

INTERIM MEASURE COMPLETION REPORT

**REMOVAL OF PCB-CONTAINING CAULK
IN CONCRETE PAVEMENTS**

**Boeing Plant 2
Seattle/Tukwila, Washington**

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October 2010

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List of Abbreviations/Acronyms

Abbreviation/Acronym	Definition
Boeing	The Boeing Company
EPA	United States Environmental Protection Agency
Golder	Golder Associates, Inc.
IM	Interim Measure
IM Work Plan	Interim Measure Work Plan: Characterization of Caulk in Concrete Pavements at Boeing Plant 2
NPDES	National Pollutant Discharge Elimination System
PCB	polychlorinated biphenyl
ppm	parts per million
OA	Other Area
Order	Order on Consent
RCRA	Resource Conservation and Recovery Act
RL	reporting limit
SOPs	Standard Operating Procedures
SWMU	Solid Waste Management Unit

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1.0 INTRODUCTION

The Boeing Company (Boeing) completed the removal of caulk materials containing > 25 ppm PCBs in the concrete pavements in the 2-10 Area at the Plant 2 facility in Seattle/Tukwila, Washington during September 2010. The caulk removal was conducted in accordance with the methodology and schedule presented in the Phase 3 Interim Measure Work Plan (Phase 3 IM Work Plan) (Golder 2009b) that was submitted to EPA in June 2009, approved with modifications by EPA in September 2009, and resubmitted in September 2009 to address the required modifications. Boeing previously completed the removal of caulk materials containing > 25 ppm PCBs in the concrete pavements in the 2-60s Area of Plant 2 during October and November 2009, as documented in the EPA-approved Draft Preliminary IM Completion Report, Removal of PCB-Containing Caulk in Concrete Pavements, dated December 2009, and reissued as the Preliminary IM Completion Report in February 2010 (Golder 2010b).

The removal of caulk containing > 25 ppm PCBs is the culmination of (and was performed in accordance with) the following suite of work plans:

- Interim Measure Work Plan (IM Work Plan), Characterization of Caulk in Concrete Pavements at Boeing Plant 2, dated August 2007 (Golder 2007a) and approved by EPA in a letter dated October 1, 2007
- Phase 1 Report and Work Plan, Characterization of Caulk in Concrete Pavements at Boeing Plant 2, dated May 2008 (Golder 2008a) and approved by EPA in a letter dated June 16, 2008
- Draft Phase 2 Report and Work Plan, Characterization of Caulk in Concrete Pavements at Boeing Plant, dated October 2008 (Golder 2008e) and approved by EPA in a letter dated February 13, 2009
- Phase 3 Interim Measure Work Plan, Removal of PCB-Containing Caulk in Concrete Pavements, Boeing Plant 2, originally submitted in June 2009, approved with modifications by EPA in a letter dated September 8, 2009, and resubmitted in September 2009 (Golder 2009b)

This work was done in accordance with Administrative Order on Consent (Order) No. 1092-01-22-3008(h) between Boeing and the Environmental Protection Agency (EPA) Region X. The Order is issued pursuant to Section 3008(h) of the Solid Waste Disposal Act, also referred to as the Resource Conservation and Recovery Act (RCRA). The initial IM Work Plan was submitted pursuant to EPA's February 15, 2007 and April 11, 2007 letters, the latter being sent following Boeing's February 26, 2007 letter, and numerous discussions on this subject. In short, EPA required Boeing to identify caulk products containing polychlorinated biphenyls (PCBs) in concrete pavements at the facility with concentrations of PCBs above 1 part per million (ppm). The April 2007 letter specified inclusion of a discussion on the future removal of all caulk with PCB concentrations in excess of 50 ppm and for the stabilization or removal of all caulk with PCB concentrations between 25 and 50 ppm.

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In a letter to Boeing dated February 13, 2009, EPA approved the Draft Phase 2 Report and Work Plan. In that letter, EPA strongly encouraged Boeing to evaluate the removal of caulk containing PCB concentrations between 25 and 50 ppm, as opposed to the stabilization and long-term monitoring and maintenance of those caulks. Boeing's subsequent evaluation of the removal versus stabilization options led to the conclusion that removal, rather than stabilization, of the caulk containing between 25 and 50 ppm PCBs could be performed effectively at a reasonable cost. As such, Boeing removed all caulk containing > 25 ppm PCBs from the 2-60s Area as documented in this preliminary report, and will perform the removal of such caulk from the 2-10 Area during Spring/Summer 2010.

This report presents a summary of the caulk removal performed during 2009 and 2010, and provides for context and reference to pertinent data some background information on the full range of related stormwater source control work performed recently at Plant 2.

1.1 Background

Plant 2 is located on 107 acres between the Duwamish Waterway and East Marginal Way South in Seattle and Tukwila, Washington (Figure 1). With the exception of small landscaped areas, the ground surface at Plant 2 is topographically flat and either paved or covered by buildings. Stormwater falling upon pavement or buildings is discharged to the Duwamish Waterway under a National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Industrial Activities, in compliance with the State of Washington Water Pollution Control Law (Chapter 90.48 RCW) and the Federal Water Pollution Control Act (The Clean Water Act) (Title 33 United States Code, Section 1251 et seq.).

1.2 Description of Plant 2 Pavements and Slabs

Plant 2 was divided into five geographical areas for the purpose of the IM Work Plan (Figure 2). The five geographical areas include the North Area, the 2-10 Area, the 2-40s Area, the 2-60s/2-66 Areas (2-60s Area), and the South Yard. Figure 2 includes estimates of the pavement areas and joint lengths for each of these areas. The surfacing in the North Area comprises an area of approximately 13 acres, and consists primarily of recent asphalt with little or no caulk material. The surfacing in the 2-10, 2-40s, and 2-60s Areas comprises an area of approximately 29 acres, and consists primarily of older, jointed and/or cracked concrete with caulk material in the joints and/or cracks. The surfacing in the South Yard comprises an area of approximately ten acres, and consists primarily of recent asphalt with little or no caulk material. Within these areas a few locations warrant special mention. A small space near the SCL Transformer pad (OA-11) is concrete containing little caulk that will be excavated and replaced with asphalt when that space is remediated; that area was, therefore, not included in the work plan. Some small paved spaces east of the 20-series buildings are comprised of concrete and joint materials constructed in the 1990s; given their recent construction these small spaces were not included in the work plan. Similarly, on the east margin of the 2-10 Area recent refurbishment of the jet fuel tank space included removal and replacement of its original caulk; as such, that small space was also not included in this characterization work (Figure 2).

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As is described further below, the concrete pavements in the 2-10 and 2-40s Areas and the concrete pavements and slabs in the 2-60s Area were the focus of this IM Work Plan due to the presence, age and nature of the caulk materials in those areas.

1.3 Recent Actions

1.3.1 Caulk Investigations

2005/2006 2-60s Area Investigation

Between October 2005 and April 2006, following identification of PCBs in catch basin solids samples collected in storm lines X and Y, Boeing investigated caulking materials that had been applied to joints in paved roadways and concrete slabs in the drainage area served by Lines X and Y (2-60s Area). The investigation was conducted to provide an indication of whether joint caulk materials may have been a possible source of PCBs. Inspection of these areas revealed multiple applications of a variety of caulk materials used to seal cracks and seams in the roadways and building slabs. Sample locations were selected based on their variability of joint materials and the relative amount of joint material present. Forty-six caulk samples, representative of the numerous types of caulk material (based on appearance) in the area, were collected during that investigation. The visually identifiable physical characteristics of the joint materials were recorded for each sample location, and the samples were sent to an analytical laboratory for testing. Results for PCBs ranged from non-detect (at a reporting limit [RL] of 0.79 ppm) to 40,500 ppm. A summary of the results of the 2005/2006 investigation was presented as Table 1 in Attachment A of the IM Work Plan (Golder 2007a). The PCB concentrations in caulk used in the 2-60s Area concrete pavements were consistently and significantly lower than concentrations in the caulk used in the 2-60 Area building concrete slabs that were left in place temporarily following demolition of their overlying building structures. Additional evaluation of the 2005/2006 data were performed for characterization purposes in support of the Phase 1 investigation in 2007 (see Phase 1 Report and Work Plan, Characterization of Caulk in Concrete Pavements at Plant 2 [Phase 1 Report], dated May 2008 (Golder 2008a)).

Phase 1 Investigation

During 2007, a systematic approach was implemented to develop a baseline characterization of the caulk types in the concrete slabs and pavements in the 2-10, 2-40s, and 2-60s Areas:

- The 2005/2006 caulk data from the 2-60s Area were first reviewed and evaluated to describe and determine caulk physical appearances that could be used to identify those same caulks that may be present elsewhere in the study area. Samples were collected during 2007 at the same locations as most of the 2005/2006 samples to enable closer visual examination of the caulks and standardization of caulk descriptions. Additionally, several duplicate samples were submitted for laboratory analyses in cases where the 2005/2006 analytical data indicated PCB reporting limits (RLs) above 1 ppm that would compromise the use of those earlier results.

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- Caulk sampling and analytical testing were conducted on sixty seven caulk samples from the 2-10 and 2-40s Areas, and four caulk samples from the 2-60s Area. Data from the 2005/2006 and 2007 studies were then reviewed and evaluated with the objective of establishing the visual properties for each distinct caulk type that could in turn be used to systematically identify all caulks and their respective concentrations of PCBs.
- Caulk types were initially evaluated and characterized on the basis of visual properties first separately by area, and then collectively for all three areas.

Careful review of existing data and close examination of caulk material samples resulted in the identification of fifteen types of caulk materials in the pavements of the 2-10, 2-40s, and 2-60s Areas based upon visually identifiable physical properties (appearance and texture). Several of the caulk types were observed in all three areas, but most caulk types were not observed in all three areas. The details and results of the Phase 1 investigation were presented in the EPA-approved Phase 1 Report (Golder 2008a).

Phase 2 Investigation

Detailed mapping of the caulk materials in the concrete joints was performed during 2008 in the 2-10, 2-40s, and 2-60s Areas based upon the visual properties established by the Phase 1 baseline characterization. The mapping was required to identify the specific locations of caulk materials containing > 1 ppm PCBs; to enable an evaluation of recent catch basin and stormwater sampling results versus the areas containing caulk with elevated concentrations of PCBs such that stormwater source control issues could be better understood; and to enable recommendations regarding caulk removal (> 50 ppm PCBs) or stabilization (> 25 ppm and ≤ 50 ppm PCBs) actions. Two additional variations of a previously identified caulk material were discovered during the mapping process; those additional types were mapped, sampled, tested for PCBs, and characterized per the baseline characterization process.

A total of 107 additional caulk samples were collected in the 2-10, 2-40s, and 2-60s Areas during the Phase 2 investigation, and resulted in the identification of a total of 17 types of caulk materials in the pavements of the 2-10, 2-40s, and 2-60s Areas based upon visually identifiable physical properties (appearance and texture). Additionally, subsets of three of the seventeen caulk types were developed based upon ranges of PCB concentrations.

The EPA-approved Draft Phase 2 Report and Work Plan (Golder 2008e) reported the results of the caulk investigations of the concrete pavements and slabs in the 2-10, 2-40s, and 2-60s Areas at Plant 2, and included the analytical results for 224 samples of caulk materials that were collected and analyzed for PCBs during the 2005/2006, Phase 1, and Phase 2 investigations. Detailed mapping of the 17 caulk types was performed. The maps were included in the Phase 2 Report and Work Plan and are attached herein as Figures 3, 4, and 5.

PCB concentration ranges were designated for each of the 17 caulk types identified. Three of the caulks, Types 1A, 1C, and 4A, were divided into subsets based on varying ranges of PCBs detected in those materials. Including the subset caulks, 21 caulk categories were identified

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based upon PCB concentration ranges and physical characteristics, as presented in the Draft Phase 2 Report and Work Plan (Golder 2008e). The caulk types and/or subsets designated as containing PCB concentrations above 25 ppm included the following:

- Type 1A2: > 50 ppm, 1220 linear feet
- Type 1A3: > 25 ppm & ≤ 50 ppm, 797 linear feet
- Type 1C2: > 25 ppm & ≤ 50 ppm, 723 linear feet
- Type 4A2: > 25 ppm & ≤ 50 ppm, 1445 linear feet

In the Draft Phase 2 Report and Work Plan Golder (2008e), Boeing proposed the removal of the above caulk materials containing > 50 ppm PCBs and the stabilization of the caulk materials containing > 25 ppm & ≤ 50 ppm PCBs, in accordance with EPA's April 2007 letter.

Phase 3 IM Work Plan

In accordance with EPA's February 2009 letter, Boeing proposed the removal of all caulk materials containing > 25 ppm PCBs, as opposed to removing only those caulks containing > 50 ppm PCBs and stabilizing those caulks containing > 25 ppm and ≤ 50 ppm PCBs per EPA's April 2007 letter. Caulk materials containing > 25 ppm PCBs were located in the 2-10 and 2-60s Areas, whereas no caulks containing > 25 ppm PCBs were located in the 2-40s Area. The methodology, schedule, and standard operating procedures for the removal of the caulk containing > 25 ppm PCBs was proposed by Boeing and approved with modifications by EPA in September 2009.

Due to seasonal weather constraints and the timing of EPA approval, the caulk removal was scheduled in two phases as follows:

- Fall 2009 – Removal of caulk containing > 25 ppm PCBs from 2-60s Area concrete (Figure 7)
- Spring/Summer 2010 – Removal of caulk containing > 25 ppm PCBs from 2-10 Area (Figure 6)

The plan for the Fall 2009 removal of approximately 2,660 linear feet of caulk from the 2-60s Area included the following quantities and caulk types:

- 1,145 linear feet of Type 1A caulk
- 1,455 linear feet of Type 4A caulk
- 60 linear feet of Type 1C caulk

The plan for the Summer 2010 removal of 1,545 linear feet of caulk from the 2-10 Area included the following quantities and caulk types:

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- 875 linear feet of Type 1A caulk
- 670 linear feet of Type 1C caulk

1.3.2 Past Construction and Removal Activities

In March 2006, installation of a temporary stormwater collection and treatment system was completed to replace the drainage capacity of storm lines X and Y. Sampling and analytical testing previously indicated that catch basin solids in lines X and Y contained elevated concentrations of PCBs and metals (Floyd|Snider 2005). This construction activity included the temporary sealing at the surface of all the catch basins and manholes on the X and Y lines to remove those lines from service, and the installation of new drains, lines, asphalt swales and a modern treatment vault which collects solids and stormwater and conveys stormwater into storm line Z. Line Z is immediately south of the X and Y lines. In October 2006 following a video survey, the catch basins and manholes on the X and Y lines in the area of the 2-66 slab were backfilled with controlled density fill (CDF) and the accessible outfalls for those lines were sealed at the waterway. In May 2007, Boeing completed the removal of the X and Y lines from the 2-60s Area (east of the 2-66 slab), as documented in the EPA-approved Interim Measure Completion Report, Removal of Stormwater Lines X & Y (OA 23.1 and OA 23.2) in 2-60s Area at Boeing Plant 2, dated May 2008 (Golder 2008b). Additionally, Building 2-64 was demolished in May 2007 and its foundations and immediately-adjacent pavements were removed and replaced with asphalt surfacing.

As a result of the removal of those portions of the X and Y storm lines and the demolition of Building 2-64, caulks at the locations of five of the caulk samples collected in the 2-60s Area during 2005/2006 were removed. These five caulk samples had PCB concentrations ranging from non-detect (at an RL of 0.8 ppm) to 740 ppm. Additionally, all caulk represented by three samples containing PCB concentrations ranging from 29,300 ppm to 40,500 ppm were previously removed by Boeing from a single equipment foundation on the Building 2-65 slab (see Figure 5).

1.3.3 Stormwater Sampling

Given the possible association between the caulk at Plant 2 as a potential source of PCBs and the PCB concentrations detected in the stormwater system solids, it is appropriate to consider information regarding stormwater source control sampling. Accordingly, and to further investigate concentrations of PCBs and metals detected in catch basin solids during the 2005 survey of the Plant 2 stormwater system, Boeing and EPA initiated an annual stormwater source control sampling program to evaluate the potential for active stormwater lines at Plant 2 to convey hazardous substances to the Duwamish Waterway via stormwater discharges. To address EPA's requirements for this work identified in a May 26, 2006 letter, the Stormwater Source Control Work Plan for Boeing Plant 2 (Golder 2006) was drafted and then approved in October 2006. That work plan established a source control sampling program consisting of one-time or annual sampling and analysis of suspended solids and/or water along 12 of the 24 active stormwater lines at Plant 2 during the rainy season (approximately October to March). Source control sampling results are compared to action levels established in the work plan, and

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action level exceedances trigger further actions such as additional monitoring, source identification and/or source elimination work.

The first round (“round 1”) of source control sampling was conducted between October 2006 and April 2007, and the round 1 sampling report (Golder 2007b) was approved by EPA in October 2007. Round 2 sampling was conducted between October 2007 and May 2008 in accordance with the Revised Stormwater Source Control Work Plan for Boeing Plant 2 (Golder 2007c). The round 2 sampling report was submitted to EPA in May 2008, conditionally approved with comments by EPA in August 2008, and resubmitted for final approval in September 2008 (Golder 2008d). A draft round 3 sampling report (Golder 2009a) was submitted to EPA in July 2009, and the final round 3 report (Golder 2010a) was submitted in February 2010. Annual source control sampling will continue until baseline conditions have been established, and appropriate source control actions have been identified, completed, and verified.

1.3.4 2008 Stormwater System Sampling and Cleaning

Boeing submitted to EPA the 2008 Stormwater Source Control Interim Measure Work Plan for Boeing Plant 2 (Golder 2008c) in May 2008. The work plan was approved by EPA in a letter received by Boeing on July 2, 2008. In accordance with the work plan, Boeing implemented an interim measure on five storm lines (A, B, I, J, and Z) in the Plant 2 stormwater system during the summer and fall of 2008 to address action level exceedances identified during the first two rounds of stormwater source control sampling. The 2008 IM consisted of:

- Visually inspecting all accessible catch basins and collecting 494 solids samples from 364 locations to assess potential entry points for PCBs and metals
- Cleaning 417 catch basins and structures based on the analytical results and the visual inspections
- Cleaning more than 5 miles of storm lines and removing approximately 117 cubic yards of legacy solids that may have been ongoing sources of PCBs and metals detected during source control sampling
- Conducting a video survey in more than 3 miles of storm lines to assess the integrity of the pipes and evaluate the cleaning effectiveness
- Installing 287 geotextile filter fabric inserts at all accessible catch basins and inlets to reduce the volume of solids entering the storm system

The IM removed legacy residual solids material from the storm system that may have been a source of PCBs and metals detected during the first two rounds of stormwater source control sampling, and implemented controls to reduce future solids accumulation in the system. All details and results of the IM were presented in the Interim Measure Completion Report, 2008 Stormwater Source Control Catch Basin Sampling and Storm Line Cleaning for Boeing Plant 2 (Golder 2009c), dated October 2009 and approved by EPA in a letter dated November 18, 2009.

1.3.5 2009 Catch Basin Insert Sampling and Cleaning

Boeing collected solids samples from geotextile surface inserts in catch basins on storm lines B, I, J, and Z during October and November 2009 in an ongoing effort to identify sources of PCBs that have been detected in the stormwater system at Plant 2. Boeing also cleaned or replaced the geotextile inserts in the catch basins, and assessed the extent of accumulation in the underlying catch basin bottoms. The work was performed in accordance with the Technical Memorandum, Fall 2009 Source Control Actions (Golder 2009d), submitted to EPA on October 15, 2009. In December 2009, cleaning was completed in the containment area around the Jet-A fuel tanks near the east end of storm line B where elevated PCB concentrations have previously been detected in the stormwater system.

Following the receipt of all analytical results for the catch basin insert sampling, and assessment of the data, a Technical Completion Memorandum summarizing the work and the results will be prepared and submitted to EPA.

1.3.6 2010 Catch Basin Insert Sampling

Boeing has continued collecting solids samples from geotextile surface inserts in catch basins on storm lines B, I, J, and Z. The 2010 sampling program was conducted during July and August of this year to support the ongoing effort to identify sources of PCBs that have been detected in the stormwater system at Plant 2. Boeing also cleaned or replaced the geotextile inserts in the catch basins, and assessed the extent of solids accumulation in the underlying catch basin bottoms. The work was performed in accordance with the Technical Memorandum, Summer 2010 Plant 2 Source Control Catch Basin and Insert Sampling/Cleaning/Replacement (Golder 2010c), submitted to EPA on July 14, 2010

At the current time the evaluation of the 2010 catch basing sampling is ongoing and the necessity for any further cleaning activities is also being evaluated.

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2.0 PURPOSE OF INTERIM MEASURE

The purpose of this IM was to first determine and map the concrete joint locations of caulk materials containing PCB concentrations above 1 ppm, and to then remove those caulk materials containing > 25 ppm PCBs. The removal of the identified materials containing > 25 ppm PCBs was performed as a function of source control to preclude the migration of such materials to the Duwamish Waterway.

A phased approach was used to identify and then remove caulk materials containing PCBs in excess of 25 ppm:

- Phase 1 provided a baseline characterization of caulk materials and included correlation of caulk physical properties (i.e., appearance and texture) to PCB concentrations in the caulk. The characterization was presented in the Phase 1 Report (Golder 2008a), which established the visual properties and sampling approach to be used during the Phase 2 investigation to categorize and map all caulks relative to their ranges of PCB concentrations.
- Phase 2 included: 1) sampling and testing of newly-observed caulk types that were not previously identified, 2) additional sampling and testing of two previously identified caulk types that exhibited wide ranges of PCB concentrations, 3) detailed mapping of all of the caulks characterized during Phase 1 and Phase 2 of this IM Work Plan, and 4) proposing actions for caulk materials containing PCB concentrations > 25 ppm.
- Phase 3 included: 1) methodology for the removal of caulk materials containing > 25 ppm PCBs, and 2) a schedule for the removal of the subject caulk materials.
- Removal Phase included: 1) Fall 2009 removal of 2-60s Area caulk materials identified as containing > 25 ppm PCBs, removal of two inches of soil from beneath the joint that contained the subject caulk, and backfilling of the caulk removal slot with controlled density fill (CDF) or concrete, and 2) Summer/Fall 2010 removal of 2-10 Area caulk materials identified as containing > 25 ppm PCBs, removal of two inches of concrete from beneath the joint that contained the subject caulk, and replacement of the caulk with new joint sealant material.

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3.0 FALL 2009 CAULK REMOVAL, 2-60S AREA

During October and November 2009, approximately 2,660 linear feet of caulk materials containing > 25 ppm PCBs were removed from the concrete slabs in the 2-60s Area of Plant 2, and two inches of soil under the caulked joints were removed in accordance with the Phase 3 IM Work Plan (Golder 2009b). The removal areas are shown on Figure 7. Controls were implemented during the removal to contain and prevent the release of PCB contaminants to the environment, as prescribed by the methodology and Standard Operating Procedures (SOPs) included in the Phase 3 IM Work Plan. Quality Assurance Field Sheets were completed on a daily basis, and are appended in electronic format, along with photographs and field notes in Appendices B, A, and C respectively on the compact disk (CD) attached to this report.

3.1 2-60s Area Slab and Joint Configurations

The 2-60s Area concrete slabs formed the indoor floors of 1950s-era buildings that were primarily used for manufacturing and storage. The configuration between adjacent approximately 6-inch thick concrete floor panels in the 2-60s Area consists of a caulked joint that generally ranges in width from 1/8 to 1/2 inch, and fully penetrates the thickness of the concrete slabs (~6 inches), as shown in Sketch 1 below. A similar configuration exists in the joint between floor slabs and the much thicker perimeter curbs, footings, stem walls, or grade beams, as shown in Sketch 2 below.

3.2 Sawcutting

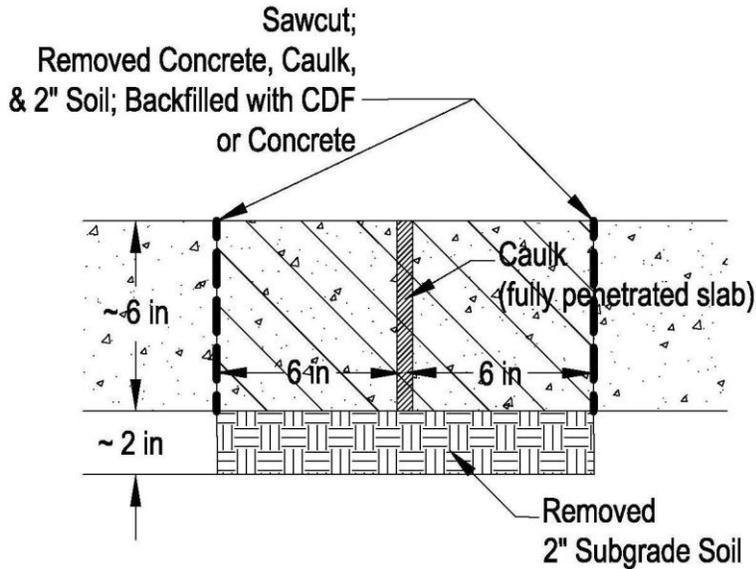
As a result of the configuration of the caulked joints in the 2-60s Area, caulk removal required sawcutting through the full thickness of the concrete (approximately 6 inches), on both sides of the joints (approximately 6 inches from the caulk joints), per Sketch 1. In the case of perimeter joints between floor panels and curbs, footings, stem walls, or grade beams, the floor concrete was sawcut at a distance of approximately 12 inches from the perimeter structure, per Sketch 2.

Prior to starting work, catch basins located within 25 feet of the work areas were blocked using plastic sheeting and sandbags to prevent liquid or solid wastes from entering the stormwater system.

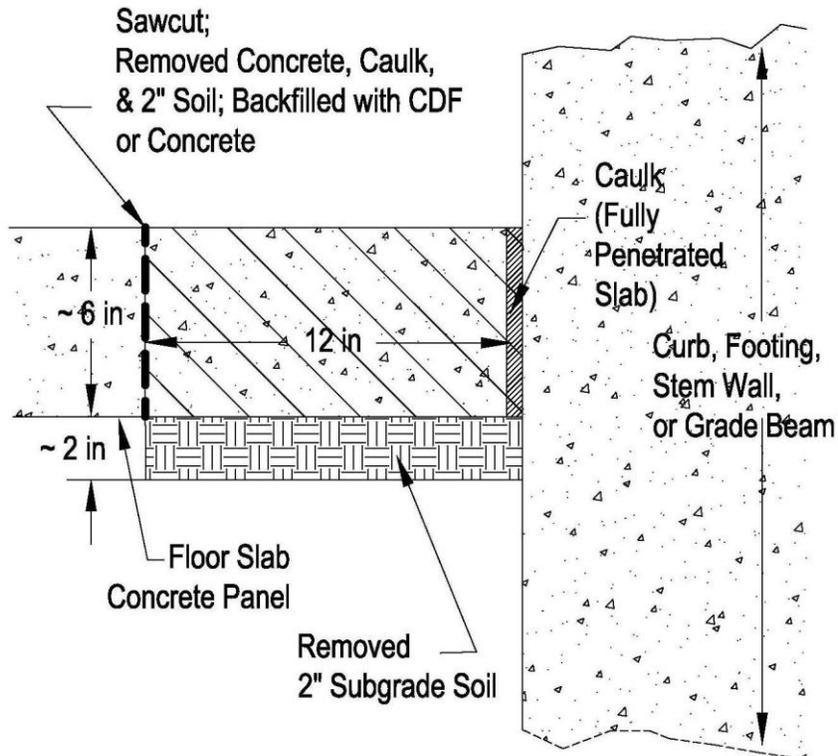
Two sawcutting machines were used to expedite the work. The first machine made a shallow cut in the concrete, to provide a notched guide for the second machine that cut through the full depth of the concrete. Drum vacuums were used to remove the sawcutting slurry almost immediately as it was generated. Drummed slurry was appropriately managed for disposal.

Sawcutting in advance of caulk-concrete removal was typically limited to one or two days in advance of the removal, to reduce exposure of the sawcut slots to weather and runoff. A pavement breaker or jack hammer was used in conjunction with or in place of a sawcutting machine in areas where the joint, concrete, or footing configurations did not accommodate the sole use of sawcutting machines. In such cases, concrete chips were cleaned-up almost immediately, using brooms and vacuums.

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Sketch 1: Section of Typical Interior Joint in Concrete Slab in 2-60s Area (not to scale)



Sketch 2: Section of Typical Perimeter (Exterior) Joint in Concrete Slab in 2-60s Area (not to scale)

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3.3 Caulk-Concrete Removal

As the sawcutting progressed, the resulting 12-inch wide by 6-inch thick concrete and caulk segments were then removed using a small excavator. A few of the caulked joints contained lengths of caulk with PCB concentrations > 25 ppm and alternating lengths of caulk with PCB concentrations < 25 ppm. In such cases, both caulks were removed when the efficiency of the sawcutting and removal operations dictated such action. At perimeter joints, manual scraping and pneumatic scabbling were used as needed to remove adhered caulk from the perimeter curb, footing, stem wall or grade beam. Two inches of soil beneath the bottom of the caulk were then removed manually using shovels, and caulk or concrete chips adjacent to the removal slot were cleaned-up using brooms. The removed caulk, concrete and soil were placed in roll-off containers and appropriately managed for disposal. A total of approximately 2,660 linear feet of caulk containing > 25 ppm PCBs were removed from the 2-60s Area concrete slabs.

At the 2-63 slab, following a period of rainy weather, saturated subgrade soil was discovered when the caulk-concrete was removed. Water had likely seeped to the subgrade through cracked concrete slabs or nearby utility pits. The wet soil in the removal slot was overexcavated and replaced with clean, granular fill prior to backfilling the slot with CDF.

The concrete adjacent to each removal slot was washed with water using a low pressure sprayer, and manually scrubbed using brushes. The spray water was aimed away from the removal slot during washing to prevent the entry of the wastewater into the slot. The wastewater was collected using a drum vacuum, and the drummed liquid was appropriately managed for disposal.

Plastic sheeting and sandbags were used as needed to protect the removal slots from adverse weather until such time that the slots were backfilled with CDF or concrete.

3.4 Backfilling

The caulk-concrete removal slots were backfilled with CDF or concrete. The slots were typically backfilled within one or two days of the caulk-concrete removal, and many were backfilled the same day as the caulk-concrete removal. Approximately 105 cubic yards of CDF and concrete were used to backfill the caulk-concrete removal slots.

3.5 Decontamination

All non-disposable equipment and tools were decontaminated before they were allowed to be removed from the jobsite. Decontamination water was drummed and appropriately managed for disposal.

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4.0 SUMMER/FALL 2010 CAULK REMOVAL, 2-10 AREA

During August and September 2010, approximately 1,545 linear feet of caulk materials containing > 25 ppm PCBs were removed from the concrete pavements in the 2-10 Area of Plant 2 in accordance with the Phase 3 IM Work Plan (Golder 2009b). The removal areas are shown on Figure 6. Controls were implemented during the removal to contain and prevent the release of PCB contaminants to the environment, as prescribed by the methodology and Standard Operating Procedures (SOPs) included in the Phase 3 IM Work Plan. Quality Assurance Field Sheets were completed on a daily basis, and are appended in electronic format, along with photographs and field notes in Appendices B, A, and C respectively on the compact disk (CD) attached to this report.

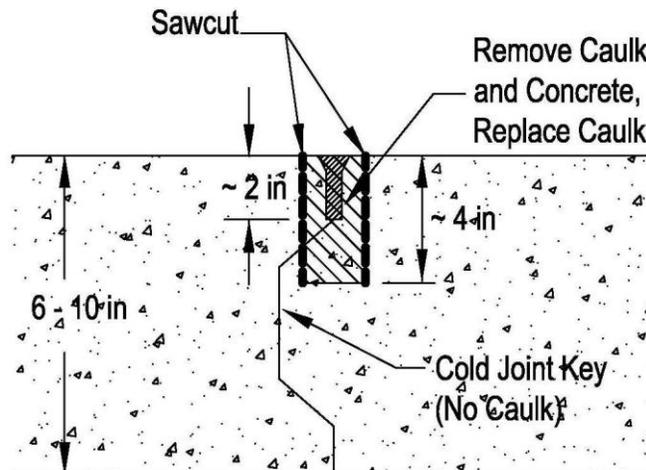
4.1 2-10 Area Slab and Joint Configurations

The pavements in the 2-10 Area primarily consist of roadways and parking lots. The caulked joints in the 2-10 Area pavements generally have a rectangular shaped surface joint with a width of approximately 3/8 to 1/2 inch, and a depth of approximately 2 inches. The concrete pavements have thicknesses ranging from approximately 6 inches to 10 inches. The caulked surface joint forms a seal over an un-caulked, cold joint key between adjacent concrete panels as shown in Sketch 3 below. The caulk width in the joint is slightly wider at the surface than that below the surface, a result of approximately 60 years of vehicular wear on the shoulders of the concrete on each side of the joint.

4.2 Sawcutting

Prior to starting work, catch basins located within 25 feet of the work areas were blocked using plastic sheeting and sandbags to prevent liquid or solid wastes from entering the stormwater system.

The concrete on both sides of the surface joint was sawcut to a depth at least two inches below the caulk. The sawcuts were made wide enough and deep enough to fully bracket the designated caulk material (Sketch 3). As such, sawcuts on both sides of the joints were at least 4 inches deep. The width between joint-bracketing sawcuts ranged from approximately 1 to 2.5 inches, depending on the width of the caulk at the surface. Drum vacuums were used to remove the sawcutting slurry almost immediately as it was generated, and a low pressure sprayer and brushes were then used to clean the concrete. A drum vacuum was used to remove the wastewater. Drummed slurry and wastewater were appropriately managed for disposal. Sawcutting in advance of caulk-concrete removal was typically limited to one or two days in advance of the removal, to reduce exposure of the sawcut slots to weather and runoff.



Sketch 3: Section of Typical Joint in Concrete Pavement in 2-10 Area
(not to scale)

4.3 Caulk-Concrete Removal

As the sawcutting progressed, the resulting 1 to 2.5-inch wide by 4-inch thick concrete and caulk segments were removed manually using pry bars, chisels, miscellaneous hand tools, and a mechanical chiseling tool. Joints were then cleaned as needed to remove caulk and concrete debris and chips, and to prepare the joint for the installation of new caulk. Caulk or concrete chips adjacent to the removal slot were cleaned-up using brooms. The removed caulk and concrete were placed in drums and appropriately managed for disposal. A total of approximately 1,545 linear feet of caulk containing > 25 ppm PCBs were removed from the 2-10 Area concrete pavements.

The concrete adjacent to each removal slot was washed with water using a low pressure sprayer, and manually scrubbed using brushes. The wastewater was collected using a drum vacuum, and the drummed liquid was appropriately managed for disposal.

4.4 Caulk Replacement

After sawcutting, caulk and concrete removal, and joint preparation, a polyolefin foam backer rod was inserted in the joint and new caulk was then applied to form a seal over the underlying, cold joint key. More than 300 gallons of new caulk were applied to seal the joints.

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

4.5 Decontamination

All non-disposable equipment and tools were decontaminated before they were allowed to be removed from the jobsite. Decontamination water was drummed and appropriately managed for disposal.

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Removal of PCB-Containing Caulk in Concrete Pavements

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IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

5.0 DEVIATIONS

No deviations from the Phase 3 IM Work Plan occurred during the removal of caulk-concrete from the 2-60s Area slabs or the 2-10 Area pavements.

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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IM Completion Report Removal of PCB-Containing Caulk in Concrete Pavements

6.0 SUMMARY

Approximately 4,205 linear feet of caulk containing > 25 ppm PCBs were removed from slabs and pavements in the 2-60s and 2-10 Areas during 2009 and 2010.

6.1 2009 Caulk Removal

Approximately 2,660 linear feet of caulk containing > 25 ppm PCBs were removed from the concrete in the 2-60s Area of Plant 2 during October and November 2009 as a function of source control to preclude the migration of the materials to the Duwamish Waterway. Two inches of soil beneath the bottom of the caulked joints were also removed. The removal slots in the concrete slabs were backfilled with CDF or concrete to seal the slots against the entry of surface runoff.

6.2 2010 Caulk Removal

Approximately 1,545 linear feet of caulk containing > 25 ppm PCBs were removed from the concrete joints in the 2-10 Area of Plant 2 during August and September 2010 as a function of source control to preclude the migration of the materials to the Duwamish Waterway. The caulk removal included the removal of concrete on both sides of the joint and below the caulk such that the removed concrete fully bracketed the designated caulk material (Sketch 3). Styrofoam backer rods were inserted in the joints and new caulk was then applied to form a seal over the underlying, cold joint keys.

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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IM Completion Report Removal of PCB-Containing Caulk in Concrete Pavements

7.0 REFERENCES

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Floyd|Snider. 2005. Memorandum: Summary of Recent Storm System Solids Survey and Source Control Sampling at Plant 2. November.

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IM Completion Report

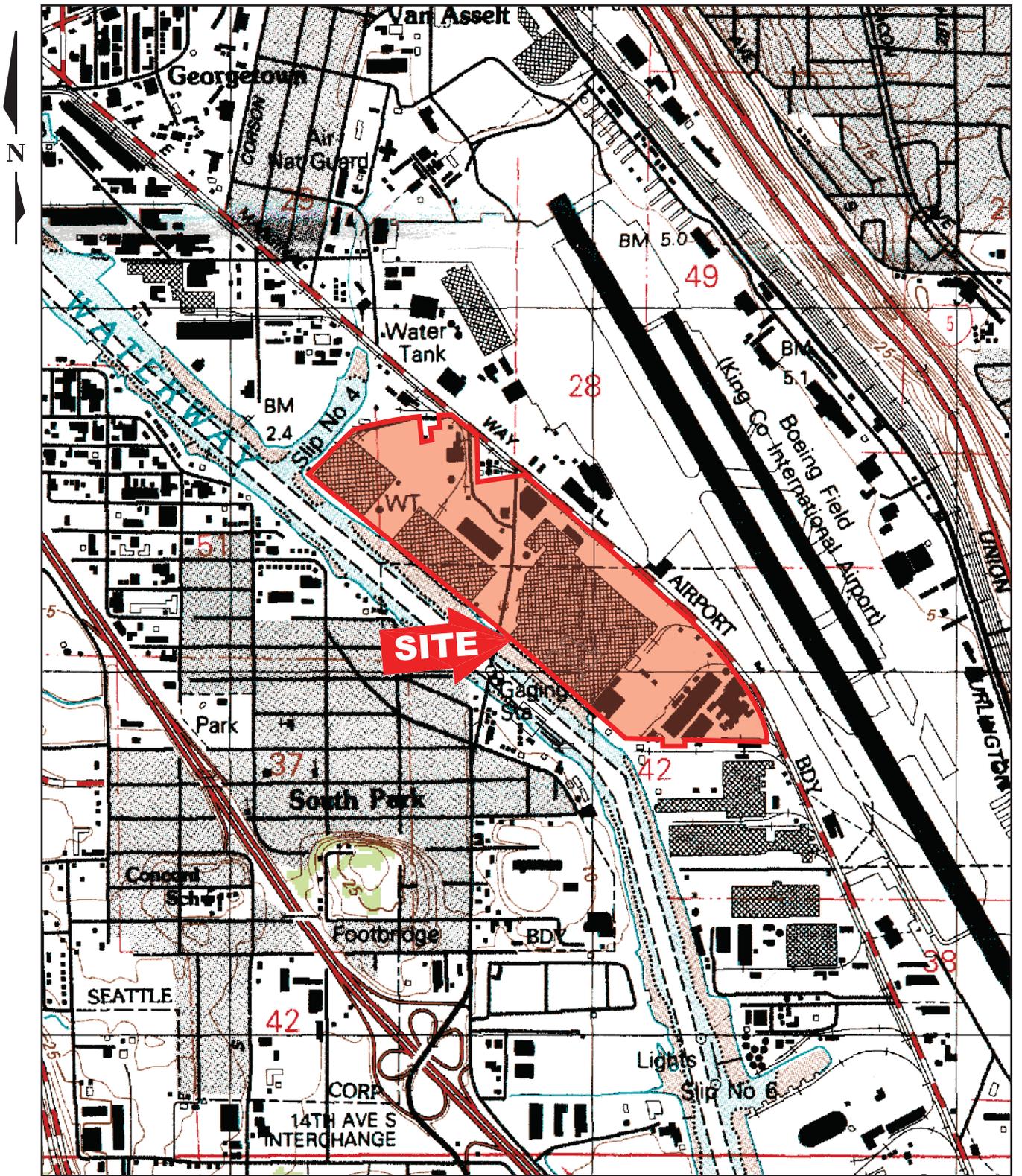
Removal of PCB-Containing Caulk in Concrete Pavements

- Golder. 2008b. Interim Measure Completion Report, Removal of Stormwater Lines X & Y (OA 23.1 and OA 23.2) at Boeing Plant 2. May.
- Golder. 2008c. 2008 Stormwater Source Control Interim Measure Work Plan for Boeing Plant 2, May.
- Golder. 2008d. Stormwater Source Control Round 2 Sampling Report, 2007-2008, September.
- Golder. 2008e. Draft Phase 2 Report and Work Plan, Characterization of Caulk in Concrete Pavements at Boeing Plant 2, October.
- Golder. 2009a. Draft Stormwater Source Control Round 3 Sampling Report, 2008 – 2009, July.
- Golder. 2009b. Phase 3 Interim Measure Work Plan, Removal of PCB-Containing Caulk in Concrete Pavements, Boeing Plant 2, September.
- Golder. 2009c. Interim Measure Completion Report, 2008 Stormwater Source Control Catch Basin Sampling and Storm Line Cleaning for Boeing Plant 2, October.
- Golder. 2009d. Technical Memorandum, Fall 2009 Source Control Actions, October.
- Golder. 2010a. Stormwater Source Control Round 3 Sampling Report, 2008 – 2009, February.
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FIGURES

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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IM Completion Report
 Removal of PCB-Containing Caulk
 In Concrete Pavements
 Boeing Plant 2

Figure 1
 Vicinity Map

SHEET	DRAWN BY	REVIEWED BY	DATE
1 of 1	SAM	SAM	10/14/10

0131646001600fig01_R7.ai

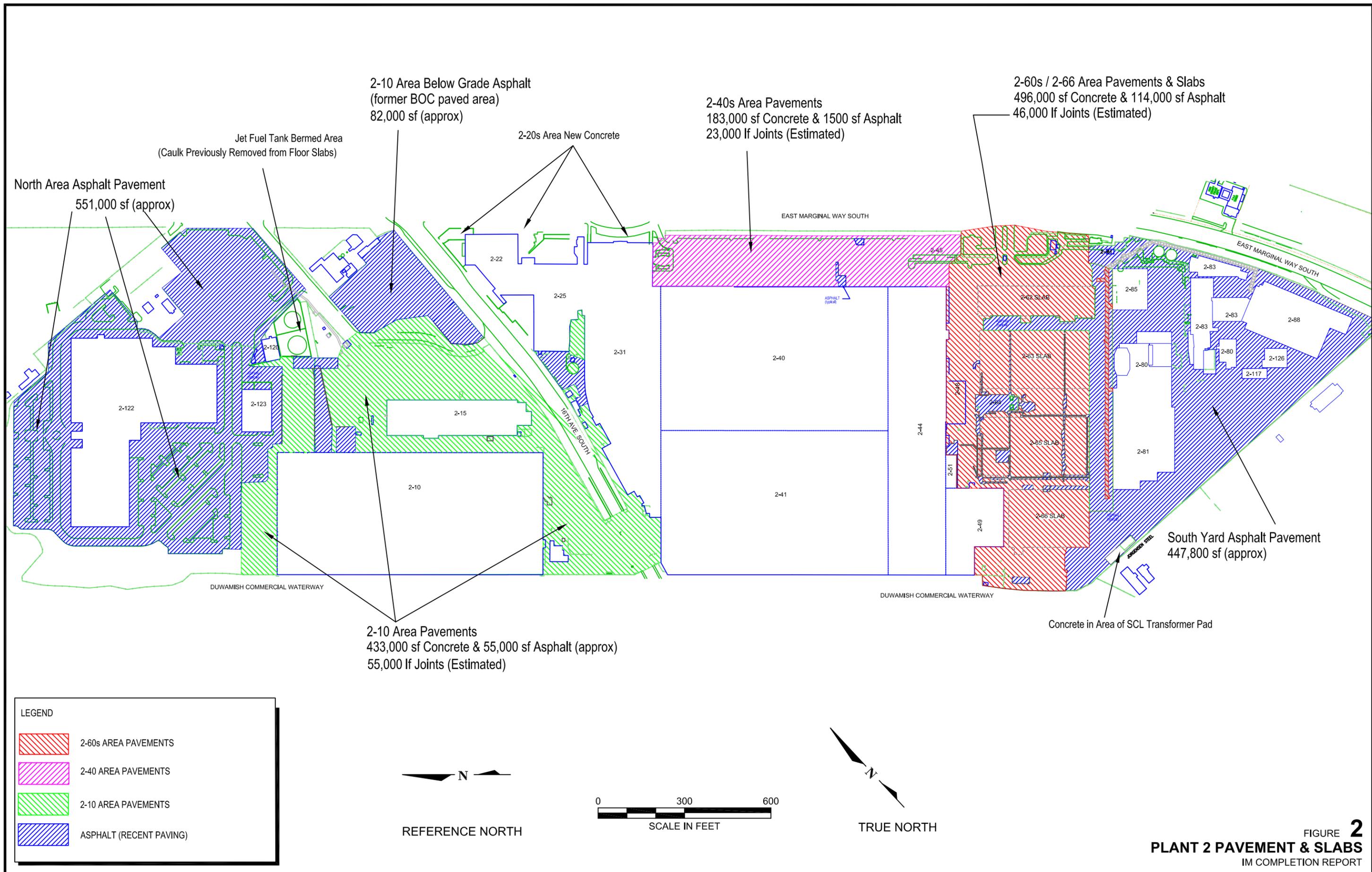


FIGURE 2
PLANT 2 PAVEMENT & SLABS
 IM COMPLETION REPORT

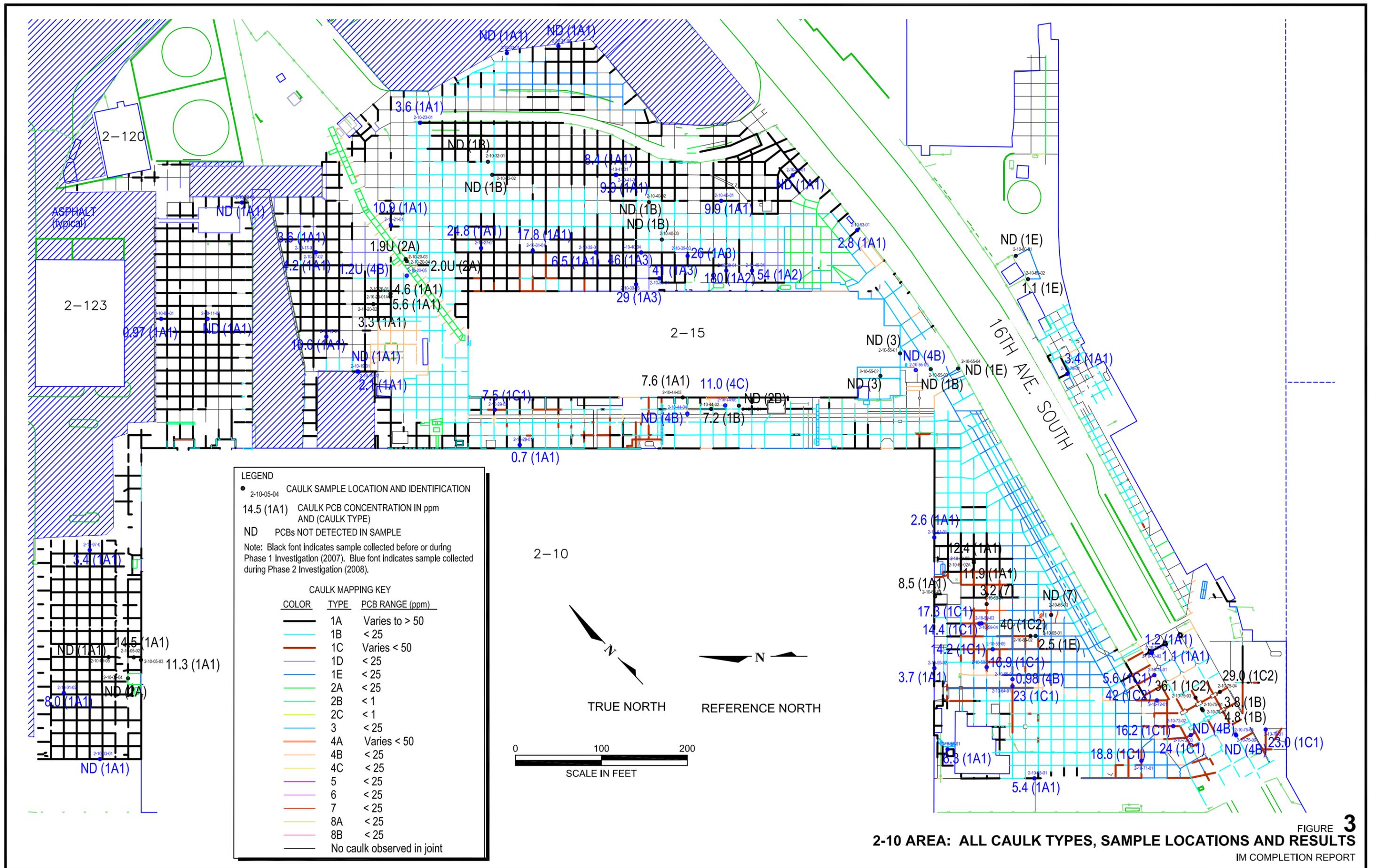
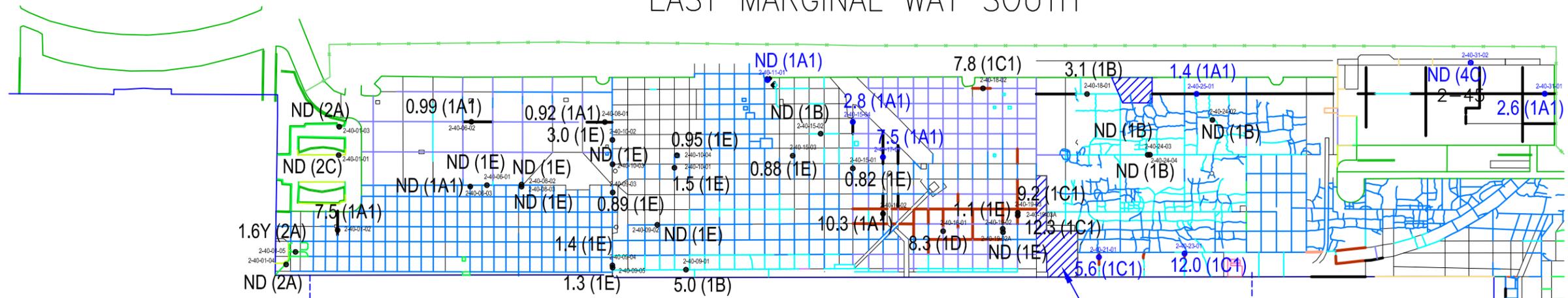


FIGURE 3
2-10 AREA: ALL CAULK TYPES, SAMPLE LOCATIONS AND RESULTS
 IM COMPLETION REPORT

EAST MARGINAL WAY SOUTH



LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

Note: Black font indicates sample collected before or during Phase 1 Investigation (2007). Blue font indicates sample collected during Phase 2 Investigation (2008).

CAULK MAPPING KEY

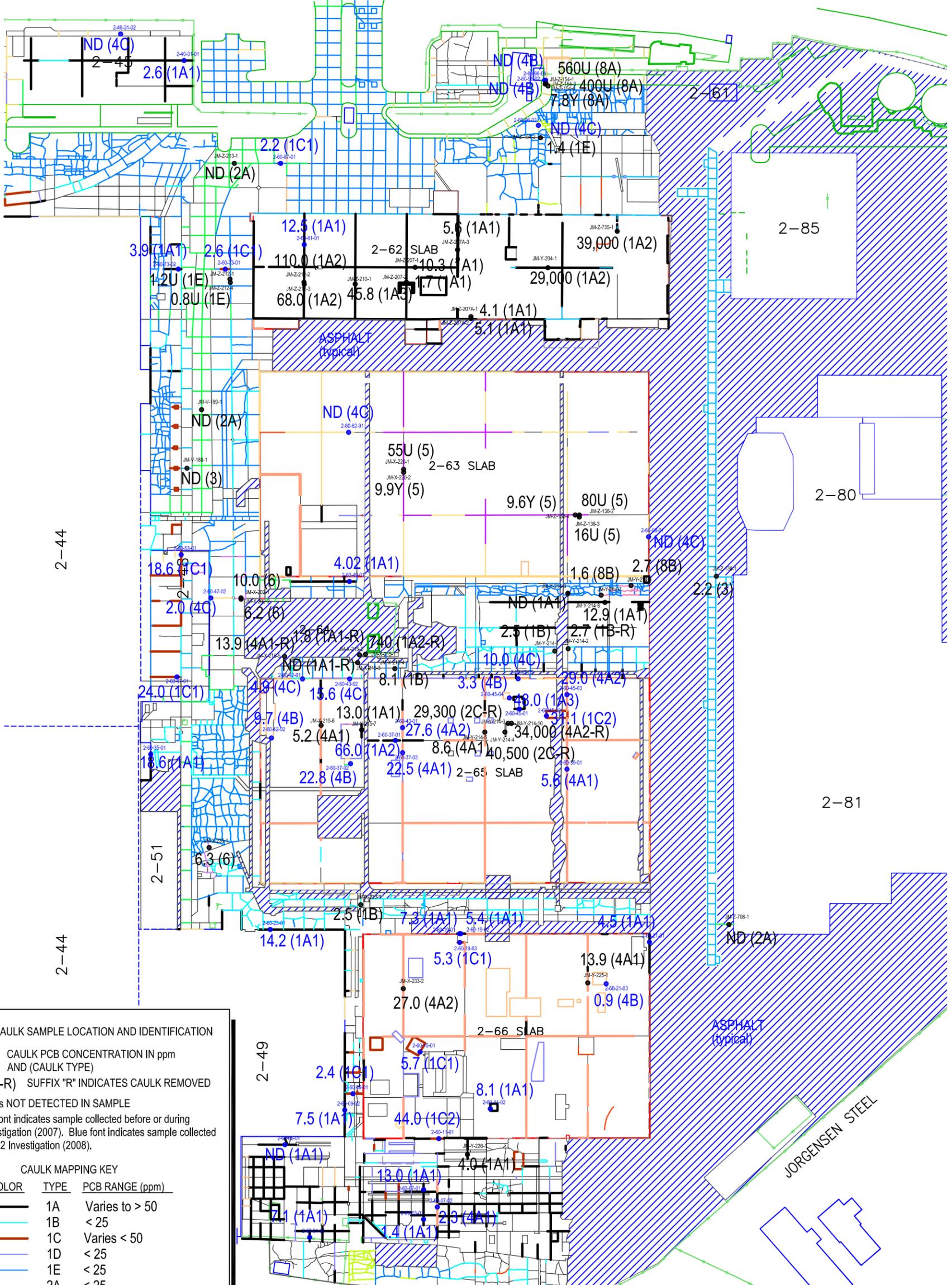
COLOR	TYPE	PCB RANGE (ppm)
Black	1A	Varies to > 50
Cyan	1B	< 25
Brown	1C	Varies < 50
Blue	1D	< 25
Light Blue	1E	< 25
Green	2A	< 25
Light Green	2B	< 1
Yellow-Green	2C	< 1
Light Blue	3	< 25
Orange	4A	Varies < 50
Light Orange	4B	< 25
Yellow	4C	< 25
Purple	5	< 25
Pink	6	< 25
Red	7	< 25
Yellow	8A	< 25
Pink	8B	< 25
Grey	No caulk observed in joint	



2-40s AREA: ALL CAULK TYPES, SAMPLE LOCATIONS AND RESULTS

FIGURE 4
IM COMPLETION REPORT

EAST MARGINAL WAY SOUTH



LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- 40,500 (2C-R) SUFFIX "R" INDICATES CAULK REMOVED
- ND PCBs NOT DETECTED IN SAMPLE

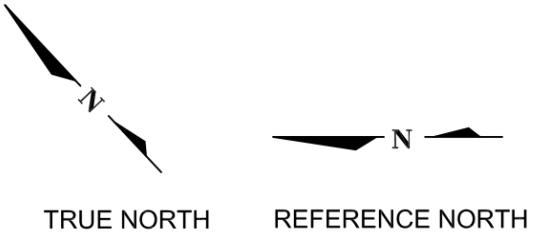
Note: Black font indicates sample collected before or during Phase 1 Investigation (2007). Blue font indicates sample collected during Phase 2 Investigation (2008).

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
Black	1A	Varies to > 50
Red	1B	< 25
Blue	1C	Varies < 50
Green	1D	< 25
Yellow	1E	< 25
Purple	2A	< 25
Light Blue	2B	< 1
Light Green	2C	< 1
Light Yellow	3	< 25
Light Purple	4A	Varies < 50
Light Red	4B	< 25
Light Blue	4C	< 25
Light Green	5	< 25
Light Purple	6	< 25
Light Red	7	< 25
Light Blue	8A	< 25
Light Green	8B	< 25
Grey	No caulk observed in joint	

DUWAMISH COMMERCIAL WATERWAY

JORGENSEN STEEL

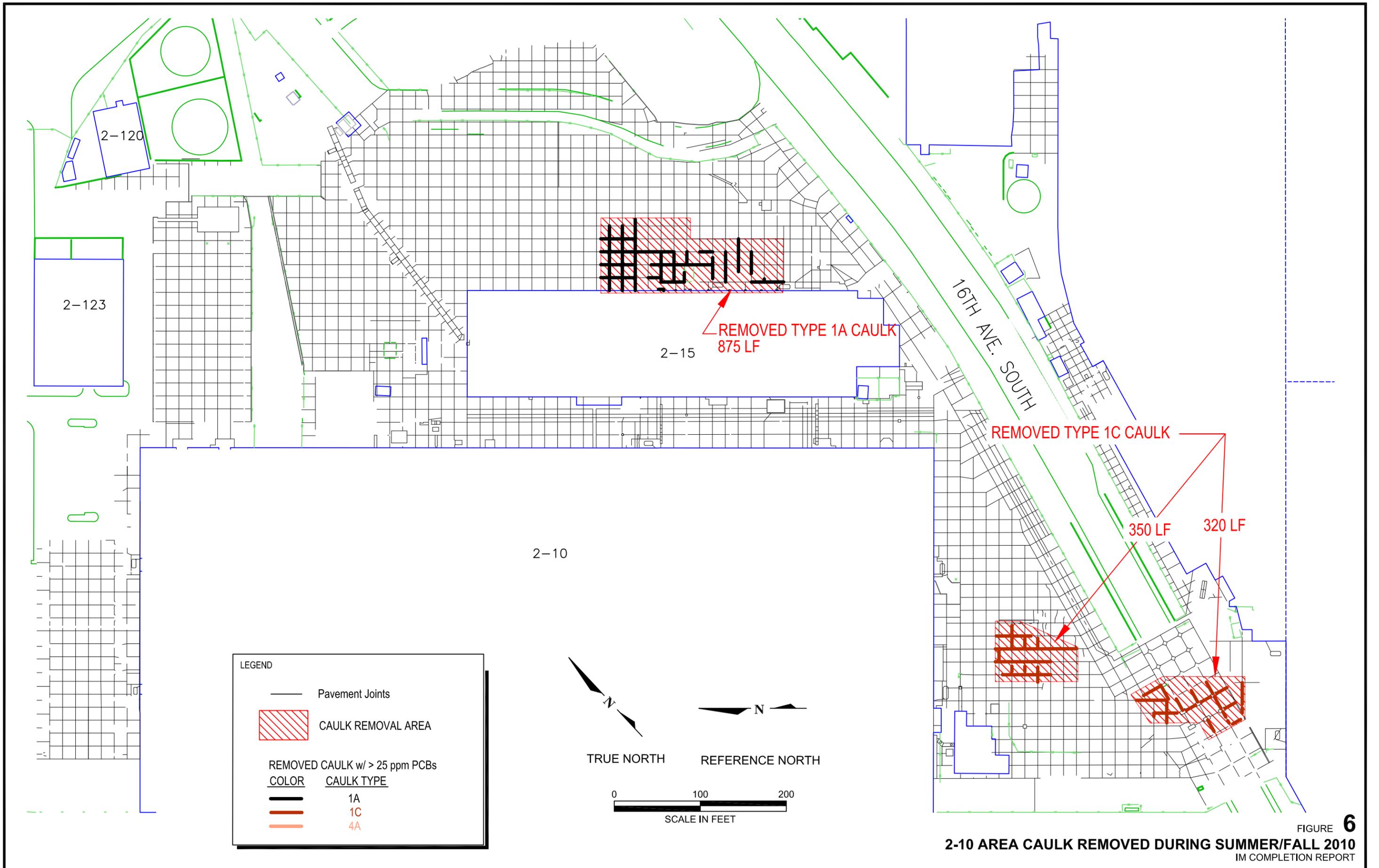


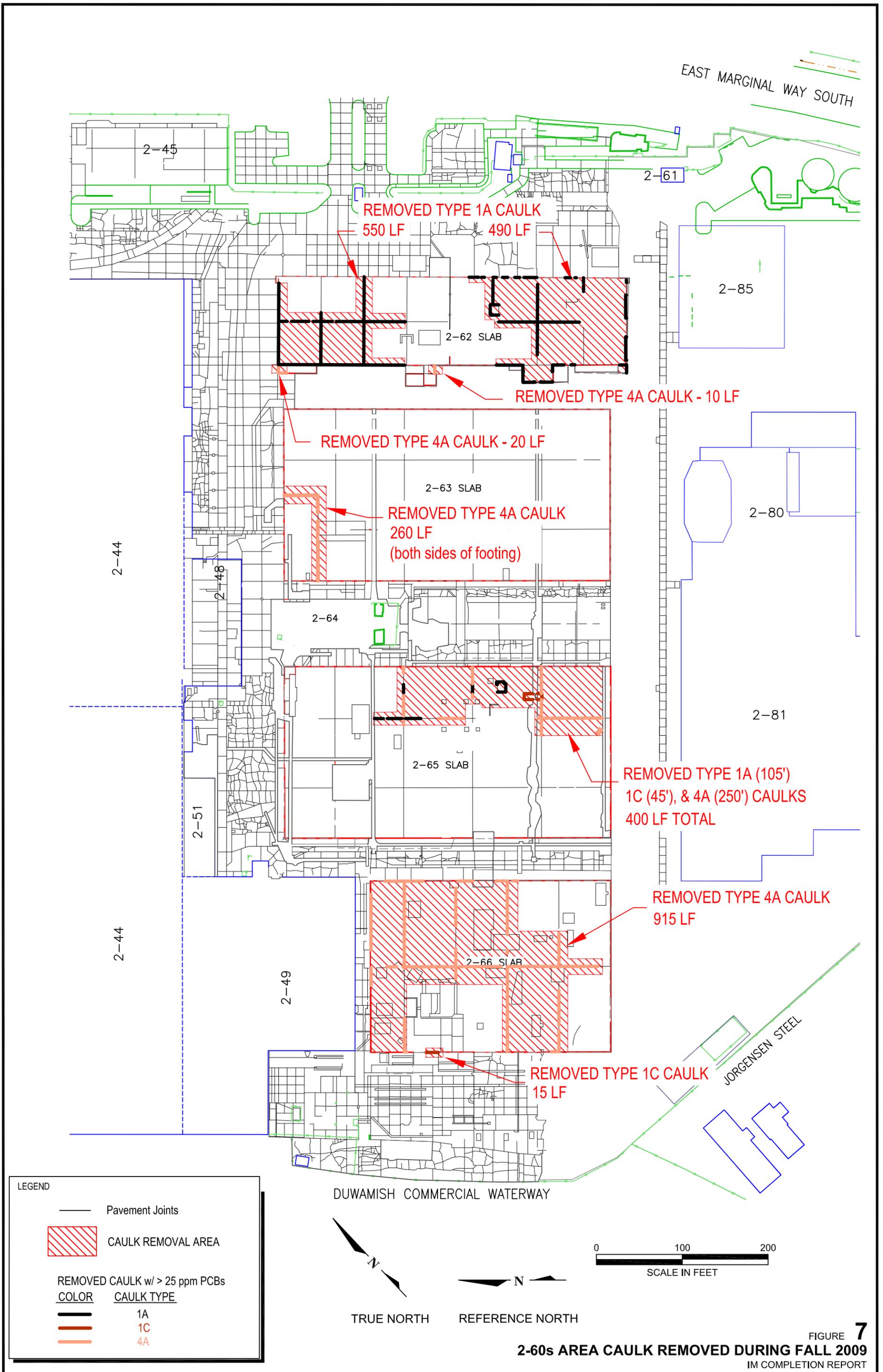
2-60s AREA: ALL CAULK TYPES, SAMPLE LOCATIONS AND RESULTS

FIGURE 5

IM COMPLETION REPORT

Golder Associates





LEGEND

- Pavement Joints
- CAULK REMOVAL AREA

REMOVED CAULK w/ > 25 ppm PCBs

COLOR	CAULK TYPE
	1A
	1C
	4A

DUWAMISH COMMERCIAL WATERWAY



FIGURE 7
2-60s AREA CAULK REMOVED DURING FALL 2009
 IM COMPLETION REPORT

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Removal of PCB-Containing Caulk in Concrete Pavements

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APPENDIX A
REMOVAL PHOTOGRAPHS

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Photos

2-10 Area Caulk Removal

Summer/Fall 2010

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Laying-out lines for sawcutting



Laying-out lines for sawcutting



Sawcutting concrete and cleaning-up slurry



Sawcutting concrete and cleaning-up slurry



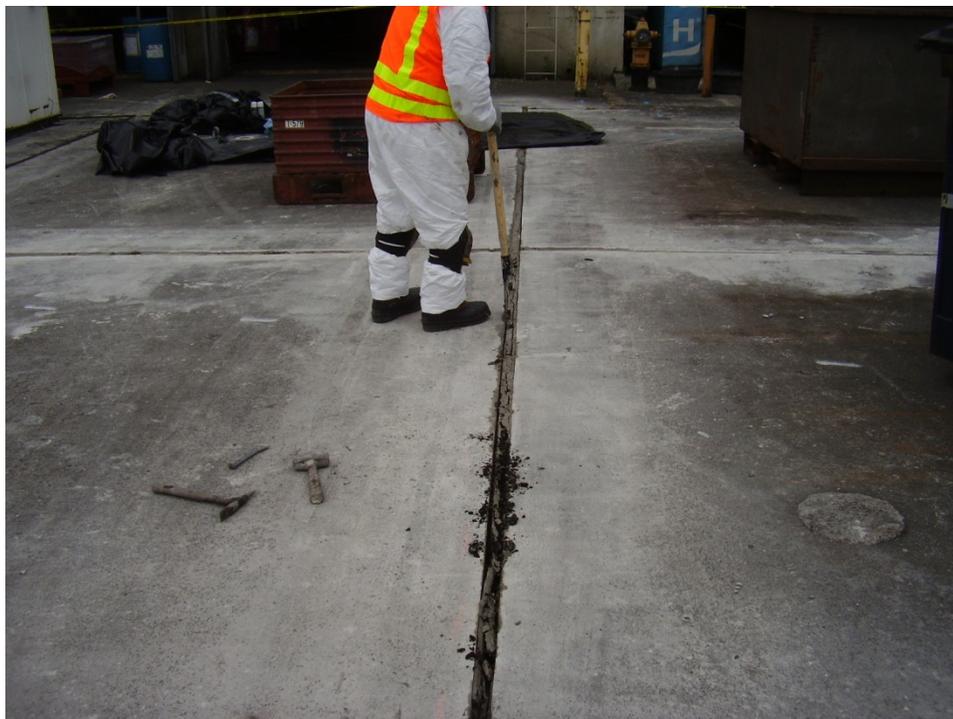
Sawcutting concrete and cleaning-up slurry



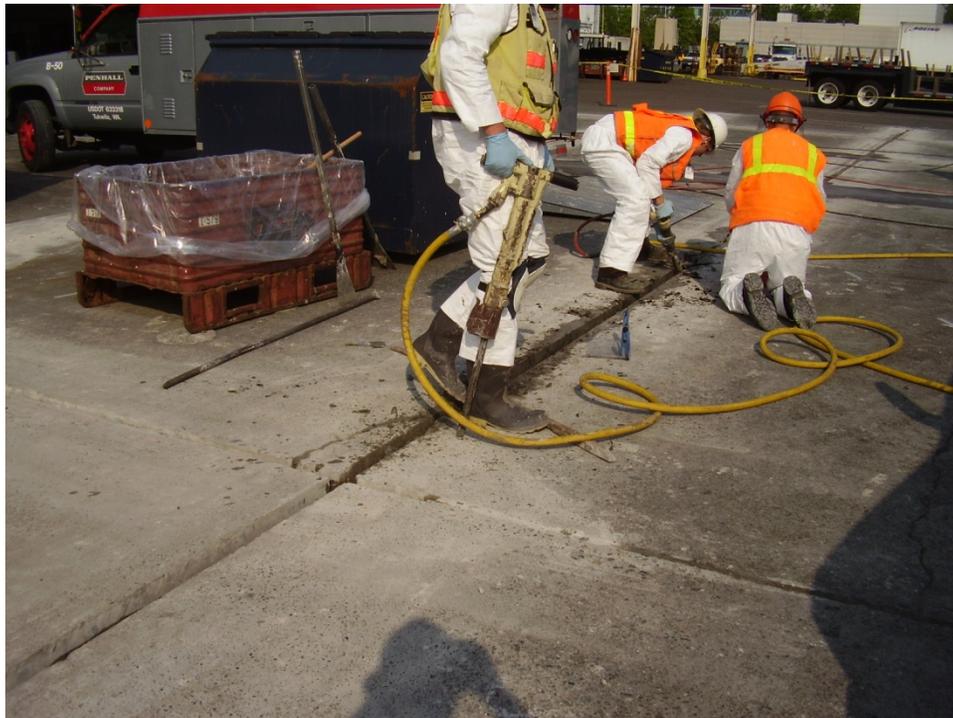
Cleaning pavement after sawcutting



Clean pavement after sawcutting, vacuuming slurry, and low-pressure washing



Manual removal of concrete and caulk from sawcut pavement



Using mechanical chisels to deepen the concrete cut after removal of caulk



Manual removal of caulk and concrete from sawcut slot



Cleaning sawcut slot with a brush after concrete and caulk removal



Manual removal and vacuuming of chips and debris from sawcut slot



Measuring to confirm 4-inch depth of concrete removal



Caulk and concrete removed from slot. Joint prepared for new caulk installation



Caulk and concrete removed from slot. Joint prepared for new caulk installation



Installing backer rods in prepared joints prior to placement of new caulk



Installing backer rods in prepared joints prior to placement of new caulk



Adjusting depth of backer rods in joints



Measuring to confirm depth of backer rod installation



Backer rods installed in joints. Ready for new caulk placement.



Placing new joint sealant compound (caulk) in joint



Placing new joint sealant compound (caulk) in joint



New caulk in joint



Temporary placement of steel plates over freshly installed caulk to protect from traffic

Photos

2-60s Area Caulk Removal

Fall 2009

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Preparing caulk-concrete removal slot for CDF backfill placement



Preparing caulk-concrete removal slot for CDF backfill placement



Caulk-concrete removal slot prepared for CDF placement



Caulk-concrete removal slot prepared for CDF placement



Using a pneumatic scabbler to remove adhered caulk from perimeter footing



Pneumatic scabbler used to removed adhered caulk from perimeter footing



Placing CDF backfill in caulk-concrete removal slot



Placing CDF backfill in caulk-concrete removal slot



Pavement breaker used when joint or concrete configurations did not allow use of sawcutting machines

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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APPENDIX B

DAILY QUALITY ASSURANCE FIELD SHEETS

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Daily QA Field Sheets

2-10 Area Caulk Removal

Summer/Fall 2010

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Aug 2, 2010

Weather overcast

Start Time 0700

End Time 1530

Contractors Onsite Glaver & Penhall Golder

Visitors _____

Plant 2 Area 2-10

Specific Area Location East of Bld 2-15 / Car Wash - Auto Shop

Work Performed

Sawcutting - Linear ft of Joint(s) 2296 LF

Slurry/Water Controlled and Collected? yes

Method VACUUM DIRT INTO DRUMS

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe CONES & CAUTION TAPE EXCLUSION

ZONE

Slurry/Water and Solids controlled and collected? _____

Method SOLID WASTES, CONCRETE OLD CAULK & PPE INTO

BOX

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method WATER ON CONCRETE / VACUUM INTO DRUMS

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

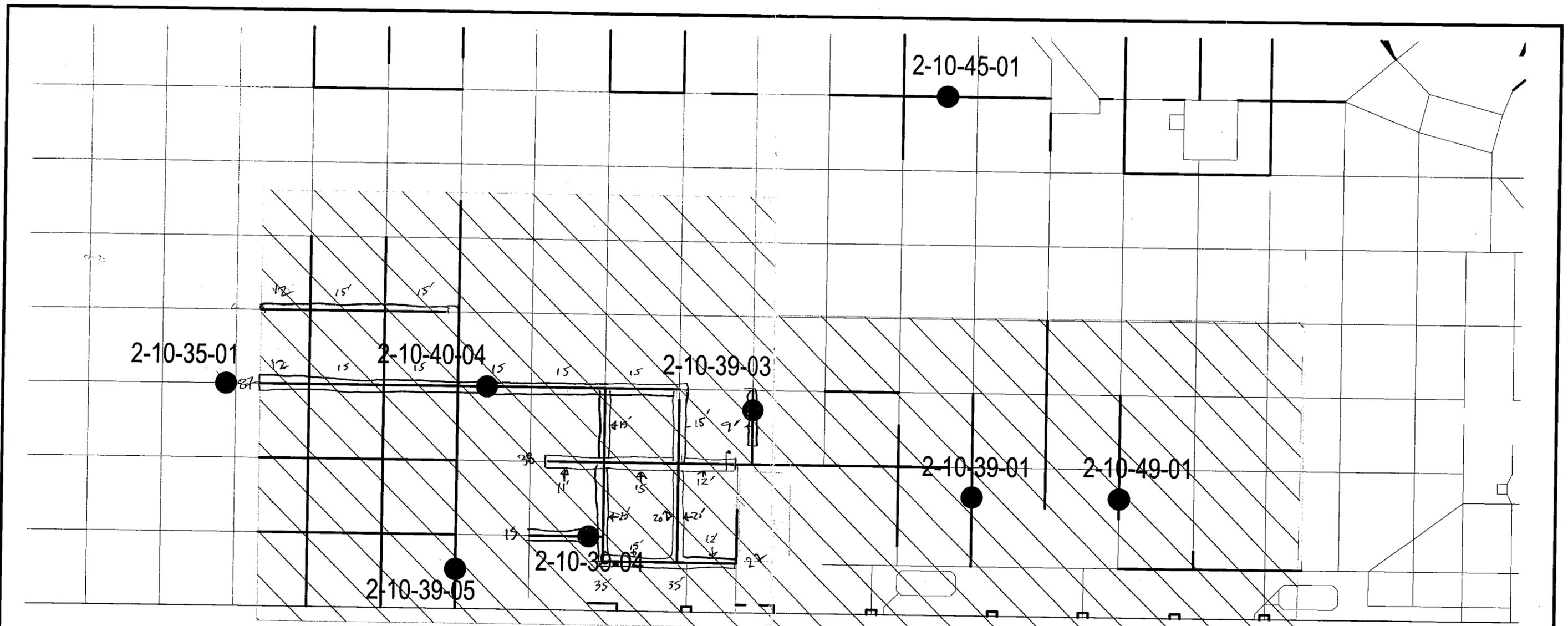
Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe OVERCAST AM / CLEAR PM

Comments _____

Site Representative: _____



36.5
60.3
146.5
24.0
110.5

210.5
230.5
46.8

246'

LEGEND

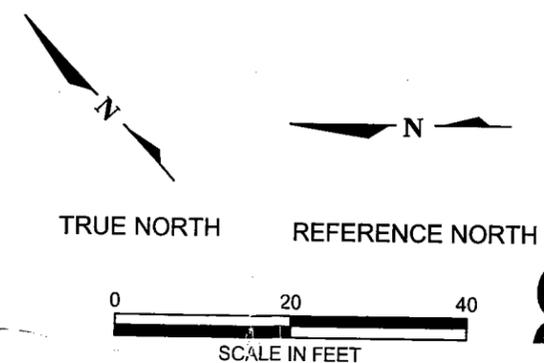
- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

REMOVE TYPE 1A &/OR 1C CAULK

8800012
6000012
0100012
6000
6000



REMOVE TYPE
875 IF

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/3/10 Weather Overcast tm / Clear PM
Start Time 0700 End Time 1530
Contractors Onsite Penhall & Glacier
Visitors _____

Plant 2 Area 2-15 Specific Area Location EAST Side 2-15 Bldg

Work Performed

Sawcutting - Linear ft of Joint(s) ~ 3 @ 2 LF (2-15) / ~ 44' (2-10)
 Slurry/Water Controlled and Collected? Yes
Method Vacuum direct into waste drums

Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe Chisel & Breaker Bar
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?
Method Solid waste placed into buckets then dumped into yard box.

New Caulk Installed (2-10 Area Only) - Linear ft _____
 CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____
 Daily Clean-up
Method Sweeping & vacuum

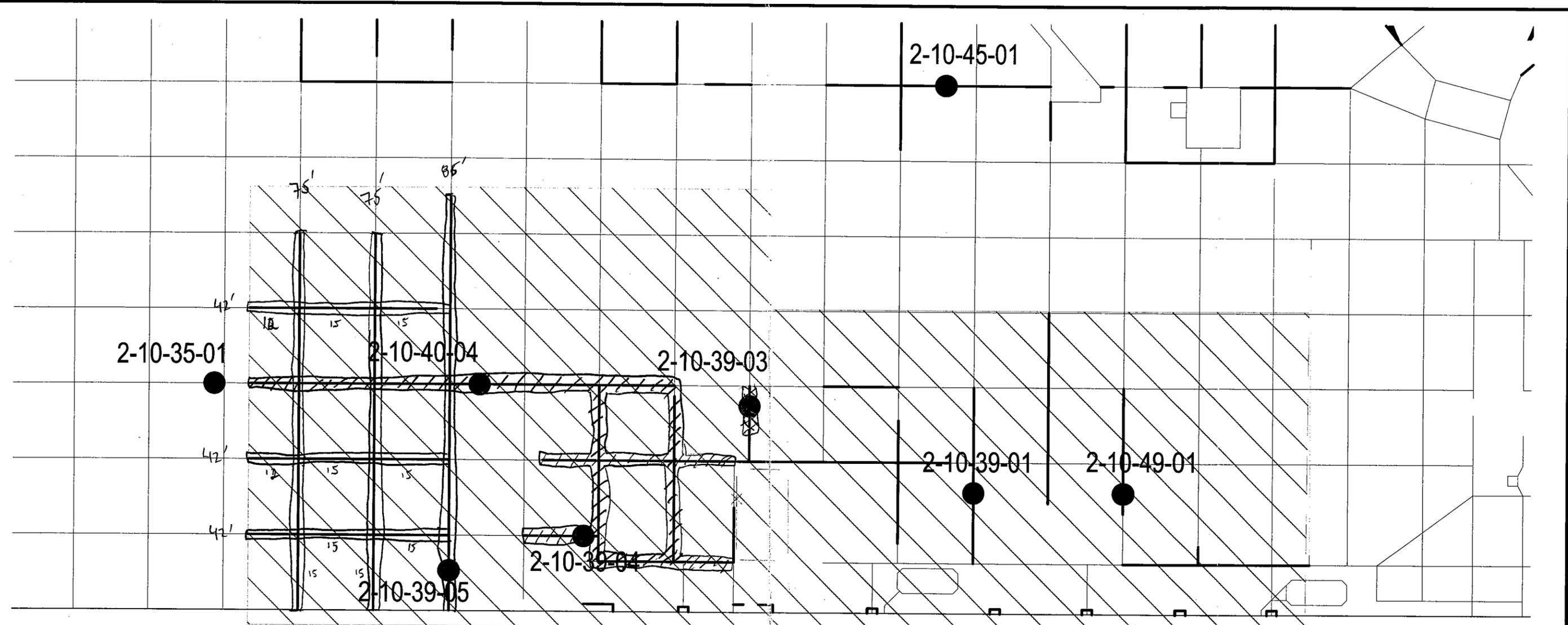
Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe None

Comments _____

Site Representative: Andrew Baird



362' Sawcut to day
 91' Previously cut
 Caulk Removed
 Caulk Installed

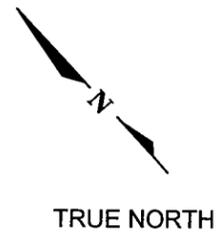
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

REMOVE TYPE 1A &/OR 1C CAULK



**REMOVE TYPE
 1A & 1C**

FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

8/3/10

2-10 Field MAP

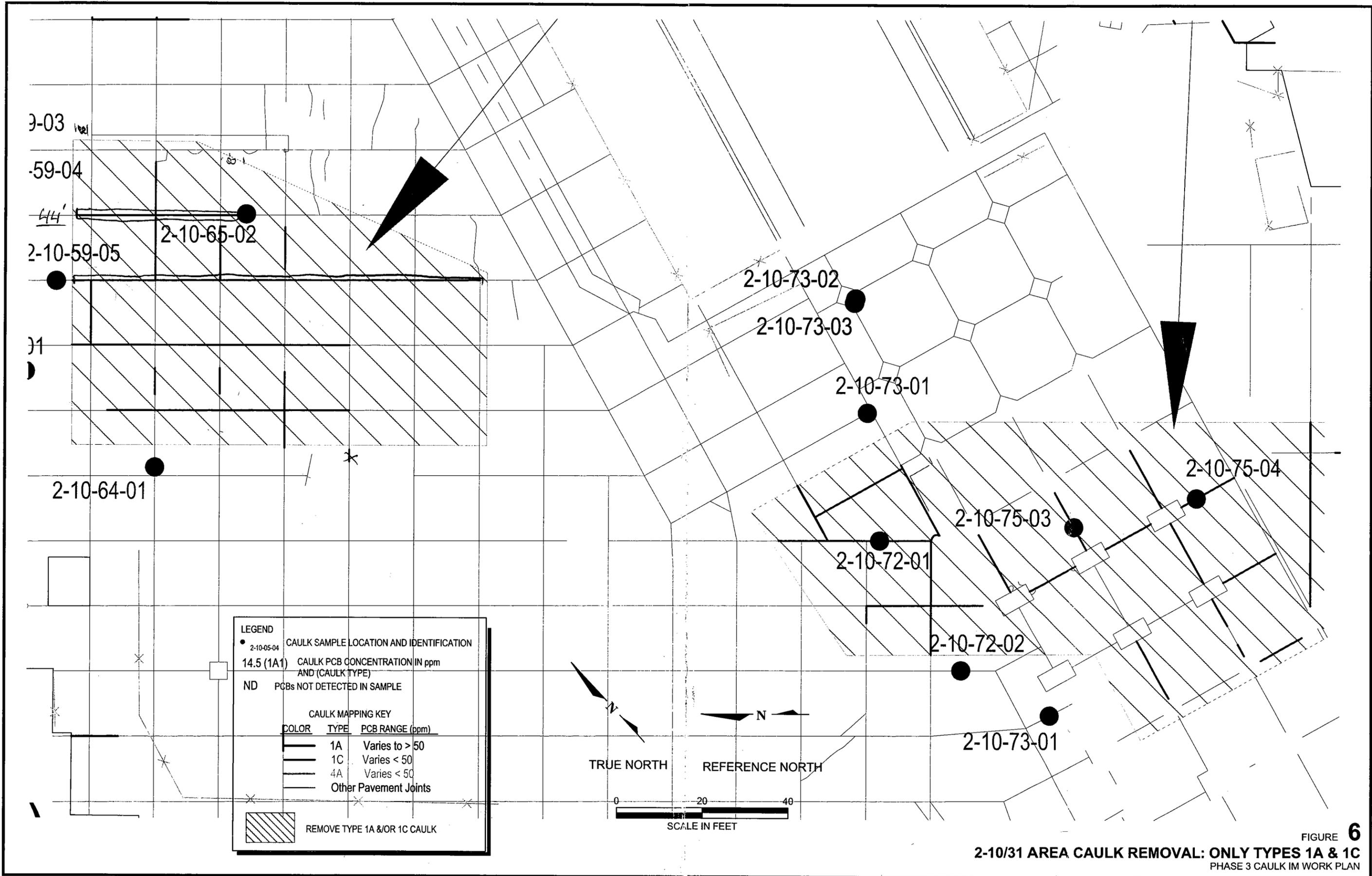


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/4/10

Weather Clear to partly cloudy

Start Time 0600

End Time 1520

Contractors Onsite Glacier - Pen hall (after 0700)

Visitors _____

Plant 2 Area 2-15/2-10

Specific Area Location 2-15/2-10

Work Performed

Sawcutting - Linear ft of Joint(s) (2-10) 251' / (2-15) ~450' re-saw

Slurry/Water Controlled and Collected? Yes

Method VACUUM directly into 55 gal. drums

Initial Caulk/Concrete Removal - Linear ft of Joints 429' (2-15) / 44' (2-10)

Method Rybars pneumatic Jack hammers

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method Sweep cover tools & barrels with plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe None

Comments _____

Site Representative: Andrew Baird

8/4/10 2-10 CAULK

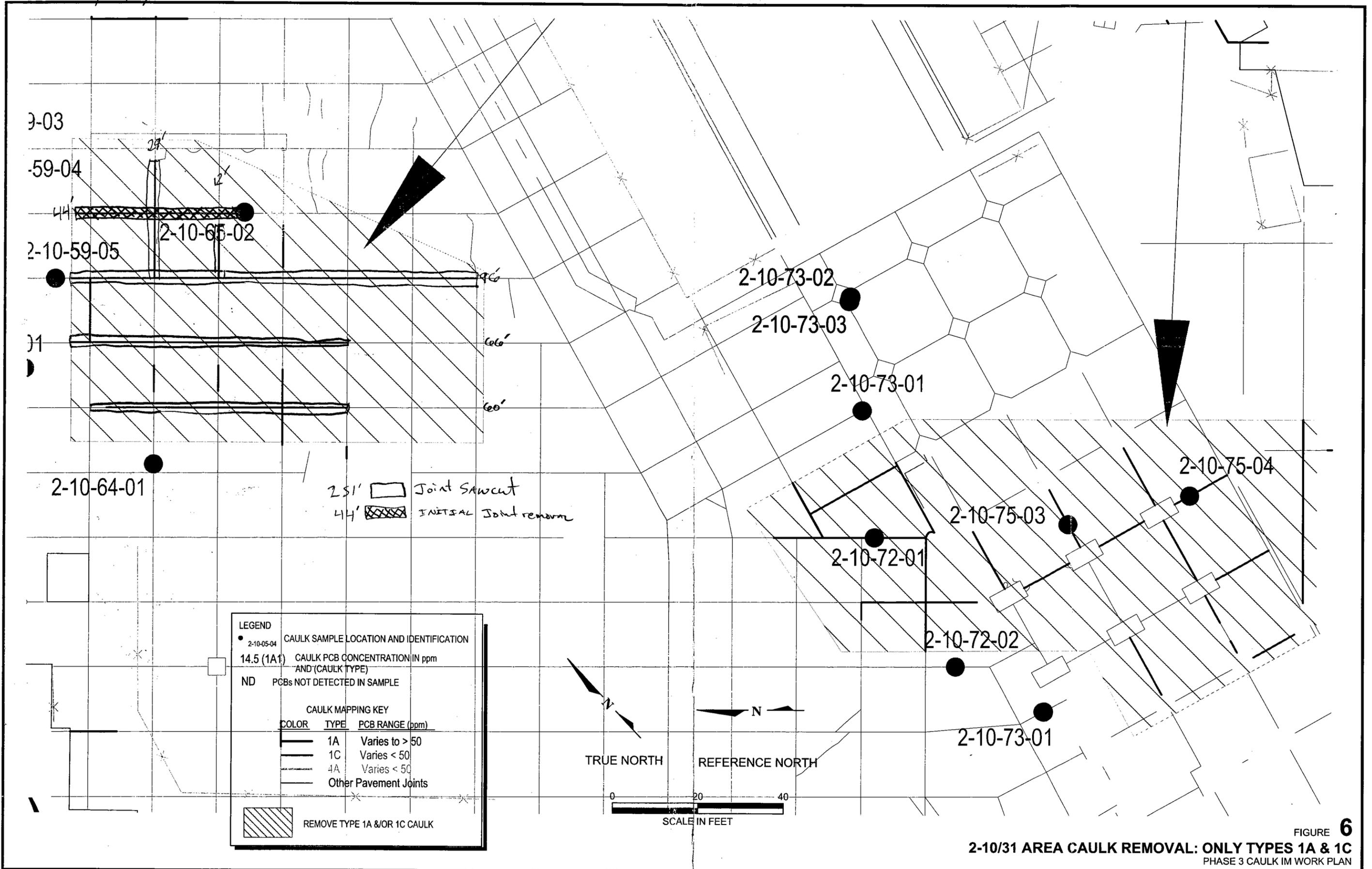
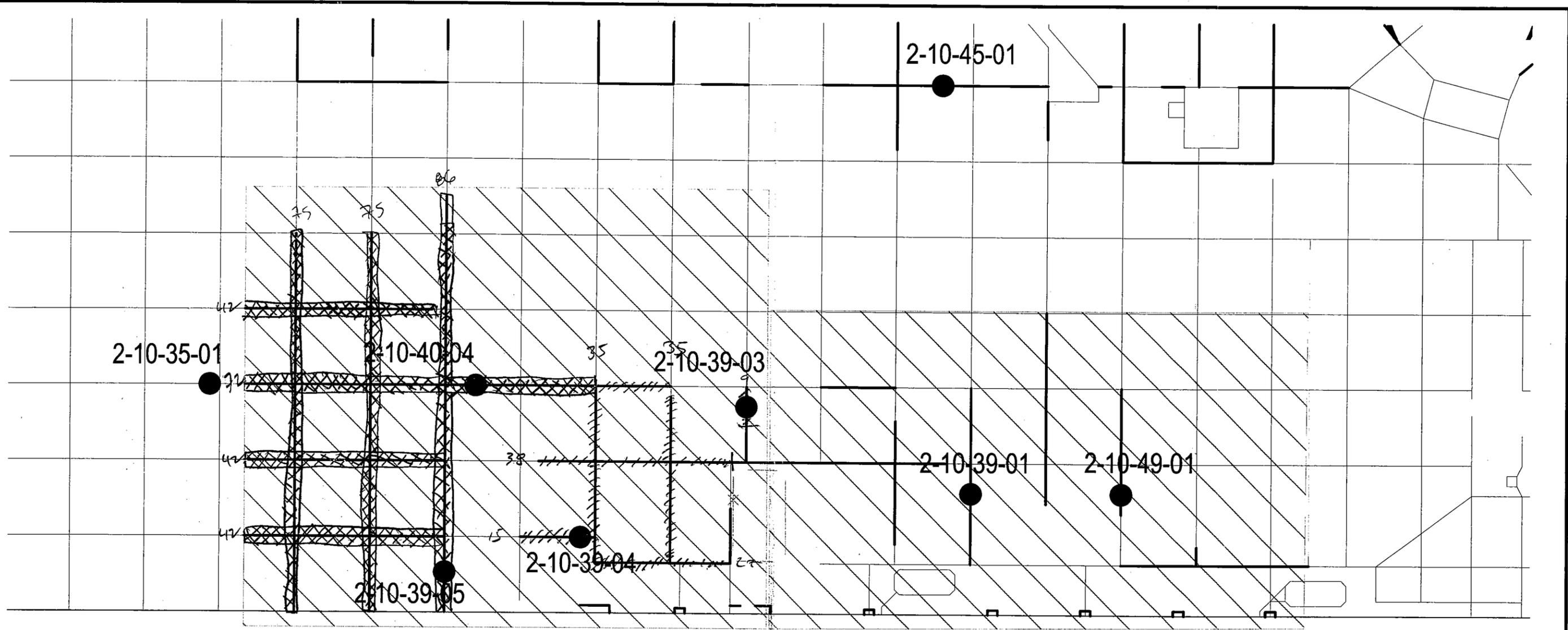


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN



429' INITIAL JOINT REMOVAL
 INITIAL JOINT REMOVAL PREVIOUSLY

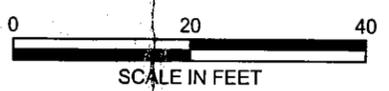
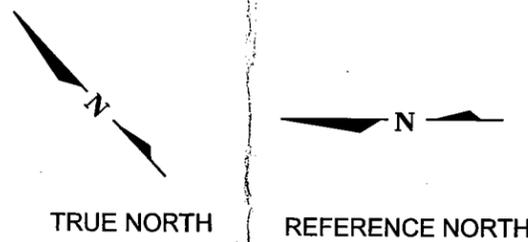
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
	1A	Varies to > 50
	1C	Varies < 50
	4A	Varies < 50
	Other Pavement Joints	

REMOVE TYPE 1A &/OR 1C CAULK



**REMOVE TYPE
 1A & 1C**

FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/5/10 Weather Partly Cloudy, light sprinkles AM / Clear ~85°F PM

Start Time 9:00 AM End Time _____

Contractors Onsite Glacier Penhall (8746)

Visitors _____

Plant 2 Area Z-10 Specific Area Location S-2-10 E-2-15

Work Performed

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? yes
Method Vacuum direct into

Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
Method _____

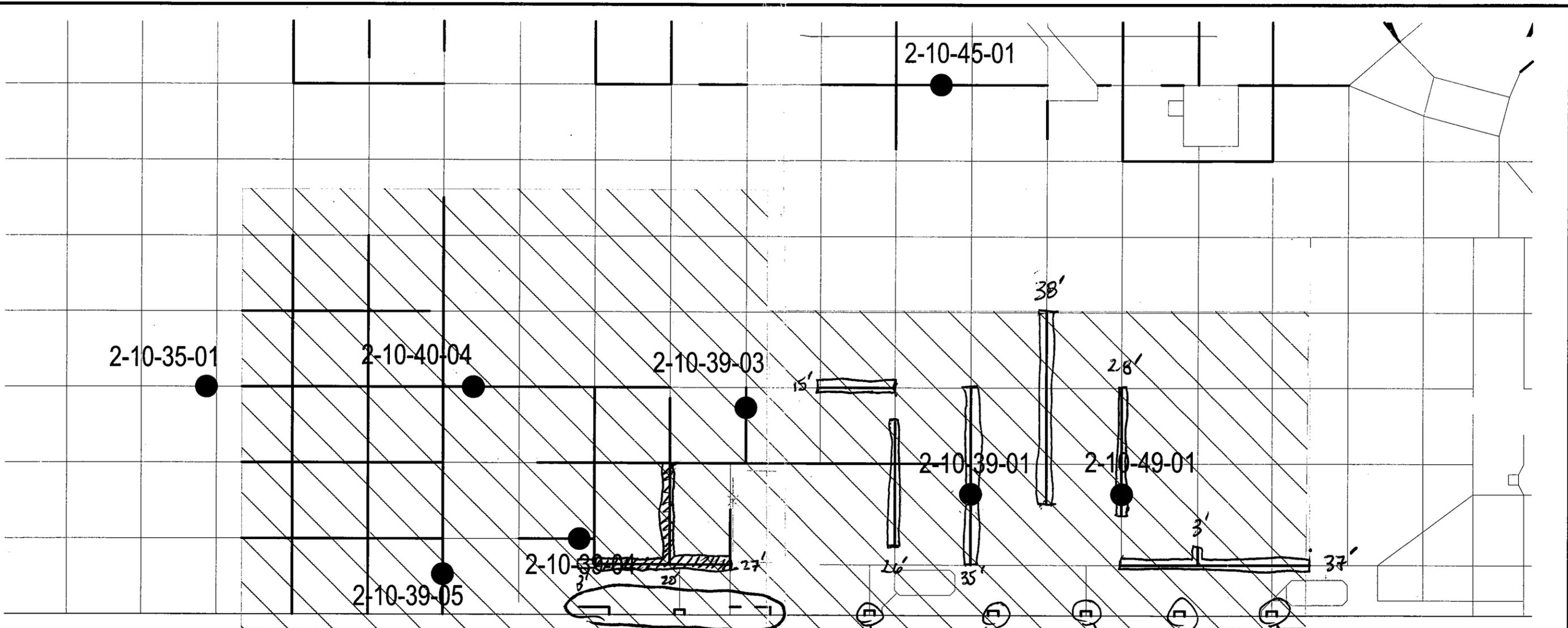
Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe None

Comments _____

Site Representative: Andrew Baird



LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

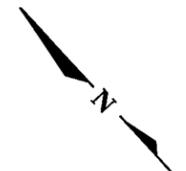
 REMOVE TYPE 1A & OR 1C CAULK

Area still needs
Joint repair

No joint observed L-14
No joint observed L-13
No joint observed L-12
No joint observed L-11
No joint observed L-10

 SAWCUT JOINTS

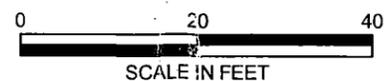
8/5/18
TCS



TRUE NORTH



REFERENCE NORTH



SCALE IN FEET

**REMOVE TYPE
1A & 1C**

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

8/5/18

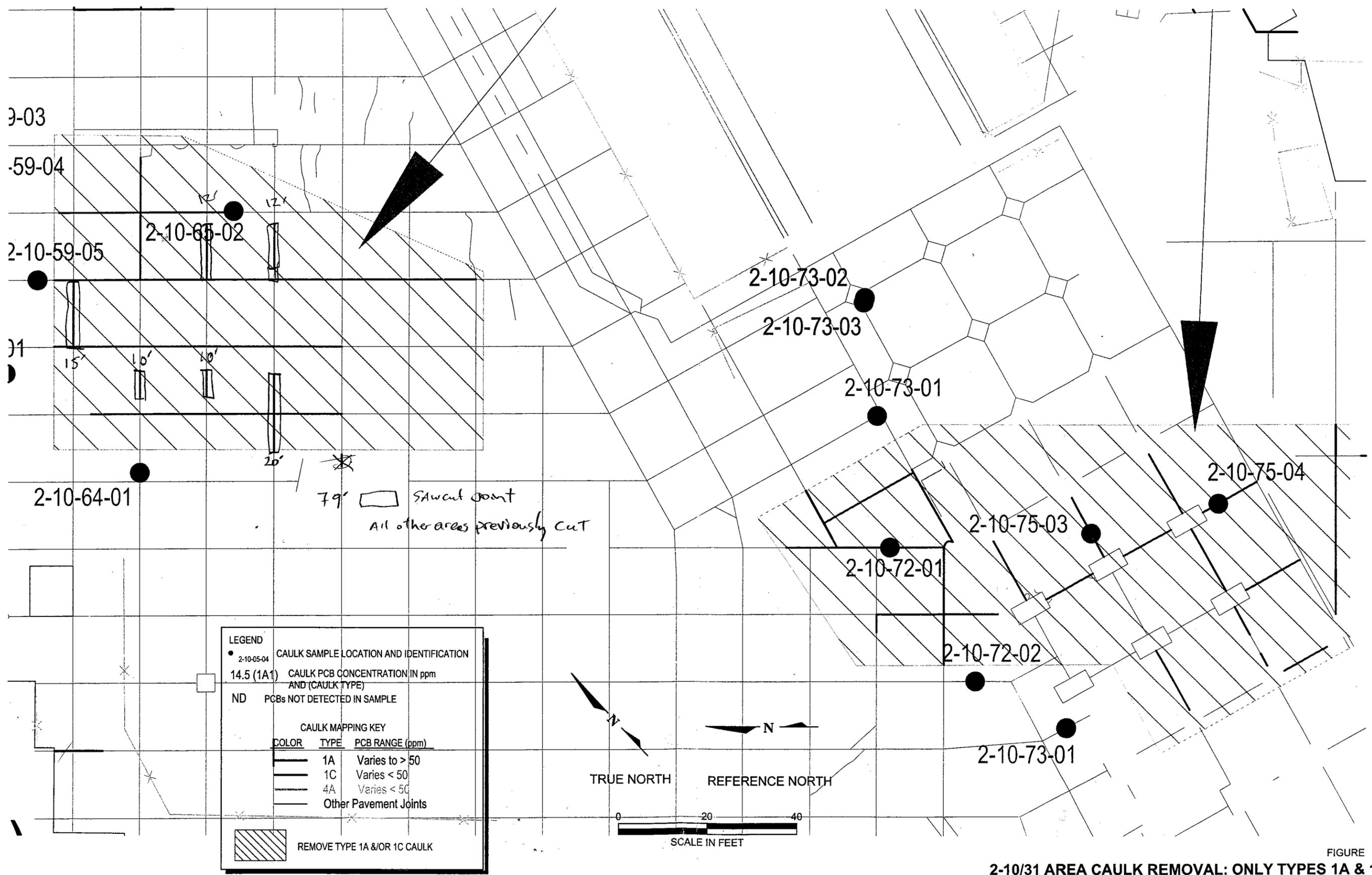


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/6/10

Weather Cloudy - 60°F

Start Time 0600

End Time _____

Contractors Onsite Galacher

Visitors _____

Plant 2 Area 2-10

Specific Area Location 2-15

Work Performed

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe Chipping pneumatic Jack hammer

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method VACUUM waste collected into yard boxes

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up _____

Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

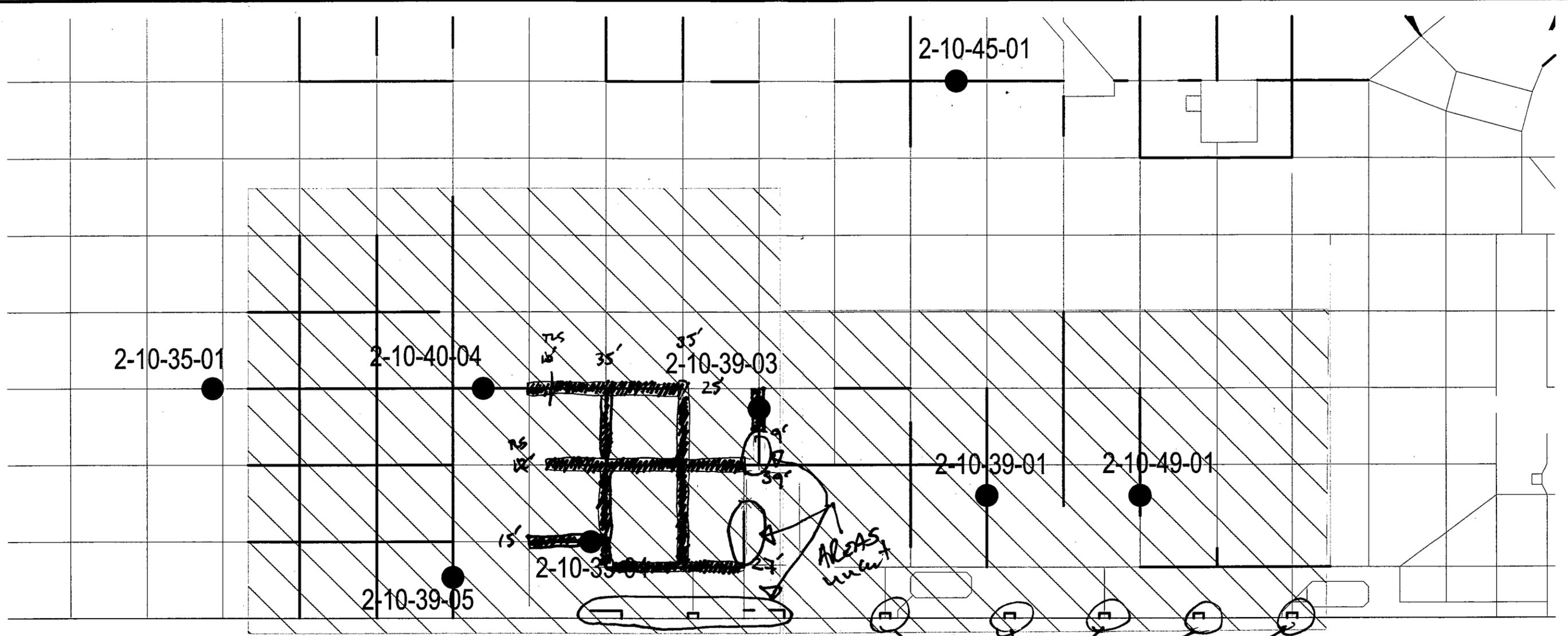
Other _____

Weather Issues - Describe _____

Comments _____

Site Representative: _____

8/6/18



~~REMOVE~~ New Caulk installed

No Joints observed!

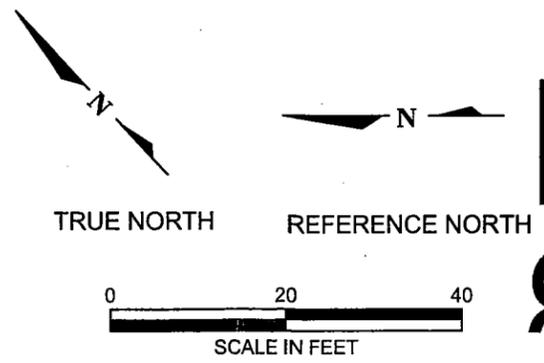
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

 REMOVE TYPE 1A & OR 1C CAULK



**REMOVE TYPE
875 IF**

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/9/10 Weather Cloudy AM

Start Time 0600 End Time 1430

Contractors Onsite Glacier

Visitors _____

Plant 2 Area 2-10 Specific Area Location 2-10/2-15

Work Performed

Sawcutting - Linear ft of Joint(s) None

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method JACK hammer prybars hook knives, hand picking

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? Solids in 2-15

Method VACUUMS & hand picking

New Caulk Installed (2-10 Area Only) - Linear ft None

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up

Method Sweep VACUUM cover tools & equipment with plastic for storage over night in exclusion zone

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe Chance of rain tonight

Comments No new caulk installed EAST of 2-15 bldg. due to chance of measurable rain fall over night

Site Representative: Jennifer Parsons - Boemey / Ted Sager - Golder

8/9/10 Field map

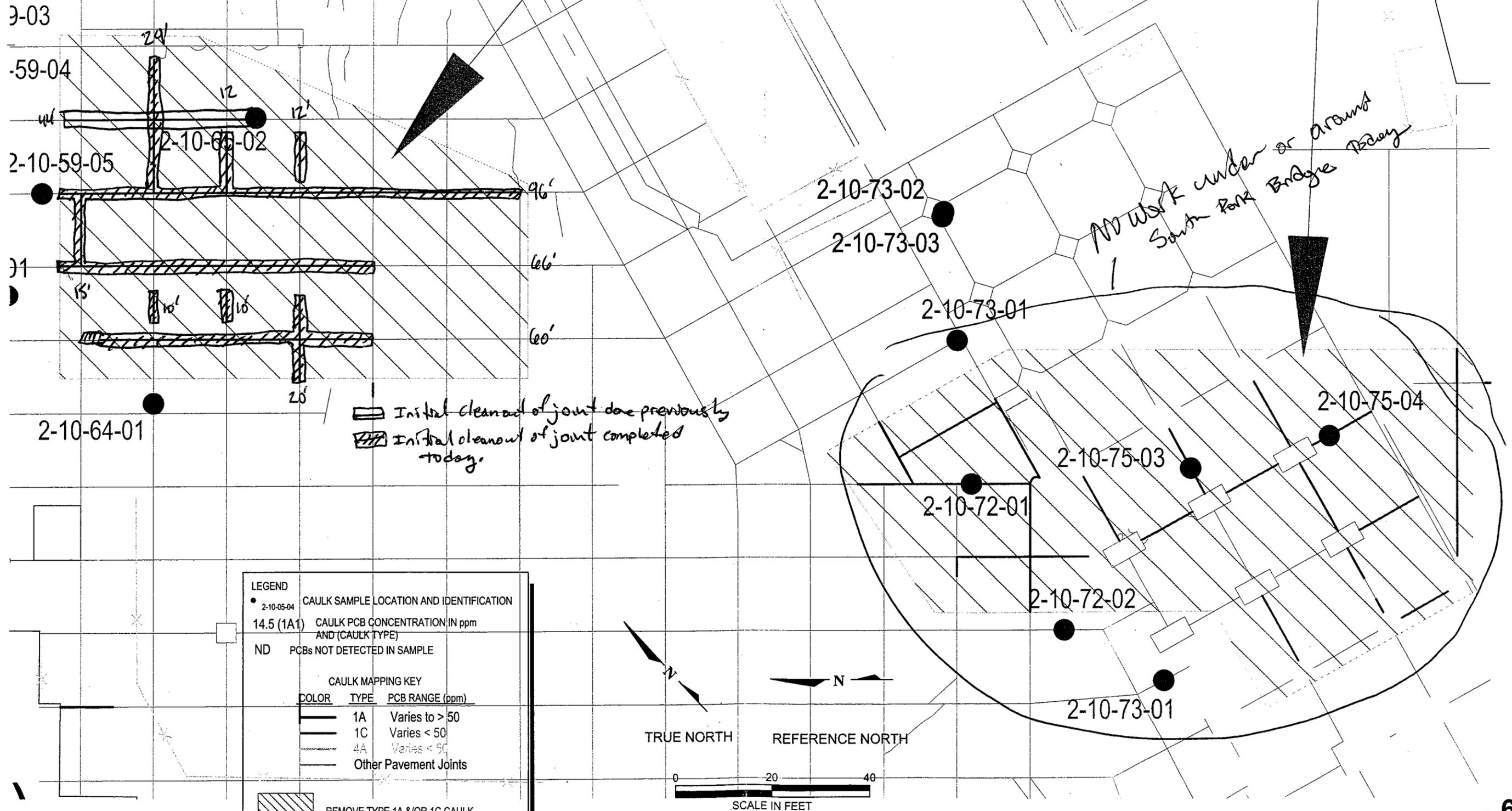


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/10/10 Weather Cloudy Cool ~55°F

Start Time 0600 End Time 1410

Contractors Onsite Galacier

Visitors Jennifer Parsons - Boeing

Plant 2 Area 2-10 Specific Area Location 2-10 South

Work Performed

Sawcutting - Linear ft of Joint(s) None

Slurry/Water Controlled and Collected? N/A

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints NA

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe Jackhammer pry bars hand removal, vacuums

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method Hand collection of solid debris & vacuum of solid debris

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up

Method Sweep & vacuum

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe none

Comments Galacier crew ended early today.

Site Representative: Ted Sager - Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date August 11, 2018

Weather Partly Cloudy ~ 55°F AM / Clear ~ 70°F PM

Start Time 8:00

End Time _____

Contractors Onsite _____

Visitors Jennifer Parsons & Nickita (Boeing)

Plant 2 Area 2-10 Specific Area Location South 2-10 Bus Parking

Work Performed

Sawcutting - Linear ft of Joint(s) None

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints None

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe hand chipping w/ hammer & chisel

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? Sweeping & vacuuming

Method of solid debris

New Caulk Installed (2-10 Area Only) - Linear ft None

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up

Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe None

Comments Jennifer Parsons requested that Glacier be more meticulous about gray debris within exclusion areas clean up all debris whether or not *

Site Representative: 8000-0930 Scott Matthews / 0930-1430 T. Sager

* The debris was generated from the caulk removal or not? ²³

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Aug 12, 2018 Weather cool/Cloudy, 55-60° Am / Clear 70-75° Pm
Start Time 0600 End Time 1430

Contractors Onsite Glacier

Visitors J. Parsons (Boeing)

Plant 2 Area 2-10 Specific Area Location Bld 2-10 (South)

Work Performed

Sawcutting - Linear ft of Joint(s) None
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints None
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding & S. 2-10
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? YES
Method Sweep/VACUUM

New Caulk Installed (2-10 Area Only) - Linear ft NONE

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up
Method Sweep-Rinse VACUUM

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe NONE

Comments _____

Site Representative: Ted Sager

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date August 11, 2018 Weather Partly Cloudy ~55°F AM / Clear ~70°F PM
Start Time 0600 End Time 1430

Contractors Onsite _____

Visitors Jennifer Parsons & Nickita (Boeing)

Plant 2 Area 2-10 Specific Area Location South 2-10 Bus Parking

Work Performed

Sawcutting - Linear ft of Joint(s) None
 Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints None
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe hand chipping w/ hammer & chisel
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? Sweeping & vacuuming
Method wt of solid debris

New Caulk Installed (2-10 Area Only) - Linear ft None

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up
Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe None

Comments Jennifer Parsons requested that Glacier be more meticulous about stray debris within exclusion areas clean up all debris whether or not

Site Representative: 0600-0930 Scott Matthews / 0930-1430 T. Sager

* The debris was generated from the caulk removal or not?

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date Aug 16, 2010

Weather Clear ~6:00 AM / ~88°F PM

Start Time 8:00

End Time 1430

Contractors Onsite

Visitors Scott Matthews (Golder) / Jennifer Parsons (Boeing)

Plant 2 Area 210 / 2-31

Specific Area Location South Park Bridge

Work Performed

Sawcutting - Linear ft of Joint(s) S. Park Bridge ~248'
 Slurry/Water Controlled and Collected? yes
Method Vacuum into 55 gallon drums connected w/water

Initial Caulk/Concrete Removal - Linear ft of Joints NONE & vacuumed
Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft ~30LF + 20ft of touch up (2-15)

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method Cover tools drums & equipment w/plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe High heat rest after & hydrate

Comments _____

Site Representative: T. Sager

Aug 16, 2010

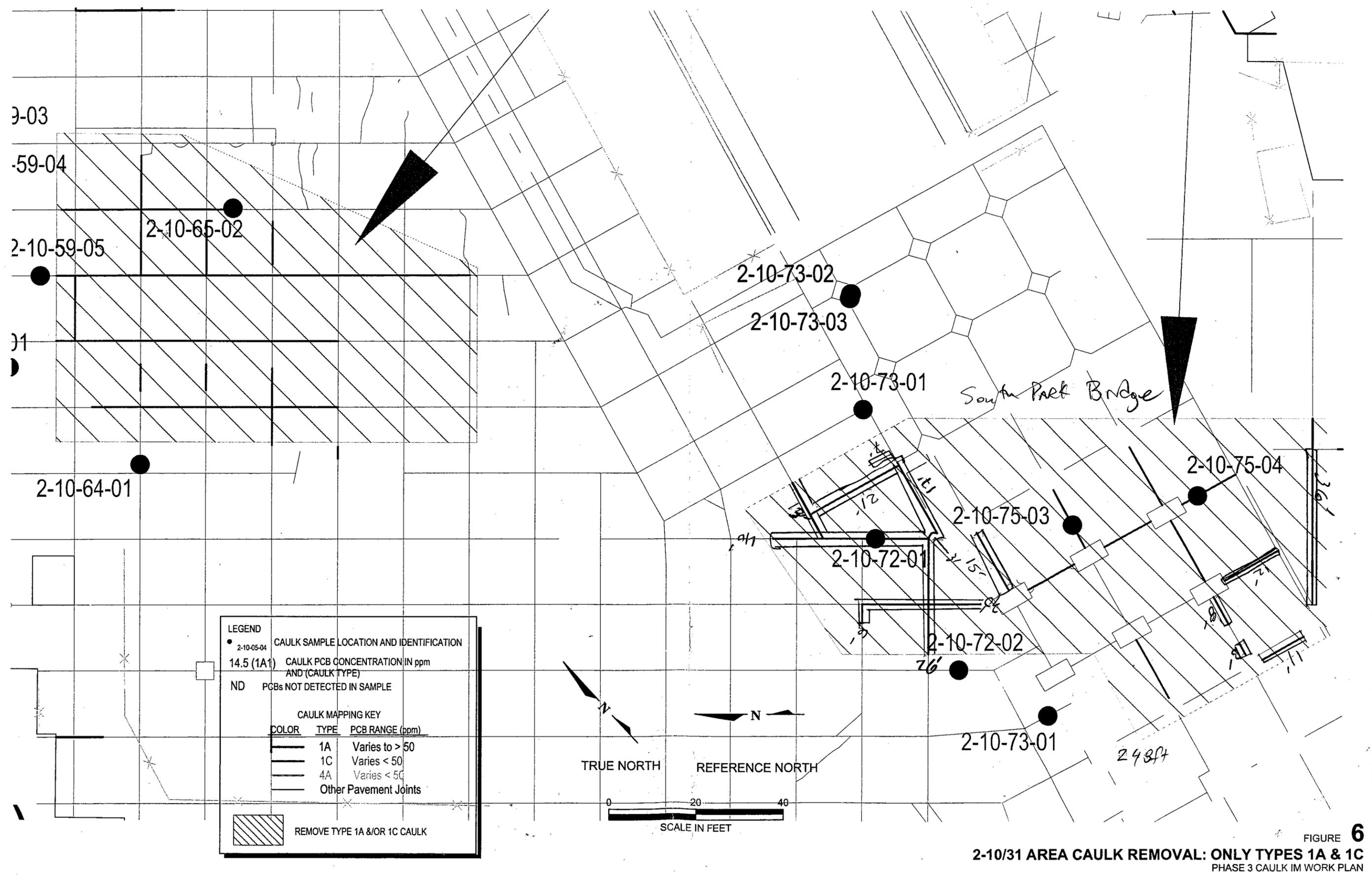


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

8/16/18

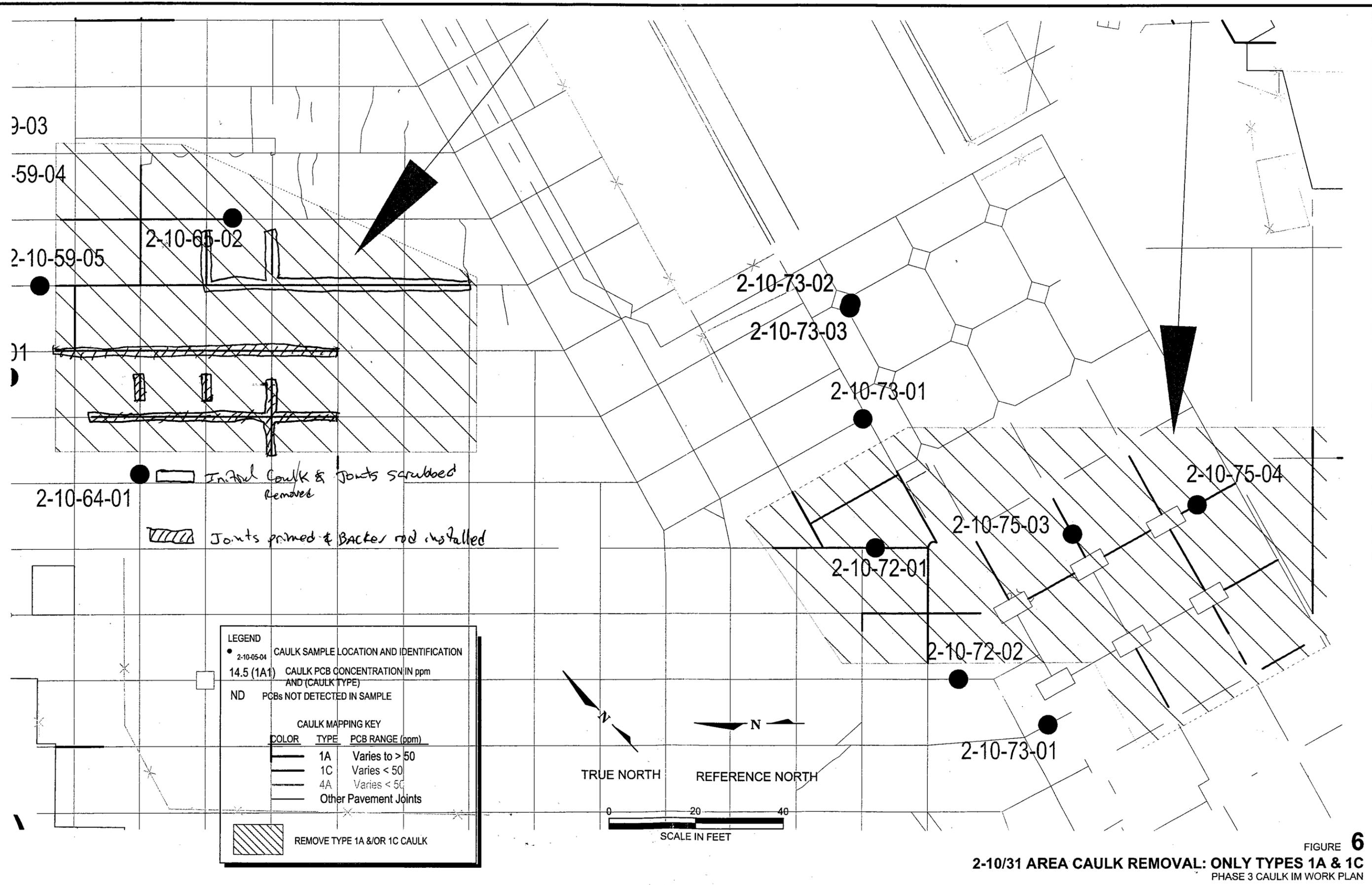


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/17/10

Weather Clear ~70/AM Clear ~90°F PM

Start Time 0600

End Time 1415

Contractors Onsite Glacier Penhall

Visitors Jennifer Parsons - Boeing

Plant 2 Area PL2 Specific Area Location 2-31/South Park Bridge / 2-15

Work Performed

Sawcutting - Linear ft of Joint(s) 15' of Joint S.P. Bridge

Slurry/Water Controlled and Collected? YES
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints NONE
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft NONE

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
Method VACUUM SWEEP secure tools in plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

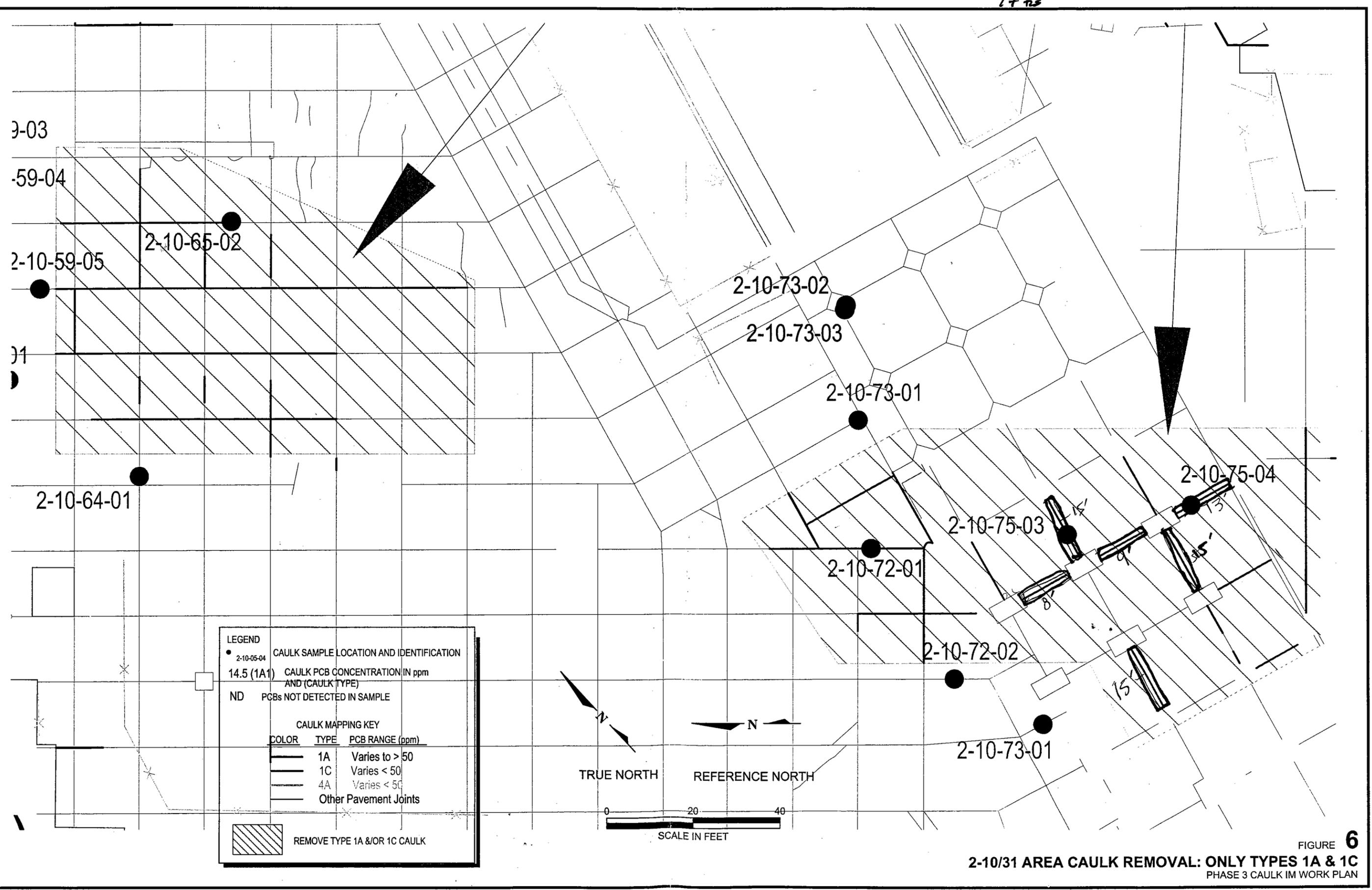
Other _____

Weather Issues - Describe none

Comments _____

Site Representative: Ted Sagel

8/15/10
17 TS



LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

▨ REMOVE TYPE 1A &/OR 1C CAULK

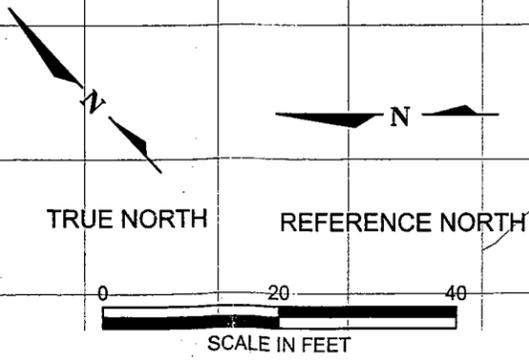
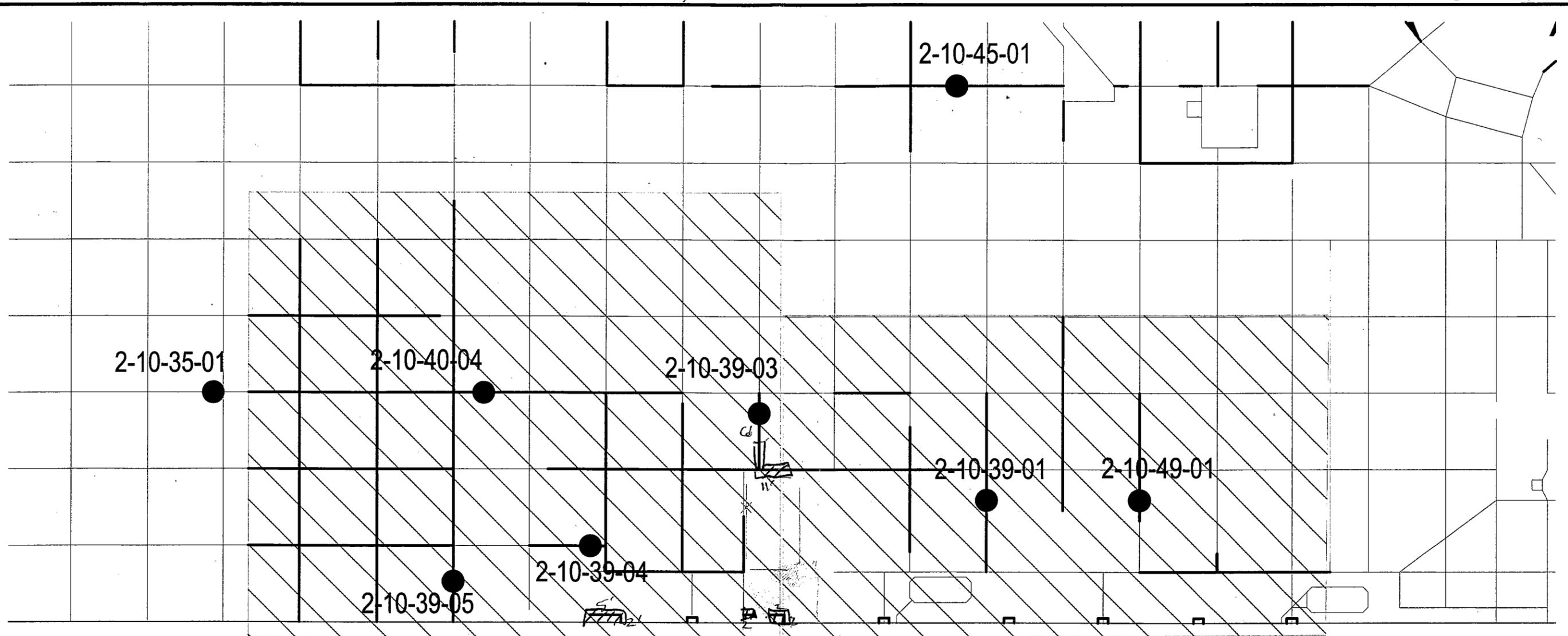


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN



30ft [hatched] Sawcuts Today 2-15 AREA

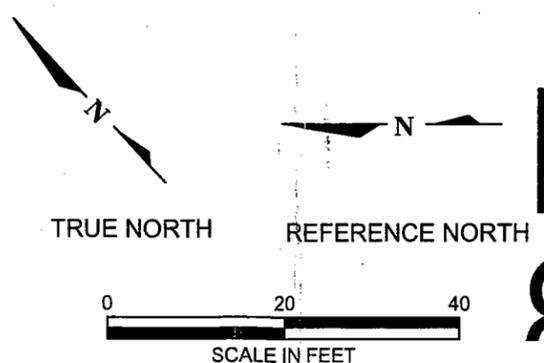
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
[Solid Line]	1A	Varies to > 50
[Dashed Line]	1C	Varies < 50
[Dotted Line]	4A	Varies < 50
[Thin Solid Line]	Other Pavement Joints	

[Hatched Box] REMOVE TYPE 1A &/OR 1C CAULK



REMOVE TYPE
875 IF

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Aug 18, 2010

Weather Cloudy ~ 60°F AM / Clear ~ 70°F PM

Start Time 8:00 AM

End Time 1430

Contractors Onsite Glacier Penhall

Visitors _____

Plant 2 Area 2-10

Specific Area Location S. Park Bridge - Sawcuts / Bldg 2-15 removal

Work Performed

Sawcutting - Linear ft of Joint(s) 15ft under South Park Bridge

Slurry/Water Controlled and Collected? YES

Method VACUUM into drum

Initial Caulk/Concrete Removal - Linear ft of Joints 9ft Bldg 2-15

Method JACK HAMMER / Hand picking w/ prybar

Remaining Caulk Removal

Sawcutting

Washing

Scraping

Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft NONE

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up

Method VACUUM Sweep cover tools w/plastic

Run-off Controls

Catch basins within 25 ft blocked?

Portable Booms

Filter Sock in Catch Basins

Vacuums

Other _____

Weather Issues - Describe NONE

Comments _____

Site Representative: Ted Sager

8/13/16

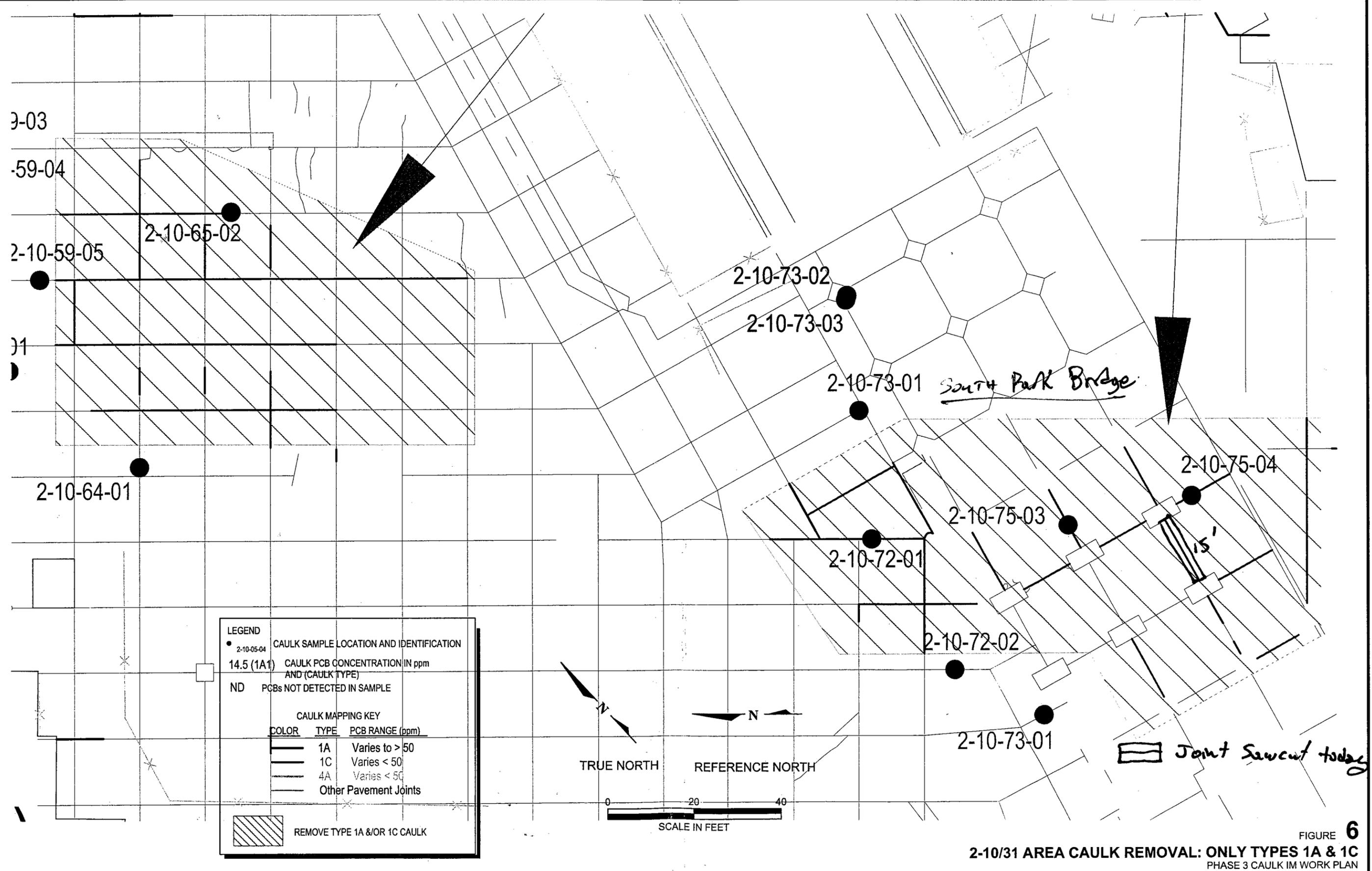


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date Aug. 19, 2010

Weather Cloudy AM 55°F / Cloudy Partly Sunny PM 65°F

Start Time 0800

End Time 1430

Contractors Onsite Glacier

Visitors Scott Matthees - Golder

Plant 2 Area 2-10 Specific Area Location 2-15

Work Performed

Sawcutting - Linear ft of Joint(s) NONE

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 5ft

Method JACK hammer chisel

Remaining Caulk Removal 10ft

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? yes

Method fine solid debris wet down & vacuumed from joints

New Caulk Installed (2-10 Area Only) - Linear ft NONE

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards N/A

Daily Clean-up

Method Sweep vacuum cone tools & clean station with plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

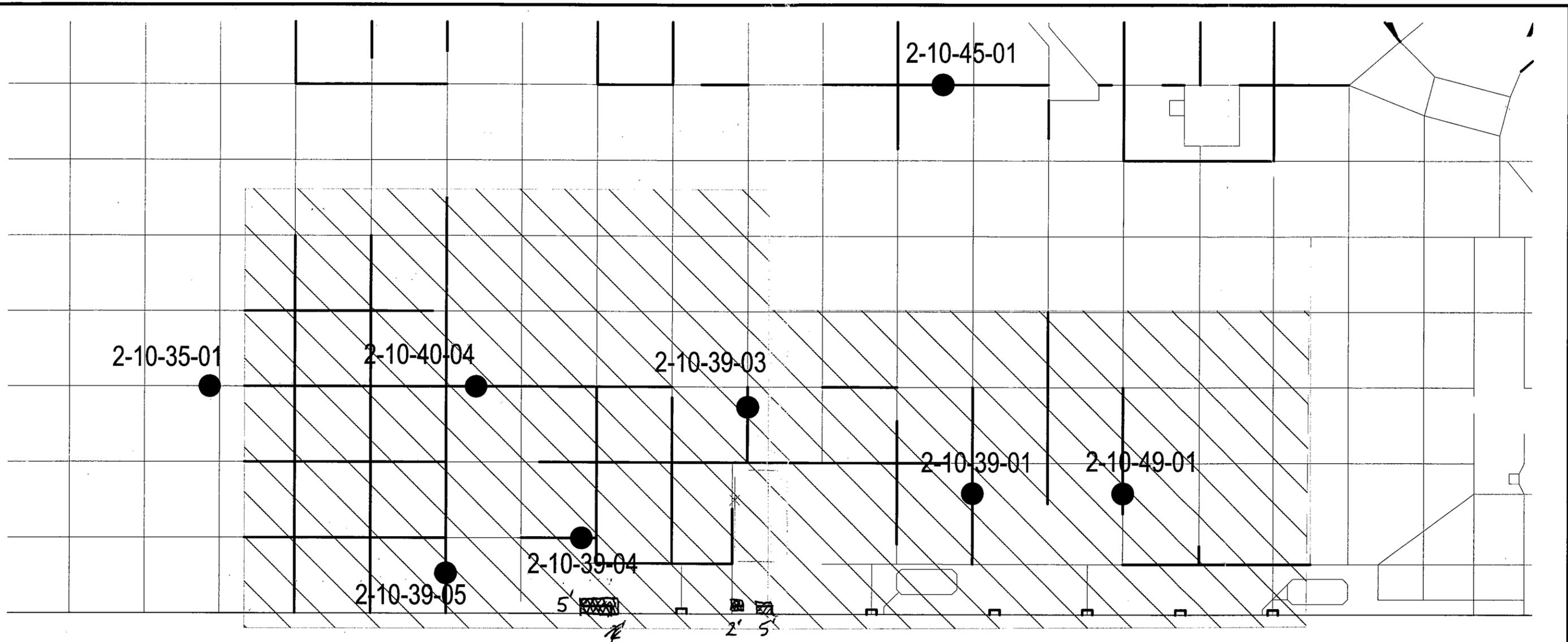
Other _____

Weather Issues - Describe NONE

Comments _____

Site Representative: TED SAGER

8/19/20



2-15 Bldg.

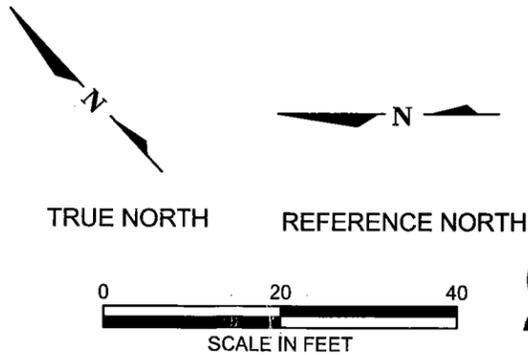
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

 REMOVE TYPE 1A &/OR 1C CAULK



REMOVE TYPE
875 I F

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/28/13

Weather Clear

Start Time 0600

End Time 1500

Contractors Onsite Glacier

Visitors _____

Plant 2 Area 210

Specific Area Location Bldg 2-15

Work Performed

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? Wet vacuumed

Method Joints

New Caulk Installed (2-10 Area Only) - Linear ft NONE

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method Sweep & vacuum consolidated all tools &

supplies under Si Park Bridge & covered w/plastic

All Drums & yard Boxes Taken to 2-49 Bldg for Storage

Run-off Controls All Drums & yard Boxes Taken to 2-49 Bldg for Storage

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

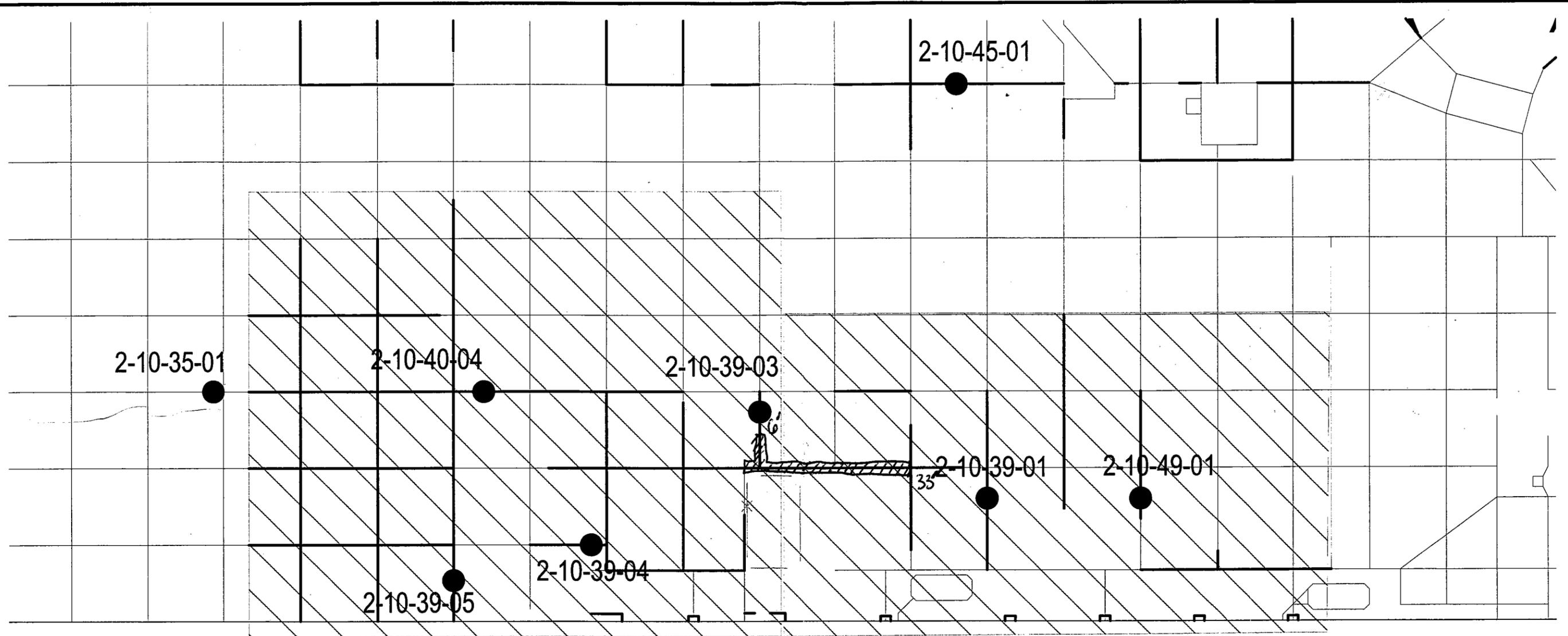
Weather Issues - Describe NONE

Comments _____

Site Representative: Ted Sager

8/20/10

8/20/10



~39' INITIAL JOINT REMOVAL TODAY

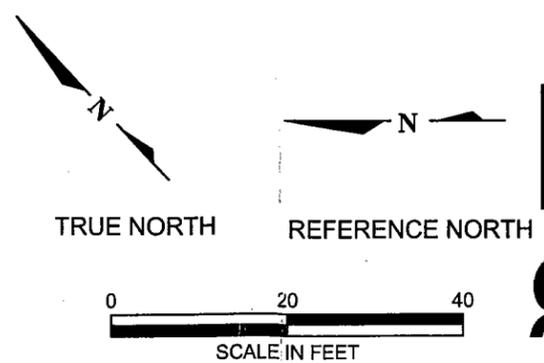
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

 REMOVE TYPE 1A &/OR 1C CAULK



REMOVE TYPE 8751F

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8/23/10

Weather Clear ~ 55°F AM / Clear ~ 70°F PM

Start Time 0600

End Time 1440

Contractors Onsite Calaciter

Visitors _____

Plant 2 Area S. Park Bridge 2-10/13 Specific Area Location S. Park Bridge

Work Performed

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints ~ 236ft

Method JACKhammer, Vacuum Scraper

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-50s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method VACUUM, Sweep cover tools in paste

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe NONE

Comments _____

Site Representative: T-Sager

8/23/10

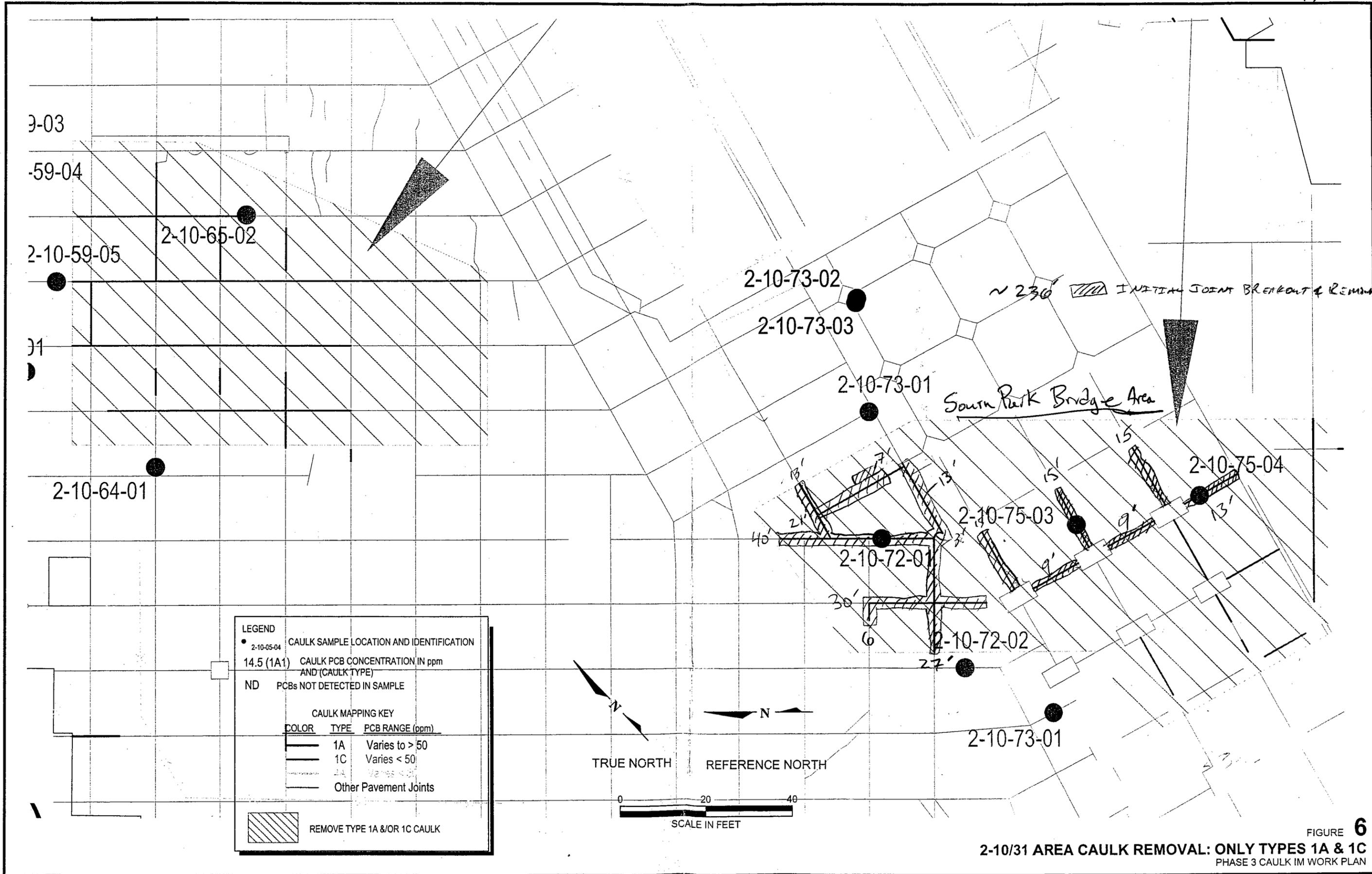


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Aug 24, 2010

Weather Clear ~ 55°F Am / Clear ~ 75°F PM

Start Time 8:00

End Time 1425

Contractors Onsite Glacier

Visitors Scott Matthews - Gualder PM

Plant 2 Area 2-10/31

Specific Area Location South Park Bridge & S. 2-10 Parking

Work Performed

Sawcutting - Linear ft of Joint(s) _____
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____

Remaining Caulk Removal South Park Bridge (233 LF)

Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? YES
Method VACUUMED slurry placed in drums Solid debris placed in remaining hard box and lined tub skids

New Caulk Installed (2-10 Area Only) - Linear ft S. 2-10 338 LF

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
Method New Caulk material containers placed in municipal truck with less than 3% product residue. Cover tools with plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe NONE

Comments _____

Site Representative: Ted Sager

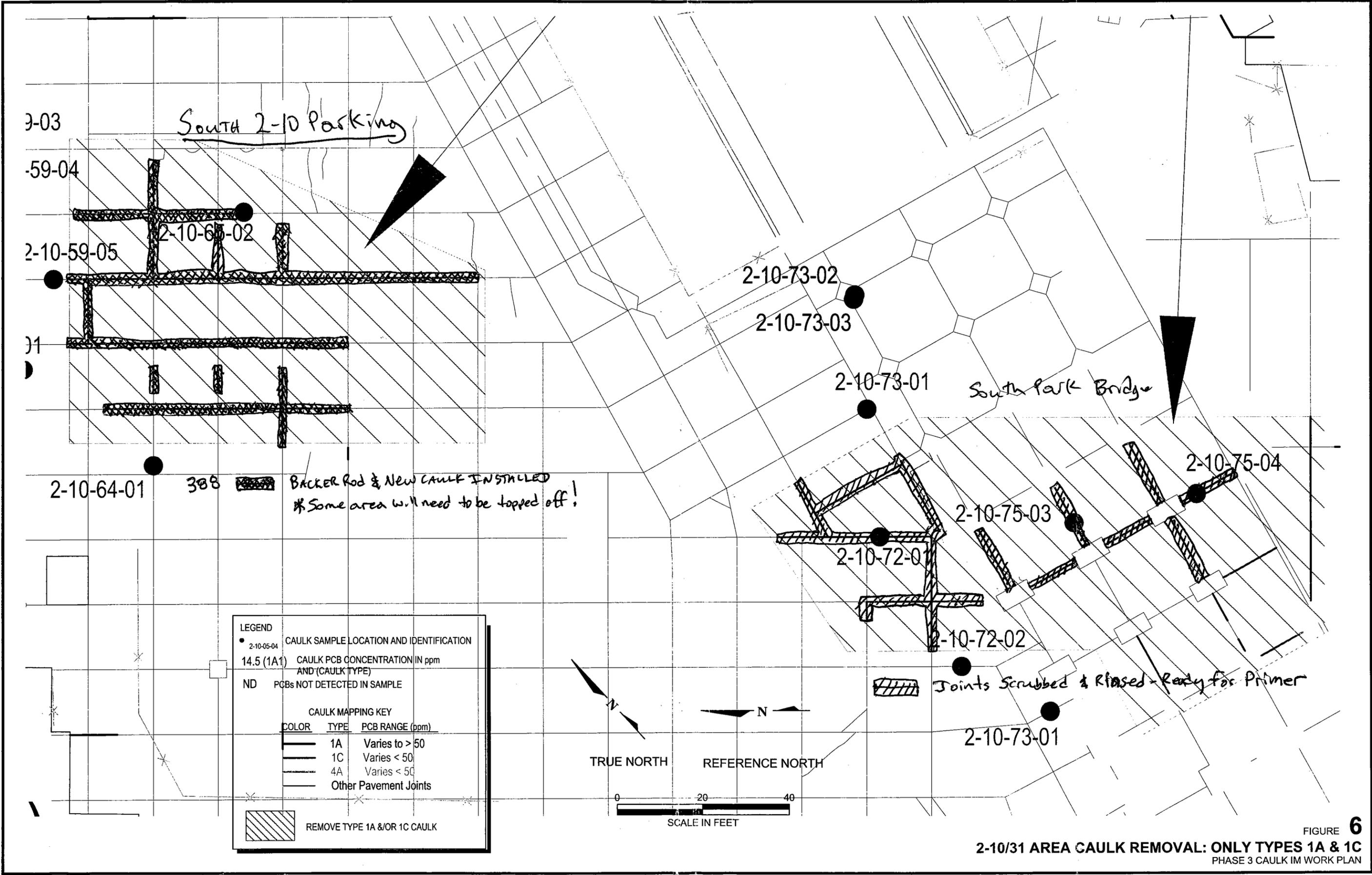


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Aug 25, 2010

Weather Clear ~60°F day / Clear ~75°F PM

Start Time 0600

End Time 1535

Contractors Onsite Glacier

Visitors _____

Plant 2 Area 2-10

Specific Area Location 2-15 / Santa Park Bridge

Work Performed

194' primer / 186' Backerrod.

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal 2-15 East of Door E-12 & Steam Cleaner w/size Tank

Sawcutting Washing

Scraping Grinding

Other - Describe JACK Hammer to 4" minima (39ft)

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? Vacuum & porting

Method Large pieces of concrete

New Caulk Installed (2-10 Area Only) - Linear ft 38ft E of 2-15 Bldg. installed within

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards side wall primer

Daily Clean-up _____

Method Cover tools w/plastic

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other Steel plate ~38ft of New caulk (2-15 bldg)

Weather Issues - Describe None

Comments _____

Site Representative: A. Sages

8/25/14

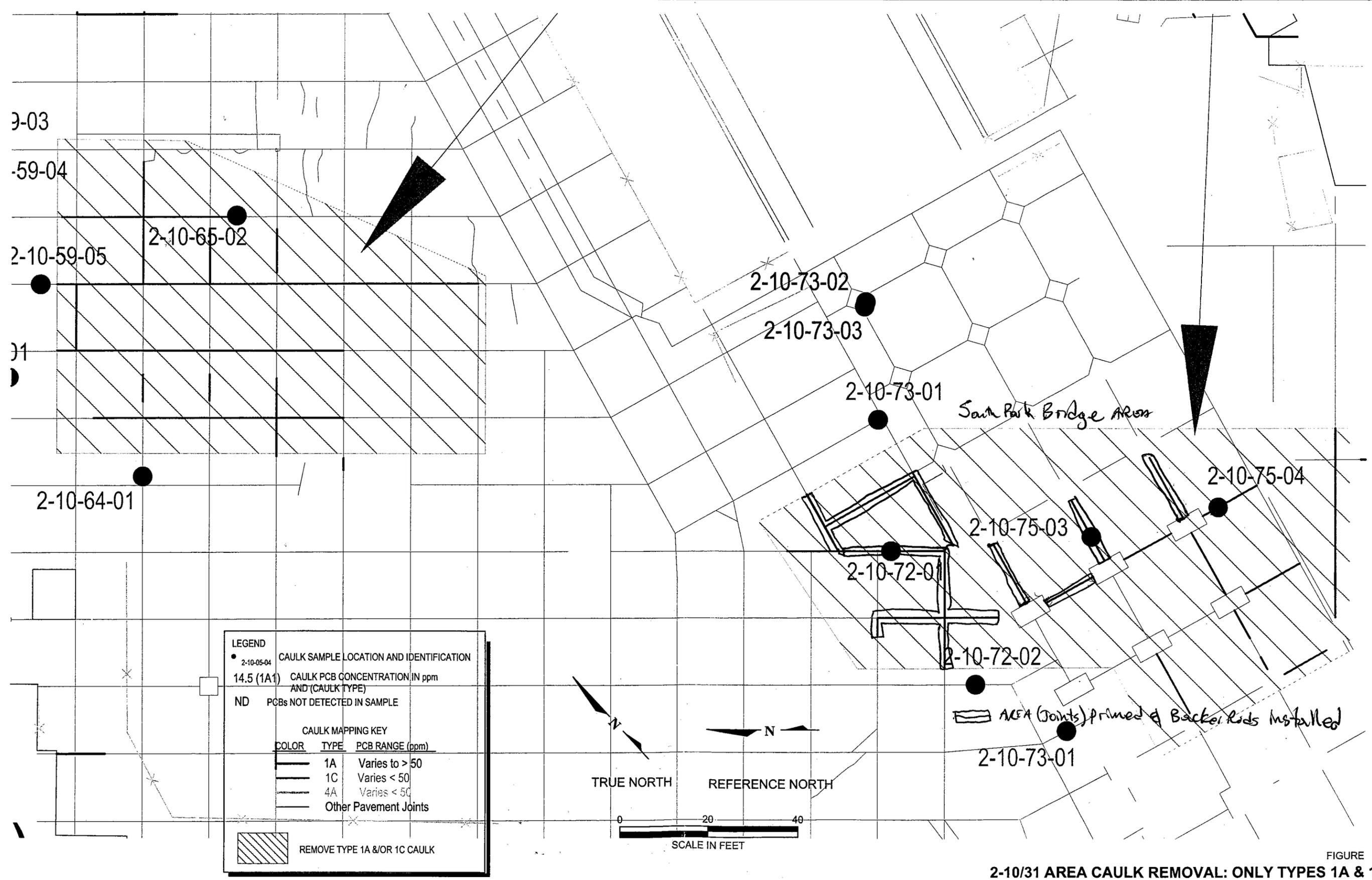
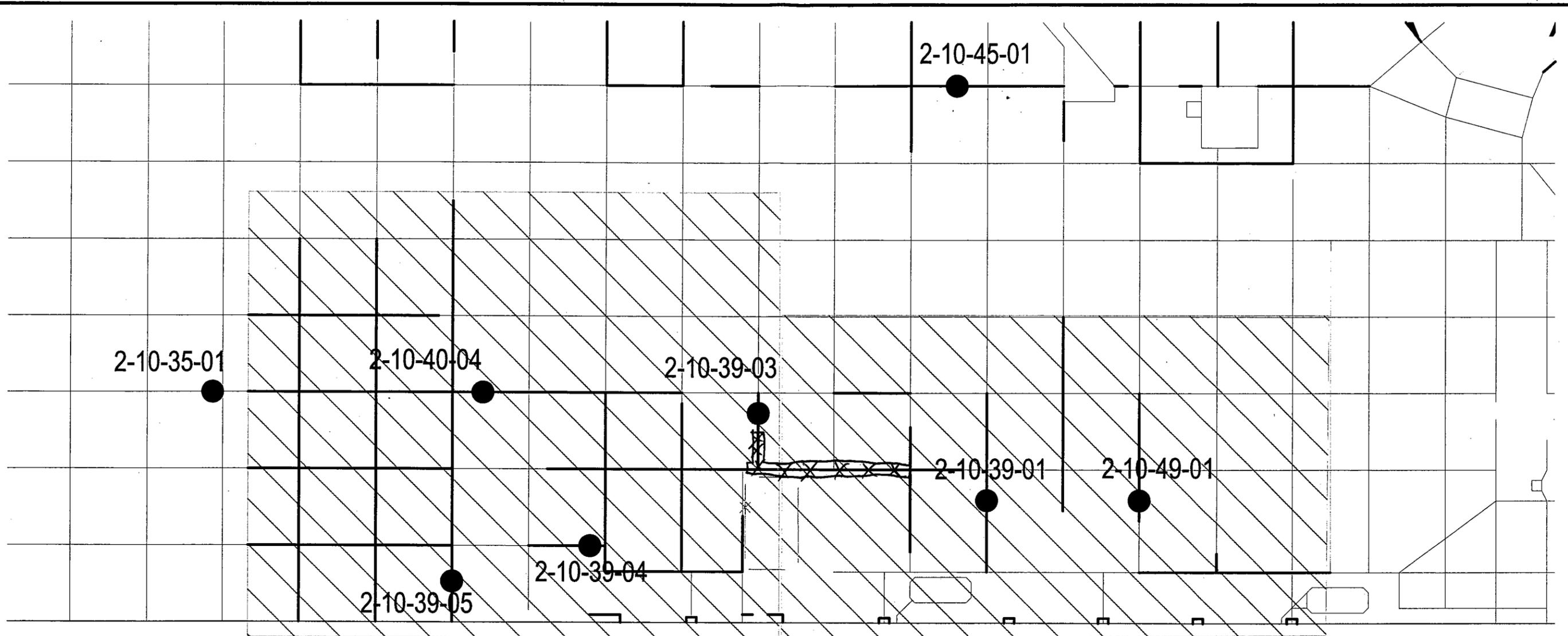


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

8/25/10



39ft BACKER Rod & New caulk - installed without primer

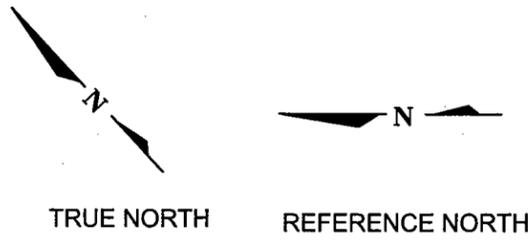
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
	1A	Varies to > 50
	1C	Varies < 50
	4A	Varies < 50
	Other Pavement Joints	

REMOVE TYPE 1A & OR 1C CAULK



REMOVE TYPE
875 IF

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 8-26-10

Weather 6 AM - PTLY CLDY 55°
11 AM - CLDY, MIST, 60°

Start Time 0600

End Time 1100

Contractors Onsite GLACIER

Visitors _____

Plant 2 Area 2-10

Specific Area Location UNDER 16TH AVE S. BRIDGE

Work Performed

Sawcutting - Linear ft of Joint(s) _____
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____

Remaining Caulk Removal

Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft ~186' UNDER BRIDGE (INCLUDES 12' OF BALKER PAD + PRIMER)

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums COVER EQUIP & TOOLS W/ PLASTIC
 Other SWEEPING W/ BROOMS, COVER JTS W/ STEEL PLATES IN PARKING AREAS.

Weather Issues - Describe LIGHT MIST @ 9 AM, NOT ENOUGH TO GET SURFACE WET,
Comments BUT STOPPED CAULK PLACEMENT UNTIL WEATHER FORECAST IMPROVES!

Site Representative: MATTHEES

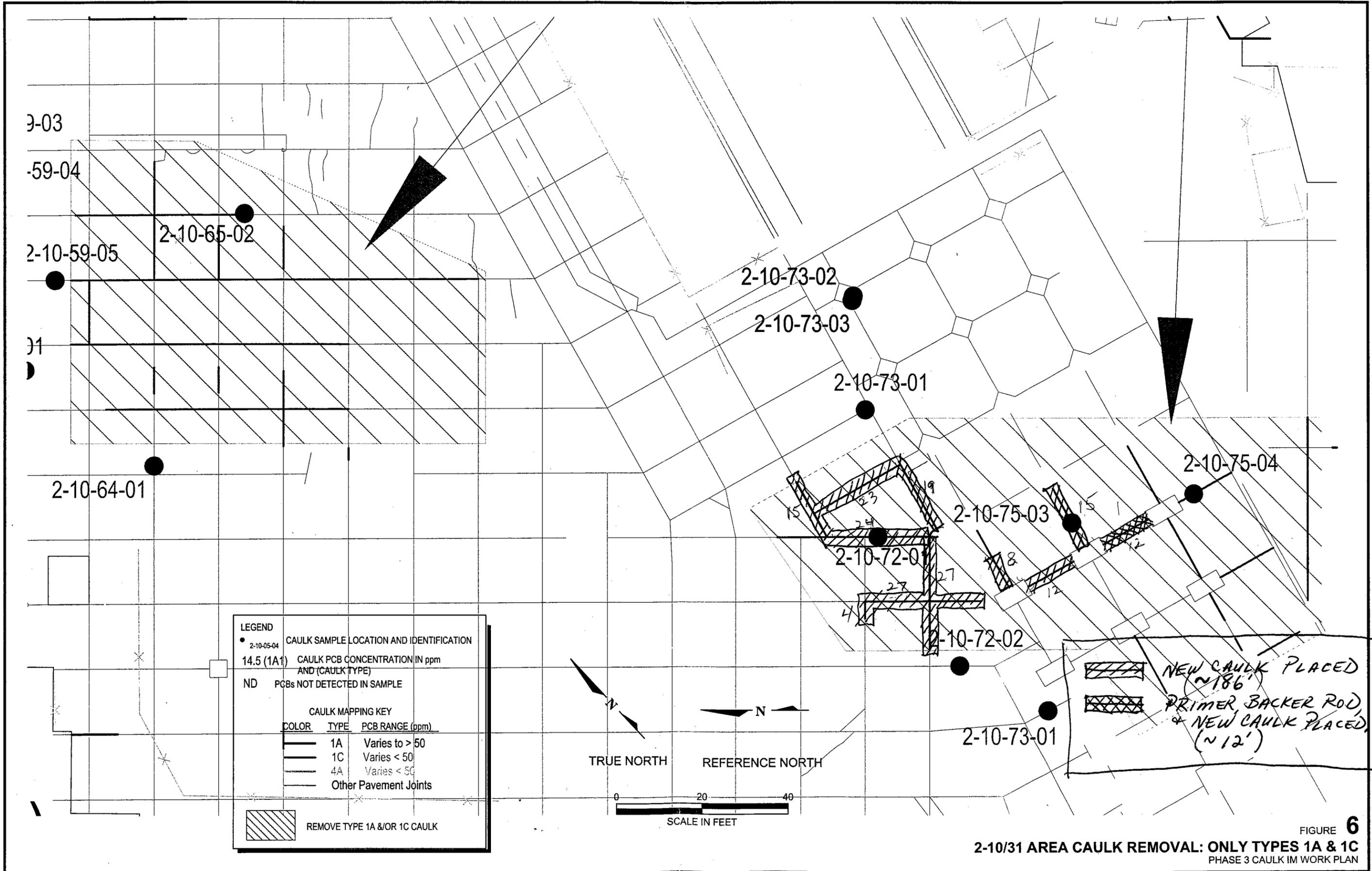


FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date August 31, 2010

Weather 6:00 Cloudy ~55°F / 0630-1000 Rain

Start Time 0600

End Time 1000

Contractors Onsite Galacter

Visitors _____

Plant 2 Area 2-10

Specific Area Location South Park Bridge (1600 Ave S. Bridge)

Work Performed

Sawcutting - Linear ft of Joint(s) _____
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints ~26 ft
Method Jack hammer / sweeping / vacuum

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe Plastic

Slurry/Water and Solids controlled and collected? Yes

Method Vacuum of water hand pick of large concrete debris
Sweep w/ broom smaller particles

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other Good toluene peltie placed open joints in drive lane

Weather Issues - Describe Steady Rain past 0630 water entering work area but
not leaving work area.

Comments _____
Site Representative: Ted Seger

August 31, 2014

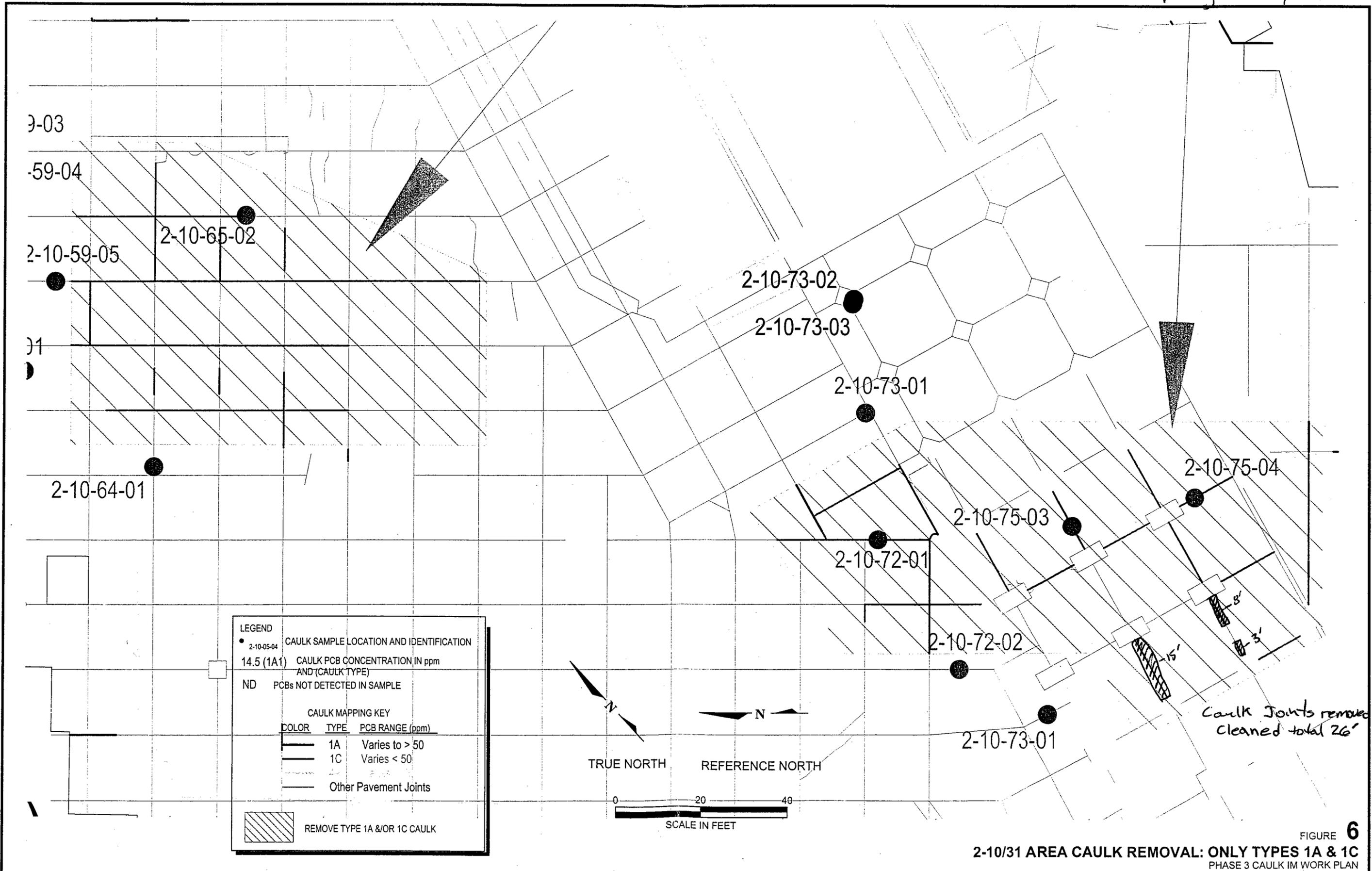


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date Sept 2, 2010

Weather Clear 75°F 1400 / clear ~ 68°F 2140

Start Time 1400

End Time 2140

Contractors Onsite Galacier

Visitors —

Plant 2 Area 2-10

Specific Area Location 2-15 Automotive shop

Work Performed

- Sawcutting - Linear ft of Joint(s) _____
- Slurry/Water Controlled and Collected? _____
- Method _____

- Initial Caulk/Concrete Removal - Linear ft of Joints _____
- Method Jack hammer & hand removal w/ hammer claw

- Remaining Caulk Removal
- Sawcutting
- Scraping
- Other - Describe VACUUM out debris from joint
- Barriers Required? - Describe _____
- Washing
- Grinding

- Slurry/Water and Solids controlled and collected? _____
- Method VACUUM Sweeping w/ broom

- New Caulk Installed (2-10 Area Only) - Linear ft _____
- CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____
- Daily Clean-up

Method Sweep VACUUM cover tools w/ plastic cover open joints with steel plate

Run-off Controls

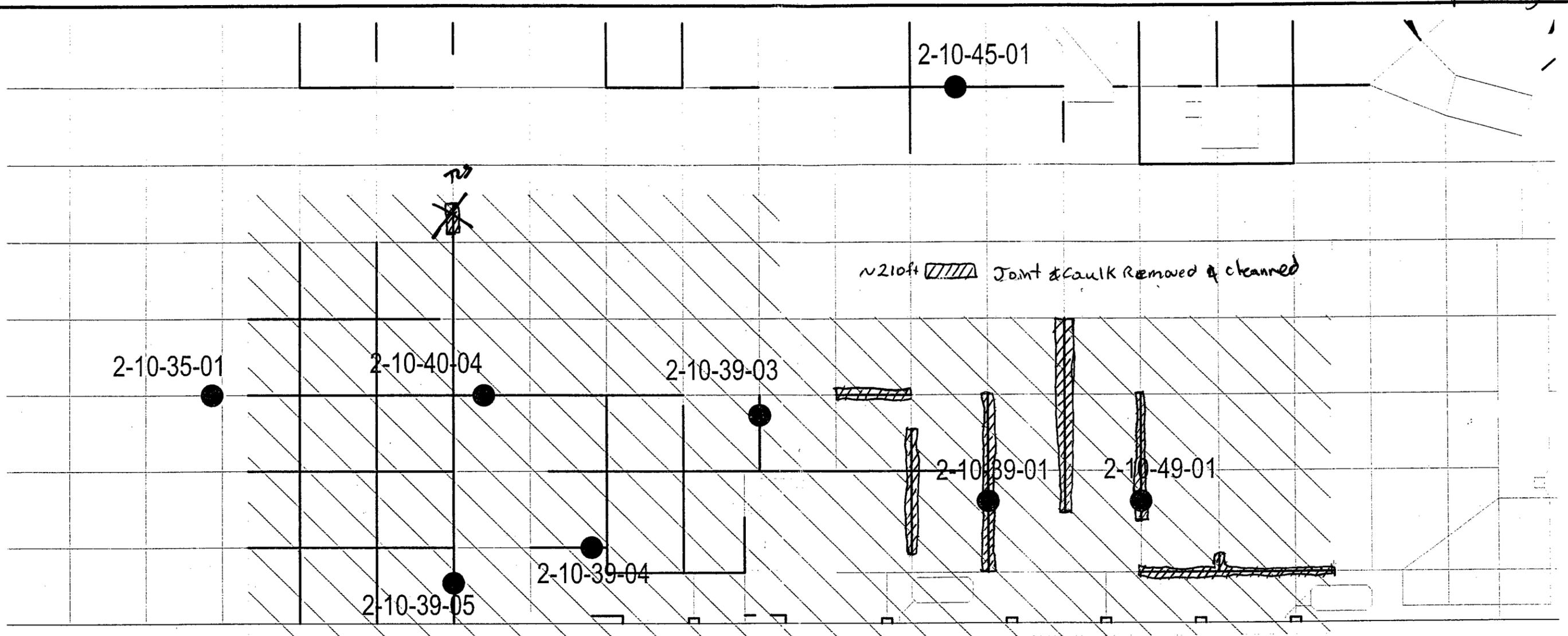
- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other _____

Weather Issues - Describe None

Comments _____

Site Representative: T. Sager

Sept. 2, 2010



2-15 Bldg. CARWASH

2-15 Bldg. Automotive Shop

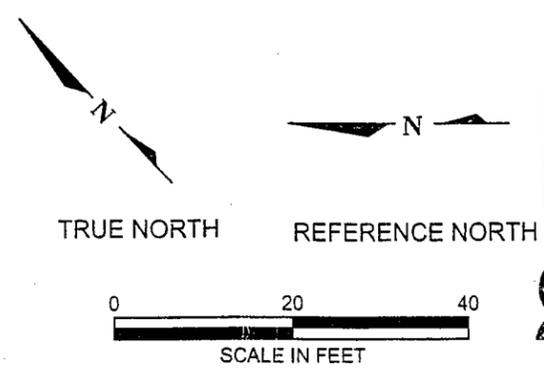
LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

COLOR	TYPE	PCB RANGE (ppm)
— (thick)	1A	Varies to > 50
— (thin)	1C	Varies < 50
— (dashed)	Other Pavement Joints	

REMOVE TYPE 1A &/OR 1C CAULK



REMOVE TYPE
8751 F

FIGURE 6
2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date Sept 3, 2010

Weather Clear - 80°F / 14% RH

Start Time 1400

End Time 0000

Contractors Onsite Glacier

Visitors Jennifer Parsons 1830-1900

Plant 2 Area 2-10

Specific Area Location 2-15 Automotive Shop EAST approach & 2-31 S.P. Bridge

Work Performed

- Sawcutting - Linear ft of Joint(s) _____
- Slurry/Water Controlled and Collected? _____
- Method _____

- Initial Caulk/Concrete Removal - Linear ft of Joints (61ft - 2-31)
- Method Jack hammer / hammer claw / VACUUM

Remaining Caulk Removal

- Sawcutting
- Scraping
- Washing
- Grinding
- Other - Describe VACUUM water out of joints
- Barriers Required? - Describe _____

- Slurry/Water and Solids controlled and collected?
- Method VACUUM

- New Caulk Installed (2-10 Area Only) - Linear ft 2-15 AREA 210ft / 2-31 S.P. Bridge 104ft
- CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

- Daily Clean-up
- Method _____

Run-off Controls

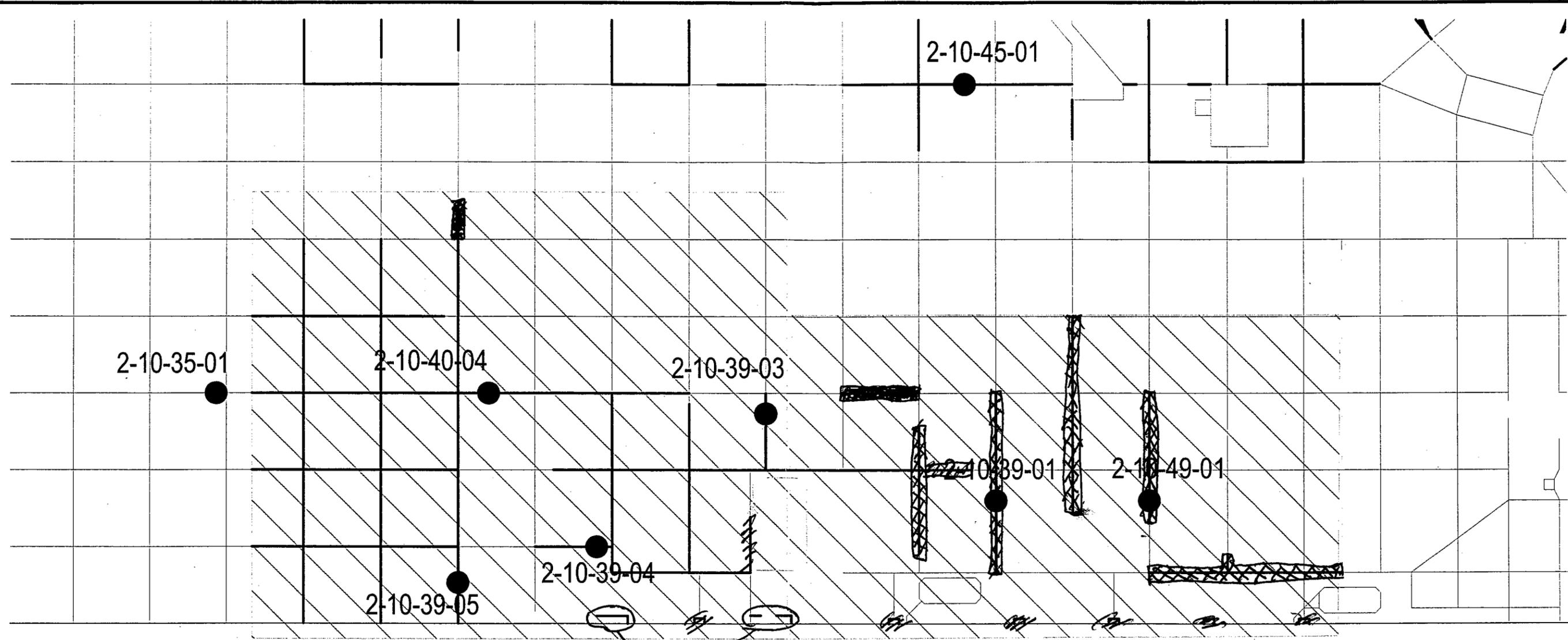
- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other _____

Weather Issues - Describe None

Comments Unfinished AREAS E. 2-10 None; E. 2-15 ~ 12 Adjacent to 2-15 Bldg. foundation wall; Bridge / 241 AREA ~ 3' to be poured w/ concrete.

Site Representative: Ted Sager

Sept 3, 2010



LEGEND

- 2-10-05-04 CAULK SAMPLE LOCATION AND IDENTIFICATION
- 14.5 (1A1) CAULK PCB CONCENTRATION IN ppm AND (CAULK TYPE)
- ND PCBs NOT DETECTED IN SAMPLE

CAULK MAPPING KEY

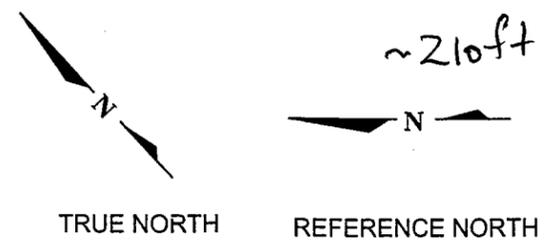
COLOR	TYPE	PCB RANGE (ppm)
—	1A	Varies to > 50
—	1C	Varies < 50
—	4A	Varies < 50
—	Other Pavement Joints	

 REMOVE TYPE 1A & OR 1C CAULK

Caulk removed will be poured back w/concrete at a later date

NO JOINTS FOUND NO REMOVAL NECESSARY.
 JOINTS & CAULK REMOVED - NEW CAULK REINSTALLED
 NEW CAULK INSTALLED

~210ft of New caulk installed this evening



REMOVE TYPE 1A & OR 1C

FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

Sept 3, 2014

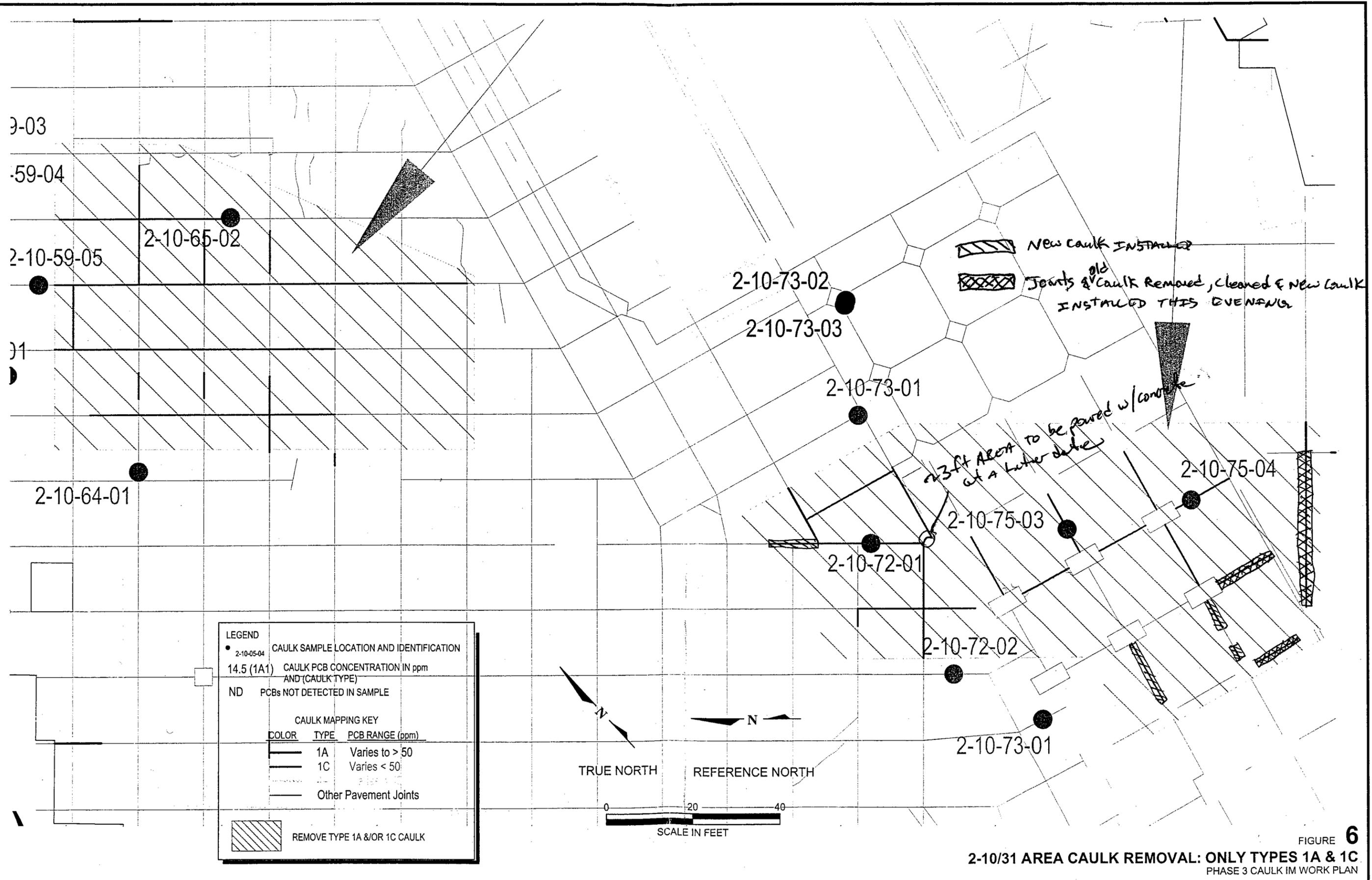


FIGURE 6
 2-10/31 AREA CAULK REMOVAL: ONLY TYPES 1A & 1C
 PHASE 3 CAULK IM WORK PLAN

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 9-27-10

Weather CLDY, 60s, SHOWERS

Start Time 0930

End Time 1000

Contractors Onsite GOLDER

Visitors _____

Plant 2 Area 2-10 Specific Area Location E OF 2-15, S OF 2-10 &

Work Performed UNDER 16TH AVE BRIDGE

Sawcutting - Linear ft of Joint(s) _____
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe WET WEATHER DURING PAST COUPLE WEEKS HAS PREVENTED COMPLETION OF CHECK-LIST: TOPPING OFF NEW CAULK IN JTS.

Comments OBSERVED JTS W/ NEW CAULK TO DETERMINE WHICH ONES NEED ADDITIONAL APPLICATION OF NEW CAULK TO FILL THE SLOT TO SURFACE

Site Representative: SCOTT MATTHEES

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 9-30-10

Weather SHOWERS, 60s

Start Time 1020

End Time 1045

Contractors Onsite NONE

Visitors _____

Plant 2 Area _____ Specific Area Location _____

Work Performed

Sawcutting - Linear ft of Joint(s) _____
 Slurry/Water Controlled and Collected? _____
 Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____
 Method _____

Remaining Caulk Removal
 Sawcutting Washing
 Scraping Grinding
 Other - Describe _____
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____
 Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up
 Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe _____

Comments BOEING HAS MADE DECISION TO FINISH ANY ADDITIONAL APPLICATION OF NEW CAULK THEMSELVES. REMOVAL OF CAULK

Site Representative: W > 25 PPM PCBs WAS PREVIOUSLY COMPLETED. NEW CAULK APPLIED TO ALL REMOVAL JOINTS; SOME ADDITIONAL APPLICATION OF NEW CAULK MAY BE IMPLEMENTED BY BOEING TO BRING SURFACE OF NEW CAULK FLUSH WITH ADJACENT CONCRETE SURFACE.

→ SCOTT MATTHEES

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Daily QA Field Sheets

2-60s Area Caulk Removal

Fall 2009

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/20/09 Weather Cloudy, calm 55°F @ 1230

Start Time 0830 End Time 1430

Contractors Onsite Glacier, Golder, APS (1300-1349)

Visitors- Boeing: J. Parsons, J. Flaherty

Plant 2 Area 2-62 Bldg Specific Area Location west half north stem wall

Work Performed

Paint Removal
 Sawcutting - Linear ft of Joint(s) 551 ft (110 SF)

Slurry/Water Controlled and Collected? none

Method used hand scabblers and scrapers to remove paint

Initial Caulk/Concrete Removal - Linear ft of Joints

Method

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe

Barriers Required? - Describe

Slurry/Water and Solids controlled and collected?

Method

New Caulk Installed (2-10 Area Only) - Linear ft

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards

Daily Clean-up

Method vacuum / brooms used to collect paint chips placed in 55 gal drum (Z900871)

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other NOT required per J. Parsons

Weather Issues - Describe none

Comments Glacier mobilized to site. Reviewed Glacier's HASP prior to work. Glacier set up work, exclusion and decon areas

Site Representative: APS began utility locate on 2-62 slab.

Michael Imphi - Golder Assoc

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/21/09 Weather cloudy, H. rain 55°F at 1300
Start Time 0730 End Time 1600

Contractors Onsite Glacier, Golder, APS Locating

Visitors Boeing: J. Parsons

Plant 2 Area 2-62 Bldg Specific Area Location West end west end of south stem walls

Work Performed Paint Removal

~~Sawcutting~~ - Linear ft of Joint(s) 185 lf (254 sf)

Slurry/Water Controlled and Collected? _____

Paint Removal Method used hand scabblers and scrapers to remove paint

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method vacuum / brooms used to collect paint chips placed in 55 gal drum (2900871)

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other not required per J. Parsons

Weather Issues - Describe _____

Comments Glacier continued removing paint from bldg ~~stem~~ exterior stem walls in areas where caulk ~~will~~ will be removed.

Site Representative: APS completed utility locates at the 2-62, 2-63, 265 and 2-66 bldgs.

Michael Lupton - Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date 10/22/09

Weather Cloudy, calm 55°F at 1230

Start Time 0730

End Time 1600

Contractors Onsite Glacier, Golder

Visitors Boeing: J. Flaherty

Plant 2 Area 2-62, 2-65

Specific Area Location 2-62 South stem wall, South end east wall, interior joint NW area 2-65 South east interior joint floor

Work Performed Paint Removal
~~Sawcutting~~ - Linear ft of Joint(s) Walls - 56 LF (-85sf), floors 91 sf

Slurry/Water Controlled and Collected?

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Paint Removal Method Wall: hand scabblers & scrapers; Floors walk behind scabblers

Remaining Caulk Removal

Sawcutting

Washing

Scraping

Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method Vacuum / brooms used to collect paint chips placed in 55gal drum (Z900871)

Run-off Controls

Catch basins within 25 ft blocked?

Portable Booms

Filter Sock in Catch Basins

Vacuums

Other Not required per J. Parsons

Weather Issues - Describe none

Comments Glacier has completed removal of paint along joints to be removed including stem walls and slabs. No paint on 2-63 or 2-66 slabs

Site Representative: _____

Michael Lynch - Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/23/09

Weather rain

Start Time 0730

End Time 0830

Contractors Onsite Glacier, Golder

Visitors none

Plant 2 Area 262 Specific Area Location _____

Work Performed

Sawcutting - Linear ft of Joint(s) _____

Slurry/Water Controlled and Collected? _____

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints _____

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up _____

Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other _____

Weather Issues - Describe No site work today due to rain

Comments Glacier not on site except to store equipment and supplies. Paint removal completed yesterday.

Site Representative: Saw work scheduled to begin Monday.

Michael Joseph - Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/26/09 Weather rain

Start Time 0730 End Time 0830

Contractors Onsite Glacier, Pennhall, Golder

Visitors Boeing: J. Parsons

Plant 2 Area 262 Specific Area Location _____

Work Performed

- Sawcutting - Linear ft of Joint(s) _____
 - Slurry/Water Controlled and Collected? _____
Method _____
- Initial Caulk/Concrete Removal - Linear ft of Joints _____
Method _____
- Remaining Caulk Removal
 - Sawcutting Washing
 - Scraping Grinding
 - Other - Describe _____
 - Barriers Required? - Describe _____
- Slurry/Water and Solids controlled and collected? _____
Method _____
- New Caulk Installed (2-10 Area Only) - Linear ft _____
- CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____
- Daily Clean-up
Method _____

Run-off Controls

- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other _____

Weather Issues - Describe no work today due to steady rain

Comments Pennhall saw cutting contractor mobilized to the site today. Reviewed HASP prior to work

Site Representative: Michael Lumpkin

Michael Jepsen - Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/27/09

Weather Partly sunny, calm 52°F @ 1200

Start Time 0730

End Time 1600

Contractors Onsite Glacier, Pennhall, Golder

Visitors Boeing: J. Flaherty, J. Parsons (Am)

Plant 2 Area 2-62

Specific Area Location South half, and interior north

Work Performed

Sawcutting - Linear ft of Joint(s) 989

Slurry/Water Controlled and Collected? yes

Method Vacuum into 55 gal drums

Initial Caulk/Concrete Removal - Linear ft of Joints none

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe _____

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up

Method _____

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other no catch basins adjacent to work areas

Weather Issues - Describe none

Comments Two concrete saws, concrete slurry drummed. slurry drums labeled and tracked.

Site Representative: _____

Michael Joseph Golder

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10-28-2009

Weather CLDY, 42° AM

CLDY, 50° PM

Start Time 0730

End Time _____

Contractors Onsite GLACIER, PENHALL, BOLDER

Boilers BOEING - FLAHERTY, PARSONS

Plant 2 Area 2-62

Specific Area Location SAWCUTTING - N. PORTION 2-62
REMOVAL - S. END + N. CENTRAL 2-62
CDF - N. INTERIOR, SW PERIMETER

Work Performed

Sawcutting - Linear ft of Joint(s) 862' TOTAL FOR ~ 571 LF. JTS

Slurry/Water Controlled and Collected? YES
Method VACUUM INTO 55 GAL DRUMS WHILE SAWCUTTING

Initial Caulk/Concrete Removal - Linear ft of Joints 651 LF
Method EXCAVATOR + LABORERS

Remaining Caulk Removal

Sawcutting

Washing

Scraping

Grinding

Other - Describe REMOVE 2" SOIL AFTER CONCRETE/CAULK REMOVAL

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft / _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 8 yd³ / 244 LF

Daily Clean-up

Method PLACED PLASTIC + SANDBAGS OVER OPEN
TRENCHES IN CASE OF RAIN. DECON

Run-off Controls

Catch basins within 25 ft blocked?

Portable Booms

Filter Sock in Catch Basins

Vacuums

Other NO CBS W/IN 25' OF WORK AREAS. USED SANDBAGS + PLASTIC ON OPEN SLOTS.

Weather Issues - Describe NONE -

Comments 2 SAWCUT MACHINES - SLURRY VACUUMED INTO DRUMS.

Site Representative: Scott A. Mankees - BOLDER

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date 10-29-2009

Weather SHOWERS 43° AM / SCATTERED LIGHT DRIZZLE, 47° PM

Start Time 0730

End Time 1600

Contractors Onsite GLACIER

~~GLACIER~~ BOEING - FLAHERTY, PARSONS

Plant 2 Area 2-62 Specific Area Location _____

Work Performed

Sawcutting - Linear ft of Joint(s) NONE TODAY
 Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 289 LF
Method EXCAVATOR & LABORERS

Remaining Caulk Removal

Sawcutting Washing
 Scraping Grinding

Other - Describe REMOVE 2" SOIL AFTER CONCRETE/CAULK REMOVAL

Barriers Required? - Describe PLASTIC & SANDBAGS USED TO KEEP RUN-OFF OUT OF SLOTS.

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 8 yd³ / 285 LF

Daily Clean-up
Method DECON. PLASTIC & SANDBAGS OVER OPEN SLOTS.

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums

Other NO CB'S W/IN 25'. USED PLASTIC & SANDBAGS @ OPEN SLOTS.

Weather Issues - Describe RAIN LAST NIGHT. WATER PUDDLES ON SLAB. 2 SMALL PUDDLES IN SLOT ON W. PERIM, S END. WATER VACUUMED INTO DRUM.

Comments _____
Site Representative: Scott W. Mattice

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 10/30/09

Weather partly cloudy 56°F AM / 62°F PM

Start Time 0730

End Time 1600

Contractors Onsite Glacier

Visitors Boeing: J. Flaherty (intermittantly)

Plant 2 Area 2-62

Specific Area Location North end, South interior, SW corner

Work Performed

Sawcutting - Linear ft of Joint(s) none today

Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 452 L.F.

Method excavator, hand tools

Remaining Caulk Removal

Sawcutting

Washing

Scraping

Grinding

Other - Describe removed 2" min. of soil below slab after

Barriers Required? - Describe none caulk/concrete removed

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-1D Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 553 L.F. / 20 CY

Daily Clean-up
Method placed plastic sheeting and sand bags over open trenches, decont'd work areas

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other No CB'S within 25' of work areas

Weather Issues - Describe none

Comments removed caulk/concrete/soil placed in double lined roll off.

Site Representative: Michael J. Simpson & Bealder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11/2/09

Weather mostly cloudy 72°F AM / 54°F PM

Start Time 0730

End Time 1600

Contractors Onsite Glacier, Penhall

Visitors Boeing: J. Parsons

Plant 2 Area 2-66 Specific Area Location interior joints

Work Performed

Sawcutting - Linear ft of Joint(s) 1233 L.F. Saw cut (≈ 641 L.F. JT)

Slurry/Water Controlled and Collected?

Method vacuumed directly into 55 gal drums while cutting

Initial Caulk/Concrete Removal - Linear ft of Joints none

Method _____

Remaining Caulk Removal _____

- Sawcutting
- Scraping
- Other - Describe _____
- Barriers Required? - Describe _____
- Washing
- Grinding

Slurry/Water and Solids controlled and collected?

Method broomed and washed slab surface

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up none Today

Method placed plastic sheeting over saw cut slots; decont'd work areas

Run-off Controls

- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other No CB's within 25' of work areas

Weather Issues - Describe none

Comments Two saw cutting machines today. All stored equipment had been removed from slab by Boeing

Site Representative: Michael Jumper - Golder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11-3-09

Weather partly cloudy 45°F Am / 50°F PM

Start Time 0730

End Time 1600

Contractors Onsite Glacier, Penhall

Visitors Boeing: J. Flaherty

Plant 2 Area 2-65, 2-63, 2-66 Specific Area Location 2-65 interior, 2-63 ^{North end}, 2-66 N. perimeter wall

Work Performed

Sawcutting - Linear ft of Joint(s) 2-65 819 L.F. (460 L.F. JT); 2-63 221 L.F. (221 L.F. JT); 2-66 15 L.F. (15 L.F. JT)
 Slurry/Water Controlled and Collected? YES
Method vacuumed directly into 55gal drums

Initial Caulk/Concrete Removal - Linear ft of Joints None
Method _____

Remaining Caulk Removal

- | | |
|--|-----------------------------------|
| <input type="checkbox"/> Sawcutting | <input type="checkbox"/> Washing |
| <input type="checkbox"/> Scraping | <input type="checkbox"/> Grinding |
| <input type="checkbox"/> Other - Describe _____ | |
| <input type="checkbox"/> Barriers Required? - Describe _____ | |

Slurry/Water and Solids controlled and collected? YES
Method broomed and washed slab surface near joints

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up _____

Method _____

Run-off Controls

- | | |
|---|---|
| <input type="checkbox"/> Catch basins within 25 ft blocked? | <input type="checkbox"/> Portable Booms |
| <input type="checkbox"/> Filter Sock in Catch Basins | <input type="checkbox"/> Vacuums |
| <input type="checkbox"/> Other <u>no CBS within 25' of work areas</u> | |

Weather Issues - Describe None

Comments Saw cutting complete. Decon'd saws before demob'd from site.

Site Representative: Michael Lumphu - Golder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11/4/09

Weather partly - mostly cloudy 40°F AM / 63°F PM

Start Time 0730

End Time 1600

Contractors Onsite Glacier

Visitors Boeing: J. Flaherty

Plant 2 Area 2-66, 2-62 Specific Area Location Northern 2/3 2-66 Interior, SW 2-62

Work Performed

Sawcutting - Linear ft of Joint(s) completed on 11/3/09

Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 551 L.F. @ 2-66
Method excavator, hand tools

Remaining Caulk Removal

- Sawcutting
- Scraping
- Washing
- Grinding

Other - Describe removed 2" min. of soil below slabs after caulk/concrete removal

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

GDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 551 L.F. @ 2-66 113 L.F. @ 2-62
664 L.F. total / 20 CY

Daily Clean-up
Method NO open trenches, decont'ed work areas

Run-off Controls

- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other No CBS within 25' of work areas

Weather Issues - Describe none

Comments caulk/concrete/soil placed in double lined roll-offs, trenches backfilled with concrete per Boeing.

Site Representative: Michael Jupp - Golder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11/5/09

Weather intermittant rain Am 50°F Am/63°F PM

Start Time 0730

End Time 1600

Contractors Onsite Glaeier

Visitors Boeing: J. Flaherty

Plant 2 Area 2-65

Specific Area Location interior joints 2-65 slab

Work Performed

Sawcutting - Linear ft of Joint(s) Complete

Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 328 L.F.
Method excavator, hand tools

Remaining Caulk Removal

Sawcutting Washing
 Scraping Grinding

Other - Describe removed 2" min. of soil below slabs after
 Barriers Required? - Describe none required caulk/concrete
removal

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 316 L.F. / 10cy concrete

Daily Clean-up
Method plastic sheeting placed over open trenches

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums

Other a small amount of runoff was vacuumed directly

Weather Issues - Describe from trenches directly into 55 gal. drum prior
Comments to concrete parts

caulk/concrete/soil placed in double lined roll-offs,

Site Representative: Michael Lupton - Golder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11-6-09

Start Time 0730

Weather intermittent AM showers 50° F AM / 54° F PM

End Time 1600

Contractors Onsite Glacier

Visitors Boeing: J. Flaherty

Plant 2 Area 2-63

Specific Area Location interior stem wall Northwest quarter

Work Performed

Sawcutting - Linear ft of Joint(s) complete

Slurry/Water Controlled and Collected?

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 220 L.F.

Method excavator, hand tools

Remaining Caulk Removal

Sawcutting

Scraping

Other - Describe removed 2" min. of soil below slabs after

Barriers Required? - Describe none remaining caulk/concrete

Slurry/Water and Solids controlled and collected?

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 224 L.F. / 9 cy concrete

Daily Clean-up

Method decont'd work areas, no open trench

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other No CBs within 25' of work areas

Weather Issues - Describe Concrete was panned immediately after concrete/eaat caulk

Comments removal to minimize run-off into trenches
Removed caulk/concrete/soil was placed in double-lined roll-offs

Site Representative: Michael Lupton - Golder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2

Removal of Caulk Containing > 25 ppm PCBs

Date 11-9-09

Weather cloudy AM showers 46° F AM / 52° F PM

Start Time 0730

End Time 1600

Contractors Onsite Glacier

Visitors Boeing: none

Plant 2 Area 2-66, 2-65, 2-63, 2-62

Specific Area Location South 1/3 2-66; machine foundation joints 2-65; north edge 2-63, scattered perimeter 2-62,

Work Performed

Concrete Breaker
Sawcutting - Linear ft of Joint(s) perimeter walls 2-66 219 L.F. (219 L.F. JT); 2-63 23 L.F. (23 L.F. JT); 2-62 56 L.F. (56 L.F. JT)
 Slurry/Water Controlled and Collected? Total Breaker = 298 L.F.
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 2-66 295 L.F.; 2-65 15 L.F.
Method excavator / hand tools Total caulk = 310 L.F.

Remaining Caulk Removal

- Sawcutting
- Scraping/scabbling
- Other - Describe removed 2" min. below slabs after caulk/concrete removed.
- Barriers Required? - Describe _____
- Washing
- Grinding

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards none today

Daily Clean-up
Method plastic sheeting and sand bags placed over open trenches, decont'd work areas

Run-off Controls

- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other plastic sheeting placed over CB within 25' of work areas

Weather Issues - Describe _____

Comments Glacier used excavator-mounted concrete breaker to break concrete in areas inaccessible to saw cutter

Site Representative: caulk/concrete/soil removed and placed in double-lined roll-offs,

Michael Lemps - Geolder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11/10/09 Weather Am Showers 48°F AM / 52°F PM
Start Time 0730 End Time 1600

Contractors Onsite Glacier

Visitors Boeing: J. Parsons

Plant 2 Area 2-66, 2-65, 2-63, 2-62 Specific Area Location 2-66 N. perimeter; 2-65 machine foundation JTS.
2-63 N. perimeter; S. perimeter 2-62 S. perimeter

Work Performed

Concrete Breaker
 Sawcutting - Linear ft of Joint(s) 2-62 23 LF (23 LF JTS)
 Slurry/Water Controlled and Collected? _____
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 2-66 23 LF; 2-65 94 L.F.
Method excavator, hand tools 2-63 23 LF; 2-62 79 L.F.

Remaining Caulk Removal total caulk = 219 L.F.
 Sawcutting Washing
 Scraping/Scabbling Grinding
 Other - Describe removed 2" min soil from below slabs after
caulk/concrete removed
 Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected? _____
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards none today

Daily Clean-up
Method plastic sheeting placed and sand bags placed
over open trenches; decont'd work areas

Run-off Controls
 Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other No CBs within 25' of work areas

Weather Issues - Describe none

Comments Glacier used an excavator mounted concrete breaker
to break concrete along the 2-62 S. perimeter wall

Site Representative: inaccessible to saw cutter. Caulk/concrete/soil removed
and placed in double-lined roll-offs,

Michael Jempke - Geol der Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11-11-09

Weather Clear 45° F Am / 52° F Pm

Start Time 0730

End Time 1600

Contractors Onsite Geolacder

Visitors Boeing: none

Plant 2 Area 2-66, 2-65, 2-63, 2-62 Specific Area Location 2-66 south interior and perimeter walls

Work Performed
 Sawcutting - Linear ft of Joint(s) 2-65 interior machine foundation JCS
 Slurry/Water Controlled and Collected? 2-63 north edge; 2-62 scattered around perimeter,
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 2-62 23 LF south perimeter
Method excavator / hand tools other areas previously removed

Remaining Caulk Removal
 Sawcutting Washing
 Scraping/scabbling Grinding
 Other - Describe removed 2" min. of soil from below slabs after
 Barriers Required? - Describe caulk/concrete removed

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____
 CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 2-66 318 LF; 2-65 141 LF.
 Daily Clean-up 2-63 23 LF; 2-62 79 LF.
Method decont'd work areas total 561 LF / 28 cy

Run-off Controls
 Catch basins within 25 ft blocked? Portable Booms
 Filter Sock in Catch Basins Vacuums
 Other _____

Weather Issues - Describe _____

Comments caulk/concrete/soil removed and placed in double-lined
roll-off; paint chips/soil in drum Z900871 disposed

Site Representative: of in roll off 5411 (Z900911).

Michael Jupp - Geolacder Assoc.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11-12-09

Weather Clear 46°F Am / 60°F Pm

Start Time 0730 0730

End Time 1530

Contractors Onsite Glacier

Visitors Boeing: J. Parsons (intermittantly)

Plant 2 Area 2-60 slabs Specific Area Location general site clean-up
2-66, 2-65, 2-63, 2-62

Work Performed

Sawcutting - Linear ft of Joint(s) complete

Slurry/Water Controlled and Collected?
Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints
Method _____

Remaining Caulk Removal

- Sawcutting
- Scraping
- Other - Describe _____
- Barriers Required? - Describe _____

- Washing
- Grinding

Slurry/Water and Solids controlled and collected?
Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards _____

Daily Clean-up none today

Method cleaned and decaulked work areas
began equipment decont, decon water
placed in 55 gal. drum

Run-off Controls

- Catch basins within 25 ft blocked? Portable Booms
- Filter Sock in Catch Basins Vacuums
- Other none required.

Weather Issues - Describe _____

Comments Glacier used hand tools to remove loose caulk
chips/pieces from the slab surface at the western
side of 2-62 slab

Site Representative: Michael Lupini - Golder Assoc.
while walking the caulk removal areas to verify that the caulk had been removed from the planned areas, Golder identified three areas where the caulk had not been removed completely, will remove tomorrow.

DAILY QUALITY ASSURANCE FIELD SHEET

Boeing Plant 2
Removal of Caulk Containing > 25 ppm PCBs

Date 11-13-09

Weather cloudy Am showers 46°F Am

Start Time 0730

End Time 1100

Contractors Onsite Glacier

Visitors Boeing: none

Plant 2 Area 2-66

Specific Area Location 2-66 interior east middle area w. perimeter wall

Work Performed

Concrete Breaking
Sawcutting - Linear ft of Joint(s) 56 L.F. (56 L.F. JT)

Slurry/Water Controlled and Collected?

Method _____

Initial Caulk/Concrete Removal - Linear ft of Joints 56 LF

Method _____

Remaining Caulk Removal

Sawcutting Washing

Scraping Grinding

Other - Describe removal 2" min. of soil from below slab after caulk/concrete removal

Barriers Required? - Describe _____

Slurry/Water and Solids controlled and collected?

Method _____

New Caulk Installed (2-10 Area Only) - Linear ft _____

CDF Backfill (2-60s Area Only) - Linear ft / Cubic Yards 56 LF / 3 cy concrete

Daily Clean-up

Method clean and decon'd work areas

completed equipment decon.; decon water

placed in 55 gal drums

Run-off Controls

Catch basins within 25 ft blocked? Portable Booms

Filter Sock in Catch Basins Vacuums

Other No CBs within 25' of work areas

Weather Issues - Describe None

Comments caulk/concrete/soil removed and placed in double-lined roll-off. Glacier completed planned

Site Representative: caulk removal, decon of equipment and demobilized from site

Michael Juras - Golder Assoc.

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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APPENDIX C
FIELD NOTES

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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Field Notes

2-10 Area Caulk Removal

Summer/Fall 2010

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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2010 - CAULK REMOVAL



"When It Rains"

ALL-WEATHER

LEVEL

No. 310

013-1646-010.540.05

①

CAULK Removal
 013-1646-010.500.05
 Monday August 2, 2010

overcast 60%

0600 O/Site - review work plan

0700 met with Galacter, Penhall & Boemy
 for job H&S safety meeting and job
 overview

- Jennifer Parsons - Boemy
- Bryan Penhall
- ALAN Hall - Galacter
- Corey
Lawson

Walked site w/ Penhall & Galacter

- Disposed Drum labeling slugs
 labeled PCB & drum directly into 55 gal.
 drums, track drums with barcode
 provided by Jennifer Parsons
- 0830 Penhall began saw cut east
 of 2-15 bldg. 1st 15 feet cut it was
 apparent that the cut needed to be moved
 in toward joint

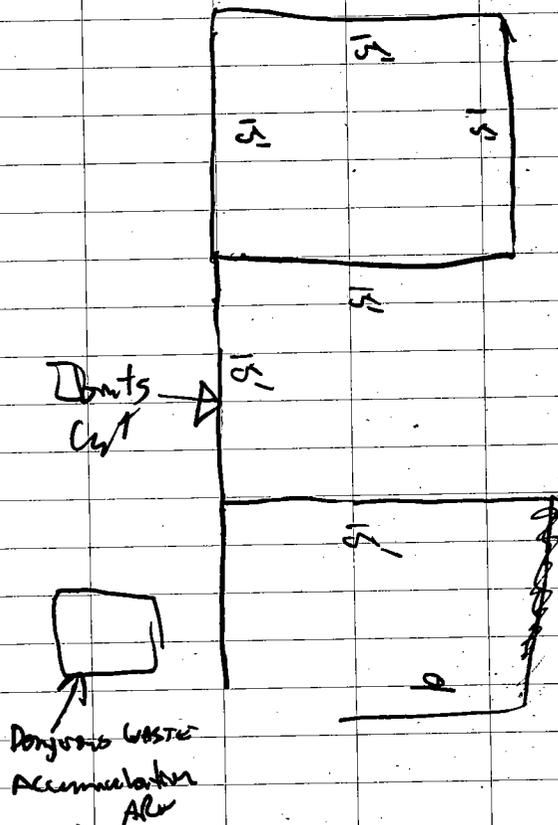
8/2/10
 JLL

②

CAULK Removal
 013-1646-010.500.05
 Monday Aug. 2, 2010



930



(3)

Caulk Removal 2-10/2-15
TUS 8/1/10
Ø13-1646-Ø18-5pp-Ø5 8/2/10

Penhall continued sawcut of joints
east of 2-15 Bldg with sawcut
varied from 3.25" to 1.75"

70°F Clear at noon

Penhall continued to sawcut joints
east of 2-15 Bldg.

✓ Section of joint cut today

1600 T. Sager off site

T.S. 8-2-10

(4)

Caulk Removal 7:58/11/10
Ø13-1646-Ø18-5pp-Ø5
Tuesday August 3, 2010 Overcast w/ fog

Ø2pp T. Sager onsite

Safety Briefing

- Boering - Jennifer Parsons

Discussed Boering Plant 2 Safety Procedures

Glacier PPE & Safe work practices

- No food or drink, including water
in excursion zone

Ø2pp Penhall began sawcut east of
Bldg 2-15.

Ø9pp Drum 21ØØ6Ø7, Shorn, Full
hogged in back of Book, & labeled

Started Drum 21ØØ6Ø6

Glacier chipping out sawcut concrete/caulk
using Chisels hammers & prybars

Penhall making 2 passes to cut to
4" depth

Better control today with cuts width
± 2" on average

8/3/10 *T.S.*

⑤

Caulk Remov

8/3/17

Ø13-1646-Ø10.55Ø.Ø5

overcast ~ 65°F

Ø1Ø Drum Z1ØØ6Ø6 Full of Slurry
Start Drum Z1ØØ6Ø5

Spoke to Alan & Thayne of Glacier about
4" minimum depth of concrete flange
removal. Measured areas where concrete
& caulk being removed using prybars
& chisel technique 4-3" depth
talked to Scott Scott Matthews
He will come to 2-15 area to observe
removal by ~ 11 AM. & talk to Glacier

Ø3Ø Glacier cordoned off west lane
of Boeing roadway with cones to
direct traffic around sawcutting

1100 Drum Z1ØØ6Ø5 Full/Slurry PCB's
Start Drum Z1ØØ6Ø4

12ØØ Penhall & Glacier Break for Lunch

8/3/17 JLS

⑥

3/3/17

CAULK REMOV

Ø13-1646-Ø10.55Ø.Ø5

Clear ~ 70°F

1235 Glacier & Penhall note
to South 2-10 AREA

Glacier Begin Sawcut

1 Penhall - begin Sawcut Joints east of
2-10 Bld

Glacier moved Drums

Z1ØØ6Ø5

Z1ØØ6Ø6

Z1ØØ6Ø7

to 249 Bldg for temp. Storage
Start Drum Z1ØØ6Ø3 (Slurry)

Penhall cut 44' of joint
+ approx 1' of one side of joint
in South 2-10 lot.

ISSUE - Glacier cannot manually
chip out concrete to min. 4"
in 2-15 AREA cut yesterday &
today. Alan will have Penhall re-cut.
Area 2-15 to 5-6"

1515 Clean-up 8/3/17 JLS

1600 T. Sager Golden all site

(7)

CAULK REMOVAL PL 2 Clear
013-1046-210-602-2-500-05
Wednesday, August 4, 2010 602

0600 T. Sager on site
Glacier on site
Safety Briefing led by Glacier
traffic -
PPE/PCB's
Heat stress/fatigue.

0630 To 2-41 Bldg to check e-mails

0730 Glacier beginning removal of
initial 44' of sawcut joint
east of 2-10 bldg.

Penhall recutting previously cut joints
to 5-6" depth to ensure minimum
4" break-out depth.

- Drum Z100603 Full of Shiny Penhall
- Short Drum Z100602

0915 Glacier attempting to chip out sawcut
joints with pneumatic concrete
concrete chopper
New technique working very well. 8/4/10
JLH

(8)

CAULK REMOVAL PL 2
013-1046-210-602-2-500-05
8/4/10
Partly Cloudy
70°F 80% RH

Glacier remaining large chips & chunks
of cut joint concrete. Debris placed in
5 gal. buckets in work area, then
the bucket contents are dumped into
yard Box.

0945 Shiny Drum Z100602 Full.

Penhall recut add 2" ~ 450' of joint
east of 2-15 bldg (total 895' reported by
Bryan w/ Penhall).

Discussed recess of caulk in High traffic
Areas. Golder could not find any
recess of caulk with the exception
of an email from Keith England
dated May 13, 2010 (Atlas supply rep.)
recommending recess of 3/8" for high
traffic areas.

Penhall back to 2-10 Area to cut
joint.

Drum Z100603 Full - Shiny
Short Z100602 8/4/10 JLH

9

CAULK REMOVAL Plant #2
013-1646-010 ~~640-82~~ ^{710 8/4/10} CLEAR 75°F
8/4/10 .500.05

1315 Discussed with Glacier & Jennifer Pearsall
w/Boeing about steel plating
through traffic areas east of 2-15 &
S. of 2-10 to accommodate 7 day
cure time for caulk.

1415 Slurry Drum 2100600 Full
Start Drum 2100599

1510 Penhall done for the day

- 2-10 251 ft of JOINT cut
44 ft of ~~JOINT~~ JOINT removal
- 2-15 429 ft Initial joint removal

1530 Glacier & Penhall off site

Colder finish ^{Field TS} maps etc.

1600 T. Sager Colder off site

8/4/10 LJS

10

CAULK REMOVAL Plant 2
013-1646-010 -500.05 Atty Clk 65°F
Thursday Aug 5, 2010

0600 T-Sager on site

Glacier led Health & Safety meeting
Start removal of caulk joints ~~East~~
2-15^{TS}

0700 Jennifer Pearsall on site Due to
depth of Key Joints Boeing has
requested that no more joints
be cut to 6" depth. Boeing wants
to decrease the chance of compromising
The strength of the Joint Key
to avoid settlement issues in the
future.

0700 Penhall on site & start
cutting joints ^{East} of 2-10
Bldg. ^{TS}

Slurry Drum 2100599 Full
Start Slurry Drum 2100598

Penhall done with ~~TS~~ ^{TS} Sautrol
270 move back to 2-15

8/5/10 LJS

(11)

CAULK Removal

013-1646⁰¹² 500.05
8/5/10 (cont)

Pen hall cutting east of auto motive
doors east of 2-15 Bldg

Issues: It was brought to Golder's
attention that there were several
areas east of the auto motive doors where
joints were not observed around the
Building Columns. Golder removed the
soil build up around the columns
to examine them.

No joints were observed at Columns

at L-14 photo 1

L-13

L-12

L-11

L-10

only metal column covers

Black tar observed at L-12 & L-14

Adjacent to metal column covers

Shumy Drum 2100598 Full

Shumy 2100597

8/5/10 J.S.

(12)

CAULK Removal

013-1646⁰¹² 500.05

Clear ~ 85°F

1305 Glacier moving Full yard Box
2100594 to 2-49 Bld

2 Box 2100593 to 2-49 Bld

1435 Shumy Drum 2100597 Full

1445 Cleanup Site Penhall off site

1500 Glacier done & off site

2-15 Sawcut
Clean joint ~ 47'

2-10 Sawcut
Cleaning - None

1510 Notes & mapping

1530 Golder off site.

8/5/10 J.S.

CAULK Removal PL 2

Ø13-1646-Ø1Ø.5ØØ.Ø5

(13)

Friday August 6, 2010 Overcast ~ 58°F

Ø61Ø

7-Sager on-site
Glacier on site just finish
daily Health & Safety briefings

~~Ø700~~ 7:25

Ø615 Glacier Decaning tools & equipment
to move to other job in North
Boeing Field. Glacier using Capsur
PCB Capone system

Ø700

Penhall on-site - to help Decan equipment

Decan water vacuumed into
Drum Z1ØØ596

Ø735

Penhall off site

Glacier continuing to prep joints
for primer & 1/2" minimum removal
contractor using pneumatic rock hammer
hammer hook, pry bars, vacuums to
remove excess concrete. S.D. walls
scraped scraped with spackling
knives.

prep for primer includes brushing &
rinsing with water and scrub brush.

8/6/10

11:28

CAULK Removal RLR

Ø13-1646-Ø1Ø.5ØØ.Ø5

(14)

Aug 6 2010 Overcast ~ 60°F

1015 Glacier Applying Primer to prepped
concrete joints on 2nd panel east of
Door E-10, Bld 2-15 and 1st panel east.

1020 Fred Wallace of Boeing stopped by.

Glacier using Primer 733 for
Sonolaste Sealants

1030 Scott Matthews (Glacier on site)

1100

Scott M. off site

1110

Start Solid Debris Yard Box

- Z1ØØ618 -

Glacier continued to prep & prime
joints between carwash

1350

Start Clean up

1400

Mix Sonolaste SL 2

8/6/10 JLD

(15)

CAULK REMOVAL PL2

Ø13-1646-Ø1Ø.5ØØ.Ø5

Partly Cloudy
~70°F

1415

Start application of Caulk
(sonoclastic SL-2).

Ø. 1.5 gal. containers used for
feet of Joint

1445 Clean up -

1500 Glacier off site.

1515 Galdor off site.

8/6/19
T.S.L.

(16)

CAULK REMOVAL PL2

Ø13-1646-Ø1Ø.5ØØ.Ø5

~60°F
overcast

Monday, August 9, 2019

Ø600 T. Sager onsite.

Glacier daily health & safety meeting
Glacier starting crew cleanup
of 2-15 Joint cuts & prep.

- 2nd crew to S. 2-1Ø area for initial
caulk & joint removal.

Ø700 Jennifer Parsons of Boeing onsite

Due to anticipated inclement
weather (rain) over the next day,
Glacier will not attempt to place
new caulk. Will only concentrate
on removal and joint prep.

Ø830 Started new cubic yard box
for debris at E. 2-15 area box labeled
w/ bar code Z100619

Ø900 Glacier continuing removal of sawcut
joints - Area 2-1Ø & cleanup &
prep of joints at 2-15 location
East & north of car wash bay

8/9/19 T.S.L.

CAULK Removal 2-10 PL2

(7)

8/9/18 013-1646-010.500.05

In N.

1345 Glacier covering cleand joints in 2-10 & NW corner with steel plates to allow traffic access to parcel pick up between columns L-18 & L-20.

1410 Glacier crew cleanup site for day

1430 Glacier off site

1450 Golder off site

8/9/18 J.S.

CAULK Removal PL2

(18)

013-1646-010.500.05 NSS of Cbly
Tuesday, August 18, 2018 AM

0605 T. Sayer on site
Glacier completed mending morning Health & Safety Briefing.

0630 Glacier crew to South Side of 2-10 Bldg. to continue initial caulk removal from previously cut sawcut joints. Tools used - Jack hammer, hand chisel & hammer, claw, pry bars, scrapers & vacuums large chunks removed by hand, all used to collect & remove debris.

0700 Jennifer Parsons at 2-10 Alor Roll-off Delivered and placed at east side of the South 2-10 exclusion zone. Jenndo requested that once the last cubic yard box already onsite, was full, to please begin placing all PPE/Solid debris into the roll off. Roll off labeled with DAR code # E 100020.

0900 Glacier continues to clean & chip out S. 2-10 Joints to the required 4" minimum depth below top of concrete

(19)

CAULK REMOVAL 2-10 P22
8/11/10

0900 Scott Matthees (Golden) on site to mark areas previously covered by Baker tanks; Under and around the South Park Bridge Between Areas 2-10 & 2-41.

1130 Glacier continued to chip high areas to 4" minimum in cut joints in 2-10 South area.

1350 Glacier crew cleaning up for day in 2-10 Area

1405 Crew cleaning up & covering tools with plastic for the day in E-275

1410 Glacier crew off site

1430 Golden off site

8/11/10 JLS

(20)

CAULK REMOVAL 2-10 AREA
Ø13-1646-Ø1Ø.5ØØ.Ø5 SCOTT MATTHEES
WED, AUG 11, 2010 FLYCDBY 55° AM

0600 MATTHEES ONSITE. GLACIER CREW MEETING (SAFETY & COORD)

0645 CREW OF 2 WORKING S OF 2-10 CHIPPING & CLEANING OUT JTS TO FINAL 4" DEPTH.

0845 CONTINUE CHIPPING & CLEANING OUT JTS TO ACHIEVE 4" DEPTH.

0915 EVACUATION DRILL - BLDG-210

0930 SAGER ONSITE, MATTHEES OFF.

1030 Continue chipping & cleaning out joints to 4" minimum depth

1100 - 1130 Glacier Lunch

1130 - Continue chipping & cleaning South of 2-10 Bldg.
Conversation related to Wayne Westman of Glacier by Golden

Spoke with Jennifer Parsons, of Boeing, she requested that Glacier make sure to clean up ALL bits of gravel & caulk removal debris and wet vacuum joints again - if necessary to keep site clean & tidy as possible.

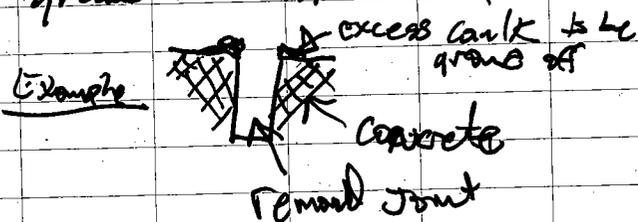
1200 Sunny w 70% of Light Breeze from the west
8/11/10 JLS

CAULK REMOVAL 2-10 Area

(21) Ø13-1646-Ø1Ø.5ØØ.Ø5 Bl/11/1Ø

121Ø Glacier Sweeping 2-1Ø Area and picking up all stray garbage per Jenner's Request earlier this morning.

131Ø Glacier complete initial to ^{TLS} ^{Ø14/1Ø} joint removal to 4' in 2-1Ø Area South of 2-1Ø Bldg. Joints need to be scrubbed & excess black caulk ground from top of corner



1315 Thayne W. - of Glacier on site

had crew wash & scrub ~ 259ft of joints S. of 2-1Ø Bldg.

1415 Crew clean up for the day

143Ø Glacier crew off site

1Ø55 Golder off site

CAULK REMOVAL 2-1Ø Area
 Ø13-1Ø46-Ø1Ø.5ØØ.Ø5 cloudy - 5ØØ-

(22)

Ø6ØØ T. Sanger on site
 Glacier pre shift Health & Safety meeting. Discussed use of respirators for Glacier crew using grinders

Ø73Ø Glacier begin grinding remaining caulk from top and edges of joints. Grinder operation wearing respirator & face shield. Grinder connected to vacuum 2ØØ Glacier laborer wetting down grinding area to reduce dust.

Ø83Ø Glacier continues to grind caulk from joints S of 2-1Ø Bldg Area 2-1Ø

Ø93Ø Glacier continues to grind caulk from joints S. of 2-1Ø Bld. Jct 2-1Ø

1Ø3Ø Continued grinding of excess caulk from joints South 2-1Ø. *MS*

1Ø5Ø Glacier Break for Lunch 8/12/Ø

113Ø Glacier resume grinding of excess caulk from joints in South 2-1Ø Area

(23)

CAULK REMOVAL 2-10 AREA
Ø13-1646-500 .Ø5
Thursday, 8/12/10 Clear 2750F

1200 Marked out areas of joints that need a second pass with the grinding crew.

1230 Glacier continuing to Grind 2-10 AREA JOINTS.

1250 Glacier re-grinding Areas marked by Gulder as needing additional caulk removal earlier today.

1330 Glacier continuing to grind 2-10 JOINTS.

1345 Discard Decon with Glacier crew reminded crew to walk the clean roasts after decontaminating boots when leaving exclusion area - do not walk back over cut joints to leave exclusion area.

1350 Sweep & reuse joints worked today cleaning - wrap tools in plastic decon

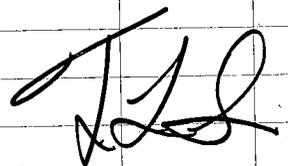
(24)

CAULK REMOVAL 2-10 AREA
Ø13-1646-500 .Ø5
Ø1211Ø Clear 2750F

1420 To 2-15 area search tools in plastic

1435 Glacier off site

1500 T. Sager off site

8/12/10 

(25)

CAULK REMOVAL A-2-10

013-1646-018.500.05

NOON
CLEAR

Friday, August 13, 2010

0600

T. Sager on site

Glacier - Health & Safety meeting
PPD & Deon of boots discussed.

0620

Glacier moving tools & equipment
to the east side of 2-15 Bldg to
concentrate efforts at that location
~ 50' still needs joint removal
to 4" minimum & wire prep for
primer

0730

Glacier track hammered ~ 75-80ft
of joint west of the 2-15 bldg

0800

Glacier washing & scrubbing
joints in preparation for primer Area 2-15

0830

Glacier continuing to wash, scrub &
ruse joints 2-15 area Started Dem
2100 (21) Concrete Slump
Glacier began application of caulk primer

8/13/10 J.S.

(26)

CAULK REMOVAL Area 2-10

013-1646-018.500.05
0113/10

Clear ~ 7:30
Breezy

1100

Glacier lunch

1135

Glacier back from lunch

1230

Perhall on site to prep area
South of 2-10 under the South Park
Ridge for sawcutting of joints

1330

Glacier placing backing rod improped
& primed joints at north end
2-15 area

1340

Glacier started placing caulk
North end of Bld 2-15 area

1445

Glacier continued placing caulk
North end of Bld 2-15 area

1540

Glacier placing ~ 50' of ~~new~~
caulk joints in NW corner of 2-15
area

1600

~ 249 ft of new caulk applied
Glacier cleaning up

1630

Glacier off site

1645

Glacier off T. Sager off site

8/13/10

J.S.

(27)

CAULK REMOVAL - 2-10 AREA

Ø13-1646-Ø1Ø, 5ØØ, Ø5

Clear 80°F

Monday, August 16, 2010

Ø6ØØ

T. Sager onsite

Glacier conducted Am Home & Safety meeting Hot weather expected

Ø7ØØ

Penall start cutting area under and adjacent to South park Bridge Slurry Drum Z1ØØ622 start.

Ø72Ø

Jennifer persue on site

Discussed plans to complete caulk applicator North of east of the car wash Bay area 2-15

Glacier scrubbing & cleaning parking area joints S. of 2-10 Bldg.

1ØØØ

Glacier installing primer & backer rods East South 2-10 area.

11ØØ

Glacier mixing caulk and placing second coat of caulk when caulk seeped through backer rods.

Yard box Z1ØØ623 started filled with emptied New caulk cans & New caulk debris.

8/16/10

(28)

CAULK REMOVAL 2-10 AREA

Ø13-1646-Ø1Ø. 5ØØ. Ø5

Clear 80°F

2ØØ

8/16/10

Slurry drum Z1ØØ623 complete

Glacier continuing Backer rod installation 2-10 Bld (South side)

1245

Clean up South 2-10 Bld area spoke to Thayne - Caulk mixture that he picked up today was not the self leveling mix it was made for sloped areas & grade surfaces - does not smooth well with tools. Thayne does not want to place more of non-self leveling caulk. Thayne plans to cut remaining areas, but will not remove caulk until self leveling caulk is onsite (4 to 5 days)

1315

Glacier buttoning up S. 2-10 Area

13Ø' of Joints primed

130' Backer rod installed

8/16/10
JLL

(29)

Caulk Removal 2-15 above
Ø13-1646-Ø1Ø.5ØØ.Ø5 Clear
8/16/1Ø ~852Ø

1330 Glacier placing caulk in joint
at Bays L-18 to L-21
East of 2-15 ²⁶ Bldg.

Penhall cut ~ 1ft at joint
in area under and adjacent to the
South Park Bridge

1540 Goldard #4
8/16/1Ø
K.S.

(30)

Caulk Removal 2-15 above
Ø13-1646-Ø1Ø.5ØØ.Ø5 ~600Ø
Tuesday, August 17, 2ØØØ Clear

Ø6ØØ T-Sager on site
Glacier - Health & Safety briefing

Ø7ØØ Penhall setting up to cut under
the bridge traffic control set up
under the bridge to direct traffic
around saw cutting in road way

Start Shiny Drum Z1ØØ625

Ø8ØØ Penhall continues to saw at joint
under the South Park Bridge.

Ø915 Z1ØØ625 Shiny drum full

Ø920 Start Shiny drum Z1ØØ626

Ø940 Penhall cut ~ 1ft and
left only one 15 ft length due to
a car parked in stall adjacent to process
cutting area will come off later today
after pickup moves.

8/17/1Ø K.S.

(31)

CAULK Removal Area 2-10

Ø13-1646-Ø1Ø.5ØØ.Ø5

8/17/18

Clear 70°F

75°F

Ø950

Penhall moved to East 2-15
Bldg Area to cut remaining
joints in the area

11ØØ

Lunch

113Ø

Resume sawing at joints E. of
2-15 Bldg.

Penhall used both hand electric
saw & smaller push saw to saw
against building.

1300

Continue sawing adjacent to Bld.
2-15 (east side).

1400

Glacier & Penhall clean-up site
for the day

1425

Goodbye at site

8/17/2018

(32)

CAULK Removal Area 2-1Ø

Ø13-1646-Ø1Ø.5ØØ.Ø5

Wednesday, August 18, 2018

Clear

76°F

Ø6ØØ

T. Sager - on site
Glacier Health & safety briefing
Look out for traffic wear ear protection
Decon in and out of exclusion zone
esp. feet.

Ø63Ø

Penhall setting up to cut
remaining 15' of joint under
South Park Bridge

Ø7Ø4

Penhall start cutting the
remaining 15' of joint below
The South Park Bridge south
of 2-1Ø Bldg & north of 241 Bldg.

Start Shury dem 21ØØ627

Ø73Ø

Cutting complete Penhall &
Glacier deconing cutting equipment
US Army Capsure excise decon water
vacuumed into decon barrel
21ØØ sq b started on Aug 6, 2018

8/18/18
T.S.

CAULK REMOVAL AREA 2-10 ~ 650F

(32)

Ø13-1646-Ø1Ø.5ØØ.Ø5
8/18/1Ø

Cloudy

Start New Drum for solid waste
Earth Caps (Capsule contained
plastic used during decon)

- Will hold drum until further
direction from Jennifer person
of Boeing.

#Z1ØØ62Ø

~~10ØØ~~ Box Z1ØØ623 containing non hazardous
empty caulk cans & coloring emptied into
regular trash - contained less than 3%
material residue

1Ø37 Glacier breaking out joint adjacent
to Bldg 2-15 North & South of Parts service
entrance door (E-11)

11ØØ Glacier knock.

113Ø Resume Breakout of concrete
joint adjacent to Bldg 2-15, door
E-11

8/18/1Ø *[Signature]*

CAULK REMOVAL AREA 2-10 ~ 5670F

(33)

Ø13-1646-Ø1.5ØØ.Ø5

1345 Glacier (one man crew) broke out
~ 9' of joint concrete & caulk
along adjacent to Building 2-15 in the
area of Bldg door E-11.

glacier will continue with concrete
break out & caulk removal in the
area tomorrow 8/19/1Ø

14ØØ Glacier securing all three
areas S. Park Bridge, S. 2-1ØBldg.
& E-2-15 bldg. Tools covered
with plastic debris collector
into yard box.
#Z1ØØ629

1450 T. Sager of site.

8/18/1Ø *[Signature]*

(34)

CAULK Removal 2-10 AC&B Clark
#13-1646-#10.500.05 #5500
Thursday, August 19, 2010

0635 T. Sager on site
Glacier had started shift with
a Health & Safety briefing at 0600

Glacier crew of 2 men setting up to
break out joint with jack hammer adjacent
to Bldg 2-15 North of Door E-9

0700 Glacier breaking out concrete &
caulk joint mentioned above

0800 Glacier continuing to break out
concrete at north end of Door E-9
2-15 bldg

0830 due to extensive re-bar in concrete
Glacier stopped concrete break out
after 4" minimum was achieved
up to ~4" out from caulk joint.

Scott Matthews on site to look at
JOINT shoulders and possible
spalling. Only one ^{#15} rebar area
had minimally spalled in front of the
Steam room Bldg 2-15

8/19/10

SS

(35)

CAULK Removal 2-10 AC&B Clark
#13-1646-#10.500.05 #6500

1000 Glacier still working on
5' long joint adjacent to Bldg.
2-15 Door E-9.

1100 Glacier lunch

1130 - Glacier had removed caulk at
Door E-9 2-15

- Glacier attempting to scrape residual
caulk from building foundation using
wood chisels. Chisels not effective

Glacier used steel wheel wire
wheel brush attached to power grinder
to remove residual caulk.

1250 Glacier rinsing & vacuuming
Door E-9 Bldg 2-15 joint. Also rinsed
water vacuumed up joint left
to air dry.

Moved to Bldg 2-15 between Door
E-12 & E-10. Scaped removed residual
caulk to 4" below existing grade
Scrapped & scrubbed Bldg 2-15 foundation
all but 1' section cleaned & scrubbed.

8/19/10
SS

(36)

CAULK Removal 2-10
#13-1646-#18.500.#5 n709= Partly Chalky

- 1430 Glacier cleanup
- 1450 Glacier off site
- 1510 T-Sager-Golder OFF SITE
8/19/10

(37)

CAULK Removal 2-10 Area
#131646-#18.500.#5 Class 5092
Friday, August 20, 2010

- 605 T-Sager-Golder onsite
Health & Safety briefing w/ACT U.
of Glacier - PPE
Traffic etc.
- 700 Glacier clipped the remains PCB stand
concrete from the Sanitation door
at E-12
- 730 Glacier laborer spilled ~ 1/2 gallon
of Capsure on to concrete panel
East of the "Dangerous Waste
Accumulation Area" Conec
in front of door E-10 within excusation
Zone set up for the day.
- Glacier began containment of Sp. 17
using a shop vacuum to remove
spilled material. Golder returned bags
from Cheml at Drum yard
Spill was rinsed & vacuumed water
& spilled Capsure deposited into
Decon to quads drum.

8/19/10

(38)

CAULK Removal 2-10 Area
D13-1646-D18. 500.05
Friday, August 20, 2010

Cloudy
N55-60°

0830 Glacier removing and joint material
east of Door E-12, Bldg ~~2-15~~ 2-15
using JACK hammer solid debris removed
by hand AND VACUUM.

0930 Glacier continuing to remove joints
EAST of 2-15 Bldg.

1100 Glacier Break for lunch

1130 Glacier resume joint removal
EAST of 2-15 Bldg.

1215 Glacier Break out ~ 39 ft of material
Joint removal EAST of Doors E-12 &
E-11.

1245 Staff clean-up
plated joints in front of Door E-12
North of Auto Shop Bldg 2-15

Moved all tools from 2-15 & S. 2-10
AREA's stored under South Park Bldg
Covered with plastic. 8/20/10

(39)

CAULK Removal 2-10 Area
D13-1646-D18. 500 Clear up
.05

8/20/10

1400 Drums & yard box moved to
2-10th 2-49 Bldg. for storage
over the weekend.

1500 To Trailer for paper work
& time sheet

1600 off site 8/20/10 = LLL

(40)

CAULK REMOVAL 2-10 AREA

Ø13-1046-Ø1Ø.5ØØ.Ø5

Monday, August 23, 2Ø1Ø

Clear
~ 55°F

Ø6ØØ Glacier onsite
Ø6ØØ T. Sayer Golder onsite
Ø6ØØ Glacier Superintendent Thayne
Ø6ØØ Wastman not on site today

- Conducted Health & Safety briefing
with the two Glacier employees
Art & Noelle.

PPE - wear tyvec & safety glasses
boot & gloves when in exclusion
area. Clean boot when leaving exclusion
area.

- Be aware of traffic.

Ø7ØØ Glacier removing initial volume
of caulk & concrete -
Ø7ØØ Jackhammer, hand chisel & rams
& prybars. Bulk debris removed
by hand.
Ø7ØØ Second pass with Jackhammer
has made to ensure 4" minimum
removal of concrete below the
top surface of the existing concrete
Joint surfaces

(41)

CAULK REMOVAL 2-10 AREA

Ø13-1046-Ø1Ø.5ØØ.Ø5

8/23/2Ø1Ø

Clear
~ 70°F

Ø8ØØ Continue removal of caulk joints
under South Park Bridge

Ø8ØØ Glacier continued removal of
caulk joints under South Park
Bridge.

Ø33Ø Glacier continued removal of
caulk joints under S. Park bridge

Ø41Ø Glacier began clean-up for the
day.

~ 236 LF of JOINT & CAULK
removed today under the South
Park Bridge

Ø44Ø Glacier clear off site

Ø45Ø T. Sayer - Golder off site

(42)

CAULK REMOVAL 2-10 AREA
#13-1046-DIP. 500 .85
Tuesday, August 24, 2010

Clear
#5597

0600 T. Sayer onsite

- Glacier Health & Safety briefing

- 0700 Glacier cleaning removed
joints using scrapers, scrubbers
water & vacuums

~ 225' cleaned & prepped for
primer at location under the
South Fork Bridge

0820 Glacier moved now to

South 2-10 Area to prime &
install backer rods in preparation
for caulk installation

0835 Received call from Jennifer Parsons
she requested that Golder begin
sampling of slurry drums
sample suites should include
solid phase - pH

PCB's

RCRA Metals & TCLP

LHW

Total metals

pH

PCB's

8/24/10

JLS

(43)

CAULK REMOVAL 2-10 ALSO
#13-1046-DIP. 500 .85 Clear #709
8/24/10

0825 2-10 (South Side) Joints prepped
primer & backer installed

1100 - Glacier had installed ~ 380ft of Backer
rod in all of the replacement joints
in the South 2-10 Bus parking area
Will pour new caulk after lunch.

1130 - Glacier mixing Sonolastic
SL 2 Activator & color -

0135 Glacier began applying caulk
to South 2-10 parking area joints

1230 Glacier continuing to pour new
caulk into South 2-10 Bus parking
joints

- Scott Matthews - Golder onsite

1255 Scott M to meeting off site

Glacier continuing to pour new
caulk S. 2-10 Bus parking Area

8/24/10 JLS

(44)

CAULK REMOVAL 2-10 AREA
813-1646-D18.500.05 Clear
8/24/18 ~700F

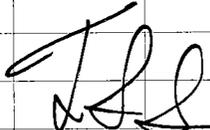
1338 New caulk installed in all joints
in S. 2-18 Bus parking area. ~388F

- Glacier plated west joints
located in west access drive
to South 2-18 Bldg. door.

1345 Cleanup

1420 Glacier off site

1440 T. Sager - Golder off site

8/24/18 

(45)

CAULK REMOVAL 2-10 AREA
813-1646-D18.500.05 Clear ~600F
Wednesday, August 25, 2018

0610

T. Sager on site

- Glacier conducting daily health &
Safety briefing

0638 Glacier setting up to clean
joints in 2-15 AREA East of the
hazardous waste accumulation box
& steam cleaning waste tanks.

0748 Joints east of the Steam Cleaner
waste water tank (Area 2-15) need
additional breakout of concrete to
achieve 4" minimum joint removal
depth.

0855 Glacier completed JACKHAMMER^{TS}
of joints east of 2-15 door E-13 of
Steam Cleaner waste water tank.

0948 Continued clean-out scrubbing
& rinsing of joints East of Bld 2-15
Door E-12 of the Steam Cleaner waste
water tank.

8/25/18

(46)

CAULK REMOVAL AREA 2-15
013-1646-010.500.05
8/25/10

1000 Continued cleaning of joints
EAST of 2-15 Bldg Steam Cleaner waste
tank.

1100 Lunch

1130 move to under South Park Bridge
to prime joints & begin install
of backer rods.

1200 Glacier employee walked off
the job only two laborers working
under South Park Bridge

1300 ~ 194' of primer applied to
joints & 186' of Backer
rod installed.

1330 TO 2-15 Bldg

Glacier installed ~ 38' of
Backer rod east of Room
E-12 and the Steam Cleaner waste
water tank without applying
Primer. 1st.

(47)

013-1646-010.500.05
8/25/10 Clear 75%

Glacier was out of primer.
Caulk was also applied over un-
primed backing rod

1445 last of New Caulk for the day
applied

1535 Glacier off site

Golden to trailer paperwork

1630 off SITE

8/25/10

Field Notes

2-60s Area Caulk Removal

Fall 2009

IM Completion Report
Removal of PCB-Containing Caulk in Concrete Pavements

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①

Crack Removal 2-605
013-1646.900.500.04

10/20/09
MSL

0700

Arrive on site. Meet
Jennifer Parsons & Joe [Booring]
Flaherty @ 2-62 slab.

D. Parsons

J. Flaherty

M. Lumphkin

Contractor Glacier Env. with
mobiliz. @ approx. 0815.

Discussed paint removal, inventory
roll offs, sampling

mostly cloudy
55°F, calm

Paint chips will be sampled
for TCLP metals & PCBs for
waste profile.

Roll offs to be filled only
~ 1/2 due to weight.
Four currently on site.

Contractor to bring current
H&S certificates, 40hr and
lead awareness.

Prisms to be used from those
in the 2-49 Bldg.

②

10/20/09

Crack Removal 2-605

MSL

013-1646.900.500.04

0840

Meet Glacier & Booring
reps @ 2-62

introductions

H&S Plan Review & meeting

Open call has been
notified.

APS will be on site
next day or two.

Glacier will take the
next few hours to
setup ~~the~~ equipment
and exclusion zones.

0930

resume work on 2-65 slab

1200

Glacier has set-up
exclusion zones, decan
station and equipment.

2 scrapers

will begin paint removal
using scrapers and

3

Callk removal 260s
013-1646.900.500.04

10-20-09
MSL

hand held scabblers (pneumatic)
Two workers working on
North wall at the 262
slab. Tops and inside
at curb wall.

mostly cloudy
55°F
calm

The scab scabblers have a
dust collection vacuum setup
to capture chips & dust.

2H. Dirt and debris within a
foot of the wall was removed
to and placed in a drum
before paint removal began.

1300 APS arrived on site,
currently locating utilities
@ 2-62 slab.

APS departed at approx
1345.

1415 Glacier stopped work for the
day. Began equipment
pickup.

1430 Done for the day.

4

10/20/09
MSL

Callk Removal 260s
013-1646.900.500.04

0135

Arrive onsite

Alan

Tool box safety meeting

Clayton

Glacier

J. Parsons

M. Lymphin

Glacier will continue
removing paint from stem
walls.

cloudy

light gas breeze
11. showers, soft

Note: Stem walls are not
continuous in work areas.

0815 Glacier setting up
equipment and exclusion
zones. Also PPE

0826

Begin removing paint
two scabblers.

1000

Glacier has finished
removing paint from
stem wall @ N. end of
2-62 slab requiring removal.
Start moving and setting up
at South end of west wall

5

Carlk Removal
013-1646-009.500.09

10/21/09
MS

DRUM LOG

	START	END	REMARKS
✓ Z900871	10/20/09	10/23	Paint chips dirt, carlk disposed w/11 to Roll off fill

Slurry Drums Z900911

	START	END	REMARKS
✓ Z900872	10/27/09	10/27	(3) 11/12
X Z900874	10/27/09	10/27	(9) 11/12
X Z900875	10/27/09	10/27	(5) 11/12
✓ Z900876	10/27/09	10/27	11/12
X Z900880	10/27	10/27	882 11/12
✓ Z900881	10/27	10-27	damaged, unlinked
262/266 ✓ Z900882	11/12 10-27	10-28 11/12	disarded
✓ Z900883	11/12 10-27	10-28	into Roll off

Roll offs year 2-62

Roll off #	START	END	REMARKS
5770	Z900873 10-28-09	10-28-09	10-30-09
5406	Z900874 10/27/09	10-28-09	10-30-09
5841	Z900878 10-28-09	10-29-09	10-30-09
5964	Z900879 10-29-09	10-29-09	11-6-09
5894 10/29	Z900889 10-29	10-30-09	11-6-09
5605 10/29	Z900890 10/30	10/30	11-6-09
5559 10/30	Z900891 10/30	10/30 11/26/09	2
5752 10/30	Z900892		

10/21/09
MSL

Carlk Removal 2-60s
013-1646-009.500.09

6

1025 APS returns to the

Site to continue
Onsite Utility locate

1200 Gelacur continuing to
remove paint along
sections of stem wall
on west side of 2-62.
Slabs.

1500 Gelacur completed sections
of paint removal along
west stem wall of 2-62.
Currently remaining
paint along required
sections of the south
wall.

Cloudy, calm
55°F

1530 Gelacur stops scraping.
Begin picking up

1600 Done for the day

Note: APS completed locates
on 2-63, 2-65 and 2-66 slabs
Done with locates.

(7)

CAULK Removal 2-605

10/21/09

013-1646.009, 500, 04

MSL

10/21/09

CAULK Removal 2-605

013-1646.009, 500, 04

(8)

DATE	Ln	DESCRIPTION	PROGRESS
10/20	10 55'	N. half North end	inside 262
10/21	10 11'	E. end North wall	inside 262
10/21	6" 3'	W. end North wall	inside 262
10/21	6" 12'	N. End W. wall	outside 262
10/21	18" 26'	Middle W. wall	inside 262
10/21	6" 30'	stick on S end wall	inside "
10/21	6" 13.5'	"	" "
10/21	6" 12.0'	"	" "
10/21	6" 30'	"	" "
10/21	18" 19'	South end W. wall	" "
10/21	18" 10'	S. end W. wall	" "
10/21	10" 6'	W. end S. wall	" "
10/21	10" 4'	W. end S. wall	" "
10/22	10" 28'	West end S. wall	" "
10/22	10" 21'	East end S. wall	" "
10/22	10" 4'	East end S. wall	" "
10/22	18" 2'	Mid. West wall	
10/22	6" 2'	mid South EAST wall	265

Floors

- 22' x 1'
- 8' x 1'
- 1' x 1'
- 26' x 1'
- 6' x 1'
- 7' x 1'

S. End East wall	inside	
"	"	262
"	"	"
	outside	"
North end west side	interior	265

Floors

2-65

10/22	9' x 1'	middle East side interior	East side
	7' x 1'	"	
	4' x 1'	"	
	11' x 1'	"	
	9' x 1'	"	
	1' x 1'	"	
	7' x 1'	"	West

(11)

Caulk Removal 2-60s

013.1646.009.500.04

10/23/09
MSL

0730 Arrive on site

0750 Talked to A. Hall, Gelester
will only store equipment
for the weekend today

Impkin

Finished paint removal
yesterday and saw
cutting is scheduled to
begin Monday morning.
Site conditions are
too wet to mark out
Saw cut lines.

Cloudy, H. rain
50°F

10-26-09

MSL

Caulk Removal 2-60s

013-1646.009.500.04

(12)

* 0705 Arrive on site
Prepare for the day

0730 Meet w Gelester

Pennhall on site for
Saw cutting

Rain, 48°F
Cloudy; calm

Mini excavator
mobilized to site

H&S meeting w/
Penn hall

Drum sampling

slurry 4s 3
next 20 30% random

24 beyond 10% random

Expedited turn

3-5 day

PLB, Tap metal
PH

Pennhall, Parsons
Parsons
Clay
Blum

(13)

Cork Removal 2-605

013-1646.009.500.04

10/26/09

MSL

Hold

Total Metals, PCBs
20X TELP MTEA
→

Dum log

No work today because
of rain and very
wet site conditions

0900

Done for ~~the~~ the
day.

10/27/09

MSL

Cork Removal 2-605

013-1646.009.500.04

(14)

0720

arrive on site

0735

Daily Safety Meeting

Begin setting up
concrete saws, vacuum
and other equipment

proth
440P
Clemby
Calm

0810 Have laid out west
stem wall cut around
stick out.

Arms
Arms
Fidelity

0840 Begin saw cutting
stem wall south middle
2-62 progressively south

Glen
Alan
Dunk
Clayton
TUD

concrete shown stays
with $\approx 1'$ of cut.

proth
Grain
Arms

1010 continuing saw cutting
and laying out cut lines

I have examined joint

(15)

Cork Removal 2-605

013-1646.009.500.04

10/27/09

MSL

aka along the southern
half of east edge
of 2-62 in area shown
as dashed on drawings.
this joint was partially
covered with ecology
blocks and the entire
joint was not examined
during initial mapping.
The majority of this
line in the dashed area
was type 1A material.
Remarked area to be
saw cut and removed
and notified Glacker's
Superintendent.

NOTE: The saw cut lines
are 14" out from stem wall &
14" across interior cuts
to assure minimum distances
are maintained.

standing water was removed from
saw cut areas before cutting. Slurry
was vacuumed (MA) from surface
after cutting. Vacuumat

10/27/09

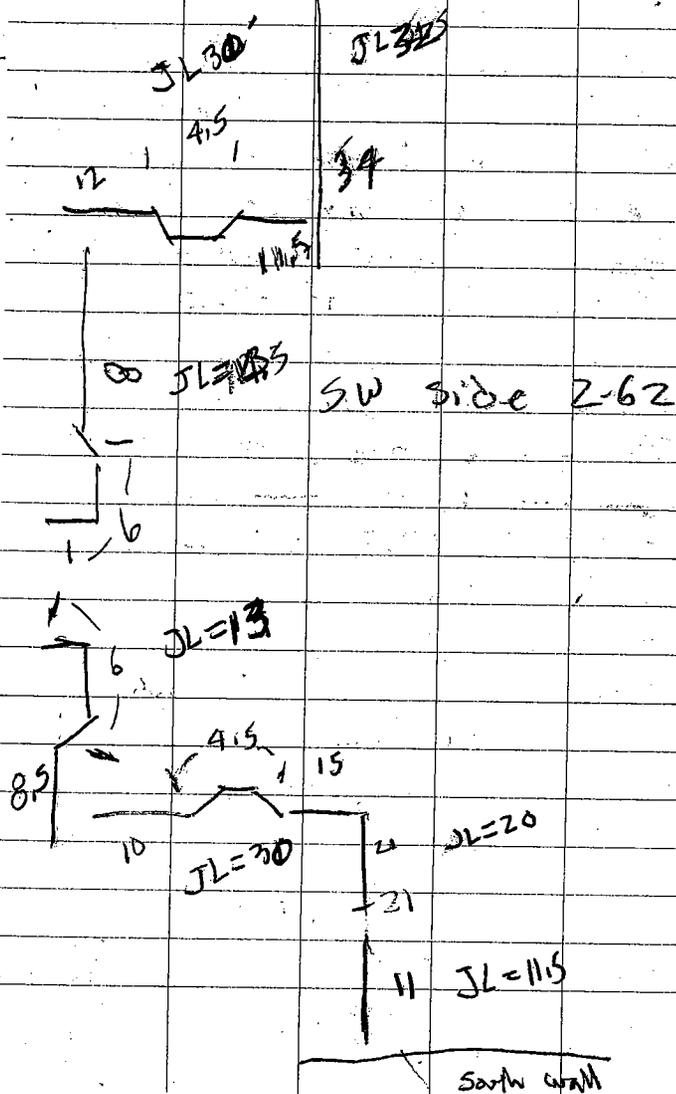
MSL

Cork Removal 2-605

013-1646.009, 500.04

(16)

Saw cut measurements



(17)

Caulk Removal 2-605

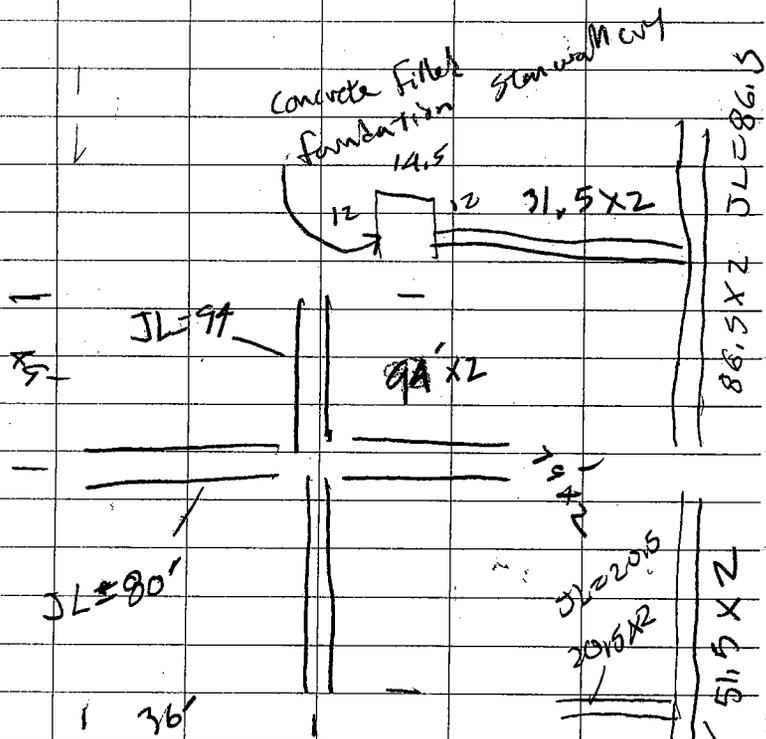
013-1646, 009, 500, 04

10/27/09

MSL

Saw cut measurements

South interior 262



Note: Saw cuts were made to avoid crossing joints.

JL = 51.5
= JL

10/27/09

MSL

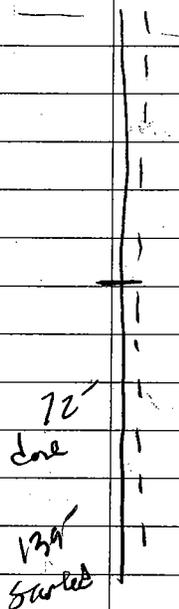
Caulk Removal 2-605

013-1646, 009, 500, 04

(18)

2-62

North end interior



(19)

Caulk Removal 2-605

10/27-09

013-1646.009.500.04

MSL

1130

No catch basins within 25' of work areas or were separated from work areas by stem walls or other barriers to surface flow.

1210

Two Saws on site, one saw had mechanical problem @ about 1100. Mechanic's arrive on site at about 1145 to repair.

partly sunny calm day
5:00 @ 10:00

After laying out saw cuts at north end of 2-62 slabs

1215 Both saws back in operation.

1500

Saw cutting done for the day continued throughout the day as did vacuuming & drumming.

Measured saw cut lengths.

10/27/09

Caulk Removal 2-605

MSL

013-1646.009.500.04

(20)

Daily Saw Cutting Total
@ Al Denmark

10/27

987*

1010

2-62

10/28

862*

2-62

*EXCLUDES CROSS CUTS

10-28-09
5AM

(23)

10-28-09

SLURRY DRUMS

No	START	FULL
1 Z900884	10-28-09	10-28
1 Z900885	10-28-09	10-28
1 Z900886	10-28-09	10-28

1345 SAWCUTTERS LEFT SITE FOR DAY.

(862) LF SAWCUT TODAY

- GLACIER MOVED TO S PORTION OF 2-62 TO BEGIN ADD'L REMOVAL REMOVAL TODAY - CONCRETE/CAULK

$142 + 20 + 44 + 10 + 138 + 12 + 19 + 30 +$

$13 + 13 + 30 = 651 LF$ (411 LF)

1600 CDF ARRIVED. BACKFILLED

REMOVAL SLOTS, 8 YD³ CDF

$82 + 150 + 12 = 244 LF$

1715 DONE FOR DAY - COVERED OPEN TRENCHES W/ PLASTIC & SANDBAGS IN CASE OF RAIN. MAINTENANCE ON EXCLUSION ZONE BARRICADES.

10-29-09
5AM

(24)

425-328-7388 DAVE (GLACIER)

0730 ONSITE, SHOWERS, 43°

0800 SAFETY MEETING

HOUSEKEEPING

BOEING "911" = 206-655-2222

0830 RESUME REMOVAL OF CAULK/CONC.

ON W PERIM, CENTRAL PORTION

(32') OF 2-62 SLAB. NO SAWCUTTING

TODAY - FINISHED 2-62 SLAB

YESTERDAY

0900 MOVED TO E/W SEAM + FOOTING (32' + 11' + 11' = 65') IN E. CENTRAL PORTION OF SLAB

0930 MOVED TO NEXT E/W SEAM TO SOUTH.

1045 DRUM - TRENCH WATER

NO START FULL

Z900887 10-29

VACUUMED PONDING WATER

1055 CREW WENT TO LUNCH WHILE WAITING FOR CDF, CAFE CLOSED.

1105 CDF ARRIVED 8 YD³

PLACED CDF IN S. HALF OF SLAB

1150 DONE W/ CDF

CLEAN-UP

1200 CREW WENT TO LUNCH.

1330 DECON SAWCUT MACHINE

(27)

Caulk Removal 2-605
013-1646.009, 500.04

18/30/09
MSL

0700

Arrive on site

0730

Daily Safety Briefing

Tito from Glacier strained his back yesterday from repetitive hand chiseling, not on site

Two additional roll-offs received late yesterday or earlier this morning 5569 and 5752. Placed on 262 slab.

0800

I walked the slab to observe progress over the last two days. Review notes.

Discussed today's plan of the day w A. Hall - Glacier. Will continue removing caulk/concrete at the north end, ~~and~~

cloudy, SW wind
56°F

Glacier
Alan
Dore
Clay

Oring
J. Flaherty
Thompson

Golden
Lundgren

(28)

18/30/09
MSL

Caulk Removal 2-605
013-1646.009, 500.04

CPF has been ordered for 1000 and possibly 1400 today.

0840

Two additional roll-offs delivered. Stayed at the 2-66 slab 5771 & 5948

0850

Two more roll-offs delivered to 2-65 slab 5333 & 5626

0900

Glacier preparing for CPF along stem wall at north end and north half of the west wall. Concrete removed by mini-excavator placed in loader bucket which is used to dump in roll off.

most of caulk is ~~easy~~ easily easier removed

29

CanK Removal 2-605
013-1646-009, 500, 04
10/3/09
MSL

Drum Log 2-66

		Start	End	
✓✓	Z900702	11/2/09	11/3/09	
✓✓	Z900703	11/3/09	11/3/09	
✓✓	Z900704	11/3/09	11/2/09	
✓✓	Z900705	11/3/09	11/3/09	2-66/265
✓✓	Z900706	11/3/09	11/3/09	

30

CanK Removal 2-605
013-1646-009, 500, 04
10/3/09
MSL

Drum Log 2-65

Z900708	11/3	11/3	✓✓	Slurry
Z900906	11/3	11/3	✓✓	Slurry
Z900907	11/3	11/3	✓✓	Slurry

Drums 2-63

✓ Z900707	11/3/09	11/3/09	Slurry
✓ Z900912	11/11/09		Trench water
✓ Z900913	11/12	11/12	Decon water

Roll offs

	delivered	Begin	End	
5771	Z900893	10/30	used	Sur 2-65
5418	Z900894	10/30	start	End
5333	Z900895	11/5	11/5	265
5621	Z900896	11/5	11/5	265

Roll offs

	delivered	Begin	End	
5333	Z900895	10/30	2-66	used for
5621	Z900896	10/30	2-66	2-66 Slab
5998	Z900894	11/5	11/5	266, 265
5771	Z900893	11/5	11/6	266/263, 265, 263
5429	Z900910	11/6	11/10	11/10, 262, 266
5911	Z900911	11/6	11/10	266, 265
5424	Z900908	11/6	11/9	263, 266
5412	Z900909	11/6	11/9	266, 263

(31)

Caulk Removal 2-60s
013-1646.009, 500, 04
10/30/09
MSL

in large insect boards with
the concrete. Small areas
adhered to the wall
removed with hand scraper

0925 note CDF truck arrives

1030 CDF begin pouring

Note: a minimum of 2" of
subgrade soil below slab
bottom residual pieces of
caulk removed by hand
shovel. Dispose in roll-off.

294696 10cy CDF

1135 Begin removing interior joint
on the end

Note: Roll off 5894 fill
begin using 5605

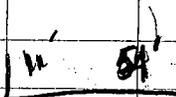
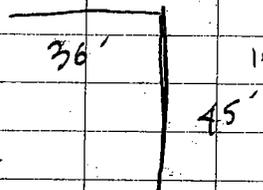
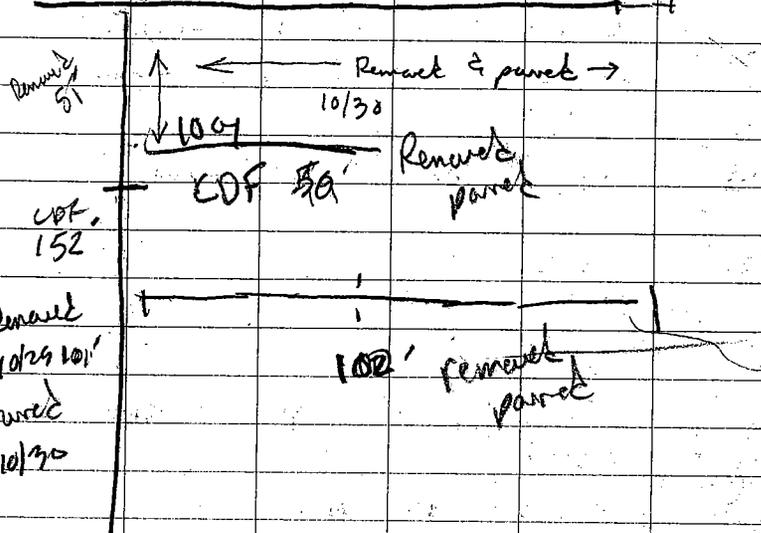
(32)

10/30/09 Caulk Removal 2-60s
MSL 013-1646.009, 500, 04

2-62 caulk removal

103

not completed



Daily total 262

452 LF
553 LF
Total
Total

caulk removed
gross 20cy

33

Crack Removal 2-60s

013-1646.009.500.04

10/20/09

MSL

1425

Glacier marking final preparations for another CDF pour on ~~joint~~ interior joints at the north end and exterior joints ~~at the~~ along the south perimeter wall west end

fly cloudy
62°F

1438

Begin pouring

294818

Mix 0309

1510

Finished pouring

Complete starting/cleaning equipment.

prepare daily progress form.

1600

End shift.

34

11/2/09

Crack Removal 2-60s

013-1646.009.500.04

MSL

0715

Arrive on site

0730

Daily Safety Briefing.

mostly cloudy
calm dry spot

POD; will begin saw cutting at 2-66 slab. The slab has been completely cleared of stored surplus. will saw cut entire slab.

0845

Pennhall returned to the site. currently setting up @ 2-66. Glacier laying out saw cuts.

Glacier
Aron
Dove
Clay
Tito

Pennhall will begin interior cuts.

Pennhall
Brian
Craig

0905

Begin saw cutting.

Boeing
Parsons
Glacier
Lumpkin

35

Caulk Removal 2-605
013-1646-009.500.04

11/2/09
MSL

Saw Cut 2-66

15
11/3/09

8

7

20

97

40

10

8

95

15

40.5

40.5

15

20

36'

51

21

51

51

97

5

56

97

5

56

20

10

29

21

7

10

35

MSL

35

Total length saw cut
2-66 11/3/09 1272'

36

11/2/09 Caulk Removal 2-605
MSL 013-1646-009.500.04

1300

Penhall continuing to
saw cut 2-66 slab.
Glacier continuing to
lay out saw cut lines,
vacuum & wash slurry
up after cutting is
complete. Slurry vacuum
directly into 55 gal drums.

Cludy, Vereegy
510 F @ 1400

1415

Glacier has been
preparing 2-63 slab for
saw cutting. Remaining
soil and ceiling blocks
fram along joint.

Note: I was informed
this morning that Boeing
has authorized backfilling
the joints in the 2-66
and 2-65 slabs with
concrete instead of CRF.

1500

~~While setting up to~~

(37)

2-60 Slabs Cowlk Removal
013-1646.009,500.04

11/27/09

1440

Penhall is nearing completion of saw cutting on the 2-66 slabs.

1500

near miss

while setting up to make the last 10' cut on the 2-66 slab the anchor on ~~the~~ one of the saws broke and the wheel came off and rolled at high speed away from the saw ($\approx 24"$ ϕ blade), the saw was at about 2500 rpm. No injuries

Glacier & Penhall began putting away equipment for the day.

1600

Prior to removing the broken saw from the site it was disconnected using Kapsum.

1630

Depart site

(38)

11/3/09

Cowlk Removal

MRL

013-1646.009,500.04

0715

Arrive on site

0735

POD - continue saw cutting

Penhall clear
450F, JMT

Penhall will make the final cut on 2-66 slabs then move to 2-63.

Glacier
Alam
Clay
Tito
Shuman

0850 Penhall has completed final cut at 2-66 slabs.

They have moved to 2-63 and is currently sawcutting ($\approx 280'$ total). Glacier supporting saw cutting (vacuum / brushing slabs) and laying out saw cuts on 2-65 slabs.

Penhall
Karin
Candy

Glacier
Lumpkin

0950 Penhall done on 2-63 slabs. moving & setting up on 2-65 slabs

Brewer
Joe Flaherty

1040 Setup for drum sampling

41

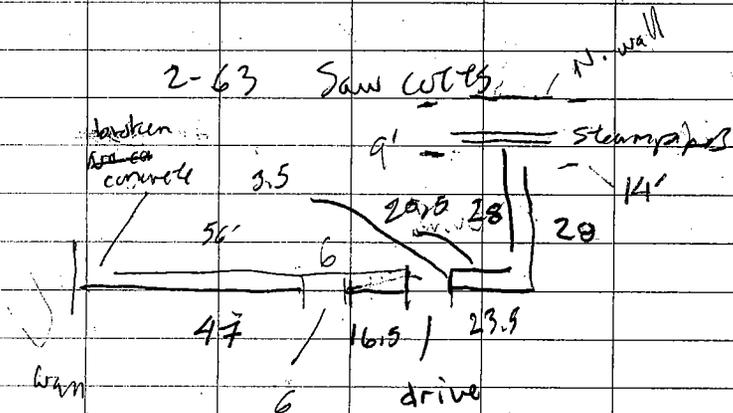
2-60 Slabs Calk Removal

013-1646-009, 500.04

11/3/09

MAL

Note: I extended a few cuts on 2-65 slab based on reexamination in the field prior to saw cutting



Total Daily Footage of Saw Cut

2-66	15
2-65	810
2-63	220
TOTAL	1045

42

11/4/09

MAL

2-60s Slabs Calk Removal

013-1646, 009, 500.04

0715

Arrive on site

Quarter
North
40°F. Dry

0735

Daily Safety Briefing

POD

will remove and pour

inter
2-66

east side interior joints

0755

Begin removing joints east
north east interior corner
2-66

1045

Continuing to remove calk
joints 2-66 interior,

Taruchi
TD175

JD 5445
loader.

Removing a minimum of 2" of
subgrade soil from below
slabs. Spoils hauled and
placed in roll offs.

Quarter
Along
Drive
Quarter
Other

Using mini excavator to
remove and front end
loader to haul to
roll off.

Quarter
Quarter
Quarter

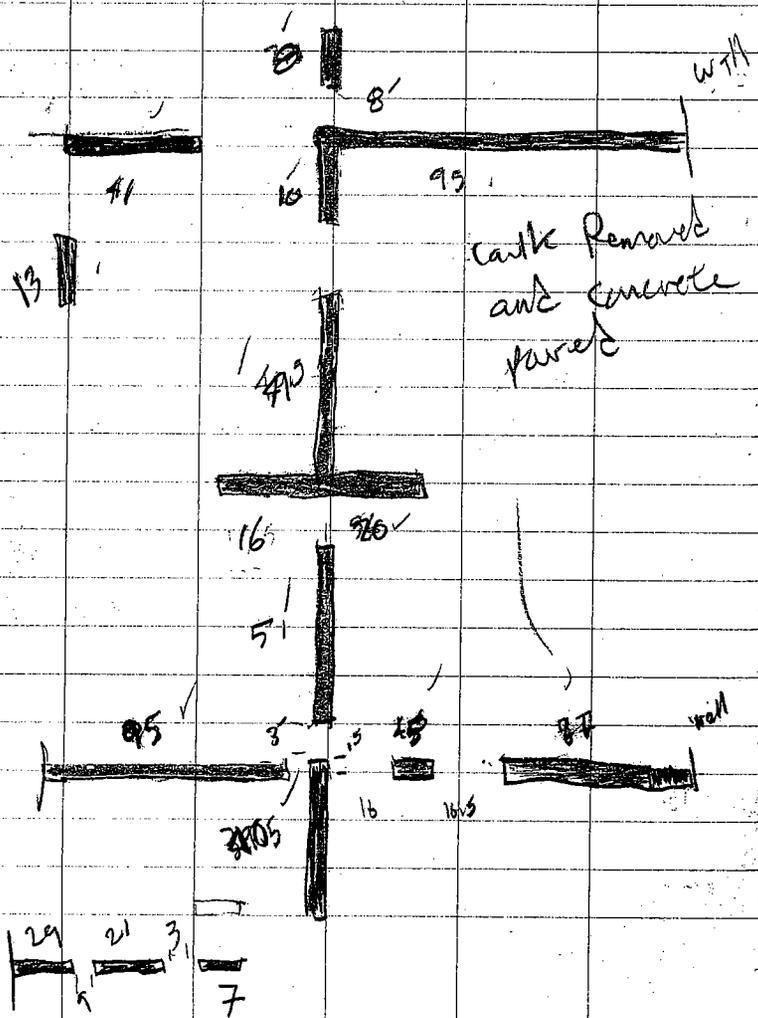
Currently nearing completion
of removal of interior joints
on northern 3/4 of slab.
N/O Col. Lnr 5

(43)

2-60s Slabs Caultk Removal 11/21/09
013-1646-089.500.04 MSL

2-66 Joint Remove / Parrel

Per ~~the~~ Basing used concrete to back fill instead of CDF



(44)

11/21/09 2-60s Slabs Caultk Removal
MSL 013-1646-089.500.04

1210
295604
1064
3710 mix
1250

Began placing pouring concrete started at N. end interior progressed south

Done paving 1st load

clear mostly
Caulk, 630F

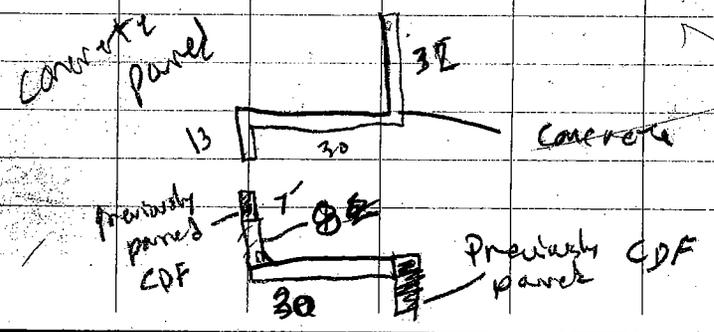
Glacier begins remaining additional joint trench for afternoon pour 2-66 Slab.

1300
Exterior stem wall

Glacier also preparing to pour @ "stick out" area of 2-62 slab. caulk was previously removed.

Another 10y of concrete due to arrive @ 2400

2-62



(45)

260 Slabs Calk Remnant
013-1646,009,500,024

11/9/91
MSL

W/Slog
MSL

260 Slabs Calk Remnant
013-1646,009,500,024

(46)

1425 2nd Cement truck arrived
Begin pouring @ 2-66

0715 Arrive on site

1500 Move to 2-62 to place
remaining half load
Concrete was used at 2-62
because of additional volume

0730

Daily Safety Briefing

11:50
Climbing,
1.5m
vertical,
50ft

POD Remove interior
joints @ 2-63 due
to forecast for rain
to begin at mid day.

1530 Completed form pouring for the
day

0745

Begin remaining interior
joints at S end of 2-65.

Calk Joint Removed today
2-66 ~~547~~ 10 551
551 daily total

Concrete Poured 20 CY
2-66 547 10 551 concrete
2-62 115 10 113
662 10 daily total

Staircase
Atrium
Clary
Dome

Per J. Parsons the trench
will be backfilled with
concrete instead of CDF
because of continued use
of the slab for parking
vehicles, trailers and
roll off containers.

Basement
Lumpkin

1600 End of shift

Boeing
Flaherty

1630 Done for the day

Note: observed that the
concrete poured yesterday
at the 2-66 slab has
gained enough strength
for fork lift traffic. will
reopen the area later today

or tomorrow morning

(47)

2-60 Slabs Calk Removal
013-1646.009, 500.04

11/5/09
MSL

0945

Have inventoried and checked
drums and labels.

Begin setup of additional
drum sampling.

1050

rain begins

1130

Steady rain begins

1145

Glacier completed remaining
calk joints along column lines
concrete scheduled for 1200.

Glacier preparing to pump
any water from trenches as
necessary.

1207

Concrete arrives

1212

Begin pouring at south end
progress north

1244

Glacier vacuuming standing
water from south area
East edge of slab

11/5/09

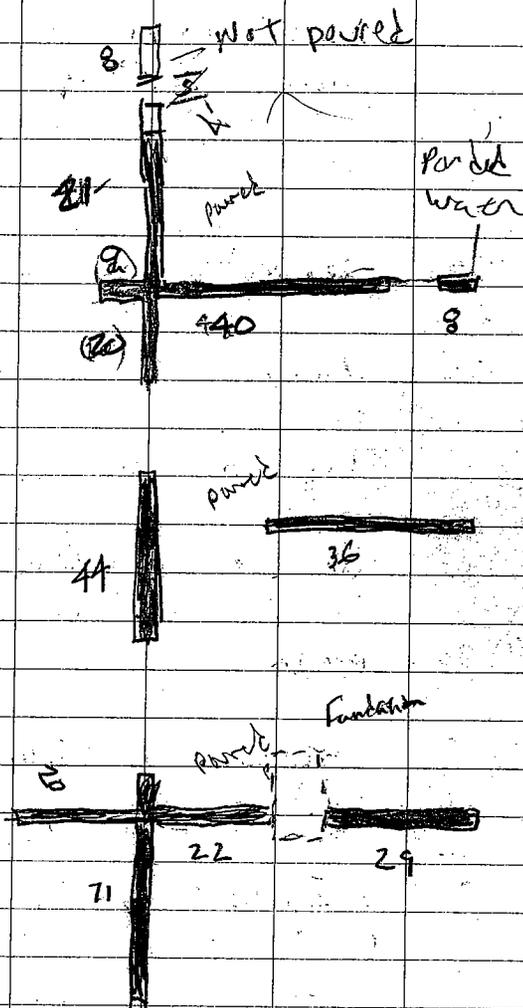
2-60 Slabs Calk Removal
013-1646.009.500.04

MSL

(48)

2-6-S Joint Removal
removed, poured

4
49
8
44
36
42
29
71
320



(49)

2-60 Slabs Conk Removal 11/5/09
013-1646-009, 500.04 MSL

Very little runoff flowing
into open trenches

1320

Done pouring

Tick-1 Vol. Mix
208,792 1004 1310

1350

Glacier has cordoned off
perimeter stem walls
at the N. end of 2-66
Slab.

sealing has been
decreasing since
12.15. 630F
Poreguy

The interior of the slab
is ready to re-opened
for general use

1530

Begin Sampling Drums

2-60-2900702-L 11/5/09 1603

2-60-2900702-S 11/5/09 1614

2-60-2900705-L 11/5 1637

2-60-2900705-S 11/5 1648

2-60-2900706-L 11/5 1713

2-60-2900706-S 11/5 1725

11/5/09

MSL

2-60 Slabs Conk Removal
013-1646-009, 500.04

(50)

1733

Depart for Lab. Have pack
samples

1810

Done for the day

Digity Totals

Joint Removal

2-65 328 lf

Concrete Poured

2-65 316 lf

(51)

2-60 Slabs CastK Removal

013-1646-009, 500, 04

11/6/09

MSL

(52)

2-60 Slabs CastK Removal

013-1646-009, 500, 04

11/6/09

MSL

0725

Arrive on site

Observe that two additional roll off being delivered unloading on 2-65 slab 5429, 5411.

Shewers, H/V breeze

500F

Note: The roll off have double plastic liners installed upon delivery

0745

Safety briefing

Glaciator

Alan Hall
Clay Pearce
Shawna

POD, a breaker head will be delivered this morning to be used in areas not that were not accessible to the saw cut. Will start off at the 2-63 slab area there is one 'L' shaped area that was saw cut.

Geotex

Lumpkin

Probing

Flaherty

Observed that the concrete poured yesterday on the 2-65 slab has begun to gain strength and can be driven on.

0805

Begin removing the inside section of interior stem wall in the 2-63 slab using excavator. This section was ~~saw~~ cut primarily saw cut.

Intermittent 4 M Shewers
520F SW breeze

Note: all concrete remains along with soil and castk joints are being placed in double lined roll off.

currently hauling to 5771

0917

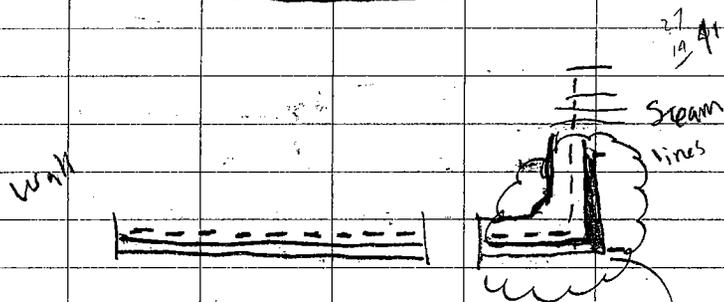
Receiving two additional roll offs 5424, 5422

Note: Exclusion Zones have been set up enclosing all work areas until backfilling at the trenches was complete and had adequately set up.

53

2-60 Slabs Calk Removal 11/6/09
03-1646.009, 500.04 MSL

2-63 Calk Joint Removal



Double sided interior steam wall

over-excavated wet soil
8-16" below slab & water
placed 5/8" crushed rock

1043 While removing the calk joint at the eastern end of the 'L' shaped area in the 2-63 Slab water began flowing into the under trench from under the slab causing wet "soupy" soil conditions.

11/6/09
MSL

2-60 Slabs Calk Removal
03-1646.009, 500.04

54

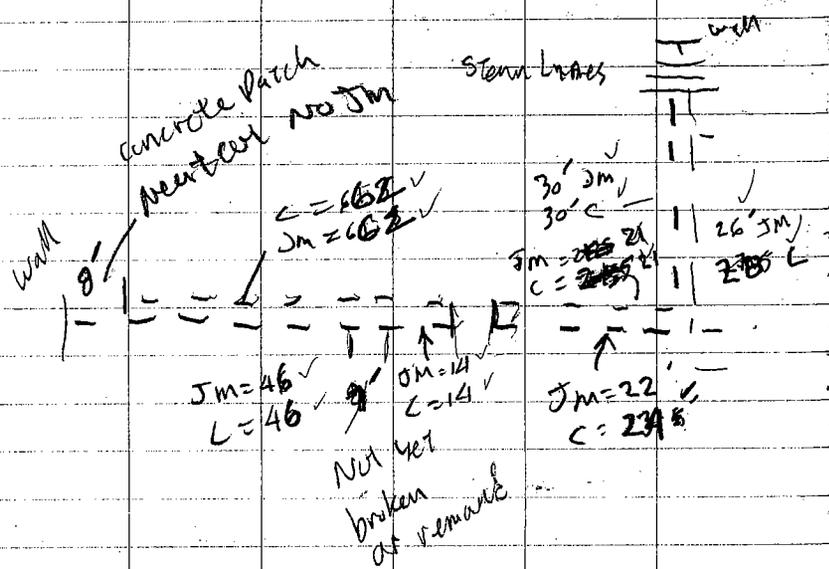
Gladden will over-excavate the soil to attempt to remove most of the mud. The will then place ~~the~~ gravel a few inches of gravel in the excavation to construct a base for concrete.

DBussel w/ Alan Hall (Gladwin), Joe Fahrely (Buchy) and Scott Matthews (Golden). we

we will only prepare this section of trench today and pour concrete. The forecast is for wet weather over the week end.

55

2-60s Slabs Carlk Removal 11/6/09
0.3-1646.009.500.04 MSL



1140

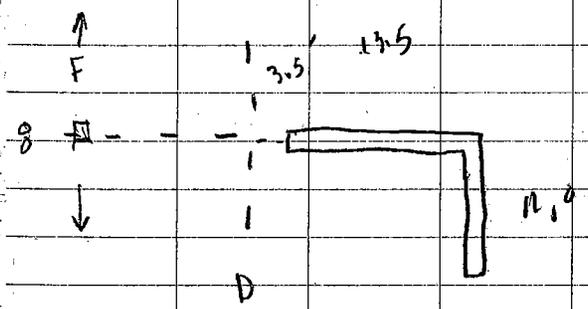
Glacier completed prepping 2-63 slab area. Excavated approximately 9'-16" of soil below bottom of slab on eastern end of 'L' shape section. Placed 5/8" crushed rock to approx. 2'-4" below bottom of slab. Piles of carlk remaining on side wall of footing removed using a hand scraper. Concrete scheduled for between 1230 & 1330.

56

11/6/09 2-60s Slabs Carlk Removal
MSL 0.3-1646.009.500.04

1225

Glacier preparing an 'L' shape carlk joint that was previously removed (a couple of years ago) for concrete placement. Excavated 2-2" below slab,



1245

concrete arrived. Glacier will use concrete @ 2-63 slab according to J. Flaherty (Boeing).

1320

Completed pouring 2-63
8cy 295950
mix 3310

(57)

2-60 Slabs Calk Removal 11/6/09
013-1646-009, 500, 04 MSL

1330 Grader begins securing exclusion zone barriers and caution tape, placing plastic

1400 Grader departs site

Daily Totals

Joint Removed
2-63 220 LF

Concrete parrel
2-63 224 LF
8 CY

1645 Depart site

540F

(58)

11/9/09 2-68 Slabs Calk Removal
MSL 013-1646-900, 500, 04

0705 Arrive on site
Prepare to sample drums

0730 Daily Safety briefing

POD: Use excavator mounted concrete breaker to break calk joints that were not accessible to the saw. be saw cut. Will start at the 2-66 slab.

0815 Begin breaking concrete 2-66 slabs

0820 rain begins

Have been preparing to sample drums

1030 verify that all areas of remaining calk joints have been removed.

Clay, Agof
calk, shovels

Grader
Aram
Shovel
clay

Grader
Wumpkin

Bracing

(59)

2-60 slabs Caultk Removal
013-1646,009,500,04

11/9/09
MSL

1115

Glacier begins remarks
caulk joints at the
S. end of 2-66 interior
joints that have been

seen cut.
Region
Sampling drums

MS/MSD 2-60-2900906-L 1127
2-60-2900906-S 1139

Clear day, 52°F
WIND SW breeze

2-60-2900707-L 1159
2-60-2900707-S 1207

Equipment Blank 1240

2-60-2900887-L 1314 trench
water

1405 Completed Drum Sampling

2-66
Glacier has continued to remove
concrete joints that were
broken up this morning.
Covering trenches with
plastic sheeting after completing
remaining caulk joints. They
have also covered catch

11/9/09
MSL

2-60 slabs caulk Removal
013-1646,009,500,04

(60)

beginning with plastic sheeting
prior to beginning joint
removal.

(61)

2-60 Slabs Caultk Removal

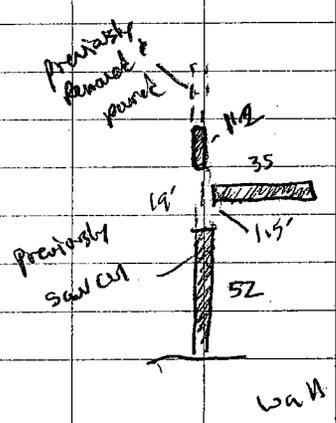
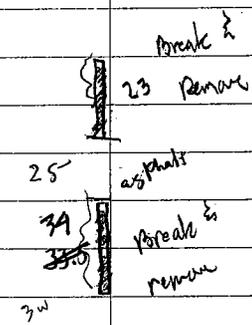
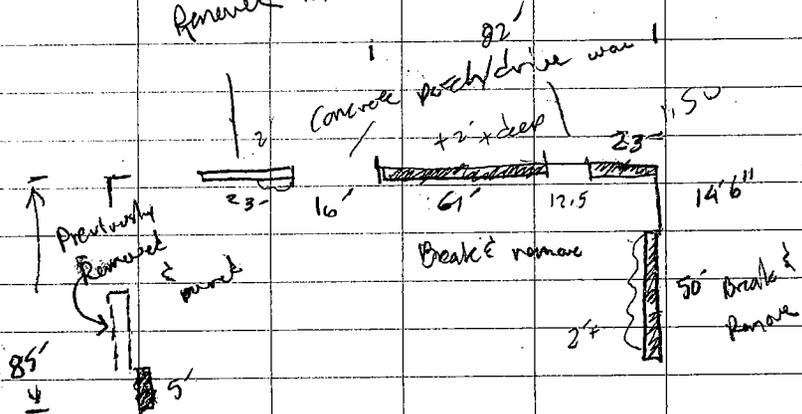
013-1646-009,500.04

11/9/09

MSL

2-66 Caultk Removal

Removed 11/10/09



(62)

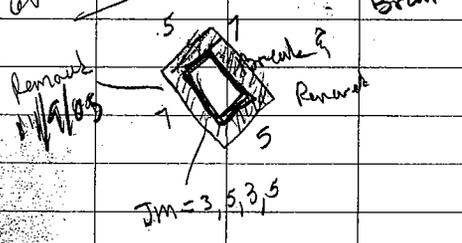
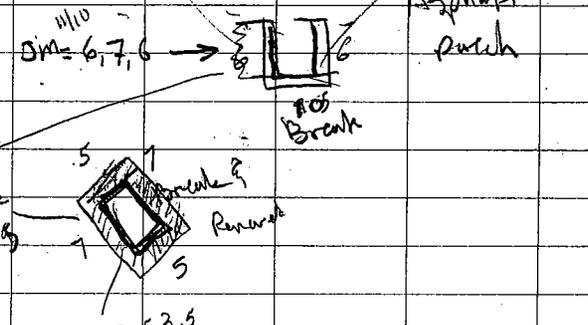
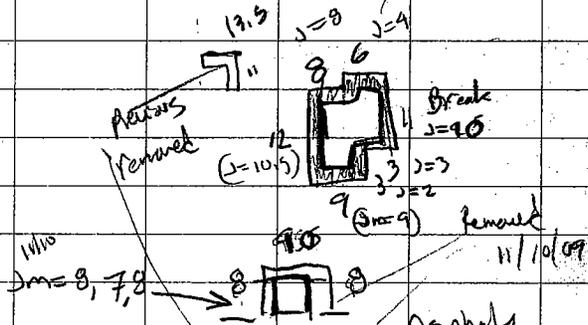
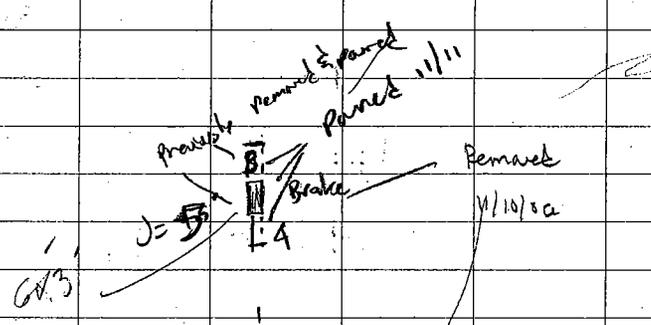
11/9/09

2-60 Slabs Caultk Removal

013-1646-009,500.04

MSL

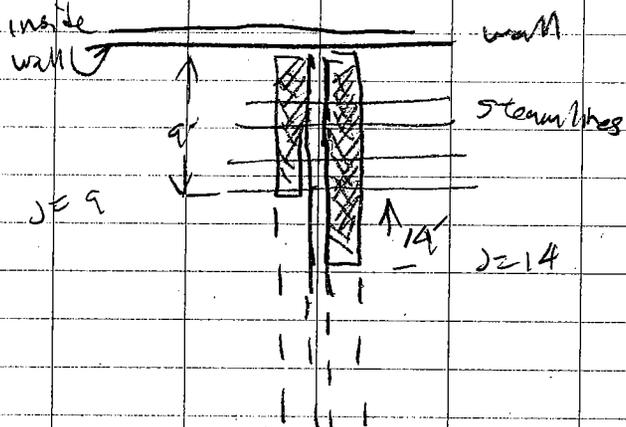
2-65 Concrete Breaking



(63)

2-60 Slabs Caultk Removal 11/9/09
013-1646-009.500.04 MSL

2-63 Concrete Breaks



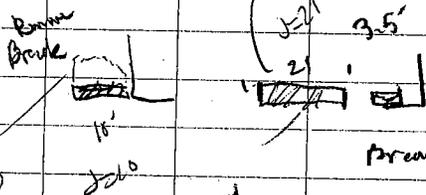
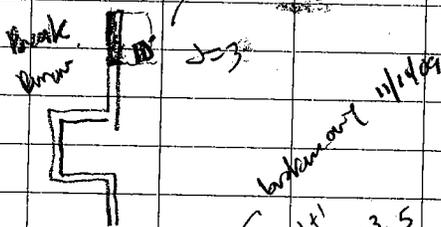
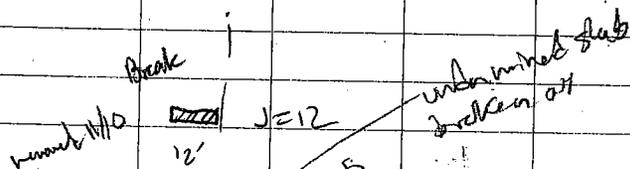
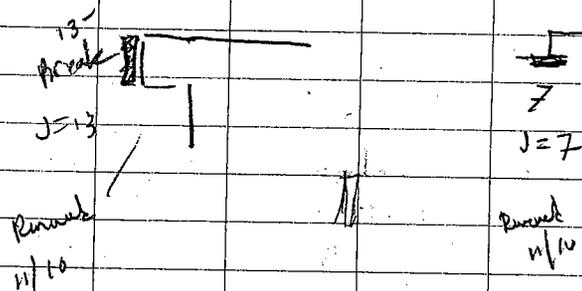
Precast
Remains &
poured

11/9/09
MSL

2-60 Slabs Caultk Removal
013-1646-009.500.04

(64)

2-62 Concrete Breaks



NOT
Broken
in standing
water tank

(69)

2-60 Slabs Calk Removal 11/9/09
013-1646.009.500.04 MSL

1540 Glacier begins shutting down for the day

1600 End of shift.
all trenches where calk was removed today were covered with plastic sheeting

Daily Totals

Trench Breaking

2-66	?	219
2-65		128
2-63		23
2-62		42
Total		411

Calk Removed

2-66	2544	295	1P
2-65	2418	10	1P
total		2834P	3101P

1640 Report for Lab

11/10/09
MSL

2-60s Slabs Calk Removal
013-1646.009.500.04

(66)

0750

Arrive on site

Glacier has completed Daily Safety briefing and discussed P.D.

The will continue remaining over concrete along joints broken out yesterday

0920

Remaining one section along north edge of 2-66 not completed yesterday

23'

0900

Glacier has moved to 2-65 slabs. See page 62

1020

Have completed remaining joints from 2-65 & 2-63. Currently working 2-62

Refer to pages 61-64 for sketches and footages

Chapman
Shaw
Tolbert
A. Hall

Glacier
A. Hall
Shaw Tolbert
Chapman

Glacier
Lumpkin
J. Parsons

(67)

2-60 slabs Calk Removal

013-1646-009, 500.04

11/18/09

MSL

1200

Gibster completed removal
remaining areas at joints
material. Will begin hand
stripping and scabbling
along 5cm walkway foundation
cuts.

1307

1420

Gibster continuing prep of
surfaces for concrete pour.
Concrete is scheduled for
~~0800~~ tomorrow.
Wood

1445

Completed 2-66 hand work
move to 2-65 slab

1630

Depart Site

(68)

2-60 slabs Calk Removal

013-1646-009, 500.04

11/11/09

MSL

0710

Arrive on site

0730

Daily Safety Briefing
POD: complete hand
removal of calk residue
plus concrete.

Clear, cool
calm 450F

Concrete scheduled between
0900-1000. 2T loads
ordered.

Gibster
6:15 AM
Tollbert
D'Arcy

0830 Gibster has completed
hand work @ 2-65
currently a N. end of 2-63
pumping water from both
trenches.

Gibster
Lumpkin

0920 Gibster completed hand
work at 2-63 and 2-65.
Currently removing plastic
sheeting from 2-65, 2-66 slab
areas in preparation of
concrete.

I verified that residual
calk had been removed
and a minimum of 2" of

slabs
soil removed below

(69)

2-60 Carbk Removal
013-1646, 009, 500, 02

11/11/09
MSL

0910

pen
double lined

Note: Alan Hall (Glauser)
informed me that J. Parsons
(Boeing) instructed him to
dispose of the drum ~~content~~
containing paint chips
(Z 900871) into an
available roll off (5911, Z900911)
to be disposed of.

1008

Concrete has been delayed
until 1100. Glauser begins
site clean up.

1115

Begin pouring 2-66 slab

1205

Done pouring 1st load
10cy 296 438 3310

1230

2nd load arrives begin
pouring. Continue 2-66

1300

Completed pouring 2-66, move
to 2-65.

11/11/09
MSL

2-60 Slabs Carbk Removal
013-1646, 009, 500, 04

(70)

2-66 slab

Concrete pour

23 load 2

load 1

23

61

23

Primarily
poured

50

5 load 2

23

Asphalt
drive

34

load 1

load 2

12

35

52

10cy 296 438 3310

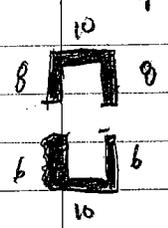
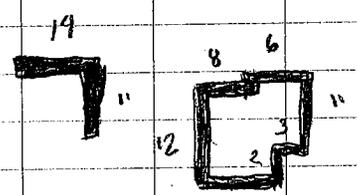
(69)

2-60 slabs Calk Removal
013-1646-009,500,04
11/11/09
MSL

2-65 Slab
Concrete pour



Load 2



(70)

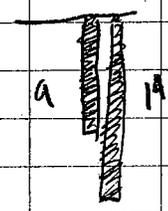
11/11/09
MSL
2-60 Calk Removal
013-1646-009,500,04

2-63 Slab
Concrete pour

1335

Begin pouring 2-63

52°F, calm
clear



Load 2

1004 296770 3310

1345

finish load 2

1425

3rd load of concrete arrives

pour remaining areas
at 2-62 slab

(71)

2-60 Slabs Caultk Renewal
013-1646-009,500.04

11/11/09
MSL

2-62

concrete pour

13

7

12

10
previously
poured

10

20

Δ

11/11/09
MSL

2-60 Slabs Caultk Renewal
013-1646-009,500.04

(72)

1445

Finished 3rd and final
load.

8 cy 296440 ~~3310~~

1500

Generator starts cleanup.

1600

End of shift

Daily Totals

Caultk Renewal
2-62 23 LF

Concrete pour
2-66 318 LF
2-65 141 LF
2-63 23 LF
2-62 29 LF

561 LF

28 cy concrete

(73)

2-60 Slabs Caulk Removal 11/12/09
013-1646.009,500,04 MSZ

0710 Arrive on site

0730 Daily Safety

0935 Decan ^{water} drum Sampling ^{Per} J. Parsons
PCB
Metals
VOC Trip blanks

Clear, cool
dry, 46°F

Sample each drum

0943 Have walked the slabs
to verify that all area
to be removed have been

Gelacien
A. Ham
S. Tolbert
C. Packer

Gelacien has been decontam
equipment, making remaining
drums to storage inside
2-44 Bldg

Crabbe
Lumplem

Boachy
J. Parsons

Currently sweeping loose
pieces of cat caulk from
Slab at west side of
~~266~~ 2-62 slabs

(74)

11/12/09 2-60 Slabs Caulk Removal
MSZ 013-1646.009,500,04

1300 While walking to job
to verify that everything
had been completed, #
discovered a joint joint
on the 2-66 slab that
had not been removed.
It had been overlooked
during lay out. Gelacien
will return tomorrow to
finish remaining and
filling the joint.

clear calm, mild
60°F

work as as-built drawing.

1630 Depart site

note ^{nine} ~~eight~~ drums from 2-62
slab removed today

Z900872 Z900882 Z900886
Z900873 Z900883
Z900875 Z900884
Z900876 Z900885

Z900871 previously disposed 11/11/09

75

2-60 Slabs Curb Removal
013-1646.009.500.04

11/13/09
MSL

0705 Arrive on site
0720 Gelacier on site
0730 Daily Safety Briefing

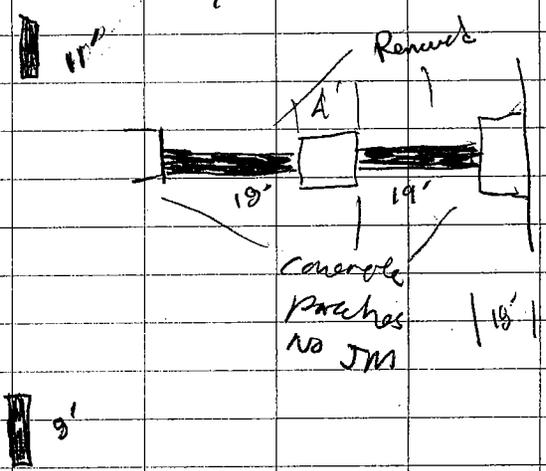
Shows
Curb by 46' of
20' using 50'

POD Gelacier will remove
the final joint at 2-66.
Will use a breaker to
remove portion concrete/curb.

0830 Gelacier has begun removing
breaking and removing
concrete/curb

Gelacier
A. Peck
S. Talbot

Gelacier
Lumpkin



76

11/13/09
MSL

2-60 Slabs Curb Removal
013-1646.009.500.04

1010 Concrete arrives
Gelacier has completed
removing concrete/curb.
Visible
Verified that all curb
removed

307 296874 3710

1030 Completed pour.

Gelacier begins re-deck
of equipment used today

Final pickup of supplies
equipment.

1100 Gelacier departs

work on as built & quantity
Tables.

(77)

2-60 Caulk Removal

013-1646, 009, 500, 04

MSL

left Blank

11/14/04

2-60 Caulk Removal

013-1646, 009, 500, 04

(78)

MSL

Drums still in 2-44

2900887 Trench water 10/29 2-62

2900913 Deca water 11/12
2900888 10/29

2900707 Slurry 11/3 2-63

2900906 Slurry 11/3 2-64

2900907 " 11/3 2-65

2900908 " 11/2 2-65

2900702 " 11/2 2-66

703 " 11/2 2-66

704 " 11/2 2-66

705 " 11/2 2-66/2-65

706 " 11/2 2-66

(79)

2-605 Caultk Renewal
013-1646,009,500,04

11/23/09
MSL

Decon water & trench
water drum sampling

2-60-2900898-L 0820

Decon water
PCB, VOCs, metals

2-60-2900913-L 0850

Decon water
PCB, VOCs, metals

2-60-2900912-L 0950

Trench water
PCBs, metals, pH

Sampling of ~~the~~ required
drums is now complete.

J. Parsons was at the drum
storage area in 2-44 Bldg
bonding drums in preparation
of removal to drum yards.