

**Station No.5 Structural Repairs – Existing Building Elevations & Detail Views**  
**2015 East Michigan Ave., Kalamazoo, MI 49048**  
**Structure Built 1914 – Bricks Solid, 3-Wythe Thick, Running Bond**



**South Elevation – Facing North**

**18.5 Ft Wide – Sill to Eve 9 Ft**

**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces – Entire Exterior Square Footage**

**Masonry Tuck Pointing - Entire Square Footage**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**

**Heli-Tie Helical Wall Tie, 12" Horizontal OC, 16" Vertical OC - Entire Square Footage**

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**West Elevation – Facing East**

**22.5 Ft Wide – Sill to Eave 9 Ft**

**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces – Entire Exterior Square Footage**

**Masonry Tuck Pointing - Entire Square Footage**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**

**Heli-Tie Helical Wall Tie, 12" Horizontal OC, 16" Vertical OC - Entire Square Footage**



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**North Elevation – Facing South**

**18.5 Ft Wide – Sill to Eve 9 Ft**

**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces – Entire Exterior Square Footage**

**Masonry Tuck Pointing - Entire Square Footage**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**

**Heli-Tie Helical Wall Tie, 12" Horizontal OC, 16" Vertical OC - Entire Square Footage**



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**East Elevation – Facing West, Northwest**

**18.5 Ft Wide – Sill to Eve 9 Ft**

**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces – Entire Exterior Square Footage**

**Masonry Tuck Pointing - Entire Square Footage**

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**Chimney Detail View – Included Quantity of Masonry Tuck Pointing (Type N Mortar). Concrete Cap Included Quantity of Concrete Restoration (RPS-263 Rapid-Hardening Vertical/Overhead Repair Mortar)**



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**South Elevation, West Window Detail View – Active Failure Area Above Window Arch and Mid Centerline of Window**

**Included Quantity of Work Scope:**

**Masonry Tuck Pointing - Entire Square Footage**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**

**Heli-Tie Helical Wall Tie, 12" Horizontal OC, 16" Vertical OC - Entire Square Footage**

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**South Elevation, Door Detail View – Active Failure Area Above Door Arch**

**Evidence of Improper Mortar, No Adhesion, Repair Attempt – Remove per Specifications**



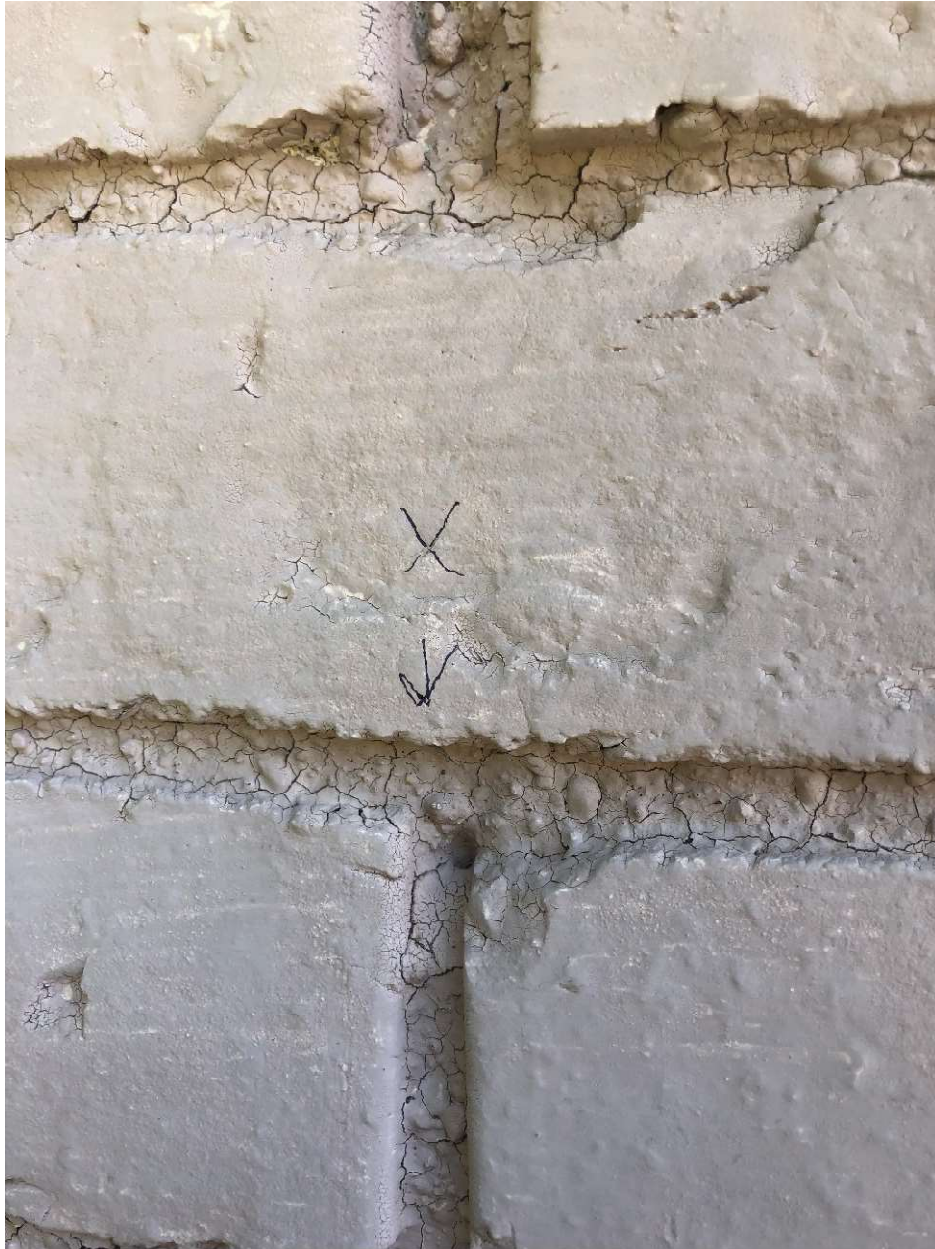
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**Example Detailing Heli-Tie Helical Wall Tie Placement 12" OC Horizontal by 16" OC Vertical beginning from the Top of the Second Course from Sill**

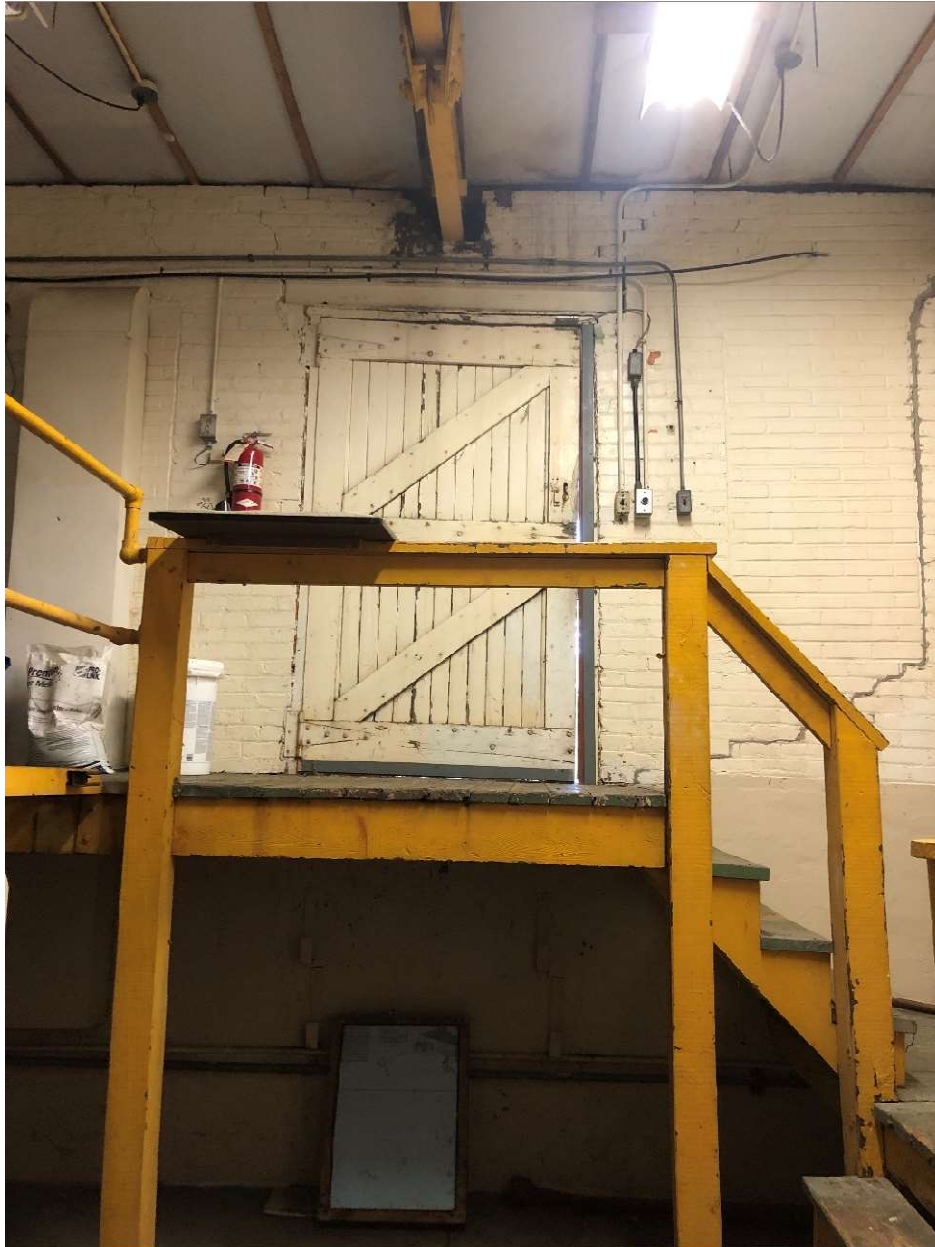


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**Detail View of Existing Joint/Mortar Condition (Typical) in Non-Active Failure Areas**

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**Interior South Elevation – Facing South**

**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces**

**Masonry Tuck Pointing – Heavy Replacement – Above Door Frame, And At Beam Penetration**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**



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**Interior South Elevation – Facing South**

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**Interior South Elevation – Facing South – Detail View**

**Included Quantity of Work Scope:**

**Masonry Tuck Pointing – Heavy Replacement – Above Door Frame, And At Beam Penetration**



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**Interior North Elevation – Facing North**

**Included Quantity of Work Scope:**

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**Interior West Elevation – Facing West**

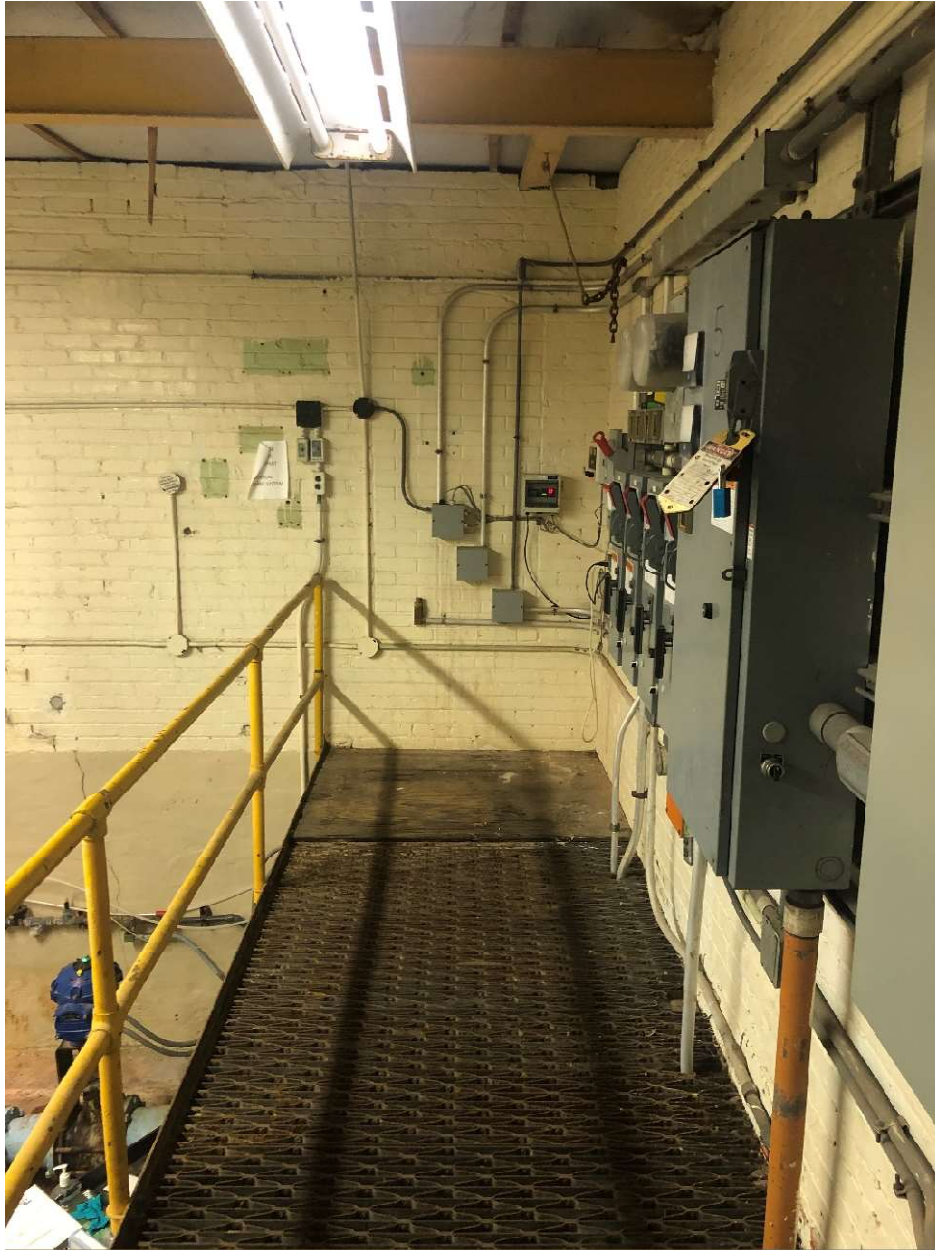
**Included Quantity of Work Scope:**

**Lead Abatement from Masonry Surfaces**

**Heli-Tie Helical Stitching Tie, 60" Horizontal OC, 12" Vertical OC – At Active Vertical Cracks**



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**Proposed Structural Steel Vertical Load Support Column – East Column Proposed Location – See Structural Steel Specs – Place W16 x 26 105" from Existing Floating Beam to New Proposed Concrete Pier Placed 60" Above Basement Floor.**

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**Proposed Structural Steel Vertical Load Support Column – South Column Proposed Location – See Structural Steel Specs – Place W16 x 26 105" from Existing Floating Beam to New Proposed Concrete Pier Placed 60" Above Basement Floor.**



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**Proposed Structural Steel Vertical Load Support Column – West Column Proposed Location – See Structural Steel Specs – Place W16 x 26 105" from Existing Floating Beam to New Proposed Concrete Pier Placed 60" Above Basement Floor.**

## **REMOVE LEAD-BASED PAINT FROM BRICK MASONRY SURFACES**

### **DESCRIPTION**

This work shall consist of hand scraping, wire brushing, pressure washing, sandblasting, torc cleaning, or acidic paste striping to REMOVE LEAD-BASED PAINT FROM BRICK MASONRY SURFACES, in accordance with the Contract Documents and as directed by the Engineer.

### **MATERIALS**

Not specified

### **CONSTRUCTION DETAILS**

The Contractor shall provide all necessary equipment to capture, convey, collect, contain, and dispose of the paint debris removed from the existing exterior or interior bricks or surfaces. The lead paint removal operations shall be conducted in accordance with the 29 CFR1926.62, OSHA Lead Exposure in Construction.

The containment shall have impenetrable walls and will allow natural ventilation. The containment shall protect dust or material propagation from the site and shall project the ground from lead containing materials.

All provisions of the following shall apply to implement and maintain effective health and safety control:

- Lead-Exposure Control Plan

- Medical Testing

- Personal-Exposure Monitoring Sample Analysis

- Decontamination Facilities

- Environmental Ground Protection

- Waste Disposal Plan

The paint removal waste shall be managed and disposed of in accordance with EGLE Standards and Regulations for the Treatment and Disposal of Paint Removal Wastes.

### **Michigan Certified Firm**

**The Contractor or Sub-Contractor performing the Lead Paint Abatement work scope shall be certified as a Lead Abatement Firm with the State of Michigan. Failure to provide Michigan certification will result in a determination of a non-responsive bid.**



**Lead Abatement Firm**

<b>Cert#</b>	<b>Name</b>	<b>City</b>	<b>Phone Number</b>	<b>Owner Name</b>
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**Allegan**

C-000650	Across The Board LLC	Allegan	616-307-0983	Marvin Van Oosten II
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**Barry**

C-000259	Able Construction Company	Wayland	616-291-7665	Craig Timmerman
C-001012	Blastek, LLC	Middleville	616-292-4695	Eric Waddell

**Bay**

C-000075	Boyle Constructors Incorporated	Bay City	989-450-4228	Andrew Boyle
C-000645	Burzie Builders	Linwood	989-600-5849	Andrew Burzynski Jr.
C-000925	Tucker Builders LLC	Pinconning	989-450-4481	Casey Tucker

**Benzie**

C-001085	SGS Contracting and Environmental LLC	Arcadia	231-970-9800	Scott S Fisher
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**Berrien**

C-001031	Lakeshore Management and Development LLC	Sodus	773-704-4436	Mark Postelli
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**Calhoun**

C-001110	AEDENCO LLC	Battle Creek	269-217-7999	Donald McClellan
C-001118	Breedlove Remodel & Roofing, LLC	Battle Creek	269-420-0737	Jeff Breedlove

C-000820	Roach Home Improvement, LLC	Battle Creek	269-420-6623	Terry Roach
C-001155	WG Construction Services, LLC	Albion	989-302-2698	N/A

<b>Cass</b>				
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C-000864	Flory Construction	Marcellus	269-501-3417	Willis Flory
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<b>Clare</b>				
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C-000991	Central Restoration, Inc.	Clare	989-386-6994	Justin Ridenour
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<b>Clinton</b>				
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C-000249	First Contracting Inc.	Ovid	989-834-1500	Brian Fleming
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<b>Eaton</b>				
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C-001074	Applin Remodeling	Charlotte	517-281-9321	Steven Applin
C-001121	Family First Builders LLC	Pottersville	517-930-2050	Cody Grider
C-000375	Michigan Builders LLC	Eaton Rapids	517-663-4340	John Campbell

<b>Fulton</b>				
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C-001123	W. J. Henry Construction LLC	Atlanta	404-518-4566	Michael R. Kelley
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<b>Genesee</b>				
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C-001092	1 Environmental LLC	Grand Blanc	810-695-7600	Nicholas Mannor
C-000025	Bedrock Building Incorporated	Flint	810-691-0808	Michael Foy
C-000001	Certified Abatement Services Incorporated	Flint	810-742-0600	Richard Jacques
C-000990	Cymex LLC	Goodrich	248-722-7335	Martin Petrov
C-000012	R.L. Howell Construction Incorporated	Davison	810-691-0412	Robert L. Howell



C-000242	Roe Enterprises	Flushing	810-625-1431	Leonard Roe Jr.
C-001081	Tree House Construction	Flushing	810-397-9621	Steven Van Tol

### Gladwin

C-000036	Quality Environmental Services, Inc	Beaverton	989-435-2946	Kevin Wolfe
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### Ingham

C-000318	Asbestos Abatement, Inc.	Lansing	517-323-0052	Michael Suty
C-000931	Community Building Services, LLC	Mason	517-604-6214	Clayton Shafer
C-001114	Frontier Building & Abatement LLC	Haslett	810-523-8044	Jarred Frick
C-000523	Habitat for Humanity Capital Region, Inc.	Lansing	517-374-1313	Vicki Hamilton-Allen
C-000045	Hazar-Bestos Corporation	Lansing	517-886-2772	Mike Beck
C-001156	Simon Zeineh - Residential Builders	Lansing	517-204-4200	Simon Zeineh

### Jackson

C-001113	Asbestos and Lead Abatement of Michigan LLC	Jackson	517-788-8348	Scott Hiller
C-001049	Community Action Agency	Jackson	517-784-4800	Toby Berry
C-001082	Driscoll Construction	Pleasant Lake	313-559-0071	Taylor Driscoll
C-001117	Iron Clad Construction LLC	Jackson	248-217-5693	Dwain Chalker
C-000871	Vandenburgh Building Co.	Michigan Center	517-740-8089	Timothy Vandenburgh

### Kalamazoo

C-000887	Abatement & Building Specialists	Richland	269-207-2744	Walter Scott Higdon
C-000791	Blackberry Systems, Inc.	Kalamazoo	269-353-8844	Michael Shields
C-001050	Home Ownership Construction Services L3C	Kalamazoo	269-364-2538	Kalamazoo Neighborhood Housing Services/Matt Milcarek
C-001098	Hunt for Home Construction LLC	Kalamazoo	269-350-9007	Ramon Huerta
C-001101	Legends Professional Property Services LLC	Richland	517-285-3268	Josh Lechner/Layne Lechner
C-000167	Martin & Associates Environmental L.L.C.	Kalamazoo	269-226-0707	William Martin

### Kalkaska

C-000953	Northern A-1 Services	Kalkaska	231-258-9961	Patrick Dovigi
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### Kent

C-001144	Able Home Repair, LLC	Grand Rapids	616-202-1177	LeDell Scott
C-000464	Commercial Abatement Services, LLC	Lowell	616-897-1966	Kenneth Walsh
C-000924	Demolition Contractors, Inc.	Grand Rapids	616-363-4895	Steven Pitsch
C-000343	Great Lakes Builders	Grand Rapids	616-308-5503	Viv Jaunais
C-000824	Green Management Co.	Caledonia	616-291-0993	Robert Keller
C-001153	JK Construction & Property Services LLC	Grand Rapids	720-979-5515	Joshua Koster
C-000342	Linnie's Home Repair Service	Wyoming	616-540-0104	Linnie Peterson
C-000019	Pro-Tech Environmental Incorporated	Grand Rapids	616-364-9170	Jodi Vlaming

### Lapeer



C-001063	Cooper and Son Plumbing	Lapeer	810-667-3300	Patrick Cooper
C-001149	Karma Environmental Solutions LLC	Otter Lake	Not Listed	N/A
C-000309	Stratton Home Improvement & Repair, LLC	Columbiaville	810-664-6785	Val Stratton

### Lucas

C-000140	Total Environmental Services L.L.C.	Toledo	419-244-6555	Terry Luhring
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### Macomb

C-001097	Barr-Wood Services	Mount Clemens	586-610-7314	David Barrett
C-000482	BDS Environmental	Warren	586-755-9030	Kenneth Lawler
C-000246	BT'S Construction Inc.	Shelby Township	586-264-6750	Timothy Omell
C-001151	Built Solid Renovations LLC	Mount Clemens	844-757-6543	Levi Moore
C-000022	D & T Home Improvement LLC	Macomb	586-466-4170	Donald Joseph
C-001037	Fowlers Construction, Inc.	Romeo	586-752-0587	Janece Fowler
C-000853	JMS Group, Inc.	Warren	586-634-2963	Michael Collins
C-000092	Joseph Home Improvement LLC	St. Clair Shores	810-499-5284	Stephen Joseph
C-000258	Mando Construction Inc.	Mount Clemens	586-222-3990	Nicholas DelGreco
C-001067	Premier Builder Inc.	Clinton Twp	586-727-4426	Paul H. Hayter
C-000257	Rite-Way Installations Inc.	Macomb	586-260-1435	Michael T. Nichter
C-001068	Royalty Property & Renovation Service	Sterling Heights	586-480-8082	Yvette Webb
C-000810	Scott Construction & Mechanical, LLC	Clinton Township	313-909-9556	John Scott

C-000286	White Pine Building & Development, LLC	Shelby Township	586-489-3771	Bradley Freestone
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<b>Menominee</b>				
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C-000951	N. Stroud Construction INC.	Perronville	906-280-1247	Nick Stroud
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<b>Monroe</b>				
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C-000490	Carter Building Services, Inc.	Temperance	734-847-7161	Philip Carter
C-001107	Homrich Wrecking, Inc.	Carleton	734-654-9800	Timothy J. Homrich

<b>Montcalm</b>				
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C-001027	Badgerow's Building & Remodeling	Greenville	616-889-4490	Randall Badgerow
C-001152	Excel Painting	Pierson	231-629-5899	Joshua Mackenzie

<b>Muskegon</b>				
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C-000232	Gray Space Construction	Muskegon	231-955-9701	Curtis Holden
C-000981	Nassau Construction, LLC	Muskegon	616-402-1534	Francena DePung

<b>Oakland</b>				
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C-000185	ABR Alpine Design	Berkley	248-506-0940	Richard Burke
C-001026	ABR Construction Inc.	Rochester Hills	586-405-5984	Ehab A. Mearim
C-000296	Benston D. Harris, Inc	Madison Heights	248-291-5392	Benston Harris
C-001035	Bid-Rite Contracting	Davisburg	248-795-2199	Jerome Watkins
C-001138	Clement Construction Company LLC	Waterford	248-666-7779	Jerrod Clement
C-000982	CTI Contractor Services LLC	White Lake	248-698-6900	Edward G. Wenz, Jr.
C-000072	Daco Construction, Inc.	Southfield	313-492-6644	Floyd Davis Jr.

C-001148	Davis Global Construction, LLC	Birmingham	248-975-7865	Brian R.F. Davis
C-001017	Everclean Restoration & Cleaning Services	Oak Park	248-860-5887	Christian Fahoome
C-000073	F. Lax Construction Co., Inc.	Ferndale	248-547-1914	Talal Jawad
C-000784	Fortune Builders	Rochester Hills	248-342-3093	Anita Chadha
C-000255	Homeform Corp.	Troy	313-972-1032	Jerzy Wydmuch
C-001096	Lead Specialist LLC	Royal Oak	313-478-1622	Juanquita Richardson
C-000915	LL Custom Contracting, Inc.	Madison Heights	248-632-1220	Christopher Lamphear
C-000552	Mansfield Construction Group LLC	West Bloomfield	248-613-5386	Richard V. Connell
C-001047	Metropolitan Environmental LLC	Farmington Hills	586-879-1234	LaMar Grace
C-000885	Optimum Contracting Solutions	Bloomfield Hills	248-346-3069	Anamaria Tet
C-000996	Pontiac Drywall Systems, Inc./ DBA PDSI Contrctors	Pontiac	248-332-3011	Phalanda Travis
C-001088	Pro Quality Remodeling LLC	Royal Oak	248-658-8852	Charles E. Dabrowski
C-000530	Qualified Construction Corp	Wixom	248-684-0005	John Hofmeister
C-001147	Select Property Solutions	Rochester Hills	877-708-1999	Michael Mead
C-000855	Synergy Construction Group LLC	Rochester	248-853-5783	Dan Gillbert
C-001150	The Paramount Consortium, LLC	Southfield	586-209-4109	Dorian Hogans
C-000481	TSS Consultants, Inc.	West Bloomfield	248-819-1062	Sandeep Shant
C-000850	We Preserve Michigan Residential Services	Southfield	248-436-2654	Jason Reaves

**Ottawa**



C-000474	Builders Unlimited, Inc.	Hudsonville	616-669-3294	Scott Brown
C-001003	JKB Construction Inc.	Jenison	616-437-2673	Jack Brown
C-000469	Randy S. Kraft Builder	Coopersville	616-485-3933	Randy Kraft

### Saginaw

C-000623	Absolute Building & Cuellar Inc.	Saint Charles	989-397-6145	Ernesto Cuellar Jr.
C-001128	Bigelow Builders LLC	Saint Charles	989-429-4245	Kenneth Bigelow
C-000241	Drew Gulliver Builders	Saginaw	989-280-0590	Kenneth Gulliver
C-000919	Rightway Remediation LLC	Saginaw	989-600-0055	Scott Krugielka
C-001105	WLF LLC	Saginaw	989-220-8612	Brian D. Poole

### Schoolcraft

C-001120	Olsen & Olsen Bldg. Contractors, Inc.	Manistique	906-341-3550	Todd L Olsen
C-001122	Woodland Builders, LLC	Manistique	906-450-3038	Paul Gibbs

### Shiawassee

C-000227	Trust Thermal Abatement, Inc.	Owosso	989-720-8834	David Baldwin
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### Tuscola

C-001013	Human Development Commission	Caro	989-673-4121	Lori Offenbacher
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### Van Buren

C-000596	David Noosbond General Contractor	South Haven	269-332-4438	David Noosbond
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### Washtenaw

C-000038	Great Lakes Environmental Services Inc.	Whitmore Lake	734-550-9199	Ryan Cleary
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### Wayne

C-000971	Aldewin Rose Contractors, LLC	Detroit	313-974-7274	Rachel Saltmarsh
C-000732	Ampro Construction LLC	Detroit	313-891-6000	Darnell Jackson
C-001059	Back To Life Properties, Inc.	Detroit	248-761-3213	Kenneth Loggins
C-001095	Blue Horizon Construction	Detroit	313-989-0092	Kalaya Long & Melvin Brown
C-001139	BLV 360 LLC	Detroit	866-258-0474	Valda Blackmoore
C-001080	Champ Construction LLC	Detroit	313-477-8513	Sean Phillips
C-000102	Clark's Construction	Detroit	313-345-7503	Clark Bailey
C-001154	CRA General Contracting	Detroit	313-354-1434	Jarrett Erwin
C-000722	D.R. Martin, Inc.	Detroit	248-210-7376	Darnell Martin
C-000970	David Fallon Construction	Belleville	734-645-2693	David Fallon
C-001124	Denim Construction LLC	Detroit	734-757-5416	Henry Williams Jr
C-001146	Detroit SOS Home Services	Detroit	248-214-7421	Julian Munoz
C-001111	Dez Luxury Painting Services	Detroit	248-445-0370	Deszjuan Bennett
C-000394	DMC Consultants, Inc.	Detroit	313-491-1815	Mike Chaudhary
C-000030	Environmental Maintenance Engineers Inc.	Inkster	313-791-2600	Michael Kelly
C-000150	George H. Pastor & Sons, Inc.	Livonia	734-522-3800	John R. Pastor
C-000534	Global Green Services Group, LLC	Dearborn Heights	313-291-2528	Clayton Robinson
C-000851	Go Green Contracting	Detroit	313-202-9025	Leon Petty

C-001140	Gold Wolf Construction LLC	Romulus	248-242-3292	Curtis Gordon
C-000390	Green Solutions Environmental Services	Detroit	313-279-0449	Monica Starks
C-001116	Harris Design & Construction Services	Detroit	313-444-3307	Karl Harris
C-000923	Innovative Environmental Solutions & Services, Inc./DBA Paige Construction	Detroit	734-512-8686	Paige Aubin
C-001102	Integrated Contracting, LLC	Westland	248-918-2379	Jesse Cortez
C-001104	J. Watson & Associates LLC	Detroit	313-516-4542	Jerry Watson
C-000861	JonMar Construction LLC	River Rouge	313-399-7291	Errol Parks
C-000908	Jozef Contractor, Inc	Detroit	586-604-5210	Jozef Olszewski
C-001129	K & R Project Management and Development LLC	Redford	313-915-9095	Keyotta Stroud
C-000166	Kingsway Building & Maintenance Incorporated	Detroit	313-895-8244	Larry K. Holloway
C-000897	Lake Star Construction Services LLC	Detroit	313-952-9096	Charles Bailey
C-001143	Lead Safe Professionals, LLC	Ecorse	313-384-2632	Oliver E Hayes
C-001125	MP Custom Contractors, LLC	Detroit	313-676-1595	Marcel Pettaway
C-000877	OMP Construction, Inc.	Livonia	313-525-4588	Priyanka Patel
C-000986	Onsite Solutions, Inc.	Livonia	734-523-8400	Jamel Esse
C-000747	Patrick Bennett Property Management Co., LLC	Redford	313-686-8401	Patrick Bennett
C-001134	Premier Contractors of Michigan, LLC	Detroit	313-695-0008	Cheryl Vincent
C-000816	Presidential Construction, Inc.	Detroit	313-801-0388	Terrell Dixon



C-001127	PurServe LLC	Detroit	269-993-9822	Simeon Anderson
C-001108	Q1 Services LLC	Detroit	313-492-0781	Kenya Spratt
C-000964	QD Environment, LLC	Detroit	313-590-9984	Larry Page
C-000057	Qualified Abatement Services Inc.	Detroit	313-733-4144	Forrest Goyette
C-001051	Ram Environmental & Consulting Services	Taylor	313-310-3252	Regina Bennett
C-000014	Rand Environmental Services, Inc.	Romulus	734-442-1101	Thomas Dyl
C-001099	Respectable Maintenance	Detroit	313-884-0063	Michael Law
C-000941	Sloan Environmental Services, Inc.	Taylor	734-992-6458	Eric Sloan
C-000433	Stroyko Construction Group, Inc	Detroit	Not Listed	Irena Milanova
C-001136	T&N Abatement & Cleaning Service	Detroit	313-320-2808	Trevor Lile
C-000486	Technical Service Professionals, LLC	Redford	734-838-0426	Ronald E. Swan, Jr.
C-001112	The Mannik & Smith Group, Inc.	Canton	Not Listed	Walter Bolt
C-001075	Tyus Construction LLC	Detroit	947-895-7373	Vaquero Tyus II
C-000360	Uniglobe Construction, Inc.	Detroit	313-592-0088	Jill Holloway
C-001137	Unleaded Abatement Group LLC	Detroit	313-400-3770	Joanne Brown
C-001029	Vertical Alliance LLC	Detroit	313-530-0204	Robert Walker IV
C-001142	Walker D. Construction LLC	Detroit	313-995-5421	Dawayne Walker



WONDER MAKERS  
ENVIRONMENTAL

2117 Lane Blvd., Kalamazoo, MI 49001  
(269) 382-4154 • Fax (269) 382-4161  
www.wondermakers.com

**Information:**

Name: James Baker  
Phone: 269-370-8715  
Fax:  
From: Cortni

Company:  
Date: 6/1/2023  
E-mail: [bakerj@kalamazoo-city.org](mailto:bakerj@kalamazoo-city.org)  
Project #: LS23-18704  
Invoice #:

Quantity	Part #	Description	Unit Price	Total
1		Standard analysis, Lead	\$75.00	\$ 75.00
		Additional layers	\$15.00	\$ -
<b>Shipping</b>				
<b>Tax</b>				
<b>Total</b>				\$ 75.00

**Bill To:**

Client/Company City of Kalamazoo  
Address: 1415 N. Harrison  
Address:  
City, State, Zip: Kalamazoo, MI 49007

**Ship To:**

Attention:  
Client/Company  
Address:  
Address:  
City, State, Zip:  
Ship Via:

**Charge To:**

Card type:  
Card #:  
Name on card: Alice A. Rowe

Expiration date:  
Authorization #:

Authorized customer signature:

\_\_\_\_\_

## **MASONRY TUCK POINTING**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION**

This section specifies requirements for tuck pointing of existing exterior masonry.

#### **1.2 RELATED WORK**

Mortars: Type N Mortar, MASONRY MORTARING

Mortars: Type N Mortar, MASONRY TUCK POINTING

Structural Repair: Helical Tie Stitching, Simpson Strong Tie Heli-Tie HELIST254000

Structural Repair Mortar: Helical Tie Stitching, Structural Repair Mortar RPS-263

Structural Repair: Helical Wall Tie, Simpson Strong Tie Heli-Tie HELI371200A

#### **1.3 APPLICABLE PUBLICATIONS**

A. Publications listed below form a part of this specification to extent referenced.

Publications are referenced in the text by basic designation only.

B. American Society for Testing and Materials (ASTM):

C67-07

C216-07

C270-07

C. International Masonry Institute: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

### **PART 2 - PRODUCTS**

Type N Mortar

#### **2.1 TUCK POINTING MORTAR**

As per appendix X3 of ASTM C270.



## **PART 3 - EXECUTION**

### **3.1 CUT OUT OF EXISTING MORTAR JOINTS**

- A. Cut out existing mortar joints (both bed and head joints) and remove by means of a toothing chisel or a special pointer's grinder, to a uniform depth of to 19 mm (3/4-inch), or until sound mortar is reached. Take care to not damage edges of existing masonry units to remain.
- B. Remove dust and debris from the joints by brushing, blowing with air or rinsing with water. Do not rinse when temperature is below freezing.

### **3.2 JOB CONDITIONS**

- A. Protection: Protect newly pointed joints from rain, until pointed joints are sufficiently hard enough to prevent damage.
- B. Cold Weather Protection:
  - 1. Tuck pointing may be performed in freezing weather when methods of protection are utilized.
  - 2. Comply with applicable sections of "Recommended Practices for Cold Weather Construction" as published by International Masonry Industry All Weather Council.
  - 3. Existing surfaces at temperatures to prevent mortar from freezing or causing other damage to mortar.

### **3.3 INSTALLATION OF TUCK POINTING MORTAR**

- A. Immediately prior to application of mortar, dampen joints to be tuck pointed. Prior to application of pointing mortar, allow masonry units to absorb surface water.
- B. Tightly pack mortar into joints in thin layers, approximately 6 mm (1/4-inch) thick maximum.
- C. Allow layer to become "thumbprint hard" before applying next layer.
- D. Pack final layer flush with surfaces of masonry units. When mortar becomes "thumbprint hard", tool joints.

### **3.4 TOOLING OF JOINTS**

- A. Tool joints with a jointing tool to produce a smooth, compacted, level joint. Joints shall be compacted and flush with the exterior face of the brick, not concaved in any manner.

### **3.5 REPLACEMENT OF MASONRY UNITS**

- A. Cut out mortar joints surrounding masonry units that are to be removed and replaced as determined by the engineer.
  - 1. Units removed may be broken and removed, providing surrounding units to remain are not damaged.
  - 2. Once the units are removed, carefully chisel out the old mortar and remove dust and debris.
- B. Dampen surfaces of the surrounding units before new units are placed.
  - 1. Allow existing masonry to absorb surface moisture prior to starting installation of the new replacement units.
  - 2. Butter contact surfaces of existing masonry and new replacement masonry units with mortar.
  - 3. Center replacement masonry units in opening and press into position.
  - 4. Remove excess mortar with a trowel.
  - 5. Point around replacement masonry units to ensure full head and bed joints.
  - 6. When mortar becomes "thumbprint hard", tool joints.

### **3.6 CLEANING**

- A. Clean exposed masonry surfaces on completion.
- B. Remove mortar droppings and other foreign substances from wall surfaces.
- C. First wet surfaces with clean water, then wash down with a solution of soapless detergent specially prepared for cleaning brick.
- D. Brush with stiff fiber brushes while washing, and immediately thereafter hose down with clean water.
- E. Free clean surfaces from traces of detergent, foreign streaks or stains. Protect materials during cleaning operations including adjoining construction.
- F. Use of muratic acid for cleaning is prohibited.

**END OF SECTION**

## **MASONRY HELICAL WALL TIES AND STITCHING TIES**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. This Section pertains to all other Sections of these Specifications that require post-installed helical ties, unless specified otherwise. Requirements pertaining to post-installed helical tie work including, but not limited to, furnishing and installing helical ties and providing all equipment, labor, services, and access to complete the work:
  - a. Helical wall ties to connect multiple wythes of masonry or other wall construction together
  - b. Helical stitching ties installed in mortar bed joints for crack stabilization

#### **1.02 RELATED WORK**

Mortars: Type N Mortar, MASONRY MORTARING

Mortars: Type N Mortar, MASONRY TUCK POINTING

Structural Repair: Helical Tie Stitching, Simpson Strong Tie Heli-Tie HELIST254000

Structural Repair Mortar: Helical Tie Stitching, Structural Repair Mortar RPS-263

Structural Repair: Helical Wall Tie, Simpson Strong Tie Heli-Tie HELI371200A

#### **1.03 REFERENCES**

Use the most recent edition of the following referenced Standards based on current, jurisdictional Code adoptions.

- A. ANSI B212.15 - Cutting Tools - Carbide-tipped Masonry Drills and Blanks for Carbide-tipped Masonry Drills
- B. ASTM E3121 - Standard Test Methods for Field Testing of Anchors in Concrete or Masonry
- C. CSA A370 – Connectors for Masonry
- D. SAE J405 - Chemical Compositions of SAE Wrought Stainless Steels
- E. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures
- F. 29 CFR, Standard 1926 – Safety and Health Regulations for Construction



#### **1.04 SUBMITTALS AND SUBSTITUTIONS**

Submittals and substitutions shall be in accordance with the General Conditions of the Contract Documents, Division 1: General Requirements, and the following procedures.

A. Submittals: Submit product data for proprietary products and materials listed under Part

2 - Products of this Section that includes:

1. General Product Information
2. Technical Performance Data
3. Material Safety Data Sheets (MSDS)
4. Manufacturer's Published Installation Instructions (MPII)
5. Results of pre-construction, site-specific, field testing program when required by the Contract Documents or Project existing conditions.

B. Substitutions

1. The Contractor shall submit technical performance data and calculations that are prepared & sealed by a registered Design Professional demonstrating that the product substitution is capable of achieving performance values equal to, or better than, the specified product using appropriate design procedure and/or standard(s) as required by the Contract Documents and applicable Building Code.
2. Calculations shall specify the diameter and embedment depth required of the substituted product as well as the diameter of drill bits and drilling procedures required to drill holes for the installation.
3. The Contractor shall submit results of a pre-construction, site-specific, field testing program for product proposed as substitutes when such field testing is required by the Contract Documents or Project existing conditions.
4. Substitution requests must be accompanied by all Submittal information required of the specified product for which the substitution is proposed.
5. Any increase in costs for such substitution shall be the sole responsibility of the Contractor.

### **1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Installers shall be trained by a qualified, helical tie product manufacturer's representative to assure proper installation.
- B. The Installer shall be experienced with the installation of product similar or equal to the type specified, and into the base material required for the Project, or shall otherwise be acceptable to the Owner.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to job site undamaged and in product manufacturer's or distributor's original packaging, complete with installation instructions.
- B. Protect and handle materials in accordance with product manufacturer's recommendations to prevent product damage, degradation, or deterioration.

### **1.07 PROJECT CONDITIONS**

- A. Contractor shall notify the registered Design Professional of inadequate, deteriorated, poor quality, and/or inappropriate base material conditions prior to commencing the work.
- B. The product steel type must provide suitable corrosion resistance for the anticipated service environment following proper installation.
- C. Pre-Construction, Site-Specific, Field Testing Program
  - 1. Pre-construction, site-specific, field testing of product may be specified or required when base materials are of unknown quality or poor existing condition to determine specific installation parameters, i.e. drill bit diameter, hole drilling procedures, etc., to optimize product performance.
  - 2. Results of the pre-construction, site-specific, field testing program shall be documented in a written field test report. The field test report shall include, but not be limited to, the following information: maximum tension performance, tension performance/axial deflection relationship, embedment depth, drill bit size, and rotohammer settings for each test and base material tested.

3. Pre-construction, site-specific, field testing shall conform to ASTM E3121 to the greatest extent possible and shall be conducted by qualified field technicians using calibrated test equipment.

## **PART 2 - PRODUCTS**

### **2.01 Helical Ties**

- A. Post-installed helical ties for use in masonry/concrete base materials shall be feature radial fins formed on the steel wire via cold rolling process suitable to support and resist structural demand loading by means of tension, compression or a combination of both.
- B. Material: Type 304 Stainless Steel as specified for the Project conditions.
- C. Helical ties shall be installed using the manufacturer's accessories.
- D. Unless noted otherwise, Helical Ties shall be Heli-Tie products by the Simpson Strong-Tie Company. Use Heli-Tie Wall Tie for wall tie applications and Heli-Tie Stitching Tie for crack stitching applications.
- E. Heli-Tie Helical Wall Tie Product Selection – 3/8" x 12" – HELI371200A (Drill Bit Diameter 1/4")
- F. Heli-Tie Helical Stitching Tie Product Selection – HELIST254000

### **2.02 Non-Shrink Repair Mortar – Use with Stitching Ties HELIST254000**

- A. Mortar for use as a system in the stitching tie application shall be cementitious, single-component, fiber-reinforced, polymer-modified, silica fume-enhanced, structural repair mortar with integral corrosion inhibitor.
- B. Unless otherwise noted, use Simpson Strong-Tie **RPS-263** Rapid-Hardening Vertical/Overhead Repair Mortar.

### **2.03 Type N Mortar – Use with Wall Ties HELI371200A**

- C. Mortar for use as a system in the wall tie application shall be Type N mortar.
- D. Unless otherwise noted, use Type N mortar.

### **2.04 Misc. Repair Materials**

- A. Material used for vertical crack repair in stitching tie application shall be as specified or approved by the registered Design Professional.



- B. Material used to conceal horizontal mortar joint in stitching tie application shall be as specified or approved by the registered Design Professional.

#### **2.05 Equipment and tools for installing wall ties**

- A. Drill bit. Drill bit shall be carbide-tipped and conforming to ANSI B212.15. Diameter shall be as specified in the Contract Documents.
- B. Installation Tool. Use installation tool as specified by the helical tie manufacturer. Unless noted otherwise, use Simpson Strong-Tie Heli-Tie Installation Tool (model HELITool37A).

#### **2.06 Equipment and tools for installing stitching ties**

- A. Rotary grinding wheel or other suitable tools for safely removing mortar in bed joints to the depth specified in the Contract Documents.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine supporting base materials and environmental conditions. Do not begin installation until base materials have been properly prepared.
- B. Unless otherwise specified, do not drill holes or commence helical wall tie installations in concrete or masonry until the concrete, mortar, or grout base materials have achieved their full design strength.

#### **3.02 INSTALLATION**

Installations shall conform to the Manufacturer's Published Installation Instructions (MPII) or to alternative procedures specified in the Contract Documents. Installation procedures specified in the Contract Documents shall supersede procedures in the MPII.

##### **A. For Wall Tie applications**

1. Drill all holes for helical ties using carbide-tipped ¼" diameter drill. Drill holes with rotohammer setting set as specified in the Contract Documents or otherwise recommended in the MPII. It is suggested to use rotation only mode for soft or hollow materials.

2. Identify position of bed joint reinforcement, reinforcing steel and/or other embedded items prior to drilling holes for ties. Exercise care in drilling to avoid damaging existing reinforcing or embedded items. Notify the registered Design Professional of Record if reinforcing steel or other embedded items are encountered during hole drilling procedures.
3. Drill holes for helical wall ties accurately and squarely without excessive drill bit wobble at locations and spacing specified in the Contract Documents. Drill holes perpendicular to base material, unless otherwise specified.
4. Drill holes continuously and to the specified embedment depth through all facing and back-up base materials to be tied together.
5. Install helical ties into holes pre-drilled in base materials using the manufacturer's recommended installation tool.
6. Position correct end of helical tie into the manufacturer's installation tool set in an SDS-Plus rotohammer and drive the helical tie into the pre-drilled hole with the rotohammer set in hammer mode. Drive the helical tie into the base material until the helical tie is countersunk beyond the facing base-material surface as specified or to the depth permitted by the installation tool. Install specified patch / repair material to match existing finish surface material.
7. Where the helical tie manufacturer recommends use of special tools for installation of ties, such tools shall be used, unless otherwise specifically permitted by the registered Design Professional of Record.

**B. For Stitching Tie applications**

1. Remove bed joint mortar for minimum 20 in. length on either side of the affected area (crack) to a depth of approximately 1 1/4", or as otherwise specified, with a rotary grinding wheel. Unless specified otherwise on the contract documents, vertical spacing of installation sites should be every fourth course for red brick or every other course for concrete masonry units.
2. Clear bed joint of all loose debris and condition mortar joint and adjacent units to a saturated surface dry moisture condition.

3. Mix non-shrink repair grout or mortar per product instructions and place into the prepared bed joint, filling the void to approximately two-thirds of its depth.
4. Embed the Stitching Tie at one-half the depth of the void. Trowel displaced grout to fully encapsulate the tie.
5. Fill and tool any remaining void of the bed joint with mortar to match existing adjacent mortar.
6. Fill and finish any vertical cracks with approved repair material to conceal repair site.

### **3.03 FIELD QUALITY CONTROL**

#### **A. Special Inspection**

1. When Special Inspection is required under the Contract, the Contractor shall notify the Owner's selected Special Inspection Agency of the helical tie Installer's intent to commence work, providing at least 72 hours advanced notice.
2. The Contractor shall provide the Special Inspector with safe access to the work and a representative from the Contractor shall accompany the Special Inspector at all time during Special Inspection, unless otherwise agreed between the Contractor, Owner, and Special Inspection Agency.

### **3.04 FIELD TESTING**

- A. Helical tie installations shall be tested during construction by qualified field technicians acceptable to the Owner and registered Design Professional of Record using properly calibrated, manufacturer-recommended, proprietary testing equipment when such field testing is specified under the Contract.
- B. Frequency of helical wall tie testing shall be determined by the engineer.
- C. Contact manufacturer for additional information related to field testing.

**END OF SECTION**



# CONCRETE RESTORATION

## **PART 1 - GENERAL**

### **1.1 DESCRIPTION**

Partial depth concrete repair with polymer modified fiber-reinforced cementitious repair mortar

### **1.2 RELATED WORK**

Mortars: Type N Mortar, MASONRY MORTARING

Mortars: Type N Mortar, MASONRY TUCK POINTING

Structural Repair: Helical Tie Stitching, Simpson Strong Tie Heli-Tie HELIST254000

Structural Repair Mortar: Helical Tie Stitching, Structural Repair Mortar RPS-263

Structural Repair: Helical Wall Tie, Simpson Strong Tie Heli-Tie HELI371200A

### **1.3 APPLICABLE PUBLICATIONS**

ASTM C109

ASTM C496

ASTM C882 MOD

ASTM C666

AASHTO/ASTM C1201/T277

ASTM C779

ICRI 210.3 /ASTM C1583

ASTM C185

ASTM C309

ACI 305

ACI 306

ACI 308

ICRI Guideline 310.1R

## **PART 2 - PRODUCTS**

Simpson Strong-Tie RPS-263 Rapid-Hardening Vertical/Overhead Repair Mortar

## **2.1 CONCRETE RESTORATION MORTAR**

RPS-263 Rapid-Hardening Vertical/Overhead Repair Mortar is a cementitious, single-component, fiber-reinforced, polymer-modified, silica fume-enhanced, structural repair mortar with integral corrosion inhibitor designed for vertical and overhead applications

### **PART 3 - EXECUTION**

#### **3.1 SURFACE PREPERATION**

- A. Concrete and reinforcing steel to receive repair mortar must be sound, clean, and free of all contaminants that could impair product adhesion, bond, or performance.
- B. Concrete should be a minimum of 28 days old or substantially cured to the equivalent design strength prior to RPS-263 installation.
- C. Prepare concrete and reinforcing steel in accordance with ICRI Guideline 310.1R. Saw-cut cracks less than ¼" wide, for areas, saw-cut the perimeter of the repair area, taking care to avoid cutting any reinforcing steel. Remove all loose or deteriorated concrete by chipping hammer, water jetting, or other mechanical means to reach sound concrete and achieve an open pore structure and surface profile per ICRI Guideline 310.2R CSP 5-9, taking care to avoid microcracking. Remove all corrosion, rust, and surface contaminants from reinforcing steel by sandblasting or other mechanical means. Remove all cleaning media and debris by vacuum or blowing with high-pressure, oil-free air.
- D. For added corrosion protection, prime exposed reinforcing steel with RPS-406 Zinc-Rich Primer.
- E. Prior to installation of RPS-263, saturate the surface with potable water to achieve a saturate surface dry (SSD) surface condition. The substrate should be saturate surface dry (SSD) with no standing water remaining at the time of application.
- F. When it is impractical to achieve an SSD surface condition or to improve bond strength, apply RPS-752 Epoxy Bonding Agent or RPS-792LPL Long Pot Life Epoxy Bonding Agent to the repair area prior to RPS-263 installation. RPS-263 must be applied while bonding agent is still wet. Do not apply more bonding agent than can be effectively covered with RPS-263 while remaining wet.

#### **3.2 MIXING**

- A. For optimal product performance, condition to 70°F (21°C) prior to use.
- B. Do not prepare more material than can be used in the working time of the product.
- C. For hot-and-cold weather installations, refer to ACI 305 and 306 guidelines.

- D. Mix with a mortar mixer or a low-speed (300–600 rpm) drill and mixing paddle.
- E. For best results, start with 90% of total mixing water and slowly add entire contents of RPS-263 while mixing to avoid clumping. Adjust using remaining 10% of total mixing water until desired consistency is achieved scraping unmixed material from the sides and bottom of mixing container as needed to ensure all material is mixed.

**Consult the printed instructions on the product package for the maximum recommended amount of mixing water.**

- F. Mix for approximately 3 minutes.

### **3.3 APPLICATION**

- A. Remove all standing water by vacuum or blowing with oil-free, compressed air prior to installation. RPS-263 can be installed on damp, or SSD concrete surfaces. Do not install through standing water or on dry porous surfaces.
- B. Take appropriate measures to protect repairs from wind and high temperatures until fully cured. Never apply in direct sunlight.
- C. **Hand Trowel with Bonding Agent:** Immediately following RPS-752 or RPS-792LPL application, and while bonding agent is still wet, hand-trowel RPS-263 into repair area to desired application thickness. Strike off with trowel and allow product to set. Finish with a wood or sponge float, or broom. For multiple lifts, roughen profile with trowel between lifts.
- D. **Hand Trowel without Bonding Agent:** Use a scrub coat by applying a thin layer of undiluted RPS-263 into the concrete surface with a stiff bristle brush. Immediately hand-trowel RPS-263 into repair area to desired application thickness. Strike off with trowel and allow product to set. Finish with a wood or sponge float. Do not apply more scrub coat than can be effectively covered with RPS-263 without scrub coat drying out. For multiple lifts, roughen profile with trowel between lifts.
- E. **Curing:** Immediately following finishing, wet-cure RPS-263 in accordance with ACI 308 or use an ASTM C309–compliant water-based curing compound. The use of curing compounds may affect adhesion of subsequent surface treatments. SSD surface conditions and proper curing procedures are critical at minimum application thickness to prevent premature drying or cracking.

### **3.5 CLEANING**

- A. Clean exposed masonry surfaces on completion.

- B. Remove mortar droppings and other foreign substances from wall surfaces.
- C. First wet surfaces with clean water, then wash down with a solution of soapless detergent specially prepared for cleaning brick.
- D. Brush with stiff fiber brushes while washing, and immediately thereafter hose down with clean water.
- E. Free clean surfaces from traces of detergent, foreign streaks or stains. Protect materials during cleaning operations including adjoining construction.
- F. Use of muratic acid for cleaning is prohibited.
- G. Cured material can only be removed by mechanical means.

**END OF SECTION**



## **STRUCTURAL STEEL & CONCRETE PIERS**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION**

Placement of wide flange beam A572 structural steel columns, concrete piers, and double cleat and base plate connection details to existing floating steel beams and concrete piers.

#### **1.2 RELATED WORK**

Concrete Piers

#### **1.3 APPLICABLE PUBLICATIONS**

MDOT Standard Specifications for Construction

AISC Steel Construction Manual

ASTM A572

ASTM A325

ASTM A563-C

ASTM F436

ACI

### **PART 2 - PRODUCTS**

#### **2.1 STRUCTURAL STEEL BEAMS**

- A. ASTM A572 Wide Flange Steel Beam W16 X 26, 105" To 105 5/16" Length
- B. 3/8" ASTM A572 Plate Steel
- C. 1/2" – 13 x 2" ASTM A325 Structural Bolt
- D. 1/2" – 13 ASTM A563-C Structural Nut
- F. 1/2" Diameter - 3/8" Thick ASTM F436 Structural Grade 50 Plate Washers

#### **2.1 CONCRETE, READY-MIX**

- A. MDOT D Concrete, All Limestone, Air Entrained, MRWR, 4500 PSI

## **PART 3 - EXECUTION**

### **Steel Vertical Load Support of Overhead Crane Beams**

#### **Specifications**

Design Load = 4 KIP

Existing (Floating) Beams, W8 x 13 A36 Wide Flange Beam

4" Flange

7.5" Web

7.99" Overall – Outside Edge to Outside Edge

#### **Proposed**

(3) W16 x 26 Grade 50 A572 Wide Flange Beams – Placed as Columns

Length = 105" to 105- 5/16 "(Each X3) Field Verify

5.5" Flange

15" Web

15.69" Overall

0.345" Tf      0.25" Tw

#### **Connection Detail – Column to Beam (x3)**

Existing W8 x 13 Flanges Oriented in the X-Axis, Place W16 x 26 Flanges in the Y-Axis

Webs Aligned – Existing W8 x 13 Web in the Continuous Dimension to be Aligned with the Proposed W16 x 26 Web in the 15" dimension

Double Cleat Bolted Connection

W16 x 26 Flange Cleats (Fins) Bolted to W8 x 13 Web

9/16" Diameter Holes at W16 x 26 Flange and W8 x 13 Web Locations

Cleats – Fabricated 3/8" Grade 50 Structural Plate, 9/16" Diameter Holes

3/8" Thick, 6" Long, 2" Wide FPW to Cleat Side (Top – Connection to W8 x 13)

3/8" Thick, 6" Long, 8" Tall FPW to Cleat Top (Side – Connection to W16 x 26)

½" – 13 x 2" A325 Structural Hex Head Bolts with A563-C Hex Nuts Plain

ATSM F436 3/8" Structural Grade Plate Washers

Each Connection (x3) – Two (2) Cleats, Six (6) Bolts

### **Connection Detail – Column to Concrete Pier (x3)**

12" x 30" x 3/8" Thick Grade 50 Base Plate, Full Penetration Welded to Base of W16 x 26

Stiffener (Cleat), 3/8" Grade 50 Structural Plate, 12" x 12", 90° to 12" Wide x 12" Long

Full Penetration Weld (FPW) Fabricated to Make Shape

FPW to W18 x 26 (3 sides)

FPW to Base Plate (3 sides)

Base Plate - Four (4) Bolt Holes, 9/16" Diameter, Offset 2" Centerline Inboard

Base Plate Bolted to Concrete Pier – ½ Diameter Bolted Connection

(X 3 Required)

### **Concrete Pier (x3)**

16" Wide

34" Long – Same Axis as the Web (15.69 Overall) of the W16 x 26 Columns

72" Tall

60" Tall Above Existing Concrete Floor (Should sit below Subway Grates)

12" Deep Below Floor

1" Formed Chamfer All Vertical Sides (x4)

1" Formed Chamfer All Horizontal Top Sides (x4)

(Top Chamfered Area = 14" x 32")

12" x 30" No.4 Stirrups @ 8"

No.6 Bar Placed Vertically Inside Stirrups @ 6" (Long Sides)

No.6 Bar Placed Vertically Inside Stirrups @ 4" (Short Sides)

No.6 Bar Bottom, Bent 90 Degrees 6", Placed Flared Out

MDOT D Concrete, All Limestone, Air Entrained, MRWR, 4500 PSI

### **Concrete Pier Base – Below Floor (x3)**

18" to 20" x 36" to 40" saw cut, break, and remove concrete (Space Allowing)

Excavate and Remove 12" Material (Depth)

Flare out Bottom of Hole by 8" in all Directions

Pier Monopour Shall Occur Within 24 Hours of Excavation

**END OF SECTION**