

# 5-Year Plan for Bridges Over I-290



August 2022

Prepared for:



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## 1.0 Introduction

The Village of Oak Park is currently responsible for deck maintenance for five bridges spanning the I-290 expressway, the CTA Blue Line, and CSX freight tracks. The Village of Oak Park hired TranSystems Corporation to develop a 5-year maintenance plan and cost estimate for expected repairs and maintenance treatments for each of those five bridges. From east to west, those bridges are: the west half of Austin Boulevard, Lombard Avenue, East Avenue, Oak Park Avenue, and the Home Avenue pedestrian bridge. IDOT is responsible for maintaining all structural elements below each bridge's deck.

Each bridge was visually inspected to assess its condition. Each inspection was documented with field notes, existing condition sketches, and photographs.

A multi-year program was developed to prioritize and complete the needed repairs recommended in the report below. TranSystems proposes three key milestone "repair by" dates: within 1 year, within 2 years, and within 5 years. The resulting 5 Year Maintenance Plan identifies the proposed repair items to be completed at each milestone year of work. The proposed sequence of repairs is based on the condition assessment inspections. Please note that during the progression of repair work or following further inspections, some items may be re-prioritized as additional information becomes available or conditions deteriorate faster than anticipated.

The five bridges listed below all span the I-290 expressway, the CTA Blue Line, and CSX freight tracks. Bridges with multiple span configurations indicate that a ramp is located at the bridge along the centerline of I-290 requiring multiple spans. The smaller span configuration spans the westbound I-290 traffic lanes.

<i>Location</i>	<i>Structure Number</i>	<i>Description</i>	<i>Long Span</i>	<i>Original Construction</i>	<i>Rehabilitation</i>
Austin Boulevard	016-2063	3 Span - Continuous Steel Beams & 2 Span - Continuous Steel Beams	65'-0"	1957	1990
Lombard Avenue	016-2062	5 Span - Continuous Steel Beams	100'-0"	1957	-
East Avenue	016-2061	3 Span - Continuous Steel Beams & 1 Span - Steel Beams	65'-0"	1957	1984
Oak Park Avenue	016-2123	4 Span - Continuous Steel Beams	65'-0"	1958	-
Home Avenue	016-2060	6 Span Pedestrian - Continuous Steel Beams	79'-0"	1958	-

## **2.0 Methodology**

The bridge inspections were performed by a two-person inspection team on July 26, 2022. Required safety equipment such as helmets and reflective vests were used.

The inspections were performed at street level on the bridge decks. Inspectors walked the lengths of the bridges while paying close attention to any elements that may require repair within the next 5 years. The inspection was visual, and the inspectors used a sounding hammer to check for spalling. Inspectors took photographs and produced representative existing condition sketches (both attached) for the Village's reference. The underside of the bridge deck and all elements below the bridge deck were not inspected.

## **3.0 Bridge Descriptions and Inspection Findings**

The existing bridge descriptions and inspection findings for each of the five bridges are listed below. The locations and pictures of these findings are shown in each bridge's respective Attachment following the report.

### **3.1 SN 016-2063 – Austin Boulevard**

The Austin Boulevard bridge was built in 1957 and received structural repairs in 1990. Due to joint jurisdiction, The Village of Oak Park is responsible for maintenance of the west half of the deck, The City of Chicago is responsible for the maintenance of the east half of the deck, and IDOT is responsible for the maintenance of all structural elements below both sides of the deck. The structure consists of two bridges: the first over westbound I-290 traffic and the second over eastbound I-290 traffic, the CTA Blue Line, and CSX freight tracks. The first bridge is a 2-span continuous steel beam bridge with spans of approximately 30'-0" and 60'-0". The second bridge is a 3-span continuous steel beam bridge with spans of approximately 58'-0", 66'-0", and 62'-0".

Inspection Findings:

- The expansion joint at the south abutment of the southern bridge has been overlaid with HMA (Photo B1).
- No protective shielding is provided for the bridge.
- Debris has accumulated on the bridge expansion joints.
- Full width transverse cracks were located approximately every 7'-0" (Photo B3).
- Spalls were observed on the top side of the deck (Photo B2).
- Rebar is exposed in the concrete curb (Photo B6).
- Handrail bolts have failed resulting in a loose handrail (Photo B4).

### **3.2 SN 016-2062 – Lombard Avenue**

The Lombard Avenue bridge was built in 1957. Due to joint jurisdiction, the Village of Oak Park is responsible for maintenance of the deck and IDOT is responsible for the maintenance of all structural elements below the deck. The bridge is a 5-span continuous steel beam bridge with spans of approximately 32'-0", 75'-0", 86'-8", 65'-1½", and 59'-3".

#### Inspection Findings:

- Large spalls were observed on the top side of the deck - especially in the northbound travel lane (Photos C4 and C8).
- No protective shielding is provided for the bridge.
- Debris has accumulated on the bridge expansion joints (Photo C3).
- Longitudinal cracks were observed on the top side of the deck.
- The concrete curb is damaged, and portions of the curb have exposed rebar (Photos C4 and C6).
- The expansion joint at the north abutment is missing blocks (Photo C2).
- Reflectors have been removed but not replaced (Photo C5).

### **3.3 SN 016-2061 – East Avenue**

The East Avenue bridge was built in 1957 and received structural repairs in 1984. Due to joint jurisdiction, The Village of Oak Park is responsible for maintenance of the deck and IDOT is responsible for the maintenance of all structural elements below the deck. There are two bridges over I-290: the first over westbound I-290 traffic and the second over eastbound I-290 traffic, the CTA Blue Line, and CSX freight tracks. The first bridge is a single span steel beam bridge with a span of approximately 56'-7½". The second bridge is a 3-span continuous steel beam bridge with spans of approximately 57'-5¼", 65'-1½", and 59'-3½".

#### Inspection Findings:

- Debris has accumulated on the bridge expansion joints (Photo D2).
- Spalls were observed on the top side of the deck (Photo D7).
- Map cracks, full width transverse cracks, and longitudinal cracks were observed (Photos D3, D4, D7, and D8).
- Protective shielding is provided in all bays over I-290 and in the west exterior bays over any rail.

### **3.4 SN 016-2123 – Oak Park Avenue**

The Oak Park Avenue bridge was built in 1958. Due to joint jurisdiction, the Village of Oak Park is responsible for maintenance of the deck and IDOT is responsible for the maintenance of all structural elements below the deck. The bridge is a 4-span continuous steel beam bridge with spans of approximately 56'-9½", 57'-3¾", 64'-10", and 59'-0¾".

#### **Inspection Findings:**

- Two fence posts have torn out of the bridge parapet (Photo E2).
- A hole was found in the woven wire fence (Photo E4).
- A human size gap between fence posts was observed (Photo E5).
- Protective shielding is not in place in the interior bays over I-290, the interior bays over rail, nor the east exterior bays over rail.
- Debris has accumulated on the bridge expansion joints (Photo E3).
- The expansion joint at the south abutment has experienced serious compression and is damaged (Photo E8).
- Spalls were observed on the top side of the deck.
- Map cracks and full width transverse cracks were observed (Photo E7).

### **3.5 SN 016-2060 – Home Avenue**

The Home Avenue pedestrian bridge was built in 1958. Due to joint jurisdiction, the Village of Oak Park is responsible for maintenance of the deck and IDOT is responsible for the maintenance of all structural elements below the deck. The bridge is a 5-span continuous and single span steel beam bridge with spans of approximately 28'-6", 78'-5", 77'-0", 65'-4", 55'-3", and 18'-9".

#### Inspection Findings:

- Approximately 33% (~35) of the fence posts have either failed base plate welds or anchor bolts (Photos F7 and F8).
- Approximately 10% of chain link fence anchors are not connected to the fence (Photo F6).
- Debris has accumulated on the bridge expansion joints (Photo F3).
- Spalls were observed on the top side of the deck.
- Full width transverse cracks in the deck approximately every 12'-0" between the expansion joints at the south abutment and pier 5.

### **4.0 Recommendations**

The recommendations for The Village of Oak Park's 5-year maintenance plan have been developed based on the inspection findings in the previous section. The recommendations have been divided into three initiatives. The first initiative is to prioritize immediate bridge maintenance and repairs that should be completed within 1 year. The second initiative is to address priority repairs that are recommended to be completed within the next 2 years. The third initiative is to determine the routine repairs that are recommended to be completed within the next 5 years. The recommended repairs have been compiled using standard IDOT Pay Items. Detailed quantities and costs for each repair is provided by bridge in the tables below and in Attachment G – Cost Estimate.

#### **4.1 SN 016-2063 – Austin Boulevard**

- **Hot-Mix Asphalt Surface Removal, 2" (44000157)**  
The expansion joint at the south abutment of the southern bridge has been partially overlaid with Hot-Mix Asphalt – obstructing an inspector's view and preventing any assessment of the joint. It is recommended that the overlaid HMA pavement is removed within 2 years so the condition of the joint can be assessed, and the appropriate repair action can be taken if necessary. This work shall be performed in accordance with Section 440 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC) and shall consist of removing the top 2" of HMA pavement that covers the bridge's expansion joint.

- **Expansion Joint Repair (Z0021900)**  
 The expansion joint at the south abutment of the southern bridge has been overlaid with HMA. Until the condition of the joint can be fully assessed, it is recommended that the joint be repaired within the next 2 years. The repair, if any, shall be determined after the condition of the joint has been fully assessed.
- **Blast Cleaning Bridge Joint Steel (X0325217)**  
 It is recommended that the expansion joints be blast cleaned within 2 years to help assess any additional repair locations and remove any debris that may impact the joints' performance. This work shall consist of either dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection the surface to be cleaned so that the surface is free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.
- **Bridge Deck Concrete Sealer (X5870015)**  
 A concrete sealer is recommended within 5 years to prevent further delamination in the deck. This work shall consist of applying a concrete sealer or protective coat upon the entire top surface of the deck.
- **Class D Patches, Type I, 4 Inch (44201690)**  
 Several small patches lined the west side of Austin Boulevard. It is recommended that all HMA patch work be completed within the next 5 years. This work shall be performed in accordance with Section 442 of the IDOT SSRBC and shall consist of removing the existing pavement and replacing it with HMA pavement.
- **Concrete Curb Repair (Z0012500)**  
 A small portion of the Austin Boulevard curb is experiencing section loss and rebar is exposed. It is recommended that the curb be repaired within 5 years to prevent further damage. This work shall consist of applying a concrete repair material to the damaged curb area.
- **Handrail Repairs (Z0029603)**  
 A few of the handrail bolts have failed resulting in a loose handrail. It is recommended that the bolts be replaced within the next 5 years. This work shall consist of replacing the failed handrail bolts.

<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Hot-Mix Asphalt Surface Removal, 2"	SQ. YD.		4	
Expansion Joint Repair	FOOT		80	
Blast Cleaning Bridge Joint Steel	FOOT		120	
Bridge Deck Concrete Sealer	SQ. FT.			9,050
Class D Patches, Type I, 4 Inch	SQ. YD.			2
Concrete Curb Repair	FOOT			10
Handrail Repairs	L. SUM			1

#### 4.2 SN 016-2062 – Lombard Avenue

- **Deck Slab Repair (Full Depth) Type I and Type II (Z0016001 and Z0016002)**  
Several potholes and spalls line Lombard Avenue. Potholes are located in the line of vehicular travel. A full depth deck slab repair is recommended within 1 year to help provide users with a smoother ride and prevent concrete from falling onto the expressway below. This work shall consist of removing the full depth of the concrete deck, disposing of the concrete removed, and replacing the removed portion with new concrete to the original concrete deck surface.
- **Blast Cleaning Bridge Joint Steel (X0325217)**  
It is recommended that the expansion joints be blast cleaned within 2 years to help assess any additional repair locations and remove any debris that may impact the joints' performance. This work shall consist of either dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection the surface to be cleaned so that the surface is free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.
- **Bridge Deck Concrete Sealer (X5870015)**  
A concrete sealer is recommended within 2 years to prevent further delamination in the deck. This work shall consist of applying a concrete sealer or protective coat upon the entire top surface of the deck.
- **Concrete Curb Repair (Z0012500)**  
A portion of the curb along the Lombard Avenue bridge has experienced section loss and rebar is exposed. It appears that an HMA patch repair was attempted but the patch has deteriorated since. It is recommended that the HMA patch be fully removed and replaced with a concrete repair material within the next 2 years. This work shall consist of removing the existing HMA patch and applying a concrete repair material to the damaged curb area.
- **Expansion Joint Repair (Z0021900)**  
The expansion joint covers on the Lombard Avenue bridge are missing blocks to secure the covers. It is recommended that damaged blocks be replaced within the next 2 years. This work shall consist of removing and replacing damaged blocks.
- **Replacement Reflector (78100300)**  
It appears that each of the 14 pavement reflectors have been removed on the Lombard Avenue bridge. Some of the holes have been filled with HMA whereas others have not. If The Village of Oak Park sees fit, new reflectors may be installed within the next 5 years. This work shall be performed in accordance with Section 781 of the IDOT SSRBC and shall consist of placing new reflectors into saw cut and epoxy filled holes in the deck.

<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Deck Slab Repair (Full Depth) Type I	SQ. YD.	1		
Deck Slab Repair (Full Depth) Type II	SQ. YD.	30		
Blast Cleaning Bridge Joint Steel	FOOT		130	
Bridge Deck Concrete Sealer	SQ. FT.		9,690	
Concrete Curb Repair	FOOT		30	
Expansion Joint Repair	FOOT		25	
Replacement Reflector	EACH			14

**4.3 SN 016-2061 – East Avenue**

- **Blast Cleaning Bridge Joint Steel (X0325217)**

It is recommended that the expansion joints be blast cleaned within 2 years to help assess any additional repair locations and remove any debris that may impact the joints' performance. This work shall consist of either dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection the surface to be cleaned so that the surface is free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

- **Class D Patches, Type I, 4 Inch (44201690)**

Most of the potholes on the East Avenue bridge have been repaired but there are a few new locations that should be patched. It is recommended that all HMA patch work be completed within the next 5 years. This work shall be performed in accordance with Section 442 of the IDOT SSRBC and shall consist of removing the existing pavement and replacing it with HMA pavement.

- **Bridge Deck Concrete Sealer (X5870015)**

A concrete sealer is recommended within 5 years to prevent further delamination in the deck. This work shall consist of applying a concrete sealer or protective coat upon the entire top surface of the deck.

<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Blast Cleaning Bridge Joint Steel	FOOT		116	
Class D Patches, Type I, 4 Inch	SQ. YD.			1
Bridge Deck Concrete Sealer	SQ. FT.			10,610

#### 4.4 SN 016-2123 – Oak Park Avenue

- **Chain Link Fence Removal (X6640300) and Bridge Fence Railing (50901730)**

The base plate anchor bolts for two posts have all failed in shear on the Oak Park Avenue bridge. The posts are still connected to the bridge because of their connections to the chain link fence but one post is hanging in open air behind the parapet. The failed portion of the fence should be removed, and a new fence and new posts should be installed within 1 year to avoid the fence falling onto CSX property below. This work shall consist of removing and replacing the damaged portion of the fence to the nearest post in satisfactory condition.
- **Handrail Repairs (Z0029603)**

There are two human sized gaps between fence posts on the northern end of the Oak Park Avenue bridge. It is recommended that a steel plate is welded to one of the posts at each location within 1 year to serve as a barrier. This work shall consist of welding a steel plate to one of the posts at each location.
- **Woven Wire Fence Repair (X6650204)**

There is a hole in the Oak Park Avenue bridge chain link fence. It is recommended that the damaged portion of the Oak Park Avenue fence is replaced within 1 year. This work shall consist of removing and replacing the damaged portion of the fence.
- **Protective Shield (50157300)**

The Oak Park Avenue bridge does not contain any protective shielding in any of the interior bays over westbound traffic, nor any of the interior bays over eastbound traffic. It is recommended that protective shielding be installed within 2 years. This work shall be performed in accordance with Section 501 of the IDOT SSRBC and shall consist of placing appropriately designed wood members under the East sidewalk and replacing existing protective shielding above I-290.
- **Blast Cleaning Bridge Joint Steel (X0325217)**

It is recommended that the expansion joints be blast cleaned within 2 years to help assess any additional repair locations and remove any debris that may impact the joints' performance. This work shall consist of either dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection the surface to be cleaned so that the surface is free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.
- **Expansion Joint Repair (Z0021900)**

The expansion joint at the south abutment has experienced serious compression and is damaged, "spilling" onto the pavement. It is recommended that the damaged portion of the expansion joint be removed and replaced within the next 2 years to prevent further damage. This work shall consist of removing and replacing the damaged portion of the expansion joint.
- **Class D Patches, Type I, 4 Inch (44201690)**

Only a handful of potholes on the Oak Park Avenue bridge were observed. It is recommended that all HMA patch work be completed within the next 5 years. This work shall be performed in accordance with Section 442 of the IDOT SSRBC and shall consist of removing the existing pavement and replacing it with HMA pavement.

- **Bridge Deck Concrete Sealer (X5870015)**

A concrete sealer is recommended within 5 years to prevent further delamination in the deck. This work shall consist of applying a concrete sealer or protective coat upon the entire top surface of the deck.

<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Chain Link Fence Removal	FOOT	30		
Handrail Repairs	L. SUM	1		
Bridge Fence Railing	FOOT	30		
Woven Wire Fence Repair	FOOT	5		
Protective Shield	SQ. YD.		260	
Blast Cleaning Bridge Joint Steel	FOOT		120	
Expansion Joint Repair	FOOT		20	
Class D Patches, Type I, 4 Inch	SQ. YD.			1
Bridge Deck Concrete Sealer	SQ. FT.			10,950

#### 4.5 SN 016-2060 – Home Avenue

- **Woven Wire Fence Repair (Special) (X0326354)**

Approximately ten percent of chain link fence anchors are no longer connected to the chain link fence. The fence should be reattached to the anchors. About 33% (~35) of the fence posts have failed base plate welds or anchor bolts. The posts should be reconnected to the bridge parapet. This work should be completed within 1 year. It shall consist of grinding the galvanized coating off both the poles and the base plates, including the welded areas, performing field welding with a certified welder – applying a fillet weld of the same size as existing. For welds that have separation beyond 3/16”, place a similar filler metal (shim/spacer) in the joint before welding. Use SMAW (stick) welding procedure. Touch-up repair welds with cold galvanize spray repair.

- **Blast Cleaning Bridge Joint Steel (X0325217)**

It is recommended that the expansion joints be blast cleaned within 2 years to help assess any additional repair locations and remove any debris that may impact the joints’ performance. This work shall consist of either dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection the surface to be cleaned so that the surface is free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

- **Class D Patches, Type I, 4 Inch (44201690)**

Spall was not the primary concern on the Home Avenue bridge, but locations requiring patching were still observed. It is recommended that all HMA patch work be completed within the next 5 years. This work shall be performed in accordance with Section 442 of the IDOT SSRBC and shall consist of removing the existing pavement and replacing it with HMA pavement.

**5-Year Plan for Bridges Over I-290**

*Village of Oak Park*

- **Bridge Deck Concrete Sealer (X5870015)**

A concrete sealer is recommended within 5 years to prevent further delamination in the deck.

This work shall consist of applying a concrete sealer or protective coat upon the entire top surface of the deck.

<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Woven Wire Fence Repair (Special)	EACH	35		
Blast Cleaning Bridge Joint Steel	FOOT		45	
Class D Patches, Type I, 4 Inch	SQ. YD.			2
Bridge Deck Concrete Sealer	SQ. FT.			3,610

**5.0 Cost Estimate**

Per the recommendations above, the overall estimated cost for the 5-Year Maintenance plan is \$ 227,000.

A summary of the pay items and combined quantities for all five bridges is shown below. For a more detailed breakdown of the pay items, unit costs, and quantities for each bridge, see Appendix G.

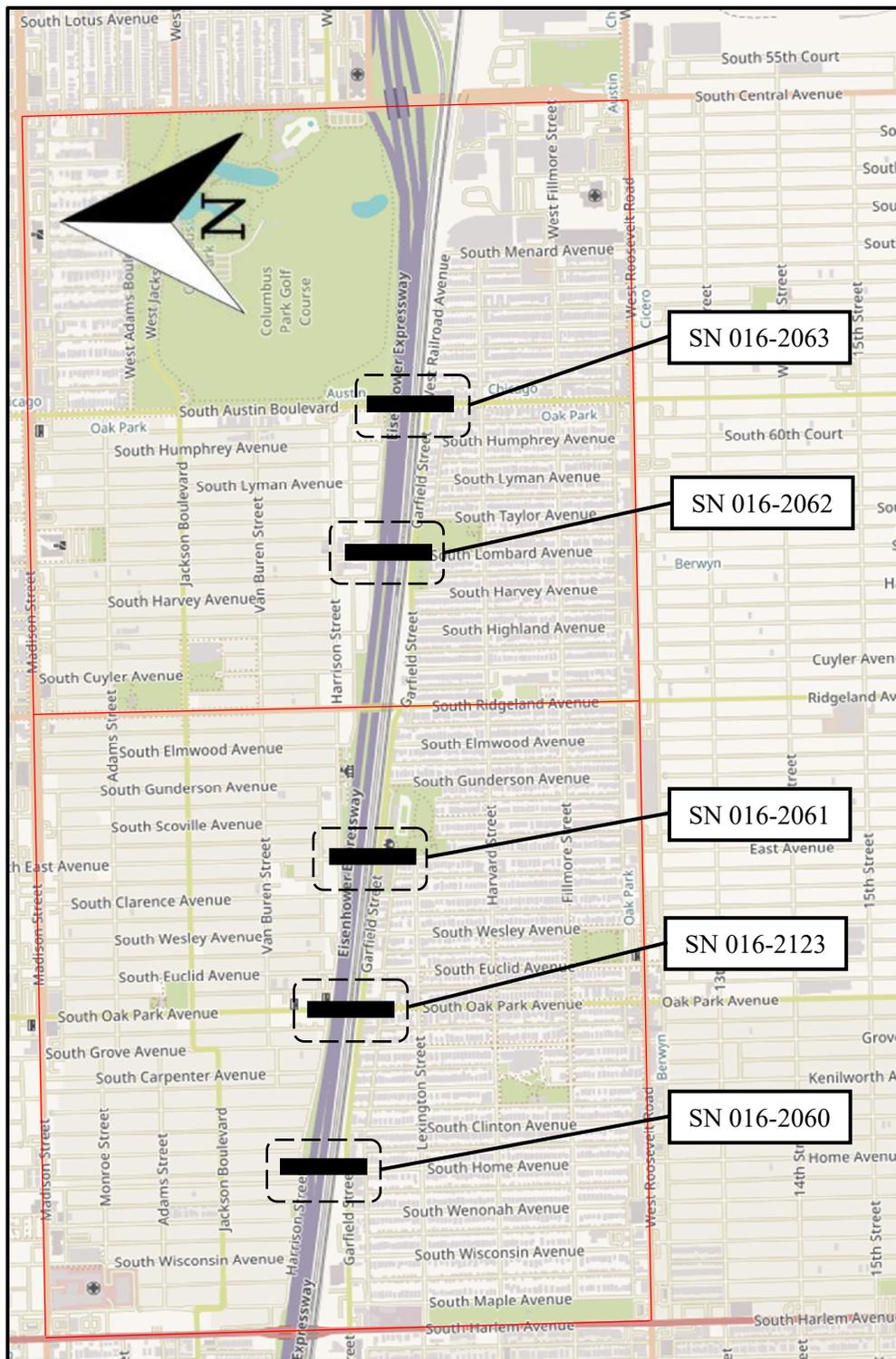
<i>Work Description</i>	<i>Unit</i>	<i>≤ 1 year</i>	<i>≤ 2 years</i>	<i>≤ 5 years</i>
Woven Wire Fence Repair (Special)	EACH	35		
Chain Link Fence Removal	FOOT	30		
Bridge Fence Railing	FOOT	30		
Woven Wire Fence Repair	FOOT	5		
Handrail Repairs	L. SUM	1		1
Deck Slab Repair (Full Depth) Type I	SQ. YD.	1		
Deck Slab Repair (Full Depth) Type II	SQ. YD.	30		
Protective Shield	SQ. YD.		260	
Hot-Mix Asphalt Surface Removal, 2"	SQ. YD.		4	
Expansion Joint Repair	FOOT		125	
Bridge Deck Concrete Sealer	SQ. FT.		9,690	34,220
Blast Cleaning Bridge Joint Steel	FOOT		531	
Concrete Curb Repair	FOOT		30	10
Class D Patches, Type I, 4 Inch	SQ. YD.			6
Replacement Reflector	EACH			14
<b>Cost</b>		<b>\$ 84,000</b>	<b>\$ 68,000</b>	<b>\$ 77,000</b>

## ***Attachment A***

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### **Location Map**

**5-Year Plan for Bridges Over I-290**  
*Village of Oak Park*



Sections 17 and 18, Township 39N, Range 13E, Cook County, Oak Park, IL

## ***Attachment B***

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### **Austin Boulevard**

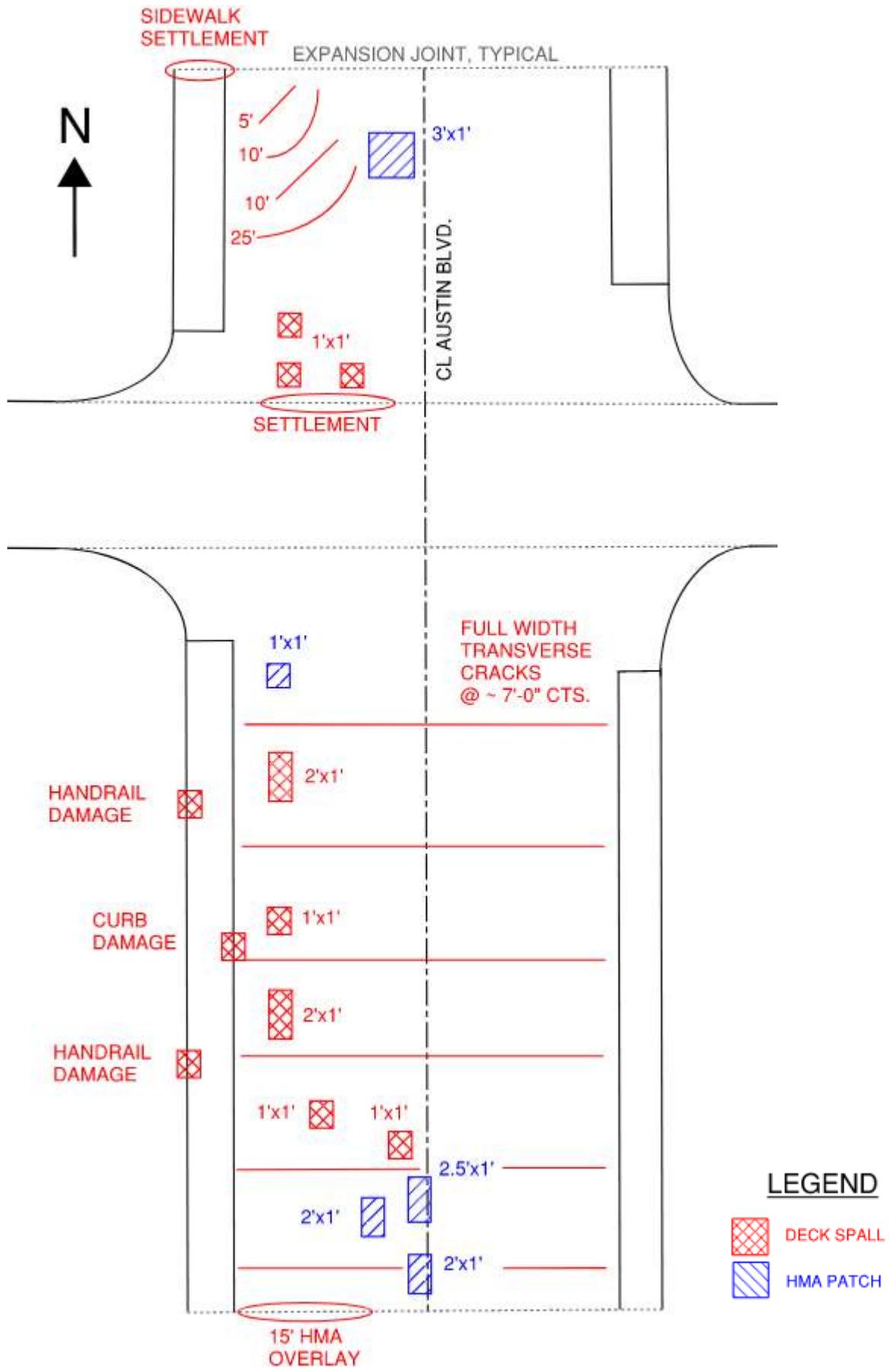




Photo B1: Overlaid Expansion Joint at the South Abutment of the Southern Bridge (Looking East).

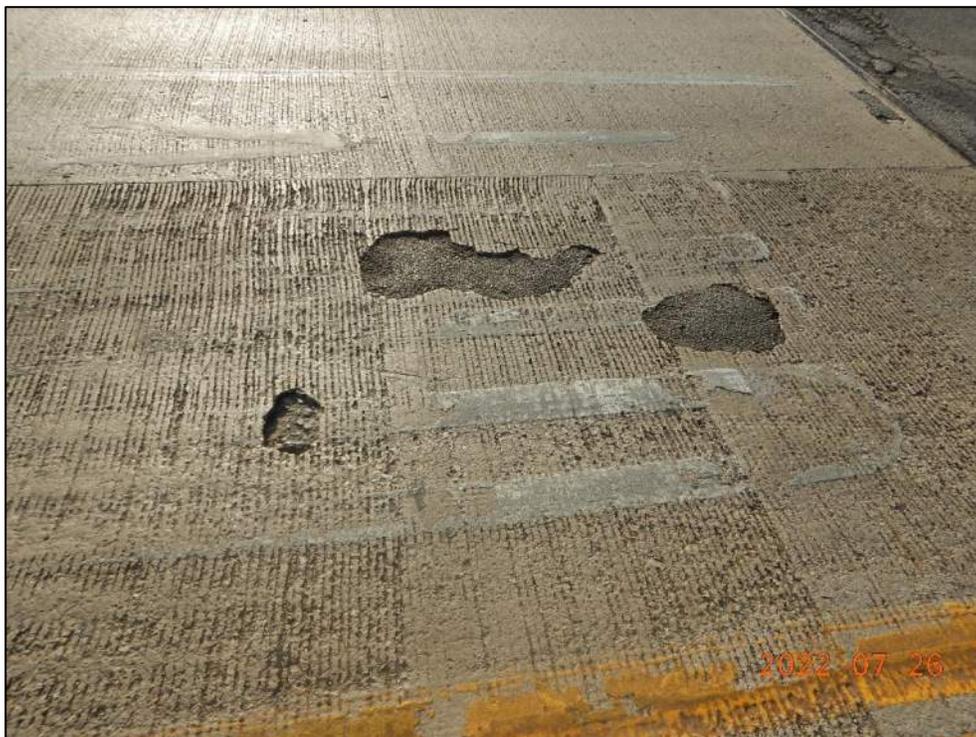


Photo B2: HMA Patches near Bridge Centerline (Looking East).



Photo B3: Transverse Cracking (Looking East).



Photo B4: Failed Handrail Bolt.



Photo B5: Sidewalk Settlement. Trip Hazard in Northwest Corner of Northern Bridge (Looking South).



Photo B6: Exposed Curb Rebar (Looking South).

## ***Attachment C***

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**Lombard Avenue**

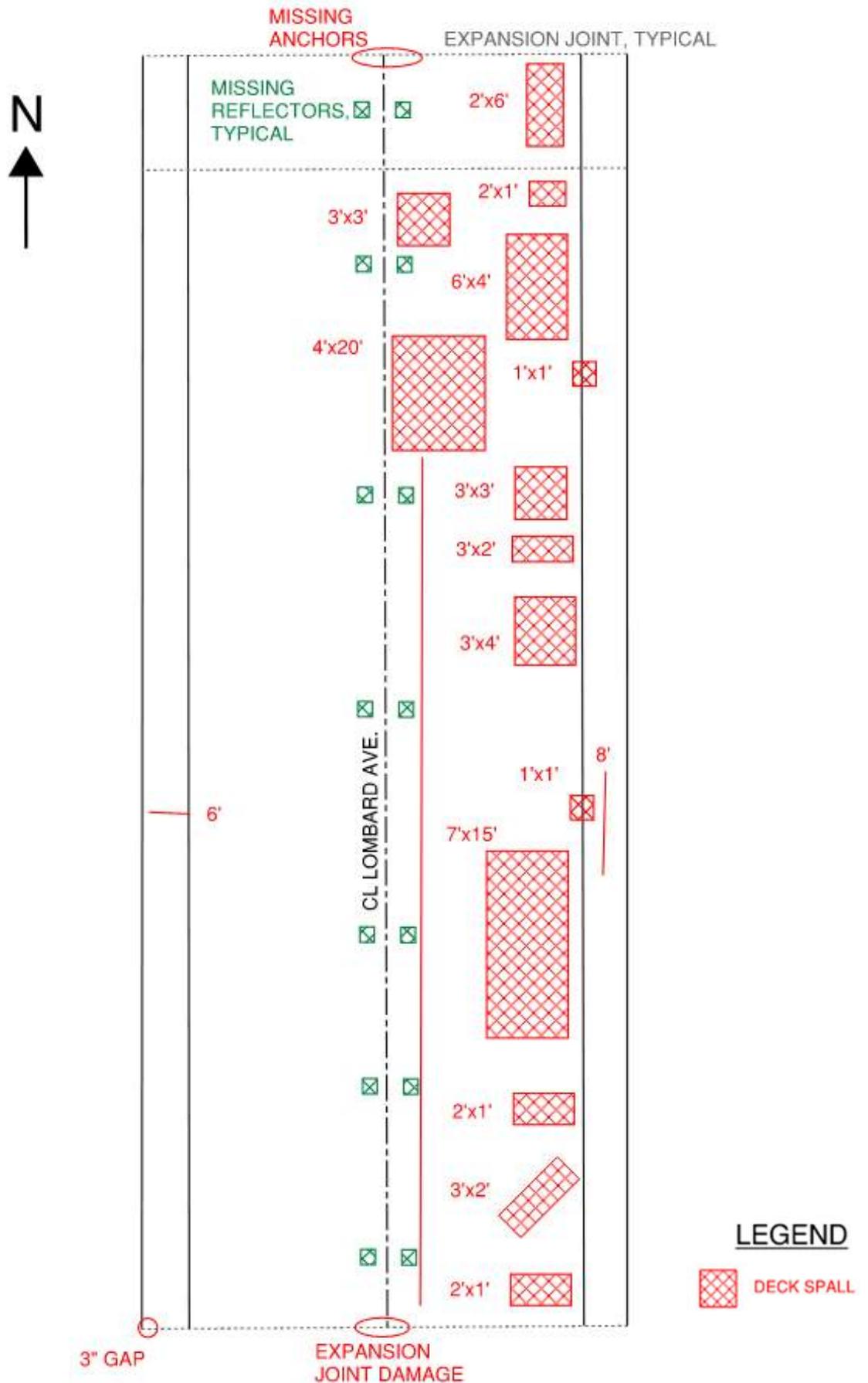




Photo C1: Overview (Looking North).



Photo C2: Missing blocks in Expansion Joint at North Abutment (Looking East).



Photo C3: Expansion Joint at Pier 1 (Looking Northwest).



Photo C4: Deck Spalls and HMA Patches (Looking Northwest).



Photo C5: Missing Reflectors.



Photo C6: Sidewalk Curb Damage (Looking South).



Photo C7: Joint Near CTA Station (Looking East).



Photo C8: Deck Spalls with Exposed Main Reinforcement and HMA Patches (Looking Northwest).

## ***Attachment D***

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**East Avenue**

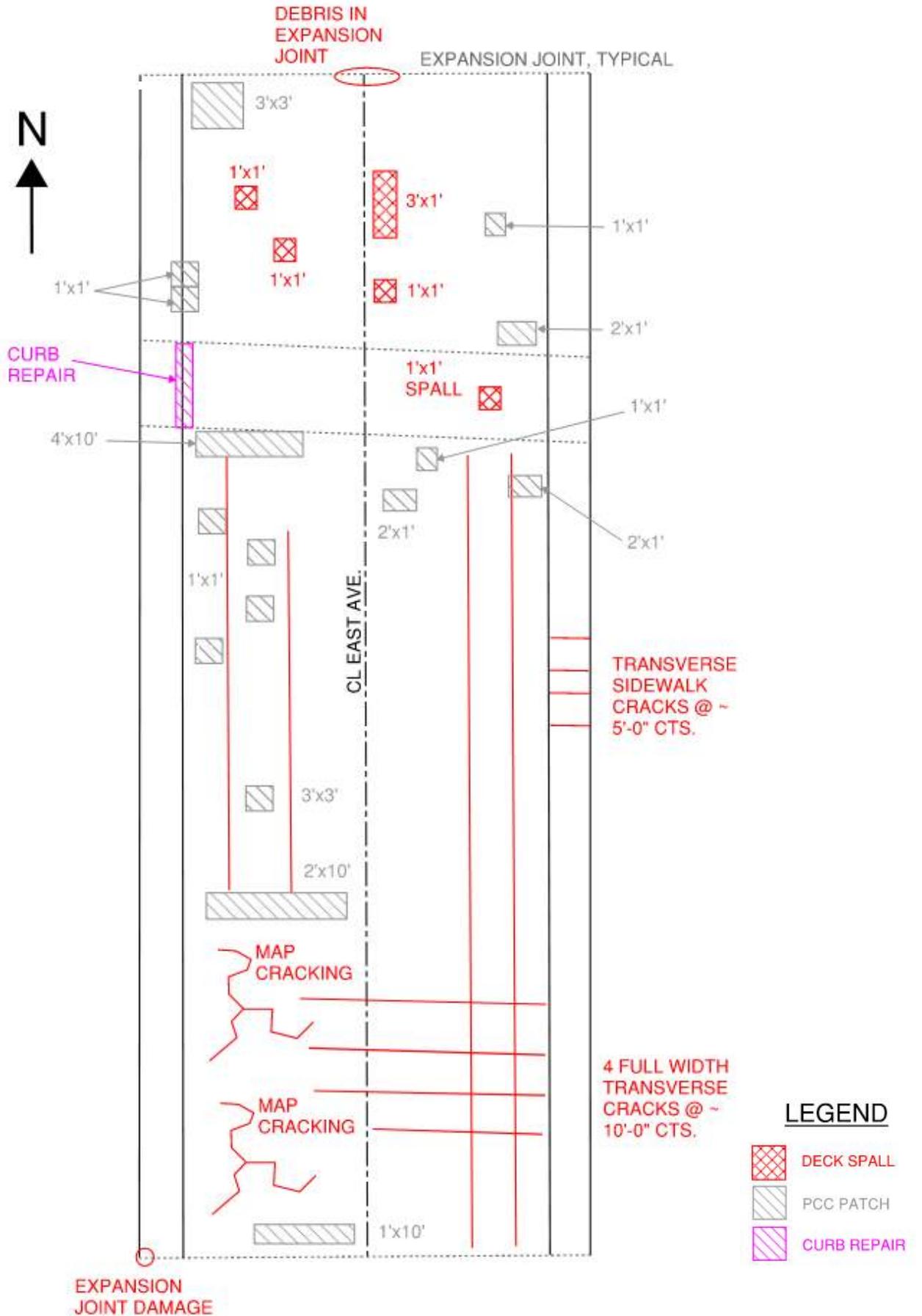




Photo D1: Overview (Looking North).



Photo D2: Dirty Expansion Joint at South Abutment (Looking East).



Photo D3: Map Cracking (Looking East).



Photo D4: Longitudinal Cracking (Looking North).



Photo D5: Curb Repair (Looking North).



Photo D6: Overlaid Interior Joint Near Old Ramp (Looking East).



Photo D7: Deck Spalls, Longitudinal Cracking, and Transverse Cracking (Looking East).



Photo D8: Sidewalk Transverse Cracking (Looking North).

## ***Attachment E***

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**Oak Park Avenue**

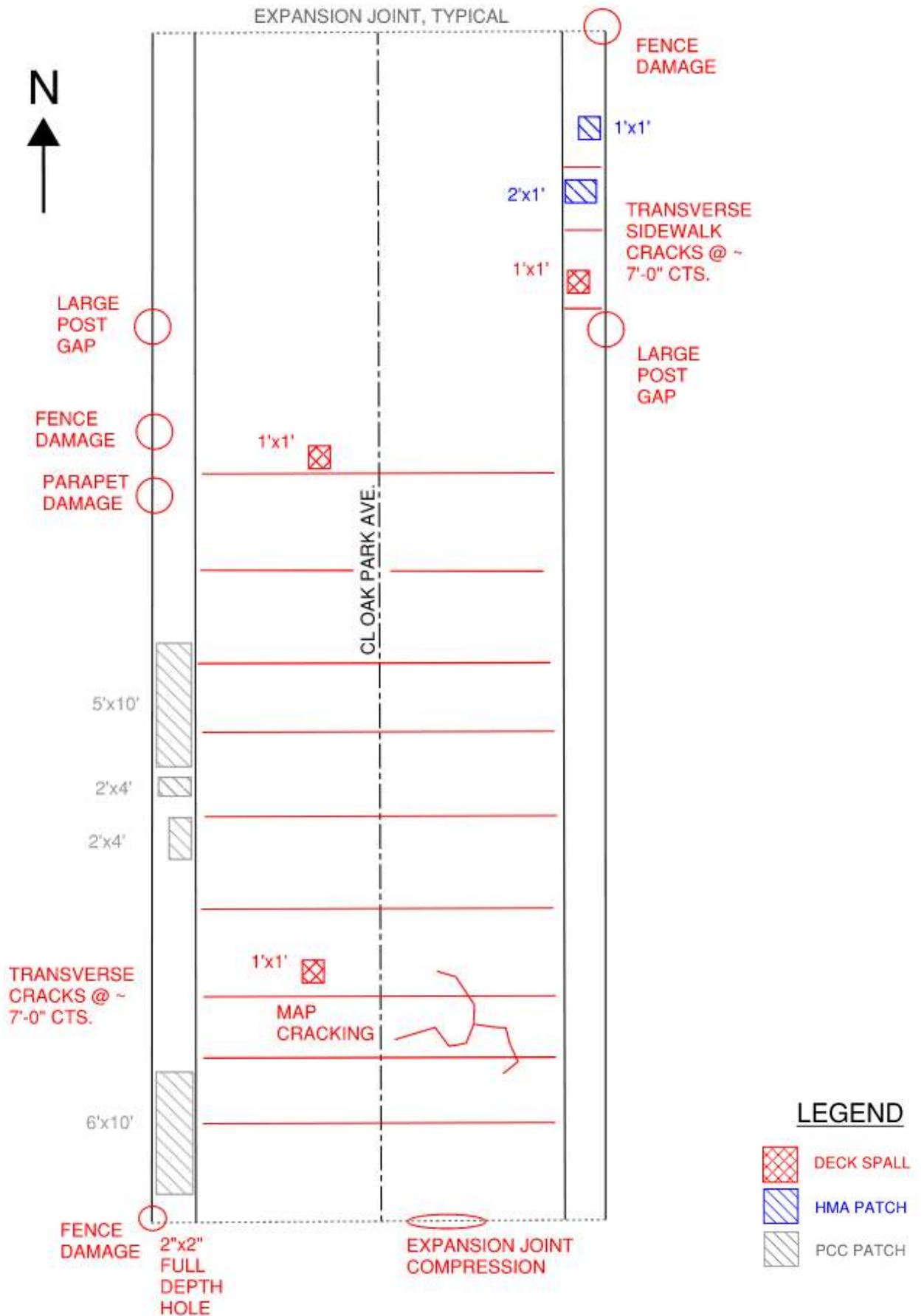




Photo E1: Overview (Looking North).



Photo E2: Fence Damage (Looking Southwest).



Photo E3: Southern Expansion Joints (Looking East).



Photo E4: Hole in Fence (Looking West).



Photo E5: Human Size Fence Post Gap (Looking West).



Photo E6: Sidewalk HMA Patches (Looking South).



Photo E7: Map Cracking (Looking North).

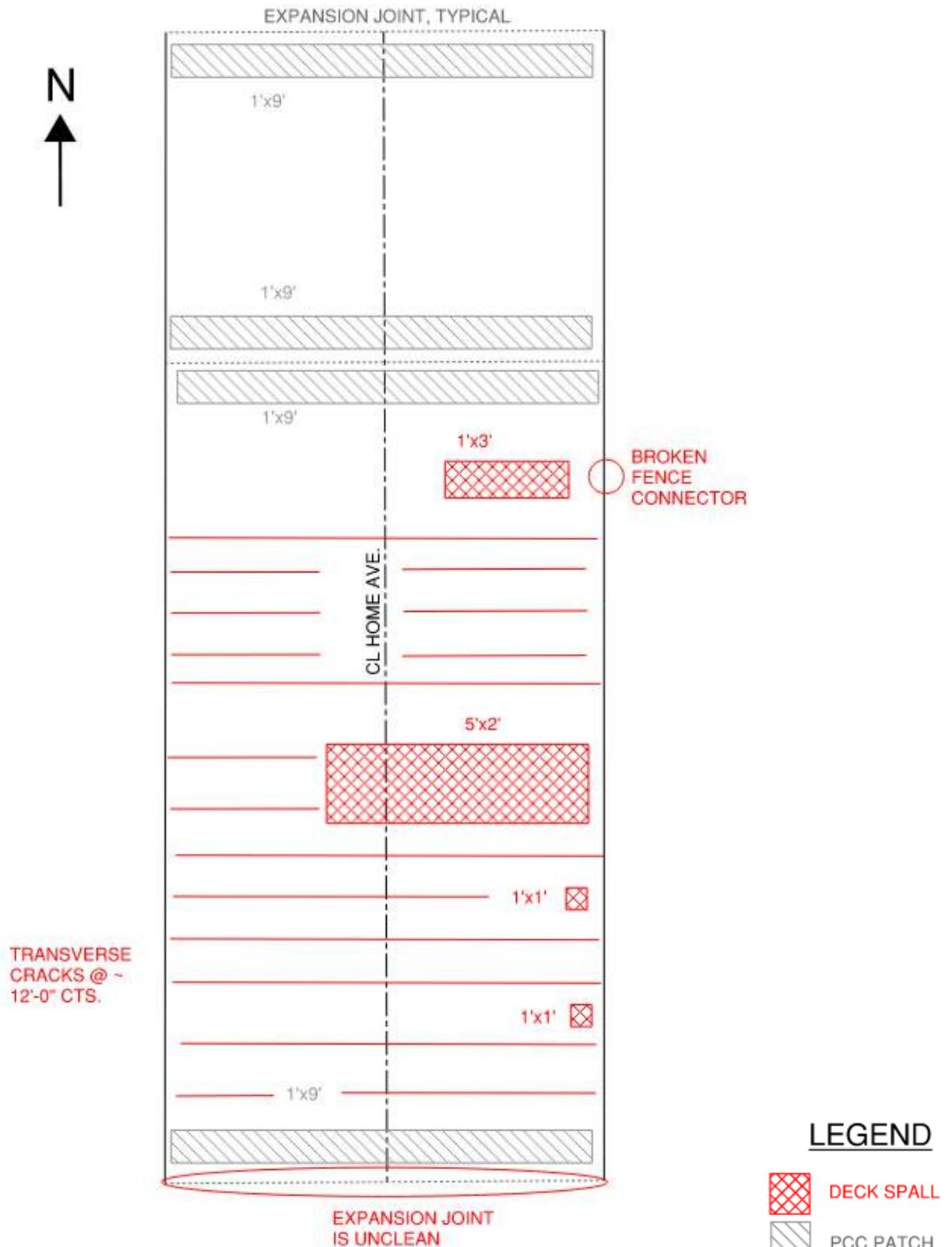


Photo E8: Damage to Expansion Joint at the South Abutment (Looking West).

## ***Attachment F***

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### **Home Avenue**



TRANSVERSE  
 CRACKS @ ~  
 12'-0" CTS.

- \* ~ 10% OF CHAIN LINK FENCE ANCHORS ARE NOT CONNECTED TO THE CHAIN LINK FENCE
- \* ~ 35% OF THE DECK SURFACE AREA HAS BEEN REPAIRED WITH PCC PATCHES THAT ARE NOT SHOWN
- \* ~ 33% (EVERY THIRD POST) OF THE FENCE POSTS HAVE FAILED BASE PLATE WELDS OR ARE MISSING ANCHOR BOLTS

**LEGEND**

- DECK SPALL
- PCC PATCH



Photo F1: Overview (Looking North).



Photo F2: Curb Deterioration.



Photo F3: Expansion Joint at the South Abutment (Looking West).



Photo F4: Curb Damage Near Expansion Joint at the South Abutment (Looking East).



Photo F5: Deck Overview (Looking South).



Photo F6: Disconnected Fence (Looking East).



Photo F7: Missing Anchor Bolt (Looking East).



Photo F8: Failed Handrail Post Weld (Looking East).

## ***Attachment G***

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### **Cost Estimate**

5-Year Plan for Bridges Over I-290

Village of Oak Park

Location	Item	Quantity	Unit	Unit Cost	Total Cost	Year 1	Year 1 Cost	Year 2	Year 2 Cost	Year 5	Year 5 Cost
Austin Boulevard	Hot-Mix Asphalt Surface Removal, 2"	4	SQ. YD.	\$ 60.00	\$ 240			X	\$ 240		
	Expansion Joint Repair	80	FOOT	\$ 100.00	\$ 8,000			X	\$ 8,000		
	Blast Cleaning Bridge Joint Steel	120	FOOT	\$ 10.00	\$ 1,200			X	\$ 1,200		
	Bridge Deck Concrete Sealer	9,050	SQ. FT.	\$ 2.00	\$ 18,100					X	\$ 18,100
	Class D Patches, Type I, 4 Inch	2	SQ. YD.	\$ 125.00	\$ 250					X	\$ 250
	Concrete Curb Repair	10	FOOT	\$ 225.00	\$ 2,250					X	\$ 2,250
	Handrail Repairs	1	L. SUM	\$ 500.00	\$ 500					X	\$ 500
Lombard Avenue	Deck Slab Repair (Full Depth) Type I	1	SQ. YD.	\$ 2,500.00	\$ 2,500	X	\$ 2,500				
	Deck Slab Repair (Full Depth) Type II	30	SQ. YD.	\$ 1,250.00	\$ 37,500	X	\$ 37,500				
	Blast Cleaning Bridge Joint Steel	130	FOOT	\$ 10.00	\$ 1,300			X	\$ 1,300		
	Bridge Deck Concrete Sealer	9,690	SQ. FT.	\$ 2.00	\$ 19,380			X	\$ 19,380		
	Concrete Curb Repair	30	FOOT	\$ 225.00	\$ 6,750			X	\$ 6,750		
	Expansion Joint Repair	25	FOOT	\$ 100.00	\$ 2,500			X	\$ 2,500		
	Replacement Reflector	14	EACH	\$ 20.00	\$ 280					X	\$ 280
East Avenue	Blast Cleaning Bridge Joint Steel	116	FOOT	\$ 10.00	\$ 1,160			X	\$ 1,160		
	Class D Patches, Type I, 4 Inch	1	SQ. YD.	\$ 125.00	\$ 130					X	\$ 130
	Bridge Deck Concrete Sealer	10,610	SQ. FT.	\$ 2.00	\$ 21,220					X	\$ 21,220
Oak Park Avenue	Chain Link Fence Removal	30	FOOT	\$ 10.00	\$ 300	X	\$ 300				
	Handrail Repairs	1	L. SUM	\$ 15,400.00	\$ 15,400	X	\$ 15,400				
	Bridge Fence Railing	30	FOOT	\$ 200.00	\$ 6,000	X	\$ 6,000				
	Woven Wire Fence Repair	5	FOOT	\$ 50.00	\$ 250	X	\$ 250				
	Protective Shield	260	SQ. YD.	\$ 75.00	\$ 19,500			X	\$ 19,500		
	Blast Cleaning Bridge Joint Steel	120	FOOT	\$ 10.00	\$ 1,200			X	\$ 1,200		
	Expansion Joint Repair	20	FOOT	\$ 100.00	\$ 2,000			X	\$ 2,000		
	Class D Patches, Type I, 4 Inch	1	SQ. YD.	\$ 125.00	\$ 130					X	\$ 130
	Bridge Deck Concrete Sealer	10,950	SQ. FT.	\$ 2.00	\$ 21,900					X	\$ 21,900
Home Avenue	Woven Wire Fence Repair (Special)	35	EACH	\$ 500.00	\$ 17,500	X	\$ 17,500				
	Blast Cleaning Bridge Joint Steel	45	FOOT	\$ 10.00	\$ 450			X	\$ 450		
	Class D Patches, Type I, 4 Inch	2	SQ. YD.	\$ 125.00	\$ 250					X	\$ 250
	Bridge Deck Concrete Sealer	3,610	SQ. FT.	\$ 2.00	\$ 7,220					X	\$ 7,220
<b>Subtotal:</b>					<b>\$ 215,360</b>		<b>\$ 79,450</b>		<b>\$ 63,680</b>		<b>\$ 72,230</b>
<b>Contingency (5%):</b>					<b>\$ 11,000</b>		<b>\$ 4,000</b>		<b>\$ 4,000</b>		<b>\$ 4,000</b>
<b>Total:</b>					<b>\$ 227,000</b>		<b>\$ 84,000</b>		<b>\$ 68,000</b>		<b>\$ 77,000</b>