

ARBORETUM GOLF COURSE PATIO UPGRADES

Arboretum Golf Course Patio Upgrades (the “**Contract**”) is entered between the Village of Buffalo Grove (hereinafter the “**Village**” or “**Owner**”), an Illinois home-rule unit of government, and Efraim Carlson & Son, Inc. an [Illinois Construction Company] (hereinafter the “**Contractor**”) on this day of Jan 20, 2022 (the “**Effective Date**”). The Village and the Contractor are hereinafter sometimes collectively referred to as the “**Parties**” and individually as a “**Party**”.

RECITALS

WHEREAS, the Village has solicited bids for the Work (defined below), Contractor has submitted a bid for the Work and Village has selected Contractor for the Work based on their bid; and

WHEREAS, the Contractor wishes to enter into this Contract with the Village and the Village wishes to enter into this Contract with the Contractor for the Work;

NOW THEREFORE, for and in consideration of the mutual covenants and promises herein contained, the adequacy and sufficiency of which are hereby acknowledged by the Parties, it is agreed as follows:

ARTICLE I - WORK TO BE DONE BY THE CONTRACTOR

The Village does hereby hire and contract with the Contractor to provide all the labor, equipment, materials and/or services described more thoroughly on Contract **Exhibit A** (the “**Work**”) which is incorporated into the Contract by this reference.

ARTICLE II - CONTRACT DOCUMENTS

The following exhibits are attached hereto and incorporated herein by this reference:

- Contract Exhibit A – Description of the Work**
- Contract Exhibit B – Schedule of Prices**
- Contract Exhibit C – Performance and Payment Bond**
- Contract Exhibit D – Partial Lien Waiver**
- Contract Exhibit E – Final Lien Waiver**

If any term or provision of this Contract shall conflict with any term or provision of the exhibits referenced above, the terms and provisions of the exhibit shall control.

ARTICLE III - CONTRACT AMOUNT

The Village agrees to pay the Contractor for the proper and timely performance of the Work in strict accordance with this Contract as detailed in **Contract Exhibit B** (the “**Schedule of Prices**”) Unless explicitly provided otherwise in this Contract, the detailed sums shall be the full and exclusive compensation owed to the Contractor for the Work; and Contractor may not seek additional payments from the Village.

The Village of Buffalo Grove reserves the right to reject a proposed price increase and terminate the Contract.

ARTICLE IV – APPLICATION FOR PAYMENT

The Contractor shall be paid at most once a month and only after providing the Village the following:

1. An executed and notarized Contractor’s Sworn Statement in a form similar to AIA G702 or AIA G703;
2. Either a partial or final lien waiver from every subcontractor, sub-subcontractor, or materialman in substantially the same form as attached here as **Contract Exhibit D** and **Contract Exhibit E**;
3. Certified payroll necessary for the Prevailing Wage Act; and

All payments under this Contract must be approved by the Village’s Board at regularly scheduled meetings. The Village reserves the right to request any receipts, invoices, proof of payments as the Village, in its sole discretion, may deem necessary to justify the payment requested *prior* to paying the requested payment. The Contractor shall furnish with his final application for payment a Final Lien Waiver from itself and, if not already provided, from every subcontractor and materialman of the Work.

The Contractor acknowledges that the Village is a unit of local government and that all payments under the Contract are subject to the Local Government Prompt Payment Act, 50 ILCS 505 et seq. To that extent, the Village shall have forty-five calendar (45) days from receipt of a bill or invoice to pay the same before it is considered late under the Contract. Interest, if any, charged for any late payments will be subject to the interest rate caps specified in the Prompt Payment Act.

ARTICLE V – CONTRACT TIME

Term. The Contractor shall fully, and not substantially, complete all the Work and the Work shall be accepted by the **Director of Public Works**, provided that acceptance by the **Director of Public Works** shall not be unreasonably delayed, on or before **Friday May 27, 2021**.

If the Contractor shall fail to complete the work within the Contract Time which shall include any proper extension granted by the Village, the Contractor shall pay to the Village an amount equal to Five Hundred dollars (\$500) per calendar day for each day past the Contract Time until final acceptance by the Village, as liquidated damages and not as a penalty.

Termination of Contract. The Contract may be terminated, in whole or in part, by either party if the other party substantially fails to fulfill its obligations under the Contract through no fault of the terminating party; or the Village may terminate the Contract, in whole or in part, for its convenience. However, no such termination may be effected unless the terminating party gives the other party: (1) not less than thirty (30) calendar days written notice by certified mail of intent to terminate, and (2) an opportunity for a meeting with the terminating party before termination.

ARTICLE VI – PERFORMANCE and PAYMENT BOND

The Contractor shall provide the Village with a performance and payment bond in substantially the same form as on **Contract Exhibit C** (the “**Performance and Payment Bond**”) prior to Contractor beginning any Work and within 10 calendar days of the Notice of Award sent to the Contractor.

ARTICLE VII – ACCIDENT PREVENTION

The Contractor shall exercise every precaution at all times to protect itself, the property of the Village and the property of others. The safety provision of all applicable laws and ordinances shall be strictly observed by the Contractor at all times. Any practice deemed hazardous or dangerous by the **Director of Public Works** or his authorized representatives shall be immediately discontinued by the Contractor upon receipt of instructions from the **Director of Public Works** or his authorized representatives. To the fullest extent permitted by law, the Contractor shall be solely responsible for all safety-related matters.

ARTICLE VIII – INDEMNIFICATION

To the fullest extent permitted by law, the Contractor agrees to defend, pay on behalf of, indemnify, and hold harmless the Village, its elected and appointed officials, agents, employees and volunteers and others working on behalf of the Village against any and all claims, demands, suits or loss, including all costs connected therewith, and for any damages which may be asserted, claimed or recovered against or from the Village, its elected and appointed officials, agents, employees and volunteers and others working on behalf of the Village, by reason of personal injury, including bodily injury and death, and/or property damage, whether damage to property of the Village or of a third party, including loss of use thereof, which arises out of or is in any way connected or associated with the Contract and the Work.

ARTICLE IX – CONTRACTORS INSURANCE

Contractor shall procure and maintain, for the duration of the Contract and any maintenance period, insurance against claims for injuries to persons or damages to property, which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance: Coverage shall be at least as broad as:

Insurance Services Office Commercial General Liability occurrence form CG 0001 with the Village of Buffalo Grove named as additional insured on a primary and non-contributory basis. This primary, non-contributory additional insured coverage shall be confirmed through the following required policy endorsements: ISO Additional Insured Endorsement CG 20 10 or CG 20 26 and CG 20 01 04 13

1. Insurance Services Office Commercial General Liability occurrence form CG 0001 with the Village named as additional insured, on a form at least as broad as the ISO Additional Insured Endorsement CG 2010 and CG 2026
2. Insurance Service Office Business Auto Liability coverage form number CA 0001, Symbol 01 "Any Auto."
3. Workers' Compensation as required by the Labor Code of the State of Illinois and Employers' Liability insurance.
4. **Owners and Contractors Protective Liability (OCP) policy with the Village of Buffalo Grove as insured.**
5. **Builder Risk Property Coverage with Village as loss payee**

B. Minimum Limits of Insurance: Contractor shall maintain limits no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. The general aggregate shall be twice the required occurrence limit. Minimum General Aggregate shall be no less than \$2,000,000 or a project/contract specific aggregate of \$1,000,000.
2. Business Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Workers' Compensation and Employers' Liability: Workers' Compensation coverage with statutory limits and Employers' Liability limits of \$500,000 per accident.
4. Owners and Contractors Protective Liability (OCP): \$1,000,000 combined single limit per occurrence for bodily injury and property damage.
5. Builder's Risk: Shall insure against "All Risk" of physical damage, including water damage (flood and hydrostatic pressure not excluded), on a completed replacement cost basis.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Village. At the option of the Village, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as it respects the Village, its officials, agents, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.

D. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages:
 - a. The Village, its officials, agents, employees and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Village, its officials, agents, employees and volunteers.
2. The Contractor's insurance coverage shall be primary and non-contributory as respects the Village, its officials, agents, employees and volunteers. Any insurance or self-insurance maintained by the Village, its officials, agents, employees and volunteers shall be excess of Contractor's insurance and shall not contribute with it.
3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Village, its officials, agents, employees and volunteers.
4. The Contractor's insurance shall contain a Severability of Interests/Cross Liability clause or language stating that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. If any commercial general liability insurance is being provided under an excess or umbrella liability policy that does not "follow form," then the Contractor shall be required to name the Village, its officials, employees, agents and volunteers as additional insureds
6. All general liability coverages shall be provided on an occurrence policy form. Claims-made general liability policies will not be accepted.
7. The contractor and all subcontractors hereby agree to waive any limitation as to the amount of contribution recoverable against them by the Village. This specifically includes any limitation imposed by any state statute, regulation, or case law including any Workers' Compensation Act provision that applies a limitation to the amount recoverable in contribution such as Kotecki v. Cyclops Welding

E. All Coverages:

1. No Waiver. Under no circumstances shall the Village be deemed to have waived any of the insurance requirements of this Contract by any act or omission, including, but not limited to:
 - a. Allowing work by Contractor or any subcontractor to start before receipt of Certificates of Insurance and Additional Insured Endorsements.
 - b. Failure to examine, or to demand correction of any deficiency, of any Certificate of Insurance and Additional Insured Endorsement received.
2. Each insurance policy required shall have the Village expressly endorsed onto the policy as a Cancellation Notice Recipient. Should any of the policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

F. Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than A-, VII and licensed to do business in the State of Illinois.

G. Verification of Coverage

Contractor shall furnish the Village with certificates of insurance naming the Village, its officials, agents, employees, and volunteers as additional insured's and with original endorsements, affecting coverage required herein. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates and endorsements are to be received and approved by the Village before any work commences. The Village reserves the right to request full certified copies of the insurance policies and endorsements.

The Certificate of Insurance shall state the Village of Buffalo Grove has been endorsed as an "additional insured" by the Vendor's insurance carrier. Specifically, this Certificate must include the following language: **"The Village of Buffalo Grove, and it's respective elected and appointed officials, employees, agents, consultants, attorneys and representatives, are, and have been endorsed, as an additional insured under the above reference policy number _____ on a primary and non-contributory basis for general liability and automobile liability coverage for the duration of the agreement term."**

H. Subcontractors

Contractor shall include all subcontractors as insured's under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage's for subcontractors shall be subject to all of the requirements stated herein.

I. Assumption of Liability

The contractor assumes liability for all injury to or death of any person or persons including employees of the contractor, any subcontractor, any supplier or any other person and assumes liability for all damage to property sustained by any person or persons occasioned by or in any way arising out of any work performed pursuant to the Contract.

J. Workers' Compensation and Employers' Liability Coverage

The insurer shall agree to waive all rights of subrogation against the Village of Buffalo Grove, its officials, employees, agents and volunteers for losses arising from work performed by Contractor for the municipality.

K. Failure to Comply

In the event the Contractor fails to obtain or maintain any insurance coverage's required under this contract, The Village may purchase such insurance coverage's and charge the expense thereof to the Contractor.

ARTICLE X – CERTIFICATE OF AUTHORITY AND SURETY CERTIFICATE

The Contractor shall furnish the Village with a current Certificate of Authority or Surety Certificate issued by the Illinois Department of Insurance for the bonding company and insurance company they are using. In lieu of a Certificate of Authority of Surety Certificate, the Contractor may provide certificate of good standing from the Illinois Department of Insurance’s website.

ARTICLE XI – COPYRIGHTS AND LICENSES

The Contractor agrees that all documents of any kind whatsoever, and in whatever medium expressed, prepared by the Contractor and the Contractor’s consultants in connection with the Work (collectively, the “Documents”) or otherwise pursuant to this Contract and all rights therein (including trademarks, trade names, rights or use, copyrights and/or other proprietary rights) shall be and remain the sole property of the Village (regardless of whether the Village or the Contractor terminates this Contract for any reason whatsoever). The Contractor hereby agrees that the Documents are or shall be deemed to be “Works for Hire” within the meaning of Section 101 of the Copyright Act, and the Contractor hereby assigns to the Village all right, title and interest therein. Notwithstanding, the Contractor shall indemnify and hold harmless the Village, its appointed and elected officials, employees, agents and volunteers from and against all claims, damages, losses, and expenses (including attorneys’ fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the Documents and the Work.

ARTICLE XII – NOTICE

All notices, demands, requests, consents, approvals and other communications required or permitted to be given hereunder (a “Notice”) shall be in writing and shall be deemed effective three (3) business days after mailing if mailed by certified mail with return receipt requested and immediately if served personally, and shall be addressed to the following:

IF TO THE VILLAGE: Village of Buffalo Grove
50 Raupp Blvd
Buffalo Grove, IL 60089
mskibbe@vbg.org
ATTN: Director of Public Works

WITH COPIES TO: Cc: pbrankin@schainbanks.com
Cc: brobinson@vbg.org

IF TO THE CONTRACTOR: Efralm Carlson & Son, Inc.
14052 Petronella Drive, Suite 105
Libertyville, IL 60048

ATTN: DAVID M HILLSTROM

ARTICLE XIII – CHANGE ORDERS

If the Village requests any change to the Work the Village shall do so by delivering Notice of the same to the Contractor and the change requested by the Village shall be effective upon receipt of the Notice by the Contractor. The Contractor may propose a change to the Work by delivering Notice of the proposed change along with a description of the changes full effect on the Work to the Village; provided, such requested change shall not be deemed accepted until the Village has delivered to the Contractor Notice of the same. Prior to approving a proposed change to the Work by the Contractor, the Village may request such additional documentation as it deems necessary to investigate the proposed change. The Contractor shall be responsible for informing all its employees and subcontractors of any changes to the Work, whether such change is requested by the Contractor or the Village.

ARTICLE XIV – NOTICE OF STARTING WORK

The Contractor shall provide Notice to the Village prior to the Contractor, or its employees or subcontractors, starting the Work or any phase of the Work.

ARTICLE XV – SEQUENCE OF THE WORK

The **Director of Public Works** shall have the power to direct the order and sequence of the Work. On any major portion of the Work, all accessories shall be set coincident with the main construction. Payment for major portions of the Work may be withheld until proper completion of accessories.

ARTICLE XVI – SUPERVISION

The **Director of Public Works** shall have override power to superintend and direct the Work, and the Contractor shall perform all of the Work herein specified to the satisfaction, approval and acceptance of the **Director of Public Works**. The Contractor shall have at all times a competent foreman or superintendent at the Work's site, who shall have full authority to act for the Contractor and to receive and execute orders from the **Director of Public Works**, and any instructions given to such superintendant or person, executing work for the Contractor, shall be binding on the Contractor as though it was personally given to the Contractor.

ARTICLE XVII – STANDARD OF WORK AND WORKERS

The Contractor shall employ competent staff and shall discharge, at the request of the **Director of Public Works**, any incompetent, unfaithful, abusive or disorderly workers in its employ. Where experts or skilled workers must be employed, only expert or skilled workers shall be employed.

ARTICLE XVIII – CONDITIONS OF THE WORK SITE

The Contractor shall provide and maintain such sanitary accommodations for the use of its employees as may be necessary to comply with the State and local Board of Health requirements. Public nuisances will not be permitted. The Contractor shall leave said Work's site(s) in the best possible condition to the complete satisfaction of the **Director of Public Works**. No vehicles of any kind shall be placed, parked, or operated upon any grass areas at any time except as authorized by the **Director of Public Works** or his authorized representative. Further, the Contractor shall exercise every precaution for the protection of all persons and all property. The safety provisions of all-applicable laws and ordinances shall be strictly observed. Any practice hazardous in the opinion of the **Director of Public Works** or his authorized representatives shall be immediately discontinued by the Contractor upon his receipt of instructions from the **Director of Public Works** or his authorized representative. To the maximum extent permitted by law, the Contractor shall be responsible for all safety-related matters.

ARTICLE XIX – WARRANTY PERIOD

All material and workmanship shall be warranted and guaranteed according to manufacturer's recommendation after inspection and approval by the **Director of Public Works** or his designated representative. All work performed by the Contractor shall be warranted by the Contractor following completion and final acceptance of the Work for a period of twelve (12) months from the date of final, and not substantial, completion.

ARTICLE XX – ACCIDENTS

In the event of any accident of any kind that involves the general public or property of the Village or a third party, the Contractor shall immediately notify the **Director of Public Works** by phone as well as provide Notice of the same. The Notice shall include a full accounting of all details of the accident. The Contractor shall furnish the Village with copies of all reports of such accidents at the same time that the reports are forwarded to any other interested parties.

ARTICLE XXI – NO ASSIGNMENT

If the Contractor sublets or assigns any part of the Work then the Contractor shall not under any circumstances be relieved of its liabilities hereunder. All transactions of the Village shall be with the Contractor. Subcontractors shall be recognized only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competence. The Contractor shall not assign, transfer, convey, sell or otherwise dispose of the whole or any part of this Contract to any person, firm or corporation without written consent of the **Director of Public Works** or his authorized representative.

ARTICLE XXII – DEFAULT

The following shall constitute a default an “**Event of Default**” by the Contractor under this Contract:

- A. If the Contractor shall fail to strictly observe or perform one or more of the terms, conditions, covenants and agreements of this Contract;
- B. If there shall be placed on any property owned by the Village any mechanics’, materialmens’ or suppliers’ lien;
- C. If there shall be instituted any proceeding against the Contractor seeking liquidation, dissolution or similar relief and the same shall not be dismissed within forty-five (45) calendar days;
- D. If there shall be appointed any trustee, receiver or liquidator of the Contractor and such appointment shall not have been vacated within forty-five (45) calendar days; and
- E. If the Contractor fails to maintain or obtain any and all permits, licenses and the like, if any, required by the Village, State or Federal governments for the Work.

Upon any Event of Default the Village shall have the option of (i) terminating the Contract; (ii) pursuing any remedy available to it at law or in equity; or (iii) pursuing both simultaneously. In addition, upon an Event of Default, the Village may withhold payments due to the Contractor until it has hired a replacement of the Contractor and deducted all costs of hiring a replacement.

ARTICLE XXIII – DELAYS

The Contractor shall not be liable in damages for delays in performance when such delay is the result of fire, flood, strike, acts of God, or by any other circumstances which are beyond the control of the Contractor; provided, however, under such circumstances the Village may, at its option, cancel the Contract.

ARTICLE XXIV – COMPLIANCE WITH LAWS

The Contractor shall comply with all applicable laws, regulations and rules promulgated by any federal, state, local, or other governmental authority or regulatory body pertaining to all aspects of the Work, now in effect, or which may become in effect during the performance of the Work. The scope of the laws, regulations, and rules referred to in this paragraph includes, but is in no way limited to, the Illinois Human Rights Act, Illinois Equal Pay Act of 2003, Occupational Safety & Health Act along with the standards and regulations promulgated pursuant thereto (including but not limited to those safety requirements involving work on elevated platforms), all forms of traffic regulations, public utility, Interstate and Intrastate Commerce Commission regulations, Workers’ Compensation Laws, Public Construction Bond Act, Public Works Preference Act, Employment of Illinois Workers on Public Works Act, USA Security Act, federal Social Security Act (and any of its titles), and any other law, rule or regulation of the Illinois Department of Labor, Department of Transportation, Illinois Environmental Protection Act, Illinois Department of Natural Resources, Illinois Department of Human Rights, Human Rights Commission, EEOC, and the Village of Buffalo Grove. Notwithstanding the following, the Contractor shall particularly note that:

A. NO DISCRIMINATION – The Contractor shall comply with the provisions of the Illinois Public Works Employment Discrimination Act and the Illinois Human Rights Act/Equal Opportunity Clause which, pursuant to Illinois law, are deemed to be part of this Contract.

B. FREEDOM OF INFORMATION - The Contractor agrees to furnish all documentation related to the Contract, the Work and any documentation related to the Village required under an Illinois Freedom of Information Act (ILCS 140/1 et. seq.) (“**FOIA**”) request within five (5) calendar days after the Village issues Notice of such request to the Contractor. The Contractor agrees to defend, indemnify and hold harmless the Village, and agrees to pay all reasonable costs connected therewith (including, but not limited to attorney’s and witness fees, filing fees and any other expenses) for the Village to defend any and all causes, actions, causes of action, disputes, prosecutions, or conflicts arising from Contractor’s actual or alleged violation of FOIA or the Contractor’s failure to furnish all documentation related to a FOIA request within five (5) calendar days after Notice from the Village for the same. Furthermore, should the Contractor request that the Village utilize a lawful exemption under FOIA in relation to any FOIA request thereby denying that request, Contractor agrees to pay all costs connected therewith (such as attorneys' and witness fees, filing fees and any other expenses) to defend the denial of the request. This defense shall include, but not be limited to, any challenged or appealed denials of FOIA requests to either the Illinois Attorney General or a court of competent jurisdiction.

C. ILLINOIS WORKERS ON PUBLIC WORKS ACT - To the extent applicable, the Contractor shall comply with the Illinois Workers on Public Works Act, 30 ILCS 570/1 et seq., and shall provide to the Village any supporting documentation necessary to show such compliance.

D. NOT A BLOCKED PERSON - The Contractor affirms and covenants that neither the Contractor nor any individual employed by the Contractor for this Work or under this Contract is a person forbidden from doing business with a unit of local government under Executive Order No. 13224 (Sept 23, 2001), 66 Fed.Reg. 49,079 (Sept 23, 2001) or is a person registered on the Specially Designated Nationals and Blocked Persons List. The Contractor shall indemnify the Village from all costs associated with failure to comply with this paragraph.

E. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS ACT - The Contractor knows, understands and acknowledges its obligations under the Substance Abuse Prevention on Public Works Act (820 ILCS 265/1 et seq.), and shall comply and require all subcontractors and lower tiered contractors to comply with the requirements and provisions thereof.

F. PREVAILING WAGE ACT - The Village is an Illinois unit of local government and the Work hereunder is subject to the Illinois Prevailing Wage Act, 820 ILCS 130/0.01, et seq.

Pursuant to PA 100-1177 the Illinois Department of Labor (IDOL) has activated an electronic database (Payroll Portal) capable of accepting and retaining certified payrolls submitted under the State of Illinois Prevailing Wage Act (820 ILCS/130/1). All contractors and subcontractors completing work for the Village of Buffalo Grove pursuant to the Act must submit all certified payroll through the IDOL Payroll Portal.

Consequently, the Contractor and each subcontractor shall submit with their application for payment(s) the email certification received from their IDOL Payroll Portal submittal with each of their pay requests. Any delay in processing the payments due to a lack of aforementioned email certification shall not be an event of default by the Village and shall not excuse any delay by the Contractor who shall proceed with the Work as if no delay in payment has occurred. The Contractor and Village shall agree to take any further steps not outlined above to ensure compliance with the Prevailing Wage Act. Upon two business days’ Notice, the Contractor and each subcontractor shall make available to the Village their records to confirm compliance with the Prevailing Wage Act. Finally, to ensure compliance with Prevailing Wage Act, the Contractor and each subcontractor shall keep for a period of not less than 5 years after the Work has been completed records of all laborers, mechanics, and other workers employed by them for the Work; the records shall include each worker’s name, address, telephone number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, the starting and ending times of work each day and, when available, last four digits of the social security number

Current rates can be located on the Illinois Department of Labor website.

<https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx>

ARTICLE XXV – NO WAIVER OF RIGHTS

A waiver by the Village of any Event of Default or any term of provision of this Contract shall not be a waiver of the same Event of Default, another Event of Default or any other term or provision of this Contract.

ARTICLE XXVI – CONTROLLING LAW AND VENUE

This Contract is entered into in the State of Illinois, for work to be performed in the State of Illinois and shall be governed by and construed in accordance with the laws of the State of Illinois. Any legal matters or dispute shall be resolved in the Circuit Court of Cook County and the Parties hereby submit to the jurisdiction of such Circuit Court. This Contract shall be construed without regard to any presumption or other rule requiring construction against the Party causing the Contract to be drafted.

ARTICLE XXVII – MISCELLANEOUS

- A. AMENDMENT** – This Contract may be amended only in writing executed by both Parties.
- B. NO RECORDING** – This Contract, or a memorandum thereof, may not be recorded in any form by either Party. If either Party records this Contract, or a memorandum thereof, they shall immediately file a release of the same.
- C. SECTION HEADINGS** – The headings in the Contract are intended for convenience only and shall not be taken into consideration in any construction or interpretation of the Contract.
- D. NO THIRD-PARTY BENEFICIARIES** – This Contract does not confer any rights or benefits on any third party.
- E. BINDING EFFECT** – This Contract shall be binding and inure to the benefit of the Parties hereto, their respective legal representatives, heirs and successors-in-interest.
- F. ENTIRE AGREEMENT** – This Contract supersedes all prior agreements and understandings and constitutes the entire understanding between the Parties relating to the subject matter hereof.
- G. SEVERABILITY** - If any term, condition or provision of the Contract is adjudicated invalid or unenforceable, the remainder of the Contract shall not be affected and shall remain in full force and effect, to the fullest extent permitted by law.
- H. TORT IMMUNITY DEFENSES** - Nothing contained in this Contract is intended to constitute nor shall constitute a waiver of the rights, defenses, and immunities provided or available to the Village under the Local Governmental and Governmental Employees Tort Immunity Act, 745 ILCS 10 *et seq.*
- I. CALENDAR DAYS AND TIME.** Unless otherwise provided in this Contract, any reference in this Contract to “day” or “days” shall mean calendar days and not business days. If the date for giving of any notice required to be given, or the performance of any obligation, under this Contract falls on a Saturday, Sunday or federal holiday, then the notice or obligation may be given or performed on the next business day after that Saturday, Sunday or federal holiday.

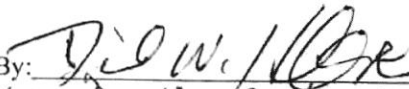
J. COUNTERPARTS – This Contract may be executed by the Parties in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute an original instrument.

IN WITNESS WHEREOF, the Parties hereto have caused the Contract to be executed as of the Effective Date.

Village of Buffalo Grove,
an Illinois home-rule unit of government

By: 
Name: Dane Bragg
Title: Village Manager

Efraim Carlson & Son, Inc.
[An Illinois construction company]

By: 
Name: DAVID W. THUSTROM
Title: CEO

CONTRACT EXHIBIT C- FORM OF PERFORMANCE AND PAYMENT BOND

Bond Number: _____

KNOW ALL MEN BY THESE PRESENTS, That _____ (the "Principal") and _____ (the "Surety"), are held and firmly bound unto the Village of Buffalo Grove, an Illinois home-rule unit of government (the "Village"), the full and just sum of _____ Dollars (\$ _____) in lawful money of the UNITED STATES OF AMERICA as herein provided.

THE CONDITION OF THIS OBLIGATION is such that the Principal and Surety agree to bind themselves, their successors, assigns, executors, heirs and administrators, jointly and severally, for the full and faithful performance of the Work as defined in that particular Arboretum Golf Course Patio Upgrades between Principal and the Village dated _____ day of _____, 20____, (hereinafter referred to as the "Contract"), a copy of which is attached and incorporated by reference as though fully set forth herein.

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if the said Principal (i) shall in all respects keep and perform all the undertakings, covenants, terms, conditions and agreements of the Contract; (ii) shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the Work provided in said Contract; and (iii) shall remove and replace any defects in workmanship or materials which may be apparent or may develop within the ARTICLE XIX – WARRANTY PERIOD of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Work thereunder shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work.

IN WITNESS WHEREOF, we have hereunto set our hands and sea _____ day of _____, 20____.

SURETY

PRINCIPAL

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

ATTEST

ATTEST

By: _____

By: _____

NOTE: Date of Bond must not be prior to date of Contract.
If Contractor is Partnership, all partners should execute Bond.
IMPORTANT: Surety companies executing Bonds must appear on the Treasury Departments most current list (Circular 570 as amended) and be authorized to transact business in the state where the Work is located.

CONTRACT EXHIBIT D- PARTIAL WAIVER

PARTIAL LIEN WAIVER

STATE OF ILLINOIS

COUNTY OF _____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by _____
 to furnish _____
 for the premises known as _____
 of which _____ is the owner.
 THE undersigned, for and in consideration of _____
 (\$ _____

) Dollars, and other good and valuable considerations, the receipt whereof is hereby acknowledged, do(es) hereby waive and release any and all lien or claim of, or right to, lien, under the statutes of the State of Illinois, relating to mechanics' liens, with respect to and on said above-described premises, and the improvements thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of all labor, services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____ COMPANY NAME _____
 ADDRESS _____
 SIGNATURE AND TITLE _____

***EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT**

CONTRACTOR'S AFFIDAVIT

STATE OF ILLINOIS

COUNTY OF _____

TO WHOM IT MAY CONCERN:

THE UNDERSIGNED, (NAME) _____ BEING DULY SWORN, DEPOSES
 AND SAYS THAT HE OR SHE IS (POSITION) _____ OF
 (COMPANY NAME) _____ WHO IS THE
 CONTRACTOR FURNISHING _____ WORK ON THE BUILDING
 LOCATED AT _____
 OWNED BY _____

That the total amount of the contract including extras* is \$ _____ on which he or she has received payment of \$ _____ prior to this payment. That all waivers are true, correct and genuine and delivered unconditionally and that there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses of all parties who have furnished or delivered material or labor, or both, for said work and all parties having contracts or sub contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to become due to each, and that the items mentioned include all labor and material required to complete said work according to plans and specifications:

NAMES AND ADDRESSES	WHAT FOR	CONTRACT PRICE (INCLDQ EXTRAS*)	AMOUNT PAID	THIS PAYMENT	BALANCE DUE
TOTAL LABOR AND MATERIAL INCLUDING EXTRAS* TO COMPLETE.					

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE _____ SIGNATURE: _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____,

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT.

 NOTARY PUBLIC

CONTRACT EXHIBIT E- FINAL WAIVER

FINAL WAIVER OF LIEN

STATE OF ILLINOIS
 COUNTY OF _____

TO WHOM IT MAY CONCERN:
 WHEREAS the undersigned has been employed by _____
 to furnish _____
 for the premises known as _____
 of which _____ is the owner.

THE undersigned, for and in consideration of _____
 (\$ _____) Dollars, and other good and valuable considerations, the receipt whereof is hereby acknowledged,
 do(es) hereby waive and release any and all lien or claim of, or right to, lien, under the statutes of the State of Illinois, relating
 to mechanics' liens, with respect to and on said above-described premises, and the improvements thereon, and on the material,
 fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the
 owner, on account of all labor, services, material, fixtures, apparatus or machinery, heretofore furnished, or which may be
 furnished at any time hereafter, by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____ COMPANY NAME _____
 ADDRESS _____
 SIGNATURE AND TITLE _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT

CONTRACTOR'S AFFIDAVIT

STATE OF ILLINOIS
 COUNTY OF _____

TO WHOM IT MAY CONCERN:
 THE UNDERSIGNED, (NAME) _____ BEING DULY SWORN, DEPOSES
 AND SAYS THAT HE OR SHE IS (POSITION) _____ OF
 (COMPANY NAME) _____ WHO IS THE
 CONTRACTOR FURNISHING _____ WORK ON THE BUILDING
 LOCATED AT _____
 OWNED BY _____

That the total amount of the contract including extras* is \$ _____ on which he or she has received payment of
 \$ _____ prior to this payment. That all waivers are true, correct and genuine and delivered unconditionally and that
 there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses
 of all parties who have furnished or delivered material or labor, or both, for said work and all parties having contracts or sub
 contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to
 become due to each, and that the items mentioned include all labor and material required to complete said work according to
 plans and specifications:

NAMES AND ADDRESSES	WHAT FOR	CONTRACT PRICE INCLDG	AMOUNT PAID	THIS PAYMENT	BALANCE DUE
TOTAL LABOR AND MATERIAL INCLUDING EXTRAS*					

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for
 material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE _____ SIGNATURE: _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE
 ORDERS, BOTH ORAL AND WRITTEN, TO THE CONTRACT.

 NOTARY PUBLIC



Wold Architects and Engineers
220 North Smith Street, Suite 310
Palatine, IL 60067
woldae.com | 847 241 6100

Project Manual

ARBORETUM GOLF COURSE PATIO UPGRADES

Village of Buffalo Grove

Buffalo Grove, Illinois
December 1, 2021

SECTION 00 01 01

PROJECT IDENTIFICATION PAGE

PROJECT MANUAL

PROJECT IDENTIFICATION

BIDDING REQUIREMENTS

CONDITIONS OF THE CONTRACT

GENERAL REQUIREMENTS

AND SPECIFICATIONS FOR:

ARBORETUM GOLF COURSE PATIO UPGRADES

**401 HALF DAY ROAD
BUFFALO GROVE, ILLINOIS 60089**

VILLAGE OF BUFFALO GROVE
BUFFALO GROVE, ILLINOIS 60089

Bid Time: 10:00 a.m.

Bid Date: December 17, 2021

Bid Place: Buffalo Grove Village Hall
50 Raupp Boulevard
Buffalo Grove, Illinois 60089

SECTION 00 01 03

TITLE PAGE

PROJECT TITLE AND LOCATION: ARBORETUM GOLF COURSE PATIO UPGRADES
401 HALF DAY ROAD
BUFFALO GROVE, ILLINOIS 60089

OWNER: VILLAGE OF BUFFALO GROVE

ARCHITECTS: Wold Architects and Engineers
220 North Smith Street, Suite 310
Palatine, Illinois 60067
Tel. (847) 241-6100

DATE: December 1, 2021

SECTION 00 01 05

PROFESSIONAL CERTIFICATIONS

ARBORETUM GOLF COURSE PATIO UPGRADES

VILLAGE OF BUFFALO GROVE

Wold Architects and Engineers

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of Illinois.

_____	December 1, 2021	001020883
Signature	Date	Registration

Typed Name

SECTION 00 01 10

PROJECT MANUAL TABLE OF CONTENTS

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<u>Division 32</u> 32 13 13 32 14 13	<u>Exterior Improvements</u> Concrete Paving Precast Concrete Unit Paving
<u>Division 33-49</u>	Not Used

SECTION 00 11 13

BIDDING AND CONTRACT DOCUMENTS

A copy of the Village of Buffalo Grove Arboretum Golf Course Patio Upgrades Bid and Contract Documents is attached hereto.

INVITATION TO BID
ARBORETUM GOLF COURSE PATIO UPGRADES

The Village of Buffalo Grove (the “**Village**”) herein invites you to submit a bid for the Arboretum Golf Course Patio Upgrade including interior and exterior remodeling and the installation of an aluminum operable wall system and glazing.

PREVAILING WAGE ACT - The Village is an Illinois unit of local government and the Work hereunder is subject to the Illinois Prevailing Wage Act, 820 ILCS 130/0.01, et seq.

For information on how to receive a copy of the Bid Package and any addenda contact the Office of the Purchasing Manager at 847-459-2500 or visit the Village of Buffalo Grove procurement website at <https://www.vbg.org/bids>

TIMELINE

- | | |
|--|---|
| 9:00 AM local time Thursday, December 9, 2021 | Due date for all questions regarding the Work (“Question Due Date”) |
| 10:00 AM local time Friday December 17, 2021 | Bid Proposals due to the Village (“Bid Due Date”) |

INSTRUCTIONS TO BIDDERS

QUESTIONS ON THE WORK

All comments, concerns and questions regarding the Work and these documents shall be addressed to the Village of Buffalo Grove Purchasing Manager via email at BGfinance@vbg.org with the subject line “Arboretum Golf Course Patio Upgrades”. All comments, concerns and questions regarding the Work must be received by the **9:00 AM local time** on the Question Due Date (defined above).

BID PROPOSAL DOCUMENTS

Each bidder must submit **copies** of the following documents (collectively, the “**Bid Proposal**”):

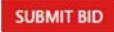
1. Executed and notarized Public Contract Statement set forth on **Exhibit A**;
2. Completed Schedule of Prices set forth on **Exhibit B**;
3. Completed Reference List set forth on **Exhibit C**;
4. A list of the requested changes to the Contract citing the specific Article within the Contract and the specific change requested.

BID SECURITY

Along with the Bid Proposal, each bidder must submit with its Bid Proposal a bank draft, cashier’s check, certified check or bid bond equal to at least five percent (5%) of the Total Contract Price, as set forth in their Schedule of Prices (the “**Bid Security**”).

BID SUBMITTAL

All bid proposals must be submitted electronically through the Village’s Vendor Registry online procurement system by the Bid Due Date on **Thursday, December 17, 2021 10:00 AM**. Hard copy bids will not be accepted. All bids will be opened and read publicly via the Microsoft Teams video conferencing platform <https://bit.ly/3rjJZJz>. In order to submit a bid proposal, bidders shall:

1. Go to www.vbg.org/bids
2. Select on the project description, ‘Arboretum Golf Course Patio Upgrades’ click the large red button at the top.

3. Log in to your account and enter your total bid price. This will be the as read bid price.
4. Bid Submittal Documents shall be a single attachment as a .pdf document (up to 200 MB)

VoBG-2022-03 Bid for Village of Buffalo Grove, Illinois

Arboretum Golf Course Patio Upgrade

NO WITHDRAWAL OF BIDS

No Bid Proposal shall be withdrawn after the Bid Due Date without the consent of the Village for a period of sixty (60) calendar days after the Bid Due Date.

QUALIFICATION OF BIDDERS

It is the intention of the Village to award the Work only to a bidder who furnishes satisfactory evidence that they have the requisite qualifications, capital, experience, facilities and ability to complete the Work successfully, promptly, and within the time frame set forth in these documents.

The Village reserves to make such investigations as it deems necessary to determine the qualifications and ability of any bidder. To that extent, all bidders agree to furnish to the Village any information and data requested by the Village in its investigation. Failure of a bidder to provide any information or data requested by the Village in its investigation will be grounds to reject that bidder from consideration for the Work.

INSTRUCTIONS TO BIDDERS

1. Bidders must inform themselves of all the conditions under which the Work is to be performed including, but not limited to, and where applicable, the structural integrity of the building, the conditions of the ground, building codes. No extra compensation will be given to any bidder who fails to apprise themselves of the conditions under which the Work is to be performed.
2. All changes requested by a bidder to the Contract must be submitted with their Bid Proposal.
3. Bidders shall be responsible, at their own expense, for all permits, business licenses and other licenses which may be required to complete the Work and required by local, county, state or federal government.

RESERVATION OF RIGHTS

The Village reserves the following rights regarding the bidding process:

1. The right to accept the Bid Proposal that is, in the Village's sole judgment, the best and most favorable to the interests of the Village and the public.
2. To reject the lowest bidder.
3. To accept any item or any portion in any Bid Proposal from any bidder.
4. To accept and incorporate corrections, clarifications or modifications following the Bid Due Date when doing so would not, in the Village's opinion, prejudice the procurement process or create any improper advantage to any bidder; and
5. To waive irregularities and informalities in the procurement process or in any Bid Proposal; provided, however, that the waiver of any prior defect or informality shall not be considered a waiver of any future or similar defects or informalities, and bidders shall not rely upon, or anticipate, such waivers in submitting their Bid Proposal.
6. To disqualify any bidder that is found to have contacted the Village's personnel in any manner with regard to the Work.
7. The right to approve or disapprove of any or all subcontractors, or insist on no subcontractors, in connection with any Bid Proposal.
8. Reject any subcontractor from working on the Work if they are not listed in the Bid Proposal.
9. The Village shall hold the Bid Security, if any, for the two (2) lowest bidders until the Contract is signed for the Work.
10. Disqualify any bidder who requests changes to the Contract when such changes were not submitted with their Bid Proposal.
11. The right is reserved to the Village to increase or decrease the quantities shown in the schedule of pricing.

RESERVATION OF RIGHTS (cont.)

12. All Bidders are prohibited from making any contact with the any official or employee of the Village (collectively, “Municipal Personnel”) with regard to the work, other than in the manner and to the person(s) designated herein. The Village Manager of Buffalo Grove reserves the right to disqualify any Bidder that is found to have contacted Municipal Personnel in any manner with regard to the work. Additionally, if the Buffalo Grove Village Manager determines that the contact with Municipal Personnel was in violation of any provision of 720 ILCS 5/33E, the matter will be turned over to the Cook County State’s Attorney for review and prosecution.

EXHIBIT A - PUBLIC CONTRACT STATEMENT

This Public Contract Statement (the “**Contract Statement**”) has been executed by the below supplier, contractor or vendor (collectively the “**Contractor**”) in order for the Village of Buffalo Grove to obtain certain information necessary prior to awarding a public contract. The Contract Statement shall be executed and notarized and submitted as part of the Bid Proposal.

CERTIFICATION OF CONTRACTOR/BIDDER

In order to comply with 720 Illinois Compiled Statutes 5/33 E-1 et seq., the Village of Buffalo Grove requires the following certification be acknowledged:

The Contractor certifies that it is not barred from bidding or supplying any goods, services or construction let by the Village of Buffalo Grove with or without bid, due to any violation of either Section 5/33 E-3 or 5/33 E-4 of Article 33E, Public Contracts, of the Chapter 720 of the Illinois Compiled Statutes, as amended. This act relates to interference with public contracting, bid rigging and rotating, kickbacks, and bidding.

CERTIFICATION RELATIVE TO 65 ILCS 5/11-42.1.1

In order to comply with 65 Illinois Compiled Statutes 5/11-42.1.1, the Village of Buffalo Grove requires the following certification:

The Contractor does hereby swear and affirm that it is not delinquent in the payment of any tax administered by the Illinois Department of Revenue unless it is contesting such tax in accordance with the procedures established by the appropriate revenue act, its liability for the tax or the amount of the tax. The undersigned further understands that making a false statement herein: (1) is a Class A misdemeanor, and (2) voids the contract and allows the Village to recover all amounts paid to it under the contract.

CONFLICT OF INTEREST

The Village of Buffalo Grove Municipal Code requires the following verification relative to conflict of interest and compliance with general ethics requirements of the Village:

The Contractor represents and warrants to the Village of Buffalo Grove as a term and condition of acceptance of their Bid Proposal that none of the following Village officials is either an officer or director of Contractor nor owns five percent (5%) or more of the Contractor: the Village President, the members of the Village Board of Trustees, the Village Clerk, the Village Treasurer, the members of the Zoning Board of Appeals and the Plan Commission, the Village Manager and his/her Assistant, or the heads of the various departments within the Village.

If the foregoing representation and warranty is inaccurate, state the name of the Village official who either is an officer or director of your business entity or owns five percent (5%) or more thereof: _____.

IN WITNESS WHEREOF, the below Contractor has signed and sealed this Contract Statement as of this _____ day of _____, 20__.

Print Name of Contractor

Signature

Print Title

Given under my hand and official seal, this _____ day of _____, 20__.

Notary Public

EXHIBIT B - SCHEDULE OF PRICES

Name of Bidder: _____

Address of Bidder: _____

City _____ State _____ Zip _____ Telephone _____

Email Address: _____

The Bidder declares, represents and warrants that it has read and agrees to abide by the terms, conditions and obligations set forth in the Invitation to Bid. In particular, the Bidder declares, represents and warrants that it has informed itself of all the conditions under which the Work is to be performed including, but not limited to, and where applicable, the structural integrity of the building, the conditions of the ground, building codes. Bidder waives any right to additional compensation for failure to make itself aware of the afore-mentioned conditions.

Bidder further declares that if their Bid Proposal is accepted, that Bidder will enter into the Contract in the same form as set forth in the Bid and Contract Documents. However, Bidder may request changes to the Contract by submitting with this Schedule of Price a list of requested changes to the Contract.

If this bid is accepted, and the undersigned fails to (i) contract as aforesaid, (ii) provide the Performance Bond required by the Contract, and (iii) provide all insurance required under the Contract within fifteen (15) calendar days after the date of the award of the Contract then the Village, at its option, may determine that the bidder has abandoned this Bid, and thereupon this Bid and the acceptance thereof shall be null and void, and such security accompanying this Bid shall be forfeited and shall be the property of the Village of Buffalo Grove not as penalty, but as liquidated damages.

BID SECURITY

Accompanying this Bid is a _____ in the amount of
 _____ Dollars (\$ _____).

Notes:

- (a) Insert the words "Bank Draft", "Cashier's Check", "Certified Check" or "Bid Bond", as the case may be.
- (b) Amount must be equal to at least five percent (5%) of the Total Base Bid.

EXHIBIT B - SCHEDULE OF PRICES (cont.)

SCHEDULE OF VALUES

Scope	Quantity	UoM*	Unit Cost		Base Price
Demolition (for work not performed by Owner)					
Masonry					
Steel					
Folding Glass Partition					
Framing and Drywall					
Interior Finishes					
Earthwork					
Exterior Improvements					
General Conditions					
Overhead and Profit					
Insurance		Lump Sum			
Bonds		Lump Sum			
A. BASE BID TOTAL					

- * Unit of Measure

A. Base Bid Total Described in the Schedule of Values \$_____

Written_____

Alternate 1. Stamped Concrete instead of Pavers Add/(Deduct) \$_____

Written_____

EXHIBIT B - SCHEDULE OF PRICES (cont.)

SUBCONTRACTOR LISTING

Bidder, to employ the following listed subcontractors for the following enumerated classes of work and is not to alter or add to such list without the written consent of the Village.

	<u>SUBCONTRACTOR</u>	<u>CLASS OF WORK</u>
1.		
2.		
3.		
4.		

ACKNOWLEDGEMENT OF ADDENDA

Acknowledgement of receipt of Addenda(s) _____ (list each addendum number)

Attach each signed addendum, if any, to the bid packet as part of your submittal.

CONTRACTOR SIGNATURE and CONTACT INFORMATION

_____ Date _____ Phone _____

_____ Legal Entity _____ E-mail _____

(Sign here)

(Print Name)

EXHIBIT C – CONTRACTOR REFERENCE LIST

Contact Name: _____

Municipality/Business: _____

Dates Employed: _____ to _____

Phone Number or E-mail address: _____

Contact Name: _____

Municipality/Business: _____

Dates Employed: _____ to _____

Phone Number or E-mail address: _____

Contact Name: _____

Municipality/Business: _____

Dates Employed: _____ to _____

Phone Number or E-mail address: _____

Contact Name: _____

Municipality/Business: _____

Dates Employed: _____ to _____

Phone Number or E-mail address: _____

CONTRACT EXHIBIT A- DESCRIPTION OF THE WORK

[Insert Description of the Work]

CONTRACT EXHIBIT B- SCHEDULE OF PRICES

[Insert Schedule of Prices]

END OF SECTION 00 11 13

SECTION 01 11 00

SUMMARY OF THE WORK

PART 1: GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Work covered by the Contract Documents.
 2. Owner-furnished products.
 3. Use of premises.
 4. Owner's occupancy requirements.
 5. Punchlist Completion.
 6. Work restrictions.
 7. Specification formats and conventions.

1.2 PROJECT IDENTIFICATION

- A. Project Name: Arboretum Golf Course Patio Upgrades, Buffalo Grove, Illinois
- B. Owner: Village of Buffalo Grove
50 Raupp Boulevard
Buffalo Grove, Illinois 60089
- C. Architect: Wold Architects and Engineers
220 North Smith Street, Suite 310
Palatine, Illinois, 60067

1.3 SUMMARY OF THE WORK

Briefly and without force and effect upon the Contract Documents, the Work of this single prime Contract can be summarized as follows:

- A. Work under this Contract includes:
1. Sitework
 - a. Site utilities: Natural gas.
 - b. Rough and finish grading, paving, concrete sidewalks and plazas, ground cover, trees and shrubs.
 - c. Fencing and miscellaneous site improvements.
 2. Building Structure
 - a. Concrete footings, concrete foundation walls, concrete slabs on grade, and miscellaneous metal items.
 3. Building Enclosure
 - a. Exterior wall systems of face brick, cavity wall insulation.
 - b. Aluminum operable wall systems and glazing.

4. Interior Finishes
 - a. Insulated gypsum board/metal stud.
 - b. Wall finishes of paint.
5. Keep Architect fully informed about progress of the work, performance of the work and potential problems.

1.4 WORK PHASES

- A. Start work immediately upon contract award by the owner.

1.5 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Concurrent Work: Owner will award separate contract(s) for the following construction operations at Project site. Those operations may be conducted simultaneously with work under this Contract.
 1. Interior lobby and event space remodel.

1.6 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
 1. Contractor is to visit site and be familiar with existing conditions. Contractor will be required to accept existing conditions on site prior to mobilizing.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 1. Allow for Owner occupancy of Project site and use by the public.
 2. Driveways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 3. Public Streets: Maintain clear of automobile parking, equipment or material storage unless arrangements have been made with the appropriate jurisdiction.
 4. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.
- C. Do not allow construction waste and debris to accumulate; remove debris as it accumulates and, unless specified otherwise, dispose of legally off-site.
- D. Conform to City's noise control regulations, including limited hours of construction operations.

- E. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.7 LAYING OUT WORK

- A. Locate all general reference points. Where dimensions or observed scope of work differ substantially from Drawings, notify Architect for decision.
- B. Lay out Work from the reference points furnished and be responsible for all lines, elevations, and measurements inside workspace. Exercise proper precaution to verify figures shown on Drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precaution.
- C. Hire the services of a locator company to locate all privately owned utilities that may be disturbed by construction operations.
- D. Coordinate utility connections with municipality/utility company in which project is being constructed.

1.8 OWNER'S OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy portions of the site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a punchlist for each specific portion of the Work to be occupied before Owner move in.
 - 2. Obtain a temporary Certificate of Occupancy if required from authorities having jurisdiction before Owner occupancy to install furnishings and equipment.

1.9 WORK RESTRICTIONS

- A. The Contractor shall limit access to grounds as indicated the Drawings.
- B. The Contractor's access to and use of the site/facility for completion of work shall be subject to the following:
 - 1. Should the Contractor have additional work to complete after May 27, 2022 including punchlist work within the existing building, continuous use of facilities is required by the Owner during regular business hours of 7:00 a.m. to 8:00 p.m. Work in those areas shall occur during evenings and weekends and shall be cleaned and available for use the following school or business day.
 - 2. The building is open between the hours of 7:00 a.m. and 8:00 p.m. Hours of operation are 7:00 a.m. to 8:00 p.m. and no work shall be performed in occupied areas during these times.
 - a. Coordinate schedule with Owner's designated building representative.

3. Should the Contractor choose to perform work after normal business hours when the building is occupied, the Contractor shall:
 - a. Maintain access, building utilities, and services to allow full and free use of the facility during this time. All temporary conditions, re-routing of services, utilities and/or power are the Contractor's responsibility.
 - b. Coordinate access and storage of materials and equipment with the Owner's designated building representative. To the fullest extent possible provide for normal building operation, and the safety of the building's occupants. Work in areas that occur during evenings and weekends shall be cleaned and available for use the following business day.
 - c. Coordinate schedule with the Owner's designated building representative.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify Architect not less than seven (7) days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Architect's or Owner's permission.

1.10 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Division and Sections using the 49-division format and CSI/CSC's "Master Format" numbering system.
 1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

END OF SECTION 01 11 00

SECTION 01 25 00

SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1: GENERAL

1.1 DESCRIPTION

- A. This Section defines procedures to be followed to gain acceptance of products in the Work which are not listed in the individual specification sections. A two step process is required.
- B. Requests for acceptance for bidding purposes of alternative manufacturers is encouraged except where specifically prohibited by this Project Manual.
- C. Submit Prior Approval request via email to mail@woldae.com with the following information in the subject line: Prior Approval 213103 XX XX XX (Specification Section).

1.2 PRODUCT OPTIONS NOT REQUIRING PRE-BID SUBMITTAL

- A. Where a single manufacture is specified and acceptable manufacturer are also listed, acceptable manufacturers must provide an identical product or accept responsibility for all design implications when providing a product other than the specified product.
- B. Where products are specified by reference standards, any product established by a material testing agency to meet these standards is acceptable.
- C. Where multiple manufacturers and associated models are specified, select any one named.
- D. Where manufacturer(s) alone are specified, select any manufacturer and the product recommended in writing by the manufacturer as most suited to the application shown on the Drawings and Specifications.
- E. Where the phrase "or equal" follows the name of a manufacturer, any product which meets the performance and appearance standards established by the specified manufacturer may be selected, subject to the Architect's acceptance.

1.3 PRODUCT SUBSTITUTIONS REQUIRING PRE-BID SUBMITTALS

- A. Step One - Manufacturers Acceptance
 - 1. Individual specification sections may be amended by the Architect during the bid period to include additional names of manufacturers determined to be capable of providing acceptable materials.
 - 2. The Architectural Drawings or Specifications may be amended by the Architect during the bid period to include colors by manufacturers listed in technical sections, but not noted on the Architectural Drawings or Specifications.
 - 3. To propose the names of specific manufacturers, submit, or arrange for suppliers to submit, written requests to Architect or appropriate Architect's Consultant. Requests received ten (10) calendar days prior to bid date will be considered.
 - a. Provide sufficient review data. Include specified manufacturer's model numbers and proposed manufacturer's product literature, noting product numbers for proposed substitutions, and where appropriate, samples and data relating to construction details. If the product is not identical to specified product, submit letter stating proposed manufacturer will custom make products to meet specified product.

- b. Architect's acceptance is based upon his determination that a manufacturer is capable of supplying acceptable materials. Approval is not assured or implied for a specific material, item of equipment, color or finish.
- c. Official notification will be by addendum to the Contract Documents. However, in addition, if letters of request are delivered in duplicate with accompanying stamped self addressed envelopes, copies may be returned with Architect's decision in advance.

B. Step Two - Product Acceptance

1. Upon award of a construction contract, accepted manufacturers may submit for review to the Architect through the General Contractor or Construction Manager, specific products, materials or equipment items as substitutes for those specified. Contractor to provide letter stating they will reimburse Architect to review substitutions.
2. Architect will review substitute products for performance, appearance, color, finish, size and suitability for inclusion in the work. If a substitute product is not accepted, submit another product by the same or other accepted manufacturer or provide the specified product.
3. Match specified colors and dimensions exactly, whether or not they are standard with the substitute product, unless a minor variation is accepted by the Architect.
4. If a substitute product is accepted, coordinate any necessary changes in other related work and pay for these changes. Pay cost of architectural or engineering services, if any, required to incorporate substitute products in the Work.

1.4 SUBSTITUTIONS BY CHANGE ORDER

- A. A substitution for a specified product may be permitted by "change order" at no additional cost to the Owner if product proposed is determined to be equivalent in performance and suitability, and if at least one of the following conditions apply:
1. Owner is given a credit for the work.
 2. Product is of superior quality than product specified.
 3. Product color or finish selection is preferable.
 4. Products specified and upon which building is designed have been discontinued by manufacturer.
- B. Provide Architect, through Owner, reasonable compensation for product evaluation.

END OF SECTION 01 25 00

SECTION 01 26 63

CHANGE ORDERS

1.01 CHANGE ORDER PROCEDURES

- A. Changes in the Project scope of work affecting the project cost can be made only through AIA Document G701 - Change Order.
- B. The procedures for processing changes in the scope of Work are listed as follows:
 - 1. The Architect prepares one of the following documents to modify the scope of work. Documents and attachments revising the drawings and specifications will be distributed electronically and the Contractor will be responsible for printing.
 - a. Supplemental Instructions (SI) which are used for no cost changes.
 - b. Proposal Request (PR) to be used for proposed changes that need written approval on cost prior to proceeding.
 - c. Construction Change Directive AIA Document G714 (CCD) which is used when the work must proceed immediately and time and material cost submitted as soon as possible for review by the Architect.
 - 2. The Contractor reviews and responds as follows:
 - a. Supplemental Instructions (SI): This no cost change is to be carried out in accordance with the following modifications to the contract documents described herein. If this change effects cost, do not proceed with this change. Notify the Architect in writing within 10 days of receipt that an itemized (labor and material) quotation will be submitted within 21 days of initial receipt of this Supplemental Instruction. If a cost is not submitted within 21 days, this Supplemental Instruction will be accepted at no additional cost.
 - b. Proposal Request (PR): Submit an itemized (labor and material) quotation for the proposed modifications to the contract documents as described herein within 21 days of receipt. If a cost is not submitted within 21 days, this Proposal Request can be accepted at no additional cost. Written approval is required prior to proceeding with this change.
 - c. Construction Change Directive AIA Document G714 (CCD): Proceed immediately to carry out this change in the contract documents as described herein. If this revision effects cost, submit an itemized (labor and material) quotation within 21 days of receipt. If a cost is not submitted within 21 days this Change Directive will be accepted at no additional cost.
 - 3. The Architect will review the Contractor's labor and material itemized quotation and respond in writing whether it is acceptable or needs revision. When all pricing is accepted by the Architect and Owner, a Change Order will be processed. Change Orders will be processed at increments determined by the Architect throughout the construction schedule.
- C. See General Conditions and Supplementary Conditions of the Work for methods of determining cost or credit, mark-up and schedule on submitting claims.

END OF SECTION 01 26 63

SECTION 01 31 19
PROJECT MEETINGS

PART 1: GENERAL

1.1 DESCRIPTION

- A. Schedule and administer pre-construction meeting, periodic progress meetings, and specially called meetings throughout the progress of the work.
 - 1. Notify Architect in advance.
 - 2. Prepare agenda for meetings.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at meetings.
- B. Representatives of contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Architect may attend meetings to ascertain that Work is expedited consistent with Contract Documents and the construction schedules.

1.2 PRE-CONSTRUCTION MEETING

- A. Schedule within 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by Contractor.
- C. Attendance:
 - 1. Owner's representative.
 - 2. Architect and their professional consultants.
 - 3. Resident project representative.
 - 4. Contractor's superintendent.
 - 5. Major subcontractors.
 - 6. Major suppliers.
 - 7. Others as appropriate.
- D. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected construction schedules Refer to Section 01 32 00.
 - Critical Path Method. Schedule for entire construction period.

- Submittal Schedule.
 - Schedule pre-scheduling conference.
2. Critical work sequencing.
 3. Major equipment deliveries and priorities.
 4. Project coordination and scheduling:
 - Designation of responsible personnel.
 - Pre-installation conference:
 - Slab on grade.
 - Masonry flashing.
 - Operable Wall.
 - Dust control.
 5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal Requests/Supplemental Instructions.
 - c. Submittals.
 - d. 21 day time limit on claims.
 - e. Change orders.
 - f. Applications for payment.
 6. Procedures for maintaining Record Documents.
 7. Use of premises:
 - a. Office, work, and storage areas.
 - b. Owner's requirements.
 8. Steel fabrication certification. Refer to Section 05 12 00 – 1.06 B, C.
 9. Construction facilities, controls and construction aids.
 - a. Construction Dust Control.
 - Submit work area and procedures schedule.
 - Dust proof enclosures.
 - HEPA filters vacuums.
 - Maintain negative air flow.
 - Dust control by spraying surfaces with watermist.
 - Enforcement per spec. Written warning, if not corrected in 8 hours, Owner will stop work. Cost will be borne by Contractor.
 10. Temporary utilities.
 11. Safety and first-aid procedures.

12. Security procedures.
13. Housekeeping Procedures. Refer to Section 01 50 00.
 - Debris removed weekly.
 - Daily clean requirements.
 - Failure to maintain clean site will result in Owner cleaning and back charging Contractor.
14. Final Cleaning. Refer to Section 01 74 00.
 - Schedule in time for Owner to complete furniture installation, required clean (i.e. floors).
 - Any cleaning done by Owner due to unacceptable cleaning by Contractor, or to and contractor in completing cleaning on schedule will be back charged to Contractor.

1.3 PROGRESS MEETINGS

- A. Schedule regular periodic meetings, as required.
- B. Hold called meetings as required by progress of the work.
- C. Location of the meetings: The project location.
- D. Attendance:
 1. Architect and their professional consultants may attend as needed.
 2. Subcontractors as appropriate to the agenda.
 3. Suppliers as appropriate to the agenda.
 4. Others.
- E. Suggested Agenda:
 1. Review, approval of minutes of previous meeting.
 2. Review of work progress since previous meeting.
 3. Field observations, problems, conflicts.
 4. Problems which impede Construction Schedule.
 5. Review of off-site fabrication, delivery schedules.
 6. Corrective measures and procedures to regain projected schedule.
 7. Revisions to Construction Schedule.
 8. Plan progress, schedule, during succeeding work period.
 9. Coordination of schedules.
 10. Review submittal schedules; expedite as required.
 11. Maintenance of quality standards.

12. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the Project.
13. Other business.

END OF SECTION 01 31 19

SECTION 01 31 26

ELECTRONIC COMMUNICATION PROTOCOLS

PART 1: GENERAL

1.01 SUMMARY

- A. The Architect will provide the Contractor with one (1) electronic copy of the background drawing relevant to their request. Requested files will be provided via email to the Contractor in AutoDesk AutoCAD format.
- B. The terms and conditions on the attached form “Agreement Between Architect and Contractor for Transfer of Computer Aided Drafting (CAD) Files on Electronic Media” apply to all Electronic Documents issued by Wold Architects and Engineers or it’s consultants for the project.
 - 1. Exceptions:
 - a. Electronic Documents by other consultants on the project may need to sign an additional Agreement for Electronic File Transfer that can be made available upon request.
- C. Electronic Document Availability
 - 1. Pre Bid: AutoCAD backgrounds pertaining only to Survey and/or proposed grading will be available prior to bid. Requesting Contractors must complete “Attachment A - Agreement Between Civil Engineer and Contractor for Transfer of Computer Aided Drafting (CAD) Files on Electronic Media” at time of request.
 - 2. After Bid: Backgrounds as requested by the awarded contractors at the discretion of the Architect or Engineer. Electronic Documents are available upon completion of “Attachment A - Agreement Between Architect and Contractor for Transfer of Computer Aided Drafting (CAD) Files on Electronic Media” by the General Contractor on project.
- D. See attached form “Attachment A – Agreement Between Architect and Contractor for Transfer of Computer Aided Drafting (CAD) Files on Electronic Media.”

PART 2: PRODUCTS – (Not Applicable)

PART 3: EXECUTION – (Not Applicable)

END OF SECTION 01 31 26

ATTACHMENT A – AGREEMENT BETWEEN ARCHITECT AND CONTRACTOR FOR THE TRANSFER OF COMPUTER AIDED DRAFTING (CAD) FILES ON ELECTRONIC MEDIA

Arboretum Golf Course Patio Upgrades

The purpose of this agreement is to grant permission from the Transmitting Party (Architect and/or Engineer) to the Receiving Party (Contractor, Bidder, and/or Construction Manager) for the Receiving Party’s use of Electronic Media on the Project, and to set forth the terms of such use. Electronic Media is defined to include all data or files transmitted. All Electronic Media is considered confidential and containing business proprietary information. Wold Architects & Engineers and its consultants grant the Receiving Party a limited license to use Electronic Media issued by Wold Architects & Engineers exclusively for this Project. The terms are set forth as follows:

1. The Electronic Media is transmitted for the Receiving Party’s convenience and remains the sole property of Wold Architects and Engineers and/or its consultants.
2. The Transmitting Party makes no warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose, respecting the Electronic Media or the files therein. The Transmitting Party makes no representation regarding the accuracy, completeness, or permanence of the Electronic Media or the files therein.
3. The Electronic Media or files therein depict information only at the specific point in time of preparation and may not include final data or represent exact as-built conditions. Addenda information or revisions made after the date indicated on the files may not have been incorporated. The Receiving Party is solely responsible for verifying all field conditions against the Electronic Media or files therein and making all necessary adjustments. The Receiving Party is solely responsible for determining whether any changes made after it receives the Electronic Documents affect any services or work it provided using the Electronic Documents and for updating any such services or work.
4. The Electronic Media and files therein are not considered to be Contract Documents as defined by the General Conditions of the Contract for Construction. In the event of a conflict between the Architect’s and/or Engineer’s sealed Contract Drawings and the Electronic Media files, the sealed Contract Drawings shall govern. It is the Receiving Party’s responsibility to determine if any conflicts exist.
5. Neither Wold Architects and Engineers nor its consultants are responsible for any decline in accuracy or readability due to the medium on which the Electronic Media are stored, or for any unintentional transmission of computer viruses.
6. The Electronic Media and the files therein may not be used by the Receiving Party for any purpose other than as a convenience in the preparation of Shop Drawings, layout, and other purposes related to the Project. Any use or reuse of the Electronic Media of the files therein, by the Receiving Party or others, are at the Receiving Party’s sole risk and without liability or legal exposure to the Architect, Engineers, or their consultants.
7. The Architect reserves the right to determine what content will be distributed to the Receiving Party.

By signing below, the Receiving Party agrees to the terms set for by this Agreement.

AUTHORIZED ACCEPTANCE:

By Receiving Party/Contractor of Record

Signature

Print Name and Title

Print Name of Company

Date

SECTION 01 32 00

CONSTRUCTION SCHEDULING

PART 1: GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
1. Contractor's Construction (CPM) Schedule.
 2. Shop Drawing Submittals Schedule
 3. CPM Reports

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
1. Float time is for the exclusive use or benefit of the Contractor to meet schedule milestones and Contract completion date.
 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- G. Major Area: A story of construction, a separate building, or a similar significant construction element.
- H. Milestone: A key or critical point in time for reference or measurement.
- I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit six copies of schedule. Arrange the following information in a tabular format:
1. Scheduled date for first submittal.
 2. Specification Section number and title.
 3. Submittal category (action or informational).
 4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Architect's final release or approval. (Assume 15 working day turnaround.)
 7. Identify submittals that effect critical path.
- B. Contractor's Construction (CPM) Schedule: Submit two printed copies of initial schedule large enough to show entire schedule for entire construction period.
- C. CPM Reports: Concurrent with CPM schedule, submit three printed copies of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, early start date, early finish date, late start date, late finish date, and total float.
1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.

1.4 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to review methods and procedures related to the Contractor's Construction (CPM) Schedule, including, but not limited to, the following:
1. Discuss constraints, including phasing, work stages, area separations, interim milestones and partial Owner occupancy.
 2. Review delivery dates for Owner-furnished products.
 3. Review schedule for work of Owner's separate contracts.
 4. Review time required for review of submittals and resubmittals.
 5. Review requirements for tests and inspections by independent testing and inspecting agencies.
 6. Review time required for completion and startup procedures.
 7. Review and finalize list of construction activities to be included in schedule.
 8. Review submittal requirements and procedures.
 9. Review procedures for updating schedule.

1.5 COORDINATION

- A. Coordinate requirements in this Article with "Submittals Schedule" Article in Part 2. If a submittal review sequence policy governs, revise this Article to comply with requirements. See Evaluations for discussion on submittal review sequence policies.

PART 2: PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates. Identify items that affect critical path.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using CPM (critical path method) format.

- B. Preliminary Network Diagram: Submit diagram within 14 days from the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. CPM Schedule: Prepare Contractor's Construction Schedule using a CPM network analysis diagram.
 - 1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted prior to first pay request.
 - 2. Establish procedures for monitoring monthly and updating CPM schedule if work is not on schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 - 3. Use "one workday" as the unit of time. Activities should not be shorter than 2 work days or longer than 10 work days for projects with a construction period over 6 months and/or longer than 5 work days for projects with a construction period under 6 months.
- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
 - 1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Purchase of materials.
 - c. Delivery.
 - d. Fabrication.
 - e. Installation.
 - 2. Processing: Process data to produce output data or a computer-drawn, logic network diagram. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

PART 3: EXECUTION

3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating:
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

SECTION 01 33 00

SUBMITTALS

PART 1: GENERAL

1.01 DESCRIPTION

- A. This Section defines procedures for the following submittals required by the Contract Documents.
- B. Provide submittals as noted in each Section.
- C. Allow for two weeks review of submittals to avoid delay of Work.
- D. Include with submittal preparation, field verifications of measurements, field construction criteria, verification of catalog numbers and similar data, and coordination of Work requirements and Contract Documents.
- E. Submit all color samples within 30 days of contract award for Architect's use in color selections. The Architect will not start the color schedule until all samples are received.

PART 2: REQUIRED SUBMITTALS

2.1 SHOP DRAWINGS AND SAMPLES

- A. Submit shop drawings in accordance with Article 3 of the General Conditions and the following.
- B. Prepare clearly identified shop drawings or schedules to this specific project, containing only data applicable. Include with the shop drawings or schedules a letter of transmittal listing and dating the submitted drawings in sets.
- C. Contractor to review all submittals prior to submittal to Architect, and indicate such review with a stamp and signature. Review submittals for conformance to Drawings, Specifications, coordination with other trades and adjacent construction and verification of field dimensions. Failure of Contractor to adequately review submittals shall be cause for rejection.
- D. Prepare and submit electronically (with exception for color charts and samples) to Architect for review, all shop drawings and manufacturers catalog sheets showing illustrated cuts of items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, wiring diagrams, weights and arrangements. Each submittal to include a transmittal on contractor letterhead. Submittal to be in the form of one combined PDF, professionally assembled so all documents are facing the same way.
- E. Reproduction or exact replication of contract documents are not an acceptable form of shop drawings. Contractor is to generate shop drawings based on the information identified in the contract documents and notify the architect of discrepancies in the documents.
- F. The Architect will take one of the following actions on submittals:
 - 1. "Reviewed": Contractor shall proceed with ordering and/or fabrication.
 - 2. "Review Comments": Contractor shall proceed with ordering and/or fabrication after taking into account noted comments.
 - 3. "Rejected": Contractor shall provide a submittal that meets the intent of the specifications.
 - 4. "Revise and Resubmit": Contractor shall modify submittal to address comments and resubmit.

- G. If equipment other than that used in the design of this project is proposed to be used, the Contractor and/or supplier shall verify electrical differences, dimension variations and weight increases. The Contractor shall be responsible for any extra costs incurred as a result of equipment substitutions.
- H. Information submittals and submittals that are not required shall be for Architects' and Engineers' use and be available for the design team's review at the jobsite. Quantity of submittals will be the same for Architect as noted under shop drawings. These submittals will not be reviewed, stamped or returned to the Contractor.
- I. Unless otherwise specified, submit to the Architect's office samples of size, and nature representing typical qualities. Where required, submit a sufficient number of samples to demonstrate the complete range of variations of the material or quality. Written acceptance of the Architect is required prior to ordering any item for which samples are required.
- J. Submit samples to Architect's office, securely packaged, with the name of the Project clearly indicated on the package exterior. Each physical sample shall have a label or tag, firmly attached to the sample, bearing the following information: (a) Name of Project, (b) Name of Supplier, (c) Name of Contractor, and (d) Product information such as manufacturer's designation, finish, type, class, grade, etc. as is appropriate. The Architect will retain one copy of each sample.

2.2 LIST OF MATERIALS

- A. Within 7 days after the award of the Contract (notice to proceed or letter of intent), submit 4 copies of a complete list of all material, products, and equipment proposed to be used in construction to the Architect for acceptance. Do not order materials until the proposed listed materials, products and equipment to be used in construction are accepted by the Architect.
- B. Where two or more makes or kinds of items are named in the specifications (or additional names are called for in addenda), the Contractor shall state which particular make or kind of each item they proposes to provide. If the Contractor fails to state a preference, the Owner shall have the right to select any of the makes or kinds named without change in price.
- C. This list shall be arranged generally in order of specification sections. The items listed shall fully conform to project requirements and specifications. All materials are subject to the Architect's acceptance. After acceptance, changes or substitutions will not be permitted.
- D. Clearly identify or list the material, product or equipment by manufacturer and brand by listing the names for all items, including those where only one material or product is specified. Each and every material, product and equipment shall be specifically named, not listed "as specified".

2.3 LIST OF SUBCONTRACTORS

- A. Refer to the General Conditions of the Contract for Construction.
- B. Propose use of subcontractors or sub-subcontractors who are established, reputable firms of recognized standing with a record of successful and satisfactory past performance. Include the following information: specification section, item of work, subcontractor or supplier, material/manufacturer (as specified will not be allowed), project manager, phone and facsimile numbers. List major sub-subcontractors for mechanical and electrical work. Use only those subcontractors (and sub-sub-contractors, when appropriate) who are acceptable to the Architect and Owner on the Work.

2.4 SCHEDULE OF VALUES

- A. Requirements
 - 1. Submit separate Schedule of Values for each building or phase to Architect ten (10) days prior to first Application For Payment (AIA Form G702, G702a).
 - 2. Use Schedule of Values only as basis for Contractor's Application For Payment.

B. Form of Submittal

1. Base format on Sections listed in Section 00 01 10 Table of Contents, as well as, the Mechanical and Electrical Table of Contents. Break down labor and material separately.
2. Round off amounts to nearest ten dollars.

2.5 PROGRESS SCHEDULE

- A. Refer to the General Conditions of the Contract for Construction and Section 01 32 00 Construction Scheduling for submittal requirements.

END OF SECTION 01 33 00

SECTION 01 45 16

QUALITY CONTROL

PART 1: GENERAL

1.1 SELECTION AND PAYMENT

- A. The Contractor shall select, hire and pay for the services of an independent testing laboratory(s) acceptable to the Owner and Architect to perform specified Source Quality Control and other tests and inspections called for in the Specifications.

1.2 RESPONSIBILITY OF CONTRACTOR

- A. Be responsible for furnishing materials and construction in full conformance with Plans and Specifications.
- B. Pay for all tests, conducted by the testing laboratory that fail and also pay for all scheduled tests for which the pours are cancelled and a test field crew is on site before that particular pour is cancelled.

1.3 COOPERATION OF CONTRACTOR

- A. Contractor: Cooperate with the Laboratory, and:
 - 1. Make available, without cost, samples of all materials to be tested in accordance with applicable standard specifications.
 - 2. Furnish such nominal labor and working space as is necessary to obtain samples at the Project.
 - 3. Advise Laboratory of the identity of material sources and instruct the suppliers to allow test or inspections by the Laboratory.
 - 4. Notify Laboratory sufficiently in advance of operations to allow completion of initial tests or inspections by the Laboratory.

1.4 REJECTION OF MATERIALS/INSTALLATION

- A. Laboratory: Notify the Owner, Architect Engineer and Contractor or his authorized representative of any materials or installation which are not in full conformance with the specifications.

1.5 FILING OF REPORTS

- A. Laboratory: File a copy of the inspection report with the Architect, appropriate Architect's Consultant, Owner and Building Official.

PART 2: PRODUCTS – Not Applicable.

PART 3: EXECUTION

3.1 GENERAL SCOPE OF TESTING, INSPECTION

- A. Require laboratory to conduct tests and inspections as directed by the Owner, Architect or Engineer.
- B. Refer to individual specification sections for test requirements.

3.2 QUALIFICATION TESTING

- A. In addition to tests specified, if a product, material, or method of assembly that is of unknown or questionable quality to Architect, the Architect may require and order suitable tests to establish a basis for acceptance or rejection. Pay for these tests. "Standard" test reports or reports on "similar" material will not be accepted.

3.3 MISCELLANEOUS (REGULATORY) INSPECTIONS

- A. Should specifications, Architect's instructions, laws, ordinances or any public authority require any work to be inspected or approved, Contractor shall give timely notice of its readiness for inspection and a reasonable date fixed for such inspection. If any work should be covered up without approval or consent of approving agency, or Architect, it must be uncovered for examination at Contractor's expense.

END OF SECTION 01 45 16

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1: GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Support facilities include, but are not limited to, the following:
 - 1. Housekeeping and waste disposal facilities.
 - 2. Lifts and hoists.
 - 3. Construction aids and miscellaneous services and facilities.
 - 4. Temporary heating, cooling, and ventilation.
 - 5. Temporary power and lighting.
- C. Security and protection facilities include, but are not limited to, the following:
 - 1. Environmental protection.
 - 2. Stormwater control.
 - 3. Site enclosure fence.
 - 4. Security enclosure and lockup.
 - 5. Barricades, warning signs, and lights.
 - 6. Temporary enclosures.
 - 7. Temporary partitions.
 - 8. Fire protection.

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weather-tight; exterior walls are insulated and weather-tight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Occupants of Project.
 - 2. Architect.
 - 3. Testing agencies.
 - 4. Personnel of authorities having jurisdiction.
- B. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
 - 1. Pay for pumps, pipe, hoses, and backflow preventors as required to distribute water.
- C. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

PART 2: PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials or undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Portable Chain-Link Fencing: Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.
- C. Lumber and Plywood: Comply with requirements in Division 6 Section "Carpentry."
- D. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36.
- E. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indices of 25 and 50, respectively.
- F. Paint: Comply with requirements in Division 9 Section "Painting."
- G. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- H. Water: Potable.
- I. Wood Walkways: 3/4" Plywood, framed with 2x joists (size as required to support span), with wood rails to contain occupants.
- J. Poly Film Guard: 3 mil. self adhering clear poly film utilizing tack water-based adhesive.
- K. Floor Protection (when identified on floor plans)
 - 1. RamBoard, www.ramboard.com, heavy duty (46 mils) temporary floor protection to prevent penetration of spills and allow vapor transmission from below. Seal seams with manufacturer's recommended seam tape.

2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- C. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- D. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
 - 3. Hook-up of gas and power, refer to Div. 23 and 26.
- E. Temporary power and lighting, refer to Div. 26.

PART 3: EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Provide rubber hoses as necessary to serve Project site.
 - 2. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
 - 3. Provide pumps if required due to low static pressure on-site. Equip pumps with surge and storage tanks and automatic controls to supply water uniformly at reasonable pressures.
 - 4. Provide backflow prevention devices to protect Owner's water system.
- B. Sanitary Facilities:
 - 1. Toilets: Use of Owner's existing toilet facilities (as designated by Owner's representative) will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 2. Provide Hand Sanitizing stations for use by all contractors as well as Architect and their consultants. Locate Hand Sanitizing stations at point of access into building.
 - 3. Provide all necessary items and procedures to meet guidelines as recommended by the Center for Disease Control and Prevention (CDC) and the State's Health Department.
- C. Telephone/Computer Service:
 - 1. Provide a computer with internet service in each field office.
 - 2. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
 - 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

- B. **Waste Disposal Facilities:** Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section for progress cleaning requirements.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
 2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
- C. **Housekeeping**
1. Do not allow debris to accumulate on-site or within the building work areas. The contractor shall implement and provide the following cleaning services:
 - a. Debris shall be removed from the construction site and police exterior project site area on a weekly basis at a minimum to clean-up any wind-blown or excess construction materials or debris and dispose of in construction dumpsters to maintain a clean project site.
 - b. Debris shall be removed from interior of the buildings on a daily basis and disposed of in construction dumpsters.
 - c. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
 - d. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
 - e. Once floor slabs are in place, walk-off mats shall be provided at all exterior entrances that are utilized by the workers. Mats shall be cleaned on a daily basis and change out mats on a monthly basis.
 - f. Areas without final floor finish in place shall be cleaned of debris and swept on a daily basis.
 - g. Areas that workers have access to with final floor finish in place shall be vacuumed on a daily basis. Carpeted major circulation paths shall be covered with poly film guard. Replace poly film guard when it develops holes or tears as they occur. Poly film guard to be replaced if left in place over 45 days. Horizontal and vertical surfaces shall be wiped down as construction dust has accumulated.
 - h. Where Contractor has periodic access to ancillary spaces occupied by Owner, thoroughly clean after each use, so as to not disrupt Owner's ongoing operations.
 - i. Failure to maintain a clean construction area may result in the Owner cleaning the site and back-charging the Contractor.
 - j. Remove waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the Owner's property.
- D. **Lifts and Hoists:** Provide facilities for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- E. **Floor Protection:** Install temporary floor protection when noted on plans. Seal all seams. Replace during construction if damaged.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- D. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- E. Site Enclosure Fence: Before construction operations begin, install chain-link enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.
 - 1. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.
- F. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- G. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
 - 1. For safety barriers, sidewalk bridges, and similar uses, provide minimum ¾-inch thick exterior plywood and appropriate 2x___framing for support.
- H. Food Consumption: Limit food and soft drink consumption to within the Contractor's trailer or out of the building.
- I. Building Environmental Protection:
 - 1. When operating equipment adjacent to occupied areas of the building:
 - a. Coordinate in advance temporary shutdown of building air supply systems.
 - b. Close all windows and cover other openings with poly securely taped whenever equipment or vehicle exhaust fumes are present.
 - c. Reactivate air supply systems when exhaust emitting activities have been completed.

- J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
- K. Temporary Dust Control Partitions: Refer to Construction Dust Control Section 01 56 00.
- L. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses as required by the local fire marshal.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 - 2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 73 29
CUTTING AND PATCHING

PART 1: GENERAL

1.01 DESCRIPTION

- A. Execute cutting, fitting or patching of Work, required to:
 - 1. Make several parts fit properly.
 - 2. Uncover Work to provide for installation of ill-timed Work.
 - 3. Remove and replace defective Work.
 - 4. Remove and replace Work not conforming to requirements of Contract Documents.
 - 5. Install specified Work in existing construction.
 - 6. Provide finished surfaces (to match adjacent existing surfaces) to fill in voids caused by removal or replacement of materials.
- B. Pay for costs caused by ill-timed or defective Work, or Work not conforming to Contract Documents, including costs for additional services of Architect/Engineer.

PART 2: PRODUCTS

2.01 MATERIALS

- A. Replacement of Work Removed: Comply with specifications for type of Work to be done.
- B. Placement of Work to fill Voids caused by Removal: Comply with latest industry standards for type of Work to be done.

PART 3: EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions of Work, including elements subject to movement or damage during:
 - 1. Cutting and patching.
- B. After uncovering Work, inspect conditions affecting installation of new products.

3.2 PREPARATION PRIOR TO CUTTING

- A. Provide shoring, bracing and support as required to maintain structural integrity of Project.
- B. Provide protection for other portions of Project.
- C. Provide protection from elements.

3.3 PERFORMANCE

- A. Neatly cut or demolish along straight, true, square lines.
- B. Execute cutting and demolition by methods which will prevent damage to other Work, and will provide proper surfaces to receive installation of repairs and new Work.
- C. Restore Work which has been cut or removed; install new products to provide complete Work in accordance with requirements of Contract Documents.
- D. Refinish entire surfaces as necessary to provide an even finish.
 - 1. Continuous Surfaces: To nearest intersections.
 - 2. Assembly: Entire refinishing.

END OF SECTION 01 73 29

SECTION 01 74 00

FINAL CLEANING

PART 1: NOT USED

PART 2: PRODUCTS

2.01 CLEANING MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3: EXECUTION

3.01 FINAL CLEANING

- A. Employ experienced workers or professional cleaners for final cleaning.
- B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection of exposed interior and exterior surfaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from interior and exterior surfaces.
- D. Repair, patch and touch up marred surfaces to match adjacent finishes.
- E. Broom clean paved surfaces; rake clean other surfaces of grounds.
- F. Maintain cleaning until the Building or portion thereof, is occupied by the Owner.

END OF SECTION 01 74 00

SECTION 01 77 00

PROJECT CLOSEOUT

PART 1 GENERAL

1.1 SUBSTANTIAL COMPLETION

- A. Refer to the General Conditions of the Contract for Construction.
- B. When the Project is determined by the Architect to be sufficiently complete to permit utilization for the intended use, the Architect will issue a Certificate of Substantial Completion.
- C. To receive the Certificate of Substantial Completion, perform the following:
 - 1. Submit to the Architect a notice declaring that work is believed to be substantially complete.
 - 2. Submit a list of work items that remain to be completed or corrected and the date this work will be accomplished.
 - 3. Obtain Occupancy certificate when required from governing municipality.
- D. Architect will visit the project to evaluate the request for issuance of a Certificate of Substantial Completion.
 - 1. If the Architect concurs that the Project is substantially complete, the Architect will deliver a Certificate of Substantial Completion and a list of work items necessary for completion or correction prior to request for inspection for final completion.
 - 2. If the Architect determines that the work is not substantially complete, the Architect will deliver to the Contractor a written statement including reasons.
 - 3. Complete work on the items required by the Architect for achieving substantial completion and make additional written requests for issuance of a Certificate of Substantial Completion until the Architect determines that sufficient Work has been performed.

1.2 FINAL INSPECTION

- A. When the Work is considered complete, submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been completed and inspected by the Contractor for compliance with Contract Documents and is ready for final inspection.
 - 3. Building Permit Final has been submitted.
- B. Architect will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Architect consider that the Work is incomplete or defective:
 - 1. Architect will notify the Contractor in writing, listing the incomplete or defective work.
 - 2. Take immediate steps to remedy the stated deficiencies, and send a second written certification to Architect that the Work is complete.
 - 3. Architect will reinspect the Work.

- D. When the Architect finds that the Work is acceptable under the Contract Documents, they will request preparation of closeout submittals.

1.3 REINSPECTION FEES

- A. Should Architect perform reinspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:
 - 1. Owner will compensate Architect for such additional services.
 - 2. Owner will deduct the amount of such compensation from the final payment.

1.4 CLOSEOUT SUBMITTALS TO ARCHITECT

- A. When the Architect has determined that the Construction Work is acceptable under the Contract Documents and the Contract fully performed, prepare and submit final Application for Payment to the Architect together with one original and one copy of the following:
 - 1. A letter recommending acceptance of the Project and indicating all punch list items are complete.
 - 2. Contractor's Affidavit of Payment of Debts and Claims, AIA Document G706, with bonds for any exceptions.
 - 3. Consent of Surety to Final Payment on Consent of Surety Company to Final Payment, AIA Document G707.
 - 4. Contractors Affidavit of Release of Liens, AIA Document G706A.
 - 5. Project Record Documents, if required.
 - 6. Warranties and Bonds.
 - 7. Documentation from Building Official that building permit has been closed out.

1.5 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to Architect.
- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders
 - b. Allowances
 - c. Unit Prices
 - d. Deductions for uncorrected Work
 - e. Penalties and Bonuses
 - f. Deductions for liquidated damages

- g. Deductions for reinspection payments and costs incurred by Architect or Architect's Consultants if project is not closed out within sixty (60) days of Substantial Completion.
 - h. Other adjustments
- 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. Architect will prepare a final Change Order, reflecting approved adjustments to the Contract Sums which were not previously made by Change Orders.

1.6 FINAL APPLICATION FOR PAYMENT

- A. Submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

END OF SECTION 01 77 00

SECTION 01 78 23

OPERATING, MAINTENANCE AND WARRANTY DATA

1.1 GENERAL

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
- B. Prepare operating, maintenance and warranty data as specified in this Section and as referenced in other pertinent section of Project Manual.
- C. Instruct Owner's personnel in the maintenance of products and in the operation of equipment and systems.

1.2 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel with the following qualifications:
 - 1. Trained and experienced in maintenance and operation of the described products.
 - 2. Completely familiar with requirements of this Section.
 - 3. Skilled as a technical writer to the extent required to communicate essential data.
 - 4. Skilled as a draftsman competent to prepare required drawings.

1.3 FORM OF SUBMITTALS

- A. Prepare data in the form of an instructional manual for use by the Owner's personnel.
- B. Format shall conform to the following:
 - 1. Size: 8½" x 11".
 - 2. Paper: 20 pound minimum, white, for typed pages.
 - 3. Text: Manufacturer's printed data, or neatly typewritten.
 - 4. Drawings
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Fold larger drawings to the size of the text pages.
 - 5. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - a. Provide typed description of product, and major component parts of equipment.
 - b. Provide indexed tabs.
 - 6. Cover: Identify each volume with typed or printed title "OPERATING, MAINTENANCE AND WARRANTY INSTRUCTIONS". List:
 - a. Title of Project
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in the manual.

C. Binders

1. Commercial quality three-ring binders with durable and cleanable plastic cover.
2. Maximum ring size: 2 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

D. Digital Format: Submit one PDF copy of the O&M Manual on a DVD Disk.

1.4 CONTENT OF MANUAL

A. Arrange neatly typewritten table of contents for each volume, in the following systematic order.

1. Contractor, name of responsible principal, address and telephone number.
2. A list of each product required to be included, indexed to the content of volume.
3. List, with each product, the name, address and telephone number of:
 - a. Contractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify the area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 - e. Include warranty information as specified.
4. Identify each product by product name and other identifying symbols such as set in Contract Documents.

B. Product Data

1. Include only those sheets which are pertinent to the specific product.
2. Annotate each sheet to:
 - a. Clearly identify the specific product or part installed.

C. Content, for moisture-protection and weather-exposed products:

1. Manufacturer's data, giving full information on products.
 - a. Applicable standards
 - b. Chemical composition
 - c. Details of installation
2. Instructions for inspection, maintenance and repair.

D. Additional requirements for maintenance data: The respective section of the Project Manual.

1.5 SUBMITTAL SCHEDULE

- A. Submit one copy of completed data in final form within thirty days of substantial completion. Copy will be returned with comments.
- B. Submit two copies of approved data in final form ten (10) days after comments are received.

END OF SECTION 01 78 23

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

1.1 GENERAL

- A. Fully cooperate with the Architect to accomplish the following.
- B. These requirements supplement the requirements set forth in the General Conditions.
- C. Maintain at each site one record copy, as applicable, of:
 - 1. Drawings and Details with addenda marked in.
 - 2. Specifications with addenda marked in.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Architect/Engineer Supplemental Instructions, Proposal Requests or written instructions.
 - 6. Approved shop drawings, product data and samples.
 - 7. Field test records.

1.2 MAINTENANCE OF RECORD DOCUMENTS AND SAMPLES

- A. Store record documents and samples in Contractor's field office in files and racks. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with the Construction Specifications Institute MASTERFORMAT.
- C. Maintain record documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make record documents and samples available at all times for inspection by Architect or Owner.

1.3 RECORDING

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Continuously record information and changes.
- C. Drawings: Legibly mark to record actual construction.
 - 1. Depths of various elements of foundation in relation to finish first floor datum.
 - 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - 4. Field changes of dimension and detail.

5. Changes made by Field Order or by Change Order.
 6. Details not on original contract drawings.
- D. Specifications and Addenda - Legibly mark each Section to record:
1. Manufacturer, trade name, catalog number, and Supplier of each Product and item of equipment actually installed.
 2. Changes made by Field Order or by Change Order.
- E. Shop Drawings – Label each set by corresponding specification section. At the completion of the project, provide the Owner with one complete set, reviewed and stamped by architect, organized by specification section in the following formats:
1. Paper (various sizes) folded to 8 1/2” x 11” and boxed with project name and completion date clearly labeled on exterior.
 2. Scanned PDF copy on a compact disk, ordered by specification section.

1.4 SUBMITTAL

- A. Deliver Record Documents to the Owner at contract close-out.
- B. Accompany submittal with transmittal letter in duplicate, containing:
1. Date
 2. Project title
 3. Title and number of each Record Document

END OF SECTION 01 78 39

SECTION 02 01 10

EXISTING UTILITIES

PART 1: GENERAL

1.1 NOTIFICATION

- A. The Contractor shall notify public utility companies and municipalities as to which of their properties (such as pole lines, conduits, gas pipes, water pipes, sewers and tile lines) must be removed or relocated to complete the work. This notice shall note the locations to where their properties could be relocated. However, no warranty is made or implied that the utility owners will remove or relocate their properties prior to commencement of construction operations or in sufficient time or manner to prevent interference with the Contractor's operations.
- B. The Contractor shall give notice to the owners of all known utilities at least 48 hours before starting any operations affecting those properties. If during the course of his operations, the Contractor discovers utility property whose existence was not known, he shall immediately notify the owner thereof and the Engineer.
- C. Construction operations adjacent to utility property shall not be commenced until arrangements satisfactory to the utility owner have been made for the protection of said property and continuation of service. Should any of the Contractor's equipment come in contact with or damage utility property in any way, even though there may be no apparent evidence of breakage or harm, the Contractor shall promptly notify the proper authorities and cooperate with them in determining damage and restoring interrupted services as may be needed. Where contact is made with a utility, operations shall be suspended immediately, and the area vacated, until it has been determined by the utility owner that it is safe to resume operations.

1.2 COMPENSATION

- A. It is understood and agreed that the Bidder has considered in his bid the relative locations of existing utilities, as shown on the Plans and that no additional compensation will be allowed for any delays, inconveniences or damages sustained due to interference which may result from those utilities or the operations of moving them.
- B. If the Contractor is required to perform any special work or use special construction methods in prosecuting work adjacent to underground utility property whose existence was not indicated in the Contract, equitable compensation will be made for the additional costs incurred.
- C. The Contractor shall employ the local utility companies to relocate existing utilities which are affected by the proposed construction. **No additional compensation will be provided for relocation of existing utilities, as shown on the Drawings.**
- D. The Contractor is responsible to hire the services of a utility locator company to locate all privately owned utilities that may be disturbed by construction operations.

1.3 CARE AND RESPONSIBILITY

- A. The Contractor shall employ special equipment or construction methods (including hand labor, if necessary) to accomplish the work as planned adjacent to utility properties without damage thereto. At no time shall the Contractor interfere with any persons engaged in protecting or moving utility property or in the operation of the utility.
- B. The Contractor shall assume full responsibility for reimbursing the utility owners for any damages caused to utility properties whose existence and approximate locations were made known to him before the damage was done. Nothing in this Section shall make the Contractor liable for damage to utility property located below the ground surface, in the absence of negligence, if the owner of the utility, after reasonable notice from the Contractor, fails to advise the Contractor of its location and approximate depth below the ground surface.

PART 2: PRODUCTS – Not Applicable.

PART 3: EXECUTION – Not Applicable.

END OF SECTION 02 01 10

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Selective demolition of building elements for alteration purposes.

1.2 SUBMITTALS

- A See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B Schedule indicating proposed sequence of operations for selective demolition work to Owner's Representative/Construction Manager for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control.
- C Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - 1. Coordinating with the Owner's continuing occupation of portions of existing building and with Owner's partial occupancy of completed new construction areas.

1.3 SELECTIVE DEMOLITION JOB CONDITIONS

- A Occupancy: Owner will occupy portions of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner's Representative of demolition activities that will affect Owner's normal operations.
- B Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner insofar as practicable. However, minor variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.
- C Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
 - 1. Storage or sale of removed items on site will not be permitted.
- D Protection: Provide temporary barricades and other forms of protection to protect Owner's personnel, students and general public from injury due to selective demolition work.
 - 1. Coordinate protective measures with those to be performed or constructed for asbestos abatement work. Avoid duplication of work where practical.
 - 2. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to occupied portions of building.
 - 3. Erect temporary covered passageways as required by authorities having jurisdiction.
 - 4. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
 - 5. Protect from damage existing finish work that is to remain in place and which becomes exposed during demolition operations.
 - 6. Protect floors with suitable coverings when necessary.
 - 7. Construct temporary insulated dustproof partitions where required to separate areas where noisy, dirty or dusty operations are performed. Construct partitions out of metal stud, poly and gypsum board and provide dustproof doors and security locks.
 - 8. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
- E Damages: Promptly repair damages caused to adjacent facilities by demolition work.

- F Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- G Flame Cutting: Do not use cutting torches for removal until work area is cleared of flammable materials. At concealed spaces, flame cutting will not be allowed. Maintain portable fire suppression devices during flame-cutting operations.
- H Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.
 1. Do not interrupt utilities serving occupied or used facilities or spaces, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner.
 2. Maintain fire protection services during selective demolition operations.
 3. Maintain HVAC functions in occupied spaces, in so far as possible. Provide temporary heating and ventilation as required to maintain acceptable working conditions. Do not interrupt functions to occupied spaces, except as shown on the demolition plans or when authorized in writing by the Owner.
- I Environmental Controls: Use temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution, or damage to finishes or occupied spaces.
- J Do not use highly odoriferous, hazardous or highly volatile chemicals during demolition without the approval of the Owner. Provide appropriate safeguards during the use of such approved materials.
- K Lead Containing Materials: The existing building may contain lead-containing materials, including lead paint. It is the Contractor's responsibility to meet all governmental regulations when dealing with and disposing of lead containing materials.

PART 2 PRODUCTS

2.01 MATERIALS

PART 3 EXECUTION

3.1 SCOPE

- A Selective removal of portions of existing building indicated on drawings and as required, to be removed and disposed of off site, to accommodate new construction.
 1. Removal and protection of existing fixtures, materials, and equipment items indicated "salvage."

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 1. Obtain required permits.
 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 3. Provide, erect, and maintain temporary barriers and security devices.
 4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 6. Do not close or obstruct roadways or sidewalks without permit.
 7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

9. Provide for effective air and water pollution controls as required by local authorities having jurisdiction.
- B Cover and protect furniture, equipment, and fixtures from soilage or damage when demolition work is performed in areas where such items have not been removed.
- C Do not begin removal until receipt of notification to proceed from Owner, the Owner's Designated Representative or the Construction Manager.
- D Do not begin removal until built elements to be salvaged or relocated have been removed.
- E Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
- F Protect existing structures and other elements that are not to be removed.
 1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- G Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- H If hazardous materials are discovered during removal operations, stop work and notify General Contractor or Construction Manager and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury. Follow the following procedures:
 1. If the materials are not disturbed, stop work in the immediate area and notify the Owner/Construction Manager who will arrange for abatement of the material.
 2. If the material has been disturbed by demolition operation, or is otherwise loose or damaged, evacuate the immediate area and restrict access to all personnel. Shut off or isolate HVAC to the area. Notify the Owner/Construction Manager and do not re-enter space until abatement is complete and permission has been received.
 3. Rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.
- I Locate, identify, stub off, and disconnect utility services that are not indicated to remain.
 1. Provide bypass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shutdown of service is necessary during changeover.
- J Perform demolition in a manner that maximizes salvage and recycling of materials.
 1. Dismantle existing construction and separate materials.
 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.3 SELECTIVE DEMOLITION FOR ALTERATIONS

- A Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as indicated.
 2. Report discrepancies to General Contractor or Construction Manager before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
- C Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools.
- D For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.

- E Prior to any floor slab cutting and removal, contractor to identify any and all underground mechanical and electrical items by means such as, but not limited to: X-ray, ground penetrating radar, tracing, etc. Any damage will be replaced at expense of Contractor. Contractor must give General Contractor or Construction Manager 48 hour notice prior to any floor slab cutting.
- F Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.
 - a. Where selective demolition occurs immediately adjacent to occupied portions of the building, construct dust-proof partitions of minimum 3-5/8" metal studs, 5/8-inch drywall (joints taped) on occupied side, 1/2-inch fire-retardant plywood on demolition side. Fill partition cavity with insulation. Provide lockable dustproof doors.
 - b. Provide similar weatherproof closures for exterior openings resulting from or immediately adjacent to demolition work.
- G Remove existing work as indicated and as required to accomplish new work.
 - 1. Carefully remove, clean and salvage items indicated on drawings.
 - a. Furniture/building contents, not scheduled for reuse, remain property of Owner. Notify Architect if such items are encountered and obtain approval regarding method of removal and salvage for the Owner.
 - b. Store salvaged items to be reused off the ground in a clean, dry location, away from uncured concrete or masonry. Cover with waterproof material in a manner that permits air circulation within covering.
 - c. For items to be reused, inventory, label with previous location and new location.
 - 2. Leave all surfaces and work ready and acceptable to the next trade. Use only materials and techniques that are acceptable to subsequent trades to remove materials from surfaces to remain.
 - a. Remove adhesive and other materials where wall and floor coverings are removed.
 - 3. Patch or repair demolition in excess of that shown on drawings.
- H If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extend of the conflict. Submit report to Genral Contractor or Construction Manager in written, accurate detail. Pending receipt of directive from Architect, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.
 - 1. Cease operations and notify Architect, General Contractor or Construction Manager immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
- I Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - a. Patch as specified for patching new work.

3.4 DEBRIS, WASTE REMOVAL AND CLEANUP

- A Remove debris, junk, and trash from site.
- B Remove protection when no longer required by demolition and remodeling work.
- C Leave site in broom clean condition, ready for subsequent work.
- D Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 02 41 00

SECTION 04 20 00
NON-BEARING UNIT MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Furnish and install concrete masonry units where shown on the drawings.
- B Furnish and install mortar, cavity insulation, masonry accessories, flexible flashing, masonry reinforcing and loose steel lintels and other items embedded in masonry construction.
- C Remove masonry as required to tooth-in new work when tothing-in is indicated on the drawings.
- D Concrete block.
- E Common brick.
- F Mortar and grout.
- G Reinforcement and anchorage.
- H Flashings.
- I Accessories.

1.2 SUBMITTALS

- A See Section 01 33 00 - Submittal Requirements, for submittal procedures.
- B Product Data:
 - 1. Provide data on reinforcing, insulation, weep vents, concrete block control joints, flexible flashing and termination bar, brick expansion joint filler, mortar net, cavity mesh.
 - 2. Installation data (including application thickness of spray) for acoustic spray system.
- C Mix Design: Submit mix designs for each brick mortar type at least seven days prior to preparation of job mortar and delivery to the site. Include copies of test reports for the brick mortar strength.
- D Bond Flexural Tests for Brick/Mortar.
- E Mortar Samples: Submit samples of manufacturer's standard colors for preliminary selection. If requested, prepare and submit custom-mixed samples to match materials or colors as directed by the Architect. Prepare custom color samples using specified mix design; make 3/8" wide, tool concave smooth. Up to two different custom mortar colors may be selected for brick, in addition to standard gray mortar and colored pointing mortar.
- F Shop drawings:
 - 1. Provide exterior elevation drawings showing all proposed brick expansion joints and floor plans with proposed block control joint locations.
 - a. Note: The Contractor can provide a letter stating that they believe the brick expansion joints on the architectural drawings are sufficient to prevent cracking of the brick veneer in lieu of providing the shop drawings and maintain the warranty.
- G Submit information on masonry cleaning, including product data of cleaning agent(s), cleaning process, and cleaning schedule.
- H Samples: Submit samples of facing brick to illustrate color, texture, and extremes of color range.
- I Shoring: Indicate details of all phases of masonry restoration, and supports for the work. Submit shop drawings showing shoring and bracing and temporary or permanent support structures, sealed by Professional Engineer registered in the State where work is being performed if requested by Architect.

1.3 QUALITY ASSURANCE

- A Employ and pay for the services of an independent testing laboratory acceptable to the Owner and Architect to perform the specified Source Quality Control.

1.4 MOCK-UP

- A Preliminary sample panels: At the site, erect a 2'-0" square panel of each brick type, incorporating the preliminary mortar selection(s) and the full range of brick color to be expected.
 - 1. After review by the Architect, construct additional sample panels to adjust brick range and mortar color.
 - 2. Do not begin final production and/or delivery of materials until acceptance of preliminary sample panel.
- B Mock-up may not remain as part of the Work.

1.5 DELIVERY, STORAGE, AND HANDLING

- A Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B Store materials under cover in dry place; in manner to prevent damage, intrusion of foreign material. During freezing weather protect all masonry units with tarpaulins or other suitable material. Store concrete masonry under covers that will permit circulation of air, prevent excessive moisture absorption; protect against wetting prior to use.

1.6 WARRANTY

- A The Contractor shall provide a five year material and installation warranty for the exterior non-bearing masonry veneer.
 - 1. Contractor shall repair or replace exterior non-bearing masonry work, including all masonry materials, associated expansion joints, flashing, vents and weeps which fail to resist penetration of moisture and/or fail to properly drain water from the unit masonry cavities resulting in water infiltration to the building or damage to the unit masonry.
 - 2. Contractor shall be responsible to reimburse other Contractors to remove and replace materials required to repair the exterior non-bearing masonry veneer.
 - 3. Contractor shall remove efflorescence occurring on the surface of the unit masonry veneer during the warranty period.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide non-standard blocks configured for corners, lintels, headers, control joint edges, and other detailed conditions.
 - a. Provide bullnose units for outside corners in occupied rooms being painted.
 - 3. Load Bearing Units: ASTM C90, normal weight.
 - 4. Prism strength: As shown on drawings. If not shown, provide $f'm = 2,000$ psi.
 - a. Compressive strength of individual masonry units shall be as shown for the respective prism strength.
 - 5. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block.

2.2 BRICK UNITS

- A Product/Manufacturers: Match existing brick color and size in field.

2.3 MORTAR AND GROUT MATERIALS

- A Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- B Hydrated Lime: ASTM C207, Type S.
- C Mortar Aggregate: ASTM C144.
- D Grout Aggregate: ASTM C404.
- E Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
 - 1. Color(s): To match Architect's sample(s) when incorporated into specified mix design(s).
 - 2. Manufacturers:
 - a. Davis Colors, a division of Venator Materials PLC; www.daviscolors.com.
 - b. Lambert Corporation; www.lambertusa.com.
 - c. Solomon Colors, Inc; www.solomoncolors.com.
 - d. Euclid Chemical; www.euclidchemical.com
 - e. Prism Corporation; www.prismpigments.com
 - f. TCC Materials; www.tccmaterials.com
- F Water: Clean, potable, free of deleterious amounts of acids, alkalines or organic materials.

- G Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Color: Standard gray.
- H Packaged Dry Material for Mortar for Brick: Premixed masonry cement and mason's sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Color: Mineral pigments added as required to produce approved color sample.
- I Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
 - 1. Type: Fine.

2.4 REINFORCEMENT AND ANCHORAGE

- A Manufacturers:
 - 1. Basis of Design:
 - a. Hohmann & Barnard, INC: www.h-b.com.
 - b. Equivalent products by other manufacturer's are acceptable.
- B Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi) (280 MPa), deformed billet bars; galvanized.
- C Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- D Single - Multiple Wythe Joint Reinforcement (Non-Load Bearing): ASTM A951/A951M.
 - 1. Type: Truss or ladder.
 - 2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
 - 3. Size: 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.
 - 4. Product: Hohmann & Barnard, INC: #220 Ladder Mesh Reinforcement; www.h-b.com.
- E Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch (16 mm) of mortar coverage from masonry face.
 - 1. Concrete Frame Back-up: Dovetail anchors of bent steel strap by others. Trapezoidal wire ties 0.1875 inch (4.75 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
 - 2. Steel Frame: Crimped wire anchors for welding to frame, 0.25 inch (6.3 mm) thick, with trapezoidal wire ties 0.1875 inch (4.75 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- F Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
 - 1. For Masonry Back-up: Not less than 0.075 inch (1.91 mm) thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
 - a. Type: Truss.
 - b. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
 - c. Size: 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not less than 5/8 inch (16 mm) of mortar coverage on each exposure.
 - d. Compressed Leg Hook: 3/16 inch (4.76 mm) diameter.
 - e. Product: Hohmann & Barnard, INC: Lox-All Adjustable Joint Reinforcement #170-2X Truss Eye-Wire; www.h-b.com.
 - 2. For Steel Stud Back-up: 2-piece anchors that permit differential movement between masonry veneer and structural backup.
 - a. Wire: hot dip galvanized, ASTM A 153/A 153M, Class B.
 - b. Barrel: stainless steel, ASTM A580/A580M-AISI Type 304.

- c. Screw: ASTM C954 (1,000 hour polymer coating)
- d. Product: Hohmann & Barnard, INC: Thermal 2-Seal Wing Nut Anchor; www.h-b.com.

2.5 FLASHINGS

- A Combination Non-Asphaltic "Cavity Wall" Flashing Materials - Stainless Steel:
 - 1. Stainless Steel Flashing - Self-adhering: ASTM A240/A240M; 2 mil (0.05 mm) type 304 stainless steel sheet with 8 mil (0.20 mm) of butyl adhesive and a removable release liner.
 - a. Manufacturers:
 - 1) STS Coatings, Inc; Wall Guardian Self Adhering SS Flashing: www.stscoatings.com.
 - 2) VaproShield, LLC; VAPRO-SS Flashing: www.vaproshield.com.
 - 3) WIRE-BOND; BOND - N - FLASH: www.wirebond.com.
 - 4) York Manufacturing, Inc; York 304 SA: www.yorkmfg.com.
- B Rope Wicks: 1/4" cotton sash cord.
- C Termination Bars: Stainless Steel, .125" thick with pre-punched holes at 8" O.C.; compatible with membrane and adhesives.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; [T1 Termination Bar: www.h-b.com](http://www.h-b.com).
 - b. Equivilant products by other manufacturers are acceptable.
 - 2. Fasteners:
 - a. Stainless Hammer Drive, Tapcon or Sheet Metal Style anchors appropriate for the substrate.
- D Drip Edge:
 - 1. Metal Flashing: 24 ga. G-90 hot dipped galvanized steel, prefinished with Kynar 500 or Hylar 5000 fluorocarbon coating.
 - 2. Colors: As selected by Architect form manufacturer's standard colors.
 - 3. Provide 20 year warranty covering color fade, chalking and film integrity.
 - 4. Provide factory applied protective film. Do not remove until after fabrication and installation is complete.
- E Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.6 ACCESSORIES

- A Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 - 1. Manufacturers:
 - a. Blok-Lok Limited; RS Series Rubber Joint: www.blok-lok.com.
 - b. Hohmann & Barnard, Inc; RS Series-Rubber Control Joint: www.h-b.com.
 - c. WIRE-BOND; Rubber Control Joint: www.wirebond.com.
 - d. Equivalent products by other manufacturer's are acceptable.
- B Brick Expansion Joint Filler: Closed cell neoprene/SBR; oversized 50 percent to joint width; self expanding; in maximum lengths available.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; NS - Closed Cell Neoprene Sponge: www.h-b.com.
 - b. WIRE-BOND; 3300 Expansion Joint: www.wirebond.com.
 - c. Equivalent products by other manufacturer's are acceptable.
- C Cavity Mortar Control : Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 - 1. Full-Height Airspace Maintenance and Drainage Material: Mesh panels fitted between masonry ties.
 - a. Drainage Material Thickness: Match cavity thickness.
 - b. Manufacturers:
 - 1) CavClear, a Division of Archovations Inc; CavClear Masonry Mat: www.cavclear.com.

- 2) Keene Building Products; [CAV-AIR-ATOR: www.keenebuilding.com](http://www.keenebuilding.com)
- 3) Equivalent products by other manufacturer's are acceptable.
- 2. Mortar Diverter "Mortar Net": Semi-rigid mesh designed for installation at flashing locations.
 - a. Manufacturers:
 - 1) Advanced Building Products, Inc; Mortar Break DT: www.advancedbuildingproducts.com.
 - 2) Mortar Net Solutions; MortarNet: www.mortarnet.com.
 - 3) York Manufacturing, Inc; Weep-Net: www.yorkmfg.com.
 - 4) Equivalent products by other manufacturer's are acceptable.
- D Bond Breaker:
 - 1. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.
 - 2. 6 mil polyethylene.
- E Nailing Strips: Softwood lumber, preservative treated; as specified in Section 06 10 00.
Weeps:
 - 1. Type: Extruded propylene with honeycomb design.
 - 2. Color(s): As selected by Architect from manufacturer's full range.
 - 3. Manufacturers:
 - a. Hohmann & Barnard, Inc; QV - Quadro-Vent: www.h-b.com.
 - b. Equivalent products by other manufacturer's are acceptable.
- F Cavity Wall Insulation: Refer to Section 07 21 00 Insulation for requirements.

2.7 MORTAR AND GROUT MIXING

- A Interior, non-loadbearing masonry: Type N.
- B Mix mortar as required for immediate use only and discard any mixed for a period exceeding 2-1/2 hours.
 - 1. Accurately maintain and control the specified proportions of the mortar materials during the entire progress of the work.
 - 2. Thoroughly mix cementitious materials and aggregates with the amount of water to produce satisfactory workability. Machine mix all mortar.
- C Proportion colorant for mortar in accordance with printed instructions by pigment manufacturer to avoid reducing mortar properties, at a rate not to exceed 10 pounds per 94 pound bag of portland cement.
- D Mortar for Unit Masonry: ASTM C270, using the Property Specification.
 - 1. Exterior masonry below grade and in contact with earth: Type M.
 - 2. Exterior, loadbearing masonry: Type N.
 - 3. Exterior, non-loadbearing masonry above grade, including brick: Type S.
 - 4. Interior, loadbearing masonry: Type N.
 - 5. Interior, non-loadbearing masonry: Type N.
 - 6. Component proportions by mortar type are as follows:

<u>Mortar Type</u>	<u>Portland Cement</u>	<u>Hydrated Lime</u>	<u>Aggregate</u>
M	1 part	1/4	See Below
S	1 part	1/4 to 1/2 part	See Below
N	1 part	1/2 to 1 1/4 parts	See Below

 - a. Volume of aggregate measured in a loose, damp condition shall be not less than 2 1/4 times and not more than 3 times the sum of the volumes of cement and lime used.
 - b. Accurately maintain and control the proportions of the mortar materials during the entire progress of the work.
 - c. Mix mortar as required for immediate use only and discard any mixed for a period exceeding 2 1/2 hours.
 - d. Thoroughly mix cementitious materials and aggregates with the amount of water to produce satisfactory workability. Machine mix all mortar.
- E Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.

- F Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
1. Proportion field mixed grout by volume and add sufficient water to produce consistency for pouring without segregation. Compose grout by volume of one part Portland cement, up to one-tenth part by volume hydrated lime or lime putty, and sand two and one-fourth to three times the sum of the volumes of the cementitious materials. Achieve grout slump of 8" to 9". Attain a minimum compressive strength of 3,000 pounds per square inch at 28 days.
 2. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.
 3. Antifreeze Compounds: Not allowed in mortar to lower freezing point.
 4. Mixing: Use mechanical batch mixer and comply with referenced standards.

2.8 MORTAR SOURCE QUALITY CONTROL

- A Test proposed aggregate for conformance to ASTM C144 and these specifications.
- B Test each mortar mix design for water retentivity and compressive strength in accordance with ASTM C270.
- C Mix mortar in the laboratory from representative samples of materials to be used in the Work, including selected colorants. Average compressive strength at 28 days shall be as follows:

<u>Mortar Type</u>	<u>Compressive Strength Range</u>
M	2,500 psi - 3,000 psi
S	1,800 psi - 2,200 psi
N	750 psi - 1,100 psi

- D Adjust mix design so as to achieve compatibility with brick to be supplied, considering initial rate of absorption of brick and water retentivity of mortar.
- E Do not start masonry work until Architect has reviewed test reports and accepted mix design.
- F Prepare and test new mix designs if mortar does not meet specifications or if, during the course of the Work, significant changes occur in aggregate or other materials.
- G Use field measuring methods to accurately control mortar mix proportions.
- H Perform tests of each brick/mortar combination to determine flexural bond strength in accordance with ASTM C1072.
- I Testing of pointing mortar is not required.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that field conditions are acceptable and are ready to receive masonry.
- B Verify that related items provided under other sections are properly sized and located.
- C Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

- A Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.3 COLD AND HOT WEATHER REQUIREMENTS

- A Cold Weather Requirements
1. Cold weather conditions exist when temperature is 40 degrees F. or below.
 2. Keep masonry units dry. Do not use wet or frozen masonry units

3. Following general rules may be modified as approved by Architect to suit project conditions.
AIR TEMP.

(Degrees F.)

CONSTRUCTION REQUIREMENTS

- 40 - 32 Heat mixing water or sand to produce mortar temperature between 40 degrees F. and 120 degrees F. Heat grout materials when their temperatures are below 32 degrees F. Do not heat water or aggregates used in mortar or grout above 140 degrees F.
- 32 - 25 Comply with construction requirements above. Heat grout materials so grout is at a temperature between 70 and 120 degrees F. during mixing and placed at a temperature above 70 degrees F. Maintain temperature of mortar on boards above 40 degrees F. Employ windbreaks when wind is in excess of 15 MPH.
- 25 - 20 Comply with construction requirements above. Heat masonry units so their temperature when laid is not less than 20 degrees F. Heat masonry to a minimum of 40 degrees F. prior to grouting. Utilize sources of heat on both sides of wall under construction.
- 20 and below Comply with construction requirements above. Provide enclosure and auxiliary heat to maintain air temperature above 32 degrees F. for 24 hours. Extend time period to 48 hours for grouted masonry.

MEAN DAILY AIR

TEMP. (Degrees F.) **PROTECTION REQUIREMENTS**

- 40 - 32 Protect masonry from rain or snow for 24 hours.
- 32 - 25 Completely cover masonry for 24 hours.
- 25 - 20 Completely cover masonry with insulating blankets or approved equal protection for 24 hours. Extend time period to 48 hours for grouted masonry.
- 20 and below Maintain masonry temperature above 32 degrees F. for 24 hours by enclosure and approved supplementary heat. Extend time period to 48 hours for grouted masonry.

B Hot Weather Requirements

AIR TEMP

(Degrees F.)

PROTECTION REQUIREMENTS

- Greater than 110
mixers,
or 90 with 8 mph
wind velocity
mortar
- Maintain the temperature of mortar and grout below 120°F; flush mortar transport containers and mortar boards with cool water before they come into contact with mortar ingredients or mortar; maintain consistency by re-tempering with cool water; and use mortar within 2 hrs.

- C Protect facing material against staining; keep top of walls covered with non-staining waterproof coverings when work is not in progress.
- D Where fresh masonry joins partially or totally set masonry, clean, roughen, lightly wet set masonry before new masonry is joined. Make necessary horizontal stop-offs by racking back masonry; do not tooth.
- E Where units are specified to be wetted, uniformly wet units 3 to 4 hours before using.

3.4 COURSING

- A Establish lines, levels, and coursing indicated. Protect from displacement.
- B Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C Unless noted on Drawings as "clear", all dimensions on Drawings are modular, from center to center of vertical joints and from bottom to bottom of horizontal joints.
- D Lay out exposed masonry to achieve joint pattern shown on Drawings. Where not shown, lay out exposed masonry to minimize cutting of units. Where possible, provide full 8" wide units at outside corners, jambs, and other openings.

- E Concrete Masonry Units:
 1. Bond: Running. Scored block to have stack bond appearance.
 2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
 3. Mortar Joints: Concave.
- F Brick Units:
 1. Existing Bond: Match existing.
 2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
 3. Mortar Joints: Concave.
 4. Provide header courses, soldier courses and corbeling as required and where shown on Drawings.

3.5 PLACING AND BONDING-CONCRETE BLOCK

- A Concrete masonry erection, workmanship: Conform to requirements of ACI 530.1.
- B Do not wet concrete masonry units.
- C Units with open cells exposed in wall will not be permitted.
- D Lay masonry plumb, true to lines. Unless noted on drawings as "clear", all dimensions on drawings are modular, from center to center of vertical joints and from bottom to bottom of horizontal joints.
- E Lay hollow masonry units with face shell bedding on head and bed joints.
- F Avoid over-plumbing, pounding of corner, jambs after setting masonry in position. Where an adjustment must be made after mortar has started to harden, remove mortar, replace with fresh mortar.
- G Lay masonry within one minute of placing mortar.
- H Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- I Remove excess mortar and mortar smears as work progresses.
- J Interlock intersections and external corners, except for units laid in stack bond.
- K Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- L Cut mortar joints flush where wall tile is scheduled.
- M Isolate masonry partitions from vertical structural framing members with a control joint.
- N Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with mineral wool and acoustic spray system to create an expansion/contraction joint. Apply mineral wool and acoustic spray to required thickness and overlap onto adjacent surfaces as recommended by manufacturer to achieve specified sound transmission classification.
- O In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

3.6 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

- A Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- B Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C Anchor abutting or intersecting non-load bearing walls, partitions at vertical intervals of 2 feet with corrugated ties.
- D Where indicated anchor walls, partitions abutting or facing against steel columns, beams with flexible anchors. Unless indicated otherwise, maximum spacing; 16 inches vertically at columns, 16 inches horizontally at beams.
- E Anchor exterior walls parallel to open web joists with prefabricated anchoring and reinforcing assembly with adjustable rectangular ties welded to structural steel as indicated.
- F Lap joint reinforcement ends minimum 6 inches (150 mm).
- G Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches (900 mm) horizontally and 24 inches (600 mm) vertically.

- H Bond walls, partitions of more than one wythe with wire ties; use at least one tie for each 3½ sq. ft. of wall surface; spaced maximum of 16 inches vertically, 36 inches horizontally, stagger alternate rows. Embed ties in horizontal joints.
 - 1. Fill all collar joints between all wythes with mortar.
- I Where masonry is built around steel columns, wrap columns with bond breaker of No. 15 asphalt-impregnated building paper or 6 mil polyethylene and remove mortar droppings from around columns.

3.7 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A Masonry/Concrete Back-Up: Embed anchors to bond veneer at maximum 16 inches (400 mm) on center vertically and 36 inches (900 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.
- B Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches (400 mm) on center vertically and 24 inches (600 mm) on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches (200 mm) on center.

3.8 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

- A Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.

3.9 MASONRY VENEER INSTALLATION

- A Clay Masonry Erection, Workmanship: Conform to latest recommended standard specifications for clay masonry as published by the Brick Institute of America (BIA).
 - 1. Moisten brick with absorption rates in excess of 20g/30 sq. in./min. as determined by ASTM C67, so that rate of absorption when laid does not exceed this amount.
 - 2. Finish face joints exposed on exterior walls with metal tool to form concave joint, close hairline cracks, crevices.
 - 3. Finish face joints on interior walls with metal tool to form raked joint, ¼" deep.
 - 4. Provide continuous vertical 3/8" expansion joints in brick where shown on drawings/shop drawings. Where not shown, or in addition to those shown, provide joints, at a minimum, within two feet of outside corners, at inside corners, above window and door jambs, between dissimilar materials and no more than 20 feet on center elsewhere.
 - 5. Keep air space within cavity walls clean, free from obstruction. Provide positive means of catching mortar droppings, or cleanouts to remove mortar from base of cavity.
 - 6. Install mortar net so it is snug between insulation and back face of brick. Install in layers if needed to fill cavity.
 - 7. Install cavity mesh between insulation and back of veneer, continuous with no gaps.
- B Cavity Wall Insulation
 - 1. Install cavity wall insulation against face of concrete block with boards horizontal, tight butted joints. Fasten with adhesive or mechanical fasteners.
- C Weeps/Cavity Vents/Rope Wicks
 - 1. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom and top of walls.
 - 2. Provide rope wicks as shown on drawings in exterior masonry in vertical joints immediately above all flashing, at base of cavity, veneer walls at top of all cavity walls; use weep vents where shown on drawings.
- D Flashings
 - 1. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 - a. Including heads and sills of all exterior openings, at the base of all masonry veneers, under stone sills and copings.

2. Extend flashings full width at such interruptions and at least 6 inches (152 mm), minimum, into adjacent masonry or turn up flashing ends at least 1 inch (25.4 mm), minimum, to form watertight pan at non-masonry construction.
3. Properly clean and dry backup prior to applying primer as recommended by flashing manufacturer.
4. Lay one layer of flexible flashing on bed joint of brick. Install continuous metal flashing and adhere another layer of flexible flashing over metal.
5. Lap all flashings a minimum of 8" (203 mm) and seal lapped ends and penetrations of flashing before covering with mortar.
6. Terminate flashing up 8 inches (203 mm) minimum on vertical surface of backing:
7. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
8. Anchor vertical leg of flashing into backing with a termination bar and sealant.
 - a. Apply a bead or trowel coat of mastic along top of termination bar.
9. Apply cap bead of sealant on top edge of self-adhered flashing.
10. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
11. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

3.10 LINTELS

- A Install loose steel lintels over openings per non-bearing lintel schedule.
 1. Set in beds of mortar.
- B Install reinforced unit masonry lintels over openings per non-bearing lintel schedule
 1. Openings to 42 inches (1070 mm): Place two, No. 3 (M9) reinforcing bars 1 inch (25 mm) from bottom web.
 2. Openings from 42 inches (1070 mm) to 78 inches (1980 mm): Place two, No. 5 (M16) reinforcing bars 1 inch (25 mm) from bottom web.
 3. Openings over 78 inches (1980 mm): Reinforce openings as detailed.
 4. Do not splice reinforcing bars.
 5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
 6. Place and consolidate grout fill without displacing reinforcing.
 7. Allow masonry lintels to attain specified strength before removing temporary supports.
- C Maintain minimum 8 inch (203 mm) bearing on each side of opening.

3.11 GROUTED COMPONENTS

- A Reinforce bond beams with 2, No. 4 (M12.7 mm) bars, 1 inch (25 mm) from bottom web.
- B Lap splices minimum 24 bar diameters.
- C Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
- D Place and consolidate grout fill without displacing reinforcing.

3.12 CONCRETE BLOCK CONTROL JOINTS

- A Do not continue horizontal joint reinforcement through control joints, with exception to bond beams where reinforcing shall be continuous.
- B Locate control joints a maximum of 20 feet on center. Locate joints a minimum of 4'-0" beyond lintel bearing.
- C Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.13 BUILT-IN WORK

- A Consult other trades in advance, make provision for installation of their work in order to avoid cutting, patching. Build-in work specified under other sections as work progresses.

- B As work progresses, install built-in metal door frames, borrowed lite frames and other items to be built into the work and furnished under other sections.
 - 1. Fill frames solid with grout around jambs, heads of bucks, frames.
- C Install built-in items plumb, level, and true to line.
- D Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches (300 mm) from framed openings.
- E Do not build into masonry construction organic materials that are subject to deterioration.

3.14 TOLERANCES

- A Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).
- B Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- C Maximum Variation from Plane of Wall: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.
- D Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
- E Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).
- F Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch (minus 6.4 mm, plus 9.5 mm).
- G Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch (6 mm).

3.15 CUTTING AND FITTING

- A Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
- B Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.16 REPAIR, POINTING, AND CLEANING

- A Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged, or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar (color to match adjoining units), pointed to eliminate evidence of replacement.
- B Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

3.17 FIELD QUALITY CONTROL

- A An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.
 - 1. Field test mortar for consistency, water content, mortar aggregate ratio, air content (only for those mixes with entrained air), and compressive strength in accordance with ASTM C780. Make one test for each 2,500 square feet of wall area.
 - 2. Test brick prisms for flexural bond strength in accordance with ASTM C1072. Make one test for each mortar/brick combination.
 - 3. Provide test results to Architect for comparison with laboratory results.

3.18 CLEANING

- A Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove excess mortar and mortar droppings.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - a. Use non-metallic tools in cleaning operations.
 - b. Protect adjacent non-masonry surfaces from contact with cleaning agent, despite the type of clean agent used, by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.

- c. Wet wall surfaces with water before applying cleaning agent; remove cleaning agent promptly by rinsing surfaces thoroughly with clear water.
 - d. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes #20.
 - e. Repeated gentle washings with gentle cleaning agents is preferred to fewer washings with more abrasive or chemical-laden cleaning agents.
 - f. Do not use hydrochloric acid (muriatic acid) except in limited applications where other alternatives have been tried and are not successful. If needed, and if accepted by the Architect, clean masonry with a proprietary acidic cleaning agent applied according to manufacturer's written instructions.
 - g. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A, applicable to type of stain on exposed surfaces.
- B Schedule and complete masonry cleaning as soon as possible, coordinating with other trades and installations.

3.19 PROTECTION

- A Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 04 20 00

SECTION 04 72 00
CAST STONE MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Architectural cast stone.
- B Units required are indicated on drawings as "cast stone".
- C Units required are:
 - 1. Exterior wall units, including wall caps, coping, and sills.

1.2 SUBMITTALS

- A See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- C Verification Samples: Pieces of actual cast stone components not less than 6 inches (152 mm) square, illustrating range of color and texture to be anticipated in components furnished for the project.
- D Source Quality Control Test Reports.

1.3 MOCK-UP

- A Provide full size cast stone components for installation in mock-up of exterior wall.
- B Remove mock-up not incorporated into the work and dispose of debris.

1.4 DELIVERY, STORAGE, AND HANDLING

- A Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B Number each piece individually to match shop drawings and schedule.
- C Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.
- F Store mortar materials where contamination can be avoided.
- G Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Architectural Cast Stone:
 - 1. Any current producer member of the Architectural Precast Association.
 - 2. Any current producer member of the Cast Stone Institute.
 - 3. Products as selected from American Artstone: Cast Stone; www.american-artstone.com

2.2 ARCHITECTURAL CAST STONE

- A Cast Stone: Architectural concrete product manufactured to simulate appearance of natural granite, complying with ASTM C1364.
 - 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
 - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
 - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet (6 meters).
 - 4. Linear Shrinkage: As specified by ASTM C426. Shrinkage shall not exceed 0.065%.
 - 5. Color: Match existing.
 - 6. Remove cement film from exposed surfaces before packaging for shipment.

- B Shapes: Provide shapes indicated on drawings.
 - 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch (3 mm) or length divided by 360, whichever is greater, but not more than 1/4 inch (6 mm).
 - 2. Unless otherwise indicated on drawings, provide:
 - a. Wash or slope of 1:12 on exterior horizontal surfaces.
 - b. Drips on projecting components, wherever possible.
 - c. Raised fillets at back of sills and at ends to be built in.
- C Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.
 - 1. Pieces More than 24 inches (610 mm) in Any Dimension: Provide full length two-way reinforcement of cross-sectional area not less than 0.25 percent of unit cross-sectional area.

2.3 MATERIALS

- A Portland Cement: ASTM C150/C150M.
 - 1. For Units: Type I, white or gray as required to match Architect 's sample.
- B Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D Pigments: ASTM C979, inorganic iron oxides; do not use carbon black.
- E Admixtures: ASTM C494/C494M, C260, C618, C989.
- F Water: Potable.
- G Reinforcing Bars: ASTM A615/A615M, Grade 40 (40,000 psi) (280 MPa), deformed bars, galvanized.
 - 1. Galvanized in accordance with ASTM A767/A767M, Class I or Epoxy coated in accordance with ASTM A775/A775M
- H Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- I Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.

2.4 SOURCE QUALITY CONTROL

- A Test compressive strength and absorption of specimens selected at random from plant production.
 - 1. Test in accordance with ASTM C642.
 - 2. Select specimens at rate of 3 per 500 cubic feet (3 per 14 cubic m), with a minimum of 3 per production week.
 - 3. Submit reports of tests by independent testing agency, showing compliance with requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A Refer to Section 04 20 00 Non-Bearing Unit Masonry.

END OF SECTION 04 72 00

SECTION 07 21 00
INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Cavity wall insulation used primarily as cavity wall insulation in masonry.
- B Expanding foam insulation as shown on drawings.

1.2 SUBMITTALS

- A See Section 01 33 00 - Submittal Requirements for submittal procedures.
- B Product Data: Provide data on product characteristics, performance criteria, and product limitations for all specified products.

1.3 FIELD CONDITIONS

- A Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.
- B Deliver material to the site in unopened packages, with identification labels intact.
- C Store under water-resistant cover and protect from weather and direct sunlight.
- D Remove damaged materials from site.

PART 2 PRODUCTS

2.1 FOAM BOARD INSULATION MATERIALS

- A Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Products:
 - a. DuPont de Nemours, Inc; Styrofoam Brand Square Edge: building.dupont.com or equal.
- B Cavity Wall Insulation:
 - 1. Hunter Panels: www.hunterpanels.com; [Xci Foil](#). Rigid closed cell polyisocyanurate foam corebonded on-line during a restrained-rise manufacturing process to trilaminate impermeable foil facers on both sides. Manufactured with HCFC-free blowing agent and is formaldehyde free. Insulation to comply with ASTM C1289 Type 1 and ASTM E85 Class B and NFPA 285 wall assembly.
 - a. Thermal Resistance: Aged R-value per inch of 6.5.
 - b. Moisture Vapor Permeance: 0.05 perm per inch per ASTM E96.
 - c. Water Absorption: 0.05% by volume per ASTM C209.
 - d. Surface Burning Characteristics: ≤75 flame spread and ≤450 smoke developed per ASTM E84.
 - e. Compressive Strength: 25 psi per ASTM D1621.
 - f. Size: 16" X 8'-0".

2.2 EXPANDING FOAM INSULATION

- A [DuPont Great Stuff Pro](#) or equal one part polyurethane foam sealant. For conditions where foam will be exposed inside a building use [DuPont Great Stuff Fireblock](#) or equal.
 - 1. Conform to ASTM C557-93, D6464, CA25-4 and is UL Class 1 (Flame Spread of 15, Smoke of 20). ASTM E84, E815 and UL 1715 for Fireblock products.
 - 2. Application temperature range of 25°F to 120°F.
 - 3. Paintable, stainable and sandable.
 - 4. Acoustical Rating: Sound transmission class rating of 69.
 - 5. Minimum R.Value of 4 per inch.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation/products.
- B Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.2 BOARD INSTALLATION AT EXTERIOR WALLS

- A Install rigid insulation directly to steel studs or exterior grade sheathing at 16 inches (406 mm) on center with manufacturer recommended mechanical fasteners.
- B Install boards perpendicular to framing on walls.
- C Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- D At radiused walls, install boards in widths as required to prevent a segmented look. Kerf boards (insulation and plywood) as required for a tight fit.

3.3 BOARD INSTALLATION AT CAVITY WALLS

- A Refer to masonry section for installation.
- B Install boards to fit snugly between wall ties.
- C Install boards horizontally on walls.
- D Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.4 PROTECTION

- A Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION 07 21 00

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Non-sag gunnable joint sealants.
 - 1. Exterior applications
 - a. Joints in masonry, including architectural precast.
 - b. Joints in precast concrete wall panels.
 - c. Joints around hollow metal.
 - d. Miscellaneous joints where “sealant” or “caulk/caulking” is indicated on drawings.
 - e. Joints around mechanical, electrical and architectural penetrations of exterior masonry skin.
 - f. Installation of sealant on masonry quality control panel for color match and adhesion verification by means of an adhesion test.
 - 2. Interior applications
 - a. Note: Sealant on materials to be painted will be installed after painting is completed and shall match paint color. A “sacrificial” backer rod shall be installed prior to painting to protect joints from paint over spray. This backer rod may be pushed into the joint or removed prior to installation of final backer rod and sealant.
 - b. Interior joints in masonry.
 - c. Interior joints in pre-cast concrete wall panels.
 - d. Interior joints around hollow metal, including joint between hollow metal and hard surface flooring.
 - e. Joints in slabs and at edges where painted, exposed or sealed concrete is shown on Drawings.
 - f. Sealant at resilient flooring wall joint where vinyl base is not scheduled.
 - g. Miscellaneous joints where “sealants” or “caulk/caulking” is indicated on Drawings.
- B Self-leveling pourable joint sealants.
- C Joint backings and accessories.

1.2 SUBMITTALS

- A See Section 013300 - Submittal Requirements, for submittal procedures.
- B Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, which includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates product should not be used on.
- C Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D Samples for Verification: Where custom sealant color is specified, submit at least two physical samples for verification of each color to match adjacent materials of each required sealant.
- E Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.
- F Field Quality Control Plan: Submit at least two weeks prior to start of installation.
- G Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.
- H Field Quality Control Log: Submit filled out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.3 QUALITY ASSURANCE

- A Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- B Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- C Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
 - 1. Identification of testing agency.
 - 2. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
 - a. Test date.
 - b. Copy of test method documents.
 - c. Age of sealant upon date of testing.
 - d. Test results, modeled after the sample form in the test method document.
 - e. Indicate use of photographic record of test.
- D Field Quality Control Plan:
 - 1. Visual inspection of entire length of sealant joints.
 - 2. Destructive field adhesion testing of sealant joints, except interior acrylic latex sealant.
 - a. For each different sealant and substrate combination, allow for one test every 100 feet (30 meters) in the first 1000 linear feet (305 linear meters), and one test per 1000 linear feet (305 meters) thereafter, or once per floor on each elevation.
 - b. If any failures occur in the first 1000 linear feet (305 linear meters), continue testing at frequency of one test per 500 linear feet (152 linear meters) at no extra cost to Owner.
 - 3. Field testing agency's qualifications.
 - 4. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.
- E Field Adhesion Test Procedures:
 - 1. Allow sealants to fully cure as recommended by manufacturer before testing.
 - 2. Have a copy of the test method document available during tests.
 - 3. Take photographs or make video records of each test, with joint identification provided in the photos/videos; for example, provide small erasable whiteboard positioned next to joint.
 - 4. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
 - 5. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
 - 6. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
 - 7. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.
- F Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
 - 1. Sample: At least 18 inch (457 mm) long.
 - 2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch (25 mm) by that percentage; if adhesion failure occurs before the "1 inch mark" is that distance from the substrate, the test has failed.
 - 3. If either adhesive or cohesive failure occurs prior to minimum elongation, take necessary measures to correct conditions and re-test; record each modification to products or installation procedures.

4. Record results on Field Quality Control Log.
 5. Repair failed portions of joints.
- G Field Adhesion Tests of Joints: Test for adhesion using most appropriate method in accordance with ASTM C1521, or other applicable method as recommended by manufacturer.

1.4 WARRANTY

- A See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B Correct defective work within a five year period after Date of Substantial Completion.
- C Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
1. BASF: www.master-builders-solutions.com.
 2. Pecora Corporation: www.pecora.com.
 3. SIKA: www.usa.sika.com.
 4. TREMCO: www.tremcosealants.com
 5. Dow; www.dow.com (Silicone only)
 6. GE; www.siliconeforbuilding.com (Silicone only)
- B Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
1. BASF: www.master-builders-solutions.com.
 2. Pecora Corporation: www.pecora.com.
 3. SIKA: www.usa.sika.com.
 4. TREMCO: www.tremcosealants.com

2.2 JOINT SEALANT APPLICATIONS

- A Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - c. Other joints indicated below and as shown on drawings.
 3. Do not seal the following types of joints.
 - a. Intentional weep holes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.

2.3 NON-SAG JOINT SEALANTS

- A Exterior Use: Silyl-Terminated Polyether (STPE): ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.

- B Interior Use: Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Custom Colors: Match adjacent finished surfaces.
 4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
 5. Products:
 - a. BASF; [MasterSeal: NP2](#)
 - b. Pecora Corporation; DynaTrol II
 - c. SIKA; [SIKAFLEX 2-C](#)
 - d. Tremco; [DYMERIC 240/240FC](#)

2.4 SELF-LEVELING SEALANTS

- A Self-Leveling Polyurethane Sealant for Horizontal Expansion Joints: ASTM C920, Grade M; multi-component; explicitly approved by manufacturer for horizontal expansion joints.
1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 30 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's standard range.
 4. Tensile Strength: 150 psi (1.34 MPa) in accordance with ASTM D412.
 5. Products:
 - a. Pecora Corporation; DynaTrol II-SG (Slope Grade)
 - b. SIKA; [SIKAFLEX 2c SL](#)
 - c. BASF; [MasterSeal SL2](#)
 - d. Tremco; [THC/900/901](#)

2.5 ACCESSORIES

- A Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specified sealant, and recommended by backing and sealant manufacturers for specific application.
1. Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 2. Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
 3. Open Cell: 40 to 50 percent larger in diameter than joint width.
 4. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- C Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- D Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that joints are ready to receive work.
- B Verify that backing materials are compatible with sealants.
- C Verify that backer rods are of the correct size.
- D Pre-installation Adhesion Testing: Install a sample for each test location indicated in the test plan.
1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
 2. Notify Architect of date and time that tests will be performed, at least 7 days in advance.
 3. Record each test on Preinstallation Adhesion Test Log as indicated.
 4. If any sample fails, review products and installation procedures, consult manufacturer, or take whatever other measures are necessary to ensure adhesion; re-test in a different location; if unable to obtain satisfactory adhesion, report to Architect.
 5. After completion of tests, remove remaining sample material and prepare joint for new sealant installation.

3.2 PREPARATION

- A Remove loose materials and foreign matter that could impair adhesion of sealant.
- B Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.3 INSTALLATION

- A Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B Perform acoustical sealant application work in accordance with ASTM C919.
- C Install bond breaker backing tape where backer rod cannot be used.
- D Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- E Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- F Non-Sag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- G Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.4 EXISTING WORK

- A Mechanically remove existing sealants.
- B Clean joint surfaces of residual sealant and other contaminants capable of affecting sealant bond to joint surface by mechanical means.
- C Allow joint surfaces to dry before installing new sealant.

3.5 FIELD QUALITY CONTROL

- A Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B Destructive Adhesion Testing: If there are any failures in first 1000 linear feet (300 linear m), notify Architect immediately.
- C Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- D Repair destructive test location damage immediately after evaluation and recording of results.

3.6 POST-OCCUPANCY

- A Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e., at low temperature in the thermal cycle. Report failures immediately and repair.

END OF SECTION 079200

SECTION 09 21 16
GYPSUM WALLBOARD ASSEMBLIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Performance criteria for gypsum wallboard assemblies.
- B Non load bearing rated and non-rated metal stud wall assemblies.
- C Sound batt insulation.
- D Mold and moisture resistant gypsum wallboard on the inside face of exterior stud walls or on top of hat channels on exterior masonry/concrete walls.
- E Gypsum wallboard.
- F Joint treatment and accessories.

1.2 SUBMITTALS

- A See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B Product Data: Provide data on installation of acoustic spray system (including application thickness of spray).
- C UL listings for rated assemblies from manufacturer of framing/gypsum board products for:
 - 1. Rated gypsum wallboard partitions.
 - 2. Rated Shaft wall and Area Separation wall.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

- A Delivery and Handling
 - 1. Deliver materials to the project site with manufacturer's labels intact and legible.
 - 2. Handle materials with care to prevent damage.
 - 3. Deliver fire-rated materials bearing testing agency label and required fire classification numbers.
 - 4. The plastic packaging used to wrap gypsum panel products for shipment is intended to provide temporary protection from moisture exposure during transit only and is not intended to provide protection during storage after delivery. Such plastic packaging shall be removed immediately upon receipt of the shipment.
 - 5. Failure to remove protective plastic shipping covers can result in condensation which can lead to damage, including mold.
- B Storage
 - 1. Store materials inside under cover, stack flat, properly supported on a level surface, all in same direction, off of floor. Gypsum panel products to be fully protected from weather, direct sunlight exposure and condensation. Gypsum materials with water damage shall be removed from the jobsite.
 - 2. Avoid overloading floor system
 - 3. Store adhesives in dry area; provide protection against freezing at all times.
 - 4. Steel framing and related accessories shall be stored and handled in accordance with AISI's "Code of Standard Practice".

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A Provide completed assemblies complying with ASTM C840 and GA-216.
 - 1. See PART 3 for finishing requirements.
- B Interior Partitions, Indicated as Sound-Rated: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: As noted on wall types on the drawings.

2.2 METAL FRAMING MATERIALS

- A Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich: www.clarkdietrich.com.
 - 2. Equivalent products by other manufacturers are acceptable.

- B Non-structural Framing System Components: ASTM C645; galvanized sheet steel (ASTM 645M G40 [Z120]), of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
 - 1. Studs: C-shaped with flat, knurled or embossed faces.
 - a. Metal thickness:
 - 1) 20 gauge or ProSTUD 20 gauge equivalent.
 - 2) 25 gauge or ProSTUD 25 gauge equivalent.
 - b. Size: 1 5/8", 2 1/2", 3 5/8", 4" or 6" deep as noted on drawings.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).
 - 4. Furring Members: Zee-shaped sections, minimum depth of 1 inch (25.4 mm).
 - a. Products:
 - 1) Same manufacturer as other framing materials.
- C Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and screwed to secondary deflection channel set inside but unattached to top track.
- D Non-structural Framing Accessories:
 - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
 - 2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
 - a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
 - b. Height: As required for wall height.
 - c. Products:
 - 1) ClarkDietrich; Pony Wall (PW): www.clarkdietrich.com.

2.3 WALLBOARD MATERIALS

- A Manufacturers:
 - 1. Any manufacturers who comply with the specification are acceptable.
- B Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use only at soffits, gypsum wallboard on furring and partitions that do not go to structure.
 - 2. Surface Paper: 100% recycled content paper on front, back and long edges.
 - 3. Long Edges: Tapered; square edge acceptable at areas with Level 1 finish.
 - 4. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).
 - b. SoffCeilings: 5/8 inch (16 mm).
- C Mold and Moisture Resistant Wallboard:
 - 1. Application: Use at interior face of exterior stud walls and on furring attached to inside face of exterior masonry/concrete walls.
 - 2. Surface Paper: Coated fiberglass mat on face, back and long edges.
 - 3. Long Edges: Tapered; square edge acceptable at areas with Level 1 finish.
 - 4. Humidified Deflection: Not more than 1/4" when tested in accordance with ASTM C473 and C1658.
 - 5. Water Absorption: Less than 5% of weight when tested in accordance with C1396M and C1658.
 - 6. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273
 - 7. Thickness: 5/8 inch (16 mm).

2.4 GYPSUM WALLBOARD ACCESSORIES

- A Beads, Joint Accessories, and Other Trim: ASTM C1047, aluminum coated, galvanized steel or rolled zinc, unless noted otherwise.
 - 1. Corner Beads: Low profile, for 90 degree outside corners.

2. L-Trim with Tear-Away Strip: Sized to fit 5/8 inch (16 mm) thick gypsum wallboard.
3. Expansion Joints:
 - a. Type: V-shaped metal with factory-installed protective tape.
- B Joint Materials: ASTM C475/C475M and as recommended by gypsum wallboard manufacturer for project conditions.
 1. Interior Gypsum Wallboard:
 - a. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners.
 2. Glass-Matt Gypsum Wallboard:
 - a. Fiberglass Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners.
 3. Other Panels:
 - a. As recommended by wallboard manufacturer.
 4. Joint Compound for Interior Gypsum Wallboard: Drying type, vinyl-based, field-mixed or ready-mixed.
 5. Joint Compound for Glass-matt Gypsum Wallboard: As recommended by wallboard manufacturer.
- C Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches (0.84 mm) in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- D Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch (0.84 to 2.84 mm) in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- E Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that project conditions are appropriate for work of this section to commence.
 1. If items need correction, contact the Construction Manager or General Contractor.
 - a. Do Not proceed with installation until conditions have been corrected.

3.2 FRAMING INSTALLATION

- A Metal Stud Schedule:
 1. Use 25 gauge or equivalent knurled or embossed metal studs on partitions up to 12 feet (3.6576 m) high and soffits.
 2. Use 20 gauge or equivalent knurled or embossed metal studs on:
 - a. Metal stud partitions over 12 feet (3.6576 m) high.
 - b. Metal stud framed ceilings.
 - c. Double studs at each door and borrowed light jamb and head up to 36 inches (914.4 mm) wide. For frame wider than 36 inches (914.4 mm) provide an additional full height stud at each jamb for every 32 inches (812.8 mm) of additional width.
 - d. Four (4) - 20 gauge studs or three (3) - 16 gauge studs at mounting points of handicapped grab bars, wall mounted handicapped benches and diaper changing stations as occurs on stud walls.
 - e. For partitions of any height covered with abuse or high impact resistant gypsum board.
 - f. For partitions of any height covered with cement board.
- B Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- C Studs: Space studs at 16 inches on center (at 406 mm on center).
 1. Extend partition framing as indicated on the drawings.
 2. Where studs or runners are installed directly against masonry walls or concrete floors/walls, set studs in acoustical sealant.
 3. Installation Tolerances: Install each steel framing and furring member so that fastening surface does not vary more than 1/8 inch (3.175 mm) from plane of faces of adjacent framing.

4. Ensure that steel framing is isolated from building structure to prevent transfer of loading imposed by structural movement, at location indicated below to comply with details shown on drawings.
 - a. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- D Brace partition framing, not extending full height to structure above, with studs same size and thickness as partition framing. Provide bracing at:
 1. 6 foot (1.8288 m) o.c. intervals along length of partitions.
 2. Not less than 6 foot (1.8288 m) from partition ends and corners.
 3. Door and window openings.
- E Do not bridge building expansion and control joints with steel framing or furring members, independently frame both sides of joints with framing or furring members or as indicated.
- F Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
 1. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum wallboard manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
- G Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum wallboard, not more than 4 inches (100 mm) from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches (600 mm) on center.
 1. Orientation: Vertical.
 2. Spacing: At 16 inches on center (At 400 mm on center).
- H Furring for Fire-Resistance Ratings: Install as required for fire-resistance ratings indicated and to GA-600 requirements.
- I Blocking: Comply with details indicated and with recommendations of gypsum wallboard manufacturer.
 1. Install mechanically fastened steel sheet blocking or plywood blocking for support of:
 - a. Framed openings.
 - b. Wall-mounted cabinets.
 - c. Plumbing fixtures.
 - d. Toilet partitions.
 - e. Toilet accessories.
 - f. Wall-mounted door hardware.
 - g. Marker and Tack Boards.
 - h. Handrails.

3.3 BOARD INSTALLATION

- A Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B Do Not install imperfect, damaged or damp/wet/water damaged boards.
- C Single-Layer Nonrated: Install gypsum wallboard perpendicular to framing on walls 8 feet -1 inch (2.46379 m) or less in height with ends and edges occurring over firm bearing.
 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- D Double-Layer, Nonrated: Use gypsum wallboard for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
- E Fire-Resistance-Rated Construction: Install gypsum wallboard in strict compliance with requirements of assembly listing.

- F Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide except where full grout is shown. Apply spot grout at each jamb anchor clip just before inserting board into frame.
- G Form control joints and expansion joints at locations indicated or as recommended, with space between edges of boards, prepared to receive trim accessories.
 - 1. Where a control joints occurs in an acoustical or fire-rated system, blocking shall be provide behind the control joint by using a backing material such as 5/8 inch (15.875 mm) type X gypsum panel product, or other tested equivalent.
- H Cover both faces of metal stud partition framing with gypsum board in concealed spaces (above ceiling, etc.), except in chase walls which are braced internally.
- I Except where concealed application is indicated or required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq.ft. (0.74322 sq. m.) area, and may be limited to not less than 75 percent of full coverage.
- J Fit gypsum wallboard around ducts, pipes and conduits.
- K Isolate perimeters of non-load-bearing drywall partitions at structural abutments. Provide ¼ to ½ inch (6.35 to 12.7 mm) space to accept trim edge.
- L Where STC-rated gypsum wallboard assemblies are indicated or drawings indicate acoustical sealant, seal construction at perimeters, behind control and expansion joints, openings, and other penetrations with a continuous bead of acoustical sealant. Include a bead of sealant at both faces of partitions.
- M Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and closing off sound flanking paths around or through gypsum wallboard assemblies, including partitions extending above ceilings.
- N Where resilient furring channels are used over steel framing, the screws used to attach the gypsum panel product to the furring channels shall not contact the framing.
- O Gypsum panel products applied to walls shall be applied with the bottom edge spaced a minimum of 1/8 inch (3.175 mm) and maximum of ¼ inch (6.35 mm) above the floor.
- P Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum wallboard), comply with gypsum wallboard manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.
- Q Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- R Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
 - 1. Single-Layer Applications: Nailing and adhesive..

3.4 INSTALLATION OF TRIM AND ACCESSORIES

- A Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.
 - 2. At exterior soffits, not more than 30 feet (10 meters) apart in both directions.
- B Corner Beads: Install at external corners, using longest practical lengths.
- C Edge Trim: Install at locations where gypsum wallboard abuts dissimilar materials.
 - 1. Allow for a 3/8 inch (9.525 mm) gap to apply a sealant joint when indicated on the drawings.
- D Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

3.5 JOINT TREATMENT

- A Paper Faced Gypsum Wallboard: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

- B Finish gypsum wallboard in accordance with levels defined in ASTM C840, as follows:
1. Level 4:
 - a. All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. When necessary, sand between coats and following final coat to provide smooth surface ready for decoration.
 - b. For use on:
 - 1) Walls scheduled for paint or wallcovering except those areas noted under Level 3 and 5.

3.6 FINISHING ADJUSTMENT

- A Screw Pop
1. Repair nail pop by driving new screw approximately 1-1/2 inches away and reseal screw.
 2. When face paper is punctured drive new screw approximately 1-1/2 inches from defective fastening and remove defective fastening.
 3. Fill damaged surface with compound in coats specified by required finish level.
- B Ridging
1. Sand ridges to reinforcing tape without cutting through tape.
 2. Fill concave areas on both sides of ridge with topping compound.
 3. After fill is dry, blend in topping compound over repaired area.
- C Fill cracks with compound and finish smooth and flush.

3.7 TOLERANCES

- A Maximum Variation of Finished Gypsum Wallboard Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

3.8 CLEANING AND PROTECTION

- A Promptly remove any residual joint compound from adjacent surfaces.
- B Protect installed products from damage from weather, condensation, construction, and other causes during remainder of the construction period.
- C Remove and replace panels that are wet, moisture damaged, or mold damaged.
- D Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
- E Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 21 16

**SECTION 09 90 00
PAINTING AND COATING**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Surface preparation.
- B Interior painting and coating systems.
- C Exterior painting and coating systems.
- D Scope:
 - 1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - a. Exterior:
 - 1) Concrete: Cementitious siding, Flexboard, Transite, non-roof shingles, common brick, stucco, tilt-up, precast, and poured-in-place cement.
 - b. Interior:
 - 1) Wood: Walls, ceilings, and trim.
 - 2) Drywall: Walls, ceilings, gypsum board, and similar items.

1.2 SUBMITTALS

- A See Section 01 33 00 - Submittal Requirements for submittal procedures.
- B Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Clean-up information.
- C Samples: Submit four paper draw down samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
- D Maintenance Data: Submit coating maintenance manual including finish schedule showing where each product/color/finish was used, product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.
- E Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements for additional provisions.
 - 2. Extra Paint and Finish Materials: Unused/previously opened cans of paint, but not less than 1 gallon (4 L) of each color; from the same product run, store where directed.
 - 3. Label each container with color in addition to manufacturer's label.

1.3 QUALITY ASSURANCE

- A Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.
- B MPI Standards:
 - 1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
 - 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
 - 3. Previously Painted Surface Preparation and Workmanship: Comply with requirements in "MPI Maintenance and Repainting Manual" for products and paint system indicated.

1.4 EXAMINATION OF DOCUMENTS

- A Examine the specifications for the work of other trade contractors and to become familiar with their work. All surfaces that are left unfinished by the requirements of other specifications to be finished by this section.

1.5 DELIVERY, STORAGE, AND HANDLING

- A Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.
- C Paint Materials: Store at a minimum of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.
- D Handling: Maintain a clean, dry storage area to prevent contamination or damage to materials.

1.6 FIELD CONDITIONS

- A Do not apply materials when environmental conditions are outside the ranges required by manufacturer.
- B Follow manufacturer's recommended procedures for producing the best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
 - 1. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
 - 2. Do not apply coatings during cold, rainy or frosty weather.
 - 3. Do not apply to surfaces, which are exposed to hot sun.
- C The existing building may contain lead-containing materials, including paint. It is the Contractor's responsibility to meet all governmental regulations when dealing with and disposing of lead containing materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Basis of Design Products: Subject to compliance with requirements, provide products from one of the following manufacturers (all products are to be from the same manufacturer):
 - 1. Sherwin-Williams Company: Noted as "S-W"; www.sherwin-williams.com.
 - 2. PPG Paints: Noted as "PPG"; www.ppg.com.
 - 3. Benjamin Moore & Company: Noted as "BM"; www.benjaminmoore.com.

2.2 PAINTINGS AND COATINGS

- A General:
 - 1. Provide factory/paint store-mixed coatings unless otherwise indicated.
 - 2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.
- B Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site, or other method acceptable to authorities having jurisdiction.
 - 1) Flat Paints & Coatings, VOC content of not more than 50 g/L.
 - 2) Non-flat Paints & Coatings VOC content of not more than 150g/L.
 - 3) Primers, Sealers, and Undercoaters VOC Content of not more than 100 g/L
 - 4) Industrial Maintenance; to include Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
 - 5) Floor Coatings: VOC not more than 100 g/L.
 - 6) Shellacs, Clear: VOC not more than 730 g/L.
 - 7) Shellacs, Pigmented: VOC not more than 550 g/L.
 - 8) Stains, Interior: VOC not more than 250 g/L
 - 9) Varnishes; VOC not more than 275 g/L
- C Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.3 PAINT SYSTEMS - EXTERIOR

- A Concrete: Cementitious siding, Flexboard, Transite, non-roof shingles, common brick, concrete masonry units (CMU), stucco, tilt-up, precast, and poured-in-place cement.
1. Latex Systems:
 - a. Satin Finish:
 - 1) 1st Coat:
 - (a) Sherwin-Williams Loxon Concrete and Masonry Primer Sealer LX02W50.
 - (b) PPG Perma-Crete Acrylic Alkali Resistant Primer 4-603.
 - (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 8 mils dry.
 - 2) 1st Coat (Existing Surfaces):
 - (a) Sherwin-Williams Extreme Bond Interior/Exterior Bonding Primer B51W001150
 - (b) PPG ACR1-Shield Acrylic Bonding Primer.
 - (c) BM Stix Waterborne Bonding Primer SXA-110.
 - (1) Minimum 0.9 mils dry.
 - 3) 2nd and 3rd Coat:
 - (a) Sherwin-Williams A-100 Exterior Exterior Latex Satin, A82 Series.
 - (b) PPG Speedhide Exterior Satin 6-2045XI.
 - (c) BM Ultra Spec Exterior Satin N448.
 - (1) Minimum 1.1 mils dry per coat.

2.4 PAINT SYSTEMS - INTERIOR

- A Wood:
1. Latex Systems (Painted- Walls, ceilings and trim):
 - a. Eg-Shel/Satin Finish:
 - 1) 1st Coat:
 - (a) S-W Multi Purpose Latex Primer / Sealer B51-450 Series
 - (b) PPG Seal Grip Int/Ext. Acrylic Universal Primer/Sealer, 17-921.
 - (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 1.5 mils dry.
 - 2) 1st Coat (Existing Surfaces):
 - (a) S-W Extreme Bond Interior/Exterior Bonding Primer B51W001150
 - (b) PPG ACR1-Shield Acrylic Bonding Primer.
 - (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 0.9 mils dry.
 - 3) 2nd and 3rd Coat:
 - (a) S-W ProMar 200 0 VOC Interior Latex Eg-Shel, B20-2600 Series.
 - (b) PPG Speedhide Interior Eggshell 6-4310XI.
 - (c) BM Ultra Spec 500 Interior Eggshell 538.
 - (1) Minimum 1.3 mils dry per coat.
 2. Stain and Varnish System (Wood-Transparent Finish):
 - a. Satin Finish:
 - 1) 1st Coat:
 - (a) S-W Minwax Performance Series Tintable Wood Stain 250 VOC.
 - (b) PPG Deft Interior Oil Wood Stain.
 - (c) BM Lenmar QuickStain Alkyd Wiping Stain
 - (1) Spreading Rate: As needed to match architect's sample.
 - 2) 2nd and 3rd Coat:
 - (a) S-W Minwax Polycrylic finish.
 - (b) PPG Deft Polyurethane Interior Satin.
 - (c) BM Benwood Stays Clear Polyurethane Satin N423.
 - (1) Minimum 1 mil dry per coat.

B Drywall:

1. Latex Systems:

a. Eg-Shel Finish (Walls and similar items):

1) 1st Coat:

- (a) S-W Multi Purpose Latex Primer / Sealer B51-450 Series
- (b) PPG Seal Grip Int/Ext. Acrylic Universal Primer/Sealer, 17-921.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 1.5 mils dry.

2) 1st Coat (Existing Surfaces):

- (a) S-W Extreme Bond Interior/Exterior Bonding Primer B51W001150
- (b) PPG ACR1-Shield Acrylic Bonding Primer.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 0.9 mils dry.

3) 2nd and 3rd Coat:

- (a) S-W ProMar 200 Zero VOC Eg-Shel, B20-2600 Series.
- (b) PPG Speedhide Interior Eggshell 6-4310XI.
- (c) BM Ultra Spec 500 Interior Eggshell 538.
 - (1) Minimum 1.5 mils dry per coat.

b. Flat primer: Surfaces Scheduled to Receive Vinyl Wallcovering, Wall Fabric or Tackable Wallcovering:

1) 1st Coat:

- (a) S-W Multi-Purpose Interior/Exterior Latex Primer B51W450.
- (b) PPG Seal Grip Acrylic Universal Primer, 17-921.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 1.5 mils dry.

2) 1st Coat (Existing Surfaces):

- (a) S-W Extreme Bond Interior/Exterior Bonding Primer B51W001150
- (b) PPG ACR1-Shield Acrylic Bonding Primer.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 0.9 mils dry.

3) 2nd Coat on Existing Surfaces:

- (a) S-W Multi-Purpose Interior/Exterior Latex Primer B51W450.
- (b) PPG Seal Grip Acrylic Universal Primer, 17-921.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 1.5 mils dry per coat.

c. Eg-Shel/Low Luster Finish-Single Component-Scheduled on Drawings to Receive Epoxy (Walls and similar items):

1) 1st Coat:

- (a) S-W Multi Purpose Latex Primer / Sealer B51-450 Series
- (b) PPG Seal Grip Int/Ext. Acrylic Universal Primer/Sealer, 17-921.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 1.5 mils dry.

2) 1st Coat (Existing Surfaces):

- (a) S-W Extreme Bond Interior/Exterior Bonding Primer B51W001150
- (b) PPG ACR1-Shield Acrylic Bonding Primer.
- (c) BM Fresh Start High Hiding All Purpose Primer N046.
 - (1) Minimum 0.9 mils dry.

- 3) 2nd and 3rd Coat:
 - (a) S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy (Eg-Shell K45)
 - (b) PPG Pitt-Glaze WB1 Interior Pre-Catalyzed Waterborne Acrylic Epoxy
 - (c) BM Corotech High Performance Pre-Catalyzed Waterborne Epoxy Eggshell V342
 - (1) Minimum 2.0 mils dry per coat.

2.5 EXTRA STOCK

- A Provide left over paint with Owner for touch-up purposes. At completion of project, provide one complete set of drawdowns in each maintenance manual with a schedule noting the locations each paint color was used.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- C Test shop-applied primer for compatibility with subsequent cover materials.
- D Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- E Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Wood: 15 percent
 2. Gypsum Board: 12 percent

3.2 PREPARATION

- A Clean surfaces thoroughly and correct defects prior to application.
- B Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.
- D Formed and Precast Concrete:
 1. Remove release agents including form oil, curing compounds, dirt, laitance, loose cement, efflorescence, chalk and leftover residue from precast manufacturing process per paint manufacturer's recommendations.
 2. Fill bug holes, air pockets, and other voids with cement patching compound.
 3. Prepare concrete according to SSPC-SP 13.
 4. Previously painted surfaces must be free of grease, oil, wax or any other contaminants and loose or flaking paint. Clean concrete of oil and grease with detergent, hot water and vigorous scrubbing. All loose and peeling paint must be scraped or sand blasted back to sound adhesion.
- E Masonry: Remove efflorescence and chalk. After prime coat is dry, fill remaining small holes, cracks and other defects with Swedish putty made by mixing dry spackle with prime paint.
 1. Previously painted masonry surfaces must be dry, clean and free of dust, dirt and any other contaminants. Hard glossy surfaces are to be lightly sanded or dulled with deglosser/cleaner. Surfaces in poor condition must be prepared for repainting by removing loose paint and blisters by scraping, sanding or burning. Paint in these areas are to be removed at least 12 inches beyond the failing area. Patch all holes left after removal of nails, screws, and anchors. Prime before applying finish coats.
- F Cementitious Siding: Remove dirt, dust and other foreign matter. Pressure clean, if needed, to remove grease, oil, and loose particles.

- G Gypsum Board: Fill minor defects with filler compound; sand smooth and remove dust prior to painting.
1. Previously painted gypsum wallboards must be completely dry, smooth-sanded, clean and free of dust, dirt, powdery residue, grease, oil, wax or any other contaminants such as flaking or peeling paint before paint application is started. Treat or remove all contaminants and correct defects. Dull glossy old paint by light sanding or with a commercial deglosser/cleaner to assure maximum adhesion of the new coating. Patch holes and cracks with a latex patching compound, sand smooth and spot prime with the paint or enamel to be used as the final coat.
- H Plaster: Fill hairline cracks, small holes, and imperfections with patching plaster. Make smooth and flush with adjacent surfaces. Treat textured, soft, porous, or powdery surfaces in accordance with manufacturer's instructions.
1. Previously painted plaster surfaces must be dry, clean, and free of dust, dirt, powder residue, grease, oil, wax or any other contaminants; free of flaking, crumbling or chalking conditions before paint application is started. Contaminants must be treated or removed. Defects corrected as necessary. Dull glossy old paints by light sanding or with deglosser/cleaner to assure maximum adhesion of the new coating. Remove any loose, chipped, peeling or blistered old paint by scraping and smooth sanding. If highly porous old paint needs reconditioning before receiving the new application, prime the entire surface with undercoater oil primer. Patch holes and cracks with latex patching compound per manufacturer's instructions after removing plaster as far back as necessary to reach firm areas. Spot prime patched areas with sealer-primer.
- I Concrete Floors and Traffic Surfaces: Prepare concrete according to SSPC-SP 13.
- J Aluminum: Remove surface contamination and oil; wash with solvent according to SSPC-SP 1.
1. All chipped, peeling or blistered paint must be removed by hand or power tool cleaning. Remove all oil, grease, dirt or other foreign materials. Remove excessive chalking or sanding. Remove any mildew present by scrubbing with detergent and bleach. Thoroughly clean surface with water prior to repainting.
- K Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 2. Prepare surface according to SSPC-SP 2.
 3. Previously painted metal must be dry, clean and free of contaminants. Hard and glossy surfaces are to be sanded lightly or dulled with deglosser/cleaner. Remove peeling, loose, chipped, and blistered paint and rust by scraping and sanding. Prime all sanded areas and areas devoid of paint with an all-purpose metal primer.
- L Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Prime bare steel surfaces.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6. Protect from corrosion until coated.
 4. Previously painted metal must be dry, clean and free of contaminants. Hard and glossy surfaces are to be sanded lightly or dulled with deglosser/cleaner. Remove peeling, loose, chipped, and blistered paint and rust by scraping and sanding. Prime all sanded areas and areas devoid of paint with an all-purpose metal primer.

- M Wood: Remove dust, grit, and foreign matter. Scrape, sand, and spot prime knots and pitch streaks. Fill nail holes and imperfections with wood filler and sand smooth.
1. Previously painted surfaces must be free of dirt, mildew, loose paint, etc. Excessive chalking or dirt must be removed by washing with water. Hard glossy surfaces are to be lightly sanded or dulled with deglosser/cleaner. Openings permitting entrance of water should be caulked prior to painting. Surfaces in poor condition must be prepared for repainting by removing loose paint and blisters by scraping, sanding or burning. Paint in these areas is to be removed at least 12 inches beyond the failing area. Prime before applying finish coats.
- N Concrete Floors:
1. To receive paint or non-slip paint: Shotblast floor to resemble 100 grit sandpaper. Torch fiber reinforcing exposed after shot blasting. Fill cracks, voids, bug holes, gouges or divots with Crack Filler.

3.3 SCHEDULE OF EXTERIOR WORK

- A General: Do not paint brick, stucco, precast concrete, prefinished aluminum, sealant (unless scheduled to receive paint).
- B New Work: Paint or finish all other new, unfinished, primed and factory painted surfaces, including all rooftop mechanical equipment, screen louvers, wall louvers (not factory-finished), miscellaneous metals, steel and galvanized steel lintels.
- C Existing Work: Prepare and paint all surfaces as noted on the drawings.

3.4 GENERAL

1. Paint complete all surfaces noted with a "PT" on Room Finish Schedule.
 - a. New Work: In rooms with surfaces not scheduled for paint on Room Finish Schedule, paint hollow metal doors and frames, metal stairs and railings as occur.
 - b. Existing Areas:
 - 1) Paint all items covered by notes on the drawings.
 - 2) Remodeling work: In rooms with surfaces scheduled for paint on Room Finish Schedule, paint hollow metal doors and frames, metal stairs and railings as occur.
 - 3) In unscheduled areas where patching has occurred, paint all walls corner to corner and floor to ceiling. Match adjacent wall color. Paint both sides of doors and frames at locations where replacement or modifications have been made.
2. Provide specified finish on exposed surfaces including, but not limited to the following:
 - a. Prime coated mechanical units, piping, pipe covering, sprinkler piping, interior duct surfaces visible behind grilles, tanks without factory finish, radiation covers, cabinet unit heaters, exposed ductwork, louvers and grilles.
 - b. Electrical panel box covers and surface raceways (over factory finish), conduits and boxes and all factory primed electrical equipment. (Except in maintenance, service and electrical rooms).
 - c. Hollow metal doors and frames, steel stairs, ladders and railings, catwalks and safety mesh grilles, access panels, prime painted hardware, painted astragals and vision lite kits on doors, coiling grilles and doors (unless factory finished), metal supports for counters and exposed miscellaneous metals.
 - d. Plywood backboards for electrical panels/devices and low voltage. Primer. Color white or to match adjacent wall surface, two coats on unistrut mounted backboards. Cover all sides and within cutout areas. Mask the fire-retardant rating stamp on each sheet prior to priming and painting. Leave the stamps exposed and visible.
3. Do not paint sealant.
4. DO NOT paint low voltage Category rated (Cat5, Cat6, Cat6A) cabling, as it voids the warranty.
5. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.

6. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
7. Paint exposed ceiling areas visible around edges of "clouds".

3.5 APPLICATION

- A Conditions
 1. Do no work when surface, coating product, air temperature, humidity or dewpoint does not meet requirements of PROJECT CONDITIONS in Part 1 of this specification or manufacturers recommendations.
 2. Do no interior work until building is properly enclosed.
 3. Do work under adequate illumination and dust-free conditions.
- B Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- C Apply products in accordance with manufacturer's written instructions.
- D Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.
- E Regardless of number of coats specified, apply additional coats until complete hide is achieved.

3.6 PRIMING

- A Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.
 1. Tint prime and under coats being used under highly pigmented paint, approximately 1/2 to 3/4 depth of final color.
- B Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to top coat manufacturers.

3.7 CLEANING

- A Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B Clean surfaces immediately of overspray, splatter, and excess material.
- C After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.
- D Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- E At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.8 FIELD QUALITY CONTROL

- A Testing and Painting Application: Owner reserves the right to test DFT of painted surfaces.
- B If testing discovers that DFT of installed paint does not meet specification, the Contractor will pay for initial and final testing and recoat surfaces until testing agency confirms specification is met.

3.9 PROTECTION

- A Protect finished coatings from damage until completion of project.
- B Touch-up damaged finishes after Substantial Completion.

END OF SECTION 09 90 00

SECTION 10 22 39

FOLDING GLASS PARTITIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes furnishing and installing a top-hung sliding-folding aluminum-framed glass storefront system.

1.2 SUBMITTALS

- A. Submit in accordance with Submittal Section 01 33 00:
 - 1. Product Data: Submit manufacturer's printed product literature for each Folding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.
 - 2. Shop Drawings: Indicate Folding Glass Storefront system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
 - 3. Manufacturers' Instructions: Submit manufacturer's installation instructions.
 - 4. Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

1.3 QUALITY ASSURANCE

- A. Coordination: Coordinate Folding Glass Storefront system and framing R.O.
- B. Hold a pre-installation conference at the project site not more than one week prior to beginning work. Attendance is mandatory for any trade in contact with the folding glass storefront.
- C. Construction Sequencing, hold to dimensions, coordination with related specification sections shall be coordinated with the General Contractor or Construction Manager.
- D. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
- E. Installer to be trained and certified by manufacturer.
- F. Single Source Responsibility: Furnish Folding Glass Storefront system materials from one manufacturer for entire project.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's instructions and recommendations:

1. Deliver materials to job site in sealed, unopened cartons or crates.
 - a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.
 - b. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.5 FIELD CONDITIONS

- ### **A. Field Measurements: Contractor to field verify dimensions of rough openings and threshold depressions to receive sill. Mark field measurements on shop drawing submittal.**

1.6 WARRANTY

- ### **A. Manufacturer Warranty: Provide Folding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.**

1. Warranty Period begins at Date of Substantial Completion:
 - a. Rollers and Glass Seal Failure: Ten (10) years
 - b. All Other Components Except Screens: Ten (10) years

PART 2 PRODUCTS

2.1 MANUFACTURERS/MODEL

- ### **A. Product/model basis of design: Alumil Supreme SF 85 Insulated Bi- Folding System.**
1. Other manufacturers to be reviewed by Architect prior approval during bidding phase.

2.2 PERFORMANCE / DESIGN CRITERIA

A. Performance Criteria (Lab Tested):

1. Structural Loading (ASTM E330):
 - a. Load Structure: At 1.5 times design wind pressure with no glass breakage or permanent damage to fasteners or storefront components.
 - b. Design Pressure w/ Reinforced Locking Unit: Positive and Negative at 35 psf.
2. Forced Entry (AAMA 1303.5 and AAMA CAWM 300): Meets requirements.
3. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
4. Thermal Performance U-factor: NFRC 100 rated.

B. Design Criteria:

1. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing panels, and location of tracks and stacking bays.
2. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks;
 - a. Inswing type and Outswing type. See Architectural drawings for location and number.
3. Panel Configuration: Straight.
4. Stack Storage Configuration:
 - a. Inside or outside. See Architectural drawings for location and pivot type.
5. Mounting Type: Top hung.
6. Panel Type: Hinged.

2.3 MATERIALS

A. Sliding-Folding Glass Storefront Description: Monumental top-hung system designed for straight runs, segmented angle changes, center pivot, and capable of folding flat against adjacent walls. Manufacturer's standard frame and panel profiles, with head and floor tracks, side jambs and panels with dimensions as shown on Drawings.

1. Panels: Single lite.
 - a. Panel Size (W x H): As indicated on drawings.
 - b. Rail Depth: 1-3/4 inch.
 - c. Top Rail and Stile Width: 2 1/8 inch.
 - d. Bottom Rail Width: 2-1/16 inch.
2. Frame:
 - a. Matching top track and side jambs
 - b. Top track width: 2 1/2 inch.
 - c. Top track and Side Jambs Depth: 1 3/4 inch.
 - d. Sill type
 - 1) Flush sill.
 - 2) Finish: Clear anodized aluminum.
3. Aluminum Extrusion: AIMgSi0.5 alloy, 6063-T5.
 - a. Thickness: 0.078 inch nominal
 - b. Aluminum Finish (including head track covers): Clear Anodized (AAMA 611).

B. Glass and Glazing:

1. Safety Glazing: In compliance with ANSI Z97.1 and CPSC 16CFR 1201.
2. Glass Acoustical Performance: STC 37.3. Standard lites in single glazing units, dry glazed with glass stops on inside.
 - a. 1/4 inch laminated glass w/ sound enhanced interlayer.

C. Locking Hardware and Handles:

1. Hardware to accept builders hardware cylinder by Section 08 71 00. Additional profile cylinders to be keyed alike.
2. Main Entry Panel for Outswing Models WITHOUT Swing Panel(s): Provide manufacturer's standard flat handle on the inside and a lock set with a profile cylinder on the outside. Operation of lock set is by turn of key from the outside and from the inside with a two point locking hardware operated by 180° turn of the handle.
3. Secondary Swing Panels and Pairs of Folding Panels: Provide manufacturer's flat handles and concealed one or two-point locking hardware operated by 180° turn of handle.
4. Face applied flush bolt locking not acceptable (except for units with paired panels).
5. Flat Handle - Finish:
 - a. Brushed satin stainless steel
6. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.
7. Aluminum locking rods with standard fiberglass reinforced polyamide end caps at the top and bottom. Rods to have a stroke of 15/16 inch.

D. Sliding- Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks.

1. For each pair of folding panels, provide independent cardanic suspension for four (4) wheeled rollers coated with fiberglass reinforced polyamide upper running carriage and lower guide carriage.
2. Swing Panel Hinges:
 - a. Zinc die cast with finish closest match to finish of frame and panels and stainless steel security hinge pins with set-screws.
3. Adjustment: Provide 1/16 inch in width per hinge adjustments without removing panels from tracks and without needing to remove panels from tracks.

E. Weatherstripping: Manufacturer's double layer EPDM between panels, EPDM gasket and Q-lon gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.

F. Fasteners: Stainless steel screws for connecting frame components.

2.4 FABRICATION

A. Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and weatherstripping components needed to construct a folding glass wall.

1. Each unit factory pre-assembled and shipped with all components and installation instructions.

Exposed work to be carefully matched to produce continuity of line and design with all joints.

2. No raw edges visible at joints.

2.5 ACCESSORIES

A. Provide sidelights, transoms, corner posts, or single or double doors as indicated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions per as follows:

1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
 - a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer to receive Work.
 - b. Verify the structural integrity of the header for deflection with live and dead loads limited to the lesser of $L/720$ of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install Folding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturer's recommendations and installation instructions, and as follows:

1. Properly flash, waterproof and seal around opening perimeter.
2. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work
3. When lower track is designed to drain, provide connections to allow for drainage.
4. Install panels, handles, lockset, screens and other accessories in accordance with manufacturer's recommendations and instructions.

3.3 FIELD QUALITY CONTROL

A. Field Tests and Inspections per Section 01 44 00 of the following:

1. Verify the Folding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.

- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.4 CLEANING AND PROTECTION

- A. Keep units closed and protect Folding Glass Storefront installation against damage from construction activities.
- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

1.05 DEMONSTRATION AND TRAINING

- A. Engage factory-authorized representatives to train Owner's personnel on operation and maintenance of the partition.
Refer to Section 01 79 00.

END OF SECTION 08 43 33

EXHIBIT A- PUBLIC CONTRACT STATEMENT

This Public Contract Statement (the "Contract Statement") has been executed by the below supplier, contractor or vendor (collectively the "Contractor") in order for the Village of Buffalo Grove to obtain certain information necessary prior to awarding a public contract. The Contract Statement shall be executed and notarized and submitted as part of the Bid Proposal.

CERTIFICATION OF CONTRACTOR/BIDDER

In order to comply with 720 Illinois Compiled Statutes 5/33 E-1 et seq., the Village of Buffalo Grove requires the following certification be acknowledged:

The Contractor certifies that it is not barred from bidding or supplying any goods, services or construction let by the Village of Buffalo Grove with or without bid, due to any violation of either Section 5/33 E-3 or 5/33 E-4 of Article 33E, Public Contracts, of the Chapter 720 of the Illinois Compiled Statutes, as amended. This act relates to interference with public contracting, bid rigging and rotating, kickbacks, and bidding.

CERTIFICATION RELATIVE TO 65 ILCS 5/11-42.1.1

In order to comply with 65 Illinois Compiled Statutes 5/11-42.J. I, the Village of Buffalo Grove requires the following certification:

The Contractor does hereby swear and affirm that it is not delinquent in the payment of any tax administered by the Illinois Department of Revenue unless it is contesting such tax in accordance with the procedures established by the appropriate revenue act, its liability for the tax or the amount of the tax. The undersigned further understands that making a false statement herein: (1) is a Class A misdemeanor, and (2) voids the contract and allows the Village to recover all amounts paid to it under the contract.

CONFLICT OF INTEREST

The Village of Buffalo Grove Municipal Code requires the following verification relative to conflict of interest and compliance with general ethics requirements of the Village:

The Contractor represents and warrants to the Village of Buffalo Grove as a term and condition of acceptance of their Bid Proposal that none of the following Village officials is either an officer or director of Contractor nor owns five percent (5%) or more of the Contractor: the Village President, the members of the Village Board of Trustees, the Village Clerk, the Village Treasurer, the members of the Zoning Board of Appeals and the Plan Commission, the Village Manager and his/her Assistant, or the heads of the various departments within the Village.

If the foregoing representation and warranty is inaccurate, state the name of the Village official who either is an officer or director of your business entity or owns five percent (5%) or more thereof: - - - - -

IN WITNESS WHEREOF, the below Contractor has signed and sealed this Contract Statement as of this 17th day of December, 2022.

Efraim Carlson & Son, Inc.
Print Name of Contractor

[Signature]
Signature

President
Print Title

Given under my hand and official seal, this 17th day of

December

LL, 21

Notary Public



EXHIBIT C - CONTRACTOR REFERENCE LIST

Contact Name: David Sieffert -----

Municipality/Business: Bensenville Community Public Library

Dates Employed: November 2021 to November 2021 -----

Phone Number or E-mail address: dsieffert@benlib.org 630-766-4642

Contact Name: Chief Greg Formica

Municipality/Business: Greater Round Lake Fire Protection District

Dates Employed: February 2020 to December 2020 -----

Phone Number or E-mail address: 847-546-6001 -----

Contact Name: Andrew Jose -----

Municipality/Business: Park Ridge Public Library

Dates Employed: December 2020 to May 2021 -----

Phone Number or E-mail address: 847-317-0852 ajose@greenassociates.com

Contact Name: Kraig Owens -----

Municipality/Business: Viking Park Maintenance Building - Gurnee Park District

Dates Employed: April 2019 _____ to December 2019

Phone Number or E-mail address: 847-599-3763 kowens@gurneeparkdistrict.com -----

THE AMERICAN INSTITUTE OF ARCHITECTS

AJA Document A310 Bid Bond

KNOW ALL MEN BY THESE PRESENTS, THAT WE Efraim Carlson & Son, Inc.
14052 Petronella Drive, Suite 105 Libertyville, IL 60048

as Principal, hereinafter called the Principal, and Employers Mutual Casualty Company
P.O. Box 712 Des Moines IA 50306-0712


a corporation duly organized under the laws of the State of IA
as Surety, hereinafter called the Surety, are held and finny bound unto Village of Buffalo Grove
50 Raupp Blvd Buffalo Grove, IL 60089

as Obligee, hereinafter called the Obligee, in the sum of Five Percent of Amount Bid
----- Dollars (\$ 5%),
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs,
executors, administrators, successors and assigns, jointly and severally, finny by these presents.

\\t-HEREAS, the Principal has submitted a bid for Arboretum Golf Course Patio Upgrades.

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with
the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or
Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt
payment of labor and materials furnished in the prosecution thereof, or in the event of the failure of the Principal to enter
such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the
penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith
contract with another party to perform the Work covered by said bid, then this obligation shall be null and otherwise
to remain in full force and effect.

Signed and sealed this 17th day of December
1972
10 SEAC
Efraim Carlson & Son, Inc.
(Principal)
By: [Signature] President
(Title)

[Signature]
(Witness)

Em lo ers Mutual Casual ty Compan
Surety) (Seal)
By: [Signature]
Attorney-in-Fact William P. Maher
(Title)

STATE OF Illinois

COUNTY OF Cook

I, V Broaddus Notary Public of Cook County,

in the State of Illinois, do hereby certify that William P. Maher

Attorney-in-Fact, of the Employers Mutual Casualty Company

who is personally known to me to be the same person whose name is

subscribed to the foregoing instrument, appeared before me this day in person, and

acknowledged that he signed, sealed and delivered said instrument, for and on behalf of the

Employers Mutual Casualty Company

for the uses and purposes therein set forth.

Given under my hand and notarial seal at my office in the City of Palatine

in said County, this 17th day of December, A.D., 2021

[Signature] V Broaddus

My Commission expires: April 28, 2025



OFFICIAL SEAL
VBROADDUS
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires 4/28/25

CERTIFICATE OF AUTHORITY INDIVIDUAL ATTORNEY-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, that:

- 1. Employers Mutual Casualty Company, an Iowa Corporation
- 2. EMCASCO Insurance Company, an Iowa Corporation
- 3. Union Insurance Company of Providence, an Iowa Corporation
- 4. Illinois EMCASCO Insurance Company, an Iowa Corporation
- 5. Dakota Fire Insurance Company, a North Dakota Corporation
- 6. EMC Property & Casualty Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:

William P. Maher

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute the following Surety Bond:

Surety Bond Number: Bid Bond
 Principal : Efraim Carlson & Son, Inc.
 Oblige : Village of Buffalo Grove

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at the first regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company hereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be full and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

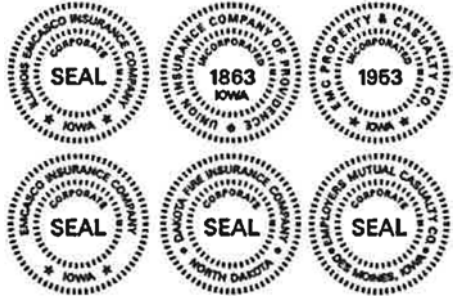
IN WITNESS THEREOF, the Companies have caused these presents to be signed by the officers as shown, and the Corporate seals to be hereto affixed this

July 1, 2018

J/1: data

 Bruce G. Kelley, CEO, Chairman of
 Companies 2, 3, 4, 5 & 6; President
 of Companies 1, 2 & 6; Treasurer of
 Companies 1, 2, 3, 4 & 6

 Todd Strother,
 Senior Vice President



On this 1st day of July, 2018 before me a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and Todd Strother, who, being by me duly sworn, did say that they are, and are known to me to be the CEO, Chairman, President and Treasurer, and/or Senior Vice President, respectively, of each of the Companies above; that the seals affixed to this Instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Bruce G. Kelley and Todd Strother, as such officers, acknowledged the execution of said instrument to be their voluntary act and deed, and the voluntary act and deed of each of the Companies.

My Commission Expires October 10, 2022.

KATHY LOVERIDGE
 Notary Public
 Commission Number 780769
 Expires
 October 10, 2022

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CERTIFICATE

I, James D. Clough, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on 1st day of July, 2018, are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 17th day of December 2021 .

 Vice President



To: Prospective Bidders
From: Wold Architects and Engineers
Date: December 7, 2021
Comm. No: 213103

Subject: Addendum No. 1 for Bidding Documents for the
Arboretum Golf Course Patio Upgrades
Buffalo Grove, Illinois

BIDS DUE: DECEMBER 17, 2021 AT 10:00 AM.

This addendum forms a part of the Contract Documents dated December 1, 2021. Acknowledge receipt of this Addendum on the space provided on the Bid Form. Failure to do so may result in disqualification of Bid.

This Addendum consists of one (1) typed sheet and attachments:
Specifications: 00 01 10; 05 50 00; 10 22 39
Drawings: A1.01, A1.10

PROJECT MANUAL

1. **SPECIFICATION SECTION 00 01 10 TABLE OF CONTENTS**
 - A. Reissued this addendum
2. **SPECIFICATION SECTION 05 50 00 METAL FABRICATIONS**
 - A. Issued this addendum
3. **SPECIFICATION SECTION 10 22 39 FOLDING GLASS PARTITIONS**
 - A. Reissued this addendum

DRAWINGS

1. **DRAWING A1.01 DEMOLITION PLANS, SECTIONS AND ELEVATION**
 - A. Reissued this addendum
2. **DRAWING A1.10 MAIN LEVEL FLOOR PLAN/SECTIONS/ELEVATIONS**
 - A. Reissued this addendum

END OF ADDENDUM #1

SECTION 00 01 10

PROJECT MANUAL TABLE OF CONTENTS

<u>Section No.</u>	<u>Title</u>
<u>Division 00</u>	<u>Procurement and Contracting Requirements</u>
00 01 01	Project Identification Page
00 01 03	Title Page
00 01 05	Professional Certifications
00 01 10	Table of Contents
<u>Bidding Requirements</u>	
0 11 13	Bidding and Contract Documents
<u>Division 01</u>	<u>General Requirements</u>
1 11 00	Summary of the Work
01 25 00	Substitutions and Product Options
01 26 63	Change Orders
01 31 19	Project Meetings
01 31 26	Electronic Communication Protocols
01 32 00	Construction Scheduling
01 33 00	Submittals
01 45 16	Quality Control
01 50 00	Temporary Facilities and Controls
01 73 29	Cutting and Patching
01 74 00	Final Cleaning
01 77 00	Project Closeout
01 78 23	Operating, Maintenance and Warranty Data
1 78 39	Project Record Documents
<u>Division 02</u>	<u>Existing Conditions</u>
2 01 10	Existing Utilities
02 41 00	Demolition
<u>Division 03</u>	Not Used
<u>Division 04</u>	<u>Masonry</u>
04 20 00	Non-Bearing Unit Masonry
4 72 00	Cast Stone Masonry
<u>Division 05-06</u>	<u>Not Used</u>
<u>Division 05</u>	<u>Metals</u>
5 50 00	<u>Metal Fabrications</u>
<u>Division 06</u>	<u>Not Used</u>
<u>Division 07</u>	<u>Thermal and Moisture Protection</u>
07 21 00	Insulation
07 92 00	Joint Sealants
<u>Division 08</u>	Not Used
<u>Division 09</u>	<u>Finishes</u>
09 21 16	Gypsum Wallboard Assemblies
9 90 00	Painting and Coating

<u>Section No.</u>	<u>Title</u>
<u>Division 10</u> 10 22 39	<u>Specialties</u> Folding Glass Partitions
<u>Division 11-30</u>	Not Used
<u>Division 31</u> 31 23 16	<u>Earthwork</u> Earthwork
<u>Division 32</u> 32 13 13 32 14 13	<u>Exterior Improvements</u> Concrete Paving Precast Concrete Unit Paving
<u>Division 33-49</u>	Not Used

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A Section includes: All labor, material necessary to complete all items of miscellaneous metal as listed on the schedule in Part 2 and shown on the Drawings.
- B The design, fabrication, transportation to the project site, and associated operations required to complete miscellaneous metals, including all the various metal items manufactured to more or less standard details in sizes conforming to specific requirements of the project.

1.2 SUBMITTALS

- A See Section 01 33 00 - Submittal Requirements, for submittal procedures.
- B Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Coordinate work with other suppliers and subcontractors; obtain their approved shop drawing where necessary or obtain any necessary additional detail information regarding mounting conditions or other aspects of related work.

PART 2 PRODUCTS

2.1 MATERIALS - STEEL

- A Steel Sections: ASTM A992.
- B Plates: ASTM A36.
- C Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- D Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- E Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.2 FABRICATION

- A Take field measurements before fabrication when required.
- B Fit and shop assemble items in largest practical sections, for delivery to site.
- C Fabricate items with joints tightly fitted and secured.
- D Continuously seal joined members exposed in the work by continuous welds and grinding smooth.
- E Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 SCHEDULE OF FABRICATED ITEMS

- A Items listed in this Section are intended only as a guide, but do not relieve responsibility for verifying quantities and inclusion of all similar items. Thoroughly examine all Drawings for items of miscellaneous metal fabrications.
 - 1. Galvanized Steel Lintel and Plate

2.4 FINISHES - STEEL

- A Galvanizing of Lintels: Galvanize after fabrication to ASTM A123/A123M requirements for all steel items exposed to weather.

2.5 FABRICATION TOLERANCES

- A Squareness: 1/8 inch (3 mm) maximum difference in diagonal measurements.
- B Maximum Offset Between Faces: 1/16 inch (1.5 mm).
- C Maximum Misalignment of Adjacent Members: 1/16 inch (1.5 mm).
- D Maximum Bow: 1/8 inch (3 mm) in 48 inches (1.2 m).
- E Maximum Deviation From Plane: 1/16 inch (1.5 mm) in 48 inches (1.2 m).

PART 3 EXECUTION

3.1 EXAMINATION

- A Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

- A Clean and strip primed steel items to bare metal where site welding is required.
- B Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.3 INSTALLATION

- A Clean masonry bearing surfaces of bond reducing materials. Clean bottom surface of lintel
- B After lintel erection, touch-up damaged hot dipped galvanizing to comply with ASTM A780.

3.4 TOLERANCES

- A Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-cumulative.
- B Maximum Offset From True Alignment: 1/4 inch (6 mm).
- C Maximum Out-of-Position: 1/4 inch (6 mm).

3.5 FIELD QUALITY CONTROL

- A Structural Testing and Special Inspection
 - 1. Comply with the requirements of Section 05 10 00 – Structural Steel Framing

END OF SECTION 05 50 00

SECTION 10 22 39

FOLDING GLASS PARTITIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes furnishing and installing a top-hung sliding-folding aluminum-framed glass storefront system.

1.2 SUBMITTALS

- A. Submit in accordance with Submittal Section 01 33 00:
1. Product Data: Submit manufacturer's printed product literature for each Folding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.
 2. Shop Drawings: Indicate Folding Glass Storefront system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
 3. Manufacturers' Instructions: Submit manufacturer's installation instructions.
 4. Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

1.3 QUALITY ASSURANCE

- A. Coordination: Coordinate Folding Glass Storefront system and framing R.O.
- B. Hold a pre-installation conference at the project site not more than one week prior to beginning work. Attendance is mandatory for any trade in contact with the folding glass storefront.
- C. Construction Sequencing, hold to dimensions, coordination with related specification sections shall be coordinated with the General Contractor or Construction Manager.
- D. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
- E. Installer to be trained and certified by manufacturer.
- F. Single Source Responsibility: Furnish Folding Glass Storefront system materials from one manufacturer for entire project.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions and recommendations:
 - 1. Deliver materials to job site in sealed, unopened cartons or crates.
 - a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.
 - b. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.5 FIELD CONDITIONS

- A. Field Measurements: Contractor to field verify dimensions of rough openings and threshold depressions to receive sill. Mark field measurements on shop drawing submittal.

1.6 WARRANTY

- A. Manufacturer Warranty: Provide Folding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.
 - 1. Warranty Period begins at Date of Substantial Completion:
 - a. Rollers and Glass Seal Failure: Ten (10) years
 - b. All Other Components Except Screens: Ten (10) years

PART 2 PRODUCTS

2.1 MANUFACTURERS/MODEL

- A. Product/model basis of design: Alumil Supreme SF 85 Insulated Bi- Folding System.
 - 1. Other manufacturers to be reviewed by Architect prior approval during bidding phase.
- B. *Contact: Valda USA; www.valda.us
Kalín - (609) 233-5967; malincho@gmail.com*

2.2 PERFORMANCE / DESIGN CRITERIA

- A. Performance Criteria (Lab Tested):
 - 1. Structural Loading (ASTM E330):
 - a. Load Structure: At 1.5 times design wind pressure with no glass breakage or permanent damage to fasteners or storefront components.
 - b. Design Pressure w/ Reinforced Locking Unit: Positive and Negative at 35 psf.
 - 2. Forced Entry (AAMA 1303.5 and AAMA CAWM 300): Meets requirements.
 - 3. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles.
 - 4. Thermal Performance U-factor: NFRC 100 rated.

B. Design Criteria:

1. **Sizes and Configurations:** As indicated by the Drawings for selected number and size of panels, location of swing panels, and location of tracks and stacking bays.
2. **Unit Operation:** Adjustable sliding and folding hardware with top and bottom tracks;
 - a. Inswing type and Outswing type. See Architectural drawings for location and number.
3. **Panel Configuration:** Straight.
4. **Stack Storage Configuration:**
 - a. Inside or outside. See Architectural drawings for location and pivot type.
5. **Mounting Type:** Top hung.
6. **Panel Type:** Hinged.

2.3 MATERIALS

A. Sliding-Folding Glass Storefront Description: Monumental top-hung system designed for straight runs, segmented angle changes, center pivot, and capable of folding flat against adjacent walls. Manufacturer's standard frame and panel profiles, with head and floor tracks, side jambs and panels with dimensions as shown on Drawings.

1. **Panels:** Single lite.
 - a. **Panel Size (W x H):** As indicated on drawings.
 - b. **Rail Depth:** 1-3/4 inch.
 - c. **Top Rail and Stile Width:** 2 1/8 inch.
 - d. **Bottom Rail Width:** 2-1/16 inch.
2. **Frame:**
 - a. Matching top track and side jambs
 - b. Top track width: 2 1/2 inch.
 - c. Top track and Side Jambs Depth: 1 3/4 inch.
 - d. Sill type
 - 1) Flush sill.
 - 2) Finish: Clear anodized aluminum.
3. **Aluminum Extrusion:** AlMgSi0.5 alloy, 6063-T5.
 - a. Thickness: 0.078 inch nominal
 - b. Aluminum Finish (including head track covers): Clear Anodized (AAMA611).

B. Glass and Glazing:

1. Safety Glazing: In compliance with ANSI Z97.1 and CPSC 16CFR1201.
2. Glass Acoustical Performance: STC 37.3. Standard lites in single glazing units, dry glazed with glass stops on inside.
 - a. 1/4 inch laminated glass w/ sound enhanced interlayer.

C. Locking Hardware and Handles:

1. Hardware to accept builders hardware cylinder by Section 08 71 00. Additional profile cylinders to be keyed alike.
2. Main Entry Panel for Outswing Models WITHOUT Swing Panel(s): Provide manufacturer's standard flat handle on the inside and a lock set with a profile cylinder on the outside. Operation of lock set is by turn of key from the outside and from the inside with a two point locking hardware operated by 180° turn of the handle.
3. Secondary Swing Panels and Pairs of Folding Panels: Provide manufacturer's flat handles and concealed one or two-point locking hardware operated by 180° turn of handle.
4. Face applied flush bolt locking not acceptable (except for units with paired panels).
5. Flat Handle - Finish:
 - a. Brushed satin stainless steel
6. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.
7. Aluminum locking rods with standard fiberglass reinforced polyamide end caps at the top and bottom. Rods to have a stroke of 15/16 inch.

D. Sliding- Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks.

1. For each pair of folding panels, provide independent cardanic suspension for four (4) wheeled rollers coated with fiberglass reinforced polyamide upper running carriage and lower guide carriage.
2. Swing Panel Hinges:
 - a. Zinc die cast with finish closest match to finish of frame and panels and stainless steel security hinge pins with set-screws.
3. Adjustment: Provide 1/16 inch in width per hinge adjustments without removing panels from tracks and without needing to remove panels from tracks.

E. Weatherstripping: Manufacturer's double layer EPDM between panels, EPDM gasket and Q-Ion gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.

F. Fasteners: Stainless steel screws for connecting frame components.

2.4 FABRICATION

A. Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and weatherstripping components needed to construct a folding glass wall.

1. Each unit factory pre-assembled and shipped with all components and installation instructions.

Exposed work to be carefully matched to produce continuity of line and design with all joints.

2. No raw edges visible at joints.

2.5 ACCESSORIES

A. Provide sidelights, transoms, corner posts, or single or double doors as indicated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions per as follows:

1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
 - a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer to receive Work.
 - b. Verify the structural integrity of the header for deflection with live and dead loads limited to the lesser of $L/720$ of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install Folding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturer's recommendations and installation instructions, and as follows:

1. Properly flash, waterproof and seal around opening perimeter.
2. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work
3. When lower track is designed to drain, provide connections to allow for drainage.
4. Install panels, handles, lockset, screens and other accessories in accordance with manufacturer's recommendations and instructions.

3.3 FIELD QUALITY CONTROL

A. Field Tests and Inspections per Section 01 44 00 of the following:

1. Verify the Folding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.

- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.4 CLEANING AND PROTECTION

- A. Keep units closed and protect Folding Glass Storefront installation against damage from construction activities.
- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

1.05 DEMONSTRATION AND TRAINING

- A. Engage factory-authorized representatives to train Owner's personnel on operation and maintenance of the partition. Refer to Section 01 79 00.

END OF SECTION 08 43 33

**ARBORETUM
GOLF COURSE
PATIO UPGRADES**

401 Half Day Road
Buffalo Grove, IL 60089

Village of Buffalo Grove
50 Raupp Blvd.
Buffalo Grove, IL 60089



**WOLD ARCHITECTS
AND ENGINEERS**

230 North Smith Street, Suite 310
Palatine, Illinois 60067
woldae.com | 847.241.6100

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed ARCHITECT under the laws of the State of Illinois

Matthew J. Bickel
License Number 001.020683 Date 11/30/22

Revisions			
Description	Date	Num	
ISSUE FOR BID	12-1-21	1	
Addendum #1	12-7-21	2	

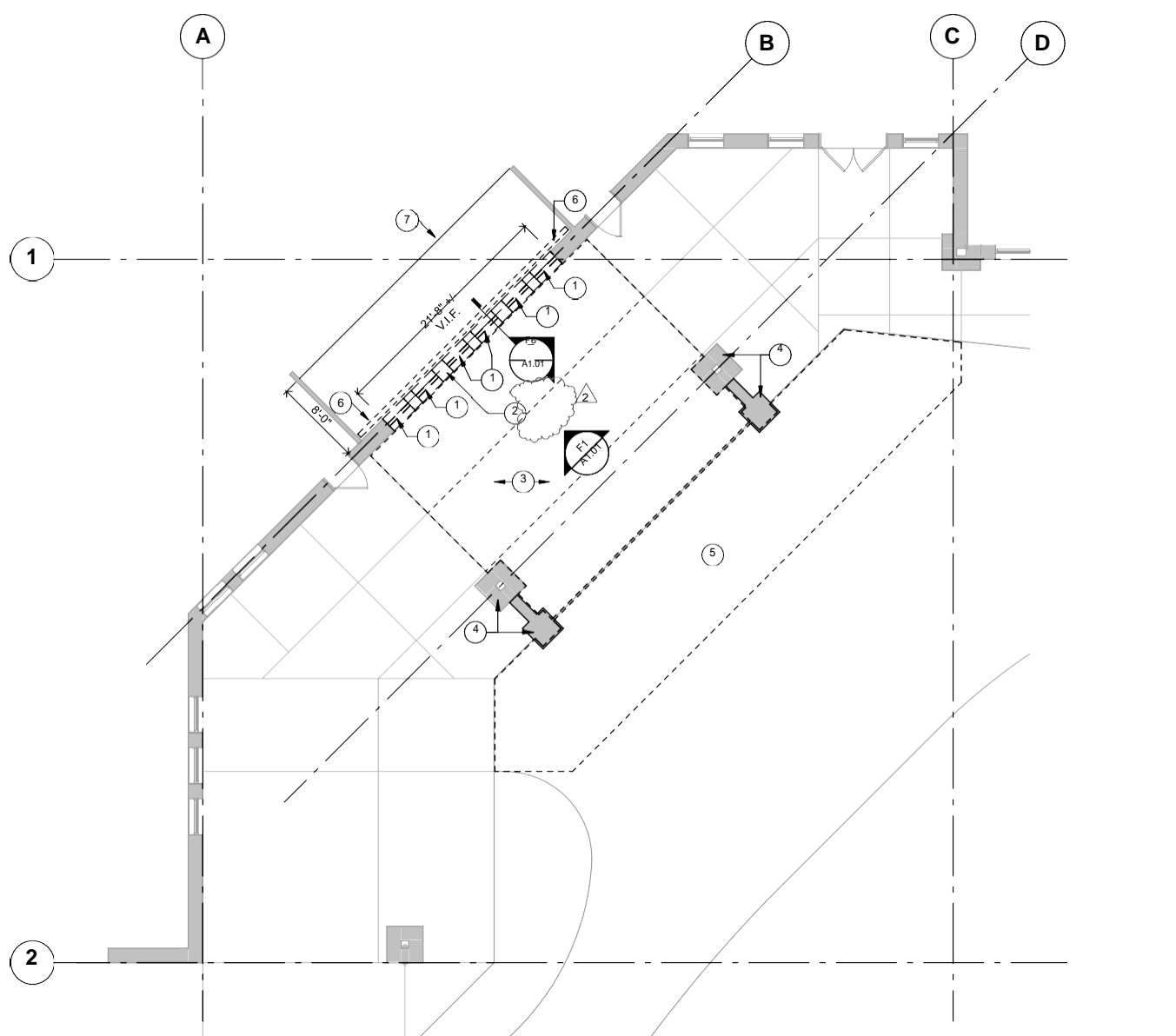
Comm: 213103
Date: 11/24/21
Drawn: BB/MG
Check: Checker

**DEMOLITION
PLANS,
SECTIONS, &
ELEVATIONS**

Scale: As Indicated

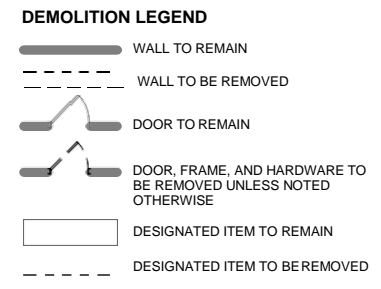
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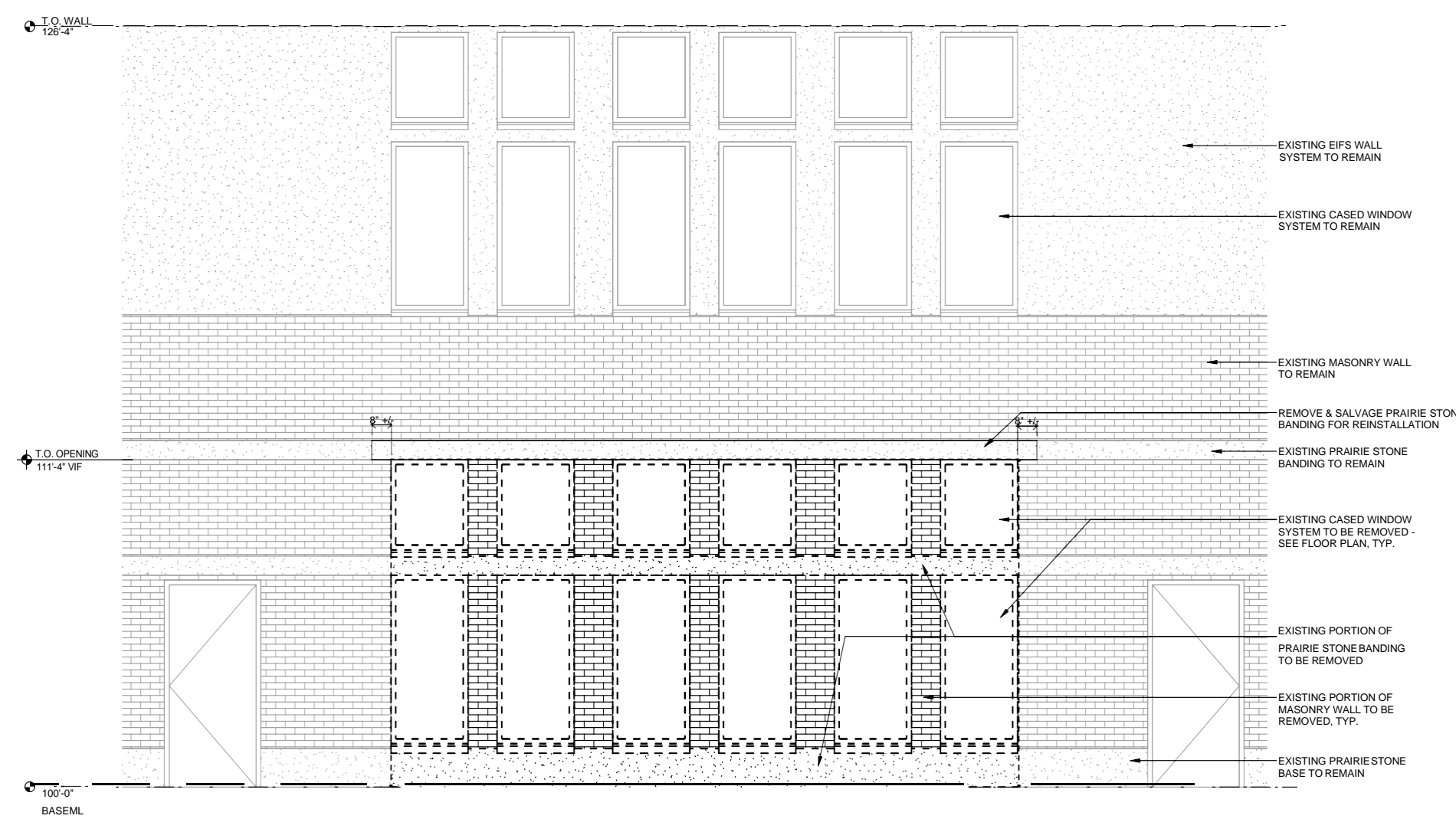


C1 MAIN LEVEL DEMOLITION FLOOR PLAN
1/8" = 1'-0"
0 6 12

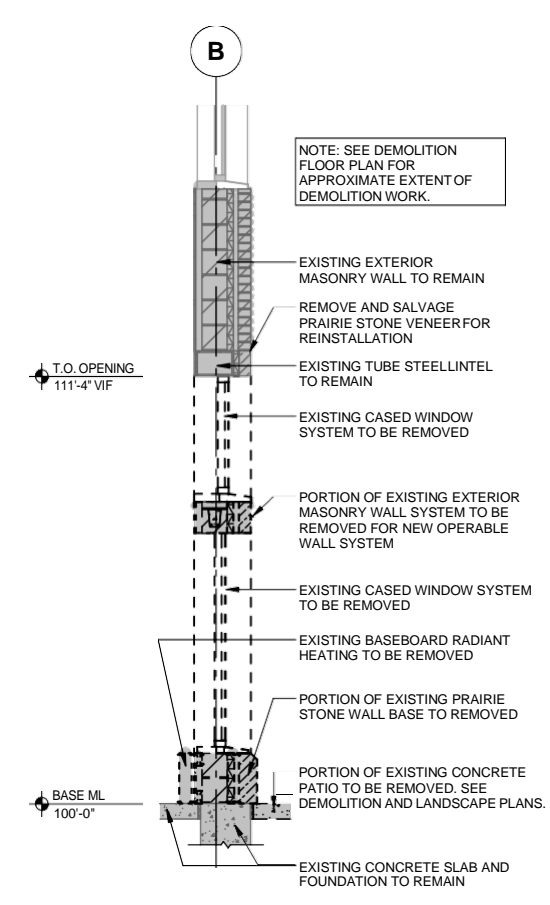
- DEMOLITION GENERAL NOTES**
- DEMOLITION NOTES AND PLANS ARE PROVIDED AS A GUIDE ONLY. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND EXAMINE DRAWINGS AND DETAILS TO DETERMINE EXTENT AND LIMITS OF DEMOLITION REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
 - CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL ASPECTS OF DEMOLITION. CONTRACTOR TO REVIEW ALL DRAWINGS FOR ADDITIONAL DETAILS AND CONSTRUCTION SEQUENCING NOTES. SEE ADDITIONAL DEMOLITION NOTES ON LANDSCAPE DRAWINGS.
 - CONTRACTOR TO COORDINATE DEMOLITION WITH NEW DETAILS AND DRAWINGS TO INSTALL NEW LINTELS OR STRUCTURAL COMPONENTS TO SUPPORT EXISTING STRUCTURE.
 - PROVIDE AND COORDINATE ALL DEMOLITION AND RECONSTRUCTION WITH NEW WORK PLAN DIMENSIONS AND INSTALLATION OF NEW MATERIALS AND FINISHES, AS REQUIRED, WHETHER INDICATED ON DRAWINGS OR NOT.
 - PROVIDE SMOOTH AND CLEAN SUBSTRATE TO ALL AREAS RECEIVING NEW FINISHES. COORDINATE WORK WITH PLANS AND THE ROOM FINISH SCHEDULE.
 - ALL RELATED WOOD BLOCKING SUPPORT STRUCTURE, HARDWARE CONNECTION DEVICES, ADHESIVES, AND/OR MASTIC SHALL BE REMOVED FROM SURFACES AT ITEMS NOTED FOR REMOVAL. PROVIDE SURFACES ACCEPTABLE FOR PATCHING AND/OR NEW WORK.
 - DEMOLITION NOTES WITHOUT ARROWS INDICATE THAT THE NOTE APPLIES TO THE ENTIRE ROOM.



- DEMOLITION PLAN KEY NOTES:**
- REMOVE CASED WINDOW SYSTEM IN ITS ENTIRETY INCLUDING BUT NOT LIMITED TO ALL ASSOCIATED ANCHORS, GLAZING, SEALS, HARDWARE, AND BLOCKING.
 - REMOVE CONCRETE MASONRY AND BRICK WALL ASSEMBLY IN ITS ENTIRETY TO EXTENTS INDICATED ON DRAWINGS. DO NOT OVERCUT CORNERS. PROVIDE SHORING AS REQUIRED FOR INSTALLATION OF NEW WORK. PROVIDE ROUGH OPENING FOR NEW OPERABLE WALL SYSTEM - SEE PLAN FOR R.O. DIMENSIONS.
 - SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE PATIO SLAB TO APPROXIMATE EXTENTS INDICATED ON PLAN. COORDINATE WITH LANDSCAPE PLANS.
 - EXISTING MASONRY FACED COLUMN AND PLANTER TO REMAIN. CONTRACTOR RESPONSIBLE FOR REPLACEMENT OF ANY DAMAGE DUE TO CONSTRUCTION ACTIVITIES.
 - SAWCUT AND REMOVE PORTION OF ASPHALT DRIVE TO EXTENTS INDICATED ON DRAWINGS. COORDINATE WITH FLOOR PLAN AND LANDSCAPE DRAWINGS.
 - REMOVE ELECTRIC BASEBOARD HEATING ENTIRE LENGTH OF WALL IN ITS ENTIRETY. REMOVE ASSOCIATED THERMOSTAT AND CONTROL WIRING BACK TO SOURCE.
 - PROVIDE FLOOR PROTECTION TO EXTENTS SHOWN. REPLACE OR CLEAN ANY DAMAGED CARPET AND TILE AS REQUIRED.



F1 DEMOLITION ELEVATION
3/8" = 1'-0"
0 2 4



F6 DEMOLITION WALL SECTION
3/8" = 1'-0"
0 2 4

A



To: Prospective Bidders

From: Wold Architects and Engineers

Date: December 13, 2021

Comm. No: 213103

Subject: Addendum No. 2 for Bidding Documents for the
Arboretum Golf Course Patio Upgrades
Buffalo Grove, Illinois

BIDS DUE: DECEMBER 17, 2021 AT 10:00 AM.

This addendum forms a part of the Contract Documents dated December 2, 2021. Acknowledge receipt of this Addendum on the space provided on the Bid Form. Failure to do so may result in disqualification of Bid.

This Addendum consists of two (2) typed sheets and attachments:
 Drawings: L-100

PRIOR APPROVALS

The following schedule amends designated specification sections to list additional acceptable manufacturers. Use of any product by any of these manufacturers will be permitted only if after review of shop drawings or detailed product data per Section 01 33 00, Architect determines that proposed materials or equipment are equivalent in performance, construction and appearance to product(s) specified.

Where anticipated product substitutions would alter the design or space requirements indicated on the Drawings, pay for cost of design and construction revisions including the cost of associated work by other contractors.

For complete requirements, see Specification Section 01 25 00 – Substitutions and Product Options.

<u>Section No.</u>	<u>Item</u>	<u>Type</u>	<u>Acceptable Manufacturer</u>
10 22 39	2.01	Folding Glass Wall	Solar Innovations (G3 model)



DRAWINGS

1. DRAWING L-100 CONSTRUCTION PLAN & DETAILS
 - A. Reissued this addendum

A large, stylized handwritten signature in blue ink, appearing to read 'D. J. H. K.', is written over the list items.

END OF ADDENDUM #2

Wold
WOLD ARCHITECTS AND ENGINEERS
270 North Lincoln Street, 10th Floor
Chicago, Illinois 60610
Tel: (312) 281-1100

Design Perspectives
Grounded in Creativity
1167 Hobson Mill Drive
Naperville, Illinois 60540
Telephone: (630) 606-0776
www.design-perspectives.net

PLANT SCHEDULE

SHRUBS	BOTANICAL / COMMON NAME	SIZE	QTY	REMARKS	
BUX CHI	Buxus x 'Chicago Land Green' TM / Glencoe Boxwood	3 gal	6		
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY	REMARKS
ACH MOO	Achillea x 'Moonshine' / Moonshine Yarrow	1 gal	24" o.c.	21	
CAL KAR	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal	18" o.c.	14	
PEN HAM	Pennisetum alopecuroides 'Hameln' / Hameln Dwarf Fountain Grass	1 gal	18" o.c.	31	

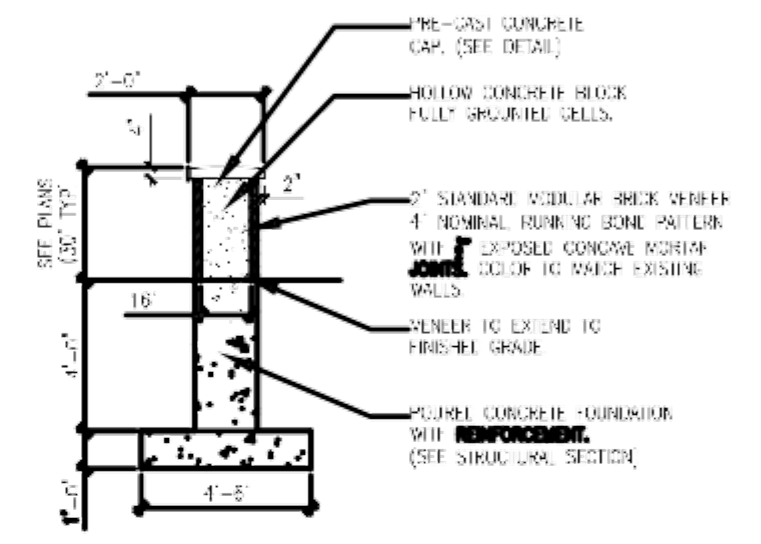
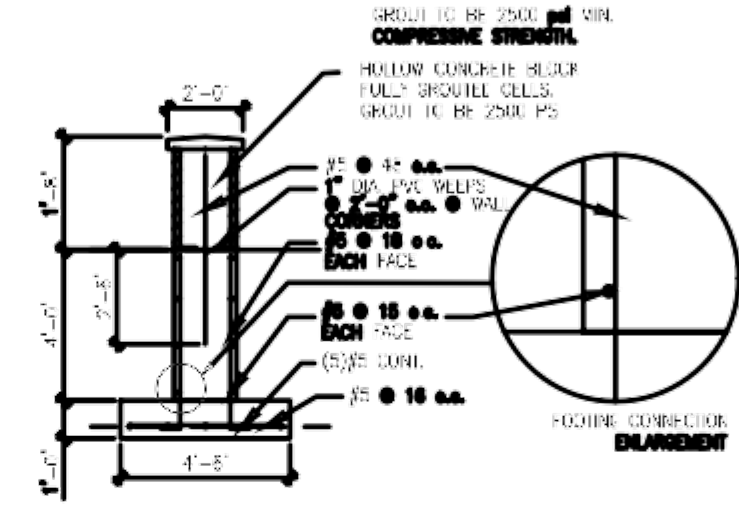
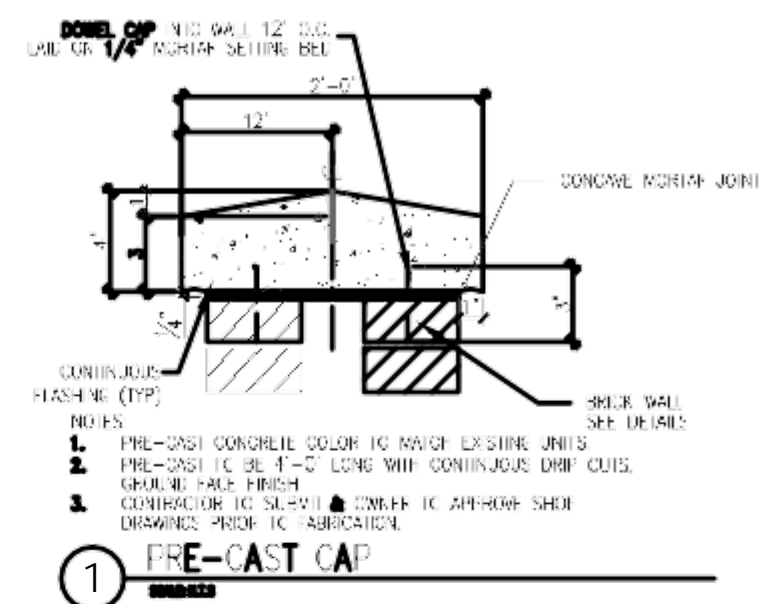
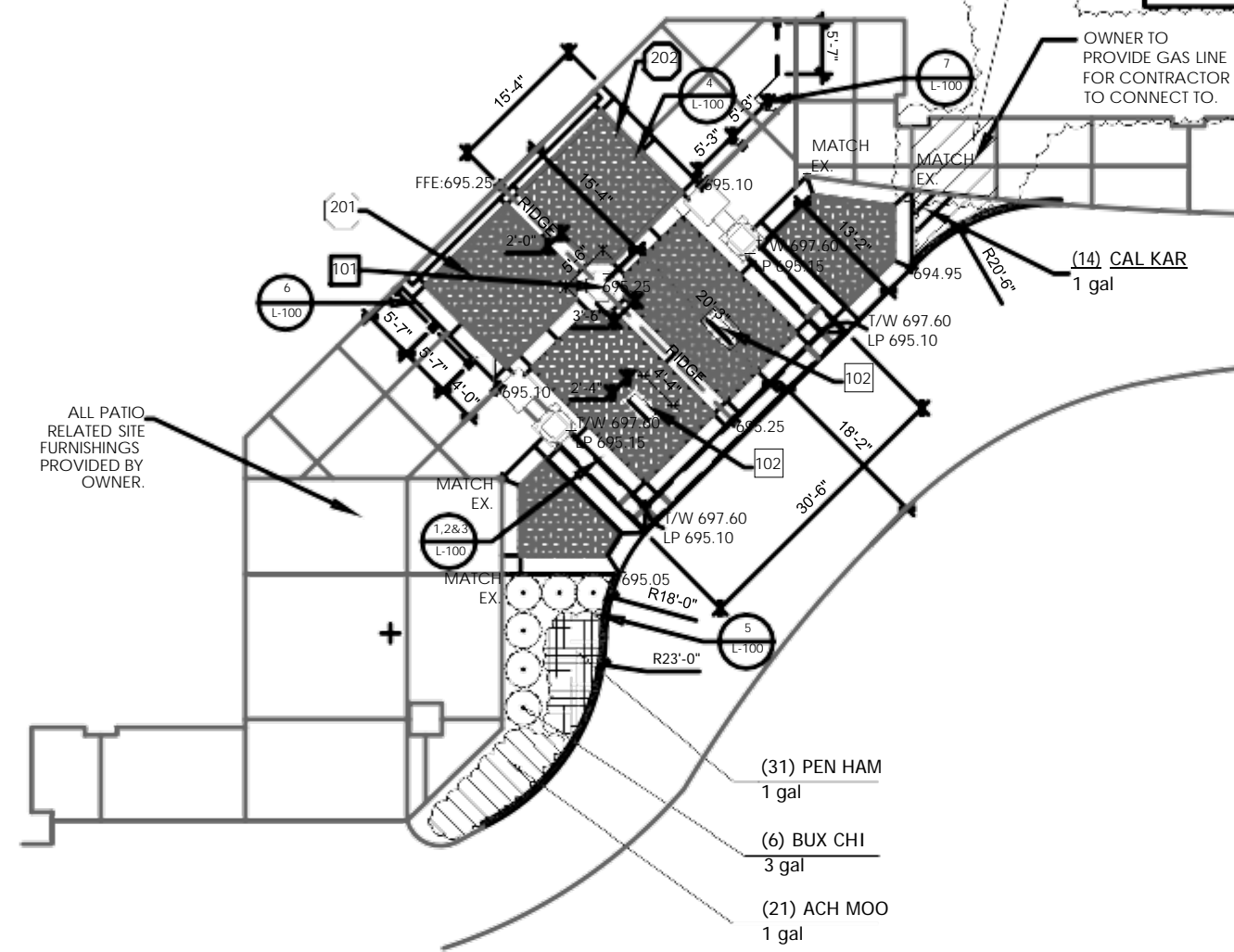
200 PAVING FINISH SCHEDULE

SYMBOL	DESCRIPTION	COLOR	FINISH	THICKNESS	REMARKS
201	CONCRETE UNIT PAVERS BRUSSELS BLOCK BY UNI-LOCK	RIVER		2-3/4"	SEE DETAIL #3 SHEET LS-500 PATTERN AD
202	CONCRETE BANDS	ALTERNATE 1: STAMPED COLOR CONCRETE	U16-HARVEST WHEAT ENGLISH RIVENSTONE SGR29-WHEAT (BUTTERFIELD COLOR) U11-AUTUMN OAK MEDIUM BROOM (BUTTERFIELD COLOR)	5" CONCRETE WITH 4" CA-6 STONE BASE 8"	SEE DETAIL #3 SHEET LS-500

100 SITE FURNISHING SCHEDULE

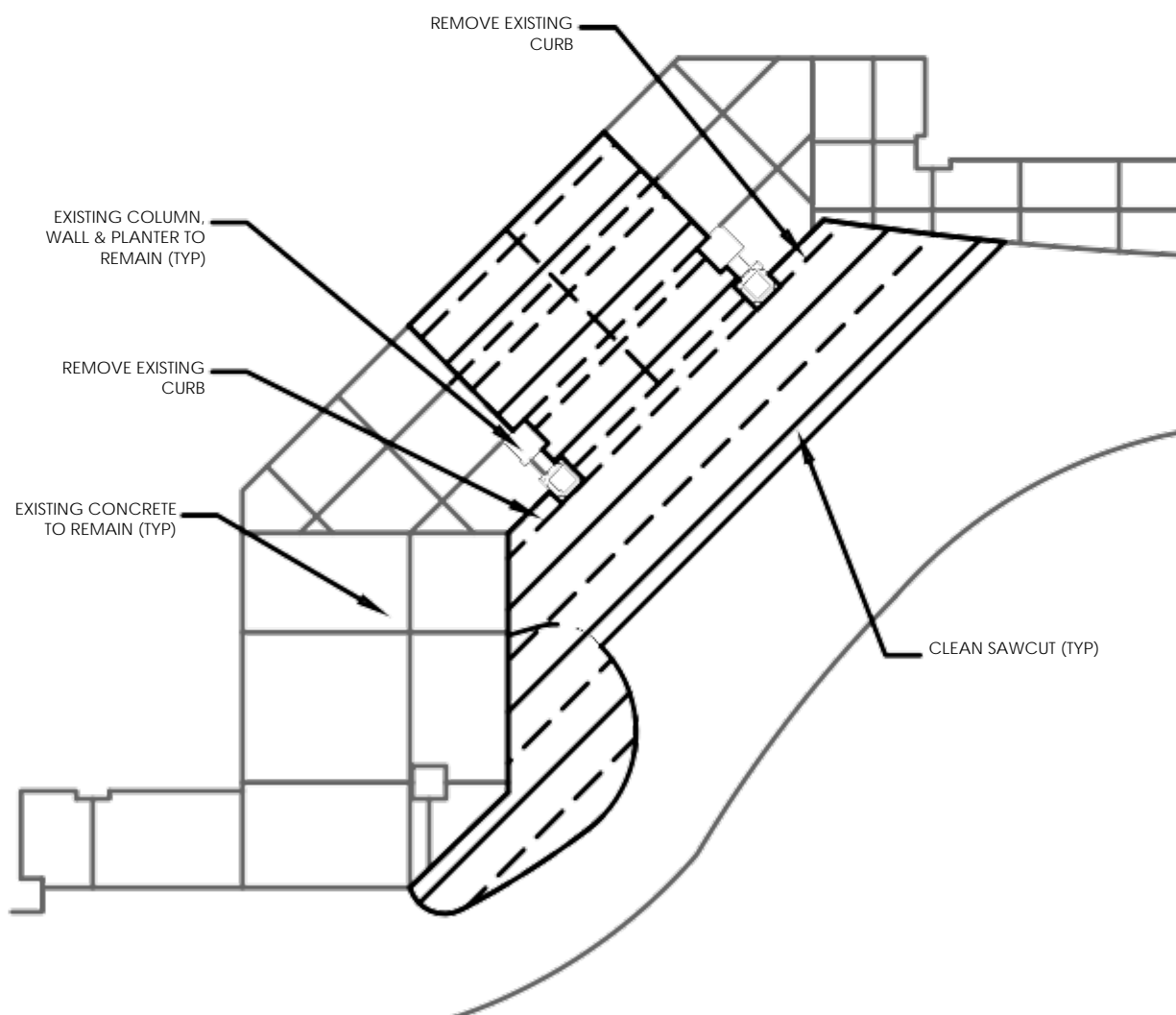
SYMBOL	DESCRIPTION
101	3'-6" OCTAGON FIRE TABLE WITH A HEIGHT OF 30" WITH BURN PAN, BURNER AND 1/2" FIRE GLASS INFILL. (COLOR TO BE DETERMINED) COMPANY: GRAYSEN WOODS OR EQUAL CONTACT: TONY KLONITZ 1-800-682-9722 X 1026 TOTAL SIZE OF FIRE TABLE IS 5'-6" WITH A 1" DEEP GRANITE COUNTERTOP WITH BRICK VENEER SIDES TO MATCH WALL TO BE PROVIDED BY THE CONTRACTOR. COMPANY: GRAYSEN WOODS OR EQUAL www.graysenwoods.com
102	1' X 3' FIRE TABLE WITH A HEIGHT OF 24" WITH BURN PAN, BURNER AND 1/2" FIRE GLASS INFILL. (COLOR TO BE DETERMINED) COMPANY: GRAYSEN WOODS OR EQUAL CONTACT: TONY KLONITZ 1-800-682-9722 X 1026 TOTAL SIZE OF FIRE TABLE IS 2'-4" X 4'-4" WITH A 8" DEEP GRANITE COUNTERTOP WITH BRICK VENEER SIDES TO MATCH WALL TO BE PROVIDED BY THE CONTRACTOR. COMPANY: GRAYSEN WOODS OR EQUAL www.graysenwoods.com

ALL PATIO RELATED SITE FURNISHINGS PROVIDED BY OWNER



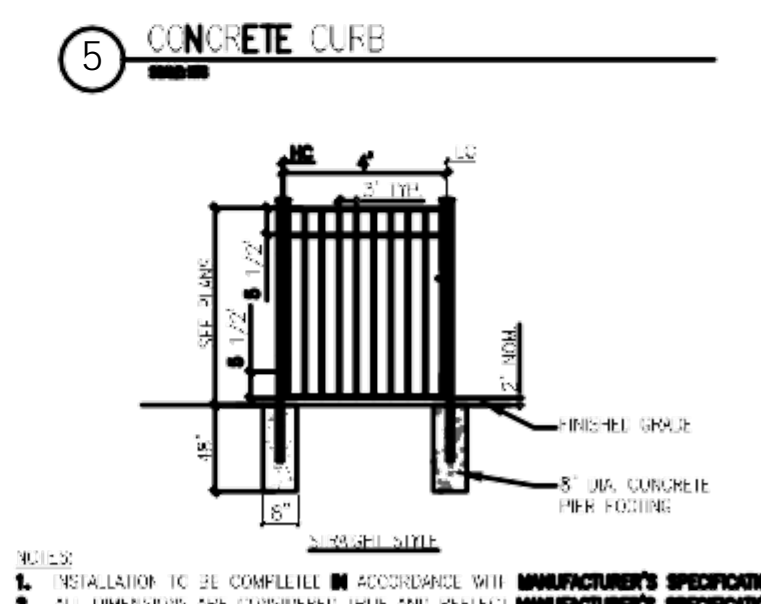
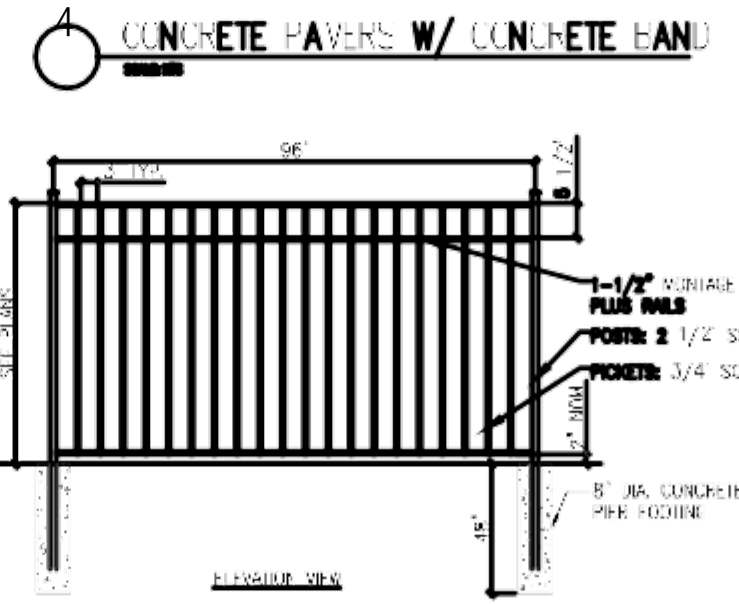
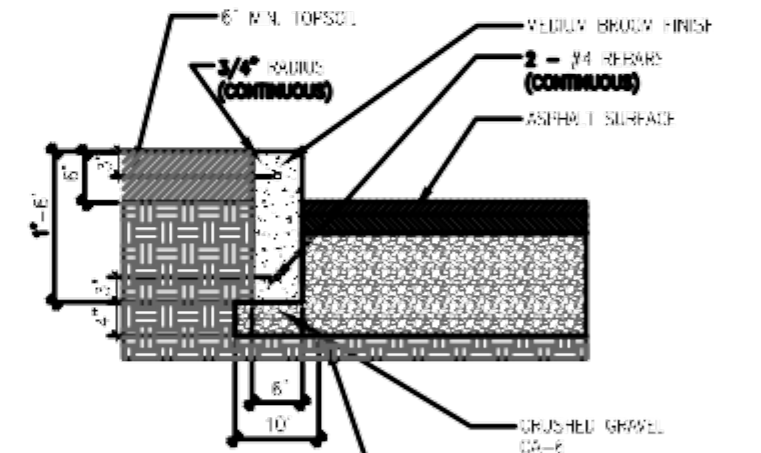
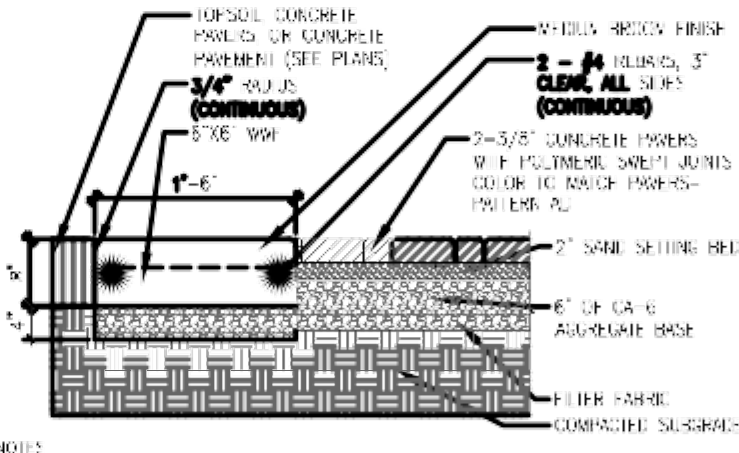
1 CONSTRUCTION PLAN
1" = 10'-0"

BASE INFORMATION OBTAINED FROM OTHERS.



DEMOLITION NOTES

- BEFORE ANY EXCAVATION ON THE SITE CALL J.U.L.I.E. AT 1-800-892-0123 TO LOCATE ANY EXISTING UTILITIES ON THE SITE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE LOCATION OF ALL BURIED UTILITIES IN THE AREAS OF WORK BEFORE STARTING OPERATIONS. THE CONTRACTOR SHALL BE LIABLE FOR COST OF REPAIRING OR REPLACING ANY BURIED CONDUITS, CABLES OR PIPING DAMAGED DURING THE INSTALLATION OF THIS WORK.
- PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS AND OTHER UTILITIES TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUTS AND OTHER HAZARDS CREATED BY SITE IMPROVEMENT OPERATIONS.
- CONTRACTOR SHALL RESTORE AREAS OF REMOVALS WITH SUITABLE TOPSOIL & SEED AND BLANKET ALL LAWN AREAS DAMAGED BY CONSTRUCTION.
- THE CONTRACTOR AT ALL TIMES SHALL KEEP THE PREMISES ON WHICH THE WORK IS BEING DONE, CLEAR OF RUBBISH AND DEBRIS. ALL PAVEMENT AND DEBRIS REMOVED FROM THE SITE SHALL BE DISPOSED OF LEGALLY.
- CONTRACTOR SHALL REMOVE ALL EXISTING MATERIAL WITHIN DEMOLITION LIMITS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REMOVE EVERYTHING NECESSARY TO COMPLETE CONSTRUCTION.
- LABELS ARE FOR CONVENIENCE ONLY AND THE CONTRACTOR SHALL VERIFY REMOVALS PRIOR TO COMMENCING WORK ON THIS PROJECT. ALL REMOVALS ARE TO BE DISPOSED OF OFF-SITE BY CONTRACTOR. CLEAN TOPSOIL CAN BE RE-USED AND/OR DISPOSED OF ON-SITE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL CONSTRUCTION BARRIERS AND FENCING TO PROTECT THE PROPOSED WORK, FOR PUBLIC SAFETY AND TO PROVIDE SECURITY. THE CONTRACTOR MAY ESTABLISH FENCING AROUND AREAS OF WORK IN PROGRESS AS THE PROJECT DICTATES.
- CONTRACTOR SHALL CONSULT OWNER FOR ANY ADDITIONAL INFORMATION PRIOR TO COMMENCING REMOVALS.



LEGEND
REMOVE EXISTING PAVING, CURBING AND ALL ASSOCIATED MATERIALS WITHIN HATCHED AREA. LIMITS AND ALL ITEMS TO BE FIELD VERIFIED PRIOR TO DEMOLITION.

2 DEMOLITION PLAN
1" = 10'-0"

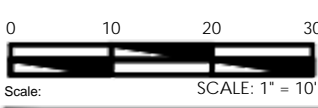
BASE INFORMATION OBTAINED FROM OTHERS.



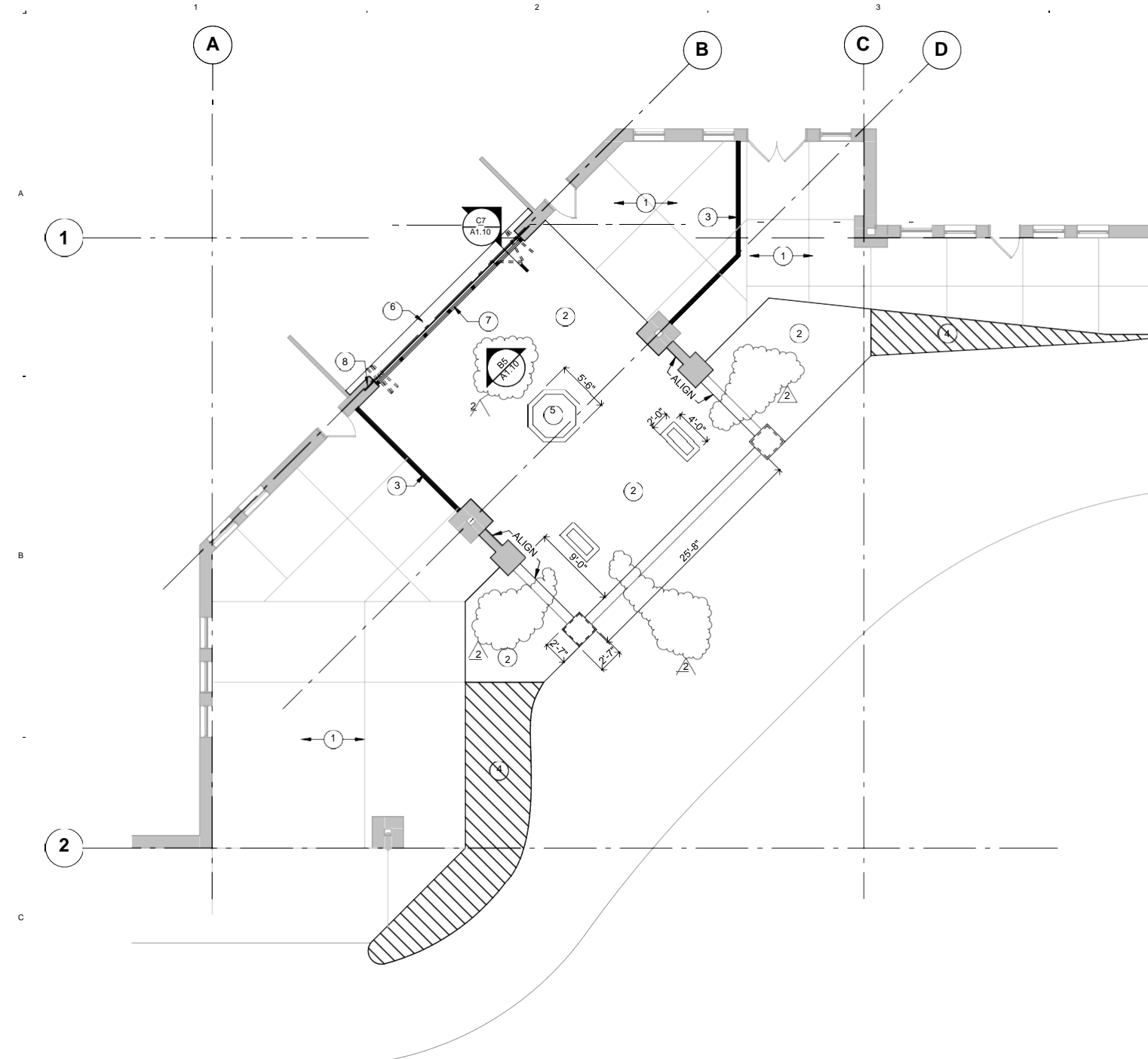
NO.	REVISION	DATE

Comm: 213103
Date: 11/19/21
Drawn: TS
Check: TS

CONSTRUCTION PLAN & DETAILS

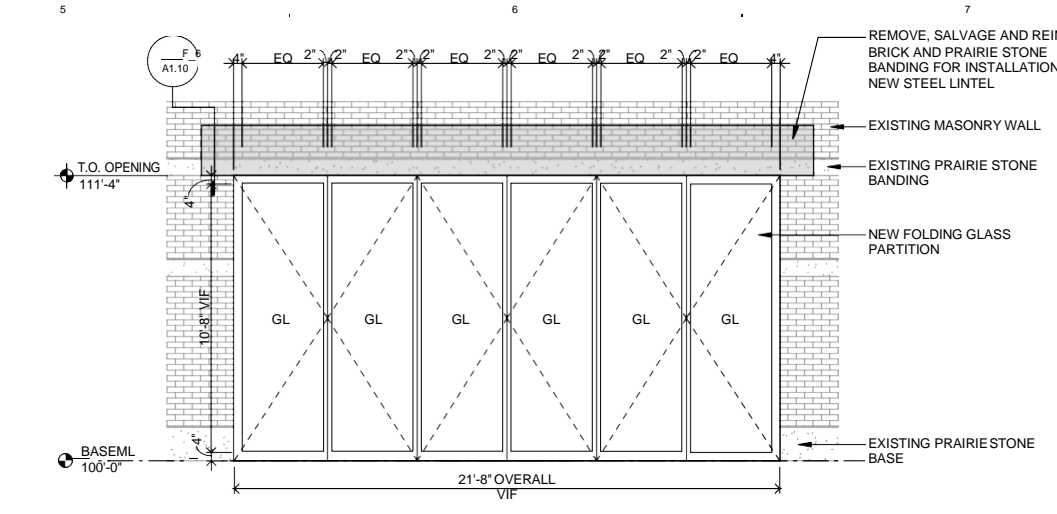


L-100

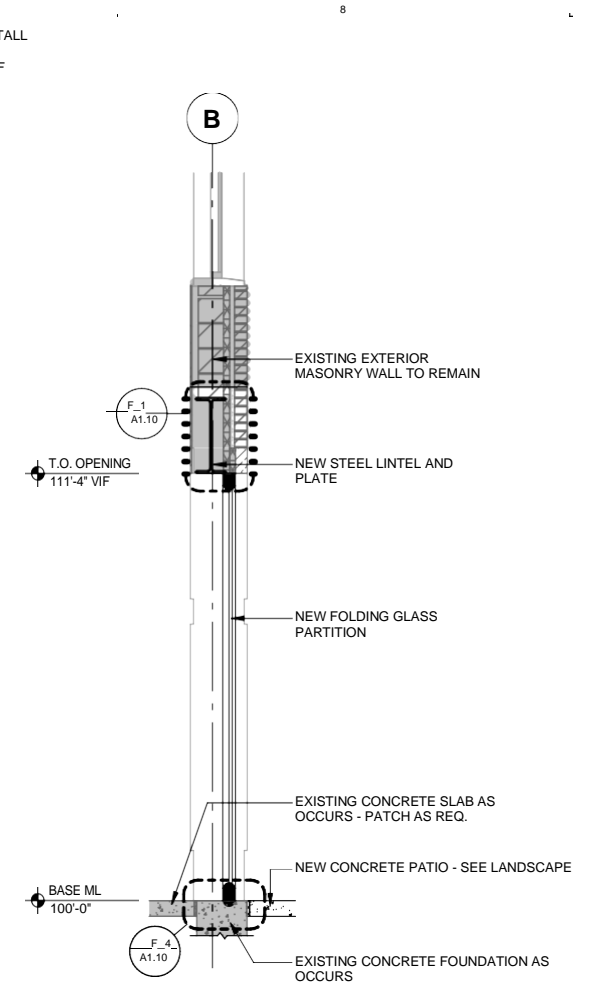


- PLAN GENERAL NOTES**
- ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
 - ALL GYP. WALLS ARE TO BE 5 INCHES THICK UNLESS OTHERWISE NOTED.
 - ALL CONCRETE BLOCK WALLS ARE TO BE 8 INCHES THICK UNLESS OTHERWISE NOTED.

- FLOOR PLAN KEY NOTES:**
- EXISTING CONCRETE PATIO TO REMAIN.
 - NEW CONCRETE PATIO TO ALIGN WITH EXISTING SLAB ON GRADE. COORDINATE WITH LANDSCAPE.
 - NEW 48" HIGH ALUMINUM FENCE. SEE LANDSCAPE FOR ADDITIONAL INFORMATION.
 - LANDSCAPE AREA - SEE LANDSCAPE FOR ADDITIONAL INFORMATION.
 - FIRE PIT AS SPECIFIED - SEE LANDSCAPE.
 - PROVIDE NEW FLOOR TILE TO MATCH EXISTING AT LOCATION OF REMOVED WALL / BASEBOARD HEATING. REMOVE EXISTING TILE AS NEEDED TO PROVIDE CLEAN LINE FULL LENGTH OF WALL.
 - NEW HORIZONTAL FOLDING WALL SYSTEM.
 - NEW W24X76 STEEL LINTEL. SEE SECTION AND DETAILS FOR ADDITIONAL INFORMATION.

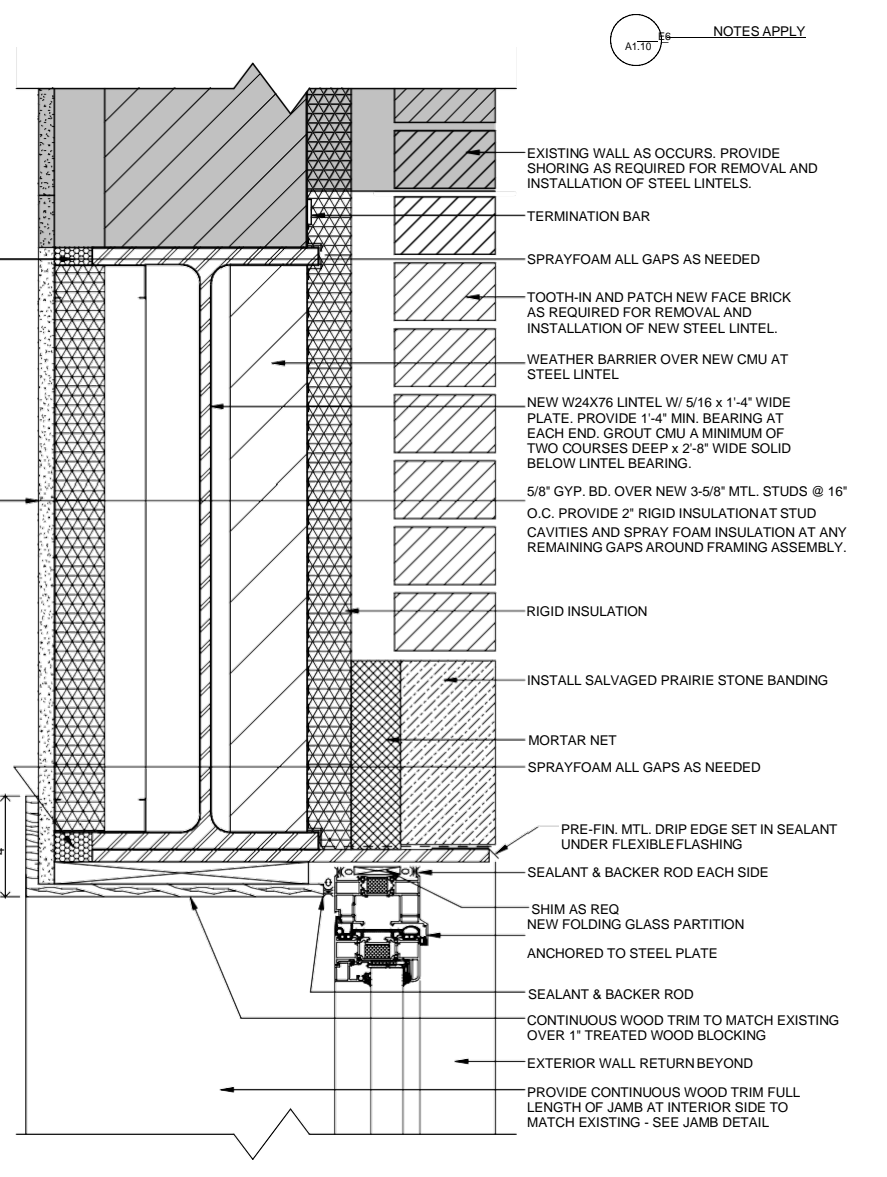


B5 EXTERIOR ELEVATION - NEW FOLDING WALL SYSTEM
1/4" = 1'-0"

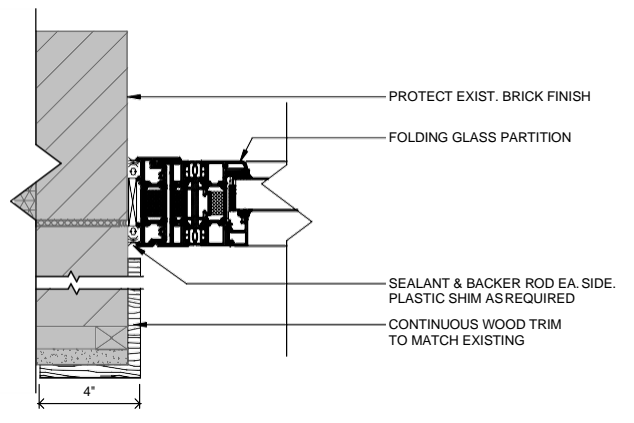


C7 SECTION AT FOLDING WALL
3/8" = 1'-0"

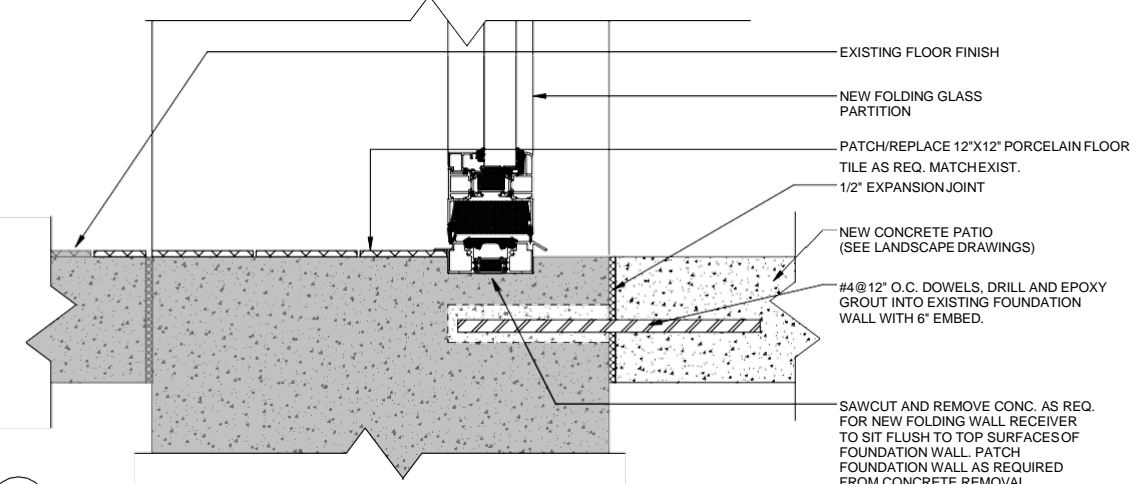
D1 MAIN LEVEL FLOOR PLAN
1/8" = 1'-0"



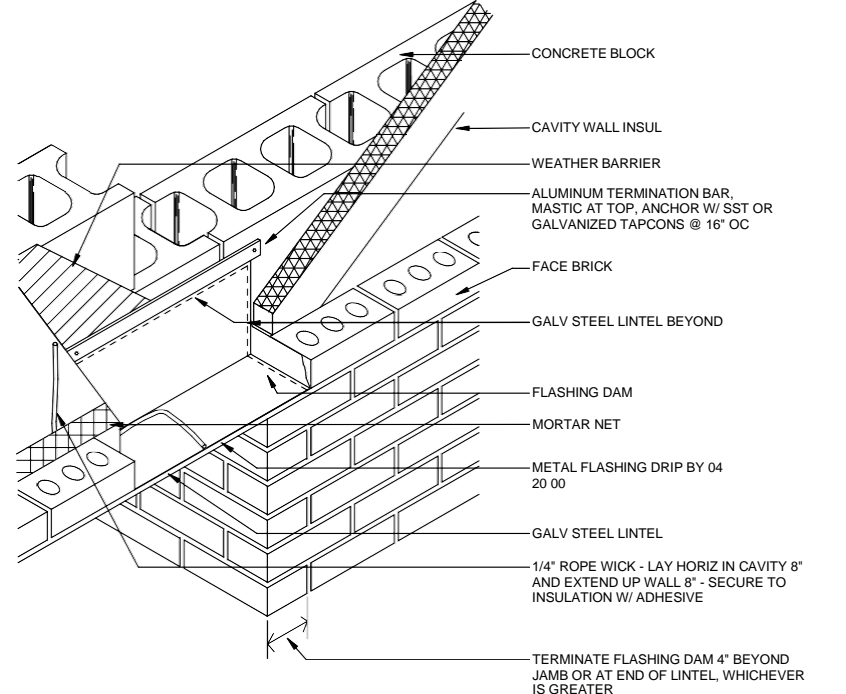
F1 HEAD AND LINTEL DETAIL
3" = 1'-0"



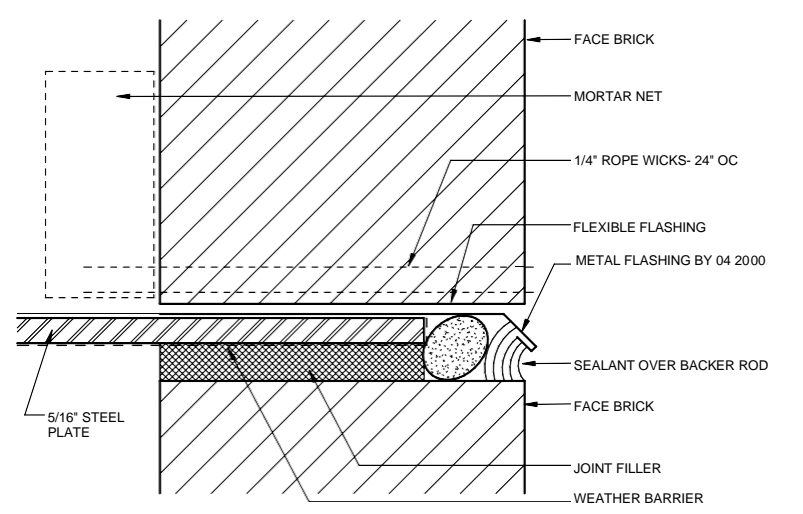
E4 JAMB DETAIL
3" = 1'-0"



F4 SILL DETAIL
3" = 1'-0"



E6 TYPICAL FLASHING TERMINATION
1 1/2" = 1'-0"



F6 JOINT DETAIL AT RELIEVING ANGLE
1:1

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed ARCHITECT under the laws of the State of Illinois

Matthew J. Bickel
License Number: 001.020683 Date: 11/30/22

Description	Revisions	
	Date	Num
ISSUE FOR BID	12-1-21	1
Addendum #1	12-7-21	2

Comm: 213103
Date: 11/24/21
Drawn: MG
Check: BB

**MAIN LEVEL FLOOR PLAN/
SECTIONS/
ELEVATIONS**

EXHIBIT B - SCHEDULE OF PRICES

Name of Bidder: Efraim Carlson & Son, Inc.

Address of Bidder: 14052 Petronella Drive, Suite 105

City Libertyville State IL Zip 60048 Telephone 847-573-1888

Email Address: mhillstrom@efraimcarlson.com

The Bidder declares, represents and warrants that it has read and agrees to abide by the terms, conditions and obligations set forth in the Invitation to Bid. In particular, the Bidder declares, represents and warrants that it has informed itself of all the conditions under which the Work is to be performed including, but not limited to, and where applicable, the structural integrity of the building, the conditions of the ground, building codes. Bidder waives any right to additional compensation for failure to make itself aware of the afore-mentioned conditions.

Bidder further declares that if their Bid Proposal is accepted, that Bidder will enter into the Contract in the same form as set forth in the Bid and Contract Documents. However, Bidder may request changes to the Contract by submitting with this Schedule of Price a list of requested changes to the Contract.

If this bid is accepted, and the undersigned fails to (i) contract as aforesaid, (ii) provide the Performance Bond required by the Contract, and (iii) provide all insurance required under the Contract within fifteen (15) calendar days after the date of the award of the Contract then the Village, at its option, may determine that the bidder has abandoned this Bid, and thereupon this Bid and the acceptance thereof shall be null and void, and such security accompanying this Bid shall be forfeited and shall be the property of the Village of Buffalo Grove not as penalty, but as liquidated damages.

BID SECURITY

Accompanying this Bid is a Bid Bond in the amount of Five Percent Dollars (\$5%)

Notes:

- (a) Insert the words "Bank Draft", "Cashier's Check", "Certified Check" or "Bid Bond", as the case may be.
(b) Amount must be equal to at least five percent (5%) of the Total Base Bid.

EXHIBIT B - SCHEDULE OF PRICES (cont.)

SCHEDULE OF VALUES

Scope	Quantity	UoM*	Unit Cost	Base Price
Demolition (for work not performed by Owner) Included with Masonry & Earthwork				
Masonry				\$49,345.00
Steel				4,850.00
Folding Glass Partition				39,600.00
Framing and Drywall				3,500.00
Interior Finishes				5,800.00
Earthwork				20,300.00
Exterior Improvements				52,850.00
Miscellaneous				20,555.00
General Conditions				11,000.00
Overhead and Profit				20,000.00
Insurance		Lump Sum		1,900.00
Bonds		Lump Sum		2,500.00
A. BASE BID TOTAL				\$232,200.00

* Unit of Measure

A. Base Bid Total Described in the Schedule of Values \$ 232,200.00

Written Two hundred thirty-two thousand two hundred & 00/100

Alternate 1. Stamped Concrete instead of Pavers (Deduct) \$ 4,000.00

Written Four thousand and 00/100

EXHIBIT B - SCHEDULE OF PRICES (cont.)

SUBCONTRACTOR USTING

Bidder, to employ the following listed subcontractors for the following enumerated classes of work and is not to alter or add to such list without the written consent of the Village.

	<u>SUBCONTRACTOR</u>	<u>CLASS OF WORK</u>
1.	<u>Honch Concrete</u>	<u>Earthwork and Concrete</u>
2.	<u>Grace Masonry</u>	<u>Masonry</u>
3.	<u>Valda</u>	<u>Folding Partition</u>
4.	<u>Efraim Carlson & Son, Inc.</u>	<u>Finishes</u>


ACKNOWLEDGEMENT OF ADDENDA

Acknowledgement of receipt of Addenda(s) 1 and 2 (List each addendum number)

Attach each signed addendum, if any, to the bid packet as part of your submittal.

CONTRACTOR SIGNATURE and CONTACT INFORMATION

12/17/2021 847-573-1888
Date Phone
Efraim Carlson & Son, Inc. mhillstrom@efraimcarlson.com
Legal Entity E-mail



(Sign here)

David M Hillstrom
(Print Name)