

US EPA ARCHIVE DOCUMENT

DIE CAST AREA
SHORING WORK PLAN
FOR THE
CARTER CARBURETOR SUPERFUND SITE

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Project No. ACF0001.RA

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**Die Cast Area Shoring Plan
for the
Carter Carburetor Superfund Site
St. Louis, Missouri**

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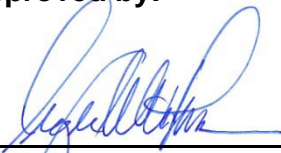


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DIE CAST AREA SHORING WORK PLAN

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ABBREVIATIONS AND ACRONYMS

ACF	ACF Industries, LLC
BMP	Best Management Practices
CBI	Carter Building, Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CY	cubic yards
EPA	US Environmental Protection Agency
ft	foot (or feet)
ft ²	square feet
HRP	HRP Associates, Inc.
HASP	Health and Safety Plan
MSD	Metropolitan St. Louis Sewer District
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PE	Professional Engineer
POTW	publicly owned treatment works
PPE	personal protective equipment
RAWP	Removal Action Work Plan
RC	reinforced concrete
RCRA	Resource Conservation and Recovery Act
Site	Carter Carburetor Superfund Site
SOW	Scope of Work
TSDf	treatment storage and disposal facility

DIE CAST AREA SHORING WORK PLAN

1.0 INTRODUCTION

The purpose of this Die Cast Area Shoring Work Plan (SWP) is to describe in detail the scope of work to be executed to provide support of subsurface soils for the purposes of excavating and disposing impacted soils within the Die Cast Area of the Carter Carburetor Superfund Site. This shoring system will be designed and constructed to temporarily support the public right of way and utilities within and along North Grand Boulevard during the excavation process and prior to completion of backfilling.

The Site Layout for installation of the shoring system, Figure SP-2 depicts the potential layout of the work area to include the placement of equipment and temporary measures necessary for the installation of a shoring system. The layout is based on existing conditions, expected equipment and space required for stockpiled materials. It is anticipated that the shoring system design would take three weeks to prepare and the installation of the shoring system and related work would take approximately four weeks to complete.

1.1 Background

The Die Cast Area consists of building foundation remnants from the preexisting Die Cast Buildings located midblock along North Grand Avenue, and oriented length-wise in an east-west direction. The Die Cast Area extends from the CBI building eastward to the sidewalk at North Grand Avenue (see figure SP-2 for Die Cast Excavation Area limits). What remains in the Die Cast Area is the former Die Cast Building concrete foundation slab, a one to two vertical feet of load bearing wall sections in some places (knee-walls and foundations), and a crushed limestone cap, formerly 36-inches thick, now ranging in thickness from 4 inches to 24 inches over the entire foundation area.

As described in Section 2.0 of a separate report entitled, "Site Characterization of the Engineering Evaluation and Cost Analysis (EE/CA) for the Carter Carburetor Site. September 22, 2010"; the Die Cast Area is impacted with polychlorinated biphenyls (PCBs). PCBs were detected in the concrete and in the soil below the foundation.

The selected remedy for the Die Cast Area is excavation and off-site disposal of soils and concrete.

1.2 Approach for Management of PCB-Impacted Soils and Debris

The overall site cleanup and disposal of PCB remediation waste is addressed under Title 40 CFR Part 761.61(c) of *the PCB Regulations (Mega-Rule)*. This regulatory information is governed by Code of Federal Regulation (CFR) Title 40, Protection of Environment; Chapter I, Environmental Protection Agency (EPA); Subchapter R, Toxic Substance Control Act (TSCA);

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Part 761, Polychlorinated Biphenyl (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions; Subpart D, Storage and Disposal; Section 761.61, PCB Remediation Waste; dated July 1, 2011. The Die Cast Area Excavation Work Plan contains special handling and disposal considerations for the management of PCB impacted debris as well as worker, equipment and materials that come into contact with PCB impacted materials within the site. Those same considerations will be used in order to facilitate the installation of the shoring system in a timely basis and minimize the numerous project related risks, include, but are not limited to:

- fugitive dust generation,
- worker exposure,
- management of PCB impacted storm water runoff,
- generation of PCB decontamination fluids, and
- management of PCB impacted soil and demolition debris handled to facilitate the shoring installation process.

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2.0 SEQUENCE OF OPERATIONS

This section provides an overall strategy for the design and construction of the shoring system necessary to excavate PCB-impacted soils located within the Die Cast Area of the project site while supporting the public right-of way of North Grand Boulevard. Work will be sequenced and executed in a safe and efficient manner and according to all applicable regulations, including but not limited to, OSHA and 29 CFR Part 1926.

2.1 Pre-Construction Activities

There are several activities that must be performed prior to the start of shoring installing. The order in which the activities are listed is not indicative of the order in which they are completed. The activities are:

- Prior to the start of work, the shoring contractor shall prepare and submit for review a shoring system design prepared by a licensed professional engineer in the State of Missouri. This design will include all OSHA compliant safety measures including fall protection.
- Provide a site specific health and safety plan, which will include employee Hazwoper and OSHA training documentation.
- Contact Missouri One Call System to conduct a utility clearance for the work area at least 3 days but not more than 14 days prior to start of work;
- Secure a subsurface utility clearance service to mark-out underground public utilities within right-of-ways and private utilities on the site;
- Coordinate the removal of overhead utility line and underground gas piping that exist within the shoring installation limits;
- Relocate chain link fence and install screening
- Mobilize Personnel, Materials and Equipment;
- Construct a decontamination area.

2.2 Description of Shoring System and Installation

The shoring system will be installed parallel to North Grand Boulevard along the project property line for a length of at least 200 feet as depicted in Figure SP-2. Because there are existing foundations remaining from the former die cast structure within the excavation area, the shoring system will need to be installed beyond these foundation limits. This may require that a portion of the concrete sidewalk along the western side of North Grand Boulevard be removed to facilitate the installation of the shoring system. The sidewalk removed for installation of the shoring system will be replaced once the system has served its purpose and has been abandoned in place. Special consideration in the final structural

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engineering design will be taken to ensure that the existing utilities and infrastructure located along North Grand Boulevard are protected and uninterrupted.

The shoring system will extend from the ground surface to the underlying limestone bedrock, which is located at an average depth of approximately 23 feet below the existing grade. The shoring system will extend above the existing grade a minimum of 3.5 feet. Precast concrete barriers will be installed along and in front of the shoring system to provide positive protection from potential vehicle impact. Fall protection will be installed along the top of the shoring system and will comply with OSHA requirements. A 6 foot high chain link fence will remain in place to separate the work area from the public right of way. Fabric screening will be installed along the chain link fencing to deter passersby from being distracted by the work operations. This screening will also contribute to limiting dust migration. Concrete barriers will be installed along the road side of the shoring system to serve as protection to the travelling public from the excavation area.

Upon completion of the Die Cast Area excavation and once sufficient backfill has been placed to eliminate the need for shoring, the upper portion of the shoring system will be cut to a minimum of approximately 1 foot below surface grade and those shoring materials below this level will be abandoned-in-place. Surplus materials that will be removed from the site will be decontaminated prior to removal. Prior to demobilization from the site, the concrete barrier will be removed, the concrete sidewalk reconstructed and the chain link fence re-installed at its former location.

2.3 Control Measures

The following is a list of control measures to be discussed in Section 4 of this work plan:

- Entry and Exit Procedures;
- Dust Control;
- Dust Suppression and Surface Water Runoff Management;
- Safety Controls to protect the Work Site and Traveling Public

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3.0 SITE MOBILIZATION

HRP will perform a pre-construction/demolition inspection and retain video/photographic documentation of the existing site conditions, including the surrounding sidewalks and roadways, prior to commencement of Site shoring construction activities. Additionally, any equipment mobilized to the Site will have a safety inspection performed and documented by the HRP Site Health and Safety Coordinator and a representative from the shoring contractor to ensure the equipment is functioning correctly and all safety devices are properly installed and functioning as designed.

Major equipment anticipated to be mobilized for the installation of the Die Cast Area shoring system includes, but is not limited to:

- Tracked Excavator with Vibratory Hammer;
- Boom Crane, Vibratory Hammer and powerpac
- Decontamination Area;
- Aerial Lift(s);
- Water Truck or similar;
- Miscellaneous hand tools to include cutting torches;
- Storage Containers; and
- Mobile Office.

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4.0 QUALITY ASSURANCE PLAN

Materials handled on site during the shoring installation process will be managed as specified in the overall site demolition work plans prepared under separate cover.

4.1 Documentation and Reporting

The site supervisor will oversee the implementation of the Die Cast Area Excavation Shoring Work Plan; prepare, maintain and document a complete record of construction activities performed at the Site and ensure that the project is completed in accordance with the specifications of general Die Cast Area work plans, the HASP, and generally accepted industry/engineering standards.

4.2 Field Records

The site supervisor will maintain a field log on a daily basis of all activities associated with shoring construction progress. The following specific documentation and reporting requirements will be the responsibility of the site manager and site supervisor.

- Ensuring compliance with provisions of the HASP and completion of its logs;
- Ensuring proper management of PCB impacted wastes, including excavating, relocating, stockpiling, loading for transport, etc.;
- Maintaining an accurate accounting of materials and equipment entering and leaving the site, including PCB impacted debris and other materials, contractor forces, and placement of each type of backfill material on the site;
- Documentation of shoring installation activities including all drawings, photographic and video logs;
- Sampling documentation, including copies of chain of custodies, a log of cooler temperatures, measurements of sample locations in reference to fixed site features;
- Documenting and reporting of any spills, leaks, or other discharges occurring at the site during implementation of construction activities;
- Documenting and reporting of any disruption/damage to utilities.
- Documenting and reporting any disruption/damage to the sidewalks, curbing and roadway of the public right-of way.

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4.3 Equipment Mobilization

Equipment will be mobilized on an as needed basis due to the limited area of the Site. Equipment may be stored on the west side of North Spring Avenue inside the fenced area, if cleared in advance with the Site Supervisor. Heavy equipment mobilization for the shoring installation will be coordinated with the demolition contractor and site supervisor to minimize impact to local businesses and traffic. Some equipment may require assembly on-site. Assembled equipment will be inspected and tested to ensure a safe working condition and that all safety apparatus' are in place and functioning as designed. Equipment operators will be competent, experienced and properly trained.

4.4 Entry and Exit Procedures

Site Access Control is discussed in detail in Section 5.6 of the RAWP. Site Access will be controlled to prevent unauthorized access to the Site in accordance with the RAWP.

4.4.1 Decontamination and PPE

The area of the site where shoring installation activity will occur (i.e. equipment staging areas, materials stockpiles, etc) will be considered part of the exclusion zone, see figure SP-2. The exclusion area will be delineated in the field with high visibility construction fencing with signage indicating that it is an exclusion zone. A second area of the site, outside of the exclusion zone, will be designated a contaminant reduction zone. In this area, decontamination and personal protective equipment protocols will be applied. The contamination reduction zone will have a decontamination strategy which will identify, establish and determine: 1) the number and layout of the decontamination stations, 2) the decontamination equipment needed, 3) the appropriate decontamination methods, 4) procedures to prevent contamination of clean areas, 5) methods and procedures to minimize worker contact with contaminants during removal of personal protective clothing and equipment (PPE), and 6) methods for disposing of clothing and equipment that are not completely decontaminated when completed for a work shift.

All personnel entering the exclusion zone will be required to wear PPE prior to entry and continuously while in the exclusion zone. The required PPE during all phases of work will include:

- High visibility shirts, vests, or similar garment(s),
- Hard hat,
- Eye protection,

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- Hearing protection, and
- Steel-toed shoes or boots,

While PCBs are present in the work areas at levels greater than 25 ppm, the following additional PPE will be required within the exclusion zone:

- Boot covers,
- Tyvek chemical resistant suits, and
- Chemical resistant gloves.

Single use disposable PPE will be used to the maximum extent. Used PPE will be containerized and transported off-site for disposal as TSCA regulated waste (greater than 50 ppm).

Durable PPE and all other durable equipment that may have potentially been in contact with PCB impacted materials will be cleaned using the double wash and double rinse method consistent with Subpart S of the PCB Regulations prior to exiting the exclusion zone. Decontamination of personnel and equipment will be performed on an appropriately sized and constructed (i.e. sufficient to contain and clean the largest equipment) decontamination pad located within the contaminant reduction zone. The decontamination pad will be configured such that all wash-waters will be contained and can be easily collected. The used wash-waters will be containerized and transferred to the process wastewater treatment system.

4.5 Utility Abandonment

A geophysical survey was performed to locate all underground utilities within the work area perimeter. This action was performed to ensure that utilities within the shoring installation area have been terminated prior to the start of demolition activities.

HRP and the shoring installation contractor, when selected, will disconnect and properly terminate all existing utility lines as required for work. Based on the data provided by the geophysical survey and the Missouri One Call service, the utilities that require abandonment prior to beginning demolition activities are natural gas and overhead electric lines.

4.6 Dust Control

A fugitive dust suppression program will be implemented in accordance with the project specifications to prevent the off-site migration of particulate matter and/or dust resulting from

DIE CAST AREA SHORING WORK PLAN

excavation, loading, transportation, and filling operations associated with site materials. The following measures will be implemented continuously during site activities:

- 1) supervision and maintenance of fugitive dust control measures,
- 2) monitoring of airborne particulate matter (visual and metered), and
- 3) coordinate with the USEPA for perimeter air monitoring.

The area of the Site to be used for vehicle traffic, dry excavation surfaces, and backfill surfaces that contain fine materials and cause dust will be periodically wetted. The travel paths on-site will be swept on a weekly basis and wetted as-needed to prevent airborne dust. It is the intent of the dust control actions to avoid any fugitive dust generated from leaving the Site.

4.7 Surface Water Runoff Management

Surface water management will be controlled utilizing a series of BMPs such as seeding, sodding, soil roughening, geotextiles, slit fences, etc combined with Site Specific Water Runoff Controls such as strategically placed berms, a process water collection tank and process/stormwater treatment system to insure the Site can meet the POTW requirements prior to discharge. Site specific water runoff controls that are available and consist of, but are not limited to at this time, are as follows:

- Land Grading to help control surface runoff, soil erosion and sedimentation (with the potential for COC transport mechanisms);
- Semi-permanent Diversions (berms) which can be constructed by creating channels with supporting earthen ridges on the bottom sides of the slopes to collect storm water runoff and to deflect the runoff to acceptable outlets that convey it without erosion;
- Stabilized Construction Entrances to minimize the amount of sediment leaving the Site (gravel pad over filter cloth) in conjunction with vehicle/tire wash station;
- Filter Berms made up of a temporary loose gravel ridge on the roadway that diverts storm water flow from an open traffic area and acts as an efficient form of sediment control (intended for gentle slope, short life span and require maintenance due to clogging from mud/soil on tires);
- Dust control management with a dust control plan.

All measures will be taken on-site to insure that all surface water, process water, and storm water is captured, collected, treated and released to the POTW in accordance with the Metropolitan Sewer District (MSD) and United States Environmental Protection Agency standards.

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4.8 Visual Inspection

Prior to leaving the site trucks shall be inspected to ensure proper loading, covering/sealing, placarding and manifesting. Trucks will be visually inspected to ensure no debris or material is present that could impact public health and safety and/or the environment. Prior to leaving the site, each truck load will be covered with a tarp or other material to prevent material spreading/spilling while enroute to disposal facility. Trucks with debris or other material on the outside of the truck body or tires will be cleaned via a dry method, wiping or brushing. If this method is not successful, the truck will be directed to the truck wash for cleaning prior to leaving Site.

4.9 Truck Wash

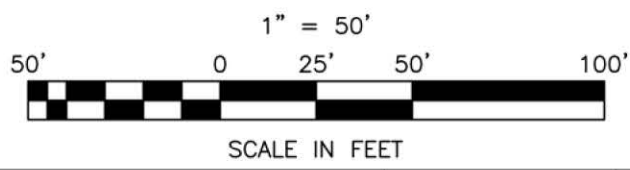
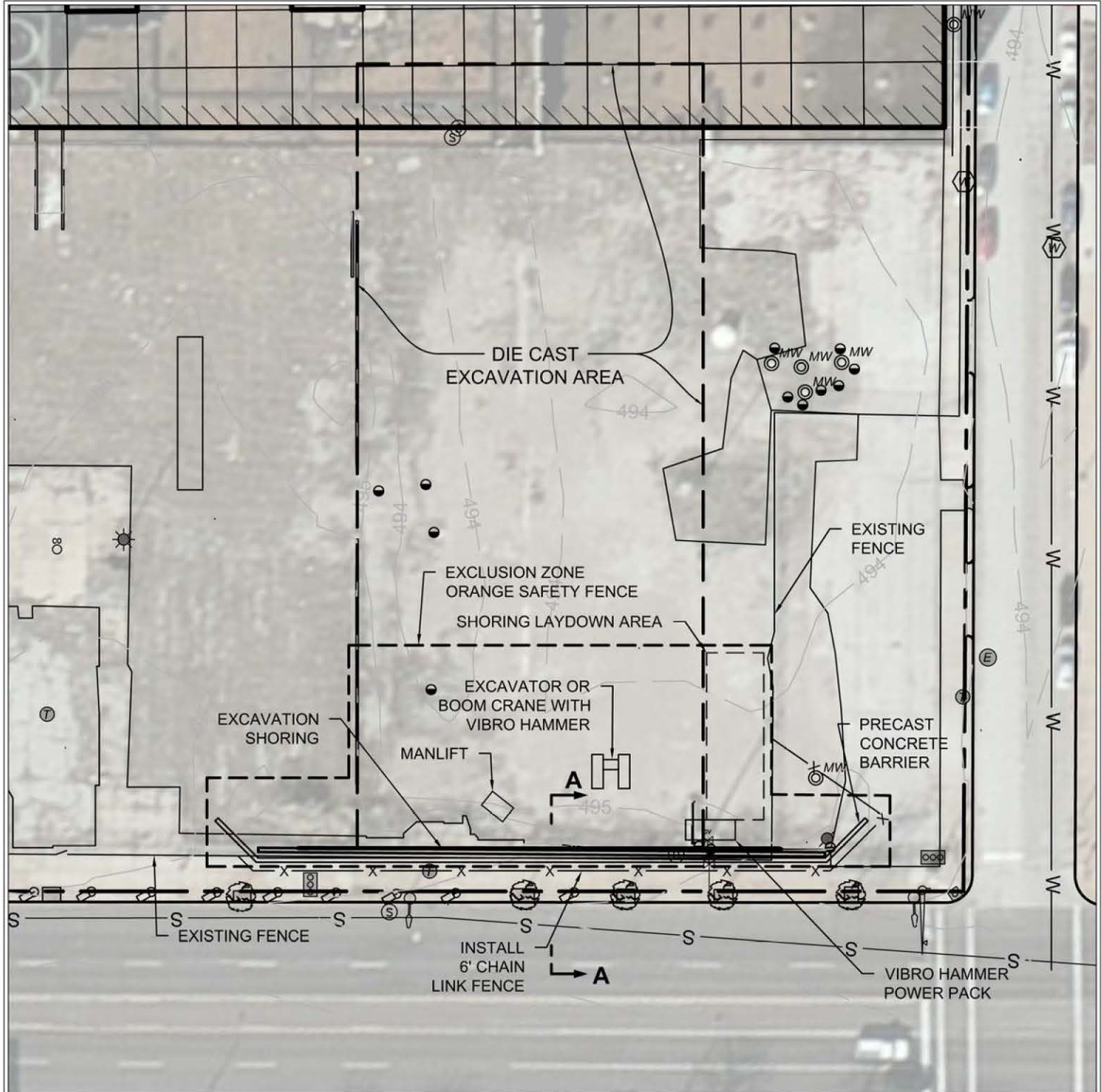
Equipment that have debris or material that that cannot be dry brushed off shall utilize the onsite truck wash before leaving the site and be re-inspected to verify the effectiveness of the cleaning procedures. The cleaning procedure will include a double-wash double-rinse of all areas where potential contact with PCBs may have occurred. The truck wash area will be constructed to contain the cleaning water and to prevent any PCB impacted material from contacting non-impacted areas of the site. Equipment will not be allowed to leave the designated work zone or cleaning area until a designated representative has verified all material has been removed from the tires and outside of truck bed.

4.10 Public Road Inspection

Public streets utilized by the trucks transporting equipment and material for off-site disposal will be inspected at least daily in order to ensure that the trucks are being adequately cleaned and that no spillage is occurring. The street inspection will be conducted near the end of the daily work shift, with more frequent inspections to occur if spills of impacted material are documented in public streets. Any identified spills will be cleaned up immediately. The daily inspection will be documented in a log book to be maintained at the site.

Figures

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**SHORING INSTALLATION
 PLAN AT DIE CAST AREA**

CARTER CARBURETOR SITE

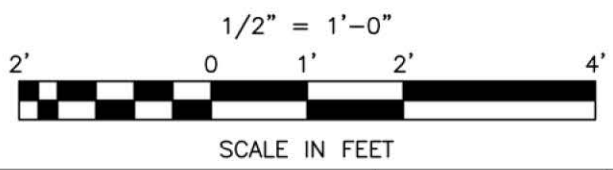
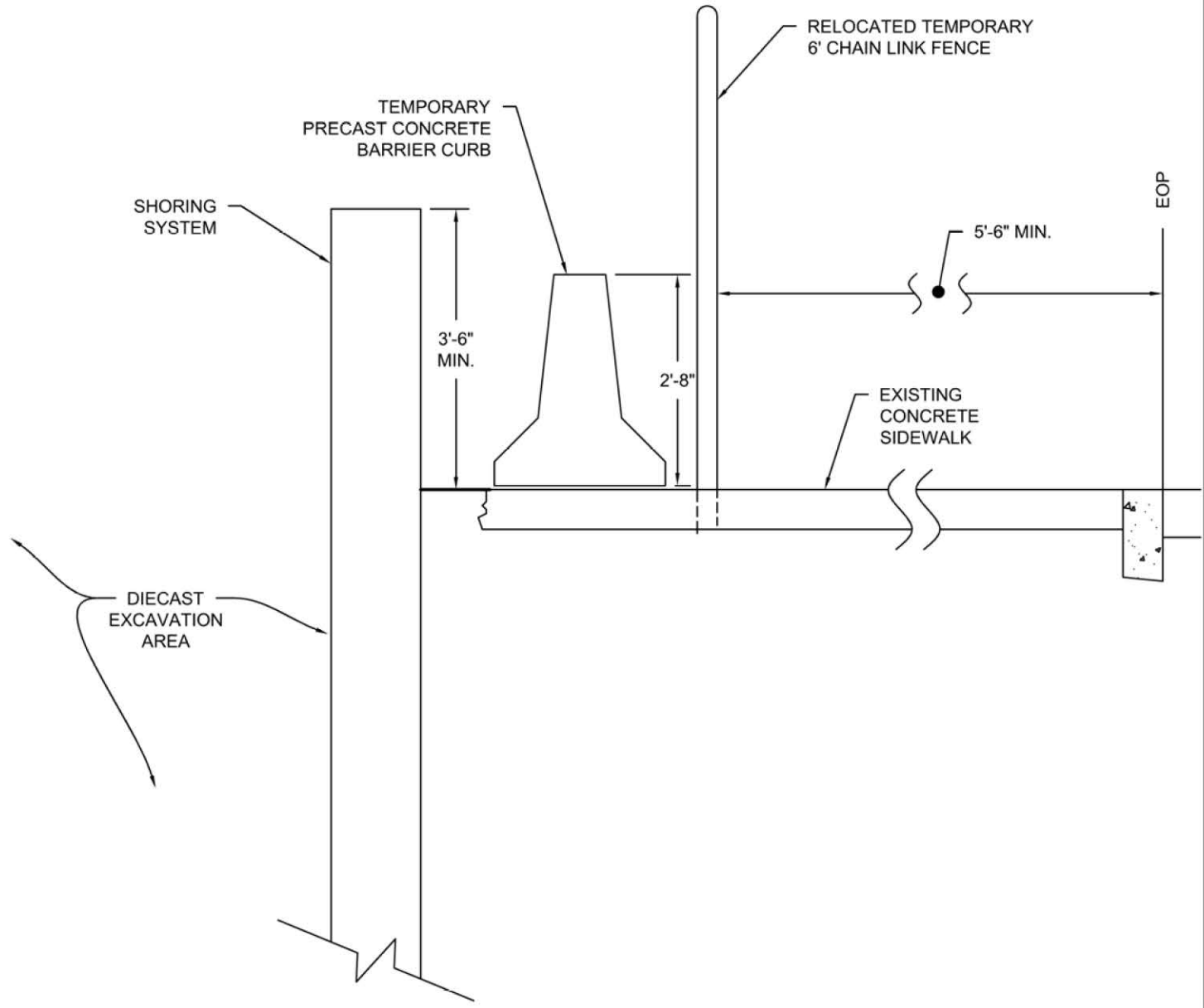
2800 BLOCK OF NORTH SPRING AVENUE, ST. LOUIS, MISSOURI

1" = 50'
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SECTION A-A

CARTER CARBURETOR SITE
 SHORING INSTALLATION PLAN AT DIE CAST AREA
 2800 BLOCK OF NORTH SPRING AVENUE, ST. LOUIS, MISSOURI

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 09/08/2014
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 ACF0001RA
 PROJECT NUMBER:

SP-3

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