

April 21, 2022

Ms. Jennifer Dorman Remediation and Redevelopment Program Wisconsin Department of Natural Resources 2300 North Martin Luther King Drive Racine WI, 53212

Project # 40443

Subject: Proposed Vapor Mitigation System Commissioning Plan for

Community Within the Corridor – West Block

3212 W. Center St., 2727 N. 32nd St., and 2758 N. 33rd St., Milwaukee, WI 53210

BRRTS #: 02-41-587376, FID #: 341333190

Dear Ms. Dorman:

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) proposes a Vapor Mitigation Commissioning plan for the west block property. KSingh requests that the WDNR review this response and grant approval to proceed with commissioning of the vapor mitigation system. A Technical Assistance Fee in the amount of \$700 is attached with this letter. KSingh requests a review by May 15, 2021.

Project Background

The Community Within the Corridor Limited Partnership is proposing to redevelop the property into a mix of affordable housing, commercial spaces, and other amenities. The proposed development includes the following: The Corridor Lofts (64 Units), Creme City Lofts (36 Units) & 30 Square Townhomes (6 Units) and the Briggs Apartment Homes (91 Units) and a Community Service Facility which will include early childhood education, Science, Technology, Engineering, Art & Math after school programming, a health club (Basketball, Volleyball & Futsal, Skatepark), laundromat and a petite grocery store. The property has been rezoned Industrial Mix to facilitate development of the project. The subject property is owned by Community within the Corridor Limited Partnership (BRRTS #02-41-587376), is located at 3212 W. Center Street, 2727 N. 32nd Street, and 2758 N. 33rd Street, City of Milwaukee, Milwaukee County, Wisconsin. The three parcels total approximately 2.83 acres and are all zoned as IM – Industrial Mixed (1 and 2). The subject property is covered by one- to three-story buildings. Historically, the West Block of the facility served various industrial purposes for over 100 years (since 1920). The West Block building complex was recently vacant and is currently under construction for redevelopment which started in February 2021, which entails affordable housing, commercial space, and other amenities within the former industrial complex.

tween March and April of 2021, sub-slab vapor samples were collected throughout the West Block facility. Concentrations from sampling activities identified impacts beneath the sub-surface for future mitigation efforts.

Twenty-five (25) sub-slab vapor (SSV) points were installed at the West Block and tested for VOCs. Vapor results indicated



the following:

- Tetrachloroethene (PCE) was detected at concentrations exceeding the Residential VRSL of 1400 ug/m³ at WB-SS-7 and at WB-SS-19.
- Trichloroethene (TCE) was detected at concentrations exceeding the Residential VRSL of 70 ug/m³ at WB-SS-4 and WB-SS-7.
- 1,4-Dioxane, a known constituent of chlorinated solvents, was detected at concentrations exceeding the Residential Vapor Risk Screening Level (VRSL) of 18 micrograms per cubic meter (ug/m³) at WB-SS-3.
- M&p-Xylene was detected at concentrations exceeding the Residential VRSL of 333 ug/m³ at WB-SS-23.
- No Large Commercial / Industrial VRSLs were exceeded.

Based on the results of SSV sampling, limited areas of Residential VRSL exceedances for chlorinated solvents and other VOCs were detected and delineated. Based on the levels of vapors and soil contamination, vapor mitigation of the known areas of vapor contamination is recommended. Pressure Field Extension (PFE) testing was performed in buildings 7 through 8A and 8B.

Soil sampling in Buildings 4 and 5 did not identify source areas. Thirteen soils samples were collected beneath Buildings 4 and 5 and 10 soil samples did not contain CVOCs. Soil contamination including CVOCs was detected from trench samples WB-RTS-1 and WB-RTS-2 and source removal was performed during excavation of the trenches.

The vapor remedial action plan for the West Block included a second round of vapor sampling in the basement areas (including building 8A) and in buildings 4, 5 and 6 in August 2021 to determine the adequacy of the vapor system. Vapor sampling included additional sampling of sub-slab vapor points WB-SS-2, WB-SS-8, WB-SS-9, WB-SS-10, WB-SS-11, WB-SS-12, WB-SS-13, WB-SS-14, WB-SS-15, WB-SS-16, WB-SS-17, WB-SS-18, WB-SS-19, WB-SS-20, WB-SS-21, WB-SS-22, WB-SS-23, WB-SS-24, and WB-SS-25 where no Vapor Risk Screening Levels (VRSLs) were exceeded during the first round of sampling.

The findings of the second round of vapor sampling are summarized below.

- Subslab vapor sampling of WB-SS-2 in the basement of building 8A showed no exceedances of any VRSL.
- Subslab vapor sampling of WB-SS-8 and WB-SS-9 in the basement of building 6 showed no exceedances of any VRSL.
- Subslab vapor sampling of WB-SS-12 and WB-SS-13 in the basement of building 4 showed no exceedances of any VRSL.
- Subslab vapor sampling of WB-SS-14 and WB-SS-24 on the ground floor of Building 4 showed no exceedances of any VRSL.
- Subslab vapors in WB-SS-10, WB-SS-11, WB-SS-22, WB-SS-23, and WB-SS-25 from the ground floor of Building 4 and Building 5 contained TCE at concentrations ranging from 128 ug/m³ to 460 ug/m³ which exceed the Residential exposure VRSL of 70 ug/m³.

Soil sampling in Building 4 Based on the second round of groundwater sampling, a Sub-Slab Depressurization System (SSDS) was recommended for vapor mitigation of Building 4 and Building 5.

Pressure field extension testing was performed in Buildings 4 and 5 and a report for Feasibility Study and Design of a Vapor Mitigation System was submitted to the WDNR on April 1, 2022. Installation of the Vapor



Mitigation System in Buildings 4 and 5 is in progress. Installation of the Vapor Mitigation System (VMS) in buildings 6, 7, 8A, and 8B is nearly complete. The plans for the VMS system for the West Block complex is shown on Figure 1. This plan has been prepared to properly commission the VMS for the West Block buildings in accordance with guidance provided in WDNR publication RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin" dated January 2018.

Commissioning Plan for Buildings 6, 7, 8A, and 8B

The performance goals for Buildings 6, 7, 8A, and 8B are the following.

- 1. Demonstrate a sub-slab depressurization of at least 0.004 inches water under the entire ground floor slab where vapors exceeding VRSLs were determined to be present.
- 2. Demonstrate that there are no indoor air exceedances of VALs.
- 3. Demonstrate that the ground floor slab acts as a barrier.

To do so, the following commissioning actions will be performed for the first round in accordance with Appendix D of WDNR publication RR-800.

- 4. The SSDS fans will be turned on and allowed to operate for at least 48 hours prior to measurements.
- 5. The building will be sealed for at least 24 hours prior to air testing.
- 6. An inspection of cracks and joints will be performed using smoke methods to determine if air is being drawn into the sub-slab. Identified infiltration points will be sealed to prevent further infiltration.
- 7. Sub-slab vapor pins will be installed at 16 points (SVP-1 to SVP-16) as shown on Figure 2.
- 8. Following installation of vapor pins, vacuum measurements will be performed using a digital manometer. Readings will be recorded and compared to the standard of 1 Pa or 0.004 inch-H2O. If not all points meet the vacuum goal, modifications will be made to the system including 1) installing larger fans, 2) adding extraction points, 3) improve the barrier seal, or, with WDNR's permission, add supplemental air exchange or treatment.
- 9. Following the PFE measurements, indoor air samples will be collected and tested for VOCs to document compliance with residential VALs. One air sample will be collected over a 24-hour period using passive air sampling for each building level. The proposed locations are shown in Attachment A. Three indoor air samples (IA-6-Basement, IA-6-01, and IA-6-02) will be collected in Building 6. Two indoor air samples will be collected in Building 7 (IA-7-01 and IA-7-02). Four indoor air samples (IA-8A-Basement, IA-8A-01, IA-8A-02, and IA-8A-03) will be collected in Building 8A. Two indoor air samples (IA-8B-01 and IA-8B-02) will be collected in Building 8B. One outdoor background sample (OA-6/7/8A/8B-Background) will be collected. 12 air samples will be tested in total for each commissioning round.
- 10. Baseline conditions will be documented including 1) vacuum measurements for each fan system, 2) barrier condition inspection, repair, and photographic and written documentation, and 3) parts inspection, repair, and photographic and written documentation. Air flow inspection may be performed if vacuum isn't sufficient as part of troubleshooting.
- 11. One outflow air sample will be collected from each building for a total of 4 based on future accessibility and tested for VOCs to establish baseline conditions.

Following completion of each round of commissioning, a report documenting findings will be submitted to WDNR. The first round of commissioning is scheduled for May 2022.

If VALs are complied with and adequate sub-slab depressurization is demonstrated, it is expected that the building will be open for residents in June 2022.



The second round of commissioning is scheduled for August 2022. The third and final round of commissioning is scheduled for November 2022.

An operations and maintenance plan will be submitted with the first round commissioning report, and modified as necessary.

Commissioning Plan for Buildings 4 and 5

The performance goals for Buildings 4 and 5 are the following.

- 1. Demonstrate a sub-slab depressurization of at least 0.004 inches water under the entire ground floor slab where vapors exceeding VRSLs were determined to be present.
- 2. Demonstrate that there are no indoor air exceedances of VALs.
- 3. Demonstrate that the ground floor slab acts as a barrier.

To do so, the following commissioning actions will be performed for the first round in accordance with Appendix D of WDNR publication RR-800.

- 4. The SSDS fans will be turned on and allowed to operate for at least 48 hours prior to measurements.
- 5. The building will be sealed for at least 24 hours prior to air testing.
- 6. An inspection of cracks and joints will be performed using smoke methods to determine if air is being drawn into the sub-slab. Identified infiltration points will be sealed to prevent further infiltration.
- 7. Sub-slab vapor pins will be installed at 15 points (SVP-17 to SVP-31) as shown on Figure 3.
- 8. Following installation of vapor pins, vacuum measurements will be performed using a digital manometer. Readings will be recorded and compared to the standard of 1 Pa or 0.004 inch-H2O. If not all points meet the vacuum goal, modifications will be made to the system including 1) installing larger fans, 2) adding extraction points, 3) improve the barrier seal, or, with WDNR's permission, add supplemental air exchange or treatment.
- 9. Following the PFE measurements, indoor air samples will be collected and tested for VOCs to document compliance with residential VALs. One air sample will be collected over a 24-hour period using passive air sampling for each building level. The proposed locations are shown in Attachment A. Building 4 will be sampled in the basement (IA-4-Basement) and 1st floor (IA-4-01). Building 5 will be sampled on the ground level (IA-5-01). One outdoor background sample (OA-4/5-Background) will be collected. 16 air samples will be tested in total for each commissioning round.
- 10. Baseline conditions will be documented including 1) vacuum measurements for each fan system, 2) barrier condition inspection, repair, and photographic and written documentation, and 3) parts inspection, repair, and photographic and written documentation. Air flow inspection may be performed if vacuum isn't sufficient as part of troubleshooting.
- 11. One outflow air sample will be collected from each building for a total of 2 based on future accessibility and tested for VOCs to establish baseline conditions.

Following completion of each round of commissioning, a report documenting findings will be submitted to WDNR. The first round of commissioning is scheduled for June 2022.

If VALs are complied with and adequate sub-slab depressurization is demonstrated, it is expected that the building will be open for commercial occupancy in August 2022.

The second round of commissioning is scheduled for September 2022. The third and final round of commissioning is scheduled for December 2022.



An operations and maintenance plan will be submitted with the first round commissioning report, and modified as necessary.

Schedule

The following schedule is proposed:

May 2022 First round of commissioning, Buildings 6, 7, 8A, and 8B

June 2022 Submission of First Round Commissioning Report for Buildings 6, 7, 8A, and 8B

June 2022 Residential Occupancy of Buildings 6, 7, 8A, and 8B June 2022 First round of commissioning, Buildings 4 and 5

July 2022 Submission of First Round Commissioning Report for Buildings 4 and 5

August 2022 Commercial Occupancy of Buildings 4 and 5

August 2022 Second round of commissioning, Buildings 6, 7, 8A, and 8B

September 2022 Second round of commissioning, Buildings 4 and 5
October 2022 Submission of Second Round Commissioning Report
November 2022 Final round of commissioning, Buildings 6, 7, 8A, and 8B

December 2022 Final round of commissioning, Buildings 4 and 5

January 2023 Final Commissioning Report

We request WDNR's approval of plan for Vapor Extraction / Mitigation. Please contact us, if you have any questions or seek clarification regarding this submittal.

Sincerely,

K. SINGH & ASSOCIATES, INC.

Robert T. Reineke, P.E.

Project Manager

Pratap N. Singh, Ph.D., P.E.

Principal Engineer

cc: Que El-Amin / Scott Crawford, Inc.

Shane LaFave / Roers Companies

Robert I Reinske

Attachments:

Figure 1 Layout vs VRSL Exceedance Plumes for VOCs
Figure 2 Commissioning Plan for Buildings 6, 7, 8A, and 8B

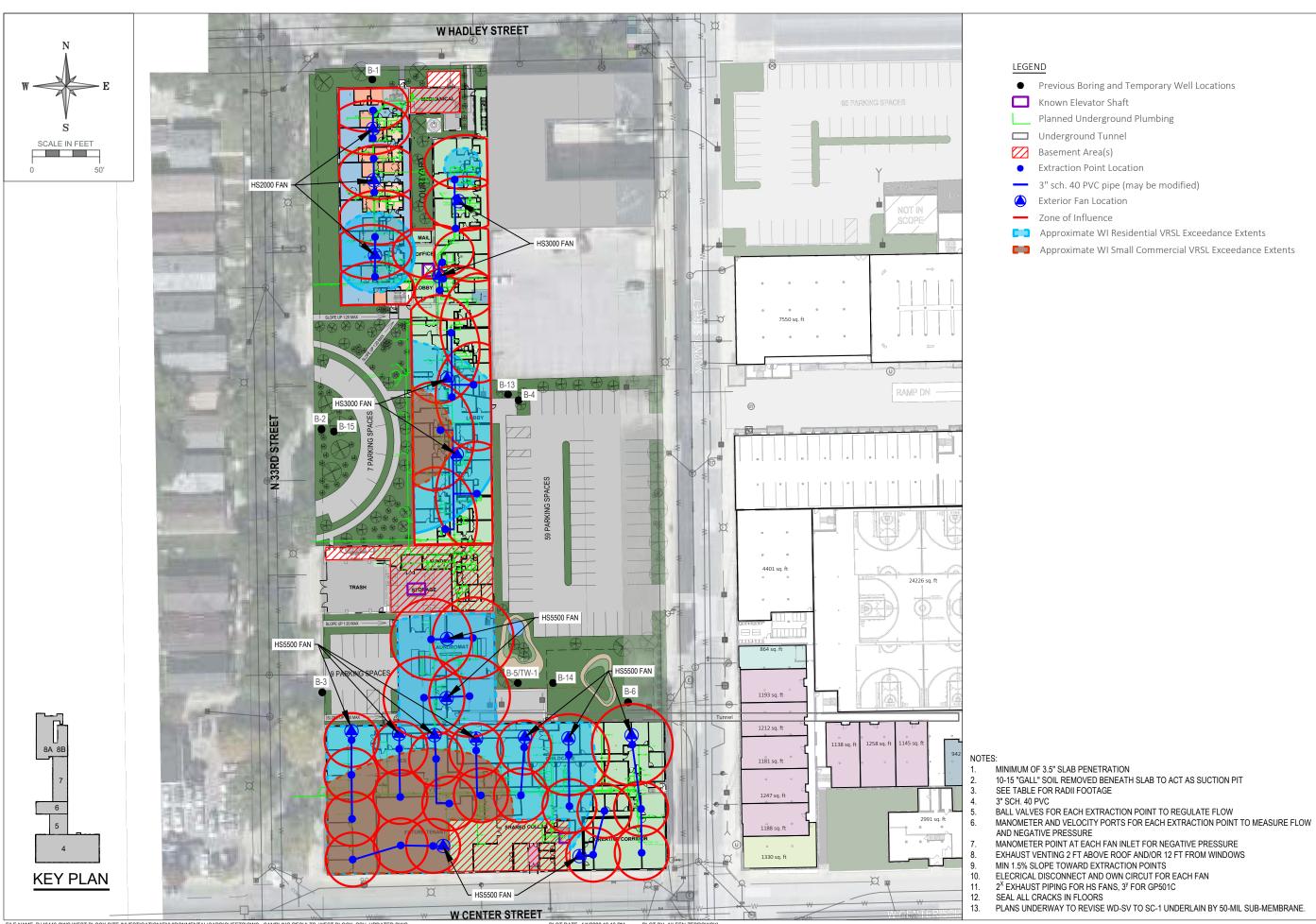
Figure 3 Commissioning Plan for Buildings 4 and 5

Attachment A Air Sampling Locations



FIGURES







LEGEND

Known Elevator Shaft

■ Underground Tunnel

Basement Area(s)

Extraction Point Location

Exterior Fan Location Zone of Influence

Previous Boring and Temporary Well Locations

3" sch. 40 PVC pipe (may be modified)

Approximate WI Residential VRSL Exceedance Extents

Approximate WI Small Commercial VRSL Exceedance Extents

Planned Underground Plumbing

3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

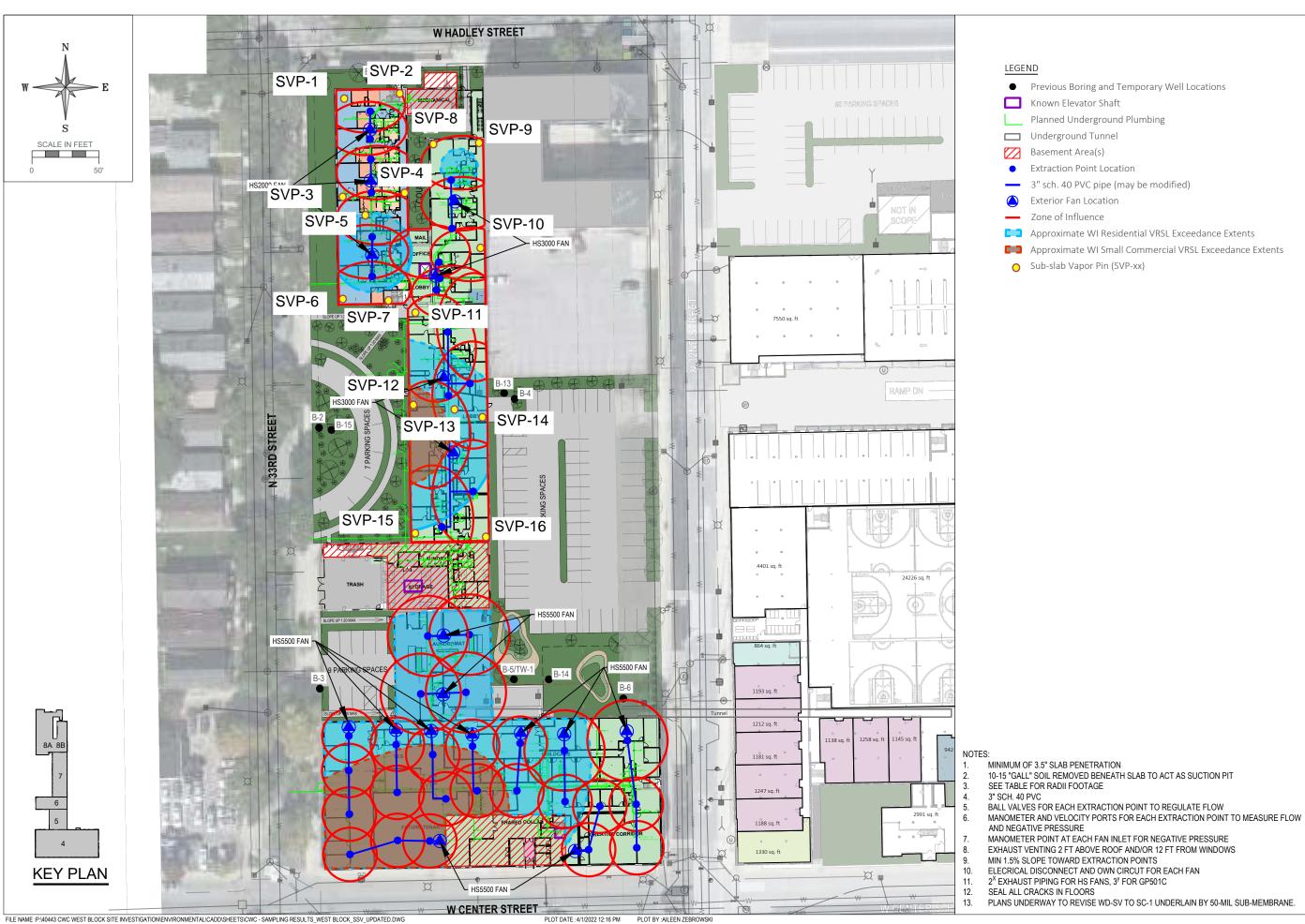
SITE INVESTIGATION REPORT
3212 W. CENTER ST., 2727 N. 32ND ST., 2758 N. 33RD ST.
COMMUNITY WITHIN THE CORRIDOR - WEST BLOCK
MILWAUKEE, WI 53210
PROJECT NUMBER: 40443

CLIENT:

COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

LAYOUT VS VRSL EXCEEDANCE PLUMES FOR VOCs

FIGURE 1





Previous Boring and Temporary Well Locations

Known Elevator Shaft

Planned Underground Plumbing

Underground Tunnel

Basement Area(s)

Extraction Point Location

3" sch. 40 PVC pipe (may be modified)

Exterior Fan Location

Zone of Influence

Approximate WI Residential VRSL Exceedance Extents

Approximate WI Small Commercial VRSL Exceedance Extents

Sub-slab Vapor Pin (SVP-xx)

3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

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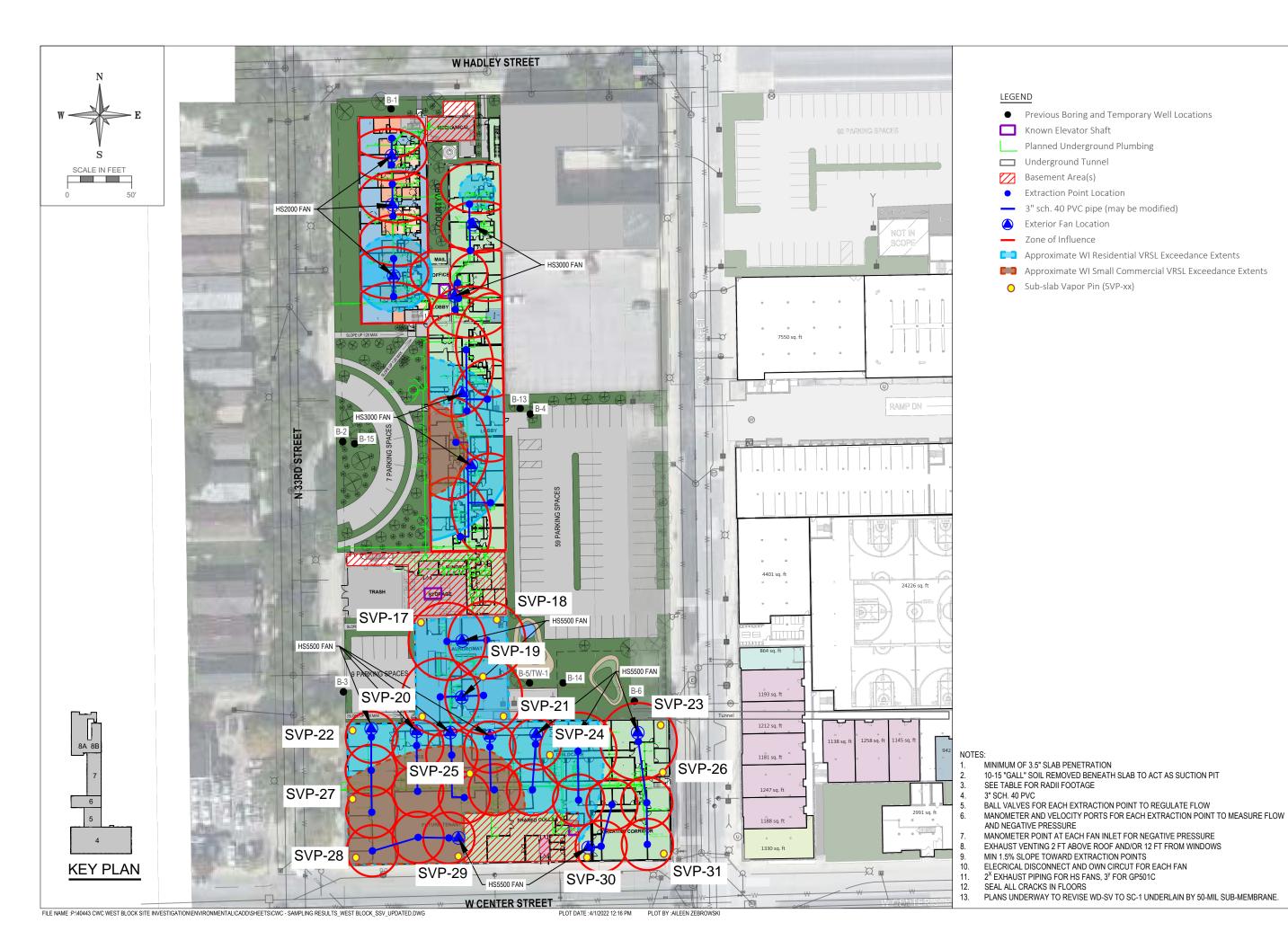
COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

CLIENT:

Commissioning Plan for Buildings 6, 7, 8A, and 8B

FIGURE 2

PLOT DATE :4/1/2022 12:16 PM





3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

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SITE INVESTIGATION REPORT
3212 W. CENTER ST., 2727 N. 32ND ST., 2758 N. 33RD ST.
COMMUNITY WITHIN THE CORRIDOR - WEST BLOCK
MILWAUKEE, WI 53210
PROJECT NUMBER: 40443

COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

CLIENT:

PROJECT

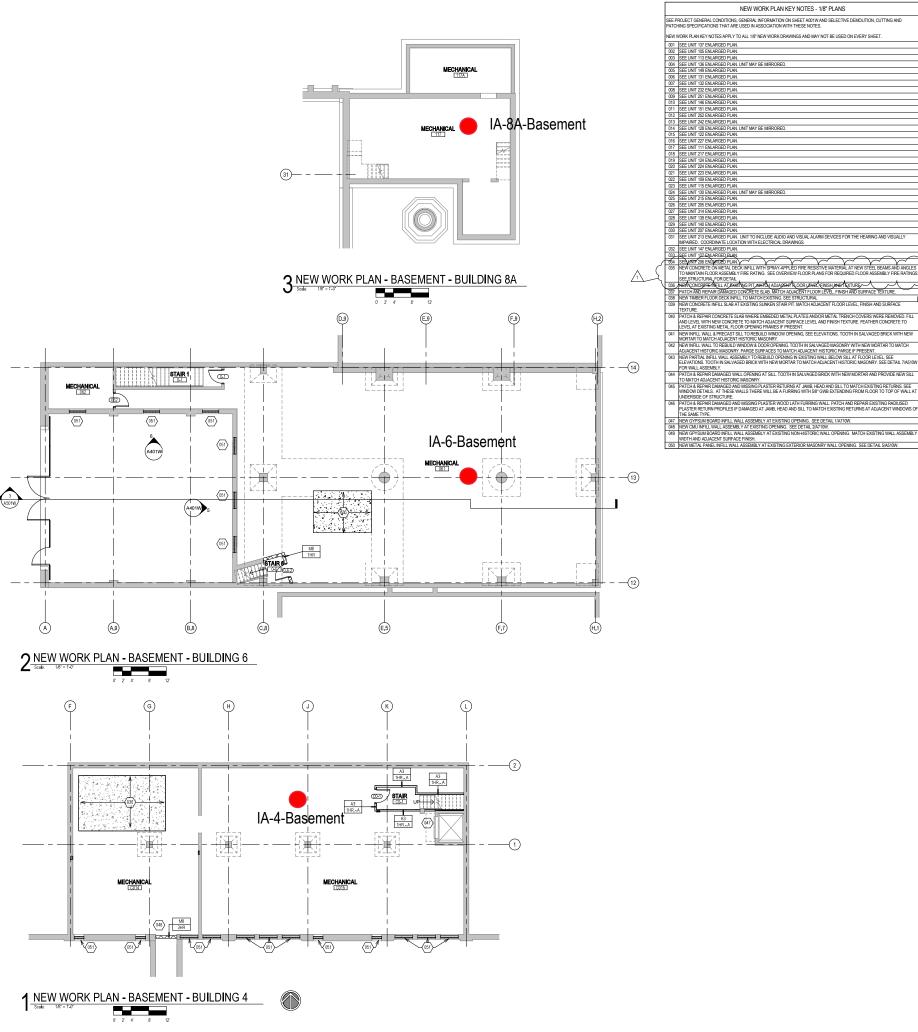
SHEET TITLE
Commissioning Plan for Buildings 4 and 5

FIGURE 3

ATTACHMENT A

Air Sampling Locations







ZYSS N. 33RD STREET
MILMALKEE, WI 53210

414.220.9640

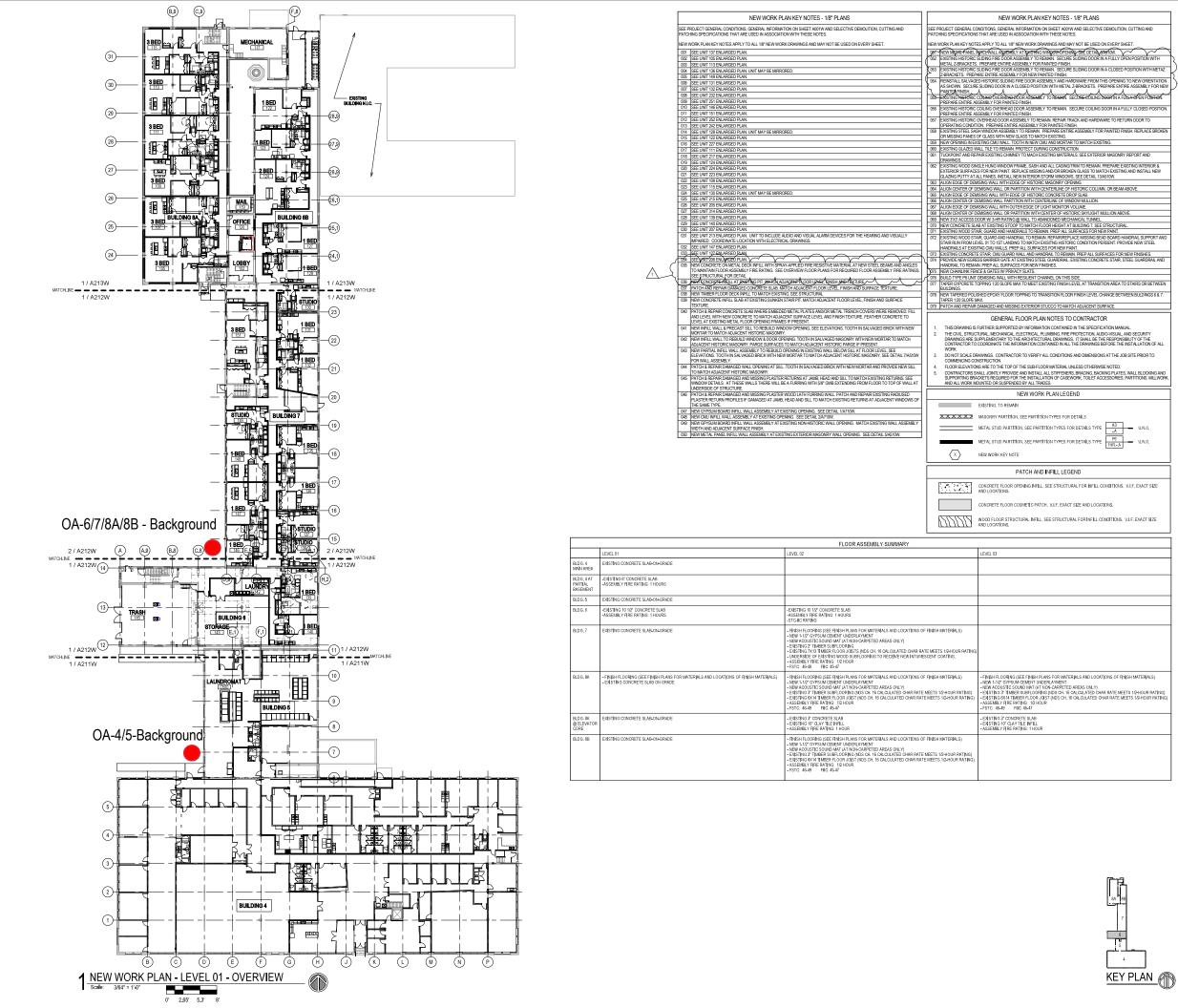
Suite 200 Milwaukee, WI 53202

EVISIONS:

1 10/09/20 ADDENDUM#1

KEY PLAN

A201W



414.220.9640

751 N Jefferson St. Suite 200 Milwaukee, WI 53202

> 2758 N. 33RD STREET MILWAUKEE, WI 53210

10/09/20 ADDENDUM#1

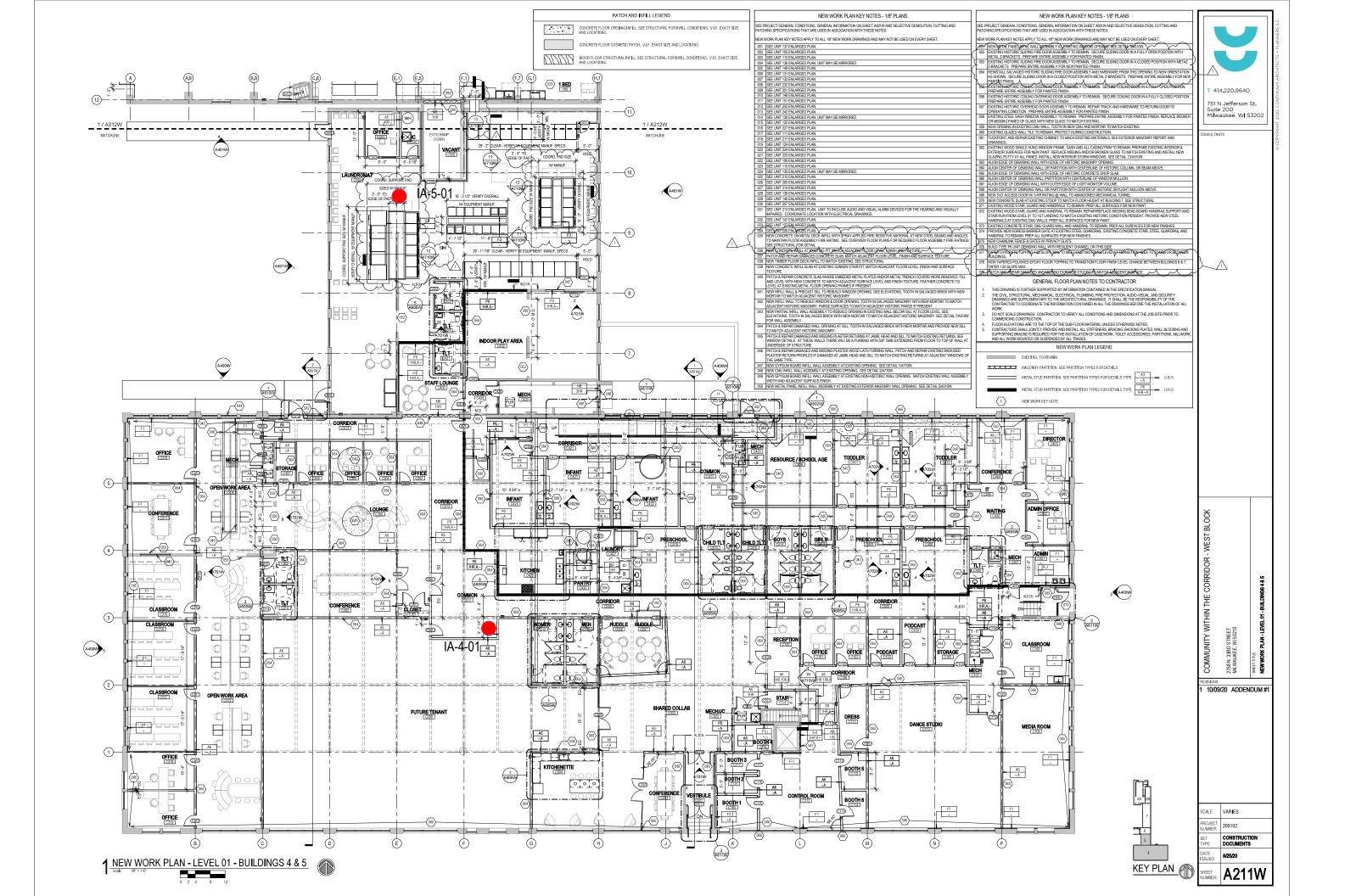
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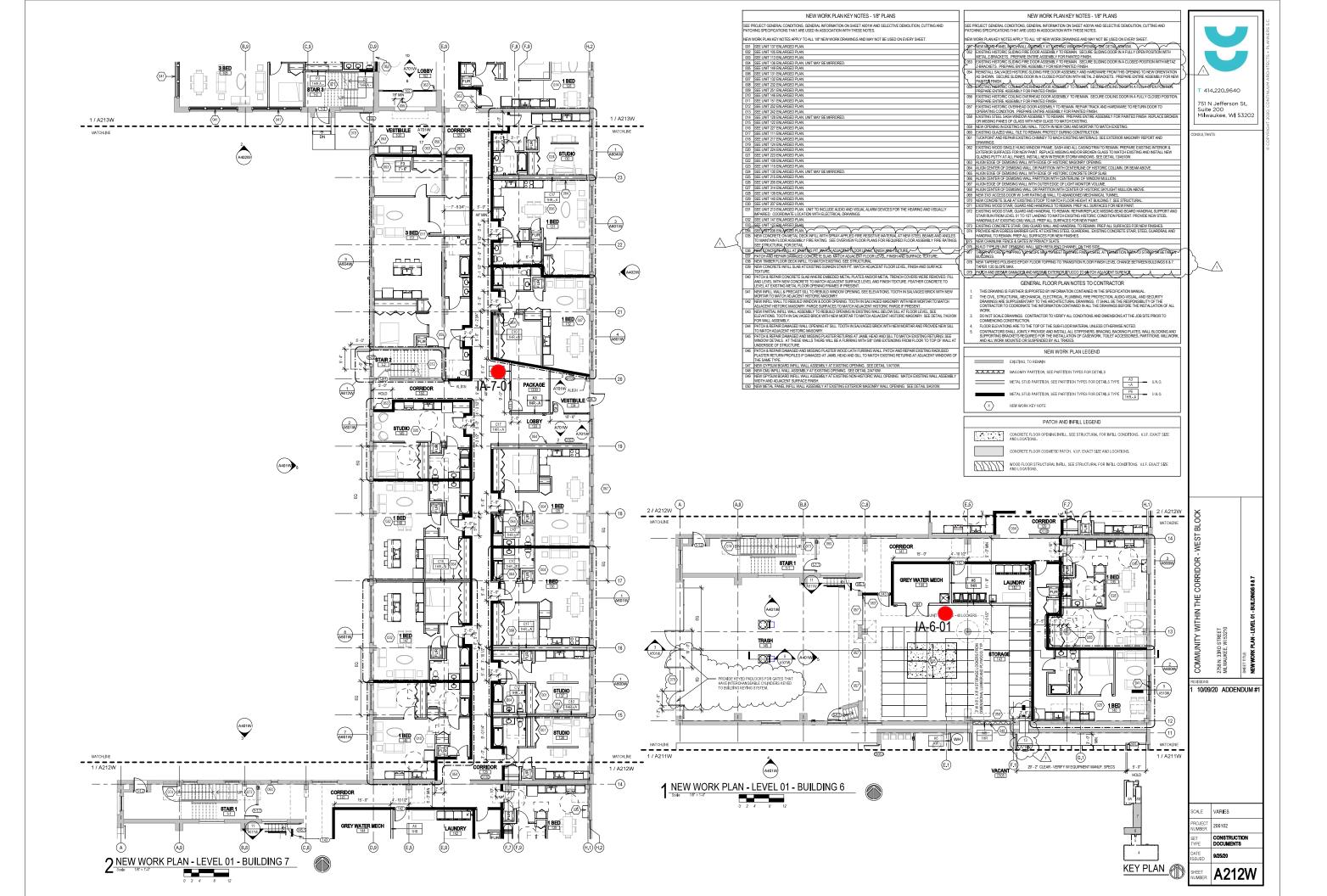
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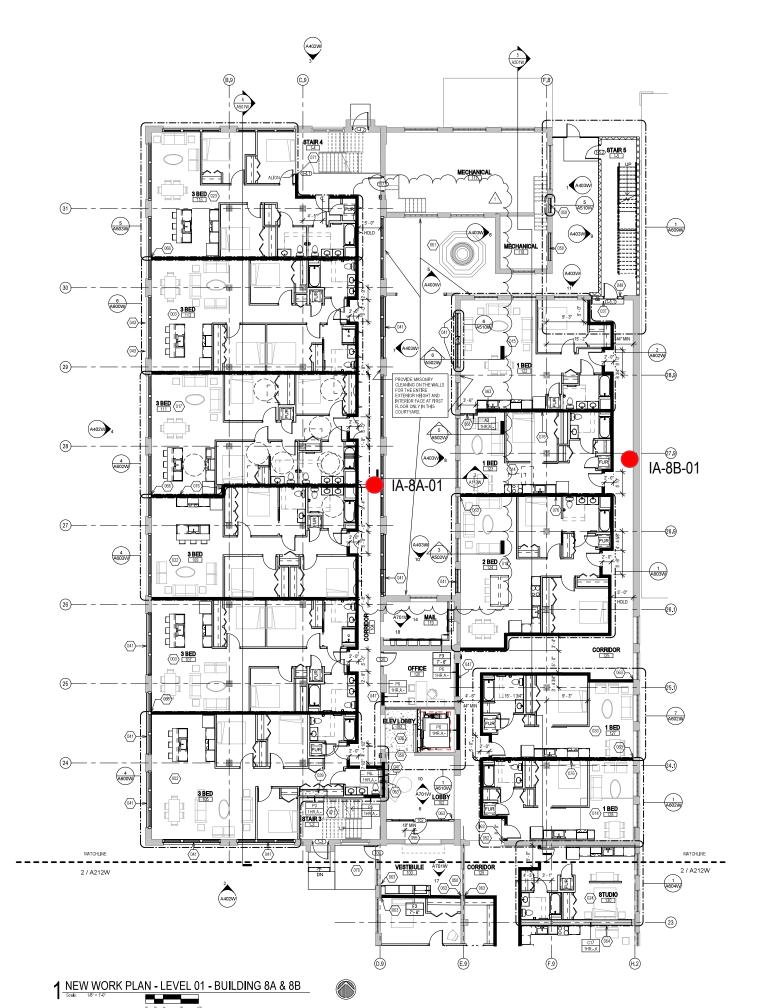
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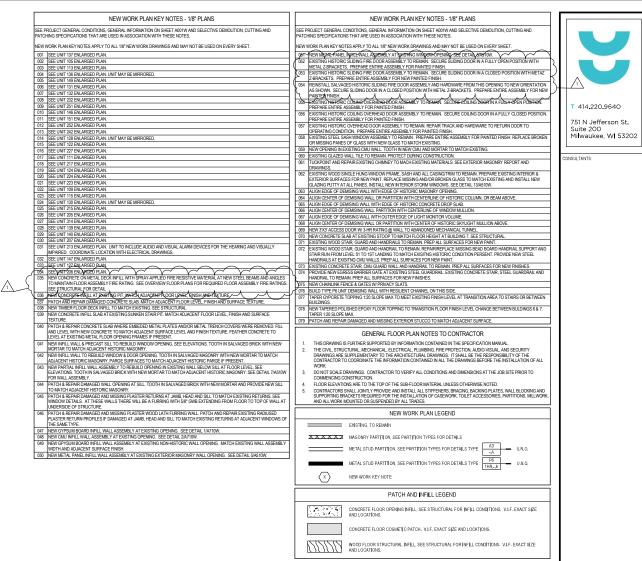
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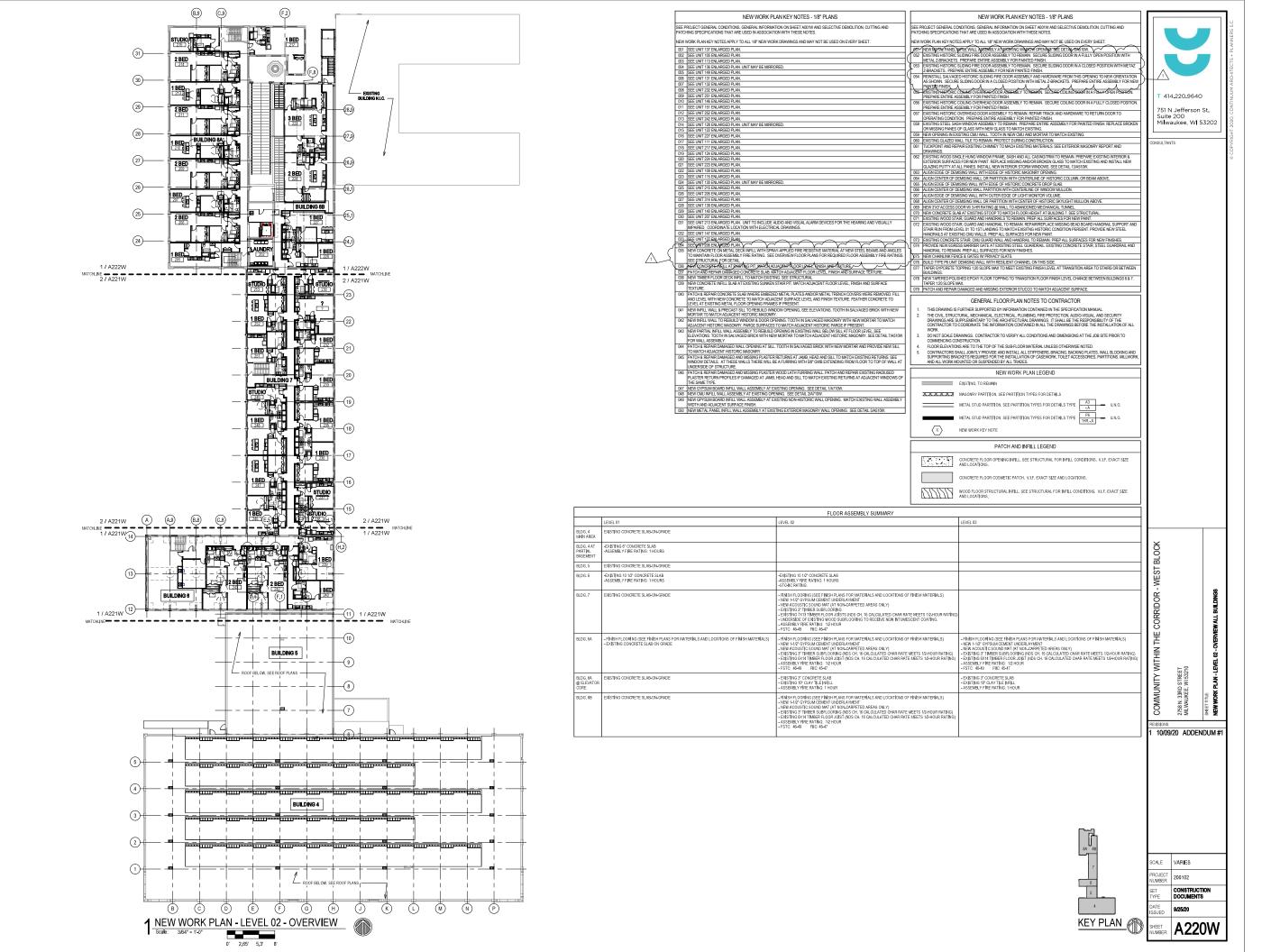
2758 N. 33RD STREET MILWAUKEE, WI 53210

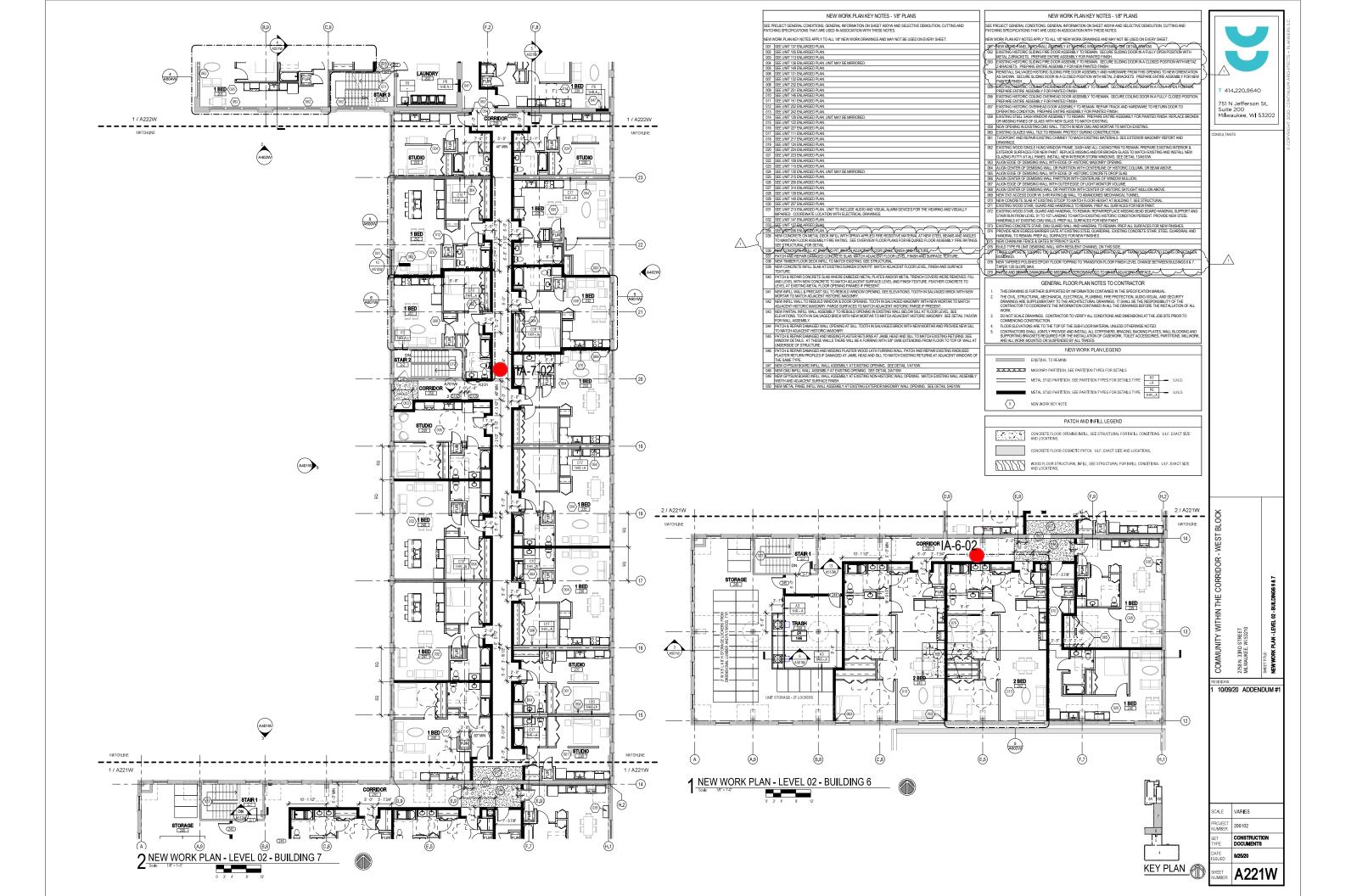
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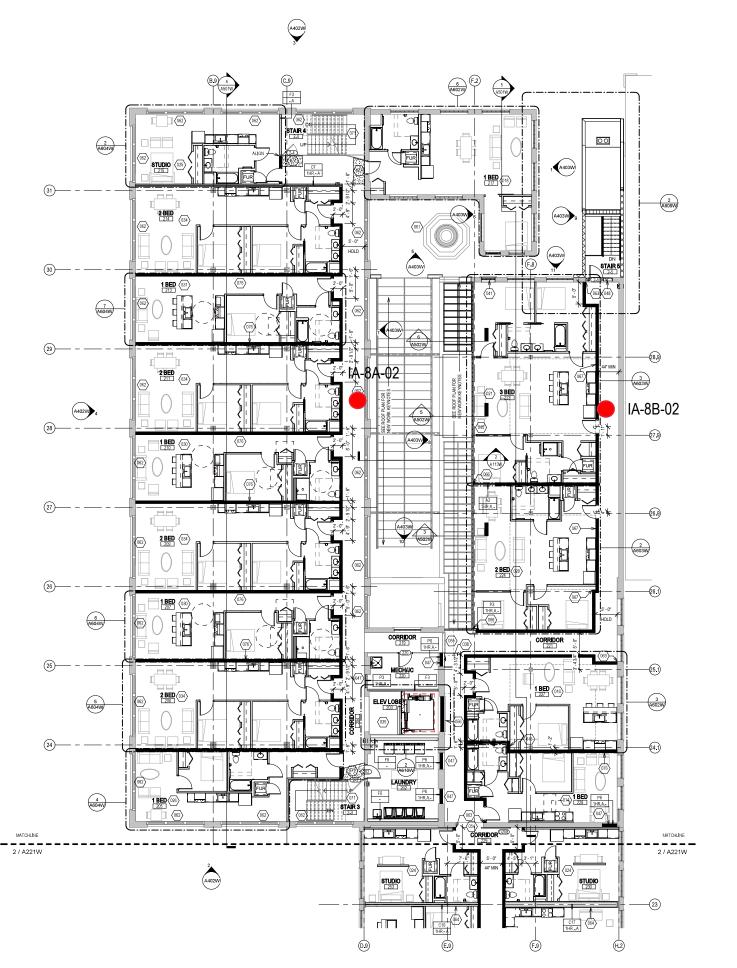
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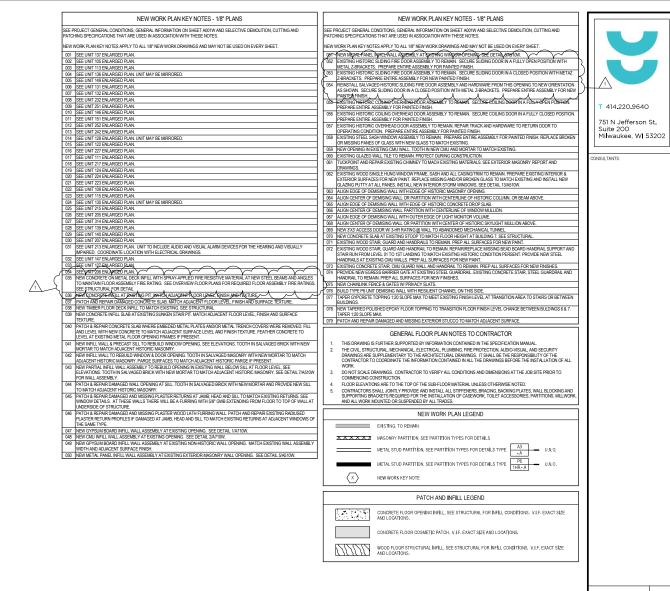
KEY PLAN

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COMMUNITY WITHIN THE CORRIDOR - WEST BL
Z758 N 3380 STREET
MLWAUKEE, WI 53210

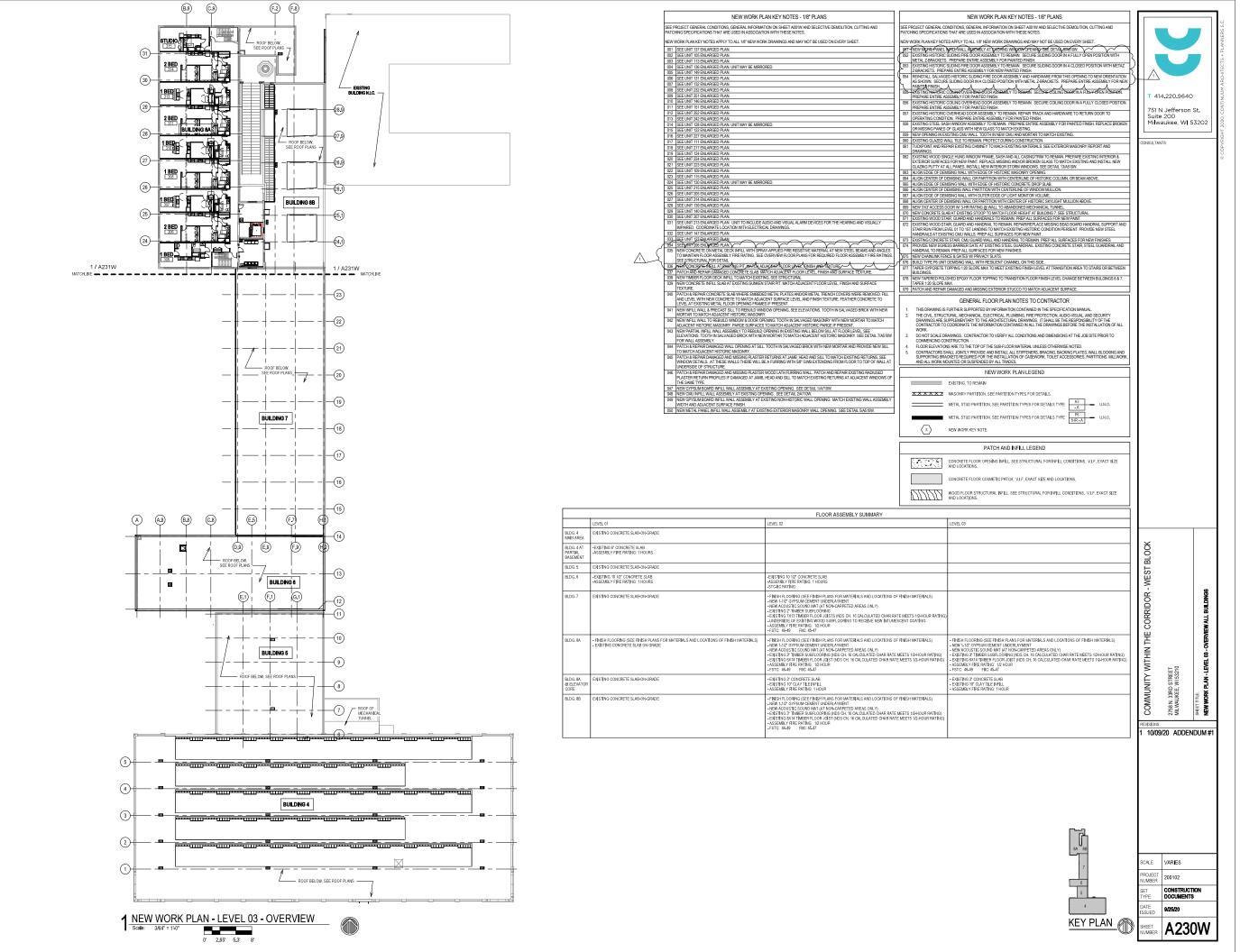
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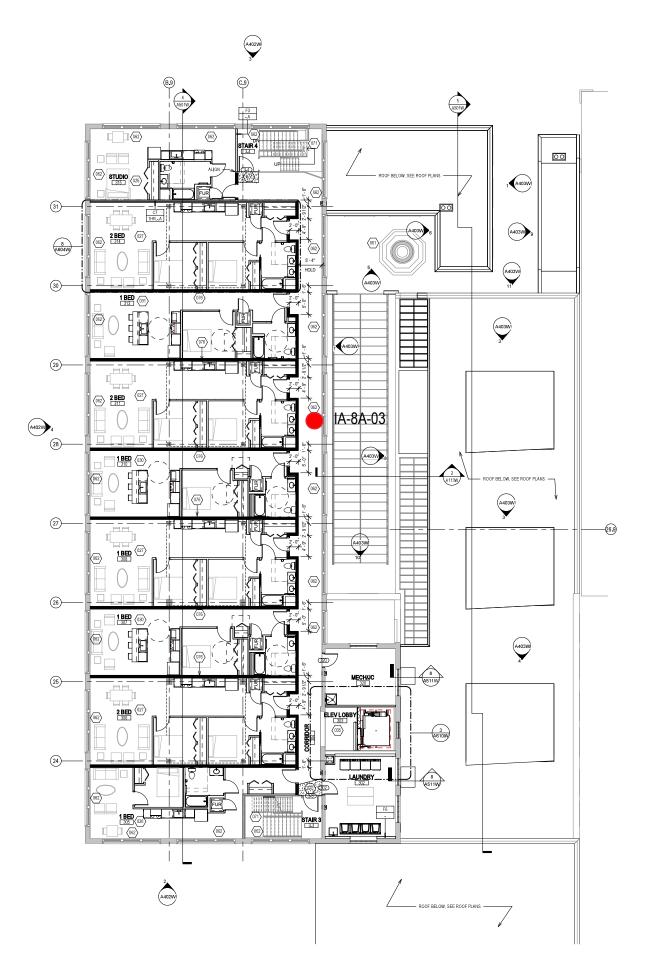
8A 8B

A222W

KEY PLAN

NEW WORK PLAN - LEVEL 02 - BUILDING 8A & 8B







NEW WORK PLAN - LEVEL 03 - BUILDING 8A

KEY PLAN

414.220.9640 751 N Jefferson St. Suite 200 Milwaukee, WI 53202

ALE VARIES 200102

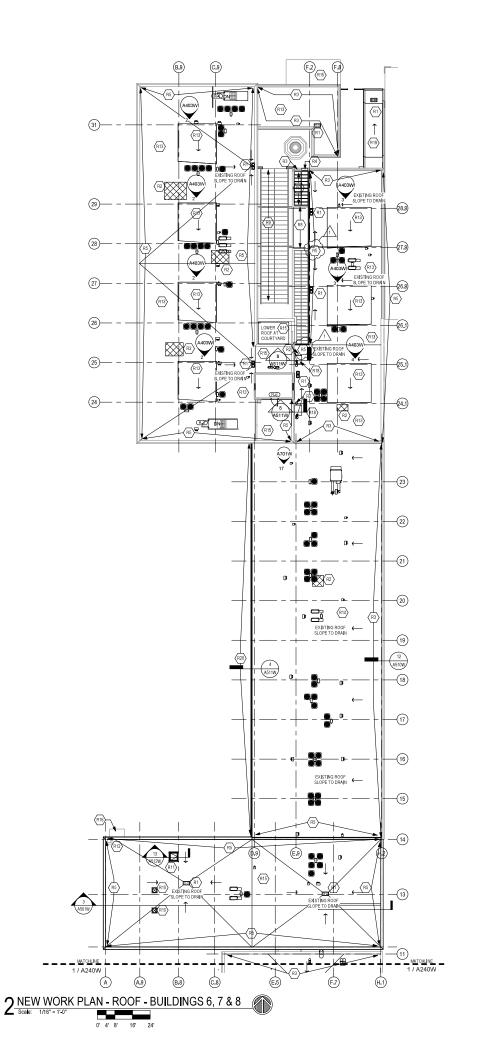
CONSTRUCTION DOCUMENTS 9/25/20

2758 N. 33RD STREET MILWAUKEE, WI 53210

10/09/20 ADDENDUM#1

COMMUNITY \

A231W



GENERAL ROOF PLAN NOTES TO CONTRACTOR

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NEW WORK ROOF PLAN KEY NOTES

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2 PATCH ROOF DECK AT DEMOLISHED ROOF EQUIPMENT.

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ROOF EDGE.

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NEW ROOF MEMBRANE, R30 MIN. RIGID INSULATION, VAPOR BARRIER, 50° EXITERIOR GYPSUM SHEATHING

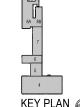
FIFTY SEE STITUTION.

R19 INEW ROOF MEMBRANE, R30 MM. RIGIO INSULATION, VAPOR BARRIER, 56" EXTERIOR GYPSUM SHEATH DECK. SEE STRUCTURAL DRAWINGS.

R20 INEW GUTTER ENTIRE LENGTH OF ROOF, PROVIDE NEW DOWNSPOUTS, COORDINATE WITH PLUMBING.

R21 INEW METAL ROOF EDGE & GUTTER SYSTEM. COORDINATE W PLUMBING.

2 / A240W (R13) R1 A702W (R13) * (R13) EXISTING ROOF SLOPE (R13) (R13)



2758 N. 33RD STREET MILWAUKEE, WI 53210 10/09/20 ADDENDUM #1

> VARIES 200102 CONSTRUCTION DOCUMENTS

9/25/20

A240W

414.220.9640

Suite 200 Milwaukee, WI 53202

KEY PLAN

1 NEW WORK PLAN - ROOF - BUILDINGS 4 & 5