**AGENDA**
**REGULAR SESSION**
**HIGHLAND AREA SENIOR CENTER**
**187 WOODCREST DRIVE**
**MONDAY, APRIL 3, 2023**
**7:00 PM**

NOTE: This is an in person meeting. However, anyone wishing to monitor the meeting via phone may do so by following the instructions on page 3 of this agenda.

**CALL TO ORDER / ROLL CALL / PLEDGE OF ALLEGIANCE:**

**MINUTES:**

**MOTION** – Approve Minutes of March 20, 2023 Regular Session (attached)

**MAYORAL RECOGNITIONS:**

- Mayor Hemann will recognize August Rottmann, 2023 IHSA Girls 170lb Wrestling State Champion.

- Mayor Hemann will recognize Noah Allen, David and Matt Zahn, Meghan Hanna, Kody Welch, Jamie Wagner, Ty Welchlen, Stacie Black and Theresa Tucker for an Outstanding Performance in a Life-Saving Situation that Occurred at the Korte Recreation Center on March 18, 2023.

**PUBLIC FORUM:**

A. Citizens' Requests and Comments:
   1. HSHS St. Joseph's Hospital – Party on the Patio, Plaza Park Request – Morgan Woltering, Representative (attached)
   2. Highland Fire Department – Highland Firefighter Picnic, Plaza Park Request – Chris Straub, Representative (attached)

**Anyone wishing to address the Council on any subject may do so at this time. Please come forward to the microphone**.

B. Requests of Council:

C. Staff Reports:

**NEW BUSINESS:**

A. **MOTION** – Making Tentative Budget for FY 2023-2024 Available for Public Review at the Public Safety Building and Setting the Public Hearing Date for 7:00 PM on Monday, April 17, 2023 (attached)

B. **MOTION** – Bill #23-25/RESOLUTION Authorizing Allocation of Hotel/Motel Tax Funding for Art in the Park– Highland Arts Council (attached)

C. **MOTION** – Approve Notice of Municipal Letting for Motor Fuel Tax Maintenance Materials (MFT Section 24-00000-00-GM) (attached)

**Continued**

D. **MOTION** – Approve Notice of Municipal Letting, Bid #G-02-23, for Renovations and Alterations to the Existing Highland City Hall Building (attached)

E. **MOTION** – Bill #23-26/RESOLUTION Approving and Authorizing the Execution of a Contract for Non-Emergency Transport Services by City EMS (attached)

F. **Discussion** – Silver Lake Watershed Report (attached)

**REPORTS:**

A. **MOTION** – Accepting Expenditures Report #1239 for March 18, 2023 through March 31, 2023 (attached)

**EXECUTIVE SESSION:**

The City Council will conduct an Executive Session pursuant to the Illinois Open Meetings Act, citing the following exemption(s) allowing such meeting: 5 ILCS 120/2(c)(11) to discuss litigation.

**ADJOURNMENT:**

**Continued**

| | |
|---|---|
|  | Anyone requiring accommodations, provided for in the Americans with Disabilities Act (ADA), to attend this public meeting, please contact Breann Vazquez, ADA Coordinator, by 9:00 AM on Monday, April 3, 2023. |

BE ADVISED this is a public meeting conducted in accordance with Illinois state law and may be recorded for audio and video content. City reserves the right to broadcast or re-broadcast the content of this meeting at City's sole discretion. City is not responsible for the content, video quality, or audio quality of any City meeting broadcast or re-broadcast.

**Directions for Public Monitoring of Highland City Council Meetings:**

In an effort to protect as many individuals as possible, including the leaders of our communities statewide, Governor J.B. Pritzker has issued a number of directives, one of which was to suspend the provisions of the Illinois Open Meetings Act (5 ILCS 120), requiring or relating to in-person attendance by members of a public body. Specifically, (1) the requirement in 5 ILCS 120/2.01 that "members of a public body must be physically present;" and (2) the conditions in 5 ILCS 120/7 limiting when remote participation is permitted, are suspended. Public bodies are encouraged to postpone consideration of public business where possible. When a meeting is necessary, public bodies are encouraged to provide video, audio, and/or telephonic access to their meetings to ensure members of the public may monitor the meeting, and to update their websites and social media feeds to keep the public fully apprised of any modifications to their meeting schedules or the format of their meetings due to COVID-19, as well as their activities relating to COVID-19.

In following this directive, the City of Highland is providing the following phone number for use by citizens to call in just before the start of this meeting:

**618-882-5625**

Once connected, you will be prompted to enter a conference ID number.

**Conference ID #: 867900**

This will allow a member of the public to hear the city council meeting.

**Note:** This is for audio monitoring of the meeting, only. Participants will not be able make comments.

Anyone wishing to address the city council on any subject during the Public Forum portion of the meeting may submit their questions/comments in advance via email to lhediger@highlandil.gov or, by using the citizens' portal on the city's website found here: https://www.highlandil.gov/citizen_request_center_app/index.php.

Any comments received prior to 3:00 PM on the day of the meeting, will be read into the record.

# CITY OF HIGHLAND
# SPECIAL EVENT APPLICATION

**Authorized under City Ordinance Sec. 64-3-1**

**PURPOSE:** The City of Highland supports various community activities and festivals throughout the year. Establishing public safety and coordinating needs between the events and the city are the overall goals of this process. It is the responsibility of the specific event Sponsors to obtain, complete, and follow through the application process for city approval.

**SPECIAL EVENT:** A "Special Event" is defined as: (1) any event, race, gathering, demonstration, or service; (2) that occurs partially or completely within the jurisdiction of the City of Highland; (3) is expected to draw crowds in excess of one hundred fifty (150) attendees; and (4) is expected to or could disrupt normal daily functions within the City of Highland including but not limited to traffic congestion and excess noise; or could create a public health/safety concern without proper precautions or prior planning. Specific examples would include (but are not limited to): The Kirchenfest, Schweizerfest, 5K runs, parades, Art in the Park, Fourth of July Festivities, Madison County Fair, etc. The City Manager will make the final determination as to whether an event qualifies. This will be based upon the totality of the circumstances presented.

**PROCEDURE:**

1. All Requests will be directed to Highland City Hall, to the attention of the Deputy City Clerk.
2. Applications will be available at Highland City Hall, Monday-Friday, 8:00 am to 5:00 pm or online through the City's web site.
3. Applications will be completed by the Event Sponsor and submitted at least 60 days prior to the event. The application must be signed by the Event Sponsor Responsible Party. Incomplete applications will not be accepted. If an application is accepted and later determined to be incomplete, the applicant will be notified by the Deputy Clerk. Failure to provide information will result in denial of application.
4. The Deputy City Clerk will forward the application to all city departments that have responsibilities relating to the event. If necessary, a committee meeting involving the event Sponsor and city stakeholders may take place to clarify questions, determine specific needs, and address concerns.
5. The event Sponsor is required to obtain final approval for the special event from the City Manager. The City Council may announce the special event to the public at a scheduled Council meeting.

# CITY OF HIGHLAND-SPECIAL EVENT APPLICATION

Name of Event: Party on the Patio

Type/Purpose of Event: ☐ Festival ☐ Race ☑ Other Fundraiser ☐ Service ☐ Parade ☐ Demonstration ☐ Other (please specify): _____

Location of Event: Schlafly and Plaza Park

Sponsoring Organization/Individual: HSHS St. Joseph's Hospital- Highland

Event Responsible Party: Brandon Pitts
Address: _____
Phone(s): 612-716-5380
Email: brandon.pitts@hshs.org

Secondary Contact: Morgan Woltering
Address: _____
Phone(s): 618-616-2504
Email: morgan.woltering@hshs.org

Date(s) of Set-up: 6.3.2023

Event Date(s) / Times:
6.3.2023/ 6pm to 9pm

Date(s) of Tear-down: 6.3.23

Expected Attendance: 150

Alcohol License Required: ☐ Yes ☑ No
If yes, application received: ☐ Yes ☐ No

Sound Amplification System utilized: ☐ Yes ☑ No
If yes, hours of operation: _____

Funding request of the Council: ☐ Yes ☑ No
Amount requested and purpose: _____

**City Services Requested – Please attach additional documents (maps, detailed information), where needed. Write "Not applicable" if no services requested.**

(Directors must initial behind requests)

**Street Dept:** Signage, Barricades, Street Closures (Specify): **Public Works Director:**____

**Electric Dept**: Electrical Service, Lighting (Specify): **Electric Dept. Director:** _____

Band

**Public Safety**: Security, First Aid, Traffic Control (Specify): **Public Safety Director**: _____

**HCS Services:** Wi-Fi or other technological needs (Specify): **HCS Director:** _____

**Other City Services:** Restrooms, City Officials (Sign approval), Refuse Dumpsters (Specify):
**Department:** _____

Restrooms

## Application Checklist (Attachments):

**Deputy Clerk Initial Upon receipt or waiver:**

☐ Certificate of Insurance: (attached) _____

- Must be General liability
- $1 Million per occurrence/$2 million aggregate
- City named as "additional insured" If Event is on city property.

☐ Site Plan Rendering _____

☐ Evacuation Plan ____

☐ Fire Plan ____

☐ Parking Plan ____

☐ Schedule City Council Meeting for announcement ____

- **Date:**_____

☐ Application Submittal (60+ days) ____

Brandon Pitts / Morgan Wotherspoon 3-8-2023

**Event Sponsor Responsible Party** **Date**

**City Manager** **Date**

# CITY OF HIGHLAND-SPECIAL EVENT APPLICATION

Name of Event: Highland Firefighter Picnic

Type/Purpose of Event: ☐ Festival ☐ Race ☐ Other Fundraiser ☐ Service ☐ Parade
☐ Demonstration ☑ Other (please specify): Fire Department fundraiser

Location of Event: Highland Square in conjunction with the Rusty Rodz Car Club

Sponsoring Organization/Individual: Highland Fire Department

Event Responsible Party: Highland Fire Department
Address: 1122 Broadway
Phone(s): 618-484-5561
Email: cstraub@highlandil.gov

Secondary Contact: Chris Straub
Address:
Phone(s): 618-484-5561
Email: cstraub@highlandil.gov

Date(s) of Set-up: 9/30/2023

Event Date(s) / Times:
9/30/2023
3:00 p.m. - 11:00 p.m.

Date(s) of Tear-down: 10/1/2023

Expected Attendance: 500

Alcohol License Required: ☐ Yes ☑ No
If yes, application received: ☐ Yes ☐ No

Sound Amplification System utilized: ☑ Yes ☐ No
If yes, hours of operation: 3:00-11:00 p.m.

Funding request of the Council: ☑ Yes ☐ No
Amount requested and purpose: $500 for advertisement of the event

**City Services Requested – Please attach additional documents (maps, detailed information), where needed. Write "Not applicable" if no services requested.**

(Directors must initial behind requests)

**Street Dept:** Signage, Barricades, Street Closures (Specify): **Public Works Director:**_____
Road closed signs for Laurel, Main & Washington Strets.

**Electric Dept**: Electrical Service, Lighting (Specify): **Electric Dept. Director:** _____
Electric pedistals installed for food trucks and beer wagon on Mian Street side of square

**Public Safety**: Security, First Aid, Traffic Control (Specify): **Public Safety Director**: _____
none

**HCS Services:** Wi-Fi or other technological needs (Specify): **HCS Director:** _____
none

**Other City Services:** Restrooms, City Officials (Sign approval), Refuse Dumpsters (Specify):
**Department:** _____
One dumpster will be rented and placed on Main & Washington Street corner

## Application Checklist (Attachments):

**Deputy Clerk Initial Upon receipt or waiver:**

☐ Certificate of Insurance: (attached) _____

- Must be General liability
- $1 Million per occurrence/$2 million aggregate
- City named as "additional insured" If Event is on city property.

☐ Site Plan Rendering _____

☐ Evacuation Plan ____

☐ Fire Plan ____

☐ Parking Plan ____

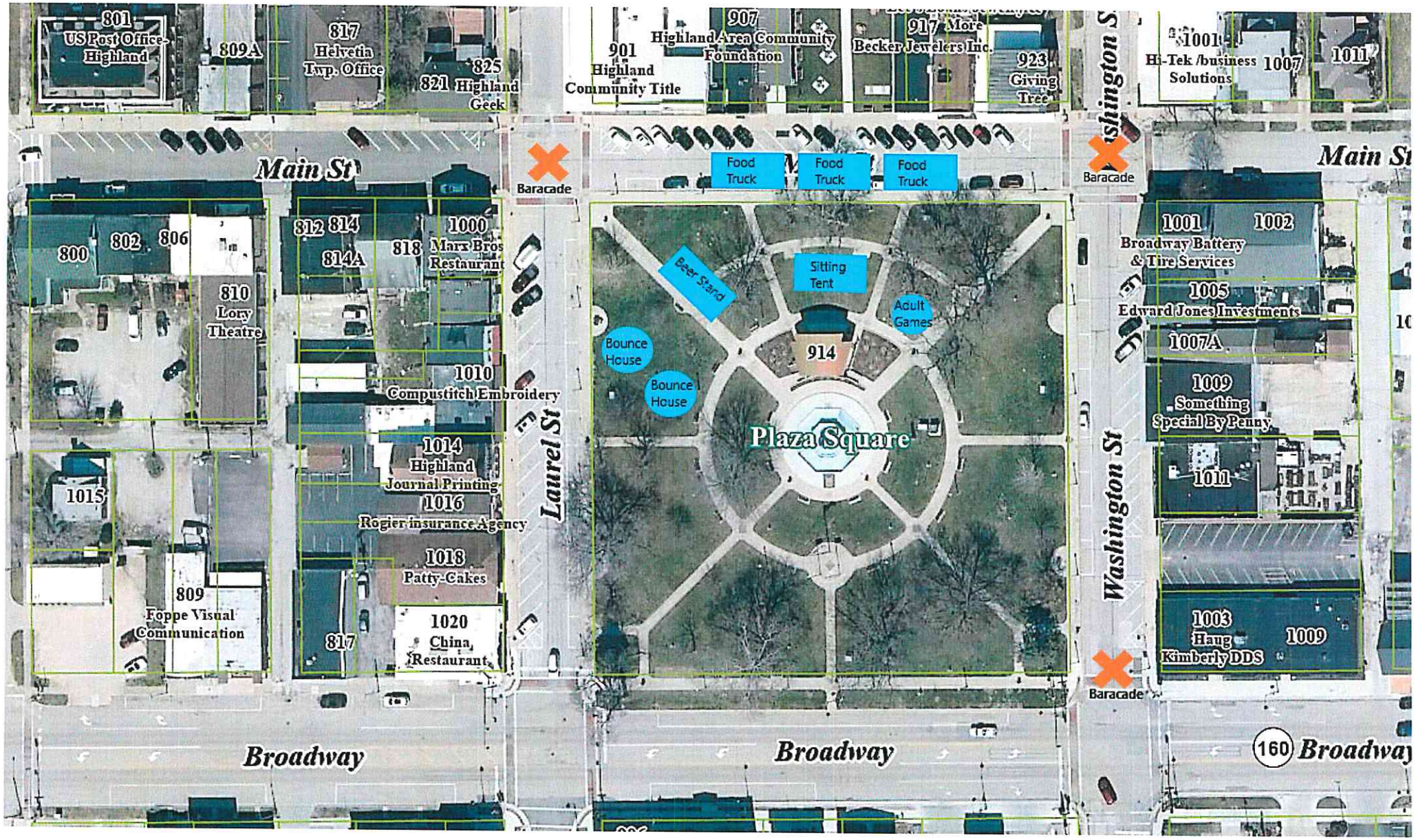
☐ Schedule City Council Meeting for announcement ____

- **Date:_____**

☐ Application Submittal (60+ days) ____

Event Sponsor Responsible Party — Date: 3/25/2023

City Manager — Date


801
US Post Office-Highland
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825
Highland Geek
901
Highland Community Title
907
Highland Area Community Foundation
917 More
Becker Jewelers Inc.
923
Giving Tree
1001
Hi-Tek /business Solutions
1007
1011
Main St
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Lory Theatre
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1000
Marx Bros Restaurant
Beer Stand
Sitting Tent
Acult Games
Bounce House
Bounce House
914
Plaza Square
1001
Broadway Battery & Tire Services
1002
1005
Edward Jones Investments
1007A
1009
Something Special By Penny
1011
1010
Compustitch Embroidery
1014
Highland Journal Printing
1016
Rogier insurance Agency
1015
1018
Patty-Cakes
809
Foppe Visual Communication
817
1020
China Restaurant
Laurel St
Washington St
1003
Haug Kimberly DDS
1009
Baracade
Broadway
Broadway
160
Broadway

# City of Highland

Finance Department

MEMO FROM: Reanna Ohren, Director of Finance
MEMO TO: Chris Conrad
SUBJECT: Publication
DATE: March 21, 2023

The below public notice is set to be published in the Pioneer on Wednesday April 5, 2023.

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## PUBLIC NOTICE

There will be a public hearing on the annual City of Highland budget for the fiscal year beginning May 1, 2023 and ending April 30, 2024. This public hearing will be held at the regular City Council meeting on Monday, April 17, 2023 at 7:00 PM at the Highland Senior Center, 187 Woodcrest Drive, Highland, Illinois. This meeting of the city council will be held in person and may also be monitored via telephone conference. Directions for public monitoring of this meeting will be provided with the agenda for the meeting, which will be posted in accordance with the Illinois Open Meetings Act.

Beginning on April 5th, the tentative budget for the fiscal year beginning May 1, 2023 and ending April 30, 2024 will be available for public inspection online at www.highlandil.gov. The tentative budget will also be available for public inspection at the Highland Public Safety Building, 12990 Troxler Ave, Highland, Illinois, Monday through Friday from 8:00 AM to 4:30 PM.

**RESOLUTION NO. _____**

**A RESOLUTION AUTHORIZING**
**ALLOCATION OF HOTEL / MOTEL TAX FUNDING**
**Highland Arts Council – Art in the Park**

**WHEREAS**, the City of Highland, Madison County, Illinois (hereinafter "City"), is a non-home rule municipality duly established, existing and operating in accordance with the provisions of the Illinois Municipal Code (Section 5/1-1-1 et seq. of Chapter 65 of the Illinois Compiled Statutes); and

**WHEREAS**, City has determined applicants for hotel / motel tax funding shall fill out an application to determine whether the funding request may be granted according to 65 ILCS 5/8-3-14, which reads, in pertinent part:

The amounts collected by any municipality pursuant to this Section shall be expended by the municipality solely to promote tourism and conventions within that municipality or otherwise to attract nonresident overnight visitors to the municipality

*See* 65 ILCS 5/8-3-14; and

**WHEREAS**, City has determined the applicant has submitted a "Hotel / Motel Tax Funding Application" (*See* **Exhibit A**); and

**WHEREAS**, City has determined the applicant has requested funds for tourism and/or conventions and/or overnight visitors to City, and the applicant's request for funds may be permitted pursuant to the spirit of 65 ILCS 5/8-3-14 (*See* **Exhibit A**); and

**WHEREAS**, the City Council finds that the City Manager should be authorized and directed, on behalf of the City of Highland, to execute whatever documents are necessary to allocate hotel / motel tax funds to the applicant pursuant to the "Hotel / Motel Tax Funding Application" (*See* **Exhibit A**).

**NOW, THEREFORE, BE IT RESOLVED,** by the City Council of the City of Highland, Illinois, as follows:

*Section 1.* The foregoing recitals are incorporated herein as findings of the City Council of the City of Highland, Illinois.

*Section 2.* The "Hotel / Motel Tax Funding Application" (*See* **Exhibit A**) is approved.

*Section 3.* The City Manager is directed and authorized, on behalf of the City of Highland, to execute whatever documents are necessary to allocate hotel / motel funds to applicant pursuant to applicant's "Hotel / Motel Tax Funding Application" (*See* **Exhibit A**).

*Section 4.* This Resolution shall be known as Resolution No. _____ and shall be effective upon its passage and approval in accordance with law.

Passed by the City Council of the City of Highland, Illinois, approved by the Mayor, and deposited and filed in the Office of the City Clerk, on the ____ day of _____, 2023, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

_____
Kevin B. Hemann
Mayor
City of Highland
Madison County, Illinois

ATTEST:

_____
Barbara Bellm
City Clerk
City of Highland
Madison County, Illinois

**HOTEL/MOTEL FUND APPLICATION**

(For Funding Requests in excess of $1,500)

**Organization Information**

1) Name and Address of Applicant (Organization): _____

Highland Arts Council

PO Box 33
Highland, IL 62249

2) Website Address: __www.HighlandArtsCouncil.org_____

3) Contact Person:

a) Name: ___Lynnette Schuepbach_____

b) Phone: __618-558-0054_____

c) Fax: _____618-654-4054_____

d) Email: ____lynnette@HighlandArtsCouncil.org_____

4) Is this a Non-Profit Organization? Yes__X___ No_____

5) Status of Organization (i.e. Foundation, Corporation, etc): ____Charity 501(c)3_____

6) Agency Tax ID # _____

**Event Information**

**Please state how your request for hotel/motel tax funds will help promote: 1) tourism; 2) conventions within the City; and/or 3) overnight visitors to the municipality:**

Answer in #20 Question

7) Fiscal Year of the Event: 2022-2023

8) Name of the Event: _Art in the Park___

9) Date(s) of the Event: October 13-15, 2023

10) Location of the Event: _Lindendale Park_____

11) Description of the Event:

19th Annual offers covered and outdoor booths showing world-class art in a beautiful hometown atmosphere only 35 miles from St. Louis. A total of nearly $8,000 in cash prizes will be awarded. The public will begin shopping on Friday, October 13, 2023, from 5 pm to 8 pm. Beginning at 5 pm on Friday, October 13, a Happy Hour Arts will give preview of the exhibits for

sponsors and people who have paid pre-sales dollars to spend with the artists. Art demonstrations; performing arts including music, theater and dance; hands-on Kids Kreation area; Art Gallery…Just for Kids where they can purchase art donated by exhibitors for $5; a youth art exhibit and fantastic food will keep art buyers entertained. Great hospitality and easy, drive-up set-up and tear-down. We treat artists like the royalty they are.

A total of nearly $8,000 in cash prizes will be awarded. Approximately 7,000 attendees shop on Saturday, October 14, 2023, from 10 am to 5 pm and on Sunday, October 15, 2023, from 11 am to 4 pm.

Artists will meet the movers and shakers on Friday, October 13, 2022, from 5 pm to 8 pm at a Happy Hour Arts Reception. We are adding a focus on the performing arts through art demonstrations; thespian performances, dance, live music; hands-on Kids Kreation area; Art Gallery…Just for Kids where they can purchase art donated by exhibitors for $5; a youth art exhibit and fantastic food will keep art buyers entertained. Drive-up set up and tear down. We treat artists like the royalty they are. We are adding an Emerging Artists Tent for artist from local colleges.

12) Funding Request Amount: $__7,000.00_____

13) Projected Attendance for the Event: __8,000 - 9,000_____

14) Expected Overnight Stays for the Event: ___20_____

15) Description / Purpose of Funding Request:
Help to pay for advertising to bring more people into the City.

16) Other Sources of Project Funding:

Individual Donations: $___900.00

Grants: $____$5,000_____

Private Businesses: $____$13,000_____

Highland Arts Council's Reserves: We hope not to have to use it up.

17) Do you anticipate the need for "in-kind" services from City resources or staff? If so, please describe the nature of your request along with an estimated number of hours needed.

- Electricity – October 12-15, 2023
- Trash – cans and dumpster
- Wi-Fi (Password protected for vendors and free for attendees) – October 7-9, 2022
- Permission for placement of signage (we will place them) from Thursday, Oct 12 – Monday, Oct 16, 2023

18) Continuing / New Activity: New Activity

a) Is this event… New _____ Continuing ___X__

b) Do you expect it to be an Annual Event? Yes___X__ No__ ___

c) Do you anticipate requiring regular and continued funding? Yes___X__ No_____

d) Did you receive funding last year? Yes__X___ No_____

e) If "d" = yes i) What amount did you receive? $__8,000.00_____

19) Sponsors

If applicable, please list key sponsors that donate funds or provide "in-kind" services, along with the pledged amount anticipated for the event.

| SPONSOR | AMOUNT OF SPONSORSHIP |
|---|---|
| Edward Jones | $3,000.00 |
| Highland Rotary | $1,250.00 |
| St. Louis Homes & LifeStyle Magazine | $1,250.00 |

20) Benefits to City Tourism: Describe how this activity attracts and/or contributes to tourism and overnight stays in the City of Highland.

- **Increased Use of Tourism Businesses**
  - Forty-nine percent of the artists are not based locally. They may require a 2 or more night stay in one of Highland's hotels and use other services, such as restaurants, grocery stores, clothing stores or hardware/lighting stores.
  - We have blocked 10 rooms at Baymont Inn in Highland.
  - Increased use of other local businesses.
  - We suggest that the hotels, restaurants, and local wineries create a "destination package" for the weekend of Art in the Park to increase patronage of Highland businesses.
- **Increased Sales Tax Income**
  - We estimated attendance from 8,000 – 9,000 from all areas surrounding Highland and St. Louis.
  - All art items sold are taxed and reported to the State of Illinois. In previous years' sales reported by the artists completing the evaluation were over $25,000. The average for each artist reporting is over $2,000.
  - Artists and attendees use Highland restaurants, shop our stores, and buy gas in Highland.
- **Providing Vendor Opportunities**
  - Restaurants have the opportunity to participate in Art in Park to promote patronage of their businesses as an onsite vendor and in their restaurant in the future.
  - Art in the Park is a marketing/advertising opportunity for businesses to tag onto the advertising of Art in the Park through sponsorships of the event.

- Sponsorships are highlighted on colorful banners onsite.
- Visiting artists and patrons will be using local businesses during their stay here.

- **Contributes to Highland's Image as the 24th Best City to Live in in Illinois**
  - The addition of HAC's Art Walk will give visitors an opportunity to see many parts of Highland in a positive aspect.
  - Art in the Park showcases Highland as a progressive city with many positive and diverse aspects. Art is one piece of the diverse puzzle that enhances our City, making Highland a great place to live.
  - Promoted as a City that promotes the arts, gives class to the overall City.
  - Proceeds from Art in the Park events will be used for other ways to enhance the City, i.e. Art Gallery/Visitor Center, Art Affairs, Street Art Festival, donations to Hard Road Theater and the Heartland Community Chorus, other commissioned art for the City, and materials for workshops such as Art of Soul and the Mural painted on the Weinheimer Building last fall.
- **Increased Visibility of Highland Within the Area and Beyond**
  - We intend to continue marketing Highland and Art in the Park through, banners, Internet, radio, TV, magazines, and newspaper.
  - We will be focusing on areas to the east of Highland as well as St. Louis metropolitan area, bringing people from the surrounding areas to Highland as THE cultural center of the area.
  - Our Web site continues to be updated and improved. We will continue to link to the City of Highland Web site and hope for a continued reciprocal link.
  - We will expand and upgrade the variety of food offered at Art in the Park in 2023 hoping to entice people to stay longer at the event.
  - We intend to have live musical entertainment throughout the show, highlighting SIUE Jazz Combo and Highland Music School, as well as local bands. Performing arts will be highlighted and scheduled throughout the show as well as artist demonstrations.
  - When available we will work cooperatively with Hard Road Theatre by providing an ad for Art in the Park and HAC membership throughout the year.

**Sponsorship Benefits ($7,000 sponsorship or a little less than $1/attendee)**

- Corporate identification in the advertising featuring the City as THE major sponsor of the entire event.
- Mention in all ads in the *Highland News leader, The Intelligencer, The Alton Telegraph, The Edge Magazine, Belleville News Democrat, St. Louis Post Dispatch and Journal* newspapers throughout the area, as well as every promotional piece.
- Company banner displayed on festival grounds.
- Corporate sponsorship banner displayed on festival grounds.
- Corporate sponsorship listing on festival grounds.
- Digital ad placed strategically with the Discover Downstate Illinois Tourism

- Sponsor listing in marketing flyer distributed to attendees and mailed with *Highland News Leader, Belleville News Democrat and Advertiser Direct* prior to the show.
- Web link to Highland City site from Highland Arts Council site.
- Invitations for 40 guests to the Art in the Park private reception Friday evening, October 13.

21) Additional Information: Provide any additional information which will assist the City in evaluating your project and its benefit to the City of Highland (attachments are welcomed).

- We continue the desire to have a location to further HAC and the City.
- NEA has valid research on how experiencing the arts helps youth to achieve more in academic classes. What better way to help our youth when the arts are being cut in the school classroom.
- This is the one large event where Highland Arts Council hopes to build its resources to provide other art events throughout the year and to support other art organizations such as Street Art Festival, Hard Road Theatre, and the Heartland Community Chorus.
- A display of youth art will create more attention from local schools and parents.
- We will continue to offer the Art Gallery…Just for Kids consisting of donated art for children to purchase for $5. This will help to build adults who will appreciate and purchase art in the future.
- We will continue to suggest the artists demonstrate during the show.
- AITP has had 18 successful years. This year will be its 19th
- Belleville's Art on the Square and Salute to the Masters are supported financially by their respective cities. We appreciate similar support.

23 Event / Project Budget Please list all revenues and expenses, on a separate sheet (similar format) if necessary. Complete project expense information must be provided on this document. Quoted estimates must be provided when possible and when not possible, describe in an attachment how the expense was estimated.

**Budget for Art in the Park 2022**

| **Revenue** | **Amount** |
|---|---|
| Hotel/Motel Tax Grant | $7,000 |
| Artist Fees (45 booths) | $8,950 |
| Sponsorships | $13,000 |
| Raffle Income | $ 1,000 |
| Grants | $ 1,000 |
| Vendors | $ 500 |
| Youth Art | $ 300 |
| **Total** | **$31,750** |

| **Expenses** | **Amount** |
|---|---|
| Advertising | $10,000 |
| Online Applications | $ 1,100 |
| Awards | $ 8,000 |
| Signs | $ 500 |
| Performing Arts | $ 2,500 |
| Grounds/logistics | $ 1,500 |
| Hospitality | $ 500 |
| Judges | $ 600 |
| Marketing/design | $ 1,150 |
| Website Upgrade | $ 300 |
| Postage | $ 700 |
| Printed Material | $ 1,000 |
| Happy Hour Arts Reception | $ 3,000 |
| Raffle Prize | $ 500 |
| Misc | $ 200 |
| Youth Art | $ 200 |
| **Total** | **$ 31,750** |

23) Attach Event Plan and Budget; Timeline for upcoming event; Marketing efforts

- All advertising goes through the Discover Downstate Illinois Tourism which saves us 15% of the cost of the advertising (They also help with graphic design of ads and development of radio and television ads)
- Newspaper Ads (HNL, the Pioneer BND, Intelligencer, Telegraph, St. Louis Post Dispatch, Go Magazine, The Edge Magazine)
- FaceBook/Social Media
- Paid Television Spots
- Paid Radio Spots
- Paid Internet Spots
- Website – HighlandArtsCouncil.org
- Facebook HAC page
- Insert into BND & HNL
- Press releases/stories sent to all local newspapers for free insertion in their publications (Greenville, Troy, Edwardsville, Alton, Trenton, Highland, Collinsville, O'Fallon, Belleville, etc.)
- Budget is above
- Press releases to encourage artists happen January-June, but the major advertising happens three months prior to the event.

24) Can event occur without city financial assistance: _x__Yes ____ No (but not at the same level)

25) Has event previously been held in Highland: _X___Yes ____No

If yes, how many years in existence? 18 years

26) Projected sales tax generation: Event _____ Indirect_____ Not available

27) Number of volunteers associated with event? __50_____

28) Nonprofit or for profit event? __nonprofit but we do hope to put something back in our account for other programs_____

29) Address security, traffic control for event, and Health Department and Fire Department approval in Event Plan? ____ Yes _____ No (Not sure)

30) Why should event be funded? Attach narrative.

- Art in the Park is one event in Highland that has a large drive to bring people into town. Other events are mostly for the people within Highland and their friends.
- The event highlights the culture of the City, the City's beauty, and world-class art at the show.
- The continuity of the show exhibits the dedication of the Highland Arts Council to the City of Highland.
- HAC is always adding/changing the show to fit the current needs. This year we added covered space.

I certify the information contained in this application is complete, accurate, and fully discloses the scope and intent of my request for funding from the Hotel/Motel Tax Fund. I agree to comply with the City's requests for information regarding the use of awarded funds and to provide access to accounting records related to these funds. By signing this application, I accept and agree to be bound by the terms and conditions of the Hotel/Motel Tax Fund as administered by the City of Highland in compliance with current federal, state and local laws.

___Lynnette Schuepbach_____

Applicant

Lynnette Schuepbach

Signature of Representative / Officer

____President_____Title 1/30/2023 Date

# CITY OF HIGHLAND

| | |
|---|---|
| **To:** | **Mayor and Council Members** |
| **From:** | **Mallord Hubbard, Economic Development Coordinator** |
| **Date:** | **March 29, 2023** |
| **Subject:** | **Approval of Hotel/Motel Funding for 2023 Art in the Park** |

## RECOMMENDATION

I am recommending the Council consider approval of Hotel/Motel funds to the Highland Arts Council for the 2023 Art in the Park.

## DISCUSSION

Staff has reviewed the application request and determined that it meets the requirement for Hotel/Motel tax funding.

## FISCAL IMPACT

Subject to approval, funding as determined by City Council will be appropriated from the Hotel/Motel Tax Budget for this item.

Recommended by: Mallard Hubbard

Mallord Hubbard, Economic Development Coordinator

# City of Highland

**MEMO TO:** Christopher Conrad, City Manager

**FROM:** Joe Gillespie, Director of Public Works

**DATE:** March 31, 2023

**SUBJECT:** MFT Section 24-00000-00-GM Maintenance Materials
Notice of Municipal Letting

## RECOMMENDATION

I recommend that you request City Council approval to advertise for the above referenced NOML.

## DISCUSSION

The Illinois Department of Transportation approved funding for $361,000 for this year's Motor Fuel Tax program bidding items on March 8, 2023. This program is similar in scope to previous years. The maintenance materials being bid are for seal coat operations (oil and chip), and aggregates.

## FISCAL IMPACT

The purchases are funded through Motor Fuel Tax for FY 2024.

## CONCURRENCE

Recommended by: Joe Gillespie
Joe Gillespie, Director of Public Works

Approved by: Christopher J. Conrad
Christopher Conrad, City Manager

Illinois Department of Transportation

# Local Public Agency Material Proposal or Deliver & Install Proposal

**Proposal Submitted By:**

Contractor's Name

Contractor's Address | City | State | Zip Code

STATE OF ILLINOIS

Local Public Agency: City of Highland | County: Madison | Section Number: 24-00000-00-GM

Street Name/Road Name: Various | Type of Funds: MFT

☐ Material proposal ☒ Deliver and Install Proposal ☐ Plans

---

**For a County and Road District Project**

Submitted/Approved

Highway Commissioner Signature & Date

Submitted/Approved

County Engineer/Superintendent of Highways Signature & Date

**For a Municipal Project**

Submitted/Approved/Passed

Signature & Date

Official Title

**Department of Transportation**

Released for bid based on limited review

Regional Engineer Signature & Date

Note: All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed.

| Local Public Agency | County | Section Number |
|---|---|---|
| City of Highland | Madison | 24-00000-00-GM |

**NOTICE TO BIDDERS**

Sealed proposals for the project described below will be received at the office of Public Works (Name of Office)

1113 Broadway, Highland, IL 62249 (Address) until 10:00 AM (Time) on _____ (Date).

1. Plans and proposal forms will be available in the office of

Public Works, 1113 Broadway, Highland, IL 62249

2. ☐ Prequalification

   If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57) in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.

3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Material/Deliver and Install Proposals.

4. A proposal guaranty in the proper amount, as specified in the BLRS Special Provision for Bidding Requirements and Conditions for Material/Deliver and Install Proposals, will be required. See the attached Special Provisions for specific instructions for proposal guaranty for this proposal packet.

5. The successful bidder at the time of execution of the contract will be required to deposit a contract bond or proposal guaranty as provided for in the special provisions. Failure on the part of the contractor to deliver the material within the time specified or to do the work specified herein will be considered just cause to forfeit his surety as provided in Article 108.10 of the Standard Specifications.

6. Proposals shall be submitted on forms furnished by the Awarding Authority and shall be enclosed in an envelope endorsed "Material Proposal, Section 24-00000-00-GM ".

| By Order of Awarding Authority | County Engineer/Superintendent of Highways/ Municipal Clerk | Date |
|---|---|---|
| City of Highland | Barbara Bellem | |

**Material Proposal or Deliver & Install Proposal**

To

Awarding Authority: City of Highland

| Awarding Authority Address | City | State | Zip Code |
|---|---|---|---|
| 1115 Broadway | Highland | IL | 62249 |

If this bid is accepted within 45 days from the date of opening, the undersigned agrees to furnish or to deliver & install any or all of the materials, at the quoted unit prices, subject to the following:

1. It is understood and agreed that the "Standard Specifications for Road and Bridge Construction", adopted 01/01/22 and the "Supplemental Specifications and Recurring Special Provisions", adopted 01/01/23 , prepared by the Department of Transportation, shall govern insofar as they may be applied and insofar as they do not conflict with the special provision and supplemental specifications attached hereto.

2. It is understood that quantities listed are approximate only and that they may be increased or decrease as may be needed to properly complete the improvement within its present limits or extensions thereto, at the unit prices stated and that bids will be compared on the basis of total price bid for each group.

3. Delivery in total or partial shipments as ordered shall be made within the time specified in the special provisions or by the acceptance at the point and in the manner specified in the "Schedule of Prices". If delivery on the job site is specified, it shall mean any place or paces on the road designed by the awarding authority or its authorized representative.

4. The contractor and/or local public agency performing the actual material placement operations shall be responsible for providing work zone traffic control, unless otherwise specified in this proposal. Such devices shall meet the requirements of and be installed in accordance with applicable provisions of the "Illinois Manual on Uniform Traffic Control Devices" and any referenced Illinois Highway Standards.

| Local Public Agency | County | Section Number |
|---|---|---|
| City of Highland | Madison | 24-00000-00-GM |

5. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price. A bid will be declared unacceptable if neither a unit price nor a total price is shown.

6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. The proposal guaranty as specified in the special provisions is attached.

   If a bid bond is allowed or required, Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to: City of Highland Treasurer of Highland .

   The amount of the check is _____ (_____).

**Attach Cashier's Check or Certified Check Here**

In the event that one proposal guaranty check is intended to cover two or more bid proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual bid proposal. If the proposal guaranty check is place in another bid proposal, state below where it may be found.

The proposal guaranty check will be found in the bid proposal for: Section Number 24-00000-00-GM ).

Discounts will be allowed for payment as follows: _____ _____calendar days _____ _____calendar days

Discounts will not be considered in determining the low bidder

Bidder

By | Title

Address | City | State | Zip Code

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2023

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 1-1-22) (Revised 1-1-23)

SUPPLEMENTAL SPECIFICATIONS

Illinois Department of Transportation

# Check Sheet for Recurring Special Provisions

| Local Public Agency | County | Section Number |
|---|---|---|
| | | |

☐ **Check this box for lettings prior to 01/01/2023.**

The Following Recurring Special Provisions Indicated By An "X" Are Applicable To This Contract And Are Included By Reference:

| Check Sheet # | | Recurring Special Provisions | Page No. |
|---|---|---|---|
| 1 | ☐ | Additional State Requirements for Federal-Aid Construction Contracts | 53 |
| 2 | ☐ | Subletting of Contracts (Federal-Aid Contracts) | 56 |
| 3 | ☐ | EEO | 57 |
| 4 | ☐ | Specific EEO Responsibilities Non Federal-Aid Contracts | 67 |
| 5 | ☐ | Required Provisions - State Contracts | 72 |
| 6 | ☐ | Asbestos Bearing Pad Removal | 78 |
| 7 | ☐ | Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal | 79 |
| 8 | ☐ | Temporary Stream Crossings and In-Stream Work Pads | 80 |
| 9 | ☐ | Construction Layout Stakes | 81 |
| 10 | ☐ | Use of Geotextile Fabric for Railroad Crossing | 84 |
| 11 | ☐ | Subsealing of Concrete Pavements | 86 |
| 12 | ☐ | Hot-Mix Asphalt Surface Correction | 90 |
| 13 | ☐ | Pavement and Shoulder Resurfacing | 92 |
| 14 | ☐ | Patching with Hot-Mix Asphalt Overlay Removal | 93 |
| 15 | ☐ | Polymer Concrete | 95 |
| 16 | ☐ | Reserved | 97 |
| 17 | ☐ | Bicycle Racks | 98 |
| 18 | ☐ | Temporary Portable Bridge Traffic Signals | 100 |
| 19 | ☐ | Nighttime Inspection of Roadway Lighting | 102 |
| 20 | ☐ | English Substitution of Metric Bolts | 103 |
| 21 | ☐ | Calcium Chloride Accelerator for Portland Cement Concrete | 104 |
| 22 | ☐ | Quality Control of Concrete Mixtures at the Plant | 105 |
| 23 | ☐ | Quality Control/Quality Assurance of Concrete Mixtures | 113 |
| 24 | ☐ | Reserved | 129 |
| 25 | ☐ | Reserved | 130 |
| 26 | ☐ | Temporary Raised Pavement Markers | 131 |
| 27 | ☐ | Restoring Bridge Approach Pavements Using High-Density Foam | 132 |
| 28 | ☐ | Portland Cement Concrete Inlay or Overlay | 135 |
| 29 | ☐ | Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching | 139 |
| 30 | ☐ | Longitudinal Joint and Crack Patching | 142 |
| 31 | ☐ | Concrete Mix Design - Department Provided | 144 |
| 32 | ☐ | Station Numbers in Pavements or Overlays | 145 |

| Local Public Agency | County | Section Number |
|---|---|---|
| | | |

The Following Local Roads And Streets Recurring Special Provisions Indicated By An "X" Are Applicable To This Contract And Are Included By Reference:

Local Roads And Streets Recurring Special Provisions

| Check Sheet # | | | Page No. |
|---|---|---|---|
| LRS 1 | | **Reserved** | 147 |
| LRS 2 | ☐ | Furnished Excavation | 148 |
| LRS 3 | ☐ | Work Zone Traffic Control Surveillance | 149 |
| LRS 4 | ☐ | Flaggers in Work Zones | 150 |
| LRS 5 | ☒ | Contract Claims | 151 |
| LRS 6 | ☐ | Bidding Requirements and Conditions for Contract Proposals | 152 |
| LRS 7 | ☒ | Bidding Requirements and Conditions for Material Proposals | 158 |
| LRS 8 | | **Reserved** | 164 |
| LRS 9 | ☐ | Bituminous Surface Treatments | 165 |
| LRS 10 | | **Reserved** | 169 |
| LRS 11 | ☒ | Employment Practices | 170 |
| LRS 12 | ☒ | Wages of Employees on Public Works | 172 |
| LRS 13 | ☒ | Selection of Labor | 174 |
| LRS 14 | ☐ | Paving Brick and Concrete Paver Pavements and Sidewalks | 175 |
| LRS 15 | ☒ | Partial Payments | 178 |
| LRS 16 | ☐ | Protests on Local Lettings | 179 |
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| LRS 19 | ☐ | Reflective Crack Control Treatment | 182 |

Illinois Department of Transportation

# Apprenticeship and Training Program Certification

| Local Public Agency | County | Street Name/Road Name | Section Number |
|---|---|---|---|
| City of Highland | Madison | Various | 24-00000-00-GM |

**All contractors are required to complete the following certification**

☐ For this contract proposal or for all bidding groups in this deliver and install proposal.

☒ For the following deliver and install bidding groups in this material proposal.

MC-800 Prime Bituminous Materials Furnished and Delivered
HFRS-2 Emulsified Asphalt Bituminous Materials Furnished and Applied
Seal Coat Hauled and Spread (CM-13 079CML2-22)

Illinois Department of Transportation policy, adopted in accordance with the provisions of the Illinois Highway Code, requires this contract to be awarded to the lowest responsive and responsible bidder. The award decision is subject to approval by the Department. In addition to all other responsibility factors, this contract or deliver and install proposal requires all bidders and all bidder's subcontractors to disclose participation in apprenticeship or training programs that are (1) approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training, and (2) applicable to the work of the above indicated proposals or groups. Therefore, all bidders are required to complete the following certification:

1. Except as provided in paragraph 4 below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved apprenticeship or training program applicable to each type of work or craft that the bidder will perform with its own employees.

2. The undersigned bidder further certifies, for work to be performed by subcontract, that each of its subcontractors either (A) is, at the time of such bid, participating in an approved, applicable apprenticeship or training program; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved apprenticeship or training program applicable to the work of the subcontract.

3. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. Types of work or craft that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

4. Except for any work identified above, if any bidder or subcontractor shall perform all or part of the work of the contract or deliver and install proposal solely by individual owners, partners or members and not by employees to whom the payment of prevailing rates of wages would be required, check the following box, and identify the owner/operator workforces and positions of ownership. ☐

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. The Department at any time before or afterward may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. In order to fulfill the participation requirement, it shall not be necessary that any applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract or deliver and install proposal.

Bidder

Signature & Date

Title

| Address | City | State | Zip Code |
|---|---|---|---|
| | | | |

Illinois Department of Transportation

# Affidavit of Illinois Business Office

| Local Public Agency | County | Street Name/Road Name | Section Number |
|---|---|---|---|
| City of Highland | Madison | Various | 23-00000-00-GM |

I, _____ of _____ , _____ ,
Name of Affiant City of Affiant State of Affiant
being first duly sworn upon oath, state as follows:

1. That I am the _____ of _____ .
Officer or Position Bidder

2. That I have personal knowledge of the facts herein stated.

3. That, if selected under the proposal described above, _____ , will maintain a business office in the
Bidder
State of Illinois, which will be located in _____ County, Illinois.
County

4. That this business office will serve as the primary place of employment for any persons employed in the construction contemplated by this proposal.

5. That this Affidavit is given as a requirement of state law as provided in Section 30-22(8) of the Illinois Procurement Code.

Signature & Date

Print Name of Affiant

**Notary Public**

State of IL

County _____

Signed (or subscribed or attested) before me on _____ by
(date)

_____ , authorized agent(s) of
(name/s of person/s)

_____ .
Bidder

Notary Public Signature & Date

(SEAL)

My commission expires _____

# Instructions to Bidders

1. Bids are to be submitted in a sealed, opaque, envelope with the following information on the outside of the envelope:

   City of Highland
   Bid #24-00000-00-GM

2. Bids shall be delivered to:

   City of Highland
   Public Works
   1113 Broadway
   Highland, Illinois

   Before the bid opening time and date.

3. All bids received by the bid date and time shall be publicly opened and read aloud.

4. The following forms shall be fully executed and included with the bid submittal:
   a. Material Proposal Schedule of Prices
   b. Proposal guaranty

5. The Illinois Department of Transportation, Bureau of Local Roads form BLR 12240 "Local Public Agency Material Proposal or Deliver & Install Proposal" shall be fully executed (at the bottom of the form) by the bidder and included in the bid submittal.

# Special Provisions
# For Motor Fuel Tax Maintenance

Material and operations for Bituminous Materials and Seal Coat Aggregate or Blotter Aggregate shall comply with Section 403 of the Standard Specifications, except that Repair and Preparation of Base, or Existing Surface, under Article 403.08 will not be repaired. The preparation of the surface, closing of the streets to traffic during application of the bituminous material, and blotting of the excess bitumen remaining on the surface shall be done by others. The grade of bituminous material shall be furnished and applied as directed by an authorized representative of the local agency. The Seal Coat Aggregate and Blotter Aggregate shall conform to the graduations as set forth in Article 1004.03 or those shown in the special provisions included in the proposal.

All material must be State inspected, and it is the responsibility of the Contractor to secure the inspection and reports.

The contract for furnishing materials under this proposal will expire April 30, 2024, or as specified in the proposal.

# SPECIAL PROVISION FOR FURNISHING

# AND APPLYING EMULSIFIED ASPHALT HFRS-2

# AND SEAL COAT AGGREGATE CM-13 (SLAG)

## Scope of Work

The work to be performed under this bid group shall consist of furnishing and applying emulsified asphalt and seal coat aggregate on streets designated by the City. In the scheduling of work, City crews will assist the Contractor in finding the locations of work. Work shall be scheduled to the mutual agreement of the City and Contractor.

## Materials

The emulsified asphalt shall be HFRS-2 conforming to applicable requirements of the "Standard Specifications for Road and Bridge Construction."

The seal coat material to be used shall be crushed slag produced from air cooled blast furnace slag.

It is anticipated that the rate of application will be 22 lbs. per sq. yd.

## Construction Requirements

Application of the emulsified asphalt and seal coat aggregate shall meet the requirements of the "Standard Specifications for Road and Bridge Construction" and as provided for herein. Emulsified asphalt shall not be applied when either the deck temperature is below 70 degrees F or the air temperature is below 65 degrees F. Streets scheduled for double seal coats shall have each seal applied on separate days, if scheduling permits.

It is anticipated that the rate of application for emulsified asphalt will be approx. 0.33 gal/s.y. and the rate of application for seal coat aggregate will be 22 lbs./s.y.

The contractor is responsible for loading the stored aggregate into the spreader and dump trucks.

Seal coat aggregate shall be applied with a self-propelled mechanical spreader with an accurate control for regulating the width and rate of application and shall be of a type to be approved by the City. The spreader shall be equipped with deflectors to insure the larger chips hit the street surface in advance of the smaller chips. Dump truck style spreaders with rotating flinkers shall not be accepted. Immediately after

spreading, seal coat aggregate shall be rolled with a 10 to 12 ton pneumatic-tired roller across the total width a minimum of one pass, overlapping on successive trips by at least ½ the width of the roller.

Chips shall be applied to the freshly spread emulsion and rolling commenced prior to the "breaking" of the emulsion. Emulsion shall not be applied in a width greater than the application width of the chip spreader.

Should the contractor not apply chips prior to "breaking" of the emulsion, the following procedure shall govern.

1. The Contractor shall proceed and apply chips to the emulsion that has "broke".
2. Within a period not to exceed 2 weeks, the Contractor shall sweep the surface and pick up all loose chips.
3. The sealing and chipping operations shall then be repeated in a satisfactory manner.
4. All costs associated with items 2 and 3 shall be at the Contractor's expense.

All intersection returns shall be hand-sprayed and chipped as necessary to provide a uniform surface.

The Contractor shall notify the City, at least 48 hours in advance, of all seal-coat operations on a street by street basis in order to allow the City time to notify the appropriate residents. Providing the Contractor adheres to this provision, the City will take the responsibility of moving parked cars.

Payment

Payment for furnishing and applying emulsified asphalt and seal coat aggregate shall be on a basis of material applied in gallons and tons, respectively. Payment quantities shall be determined from weight tickets furnished by the Contractor from an approved scale. No payment shall be made until proof of state material inspection is received.

## EMPLOYMENT REQUIREMENTS AND WAGE RATES

The 2024 MFT Materials is a “Public Works Construction” Project as defined in the Illinois Prevailing Wage Act 820 ILCS 130. As such, all bidders shall account for in their bids and will be subject to the general prevailing wage rates for Madison County, Illinois, currently published and as amended from time to time by the Department of Labor. Prevailing rate of wages are revised by the Department of Labor and are available on the Department’s official website.

# Madison County Prevailing Wage Rates posted on 3/1/2023

| | | | | | | Overtime | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Trade Title** | **Rg** | **Type** | **C** | **Base** | **Foreman** | **M-F** | **Sa** | **Su** | **Hol** | **H/W** | **Pension** | **Vac** | **Trng** | **Other Ins** |
| ASBESTOS ABT-GEN | NW | ALL | | 33.34 | 34.34 | 1.5 | 1.5 | 2.0 | 2.0 | 7.25 | 19.84 | 0.00 | 0.80 | |
| ASBESTOS ABT-GEN | SE | ALL | | 33.93 | 34.93 | 1.5 | 1.5 | 2.0 | 2.0 | 8.60 | 17.90 | 0.00 | 0.80 | |
| ASBESTOS ABT-MEC | All | BLD | | 33.70 | 34.70 | 1.5 | 1.5 | 2.0 | 2.0 | 9.95 | 6.25 | 0.00 | 0.50 | |
| BOILERMAKER | All | BLD | | 41.50 | 45.00 | 1.5 | 1.5 | 2.0 | 2.0 | 7.07 | 26.56 | 0.00 | 1.06 | |
| BRICK MASON | All | BLD | | 36.74 | 38.94 | 1.5 | 1.5 | 2.0 | 2.0 | 9.05 | 15.68 | 0.00 | 0.91 | |
| CARPENTER | All | ALL | | 41.62 | 43.12 | 1.5 | 1.5 | 2.0 | 2.0 | 9.20 | 10.30 | 0.00 | 0.65 | |
| CEMENT MASON | All | ALL | | 36.75 | 37.75 | 1.5 | 1.5 | 2.0 | 2.0 | 10.60 | 16.50 | 0.00 | 0.50 | |
| CERAMIC TILE FINISHER | All | BLD | | 27.38 | 27.38 | 1.5 | 1.5 | 2.0 | 2.0 | 8.80 | 7.69 | 0.80 | 0.83 | |
| ELECTRIC PWR EQMT OP | NW | ALL | | 50.48 | 50.48 | 1.5 | 1.5 | 2.0 | 2.0 | 7.00 | 14.13 | 0.00 | 0.50 | 3.25 |
| ELECTRIC PWR EQMT OP | SE | ALL | | 50.99 | 61.47 | 1.5 | 1.5 | 2.0 | 2.0 | 6.95 | 14.28 | 0.00 | 0.51 | |
| ELECTRIC PWR GRNDMAN | NW | ALL | | 33.27 | 33.27 | 1.5 | 1.5 | 2.0 | 2.0 | 7.00 | 9.32 | 0.00 | 0.33 | 3.25 |
| ELECTRIC PWR GRNDMAN | SE | ALL | | 38.07 | 61.47 | 1.5 | 1.5 | 2.0 | 2.0 | 5.19 | 10.67 | 0.00 | 0.38 | |
| ELECTRIC PWR LINEMAN | NW | ALL | | 58.95 | 62.27 | 1.5 | 1.5 | 2.0 | 2.0 | 7.00 | 16.51 | 0.00 | 0.59 | 3.25 |
| ELECTRIC PWR LINEMAN | SE | ALL | | 58.63 | 61.47 | 1.5 | 1.5 | 2.0 | 2.0 | 7.99 | 16.42 | 0.00 | 0.59 | |
| ELECTRIC PWR TRK DRV | NW | ALL | | 37.68 | 37.68 | 1.5 | 1.5 | 2.0 | 2.0 | 7.00 | 10.55 | 0.00 | 0.38 | 3.25 |
| ELECTRIC PWR TRK DRV | SE | ALL | | 41.62 | 61.47 | 1.5 | 1.5 | 2.0 | 2.0 | 5.67 | 11.66 | 0.00 | 0.42 | |
| ELECTRICIAN | NW | ALL | | 47.43 | 49.68 | 1.5 | 1.5 | 2.0 | 2.0 | 11.00 | 13.67 | 0.00 | 0.24 | 1.25 |
| ELECTRICIAN | SE | ALL | | 45.49 | 48.22 | 1.5 | 1.5 | 2.0 | 2.0 | 7.99 | 13.91 | 0.00 | 1.25 | 2.97 |
| ELECTRONIC SYSTEM TECH | NW | BLD | | 34.44 | 37.44 | 1.5 | 1.5 | 2.0 | 2.0 | 11.00 | 8.76 | 0.00 | 0.40 | |
| ELECTRONIC SYSTEM TECH | SE | BLD | | 36.27 | 39.27 | 1.5 | 1.5 | 2.0 | 2.0 | 4.00 | 11.10 | 0.00 | 0.40 | 0.50 |
| ELEVATOR CONSTRUCTOR | All | BLD | | 55.29 | 62.20 | 2.0 | 2.0 | 2.0 | 2.0 | 16.02 | 20.21 | 4.42 | 0.65 | |
| FLOOR LAYER | All | BLD | | 36.33 | 37.08 | 1.5 | 1.5 | 2.0 | 2.0 | 9.20 | 10.30 | 0.00 | 0.65 | |
| GLAZIER | All | BLD | | 40.25 | 42.75 | 1.5 | 1.5 | 2.0 | 2.0 | 9.51 | 14.23 | 0.00 | 1.26 | |
| HEAT/FROST INSULATOR | All | BLD | | 41.13 | 42.13 | 1.5 | 1.5 | 2.0 | 2.0 | 11.24 | 13.35 | 0.00 | 0.95 | |
| IRON WORKER | All | ALL | | 38.80 | 40.80 | 1.5 | 1.5 | 2.0 | 2.0 | 10.55 | 18.50 | 0.00 | 0.48 | |
| LABORER | NW | ALL | | 32.84 | 33.84 | 1.5 | 1.5 | 2.0 | 2.0 | 7.25 | 19.84 | 0.00 | 0.80 | |
| LABORER | SE | ALL | | 33.43 | 34.43 | 1.5 | 1.5 | 2.0 | 2.0 | 8.60 | 17.90 | 0.00 | 0.80 | |
| MACHINIST | All | BLD | | 53.18 | 57.18 | 1.5 | 1.5 | 2.0 | 2.0 | 9.93 | 8.95 | 1.85 | 1.47 | |
| MARBLE FINISHER | All | BLD | | 27.38 | 27.38 | 1.5 | 1.5 | 2.0 | 2.0 | 8.80 | 7.69 | 0.80 | 0.84 | |
| MARBLE MASON | All | BLD | | 32.87 | 32.87 | 1.5 | 1.5 | 2.0 | 2.0 | 8.80 | 9.10 | 0.80 | 0.93 | |
| MILLWRIGHT | All | ALL | | 41.62 | 43.12 | 1.5 | 1.5 | 2.0 | 2.0 | 9.20 | 10.30 | 0.00 | 0.65 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPERATING ENGINEER | All | BLD | 1 | 42.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 2 | 41.32 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 3 | 36.84 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 4 | 43.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 5 | 44.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 6 | 45.00 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 7 | 45.30 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 8 | 45.60 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 9 | 46.25 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 10 | 46.75 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 11 | 44.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 12 | 45.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 13 | 42.45 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | BLD | 14 | 36.90 | 45.45 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 1 | 40.95 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 2 | 39.82 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 3 | 35.34 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 4 | 41.95 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 5 | 42.95 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 6 | 43.50 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 7 | 43.80 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 8 | 44.10 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 9 | 44.75 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 10 | 45.25 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 11 | 42.95 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 12 | 43.95 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| OPERATING ENGINEER | All | HWY | 13 | 35.40 | 43.95 | 1.5 | 1.5 | 2.0 | 2.0 | 14.25 | 19.25 | 0.00 | 1.45 | |
| PAINTER | All | BLD | | 32.45 | 33.95 | 1.5 | 1.5 | 2.0 | 2.0 | 7.45 | 13.67 | 0.00 | 0.70 | |
| PAINTER | All | HWY | | 33.65 | 35.15 | 1.5 | 1.5 | 2.0 | 2.0 | 7.45 | 13.67 | 0.00 | 0.70 | |
| PAINTER OVER 30 FT. | All | BLD | | 33.45 | 34.95 | 1.5 | 1.5 | 2.0 | 2.0 | 7.45 | 13.67 | 0.00 | 0.70 | |
| PAINTER PWR EQMT | All | BLD | | 33.45 | 34.95 | 1.5 | 1.5 | 2.0 | 2.0 | 7.45 | 13.67 | 0.00 | 0.70 | |
| PAINTER PWR EQMT | All | HWY | | 34.65 | 36.15 | 1.5 | 1.5 | 2.0 | 2.0 | 7.45 | 13.67 | 0.00 | 0.70 | |
| PILEDRIVER | All | ALL | | 41.62 | 43.12 | 1.5 | 1.5 | 2.0 | 2.0 | 9.20 | 10.30 | 0.00 | 0.65 | |
| PIPEFITTER | N | BLD | | 48.31 | 50.72 | 1.5 | 2.0 | 2.0 | 2.0 | 5.25 | 10.50 | 0.00 | 0.60 | |
| PIPEFITTER | S | BLD | | 41.75 | 45.75 | 1.5 | 1.5 | 2.0 | 2.0 | 9.40 | 10.80 | 0.00 | 1.55 | |
| PLASTERER | All | BLD | | 35.50 | 37.00 | 1.5 | 1.5 | 2.0 | 2.0 | 10.60 | 11.75 | 0.00 | 0.65 | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLUMBER | N | BLD | | 48.31 | 50.72 | 1.5 | 2.0 | 2.0 | 2.0 | 5.25 | 10.50 | 0.00 | 0.60 | |
| PLUMBER | S | BLD | | 40.50 | 43.00 | 1.5 | 1.5 | 2.0 | 2.0 | 9.45 | 8.40 | 0.00 | 1.20 | |
| ROOFER | All | BLD | | 37.00 | 39.50 | 1.5 | 1.5 | 2.0 | 2.0 | 9.50 | 10.20 | 0.00 | 0.76 | |
| SHEETMETAL WORKER | All | ALL | | 38.43 | 39.93 | 1.5 | 1.5 | 2.0 | 2.0 | 10.95 | 9.71 | 2.31 | 0.71 | 1.84 |
| SPRINKLER FITTER | All | BLD | | 46.99 | 50.74 | 2.0 | 2.0 | 2.0 | 2.0 | 10.39 | 15.10 | 0.00 | 1.10 | |
| TERRAZZO FINISHER | All | BLD | | 27.38 | 27.38 | 1.5 | 1.5 | 2.0 | 2.0 | 8.80 | 7.69 | 0.80 | 0.84 | |
| TERRAZZO MASON | All | BLD | | 32.87 | 32.87 | 1.5 | 1.5 | 2.0 | 2.0 | 8.80 | 9.10 | 0.80 | 0.93 | |
| TRUCK DRIVER | All | ALL | 1 | 41.00 | 45.36 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | ALL | 2 | 41.58 | 45.36 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | ALL | 3 | 41.90 | 45.36 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | ALL | 4 | 42.25 | 45.36 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | ALL | 5 | 43.36 | 45.36 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | O&C | 1 | 32.80 | 36.29 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | O&C | 2 | 33.26 | 36.29 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | O&C | 3 | 33.52 | 36.29 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | O&C | 4 | 33.80 | 36.29 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |
| TRUCK DRIVER | All | O&C | 5 | 34.69 | 36.29 | 1.5 | 1.5 | 2.0 | 2.0 | 14.69 | 7.43 | 0.00 | 0.25 | |

**Legend**

**Rg** Region
**Type** Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers
**C** Class
**Base** Base Wage Rate
**OT M-F** Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.
**OT Sa** Overtime pay required for every hour worked on Saturdays
**OT Su** Overtime pay required for every hour worked on Sundays
**OT Hol** Overtime pay required for every hour worked on Holidays
**H/W** Health/Welfare benefit
**Vac** Vacation
**Trng** Training
**Other Ins** Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations MADISON COUNTY

ELECTRICIANS AND ELECTRIC SYSTEMS TECHNICIAN (NORTHWEST) - Townships of Godfrey, Foster and Wood River, and the western one mile of Moro, Ft. Russell and Edwardsville, south to the north side of Hwy. 66 and west to the Mississippi River. This includes SIU-Edwardsville Dental Facility and Alton Mental Health Hospital.

ELECTRICIANS AND ELECTRIC SYSTEMS TECHNICIAN (SOUTHEAST) - Remainder of county not covered by ELECTRICIANS AND ELECTRIC SYSTEMS TECHNICIAN (NW) including SIU-Edwardsville Main Campus.

LABORERS (NORTHWEST) - That area northwest of a diagonal line running from the Mississippi River at the intersection of the waterway known as Wood River at Maple Island, northeast through the highway intersection of Illinois Routes 3 and 143 and following the boundary of Alton/East Alton, then preceding northeast to the county line at a point approximately one mile west of Illinois Route 159.

PLUMBERS AND PIPEFITTERS (SOUTH) - That part of the county South of a line between Mitchell and Highland including the town of Glen Carbon.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

Oil and chip resealing (O&C) means the application of road oils and liquid asphalt to coat an existing road surface, followed by application of aggregate chips or gravel to coated surface, and subsequent rolling of material to seal the surface.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER AND MARBLE FINISHER

The handling, at the building site, of all sand, cement, tile, marble or stone and all other materials that may be used and installed by [a] tile layer or marble mason. In addition, the grouting, cleaning, sealing, and mixing on the job site, and all other work as required in assisting the setter. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

ELECTRONIC SYSTEMS TECHNICIAN

Installation, service and maintenance of low-voltage systems which utilizes the transmission and/or transference of voice, sound, vision, or digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background/foreground music, intercom and telephone interconnect, field programming, inventory control systems, microwave transmission, multi-media, multiplex, radio page, school, intercom and sound burglar alarms and low voltage master clock systems.

Excluded from this classification are energy management systems, life safety systems, supervisory controls and data acquisition systems not intrinsic with the above listed systems, fire alarm systems, nurse call systems and raceways exceeding fifteen feet in length.

OPERATING ENGINEER - BUILDING

GROUP I

Cranes, Draglines, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, Screws on Asphalt Spreading Machines, All

Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines, or Backfiller, Cherrypickers, overhead Cranes, Roller, Steam or Gas, Concrete Pavers, Excavator Concrete Breakers, Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick-Type Drills, Boat Operators, Motor Graders or Pushcats, Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than derrick type), Mud Jacks, or Well Drilling Machines, Boring Machines or Track Jacks, Mixers, Conveyors (two), Air Compressors (two) Water Pumps, regardless of size (two), Welding Machines (two), Siphons or Jets (two), Winch Head or Apparatuses (two), Light Plants (two), Waterblasters (two), all Tractors, regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (one), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, Autonomous and semi-autonomous equipment, concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair, greasing, and fueling of all diesel hammers, the operation, set-up and cleaning of bidwells, concrete placement booms, the alterations, repair of all barges, water blasters of all sizes and their clutches, mobile lifts, hydraulic jacks where used for hoisting, diesel or gas powered flashing signs used for traffic control, micro pavers, log skiders, iceolators used on and off of pipeline, condor cranes, drill rigs of all sizes, bow boats, survey boats, ross carriers, bob-cats and all their attachments, skid steer loaders and all their attachments, creter crane, direct drive electric motors the bolting and unbolting the adjusting and shimming, (dewatering jobs, whirley crane, conveyor belts) etc., batch plants (all sizes), roto mills, conveyors systems of any size and any configuration, hydroseeders and straw-blowers all sizes, operation, repair, service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, grout machines regardless of size, Nail Launchers when mounted on a machine or self-propelled, con-cover machines, Goldhofer and similar S.P.M.T. (self-propelled modular transporters) heavy transport units and all Operators (except those listed below).

GROUP II
Assistant Operators

GROUP III
Air Compressors (one), Water Pumps, regardless of size (one), Water-blasters (one), Welding Machine (one), Mixers (one bag), Conveyor (one), Siphon or Jet (one), Light Plant (one), Heater (one), Immobile Track Air (one), and Self-Propelled Walk Behind Rollers.

GROUP IV
CCO-17 ton and below

GROUP V
CCO-17.5 to 35 Ton and Boom to 50′

GROUP VI
CCO-35.5 to 75 Ton and Boom to 100′

GROUP VII
CCO-75.5 to 125 Ton and Boom to 125′

GROUP VIII
CCO- 125.5 to 200 Ton and Boom to 100′

GROUP IX
CCO-200.5 to 300 Ton and Boom to 100′

GROUP X

CCO-300.5 to 450 Ton and Boom to 150’

GROUP XI
Master Mechanic

GROUP XII
Operator Foreman, Licensed Boat Pilot

GROUP XIII
Track type hydraulic hoes & crawler gradealls prep time.

GROUP XIV
Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant oiler and Creter Crane Oiler (when required), barge tenders, oilers on drill rigs used for caisson or for pile driving and Oiler.

OPERATING ENGINEERS – Highway

GROUP I

Cranes, Draglines, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, Screws on Asphalt Spreading Machines, All Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines, or Backfiller, Cherrypickers, overhead Cranes, Roller, Steam or Gas, Concrete Pavers, Excavator Concrete Breakers, Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick¬Type Drills, Boat Operators, Motor Graders or Pushcats, Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than derrick type), Mud Jacks, or Well Drilling Machines, Boring Machines or Track Jacks, Mixers, Conveyors (two), Air Compressors (two) Water Pumps, regardless of size (two), Welding Machines (two), Siphons or Jets (two), Winch Head or Apparatuses (two), Light Plants (two), Waterblasters (two), all Tractors, regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (one), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, concrete saws of all types and sizes with their attachments, gob¬hoppers, excavators all sizes, the repair, greasing, and fueling of all diesel hammers, the operation, set-up and cleaning of bidwells, concrete placement booms, the alterations, repair of all barges, water blasters of all sizes and their clutches, mobile lifts, hydraulic jacks where used for hoisting, diesel or gas powered flashing sings used for traffic control, micro pavers, log skiders, iceolators used on and off of pipeline, condor cranes, drill rigs of all sizes, bow boats, survey boats, ross carriers, bob-cats and all their attachments, skid steer loaders and all their attachments, creter crane, direct drive electric motors the bolting and unbolting the adjusting and shimming, (dewatering jobs, whirley crane, conveyor belts) etc., batch plants (all sizes), roto mills, conveyors systems of any size and any configuration, hydroseeders and straw-blowers all sizes, operation, repair, service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, grout machines regardless of size, Nail launchers when mounted on a machine or self-propelled, con-cover machines, Goldhofer and similar S.P.M.T. (self-propelled modular transporters) heavy transport units and all Operators (except those listed below).

GROUP II
Assistant Operators

GROUP III
Air Compressors (one), Water Pumps, regardless of size (one), Water-blasters (one), Welding Machine (one), Mixers (one bag),

Conveyor (one), Siphon or Jet (one), Light Plant (one), Heater (one), Immobile Track Air (one), and Self-Propelled Walk Behind Rollers.
GROUP IV
CCO-17 ton and below

GROUP V
CCO-17.5 to 35 Ton and Boom to 50′

GROUP VI
CCO- 35.5 to 75 Ton and Boom to 100′

GROUP VII
CCO- 75.5 to 125 Ton and Boom to 75′

GROUP VIII
CCO- 125.5 to 200 Ton and Boom to 100′

GROUP IX
CCO- 200.5 to 300 Ton and Boom to 100′

GROUP X
CCO- 300.5 to 450 Ton and Boom to 150′

GROUP XI
Master Mechanic, Working Foreman/Mechanic.

GROUP XII
Operator Foreman, licensed boat pilot.

GROUP XIII
Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant Oiler and Creter Crane Oiler (when required), barge tenders, oilers on drill rigs used for caisson or for pile driving, and Oiler.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION Class 1. Drivers on 2 axle trucks hauling less than 9 ton. Air compressor and welding machines and brooms, including those pulled by separate units, truck driver helpers, warehouse employees, mechanic helpers, greasers and tiremen, pickup trucks when hauling materials, tools, or workers to and from and on-the-job site, and fork lifts up to 6,000 lb. capacity.

Class 2. Two or three axle trucks hauling more than 9 ton but hauling less than 16 ton. A-frame winch trucks, hydrolift trucks, vactor trucks or similar equipment when used for transportation purposes. Fork lifts over 6,000 lb. capacity, winch trucks, four axle combination units, and ticket writers.

Class 3. Two, three or four axle trucks hauling 16 ton or more. Drivers on water pulls, articulated dump trucks, mechanics and working forepersons, and dispatchers. Five axle or more combination units.

Class 4. Low Boy and Oil Distributors.

Class 5. Drivers who require special protective clothing while employed on hazardous waste work.

TRUCK DRIVER - OIL AND CHIP RESEALING ONLY.

This shall encompass laborers, workers and mechanics who drive contractor or subcontractor owned, leased, or hired pickup, dump, service, or oil distributor trucks. The work includes transporting materials and equipment (including but not limited to, oils, aggregate supplies, parts, machinery and tools) to or from the job site; distributing oil or liquid asphalt and aggregate; stock piling material when in connection with the actual oil and chip contract. The Truck Driver (Oil & Chip Resealing) wage classification does not include supplier delivered materials.

TERRAZZO FINISHER

The handling of all materials used for Mosaic and Terrazzo work including preparing, mixing by hand, by mixing machine or transporting of pre-mixed materials and distributing with shovel, rake, hoe, or pail, all kinds of concrete foundations necessary for Mosaic and Terrazzo work, all cement terrazzo, magnesite terrazzo, Do-O-Tex terrazzo, epoxy matrix ter-razzo, exposed aggregate, rustic or rough washed for exterior or interior of buildings placed either by machine or by hand, and any other kind of mixture of plastics composed of chips or granules when mixed with cement, rubber, neoprene, vinyl, magnesium chloride or any other resinous or chemical substances used for seamless flooring systems, and all other building materials, all similar materials and all precast terrazzo work on jobs, all scratch coat used for Mosaic and Terrazzo work and sub-bed, tar paper and wire mesh (2x2 etc.) or lath. The rubbing, grinding, cleaning and finishing of same either by hand or by machine or by terrazzo resurfacing equipment on new or existing floors. When necessary finishers shall be allowed to assist the mechanics to spread sand bed, lay tarpaper and wire mesh (2x2 etc.) or lath. The finishing of cement floors where additional aggregate of stone is added by spreading or sprinkling on top of the finished base, and troweled or rolled into the finish and then the surface is ground by grinding machines.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

Illinois Department of Transportation

# Material Proposal Schedule of Prices

| Local Public Agency | County | Section Number |
|---|---|---|
| City of Highland | Madison | 24-00000-00-GM |

**Material Proposal Schedule of Prices**

| Group No. | Item(s) | Delivery | Unit | Quantity | Unit Price | Total |
|---|---|---|---|---|---|---|
| 1 | Seal Coat Furn. and Del. | City Storage | TON | 1200 | | |
| | (CM-13 079CML2-22) | | | | | |
| 2 | CA 6 Aggregate (Limestone) | City Storage | TON | 1000 | | |
| 3 | CA 7 Aggregate (Limestone) | City Storage | TON | 400 | | |
| 4 | Grit (CM-13 Slag) | City Storage | TON | 25 | | |
| 5 | MC-800 Prime Furn. & Appl. | City Storage | TON | 40 | | |
| 6 | HFRS-2 Furn. & Appl. | City Storage | TON | 120 | | |
| 7 | Seal Coat Hauled and Spread | City Storage | TON | 1200 | | |
| | (CM-13 079CML-22 | | | | | |
| | | | | | | |

The undersigned firm certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm. The undersigned firm further certifies that it is not barred from contracting with any unit of State or local government as a result of a violation of State laws prohibiting bid-rigging or bid rotating.

Bidder Signature & Date

| Address | City | State | Zip Code |
|---|---|---|---|
| | | | |

# City of Highland

## City Manager

To: Honorable Mayor Hemann and Council Members
From: Christopher Conrad, City Manager
Date: March 31, 2023
Re: Notice of Municipal Letting for City Hall Remodel

As you all are aware, we suffered a water line break in December as a result of the extreme temperatures and a previously unknown design flaw with a prior remodel that put water lines in a vulnerable position. Due to the extreme amount of water and the delay in being able to schedule a response team, simple clean-up and repair was not a viable option. The decision was made by council, after consultation with our insurance company, to seek a full remodel to correct several known deficiencies with the building.

The NOML before you is to seek general contractor bids to complete the remodel as designed. The floor plan has been worked on with staff input with the intent to make the remodeled city hall a one-stop shop for our citizens. This would include a space for HCS customer service and Building and Zoning within the building. We have also included alternate bids to include the roof replacement (currently anticipated for FY 25); window replacements; and soundproofing modifications in the council chambers to help with current sound issues. As part of this remodel we also plan to make major changes to the HVAC system moving from the current 6 residential heat pump systems with electric back-up which deliver air through floor air ducts that were compromised during the flood and created health concerns and instead use overhead air ducts and air handlers which are more efficient for commercial use.

We believe the suggested remodel will serve the citizens of Highland very well for many years to come and therefore we respectfully request the council approve this notice of municipal letting to obtain bids for the remodel of city hall.

# ADDITIONS & ALTERATIONS TO EXISTING HIGHLAND CITY HALL BUILDING

## PROJECT #2246

## April 1, 2023

**General Construction G-02-23**

Loyet
ARCHITECTS

**DAVID A. LOYET & ASSOC., INC.**
**ARCHITECTS**
**902 WALNUT STREET**
**HIGHLAND, ILLINOIS 62249**
**PHONE: 618-654-2328**
**FAX: 618-654-3823**
**EMAIL: mloyet@loyet-architects.com**

**ADDITIONS & ALTERATIONS TO EXISTING HIGHLAND CITY HALL BUILDING**
**TABLE OF CONTENTS**

**Div. 16 - Electrical**

**City of Highland, Illinois**

# Renovations and Alterations to the Existing Highland City Hall Building

GA-02-23

**Approved by:**_____ **Date:**_____
City Manager

Date: April 27, 2023
Time: 10:00 a.m.

Location: Public Safety Building
12990 Troxler Avenue
Highland, IL 62249

**Proposal Submitted by:**

Vendor Name: _____

Address: _____

City, State, Zip: _____

# Contents

## BID FORM

Submit this bid to: Office of the City Manager
12990 Troxler Avenue
P.O. Box 218
Highland, Illinois 62249

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the City of Highland in the form included in the Contract Administration to perform and furnish all Work as specified or indicated in the Special Provisions within the specified time and for the amount indicated in the Bid and in accordance with other terms and conditions of the Contract Documents.

Bidder accepts all of the terms and conditions of the Contract Administration and the Special Provisions, including without limitation those dealing with the disposition of bid security. This Bid will remain subject to acceptance for 30 days after the day of bid opening. Bidder will sign and submit the Contract with the Bonds and other documents required by the Bidding Documents within 15 calendar days after the date of the Notice of Award.

In submitting this Bid, Bidder represents that:

a) Bidder has visited the site and is familiar and satisfied with the location and site conditions, which may affect the cost, progress, performance, and completion of the Work.

b) Bidder is familiar with, and has satisfied with all Federal, State, and Local laws and regulations that may affect the performance of this Work.

c) Bidder is familiar and satisfied with the general nature of the Work.

d) Bidder has given the City of Highland written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by the City of Highland is acceptable to the Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all items and conditions for performing and furnishing the Work for which this Bid is submitted.

e) This Bid is genuine, not made in the interest or on behalf of any undisclosed person, firm, or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation. Bidder has not directly or indirectly induced or solicited any other bidder to submit a false or sham bid. Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding. Bidder has not sought by collusion to obtain for itself any advantage over any other bidder of over the City of Highland.

f) Bidder has completed and submitted with this Bid, the Certificate of Compliance, the Certificate of Non-Delinquency of Taxes, and the Certificate of Compliance with the Substance Abuse Prevention on Public Works Projects Act.

g) The bidder agrees to complete the work as described.

The bidder agrees to complete the work within the specified time limit.

Communications with the bidders should be addressed to the following address:
(Please print or type)

_____

_____

_____

Attach a list of subcontractors, if any. Absence of a subcontractor list will be interpreted as no subcontractors working on this contract.

Bid of _____
Company Name

_____
Address City State Zip Code

To: City of Highland, Illinois Date:_____

We hereby certify that we are the only party interested in this Bid as principals and that we have examined all the Contract Documents and the Specifications.

AUTHORIZED
SIGNATURE:_____ TITLE:_____

Print Name:_____

**Total Lump Sum Bid Price** **$_____**

## SIGNATURES

(If an individual)

Name (print) _____

Signature of Bidder _____

Business Address _____

_____

_____

---

(If a partnership)

Firm Name (print) _____

Signed by (print) _____

Signature _____

Business Address _____

_____

_____

---

(If a corporation)

Corporation Name _____

Signed by (print) _____

Signature _____

Title _____

Business Address _____

_____

# CONTRACT

This agreement, made and entered into this _____ day of _____ , 20__, by and between the City of Highland, Illinois, party of the first part, hereinafter designated as the Owner, and _____ his or their executors, administrators, successors and assignees, party of the second part, hereinafter designated as the Contractor.

Witnesseth: That the said Contractor has covenanted, contracted, and agreed, and by these presents does covenant, contract, and agree with the said Owner for and in consideration of the payment provided in the proposal attached hereto, and under the penalty expressed in the bond attached hereto, to do all called for by the specifications, free from all claims, liens, and charges.

It is also understood and agreed that the Contract Administration, Specifications, Bid Form, Proposal, and other exhibitors hereto attached or herein referred to are all essential documents for this Contract and are part thereof.

In witness therefore, on the day and year first above written, the parties hereto have set their hands and seals.

City of Highland, Illinois (Owner)

By: _____

Title: Mayor

Attest: _____

Title: _____ (CORPORTATE SEAL)

---

(if corporation) _____ (Contractor)

By: _____ President

Attest: _____ Secretary

(if a partnership) _____ (Contractor)

_____ (Contractor)

Partners doing business under the firm name of:

_____

If an individual _____

# CERTIFICATE OF COMPLIANCE

The undersigned Bidder / Proposer on a Contract submitted for bids / proposals by the City of Highland, Illinois known as_____, hereby certifies that he/she/it is not barred from bidding on the Contract as a result of violation of either Section 33E-3 (Bid Rigging) or Section 33E-4 (Bid Rotating) of Chapter 38 of the Illinois Revised Statutes.

Dated:_____, 20____

_____
Company Name

_____
Address

_____
City / State / Zip Code

_____
Signature Print Name

_____
Title

**CERTIFICATE OF NON-DELINQUENCY OF TAX**

# City of Highland

**To:** All Vendors and Contractors

**From:** City of Highland

**RE:** Certificate of Non-Delinquency of Tax

As a result of a recent amendment to the Illinois Municipal Code (Adding Section 11-42.1-1), the City of Highland is prohibited from entering into a contract with any individual or anyone else that is delinquent in the payment of any tax administered by the Illinois Department of Revenue, unless that party is contesting the tax in accordance with procedure established by the particular taxing act.

Further, before awarding a contract, the City of Highland is required to obtain a statement under oath from the party with whom it is contracting that no such taxes are delinquent. If a false statement is made, it voids the contract and allows the City to recover all amounts paid to the individual in a civil action.

**CERTIFICATE OF NON-DELINQUENCY OF TAX**

As required by Section 11-42.1-1 of the
Illinois Municipal Code

The undersigned hereby and herewith certifies under oath that he/she/it is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, or if delinquent, is currently contesting the liability or the amount of such tax in accordance with the procedures established by the appropriate Taxing Act.

A person is not considered delinquent in the payment of a tax for the purposes of this certification if such person has entered into an Agreement with the Illinois Department of Revenue for the payment of all taxes claimed delinquent, and is in compliance with that Agreement. If such is the case with the undersigned, the undersigned certifies that he/she/it has made such an Agreement and is in compliance therewith.

_____ _____

Date Company Name

_____ _____

Federal I.D. Number Address

_____

City / Sate / Postal Code

_____

Signature / Title

Signed and sworn to before me this_____day of _____, 20___.

_____

Notary Public

**CERTIFICATION OF COMPLIANCE WITH THE SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION**

# City of Highland

To: All Vendors

From: City of Highland

RE: Certificate of Compliance with the Substance Abuse Prevention on Public Works Projects Act

"The Substance Abuse Prevention on Public Works Projects Act" (Pub. L. 95-0635, codified as 820 ILCS 265/1 *et seq.*) became effective in the State of Illinois on January 1, 2008.

Due to the above-stated law, all bids from contractors and subcontractors for work on a public works project of the City of Highland shall be accompanied by a Certification of Compliance indicating, *first*, whether the bidder has signed collective bargaining agreements that are in effect for all of its employees and that deal with the subject matter of the above-stated Act; and, if not, *second*, that the bidder's written substance abuse program is attached to the Certification of Compliance and that the bidder's written substance abuse program meets or exceeds the requirements of "The Substance Abuse Prevention on Public Works Projects Act" (Pub. L. 95-0635, codified as 820 ILCS 265/1 *et seq.*).

# CERTIFICATION OF COMPLIANCE WITH THE SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION

## CITY OF HIGHLAND

Letting Date: _____ Item No.: _____
Contract No.: _____
Route: _____
Section: _____
Job No. _____
County: _____

The Substance Abuse Prevention on Public Works Projects Act, Public Act 95-0635, prohibits the use of drugs and alcohol, as defined in the Act by employees of the Contractor and by employees of all approved Subcontractors while performing work on a public works project. The Contractor/Subcontractor herewith certifies that it has a superseding collective bargaining agreement or makes the public filing of its written substance abuse prevention program for the prevention of substance abuse among its employees who are not covered by a collective bargaining agreement dealing with the subject as mandated by the Act.

A. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has signed collective bargaining agreements that are in effect for all of its employees, and that deal with the subject matter of Public Act 95-0635.

_____
Contractor/Subcontractor

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____
Signature of Authorized Representative Date

B. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has in place for all of its employees not covered by a collective bargaining agreement that deals with the subject of the Act, the attached substance abuse prevention program that meets or exceeds the requirements of Public Act 95-0635.

_____
Contractor/Subcontractor

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____
Signature of Authorized Representative Date

**HOLD HARMLESS AND INDEMNITY AGREEMENT**
**CITY OF HIGHLAND, ILLINOIS**

The Contractor_____, by affixing his signature hereto agrees to the following conditions:

1. To save and keep the City (including its agents and employees) free and harmless from all liability, public or private penalties contractual or otherwise, losses, damages, costs, attorney's fees, expenses, causes of actions, claims, or judgments, resulting from claimed injury, damages, or judgments resulting from claimed injury, damage, loss or loss of use to or of any person, including natural persons and any other legal entity, or property of any kind (including but not limited to causes in action) arising out of or in any way connected with the performance of work or work to be performed under this permit, excepting, however, the negligence of the City and shall indemnify the City for any costs, expenses, judgments, and attorneys' fees paid or incurred, by or on behalf of the City and its agents and employees, or paid for on behalf of the City and its agents and employees by insurance provided by the City.

2. To hold harmless the City (including its agents and employees) from liability or claims for any injuries to or death of Contractor's or any Subcontractor's employees, resulting from any cause whatsoever, excluding negligence of the City, including protection against any claim of the Contractor or any Subcontractor for any expenses of or payments made by any workman's compensation insurance payments under any workman's compensation law or any carrier on behalf of said Contractor or Subcontractor and shall indemnify the City for any costs, expenses, judgments, and attorneys' fees paid or incurred with respect to such liability or claims by it or on its behalf or on behalf of its agents and employees, whether or not by or through insurance provided by the City.

3. In the event the City's machinery or equipment is used by the Contractor, or Subcontractor, in the performance of the work called for by this permit, such machinery or equipment shall be considered as being under the custody and control for the Contractor during the period of such use by the Contractor or any Subcontractor, and if any person or persons in the employ of the City should be used to operate said machinery or equipment during the period of such use, such person or persons shall be deemed during such period of operation to be an employee or employees of the Contractor.

| | |
|---|---|
| _____ | _____ |
| Signature | Date |
| _____ | _____ |
| Print Name | Title |

## CONTRACT ADMINISTRATION

### INVITATION

The city of Highland, Illinois, will receive sealed bids until 10:00 a.m., April 27, 2023 at the Public Safety Building, 12990 Troxler Avenue, at which time they will be publicly opened and read. After tabulation and review, bids will be presented to the City Council for consideration. If there are any questions concerning this solicitation, please contact Mr. Matt Loyet at 618-654-2328.

This contract is governed by Prevailing Wage regulations in the state of Illinois.

### INSTRUCTIONS

Bids must be made on the forms furnished, and **NO ALTERATION, ADDITION, OR VARIATION**, to the bid form will be permitted.

Authorized signature must be included.

Bids shall be submitted in an opaque, sealed envelope containing the bidder's name and address, and labeled "Sealed Bid, Renovations and Alterations to the Existing Highland City Hall Building, GA-02-23." Facsimile or emailed bids are not acceptable.

Bidders need not return the entire contract proposal when bids are submitted unless otherwise required. Portions of the proposal that must be returned include the following:

a. Contract Cover
b. Bid Form
c. Signatures
d. Proposal Bid Security
e. Certificate of Non-Delinquency of Tax
f. Certificate of Compliance
g. Certificate of Compliance Substance Abuse

The city of Highland reserves the right to reject any and all, or any part of bids, and to waive any informality therein and to make the award in the best interest of the City. Bid Forms will be evaluated for the lowest responsible and responsive bid that shall be deemed the successful bidder and upon City Council approval, will be issued a Notice of Award.

Each bid shall be accompanied by a cash deposit, certified check, bid bond or irrevocable letter of credit made payable to the city of Highland, Illinois in the minimum amount of 5% of the bid as guarantee that the Bidder will enter into the proposed contract within the time specified. Personal or business checks will not be accepted. **The City will consider no bid unless accompanied by the required security.**

Should any bidder whose bid has been accepted by the City refuse, fail, or neglect to execute the attached contract, or if any provision of said contract is not met, Bidder agrees that the 5% bid

security shall be the amount of the liquidated damages occasioned by the failure, refusal, neglect, or non-compliance, and that thereupon the City shall realize on said bid security and use the proceeds in payment of said damages.

The bid prices shall remain valid and no participating party may withdraw his bid for at least 30 days after the established deadline for receipt of bids.

By submitting this bid, the participating party acknowledges that they are familiar with the specifications and all other applicable regulatory and contract requirements for the work. Any area of concern shall be brought to the architect's attention as soon as possible.

This contract is governed by Prevailing Wage regulations and the bidder shall comply with the Illinois Prevailing Wage Act. The CONTRACTOR and their subcontractors shall comply with all Illinois statutes pertaining to the selection of labor.

**REQUIRED DOCUMENTS**

The Certificate of Non-Delinquency of Taxes, a Certificate of Compliance concerning the bidder's "not [being] barred from bidding on the Contract as a result of violation of either Section 33E-3 (Bid Rigging) or Section 33E-4 (Rotating) of Chapter 38 of the Illinois Revised Statutes," and a Certificate of Compliance - Substance Abuse Prevention Program (and, if applicable) a copy of the bidder's written substance abuse program).

The successful bidder must agree to, and sign, the "Hold Harmless Agreement" form included in this bid package. The form must be completed before execution of the Contract.

The bidder shall include with his/her bid a listing of all Subcontractors. Subcontractors that are deemed unacceptable by the City will not be allowed to work on this contract. Only Subcontractors detailed on the Bid Sheet will be considered.

Following issuance by the City of the Notice of Award, the CONTRACTOR shall return the signed Contract within 15 calendar days of the date of issuance, together with executed copies of Performance and Payment Bonds, each in an amount equal to the Contract Price, and Certificate of Insurance as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract.

Upon receipt of the required documents, the City shall sign the executed documents and return a copy to the CONTRACTOR.

**INSURANCE**

The successful bidder will be required to carry a minimum amount of insurance. A Certificate of Insurance shall be submitted with the city of Highland listed as an Additional Insured. All Subcontractors shall provide a Certificate of Insurance.

The successful bidder shall obtain, and maintain, in force throughout the Contract period, insurance coverage in the amounts set out below.

**COVERAGE LIMITS**

Comprehensive General Liability

| | |
|---|---|
| Bodily Injury<br>1,000,000 aggregate all claims | 1,000,000 per claim |
| Property Damage<br>1,000,000 aggregate all claims | 1,000,000 per claim |
| Worker's Compensation<br>500,000 aggregate all claims | 500,000 per claim |
| Professional Liability Insurance<br>500,000 aggregate all claims | 500,000 per claim |

**BASIS FOR BID**

The bid shall include all labor, material, transportation, and other costs.

The bid price will include all discounts, preparation costs and all other charges or credits. Additional surcharges are not accepted after the award.

DO NOT include taxes in the bid price. The city of Highland is exempt from Federal Excise, Transportation, and State Sales Taxes.

**BASIS FOR CONTRACT AWARD**

Bid sheets will be evaluated. The lowest responsible and responsive bid shall be deemed the successful bidder and the contract will be awarded to that bidder (subject to the City Council approval).

**BASIS OF PAYMENT**

The CONTRACTOR will be paid in one payment upon receipt of the CONTRACTOR's invoice due to the short contract time. Final payment shall not be released until all lien waivers are received from the CONTRACTOR, Subcontractors, and Suppliers.
All work shall comply with applicable Occupation Health and Safety Administration (OSHA) regulations and guidelines.

## DESCRIPTION OF WORK

The work consists of Additions and alterations to existing Highland City Hall building as shown on drawings and specification.

## EMPLOYMENT REQUIREMENTS AND WAGE RATES

The 2022 MFT Materials is a “Public Works Construction” Project as defined in the Illinois Prevailing Wage Act 820 ILCS 130. As such, all bidders shall account for in their bids and will be subject to the general prevailing wage rates for Madison County, Illinois, currently published and as amended from time to time by the Department of Labor. Prevailing rate of wages are revised by the Department of Labor and are available on the Department’s official website.

(insert current prevailing wages for Madison County, Illinois)

# City of Highland

To: All Vendors

From: City of Highland

RE: Certificate of Compliance with the Substance Abuse Prevention on Public Works Projects Act

"The Substance Abuse Prevention on Public Works Projects Act" (Pub. L. 95-0635, codified as 820 ILCS 265/1 *et seq.*) became effective in the State of Illinois on January 1, 2008.

Due to the above-stated law, all bids from contractors and subcontractors for work on a public works project of the City of Highland shall be accompanied by a Certification of Compliance indicating, *first*, whether the bidder has signed collective bargaining agreements that are in effect for all of its employees and that deal with the subject matter of the above-stated Act; and, if not, *second*, that the bidder's written substance abuse program is attached to the Certification of Compliance and that the bidder's written substance abuse program meets or exceeds the requirements of "The Substance Abuse Prevention on Public Works Projects Act" (Pub. L. 95-0635, codified as 820 ILCS 265/1 *et seq.*).

Return with Bid

**Certification of Compliance**

**Substance Abuse Prevention Program Certification**

**CITY OF HIGHLAND**

Letting Date: _____ Item No.: _____
Contract No.: _____
Route: _____
Section: _____
Job No. _____
County: _____

The Substance Abuse Prevention on Public Works Projects Act, Public Act 95-0635, prohibits the use of drugs and alcohol, as defined in the Act by employees of the Contractor and by employees of all approved Subcontractors while performing work on a public works project. The Contractor/Subcontractor herewith certifies that it has a superseding collective bargaining agreement or makes the public filing of its written substance abuse prevention program for the prevention of substance abuse among its employees who are not covered by a collective bargaining agreement dealing with the subject as mandated by the Act.

A. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has signed collective bargaining agreements that are in effect for all of its employees, and that deal with the subject matter of Public Act 95-0635.

_____
Contractor/Subcontractor

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____
Signature of Authorized Representative Date

B. The undersigned representative of the Contractor/Subcontractor certifies that the contracting entity has in place for all of its employees not covered by a collective bargaining agreement that deals with the subject of the Act, the attached substance abuse prevention program that meets or exceeds the requirements of Public Act 95-0635.

_____
Contractor/Subcontractor

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____
Signature of Authorized Representative Date

Return with Bid

**HOLD HARMLESS AND INDEMNITY AGREEMENT**
**CITY OF HIGHLAND, ILLINOIS**

The Contractor_____, by affixing his signature hereto agrees to the following conditions:

1. To save and keep the City (including its agents and employees) free and harmless from all liability, public or private penalties contractual or otherwise, losses, damages, costs, attorney's fees, expenses, causes of actions, claims, or judgments, resulting from claimed injury, damages, or judgments resulting from claimed injury, damage, loss or loss of use to or of any person, including natural persons and any other legal entity, or property of any kind (including but not limited to causes in action) arising out of or in any way connected with the performance of work or work to be performed under this permit, excepting, however, the negligence of the City and shall indemnify the City for any costs, expenses, judgments, and attorneys' fees paid or incurred, by or on behalf of the City and its agents and employees, or paid for on behalf of the City and its agents and employees by insurance provided by the City.

2. To hold harmless the City (including its agents and employees) from liability or claims for any injuries to or death of Contractor's or any Subcontractor's employees, resulting from any cause whatsoever, excluding negligence of the City, including protection against any claim of the Contractor or any Subcontractor for any expenses of or payments made by any workman's compensation insurance payments under any workman's compensation law or any carrier on behalf of said Contractor or Subcontractor and shall indemnify the City for any costs, expenses, judgments, and attorneys' fees paid or incurred with respect to such liability or claims by it or on its behalf or on behalf of its agents and employees, whether or not by or through insurance provided by the City.

3. In the event the City's machinery or equipment is used by the Contractor, or Subcontractor, in the performance of the work called for by this permit, such machinery or equipment shall be considered as being under the custody and control for the Contractor during the period of such use by the Contractor or any Subcontractor, and if any person or persons in the employ of the City should be used to operate said machinery or equipment during the period of such use, such person or persons shall be deemed during such period of operation to be an employee or employees of the Contractor.

_____ _____
Signature Date

_____ _____
Print Name Title

**Return with Bid**

# CERTIFICATE THAT CONTRACTOR IS NOT BARRED FROM CONTRACTING WITH UNIT OF LOCAL GOVERNMENT BECAUSE OF CONVICTION OF AN OFFENSE RELATED TO BIDDING

The undersigned Bidder / Proposer on a Contract submitted for bids / proposals by the City of Highland, Illinois known as:_____, hereby certifies that he/she/it is not barred from bidding on the Contract as a result of violation of either Section 33E-3 (Bid Rigging) or Section 33E-4 (Bid Rotating) of Chapter 38 of the Illinois Revised Statutes.

Dated:_____,20____

_____
Company Name

_____
Address

_____
City / State / Zip Code

_____
Signature Print Name

_____
Title

# City of Highland

**To:** All Vendors and Contractors

**From:** City of Highland

**RE:** Certificate of Non-Delinquency of Tax

As a result of a recent amendment to the Illinois Municipal Code (Adding Section 11-42.1-1), the City of Highland is prohibited from entering into a contract with any individual or anyone else that is delinquent in the payment of any tax administered by the Illinois Department of Revenue, unless that party is contesting the tax in accordance with procedure established by the particular taxing act.

Further, before awarding a contract, the City of Highland is required to obtain a statement under oath from the party with whom it's contracting that no such taxes are delinquent. If a false statement is made, it voids the contract and allows the City to recover all amounts paid to the individual in a civil action.

Return with Bid

**CERTIFICATE OF NON-DELINQUENCY OF TAX**

As required by Section 11-42.1-1 of the
Illinois Municipal Code

The undersigned hereby and herewith certifies under oath that he/she/it is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, or if delinquent, is currently contesting the liability or the amount of such tax in accordance with the procedures established by the appropriate Taxing Act.

A person is not considered delinquent in the payment of a tax for the purposes of this certification if such person has entered into an Agreement with the Illinois Department of Revenue for the payment of all taxes claimed delinquent, and is in compliance with that Agreement. If such is the case with the undersigned, the undersigned certifies that he/she/it has made such an Agreement and is in compliance therewith.

_____ _____

Date Company Name

_____ _____

Federal I.D. Number Address

_____

City / Sate / Postal Code

_____

Signature / Title

Signed and sworn to before me this_____day of _____, 20___.

_____

Notary Public

**SECTION 00100**
**Instructions to Bidders**

1. Bids will be submitted on the form prescribed in the Form of Proposal, sample of which is included in this specification. All blank spaces in the form shall be fully filled out; numbers stated both in writing and in figures. Signatures shall be in long hand, and the completed form shall be without interlineation, alterations, and erasures. Bids will be received by selected contractors. Bids will be received until 10:00am Thursday April 27, 2023 on general construction.

2. Bids will be received on:

   A. General Construction GC-02-23.

3. Bids will be addressed and delivered to Mr. Chris Conrad, City Manager, 12990 Troxler Avenue, Highland, Illinois 62249, enclosed in an envelope marked ASealed Bid@ and bearing the name of the project and the bidder.

4. Plans and specifications are available from David A. Loyet & Assoc., Inc., Architects. Plan deposit is $100.00/per set and $35.00/shipping and handling. Plans and specifications must be returned for a refund to the architect=s office by May 11, 2023. Contact the architect=s office at 618-654-2328. Plans may be picked up at 902 Walnut Street, Highland, IL 62249.

5. All bids will be accompanied by a bank draft, certified check, or bid bond in an amount equal to 5% of the base bid. Any bid not accompanied by a bid bond, certified check, or bank draft will be considered irregular. No bidder may withdraw his bid for ninety (90) days after receipt of bids. By making such bid deposit, the bidder shall agree that the proceeds thereof shall be retained as liquidated damages, and become the property of the Owner. Should the successful bidder fail or refuse to sign a formal written contract with the Owner, or fail or refuse to furnish a Performance Bond satisfactory to the Owner and Architect, the Bidder will be considered to have abandoned the proposal. In such event, the Owner shall retain all proceeds of the Bid Security in order to secure a ASuccessful Bidder@. The term ASuccessful Bidder@ shall be deemed to include any bidder whose proposal is accepted by the Owner.

6. The successful bidder will be required to furnish performance and payment bonds in an amount equal to the contract. Cost of the bonds to be paid by the contractor. These bonds shall be furnished and in effect

before any work is started under this contract. See form of proposals 00100- 10-14 item 4.

7. The owner reserves the right to reject any or all bids and to not accept the lowest bid. The owner reserves the right to waive informalities in the bids, and to accept the bid which it considers to be in the best interest of the Owner.

8. Should the bidder find discrepancies or omissions from the specifications, or should be in doubt as to their meaning, he should at once notify the Architect.

9. All contractors shall be required to provide complete installations, all to conform to all applicable regulations, and recognized and accepted engineering practices. Any work normally required, but not specifically shown, shall be provided of a quality consistent with work indicated.

10. The contractor shall guarantee that all necessary steps will be taken during construction to prevent damage by water, building materials and labor due to the work as specified in the specifications. Any such damage will be corrected by and paid for by the contractor.

11. Illinois State Sales Tax does <u>not apply.</u> The Owner will provide the Contractor with tax exempt identification numbers upon request.

12. All materials shall be installed in strict accordance with the manufacturer=s recommendations. Where the manufacturer=s recommendations exceed the provisions of the work shown, the manufacturer=s recommendations shall govern.

13. In the event of conflict between drawings and specifications, the specifications shall have precedence. If any work is shown on the drawings and not specified, the contractor is obligated to provide these items. He should consult with the Architect for approval of the manufacturer.

14. Before submitting his proposal, bidders are instructed to examine the site and to fully inform themselves of all existing conditions. No consideration will be given for extra work arising out of conforming to existing construction not specifically shown. If any existing conditions occur through contractor's examination, which effect the intent of the drawings and specifications, they should be brought to the attention of the Architect prior to bidding.

15. Each bidder shall review all sections of the drawings and specifications to

determine the extent of work that the contractor is responsible for. No extra consideration will be given to any contractor not knowing the full extent of all the drawings and specifications.

16. Before submitting a request for payment, the contractor shall submit to the Architect, in a form acceptable to the Architect, an affidavit including the names and addresses of all parties furnishing labor and/or materials, and the amounts to become due each.

17. The contractor shall locate all materials and equipment, and schedule all deliveries and all work so as not to interfere with the owner's normal operation.

18. The contractor shall submit monthly waivers of lien, notarized or corporate seal, and the actual dollar amount of payment for the previous monthly payment from each party receiving money. The contractor shall submit a waiver of lien for the total amount of request. Before final payment will be made to the general contractor, final lien waivers will be required from all sub-contractors and major suppliers.

19. Progress payments shall be made for 90% of the portion of the contract sum for labor, materials, and equipment incorporated in the work and 90% of the portion of the contract sum for materials and equipment suitably stored at the site or at some other location agreed upon in writing, for the period covered by the application for payment, less the aggregate of previous payments made. Final payment for the entire unpaid balance of the contract sum shall be paid by the Owner to the contractor when the work has been completed, the contract fully performed, a final certificate for payment issued by the Architect, and final lien waivers received from all sub-contractors, major suppliers, and general contractor.

20. No asbestos containing materials may be installed as part of this project. If any existing suspect asbestos containing materials require removal or disturbance, consult with the Architect prior to any disturbance of such.

21. The Contractor shall submit requests for product substitutions for the Architect=s approval no later than ten days prior to bid date. Any other proposed product substitutions shall be listed on the bid proposal as voluntary alternates.

22. It is the responsibility of all Contractors, prime or subcontractor, bidding any or all portions of this project, to thoroughly review all drawings and specifications to determine their scope of work. All work items may not specifically be shown only under their section of bid documents. No

consideration will be made to any bidder not knowing the full extent of the bid documents.

23. The successful Contractor shall require the Owner to supply him with a copy of insurance that the Owner is required to purchase. (See General Conditions: Insurance on page 0100-5, Paragraph 3, Items D and E.)
24. A each bidder shall have received a set of bid documents from the architect's office prior to submitting a bid for this project. Bids submitted without obtaining a set of bid documents, will not be allowed.

25. The structure is stable only in its completed form. Temporary supports required for stability of the structure during all intermediate stages of construction shall be designed and provided by Contractor.

## GENERAL CONDITIONS

1. **STANDARD A.I.A. FORMS:** General Conditions of the Contract, Standard Form A201, current edition of the American Institute of Architects, are hereby made a part of this specifications to the same extent as if printed herein. The General Conditions, including modifications herein, shall become a part of the contract and apply to all contractors and sub-contractors. Copies of the General Conditions may be examined at the Architect's office.

2. **PERMITS, FEES, AND NOTICES:** The contractor shall provide and pay all costs associated with his work, such as connection charges, taxes, permits, telephone calls, transportation and unloading, storage in safe protected areas, use of tools, power driven equipment, etc. Thus, the contract sum shall cover all cost of doing business associated with this contract.

**3. INSURANCE:**

A. The contractor shall carry Comprehensive General Liability Insurance in an amount equal to or exceeding $1,000,000.00 single limit coverage for bodily injury and/or property damage liability. Each policy of comprehensive general liability and Umbrella Coverage shall name the Owner and Architect as an additional insured for the occurrences arising, in whole or in part, out of the work and operations performed. Additionally, the contractor shall carry automobile liability protection with limits equal to or exceeding $500,000 bodily injury per person, $2,000,000 bodily injury per occurrence, and $250,000 property damage liability per occurrence. Each policy of comprehensive general liability and

Umbrella Coverage shall name the Owner and Architect as an additional insured for the occurrences arising, in whole or in part, out of the work and operations performed. Also, the contractor shall carry Workman's Compensation insurance with Standard Illinois limits including $300,000 employer's liability protection. Contractor may provide a commercial umbrella liability policy with a $1,000,000 limit in lieu of limiting above requirements. Insurance company shall be subject to acceptance by the owner's representative, however, said company shall have at least an A.M. Best's rating of B+ or better. The contractor shall furnish the Architect/Owner with a Certificate of Insurance.

B. Additionally, the contractor=s insurance shall include the following:

The contractor agrees to waive any subrogation claim for any amounts paid by the contractor under any workers= compensation act or law and further agrees that all insurance policies will be endorsed to reflect that there is a waiver of any subrogation for workers= compensation payments. Further, the contractor agrees to waive any limitation on the amount of contribution recoverable from the contractor. The contractor also agrees to require identical provisions to be included in all subcontractor=s subcontracts. The waivers as set forth in this paragraph will apply to and go to the benefit of the owner, design professional and all other contractors and subcontractors working on the job and their agents, employees and consultants. All subcontractors for the job also agree to the identical waiver on their own behalf and that they will require such waivers and endorsements to be put in their own insurance policies. By entering into any contract or subcontract in connection with the job all contractors and subcontractors hereby agree to be bound by this provision and that this clause is adopted and incorporated by reference into their contract or subcontract whether specifically set forth therein or not. Further, all contractors and subcontractors hereby agree that they will indemnify and defend the owner, design professional, all other contractors and subcontractors and their agents, employees and consultants from and against any loss, expense, damage or injury that the indemnities may sustain as a result of any claim made against them in connection with the job referred to in these documents to the extent that any such loss, expense, damage or injury is caused or contributed to by the conduct or negligence of the party providing indemnification.

C. The contractor shall be responsible for loss of materials, equipment, tools, etc., from job site due to theft. At his option, he may cover

such items with applicable insurance inasmuch as the Owner's insurance, known as Builder's Risk, does not cover such loss.

D. The owner will carry general liability insurance as mentioned in the General Conditions of the Contract for Construction, AIA Document A201.

E. Fire and Extended Coverage Insurance, etc., as indicated in Section 11.3 of the General Conditions of the Contract for Construction, AIA Document A201, shall be carried by the Owner. Premium for same will be paid by the Owner. The Owner shall furnish the contractor a Certificate of Insurance upon request.

## SPECIAL CONDITIONS

1. The contractor shall guarantee, in writing, all labor and materials for one (1) year from the date of acceptance unless otherwise specified.

2. All bidders must visit the site to determine the job conditions.

3. The contractor must inform the Architect and Owner three (3) days in advance of date he plans to begin work; and on the day that work commences, the contractor shall inform the Architect and Owner that he is at the site and about to begin work.

**5. OVERHEAD AND PROFIT:**

A. The contractor will be limited to overhead, profit, and increase in bond cost not exceeding 15% for additional work accomplished by his own forces. The contractor will be limited to 5% overhead, profit, and increase in bond cost on additional work performed by all sub-contractors.

6. **TEMPORARY SERVICES:**

A. Water and electric services are available. The City of Highland will permit the contractors to use same during the period of work, provided it is used without waste. The city will provide single source tap-ons. Extension of these services will be by the applicable contractor.

B. Toilet facilities for workmen are not available and shall be furnished by the general contractor. These must be kept clean and orderly.

**7. CLEAN UP:**

A. Periodic clean-up will be insisted upon to maintain an orderly appearance and for safety measures.
B. The contractors shall remove all debris, unused materials, tools, and other items used in his work.

C. Final clean up at the completion of the work will be done by the contractors.

**8. CONTRACTOR USE OF PREMISES:**

A. General:

1. Limit use of the premises to construction activities.

**9. Temporary Heat**

A. The General contractor shall provide at his own expense temporary heat necessary to protect all work and materials against injury from dampness and cold and to dry out the building. Fuel, Equipment, and method of temporary heat shall be satisfactory to the architect. The use of new HVAC system for temporary heat will not be allowed.

**10. Alternates**

A. All contractors and sub-contractors should refer to Alternates, Section 01030, as alternates may not be referenced in each section of the specification.

**11. Miscellaneous Requirements**

A. All work shall be sized to fit jobsite and job conditions. The drawings are to be regarded as design drawings (not shop drawings and shall be subject to taking dimensions on the jobsite.

B. All layout work, including walls and partitions, shall be by the general contractor.

**12. LABOR STATUTES, RECORDS, AND RATES:**

A. All contractors shall familiarize themselves with all provisions of all acts referred to in this section and in addition should make an investigation of labor conditions and any negotiated labor agreements which may exist or are contemplated at this time. Nothing in the acts referred to in this section shall be construed to prohibit the payment of more than the prevailing wage scale.

B. In the employment and use of labor, the contractor shall conform to all Illinois Statutory Requirements regarding the labor, including, but not limited to, the following Acts:

(1) An Act to give preference to veterans of the United States Military and Naval Service in appointments and employment upon public works by, or for the use of, the State or its political subdivisions, approved June l2, l935, as amended (Illinois Statutes, Revised, Chapter l26 l/2, Section 23 et. seq.)

(2) An Act to give preference to the construction of public works projects and improvements to citizens of the United States who have resided in Illinois for one year, filed July 26, l939, as amended (Illinois Revised Statutes, Chapter 48, Section 269, et. seq.).

(3) The Fair Employment Practices Act, approved July 21, 1961, amended (Illinois Revised Statutes, Chapter 48, Section 851, et. seq.).

(4) An Act to prohibit discrimination and intimidation on account of race, color, creed, sex, or natural origin in employment under contracts for public buildings, or public works,

approved July 8,1933, as amended (Illinois Revised Statutes, Chapter 29, Section 17, et.seq.).

(5) An Act in relation to the protection of the employment status of persons in the Military and Naval Service

(6) An Act to prohibit unjust discrimination in employment because of age and providing for penalties, approved July 26, 1967, as amended (Illinois Revised Statutes, Chapter 48, Section 881, et. seq.).

(7) An Act regulating wages of laborers, mechanics, and other workmen employed in any public works of the State, County, City, or any public works, approved June 26, 1941, Section 39s-1 et. seq.), which provides in part that the contractor, sub-contractors, etc., shall pay to all laborers, workmen, and mechanics performing work under the contract, not less than the prevailing wages at the project site. A schedule of prevailing wages may be obtained from the Illinois Department of Labor. The contractor shall keep or cause to

be kept an accurate record of names, occupations, and actual wages paid to the laborer, workmen, and mechanic employed by him in connection with the contract. The record shall be open for inspection by a representative of the Illinois Department of Labor at all reasonable hours for four (4) years following completion of the contract.

(8) Hours of Work: The contractor shall furnish sufficient forces and work such shifts as may be required to ensure completion of the work in accordance with the contract and within the contract time. The nature of the work may require that parts of it be performed outside of regular working hours. If the project falls behind schedule, the contractor shall be required to perform the work by extra shifts, or overtime basis as may be necessary to complete the work on time. The contractor shall not be permitted to be entitled to additional compensation for extra shifts or overtime work.

(9) An Act in relation to the prevention of substance abuse.

(10) Public act 100-1177

C. The Combined Public Safety Building is a "Public Works Construction" Project as defined in the Illinois Prevailing Wage Act 820 ILCS 130. As such, all bidders shall account for in their bids and will be subject to the general prevailing wage rates for Madison County, Illinois, currently published and as amended from time to time by the Department of Labor. Prevailing rate of wages are revised by the Department of Labor and are available on the Department's official website.

For Illinois prevailing wage rates go to www.Illinois.gov/idol

## FORM OF PROPOSAL FOR GENERAL CONSTRUCTION GC-02-23

**(COPY ON YOUR LETTERHEAD IN DUPLICATE)**

I. Having carefully examined the drawings and specifications entitled **"Alterations & Additions to Existing Highland City Hall",** as well as the site and all conditions affecting the work, the undersigned contractor shall agree to furnish all labor and materials necessary for the work shown on the drawings and described in the specifications for the sum of:

**Base Bid:_____ Dollars (_____)**
**(Includes Performance/Payment Bond)**
**Alternate Bid No. 1: Windows Dollars (_____)**
**Alternate Bid No. 2: Shingles Dollars (_____)**
**Alternate Bid No. 3: N/A**
**Alternate Bid No. 4: Paint Existing Building Dollars (_____)**

2. If the undersigned contractor is notified of the acceptance of this proposal within ninety (90) days after the date set for receiving of bids, he agrees to execute a contract for the above mentioned compensation.

3. This contractor shall agree to complete, substantially, all work furnished and included in this set of contract documents within _____calendar days after the execution of the contract.

5. We acknowledge receipt of Addenda #_____

6. Enclosed is a bid bond or check in an amount equal to 5% of the sum of the base bid.

Respectfully submitted,

Signed_____

Title _____

Firm Name _____

Address_____

Date _____

# DIVISION 1 - GENERAL REQUIREMENTS
## Section 01100 - Summary

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 1.2. SUMMARY:

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Work under other contracts.
4. Work restrictions.

B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities" for limitations and procedures governing temporary use of Owner's facilities.

### 1.3. WORK COVERED BY CONTRACT DOCUMENTS:

A. Project Identification: Additions and Alterations to Highland City Hall.

1. Project Location: Highland, Illinois.

B. Owner: City of Highland
1115 Broadway
Highland Illinois 62249

1. Owner's Representative: Chris Conrad, City Manager.

C. Architect: David A. Loyet & Associates, Inc., Architects
902 Walnut Street
Highland, Illinois 62249

D. The Work consists of the following:

1. This project includes a new addition of a vestibule, interior repair/replacement of water damage to existing building materials, and material upgrades.

**1.4. TYPE OF CONTRACT:**

A. Project will be constructed under a single prime contract.

**1.5. WORK RESTRICTIONS:**

A. The contractor shall realize that the entire site is a "smoking is prohibited" area. All employees of the contractor shall obey this rule.

END OF SECTION 01100.

**DIVISION 1 - GENERAL REQUIREMENTS**
**Section 01210 - Allowances**

1. **GENERAL:**

1.1. REQUIREMENTS INCLUDE:

A. The contractor shall include an allowance for the item as listed below in their costs and bid. If actual costs for the item are below the allowance, the Owner will receive the credit. If actual costs exceed the allowance, the Owner will pay an extra. However, the Owner shall be made aware of the costs and approve them in writing before any material or service is ordered.

B. Plaque:

1. The General Contractor shall include in his bid an allowance of $2,000.00 for the purchase of a plaque.

C. Unknown Conditions:

1. The General contractor shall provide an allowance of $25,000.00 to correct deficiencies in this project due to unknown conditions.

D. HVAC Control Systems

1. The contractor shall provide for an allowance of $15,000.00 for the purchase and installation of a control system as selected by the owner.

E. Roof Deck Replacement

1. The contractor shall provide an allowance of $5,000.00 for unknown wood replacement.

f. Sound Control Systems

2. The contractor shall provide for an allowance of $10,000.00 for the purchase and installation of a sound control system as selected by the owner, for the Council Chambers.

END OF SECTION 01210.

**DIVISION 1 - GENERAL REQUIREMENTS**
**Section 01230 - Alternates**

## 1. GENERAL:

1.1. SCHEDULE OF ALTERNATES:

A. Alternate No. 1: This alternate consists of the Ceneral Contractor providing and installing new windows as shown.

B. Alternate No. 2: This alternate consists of the General Contractor of providing a new shingled roof system, as specified, for the existing roof.

C. Alternate No. 3: Not Used

D. Alternate No. 4: This alternate consists of painting all existing surfaces previously painted/stained
   1. Cedar trim: 1 coat penetrating stain
   2. Dryvit: 2 coats acrylic latex flat emulsion
   3. Material: Sherwin Williams, Manufacturer of paint.

END OF SECTION 01230.

**DIVISION 1 - GENERAL REQUIREMENTS**
**Section 01330 - Submittal Procedures**

## 1. GENERAL:

### 1.1. SUMMARY:

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

### 1.2. SUBMITTAL PROCEDURES:

A. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal.
2. Resubmittal Review: Allow 10 days for review of each resubmittal.

B. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.

C. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals without review received from sources other than Contractor.

1. Transmittal Form: Use AIA Document G810.

D. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

E. Use for Construction: Use only final submittals with mark indicating "Approved" action taken by Architect.

## 2. PRODUCTS:

### 2.1. SUBMITTALS:

A. General: Prepare and submit Submittals for all construction materials.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Manufacturer's catalog cuts.
    e. Wiring diagrams showing factory-installed wiring.
    f. Printed performance curves.
    g. Operational range diagrams.
    h. Compliance with specified referenced standards.
    i. Testing by recognized testing agency.

4. Number of Copies: Submit six copies of Product Data, unless otherwise indicated. Architect will return four copies. Mark up and retain one returned copy as a Project Record Document. Electronic submittals are acceptable if accompanied with three hard copies.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Notation of coordination requirements.
j. Notation of dimensions established by field measurement.
k. Relationship to adjoining construction clearly indicated.
l. Seal and signature of professional engineer if specified.
m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.

## 2.2. INFORMATIONAL SUBMITTALS:

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

## 2.3. DELEGATED DESIGN:

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## 3. EXECUTION:

### 3.1. CONTRACTOR'S REVIEW:

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2. ARCHITECT'S ACTION:

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

**END OF SECTION 01330.**

**DIVISION 1 - GENERAL REQUIREMENTS**
**Section 01740 - Warranties and Bonds**

## 1. GENERAL:

1.1. REQUIREMENTS INCLUDE:

A. General Contractor:

1. See demolition plan.

2. Provide all demolition required of not shown on demolition plan.

1.2. RELATED REQUIREMENTS:

A. Specified Elsewhere:

1. Preliminary Matters.

a. Performance Bond.
b. Labor and Material Payment Bond.
c. General Conditions - Warranty.
d. Bid Bond.

1.3. SUBMITTAL REQUIREMENTS:

A. Assemble warranties and bonds, properly executed by each of the respective manufacturers, sub-contractors, and suppliers.

B. Submit one original signed copy of each item.

C. Table of Contents:

1. Product or work item.

2. Firm, with principal's name, address, and telephone number.

3. Scope.
4. Date of beginning of warranty or bond (in accord with General Conditions).

5. Duration of warranty or bond.

6. Provide information for Owner's personnel. Proper procedures in case of product or equipment failure.

7. Contractor; responsible principal's name, address, and telephone number.

1.4. FORM OF SUBMITTALS:

A. Prepare a single packet.

B. Format 8 1/2" x 11". Fold larger sheets to fit.

1.5. SUBMITTALS REQUIRED:

A. Submit warranties and bonds specified in, but not limited to, the following sections:

1. 05500 - Metal Fabrications
2. 06300 - Wood Window
3. 07241 – Exterior Insulation and Finish System- Class Pb
4. 07610 - Flashing & Sheet Metal.
5. 08211 - Flush Wood Doors.
6. 08410 – Aluminum Entrances & Storefronts.
7. 08711 - Door Hardware
8. 08800 - Glass and Glazing
9. 09120 – Metal Suspension Systems
10. 09680 - Carpet Tile
11. 09705 - Poured Epoxy Flooring
12. 10830 – Mirror Units.
13. Div. 15 - HVAC.
14. Div. 16 – Electrical Work.

END OF SECTION 01740.

**DIVISION 2- SITE CONSTRUCTION**
**SECTION 02060 – DEMOLITION**

## 1. GENERAL

### 1.01. WORK INCLUDES

A. Contractor Provide:

a. Removal and disposal of the following existing items as indicated on the drawings:

1. Existing partitions, including concrete block, studs and drywall.

2. Electrical, Plumbing and Mechanical.

3. Doors, Frames and Hardware.

### 1.02. RELATED WORK

A. Specified elsewhere:

1. Respective specification sections.

### 1.03. PROJECT/SITE CONDITIONS

A. Existing conditions:

1. Conduct demolition to minimize interferences with adjacent structures.

2. Provide and maintain temporary barriers and security devices.

3. Conduct operations with minimum interference to public or private thoroughfares.

## 3. EXECUTION

3.01. PREPARATION.

A. Prevent movement or settlement of adjacent structures.

3.02. DEMOLITION & REMOVAL

A. Demolish specified items in an orderly and careful manner as shown on drawings and as specified herein.

B. Remove demolished materials from site as work progresses. Leave site in clean condition. Contractor shall dispose of all demolished materials in a proper manner.

3.03. PAY COSTS

A. Include cost for all demolition and disposal with contract price and no additional compensation will be allowed.

END OF SECTION 02060

# DIVISION 3 - CONCRETE
## Section 03100 - Concrete Formwork

## 1. GENERAL:

### 1.1. WORK INCLUDES:

A. General Contractor:

1. Provide all concrete formwork, shoring and accessories as shown on the drawings and as herein specified for the following:

   a. Floor slabs.
   b. Entrance slabs.
   c. Concrete foundation walls/footings.
   d. Miscellaneous items.
   e. Sitework Items.

### 1.2. RELATED WORK:

A. Specified Elsewhere:

1. Related provisions - Divisions 1, 15 and 16.
2. 03200 - Concrete Reinforcement.
3. 03300 - Cast-In-Place Concrete.
4. 05120 - Structural Steel.

### 1.3. REFERENCES:

A. ACI 301(Latest Edition) - Specifications for Structural Concrete for Buildings.

B. ACI 347-R - Recommended Practice for Concrete Formwork.

### 1.4. SYSTEM DESCRIPTION:

A. Design, engineer, and construct formwork, shoring and bracing to meet design requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

**B. Contractor assumes full responsibility for formwork design.**

### 1.5. QUALITY ASSURANCE:

A. Construct and erect concrete formwork in accordance with ACI 301 and 347-R.

**1.6. DELIVERY, STORAGE, AND HANDLING**:

A. Deliver form materials in manufacturer's packaging with installation instructions.

B. Store off ground in ventilated and protected area to prevent deterioration from moisture or damage.

**2. PRODUCTS:**

**2.1. WOOD FORMS:**

A. Forms For Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.

Use Overlaid Plywood: Complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form", Class I.

B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.

C. Use only the specified products for the following manufacturers:

1. Weyerhauser concrete form.
2. Georgia-Pacific, G-P Exterior soft wood plywood.
3. Plywood and Door Corporation's Finn-Form.

**2.2. FORM OIL:**

A. Coat the inside of forms with non-staining oil.

B. Use only the specified products of the following manufacturers:

1. Symons Manufacturing Co., Deerfield, IL - Magic Kote.

2. Lambert Corporation - Formcel.

3. Guardian Chemical Coatings, Inc., Houston, Texas - Guardian Form Coating.

4. Concrete Service Co., Philadelphia, PA - Form-Coat.

5. Euclid Chemical Co., - Ecoslip.

**2.3. FORM TIES:**

A. Form ties shall have a 1" minimum break-off depth from the face of the concrete. Ties shall be removed after forms are removed and holes shall then be filled with mortar that matches the adjacent surfaces. Provide stainless steel form ties for all exterior surfaces exposed to view.

B. Use only the specified products of the following manufacturers:

1. Dayton - Sure Grip snap-in form tie.
2. Heckman - Snapties.
3. Richmond - Snap-Tys.

**3. EXECUTION:**

**3.1. INSPECTION:**

A. Verify lines, levels, and measurements before proceeding with formwork.

**3.2. PREPARATION:**

A. Earth forms, except for footings, not permitted.

B. Minimize form joints. Symmetrically align joints.

C. Arrange and assemble formwork to permit stripping, so that concrete is not damaged during its removal.

**3.3. ERECTION:**

A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be over stressed by construction loads.

B. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside

face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.

C. Construct formwork to maintain tolerances in accordance with ACI 301-72 (Latest Edition).

## 3.4. APPLICATION OF FORM RELEASE AGENT:

A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

B. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

## 3.5. INSERTS, EMBEDDED PARTS, AND OPENINGS:

A. Provide formed openings where required for work embedded in or passing through concrete.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

## 3.6. FORM REMOVAL:

A. Do not remove forms and shoring until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it.

B. Do not damage concrete surfaces during form removal.

## 3.7. CLEANING:

A. Clean forms to remove foreign matter as erection proceeds.

B. Ensure that water and debris drain to exterior clean-out ports.

C. During cold weather, remove ice and snow from forms. Do not use

deicing salts. Do not use water to clean out completed forms, unless formwork and construction proceed within heated enclosure. Use compressed air to remove foreign matter.

**END OF SECTION 03100.**

# DIVISION 3 - CONCRETE
## Section 03200 - Concrete Reinforcement

## 1. GENERAL:

### 1.1. WORK INCLUDES:

A. General Contractor:

1. Provide all labor, material and equipment to install all concrete reinforcement and related accessories shown on the drawings and herein specified including:

   a. Reinforcing Bars.
   b. Support Bars.
   c. Galvanized Chair Supports.

### 1.2. RELATED WORK:

A. Specified Elsewhere:

1. Related Provisions - Divisions 1, 15 and 16.
2. 03100 - Concrete Formwork.
3. 03300 - Cast-in-Place Concrete.

### 1.3. REFERENCES:

A. ACI 301(Latest Edition) - Specifications for Structural Concrete for Buildings.

B. ACI 315(Latest Edition) - Details and Detailing of Concrete Reinforcement.

C. ASTM A185-01 - Welded Steel Wire Fabric for Concrete Reinforcement.

D. ASTM A615/A - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

E. CRSI - Manual of Practice.

### 1.4. QUALITY ASSURANCE:

A. Perform concrete reinforcement work in accordance with CRSI

Manual of Standard Practice Latest Edition.

B. Conform to ACI 301 and ACI 315.

## 1.5. SHOP DRAWINGS:

A. Submit shop drawings under provisions of Section 01300.

B. Indicate sizes, spacings, locations and quantities of reinforcing steel, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

# 2. PRODUCTS:

## 2.1. MATERIALS:

A. Reinforcing Steel: ASTM/A, 60 yield billet-steel deformed bars.

## 2.2. ACCESSORY MATERIALS:

A. Tie Wire: Minimum 16 gage.

B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete including load bearing pad on bottom to prevent vapor barrier puncture.

## 2.3. FABRICATION:

A. Fabricate in accordance with ACI 315, providing concrete cover specified in Section 03300.

B. Locate reinforcing splices not indicated on drawings at points of minimum stress. Indicate location of splices on shop drawings.

# 3. EXECUTION:

## 3.1. INSTALLATION:

A. Before placing concrete, clean reinforcement of foreign particles or coatings.

B. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.

C. Contractor may substitute fiber mesh reinforcement in lieu of welded wire fabric.

## 3.2. SPECIAL AND MINIMUM REINFORCING STEEL REQUIREMENTS:

A. Where walls or other items are shown as built integrally with other sections, but are placed as separate pours, keys and dowels shall be provided. Dowels shall be the same size and at the same spacing as reinforcing.

B. Provide corner bars of same size and spacing as main reinforcement at all intersections and corners.

C. Where openings occur in walls or slabs, provide two (2) #5 bars at all sides and extending at least 2' beyond the corners and two (2) #5 bars at least 3' long diagonally across each re-entrant corner.

## 3.3. INSPECTION OF REINFORCEMENT:

A. Reinforcing placement will be checked by the Architect before any concrete is placed. All corrections shall be made before concrete is placed.

B. Contractor shall notify the Architect at least 24 hrs. in advance of concrete placement for a particular portion of the building. Placement of reinforcing shall occur in such sequence that the Architect has sufficient time to inspect the correctness of the reinforcing within the placement area. Architect retains the right to require necessary revisions be made before concrete is placed.

## 3.4. CLEAN UP:

A. Remove all rubbish resulting from work as it accumulates, leaving premises in a clean and acceptable condition at all times.

**END OF SECTION 03200.**

# DIVISION 3 - CONCRETE
## Section 03300 - Cast-In-Place Concrete

## 1. GENERAL

### 1.1. WORK INCLUDES:

A. General Contractor:

1. Provide all labor, materials, and equipment to install all cast-in-place concrete work as shown on the drawings and herein specified including:

a. Floor slabs.
b. Entrance slabs.
c. Concrete foundation walls/footings.
d. Miscellaneous items.
e. Sitework Items.

### 1.2. RELATED WORK:

A. Specified Elsewhere:

1. Related provisions of Divisions 1, 15 and 16.
2. 03100 - Concrete Formwork.
3. 03200 - Concrete Reinforcement.
4. 05120 - Structural Steel.

### 1.3. REFERENCES:

A. ACI 301(Latest Edition) - Specifications for Structural Concrete for Buildings.

B. ASTM C33-02 - Concrete Aggregates.

C. ASTM C94/C - Ready-Mixed Concrete.

D. ASTM C150-02 - Portland Cement.

E. ASTM C260-01 - Air-Entraining Admixtures for Concrete.

F. ASTM C494/C - Chemical Admixtures for Concrete.

G. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.

H. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

I. ACI 318-02 - Building Code Requirements for Reinforced Concrete.

## 1.4. QUALITY ASSURANCE:

A. Perform work in accordance with ACI 301, and other publications listed in 1.03 references.

B. Obtain materials from same source throughout the work.

## 1.5. TESTS (See this Section 03300-9, Paragraph 3.7):

A. Submit proposed mix design to Architect for review prior to commencement of work. Submittal shall include strength test results of a trial batch of the proposed mix design, or alternately the submittal shall include test results of the proposed mix design placed within the last 12 months. Submittal shall also include aggregate test results and cut sheets for all proposed admixtures.

B. The General Contractor shall make required cylinders and deliver same to the testing laboratory employed by the City of Highland. The testing laboratory will perform necessary slump and air entrainment test in accordance with ACI 301. The Architect shall approve testing laboratory.

C. Four (4) concrete test cylinders will be taken and cured on site under same conditions as concrete it represents.

D. One additional test cylinder will be taken during cold weather and cured on site under same conditions as concrete it represents.

E. One slump test will be taken for each set of test cylinders taken.

## 1.6. PRODUCT DATA:

A. Submit product data under provisions of Section 01330.

B. Submit manufacturer's instructions under provisions of Section 01330.

## 2. PRODUCTS:

### 2.1. CONCRETE MATERIALS:

A. Cement: ASTM C150-02, normal - Type I, and high early strength - Type III.

B. Fine and Coarse Aggregates: ASTM C33-02. Aggregates shall contain no lignite.

C. Water: Clean and not detrimental to concrete.

### 2.2. ADMIXTURES:

A. Air Entrainment: ASTM C260-01.

B. Chemical Admixture: ASTM C494/C, Type A - water reducing.

C. Calcium Chloride: Do not use calcium chloride in any concrete.

### 2.3. RELATED MATERIALS:

A. Granular Base: Evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade.

B. Vapor Retarder: Provide vapor retarder cover over prepared base material where indicated below slabs on grade. Use only materials which are resistant to decay when tested in accordance with ASTM E154, as follows:

1. Polyethylene sheet not less than 8 mils thick.

C. Non-Shrink Grout:

1. CRD-C 621, factory pre-mixed grout.

2. Products: Subject to compliance with requirements, provide one of the following:

a. Non-metallic:
   1) "Set Grout"; Master Builders.
   2) "Sonogrout"; Sonneborn-Rexnord.
   3) "Supreme"; Gifford-Hill/American Admixtures.

4) "Horngrout"; A.C. Horn, Inc.

D. Moisture-Retaining Cover:

1. One of the following, complying with ASTM Cl7l.

a. Waterproof paper.
b. Polyethylene film.
c. Polyethylene-coated burlap.

E. Liquid Membrane-Forming Curing Compound: (Use on all non-exposed concrete slabs).

1. Liquid type membrane-forming curing compound complying with ASTM C309, Type I, Class A. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal. Note: Curing compound is not compatible with specified chemical hardener finishes.

2. Products: Subject to compliance with requirements, provide one of the following:

a. "Masterseal"; Master Builders.
b. "Clear Seal"; A.C. Horn, Inc.
c. "Sealco 309"; Gifford-Hill/American Admixtures.
d. "Kure-N-Seal"; Sonneborn-Rexnord.

F. Chemical Hardener: (Use on exposed to view concrete slabs).

1. Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. of fluosilicates per gallon.

a. Products:

1) Subject to compliance with requirements, provide one of the following:

(a) "Surfhard"; Euclid Chemical Co.
(b) "Lapidolith"; Sonneborn-Rexnord.
(c) "Saniseal"; Master Builders.
(d) "Burk-O-Lith"; The Burke Co.

## 2.4. CONCRETE MIX:

A. Mix concrete in accordance with ASTM C94/C.
B. Provide concrete of the following characteristics:

1. Compressive Strength at 28 days: 4,000 psi - (564 lbs. of cement per cubic yard minimum)or six-bag mix.

2. Water-Cement Ratio:

a. Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:

1) Subjected to freezing and thawing; W/C 0.50.

3. Slump Limits:

a. Proportion and design mixes to result in concrete slump at point of placement as follows:

1) Slabs: Not more than 3".
2) Reinforced foundation systems: Not less than 1" and not more than 3".
3) Concrete containing HRWR admixture (super-plasticizer): Not more than 8" after addition of HRWR to site-verified 2"-3" slump concrete.
4) Other concrete: Not less than 1" nor more than 4".

C. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.

D. Use set-retarding admixtures during hot weather only when approved by Architect.

E. Add air-entraining agent to concrete mix for concrete work exposed to exterior (6% +/ - 1%).

F. Use water-reducing admixtures in all concrete and in strict compliance with the manufacturer's directions. Admixture to increase cement dispersion, or provide increased workability for low-slump concrete, may be used at the contractor's option subject to the Architect's acceptance.

## 3. EXECUTION:

### 3.1. INSPECTION:

A. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

### 3.2. PREPARATION:

A. Prepare previously placed concrete by cleaning with steel brush.

B. At locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.

C. Install vapor barrier under interior slabs over granular fill. Lap joints minimum 6" and seal. Do not disturb or damage vapor barrier while placing concrete. Repair damaged vapor barrier.

### 3.3. PLACING CONCRETE:

A. Notify Architect minimum 24 hours prior to commencement of concreting operations.

B. Place concrete in accordance with ACI 301.

C. Hot Weather Placement: ACI 305R-99.

D. Cold Weather Placement: ACI 306.1I-90.

E. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

F. Maintain concrete cover around reinforcing as follows:

i. Concrete cast against and permanently exposed to earth
3"

ii. Concrete exposed to earth or weather
2"

iii. Concrete not exposed to weather or in contact with ground:
1. Slabs and walls ¾"

2. Beams and columns 1 ½"

G. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

H. Place floor slabs on grade using long-strip construction method.

I. Saw cut control joints at an optimum time after finishing. Use 3/16" thick blade, cutting 1/3 into depth of slab thickness.

J. Separate slabs on grade from vertical surfaces with 1/2" joint filler. Extend joint filler from bottom of slab to within 1/8" of finished slab surface.

K. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect upon discovery.

L. Slope floor slabs where shown on the drawings or as required.

## 3.4. FINISHING:

A. Finish of Formed Surfaces:

1. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with the holes and defective areas repaired and patched and fins and other projections exceeding l/4" in height rubbed down or chipped off.

B. Monolithic Slab Finishes:

1. Float Finish:

a. Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and as otherwise indicated.

b. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with

power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to tolerance of F(F)25 (floor flatness) and F(L)25 (floor levelness), measured according to ASTM E1155. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform smooth, granular texture.

2. Trowel Finish:

   a. Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic tile or other thin film finish coating system.

   b. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances of F(F)35 (floor flatness) and F(L)35 (floor levelness) measured according to ASTM E1155. Grind smooth surface defects which would telegraph through applied floor covering system. Provide a burnished finish on all exposed concrete slabs, not receiving a colored finish.

3. Smooth Rubbed Finish: Provide smooth rubbed finish to all exposed exterior concrete wall surfaces, such as retaining walls, etc., which have received smooth form finish treatment, not later than one day after form removal. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process. Use this on the Planter walls.

C. Grout Cleaned Finish:

1. Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment.

2. Combine one part Portland Cement to 1-1/2 parts fine sand by volume, and mix with water to consistency of thick paint. Proprietary additives may be used at contractor=s option. Blend standard Portland Cement and white Portland Cement, amounts determined by trial patches, so that final color of dry grout will match adjacent surfaces.

3. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

## 3.5. PATCHING:

A. Notify Architect immediately upon removal of forms.

B. Patch imperfections.

## 3.6. DEFECTIVE CONCRETE:

A. Modify or replace concrete not conforming to required levels and lines, details, and elevations.

B. Repair or replace concrete not properly placed or of the specified type.

## 3.7. QUALITY CONTROL TESTING DURING CONSTRUCTION:

A. The City of Highland will employ a testing laboratory to perform tests and to submit test reports.

B. Sampling and testing for quality control during placement of concrete may include the following as directed by Architect.

C. Sampling Fresh Concrete:

1. ASTM C172-99, except modified for slump to comply with ASTM C94.

a. Slump: ASTM C143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.

b. Air Content: ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231 pressure method for normal weight concrete; one for each day's pour of each type of air-entraining concrete.

c. Concrete Temperature: Test hourly when air temperature is 40 degrees F (4 degree C) and below, and when 80 degree F (27 degree C) and above; and each time a set of compression test specimens made.

D. Compression Test Specimen: ASTM C31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

E. Compressive Strength Tests:

1. ASTM C39; one set for each day's pour exceeding 5 cy. yds. plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

2. When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.

F. Test results will be reported in writing to Architect and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

G. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

H. Additional Tests: The testing service will make additional tests of

in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified.

## 3.8. CHEMICAL HARDENER FINISH:

A. Apply chemical hardener finish to interior concrete floors. Apply liquid chemical hardener after complete curing and drying of the concrete surface. Dilute liquid hardener with water (parts of hardener/water as follows), and apply in 3 coats; first coat, 1/3-strength; second coat, 1/2-strength; third coat, 1/1-strength. Evenly apply each coat, and allow 24 hours for drying between coats.

B. Apply proprietary chemical hardeners, in accordance with manufacturer's printed instructions.

C. After final coat of chemical hardener solution is applied and dried, remove surplus hardener.

## 3.9. CURING AND PROTECTION:

A. Cure and protect finished work in accordance with ACI301 and as specified.

B. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete in accordance with ACI 301.

## 3.10. CONCRETE WALKS AND PLATFORMS:

A. Concrete walks and platforms shall be of one course construction, 5" in thickness for walks adjacent to drives and 4" for all other walks of 4,000 lb. concrete. Provide 6" x 6" WWF w1.4 x w1.4 for all walks.

B. Provide 1/2" expansion joints not more than 30' apart, also where walks abut buildings, platforms, and other fixed structures, and elsewhere as instructed. Form dummy joints as indicated on drawings and spacing not exceeding 10'-0".

C. Tamp and screed concrete true to grade and section, bring sufficient mortar to surface for finishing and give wood or carpet float finish before concrete sets. Steps in connection with walks shall have same finish as walks. Round all edges including those at expansion and dummy joints. Permit no pedestrian traffic on concrete walks for a period of three days after pouring. Cross slope for sloped or crowned walks shall be 1/4" per foot.

**END OF SECTION 03300.**

# DIVISION 3- CONCRETE

## SECTION 03302 - PAVEMENT JOINT SEALANTS

1.1 GENERAL

A. Preconstruction Joint-Sealant-Substrate Tests: Submit substrate materials, representative of actual joint surfaces, to joint sealant manufacturer for laboratory testing of joint sealants for adhesion to primed and unprimed substrates and for compatibility with joint substrates and other joint-related materials.

B. Submittals: In addition to Product Data, submit the following:

1. Samples of each type and color of joint sealant required.
2. Certified test reports for joint sealants evidencing compliance with requirements.

C. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

D. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet or covered with frost.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.2 PRODUCTS

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

B. Colors: Provide color indicated for exposed joint sealants or, if not indicated, as selected by Architect from manufacturer's full range of standard colors for this characteristic.

C. Cold-Applied Joint Sealants (in concrete pavement and sidewalk joints, in joints along structures and in vertical joints): Provide manufacturer's standard products complying with the following requirements:

1. Single-Component Urethane Sealant for Concrete: Single-component, pourable, coal-tar-modified, urethane formulation complying with ASTM C 920 for Type S; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O. Joint sealant that withstands plus/minus of at least 25 percent movement of joint width used for pedestrian areas, vehicle traffic areas, and areas using mortar.

D. Hot-Applied Joint Sealants (provide for transverse and longitudinal joints in concrete pavement at concrete entrances): Provide manufacturer's standard products complying with the following requirements:

1. Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 6690 Type II. Elastomeric joint sealant used in sealing joints and cracks in Portland cement concrete pavements.

E. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers and other joint fillers; and approved for applications indicated by joint sealant manufacturer based on field experience and laboratory testing.

1. Round Backer Rod for Cold- and Hot-Applied Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depths and prevent bottom-side adhesion of sealant.
2. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depths, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.
3. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depths and prevent bottom-side adhesion of sealant.

F. Primers: As recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

1.3 EXECUTION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

C. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

D. General: Comply with joint sealant manufacturer's written instructions applicable to products and applications indicated.

E. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

F. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of backer materials.
2. Do not stretch, twist, puncture, or tear backer materials.
3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.

G. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses provided for each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

H. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealants from surfaces adjacent to joint.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

I. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.

J. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

**END OF SECTION 03302.**

# DIVISION 4 - MASONRY
## Section 04200 - Unit Masonry Assemblies

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of each type of masonry work is indicated on drawings and schedule.

B. Types of masonry work required include:


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Insulation.doc

1. Brick.

2. Concrete unit masonry.

3. Lintels

### 1.3. QUALITY ASSURANCE:

A. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

B. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

### 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's product data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements.

B. Unit masonry samples in small scale form showing full extent of colors and textures available for each type of exposed masonry unit required.

C. Supply the Architect with a sample of the brick masonry consisting of six brick showing full range of color.

D. Colored masonry mortar samples showing full extent of colors available.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.

1. Limit moisture absorption of concrete masonry units during delivery and until time of installation to the maximum percentage specified for Type I units for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.

C. Store cementitious materials off the ground, under cover and in dry location.

D. Store aggregates where grading and other required characteristics can be maintained.

E. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

## 1.6. PROJECT CONDITIONS:

A. Protection of Work: During erection, cover top of walls with waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.

B. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

C. Do not apply uniform floor or roof loading for at least 12 hours after building masonry walls or columns.

D. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.

E. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Remove immediately grout or mortar in contact with such masonry.

F. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

G. Protect sills, ledges and projections from droppings of mortar.

H. Cold Weather Protection:

1. Do not lay masonry units which are wet or frozen.

2. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch.

3. Remove masonry damaged by freezing conditions.

4. Perform the following construction procedures while masonry work is progressing. Temperature ranges indicated below apply to air temperatures existing at time of installation except for grout.

a. For grout, temperature ranges apply to anticipated minimum night temperatures. In heating mortar and grout materials, maintain mixing temperature selected within 10 deg. F (6 deg. C).

(1) 40 deg. F (4 deg. C) to 32 deg. F (0 deg. C):

(a) Mortar: Heat mixing water to produce mortar temperature between 40 deg. F (4 deg. C) and 120 deg. F (49 deg. C).

(b) Grout: Follow normal masonry procedures.

I. Protect completed masonry and masonry not being worked on in the following manner. Temperature ranges indicated apply to mean daily air temperatures except for grouted masonry. For grouted masonry, temperature ranges apply to anticipated minimum night temperatures.

1. 32 deg. F (0 deg. C) to 25 deg. F (-4 deg. C):

a. Completely cover masonry with weather-resistive membrane for at least 24 hours.

## 2. PRODUCTS:

### 2.1. CONCRETE MASONRY UNITS:

A. General: Comply with referenced standards and other requirements indicated below applicable to each form of concrete masonry unit required.

1. Provide special shapes where required for lintels, corners, jambs, sash, control joints, headers, bonding and other special conditions.

2. Provide bullnose units for all outside corners.

3. Concrete Block: Provide units complying with characteristics indicated below for grade, type, face size, exposed face and, under each form of block included, for weight classification.

a. Grade N.

b. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" high (15-5/8" x 7-5/8" actual) x thicknesses indicated.

c. Type I, moisture-controlled units.

(1) Cure units by autoclave treatment at a minimum temperature of 350 deg. F (176 deg. C) and a minimum pressure of 125 psi.

d. Hollow Loadbearing Block: ASTM C 90 and as follows:

(1) Weight Classification: Normal weight.

e. Provide bond beam concrete blocks where shown on drawings. See Section 03200 for concrete reinforcement required. In general provide continuous rows of bond beam at the top and bottom of walls, plus every 8' O.C vertically in tall walls

## 2.2. MORTAR AND GROUT MATERIALS:

A. Portland Cement: ASTM C 150, Type I. Provide natural color or white cement as required to produce required mortar color.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate for Mortar: ASTM C 144, meramec sand.

D. Aggregate for Grout: ASTM C 404.

E. Mortar Mix and Additive: Mortar for all walls shall be Type S only. All mortar for exterior split face block shall contain the recommended amount of Dry-Block mortar admix for water-repellency and to assure proper bond strength. The required amount is one quart (32 fl. oz.) of Dry-Block mortar admix per bag of Portland Cement with not more than three (3) times the volume of cement and lime, of masonry sand. Mortar preparation and composition shall comply with ASTM C-270.

F. Water: Clean and potable.

## 2.3. JOINT REINFORCEMENT, TIES AND ANCHORING DEVICES:

A. Materials: Comply with requirements indicated below for basic materials and with requirements indicated under each form of joint reinforcement, tie and anchor for size and other characteristics:

1. Zinc-Coated (galvanized) Steel Wire: ASTM A 82 for uncoated wire and with ASTM C 641 for zinc coating of class indicated below:

a. Class 3 (0.80 oz. per sq. ft. of wire surface).

b. Application: Use where indicated.

B. Cavity Masonry Wall (cavity with air space and rigid insulation).

1. Reinforcing shall be adjustable (two-piece) ladder type, (Dur-O-Wall, Ladur-Eye) with one side rod at each face shell of backing wythe and separate ties that extend into facing wythe. Ladder type reinforcing shall have 9 gauge side and cross wires. Ties shall have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties shall be 3/16" minimum diameter. Ties shall extend at least halfway through facing wythe but with at least 5/8-inch cover on outside. Ties shall have hooks or clips to engage a continuous horizontal wire in the facing wythe.

2. Veneer anchors shall be spaced at 16" o.c. vertically and horizontally.

3. Reinforcing shall be hot-dipped galvanized.

4. Provide appropriate adjustable ties and corner assemblies as required.

C. Veneer Anchors:

1. Acceptable Manufacturer: Heckmann Building Products Inc., 1501 N. 31st Avenue, Melrose Park, IL 60160
800-621-4140 or 708-865-2403 FAX: 708-865-2640
Email: Info @heckmannanchors.com
Website: www.heckmannanchors.com

2. Masonry Anchors:
   a. Anchors to Metal Stud Backup: No. 75: Heckmann "Pos-I-Tie" Self-Drilling Screw.
   b. Anchors to Structural Steel: No. 75: Heckmann "Pos-I-Tie" Dril-it Screw.

3. Material for ties in Exterior walls: Stainless steel.

4. Barrel Materials: Heckmann "No. 75 Pos-I-Tie": One-Piece Screw consisting of a 92% Zamac 2 Zinc barrel, washer, flanged head and eye to receive Pos-I-Tie wire tie; Designed to seat barrel directly on structural portion of backup, with flanged head covering fastener hole.

a. Provide barrel shaft length [5/8 inch] [1 inch] [1-1/2 inch] [2 inch] [2-1/2 inch] [3 inch] [3-1/2 inch] [4 inch] [5 inch] with screw to suit substrate.

D. Masonry Joint Reinforcement for Veneers Anchored with Seismic Masonry-Veneer Anchors.

1. Continuous, single, 9 gauge wire horizontal joint reinforcement at a maximum spacing of 16"o.c., hot-dipped galvanized.

2. Mechanically attach joint reinforcement to the wall anchors or reinforcing.

## 2.4. MISCELLANEOUS MASONRY ACCESSORIES:

A. Reinforcing Bars: Deformed steel, ASTM A 615, Grade 60 for bars No. 3 to No. 18.

B. Expansion/Control Joints:

1. Provide expansion/control joints in all exterior masonry walls. See drawings for location. Where no expansion/control joints are shown, this contractor shall install expansion/control joints at a maximum of 30' o.c. for CMU and 20' o.c. for Face Brick and as directed by the Architect. Expansion joints are to be used in conjunction with brick.

2. Expansion joint fillers in brick to be styrofoam or equal of thickness indicated or required. Width to suit caulking requirements.

C. Premolded Control Joint Strips: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

1. Styrene-butadiene rubber compound complying with ASTM D2000, Designation 2AA-805.

D. Weepholes: Provide the following for weepholes:

1. Cotton Cord: Sash cord of length required to produce 2" exposure on exterior and 18" in cavity between wythes. Weep

holes to be 16" o.c. horizontal.

## 2.5. MORTAR AND GROUT MIXES:

A. Mortar shall be of the following types:

1. Walls below grade: Type M
2. Bearing walls: Type M or S

B. General: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, anti-freeze compounds or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

C. Mixing: Combine and thoroughly mix cementitious, water and aggregates in a mechanical batch mixer; comply with referenced ASTM standards for mixing time and water content.

D. Grout for Unit Masonry: Comply with ASTM C 476 for grout for use in construction of reinforced and nonreinforced unit masonry. Use grout of consistency indicated or if not otherwise indicated, of consistency (fine or coarse) at time of placement which will completely fill all spaces intended to receive grout.

1. Use fine grout in grout spaces less than 2" in horizontal direction, unless otherwise indicated.

2. Use coarse grout in grout spaces 2" or more in least horizontal dimension, unless otherwise indicated.

3. Grout shall have a 28-day compressive strength of 3,000 psi.

# 3. EXECUTION:

## 3.1. INSTALLATION, GENERAL:

A. Do not wet concrete masonry units.

B. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.

C. Thickness: Build cavity and composite walls, floors and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

D. Build chases and recesses as shown or required for the work of other trades. Provide not less than 8" of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.

E. Leave openings for equipment to be installed before completion of masonry work. After installation of equipment, complete masonry work to match work immediately adjacent to the opening.

F. Cut masonry units using motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible.

1. Use dry cutting saws to cut concrete masonry units.

## 3.2. CONSTRUCTION TOLERANCES:

A. Variation from Plumb: For vertical lines and surfaces of columns, walls and arrises do not exceed 1/4" in 10', or 3/8" in a story height not to exceed 20', nor 1/2" in 40' or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4" in any story or 20' maximum, nor 1/2" in 40' or more. For vertical alignment of head joints do not exceed plus or minus 1/4" in 10', 1/2" maximum.

B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4" in any bay or 20' maximum, nor 1/2" in 40' or more. For top surface of bearing walls do not exceed 1/8" between adjacent floor elements in 10' or 1/16" within width of a single unit.

C. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed 1/2" in any bay or 20' maximum, nor 3/4" in 40' or more.

D. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4" nor plus 1/2".

E. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8", with a maximum thickness

limited to 1/2". Do not exceed head joint thickness indicated by more than plus or minus 1/8".

## 3.3. LAYING MASONRY WALLS:

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.

B. Lay-up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other work.

C. Pattern Bond: Lay exposed masonry in the bond pattern shown or, if not shown, lay in running bond with vertical joint in each course centered on units in courses above and below. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2". Bond and interlock each course of each wythe at corners. Do not use units with less that nominal 4" horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Rack back 1/2-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

E. Built-in work: As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around built-in items.

1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

## 3.4. MORTAR BEDDING AND JOINTING:

A. Lay solid brick size masonry units with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.

B. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8" joints.

C. Cut joints flush for masonry walls which are to be concealed or to be

covered by other materials, unless otherwise indicated.

D. Tool exposed joints slightly concave using a jointer larger than joint thickness, unless otherwise indicated.

E. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.

## 3.5. HORIZONTAL JOINT REINFORCEMENT:

A. General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls, 1/2" elsewhere. Lap reinforcing a minimum of 6".

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Reinforce walls with continuous horizontal joint reinforcing unless specifically noted to be omitted.

D. Reinforce the following walls with continuous horizontal joint reinforcement:

1. Single wythe walls.

E. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.

1. For single-wythe walls, space reinforcement at 16"o.c. vertically, unless otherwise indicated.

## 3.6. ANCHORING MASONRY WORK:

A. General: Provide anchor devices of type indicated.

B. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1" in width between

masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.

2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.

3. Space anchors as indicated, but not more than 16" o.c. vertically and 16" o.c. horizontally and at the rate of at least one anchor for 2 S.F. of wall surface.

## 3.7. CONTROL AND EXPANSION JOINTS:

A. General: Provide vertical and horizontal expansion, control and isolation joints in masonry where shown. Build-in related items as the masonry work progresses. If joints are not shown, provide control and expansion joints in accordance with the Masonry Institute, and are not to exceed 30' o.c. for CMU and 20' o.c. for Face Brick by this specification.

## 3.8. LINTELS:

A. Install steel lintels where indicated. If not shown, but required, provide one (1) steel lintel 5" x 3-1/2" x 3/8: for each 4" wythe of masonry.

A. Provide minimum bearing of 8" at each jamb, unless otherwise indicated.

B. Exterior lintels shall be galvanized.

## 3.9. FLASHING OF MASONRY WORK:

A. General: Provide concealed flashing in masonry work at, or above, shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections which could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar. Extend flashings through exterior face of masonry and turn down to form drip.

B. Extend flashing the full length of lintels and shelf angles and minimum of 4" into masonry each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4", and through the inner wythe to within 1/2" of the

interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2". At heads and sills turn up ends not less than 2" to form a pan.

C. Install flashing to comply with manufacturer's instructions.

D. Provide weep holes in the head joints of the first course of masonry immediately above concealed flashings. Space 24" o.c., unless otherwise indicated.

E. Install reglets and nailers for flashing and other related work where shown to be built into masonry work.

**3.10 Surface Preparation:**

A. Concrete masonry unit (CMU) walls shall be prepared as follows to accept air and vapor barrier:

1. Surfaces shall be free of contaminants such as grease, oil and wax on surfaces to receive membrane.

2. The CMU surfaces shall be free from projections.

3. Strike all mortar joints flush to the face of the concrete block.

4. Fill all voids and holes with mortar, sealant or other approved fill material

5. Surface irregularities shall be ground flush or made smooth.

6. Fill around all penetrations with mortar, sealant, or other approved fill material and strike flush.

7. If the surfaces cannot be made smooth to the satisfaction of the Architect, it will be the responsibility of the trade to alternatively apply a parge coat (typically one part cement to three parts sand) over the entire surface to receive Air Barrier Membrane.

8. Remove mortar droppings on brick ties, shelf angles, brick shelves or other horizontal obstructions.

**3.11. REPAIR, POINTING, AND CLEANING:**

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings and adjacent work to provide a neat, uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.

2. Clean concrete unit masonry to comply with masonry manufacturer's directions and applicable NCMA "Tek" bulletins.

3. Protection: Provide final protection and maintain conditions in a manner acceptable to Installer, which ensures unit masonry work being without damage and deterioration at time of substantial completion.

END OF SECTION 04200.

# DIVISION 4 - MASONRY
## Section 04230 - Reinforced Unit Masonry

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Requirements of Section AUnit Masonry@ apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of each type of reinforced unit masonry work is indicated on drawings and in schedules.

### 1.3. SUBMITTALS:

A. Mill Certificates: Submit steel producer=s certificates of mill analysis, tensile and bend tests for reinforcement steel required for project.

## 2. PRODUCTS:

### 2.1. MATERIALS:

A. General: Refer to Section AUnit Masonry@ for masonry materials and accessories not included in this section.

B. Reinforcement Bars: Provide deformed bars of following grades complying with ASTM A-615, except as otherwise indicated.

1. Provide Grade 60 for bars No. 3 to No. 18, except as otherwise indicated.

2. Shop-fabricate reinforcement bars which are shown to be bent or hooked.

## 3. EXECUTION:

### 3.1. PLACING REINFORCEMENT:

A. General: Clean reinforcement of loose dust, mill scale, earth, ice or other materials which will reduce bond to mortar or grout. Do not use reinforcement bars with kinks or bends not shown on drawings or final shop drawings, or bars with reduced cross-section due to excessive rusting or other causes.

B. Position reinforcement accurately at the spacing indicated. Support and secure vertical bars against displacement. Horizontal reinforcement may be placed as the masonry work progresses. Where vertical bars are shown in close proximity, provide a clear distance between bars of not less than the nominal bar diameter or 1" (whichever is greater).

C. Splice reinforcement bars where shown; do not splice at other points unless acceptable to the Architect. Provide lapped splices, unless otherwise indicated. In splicing vertical bars or attaching to dowels, lap ends, place in contact and wire tie.

1. Provide not less than minimum lap indicated, or if not indicated, as required by governing code.

D. Embed metal ties in mortar joints as work progresses, with a minimum mortar cover of 5/8" on exterior face of walls and 1/2" at other locations.

E. Embed prefabricated horizontal joint reinforcement as the work progresses, with a minimum cover of 5/8" on exterior face of walls and 1/2" at other locations. Lap units not less than 6" at ends. Use prefabricated AL@ and AT@ units to provide continuity at corners and intersections. Cut and bend units as recommended by manufacturer for continuity at returns, offsets, column fire-proofing, pipe enclosures and other special conditions.

F. Anchoring: Anchor reinforced masonry work to supporting structure as indicated.

1. Anchor reinforced masonry walls to non-reinforced masonry where they intersect.

## 3.2. INSTALLATION, GENERAL:

A. Refer to Section AUnit Masonry@ for general installation requirements of unit masonry.

## 3.3. INSTALLATION OF REINFORCED CONCRETE UNIT MASONRY:

A. General:

1. Do not wet concrete masonry units (CMU).

2. Lay CMU units with full-face shell mortar beds. Fill vertical head joints (end joints between units) solidly with mortar from face of unit to a distance behind face equal to not less than the thickness of longitudinal face shells. Solidly bed cross-webs of starting courses in mortar. Maintain head and bed joint widths shown, or if not shown, provide 3/8" joints.

   a. Where solid CMU units are shown, lay with full mortar head and bed joints.

B. Walls:

1. Pattern Bond: Lay CMU wall units in 1/2-running bond with vertical joints in each course centered on units in courses above and below, unless otherwise indicated. Bond and interlock each course at corners and intersections. Use special-shaped units where shown, and as required for corners, jambs, sash, control joints, lintels, bond beams and other special conditions.

2. Maintain vertical continuity of core or cell cavities, which are to be reinforced and grouted, to provide minimum clear dimension indicated and to provide minimum clearance and grout coverage for vertical reinforcement bars. Keep cavities free of mortar. Solidly bed webs in mortar where adjacent to reinforced cores or cells.

3. Where horizontal reinforced beams (bond beams) are shown, use special units or modify regular units to allow for placement of continuous horizontal reinforcement bars. Place small mesh expanded metal lath or wire screening in mortar joints under

bond beam courses over cores or cells of non-reinforced vertical cells, or provide units with solid bottoms.

C. Columns, Piers and Pilasters:

1. Use CMU units of the size, shape and number of vertical core spaces shown. If not shown, use units which provide minimum clearances and grout coverage for number and size of vertical reinforcement bars shown.

2. Provide pattern bond shown, or if not shown, alternate head joints in vertical alignment.

D. Grouting:

1. Use AFine Grout@ per ASTM C 476 for filling spaces less than 4" in one or both horizontal directions.

2. Use ACoarse Grout@ per ASTM C 476 for filling 4" spaces or larger in both horizontal directions.

3. Grouting Technique: At the Contractor=s option, use either low-lift or high-lift grouting techniques subject to requirements which follow.

4. Low-Lift Grouting:

5. Provide minimum clear dimension of 2" and clear area of 8 sq.in. in vertical cores to be grouted.

6. Place vertical reinforcement prior to laying of CMU. Extend above elevation of maximum pour height as required for splicing. Support in position at vertical intervals not exceeding 192 bar diameters nor 10 ft.

7. Lay CMU to maximum pour height. Do not exceed 5' height, or if bond beam occurs below 5' height stop pour at course below bond beam.

8. Pour grout using chute or container with spout. Rod or vibrate grout during placing. Place grout continuously; do not interrupt pouring of grout for more than one hour. Terminate grout pours 1-1/2" below top course of pour.

9. Bond Beams: Stop grout in vertical cells 1-1/2" below bond beam course. Place horizontal reinforcement in bond beams; lap at corners and intersections as shown. Place grout in bond beam course before filling vertical cores above bond beam.

E. High-Lift Grouting:

1. Do not use high-lift grouting technique for grouting of CMU unless minimum cavity dimension and area is 3" and 10 sq. in., respectively.

2. Provide cleanout holes in first course at all vertical cells which are to be filled with grout.

   a. Use units with one face shell removed and provide temporary supports for units above, or use header units with concrete brick supports, or cut openings in one face shell.

3. Construct masonry to full height of maximum grout pour specified, prior to placing grout.

   a. Limit grout lifts to a maximum height of 5' and grout pour to a maximum height of 24', for single wythe hollow concrete masonry walls, unless otherwise indicated.

4. Place vertical reinforcement before grouting. Place before on after laying masonry units, as required by job conditions. Tie vertical reinforcement to dowels at base of masonry where shown and thread CMU over or around reinforcement. Support vertical reinforcement at intervals not exceeding 192 bar diameters nor 10'.

   a. Where individual bars are placed after laying masonry, place wire loops extending into cells as masonry is laid and loosen before mortar sets. After insertion of reinforcement bar, pull loops and bar to proper position and tie free ends.

5. Place horizontal beam reinforcement as the masonry units are laid.

6. Preparation of Grout Spaces: Prior to grouting, inspect and clean grout spaces. Remove dust, dirt, mortar droppings, loose

pieces of masonry and other foreign materials from grout spaces. Clean reinforcement and adjust to proper position. Clean top surface of structural members supporting masonry to ensure bond. After final cleaning and inspection, close cleanout holes and brace closures to resist grout pressures.

7. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist displacement of masonry units and breaking of mortar bond. Install shores and bracing, if required, before starting grouting operations.

8. Place grout by pumping into grout spaces unless alternate methods are acceptable to the Architect.

9. Limit grout pours to sections which can be completed in one working day with not more than one hour interruption of pouring operation. Place grout in lifts which do not exceed 5'. Allow not less than 30 minutes, nor more than one hour between lifts of a given pour. Rod or vibrate each grout lift during pouring operation.

10. Where bond beam occurs more than one coarse below top of pour, fill bond beam course to within 1" of vertically reinforced cavities, during construction of masonry.

11. When more than one pour is required to complete a given section of masonry, extend reinforcement beyond masonry as required for splicing. Pour grout to within 1-1/2" of top course of first pour. After grouted masonry is cured, lay masonry units and place reinforcement for second pour section before grouting. Repeat sequence if more pours are required.

**END OF SECTION 04230.**

# DIVISION 5 - METALS
## Section 05400 - Cold-Formed Metal Framing

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. SUMMARY:

A. Extent of cold-formed metal framing is shown on drawings. Use these units for all interior and exterior bearing walls.

B. Types of cold-formed metal framing units include the following:

1. "C" shaped load-bearing steel studs.

2. Manufacturer proprietary jamb studs, headers, tracks.

3. Roof truss to wall connections.

4. Interior metal studs are specified in a Division 9 section.

C. Engineering design of cold formed metal framing.

### 1.3. SUBMITTALS:

A. Product Data: Submit manufacturer's product information and installation instructions for each item of cold-formed metal framing and accessories.

B. Stamped and signed calculations for fabrication and erection approval, prior to fabrication.

C. Show layout, spacings, sizes, thicknesses and types of cold formed metal framing. Indicate fastening and anchorage details.

D. Show coordination of wall framing with roof truss layout and reactions as reported by the truss supplier.

## 1.4. QUALITY ASSURANCE:

A. Engineering Responsibility: Cold formed metal framing design and submittal preparation shall be performed by a registered Illinois professional engineer.

B. Component Design: Calculate structural properties of studs and joists in accordance with American Iron and Steel Institute (AISI) "Specification for Design of Cold-Formed Steel Structural Members".

C. Welding: Use qualified welders and comply with American Welding Society (AWS) D1.3, "Structural Welding Code - Sheet Steel".

D. Reference structural drawings for design loads.

E. Design exterior wall studs for a maximum lateral deflection of 1/600 of the wall height.

F. Design shall comply with IBC 2006 and referenced standards for cold formed metal framing design.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Protect metal framing units from rusting and damage. Deliver to project site in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade. Store off ground in a dry ventilated space or protect with breathable waterproof tarpaulins.

## 1.6 General

A. Cold formed metal framing shall be designed , fabricated, and erected in accordance with AISI,s "specifications for the Design of Cold –Formed steel structural members."

B. Complete, uniform, and level bearing support shall be provided for the top and bottom tracks of stud walls, or full size shims shall be installed to provide such bearing.

C. Studs shall be installed with their bearing ends positioned flush against the inside track web.

D. Splices in studs and joists shall not be permitted. Do not cut studs or joists.

## 2. PRODUCTS:

### 2.1. MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Milcor Division, Inryco Inc.

2. U.S. Gypsum Co.

3. Dietrich Metal Framing

4. Clark Steel Framing

5. Dale/Incor

### 2.2. METAL FRAMING:

A. System Components: With each type of metal framing required, provide manufacturer's standard steel runners (tracks), blocking, lintels, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for applications indicated, as needed to provide a complete metal framing system.

B. Materials and Finishes:

1. For 16-gage and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 40,000 psi; ASTM A-446, A-570, or A-611.

2. Provide galvanized finish to metal framing components complying with ASTM A-525 for minimum G-60 coating.

a. Finish of installation accessories to match that of main framing components, unless otherwise indicated.

3. "C"-Shape Studs: Manufacturer's standard load-bearing steel studs of size, shape, and gage indicated, with 1.625" flange and flange return lip. The following represents minimum sizes and types to be used unless otherwise indicated.

a. 6" stud = C6 x 16.
b. 3-5/8" stud = C3-5/8 x 16.

4. Joists: Manufacturer's standard C-shape sections of size shape, and gage indicated. Use the following as a minimum unless otherwise indicated.

   a. 10" joist = J10 x 16.

5. Electrodes for Welding: Comply with AWS Code.

6. Galvanizing Repair Paint: High zinc dust content paint for repair of galvanized surfaces damaged by welding, complying with M.I. Spec. MIL-P-21035.

## 2.3. FABRICATION:

A. General: Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in a manner to prevent damage or distortion.

B. Fabricate panels in jig templates to hold members in proper alignment and position and to assure consistent component placement.

C. Fastenings: Attach similar components by welding.

D. Wire tying of framing components is not permitted.

E. Fabrication Tolerances: Fabricate panels to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8" in 10'-0".

# 3. EXECUTION:

## 3.1. INSTALLATION:

A. Manufacturers Instructions: Install metal framing systems in accordance with manufacturer's printed or written instructions and recommendations, unless otherwise indicated.

B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as indicated on structural drawings. Provide fasteners at corners and ends of tracks.

C. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.

D. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.

E. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported.

F. Installation of Wall Stud System: Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.

G. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of wall. Secure stud system wall opening frame in manner indicated.

H. Frame both sides of expansion and control joints, with separate studs; do not bridge the joint with components of stud system.

I. Install horizontal stiffeners in stud system, spaced (vertical distance) at not more than 4'-6" o.c. Weld at each intersection.

J. Erection Tolerances: Bolt or weld wall panels (at both horizontal and vertical junctures) to produce flush, even, true to line joints.

1. Step in face and jog in alignment between panels not to exceed 1/16".

K. All Interior stud partitions shall be laterally braced to the building structure @ 6' O.C.

**END OF SECTION 05400.**

# DIVISION 6 - WOOD AND PLASTICS
## Section 06100 - Rough Carpentry

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. SUMMARY:

A. Types of work in this section include rough carpentry for:

1. Wood grounds, nailers, blocking, and plywood.

2. Blocking in-wall for toilet accessories.

### 1.3. PRODUCT HANDLING:

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

### 1.4. PROJECT CONDITIONS:

A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

## 2. PRODUCTS:

### 2.1. LUMBER, GENERAL:

A. Lumber Standards: Manufacture lumber to comply with PS 20" American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Grade Stamps: Factory-mark each piece of lumber with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

1. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

2. Provide dressed lumber, S4S, unless otherwise indicated.

3. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2" or less in nominal thickness, unless otherwise indicated.

## 2.2. DIMENSION LUMBER:

A. For light framing (2" to 4" thick, 2" to 4" wide) provide the following grade and species:

1. Standard grade.

B. For grounds and blocking, use preservative pressure treated #I Yellow Pine with .40# net retention.

C. Plywood: Provide Douglas Fir or Yellow Pine, thickness as indicated on the drawings, Grade CD, exterior.

## 2.3. MISCELLANEOUS LUMBER:

A. Provide wood for support or attachment of other work including curbs, cant strips, rough bucks, nailers, blocking, furring, grounds, blocking in-wall, and similar members. Provide lumber of sizes indicated, worked into shapes shown.

B. Moisture content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.

C. Grade: No. I Standard grade boards per WCLIB or WWPA rules.

## 2.4. MISCELLANEOUS MATERIALS:

A. Fasteners and Anchorages: Provide size, type, material and finish as

indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

## 2.5. WOOD TREATMENT BY PRESSURE PROCESS:

A. Preservative Treatment:

1. Where lumber or plywood is indicated as "Pressure Treated," or is specified herein to be treated, comply with applicable requirements of AWPA Standards C2 (Lumber and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

2. Pressure-treat above-ground items with water-borne preservatives to comply with AWPB LP-2. After treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with masonry, and flashing.

# 3. EXECUTION:

## 3.1. INSTALLATION, GENERAL:

A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

D. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install

fasteners without splitting of wood; predrill as required.

## 3.2. WOOD GROUNDS, NAILERS, BLOCKING AND SLEEPERS:

A. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

## 3.3. WOOD FRAMING, GENERAL:

A. Provide framing members of sizes and on spacings shown, and frame openings as shown, or if not shown, comply with recommendations of "Manual for House Framing" of National Forest Products Association (N.F.P.A). Do not splice structural members between supports.

B. Anchor and nail as shown, and to comply with "Recommended Nailing Schedule" of "Manual for House Framing" and "National Design Specifications for Wood Construction" published by N.F.P.A.

C. Firestop concealed spaces of wood framed walls and partitions at each floor level and at the ceiling line of the top story. Where firestops are not automatically provided by the framing system used, use closely-fitted wood blocks of nominal 2" thick lumber of the same width as framing members.

**END OF SECTION 06100.**

DIVISION 6 – WOOD AND PLASTICS
SECTION 06150 – Wood Decking

## 1. GENERAL:

### 1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY:

A. This Section includes the following:

1. Glued-laminated wood roof decking.

B. Related Sections:

1. Division 6 Section "Rough Carpentry" for dimension lumber items associated with wood decking.

### 1.3 SUBMITTALS:

A. Product Data: For each type of product indicated.

1. For glued-laminated wood decking, include installation instructions and data on lumber, adhesives, and fabrication.

2. For preservative-treated wood products, include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

3. For sealant and installation adhesive.

4. Prefinished stain color charts.

B. Samples: 24 inches long, showing the range of variation to be expected in appearance of wood decking.

## 1.4 DELIVERY, STORAGE, AND HANDLING:

A. Schedule delivery of wood decking to avoid extended on-site storage and to avoid delaying the Work.

B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings. Stack wood decking with surfaces that are to be exposed in the final Work protected from exposure to sunlight.

# 2. PRODUCTS:

## 2.1 WOOD DECKING, GENERAL:

A. General: Comply with DOC PS 20, "American Softwood Lumber Standard", and with applicable grading rules of inspection agencies certified by ALSC's Board of Review. Match existing wood deck for size and finish.

B. Grade Stamps: Provide solid-sawn wood decking with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, species, grade, moisture content at time of surfacing, and mill. Apply grade stamp to surfaces that will not be exposed to view.

C. Moisture Content: Provide wood decking with 15 percent maximum moisture content at time of dressing.

## 2.2 GLUED-LAMINATED WOOD DECKING:

A. Face Species: Alaska cedar.

B. Decking Nominal Size: Match existing.

C. Decking Configuration: For glued-laminated wood decking indicated to be of diaphragm design and construction, provide tongue-and-groove configuration that complies with research/evaluation report.

D. Face Grade: Decorative: Sound knots and natural characteristics are allowed, including chipped edge knots, short end splits,

seasoning checks, and some pin holes. Face knot holes, stain, end slits, skip, roller split, and planer burn are not allowed.

E. Face Surface: Smooth.

F. Edge Pattern: Beaded edge

G. Laminating Adhesive: Wet-use type complying with ASTM D 2559.

1. Use adhesive that contains no urea-formaldehyde resins.

H. Preservative Treatment: Pressure treat lumber before gluing according to AWPA C28 for aboveground use.

1. Use oxine copper (copper-8-quinolinolate) in a light petroleum solvent.

2. Use copper naphthenate in a light petroleum solvent.

3. Use waterborne preservative that is acceptable to authorities having jurisdiction and that contains no arsenic or chromium. After treating, redry wood to 15 percent maximum moisture content.

4. Use preservative solution without substances that might interfere with application of indicated finishes.

5. After dressing and fabricating decking, apply copper naphthenate according to AWPA M4 to surfaces cut to a depth of more than 1/16 inch.

## 2.3 ACCESSORY MATERIALS:

A. Fasteners for Glued-Laminated Decking: Provide fastener size and type complying with requirements in Part 3 "Installation" Article for installing laminated decking.

B. Fastener Material: Stainless steel.

C. Installation Adhesive: For glued-laminated wood decking indicated to be of diaphragm design and construction, provide adhesive that complies with research/evaluation report.

1. Use adhesive that has a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

D. Sealant: Elastomeric joint sealant complying with requirements in Division 7 Section "Joint Sealants".

1. Use sealant that has a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Prefinishing: All wood deck shall be prefinished with a penetrating stain. Color will be selected from manufacturers' standard stain charts and shall match existing.

## 2.4 FABRICATION:

A. Shop Fabrication: Where preservative-treated decking is indicated, complete cutting, trimming, surfacing, and sanding before treating.

B. Fabricate decking in lengths for combination simple and two-span continuous lay-up.

C. Predrill decking for lateral spiking to adjacent units to comply with referenced decking standard.

D. Seal Coat: After fabricating and surfacing decking, apply a saturation coat of penetrating sealer.

# 3. EXECUTION:

## 3.1 EXAMINATION:

A. Examine walls and support framing in areas to receive wood decking for compliance with installation tolerances and other conditions affecting performance of wood decking.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.1 INSTALLATION:

A. Install laminated wood decking to comply with manufacturer's written instructions and with end joints located according to lay-up indicated.

1. Nail each course of glued-laminated wood decking at each support with one nail slant nailed above the tongue and one nail straight nailed through the face.

    a. Use 60d nails for 4x6 and 4x8 decking. Predrill decking to prevent splitting.

2. Slant nail each course of glued-laminated wood decking to the tongue of the adjacent course at 30 inches o.c. and within 12 inches of the end of each unit. Stagger nailing in adjacent courses 15 inches.

    a. Use 10d nails for 4x6 and 4x8 decking.

3. Glue adjoining decking courses together by applying a 3/8-inch bead of adhesive on the top of tongues according to research/evaluation report.

B. Where preservative-treated decking must be cut during erection, apply a field-treatment preservative to comply with AWPA M4.

1. For solid-sawn decking, use inorganic boron (SBX).

2. For laminated decking, use copper naphthenate.

3. Restain damaged areas.

C. Apply joint sealant to seal roof decking at exterior walls at the following locations:

1. Between decking and supports located at exterior walls.

2. Between decking and exterior walls that butt against underside of decking.

3. Between tongues and grooves of decking over exterior walls and supports at exterior walls.

## 3.2 ADJUSTING:

A. Repair damaged surfaces and finishes after completing erection. Replace damaged decking if repairs are not approved by Architect.

## 3.3 PROTECTION:

A. Provide temporary waterproof covering to protect exposed decking before applying roofing.

END OF SECTION 06150

# DIVISION 6 - WOOD AND PLASTICS
## Section 06200 - Finish Carpentry

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Definition: Finish carpentry includes carpentry work which is exposed to view, is non-structural, and which is not specified as part of other sections.

B. Types of finish carpentry work in this section include:

1. Provide 1" thick cabinet tops at all cabinets with 2'x ½" Corian edge trim

C. Rough carpentry is specified in another Division - 6 section.

D. Builders hardware and wood doors are specified in Division - 8 sections.

### 1.3. PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Protect finish carpentry materials during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver finish carpentry materials, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, finish carpentry materials must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

## 2. PRODUCTS:

## 2.1. GENERAL:

A. Plywood: Provide Douglas Fir or Yellow Pine, 3/4" thickness, "A-C" exterior grade.

B. High Pressure Decorative Laminate: Grade PF-42 (0.042" nominal thickness) as manufactured by Formica Corp., Micarta, or approved equal.

## 3. EXECUTION:

## 3.1. PREPARATION:

A. Condition wood materials to average prevailing humidity conditions in installation areas prior to installing.

## 3.2. INSTALLATION:

A. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'0" for plumb and level.

B. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

## 3.3. ADJUSTMENT, CLEANING, FINISHING AND PROTECTION:

A. Repair damaged and defective finish carpentry work wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace woodwork.

B. Protection: Installer of finish carpentry work shall advise Contractor of final protection and maintained conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

**END OF SECTION 06200.**

# Division 6- Wood & Plastics

## Section 06300- Wood Windows

1. General

1.1. Summary

A. Section includes.

1. Aluminum-clad Wood windows.

1.2. Preinstallation Meetings

A. Preinstallation conference: Conduct Conference at Highland City Hall.

1.3. Action Submittals

A. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing, and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for wood windows.

B. Shop Drawings: For wood windows.

1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation including anchor, flashing, and sealant installation.

C. Samples: for each exposed product and for each specified 2"x4" in size.

D. Samples for initial selection: for units with factory-applied color finishes.

1. Include examples of hardware and accessories involving color selection.

E. Samples for verification: For wood and components required, prepared on samples of size indicated below:
   1. Exposed finishes: 2"x4".
   2. Exposed hardware: Full-sized units.

F. Product Schedule: for wood Windows. Use designations indicated on drawings.

1.4. Informational Submittals

A. Qualification data: For Installer.

B. Product test reports: For each type of wood window, for tests preformed by a qualified testing agency.

C. Field quality-control test reports.

D. Sample warranties: For manufacturer's warranties.

1.5. Quality Assurance

A. Manufacturer qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

B. Vendor qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

C. Installer qualifications: An installer acceptable to wood window manufacturer of supplier for installation of units required for this project.

D. Mockups: Build mockups to verify selections made under sample submittals. To demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on drawings.
2. Approval of mockups does not constitute approval of deviations from the contracts contained in mockups unless architect specifically approves such deviations in writing.
3. Subject to compliance with requirements. Approved mockups may become part of the completed work if undisturbed at time of substantial completion.

1.6. Warranty

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
    a. Failure to meet performance requirements.
    b. Structural failures including excessive defection, water leakage, and air infiltration.
    c. Faulty operation of movable sash and hardware.
    d. Deterioration of materials and finishes beyond normal weathering.
    e. Failure of insulating glass.

2. Warranty period:
    a. Window: 10 years from date of substantial completion.
    b. Glazing units, nonlaminated: 20 years from date of substantial completion.
    c. Glazing units, laminated: 10 years from date of substantial completion.
    d. Aluminum-cladding finish: 10 years from date of substantial completion.

2. Products

2.1. Source limitations

A. Obtain wood windows from single source from single manufacturer.

2.2. Window Performance Requirements

A. Product standard: Comply with all AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
    1. Window certification: WDMA certified with label attached to each window.

B. Performance class and grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
    1. Minimum performance class: LC
    2. Minimum performance grade: 35

C. Thermal transmittance: NFRC 100 maximum whole windows U-factor of 0.3 Btu/ Sq.ft x h x deg F (1.71 W/sq. m x K)

D. Solar heat gain coefficient (SHGC): NFRC 200 maximum whole-window SHGC of .03

E. Sound transmission class SYC; rated for not less than 26 STC when tested for laboratory sound transmission loss according to ASTM E90 and determined by ASTM E413.3

F. Outside- inside Transmission class (OITC): Rated for not less than 22 OITC when tested for laboratory sound transmission loss according to ASTM E90 and determined by ASTM E1332.

2.3. Wood windows

A. Basis-of-design product: subject to compliance with requirements, provide Pella Corporation lifestyle series or comparable product by one of the following.

1. Aluminum clad wood windows:
2. Eagle Window& Door, Inc.: an Anderson Window & Door company.
3. Marvin Windows and Door

B. Operating types: provide the following operating types in locations indicated on the drawings:

1. Double Hung

C. Frames and sashes : Fine grained wood lumber complying with AAMA/WDMA/CSA 101/I.S. 2/a440; kiln dried to moisture content not

more than 12 percent at time of fabrication : free of visible finger joints on linear members, blue stains, knots, pitch pockets and surface checks larger than 1/32 inch deep by 2 inches wide, water repellent preservative treated.

1. Exterior finish: Aluminum clad.
    a. Aluminum finish: Manufacturer's standard species.
    b. Color: Brown
2. Interior Finish: Unfinished
    a. Exposed unfinished wood surfaces: Manufacture's standard species.
    b. Stian color: Field finished to match existing casing.

D. Glass: Clear annealed glass, ASTM c1036, type 1, class 1, q3.
    1. Kind: Fully tempered, ASTM C1048, where indicated on drawings.

E. Insulating – Glass units: ASTM E2130.
    1. Glass: ASTM C1036, Type 1 class1,q3.
        a. Tint or pattern: Clear.
        b. Kind: Fully tempered, ASTM C1048 where indicated on drawings.
    2. Lites: Two
    3. Filling: Fill space between glass lites with argon.
    4. Low-E Coating: Sputtered on second or third surface.

F. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum stainless stee, carbon steel complying

AAMA 907, or other corrosion resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed hardware color and finishes: Brown.

G. Hung window Hardware:

1. Counterbalancing mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
2. Locks and latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Tilt hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surface from the interior.

H. Weather stripping: Provide full perimeter weather stripping for each operable sash unless otherwise indicated.

I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4. Accessories

A. Interior transition stops to span from new window to existing jamb extensions.

B. Color matched exterior caulk.

C. Flashing tape.

2.5. Insect Screens

A. General: Fabricate insect screens to integrate with window frame. Provide screen for ach operable exterior sash. Screen wickets are not permitted.

1. Type and location: Full outside for double hung.

B. Aluminum frames: Manufacturers standard aluminum allow complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge or frame.

1. Tubular framing sections and cross braces: roll formed for aluminum sheet.

2. Finish for exterior screens: Matching color and finish of cladding.

C. Glass-Fiber Mesh Fabric: Mesh of PVC coated, Glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration comply with ASTM D3656/D3656M and SNA 1201.

1. Mesh color: Manufacturer's standard.

2.6. Fabrication

A. Fabricate wood windows in sizes indicated: Include a complete system for installing and anchoring windows.

B. Glaze wood windows in the factory.

C. Weather strip each operable sash to provide weather tight installation.

D. Mullions: Provide mullions and cover pates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building defections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

3. Execution

3.1. Examination

A. Examine openings, substrate, structural support, anchorage, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2. Installation

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weather tight construction.

C. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action (dissimilar materials, treated lumber, etc.) at the points of contact with other materials.

D. For fin method of attachment, integrate window system installation with exterior water-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with water resistant barrier using watershed principles in accordance with window manufacturer's written instructions.

E. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.

F. Leave windows closed and locked.

3.3. Adjusting, Cleaning, and Protection

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weather closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

   1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating surfaces resulting from construction operations if contaminating substances do contact window, surfaces, remove contaminants immediately in accordance with manufacturer's written instructions.

END SECTION 06300

# DIVISION 6 - WOOD AND PLASTICS
## Section 06402 - Interior Architectural Woodwork

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division l Specification Sections, apply to this section.

### 1.2. SUMMARY:

A. This section includes the following:

1. Cabinet tops. See Section 06200

2. Cabinets

B. Related Sections: The following sections contain requirements that relate to this section:

1. Division 6 Section "Rough Carpentry" for furring, blocking for other carpentry work that is not exposed to view.

### 1.3. SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division l Specification sections.

B. Shop drawings showing location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

C. Samples for initial selection purposes of the following inform of manufacturer's color charts consisting of actual units or sections of units showing full range of colors, textures, and patterns available for each type of material indicated.

l. Plastic laminate.

### 1.4. QUALITY ASSURANCE:

A. AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI) except as otherwise indicated.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.

B. Do not deliver woodwork until painting, wet work, grinding, and similar operations that could damage, soil, or deteriorate woodwork have been completed in installation areas.

C. Field Measurements: Where woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with construction progress to avoid delay of work.

# 2. PRODUCTS:

## 2.1. HIGH PRESSURE DECORATIVE LAMINATE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide high pressure decorative laminates of one of the following:

1. Formica Corp.
2. Laminart.
3. Micarta Div., Westinghouse Electric Corp.
4. Nevamar Corp.
5. Ralph Wilson Plastics Co.

## 2.2. MATERIALS:

A. General: Provide materials that comply with requirements of the WIC woodworking standard for each type of woodwork and WIC quality grade indicated, unless otherwise indicated.

B. General: Provide materials that comply with requirements of the AWI woodworking standard for each type of woodwork and quality grade indicated and, where the following products are part of woodwork, with requirements of the referenced product standards, that apply to product characteristics indicated:

1. Hardboard: ANSI/AHA Al35.4.
2. High Pressure Laminate: NEMA LD 3.
3. Medium Density Fiberboard: ANSI A208.2.
4. Particleboard: ANSI A208.l.
5. Softwood Plywood: PS l.

## 2.3. FABRICATION, GENERAL:

A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber in relation to relative humidity conditions existing during time of fabrication and in installation areas.

B. Fabricate woodwork to dimensions, profiles, and details indicated.

C. Complete fabrication, including assembly, finishing, and hardware application, before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Factory-cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts and, where located in countertops and similar exposures, seal edges of cutouts with a water resistant coating.

## 2.4. ARCHITECTURAL CABINETS:

A. Quality Standard: Comply with AWI Section 400 and its Division 400C.

B. Type of Top: Corian See Section 06200.

1. Grade: Premium.

2. Cabinets: AWI 400B (Laminate clad)
   a. Premium Grade.
   b. Doors: Flush type hinged.
   c. Hardware: All hardware to be Bloom Cabinet hardware.
   d. Drawers: Bloom Meta Box
   e. Cabinet Design: European style 32 Mil system, flush overlay design.

## 3. EXECUTION:

### 3.1. PREPARATION:

A. Condition woodwork to average prevailing humidity conditions in installation areas before installing.

B. Deliver concrete inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.

C. Before installing architectural woodwork, examine shop fabricated work for completion and complete work as required, including back priming and removal of packing.

### 3.2. INSTALLATION:

A. Quality Standard: Install woodwork to comply with AWI Section 1700 for same grade specified in Part 2 of this section for type of woodwork involved.

B. Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including tops) and with no variations in flushness of adjoining surfaces.

C. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.

D. Tops: Anchor securely to base units and other support systems as indicated.

### 3.3. ADJUSTMENT AND CLEANING:

A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean woodwork on exposed and semi-exposed surfaces. Touchup factory-applied finishes to restore damaged or soiled areas.

### 3.4. PROTECTION:

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, that ensures that woodwork is being without damage or deterioration at time of substantial completion.

**END OF SECTION 06402.**

# DIVISION 7- THERMAL AND MOISTURE PROTECTION
## Section 07210 - Insulation

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:

1. Foundation wall insulation (perimeter).

2. Blanket-type building insulation.

3. Sound attenuation blankets installed as part of the metal-framed gypsum drywall assemblies are specified in Division 9 section 09215- Veneer Plaster.

### 1.3. QUALITY ASSURANCE:

A. Thermal Resistivity: Where thermal resistivity properties of insulation materials are designated by r-values they represent the rate of heat flow through a homogenous material exactly 1" thick, measured by test method included in referenced material standard or otherwise indicated. They are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

B. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having

jurisdiction.

C. Surface Burning Characteristics: ASTM E-84.

D. Fire Resistance Ratings: ASTM E-119.

E. Combustion Characteristics: ASTM E-136.

## 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation material required.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. General Protection: Protect insulations from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

# 2. PRODUCTS:

## 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Extruded Polystyrene Board Insulation:

    a. Dow Chemical U.S.A.
    b. Minnesota Diversified Products, Inc.
    c. Owens-Corning Fiberglass Corp..

2. Manufacturers of Glass Fiber Insulation:

    a. CertainTeed Corp.
    b. Knauf Fiber Glass GmbH.
    c. Manville Corp.
    d. Owens-Corning Fiberglas Corp.

## 2.2. INSULATING MATERIALS:

A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics.

B. Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths and lengths.

C. Extruded Polystyrene Board Insulation: 2" rigid, cellular thermal insulation with closed-cells and integral high density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C-578 for Type indicated; with 5-year aged r-values of 5.4 and 5 at 40 and 75 deg. F (4.4 and 23.9 deg. C), respectively; and as follows:

1. Type IV, 1.6 lb./cu. ft. min. density, unless otherwise indicated.

2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 5 and 165, respectively.

3. Use for perimeter and wall cavity insulation.

D. Faced Mineral Fiber Blanket/Batt Insulation: 6" or 12" thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C-665 for Type III, Class A; standard kraft faced vapor-retarder membrane on one face, respectively; and as follows:

1. Mineral Fiber Type: fibers manufactured from glass.

E. Adhesive for Bonding Insulation: Type recommended by insulation manufacturer, and complying with requirements for fire performance characteristics.

F. Mechanical Anchors: Type and size indicated or, if not indicated as recommended by insulation manufacturer for type of application and condition of substrate.

## 3. EXECUTION:

### 3.1. INSPECTION AND PREPARATION:

A. Require Installer to examine substrates and conditions under which insulation work is to be performed. A satisfactory substrate is one that complies with requirements of the section in which substrate and related work is specified. Obtain Installer's written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions

have been corrected.

B. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections which might puncture vapor retarders.

## 3.2. INSTALLATION, GENERAL:

A. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.

B. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.

C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

## 3.3. INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION:

A. On vertical surfaces, set units in adhesive applied in accordance with manufacturer's instructions. Use type of adhesive recommended by manufacturer of insulation.

## 3.4. INSTALLATION OF GENERAL BUILDING INSULATION:

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (non-breathing) insulation units by applying mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with mastic or sealant.

C. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

D. Tape joints and ruptures in vapor retarder, and seal each continuous

area of insulation to surrounding construction to ensure air-tight installation.

E. Stuff loose glass fiber insulation into miscellaneous voids and cavity spaces where shown. Compact to approximately 40% of normal maximum volume (to a density of approximately 2.5 lbs. per cu. ft.).

## 3.5. PROTECTION:

A. General: Protect installed insulation and vapor retarders from harmful weather exposures and from possible physical abuses, where possible by nondelayed installation of concealing work or, where that is not possible, by temporary covering or enclosure.

**END OF SECTION 07210.**

**DIVISION 7- THEMAL AND MOISTURE PROTECTION**
**SECTION 07241-EXTERIOR INSULATION AND FINISH SYSTEM CLASS PB**

## PART I GENERAL

### 1.01 SUMMARY

A. This document is to be used in preparing specifications for projects utilizing the Dryvit Outsulation Plus MD System. For complete product description and usage refer to:
   1. Dryvit Outsulation Plus MD System Data Sheet, DS445
   2. Dryvit Outsulation Plus MD System Application Instructions, DS218
   3. Dryvit Outsulation Plus MD System Installation Details, DS110

B. Related Sections
   1. Unit Masonry – Section 04 20 00
   2. Concrete – Sections 03 00 00
   3. Cold-Formed Metal Framing – Section 05 40 00
   4. Wood Framing – Section 06 11 00
   5. Joint Protection – Section 07 90 00
   6. Flashing – Section 07 60 00
   7. Water-Resistive Barriers – Section 07 25 00
   8. Vapor Retarders – 07 26 13
   9. Air Barriers – 07 27 26

### 1.02 REFERENCES

A. Section Includes
   1. ASTM B 117 (Federal Test Standard 141A Method 6061) Standard Practice for Operating Salt Spray (Fog) Apparatus
   2. ASTM C 150 Standard Specification for Portland Cement
   3. ASTM C 297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
   4. ASTM C 1063 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
   5. ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
   6. ASTM C 1396 (formerly C 79) Standard Specification for Gypsum Board
   7. ASTM D 968 (Federal Test Standard 141A Method 6191) Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
   8. ASTM D 1784 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
   9. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
   10. ASTM D 2247 (Federal Test Standard 141A Method 6201) Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
   11. ASTM D 2898 Standard Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing
   12. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

13. ASTM D 4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
14. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
15. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
16. ASTM E 119 Standard Method for Fire Tests of Building Construction and Materials
17. ASTM E 283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen
18. ASTM E 330 Test Method for Structural Performance of Exterior Windows, Doors and Curtain Walls by Uniform Static Air Pressure Difference
19. ASTM E 331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
20. ASTM E 2098 Test Method for Determining the Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to Sodium Hydroxide Solution
21. ASTM E 2134 Test Method for Evaluating the Tensile-Adhesion Performance of Exterior Insulation and Finish Systems (EIFS)
22. ASTM E 2178 Standard Test Method for Air Permeance of Building Material
23. ASTM E 2273 Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies
24. ASTM E 2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
25. ASTM E 2430 Standard Specification for Expanded Polystyrene (EPS) Thermal Insulation Boards for use in Exterior Insulation and Finish Systems (EIFS)
26. ASTM E 2485 (formerly EIMA Std. 101.01) Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water-Resistive Barrier Coatings
27. ASTM E 2486 (formerly EIMA Std. 101.86) Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
28. ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems
29. ASTM E 2570 Standard Test Method for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
30. ASTM G 155 (Federal Test Standard 141A Method 6151) Standard Practice for Operating-Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials
31. Mil Std E5272 Environmental Testing
32. Mil Std 810B Environmental Test Methods
33. NFPA 268 Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source.
34. NFPA 285 Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus

**1.03 DEFINITIONS**

A. Base Coat: Material used to encapsulate one or more layers of reinforcing mesh fully embedded that is applied to the outside surface of the EPS.
B. Building Expansion Joint: A joint through the entire building structure designed to accommodate structural movement.
C. Contractor: The contractor that installs the Outsulation Plus MD System to the substrate.
D. Dryvit: Dryvit Systems, Inc., the manufacturer of the Outsulation Plus MD System, a Rhode Island corporation.
E. Expansion Joint: A structural discontinuity in the Outsulation Plus MD System.
F. Finish: An acrylic-based coating, available in a variety of textures and colors that is applied over the base coat.
G. Insulation Board: Expanded polystyrene (EPS) insulation board, which is affixed to the substrate and creates a layer of continuous insulation.
H. Panel Erector: The contractor who installs the panelized Outsulation Plus MD System.
I. Panel Fabricator: The contractor who fabricates the panelized Outsulation Plus MD System.
J. Reinforcing Mesh: Glass fiber mesh(es) used to reinforce the base coat and to provide impact resistance.
K. Sheathing: A substrate in sheet form.
L. Substrate: The material to which the Outsulation Plus MD System is affixed.
M. Substrate System: The total wall assembly including the attached substrate to which the Outsulation Plus MD System is affixed.

**1.04 SYSTEM DESCRIPTION**

A. General: The Dryvit Outsulation Plus MD System is an Exterior Insulation and Finish System (EIFS), Class PB, consisting of an air/water-resistive barrier, an adhesive, expanded polystyrene insulation board, base coat, reinforcing mesh(es) and finish.
B. Methods of Installation:
1. Field Applied: The Outsulation Plus MD System is applied to the substrate system in place.
2. Panelized: The Outsulation Plus MD System is shop-applied to the prefabricated wall panels.
C. Design Requirements:
1. Acceptable substrates for the Outsulation Plus MD System shall be:
a. Exterior grade gypsum sheathing meeting ASTM C 1396 (formerly C 79) requirements for water resistant core or Type X core at the time of application of the Outsulation Plus MD System.
b. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177.
c. Exterior fiber reinforced cement or calcium silicate boards.
d. APA Exterior or Exposure 1 Rated Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.
e. APA Exterior or Exposure 1 Fire Retardant Treated (FRT) Plywood, Grade C-D or better, nominal 1/2 in (12.7 mm), minimum, installed with the C face out.
f. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 1/2 in (12.7 mm), minimum. **NOTE: Applications over OSB sheathing requires a minimum of 2**

**coats of Backstop NT – Smooth or Spray. Backstop NT – Texture is not recommended for the field of wall application over OSB.**

g. Unglazed brick, cement plaster, concrete or masonry.

h. Pre-engineered metal building panels with an acceptable substrate as noted in Section 1.04.C.1.a through f.

2. Deflection of the substrate systems shall not exceed 1/240 times the span.
3. The substrate shall be flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
4. The slope of inclined surfaces shall not be less than 6:12 (27°) and the length shall not exceed 12 in (305 mm).
5. All areas requiring an impact resistance classification higher than "standard", as defined by ASTM E 2486 (formerly EIMA Standard 101.86), shall be as detailed in the drawings and described in the contract documents. Refer to Section 1.04.D.1.d of this specification.
6. Expansion Joints:
   a. Design and location of expansion joints in the Outsulation Plus MD System is the responsibility of the project designer and shall be noted on the project drawings. As a minimum, expansion joints shall be placed at the following locations:
      1) Where expansion joints occur in the substrate system
      2) Where building expansion joints occur
      3) At floor lines in wood frame construction
      4) At floor lines of non-wood framed buildings where significant movement is expected
      5) Where the Outsulation Plus MD System abuts dissimilar materials
      6) Where the substrate type changes
      7) Where prefabricated panels abut one another
      8) In continuous elevations at intervals not exceeding 75 ft (23 m)
      9) Where significant structural movement occurs, such as changes in roof line, building shape or structural system
7. Terminations:
   a. Prior to applying the Dryvit Outsulation Plus MD System, wall openings shall be treated with Dryvit AquaFlash System, Backstop® Flash & Fill or Flashing Tape. Refer to Dryvit Outsulation Plus MD Installation Details, DS110.
   b. The Outsulation Plus MD System shall be held back from adjoining materials around openings and penetrations such as windows, doors, and mechanical equipment a minimum of 3/4 in (19 mm) for sealant application. See Dryvit's Outsulation Plus MD System Installation Details, DS110.
   c. The system shall be terminated a minimum of 8 in (203 mm) above finished grade.
   d. Sealants
      1) Shall be manufactured and supplied by others.
      2) Shall be compatible with the Outsulation Plus MD System materials. Refer to current Dryvit Publication DS153 for listing of sealants tested by sealant manufacturer for compatibility.
      3) The sealant backer rod shall be closed cell.
8. Vapor Retarders: The use and location of vapor retarders within a wall assembly is the responsibility of the project designer and shall comply with local building

code requirements. The type and location shall be noted on the project drawings and specifications. Vapor retarders may be inappropriate in certain climates and can result in condensation within the wall assembly. Refer to Dryvit Publication DS159 for additional information.

9. Dark Colors: The use of dark colors must be considered in relation to wall surface temperature as a function of local climatic conditions. Use of dark colors in high temperature climates can affect the performance of the system.
10. Flashing: Shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies and other areas as necessary to prevent water from entering behind the Outsulation Plus MD System.
11. Site Coated EPS Shapes and Starter Boards: Shall be coated on site utilizing the same materials (EPS, base material mixture, reinforcing mesh, and finish) as specified for the project.
12. Pre Base Coated EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other approved shape manufacturer.

D. Performance Requirements:

1. The Outsulation Plus MD System shall have been tested as follows:
   a. Air/Water-Resistive Barrier Coating

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Tensile Bond** | ASTM C 297/E 2134* | Minimum 15 psi (104 kPa) | Substrate:<br>Minimum 19 psi (131 kPa) (Backstop NT)<br>Minimum 24.1 psi (166 kPa) (Backstop DMS)<br><br>Flashing:<br>Minimum 431 psi (2970 kPa)<br>(Backstop NT)<br>Minimum 140 psi (967 kPa)<br>(Backstop DMS) |
| **Freeze-thaw** | ASTM E 2485 Method B* | No deleterious effects after 10 cycles | Passed - No deleterious effects after 10 cycles |
| **Water Resistance** | ASTM D 2247* | No deleterious effects after 14 days exposure[1] | No deleterious effects after 14 days exposure |
| **Water Vapor Transmission** | ASTM E 96 Proc. B* | Vapor Permeable | Vapor Permeable<br>Backstop DMS: 30 Perms |
| **Air Leakage** | ASTM E 283 | No ICC or ANSI/EIMA Criteria | 0.002 cfm/ft$^2$ (0.01 l/sec/m$^2$)<br>(Backstop NT) |
| **Air Permeance** | ASTM E 2178 | No ICC or ANSI/EIMA Criteria | 1.2x10$^{-4}$ cfm/ft$^2$ @ 1.6 psf (0.0006 l/s/m$^2$ @ 75 Pa)<br>(Backstop NT) |

| | | | |
|---|---|---|---|
| **Air Barrier Assembly** | ASTM E 2357 | No ICC or ANSI/EIMA Criteria | <0.001 cfm/ft$^2$ @ 6.24 psf (0.05 l/sec m$^2$ @300 Pa) (Backstop NT) |
| **Nail Sealability** | ASTM D 1970 | No ICC or ANSI/EIMA Criteria | Passed ABAA Criteria |
| **Structural Performance** | ASTM E 1233 Proc. A* | Minimum 10 positive cycles at 1/240 deflection; No cracking in field, at joints or interface with flashing | Passed |
| **Racking** | ASTM E 72* | No cracking in field, at joints or interface with flashing at net deflection of 1/8 in (3.2 mm) | Passed |
| **Restrained Environmental** | ICC-ES Procedure* | 5 cycles; No cracking in field, at joints or interface with flashing | Passed |
| **Water Penetration** | ASTM E 331* | No water penetration beyond the inner-most plane of the wall after 15 minutes at 2.86 psf (137 Pa) | Passed |
| **Weathering UV Exposure**<br><br>**Accelerated Aging**<br><br>**Hydrostatic Pressure Test** | ASTM D 2898 Method B*<br><br>ICC-ES Procedure*<br><br>AATCC 127* | 210 hours of exposure<br><br>25 cycles of wetting and drying<br><br>ICC: 21.6 in (549 mm) water column for 5 hours | Passed<br><br>Passed<br><br>Passed |
| **Surface Burning Characteristics** | ASTM E 84 | Flame Spread < 25<br>Smoke | Passed |

| | | | |
|---|---|---|---|
| | | Developed < 450 | |

* ASTM E 2570 Standard Test Method for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage, also referred to as AC212 – Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing

1. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification

b. Durability

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Abrasion Resistance** | ASTM D 968 | No deleterious effects after 528 quarts (500 liters) | No deleterious effects after 1056 quarts (1000 liters) |
| **Accelerated Weathering** | ASTM G 155 Cycle 1* | No deleterious effects after 2000 hours | No deleterious effects after 5000 hours |
| | ASTM G 154 Cycle 1* (QUV) | | No deleterious effects after 5000 hours |
| **Freeze-Thaw** | ASTM E 2485 Method A* | No deleterious effects after 60 cycles | Passed - No deleterious effects after 90 cycles |
| | ASTM C 67 modified | No deleterious effects after 60 cycles | Passed - No deleterious effects after 60 cycles |
| | ASTM E 2485 Method B* | No deleterious effects after 10 cycles | Passed - No deleterious effects after 10 cycles |
| **Mildew Resistance** | ASTM D 3273 | No growth during 28 day exposure period | No growth during 60 day exposure period |
| **Water Resistance** | ASTM D 2247* | No deleterious effects after 14 days exposure | No deleterious effects after 42 days exposure |
| **Taber Abrasion** | ASTM D 4060 | N/A | Passed 1000 cycles |
| **Salt Spray Resistance** | ASTM B 117* | No deleterious effects after 300 hours exposure | No deleterious effects after 1000 hours exposure |
| **Water Penetration** | ASTM E 331* | No water penetration beyond the inner-most plane of the wall 2 hours at 6.24 psf (299 Pa) | Passed |
| **Water Vapor Transmission** | ASTM E 96 Procedure B* | Vapor permeable | EPS 5 perm-inch<br>Base Coat[1] 40 Perms<br>Finish[2] 40 Perms |
| **Drainage Efficiency** | ASTM E 2273 | Minimum Drainage Efficiency of 90% | Passed |

* ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems.
1. Base Coat perm value based on Dryvit Genesis®
2. Finish perm value based on Dryvit Quarzputz

c. Structural

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Tensile Bond** | ASTM C 297/E 2134* | Minimum 15 psi (104 kPa) – substrate or insulation failure | Minimum 31 psi (213.6 kPa) |
| **Transverse Wind Load** | ASTM E 330* | Withstand positive and negative wind loads as specified by the building code | Minimum 90 psf (4.3 kPa)[1]<br>16 in o.c. framing, 1/2 in sheathing screw attached at<br>8 in (203 mm) o.c. |
| * ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems.<br>1. All Dryvit components remain intact – for higher wind loads contact Dryvit Systems, Inc. | | | |

d. Impact Resistance: In accordance with ASTM E 2486* (formerly EIMA Standard 101.86):

| Reinforcing Mesh[1]/Weight oz/yd² (g/m²) | Minimum Tensile Strengths | EIMA Impact Classification | EIMA Impact Range in-lbs (Joules) | | Impact Test Results in-lbs (Joules) | |
|---|---|---|---|---|---|---|
| Standard - 4.3 (146) | 150 lbs/in (27 g/cm) | Standard | 25-49 | (3-6) | 36 | (4) |
| Standard Plus - 6 (203) | 200 lbs/in (36 g/cm) | Medium | 50-89 | (6-10) | 56 | (6) |
| Intermediate™ - 12 (407) | 300 lbs/in (54 g/cm) | High | 90-150 | (10-17) | 108 | (12) |
| Panzer® 15[2] - 15 (509) | 400 lbs/in (71 g/cm) | Ultra High | >150 | (>17) | 162 | (18) |
| Panzer 20[2] - 20.5 (695) | 550 lbs/in (98 g/cm) | Ultra High | >150 | (>17) | 352 | (40) |
| Detail Mesh® Short Rolls - 4.3 (146) | 150 lbs/in (27 g/cm) | n/a | n/a | n/a | n/a | n/a |
| Corner Mesh™ - 7.2 (244) | 274 lbs/in (49 g/cm) | n/a | n/a | n/a | n/a | n/a |
| * ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems.<br>1. It shall be colored blue and bear the Dryvit logo for product identification<br>2. Shall be used in conjunction with Standard Mesh (recommended for areas exposed to high traffic) | | | | | | |

e. Fire performance

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Fire Resistance** | ASTM E 119 | No effect on the fire resistance of a rated wall assembly | Passed 1 hour non-load bearing |
| | | | Passed 2-hour load bearing over wood framing |
| **Ignitability** | NFPA 268* | No ignition at 12.5 kw/$m^2$ at 20 minutes | Passed |
| **Intermediate Multi-Story Fire Test** | NFPA 285* (UBC 26-9) | 1. Resist flame propagation over the exterior surface<br>2. Resist vertical spread of flame within combustible core/component of panel from one story to the next<br>3. Resist vertical spread of flame over the interior surface from one story to the next<br>4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces | Passed over steel framing and wood framing |

2. The Outsulation Plus MD components shall be tested for:
a. Fire

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Surface Burning Characteristics** | ASTM E 84* | All components shall have a:<br>Flame Spread $\leq$ 25<br>Smoke Developed $\leq$ 450 | Passed |
| * ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems. | | | |

b. Durability

| TEST | TEST METHOD | CRITERIA | RESULTS |
|---|---|---|---|
| **Reinforcing Mesh Alkali Resistance of Reinforcing Mesh** | ASTM E 2098* | 120 pli (> 21dN/cm) retained tensile strength after exposure | Passed |
| **EPS (Physical Properties)** | ASTM C 303, D | 0.95-1.25 lb/$ft^3$ (15.2-20.0 | Passed |

| | | | |
|---|---|---|---|
| **Density** | 1622 | kg/m$^3$) | |
| **Thermal Resistance** | ASTM C 177, C 518 | 4.0 @ 40 °F (4.4 °C)<br>3.6 @ 75 °F (23.9 °C) | Passed<br>Passed |
| **Water Absorption** | ASTM C 272 | 2.5 % max. by volume | Passed |
| **Oxygen Index** | ASTM D 2863 | 24% min. by volume | Passed |
| **Compressive Strength** | ASTM D 1621 Proc. A | 10 psi (69 kPa) min. | Passed |
| **Flexural Strength** | ASTM C 203 | 25 psi (172 kPa) min. | Passed |
| **Flame Spread**<br>**Smoke Developed** | ASTM E 84*<br>ASTM E 84* | 25 max.<br>450 max. | Passed<br>Passed |
| * ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems. | | | |

**1.05 SUBMITTALS**

A. Product Data: The contractor shall submit to the owner/architect the manufacturer's product data sheets describing products, which will be used on this project.

B. Shop Drawings for Panelized Construction: The panel fabricator shall prepare and submit to the owner/architect complete drawings showing: wall layout, connections, details, expansion joints, and installation sequence.

C. Samples: The contractor shall submit to the owner/architect two (2) samples of the Outsulation Plus MD System for each finish, texture and color to be used on the project. The same tools and techniques proposed for the actual installation shall be used. Samples shall be of sufficient size to accurately represent each color and texture being utilized on the project.

D. Test Reports: When requested, the contractor shall submit to the owner/architect copies of selected test reports verifying the performance of the Outsulation Plus MD System.

E. Environmental Product Declaration: When requested, the contractor shall submit to the owner/architect copies of the Environmental Product Declaration (EPD) describing the estimated environmental impacts of the Outsulation Plus MD System.

**1.06 QUALITY ASSURANCE**

A. Qualifications

1. System Manufacturer: Shall be Dryvit Systems, Inc. All materials shall be manufactured or sold by Dryvit and shall be purchased from Dryvit or its authorized distributors.
   a. Materials shall be manufactured at a facility covered by a current ISO 9001:2015 and ISO 14001:2015 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).
2. Contractor: Shall be knowledgeable in the proper installation of the Dryvit Outsulation Plus MD System and shall be experienced and competent in the installation of Exterior Insulation and Finish Systems. Additionally, the contractor shall possess a current Outsulation Plus MD System Trained Contractor Certificate* issued by Dryvit Systems, Inc.
3. Insulation Board Manufacturer: Shall be listed by Dryvit Systems, Inc., shall be capable of producing the Expanded Polystyrene (EPS) in accordance with the

current Dryvit Specification for Insulation Board, DS131, and shall subscribe to the Dryvit Third Party Certification and Quality Assurance Program.

4. Panel Fabricator: Shall be a contractor experienced and competent in the fabrication of architectural wall panels and shall possess a current Outsulation Plus MD System Trained Contractor Certificate* issued by Dryvit Systems, Inc.
5. Panel Erector: Shall be experienced and competent in the installation of architectural wall panel systems and shall be:
   a. The panel fabricator or
   b. An erector approved by the panel fabricator or
   c. An erector under the direct supervision of the panel fabricator
6. Machine Coated Dryvit EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other manufacturer that subscribes to the Dryvit third party certification and quality assurance program.

B. Regulatory Requirements:
1. The EPS shall be separated from the interior of the building by a minimum 15-minute thermal barrier.
2. The use and maximum thickness of EPS shall be in accordance with the applicable building code(s).

C. Certification
1. The Outsulation Plus MD System shall be recognized for the intended use by the applicable building code(s).

D. Mock-Up
1. The contractor shall, before the project commences, provide the owner/architect with a mock-up for approval.
2. The mock-up shall be of suitable size as required to accurately represent the products being installed, as well as each color and texture to be utilized on the project.
3. The mock-up shall be prepared with the same products, tools, equipment and techniques required for the actual applications. The finish used shall be from the same batch that is being used on the project.
4. The approved mock-up shall be available and maintained at the jobsite.
5. For panelized construction, the mock-up shall be available and maintained at the panel fabrication location.

**1.07 DELIVERY, STORAGE AND HANDLING**

A. All Dryvit materials shall be delivered to the job site in the original, unopened packages with labels intact.

B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.
1. Materials shall be stored at the job site, and at all times, in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Minimum storage temperature shall be as follows:
   a. DPR, PMR™, HDP™, Weatherlastic® and E™ Finishes, Color Prime™, Primus®, Genesis® and NCB™,
   40 °F (4 °C).
   b. For other products, refer to specific product data sheets.

2. Maximum storage temperature shall not exceed 100 °F (38 °C). **NOTE: Minimize exposure of materials to temperatures over 90 °F (32 °C). Finishes exposed to temperatures over 110 °F (43 °C) for even short periods may exhibit skinning, increased viscosity and should be inspected prior to use.**

C. Protect all products from inclement weather and direct sunlight.

**1.08 PROJECT CONDITIONS**

A. Environmental Requirements

1. Application of wet materials shall not take place during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
2. At the time of Dryvit product application, the air and wall surface temperatures shall be from 40 °F (4 °C) minimum to 100 °F (38 °C) maximum for the following products:
   a. DPR, PMR, HDP, Weatherlastic and E Finishes, Color Prime, Primus, Genesis and NCB.
   b. For other products, refer to specific product data sheets.
3. These temperatures shall be maintained with adequate air ventilation and circulation for a minimum of
   24 hours (48 hours for Weatherlastic Finishes, Ameristone, TerraNeo and Lymestone) thereafter, or until the products are completely dry. Refer to published product data sheets for more specific information.

B. Existing Conditions: The contractor shall have access to electric power, clean water and a clean work area at the location where the Dryvit materials are to be applied.

**1.09 SEQUENCING AND SCHEDULING**

A. Installation of the Outsulation Plus MD System shall be coordinated with other construction trades.

B. Sufficient manpower and equipment shall be employed to ensure a continuous operation, free of cold joints, scaffold lines, texture variations, etc.

**1.10 WARRANTY**

A. Dryvit Systems, Inc. shall provide a written moisture drainage and limited materials warranty against defective material upon written request. Dryvit shall make no other warranties, expressed or implied. Dryvit does not warrant workmanship. Full details are available from Dryvit Systems, Inc.

B. The applicator shall warrant workmanship separately. Dryvit shall not be responsible for workmanship associated with installation of the Outsulation Plus MD System.

**1.11 DESIGN RESPONSIBILITY**

A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. Dryvit has prepared guidelines in the form of specifications, installation details, and product data sheets

to facilitate the design process only. Dryvit is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings, or the like, whether based upon the information prepared by Dryvit or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to Dryvit's published comments.

**1.12 MAINTENANCE**

A. Maintenance and repair shall follow the procedures noted in the Dryvit Outsulation Plus MD System Application Instructions, DS218.

B. All Dryvit products are designed to require minimal maintenance. However, as with all building products, depending on location, some cleaning may be required. See Dryvit publication DS152 on Cleaning and Recoating.

C. Sealants and Flashings shall be inspected on a regular basis and repairs made as necessary.

**PART II PRODUCTS**

**2.01 MANUFACTURER**

A. All components of the Outsulation Plus MD System shall be supplied or obtained from Dryvit or its authorized distributors. Substitutions or additions of materials other than specified will void the warranty.

**2.02 MATERIALS**

A. Portland Cement: Shall be Type I or II, meeting ASTM C 150, white or gray in color, fresh and free of lumps.

B. Water: Shall be clean and free of foreign matter.

**2.03 COMPONENTS**

A. Air/Water-Resistive Barrier Components:

1. Dryvit Backstop NT: A vapor permeable, flexible, polymer-based noncementitious water-resistive and air barrier coating available in Texture, Smooth, and Spray. See DS180 and DS181.
2. Dryvit Backstop NT-VB: A Class 1 vapor retarder, available in trowel and spray versions. When specified, consider having a WVT analysis performed. See DS830 and DS831.
3. Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive available in rolls
   4 in (102 mm) wide by 100 yds (91 m) long.
4. Dryvit Backstop DMS: A sprayable single step water-resistive membrane/air barrier and adhesive.

**NOTE: Backstop DMS is not approved for use over wood based substrates.**

B. Flashing Materials: Used to protect substrate edges at terminations.

1. Liquid Applied: An extremely flexible water-based polymer material, ready for use.
   a. Shall be AquaFlash and AquaFlash Mesh
2. Gun Applied: A flexible waterproof material, ready for use.
   a. Shall be Backstop Flash & Fill

3. Sheet Type:
   a. Shall be Flashing Tape and Surface Conditioner
      1) Dryvit Flashing Tape™: A high density polyethylene film backed with a rubberized asphalt adhesive available in rolls 4 in (102 mm), 6 in (152 mm) and 9 in (229 mm) wide by 75 ft (23 m) long.
      2) Dryvit Flashing Tape Surface Conditioner™: A water-based surface conditioner and adhesion promoter for the Dryvit Flashing Tape.

C. Dryvit AP Adhesive™: A moisture cure, urethane-based adhesive used to adhere the Dryvit Drainage Strip™ and Drainage Track.

D. Drainage Track: UV treated PVC "J" channel perforated with weep holes, complying with ASTM D 1784 and ASTM C 1063. **Drainage track usage is limited to the base of the system at finished grade level when installing system in noncombustible construction. All other horizontal terminations shall utilize the Dryvit Drainage Strip as shown in Outsulation Plus MD Installation Details,** DS110**.** Shall be one of the following:
   1. Starter Trac STWP – without drip edge by Plastic Components, Inc.
   2. Starter Trac STDE – with drip edge by Plastic Components, Inc.
   3. Universal Starter Track by Wind-lock Corporation
   4. Sloped Starter Strip with Drip by Vinyl Corp.

E. Dryvit Drainage Strip: A corrugated plastic sheet material, which provides drainage.

F. Adhesives: Used to adhere the EPS to the air/water-resistive barrier, shall be compatible with the water-resistive barrier and the EPS.
   1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
      a. Shall be Primus, or Genesis
   2. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.
      a. Shall be Primus® DM, Genesis® DM, Genesis® DMS, Rapidry DM 35-50 or Rapidry DM 50-75

G. Insulation Board: Expanded Polystyrene meeting Dryvit Specification for Insulation Board, DS131.
   1. Thickness of insulation board shall be minimum 1 in (25 mm).
   2. The insulation board shall be manufactured by a board supplier listed by Dryvit Systems, Inc.

H. Machine Coated Dryvit EPS Shapes and Starter Boards: Shall be supplied by Acrocore or other approved manufacturer that subscribes to the Dryvit third party certification and quality assurance program.

I. Base Coat: Shall be compatible with the EPS insulation board and reinforcing mesh(es).
   1. Cementitious: A liquid polymer-based material, which is field mixed with Portland cement.
      a. Shall be Primus, or Genesis
   2. Noncementitious: A factory-mixed, fully formulated, water-based product.
      a. Shall be NCB
   3. Ready mixed: A dry blend cementitious, copolymer-based product, field mixed with water.

a. Shall be Primus DM, Genesis DM, Genesis DMS, Rapidry DM 35-50 or Rapidry DM 50-75

4. ShieldIt™: A 2-pass base coat used over existing EIFS or a Dryvit reinforced base coat to improve impact resistance against woodpeckers when specified.

J. Reinforcing Mesh: A balanced, open weave, glass fiber fabric treated for compatibility with other system materials. **NOTE: Reinforcing meshes are classified by impact resistance and specified by weight and tensile strength as listed in Section 1.04.D.1.d.**

1. Shall be Standard, Standard Plus, Intermediate, Panzer 15, Panzer 20, Detail and Corner Mesh
2. Shall be colored blue for product identification bearing the Dryvit logo.

K. Finish: Shall be the type, color and texture as selected by the architect/owner and shall be one or more of the following:

1. Standard DPR (Dirt Pickup Resistance): Water-based, acrylic coating with integral color and texture and formulated with DPR chemistry:
   a. Quarzputz® DPR: Open-texture

## PART III EXECUTION

### 3.01 EXAMINATION

A. Prior to installation of the Outsulation Plus MD System, the contractor shall verify that the substrate:

1. Is of a type listed in Section 1.04.C.1.
2. Is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
3. Is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the Outsulation Plus MD System installation or performance.

B. Prior to installation of the Outsulation Plus MD System, the architect or general contractor shall insure that all needed flashings and other waterproofing details have been completed, if such completion is required prior to the Outsulation Plus MD application. Additionally, the Contractor shall ensure that:

1. Metal roof flashing has been installed in accordance with the manufacturer's requirements, Asphalt Roofing Manufacturers Association (ARMA) Standards and Dryvit Outsulation Plus MD Installation Details, DS110, or as otherwise necessary to maintain a watertight envelope.
2. Openings are flashed in accordance with the Outsulation Plus MD System Installation Details, DS110, or as otherwise necessary to prevent water penetration.
3. Chimneys, balconies and decks have been properly flashed.
4. Windows, doors, etc. are installed and flashed per manufacturer's requirements and the Outsulation Plus MD System Installation Details, DS110.

C. Prior to the installation of the Outsulation Plus MD System, the contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.

### 3.02 PREPARATION

A. The Outsulation Plus MD materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.
B. Protect adjoining work and property during Outsulation Plus MD installation.
C. The substrate shall be prepared as to be free of foreign materials, such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

**3.03 INSTALLATION**

A. The system shall be installed in accordance with the Dryvit Outsulation Plus MD System Application Instructions, DS218.
B. The overall minimum base coat thickness shall be sufficient to fully embed the mesh. The recommended method is to apply the base coat in two (2) passes.
C. Sealant shall not be applied directly to textured finishes or base coat surfaces. Dryvit Outsulation Plus MD System surfaces in contact with sealant shall be coated with Demandit Smooth or Color Prime.
D. High impact meshes shall be installed as specified at ground level, high traffic areas and other areas exposed to or susceptible to impact damage.
E. The installation of Machine Coated Dryvit EPS Shapes and Starter Boards shall be in accordance with Dryvit Publication DS854.

**3.04 FIELD QUALITY CONTROL**

A. The contractor shall be responsible for the proper storage and application of the Outsulation Plus MD materials.
B. Dryvit assumes no responsibility for on-site inspections or application of its products.
C. If required, the contractor shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures, workmanship and as to the specific products used.
D. If required, the EPS supplier shall certify in writing that the EPS meets Dryvit's specifications.
E. If required, the sealant contractor shall certify in writing that the sealant application is in accordance with the sealant manufacturer's and Dryvit's recommendations.

**3.05 CLEANING**

A. All excess Outsulation Plus MD System materials shall be removed from the job site by the contractor in accordance with contract provisions and as required by applicable law.
B. All surrounding areas, where the Dryvit Outsulation Plus MD System has been applied, shall be left free of debris and foreign substances resulting from the contractor's work.

**3.06 PROTECTION**

A. The Outsulation Plus MD System shall be protected from inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, etc. are installed.

# DIVISION 7 - THERMAL & MOISTURE PROTECTION
## Section 07311 - Asphalt Shingles

## 1. GENERAL:

### 1.1. SUMMARY:

A. This Section includes the following:

1. Asphalt shingles.
2. Self-adhering sheet underlayment.
3. Ridge vents.
4. Felt underlayment.

### 1.2. SUBMITTALS:

A. Product Data: For each product indicated.

B. Samples: For asphalt shingles, ridge vent and underlayment.

C. Product test reports.

D. Research/evaluation reports.

### 1.3. QUALITY ASSURANCE:

A. Source Limitations: Obtain ridge and hip cap shingles, ridge vents and felt underlayment through one source from a single asphalt shingle manufacturer.

B. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

## 1.4 WARRANTY:

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials within specified warranty period.

1. Material Warranty Period: 30 years from date of Substantial Completion, prorated, with first 5 nonprorated.
2. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.

## 2. PRODUCTS:

## 2.1. MANUFACTURERS:

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.

## 2.2. GLASS-FIBER-REINFORCED ASPHALT SHINGLES:

A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.

1. Available Products:

a. Atlas Roofing Corporation; Pinnacle 35.
b. CertainTeed Corporation; Landmark 30.
c. GAF Materials Corporation; Timberline 30.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

## 2.3. UNDERLAYMENT MATERIALS:

A. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil- (1.0-mm) thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt

adhesive, with release paper backing; cold applied and as equal to Grace Ice and Water Shield.

B. Felts: ASTM D 226, Type I, Asphalt-saturated organic felts, nonperforated.

## 2.4. RIDGE VENTS:

A. Rigid Ridge Vent: Manufacturer's standard rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and with external deflector baffles for use under ridge shingles.

1. Available Products:

a. Air Vent Inc., a CertainTeed Company; ShingleVent II.
b. Cor-A-Vent, Inc.; V-Series.
c. GAF Materials Corporation; Cobra Rigid Vent II.
d. Lomanco, Inc.; OR-4.
e. Mid-America Building Products; RidgeMaster Plus.
f. Obdyke, Benjamin Incorporated; Xtractor Vent X18.
g. Owens Corning; VentSure Ridge Vent.
h. Ridglass Manufacturing Company, Inc.; Coolvent.
i. Solar Group, Inc. (The), a Gibraltar Company; PRV4.
j. Trimline Building Products; Trimline Ridge Vent.

## 2.5. ACCESSORIES:

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized steel wire shingle nails, minimum 0.120-inch (3-mm) diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch- (9.5-mm) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through OSB or plywood sheathing.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

## 2.6. METAL FLASHING AND TRIM:

A. Sheet Metal Flashing and Trim: Comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."

1. Sheet Metal: Coil-coated aluminum.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.

## 3. EXECUTION:

### 3.1. UNDERLAYMENT INSTALLATION:

A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated, lapped in direction to shed water. Lap sides not less than 3-1/2 inches (89 mm). Lap ends not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Roll laps with roller. Cover underlayment within seven days. Material shall extend from roof edge to two feet horizontally above juncture of wall and roof.

B. Single-Layer Felt Underlayment: Install single layer of felt underlayment on roof deck perpendicular to roof slope in parallel courses. Lap sides a minimum of 2 inches (50 mm) over underlying course. Lap ends a minimum of 4 inches (100 mm). Stagger end laps between succeeding courses at least 72 inches (1830 mm). Fasten with felt underlayment roofing nails.

1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches (75 mm) in direction to shed water. Lap ends of felt not less than 6 inches (150 mm) over self-adhering sheet underlayment.

### 3.2. METAL FLASHING INSTALLATION:

A. General: Install metal flashings and other sheet metal to comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."

1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt

shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

## 3.3. ASPHALT SHINGLE INSTALLATION:

A. Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least 7 inches (175 mm) wide with self-sealing strip face up at roof edge.

1. Extend asphalt shingles ½ inch (13 mm) over fascia at eaves and rakes.

C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

D. Fasten asphalt shingle strips with a minimum of five roofing nails located according to manufacturer's written instructions.

E. Woven Valleys: As recommended by manufacturer.

F. Closed-Cut Valleys: As recommended by manufacturer.

G. Open Valleys: As recommended by manufacturer.

H Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.

I. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.

**END OF SECTION 07311.**

# DIVISION 7 - THERMAL AND MOISTURE PROTECTION
## Section 07610 - Flashing and Sheet Metal

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of each type of flashing and sheet metal work is indicated on drawings and by provisions of this section. All flashing and sheet metal items shall be shop-fabricated and finished.

B. Types of work specified in this section include the following:

1. Metal trim.

2. Metal flashing.

C. Roofing accessories which are installed integral with roofing membrane shall be approved and coordinated with the roofing system manufacturer.

D. All metal flashings which are installed integral with the preformed roofing shall be as supplied by that manufacturer or as approved and coordinated with that manufacturer.

### 1.3. SUBMITTALS:

A. Product Data; Flashing, Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

### 1.4. JOB CONDITIONS:

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

## 1.5. WARRANTY:

A. All flashing and sheet metal material shall have a 20-year manufacturer's guarantee against discoloration.

## 2. PRODUCTS:

## 2.1. FLASHING AND SHEET METAL MATERIALS:

A. Sheet metal shall be prefinished steel 24 gauge hot-dipped galvanized steel ASTM A-446 G-90 coating ASTM 525. Finish shall be Kynar 500 Fluorocarbon coating applied on the Berridge Coil Coating line with a top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by Kynar 500 finish supplier.

1. Metal Flashing and Trim - 24 gauge.

B. Miscellaneous Accessories:

1. Fasteners: Same metal as sheet metal or, other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

2. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed; comply with FS TT-S-0027, TT-S-00230, or TT-S-001543.

3. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

## 2.2. FABRICATED UNITS:

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or

deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

## 3. EXECUTION:

### 3.1. INSTALLATION REQUIREMENTS:

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.

### 3.2. CLEANING AND PROTECTION:

A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering at time of substantial completion.

**END OF SECTION 07610.**

# DIVISION 7 - THERMAL AND MOISTURE PROTECTION
## Section 07920 - Joint Sealers

## 1. GENERAL

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2. SUMMARY:

A. Extent of each form and type of joint sealer is indicated on drawings and schedules.

### 1.3. SYSTEM PERFORMANCES:

A. Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

### 1.4. SUBMITTALS:

A. Product Data from manufacturers for each joint sealer product required, including instructions for joint preparation and joint sealer application.

B. Samples for Initial Selection Purposes: Manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available, for each product exposed to view.

C. Certificates from manufacturers of joint sealers attesting that their products comply with specification requirements and are suitable for the use indicated.

### 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials to project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

**1.6. PROJECT CONDITIONS:**

A. Environmental Conditions:

1. Do not proceed with installation of joint sealers under the following conditions:

a. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.

b. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40 deg F (4.4 deg C).

c. When joint substrates are wet due to rain, frost, condensation, or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

**2. PRODUCTS**:

**2.1. MATERIALS, GENERAL:**

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

**2.2. ELASTOMERIC JOINT SEALANTS:**

A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C-920 requirements, including those referenced for type, grade, class, and uses.

1. One-Part Nonacid Curing Silicone Sealant: Type S, Grade NS, Class 25, and complying with the following requirements for uses and additional joint movement capability:

B. Products: Subject to compliance with requirements, provide one of the following:

1. One-Part Nonacid-Curing Silicone Sealant:

a. "Dow Corning 790"; Dow Corning Corp.

b. "Silpruf SCS 2000"; General Electric Co.

c. "864"; Pecora Corp.

## 2.3. JOINT SEALANT BACKING:

A. General:

1. Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

2. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of flexible, non-gassing plastic foam of material indicated below; nonabsorbent to water and gas; and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

a. Open-cell polyurethane foam, flexible.

## 2.4. MISCELLANEOUS MATERIALS:

A. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer-substrate tests and field tests.

## 3. EXECUTION:

## 3.1. EXAMINATION:

A. Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

## 3.2. PREPARATION:

A. Surface Cleaning of Joints:

1. Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

2. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellants; water; surface dirt; and frost.

3. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

4. Remove laitance and form release agents from concrete.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

## 3.3. INSTALLATION OF JOINT SEALERS:

A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C-962 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. Installation of Sealant Backings: Install sealant backings to comply with the manufacturer's requirements.

D. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

1. Do not leave gaps between ends of joint fillers.

2. Do not stretch, twist, puncture, or tear joint fillers.

E. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

G. Provide concave joint configuration per Figure 6A in ASTM C-962, unless otherwise indicated.

## 3.4. CLEANING:

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

## 3.5. PROTECTION:

A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

END OF SECTION 07920.

# DIVISION 8 - DOORS AND WINDOWS
## Section 08110 - Steel Doors and Frames

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of standard steel doors and frames is indicated and scheduled on drawings.

B. Finish hardware is specified elsewhere in Division-8.

C. Building in of anchors and grouting of frames in masonry is specified in Division 4.

D. Steel doors and frames shall have a 20 minute fire rating unless otherwise indicated.

### 1.3. QUALITY ASSURANCE:

A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.

### 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.

B. Shop Drawings:

1. Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

2. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

3. Indicate coordinate of glazing frames and stops with glass and glazing requirements.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory-finished doors.

B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4" high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

# 2. PRODUCTS:

## 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer:

1. Subject to compliance with requirements, provide steel doors and frames by Steel Craft, Curries Company and Mesker Industries.

## 2.2. MATERIALS:

A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A-569 and ASTM A-568.

B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A-366 and ASTM A-568.

C. Supports and Anchors: Fabricate of not less than 18-gage galvanized

sheet steel.

D. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A-153, Class C or D as applicable.

E. Apply shop coat of epoxy prime paint similar to Sherwin-Williams Tile-Clad II Primer B62N7I, to doors and frames, and of even consistency to provide a uniformly finished surface compatible for job-applied finish painting with high build asphaltic polyurethane B-65.

F. Apply shop coat of asphaltic paint to interior surfaces of hollow metal frames.

## 2.3. FABRICATION, GENERAL:

A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site. Comply with SDI-100 requirements as follows:

1. Doors: SDI-100, Grade III, extra heavy-duty, minimum 16-gage faces, lock rail 14 gage channel, hinge rail 12 gage channel formed and tapped for hinges. Insulate with resin impregnated honeycomb fill; both lock and hinge rail wire welded full length and ground smooth.

    a. Glass lites shall have a welded fixed glass molding unit welded to the interior of both 16 gauge face skins of the door.

2. Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-rolled steel.

3. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).

4. Fabricate exterior doors, panels, and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as

integral part of door construction or by addition of minimum 16-gage inverted steel channels.

5. Thermal-Rated (Insulating) Assemblies:

   a. At exterior locations and elsewhere as shown or scheduled, provide doors which have been fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C-236.

6. Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A-115 series specifications for door and frame preparation for hardware.

   a. Doors which are to receive continuous type hinge assembly must be undersized as required to accommodate the hinge. See Finish Hardware Schedule for locations.

7. For concealed overhead door closers, provide space, cutouts, reinforcing and provisions for fastening in top rail of doors or head of frames, as applicable.

8. Reinforce doors and frames to receive surface-applied hardware. Reinforce hinges with 7 gage hinge reinforcement. Drilling and tapping for surface-applied finish hardware may be done at project site. Factory finished doors shall be completely prepared for all hardware in the factory.

9. Locate finish hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.

10. Shop Painting:

    a. Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.

    b. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

c. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

## 2.4. STANDARD STEEL DOORS:

A. Provide metal doors of types and styles indicated on drawings or schedules.

B. Door Louvers: Provide sight proof stationary louvers for interior doors where indicated, constructed of inverted V-shaped or Y-shaped blades formed of 24-gage cold-rolled steel set into 20-gage steel frame.

## 2.5. STANDARD STEEL FRAMES:

A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled furniture steel. Use 16 gage galvanized steel on exterior frame.

B. Fabricate frames with mitered and welded corners, filled and ground smooth.

C. Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

D. Plaster Guards: Provide 26-gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

# 3. EXECUTION:

## 3.1. INSTALLATION:

A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

B. Placing Frames:

1. Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames", unless otherwise indicated.

2. Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

3. In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.

4. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices. Fill holes with body putty and grind smooth.

5. Install fire-rated frames in accordance with NFPA Std. No. 80.

6. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.

C. Door Installation:

1. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

2. Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

## 3.2. ADJUST AND CLEAN:

A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and incomplete

and proper operating condition.

**END OF SECTION 08110.**

# DIVISION 8 - DOORS AND WINDOWS
## Section 08211 - Flush Wood Doors

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. SUMMARY:

A. Extent and location of each type of flush wood door is indicated on drawings and in schedules.

B. Types of doors required include the following:

1. Solid core flush wood doors with wood veneer faces.

2. All flush wood doors shall be 20 minute rated unless otherwise shown elsewhere.

C. Factory-prefitting to frames and factory-premachining for hardware for wood doors is included in this section.

D. Louvers for flush wood doors, including furnishing and installation, are specified under this section.

E. Metal door frames for flush wood doors are specified in another Division-8 section.

### 1.3. SUBMITTALS:

A. Product Data: Door manufacturer's technical data for each type of door, including details of core and edge construction, trim for openings and louvers, and factory-finishing specifications.

B. Shop Drawings:

1. Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, and other

pertinent data.

2. For factory-premachined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.

C. Samples: Submit samples, 1-0" square or as indicated, for the following:

1. Metal Louvers: Blade and frame in 6" lengths, for each material and finish required.

2. Metal Frames for Light Openings: Metal light frames in 6" lengths; for each material, type and finish required.

## 1.4. QUALITY ASSURANCE:

A. Quality Standards: Comply with the following standards:

1. AWI Quality Standard: "Architectural Woodwork Quality Standards", including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.

B. Fire-Rated Wood Doors: Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E-152 and which are labeled and listed for ratings indicated by UL, Warnock Hersey or other testing and inspection agency acceptable to authorities having jurisdiction.

C. Manufacturer: Obtain doors from a single manufacturer.

## 1.5. PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors", as well as with manufacturer's instructions.

B. Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable or concealed markings.

## 1.6. PROJECT CONDITIONS:

A. Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to project's geographical location:

1. Referenced AWI quality standard including Section 100-S-3 "Moisture Content".

## 1.7. WARRANTY:

A. General: Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.

B. Door Manufacturer's Warranty:

1. Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.

2. Warranty shall also include reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.

3. Warranty shall be in effect during following period of time after date of Substantial Completion.

a. Solid Core Interior Doors: Life of installation.

C. Contractor's Responsibilities: Replace or refinish doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

# 2. PRODUCTS:

## 2.1. MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide

doors of one of the following:

1. Solid Core Doors with Wood Veneer Faces:

    a. Algoma Hardwoods, Inc.
    b. Eggers Industries, Architectural Door Division.
    c. Weyerhauser Company.
    d. VT Industries
    e. Osh Kosh Architectural Door Company

## 2.2. INTERIOR FLUSH WOOD DOORS:

A. Solid Core Doors for Transparent Finish: Comply with the following requirements:

1. Faces: Rotary White Birch.

2. AWI Grade: Premium.

3. Construction: PC-5 (Particleboard core, 5-ply), Type I glue.

B. Fire-Rated Solid Core Doors: Comply with the following requirements:

1. Faces and AWI Grade: Provide faces and grade to match non-rated doors in same area of building, unless otherwise indicated.

2. Construction: Manufacturer's standard core construction as required to provide fire-resistance rating indicated.

3. Edge Construction: Provide manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.

4. Pairs: Provide fire-rated pairs with fire-retardant stiles which are labeled and listed for kinds of applications indicated without formed steel edges and astragals.

## 2.3. LOUVERS AND LIGHT FRAMES:

A. Metal Louvers: Size, type and profile shown and fabricated from the following:

1. Color Anodized Aluminum: Extruded aluminum with AA-C22A32, Class II finish.
2. Color: Match Architect's sample.

## 2.4. FABRICATION:

A. Fabricate flush wood doors to produce doors complying with following requirements:

B. Factory-prefit and premachine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:

1. Comply with tolerance requirements of AWI for prefitting. Comply with final hardware schedules and door frame shop drawings and with hardware templates.

2. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory premachining.

C. Metal Astragals: Premachine astragals and formed steel edges for hardware where required for pair of fire-rated doors.

D. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces and finish as specified for associated doors.

E. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.

F. Light Openings: Trim openings with moldings of material and profile indicated.

G. Louvers: Factory install louvers in prepared openings.

## 2.5. FACTORY FINISHING:

A. General: Comply with referenced AWI quality standard including Section 1500 "Factory Finishing".

B. Prefinish wood doors at factory.

1. Transparent Finish: Comply with requirements indicated for

grade, finish system, staining effect and sheen.

a. AWI Grade: Premium.
b. Finish: Manufacturer's standard finish with performance requirements comparable to either AWI System #2 catalyzed lacquer or AWI System #3 alkyd urea conversion varnish.

## 3. EXECUTION:

### 3.1. EXAMINATION::

A. Examine installed door frames prior to hanging door:

1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.

2. Reject doors with defects.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.2. INSTALLATION:

A. Hardware: For installation see Division-8 "Finish Hardware" section of these specifications.

B. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.

C. Install fire-rated doors in corresponding fire-rated frames in accordance with requirements of NFPA No. 80.

D. Fitting Clearances for Non-Rated Doors: Provide 1/8" at jambs and heads;1/16" per leaf at meeting stiles for pairs of doors; and 1/8" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold.

E. Fitting Clearances for Fire-Rated Doors: Comply with NFPA 80.

F. Bevel non-rated doors 1/8" in 2" at lock and hinge edges.

G. Bevel fire-rated doors 1/8" in 2" in lock edge; trim stiles and rails only to extent permitted by labeling agency.

H. Prefit Doors: Fit to frames for uniform clearance at each edge.

I. Factory-finished Doors: Restore finish before installation, if fitting or machining is required at the jobsite.

## 3.3. ADJUSTING AND PROTECTION:

A. Operation: Rehang or replace doors which do not swing or operate freely.

B. Protect doors as recommended by door manufacturer to ensure that wood doors will be without damage or deterioration at time of Substantial Completion.

**END OF SECTION 08211.**

# DIVISION 8 - DOORS AND WINDOWS
## Section 08410 - Aluminum Entrances and Storefronts

## 1. GENERAL:

### 1.1. WORK INCLUDES:

A. Base Bid:

1. Prime Contractor Provide:

a. All necessary materials, labor and equipment for the complete installation of aluminum entrance doors, door frames, storefront vent windows, sunshades and hardware as shown on the drawings and specified herein.

### 1.2. RELATED WORK:

A. Specified elsewhere:

1. Section 01340 - Shop Drawings, Product Data, and Samples.
2. Section 05100 - Structural Metal Framing.

### 1.3. QUALITY ASSURANCE:

A. For purposes of designating type and quality for work in this section, drawings and specifications are based on the D318 Durastile Entrances as manufactured by EFCO Corp. Storefront framing shall be EFCO Series 403 Exterior and EFCO Series 401 Interior. Whenever substitute products are to be considered, supporting technical literature, samples and drawings must be submitted ten (10) days prior to bid date in order to make a valid comparison of the products involved.

B. Door and frame to be supplied as a complete system, as any intermixing of either door or frame would lessen the structural integrity of this product.

### 1.4. SUBMITTALS:

A. Shop drawings and other data, including color samples:

1. Submit in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this section with the work of adjacent trades.

B. Manufacturer's recommended installation procedures which, when approved by the Architect/Engineer, will become the basis for accepting or rejecting actual installation procedures used on the work.

## 1.5. PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Deliver and store all products in a manner to prevent damage, in a secure place, out of way of construction operations. Provide protection until ready for use.

B. Handle all material in accord with manufacturer's recommendations.

## 1.6. WARRANTY:

A. Provide written guarantee by the door and frame manufacturer, signed by the Prime Contractor and subcontractor, agreeing to repair or replace defective materials and workmanship for period of five (5) years, in accordance with General Conditions.

# 2. PRODUCTS:

## 2.1. MANUFACTURERS:

A. Manufacturers subject to compliance with requirements, provide products of one of the following:

1. EFCO Corp.
2. Wausau, subject to strict compliance.
3. YKK.

## 2.2. MATERIALS:

A. Door, door frame and trim moldings shall be extruded of 6063-T5 aluminum alloy and temper (ASTM B221) alloy G.S. 10A-T5.

B. Glazing gaskets for doors and frames shall be EPDM extrusions.

C. All screws and miscellaneous fasteners shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A164.

D. Doors to be full glass type with 1" insulating glass tempered and tinted.

## 2.3. FINISH SPECIFICATIONS:

A. All exposed surfaces shall be free of scratches and other serious blemishes and shall receive a color anodized finish. Finish shall be Dark Bronze Anodized, Class 1.

## 2.4. HARDWARE:

A. Hardware for the aluminum doors and door frames shall be furnished by the hardware supplier per section 08710.

## 2.5. FABRICATION:

A. General
1. Major portions of the door sections shall have .125" (3 mm) wall thickness.
2. Exterior glazing stops shall be an integral part of the door; glazing stop sections shall have .050" (1.2 mm) wall thickness. Interior stops shall be snap-in type.
3. Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all corners.
4. Depth of door frame shall not be less than 2" (50 mm).
5. Stiles shall be no less than 3 1/2" (88 mm) in width

B. Entrance Doors
1. Door stiles and rails shall have hairline joints at corners.
2. Exterior corner construction is true mortise and tenon for physical interlock between the rails and stiles.
3. Interior corner construction shall be joined by heavy concealed reinforcement brackets with screws and shall be of deep penetration and fillet welded.
4. Doors using a tie rod will not be accepted.
5. Weather stripping shall be wool pile and shall be installed in one stile of pairs of doors and in jamb stiles of center pivot doors.
    2. The door stile and rail face dimensions shall be:

        a. Vertical Stile: 3-1/2".
        b. Top Rail: 3-1/2".

c. Bottom Rail: 10".

C. Door Frame
1. Depth of frame shall not be less than 4 1/2" (114 mm).
2. Face dimension shall not be less than 2" (50 mm).
3. Shear block construction shall be utilized throughout.
4. System design shall be such that raw edges will not be visible at joints.

5. Doors are capable of having separate interior and exterior finishes and/or colors. Doors and door frames shall be fabricated complete by the entrance manufacturer including the application of, or the preparation for, all operating hardware.

1. Door stiles and rails shall be 2" (50.8 mm) in depth, and the sections shall have a minimum wall thickness of 3/16" (4.8) in sidewalls enclosing the basic tube.

2. The door stile and rail face dimensions shall be:

a. Vertical Stile: 3-1/2".
b. Top Rail: 3-3/8".
c. Bottom Rail: 10".

3. Frame moldings 4-1/2" (114.3) in depth, which provide structural support for the doors, shall be full tubular sections with minimum wall thicknesses of 3/16" (4.8) at exposed faces and sides, 5/16" (7.9 mm) at recessed sidewalls receiving mortised or concealed hardware.

4. Weatherstripped aluminum moldings, fitted to each door and frame, shall form continuous interlocks between the hinge and lock jambs and the closed door. Each door opening shall be weatherstripped at jambs, head and threshold. Glazing moldings and trim inserts shall not be less than 1/16" (1.6) thick.

5. Corner construction shall consist of mechanical clip fastening, SIGMA depp penetration and fillet welds.

6. Frame members which function primarily as glass holding assemblies shall be anchored with standard frame clips and machine screws. Glazing framing members and doors shall provide for fully resilient glass settings.

7. Mortised hardware shall be fitted flush with finished trim moldings and applied directly to recessed sidewalls of the door and/or frame tubing. Cut-outs in door or frame moldings shall not require separate screw-applied tabs or straps on which to mount hinging hardware. Where shims and spacers are required for finished appearance, they shall provide full and solid bearing for the hardware.

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. All items under this heading shall be set in their correct locations as shown in the details and shall be level, square, plumb, and at proper elevation and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between entrance framing and the building structure shall be sealed in order to secure a watertight installation.

1. All materials shall be fastened in place using backing, masonry plugs, or anchor straps as required.

2. When moldings are joined, they shall be accurately fitted to result in a tightly closed joint.

3. Upon completion of the installation of the entrances, it shall be this contractor's responsibility to make all necessary final adjustments to attain normal operation of each door and its mechanical hardware.

### 3.2. PROTECTION AND CLEANING:

A. After installation, the Prime Contractor shall adequately protect exposed portions of the aluminum entrance from damage by grinding and polishing compounds, plaster, lime, cement, or other contaminants. The Prime Contractor shall be responsible for final cleaning.

**END OF SECTION 08410.**

## Division 8-Doors, Windows, and Glass

## SECTION 08710 – DOOR HARDWARE

# 1.00 GENERAL

## 1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.02 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware for:

   a. Swinging doors.

2. Electronic access control system components, including:

   a. Electronic access control devices.

3. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
3. Division 08 sections for Doors and Frames
4. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
5. Division 26 sections for connections to electrical power system and for low-voltage wiring.
6. Division 28 sections for coordination with other components of electronic access control system.

## 1.03 REFERENCES

A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties.

2. ANSI/DHI A115.IG – Installation Guide for Doors and Hardware

D. ICC – International Code Council, Inc
1. ICC/ANSI A117.1 – Accessible and Usable Buildings and Facilities.
2. ICC IBC – International Building Code

E. NFPA – National Fire Protection Agency
1. NFPA 101 - Life Safety Code
2. NFPA 80 - Fire Doors and Windows

F. Builders Hardware Manufacturing Association (BHMA)

## 1.04 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.

B. Action Submittals:

1. Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

    a. Wiring Diagrams: For power, signal, and control wiring and including:
        1) Details of interface of electrified door hardware and building safety and security systems.
        2) Schematic diagram of systems that interface with electrified door hardware.
        3) Point-to-point wiring.
        4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

    a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

a. Door Index; include door number, heading number, and Architects hardware set number.
b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
c. Quantity, type, style, function, size, and finish of each hardware item.
d. Name and manufacturer of each item.
e. Fastenings and other pertinent information.
f. Location of each hardware set cross-referenced to indications on Drawings.
g. Explanation of all abbreviations, symbols, and codes contained in schedule.
h. Mounting locations for hardware.
i. Door and frame sizes and materials.
j. Name and phone number for local manufacturer's representative for each product.
k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include operational descriptions for: egress, ingress (access), and fire/smoke alarm connections.
    1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

    a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
    b. Use ANSI/BHMA A156.28 “Recommended Practices for Keying Systems” as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
   1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product data for electrified door hardware:

   a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Certificates of Compliance:

   a. UL listings for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
   b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.
   c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in "QUALITY ASSURANCE" article, herein.

4. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:

   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Factory order acknowledgement numbers (for warranty and service)

d. Name, address, and phone number of local representative for each manufacturer.
e. Parts list for each product.
f. Final approved hardware schedule, edited to reflect conditions as-installed.
g. Final keying schedule
h. Copies of floor plans with keying nomenclature
i. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
j. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

## 1.05 QUALITY ASSURANCE

A. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
4. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

    a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

B. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).

2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
4. Capable of producing wiring diagrams.
5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

C. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

D. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

E. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.

G. Keying Conference

1. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

    a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
    b. Preliminary key system schematic diagram.
    c. Requirements for key control system.
    d. Requirements for access control.
    e. Address for delivery of keys.

H. Pre-installation Conference

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

I. Coordination Conferences:

1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

## 1.06 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

1. Deliver each article of hardware in manufacturer's original packaging.

C. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
2. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

D. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.

3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

E. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

## 1.07 COORDINATION

A. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

## 1.08 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Beginning from date of Substantial Completion, for durations indicated.

a. Closers:
   1) Mechanical: 30 years
   2) Electrified: 2 years.

b. Automatic Operators: 2 years
c. Exit Devices:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

d. Locksets:
   1) Mechanical: 10 years
   2) Electrified: 1 year.

e. Continuous Hinges: Lifetime warranty.
f. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

# 2 PRODUCTS

## 2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

   1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

## **2.02 MATERIALS**

A. Fasteners

   1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
   2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.

3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

D. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:

1. Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.
2. DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.
3. Provide type of data and DC power cabling required by access control device manufacturer for this installation.
4. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

## 2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series.
2. Acceptable Manufacturers and Products: Hager BB series, McKinney TA/T4A series, Stanley FBB Series.

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

    a. Exterior: Standard or heavy weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
    b. Interior: Standard or heavy weight, steel, 4-1/2 inches (114 mm) high

3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:

    a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
    b. Interior: Heavy weight, steel, 5 inches (127 mm) high

4. 2 inches or thicker doors:

    a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
    b. Interior: Heavy weight, steel, 5 inches (127 mm) high

5. Provide minimum three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

    a. Steel Hinges: Steel pins
    b. Non-Ferrous Hinges: Stainless steel pins
    c. Out-Swinging Exterior Doors: Non-removable pins
    d. Out-Swinging Interior Lockable Doors: Non-removable pins
    e. Interior Non-lockable Doors: Non-rising pins

8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate

electric hinge at second hinge from bottom or nearest to electrified locking component.

10. Provide mortar guard for each electrified hinge specified.

## 2.04 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:

a. Scheduled Manufacturer: Ives.
b. Acceptable Manufacturers: Select, Stanley.

2. Requirements:

a. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
f. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware.
g. Install hinges with fasteners supplied by manufacturer.
h. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

## 2.05 ELECTRIC POWER TRANSFER

A. Manufacturers:

a. Scheduled Manufacturer: Von Duprin EPT-10.
b. Acceptable Manufacturers: ABH PT1000, Securitron CEPT-10.

B. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires sufficient to accommodate electric function of specified hardware.

C. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

## 2.06 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage ND series – No Substitutions

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3 hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.

    a. Lever Design: As indicated
    b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

## 2.07 EXIT DEVICES

A. Manufacturers and Products:

**1.** Scheduled Manufacturer and Product: Von Duprin 99/33A series – No Substitutions

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide flush end caps for exit devices.
7. Provide exit devices with manufacturer's approved strikes.
8. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
10. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
11. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrified options as scheduled.
14. Top latch mounting: double or single tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
15. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

    a. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

## 2.08 CYLINDERS

A. Manufacturers and Products:

**1.** Scheduled Manufacturer and Product: Schlage Everest 29 Primus.

B. Requirements:

1. Provide cylinders/cores, from the same manufacturer of locksets, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.

    a. High Security: dual-locking cylinder with permanent core requiring restricted, patented keyway. Dual-locking mechanism with interlocking finger pin(s) to check for patented features on keys.

3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent-protected until the year, 2029.
4. Nickel silver bottom pins.
5. Replaceable Construction Cores

    a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
        1) 3 construction control keys
        2) 12 construction change (day) keys.

    b. Replace temporary construction cores with permanent cores unless directed otherwise at keying conference.

## 2.09 KEYING

A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.

    a. Master Keying system as directed by the Owner.

2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements

will be cause for replacement of cylinders/cores involved at no additional cost to Owner.

3. Provide keys with the following features:

    a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    b. Patent Protection: Keys and blanks protected by one or more utility patent(s) until the year, 2029.

4. Identification:

    a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Do not provide blind code marks with actual key cuts.
    b. Identification stamping provisions must be approved by the Architect and Owner.
    c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
    d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
    e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

5. Quantity: Furnish in the following quantities.

    a. Change (Day) Keys: 3 per cylinder/core.
    b. Permanent Control Keys: 3.
    c. Master Keys: 6.

## 2.10 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4040XP series.
2. Acceptable Manufacturers and Products: Corbin-Russwin DC8000 series, Sargent 281 series.

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.

2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

## 2.11 ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4600 series.
2. Acceptable Manufacturers and Products: Norton 6000 series, Besam Power Swing.

B. Requirements:

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI/BHMA A156.19.
2. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
3. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door

4. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
5. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check valve, sweep valve, latch valve to control door.
6. Provide drop plates, brackets, or adapters for arms as required for details.
7. Provide hard-wired actuator switches for operation as specified.
8. Provide weather-resistant actuators at exterior applications.
9. Provide key switches with LED's, recommended and approved by manufacturer of automatic operator as required for function described in operation description of hardware group below. Cylinders: Refer to "KEYING" article, herein.
10. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.
11. Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

## 2.12 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.

3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

## 2.13 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:

    a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
    b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
    c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

## 2.14 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson.

2. Acceptable Manufacturers: Rixson, Sargent.

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

## 2.15 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

## 2.16 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Zero International.
2. Acceptable Manufacturers: National Guard, Reese.

B. Requirements:

1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Size of thresholds:

    a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
    b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width

4. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

### 2.17 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Rockwood.

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is

compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.02 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Lock Cylinders: Install construction cores to secure building and areas during construction period.

   1. Replace construction cores with permanent cores unless directed otherwise at keying meeting.

I. Wiring: Coordinate with Division 26, ELECTRICAL sections for:

   1. Conduit, junction boxes and wire pulls.
   2. Connections to and from power supplies to electrified hardware.
   3. Connections to fire/smoke alarm system and smoke evacuation system.
   4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
   5. Testing and labeling wires with Architect's opening number.

J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

## 3.03 FIELD QUALITY CONTROL

A. Engage qualified manufacturer trained representative to perform inspections and to prepare inspection reports.

   1. Representative will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

## 3.04 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

   1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
   2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, Installer's Architectural Hardware Consultant must examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

## 3.05 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

## 3.06 DOOR HARDWARE SCHEDULE

A. Hardware items are referenced in the following hardware. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

   Hardware Sets:

   1. The hardware sets listed below represent design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process.

**Hardware Group No. 01.01**

For use on Door #(s):

1

Provide each PR door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|---|
| 2 | EA | CONT. HINGE | 112XY EPT | | | US28 | IVE |
| 2 | EA | POWER TRANSFER | EPT10 CON | ✓ | | 689 | VON |
| 1 | EA | REMOVABLE MULLION | KR4954 | | | 689 | VON |
| 1 | EA | ELEC PANIC HARDWARE | QEL-99-EO-CON | ✓ | | 626 | VON |
| 1 | EA | ELEC PANIC HARDWARE | QEL-99-NL-OP-110MD-CON | ✓ | | 626 | VON |
| 1 | EA | MORT CYL HOUSING | AS REQ'D | | | 626 | SCH |
| 1 | EA | RIM HOUSING | AS REQ'D | | | 626 | SCH |
| 2 | EA | FSIC CORE | PERMANENT CORE | | | 626 | SCH |
| 2 | EA | FSIC CORE | CONST CORE | | | 622 | SCH |
| 2 | EA | 90 DEG OFFSET PULL | 8190EZHD 12" O | | | 630-316 | IVE |
| 2 | EA | OH STOP | 100S | | | 630 | GLY |
| 1 | EA | SURFACE CLOSER | 4040XP EDA MC | | | 689 | LCN |
| 1 | EA | SURF. AUTO OPERATOR | 4642 WMS | ✓ | | 689 | LCN |
| 2 | EA | ACTUATOR - WALL OR MULLION MOUNT AS REQ'D | 8310-853T/8310-818T | ✓ | | 630 | LCN |
| 2 | | CLOSER BRACKETS, SPACERS, ETC | AS REQ'D | | | | LCN |
| 1 | EA | RAIN DRIP | 142AA | | | AA | ZER |
| 1 | EA | MULLION SEAL | 8780NBK PSA | | | BK | ZER |
| | SET | WEATHER STRIPPING | BY DOOR/FRAME MFR. | | | | UNK |
| 2 | EA | DOOR SWEEP | 39A | | | A | ZER |
| 1 | EA | THRESHOLD | 655A-223 | | | A | ZER |
| 2 | EA | WIRE HARNESS | CON X LENGTH AS REQ'D | | | | SCH |
| 2 | EA | WIRE HARNESS | CON-6W | | | | SCH |
| 1 | EA | MULTITECH READER | BY OTHERS | ✓ | | BLK | SCE |
| 2 | EA | DOOR CONTACT | BY OTHERS | ✓ | | WHT | SCE |
| 1 | EA | POWER SUPPLY | BY OTHERS | ✓ | | LGR | SCE |

OPERATIONAL DESCRIPTION
ACTIVE LEAF
RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL AFTER RETRACTING LATCHBOLT WITH KEY. LATCHBOLT CAN BE RETRACTED ELECTRICALLY FOR EITHER MOMENTARY OR EXTENDED PERIODS OF TIME ALLOWING DOOR TO BE PUSH/PULL FUNCTION. ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RETRACT LATCHBOLT ELECTRICALLY ALLOWING DOOR TO BE OPENED. AUTO OPERATOR - PUSHING EITHER INTERIOR OR EXTERIOR ACTUATOR BUTTON TO CYCLE AUTO OPERATOR AFTER RETRACTING LATCHBOLT ELECTRICALLY. EXTERIOR ACTUATOR BUTTON ONLY ENERGIZED WHEN ACCESS CONTROL SOFTWARE OR AUTHORIZED CREDENTIAL RETRACTS LATCHBOLT ELECTRICALLY.
CONCEALED OVERHEAD STOP

INACTIVE LEAF
RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL WHEN LATCHBOLT RETRACTED ELECTRICALLY. LATCHBOLT CAN BE RETRACTED ELECTRICALLY FOR EITHER MOMENTARY OR EXTENDED PERIODS OF TIME ALLOWING DOOR TO BE PUSH/PULL FUNCTION. ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RETRACT LATCHBOLT ELECTRICALLY ALLOWING DOOR TO BE OPENED. SELF-CLOSING WITH EDA ARM. EXTRA DUTY ARM. PUSH SIDE MOUNTED.
CONCEALED OVERHEAD STOP

KEYED REMOVABLE MULLION
DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

**Hardware Group No. 01.02**

For use on Door #(s):

19

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1HW 4.5 X 4.5 NRP | | | 630 | IVE |
| 1 | EA | STOREROOM LOCK | ND80JD RHO | | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | | 622 | SCH |
| 1 | EA | ELECTRIC STRIKE | BY OTHERS | ✓ | | 630 | VON |
| 1 | EA | SURFACE CLOSER | 4040XP EDA MC | | | 689 | LCN |
| 1 | EA | WALL STOP | WS406/407CCV | | | 630 | IVE |
| 1 | EA | RAIN DRIP | 142AA | | | AA | ZER |
| 1 | EA | GASKETING | 328AA-S | | | AA | ZER |
| 1 | EA | DOOR SWEEP | 39A | | | A | ZER |
| 1 | EA | THRESHOLD | 655A-223 | | | A | ZER |
| 1 | EA | MULTITECH READER | BY OTHERS | ✓ | | BLK | SCE |
| 1 | EA | DOOR CONTACT | BY OTHERS | ✓ | | WHT | SCE |
| | | POWER SUPPLY | BY OTHERS | | | | |

OPERATIONAL DESCRIPTION
STOREROOM LOCK - OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.
ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RELEASE ELECT STRIKE ALLOWING DOOR TO BE PULLED OPEN. FAIL SECURE.
SELF-CLOSING WITH EDA ARM. EXTRA DUTY ARM. PUSH SIDE MOUNTED.

DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

**Hardware Group No. 01.03**

For use on Door #(s):

24 25

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|---|
| 1 | EA | ELECTRIC STRIKE | BY OTHERS | ✓ | | 630 | VON |
| 1 | EA | MULTITECH READER | BY OTHERS | ✓ | | BLK | SCE |
| 1 | EA | DOOR CONTACT | BY OTHERS | ✓ | | WHT | SCE |
| 1 | | | BALANCE OF HARDWARE EXISTING | | | | |
| | | POWER SUPPLY | BY OTHERS | | | | |

CONTRACTOR TO CONFIRM NEW HARDWARE IS COMPATIBLE WITH EXISTING DOOR AND FRAME PREP.

OPERATIONAL DESCRIPTION
ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RELEASE ELECT STRIKE ALLOWING DOOR TO BE PULLED OPEN. FAIL SECURE.
SELF-CLOSING

DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

**Hardware Group No. 02.01**

For use on Door #(s):

2

Provide each PR door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|---|
| 2 | EA | CONT. HINGE | 112XY EPT | | | US28 | IVE |
| 2 | EA | POWER TRANSFER | EPT10 CON | ✓ | | 689 | VON |
| 1 | EA | REMOVABLE MULLION | KR4954 | | | 689 | VON |
| 1 | EA | ELEC PANIC HARDWARE | QEL-99-EO-CON | ✓ | | 626 | VON |
| 1 | EA | ELEC PANIC HARDWARE | QEL-99-NL-OP-110MD-CON | ✓ | | 626 | VON |
| 1 | EA | MORT CYL HOUSING | AS REQ'D | | | 626 | SCH |
| 1 | EA | RIM HOUSING | AS REQ'D | | | 626 | SCH |
| 2 | EA | FSIC CORE | CONST CORE | | | 626 | SCH |
| 2 | EA | FSIC CORE | PERMANENT CORE | | | 626 | SCH |
| 2 | EA | 90 DEG OFFSET PULL | 8190EZHD 12" O | | | 630-316 | IVE |
| 1 | EA | SURFACE CLOSER | 4040XP SCUSH MC | | | 689 | LCN |
| 1 | EA | SURF. AUTO OPERATOR | 4642 WMS | ✓ | | 689 | LCN |
| 2 | EA | ACTUATOR - WALL OR MULLION MOUNT AS REQ'D | 8310-853T/8310-818T | ✓ | | 630 | LCN |
| 2 | | CLOSER BRACKETS, SPACERS, ETC | AS REQ'D | | | | LCN |
| | SET | WEATHER STRIPPING | BY DOOR/FRAME MFR. | | | | UNK |
| 2 | EA | WIRE HARNESS | CON X LENGTH AS REQ'D | | | | SCH |
| 2 | EA | WIRE HARNESS | CON-6W | | | | SCH |
| 1 | EA | MULTITECH READER | BY OTHERS | ✓ | | BLK | SCE |
| 2 | EA | DOOR CONTACT | BY OTHERS | ✓ | | WHT | SCE |
| 1 | EA | POWER SUPPLY | BY OTHERS | ✓ | | LGR | SCE |

OPERATIONAL DESCRIPTION
ACTIVE LEAF
RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL AFTER RETRACTING LATCHBOLT WITH KEY. LATCHBOLT CAN BE RETRACTED ELECTRICALLY FOR EITHER MOMENTARY OR EXTENDED PERIODS OF TIME ALLOWING DOOR TO BE PUSH/PULL FUNCTION. ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RETRACT LATCHBOLT ELECTRICALLY ALLOWING DOOR TO BE OPENED. AUTO OPERATOR - PUSHING EITHER INTERIOR OR EXTERIOR ACTUATOR BUTTON TO CYCLE AUTO OPERATOR AFTER RETRACTING LATCHBOLT ELECTRICALLY. EXTERIOR ACTUATOR BUTTON ONLY ENERGIZED WHEN ACCESS CONTROL SOFTWARE OR AUTHORIZED CREDENTIAL RETRACTS LATCHBOLT ELECTRICALLY.

INACTIVE LEAF
RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL WHEN LATCHBOLT RETRACTED ELECTRICALLY. LATCHBOLT CAN BE RETRACTED ELECTRICALLY FOR EITHER MOMENTARY OR EXTENDED PERIODS OF TIME ALLOWING DOOR TO BE PUSH/PULL FUNCTION. ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RETRACT LATCHBOLT ELECTRICALLY ALLOWING DOOR TO BE OPENED. SELF-CLOSING WITH SCUSH ARM. SPRING LOADED STOP INCLUDED WITH SOFFIT SHOE. PUSH SIDE MOUNTED.

KEYED REMOVABLE MULLION
DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

**Hardware Group No. 06.01**

For use on Door #(s):
12 13

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | CORRIDOR LOCK | ND73JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP REG OR PA AS REQ MC | | 689 | LCN |
| 1 | EA | WALL STOP | WS406/407CCV | | 630 | IVE |
| 1 | EA | GASKETING | 488SBK PSA | | BK | ZER |

OPERATIONAL DESCRIPTION
CORRIDOR LOCK - PUSHBUTTON LOCKING; PUSHING BUTTON LOCKS OUTSIDE LEVER UNTIL UNLOCKED BY KEY, CLOSING OF DOOR OR BY TURNING INSIDE LEVER. LOCKING BY KEY, LEVER REMAINS LOCKED UNTIL UNLOCKED BY KEY. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.
SELF CLOSING.

**Hardware Group No. 06.02**

For use on Door #(s):

14 15

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | CORRIDOR LOCK | ND73JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP SCUSH MC | | 689 | LCN |
| 1 | EA | GASKETING | 488SBK PSA | | BK | ZER |

OPERATIONAL DESCRIPTION

CORRIDOR LOCK - PUSHBUTTON LOCKING; PUSHING BUTTON LOCKS OUTSIDE LEVER UNTIL UNLOCKED BY KEY, CLOSING OF DOOR OR BY TURNING INSIDE LEVER. LOCKING BY KEY, LEVER REMAINS LOCKED UNTIL UNLOCKED BY KEY. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

SELF CLOSING. SPRING LOADED STOP

**Hardware Group No. 07.01**

For use on Door #(s):

4 5 6 7 8 9

10 11 16 17 18

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | ENTRANCE/OFFICE LOCK | ND50JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | WALL STOP | WS406/407CCV | | 630 | IVE |
| 3 | EA | SILENCER | SR64 | | GRY | IVE |

OPERATIONAL DESCRIPTION

OFFICE LOCK - PUSHBUTTON LOCKING; PUSHING BUTTON LOCKS OUTSIDE LEVER UNTIL UNLOCKED BY KEY OR BY TURNING INSIDE LEVER. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS. CLOSING DOOR DOES NOT RELEASE PUSH BUTTON.

**Hardware Group No. 07.02**

For use on Door #(s):

23

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | ENTRANCE/OFFICE LOCK | ND50JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP SCUSH MC | | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 2" LDW B-CS | | 630 | IVE |
| 3 | EA | SILENCER | SR64 | | GRY | IVE |

OPERATIONAL DESCRIPTION

OFFICE LOCK - PUSHBUTTON LOCKING; PUSHING BUTTON LOCKS OUTSIDE LEVER UNTIL UNLOCKED BY KEY OR BY TURNING INSIDE LEVER. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS. CLOSING DOOR DOES NOT RELEASE PUSH BUTTON.

SELF-CLOSING WITH SPRING LOADED STOP

**Hardware Group No. 09.01**

For use on Door #(s):

3

Provide each PR door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 6 | EA | HINGE | 5BB1HW 4.5 X 4.5 | | 652 | IVE |
| 2 | EA | PANIC HARDWARE | CD-9947WDC-L-LBR-06-SNB | | 626 | VON |
| 2 | EA | MORT CYL HOUSING | AS REQ'D | | 626 | SCH |
| 2 | EA | RIM HOUSING | AS REQ'D | | 626 | SCH |
| 4 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 4 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 2 | EA | SURFACE CLOSER | 4040XP SCUSH MC | | 689 | LCN |
| 2 | EA | SILENCER | SR64 | | GRY | IVE |

OPERATIONAL DESCRIPTION

BOTH LEAVES

CONCEALED ROD EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY TURNING LEVER UNLESS LOCKED BY KEY. KEY LOCKS AND UNLOCKS LEVER

DOGGING BY KEYED CYLINDER LOCKS DOWN THE PUSHBAR SO THE LATCHBOLT REMAINS RETRACTED AND DOOR FUNCTIONS AS A PUSH/PULL.

SELF-CLOSING . SPRING LOADED STOP

**Hardware Group No. 09.02**

For use on Door #(s):

22

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | STOREROOM LOCK | ND80JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | WALL STOP | WS406/407CCV | | 630 | IVE |
| 3 | EA | SILENCER | SR64 | | GRY | IVE |

OPERATIONAL DESCRIPTION

STOREROOM LOCK - OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

**Hardware Group No. 09.03**

For use on Door #(s):

20 21

Provide each SGL door(s) with the following:

| QTY | | DESCRIPTION | CATALOG NUMBER | ITEMID | FINISH | MFR |
|---|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | | 652 | IVE |
| 1 | EA | STOREROOM LOCK | ND80JD RHO | | 626 | SCH |
| 1 | EA | FSIC CORE | CONST CORE | | 626 | SCH |
| 1 | EA | FSIC CORE | PERMANENT CORE | | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP SCUSH MC | | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 2" LDW B-CS | | 630 | IVE |
| 1 | EA | GASKETING | 488SBK PSA | | BK | ZER |

FIRE RATED OPENING

OPERATIONAL DESCRIPTION

STOREROOM LOCK - OUTSIDE LEVER FIXED. ENTRANCE BY KEY ONLY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

SELF-CLOSING WITH SPRING LOADED STOP

# DIVISION 8 - DOORS AND WINDOWS
## Section 08800 - Glass and Glazing

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. SUMMARY:

A. Extent of glass and glazing work is indicated on drawings and schedules.

B. Types of work in this section include glass and glazing for:

1. Entrances and other doors, not indicated as "preglazed".

2. Windows, not indicated as "preglazed".

3. Interior door vision panels.

### 1.3. SYSTEM DESCRIPTION:

A. Provide glass and glazing that has been produced, fabricated and installed to withstand normal thermal movement, wind loading and impact loading (where applicable), without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glass and glazing materials and other defects in the work.

### 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's technical data for each glazing material and fabricated glass product required, including installation and maintenance instructions.

B. Samples: Submit, for verification purposes, 12" square samples of each type of glass indicated except for clear single pane units, and 12" long samples of each color required (except black) for each type of

sealant or gasket exposed to view. Install sealant or gasket sample between two strips of material representative of adjoining framing system in color.

## 1.5. QUALITY ASSURANCE:

A. Glazing Standards: Comply with recommendations of Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated. Refer to those publications for definitions of glass and glazing terms not otherwise defined in this section or other referenced standards.

B. Fire Resistance Rated Wire Glass: Provide wire glass products that are identical to those tested per ASTM E-163 (UL 9) and are labeled and listed by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.

C. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers or at least one component pane of units with appropriate certification label of inspecting and testing organization indicated below:

D. Insulating Glass Certification Council (IGCC).

E. Single Source Responsibility for Glass: To ensure consistent quality of appearance and performance, provide materials produced by a single manufacturer or fabricator for each kind and condition of glass indicated and composed of primary glass obtained from a single source for each type and class required.

## 1.6. DELIVERY, STORAGE, AND HANDLING:

A. Protect glass and glazing materials during delivery, storage and handling to comply with manufacturer's directions and as required to prevent edge damage to glass, and damage to glass and glazing materials from effects of moisture including condensation, of temperature changes, of direct exposure to sun, and from other causes.

## 1.7. WARRANTY:

A. General:

1. Warranties shall be in addition to, and not a limitation of, other

rights the Owner may have under the Contract Documents.

B. Manufacturer's Special Project Warranty on Laminated Glass: Provide written warranty signed by manufacturer of laminated glass agreeing to furnish f.o.b. point of manufacture, freight allowed project site, within specified warranty period indicated below, replacements for those laminated glass units which develop manufacturing defects. Manufacturing defects are defined as edge separation or delamination which materially obstructs vision through glass.

1. Warranty Period: Manufacturer's standard but not less than 4 years after date of substantial completion.

C. Manufacturer's Special Project Warranty on Insulating Glass: Provide written warranty signed by manufacturer of insulating glass agreeing to furnish f.o.b. point of manufacture, freight allowed project site, within specified warranty period indicated below, replacements for those insulating glass units developing manufacturing defects. Manufacturing defects are defined as failure or hermetic seal of air space (beyond that due to glass breakage) as evidenced by intrusion of dirt or moisture, internal condensation or fogging, deterioration of protected internal glass coatings, if any, and other visual indications of seal failure or performance; provided the manufacturer's instructions for handling, installing, protecting and maintaining units have been complied with during the warranty period.

1. Warranty Period: Manufacturer's standard but not less than 10 years after date of substantial completion.

## 2. PRODUCTS:

### 2.1. MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Heat-Treated Glass:

a. AFG Industries, Inc.
b. Cardinal IG.
c. Environmental Glass Products.
d. Falconer Glass Industries.
e. Ford Glass Division.
f. Guardian Industries Corp.

g. Hordis Brothers, Inc.
h. LOF Glass, Inc.
i. PPG Industries, Inc.
j. Saint-Gobain/Euroglass.
k. Spectrum Glass Prod. Div., H. H. Robertson Co.
l. Viracon, Inc.

2. Manufacturers of Coated Glass:

a. Advanced Coating Technology.
b. Cardinal IG.
c. Environmental Glass Products.
d. Falconer Glass Industries.
e. Ford Glass Division.
f. Guardian Industries Corp.
g. Hordis Brothers, Inc.
h. PPG Industries, Inc.
i. Saint-Gobain/Euroglass.
j. Viracon, Inc.
k. Independent Insulating Glass.
l. Interpane Coatings, Inc.
m. LOF Glass, Inc.

3. Manufacturers of Insulating Glass:

a. Advanced Coating Technology.
b. AFG Industries, Inc.
c. Cardinal IG.
d. Environmental Glass Products.
e. Falconer Glass Industries.
f. Ford Glass Division.
g. Guardian Industries Corp.
h. Hordis Brothers, Inc.
i. Independent Insulating Glass.
j. PPG Industries, Inc.
k. Spectrum Glass Prod. Div., H. H. Robertson Co.
l. Viracon, Inc.

## 2.2. GLASS PRODUCTS, GENERAL:

A. Primary Glass Standard: Provide primary glass which complies with ASTM C-1036 requirements, including those indicated by reference to type, class, quality, and, if applicable, form, finish, mesh and pattern.

B. Heat-Treated Glass Standard: Provide heat-treated glass which

complies with ASTM C-1048 requirements, including those indicated by reference to kind, condition, type, quality, class, and, if applicable, form, finish, and pattern.

C. Sizes: Fabricate glass to sizes required for glazing openings indicated, with edge clearances and tolerances complying with recommendations of glass manufacturer. Provide thicknesses indicated or, if not otherwise indicated, as recommended by glass manufacturer for application indicated.

## 2.3. PRIMARY GLASS PRODUCTS:

A. Clear Float Glass: Type I (transparent glass, flat), Class 1 (clear), Quality q3 (glazing select). Temper where indicated on the drawings or as required by Code.

B. Tinted Float Glass: Type I (transparent glass, flat), Class 2 (tinted heat absorbing and light reducing), Quality q3 (glazing select). Temper where indicated on the drawings or as required by Code.

1. Bronze: Manufacturer's standard tint, with visible light transmittance of 50-52% and shading coefficient of 0.69-0.71 for 1/4" thick glass. Temper where indicated on the drawings or as required by Code.

C. Refer to coated glass product requirements for tint and performance characteristics of coated tinted glass for single glazing relative to visible light transmittance, U-values, shading coefficient and visible reflectance.

D. Refer to requirements for sealed insulating glass units for performance characteristics of assembled units composed of tinted glass, coated or uncoated, relative to visible light transmittance, U-values, shading coefficient and visible reflectance.

## 2.4. HEAT-TREATED GLASS PRODUCTS:

A. Coated Clear Heat-Treated Float Glass: Condition C (other coated glass), Type I (transparent glass, flat), Class 1 (clear), Quality q3 (glazing select), with coating type and performance characteristics complying with requirements specified under coated glass products; fully tempered, 1/4" thick. See drawings for locations. In general, all interior door vision panels and

## 2.5. SEALED INSULATING GLASS UNITS:

A. General: Provide preassembled units consisting of organically sealed panes of glass enclosing a hermetically sealed dehydrated air space and complying with ASTM E-774 for performance classification indicated as well as with other requirements specified for glass characteristics, air space, sealing system, sealant, spacer material, corner design and desiccant.

1. For properties of individual glass panes making up units, refer to product requirements specified elsewhere in this section applicable to types, classes, kinds and conditions of glass products indicated.

2. Provide heat-treated panes of kind and at locations indicated or, if not indicated, provide heat-strengthened panes where recommended by manufacturer for application indicated and tempered where indicated or where safety glass is designated or required.

3. Performance characteristics designated for coated insulating glass are nominal values based on manufacturer's published test data for units with 1/4" thick panes of glass and 1/2" thick air space.

   a. U-values indicated are expressed in the number of BTU's per hour per sq. ft. per degree F. difference.

4. Performance Classification per ASTM E-774: Class A.

5. Thickness of Each Pane: 3/16".

6. Air Space Thickness: 5/8" or 3/8".

7. Sealing System: Manufacturer's standard.

8. Spacer Material: Manufacturer's standard metal.

9. Desiccant: Manufacturer's standard; either molecular sieve or silica gel or blend of both.

10. Corner Construction: Manufacturer's standard corner construction.

## 2.7. ELASTOMERIC GLAZING SEALANTS AND PREFORMED GLAZING TAPES:

A. General: Provide products of type indicated and complying with the following requirements:

1. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C-920 requirements, including those for Type, Grade, Class and Uses.

2. Colors: Provide color of exposed sealants indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

B. One-Part Non-Acid-Curing Silicone Glazing Sealant: Type S; Grade NS, Class 25; Uses NT, G, A, and, as applicable to uses indicated, O; and complying with the following requirements for modulus and additional joint movement capability.

C. Preformed Butyl-Polyisobutylene Glazing Tape: Provide manufacturer's standard solvent-free butyl-polyisobutylene formulation with a solids content of 100 percent; complying with AAMA A-804.1; in extruded tape form; non-staining and non-migrating in contact with nonporous surfaces; packaged on rolls with a release paper on one side; with or without continuous spacer rod as recommended by manufacturers of tape and glass for application indicated.

## 2.8. TYPES OF GLASS:

A. General:

1. 1" insulating glass.

   a. Tinted.
   b. Tempered.

2. 1/4" clear glass.

   a. Tinted.
   b. Tempered.

## 3. EXECUTION:

## 3.1. PREPARATION:

A. Clean glazing channels and other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to substrates. Remove lacquer from metal surfaces where elastomeric sealants are indicated for use.

## 3.2. GLAZING, GENERAL:

A. Comply with combined printed recommendations of glass manufacturers, of manufacturers of sealants, gaskets and other glazing materials, except where more stringent requirements are indicated, including those of referenced glazing standards.

B. Glazing channel dimensions as indicated in details are intended to provide for necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by job conditions at time of installation.

C. Protect glass from edge damage during handling and installation; use a rolling block in rotating glass units to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass units within openings; do not raise or drift glass with a pry bar. Rotate glass with flares or bevels along one horizontal edge which would occur in vicinity of setting blocks so that these are located at top of opening. Remove from project and dispose of glass units with edge damage or other imperfections of kind that, when installed, weakens glass and impairs performance and appearance.

## 3.3. GLAZING:

A. Install setting blocks of proper size in sill rabbet, located one quarter of glass width from each corner, but with edge nearest corner not closer than 6" from corner, unless otherwise required. Set blocks in thin course of sealant which is acceptable for heel bead use.

B. Provide spacers inside and out, of correct size and spacing to preserve required face clearances, for glass sizes larger than 50 united inches (length plus height), except where gaskets or glazing tapes with continuous spacer rods are used for glazing. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.

C. Tool exposed surfaces of sealants to provide a substantial "wash" away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.

## 3.4. PROTECTION AND CLEANING:

A. Protect exterior glass from breakage immediately upon installation by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove non permanent labels and clean surfaces.

B. Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.

C. Wash glass on both faces not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Wash glass by method recommended by glass manufacturer.

**END OF SECTION 08800.**

**DIVISION 9 - FINISHES**
**Section 09215 - Veneer Plaster**

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

B. Specified Elsewhere:

1. 05400 - Cold Formed Metal Framing.

2. 07210 - Insulation.

3. 07241 - EIFS

### 1.2. DESCRIPTION OF WORK:

A. Types of work include:

1. Gypsum including screw type metal support system.

2. 5/8" Glass faced gypsum sheathing (exterior walls).

3. Two-component veneer plastering.

### 1.3. QUALITY ASSURANCE:

A. Fire-Resistance Ratings: Where veneer plaster systems with fire-resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E-119 by fire testing laboratories acceptable to authorities having jurisdiction.

B. Gypsum Board Terminology Standard: GA-505 by Gypsum Association.

C. Single Source Responsibility: Obtain veneer plaster products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of veneer plaster

and gypsum base.

## 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's product specifications and installation instructions for each component of veneer plaster systems, including other data as may be required to show compliance with these specifications.

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and in manner to keep them dry, protected from the weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads, casing beads and trim from being bent or damaged.

## 1.6. PROJECT CONDITIONS:

A. Environmental Requirements, General: Comply with requirements of referenced veneer plaster application standard and recommendations of veneer plaster manufacturer, for environmental conditions before, during and after application of veneer plaster.

B. Cold Weather Protection: When ambient outdoor temperatures are below 55 deg. F (13 deg. C) maintain continuous, uniform, comfortable building working temperatures of not less than 55 deg. F (13 deg. C) for a minimum period of one week prior to and during veneer plastering, and for a minimum period of one week after veneer plaster has set; unless otherwise indicated.

C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for hydration of veneer plaster, immediately after its application and set.

## 2. PRODUCTS:

### 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Veneer Plaster, Including Gypsum Lath:

   a. Georgia Pacific Corp.
   b. Gold Bond Building Products Div., National Gypsum Co.
   c. United States Gypsum Co.

2. Manufacturers of Metal Support Materials:

   a. Same as veneer plaster manufacturer and,
   b. Milcor Division; Inryco Inc.

### 2.2. METAL SUPPORT MATERIALS:

A. Wall/Partition Support Materials:

1. Studs: ASTM C-645; 20 gauge .0396", minimum thickness of base metal unless otherwise indicated. Use 6" CA-16 studs for interior bearing walls and all exterior walls.

2. Remainder of Interior Studs Depth of Section: 3-5/8", except as otherwise indicated.

3. Runners: Match studs: provide type recommended by stud manufacturer for floor and ceiling support of studs and for vertical abutment of veneer plaster work to other work.

4. Stud System Accessories: Provide stud manufacturer's standard clips, shoes, ties, reinforcements, fasteners and other accessories as needed for a complete stud system.

5. Furring Members:

   a. Hat shaped furring channels, 7/8".

   b. Z-Furring Members: Manufacturer's standard screw-type zee-shaped furring members; ASTM A-525, G60; 0.0179" minimum thickness of base metal; of depth indicated; designed for mechanical attachment of insulation boards or blankets to masonry and monolithic concrete walls.

6. Channels: Cold-formed steel, 0.0598" minimum thickness of base (uncoated) metal and 7/16" wide flanges, protected with rust-inhibitive paint, and as follows:

   a. Carrying Channels: 1 1/2" deep, 475 lbs. per 1,000 ft., unless otherwise indicated.

   b. Furring Channels: 3/4" deep, 300 lbs. per 1,000 ft., unless otherwise indicated.

7. Fasteners for Furring Members: Type and size recommended by furring manufacturer for substrate and application indicated.

8. Structural Studs: Use structural studs for all exterior wall applications or interior bearing partitions. (See Division 5, Section 05400 - Cold Formed Metal Framing).

## 2.3. GYPSUM BOARD PRODUCTS:

A. Gypsum Base for Veneer Plaster: ASTM C-585, of types, edge configurations and thicknesses indicated below; in maximum lengths available to minimize end-to-end joints.

1. Type: Type X. in addition use M/R Gypsum board in unisex toilet rooms on walls and ceiling.

2. Edges: Manufacturer's standard.

3. Thickness: 5/8", unless otherwise indicated.

## 2.4. TRIM ACCESSORIES:

A. General: Provide manufacturer's standard trim accessories of types indicated for gypsum veneer plaster, formed of galvanized steel with flanges for concealment in veneer plaster, including corner beads, edge trim and control joints, including horizontal control joint between cement board and gypsum base.

## 2.5. JOINT REINFORCEMENT MATERIALS:

A. General: Except as otherwise indicated, comply with ASTM C-587.

B. Mesh-Type Joint Reinforcement: Manufacturer's standard glass-fiber-mesh reinforcing tape for use with veneer plaster.

## 2.6. VENEER PLASTER MATERIALS:

A. Two-Component Veneer Plaster: ASTM C-587; manufacturer's standard products consisting of separate base coat and finish coat materials.

B. Compressive Strength: 2500 psi per ASTM C-472.

C. Products: Subject to compliance with requirements, provide one of the following:

1. Veneer Plaster Base Coat:

    a. Dens-Cote; Georgia Pacific Corp.
    b. Kal-Cote; Gold Bond Bldg. Products Div., National Gypsum Co.
    c. Imperior Basecoat; United States Gypsum Co.

2. Veneer Plaster Finish Coat:

    a. Dens-Cote; Georgia Pacific Corp.
    b. Kal-Kote Finish; Gold Bond Bldg. Products Div., National Gypsum.
    c. Imperior Finish; United States Gypsum Co.

3. Finish Coat Aggregates: For sand-float finish, provide white silica sand passing a 30-mesh screen.

## 2.7. MISCELLANEOUS MATERIALS:

A. Bonding Agent: ASTM C-631.

B. Laminating Adhesive: Type specifically recommended by gypsum base manufacturer for two-ply gypsum base application.

C. Gypsum Base Fasteners: Type recommended by manufacturer of gypsum base for application to support system indicated.

D. Product: Subject to compliance with requirements, provide Sheetrock Brand W/R Compound manufactured by United States Gypsum Co.

E. Sound Attenuation Blankets: FS HH-I-521, Type I; semi-rigid mineral fiber blanket without membrane, Class 25 flame-spread thickness as indicated. See drawings for location above ceilings for sound transfer. See drawing for location. Each offcie shall have each a border of sound attenuation blankets above each such ceiling.

# 3. EXECUTION:

## 3.1. PREPARATION FOR METAL SUPPORT SYSTEMS:

A. Ceiling Anchorages: Coordinate work with structural ceiling work to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling hangers.

## 3.2. INSTALLATION OF METAL SUPPORT SYSTEMS:

A. General:

1. Metal Support Installation Standard: Comply with ASTM C-754.

2. Do not bridge building expansion joints with support

system, frame both sides of joints with furring and other supports as indicated.

B. Wall Partition-Support Systems:

1. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings and similar work to comply with details indicated, or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co.

2. Install runner tracks at floors, ceilings and structural walls and columns where veneer plaster stud system abuts other work, except as otherwise indicated.

3. Terminate partition stud system at 6" above ceilings, as detailed, except where indicated to be extended to structural support or substrate above. Brace all partitions to structural support above as required to stiffen partitions.

4. Space studs 16" o.c., except as otherwise indicated.

5. Frame door openings to comply with details indicated, or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, of if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co. Attach vertical studs at jambs with screws either directly to frame or to jamb anchor clips on door frames; install runner track sections (for jack studs) at head and secure to joint studs.

6. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above, unless otherwise indicated.

7. Frame openings other than door openings to comply with details indicated, or if not indicated, in same manner as required for door openings; and install

framing below sills of openings to match framing required above door heads.

8. Space wall furring members 16" o.c., except as otherwise indicated.

9. Erect thermal insulation vertically and hold in place with Z-furring members spaced 24" o. c. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stud nails or power-driven fasteners spaced 24" o.c. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; start from this furring member with 3" wide strip of insulation followed by furring member in the normal manner. At interior corners, space second member no more than I2" from corner and cut insulation to fit.

10. Provide "x" strap bracing and intermediate horizontal bridging as required for stiffening wall framing.

## 3.3. GENERAL GYPSUM OR CEMENT BOARD INSTALLATION REQUIREMENTS:

A. Gypsum Base Application Standard: Comply with ASTM C-844.

B. Erection Tolerance: No more than 1/16" offsets between planes of gypsum base faces, and 1/8" in 8'-0" for plumb, level, warp and bow.

C. Install sound attenuation blankets as indicated, prior to gypsum base unless readily installed after base has been installed.

D. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 1'-0" in alternate courses of base.

E. Install wall/partition boards vertically to avoid end-butt joints wherever possible. At areas with high walls, install boards horizontally with end joints staggered over studs.

F. Install gypsum base with face side out. Do not install imperfect, damaged or damp boards. Butt boards together

for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.

G. Attach gypsum base to supplementary framing and blocking forming additional support at perimeter of openings, cutouts and other locations.

H. Form control and expansion joints in gypsum board surfaces to comply with requirements indicated and those of referenced application standard and recommendations of manufacturer. Prepare joints to receive trim accessories. Locate where indicated, or if not indicated, as required by referenced standard and coordinated with other elements of the work as directed by Architect.

I. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are properly braced internally.

J. Isolate edges of gypsum board from abutment with structure except at floors. Provide 1/4" to 1/2" space for trim and sealant.

K. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

## 3.4. METHODS OF GYPSUM BASE APPLICATION:

A. Single-Layer Application: Install gypsum base as follows:

1. On ceilings, apply gypsum base prior to wall/partition board application to the greatest extent possible.

2. On partition/walls, apply gypsum base vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which minimize end joints.

3. On Z-furring members, apply gypsum base vertically (parallel to framing) with no end joints. Locate edge joints over furring members.

B. Single-Layer Fastening Methods: Apply gypsum boards to

supports as follows:

1. Fasten with screws.

C. Double-Layer Fastening Methods: Apply base layer and face layer to base layer as follows:

1. Fasten both base layers separately to supports with screws.

## 3.5. INSTALLATION OF TRIM AND JOINT REINFORCEMENT:

A. General: Use same fasteners to anchor trim accessory flanges as required to fasten gypsum board to supports. Otherwise, fasten flanges by nailing or stapling to substrate in accordance with manufacturer's instructions and recommendations.

B. Install metal corner beads at external corners of veneer plaster work.

C. Install metal edge trim wherever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flanges for embedment in plaster, except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

D. Install metal control joint (beaded type) where indicated.

E. Install joint reinforcement on gypsum base joints (including internal corners) to be covered with veneer plaster. Comply with manufacturer's recommendations for attachment and embedment of joint reinforcement in plaster or other joint compound.

F. Provide mesh-type joint reinforcement, except provide paper-type where indicated or required to comply with manufacturer's recommendations for type of veneer plaster assembly indicated or for installation procedures where rapid drying conditions exist.

## 3.6. VENEER PLASTERING OVER GYPSUM BASE:

A. Gypsum Veneer Plaster Application Standard: Comply with ASTM C-843.

B. General Plastering Standards: Except as otherwise indicated, comply with plaster manufacturer's instructions, referenced standards, and requirements for fire-resistance ratings, whichever is the most stringent.

C. Grout hollow metal frames and similar units solidly and continuously where occurring in the veneer plastered systems, using plaster grout materials recommended by the manufacturer. Grout prior to gypsum base installation where necessary for proper access.

D. Grounds: Where frames and other units in the veneer plastering act as grounds (not including trim accessories) for flush plastering, groove finish coat at juncture with the other work.

E. Mixing and Application: Machine mix plaster, except for small amounts of work requiring less than one bag of plaster; and apply to substrate either by machine or by hand as required to produce the required texture of finished plastering.

F. Trowel veneer plaster finish-coat to a sand-float finish.

G. Plastering: Provide 2-component application of veneer plaster on surfaces shown or scheduled for veneer plaster finish. Apply veneer plaster base-coat and veneer plaster finish-coat in separate plastering operations, and dry each coat. Finish coat to be white, unpainted.

H. Refer to Other Division-9 sections for decorative finishes to be applied to veneer plastering.

## 3.8. ACCESSORY APPLICATION:

A. Control Joints: Control joints shall be installed where indicated on plans. Break base behind joint and back by double studs. Apply acoustical sealant to fill gap and attach

control joint with nails, screws or 1/2" galvanized staples spaced 6" o.c. on both flanges along control joint length.

B. Corner Bead: Attach corner beads to all vertical and horizontal exterior corners with nails, screws or 1/2" galvanized staples spaced 12" o.c. along both flanges along entire length of bead.

C. Bonding Agent: Prior to treatment of the panel joints, the Durock exterior cement board surface shall be coated with a plaster bonding agent. Apply plaster bonding agent in a continuous film over entire surface according to manufacturer's directions.

D. Joint Treatment: The Durock exterior cement board joints shall be finished with paper tape and Durabond joint compound. Apply joint compound in a thin uniform layer to all joints and angles to be reinforced. Immediately apply joint tape centered over joint and seated into compound. Sufficient compound, approximately 1/64" to 1/32", must remain under the tape to provide proper bond. Follow immediately with a thin skimcoat to embed tape. Fill all beads with joint compound and allow compound to set prior to application of veneer plaster basecoat. After joint compound is thoroughly dry, coat joints with bonding agent prior to veneering.

## 3.8. VENEER PLASTER APPLICATION:

A. Veneer Plaster Basecoat Application:

1. Apply a thin, tight scratch coat of veneer plaster basecoat over entire working area and immediately double back with material from the same batch to form a nominal 1/16" to 3/32" thickness. Fill all voids and imperfections. Leave surface rough by cross raking with a fine wire rake, sponge or fine broom. Allow basecoat to set to provide proper suction for finish coat.

B. Veneer Plaster Finish Application:

1. Apply a thin, tight scratch coat of diamond interior finish over entire working area. Immediately double

back with material from same batch to form a nominal 1/16" thickness.

2. Start finish troweling as soon as material has become sufficiently firm to achieve a smooth finish free from marks, voids and other blemishes. Smooth and level the surface with trowel held flat; use water sparingly to lubricate. Final hard troweling should be accomplished prior to set as indicated by darkening of the surface.

3. Final Finish: Sand finish at all areas except smooth trowel at toilet rooms.

## 3.10. CLEANING AND PROTECTION:

A. Remove temporary coverings used to protect other work.

B. Remove plaster spillage promptly from door frames, windows and other adjoining work. Repair surfaces which have been damaged by plastering work.

C. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures veneer plaster work being without damage or deterioration at time of substantial completion.

**END OF SECTION 09215.**

# DIVISION 9 - FINISHES
## Section 09510 - Acoustical Ceilings

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. SUMMARY:

A. Extent of each type of acoustical ceiling is shown and scheduled on drawings.

B. Types of acoustical ceilings specified in this section include the following:

1. Acoustical panel ceilings, exposed suspension.

### 1.3. SUBMITTALS:

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples for Initial Selection Purposes: Submit manufacturers' standard size samples of acoustical units, but not less than 6" square, and of exposed ceiling suspension members including wall and special moldings. Provide samples showing full range of colors, textures and patterns available for each type of component required.

### 1.4. QUALITY ASSURANCE:

A. Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

B. Surface Burning Characteristics: As follows, tested per ASTM E-84.

1. Flame Spread: 25 or less.

2. Smoke Developed: 50 or less.

C. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for floor, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E-119. Provide protection materials for lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

D. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).

## 1.5. DELIVERY, STORAGE, AND HANDLING:

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

## 1.6. EXTRA MATERIALS:

A. Deliver extra materials to Owner. Furnish extra materials described below matching products installed, packaged with protective covering for storage and identified with appropriate labels.

B. Acoustical Ceiling Units: Furnish quantity of full size units equal to 2.0% of amount installed.

## 2. PRODUCTS:

### 2.1. ACOUSTICAL CEILING UNITS, GENERAL:

A. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with FSSS-S-118 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any).

B. Sound Attenuation Performance: Provide acoustical ceiling units with ratings for ceiling sound transmission class (STC) of range indicated as determined according to AMA 1-II" Ceiling Sound Transmission Test by Two-Room Method" with ceilings continuous at partitions and supported by a metal suspension system of type appropriate for ceiling unit of configuration indicated (concealed for tile, exposed for panels).

C. Colors, Textures, and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

### 2.2. ACOUSTICAL PANELS:

A. Acoustical Ceiling - Type 1 (Offices and Corridors): See room finish schedule.

1. Mineral Composition Panels - Water Felted, with Standard Washable Painted Finish, fire rated: Provide Type III, Form 2 units, per ASTM E1264 Ace@ and complying with the following requirements:

a. Fissured and Perforated Pattern: Manufacturer's standard design combining fissures with perforations; other panel characteristics as follows:

(1) Designation per ASTM E 1264: Pattern "ce".
(2) Color: Match Architect's sample.
(3) Grade: NRC 55.
(4) CAC Range: 35.
(5) Edge Detail: Lay-in.

(6) Size:
(a) 24" x 48" x 5/8".
(b) 24" x 24" x 5/8" – See Room Finish Schedule for Location.
(7) Style: "Cortega I" Fire Guard Lay-in, Armstrong World Industries, Inc.

B. Acoustical Ceiling – Type II (Rest Rooms):

1. Mineral Composition-Water Felted Panels with Standard Washable Painted Finish, Fissured and Perforated Pattern, Fire-Resistance Rated:

a. "Fine Fissured" Ceramaguard Fire Guard Lay-in, Armstrong World Industries, Inc.
b. Size and characteristics shame as A. above.

## 2.3. METAL SUSPENSION SYSTEMS, GENERAL:

A. Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C-635 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C-635, Table 1, Direct Hung.

D. Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete forms and for embedment in concrete, with holes or loops for attachment at hanger wires.

E. Hanger Wire: Galvanized carbon steel wire, ASTM A-641, soft temper, prestretched, Class 1 coating, sized so that stress at 3-times hanger design load (ASTM C-635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12 gage.

F. Edge Moldings and Trim: Metal or extruded plastic of types and

profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated.

**2.4. EXPOSED METAL DIRECT-HUNG SUSPENSION SYSTEMS:**

A. Fire-Resistance-Rated Double Web Steel Suspension System: Manufacturer's standard system roll-formed from prefinished cold-rolled steel sheet with 15/16" wide exposed faces on structural members; other characteristics as follows:

1. Structural Classification: Heavy-Duty System.

2. Finish: Painted in color as selected from manufacturer's standard colors.

B. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Fire-Resistance-Rated Double Web Steel Suspension Systems:

a. Chicago Metallic Corporation.
b. Donn Corporation.
c. Eastern Products Div., Armstrong World Industries, Inc.
d. National Rolling Mills, Inc.

C. Manufacturers:
1. Manufacturers of acoustical tile.
a. USG
b. Armstrong

**3. <u>EXECUTION:</u>**

**3.1. PREPARATION:**

A. Coordination:

1. Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

2. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

B. Testing Substrates: Before installing adhesively-applied tile on wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.

## 3.2. INSTALLATION:

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements as indicated, and CISCA standards applicable to work.

B. Install tile with pattern running in one direction.

C. Install suspension systems to comply with ASTM C-636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

D. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

E. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, counters playing or other equally effective means.

F. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

G. Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

H. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

I. Install hold-down clips in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

J. Provide hanger wire at each corner of all light fixtures.

**3.3. CLEANING:**

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

**END OF SECTION 09510.**

# DIVISION 9 - FINISHES
## Section 09650 - Cut Flooring

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of Cut flooring and accessories is shown on drawings and in schedules.

### 1.3. QUALITY ASSURANCE:

A. Manufacturer: Provide each type of cut flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.

B. ASTM E-648- Critical radiant flux: class1,>45 w/cm2.

C. ASTM E-662- Smoke desnsity; Passes,<450.

D. CAN/ULC-S102.2- Surface burning: 30fsr, 250 SDC.

E. ASTM D2047- Slip resistance > 0.60 .

F. ASTM F970- Static load limit: Passes, >250PSI.

G. ASTM F970 (Modified)- Max weight: 2000 PSI.

### 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's technical data for each type of resilient flooring and accessory.

B. Samples for Initial Selection Purposes: Submit manufacturer's standard color charts in form of actual sections of resilient flooring, including accessories, showing full range of colors and patterns available, for each type of resilient flooring required.

C. Samples for Verification Purposes: Submit the following samples of each type, color, and pattern of resilient flooring required, showing full-range of color and pattern variations.

1. Full size tile samples.

2. 2-1/2 long samples of resilient flooring accessories.

3. 6" x 9" samples of cut flooring.

D. Maintenance Instructions: Submit two (2) copies of manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.

## 1.5. PROJECT CONDITIONS:

A. Maintain minimum temperature of 85 deg. F (18 deg. C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 deg. F (13 deg. C) in areas where work is completed.

B. Install cut flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by resilient flooring manufacturer's recommended bond and moisture test.

# 2. PRODUCTS:

## 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Vinyl Composition Tile:

a. Six degrees Flooring
Tony Lazar
314-503-0345

2. Manufacturers of Rubber Wall Base:

a. Flexco Div., Textile Rubber Co.

b. Roppe Rubber Corp.

3. Manufacturers of Raised Profile Rubber Tile

a. Afco Rubber Corp.

b. Amtico Flooring Div., American Biltrite, Inc.

c. Flexco Div., Textile Rubber.

d. R. C. Musson Rubber Co., Inc.

2.2 TILE FLOORING:

A. Luxury tile:

1. "Compass by Six Degrees Flooring.

2. Design: Contour

3. Classification: ASTM F 1700 Class III Type A&B

.

**2.3. ACCESSORIES:**

A. Rubber Wall Base: Provide rubber base complying with FSSS-W-40, Type I, with matching end stops and preformed or molded corner units, and as follows:

1. Height: 4".

2. Thickness: 1/8" gauge.

3. Thickness: 0.080" gauge.

4. Style: Standard top-set cove (use with all floors except carpet).

5. Style: Straight base without cove (use in carpeted areas).

6. Finish: Matte.

B. Resilient Edge Strips: 1/8" thick, homogeneous vinyl or rubber composition, tapered or bullnose edge, color to match flooring, or as selected by Architect from standard colors available; not less than 1" wide.

C. Adhesives (Cements): Waterproof, Stabilized type as recommended by flooring manufacture to sit material and substrate conditions.

D. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.

E. Leveling and Patching Compounds: Latex types as recommended by flooring manufacturer.

## 3. EXECUTION:

### 3.1. INSPECTION:

A. Require Installer to inspect subfloor surfaces to determine that they are satisfactory. A satisfactory subfloor surface is defined as one that is smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance.

B. Perform bond and moisture tests on concrete subfloors to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compounds.

C. Do not allow cut flooring work to proceed until subfloor surfaces are satisfactory.

### 3.2. PREPARATION:

A. Prepare subfloor surfaces as follows:

1. Use leveling and patching compounds as recommended by resilient flooring manufacturer for filling small cracks, holes and depressions in subfloors.

2. Broom clean or vacuum surfaces to be covered, and inspect subfloor.

3. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

## 3.3. INSTALLATION, GENERAL:

A. Install resilient flooring using method indicated in strict compliance with manufacturer's printed instructions. Extend resilient flooring into toe spaces, door reveals, and into closets and similar openings.

B. Scribe, cut and fit resilient flooring to permanent fixtures, built-in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.

C. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.

D. Tightly cement resilient flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Handroll resilient flooring at perimeter of each covered area to assure adhesion.

E. VCT will be layed-out with a varied color pattern design. Actual design will follow. For estimating purposes, assume 70% of all VCT will be the field color, with the remaining 30% being made up of three (3) additional tile colors.

## 3.4. INSTALLATION OF TILE FLOORS:

A. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.

B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.

C. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

## 3.5. INSTALLATION OF ACCESSORIES:

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with preformed corner units. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

B. On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

C. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

## 3.6. CLEANING AND PROTECTION:

A. Perform following operations immediately upon completion of resilient flooring:

1. Sweep or vacuum floor thoroughly.

2. Do not wash floor until time period recommended by cut flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive.

3. Damp-mop floor being careful to remove black marks and excessive soil.

4. Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturers.

B. Protect flooring against damage during construction period to comply with resilient flooring manufacturer's directions.

1. Protect cut flooring against damage from rolling loads for initial period following installation by covering with plywood or hardboard. Use dollies to move stationary equipment or furnishings across floors.

2. Cover cut flooring with undyed, untreated building paper until

inspection for substantial completion.

C. Clean cut flooring not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Clean resilient flooring by method recommended by resilient flooring manufacturer.

## 3.7. EXTRA STOCK:

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclose in protective packaging with appropriate identifying labels.

1. Tile Flooring: Furnish not less than one box for each 50 boxes or fraction thereof, for each type, color, pattern and size installed.

**END OF SECTION 09650.**

## Division 9- Finishes

## Section 09680 Carpet Tile

# 1. GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

A. Section includes modular, tufted carpet tile.

B. Related Requirements:

1. Section 096513 "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet tile.

## 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include manufacturer's written specifications and lab documents for any physical testing.

2. Include manufacturer's written installation recommendations for each type of substrate as specified in carpet manufacturer's installation guidelines and/or Carpet & Rug Institute Installation Standard 2011, where applicable.

3. Include carpet maintenance recommendations as outlined by the carpet manufacturer.

4. Carpet Manufacturer shall also submit a plan for recycling the specified carpet at the end of the useful life of the carpet.

B. Shop Drawings: For carpet tile installation, plans showing the following:

1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.

2. Carpet tile type, color, and dye lot.

3. Type of subfloor.

4. Type of installation.

5. Pattern of installation.

6. Pattern type, location, and direction.

7. Installation method (monolithic, quarter turn, ashlar, brick random, interactive patterning).

8. Type, color, and location of insets and borders.

9. Type, color, and location of edge, transition, and other accessory strips.

10. Transition details to other flooring materials.

C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet Tile: Full-size Sample.

2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch long Samples.

D. Samples for Initial Selection: For each type of carpet tile.

1. Include Samples of exposed edge, transition, and other accessory stripping involving color or finish selection.

E. Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet Tile: Full-size Sample.

2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch long Samples.

F. Product Schedule: For carpet tile. Use same designations indicated on Drawings.

G. Sustainable Product Certification: Provide ANSI/NSF 140 certification for carpet products.

## 1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:

1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated.

## 1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Carpet manufacturer shall have no less than 5 years experience of producing recyclable carpet tile.

B. Installer Qualifications: An installer with a minimum of 5 years commercial carpet installation experience.

## 1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with carpet manufacturer's installation recommendations and the Carpet & Rug Institute Installation Standard 2011 where applicable.

## 1.8 FIELD CONDITIONS

A. Comply with carpet manufacturer's installation recommendations and the Carpet & Rug Institute Installation Standard 2011 for temperature, humidity, and ventilation limitations.

B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.

C. HVAC system should be operational and running prior to carpet installation and remain running after carpet installation.

D. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to allow bond between adhesive and concrete. Concrete slabs should have moisture and pH readings that are within the specified tolerance of the adhesive to be used.

E. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

## 1.9 WARRANTY

A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.

1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
2. Failures include, but are not limited to, the following:

    a. More than 10 percent face fiber loss or edge raveling.
    b. Dimensional instability.
    c. Excess static discharge.
    d. Loss of tuft-bind strength.
    e. Delamination.
    f. Where face fiber is 100 percent solution dyed, inability to remove acid based stains.
    g. Lack of colorfastness to atmospheric contaminants.
    h. Carpet must be manufactured and warranted by same manufacturer.

3. Warranty Period: Lifetime Commercial Limited Warranty.

## 2. PRODUCTS

### 2.1 CARPET TILE

A. Basis-of-Design Product:

1. Shaw Industries.
   a.

B. Source Limitations:

1. Single Source Responsibility: Provide products that have components manufactured by a single source. Fiber and backing, as well as final carpet product, should be manufactured and warranted by same company.

C. Color: As selected by Architect from manufacturer's full range.

D. Pile Characteristics: Multi-Level Pattern Loop pile.

E. Fiber Name: Eco Solution Q Nylon.

F. Dye Method: 100 percent Solution Dye.

G. Gauge: Ends per 1/10 inch.

H. Stitches: Stitches per 9 inch.

I. Pile Thickness: 0.069 inches (1.7526 mm) for finished carpet tile according to ASTM D 6859.

J. Surface Pile Weight: 16 oz./sq. yd.

K. Primary Backing: Synthetic.

L. Secondary Backing: High performance precoat laminated to a proprietary thermoplastic polyolefin compound with a fiberglass reinforced layer. Backing must contain a minimum of 40 percent recycled content and be SCS NSF 140 Platinum certified. Backing should be recyclable, PVC free, free of 4-PCH, brominated flame retardants, and phthalate plastizers.

1. Total Backing Weight: Not to exceed 80 oz./sq yd.

M. Backing System: EcoWorx.

N. Applied Treatments:

1. Soil-Resistance Treatment: SSP Shaw Soil Protection.

## 2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

B. Trowelable Adhesives: Water-resistant, mildew-resistant, nonstaining, premium grade, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation such as Shaw 5000 or Shaw 5100 or available equivalent where slab moisture does not exceed 85 percent per ASTM F 2170 or 5 lbs per ASTM F 1869. Where slab moisture does not exceed 85 percent and antimicrobial protection is needed to pass AATCC 174, use Shaw 5036. Where moisture exceeds 85 percent or 5 lbs but does not exceed 90 percent or 10 lbs, use Shaw 5900 or available equivalent.

1. Adhesives shall have a VOC content of 50g/L or less.
2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
3. Adhesives shall comply with the testing and product requirements of the Carpet and Rug Institute Green Label Plus Program.

C. Non-Trowelable Adhesive: Water-resistant, mildew-resistant, non-staining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation such as LokDots where slab moisture does not exceed 95 percent per ASTM F 2170 per ASTM F 1869. Each carpet tile must be adhered to the subfloor.

D. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

## 3. EXECUTION

### 3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance.

B. Examine carpet tile for type, color, pattern, and potential defects prior to installation. See manufacturer's requirements for substrate conditions and ambient conditions.

C. Concrete Slabs: Verify that finishes comply with requirements specified in Section 033000 "Cast-in-Place Concrete" and that surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.

1. Lightweight concrete and gypcrete subfloors may require a primer such as Shaw 9050 or equivalent to reduce surface porosity.
2. Where previous surface treatments are unknown, or where other concerns exist as to the ability of the adhesive to bond to the substrate, a 24 hour bond test is recommended.

### 3.2 PREPARATION

A. General: Comply with Carpet & Rug Institute Installation Standard 2011 and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.

B. Use trowelable leveling and patching compounds that contain a cementitious base with a latex additive, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.

C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.

D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand

painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.

E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

## 3.3 INSTALLATION

A. General: Comply with Carpet & Rug Institute Installation Standard 2011 "Modular Carpet" and with carpet tile manufacturer's written installation instructions.

B. Installation Method: Glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive, such as LokDots. Any non-spreadable adhesive system must adhere the carpet to the substrate.

C. Maintain dye-lot integrity. Do not mix dye lots in same area unless the specific carpet style in manufactured as a merge-able dye lot product.

D. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.

E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.

H. Install pattern parallel to walls and borders.

I. Roll the entire installation with a 75 lb roller once installation is completed.

J. Access Flooring: Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

## 3.4 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet tile:

1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
2. Remove yarns that protrude from carpet tile surface.
3. Vacuum carpet tile using commercial machine with face-beater element.

B. Protect installed carpet tile to comply with Carpet & Rug Institute Installation Standard, "Protecting Indoor Installations."

C. When construction or move-in activities will continue where new carpet is installed, provide non-staining building material paper to protect carpet. Do not use plastic sheeting as it can trap moisture, and self-sticking plastic sheeting can transfer adhesive residue to carpet that will attract soil.

D. When heavy objects are moved over carpet within 24 hours of installation, use plywood over carpet to prevent buckling and wrinkling.

E. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

**END OF SECTION 09680**

# DIVISION 9 - FINISHES
# SECTION 09705 - Poured Epoxy Flooring

## 1 GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Sections, apply to work of this Section.

### 1.2. SUMMARY:

A. This Section includes the following:

1. Seamless resinous flooring.
2. Coved seamless wall base.

### 1.3. QUALITY ASSURANCE:

A. All materials must be recommended and manufactured by a single supplier to insure compatibility and proper chemical and mechanical bond.

A. Surfacing shall be applied by a surfacing applicator approved by the Architect, with a minimum of seven (7) years experience installing the brand of surfacing in similar size and function projects. A list of ten (10) completed projects using the specified materials must be submitted proving seven (7) years experience by the lead mechanic.

### 1.4. SUBMITTALS:

A. Surfacing applicator shall submit samples of color and textures for Architect's approval.

B. Prior to commencing work, at architect's discretion, applicator shall install a 100 square foot sample on the job of desired color and texture and when approved, this will serve as the standard for the entire project.

## 1.5. PRODUCT STORAGE AND ENVIRONMENTAL CONDITIONS:

A. Material temperatures shall be a minimum of 55°F before use.

C. Work on seamless flooring shall not commence until the building can be maintained at a minimum temperature of 55°F for 48 hours before, during and 48 hours after application. Areas shall also be broom clean and reasonably dust free and shall have adequately controlled ventilation with bright, uniform lighting.

## 1.6. PROJECT CONDITIONS:

A. Before commencing work, ensure environmental and site conditions are suitable for application and curing.

B. Surfaces shall be acceptable in accordance with flooring manufacturer's recommendations.

## 1.7. PROTECTION:

A. Protect adjacent surfaces from damage resulting from work of this trade. If necessary, mask and/or cover adjacent surfaces, fixtures, cabinet work, equipment, etc. by suitable means.

## 1.8. WARRANTY:

A. Applicator shall notify manufacturer of project requirements before bidding. Manufacturer shall provide single source warranty for entire installation including labor for two years. Warranty shall include removal and replacement if proven defective. Defective items are but not limited to debonding, discoloration, excessive wear and staining by bodily fluids.

# 2. PRODUCTS:

## 2.1. MATERIALS:

A. Seamless Floor Covering where called for on the drawings, install a **Desco Mosaic** Floor manufactured by Desco Coatings, Inc. **1-800-373-8128.**

B. Provide 4" high turned up coved base with 1" radius cove as indicated on drawings.

C. Provide elastomeric waterproof membrane.

D. Binder and all successive grout and top coats shall be 100% solids clear/epoxy resin. Ceramic coated quartz aggregates as supplied by Desco Coatings are to be used to achieve all color. No pigmented epoxy base or top coats allowed.

E. All poured epoxy floor finish to be non slip.

## 3. EXECUTION:

### 3.1. FLOORING PREPARATION:

A. Surface must be clean, sound and dry.

### 3.2. FLOORING APPLICATION:

A. Apply flooring in accordance with manufacturer's printed instructions, employing lead mechanic qualified under the quality assurance portion of this specification, using equipment specifically designed for this purpose.

B. Thickness varies with System selected. Choose one of the following.

1. Desco Quartz Cremona DB is a double broadcast floor consisting of Desco quartz grade 28 aggregates. The system should be applied as a double broadcast to produce a nominal 1/8" surfacing. Texture can be coarse, medium or smooth**.**

C. Install integral cove base to height of 4" with 1" radius cove.

1. Trowel apply vertical cove base.
2. Hand sand cove base.
3. Apply three coats of resin to assure a smooth surface and cove.
4. Do not allow resin to puddle in cove.

D. Install waterproof membrane to a dry mil thickness of 20 mils.

E. Finished work shall match approved samples; be uniform in thickness, sheen, color, pattern, and texture; and be free from defects detrimental to performance.

## 3.3. PROTECTION:

A. After completion of flooring the General Contractor/Owner shall protect flooring from damage by other trades.

END OF SECTION 09705.

# DIVISION 9 - FINISHES
## Section 09910 - Painting

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of painting work is indicated on drawings and schedules, and as herein specified.

B. Work includes painting and finishing of new interior and exterior exposed items and surfaces throughout project. In general, concrete block walls and H.M. doors and frames are to be painted. See Room Finish Schedule or drawings for other areas to be painted including epoxy painted walls.

C. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

D. Work includes field painting of exposed bare and covered pipes and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.

E. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

F. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

G. Following categories of work are not included as part of field-applied

finish work.

1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, acoustic materials, architectural woodwork and casework, and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.

2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

3. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.

4. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

H. Following categories of work are included under other sections of these specifications.

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

2. Unless otherwise specified, shop priming of fabricated components such as architectural woodwork, wood casework and shop-fabricated or factory-built mechanical and electrical equipment or accessories is included under other sections of these specifications.

3. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

**1.3. QUALITY ASSURANCE:**

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

## 1.4. DELIVERY AND STORAGE:

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacture.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

1. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

## 1.5. JOB CONDITIONS:

A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 deg. F (10 deg. C) and 90 deg. F (32 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 deg. F (7 deg. C) and 95 deg. F (35 deg. C), unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

1. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

## 2. PRODUCTS:

### 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of the following:

1. The Sherwin-Williams Company (S-W).
2. Platt and Lambert (P&L).
3. MAB paints (MAB).

### 2.2. MATERIALS:

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

## 3. EXECUTION:

### 3.1. INSPECTION:

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

## 3.2. SURFACE PREPARATION:

A. General:

1. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

2. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

3. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

4. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

B. Cementitious Materials:

1. Prepare cementitious surfaces of concrete, concrete block, cement plaster and cement board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

2. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found

to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

3. Clean concrete floor surfaces scheduled to be painted with a commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow to dry before painting.

C. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

D. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

E. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

## 3.3. MATERIALS PREPARATION:

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

## 3.4. APPLICATION:

A. General:

1. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

2. Provide finish coats which are compatible with prime paints used.

3. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

5. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

6. Finish all doors on tops, bottoms and side edges same as faces, and in accordance with door manufacturer's recommendations.

7. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

B. Scheduling Painting:

1. Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

2. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by

coating manufacturer.

D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces.

E. Prime Coats:

1. Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

F. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

## 3.5. CLEAN-UP AND PROTECTION:

A. Clean-Up:

1. During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

2. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection:

1. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

2. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

3. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

## 3.6. EXTERIOR PAINT SCHEDULE:

A. General: Provide the following paint systems for the various substrates indicated.

B. Exterior Ferrous Metal: Primer is not required on shop primed items. Do not use this finish on hollow metal doors and frames.

1. Deep Color, High-Gloss Alkyd Trim Finish: Two coats over primer.

a. Primer: Alkyd-Type Zinc Chromate (FS TT-P-645).
b. First Coat: Deep Color Alkyd Resin Exterior Trim Paint (FS TT-P-37).
c. Second Coat: Deep Color Alkyd Resin Exterior Trim Paint (FS TT-P-37)

C. Exterior Hollow Metal Doors and Frames:

1. Pigmented Aliphatic Polyurethane coating.

a. Primer by hollow metal supplier.
b. First and Second Coats:

(1) Devoe: 4I9XX Tru-Thane Aliphatic Polyurethane.
(2) Glidden: Y-6200 Glid-Thane Two Acrylic Polyurethane.
(3) Mameco: Sanitile 550 Finish Polyester Aliphatic Polyurethane.
(4) Pittsburgh: 97-800 Series Pitthane Aliphatic Acrylic Urethane.
(5) S-W: Hi-Build Aliphatic Polyurethane, B65 Series/B60V2.

## 3.7. INTERIOR PAINT SCHEDULE:

A. General: Provide the following paint systems for the various substrates, as indicated. Where painting existing finishes, only apply last coat specified.

B. Ferrous Metal:

1. Semi-Gloss Enamel Finish: Two coats over primer, with total dry film thickness not less than 2.5 mils.

    a. Primer: Synthetic Rust-Inhibiting Primer (FS TT-P-664).
    b. Undercoat: Interior Enamel Undercoat (FS TT-E-543)
    c. Finish Coat: Interior Semi-Gloss Odorless Alkyd Enamel (FS TT-E-509).

C. Epoxy Coatings:

1. Filler Coat: Masonry block filler (where masonry occurs) or gypsum plaster primer (veneer plaster).

2. Second and Third Coats: High Performance Polyamide Epoxy Coating (HIPAC).

D. Stained Exposed Cedar Trim And Frames And Internal Wood Deck

1. Sherwin Williams: "Sper Deck exterior transparent wood stain.
2. Equal products.
    a. Glidden
    b. Pittsburgh

END OF SECTION 09910.

# DIVISION 10 - SPECIALTIES
## Section 10431 - Specialty Signs

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to the work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of specialty signs is as explained herein.

B. Forms of specialty signs required include the following:

1. Panel signs.

### 1.3. SUBMITTALS:

A. Samples: Submit samples of each sign form and material showing finishes, colors, surface textures and qualities of manufacturer and design of each sign component including graphics.

## 2. PRODUCTS:

### 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Manufacturers of Panel Signs:

a. ABC Signing Division of Nelson-Harkins Industries.
b. Allenite, A Division of Allen Marking Products, Inc.
c. American Stamp & Marking Products, Inc.
d. Andco Industries Corp.
e. APCO Graphics Inc.
f. Architectural Graphics Inc.
g. ASI Sign Systems, Inc.
h. Best Manufacturing Co.

i. Big Apple Sign Corporation.
j. Charleston Industries, Inc.
k. Colite Industries, Inc.
l. Modulex.
m. Mohawk Sign Systems.
n. Open Plan Accessories, Inc.
o. Spandex, USA.
p. Spanjer Brothers, Inc.
q. The Supersine Company.
r. Tablet and Ticket Co.
s. Valley City Signs.
t. Vomar Products, Inc.
u. Zax Corporation.

## 2.2. MATERIALS:

A. Plastic Laminate: Provide high pressure plastic laminate engraving stock with face and core plies in contrasting colors, in finishes and color combinations indicated, or if not indicated, as selected from the manufacturer's standards.

B. Fasteners: Unless otherwise indicated, used concealed fasteners fabricated from metals that are non-corrosive to either the sign material or the mounting surface.

## 2.3. FABRICATION:

A. Unframed Panel Signs: Fabricate unframed panel signs with edges mechanically and smoothly finished to conform with the following requirements:

1. Edge Condition: Beveled.

2. Edge Color for Plastic Laminate: Provide edge color same as the copy.

3. Corner Condition: Provide square corners.

B. Graphic Image Process:

1. Signage to be raised tactile lettering. Signs to be 2" x length required. Letters to be l" high. All signage to meet ADA requirements.

a. Provide and install plastic door signs as follows:

(1) Unisex-4
(2) Conference Room
(3) City Manager
(4) Mechanical Room
(5) Electrical Equipment
(6) Mayor's Office
(7) Office-8
(8) Mail room
(9) Break Room
(10) HCS
(11) Planning

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. General: Locate sign units and accessories where shown or scheduled, using mounting methods of the type described and in compliance with the manufacturer's instructions.

1. Install sign units level, plumb and at the height indicated, with sign surfaces free from distortion or other defects in appearance.

B. Wall Mounted Panel Signs: Attach panel signs to wall surfaces using the methods indicated below:

1. Vinyl-Tape Mounting: Use double-sided foam tape, of the thickness indicated, to mount signs to smooth, non-porous surfaces. Do not use this method for vinyl-covered or rough surfaces.

### 3.2. CLEANING AND PROTECTION:

A. At completion of the installation, clean soiled sign surfaces in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

**END OF SECTION 10431.**

# DIVISION 10 - SPECIALTIES
## Section 10522 - Fire Extinguishers, Cabinets and Accessories

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of fire extinguishers, cabinets and accessories is indicated on drawings.

B. Definition: "Fire extinguishers" as used in this section refers to units which can be hand-carried as opposed to those which are equipped with wheels or to fixed fire extinguishing systems.

C. Types of products required include:

1. Fire extinguishers.

2. Fire extinguisher cabinets.

### 1.3. QUALITY ASSURANCE:

A. Single Source Responsibility: Obtain products in this section from one manufacturer.

B. UL-Listed Products: Provide new portable fire extinguishers which are UL-listed and bear UL "Listing Mark" for type, rating, and classification of extinguisher indicated.

### 1.4. SUBMITTALS:

A. For initial selection of colors and finishes, submit manufacturer's color cards showing full range of standard colors available.

## 2. PRODUCTS:

## 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. J.L. Industries.
2. Larsen's Mfg. Co.
3. Johnson-Lee, Division of W.F. Lee Corp.

## 2.2. FIRE EXTINGUISHERS:

A. General: Provide fire extinguishers for each extinguisher cabinet and other locations indicated, in colors and finishes selected by Architect from manufacturer's standard which comply with requirements of governing authorities.

B. Multi-Purpose Dry Chemical Type: UL-rated 4-A:60-B:C, 10 lb. nominal capacity, in enameled steel container, for Class A, Class B and Class C fires.

## 2.3. FIRE EXTINGUISHER CABINETS:

A. General: Provide fire extinguisher cabinets where indicated, of suitable size for housing fire extinguishers of types and capacities indicated.

B. Construction: Manufacturer's standard enameled steel box, with trim, frame, door and hardware to suit cabinet type, trim style, and door style indicated. Weld all joints and grind smooth. Miter and weld perimeter door frames.

C. Cabinet Type: Suitable for mounting conditions indicated, of the following types:
1. Semi-Recessed: Cabinet box (tub) partially recessed in walls of shallow depth.

2. Fully-Recessed: See plans where walls allow full recess.

D. Trim Style: Fabricate trim in one piece with corners mitered, welded and ground smooth.

1. Square-Edge Trim: Square edges with back bend depths as follows:

a. 1/4" to 5/16".

2. Trim Metal: Of same metal as door.

E. Door Material and Construction: Manufacturer's standard door construction, of material indicated, coordinated with cabinet types and trim styles selected.

1. Enameled Steel: Manufacturer's standard finish, hollow steel door construction with tubular stiles and rails.

2. Door Glazing: Clear float glass complying with FSDD-G-451, type I, class 1, quality q3.

a. Clear glass, class 1 (transparent).

3. Door Style: Manufacturer's standard design as indicated below and on drawing.

F. Full-Glass Panel: Float glass, 1/8" thick.

G. Door Hardware: Provide manufacturer's standard door operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide either lever handle with cam action latch, or door pull, exposed or concealed, and friction latch. Provide concealed or continuous type hinge permitting door to open 180 deg.

H. Finish: Bright chrome plated, Finish No. 651 per ANSI/BHMAA156.18.

## 2.4. FACTORY FINISHING OF FIRE EXTINGUISHER CABINETS:

A. General: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations except as otherwise indicated. Apply finishes in factory after products are assembled. Protect cabinets with plastic or paper covering, prior to shipment.

1. Painted Finishes: Provide painted finish to comply with requirements indicated below for extent, preparation and type:

a. Extent of Painted Finish: Apply painted finish to both

concealed and exposed surfaces of cabinet components except where other than a painted finish is indicated.

b. Color: Provide color or color matches indicated, or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

c. Baked Enamel Finish: Immediately after cleaning and pretreatment, apply cabinet manufacturer's standard baked enamel finish system to the following surfaces:

(1) Interior of cabinet.

B. Exterior of cabinet except for those surfaces indicated to receive another finish.

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.

B. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.

### 3.2. IDENTIFICATION:

A. Identify existence of fire extinguisher in cabinet with lettering spelling "FIRE EXTINGUISHER" applied to door by process indicated below. Provide lettering to comply with requirements indicated for letter style, color, size, spacing and location or, if not otherwise indicated, as selected by Architect from manufacturer's standard arrangements.

B. Identify bracket-mounted extinguishers with red letter decals spelling "FIRE EXTINGUISHER" applied to wall surface. Letter size, style and location as selected by Architect.

**END OF SECTION 10522.**

# DIVISION 10 - SPECIALTIES
## Section 10800 - Toilet and Bath Accessories

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of each type of toilet accessory is indicated on drawings and herein specified.

B. Types of toilet accessories required include the following:

1. Paper towel dispensers.
2. Soap dispenser.
3. Grab bars.
4. Sanitary napkin disposal unit.
5. Electric hand dryers.
6. Sanitary napkin dispenser.

### 1.3. QUALITY ASSURANCE:

A. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry; coordinate delivery with other work to avoid delay.

B. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and servicing of accessory units.

C. Products: Provide products of same manufacturer for each type of accessory unit and for units exposed in same areas, unless otherwise acceptable to Architect.

### 1.4. SUBMITTALS:

A. Product Data: Submit manufacturer's technical data and installation instructions for each toilet accessory.

## 2. PRODUCTS:

### 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide toilet accessories by one of the following:

1. American Specialties, Inc.
2. Bobrick Washroom Equipment, Inc.
3. Bradley Corporation.
4. Hallmack-Nutone/Div. Scovill.
5. Watrous, Inc.
6. Architectural and Janitorial Washroom Accessories.

### 2.2. MATERIALS, GENERAL:

A. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 22 gage (.034") minimum, unless otherwise indicated.

B. Galvanized Steel Mounting Devices: ASTM A-153, hot-dip galvanized after fabrication.

C. Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

### 2.3. GRAB BARS:

A. Stainless Steel Type: Provide grab bars with wall thickness not less than 18 (.050") gage and as follows:

1. Mounting: Exposed, manufacturer's standard flanges and anchorages.

2. Clearance: 1-1/2" clearance between wall surface and inside face of bar.

3. Gripping Surfaces: Manufacturer's standard non-slip texture.

4. Medium-Duty Size: Outside diameter of 1-1/4".

### 2.4. SANITARY NAPKIN DISPOSAL UNITS:

A. Recessed Type: Fabricate of stainless steel for nominal 4" wall depth. Provide self-closing door and removable stainless steel receptacle of all-welded construction. Surface mount where installed on existing partitions.

**2.5. TOILET TISSUE HOLDER:**

A. Recess mounted toilet tissue holder with non-controlled delivery. Recessed housing and projecting parts of satin finish stainless steel. Free turning, chrome plated plastic roller telescopes for filling. Holds one standard core roll. Rough wall openings 5-1/4" W x 5-1/4" H x 2" D.

**2.6. ELECTRIC HANDRYER:**

A. Recessed Stainless steel electric hand dryer. Design equal is Bobrick B-3725. Electric and installation by Electrical Contractor.

**2.7. RECESSED SANITARY NAPKIN/TAMPON DISPENSER:**

A. Recessed stainless steel sanitary napkin/tampon dispenser. Dispenses 31 sanitary napkins or 22 tampons. Similar to Bobrick B-3500 Multi-denomination with separate lock and key for coin box. Refill indicator on face of cabinet. Unit measures 15-1/4" W x 25-1/2" H x 4" D.

**2.8. Soap Dispenser**

A. surface mounted heavy duty soap dispenser with corrosion resistant valve for hand soaps. Container is stainless steel. Capacity 40fl.oz., 7"x6-1/8"x 3-5/16".

**2.8. FABRICATION:**

A. General: Only an unobtrusive stamped logo of manufacturer, as approved by Architect, is permitted on exposed face of toilet or bath accessory units. On either interior surface not exposed to view or back surface, provide additional identification by means of either a printed, waterproof label or a stamped nameplate, indicating manufacturer's name and product model number.

B. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

C. Recessed Toilet Accessories, General: Except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full-length stainless steel piano hinge. Provide anchorage which is fully concealed when unit is closed.

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. Install toilet accessory units in accordance with manufacturers' instructions, using fasteners which are appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and at heights indicated.

### 3.2. ADJUSTING AND CLEANING:

A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces after removing temporary labels and protective coatings.

**END OF SECTION 10800.**

# DIVISION 10 - SPECIALTIES
## Section 10830 - Mirror Units

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Extent of mirror units is indicated on drawings.

B. Types of mirror units required include the following:

1. Stainless steel framed mirrors (18" x 24").

2. Fixed frame stainless steel mirrors (18" x 30"). Use this unit over each handicapped lavatory.

C. Toilet accessories are specified elsewhere in Division 10.

### 1.3. SUBMITTALS:

A. Product Data: Submit manufacturer's technical data, detail drawings, and installation instructions for mirror units.

B. Schedule: Submit schedule indicating mirror types, quantities, sizes and installation locations for each mirror to be provided for project.

### 1.4. SPECIFIED PRODUCT WARRANTY:

A. Provide manufacturer's written 5-year warranty against silver spoilage of mirrors, agreeing to replace any mirrors which develop visible defects within warranty period.

## 2. PRODUCTS:

### 2.1. ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide mirror units of one of the following:

1. American Specialties, Inc.
2. Bobrick Washroom Equipment, Inc.
3. Bradley Corp.
4. Hallmack-NuTone/Div. Scovill.
5. Watrous, Inc.

### 2.2. MATERIALS:

A. Mirror Glass: 1/4" thick, Type I, Class 1, Quality q2, conforming to FS DD-G-451, with silvering, copper coating, and protective organic coating complying with FS DD-M-411.

B. Galvanized Steel Sheet: ASTM A-527, G60.

C. Galvanized Steel Mounting Devices: ASTM A-153, hot-dip galvanized after fabrication.

### 2.3. FABRICATION:

A. General:

1. Edge Protection: Fabricate frames for glass mirrors to accommodate wood, felt, plastic, or other glass edge protection material.

2. Backing: Provide mirror backing and support system which will permit rigid, tamperproof glass installation and prevent accumulation of moisture, as follows:

a. Galvanized steel backing sheet, not less than 22 gage and full mirror size, with non-absorptive filler material. Corrugated cardboard is not an acceptable filler material.

3. Hangers: Provide system of mounting mirror units which will permit rigid, tamperproof and theftproof installation, as follows:

a. One-piece galvanized steel wall hanger device with spring action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

4. Stainless Steel Framed Mirrors:

a. Standard Type: Fabricate frame with channel shapes of not less than 20 gage (.040"), with square corners carefully mitered to hairline joints and mechanically interlocked. Provide in Type 430 brite polished finish. Provide tilt mirror units over handicapped lavatories; see plans.

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, in accordance with manufacturer's instructions for type of substrate involved.

### 3.2. ADJUST AND CLEAN:

A. Clean exposed surfaces of mirror units in compliance with manufacturer's recommendations.

**END OF SECTION 10830.**

# DIVISION 12 - FURNISHINGS
## Section 12484 - Floor Mats and Frames

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

### 1.2. DESCRIPTION OF WORK:

A. Recessed entrance mats, see size below.

B. Set-in frames to receive recessed mats.

C. Location of Mats:

1. Vestibule #122- one(7'x4')

### 1.3. SUBMITTALS:

A. Submit manufacturer's specifications and installation instructions.

B. Submit 3" x 4" samples of each type and color of matting and 2" long samples of frame members.

C. Submit shop drawings showing full scale section of typical installations. Show details of layout, anchors, and accessories. Include relevant details of adjacent work. Coordinate shop drawing submitted with concrete work shop drawings showing recess for mat frames.

D. Submit manufacturer's printed instructions for cleaning and handling.

### 1.4. PROJECT CONDITIONS:

A. Install recessed frames for mats after building enclosure is completed and related interior work is in progress.

B. Install mats near the time of substantial completion of the project.

## 2. PRODUCTS:

## 2.1. MANUFACTURER:

A. CS Pedisystems

## 2.2. MATERIALS:

A. Entrance Mats: Peditred – LP G3 (Vinyl inserts)

1. Thickness: 1/2" recessed.

2. Color: To be selected by the Architect.

## 2.3. FABRICATION:

A. Entrance Mats:

1. Size: Fabricate entrance mats as units, but do not exceed manufacturer's size recommendation.

2. Joints: Where joints in the entrance mats are necessary, space them symmetrically and away from normal traffic lanes.

B. Mat Frames: Fabricate frames in single lengths. Where frame dimensions exceed maximum lengths, use minimum number of pieces possible with hairline joints equally spaced and spliced together with straight connecting pins.

1. Corners: Miter corners and join with corner gusset plates to produce hairline joints.

2. Protective Coating: Coat surface of frame which will contact cementitious material with zinc chromate primer conforming to SAE AMS 3110F.

## 3. EXECUTION:

## 3.1. EXAMINATION:

A. Verify that floor openings are ready to receive work.

B. Verify field measurements as shown on shop drawings.

C. Beginning of installation means acceptance of existing conditions.

## 3.2. PREPARATION:

A. Verify size of floor recesses before fabricating mats.

B. Clean the floor recesses before installing mats.

## 3.3. INSTALLATION:

A. Locate, align, and level frame members with top of frame flush with finish floor (radial and rubber tile).

B. Install mats in floor recesses with top surface of matting flush with finish floor after final cleaning of the finish floor.

## 3.4. TOLERANCES:

A. Maximum Gap Between Recessed Frame and Mat: 1/8".

B. Maximum Gap Between Surface Frame and Mat: 1/8".

## 3.5. PROTECTION:

A. Upon completion of frame installation and concrete work, install temporary filler of plywood or fiberboard in mat recesses, and protect frames with plywood sheets. Maintain this protection until final cleaning of the finish floor and installation of the mats.

B. Protect installed mats from construction traffic.

**END OF SECTION 12484.**

# DIVISION 15 - MECHANICAL
## Section 15000 - Plumbing

## 1. GENERAL:

### 1.1. GENERAL NOTES:

A. The Plumbing Contractor shall comply with all applicable provisions of the General Conditions, Supplementary Conditions, and Instructions to Bidders, bound herein as they apply. In addition, the Plumbing Contractor, hereafter called the contractor, shall comply with all provisions of the plumbing drawings and specifications.

B. The word "Contractor" as used in these specifications, shall be held to mean the person, firm, or corporation contracting to do the herein described work, whether they be prime or sub-contractors.

### 1.2. SCOPE OF WORK:

A. This section of the specifications and the accompanying drawings cover the requirements for all labor, materials, equipment, and service necessary for a complete plumbing installation as described herein for Highland Public Safety Facility.

B. This contractor shall notify the Architect if any details necessary for a complete and satisfactory installation are omitted from these specifications, and shall include such items in his bid.

C. Everything essential for the completion of the plumbing work ready for normal and proper operation shall be furnished, even if not specifically specified or shown, only excepting such items as may be hereinafter specified to be furnished by others.

D. All final gas connections to space heating equipment and new water heaters will be by the plumbing contractor.

E. All electrical power and control wiring, receptacles, starters, switches, connections, etc., will be by the electrical contractor.

F. The building shall be kept reasonably free from the accumulation of rubbish and debris. All rubbish and debris shall be removed from time to time, and as often as directed by the Architect.

G. All equipment and materials furnished shall be new.

H. Every supply outlet or connection to a fixture or appliance shall be protected against backflow by means of a two inch air gap between overflow rim and spout. Every supply outlet or connection capable of a hose connection shall be protected against backflow by means of a vacuum breaker.

I. The information given herein and on the plans is as exact as could be received, but its extreme accuracy is not guaranteed. This contractor shall therefore, examine the locations carefully and verify all measurements, distances, levels, pipe sizes, etc., before starting the work.

J. The rules, regulations, and requirements of State or City Ordinances, Illinois School Code, Department of Health, Utility Companies and Local Civil Authorities in force at the time of execution of the contract shall become a part of this specification. If anything on the plans or in the specifications is to the contrary, it shall be installed in accordance with the above ordinances or codes. All requirements of governing regulations apply.

K. Should patented articles, methods, materials, fixtures, apparatus be used in this work, this contractor shall acquire the right to use the same and shall hold the owners and their agents harmless against any delay, action, suit or costs growing out of the use of any patents.

L. This contractor shall after obtaining permission and instructions from the architect, perform all necessary cutting or channeling of floors, walls, partitions including trenching as required, and all fitting for proper installation of his work.

M. This contractor shall visit the site and familiarize himself with all existing conditions and accept all conditions as he finds them.

N. Refer to architectural, heating and ventilating, electrical and structural drawings and coordinate all work with that of other trades.

O. This contractor shall arrange and offset where necessary, without any additional cost to the owner, any of the material or apparatus included under this heading so as not to interfere with any part of the building construction or systems.

P. This contractor shall bear any cost due to changes made contrary to

the drawings, specifications, or the Architect's approval.

Q. Failure to report discrepancies or interferences to the Architect automatically places this contractor responsible for same.

## 1.3. SHOP DRAWINGS AND SUBMITTALS:

A. As soon as practicable after list of sub-contractors and manufacturers have been approved, this contractor shall submit to the Architect for approval, six copies of shop drawings and descriptive literature, cuts, specifications, wiring and other pertinent diagrams of all equipment to be furnished under this contract, for the plumbing and drainage work, before fabrication and starting work.

B. All drawings must bear the name of the job, the specification article number and specification title to which it refers. All shop drawings shall be certified. Drawings without complete information will not be accepted and will be returned unchecked.

C. Contractors shall not submit catalogs unless requested.

D. All materials, equipment and specialties shall be standard and regularly manufactured, and have the properties of which are published and regularly cataloged to the trade. Items specially assembled for this installation and for which replacement parts will not be readily available, will not be approved, when standard assembled, catalogued items, are available.

E. Contractor shall submit all submittals for approval at the same time. Partial list of submittals will not be approved.

F. The Architect's approval of such drawings or schedules shall not relieve the contractor from responsibility for deviations from drawings, or specifications, unless he has in writing called the Architect's attention to such deviations at the time of submission nor shall it relieve him from responsibility for errors of any sort in shop drawings or schedules.

## 1.4. LINES AND GRADES:

A. This contractor shall set all construction stakes required for establishing the lines and grades. He shall assume full responsibility for dimensions and elevations measured from such stakes and reset all stakes displaced or removed while this work is in progress.

B. He shall verify the elevations and dimensions shown on the drawings and report any discrepancies to the Architect. No work shall be installed until all discrepancies have been resolved.

## 1.5. EXCAVATION:

A. All excavation for plumbing and drainage materials shall be to the required depths. Trench widths shall be kept to a minimum and bottoms shall be graded to a uniform slope and piping shall be supported throughout entire length of pipe barrel.

B. Where excavation is of such a nature, or other conditions are such as to render it necessary, the sides of the trenches shall be firmly supported by adequate sheeting and bracing.

C. Trenches shall be generally free of water. In no case, shall excavated materials be placed so as to interfere with the work of others.

## 1.6. BACKFILLING:

A. Piping shall be bedded on solid earth and backfilled for a depth of at least 6" over the top of the pipe and clean, dry earth or sand and followed by 12" of clean earth. The sand and earth shall be carefully deposited uniform layers and not exceeding 6" in depth. Each layer shall be carefully and solidly tamped with appropriate tools in such a manner as to avoid injuring or disturbing the complete work.

B. Backfilling the remainder of the trench shall be approved material free from organic matter and containing no stones over 2" in their largest dimensions. Stones which are used in backfilling shall be distributed through the earth backfill so that interstices are filled with fine material. All backfilling shall be deposited as directed with fine material. All backfilling shall be deposited as directed and be spread with layers and solidly tamped. Jetting will be considered as adequate on outside sewer work, not to be under paved areas.

## 1.7. PIPE AND FITTINGS:

A. The piping systems shall conform to the requirements of the Illinois State Plumbing Code as minimum standards.

B. Soil, Waste, Storm and Vent Piping: To be plastic pipe and fittings conforming to Schedule 40 PVC-DWV in accordance with ASTM Standards D2241. All pipe and fittings shall bear the NSF Seal of Approval and other such markings as required by the aforementioned type designed for solvent welded joints. Solvent cement shall be specific for the piping material and shall meet the requirements of ASTM Standards D2564-676 and D2235-67. Special purpose adaptor fittings must be according to code.

C. Gas Pipe and Fittings: See Section 15488.

## 1.8. INSULATION:

A. All water pipe, horizontal downspout runs and exposed bottom of roof drains, inside the building, above the lowest floor slab, shall be insulated with 1/2" fiberglass low pressure pipe insulation with a vapor barrier jacket. Fittings shall be insulated with open mesh glass fabric finished with a heavy coat of vapor barrier mastic. Insulation shall be sealed off by troweling mastic over exposed end of the insulation down to the pipe. Note that all insulation must have a flame spread rating of 25 or less. Density to be 4-7 pounds per cubic foot.

B. All insulation shall run continuous through walls, but not through floors; valve bodies shall be insulated same as fittings.

C. All pipe insulation shall be applied over clean, dry surfaces, with all sections butted firmly together, when pipe is approximately at room temperature.

D. Painting of exposed insulation by general contractor.

## 1.9. HANGERS (GRINNEL, CRANE, FEE AND MASON):

A. All horizontal gas pipe inside the building shall be supported from overhead with Grinnell Figure #260 steel hangers. Hangers shall be spaced not greater than 8'-0" between hangers.

B. Where pipes are shown on walls of building, they shall be supported on wrought iron or malleable iron hooks or brackets, bolted to the wall with lead cinch anchors.

C. The use of perforated strap hangers will not be permitted.

## 1.10. SLEEVES:

A. For poured concrete, sleeves may be set before concrete is poured or holes may be drilled. All piped through outside walls and fire walls to be encased in steel pipe sleeves with waterproof packing in outside walls.

## 1.11. PLATES (BEATON AND CORBIN, GRINNELL, CRANE):

A. Provide all uncovered pipe passing through floors, walls, and ceilings, plates on both sides. Plates shall be chromium plated, spring and snap type Beaton and Corbin No. 10-BC or equal. Plates are required only on uninsulated piping.

## 1.12 PLUMBING FIXTURES

A. General:

1. The plumbing contractor shall furnish and install all plumbing fixtures shown on the drawings, even though they may not necessarily be described in the specifications.

2. All fixtures shall be set after the floors in the particular areas have been finished. The plumbing contractor shall protect all floors and will be held responsible for all damage to same as a result of his work.

3. The plumbing contractor shall furnish all necessary grounds, anchors, hangers, etc., to properly secure or hang fixtures.

    a. Provide heavy duty carriers with all necessary reinforcement for wall hung fixtures.

4. The following materials which are exposed in finished area shall be as follows:

    a. Brass pipe and piping shall be chrome plated.

    b. Material parts shall be chrome plated.

    c. Pipes passing thru walls shall have cast brass chrome plated escutcheon cemented to pipe at wall.

    d. Bolts, clamps, screws, etc., shall be chrome plated brass.

e. All stops shall be in one horizontal plane and be true and straight with wall block and floors.

f. All supplies from wall to stop shall be threaded chrome plated brass nipples.

A. Fixtures Schedule: (Fixtures based on American Standard, equal fixtures Kohler, Crane or approved equal)

1. WC-1- ADA water closet

3043001W- American standard- Madera 16-1/2 universal bowl

6065.121.002- American Sta- Exposed, sensor-operated flush valve for 1-1/2" top spud flushometer bowls, 1.28 gpf.

2155SSCT- Church- Elongated Seat, Open Front Less Cover

2. UR-1 – Urinal:

American Standard – Decorum Flowise 0.125 Gpf High efficiency Urinal, Vitreous China

1865MO Sloan- Flush Valve Assembly

Provide wall hangers and support brackets.

(Mount ADA compliant height)

3. L-1 – Lavatory ADA :

0355012W American Standard- "Lucerne" Wall-Hung Lavatory

6055.205.002 American Standard- Insbrook Selectronic Centerset proximity lavatory faucet, Cast Brass Spout, Battery powered

761-1 Oatey Manufacturing- Semi-Cast Grid Patent Overflow Plug with 1-½" x 6"– 17 gauge Tailpiece

LFBV09 Mcguire MFG- Quarter- Turn Brass Ball Valve, ½" Nominal x 3/8" O.D.

649 Brass Craft- Stainless Steel Shallow Flange, 1/2 In. Nom (5/8 In. O.d.) (.625 I.d.).

S04-201 Jones Stephens- 3/8" X1/2" O.D. X Flexible Stainless Steel Plumbing Connectors, Length As Needed

102-EZ TRUBRO- One P-Trap Cover, Two Angle Valves And Covers

0700 Jay R. Smith- Pro Set For High Back Lavatories

USGBM2 Watts- Thermal Mixing Valve

4. TVM-B/ Rest Room Mixing Valve

   LFMMV-M1-US Watts- Thermostatic Mixing Valves

5. EWC-1/ Bi-Level Cooler

   LZSTL8WSSK Elkay- EZH2O Elkay Bottle Filling Station & Versatile Bi-Level ADA Cooler

6. CP/ CIRC Pump

   009-SF5 Taco- Stainless Steel Circulator, 1/8 hp

7. FD-1/ Floor Drain

   Halo 822-2PNR for 2 ½" concrete floors Finish Line -Souix Chief

   Halo 822-3PNR for all other locations Finish Line -Souix Chief

8. FCO/ Floor Cleanout

   Finish Line -Souix Chief

9. WCO/ Wall Cleanout

   873-240 Souix Chief- Kit Ss C/O Cvr Brass Plug and Bolt

**END OF SECTION 15000.**

# DIVISION 15 – MECHANICAL
## Section 15025 – Seismic Bracing for HVAC & Plumbing

NOTES FOR SEISMIC BRACING

GENERAL

1. No bracing is required if the top of the duct or pipe is suspended 12 inches or less from the supporting structural member.

2. Walls, including drywall partitions, may replace required transverse or vertical bracing for ductwork or piping.

3. Attachement to structural members shall use devices included in federal specification ww--h-171 (mss sp-58) or be bolted/welded as approved by the resident engineer. Braces shall be connected to the hangers/supports for ducts, piping and suspended equipment.

4. See the specifications for required strength of bracing.

5. Lateral seismic force shall be considered to act concurrently with the dead load. The slenderness ration (1/r) of braces shall not exceed 200, where (1) is the length of the brace and (r) is the least radius of gyration, both in inches.

DUCTWORK

7. Brace all rectangular ducts of 6 sq. Ft. Cross sections area and larger. Brace all round/oval ducts 28 inches in diameter and larger.

8. Transverse and vertical bracing shall occur at 30 foot intervals, maximum. Longitudinal bracing shall occur at 60 foot intervals, maximum.

PIPING

9. Brace all pipes 2 1/2 inches diameter and larger. In mechanical rooms also 1 1/4, 1 1/2 and 2 inch piping as for 2 1/2 inch piping.

10. Transvers and vertical bracing shall occur at 40 foot intervals, maximum. Longitudinal bracing shall occur at 80 foot intervals, maximum.

11. At pipe risers, wherever possible, support the weight of the riser at a point or points above the center of gravity of the riser.
12. Do not fasten one rigid piping system to two dissimilar parts of the building

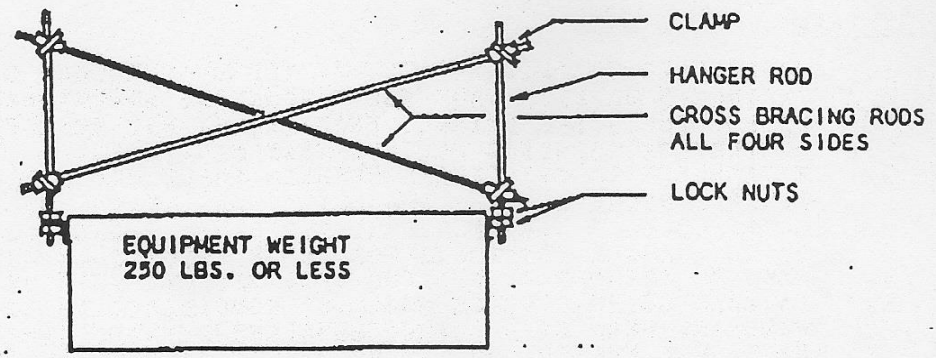
that may respond in a different mode during an earthquake; for example, a wall and a roof.

13. Do not use branch lines to brace main lines.

EQUIPMENT

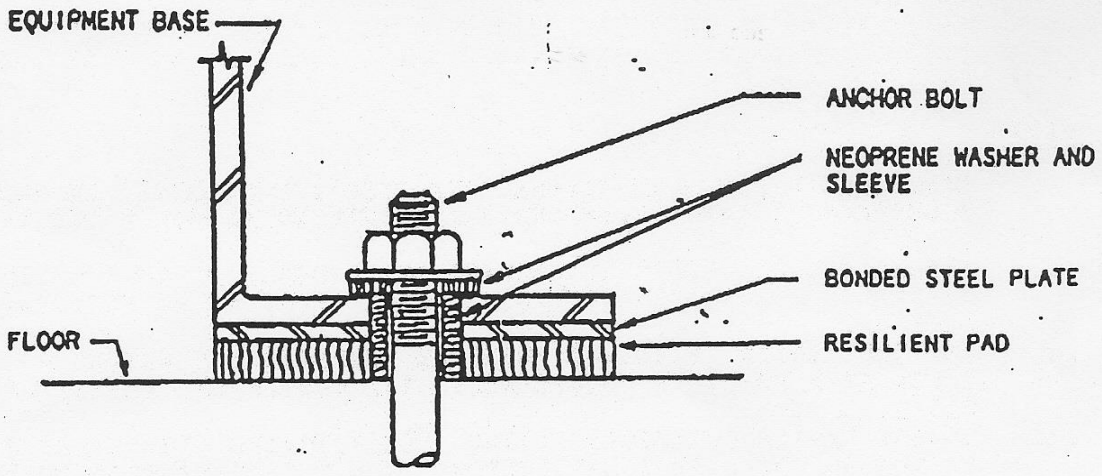
14. Refer to specifications section 15200.

Designers Note: Seismic bracing is required at designated stations only. See VA Handbook H-08-8 and Construction Standard CD-55. Show specific details for bracing suspended AC units or other heavy equipment. Provide swing joints in piping at building seismic/expansion joints to provide flexibility.



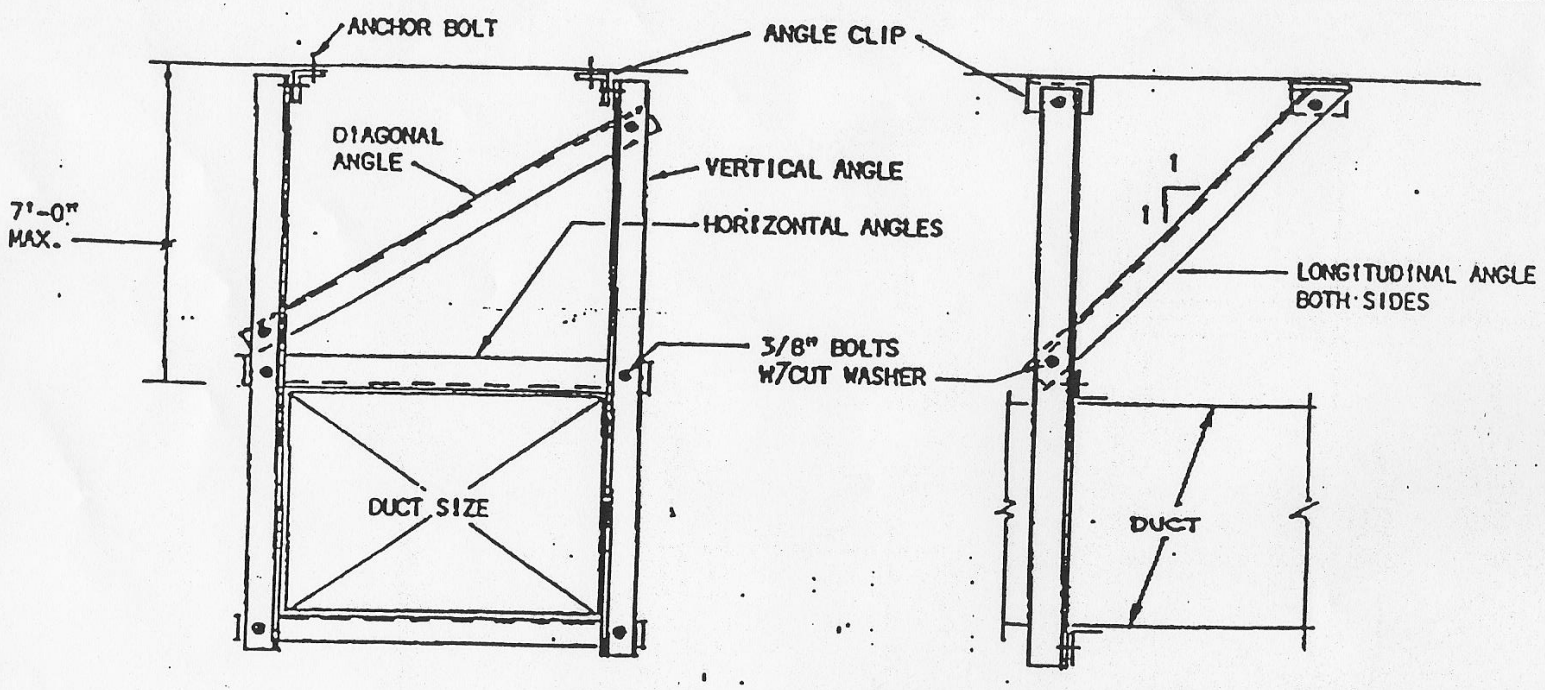

SEISMIC BRACING FOR LIGHT SUSPENDED EQUIPMENT

NOTE: NOT REQUIRED FOR AIR TERMINAL UNITS.



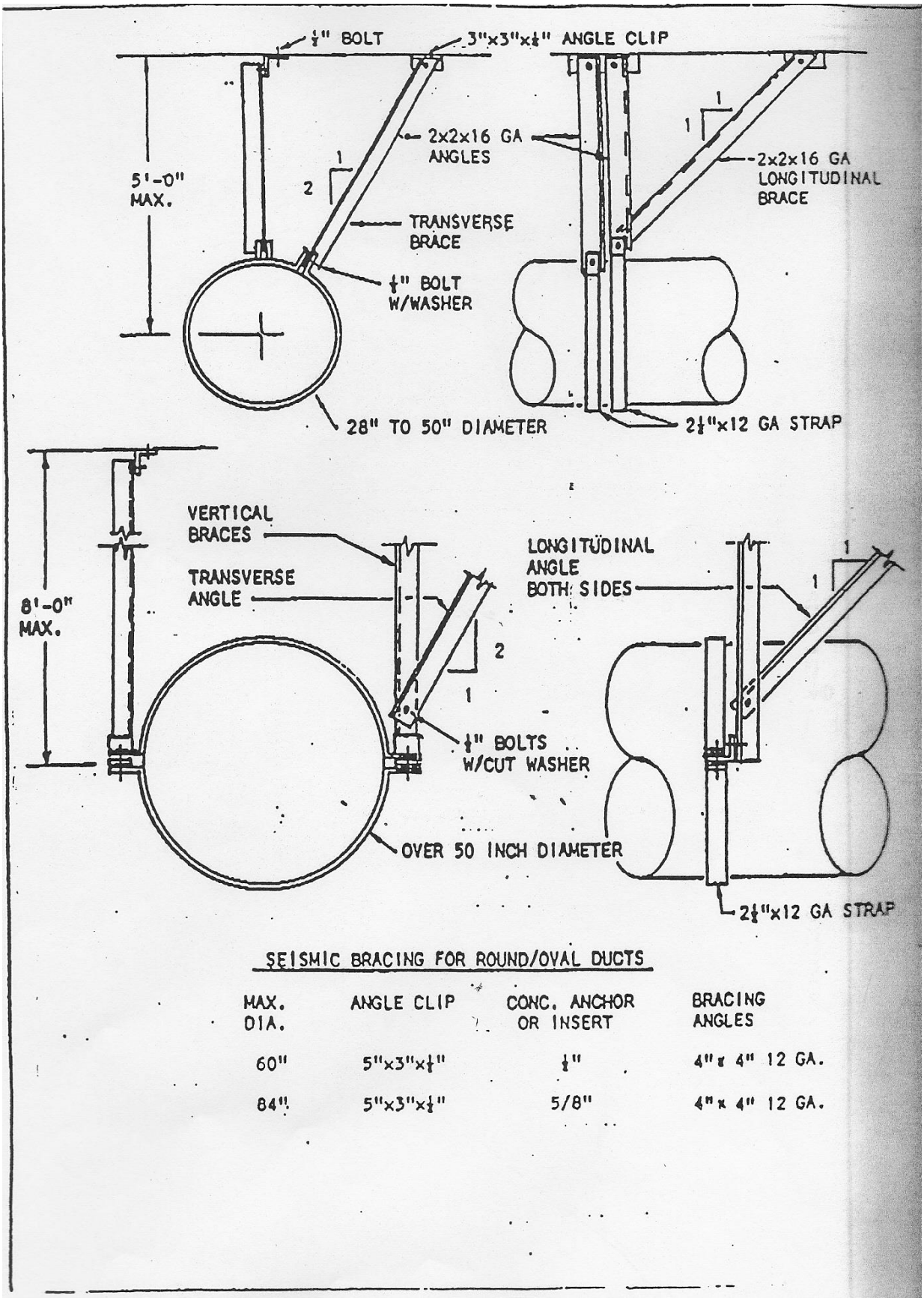

EQUIPMENT RESTRAINED BY RESILIENT PADS (TYPE DS)

Designers Note: Show this type for control air compressors and for centrifugal chillers on slab on grade.



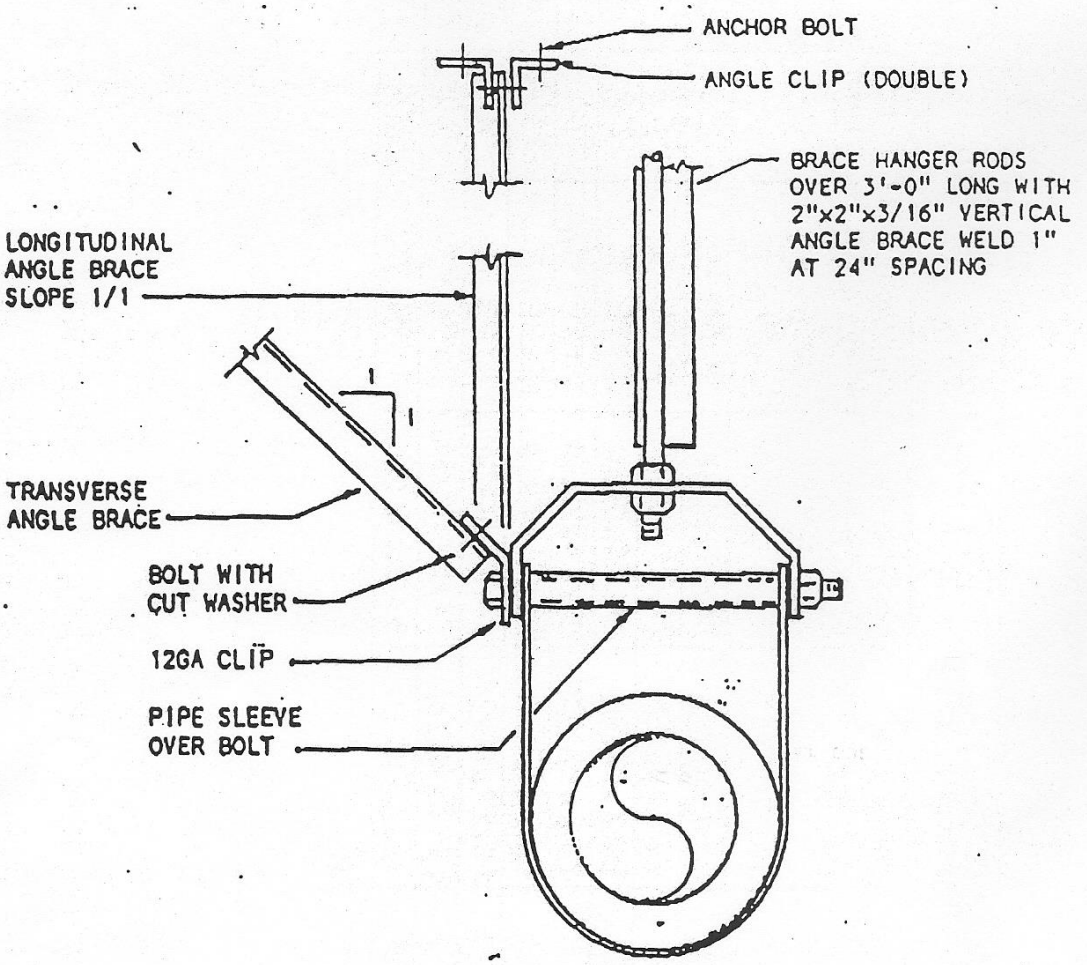

## SEISMIC BRACING FOR RECTANGULAR DUCTS

| MAX. DUCT DIMENSION | BRACING ANGLES VERTICAL | BRACING ANGLES ALL OTHERS | ANGLE CLIP | CON. ANCHOR OR INSERT |
|---|---|---|---|---|
| UP TO 60" | 4x4x12GA | 3x3x16GA | 3x3x¼ | ½" |
| 84" | 4x4x¼" | 4x4x12GA | 4x4x¼ | 5/8" |
| 96" | 5x3x¼" | 4x4x12GA | 4x4x¼ | 5/8" |




SEISMIC BRACING FOR ROUND/OVAL DUCTS

| MAX. DIA. | ANGLE CLIP | CONC. ANCHOR OR INSERT | BRACING ANGLES |
|---|---|---|---|
| 60" | 5"x3"x¼" | ½" | 4" x 4" 12 GA. |
| 84" | 5"x3"x¼" | 5/8" | 4" x 4" 12 GA. |




TYPICAL SEISMIC BRACING FOR PIPE

| PIPE SIZE | *ANGLE BRACE | BOLT TO ANGLE | ANGLE CLIP | ANCHOR BOLT OR INSERT |
|---|---|---|---|---|
| 2½" | 2"x2" 16GA | 3/8" | 3"x3"x¼ | 3/8 |
| 3,4 | 2½x2½ 16GA | 3/8 | 3"x3"x¼ | 1/2 |
| 5,6 | 2½x2½ 16GA | 1/2 | 5"x3"x¼ | 3/4 |
| 8 | 3"x3" 12GA | 5/8 | 2-5x3x¼ | 2-5/8 |
| 10 | 3"x3" 12GA | 3/4 | 2-5x3x¼ | 2-3/4 |

* 1 5/8 x 1 5/8 x 12 GAGE CHANNEL MAY BE USED.

# SCHEDULE FOR BRACING PIPES

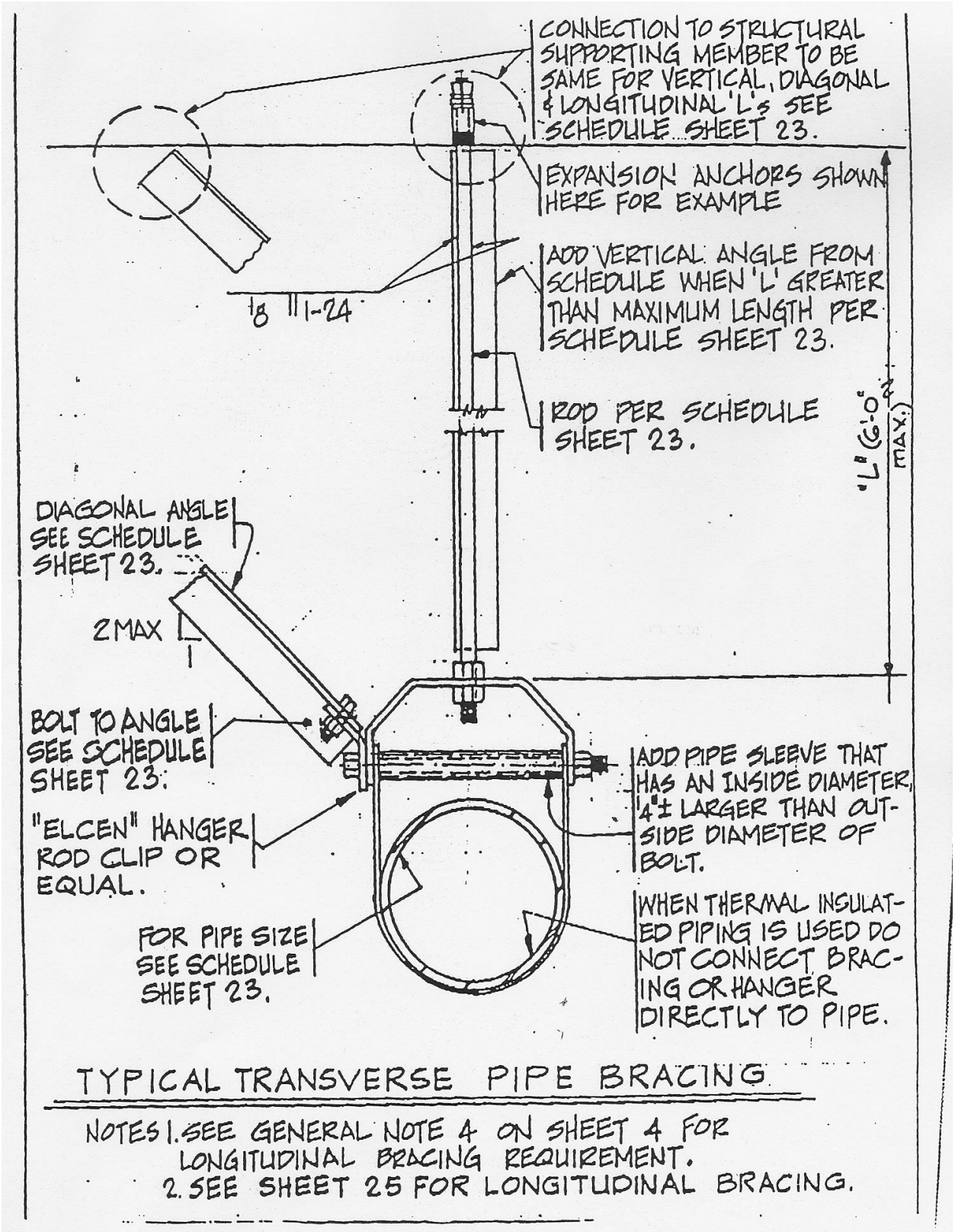
| PIPE SIZE | "ELCEN" (OR EQUAL) HANGER TYPE | BOLTS TO 'L' (2) | VERTICAL ANGLE (3) | DIAGONAL ANGLE | LONGITUDINAL DIAGONAL ANGLE (4) | TOP CONNECTION OF DIAGONAL & LONGITUDINAL 'L's (1) | ROD SIZE | MAX LENGTH FOR RODS |
|---|---|---|---|---|---|---|---|---|
| 2½ | CLEVIS TYPE | ⅜" ϕ | 2x2x16GA. | 2x2x16GA | 2½x2½x16GA. | TYPE II | ½" ϕ | 25" |
| 3 | DO DO | ⅜" ϕ | 2x2x16GA | 2x2x16GA. | 2½x2½x16GA. | TYPE II | ½" ϕ | 25" |
| 3½ | DO DO | ⅜" ϕ | 2x2x16GA. | 2x2x16GA | 2½x2½x16GA. | TYPE III | ½" ϕ | 25" |
| 4 | DO DO | ⅜" ϕ | 2x2x16GA. | 2x2x16GA. | 2½x2½x16GA. | TYPE IV | ⅝" | 31" |
| 5 | DO DO | ½" ϕ | 2x2x16GA. | 2x2x16GA. | 2½x2½x16GA | TYPE IV | ⅝" | 31" |
| 6 | DO DO | ½" ϕ | 2½x2½x16GA. | 2½x2½x16GA. | 2½x2½x16GA | TYPE V | ¾" | 37" |
| 8 | DO DO | ⅝" ϕ | 2½x2½x12GA. | 2½x2½x12GA | 2½x2½x12GA. | TYPE III | ⅞" ϕ | 43" |
| 10 | DO DO | ¾" ϕ | 2½x2½x12GA. | 3x3x12GA | 3x3x12GA. | TYPE III | ⅞" ϕ | 43" |

'L' DENOTES ANGLE

(1.) SEE SCHEDULE ON SHEET 40, FOR TYPICAL CONNECTION TO STRUCTURAL SUPPORTING MEMBERS.
(2) PLACE STANDARD CUT WASHERS BETWEEN SHEET METAL L's & NUT.
(3.) "VERTICAL ANGLE" IN THE SCHEDULE IS REQUIRED IN ADDITION TO HANGER ROD ONLY WHEN "MAXIMUN LENGTH FOR RODS" IS EXCEEDED.
(4.) SEE GENERAL NOTE 4 ON SHEET 4 FOR LONGITUDINAL DIAGONAL BRACE REQUIREMENT.

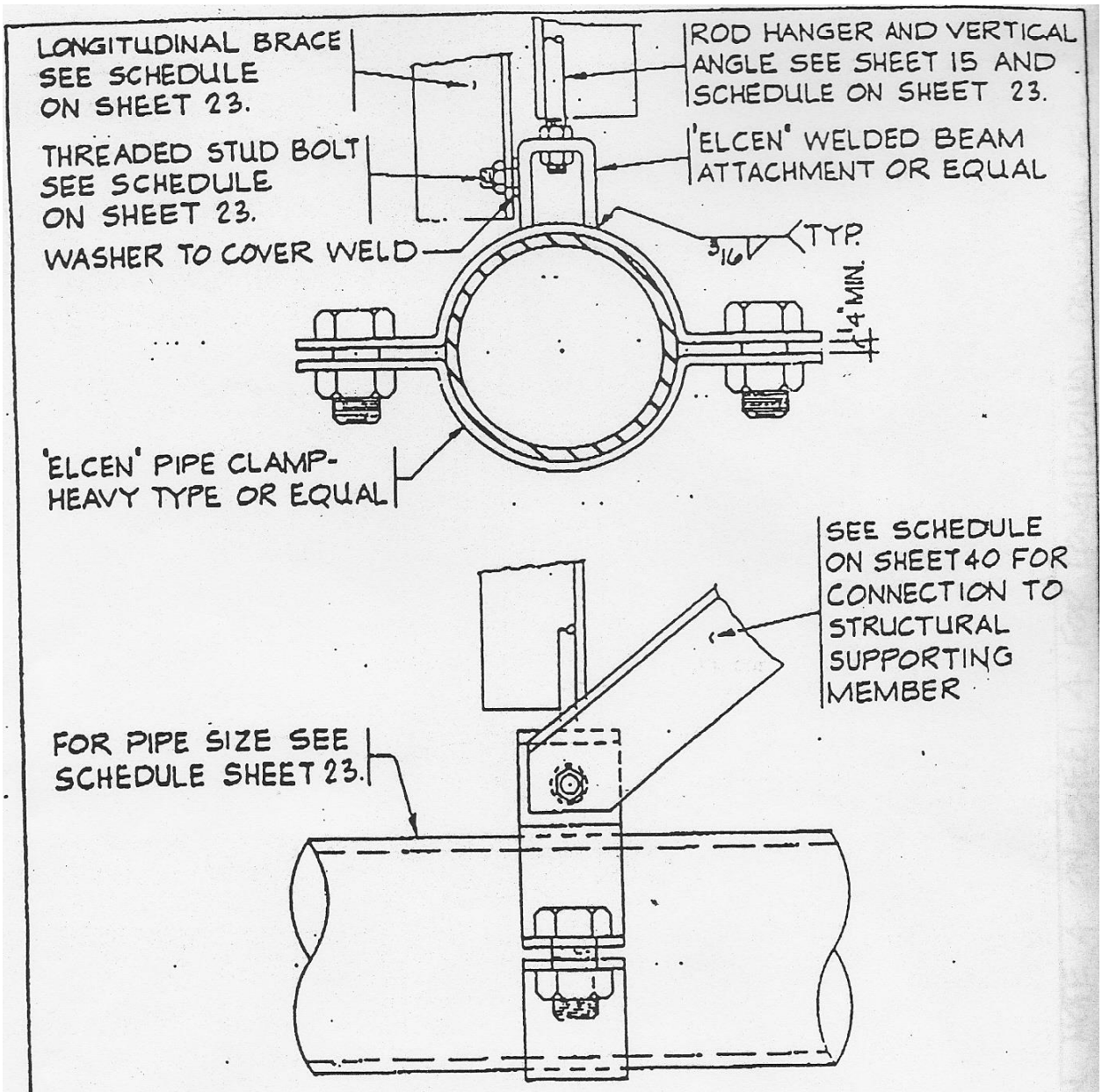
PIPES - BRACING SCHEDULE

SMACNA




## TYPICAL TRANSVERSE PIPE BRACING

NOTES 1. SEE GENERAL NOTE 4 ON SHEET 4 FOR LONGITUDINAL BRACING REQUIREMENT.
2. SEE SHEET 25 FOR LONGITUDINAL BRACING.




## TYPICAL LONGITUDINAL PIPE BRACING

1. SEE GENERAL NOTE 4 ON SHEET 4 .
2. THIS BRACING DETAIL APPLIES ONLY FOR COLD WATER PIPE AND GAS PIPE WHERE MOVEMENT OF THE PIPE DUE TO TEMPERATURE DIFFERENTIAL IS NEGLIGIBLE.
3. IT IS THE RESPONSIBILITY OF THE USER OF THIS GUIDELINE TO ASCERTAIN THAT AN ADEQUATE BRACING AND ANCHORAGE DEVICE BE DESIGNED FOR PIPE WHENEVER THE MOVEMENT DUE TO THERMAL DIFFERENTIAL EXISTS. PROVIDE ONE ANCHOR POINT IN ONE PIPE RUN. ALLOW FOR LONGITUDINAL PIPE MOVEMENT AT THE OPPOSITE END OF THE ANCHOR POINT.

## SCHEDULE FOR TYP. CONNECTIONS TO STRUCTURAL SUPPORTING MEMBERS[8]

| TYPE | MAX. LOAD CAPACITY IN TENSION (POUNDS) | EXPANSION ANCHORS TO CONCRETE [1][4][5][6][7] LT. WT. | EXPANSION ANCHORS TO CONCRETE [1][4][5][6][7] HARD ROCK | CONC. CAST-IN PLACE INSERT | MACHINE BOLT AT STL. BM. CLAMP | SPREADER SIZE (SEE SHEET 31) | MACHINE BOLT AT WOOD | SPAN-CRETE ROD | ANGLE TO SUPPORTING STRUCTURAL MEMBER (1) | ROD SIZE FOR PIPES |
|---|---|---|---|---|---|---|---|---|---|---|
| I | 400 | 5/8" | 1/2" | 3/8" | 3/8" | C4x5.4 | 1/2" | 3/8" | L3½x2½x⅜x0'-3" LLH | 1/2" ϕ |
| II | 550 | 3/4" | 5/8" | 1/2" | 3/8" | C4x5.4 | 1/2" | 3/8" | L5x3x⅜x0'-3" LLH | 5/8" ϕ |
| III | 900 | 2-1/2" | 2-3/8" | 1/2" | 3/8" | C5x6.7 | 3/4" | 3/8" | 2-L4x3x5/16x0'-4" LLH | 3/4" ϕ |
| IV | 1300 | 2-3/8" | 2-5/8" | 1/2" | 1/2" | C6x8.5 | | 1/2" | 2-L5x3x⅜x0'-4" LLH | 3/4" ϕ[2] |
| V | 1800 | 2-3/4" | 2-5/8" | 5/8" | 1/2" | C8x11.5 | | 1/2" | 2-L5½x3½x½x0'-4" LLH | 7/8" ϕ[2] |
| VI | 2600 | 4-5/8" | 4-1/2" | 2-1/2" | 5/8" | C9x13.4 | | | 2-L5x3x⅜x0'-10" LLH | 7/8" ϕ[3] |
| VII | 3700 | 4-3/4" | 4-5/8" | 2-5/8" | 5/8" | C10x15.3 | | | 2-L5½x3½x½x0'-11½" LLH | 7/8" ϕ[3] |

Notes: 1. For slabs less than 5" thick only, thin slab inserts may be used.

2. For use with concrete cast-in-place inserts or expansion anchor in hardrock concrete only. See detail B on sheet 47.

3. For use with concrete cast-in-place inserts only. See detail B on sheet 47.

4. Any of the following concrete anchors is acceptable. Install per requirements given in the latest I.C.B.O. research committee recommendations for the specific anchor.

See sheet 41 for the continuation of notes.

CONNECTION - STRUCTURAL MEMBERS. SCHEDULE | 40

END SECTION 15025.

# DIVISION 15 - MECHANICAL
## Section 15488 - Natural Gas Piping Systems

## 1. GENERAL:

### 1.1. RELATED DOCUMENTS:

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 - Specification sections, apply to this section.

B. Division 15 for piping joining materials, joint construction, basic installation requirements, and labeling and identifying requirements.

### 1.2. DESCRIPTION OF WORK:

A. This section includes piping, specialties, and accessories for natural gas systems outside the building and to the gas meters, supplied by Illinois Power.

### 1.3. QUALITY ASSURANCE:

A. Comply with NFPA 54 ANational Fuel Gas Code@ for gas piping materials and components, installations, and inspection, testing, and purging.

B. Comply with NFPA 70 ANational Electrical Code@ for electrical connections between wiring and electrically operated control devices.

## 2. PRODUCTS:

### 2.1. MANUFACTURERS:

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Gas Pressure Regulators:

    a. American Meter Co.
    b. Equimeter, Inc., ABTR Co.
    c. Fisher Controls.
    d. Gas Energy, Inc., Subsidiary of Brooklyn Union Gas.
    e. Jordan Valve Div., Richards Industries, Inc.
    f. Lancaster by National Meter Parts, Inc.
    g. Maxitrol Co.
    h. Schlumberger Industries, Gas Div.

2. Gas Valves, 2" and Smaller:

    a. Homestead by Olson Technologies, Inc.
    b. Lancaster by National Meter Parts, Inc.
    c. Lunkenheimer Co.
    d. A.Y. McDonald Mfg. Co.
    e. Milliken Valve Co., Inc.
    f. Mueller Co., A Grinnell Co.
    g. Mueller Stem Specialty Div., Core Industries, Inc.
    h. Nordstrum Valves, Inc.
    i. Resun by J. M. Huber Corp., Equipment Div.
    j. Rockford-Eclipse Div., Eclipse, Inc.

## 2.2. PIPES AND TUBES:

A. General: Refer to APipe Applications@ Article in Part 3 for identification of systems where the following materials are used.

B. Steel Pipe: ASTM A53, Type E, Electric-Resistance Welded or Type S, seamless, Grade B, Schedule 40, black.

## 2.3. PIPE AND TUBE FITTINGS:

A. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern, with threads conforming to ASME B1.20.1.

B. Unions: ASME B16.39, Class 150, black malleable iron; female pattern; brass-to-iron seat; ground joint.

C. Cast Iron Fittings: ASME B16.1, Classes 125 and 250.

D. Steel Fittings: ASME B16.9, wrought steel, butt welding type, and ASME B16.11 forged steel.

E. Steel Flanges and Flanged Fittings: ASME B16.5.
F. Bronze Flanges and Flanged Fittings: ASME B16.24.

G. Transition Fittings: Type, material, and end connections to match piping being joined.

## 2.4. JOINING MATERIALS:

A. Common Joining Materials: Refer to Division15 for joining materials not included in this section.

B. Brazing Filler Metals: AWS A5.8, Classification BAg-1 (silver). Filler metal containing phosphorus is prohibited.

C. Joint Compound and Tape: Suitable for natural gas.

D. Gasket Material: Thickness, material, and type material for natural gas.

## 2.5. VALVES:

A. Manual Valves: Conform to standards listed, or where appropriate, valves according to ANSI Z21.15 and ANSI Z21.15a.

B. Gas Valves, 2" and Smaller: 125 psi WOG minimum, equivalent to ASME B16.33, non-lubricated plug type with PTFE lining or sleeve, straight away pattern, cast iron body. Include square or flat head and threaded ends.

## 2.6. PIPING SPECIALTIES:

A. Gas Pressure Regulators: ANSI Z21.18 or ANSI Z21.18a, single stage, steel jacketed, corrosion resistant pressure regulators. Include atmospheric vent, elevation compensator, with threaded ends for 2" and smaller and flanged ends for 2-1/2" and larger. Regulator pressure ratings, inlet and outlet pressures, and flow volume in standard cubic feet per hour of natural gas at specific gravity are as indicated.

1. Gas Pressure Regulator Vents: Factory or field installed corrosion resistant screen in opening when not connected to vent piping.

B. Flexible Connectors: ANSI Z1.24 or ANSI Z21.21a, copper alloy.

C. Stainers: Y pattern, full size of connecting piping. Include Type 304 stainless steel screens with 3/64" perforations except where other screens are indicated.

1. Pressure Rating: 125 psi minimum steam or 175 psig WOG working pressure except where otherwise indicated.
2. Sizes 2" and Smaller: Bronze body, with female threaded ends.
3. Sizes 2-1/2" and Larger: Cast iron body, with flanged ends.
4. Screwed screen retainer with centered blowdown and pipe plug.

## 3. EXECUTION:

### 3.1. PIPE APPLICATIONS:

A. General: Flanges, unions, transition and special fittings, and valves with pressure ratings same or higher than system pressure rating may be used.

### 3.2. PIPING INSTALLATIONS:

A. Refer to Division 15 section ABasic Mechanical Materials and Methods@ for basic piping installation requirements.

B. Make reductions in pipe sizes using eccentric reducer fittings installed with the level side down.

C. Connect branch piping from top or side of horizontal piping.

D. Install unions in pipes 2" and smaller, adjacent to each valve, at final connection to each piece of equipment, and elsewhere as indicated. Unions are not required on flanged devices.

E. Install dielectric fittings (unions and flanges) with one ferrous and one brass or bronze-end connections, separated by insulating material, where piping of dissimilar metals are joined.

F. Install strainers on the supply side of each control valve, gas pressure regulator and elsewhere as required.

G. Anchor piping to ensure proper direction of piping expansion and contraction. Install expansion joints, expansion loops, and pipe guides as required.

## 3.3. CONNECTIONS:

A. Install gas piping next to gas utilizing equipment and appliances to allow servicing and maintenance.

B. Connect gas piping to gas utilizing equipment and appliances with shutoff valves and unions. Make connections downstream of valves and unions, with flexible connectors where indicated.

## 3.4. FIELD QUALITY CONTROL:

A. Inspect, test, and purge natural gas systems according to NFPA 54, Part 4 AGas Piping Inspection, Testing, and Purging@ and local gas utility requirements.

B. Repair leaks and defects with new materials, and retest system until satisfactory results are obtained.

C. Report test results promptly and in writing to the Architect and the authority having jurisdiction.

D. Verify capacities and pressure ratings of gas meters, regulators, valves, and specialties.

E. Verify correct pressure settings for pressure regulators.

F. Verify that specified piping tests are complete.

## 3.5. ADJUSTING:

A. Adjust controls and safety devices. Replace damaged and malfunctioning controls and safety devices.

END OF SECTION 15488.

# DIVISION 15 - MECHANICAL
## Section 15890 - Ductwork and Duct Insulation

## 1. GENERAL:

### 1.1. WORK INCLUDES:

A. HVAC Contractor:

1. Beginning at fans, furnaces, etc., furnish and erect with all registers, diffusers, grilles, deflectors, screen dampers, elbows, etc., the supply air, return air, outside air and exhaust air ducts, risers, and connections for the complete heating, ventilating and air-conditioning systems.

## 2. PRODUCTS:

### 2.1. MATERIALS:

A. All ductwork shall be installed in accordance with arrangements and sizes indicated on the drawings and shall have all necessary elbows of easy turns, turning vanes, dampers, quadrants, grounds hangers, etc., and shall be erected in a thorough and workmanlike manner.

B. All ductwork, unless otherwise specified shall be constructed of the best grade of galvanized open hearth steel, prime sheets, in accordance with the latest practice as set forth in the "Duct Manual and Sheet Metal Construction for Ventilating and Air-conditioning Systems" as published by the Sheet Metal and Air-conditioning Contractor National Association, Inc. (SMACNA). This shall include the following:

1. Gauges of metal.
2. Reinforcing of all ducts to prevent buckling, breathing, vibration or unnecessary noise.
3. Longitudinal and cross joints, elbows transitions, etc.
4. Hanger supports for ducts to suit construction.
5. Volume dampers.
6. Fire dampers.
7. Access doors.
8. Flexible connections.
9. Floor supports for vertical ducts.

C. All permanent sheet metal ductwork connections for air handling units, fans, etc., shall be made with flexible connections in accordance with SMACNA, Duct Manual.

D. Metal portion of runouts to ceiling diffusers shall be either spiral pipe or warm air pipe. Provide hard elbow and spin-ins as shown in detail in specifications.

E. Furnish and install turning vanes in al square throat 90 degree elbows. 45 degree elbows shall be designed in accordance with SMACNA, Duct Manual

F. After erection of work, test and balance all systems and set dampers to produce proper air distribution and air deliveries at each outlet and inlet shown on drawings.

G. The HVAC contractor shall form and erect all ductwork to avoid pipes, lighting fixtures, joists beams, trusses, etc., and maintain ample and approved headroom and clearances. In no case with the HVAC contractor be permitted to cut ceiling hanger rods without written approval of the Architect. Furnish and install angle irons at roof deck and/or ceiling construction, or inserts, as required for duct hanger supports. Furnish and install all necessary wood grounds for all duct openings through walls, lintels shall be by the general contractor.

H. Where changes are made in shape of ducts, full areas shall be maintained and changes shall be gradual. All bends shall have inside radius not less than diameter of ducts in direction of curbs. Where ducts terminate at grilles, suitable provisions for attaching grilles or registers shall be made as hereinafter specified.

I. Furnish and install fire dampers at all points indicated and where required by the governing building codes.

J. All manual dampers shall be adjustable, easy in operation, and absolutely noiseless. Dampers shall be installed at each diffuser or as required for proper balancing of the system. Each manual damper shall be provided with an operator, extension, rod, etc. All operators shall have locking feature.

K. Ductwork sizes shown on the drawings is inside net size. Increase duct sizes to provide sizes shown. Internal insulation shall be fiberglass mat-faced flexible duct liner, 1-1/2" density. Duct liner shall be adhered to all interior sides of ducts with a fin fire-retardant adhesive, plus

mechanical pin fasteners, in strict accordance with manufacturer=s instructions. Insulation shall be by Fiberglass, Armstrong, Johns-Manville or Gustin-Bacon.

L. Internal duct insulation shall be installed or the following:

1. All rectangular supply and return air ducts – 1" thick.
2. All rectangular exhaust ducts from roof exhaust fans down to first elbow or register, 1/2" thick,

M. All transverse joints in the supply duct system shall be sealed with 3M EC-900, Hardcast, or approved equal permanent semi-plastic compound.

N. External Duct Insulation: All rigid runouts to ceiling diffusers, including elbows above diffusers, shall be externally insulated with 1-1/2" Glass Fiber Blanket with VB.

## 3. EXECUTION:

### 3.1. INSTALLATION:

A. The general location of ducts shall be as shown. Exact locations shall be determined at building and HVAC contractor shall furnish and install such additional bends and offsets as may be required to bring ductwork into proper relation with other equipment and features of building.

**END OF SECTION 15890.**

# DIVISION 15 - MECHANICAL
## Section 15930 - Grilles, Registers, and Diffusers

## 1. GENERAL:

### 1.1. WORK INCLUDED:

A. HVAC Contractor:

1. Furnish and install all supply air grilles, registers, and diffusers; all return air and exhaust air grilles and registers of the sizes, capacities, finishes, etc., as indicated in the schedule on the drawings.

2. All grounds for grilles, registers, and diffusers will be furnished and installed by the HVAC contractor. Furnish and install heavy sponge rubber astragel between grilles and face of wall or furring.

## 2. PRODUCTS:

### 2.1. MATERIALS:

A. Each diffuser and register shall have complete valved, opposed blade volume control dampers, with flush locking device, removable key operated. Registers, grilles and diffusers shall be set with rubber or felt gaskets.

B. Grilles, registers and diffusers shall be by Tuttle & Bailey, Carnes, Titus, Krueger, or approved equal.

**END OF SECTION 15930.**

# DIVISION 15 - MECHANICAL
## Section 15940 - Duct Accessories

## 1. GENERAL:

### 1.1. MISCELLANEOUS ACCESSORIES:

A. Flexible Duct: Thermaflex Type M-KE or approved equal, insulated flexible type consisting of inner sleeve, insulation, and outer vapor barrier jacket. Inner sleeve shall consist of a continuous galvanized steel wire helix fused to a layer of fiberglass impregnated and coated with neoprene. A 1" thick layer of fiberglass wool and an outer jacket of fiberglass reinforced metalized film laminate shall enclose the sleeve. The assembly shall be UL listed as Class 1 air duct and shall comply with NFPA Standards 90A and 90B. It shall be suitable for up to 2" static pressure and to 2" negative pressure. Connectors shall be carefully fitted, cemented and clamped to duct collars. Maximum permissible length of these connectors is 4'-0" for connection to diffuser boots, and 2'-0" for connection to Zone Dampers.

B. Flexible Duct Connections: Provide flexible duct connections wherever ductwork connects to vibration isolated equipment. Construct flexible connections of neoprene coated flameproof fabric crimped into duct flanges for attachment to duct and equipment. Make airtight joint. Provide adequate joint flexibility to allow for thermal, axial, transverse, and torsional movement, and also capable of absorbing vibrations of connected equipment.

C. Manufacturers: Subject to compliance with requirements, provide flexible connections of one of the following, or equal:

1. American/Elgin Co.
2. Puro Dyne Corp.
3. Flexaust Co.
4. Ventfabrics, Inc.

**END OF SECTION 15940.**

# DIVISION 15 - MECHANICAL
## Section 15950 - Sequence of Operation

## 1. GENERAL:

### 1.1. SUMMARY:

A. All control devices required for a complete operating system shall be provided by manufacturer. Conduit and wiring required to connect the various control devices shall be provided and installed by the Electrical Contractor.

## 2. PRODUCTS:

### 2.1. OPERATING SEQUENCE:

A. Space thermostat: Will vary air supply and demand for cooling and heating to space to maintain space temperature.

B. Roof Top Unit Controls:

1. Occupied: Occupancy shall be determined by motion sensor. Upon motion detection space shall become occupied for a period of 45 minutes, once occupied fan shall run continuously with outside air damper open to adjustable minimum position. Economizer function shall modulate outside air and return air dampers in sequence to maintain 55 degree mixed air temperature. If outside air conditions exceed an enthalpy of 21 (adj.), outside air dampers shall maintain minimum position.

2. Unoccupied: Maintain outside air damper closed. Fans shall cycle to maintain reduced unoccupied temperature of 55 degrees heating and 88 degrees cooling.

3. Safety Controls: Provide smoke detectors in return air of units as called for in Rooftop Unit Schedule (detectors by rooftop unit manufacturer). If smoke is detected, stop supply fan, close smoke detector to prevent gravity circulation, and provide signal for the fire alarm system.

**END OF SECTION 15950.**

# DIVISION 15 - MECHANICAL
## Section 15960 - Balancing Air Systems

## 1. GENERAL:

### 1.1. WORK INCLUDED:

A. Balance all supply, return and exhaust systems.

### 1.2. QUALITY ASSURANCE:

A. Testing agency must have certification to balance air distribution systems.

B. Testing agency must have had experience balancing at least five systems of similar size and complexity.

C. The Owner=s Representative reserves the right during the final acceptance inspection to witness a verification of not more than 5 percent nor less than five of the readings. The particular readings to be verified will be determined during the Final Acceptance Inspection.

### 1.3. SUBMITTALS:

A. Test Reports: A final report listing all fans, diffusers, registers, etc., as listed in this specification shall be submitted with the results of the balancing certifying the work that was done. Six (6) copies of test data shall be submitted to the Architect for his approval.

### 1.4. FIELD QUALITY CONTROL:

A. Air Systems Testing and Balancing:

1. Air balance and testing shall not begin until the system has been completed and is in full working order. The contractor shall put all mechanical systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing.

2. The air balancing and testing shall be in accordance with the following requirements:

a. Test and adjust blower RPM to design requirements.
b. Test and record motor full load amperes.
c. Make pilot tube traverse of main supply and obtain design CFM at fans.
d. Test and record system static pressure suction and discharge.
e. Test and adjust system for design CFM recirculated air.
f. Record fan and motor RPM.
g. Test and record entering air temperatures (db heating & cooling).
h. Test and record leaving air temperatures (db heating & cooling).
i. Adjust all main supply and return air ducts to proper design CFM.
j. Test and adjust each diffuser to within 5 percent of design requirements. May be done in branch duct with adjustment of volume damper.
k. Identify each diffuser and opening as to location and area.
l. Identify and list size, type and manufacturer of diffuser and all testing equipment. Use manufacturer=s rating on all equipment to make required calculations.
m. In readings and test of diffusers, registers, include required FPM velocity and required CFM and test CFM adjustments.
n. Adjust all diffusers, grilles, and registers to minimize drafts.

3. As part of this contract, the Contractor shall make any changes in the pulleys, belts, and dampers or add any dampers as required for correct balance as recommended by the air balance and testing agency.

**END OF SECTION 15960.**

# DIVISION 16 ELECTRICAL
# SECTION 16000 ELECTRICAL

## 1.1. GENERAL:

A. The Architectural General Conditions@ and Supplementary General Conditions govern work under this section.

## 1.2. WORK INCLUDED:

A. The work covered by this section of the specification consists of providing all the materials, labor, equipment, and services necessary for a complete electrical installation as specified herein. Work in this section includes, but is not necessarily limited to the following items:

1. Feeders and sub-panelboards.
2. Grounding system.
3. Temporary service.
4. All conduits, wire, and outlet boxes.
5. Raceways, outlets, and cabinets for telephone service.
6. Lighting fixtures, receptacles, and toggle switches.
7. Nameplates.
8. Excavating and backfilling for electrical work.
9. Cutting patching for electrical work.
10. Connect heating, ventilating, and air conditioning equipment.
11. Motor starters for all equipment where they are not furnished as part of control panels for condensing units, etc.
12. Seismic restraints as required by code.
13. Fire Alarm System (16720).
14. HVAC Control installation and connection.
15. Lighting Controls
16. Cable tray system
17. Electric hand dryers (Furnished by General Contractor)
18. Cord reels
19. Uninterruptible Power Supply UPS

20. Engine Generator with circuit breaker
21. Automatic transfer switch.
22. Lightning protection system
23. Raceways, outlets and cabinets for data and internet service.
24. Raceways, outlets and cabinets for security system.
25. Owner training

1.3. WORK NOT INCLUDED:

A. The following work is not included under this section of the specification:

1. Telephone equipment and wiring to be furnished and installed by others.
2. All heating, ventilating and air conditioning motors and associated controls not including motor starters shall be furnished by Mechanical Contractor.
3. Temperature controls and wiring diagrams shall be furnished by Mechanical Contractor.
4. Finished painting shall be by the General Contractor

**1.4. CODES:**

A. All electrical work shall be done in strict accordance with the latest edition of the National Electrical Code and all regulations, laws and ordinances which may be applicable.

B. Electrical Contractor shall obtain and pay for all permits and inspection fees required for his work.

C. UL 1008 - Standard for Transfer Switch Equipment.

D. IEC 947-6-1 Low-voltage Switchgear and Control gear; Multifunction equipment; Automatic Transfer Switching Equipment.

E. NFPA 70 - National Electrical Code

F. NFPA 99 - Essential Electrical Systems for Health Care Facilities

G. NFPA 110 - Emergency and Standby Power Systems

H. IEEE Standard 446 - IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.

I. NEMA Standard ICS10-1993 (formerly ICS2-447) - AC Automatic Transfer Switches

J. UL 508 Industrial Control Equipment

K. CSA C22.2 No. 178 certification

## 1.5. ELECTRICAL SERVICE:

A. The Electrical service shall be from Highland City Utilities pad mounted transformer at 120/208-volt 3 phase, 4 wire.

B. The City of Highland will provide underground electrical service to the pad mounted transformer and meter base. The electrical contractor will connect at the meter base.

C. Coordinate with Highland City Utilities department for the service metering and provide the necessary equipment.

## 1.6. GROUNDING SYSTEM:

A. Furnish and install a grounding system including all fittings, clamps, conduit, and wire of the proper size to make ground connections between all apparatus, neutral bus, conduits, ufer etc. and the incoming water service as required by the latest edition of the National Electrical Code, and according to the requirement of the local inspector.

B. Furnish and install a properly sized service ground to the re-bar in the foundation, underground metal piping and grounding electrodes.

C. Interconnect the counterpoise system with the building grounding system.

D. Ground all metal mechanical and plumbing systems.

E. Ground all structural steel and metal building systems.

F. Provide grounding and ground plane for the radio tower.

## 1.7. CLEAN UP:

A. This contractor shall have all electrical rubbish and debris removed to a location on the premises as directed by the General Contractor. The General Contractor shall remove all rubbish and debris from the premises.

B. All electrical equipment and materials installed by this contractor shall be thoroughly cleaned and ready for use upon completion of the work.

C. This contractor shall clean up the premises daily of all this contractor's construction debris.

## 1.8. FIELD CONDITIONS AND MEASUREMENTS:

A. The Electrical contractor shall visit the site of the work and familiarize himself with all available information concerning the nature of the structural excavations, and the location conditions bearing on transportation, handling, and storage of materials. The Electrical Contractor shall make his own estimate of the facilities needed and difficulties attending the execution of the contract, including local conditions, availability of labor, uncertainties of weather, transportation, and other contingencies. In no event will the Architect assume any responsibility whatsoever for any interpretation, deduction, or conclusion drawn from the examination of the site. Failure of the contractor to acquaint himself with all available information concerning these conditions will not relieve him of responsibility for estimating the difficulties and costs or successfully performing his work.

B. The Electrical Contractor shall verify in the field, all measurements necessary for his work and shall assume responsibility for their accuracy.

## 1.9. TESTING:

A. The entire system shall be tested, demonstrated, and explained to personal as the Owner, Architect and Engineer shall designate.

B. This contractor will be required to make the following checks and tests with his instruments as required:

1. Test to make sure that accidental grounds do not exist on any

portion of the system before energizing the circuits.

2. The correctness of lighting circuits to be in conformity with the branch circuitry shown on the drawings.

3. Motors shall be checked for proper direction of rotation and corrected if necessary.

4. Grounds shall be checked and the resistance to ground shall not be more than outlined in the National Electrical Code.

## 1.10. GUARANTEE:

A. Contractor guarantees by his acceptance of the contract, that all work installed will be free from any and all defects in workmanship and/or materials and that all apparatus will develop capacities and characteristics specified, and that if, during the period of one year from date of certificate of completion and acceptance of work, any such defects in workmanship, materials, or performance appear, he will, without cost to the Owner remedy such defects within a reasonable time to be specified in the notice from the Architect. In default thereof, Owner may have such work done and charge cost to this contractor.

**B.** The electrical equipment and materials shall be new and without defects.

## 1.11. CONDUIT:

A. In general, unless noted otherwise, conduits shall be Thinwall electrical metallic tubing. Tubing shall be welded cold rolled steel, galvanized with coated interior.

B. Heavy wall rigid conduit shall be used in all locations exposed to the weather, and in the earth, or below vapor barrier of concrete slabs on grade. Heavy wall conduits shall be steel, hot dipped galvanized with coated interior. All the Heavy wall conduits shall have all joints red leaded, and all conduits in the earth shall be coated with two coats of bituminous paint. PVC conduit may be used in lieu of heavy wall conduit, except where exposed to the weather. Where conduits leave slab or earth they shall be heavy wall conduit. Install ground wire in all PVC conduits as required by Codes.

## 1.12. WIRE AND CABLE:

A. Building wire and cable with 600-volt insulation shall be 98%

conductivity copper unless noted otherwise. The minimum size conductor for lighting and power shall be No. 12 AWG. The minimum size conductor for control shall be No. 14 AWG.

B. Conductors size No. 10 AWG and smaller shall be type THHN/TWWN solid or stranded; conductors sized No. 8 AWG and larger shall be type THHN/TWWN stranded.

C. Metal clad (MC) cable is permitted indoors where not exposed for this project. Follow the recommended installation practices as defined by the National Electrical Code.

D. Wire #10 and smaller in conduit shall be color coded for phase, neutral, ground and switch leg:

1. Phase A – black
2. Phase B – red
3. Phase C – blue
4. Neutral – White
5. Ground – green or bare
6. Switch leg – same phase color

E. Type AC, BC and non-metallic sheathed cable shall not be used on this project.

## 1.13. INSTALLATION OF CONDUIT AND WIRE:

A. Conduits shall be continuous from outlet to outlet and from outlet to cabinets, junction or pull boxes, and shall enter and be secured to all boxes in such a manner that each system shall be electrically continuous from services to all outlets. Terminals of heavy wall conduits shall be furnished with double lock nuts and bushings. Thin wall box connectors and couplings shall be rain tight, steel compression type. Pressure indent type of thin wall box connectors and couplings shall not be acceptable. Bushings on heavy wall conduits larger than 1-1/4@ shall be plastic reinforced with metal.

B. In general, all conduits shall be run concealed unless indicated otherwise to be run exposed. Exposed conduit shall be installed perpendicular or parallel to building walls. Where more than one exposed conduit in a conduit bank changes direction, all bends shall be concentric. Conduits concealed inside floors, walls, or ceilings shall be run to clear depressions in floors, walls, ducts, plumbing, or heating pipes. This contractor shall consult all other trades/ drawings to ascertain where conflicts will occur.

C. Conduit shall be supported on approved types of galvanized brackets, ceiling trapeze or pipe straps of hangers secured by means of toggle bolts on hollow masonry, expansion bolts in concrete or bricks, machine screws on metal surfaces, or wood screws on wood construction . Nails shall not be used as a means of fastening boxes or conduits. Perforated flat steel straps shall not be used for supporting conduits.

D. The final 12" of conduit feeding motors, air conditioning equipment, exhaust fans, etc. shall be Seal-Tite flexible conduit with proper connectors and ground wires.

E. Taps and splices will not be permitted in either feeders or branch circuits except at outlets or accessible junction boxes. Splices and taps in wire size No. 8 AWG and smaller shall be made with Wire nuts. Insulating covers of equivalent conductor insulation shall be applied so that no bare wire or cable will be exposed.

F. Taps and splices in wire and cable size No. 6 AWG and larger shall be of the bolted pressure or hydraulic pressure type. Connectors shall be a non-ferrous material applied to the conductor by clamping with a minimum of two bolts for bolted pressure type and provided with a phenolic insulating cover.

G. All devices and conduit in CMU walls shall be concealed.

## 1.14. OUTLET BOXES:

A. Outlet boxes for concealment in the ceiling or walls inside the building shall be galvanized stamped steel. Outlet boxes for work exposed to weather, in floors, and other exposed locations shall be cast type.

B. Conduit fittings may be used in lieu of outlet boxes where applicable.

C. Outlet boxes shall be of the size and type to accommodate the structural conditions, size and number of raceways, conductors or cables entering and device or fixtures for which box is required. Install blank plates on all outlet boxes where apparatus is installed which does not in itself provide a cover for the box. Plaster rings shall be provided as required.

D. Special care shall be taken to set all boxes square and true with the building finish. The edge of the cover shall come flush with the

building or wall finish. When possible, all wall outlets shall be secured to the building structure or steel by adjustable supports which shall be buried in.

E. The exact location of all outlets and switches in finished rooms shall be obtained from the Architect or Engineer and/or from scale drawings of interior details and finishes. Generally, switches are to be grouped with a ganged cover plate and installed at the strike side of the door opposite the hinge side. Final correct readjustment shall be to outlets, if necessary, to give proper centering. In centering of outlets and location of outlet boxes, allow for overhead pipes, ducts and other mechanical equipment, and for variations in arrangement and thickness of walls, fireproofing, plastering, window trim, paneling, hung ceiling, and the like. Any inaccuracy resulting from failure to take the above into consideration shall be corrected by this contractor without expense to the Owner.

## 1.15. TOGGLE SWITCHES:

A. Toggle switches shall be quiet type rated 15 amperes, 120/277-volt, AC type with white handles, unless noted otherwise, as follows:

1. Single pole Hubbell #1201-W
2. Three way Hubbell #1203-W

B. All lighting control switches and devices shall be mounted 4'0" above finished floor to the top of the mounting plate, unless noted otherwise.

C. Contractor shall review drawings and check with the Architect for rooms that are to have switches of type.

D. All switches and control devices shall be white with matching plates single gang or multi-gang as shown.

E. The following are approved manufacturers:

1. Hubbell
2. Leviton
3. Eagle
4. Pass and Seymour

## 1.16. CONVENIENCE OUTLETS:

A. Duplex outlets shall be grounding type, flush mounted rated 20

amperes, 125-volt with white molded face, unless noted otherwise.

B. Emergency outlets shall be red.

C. Receptacle plates shall match the receptacle.

D. Weatherproof outlets shall be duplex GFI type, rated 20 amperes, 125-volt receptacles mounted in a cast box with weatherproof gasketed spring door.

E. Duplex receptacle GFI type, flush mounted rated 20 amperes, 125-volt with white face, unless noted otherwise.

F. Receptacles shall be mounted with long axis vertical with mounting height as shown to the bottom.

G. Contractor shall review drawings and check with Architect for rooms that are to have receptacles of different color and/or type.

H. The following are approved manufacturers:

1. Hubbell
2. Leviton
3. Eagle
4. Pass and Seymour

**1.17. <u>DEVICE PLATES</u>:**

A. Device plates shall be plastic with white finish and Slater or Hubbell type P.

B. Emergency outlet plates shall be red.

C. This contractor shall examine the plaster, block, brick, wood drywall, painting, any other finishes before making the installation to insure that the accessories, when installed, will fit and leave no open or unfinished surfaces exposed. Deficiencies shall be promptly reported to the Architect so that corrections can be made prior to proceeding with the installation of the device plates.

D. Contractor shall review drawings and check with Architect for rooms that are to have device plates of different color and/or type.

E. Each convenience outlet plate shall be engraved with panel and

circuit number identifying the circuit serving the outlet.

## 1.18. DEVICE INSTALLATION:

A. The devices shall be installed flush with the finished wall and shimmed to ensure the devices are solidly mounted.

B. The convenience outlets are to be mounted with ground down when installed vertically and to the left when mounted horizontal.

C. Mounting heights to bottom of device:

| | | | |
|---|---|---|---|
| 1 | Switches | | |
| | a. | Standard: | 44" |
| | b. | Occupancy sensors: | 44" |
| | c. | Lighting control: | 44" |
| 2 | Convenience outlets | | |
| | a. | Standard: | 16" |
| | b. | Wall (W) | 48" |
| | c. | Over counter (C) backsplash | 6" above counter or 2" above |
| | d. | TV (TV) | 78" |
| 3 | Pushbuttons | | |
| | a. | Door control: | 44" |
| 4 | Data | | |
| | a. | Standard: | 16" |
| | b. | Wall (W) | 48" |
| | c. | Over counter (TV) backsplash | 6" above counter or 2" above |
| 5 | TV signal outlets: | | 78" |

## 1.19. LIGHTING FIXTURES:

A. Furnish and install lighting fixtures selected in accordance with the Lighting Fixture Schedule on the drawings.

B. Fixtures shall be completely wired and constructed to comply with the National Electrical Code and Underwriters Laboratories Standard for

Electrical Lighting Fixtures. Fixtures shall bear the factory inspection label of the Underwriters Laboratory.

C. Ferrous metal used in fixture manufacture shall be bonderized, galvanized, or treated with an approved rust inhibiting coating to provide a rustproof base before application of finish. Rust proofing must be applied after all forming or punching operations. Painted light reflection surfaces shall be finished in a porcelain or baked with enamel having a reflection factor of not less than 90%. All parts of the reflector shall be completely covered by finish and free from irregularities. Non-reflecting surfaces shall be finished in a baked enamel finish, unless noted otherwise. All fixtures to be post manufacturing painted.

D. Fixtures with visible frames shall have concealed hinges and catches. A safety arrangement shall be incorporated in the design of fixtures to prevent frame from becoming disengaged when relamping or cleaning. Pendant fixtures and lamp holders shall be provided with ball type aligners.

H. Furnish and install all lamps for all lighting equipment covered in this specification. All LEDs shall be selected in accordance with the fixture schedule for type and color. All lamps shall be of the same manufacturer unless noted otherwise.

## 1.20. INSTALLATION OF LIGHTING FIXTURES:

A. Fixtures shall be installed at the mounting heights shown and as detailed on the drawings or as directed. Pendant fixtures within the same room or area shall be installed plumb and at a uniform height above finished floor unless noted otherwise. Adjustment of height shall be made during installation.

B. Recessed lighting fixtures shall be equipped with plaster frames as required and shall be installed to completely eliminate light leakage between the frame and the finished surface. It shall be this contractor's responsibility to review architectural drawings and to provide and install plaster frames as required.

C. Fixtures and/or fixture outlet boxes shall be provided with hangers to adequately support the complete weight of the fixture. Fixtures mounted on outlet boxes shall be rigidly secured to a fixture stud in the outlet box, hickies, or extension pieces shall be installed where required to facilitate proper installation. This contractor shall have

installed additional hanger wires from the grid tee system to bar joists, or building structure, where lighting fixtures are connected and/or supported to the ceiling system grid tees.

D. Fixture housing, frame, or canopy shall provide a suitable cover for the fixture outlet box or fixture opening.

E. Fixtures located outside the building shall be installed with stainless steel or non-ferrous metal screws finished to match fixture trim.

F. This contractor shall confer with the General Contractor to locate recessed ceiling fixtures and install supports for ceiling fixtures of such weight or construction as to require special provisions for their support.

G. All lighting fixtures shall be installed by experienced mechanics. Fixtures shall be installed after finished coat of paint has been applied to walls and ceiling, and when paint is dry.

I. Upon completion of the installation of the lighting fixtures and other lighting equipment, they must be clean and in first-class operating order and in perfect condition as to finish, hardware, glassware, etc. At the time of final inspection, all fixtures shall be properly lamped and directed to give desired illumination. Any fixture reflector, glassware, etc. which is broken or lamp burnouts, which occur prior to the turning over of the installation to the Owner, shall be replaced without cost to the Owner.

J. Mounting:

1. Wall fixtures: 84"
2. Exit lights: 6" above door frame to bottom of fixture
3. Light fixtures in open areas: even with bottom of roof joists

**1.21. <u>PANELBOARDS</u>:**

A. Panelboards shall be dead front and consist of cabinets, interiors, bus, main and branch circuit protective devices, main lugs, and all necessary equipment for a complete panelboard. Detailed characteristics such as number of branches, frame or ampere rating, trip or fuse type, bus size, type mounting or voltage ratings, shall be as shown on the drawings. The panelboards shall be rated for 120/208-volt 3 phase, 4 wire with solid neutral bus and ground bus.

B. Cabinet shall be fabricated of code gauge, hot galvanized steel with adequate gutters. Joints shall be welded and reinforced where

required. The outside of surface mounted cabinets shall be finished with one coat of zinc chromate primer and at a least one coat of gray enamel. Load center type panelboards are not acceptable.

C. Trim and panelboard front shall be made of cold-rolled steel of code gauge steel. Trim shall have doors with concealed hinges and have a flush type combination lock and catch or a multiple point contact catch. Each lock shall be provided with two keys. All panelboards shall be keyed alike. Furnish and install a typed index identifying the panelboard and indicating the circuit number with the description or function of the associated branch circuit. Index shall be mounted under a clear glass or plastic protective cover. Trim shall be cleaned, and given a prime coat of paint and at least one finished coat of gray enamel.

D. Circuit breakers shall be bolt-in type, ambient compensated thermal magnetic trip and quick-make and quick-break. Toggle mechanism shall be over-center type with trip free positive operation. All multipole circuit breakers shall be common trip type. Handle lock-ons shall be furnished and installed on all circuits as indicated on the drawings. Circuit breakers used to control lighting fixtures shall be UL rated for this duty and marked ASWD@ as required by National Electrical Code Article 240 paragraph 83(d).

E. All lugs shall be of the solderless type.

F. All panelboards shall have engraved nameplates identifying panelboards as indicated on the drawings. Main and power panelboards shall have engraved nameplates for each circuit with circuit name engraved, see drawing for nameplate data.

G. The distribution panelboard free standing with 120/208 volt 3 phase, 4 wire rating with a solid neutral bus and ground bus.

H. Distribution panelboard shall have copper bus, be bolt-on or plug-in (Sq D I-Line). The distribution panelboard shall have 800-amp bus with 800-amp main breaker with branch breakers as shown on the panel schedules.

I. Provide the main panel with surge protection.

J. The following are approved manufacturers:

1. Eaton Corp./Cutler-Hammer

2. Square D
3. General Electric
4. Siemens

## 1.25. FLOOR BOX

A. ON GRADE

1. Rectangular steel floor box for use on grade.
2. Fully adjustable before and after the concrete pour.
3. Two compartment for both power and communications with dividers.
4. With duplex mounting plates and communications plate.
5. Knock outs for conduit range from 1/2" to 1 1/4".
6. Manufacturer: Legrand – wiremold #RFD2-OG

B. FLOOR PORT FOR FLOOR BOXES

1. Use non-flanged port for tile or concrete floors.
2. Use flanged floor port for carpeted floors.

3. Manufacturer: Non-flanged: FPBTBZ

b. FlaLegrand – Wiremold

a.

nged: FPBTCBZ

## 1.27. BASKET CABLE TRAY:

A. B-Line FLEXTRAY wire basket 2" deep, 12" wide, 10 length #FT2X12X10.

B. Provide all slicing equipment necessary as suggested by manufacturer. Make the splices to maintain ground continuity.

C. Provide either a trapeze or center support at intervals

recommended by manufacturer.

D. Provide wire basket tray the entire length of all the corridors. Terminate main level tray system in the rack room to the patch panel.

E. Install the tray system above the corridor ceilings.

**F.** Provide the necessary 90's and tee fittings where necessary.

## 1.29. POWER AND CONTOL WIRING;

A. The contractor shall consult the heating, ventilation, air conditioning, plumbing, and electrical drawings, and specifications for the number and type of all motors, controls, and starting equipment which will be furnished under these headings. This contractor shall connect all motors and controls, for a complete and operational system.

## 1.30. TEMPORARY POWER:

A. This contractor shall arrange with the Utility and the General Contractor for temporary service necessary for construction purposes. Furnish, install and maintain the temporary power system on a pole furnished by General Contractor, and consisting of service, panelboard, grounding system and receptacle outlets required on pole. General Contractor shall pay for all metered charges by the Utility. Service shall be 200 amperes, 120/240-volt, single phase, three wire.

B. The Electrical Contractor shall provide and maintain throughout the construction period temporary lighting to meet all OSHA requirements.

C. The Electrical Contractor shall remove the temporary power and temporary lighting at the direction of the General contractor.

## 1.31. EXCAVATION AND BACKFILL:

A. This contractor shall provide all excavation and backfilling required for his work. Backfill shall be clean earth and shall be done in layers of 6" or less with each layer tamped. It shall be this contractor's responsibility to maintain all of his areas of backfill and to rebackfill all

areas of settlement. He shall remove all of his excess excavation materials from the site as required by the General Contractor.

B. All electrical cable and conduits shall be buried 3'-0" below grade in parking lot and open areas and at least 1'-0" below on grade slabs. Backfill around cables shall be with at least 6" of the sand for the entire length of run before earth backfill starts.

**1.32. INCIDENTAL OVERTIME:**

A. The cost of incidental overtime work for changeover of services shall be included in this contractor's price. Any other overtime must be authorized by the General Contractor, and the premium only to be reimbursed to this contractor.

**1.333. SUBSTITUTIONS:**

A. All bids shall be based on equipment as specified.

B. This contractor may propose substitutions. However, substitutions of materials must be submitted as an alternate to the base bid.

C. Except as stated above, the bidder shall make no presumptions regarding substitutions.

D. This contractor shall be held responsible for all physical changes resulting from such substitution of equipment and shall bear all increased costs to other trades in making said substitutions. Approval of equipment other than specified does not relieve the contractor of that responsibility.

**1.34. AS-BUILT DRAWINGS:**

A. This contractor shall provide as-built drawings at the completion of the job before final payment will be approved. This contractor shall maintain a set of up to date drawings at the job site for his employees to record all as-built changes to the drawings. At the completion of the project he shall record all changes on a set of as-built mylars and submit them to the Architect for review. If all changes have not been recorded properly, they shall be returned to the contractor for revisions. No final payments will be made without completed and approved as-built drawings.

## 1.35. SEISMIC RESTRAINS ON ELECTRICAL EQUIPMENT:

A. All electrical equipment shall be provided with seismic restraining services as required by local building Codes. Contractor shall have local building office review each piece of equipment when installed and the Contractor shall install all required tie down, anchors, straps or other devices required.

## 1.36. FIRESTOPPING MATERIAL:

A. The penetrations of fire and smoke rated walls or floors shall be protected by U.L. approved materials to retain the integrity of the time rated construction by maintaining as effective barrier against the spread of flame, smoke, and gases. It shall be used in all duct cable, conduit, sleeves and piping penetrations through rated walls and floors. The rating of the firestopping shall equal the rating of the time rated assembly.

B. Firestopping material shall be 3M Fire Barrier Sealing system or approved equal. Firestopping material shall constitute one or more of the following products:

1. Caulk -CP-25
2. Putty -303
3. Wrap/strip -FS195
4. Composite sheet - CS195
5. Penetrating Sealing System B 7900 Series

C. Installation of firestopping shall be installed in accordance with details on the drawings and in strict conformity with manufacturer's printed instructions as to surface preparation, installation and quality control. Areas of work shall remain accessible until inspection and approval, by the applicable code authorities.

D. Quality assurance:

1. Submit manufacturer's product data, letter of certification or certified laboratory test report that the material or combination of materials meet the requirements specified in ASTM E814 and are so classified in UL's Building Materials Directory.
2. Materials shall meet and be acceptable for use by all three

model building codes, Basic Building Code, Uniform Building Code, and Standard Building Code.

3. Materials shall meet the requirements of NFPA 101-Life Safety Code and NFPA 70 National Electrical Code.

C. Submittals:

1. Submit shop drawings, product data, certificates and manufacturer=s installation instructions under provision of the specifications.

2. Submit manufacturer's product data for all materials and prefabricated devices, providing descriptions sufficient for identification at the job site. Include manufacturer=s instruction for installation.

3. Submit shop drawings showing proposed material, reinforcements, anchorage, fastenings, and method of installation. Construction details shall accurately reflect actual job conditions.

**END OF SECTION 16000.**

# Division 16- Electrical
## 16720-NOTIFIER ADDRESSABLE FIRE ALARM SYSTEM

1. GENERAL

1.0.0 The equipment and installation shall comply with the current applicable provisions of the following standards:

1.0.1 Building Code – 2003 IBC
2002 NFPA 72
Mechanical Code – 2003 IMC
National Electrical Code, NFPA 70 - 2005
Requirements of the local AHJ.

1.1.0 General Requirements

1.1.1 Submittals.

Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:

1. Copy (if any) of list of data required by authority having jurisdiction.
2. NFPA 72 "Record of Completion", filled out to the extent known at the time.
3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72, and complete listing of software required.
4. System interfaces to fire safety systems.
5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
6. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
7. List of all devices on each signaling line circuit.
8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
9. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.

10. Certification by Contractor that the system design complies with the contract documents.

1.1.2 Equipment Supplier Qualifications.
The fire alarm equipment supplier shall have a NICET level 4 certified individual on staff responsible for overseeing the technical design and engineering functions related to the fire alarm system. The NICET level 4 certificate number must be submitted to the engineer with shop drawing submittals. The fire alarm equipment supplier shall have on staff NICET level 2 technicians supervising the final connections and programming of the system.

1.1.3 Inspection and Test Reports:
1. Submit inspection and test plan prior to closeout demonstration.
2. Submit documentation of satisfactory inspections and tests.
3. Submit NFPA 72 "Inspection and Test Form," filled out.

1.1.4 Operating and Maintenance Data
1. Complete set of specified design documents, as approved by authority having jurisdiction.
2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
4. List of recommended spare parts, tools, and instruments for testing.
5. Input/output matrix.
6. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
7. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.

1.1.5 Project Record Documents
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
2. "As installed" wiring and schematic diagrams, with final terminal identifications.

3. "As programmed" operating sequences, including control events by device, updated input/output chart.

1.1.6 Closeout Documents:

1. Certification by installing contractor that the system has been installed in compliance with his installation requirements, is complete, and is in satisfactory operating condition.
2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.

1.1.7 Equipment Manufacturers.

Base bid for the Fire Alarm System shall be the Notifier FireWarden-100X Addressable Fire Detection and Alarm System. The system shall be the latest technology multiplex, addressable system with all features as described in the product section.

2. PRODUCT

2.0.0 The FACP shall be a Notifier FireWarden 100X and shall contain a microprocessor based Central Processing Unit (CPU). The CPU shall communicate with and control the following types of equipment used to make up the system: addressable detectors and modules, annunciators, and other system controlled devices. System capacity shall be 198 points.

In addition to the major components specified any additional material and labor necessary to provide a complete and operational system shall be provided under this contract.

The panel shall be UL Listed as a Fire Alarm Control Panel per UL 864 9th edition and NFPA 72.

2.0.1 System General Operation

When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:

-The System Alarm LED shall flash.

-A local signal in the control panel shall sound.

-The 80-character LCD display shall indicate all information associated with the Fire Alarm condition, including: type of alarm point, its location within the protected premises, and the time and date of that activation.

-All system output programs assigned via control-by-event equations to be activated by the particular point in alarm shall be executed including:

Activate all alarm indicating appliances.

Shut down all air handling equipment.

Central station outputs for alarm, trouble and supervisory conditions.

The Microprocessor unit shall contain and execute all control by event programs for specific action to be taken if an alarm condition is detected by the system. Such control by event programs shall be held in nonvolatile programmable memory, and shall not be lost even if system primary and secondary power failure occurs. Provide a battery back-up and charging system for 24 hours of standby and 5 minutes of alarm for the entire fire alarm system.

2.02 Special FACP Features.

Maintenance Alert to warn of excessive compensation.
System Status Reports to display or printer (not in contract).
Alarm Verification, with verification counters.
Walk Test, with check for two detectors set to same address.

2.0.3 Provide control panel with the following control panel switches.

Acknowledge Switch.
Signal Silence Switch.
System Reset Switch.
Drill (Evacuate) Switch.

2.0.4 SLC Loop Interface

The SLC Interface shall provide power to, and communicate with, all of the Addressable Detectors and Addressable Modules over a single pair of wires.

2.0.5 System History Recording and Reporting

.

The Fire Alarm Control Panel shall contain a History Buffer that will be capable of storing up to 1000 system alarms/troubles/operator actions. The History Buffer shall use non-volatile memory. Systems that use volatile memory for history storage are not acceptable.

2.0.6 The Fire Alarm Control Panel shall include a full featured operator interface control and annunciation panel which shall include a backlit 80 character Liquid Crystal Display.

2.1.0 Field Devices

2.1.1 Addressable Manual Stations.

Addressable Manual Stations shall be provided to connect one addressable, supervised Manual Station to one of the Fire Alarm Control Panel Signaling Line Circuit (SLC) Loops. Notifier model NOT-BG12LX.

2.1.2 Addressable Smoke Detectors

The Photoelectric Smoke Detectors shall be Addressable, and shall connect with two wires to one of the Fire Alarm Control Panel Signaling Line Circuit Loops. The detectors shall use the photoelectric principal to measure products of combustion and shall, on command from the control panel, send data to the panel representing the alarm status. Notifier model NP-100 with standard base or B200SR sounder base where shown on plans.

2.1.3 Intelligent Thermal Detectors

Thermal detectors shall be intelligent addressable devices rated at 135 degrees or 190 degrees Fahrenheit. It shall connect via two wires to the fire alarm control panel signaling line circuit. Notifier NH-100 (135 degrees) NH-100H (190 degrees).

2.1.4 Addressable Duct Smoke Detectors.

Duct Smoke Detectors shall be addressable photoelectric type devices enclosed in a duct type housing and supplied with sampling tubes sized for the duct. The detectors shall be Addressable, and shall connect with two wires to the Fire Alarm Control Panel Signaling Line Circuit. Notifier model DNR housing with NP-100R sensor and DST-XX sampling tubes of required length. Provide remote test stations for detectors which are not easily accessible.

2.1.5 Monitor Module.

Monitor modules shall be provided to connect any N.O. dry contact device (water flow, tamper switches or hood suppression systems) to the Fire Alarm Control Panel Signaling Line Circuit Loop. The Monitor module shall provide address-setting means using rotary decimal switches and shall also store an internal identifying code which the Fire Alarm Control Panel shall use to identify the type of device. Notifier model NMM-100.

2.1.6 Control/Relay Module.

Control Modules shall be provided to supervise and control the operation of one signal circuit or as an addressable Dry Contact (Form C) Relay. The Control Module shall provide address-setting means using rotary decimal switches and shall also store an internal identifying code which the Control Panel shall use to identify the type of device. Provide as required for RTU shutdown and BMS notification. Notifier model NC-100 or NC-100R.

2.1.7 Audible and Visual Signals

Audible signals and/or audible sections of combination signals shall be electronic multi-tone units and shall not require vibrating solenoids or contacts. The audible section shall provide for a high/low setting providing different dB levels meeting the requirements of the particular room or space. Continuous tones or the temporal pattern based on the ANSI S3.41 Standard shall be field selectable. Set audible signals to the Temporal pattern for this project.

The signals shall operate on 24 VDC polarized and meet UL 1971 and ADA. Mounting shall be semi-flush using standard backboxes. The visual section shall be polarized Xenon strobe in various candela ratings.
There shall be FIRE lettering clearly visible from both sides.

Provide signals based on the following types:

Wall mounted selectable audible/visual signals: Horn shall have approximately 88 dB peak output at 10 feet on the high setting. Strobes shall candela ratings of 15 to 185 candela output depending on the required candela rating of the space. Provide weatherproof devices as indicated on plans. Gentex or System Sensor.

Wall mounted selectable strobe lights: Strobes shall candela ratings of 15 to 185 candela output depending on the required candela rating of the space. Gentex or System Sensor.

Ceiling mounted audible/visual signal: Horn shall have approximately 88 dB peak output at 10 feet on the high setting. Strobes shall candela ratings of 15 to 185 candela output depending on the required candela rating of the space. Gentex or System Sensor.

Ceiling mounted audible/visual signal: Strobes shall candela ratings of 15 to 185 candela output depending on the required candela rating of the space. Gentex or System Sensor.

2.1.8 Remote Signal Power Supply

Signaling appliance remote power supplies shall be UL listed for fire alarm signaling and provide 10 amps of 24 VDC power. The power supply shall include 6 style Y notification appliance circuits. Provide two 12 amp hour batteries with each power supply. Remote power supply shall be Potter model PSN106B with built in synchronization modules for all circuits. Provide as required for strobe signals.

2.1.9 Provide a Potter SASH-115 on the exterior of the building connected to a 120 volt circuit operating off the sprinkler flow switch contact

2.1.10 Central Monitoring Equipment shall be UL listed and include an integral commercial fire digital communicator that shall be connected to the fire alarm system to receive and transmit alarm signals, trouble conditions and supervisory conditions. Provide a Notifier IP/GSM-4G, IP and cellular fire communicator to interface with the fire alarm panel and transmit signals via the owners network and cellular towers to a central station monitoring service.

## 3.0 EXECUTION

### 3.1.0 INSTALLATION

1. Install in accordance with applicable codes, NFPA 72, NFPA 70, and the contract documents.
2. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.
3. Obtain approval from Architect/engineer of locations of devices, before installation.
4. Install instruction cards and labels.

### 3.2.0 INSPECTION AND TESTING FOR COMPLETION

1. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
2. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.
3. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.
4. Provide all tools, software, and supplies required to accomplish inspection and testing.
5. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

6. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.

3.3.0 OWNER PERSONNEL INSTRUCTION

1. Basic Operation: One-hour sessions for attendant personnel, security officers, and engineering staff; combination of classroom and hands-on:
    1. Initial Training: 1 session pre-closeout.
2. Furnish the services of instructors and teaching aids; have copies of operation and maintenance data available during instruction.

3.4.0 MAINTENANCE

1. See Execution and Closeout Requirements, for additional requirements relating to maintenance service.
2. Maintain a log at each fire alarm control unit, listing the date and time of each inspection and call-back visit, the condition of the system, nature of the trouble, correction performed, and parts replaced. Submit duplicate of each log entry to Owner's representative upon completion of site visit.
3. Comply with Owner's requirements for access to facility and security.

# ADDITIONS AND ALTERATIONS TO EXISTING HIGHLAND CITY HALL
# 1115 BROADWAY
# HIGHLAND, ILLINOIS 62249


## DAVID A. LOYET & ASSOC., INC.
## ARCHITECTS
## 902 WALNUT STREET
## HIGHLAND, ILLINOIS 62249


## BID NO. G-02-23

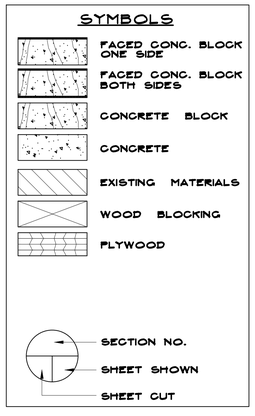
### INDEX OF DRAWINGS



### ABBREVIATIONS

| | | | |
|---|---|---|---|
| AC. T. | - SUSPENDED ACOUSTICAL TILE | MAS. | - MASONRY |
| ALT. | - ALTERNATE | MAX. | - MAXIMUM |
| ALUM. | - ALUMINUM | MECH. | - MECHANICAL |
| BM. | - BEAM | MFGR. | - MANUFACTURER |
| CAB. | - CABINET | MIN. | - MINIMUM |
| C.B. | - CHALK BOARD | MTL. | - METAL |
| ℄ | - CENTER LINE | N.I.C. | - NOT IN CONTRACT |
| CLG. | - CEILING | NO. | - NUMBER |
| CONC. | - CONCRETE | O.C. | - ON CENTER |
| CONST. | - CONSTRUCTION | OPER. | - OPERABLE |
| CONT. | - CONTINUOUS | OPNG. | - OPENING |
| CONTR. | - CONTRACTOR | PL. OR ℄ | - PLATE |
| C.J. | - CONTROL JOINT | POL. | - POLISHED |
| C.F. | - CEMENT PLASTER | PREFAB. | - PREFABRICATED |
| DET. | - DETAIL | REINF. | - REINFORCED OR REINFORCING |
| D.F. | - DRINKING FOUNTAIN | RM. | - ROOM |
| DIAM. | - DIAMETER | RUB. STR. | - RUBBER STRINGER MATERIAL |
| DWGS. | - DRAWINGS | RUB. TRD. | - RUBBER TREAD MATERIAL |
| D.S. | - DOWNSPOUT | SECT. | - SECTION |
| EA. | - EACH | SHT. | - SHEET |
| E.J. | - EXPANSION JOINT | S.M. | - SHEET METAL |
| ELEV. | - ELEVATION | SPECS. | - SPECIFICATIONS |
| E.W.C. | - ELECTRIC WATER COOLER | S.S. | - SERVICE SINK |
| EXPAN. | - EXPANSION | STD. | - STANDARD |
| F.F.E. | - FIRST FLOOR ELEVATION | STL. | - STEEL |
| F.E. | - FIRE EXTINGUISHER | STRUCT. | - STRUCTURAL |
| GALV. | - GALVANIZED | T.B. | - TACK BOARD |
| G.C. | - GENERAL CONTRACTOR | TYP. | - TYPICAL |
| H.C. | - HANDICAPPED | VTR. | - VENT THRU ROOF |
| HORIZ. | - HORIZONTAL | V.C.T. | - VINYL COMPOSITION TILE |
| H.M. | - HOLLOW METAL | VERT. | - VERTICAL |
| H.P. | - HIGH POINT | V.P. | - VENEER PLASTER |
| HR. | - HOUR | W/ | - WITH |
| H.R. | - HAND RAIL | W. | - WIRE |
| INSUL. | - INSULATION OR INSULATING | WD. | - WOOD |
| LAM. | - LAMINATE OR LAMINATED | W.W.F. | - WELDED WIRE FABRIC |
| L.P. | - LOW POINT | | |

### SYMBOLS




### GENERAL NOTES:

1. DO NOT SCALE SIZES OR DIMENSIONS FROM THESE DRAWINGS. ANY QUESTIONS CONCERNING DIMENSIONS SHALL BE REFERRED TO THE ARCHITECT FOR CLARIFICATION OR INTERPRETATION.

2. IF DIMENSIONAL DISCREPANCIES ARE FOUND TO EXIST BETWEEN ARCHITECTURAL, MECHANICAL, OR PLUMBING DRAWINGS, REFER SUCH DISCREPANCIES TO THE ARCHITECT FOR CLARIFICATION OR INTERPRETATION. IF ANY WORK IS INCORRECTLY INSTALLED DUE TO DIMENSIONAL DISCREPANCIES ON THE VARIOUS PLANS, THE ACCEPTANCE OR REJECTION OF SUCH WORK SHALL BE AT THE DISCREPANCY OF THE ARCHITECT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING WOOD GROUNDS WHERE REQUIRED FOR THE SECURE ATTACHMENT OF ANY AND ALL EQUIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OR RECOMMENDATIONS OF THE MANUFACTURER OF THE EQUIPMENT BEING INSTALLED OR AS OTHERWISE REQUIRED FOR SECURELY FASTENING EQUIPMENT OR ITEMS WHICH ARE BUILT IN PLACE.

4. THE CONTRACTOR SHALL DO ALL WORK AS REQUIRED FOR MAINTAINING THE INTEGRITY OF WALLS AND PARTITIONS INDICATED ON THE PLANS AS FIRE-RATED WALLS".

5. FACILITIES IN THE EXISTING BUILDING AND INDICATED ON THE DRAWING HAVE BEEN TAKEN FROM EXISTING BUILDING DRAWINGS AND FIELD INSPECTIONS AT THE PROJECT. BUT ITS COMPLETE ACCURACY IS NOT GUARANTEED. CONTRACTOR SHALL VERIFY AND/OR DETERMINE EXISTING CONDITIONS INVOLVING HIS WORK IN THE FIELD.

2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL FIRE CODE
2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL FUEL GAS CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2011 NATIONAL ELECTRIC CODE
2018 ILLINOIS ACCESSIBILITY CODE
2014 ILLINOIS STATE PLUMBING CODE
2015 LIFE SAFETY CODE
MUNICIPLAL REQUIREMENTS AND GOOD FIRE PROTECTION PRACTICES

BUILDING CLASSIFICATIONS
1. USE GROUP CLASSIFICATIONS.
   A. BC(BUSINESS, CIVIC ADMINISTRATION)

   IBC 107.2.1. CHAPTER 3. 302.1

CONSTRUCTION TYPE: II B

   IBC 107.2.1. CHAPTER 6. 602.1

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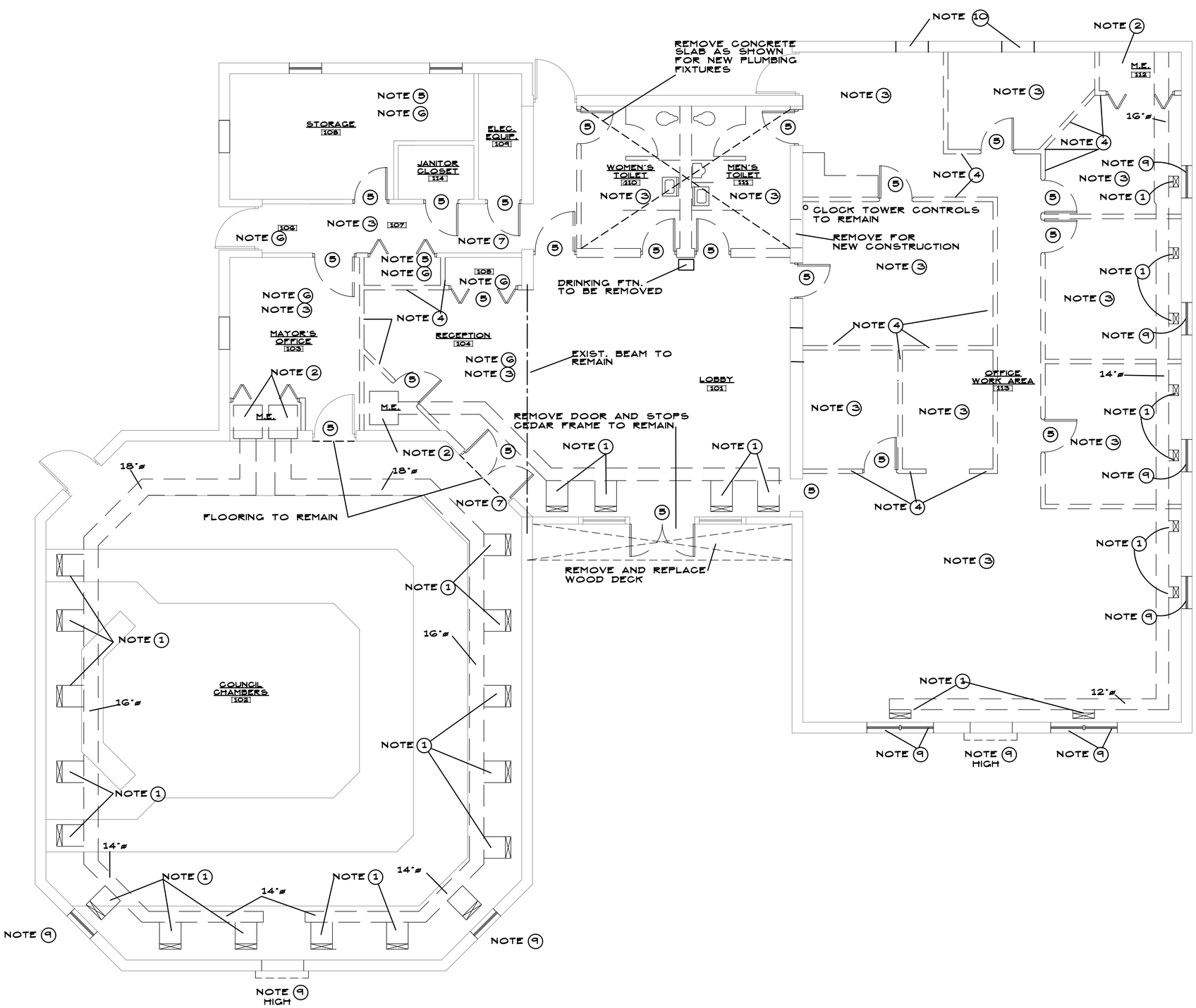
Loyet ARCHITECTS


SHEET NO.

TS

JOB NO. 2246

DATE: 4/1/2023




## DEMOLITION NOTES:

1. REMOVE EXISTING FLOOR REGISTERS. FILL EXISTING UNDERFLOOR DUCTWORK WITH LEAN CONCRETE – ABANDON IN PLACE
2. REMOVE ALL EXISTING HVAC UNITS AND ASSOCIATED OVERHEAD DUCTWORK. GRILLES ETC. (FIELD VERIFY)
3. REMOVE SUSPENDED CEILING SYSTEM AND LIGHT FIXTURES
4. REMOVE EXISTING DRYWALL PARTITION STUDS. DRYWALL. INSULATION. BASE. ETC.
5. REMOVE EXISTING DOORS. FRAMES AND HARDWARE
6. REMOVE EXISTING FLOOR AND BASE
7. NOT USED
8. REMOVE EXISTING ADA DOOR OPERATOR SEE NEW DOOR AND FRAME FOR NEW ADA OPERATOR
9. REMOVE EXISTING WINDOW AND RELATED WOOD TRIM WORK AS REQUIRED FOR NEW WINDOW INSTALLATION– SEE ALT. NO. 1
10. CUT NEW OPENING AS REQUIRED FOR NEW WINDOWS

## GENERAL NOTES:

1. REMOVE ALL EXISTING ELECTRICAL SWITCHES. OUTLETS AND DATA PORTS
2. REMOVE ALL EXISTING PLUMBING FIXTURES WATER LINES. SANITARY SEWER LINES NOT REQUIRED FOR NEW CONSTRUCTION

## DEMOLITION PLAN

SCALE 1/4"=1'-0"

NORTH

ADDITIONS AND RENOVATIONS TO EXISTING HIGHLAND CITY HALL
1115 BROADWAY
HIGHLAND, IL 62249


302 WALNUT STREET
HIGHLAND, IL. 62249
PH. 618-654-2328
FAX 618-654-3823

Loyet ARCHITECTS


SHEET NO.

A-1

JOB NO. 2246

DATE: 4/1/2023

## ROOM FINISH SCHEDULE

| ROOM NO. | ROOM NAME | FLOOR | CEILING | WALLS | BASE | REMARKS |
|---|---|---|---|---|---|---|
| 101 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 102 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 103 | STOR.CARCHIVED | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 104 | OFFICE | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 105 | OFFICE | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 106 | NOT USED | | | | | |
| 107 | CENTRAL WORK AREA | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 108 | MAIL ROOM | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 109 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 110 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 111 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 112 | BREAK ROOM | LVT | ACOUSTIC TILE | ●VENEER PLAST. | RUB. | |
| 113 | HALL | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 114 | REST ROOM | F.E. | ACOUSTIC TILE | ●VENEER PLAST./E | F.E. | |
| 115 | REST ROOM | F.E. | ACOUSTIC TILE | ●VENEER PLAST./E | F.E. | |
| 116 | REST ROOM | F.E | ACOUSTIC TILE | ●VENEER PLAST./E | F.E. | |
| 117 | REST ROOM | F.E. | ACOUSTIC TILE | ●VENEER PLAST./E | F.E. | |
| 118 | FRONT DESK | CARPET | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 119 | HALL | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 120 | INFORMATION DESK | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 121 | LOBBY | LVT | E. WOOD DECK | VENEER PLAST./E | RUB. | |
| 122 | VESTIBULE | LVT | WOOD DECK | VENEER PLAST. | RUB. | |
| 123 | ENTRY | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 124 | OFFICE | CARPET | ACOUSTIC TILE | VENEER PLAST. | RUB. | |
| 125 | PLANNING | CARPET | ACOUSTIC TILE | VENEER PLAST. | RUB. | |
| 126 | CONF. ROOM | CARPET | ACOUSTIC TILE | VENEER PLAST. | RUB. | |
| 127 | ELEC. EQUIP. | LVT | E | E | E | |
| 128 | MECH. EQUIP. | LVT | E | E | E | |
| 129 | BLDG. + ZONING | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |
| 130 | HALL | LVT | ACOUSTIC TILE | VENEER PLAST. | RUB. | |
| 131 | COUNSEL CHAMBERS | EXIST. | EXPOSED | E | E | |
| 132 | STORAGE | LVT | ACOUSTIC TILE | VENEER PLAST./E | RUB. | |

## LEGEND

● - EPOXY PAINT
ACT - SUSPENDED ACOUSTICAL TILE
CONC. - CONCRETE
VP - VENEER PLASTER
LVT - LUXURY VINYL TILE
CMU - CONCRETE MASONRY UNIT
F.E. - POURED EPOXY W/ 4" EPOXY BASE
RUB. - RUBBER BASE
E - EXISTING

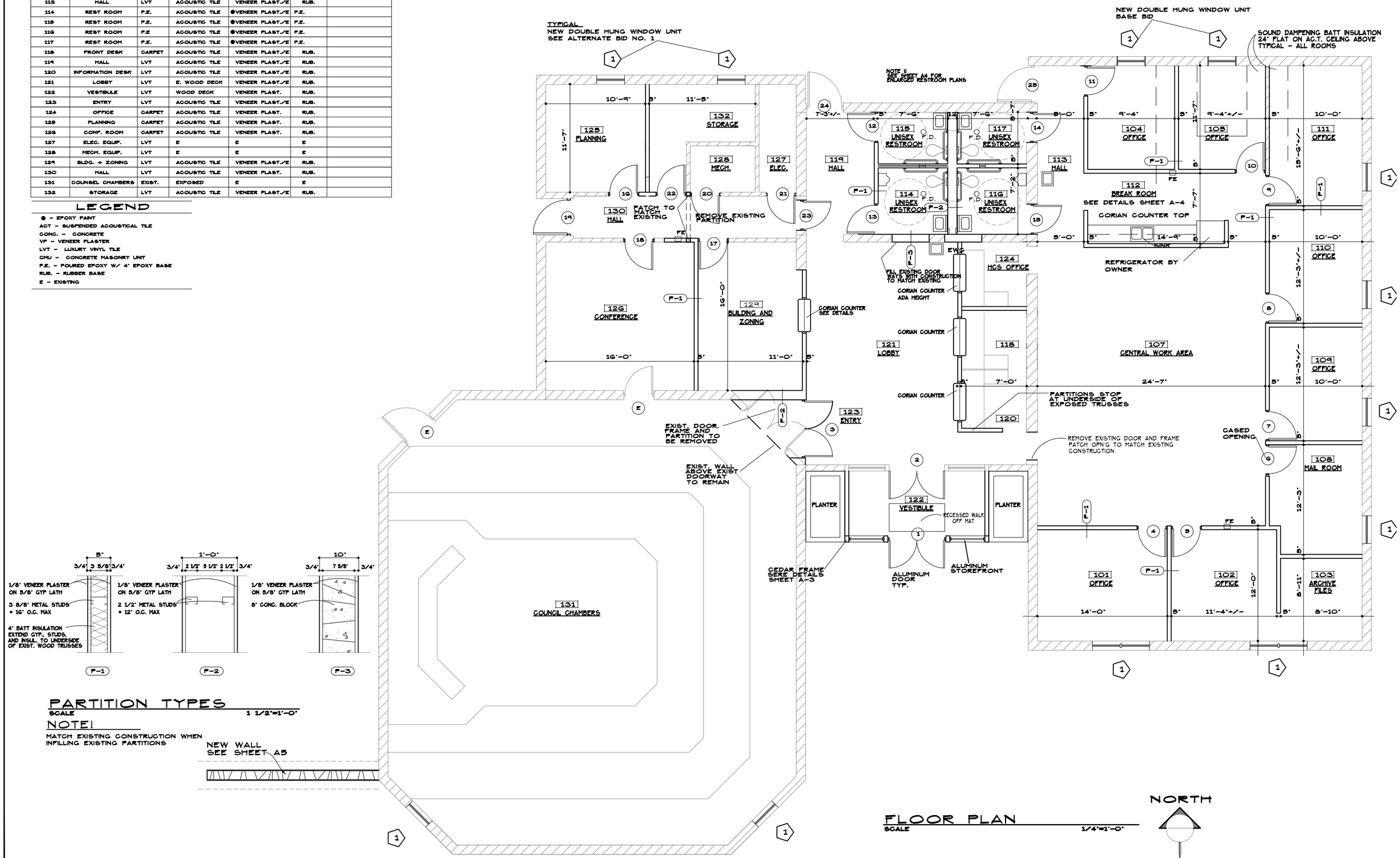
## GENERAL NOTES

PATCH ANY EXISTING PLASTER WALLS DAMAGED BY CONSTRUCTION

ALL NEW INTERIOR WALLS TO BE FILLED WITH 4" BATT INSULATION TO UNDERSIDE OF TRUSSES.

ALL EXISTING PARTITIONS TO RECIEVE A NEW "SKIM" COAT VENEER PLASTER.

ALL AREAS OF NEW AC.T. CEILINGS SHALL HAVE 24" OF BATT INSULATION LAYING FLAT ON BOTH SIDES OF DIVIDING PARTITIONS FOR SOUND DAMPENING







## PARTITION TYPES

SCALE 1 1/2"=1'-0"

### NOTE!

MATCH EXISTING CONSTRUCTION WHEN INFILLING EXISTING PARTITIONS

## FLOOR PLAN

SCALE 1/4"=1'-0"

NORTH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HIGHLAND, IL 62249

902 WALNUT STREET
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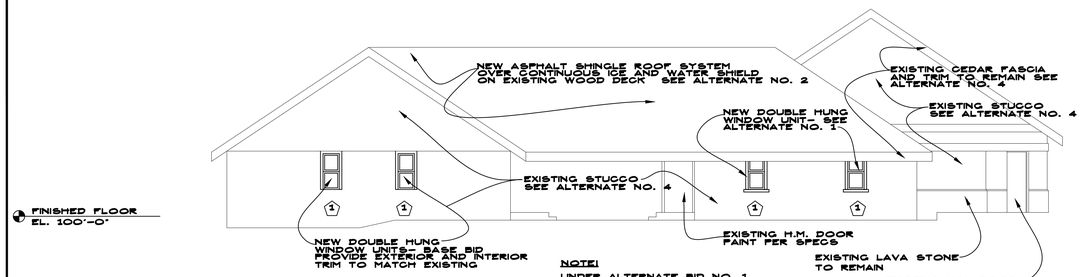
PH. 618-654-2328
FAX 618-654-3823

Loyet ARCHITECTS


SHEET NO. A-2

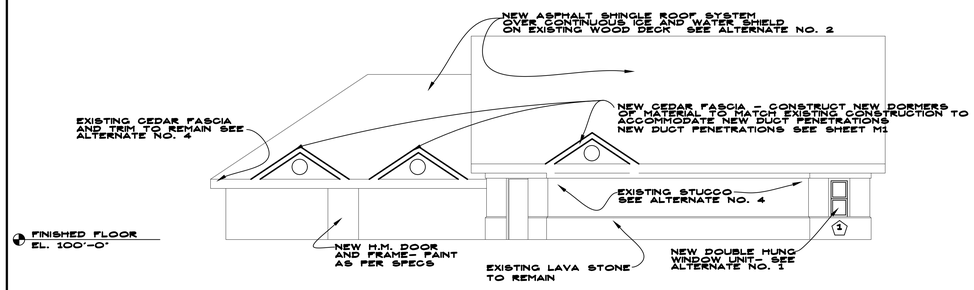
JOB NO. 2246

DATE: 4/1/2023

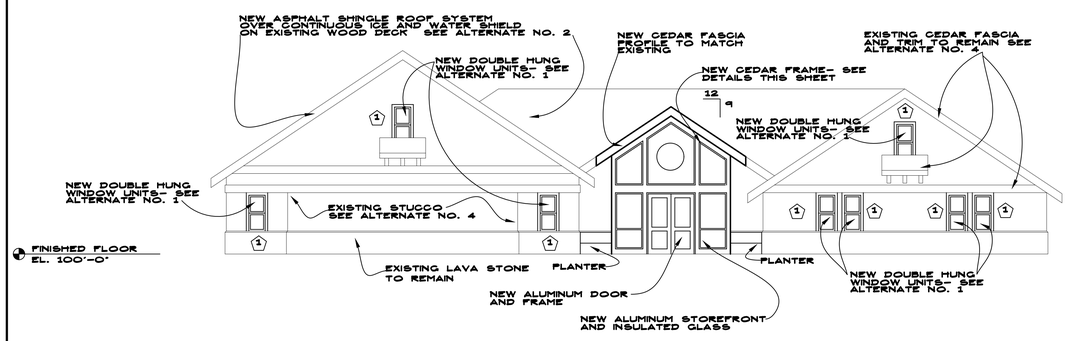



NOTE:
UNDER ALTERNATE BID NO. 1, ALL WINDOW REPLACEMENT SHALL MAINTAIN EXIST. WOOD TRIM IF DAMAGED, REPLACE WITH NEW WOOD TRIM TO MATCH EXIST. EXIST. TRIM TO BE STAINED UNDER ALT. NO. 4

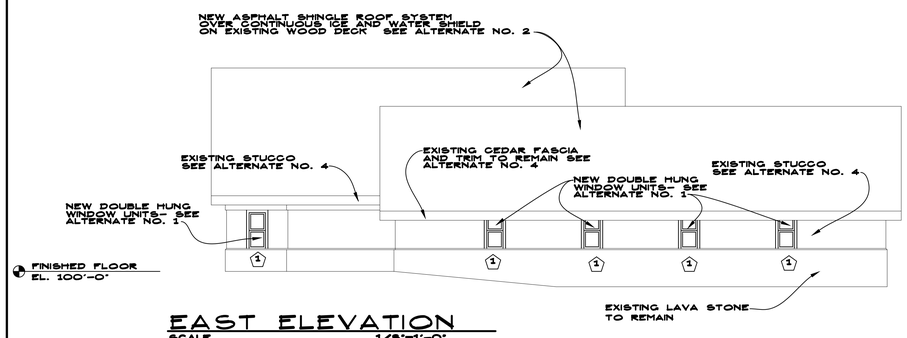
## NORTH ELEVATION
SCALE 1/8"=1'-0"




## WEST ELEVATION
SCALE 1/8"=1'-0"

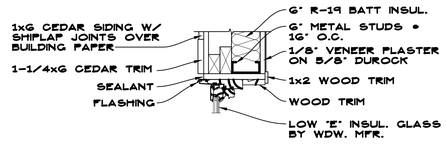



## SOUTH ELEVATION
SCALE 1/8"=1'-0"

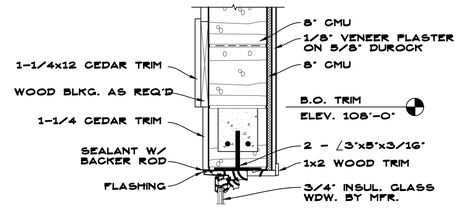



## EAST ELEVATION
SCALE 1/8"=1'-0"

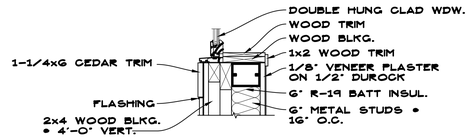
## ELEVATIONS
SCALE 1/4"=1'-0"



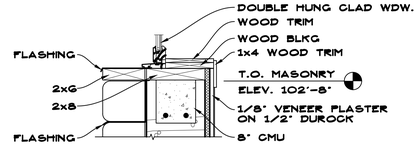

1 AX A3 WINDOW HEAD 1
SCALE: 1-1/2" = 1'-0"




3 AX A3 WINDOW HEAD 2
SCALE: 1-1/2" = 1'-0"




2 AX A3 WINDOW SILL 1
SCALE: 1-1/2" = 1'-0"




4 AX A3 WINDOW SILL 2
SCALE: 1-1/2" = 1'-0"

NOTE:
THESE HEAD AND SILL DETAILS ARE EXISTING WINDOW CONDITIONS. INSTALL THE NEW WINDOWS TO MATCH THESE EXISTING CONDITIONS. MAINTAIN EXIST. WOOD TRIM IF POSSIBLE OR REPLACE WITH NEW TRIM TO MATCH EXISTING. EXISTING TRIM TO BE STAINED UNDER ALT. BID NO. 4 NEW WOOD TRIM TO MATCH

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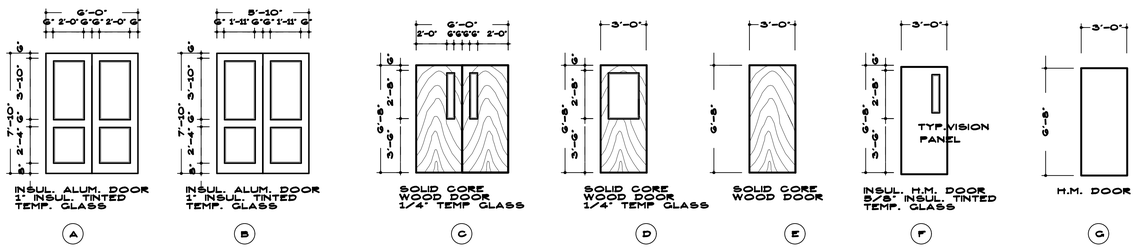
Loyet ARCHITECTS

SHEET NO.
A-3

JOB NO. 2246

DATE: 4/1/2023




INSUL. ALUM. DOOR 1" INSUL. TINTED TEMP. GLASS

INSUL. ALUM. DOOR 1" INSUL. TINTED TEMP. GLASS

SOLID CORE WOOD DOOR 1/4" TEMP GLASS

SOLID CORE WOOD DOOR 1/4" TEMP GLASS

SOLID CORE WOOD DOOR

INSUL. H.M. DOOR 5/8" INSUL. TINTED TEMP. GLASS

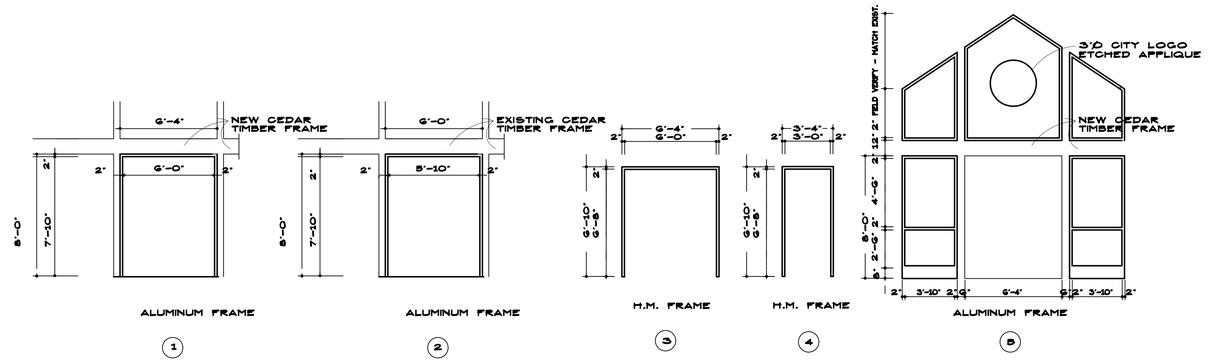
H.M. DOOR

# DOOR TYPES

SCALE : 1/4" = 1'-0"

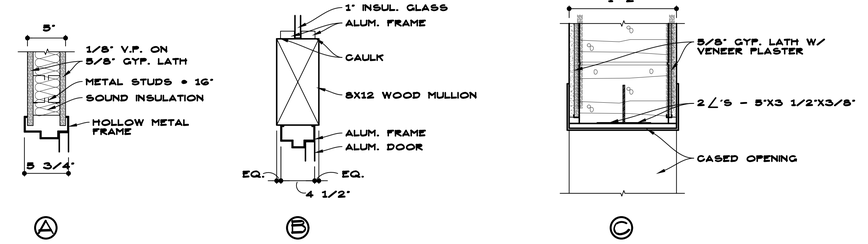
## DOOR SCHEDULE

| NO. | SIZE | TYPE | DOOR MATL. | FRAME | FRAME MATL. | HEAD | JAMB | HARD. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3'-10" X 7'-10" X 1 3/4" 1 FR. | A | ALUM. | 1 | ALUM. | - | - | - | |
| 2 | 5'-10" X 7'-10" X 1 3/4" 1 FR. | B | ALUM. | 2 | ALUM. | - | - | - | |
| 3 | 3'-0" x 6'-8" x 1 3/4" 1 FR. | C | WOOD | 3 | H.M. | - | - | - | |
| 4 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 5 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 6 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 7 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 8 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 9 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 10 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 11 | 3'-0" x 6'-8" x 1 3/4" | | WOOD | 4 | H.M. | - | - | - | |
| 12 | 3'-0" x 6'-8" x 1 3/4" | E | WOOD | 4 | H.M. | - | - | - | |
| 13 | 3'-0" x 6'-8" x 1 3/4" | E | WOOD | 4 | H.M. | - | - | - | |
| 14 | 3'-0" x 6'-8" x 1 3/4" | E | WOOD | 4 | H.M. | - | - | - | |
| 15 | 3'-0" x 6'-8" x 1 3/4" | E | WOOD | 4 | H.M. | - | - | - | |
| 16 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 17 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 18 | 3'-0" x 6'-8" x 1 3/4" | D | WOOD | 4 | H.M. | - | - | - | |
| 19 | 3'-0" x 6'-8" x 1 3/4" | G | H.M. | 4 | H.M. | - | - | - | |
| 20 | 3'-0" x 6'-8" x 1 3/4" | F | H.M. | 4 | H.M. | - | - | - | |
| 21 | 3'-0" x 6'-8" x 1 3/4" | F | H.M. | 4 | H.M. | - | - | - | B LABEL |
| | | | | | | - | - | - | B LABEL |



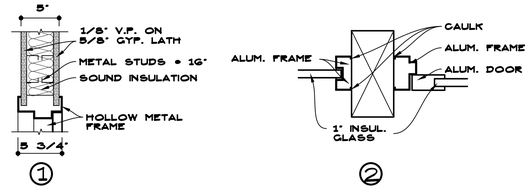

# FRAME TYPES

SCALE : 1/4" = 1'-0"



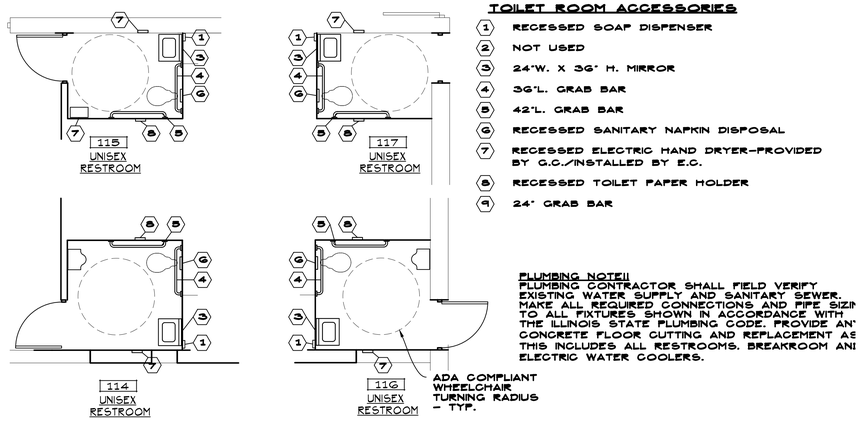

# HEAD DETAILS

SCALE : 1-1/2" = 1'-0"




# JAMB DETAILS

SCALE : 1-1/2" = 1'-0"



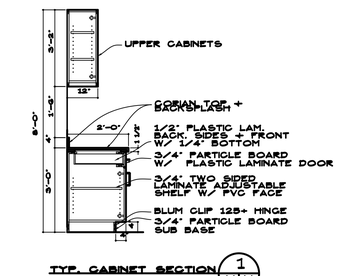

## TOILET ROOM ACCESSORIES

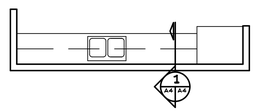
1. RECESSED SOAP DISPENSER
2. NOT USED
3. 24"W. X 36" H. MIRROR
4. 36"L. GRAB BAR
5. 42"L. GRAB BAR
6. RECESSED SANITARY NAPKIN DISPOSAL
7. RECESSED ELECTRIC HAND DRYER-PROVIDED BY G.C./INSTALLED BY E.C.
8. RECESSED TOILET PAPER HOLDER
9. 24" GRAB BAR

**PLUMBING NOTE!!**
PLUMBING CONTRACTOR SHALL FIELD VERIFY EXISTING WATER SUPPLY AND SANITARY SEWER. MAKE ALL REQUIRED CONNECTIONS AND PIPE SIZIN TO ALL FIXTURES SHOWN IN ACCORDANCE WITH THE ILLINOIS STATE PLUMBING CODE. PROVIDE AN CONCRETE FLOOR CUTTING AND REPLACEMENT AS THIS INCLUDES ALL RESTROOMS, BREAKROOM ANI ELECTRIC WATER COOLERS.

# ENLARGED RESTOOM PLANS

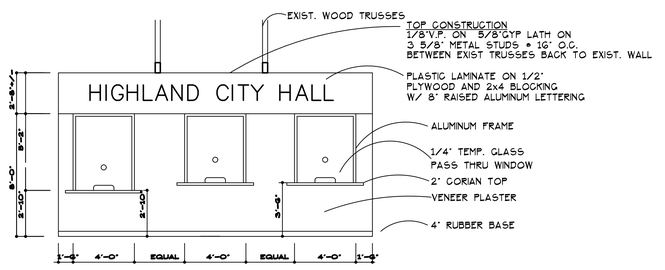
SCALE 1/4"=1'-0"




# ENLARGED FLOOR PLAN BREAKROOM 112

SCALE : 1/4" = 1'-0"




# COUNTER ELEVATIONS

SCALE 1/4"=1'-0"

ADDITIONS AND ALTERATIONS TO
EXISTING HIGHLAND CITY HALL
1115 BROADWAY
HIGHLAND, IL 62249


902 WALNUT STREET
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PH. 618-654-2322
FAX 618-654-3823

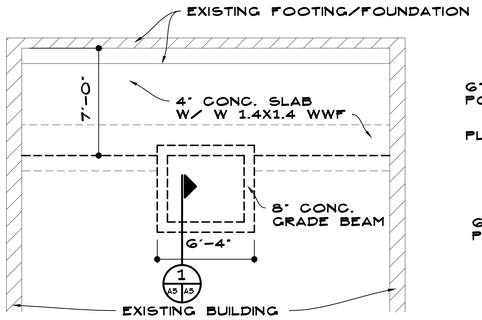
Loyet ARCHITECTS


SHEET NO.

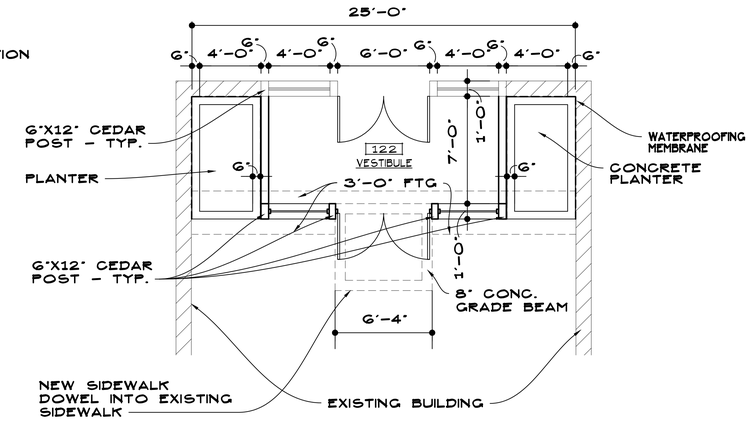
A-4

JOB NO. 2246

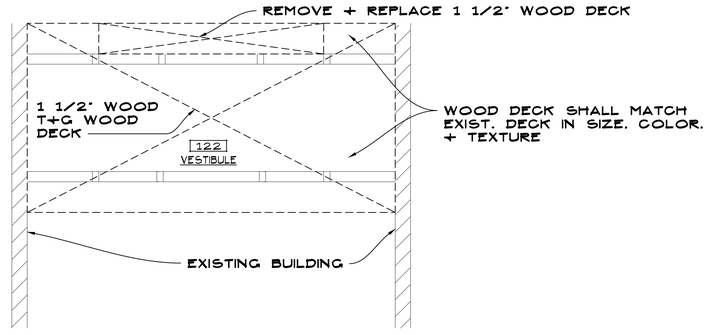
DATE: 4/1/2023




## ENTRY FOUNDATION PLAN



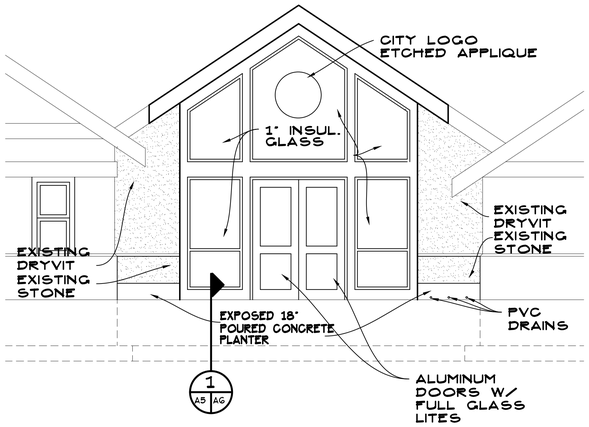

## ENTRY LAYOUT PLAN




## ENTRY PARTIAL CEILING PLAN

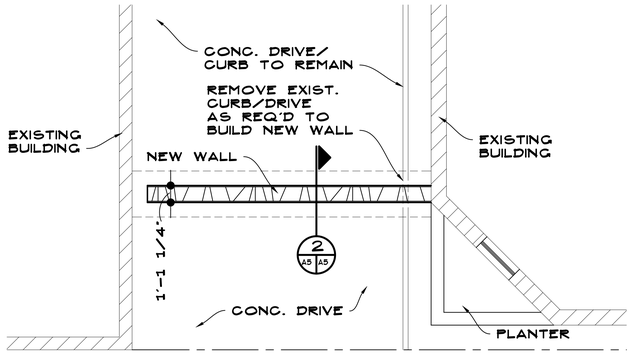
## ENLARGED ENTRY PLANS

SCALE 1/4"=1'-0"



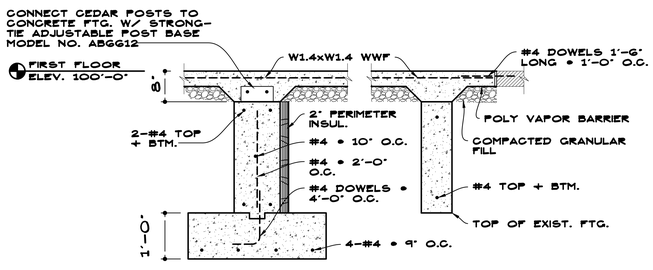

## ENTRY ELEVATION

SCALE 1/4"=1'-0"



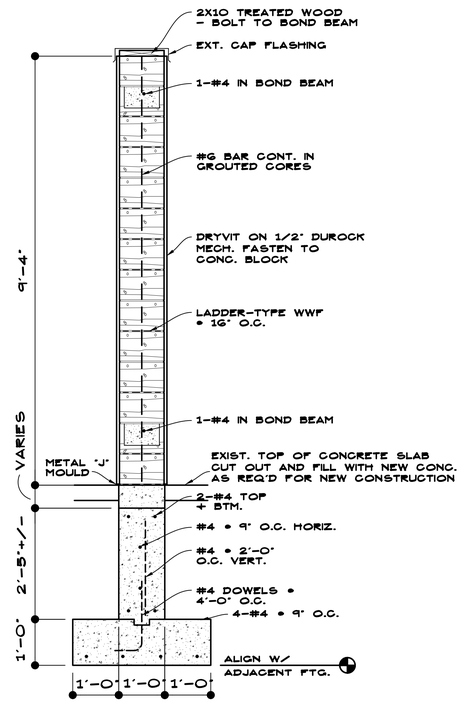

## NEW SCREEN WALL PLAN

SCALE 1/4"=1'-0"




## ENTRY FOUNDATION SECTION 1

SCALE 3/4"=1'-0" (A5 A5)




## NEW SCREEN WALL PLAN 2

SCALE 1/4"=1'-0" (A5 A5)


902 WALNUT STREET
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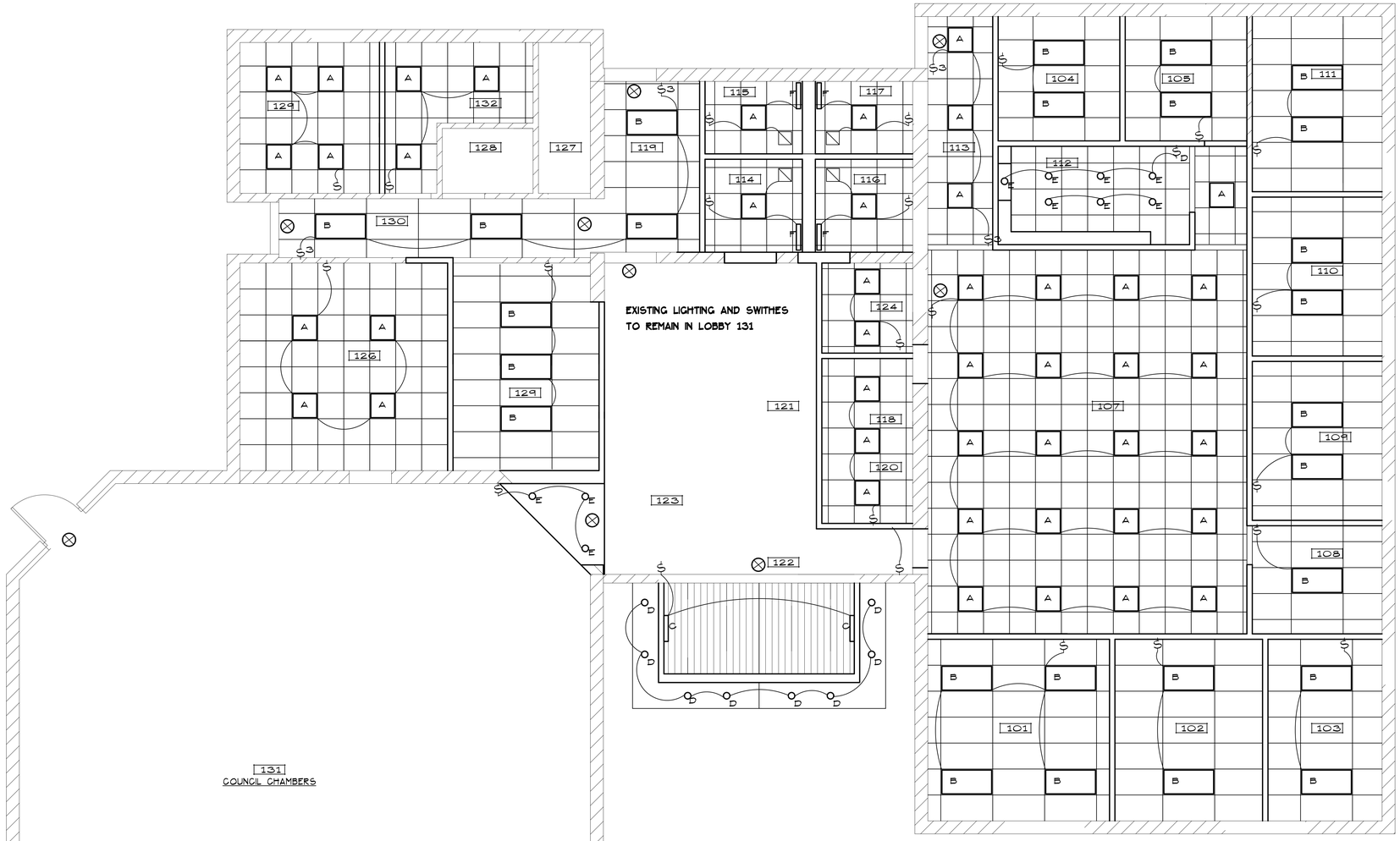
Loyet ARCHITECTS


ADDITIONS AND ALTERATIONS TO
EXISTING HIGHLAND CITY HALL
1115 BROADWAY
HIGHLAND, IL 62249

SHEET NO. A-5

JOB NO. 2246

DATE: 4/1/2023




LIGHTING PLAN
SCALE 1/4"=1'-0"

NORTH

NOTE!

EXISTING ELECTRICAL DEVICES AND LIGHTING TO REMAIN IN THE LOBBY 121 AND COUNCIL CHAMBERS 131 TO REMAIN. ALL NEW DEVICES, HVAC AND LIGHTING ETC. TO BE WIRED, CIRCUITED AND CONNECTED TO THE EXISTING PANELS BY THE E.C. IN ACCORDANCE WITH THE CURRENT VERSION OF THE NATIONAL ELECTRIC CODE.

## LIGHT FIXTURE SCHEDULE

| TYPE | MOUNTING | MANUFACTURER | CATALOG NUMBER | LAMPS | FINISH | REMARKS |
|---|---|---|---|---|---|---|
| A | LAY-IN | ACUITY | CPX 2X2 3200LM 40K | 3200 LM LED | WHITE | FIXED LIGHT OUTPUT |
| B | LAY-IN | ACUITY | CPX 2X4 3200LM 40K | 3200 LM LED | WHITE | FIXED LIGHT OUTPUT |
| C | WALL SCONCE | VISA LIGHTING | CB3872 L35KH 120V BMAT | L35KH | BMAT | FIXED LIGHT OUTPUT |
| D | SOFFIT | ACUITY | GJBKADJXXX90CRI | 3200 LED | BRONZE | EXTERIOR |
| E | RECESSED | PRESCOLITE | LCG5L-GLCSL14L40K8-WT | 4000 LED | WHITE | DIMMING |
| F | WALL | COLUMBIA | CWM2-40MLSM-FRFA-EU | 4000 LED | WHITE | FIXED LIGHT OUTPUT |
| X | SURFACE | COMPASS | CC | 4000 LED | WHITE | 120AC.RED.U |
| E | RECESSED | PRESCOLITE | LCG5L-GLCSL14L40K8-WT | 4000 LED | WHITE | |

ADDITIONS AND RENOVATIONS TO
EXISTING HIGHLAND CITY HALL
1115 BROADWAY
HIGHLAND, IL 62249

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HIGHLAND, IL. 62249
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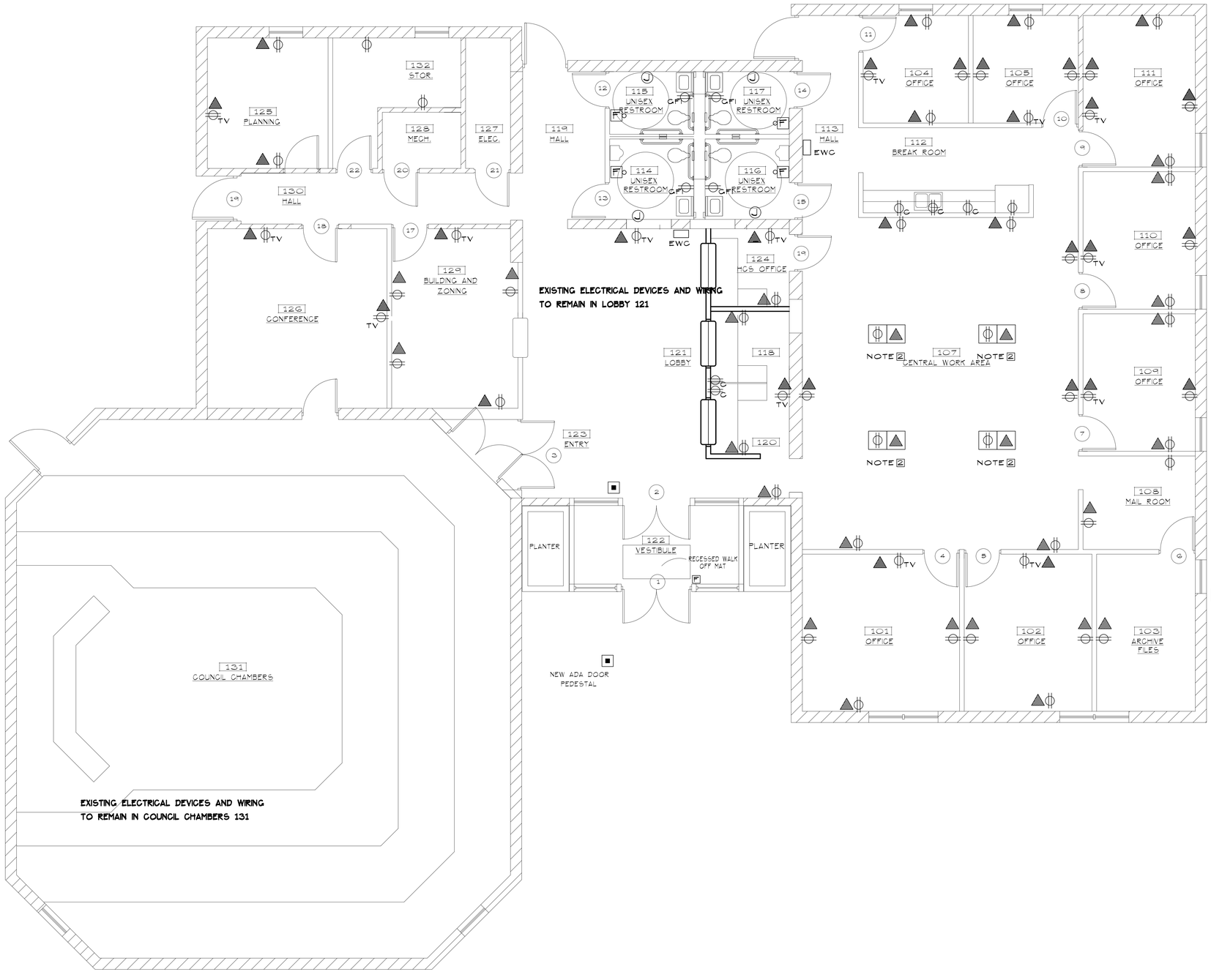
FAX 618-654-3823

Loyet ARCHITECTS

SHEET NO.
E-1
JOB NO. 2246
DATE: 4/1/2023




## GENERAL NOTES

ALL DATA WIRING TO BE RUN IN DATA TRAY ABOVE

EXISTING FIRE ALARM SYSTEM TO REMAIN. E.C. TO MODIFY EXISTING DEVICES AS REQ'D. ADD NEW DEVICES AND WIRING AS SHOWN AND CONNECT TO EXISTING F.A. SYSTEM.

CEILING.
EXISTING ELECTRICAL DEVICES AND LIGHTING TO REMAIN IN THE LOBBY 121 AND COUNCIL CHAMBERS 131 TO REMAIN. ALL NEW DEVICES, HVAC AND LIGHTING ETC. TO BE WIRED, CIRCUITED AND CONNECTED TO THE EXISTING PANELS BY THE E.C. IN ACCORD. WITH THE CURRENT VERSION OF THE NATIONAL ELECTRIC CODE.

CONNECT ANY EXISTING EXTERIOR OUTLETS TO NEAREST AVAILABLE CIRCUIT

ALL DATA CABLES CAT 6 SHALL BE RUN TO ELECTRICAL ROOM 127 OWNER TO TERMINATE CONNECTIONS AT THIS LOCATION.

ALL REGULAR POWER RECEPTACLE ARE TO BE WHITE AND SPECIFICATION GRADE WITH DEVICE PLATES TO

E.C. TO PROVIDE ELECTRICAL HOOK UP/ CONNECTIONS OF ALL DEVICES SHOWN ON THE MECHANICAL DRAWINGS

E.C. TO PROVIDE ANY CUTTING OF THE CONCRETE SLAB AS REQ'D AND FILLING WITH CONCRETE TO MATCH

OWNER TO PROVIDE AND INSTALL SECURITY AND CAMERA SYSTEM.

## KEYED NOTES

1. PROVIDE NIGHT LIGHT GFI RECEPTACLES IN BATHROOMS (TYP)
2. PROVIDE ON GRADE 2 COMPARTMENT FLOOR BOX LEGRAND RFB2-OG
3. EXISTING CLOCK TOWER CONTROLS TO BE RELOCATED IN ELECTRICAL ROOM 127. CONNECT TO NEAREST AVAILABLE CIRCUIT

## SYMBOLS

- ▲ – DUAL DATA PORT (2 RUNS CAT6 PER OUTLET) HOME RUN TO ELECTRICAL CLOSET TO BE TERMINATED BY OWNER
- ⏚ – DUPLEX OUTLET
- $ – SWITCH
- ⏚▲ – FLOOR (FLUSH MOUNT) W/ BRASS COVER PLATE
- ⏚WP – DUPLEX WEATHER PROOF
- ⏚C – GFI DUPLEX OUTLET COUNTER HEIGHT
- ⏚A▲ – DUPLEX OUTLET + DATA PORT ABOVE CEILING
- ⏚TV – DUPLEX OUTLET 6' A.F.F. – MONITOR
- ◎ – HAND DRYER
- ■ – DOOR PUSH BUTTON +42" A.B.F.
- FD – FIRE ALARM WALL STROBE– CONNECT TO EXIST. F.A.
- F – FIRE ALARM PULL STATION – CONNECT TO EXIST. F.A.

NORTH

ELECTRICAL PLAN
SCALE 1/4"=1'-0"

ADDITIONS AND ALTERATIONS TO
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1115 BROADWAY
HIGHLAND, IL 62249


902 WALNUT STREET
HIGHLAND, IL 62249
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Loyet ARCHITECTS


SHEET NO.
E 2

JOB NO. 2246

DATE: 4/1/2023

ROUND DUCT EQUIVALENT GIVEN

DUCT FROM MAIN TRUNK

DUCT SIZE TRANSITION

SUPPLY AIR DIFFUSER

RETURN AIR DIFFUSER

(TXX) THERMOSTAT WITH ZONE NO.

SRU#1 SRU#2 SRU#3 SRU#4 SRU#5

129 BUILDING AND ZONING
130 HALL
128 MECH.
127 ELEC.
115 REST ROOM
117 REST ROOM
114 REST ROOM
116 REST ROOM
125 PLANNING
126 CONFERENCE
124 GTS OFFICE
123 LOBBY
117 ENTRY
COUNCIL CHAMBER
000 VESTIBULE
750W EBH 1
750W EBH 2
000 OFFICE
000 OFFICE
111 OFFICE
112 BREAK ROOM
110 OFFICE
109 OFFICE
107 CENTRAL WORK AREA
108 MAIL ROOM
101 OFFICE
102 OFFICE
103 ARCHIVE FILES

FIRST FLOOR PLAN
SCALE 1"=42'

NORTH

EXPIRES 11-30-2024

ADDITIONS AND ALTERATIONS TO
EXISTING HIGHLAND CITY HALL
1115 BROADWAY
HIGHLAND, IL 62249


202 WALNUT STREET
HIGHLAND, IL 62249
PH. 618-654-2328
FAX 618-654-3823

Lange ARCHITECTS


SHEET NO.
M-1

JOB NO. 2246

DATE: 4/1/2023

**RESOLUTION NO. _____**

**A RESOLUTION APPROVING AND AUTHORIZING THE EXECUTION OF A CONTRACT FOR NON-EMERGENCY TRANSPORT SERVICES BY CITY EMS**

WHEREAS, the City of Highland, Madison County, Illinois (hereinafter "City"), is a non-home rule municipality duly established, existing and operating in accordance with the provisions of the Illinois Municipal Code (Section 5/1-1-1 et seq. of Chapter 65 of the Illinois Compiled Statutes); and

WHEREAS, City desires to enter into contracts with EMS customers for non-emergency services to clarify the scope of services performed and rates to be charged for services (*See* **Exhibit A**); and

WHEREAS, City has determined that the City Manager and/or Mayor should be authorized and directed, on behalf of City, to execute whatever documents are necessary to approve the contract between EMS and EMS customers for non-emergency services. *See* **Exhibit A.**

**NOW, THEREFORE, BE IT RESOLVED,** by the City Council of the City of Highland as follows:

*Section 1*. The foregoing recitals are incorporated herein as findings of the City Council of the City of Highland, Illinois.

*Section 2*. The contract between City EMS and EMS customers is approved. *See* **Exhibit A.**

*Section 3*. The City Manager and/or Mayor is authorized and directed, on behalf of the City of Highland, to execute and date the contract between City EMS and EMS customers. *See* **Exhibit A.**

*Section 4*. This Resolution shall be known as Resolution No._____ and shall be effective upon its passage and approval in accordance with law.

Passed by the City Council of the City of Highland, Illinois, approved by the Mayor, and deposited and filed in the Office of the City Clerk, on the ____ day of _____, 2023, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

_____
Kevin B. Hemann
Mayor
City of Highland
Madison County, Illinois

ATTEST:

_____
Barbara Bellm
City Clerk
City of Highland
Madison County, Illinois

# AGREEMENT FOR NON-EMERGENCY MEDICAL TRANSPORTATION

This Agreement for Non-Emergency Medical Transportation (the "Agreement") is entered into as of the date shown below between _____ (the "Facility") and the City of Highland, Illinois, EMS Service ("Ambulance").

WHEREAS, the purpose of this Agreement is to state the terms and conditions under which Ambulance will provide non-emergency transportation services for patients of the Facility.

NOW, THEREFORE, in consideration of the agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **Services Provided**. Ambulance shall provide patients of the Facility with non-emergency ambulance transportation services to or from the Facility (the "Services"). The ambulances used by Ambulance in the delivery of the Services shall be staffed by at least two (2) persons who are licensed or certified by law to render emergency medical care. Ambulance shall make the Services available twenty-four (24) hours per day, seven (7) days per week. The Services do not include, and this Agreement does not affect, the delivery by Ambulance of emergency medical transportation services. This Agreement pertains only to non-emergency services. The determination of whether a transport is an "emergency" or "non-emergency" shall be made solely at the discretion by Ambulance in accordance with established standards and protocols to be determined by Ambulance. Ambulance shall provide the Services upon request by an employee or other agent of the Facility.

2. **Fees for Services**. Ambulance shall charge the fees set forth on **Exhibit A** (attached hereto and incorporated herein by reference) for the Services provided by Ambulance hereunder. Ambulance shall have the right to change the fees it charges upon thirty (30) days written notice to the Facility.

3. **Required Documentation for the Services**.

a. The Facility shall be responsible for determining and documenting the medical necessity of all the Services requested by the Facility. Without limiting the generality of the foregoing, the Facility shall be responsible for obtaining any preauthorization, physicians orders, prior authorization number ("PAN"), physician certification statements ("PCS") or certificates of medical necessity required to document medical necessity or to comply with the requirements of Medicare, Medicaid or other third party payors for any patient.

b. For patients covered by Medicare Part B, the Facility shall deliver to Ambulance a completed PCS in the form prescribed by Ambulance prior to any transport or as soon thereafter as possible, but in no event later than three (3) days after the transport. The PCS submitted to Ambulance must include a description of the patient's physical condition that is sufficient under Medicare rules and regulations to justify the need for the patient to be transported by ambulance rather than alternative means. If the patient, or the patient's

authorized representative, is unable to sign the transport authorization form required for billing Medicare, a representative of the Facility will sign the form where indicated. The obligations of the Facility under this subparagraph (b) are subject to the applicable rules and regulations of Medicare and will be amended to comply with any changes in such rules and regulations.

c. For patients covered by Medicaid, the Facility shall realize that Ambulance service will only be provided for emergent medically necessary transports. The Facility will be responsible for any non-emergent or non-medically necessary transports. Should the Facility direct Ambulance to perform Services (non-emergent or non-medically necessary transports) for any Medicaid patients, Facility shall be responsible for payment of said services to Ambulance.

d. The Facility shall provide copies of all documentation required under this Agreement to Ambulance as soon as reasonably possible upon request by Ambulance or, at Ambulance's request, to any applicable payor. Further, the Facility shall maintain such documentation for the time period required by law.

e. The Facility shall routinely furnish Ambulance with all medical and financial information reasonably requested by Ambulance to assist Ambulance in, as applicable, preparing and submitting complete claims forms, submitting encounter data, determining what (if any) other third party coverage exists for a patient, documenting the medical necessity of any ambulance service performed for any third party payor billed directly by Ambulance, and otherwise performing the functions required or contemplated hereunder.

4. **Payment for the Services**.

a. In the event the Facility timely provides Ambulance with the documentation and information required under Paragraph 3 above with respect to a transport of a patient with a medical necessity for transport, when said patient is covered by Medicare, Medicaid or other third-party insurance, the Facility shall have no liability for the payment to Ambulance of its fees for such transport. In the event the Facility fails to timely provide Ambulance with the documentation and information required under Paragraph 3 above with respect to such a transport, the Facility shall be liable to, and shall pay, Ambulance the fees charged by Ambulance for such transport.

b. The Facility shall be liable to, and shall pay, Ambulance the fees charged by Ambulance for transports of patients not covered by Medicare, Medicaid, other third-party insurance, or Services (non-medically necessary transports). If the Facility makes payment of such fees within forty-five (45) days of the date of Ambulance's invoice, the Facility will receive a twenty-five percent (25%) discount from the fees currently stated on **Exhibit A**.

c. Notwithstanding anything to the contrary contained in subparagraphs (a) and (b) above, the Facility shall be liable to, and shall pay, Ambulance the fees charged by Ambulance for round-trip transports when the patient remains an inpatient of the Facility

and is transported from the Facility to another health care facility and is then returned to the Facility. The parties acknowledge that such round-trip transports will be billed by Ambulance as two (2) separate transports. If the Facility makes payment of the fees for such round-trip transports within forty-five (45) days of the date of Ambulance's invoice, the Facility will receive a twenty-five percent (25%) discount from the fees currently stated on **Exhibit A**.

d. The Facility will deliver payment in full to Ambulance of any amounts due and owing by the Facility under this Agreement within forty-five (45) days after the date of an invoice from Ambulance for such amounts. If the Facility fails to deliver such payment in full to Ambulance within forty-five (45) days of the date of Ambulance's invoice, the Facility will not receive any portion of the twenty-five percent (25%) discount stated in subparagraphs (b) and (c) above, and may be subject to 9% interest per annum to be charged on the balance owed by Facility to Ambulance.

5. **Term of Agreement**. This Agreement shall become effective on the date shown below for an initial one year term and shall automatically renew additional one year terms unless terminated by either party in accordance with Section 6 below.

6. **Termination**. This Agreement may be terminated pursuant to the following provisions:

a. Either party may terminate this Agreement with or without cause by giving thirty (30) days' written notice to the other party of the effective date of termination.

b. In the event of nonpayment by the Facility of any amount due hereunder, Ambulance may terminate this Agreement on ten (10) days written notice. Facility shall be responsible for any balance owed to Ambulance as stated herein.

c. In the event a party files a voluntary petition in bankruptcy or makes an assignment for the benefit of creditors or otherwise seeks relief from creditors under any federal or state bankruptcy, insolvency, reorganization or moratorium statute, or is the subject of an involuntary petition in bankruptcy which is not dismissed with prejudice within thirty (30) days of its filing, the other party may terminate this Agreement immediately.

Termination shall have no effect upon the rights or obligations of the parties arising out of any transactions occurring prior to the effective date of such termination.

7. **HIPAA Privacy Rule**. Ambulance, as an ambulance service provider, provides health care services directly to patients. As such, Ambulance is a "covered entity" under the HIPAA Privacy Rule. 45 C.F.R. §160.103. The HIPAA Privacy Rule expressly permits covered entities to share protected health information ("PHI") with another covered entity for treatment and payment activities of the entity receiving the PHI. 45 C.F.R. §164.506(c). Therefore, the Facility acknowledges and agrees that it is permitted to disclose PHI to Ambulance for its

treatment and payment activities without the need for a business associate agreement, patient authorization or any other permissions or approval.

8. **Notices**. Any notice required to be given pursuant to this Agreement shall be in writing and shall be sent by certified mail, registered mail, or hand delivery to the parties at the addresses set forth below:

**Ambulance:**

_____
CITY MANAGER AND/OR EMS CHIEF, HIGHLAND, IL

**Facility:**

_____
FACILITY MANAGER AND/OR FACILITY AGENT

9. **Parties Bound**. This Agreement shall be binding upon and inure to the benefit of the parties and their respective legal representatives, assigns and successors.

10. **Legal Construction**. In case one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision in this Agreement and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained in it.

11. **Entire Agreement**. This Agreement constitutes the entire agreement of the parties on the subject matter and supersedes any prior understanding or written or oral agreements between the parties respecting the subject matter of this Agreement.

12. **Attorneys' Fees**. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs, and expenses in addition to any other relief to which it may be entitled.

13. **Governing Law**. This Agreement shall be construed under and in accordance with the laws of the State of Illinois, and the Parties to this Agreement agree to Madison County, Illinois as the venue for all necessary dispute resolution or litigation.

14. **No Assignment**. Neither this Agreement nor any duties or obligations under it shall be assignable by either party without the prior written consent of the other party. In the event of an Assignment by either party to which the other party has consented, the assignee or the assignees legal representative shall agree in writing to assume, perform, and be bound by all of the covenants, obligations and agreements contained in this Agreement.

15. **Amendment**. This Agreement may be only amended by a written instrument signed by both parties.

16. **Medicare Access to Records**. To the extent required by Section 1395x(v)(1)(I) of Title 42 of the United States Code, until the expiration of four years after the termination of this Agreement, Ambulance shall, upon written request, make available to the Secretary of the United States Department of Health and Human Services, or to the Comptroller General of the United States General Accounting Office, or to any of their duly authorized representatives, a copy of this Agreement and such books, documents, and records as are necessary to certify the nature and extent of the costs of the Services provided by Ambulance under this Agreement.

17. **Independent Contractor.** It is understood and agreed that Ambulance is engaged by the Facility to provide the Services as an independent contractor and that no employee or agent of one party shall be considered an employee or agent of the other party. Neither party has the right to bind the other party to any contract or any other obligations.

18. **Multiple Counterparts**. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original for all purposes.

19. **Indemnity, Hold Harmless, and Tender of Defense**. Facility shall indemnify and hold harmless Ambulance, its agents, officers, lawyers, and employees against all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, costs and expenses (including any liabilities, judgments, costs and expenses and attorney's fees) which may arise directly or indirectly from anything other than the specific Services provided by Ambulance to Facility, and as stated herein.

Ambulance shall indemnify and hold harmless Facility, its agents, officers, lawyers, and employees against all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, costs and expenses (including any liabilities, judgments, costs and expenses and attorney's fees) which may arise directly or indirectly from anything other than the specific Services provided by Ambulance to Facility, and as stated herein.

20. **Acceptance of Contract.** Facility and Ambulance intend to execute this Agreement prior to Ambulance obtaining the approvals necessary to give force and effect to this Agreement. Ambulance represents that this Agreement must be passed via Resolution by the City of Highland, Illinois ("City"), and the affirmative vote of the majority of the corporate authorities then holding office. Neither Facility nor Ambulance shall have any obligation under this Agreement until City has obtained all necessary approvals to this Agreement having full force and effect.

21. **Insurance.** Facility and Ambulance agree they will maintain insurance in such types, coverages and coverage amounts necessary to cover the performance under the terms of this Agreement. Facility and Ambulance shall secure and maintain a minimum level of insurance as stated below:

1) Commercial general liability insurance:

A. One million dollars ($1,000,000) for bodily injury or death to each person;

B. One million dollars ($1,000,000) for property damage resulting from any one accident;

C. One million dollars ($1,000,000) for all other types of liability;

D. Three million dollars ($3,000,000) annual aggregate insurance;

2) Worker's compensation with statutory limits; and

3) Employer's liability insurance with limits of not less than one million dollars ($1,000,000) per employee and per accident.

EXECUTED to be effective as of _____, 2023.

City of Highland, Illinois

By:_____

Facility Name

By:_____
Printed Name:_____
Title: _____
NPI #: _____

**ORDINANCE NO: 3189**

**AN ORDINANCE AMENDING CITY CODE SECTIONS 2-261 AND 2-262 PERTAINING TO THE HIGHLAND AMBULANCE SERVICE, THE TYPE OF SERVICES TO BE RENDERED, THE AREA TO BE SERVED, AND THE CHARGES TO BE MADE FOR THE HIGHLAND AMBULANCE SERVICE**

**WHEREAS**, the City of Highland, Madison County, Illinois (hereinafter "City"), is a non-home rule municipality duly established, existing and operating in accordance with the provisions of the Illinois Municipal Code (Section 5/1-1-1 et seq. of Chapter 65 of the Illinois Compiled Statutes); and

**WHEREAS**, the EMS Chief recommends amendments to the City Code pertaining to the Highland Ambulance Service, the type of services to be rendered, the area to be served, and the charges to be made for the Highland Ambulance Service; and

**WHEREAS**, City has determined that it is in the best interests of public health, safety, general welfare, and economic welfare to amend the City Code pertaining to the Highland Ambulance Service, the type of services to be rendered, the area to be served, and the charges to be made for the Highland Ambulance Service; and

**WHEREAS**, the City Council finds that the City Manager and/or Mayor should be authorized and directed, on behalf of the City, to execute whatever documents are necessary to amend the City Code pertaining to the Highland Ambulance Service, the type of services to be rendered, the area to be served, and the charges to be made for the Highland Ambulance Service.

**NOW, THEREFORE, BE IT ORDAINED, by the City Council of the City of Highland, Illinois, as follows:**

*Section 1.* The foregoing recitals are incorporated herein as findings of the City Council of the City of Highland, Illinois.

*Section 2.* Chapter 2 – Administration, Article IV. – Department of Public Safety, Division 4. – Ambulance Service, Sec. 2-261. – Established, shall be amended to state:

**Sec. 2-261. – Established**

The Highland Ambulance Service is hereby established. The area to be serviced, the type of services to be rendered, and the charges to be made for such services shall be as provided by Ordinance adopted by the City Council.

*Section 3.* Chapter 2 – Administration, Article IV. – Department of Public Safety, Division 4. – Ambulance Service, Sec. 2-262. – Charges, shall be amended to state:

**Sec. 2-262. – Charges**

**1. Emergency Response**

*Definition:* Emergency response is a BLS or ALS level of service that has been provided in immediate response to a 911 call or the equivalent. An immediate response is one in which the ambulance provider/supplier begins as quickly as possible to take the steps necessary to respond to the call.

The charges to be made for services rendered by the Highland Ambulance Service shall be as follows:

For **emergency service**, as defined by the State of Illinois Emergency Medical Systems Act:

A. **District Resident:** Service rendered to residents of the City of Highland and those governmental units with whom the City of Highland has contractual agreements to render such ambulance service and those units of government who contribute to the cost of the operation of the Highland Ambulance Service based on their assessed value the sum of :

| | | | |
|---|---|---|---|
| Basic Life Support | | $ | 800.00 |
| Advanced Life Support | Level 1 | $ | 1,000.00 |
| Advanced Life Support | Level 2 | $ | 1,100.00 |
| Specialty Care Transport (SCT) | | $ | 1,100.00 |

B. **Non- District Resident:** Service rendered to persons who do not reside in the City of Highland and those governmental units with whom the City of Highland has contractual agreements to render such ambulance service and those units of government who contribute to the cost of the operation of the Highland Ambulance Service based on their assessed value the sum of :

| | | | |
|---|---|---|---|
| Basic Life Support | | $ | 1,000.00 |
| Advanced Life Support | Level 1 | $ | 1,200.00 |
| Advanced Life Support | Level 2 | $ | 1,300.00 |
| Specialty Care Transport (SCT) | | $ | 1,500.00 |

## 2. Non-Emergency Response

*Definition:* Non-emergency response is a BLS or ALS level of service that has been provided in response to a call for transport from a health care facility, patient residence, etc. for a scheduled appointment or procedure. An Immediate response for transport is not required.

The charges to be made for service rendered by the Highland Ambulance Service shall be as follows:

For **non-emergency service**, defined by the State of Illinois Emergency Medical Systems Act:

A. **District Resident:** Service rendered to residents of the City of Highland and those governmental units with whom the City of Highland has contractual agreements to render such ambulance service and those units of government who contribute to the cost of the operation of the Highland Ambulance Service based on their assessed value the sum of :

| | | | |
|---|---|---|---|
| Basic Life Support | | $ | 800.00 |
| Advanced Life Support | Level 1 | $ | 1,000.00 |

B. **Non- District Resident:** Service rendered to persons who do not reside in the City of Highland and those governmental units with whom the City of Highland has contractual agreements to render such ambulance service and those units of government who contribute to the cost of the operation of the Highland Ambulance Service based on their assessed value the sum of :

| | | | |
|---|---|---|---|
| Basic Life Support | | $ | 1,000.00 |
| Advanced Life Support | Level 1 | $ | 1,200.00 |

## 3. Itemized Additional Charges

The following charges shall be assessed in addition to all other charges if such service is rendered:

| | | | |
|---|---|---|---|
| 1. | For requesting ambulance service, either emergency or non-emergency, that is refused upon arrival | $ | 63.00 |
| 2. | Loaded Mileage per mile: billed - per 1/10 mile | $ | 19.00 |
| 3. | Oxygen | $ | 42.00 |
| 4. | Disposable Supplies | $ | 100.00 |
| 5. | Paramedic Intercept | $ | 150.00 |
| 6. | Lift Assist – No Treatment | $ | 70.00 |

a. Residents
- 3 free lift assists per calendar year
- After 3, charged $70.00 per lift

## 4. Geographical Area

The area to be served and the places from which patients shall be picked up and transported shall be as follows:

1. For those trips that qualify as emergencies as defined by the Emergency Medical System Act, a patient will be transported from any point upon a highway designated by the Department of transportation of the State of Illinois near the city of Highland, and from any point within the boundaries of any governmental unit with whom the City has contracted to provide such service, or provides such ambulance service based upon assessed value, and any such patient shall be transported only to the nearest appropriate hospital, unless the resource hospital's physician specifically orders that the patient be transported directly to another hospital and provides that trip for emergency service shall also be made from and to a destination necessary to comply with any mutual aid agreements entered into by this City for such service.

2. For trips other than emergencies, as defined by the State of Illinois Emergency Medical Systems act, patients shall be transported only from a point either within the boundaries of the City of Highland or governmental unit with which the City has contracted to provide such service, or a governmental unit who contributes to the cost of such service based an assessed value, and such a patient shall be transported to the nearest appropriate hospital unless the patient is being transported from a hospital in Highland, or in the area governed by a governmental unit with whom the City has either a contract to provide ambulance service or which contributes to the ambulance service based upon assessed value or from a hospital where Highland Ambulance Service has previously taken the patient, then in which case the trip shall be made only to another hospital or to a nursing home or a place of residence of the patient; and in addition thereto, such ambulance trips may be made from and to points necessary to comply with mutual aid agreements entered into by this City.

## 5. Definitions

### Basic Life Support

*Definition:* Basic life support (BLS) is transportation by ground ambulance vehicle and the provision of medically necessary supplies and services, including BLS ambulance services as defined by the State. The ambulance must be staffed by an individual who is qualified in accordance with State and local laws as an emergency medical technician-basic (EMT-Basic).

### Advanced Life Support Assessment

*Definition:* Advanced life support (ALS) assessment is an assessment performed by an ALS crew as part of an emergency response that was necessary because the patient's reported condition at the time of dispatch was such that only an ALS crew was qualified to perform the assessment. An ALS assessment does not necessarily result in a determination that the patient requires an ALS level of service.

### Advanced Life Support, Level 1

*Definition:* Advanced life support, level 1 (ALS1) is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and services including the provision of an ALS assessment or at least one ALS intervention.

**Advanced Life Support, Level 2**
*Definition:* Advanced life support, level 2 (ALS2) is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and services including (1) at least three separate administrations of one or more medications by intravenous push/bolus or by continuous infusion (excluding crystalloid fluids) or (2) ground ambulance transport and the provision of at least one of the ALS2 procedures listed below.

For purposes of this definition, the ALS2 procedures are:
(1) Manual defibrillation/cardioversion.
(2) Endotracheal intubation.
(3) Central venous line.
(4) Cardiac pacing.
(5) Chest decompression.
(6) Surgical airway.
(7) Intraosseous line.

**Specialty Care Transport (SCT)**
*Definition:* Specialty Care Transport (SCT): when medically necessary, for a critically injured or ill patient, a level of inter-facility service provided beyond the scope of the paramedic defined in the national EMS Education and Practice Blueprint. This is necessary when a patient's condition requires ongoing care that must be provided by one or more health professionals in an appropriate specialty area, e.g. nursing, medicine, respiratory care, cardiovascular care, or a paramedic with additional training.

**Treatment With No Transport:**
*Definition:* Treatment without transport shall be charged at the appropriate BLS or ALS (1 or 2) rate without mileage, when an ambulance is dispatched to an emergency medical request and medical care is provided to the patient and the patient then refuses transport to a medical facility for continuing / follow-up care.

**Advanced Life Support Intervention**
*Definition:* Advanced life support (ALS) intervention is a procedure that is, in accordance with
State and local laws, beyond the scope of practice of an emergency medical technician-basic (EMT-Basic).

**Paramedic Intercept:**
*Definition:* Paramedic Intercept services are ALS services provided by an entity that does not provide that level of ambulance transport.

## 6. Advanced Life Support (ALS) Personnel

*Definition:* ALS personnel are individuals trained to the level of the emergency medical technician- intermediate (EMT-Intermediate) or paramedic.

**EMT-Intermediate**
*Definition:* EMT-Intermediate is an individual who is qualified, in accordance with State and local laws, as an EMT-Basic and who is also certified in accordance with State and local laws to perform essential advanced techniques and to administer a limited number of medications.

**EMT-Paramedic**
*Definition:* EMT-Paramedic possesses the qualifications of the EMT-Intermediate and, in accordance with State and local laws, has enhanced skills that include being able to administer additional interventions and medications.

**Loaded Mileage**
*Definition:* Loaded mileage is the number of miles for which the patient is transported in the ambulance vehicle.

**Mileage Billed**

*Method:* All mileage less than 100 miles will be billed to the nearest tenth of a mile. Loaded mileage over 100.1 will be billed to the next higher full mile. If a payor system is unable to accept fractional mileage as of January 1st 2018, then mileage will be billed using a ***conventional rounding method*** with a minimum of 1 mile.

**Point of Pick-Up**
*Definition:* Point of pick-up is the location of the beneficiary at the time he or she is placed on board the ambulance.

## 7. Charges for Copies of Medical Records and Records Request Fees

A handling charge shall be made for complying with each request for copies of medical records. An additional charge shall be made for copying the individual pages of the medical records, based upon the fee schedule set from time to time by Illinois State Statute 735 ILCS 5/8-2006.

**Electronic Records (Source: Public Act 95-480)**

- Records retrieved from scanning, digital imaging, electronic information or other digital format do not qualify as microfiche or microfilm retrieval for purposes of calculating charges.
- For electronic records, retrieved from a scanning, digital imaging, electronic information or other digital format in a electronic document, a charge of 50% of the per page charge for paper copies listed above. This per page charge includes the cost of each CD Rom, DVD, or other storage media.

***An annual adjustment of copying fees will be applied each year as required under 735 ILCS 5/8-2006.***

That this Ordinance shall be known as Ordinance No: 3189 and shall be effective upon adoption with implementation date of May 17th, 2022.

Passed by the City Council of the City of Highland, Illinois, and deposited and filed in the Office of the City Clerk, on the 16th day of May, 2022, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES: Sloan, Frey, Hipskind, Bellm

NOES: None

APPROVED:

_____

Kevin B. Hemann, Mayor
City of Highland
Madison County, Illinois

ATTEST:

_____

Barbara Bellm, City Clerk
City of Highland
Madison County, Illinois

HIGHLAND
PARKS & RECREATION… The *FUN* Theory!

To: Mayor Kevin Hemann, City Council Members,
City Manager, Chris Conrad

From: Mark Rosen, Director of Parks & Recreation

Date: April 3, 2023

Subject: Silver Lake – Silver Lake Watershed Report

Following is a brief outline of the work that has been completed in Silver Lake and its watershed. In addition, I will provide a condensed list of projects on the proverbial dashboard to work toward in the coming years.

***LAKE STUDIES***

Silver Lake and the contiguous land around the lake have been studied extensively since the early 1980's. Much of this data collection has been used to position Highland into being awarded grants to address projects to reduce sediment from farm fields and native habitat from entering the lake.
Although data collected has been important, it wasn't until a formal comprehensive plan, completed in 2008, was able to incorporate the data with a best management plan. The BMP's will, for the most part be consistent, however, it will show measurements with the changes in quantities/distances/number of locations, etc.

***BEST MANAGEMENT PLANS COMPLETED***

In our most recent list of accomplishments, the following BMP's were implemented (page 6 of Heartlands Conservancy report 2021).

- Water and sediment controls basins (WASCBs) – 15,970 linear feet at seven sights
- Grassed waterways – 17.4 acres in 11 locations
- Ponds – three were installed
- Conservation cover – 17.03 acres covered
- Streambank and stream channel stabilization – 3,000 feet of stream, 1,500 channel and 600 feet of bank in three locations
- Shoreline stabilization – 2,035 feet
- Grade Control structures – eight locations
- Diversion channels – 2,692 in two locations
- Woodland Improvement practices – 20 acres
- Nutrient management practices – none of the 800 acres planned

***PARNTERSHIPS***

Good partnerships make for better, more far reaching capabilities. In this past grant round, we were able to finally partner with landowners in the watershed to not only maximize the use of dollars but most importantly, address issues that have a direct effect on the lake.

The City of Highland partnered with 16 different landowners to complete 32 projects other than those completed on city managed properties. In all, these projects show an overall reduction in the following:

- Phosphorus load reduction = 2,794 lbs./year
- Nitrogen load reduction = 5,211 lbs./year
- Sediment load reduction = 3,132 tons/year

***WATER STORAGE CAPACITY***

In the Phase 1 Diagnostic-Feasibility Study (HDR-CWI, 2008) and the Watershed Plan (HDR, 2011) the data that was the most startling was that the northern third of the lake had lost 50% of its water storage capacity but overall, 33% of the entire lake's storage capacity has been lost due to sediment since 1962.

In a March, 2001 report, (William C. Bogner, Illinois State Water Survey – Watershed Science Section, Champaign, IL) findings showed sediment has continuously been reducing capacity:

1962 – 7,322 acre-feet/2,386 million gallons

1999 – 5,832 acre-feet/1,900 million gallons

In the aforementioned reports, an estimated 2,977,502 cubic yards of sediment was at the lake's bottom.

Sedimentation Survey of Highland Silver Lake, Madison County, Illinois

***FUTURE CAPITAL***

As previously mentioned, many of the ongoing projects will consist of the same BMP's completed already. However, the two major projects that will be essential are the installation of a low level dam (weir) and dredging. Until grant guidelines allow for dredging, the city's focus should be on installing the weir in a manner in which it will slow down the flow of water, thus trapping sediment behind it, while allowing non-motorized watercraft to access the northern reaches of the lake until it is no longer navigable.

If and/or when the weir is installed, and should grant guidelines remain consistent, then the city will be able to apply for grant funding to dredge in order to allow the weir to operate in the manner in which it is intended. Until then, according to current guidelines, dredging is simply considered "maintenance".

In the HDR, 2011 Watershed Plan, the data that was the most startling was that the northern third of the lake has lost 50% of its water storage capacity but overall, 33% of the entire lake's storage capacity has been lost due to sediment since 1962.

***CONCLUSION***

There is no doubt that it is difficult and sometimes hard to understand the issues Silver Lake is contending with simply because water comes out of the tap. However, in my opinion, Highland is what it is today because of the foresight of the lake's creation and every available resource should be devoted to its longevity.

EXPENDITURE LISTING #1239
FROM 03/18/2023 TO 03/31/2023

City of Highland
1115 Broadway, PO Box 218
Highland IL 62249

| Check No. | Vendor/Employee | Transaction Description | Date | Amount |
|---|---|---|---|---|
| Fund: 001 General Fund | | | | |
| Department: 000 Balance Sheet Accounts | | | | |
| 12189 | AMAZON CAPITAL SERVICES | 1 QTY 3 INCH LETTER OPENER LETTER SLITTER SET, SPIRAL NOTEBOOKS | 03/24/2023 | 180.32 |
| 12197 | Carrot-Top Industries | 6 QTY 4X6 NYLON US FLAG, 4 QTY 4X6 NYLIN IL FLAG | 03/24/2023 | 640.39 |
| 12232 | Highland Optimist Club | Supplies for Central Purchasing | 03/24/2023 | 1,278.00 |
| | | Total for Department: 000 Balance Sheet Accounts | | 2,098.71 |
| Department: 011 General Admin | | | | |
| 12162 | Southwestern Illinois Council of Mayors | SWICOM MEETING FOR MAYOR 03/23/23 | 03/22/2023 | 45.00 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | 03/24/2023 | 69.61 |
| 12202 | City Utilities | UTILITES- CITY HALL | 03/24/2023 | 853.13 |
| 12230 | HIGHLAND AUTOWASH LLC | UNLIMITED CAR WASH - CITY HALL | 03/24/2023 | 20.00 |
| 12231 | Highland Communication Services | HCS SERVICES - HACSM | 03/24/2023 | 41.95 |
| 12243 | LEWIS BRISBOIS BISGAARD & SMITH LLP | CITY OF HIGHLAND V. JASON METTLER FILE NO: 15386-3 | 03/24/2023 | 136.67 |
| 12246 | LOYET-ARCHITECTS | CITY OF HIGHLAND CITY HALL REVISIONS JOB# 2246 | 03/24/2023 | 6,000.00 |
| 12247 | Mastercard | HOMEDEPOT | 03/24/2023 | 1,623.27 |
| 12284 | Third Millennium Assoc Inc | UTILITY BILL RENDERING | 03/24/2023 | 206.54 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | 03/24/2023 | 230.85 |
| 12297 | Watts Copy Systems Inc | COPIER BASE RATE FOR USAGE | 03/24/2023 | 72.13 |
| 12308 | AssuredPartners Cornerstone LLC | FEBRUARY MONTHLY FSA PLAN ADMINISTRATION | 03/29/2023 | 175.50 |
| 12310 | Mastercard | ZOOM 02/21/23-03/20/23 | 03/29/2023 | 739.90 |
| 12314 | United Municipal Security | CD SERVICE | 03/29/2023 | 1,158.23 |
| | | Total for Department: 011 General Admin | | 11,372.78 |
| Department: 012 Police Dept | | | | |
| 12187 | Aladtec, Inc | POLICE DEPT SCHEDULING SOFTWARE | 03/24/2023 | 2,465.00 |
| 12188 | ALLIED WASTE TRANSPORTATION INC | PD RECYCLING SERVICE 02/01/23-02/28/23 | 03/24/2023 | 45.00 |
| 12189 | AMAZON CAPITAL SERVICES | CREDIT FOR INVOICE 16L3-PDNT-QJWC | 03/24/2023 | 8.53 |
| 12190 | Ameren Illinois | Utilities | 03/24/2023 | 539.17 |
| 12202 | City Utilities | RADIO TOWER UTILITIES | 03/24/2023 | 1,297.23 |
| 12215 | Everlasting Etch | Engraving | 03/24/2023 | 12.00 |
| 12231 | Highland Communication Services | TV/PHONE/INTERNET PSB | 03/24/2023 | 656.95 |
| 12241 | Knebel's Auto Body Inc | CAR 10 REPAIR SIDE MIRROR | 03/24/2023 | 392.55 |
| 12242 | LeadsOnline LLC | LEADS ONLINE-INVESTIGATION SERVICE PKG | 03/24/2023 | 2,441.00 |
| 12247 | Mastercard | Hotel Room for Athmer for Criminal Justice Summit | 03/24/2023 | 1,663.83 |
| 12260 | O'Reilly Automotive Inc | 1 QTY WIPER BLADES, 1 QTY WIPER BLADES | 03/24/2023 | 60.78 |
| 12273 | Reding Tire & Battery Inc | CAR 8 OIL CHANGE, FRONT BRAKES & ROTORS, REAR BRAKES & ROTORS | 03/24/2023 | 523.20 |
| 12276 | Splish Splash Auto Bath LLC | POLICE DEPT CAR WASHES | 03/24/2023 | 117.00 |
| 12283 | The Mail Box Store | USPS-PRI WARRICK COUNTY SHERIFFS OFFICE BOONVILLE AR | 03/24/2023 | 13.98 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | 03/24/2023 | 271.46 |
| 12309 | JOINER SHEET METAL & ROOFING, INC | HIGHLAND PUBLIC SAFETY REPAIRS LABOR & MATERIALS | 03/29/2023 | 3,142.52 |
| 12310 | Mastercard | TRACFONE.COM | 03/29/2023 | 1,164.29 |
| | | Total for Department: 012 Police Dept | | 14,814.49 |
| Department: 013 Building & Zoning | | | | |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | 03/24/2023 | 8.38 |
| 12200 | City Of Highland | UTILITY CHARGE | 03/24/2023 | 192.21 |
| 12231 | Highland Communication Services | COMMUNICATION CHARGE | 03/24/2023 | 169.01 |
| 12243 | LEWIS BRISBOIS BISGAARD & SMITH LLP | CITY OF HIGHLAND V. JASON METTLER FILE NO: 15386-3 | 03/24/2023 | 136.66 |
| 12245 | Craig Loyet | FINAL PLUMBING- 12613 ST RT 143 | 03/24/2023 | 142.50 |
| 12247 | Mastercard | DROPBOX 02/28/23-03/28/23 | 03/24/2023 | 1,067.28 |
| 12275 | Timothy Singler | FINAL PLUMBING- 12613 ST RT 143 | 03/24/2023 | 142.50 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | 03/24/2023 | 54.29 |
| 12304 | Zobrist Electric Inc | FINAL ELECTRICAL INSPECTIONS | 03/24/2023 | 1,804.60 |
| | | Total for Department: 013 Building & Zoning | | 3,717.43 |
| Department: 014 Fire Dept | | | | |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | 03/24/2023 | 2.09 |
| 12190 | Ameren Illinois | GAS CHARGES | 03/24/2023 | 434.48 |
| 12201 | City Of Highland | DUMPSTER SERVICES FIREHOUSE | 03/24/2023 | 590.00 |
| 12202 | City Utilities | Utilities | 03/24/2023 | 1,278.96 |
| 12209 | DINGES FIRE COMPANY | VANGUARD GLOVES- STRUCTURAL FIREFIGHTING GLOVES | 03/24/2023 | 860.48 |
| 12223 | GLOBAL TECHNICAL SYSTEMS, INC | 2 QTY KENWOOD DC POWER SUPPLY, 1 QTY KENWOOD CABLE 10' MED POWER | 03/24/2023 | 1,719.27 |
| 12235 | HSHS Medical Group Inc | PHYSICAL, PRE-PLACEMENT - RANDALL, GREGORY | 03/24/2023 | 85.00 |
| 12241 | Knebel's Auto Body Inc | MTN/REPAIR UNIT 1590 2017 CHEV TAHOE | 03/24/2023 | 1,129.92 |
| 12253 | MIDWEST OCCUPATIONAL MEDICINE, LTD | FIT TEST - QUANTITATIVE | 03/24/2023 | 91.00 |
| 12255 | MUNICIPAL EMERGENCY SERVICES, INC. | FIRE UNIFORM SUPPLIES | 03/24/2023 | 419.00 |
| 12265 | PLUMBERS SUPPLY #215 | 1 QTY 15 PC TITA DRILL BIT SET SHOC, 64 PC STANDARD DRV BIT SET | 03/24/2023 | 96.88 |
| 12274 | SENTINEL EMERGENCY SOLUTIONS | FIRE VULCAN LED STANDARD SYSTEM DUAL REAR LED SHOULDER STRAP | 03/24/2023 | 195.00 |

| | | | | | |
|---|---|---|---|---|---|
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 13.54 |
| 12310 | Mastercard | BADGEANDWALLET.COM | | 03/29/2023 | 1,122.50 |
| | | | Total for Department: 014 Fire Dept | | 8,038.12 |

Department: 017 Streets / PW Admin

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 91.01 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 216.79 |
| 12190 | Ameren Illinois | Utilities | | 03/24/2023 | 249.10 |
| 12194 | Broadway Battery & Tire | F250 - Tires, spin balance, valve stem | | 03/24/2023 | 734.00 |
| 12202 | City Utilities | Utilities | | 03/24/2023 | 1,310.00 |
| 12212 | Electrico Inc | Work Request C10324 - IL 160 & Troxler Ave. | | 03/24/2023 | 132.50 |
| 12216 | Fehrmann Garage Doors Inc | Lube & Adjust doors & tracks,Univ. Keyless Entry, Service/Labor | | 03/24/2023 | 239.50 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 28.00 |
| 12243 | LEWIS BRISBOIS BISGAARD & SMITH LLP | CITY OF HIGHLAND V. JASON METTLER FILE NO: 15386-3 | | 03/24/2023 | 450.29 |
| 12244 | London Shoe Shop | SAFETY BOOTS - JASON SCHROEDER | | 03/24/2023 | 200.00 |
| 12249 | McKay Auto Parts Inc | Carb-Choke Clnr | | 03/24/2023 | 8.98 |
| 12258 | Northtown Auto & Tractor | 54" Tool Chest & Top | | 03/24/2023 | 3,098.98 |
| 12272 | Red E Mix LLC | Flow Backfill, Winter Serv. 3 Cy, $123/cy Tic.# 60140845 | | 03/24/2023 | 6,590.50 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 95.05 |
| | | | Total for Department: 017 Streets / PW Admin | | 13,444.70 |
| | | | Total for Fund:001 General Fund | | 53,486.23 |

Fund: 007 Community Development Fund

Department: 007 Community Development

| | | | | | |
|---|---|---|---|---|---|
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 2.09 |
| 12237 | Illinois Business Journal | FULL COLOR, 1/3 PAGE AD - M HUBBARD | | 03/24/2023 | 500.00 |
| 12247 | Mastercard | WESTERN UNIVERSITY-34TH ANNUAL RURAL COMM & ECONOMIC DEVEL CONF | | 03/24/2023 | 1,347.12 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 13.54 |
| 12310 | Mastercard | HILTON DOUBLE TREE-34TH ANNUAL RURAL COMM & ECONOMIC DEVEL CONF | | 03/29/2023 | 0.01 |
| | | | Total for Department: 007 Community Development | | 1,862.76 |
| | | | Total for Fund:007 Community Development Fund | | 1,862.76 |

Fund: 008 Motor Fuel Tax Fund

Department: 008 Motor Fuel Tax

| | | | | | |
|---|---|---|---|---|---|
| 12295 | Warning Lites of Southern IL, LLC | Street Sign- Buckingham Ct | | 03/24/2023 | 47.25 |
| | | | Total for Department: 008 Motor Fuel Tax | | 47.25 |
| | | | Total for Fund:008 Motor Fuel Tax Fund | | 47.25 |

Fund: 009 Parks & Rec Fund

Department: 009 Korte Rec Center

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 28.57 |
| 12188 | ALLIED WASTE TRANSPORTATION INC | KRC RECYCLING SERVICE 02/01/23-02/28/23 | | 03/24/2023 | 15.00 |
| 12189 | AMAZON CAPITAL SERVICES | 1 QTY 2D QR BARCODE SCANNER HANDS FREE MOBILE PAYMENT COMPUTER | | 03/24/2023 | 520.67 |
| 12190 | Ameren Illinois | Korte Rec Center gas bill | | 03/24/2023 | 945.79 |
| 12200 | City Of Highland | KRC utilities | | 03/24/2023 | 8,850.61 |
| 12210 | Direct Fitness Solutions | KRC bike repairs | | 03/24/2023 | 265.00 |
| 12214 | Energy Wise | Work on KRC HVAC and pool pac/boiler | | 03/24/2023 | 3,180.00 |
| 12219 | FROST Electric Supply | Replacement lights for KRC | | 03/24/2023 | 303.74 |
| 12231 | Highland Communication Services | KRC wifi | | 03/24/2023 | 326.33 |
| 12248 | Mazzio's Pizza | Pizza for party rentals at KRC | | 03/24/2023 | 1,136.00 |
| 12254 | Lynn Morton | Refund for half of membership. She moved away | | 03/24/2023 | 225.00 |
| 12256 | Katie Niemeier | Refund for cake she didn't get on 3/4/2023 | | 03/24/2023 | 22.00 |
| 12261 | Orkin Exterminating | Monthly pest control bill | | 03/24/2023 | 82.09 |
| 12264 | Pepsi | KRC concessions supplies | | 03/24/2023 | 1,045.20 |
| 12279 | Tech Electronics Inc | Monthly bill | | 03/24/2023 | 87.00 |
| 12287 | Twist and Bounce | Bounce house for St Patty's day event at KRC | | 03/24/2023 | 340.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 81.37 |
| 12302 | William F. Brockman Co | KRC concessions supplies | | 03/24/2023 | 394.19 |
| 12310 | Mastercard | STAGES INDOOR CYCLING | | 03/29/2023 | 484.13 |
| | | | Total for Department: 009 Korte Rec Center | | 18,332.69 |

Department: 016 Parks & Recreation

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 1,732.86 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 46.74 |
| 12190 | Ameren Illinois | Brad's shed gas bill | | 03/24/2023 | 122.97 |
| 12192 | Aviston Lumber Company | Rebar for Silver Lake park | | 03/24/2023 | 76.00 |
| 12200 | City Of Highland | senior center utilities | | 03/24/2023 | 3,962.45 |
| 12208 | Diamond Tours, Inc | Washington DC trip | | 03/24/2023 | 36,040.00 |
| 12213 | Emerald View Turf Farms | Seed bag for optimist field | | 03/24/2023 | 32.37 |
| 12215 | Everlasting Etch | memorial tree plaques | | 03/24/2023 | 38.00 |
| 12220 | St. Clair Service Company FS Turf Solutions | Field marking chalk Knights of Columbus will reimburse | | 03/24/2023 | 2,285.00 |
| 12222 | Gelly Excavating & Construction Inc | Haul rock to Silver Lake | | 03/24/2023 | 492.46 |
| 12225 | KURT GRUNER | OVERCHARGED FOR BOAT STICKER | | 03/24/2023 | 25.00 |
| 12231 | Highland Communication Services | Brad's shed | | 03/24/2023 | 10.00 |
| 12233 | Hillyard St Louis Inc | WCC scrubber maint | | 03/24/2023 | 436.86 |
| 12234 | Home Nursery Inc | Memorial trees | | 03/24/2023 | 767.75 |
| 12258 | Northtown Auto & Tractor | Top terminal part | | 03/24/2023 | 5.99 |
| 12264 | Pepsi | Glik concessions supplies | | 03/24/2023 | 1,409.59 |
| 12277 | SUMNER ONE, INC | WCC monthly printer bill | | 03/24/2023 | 56.00 |
| 12282 | The Kwik Konnection Printing Inc | Ad for DC Trip and HYBSL | | 03/24/2023 | 816.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 108.58 |

| | | | | | |
|---|---|---|---|---|---|
| 12293 | Village Locksmith | Work on WCC doors and such | | 03/24/2023 | 283.00 |
| 12301 | Wilke Truck Service, Inc | Rock drop off at Silver Lake | | 03/24/2023 | 283.93 |
| 12302 | William F. Brockman Co | WCC concessions supplies | | 03/24/2023 | 526.40 |
| 12310 | Mastercard | AIR DELIGHTS INC | | 03/29/2023 | 4,572.39 |
| | | | Total for Department: 016 Parks & Recreation | | 54,130.34 |

Department: 503 Swimming Pool Fund

| | | | | | |
|---|---|---|---|---|---|
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 4.18 |
| 12200 | City Of Highland | Outdoor pool utilities | | 03/24/2023 | 33.25 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 27.08 |
| | | | Total for Department: 503 Swimming Pool Fund | | 64.51 |

Department: 715 Cemetery Fund

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 10.99 |
| 12200 | City Of Highland | cemetery utilities | | 03/24/2023 | 62.75 |
| 12220 | St. Clair Service Company FS Turf Solutions | Turf supplies for cemetery | | 03/24/2023 | 2,600.00 |
| 12304 | Zobrist Electric Inc | misc electric work at the cemetery | | 03/24/2023 | 625.00 |
| | | | Total for Department: 715 Cemetery Fund | | 3,298.74 |
| | | | Total for Fund:009 Parks & Rec Fund | | 75,826.28 |

Fund: 012 Business District A

Department: 012 Police Dept

| | | | | | |
|---|---|---|---|---|---|
| 12259 | Oates Associates Inc | US ROUTE 40 & SYCAMORE ST INTERSECTION STUDY & PLANS | | 03/24/2023 | 4,035.00 |
| | | | Total for Department: 012 Police Dept | | 4,035.00 |
| | | | Total for Fund:012 Business District A | | 4,035.00 |

Fund: 050 Street NHR Construction

Department: 050 Street NHR Construction

| | | | | | |
|---|---|---|---|---|---|
| 12259 | Oates Associates Inc | 6TH ST RECONSTRUCTION, PH 2 & 3 01/28/23-02/24/23 | | 03/24/2023 | 17,216.54 |
| 12282 | The Kwik Konnection Printing Inc | Legal Ad 2/8 & 2/15/23 The Pioneer - Veterans Honor Pkwy Restor | | 03/24/2023 | 252.00 |
| | | | Total for Department: 050 Street NHR Construction | | 17,468.54 |
| | | | Total for Fund:050 Street NHR Construction | | 17,468.54 |

Fund: 101 Electric Fund

Department: 000 Balance Sheet Accounts

| | | | | | |
|---|---|---|---|---|---|
| 12163 | DANIJACK DESIGNS | Refund Check 022803-000 | | 03/23/2023 | 7.49 |
| 12164 | KAITLYN FULLER | Refund Check 021238-001 | | 03/23/2023 | 31.37 |
| 12165 | KYLEE GARTZKE | Refund Check 021718-000 | | 03/23/2023 | 21.27 |
| 12166 | ELIZABETH KALOUS | Refund Check 022831-000 | | 03/23/2023 | 36.78 |
| 12167 | MADISON COUNT | Refund Check 012720-000 | | 03/23/2023 | 72.10 |
| 12168 | MADSON COUNTY | Refund Check 018793-001 | | 03/23/2023 | 58.33 |
| 12169 | LAITH & VALERIE FURLONG RUSSELL | Refund Check 022782-000 | | 03/23/2023 | 32.88 |
| 12170 | JAMIE VOLKMAR | Refund Check 022482-000 | | 03/23/2023 | 42.12 |
| 12171 | LAURA WRIGHT | Refund Check 022874-000 | | 03/23/2023 | 1.36 |
| 12172 | Madison County | Refund Check 005232-001 | | 03/23/2023 | 159.21 |
| 12173 | MADISON COUNTY | Refund Check 009036-000 | | 03/23/2023 | 96.48 |
| 12174 | Madison County | Refund Check 020635-002 | | 03/23/2023 | 131.68 |
| 12175 | Madison County | Refund Check 022875-000 | | 03/23/2023 | 9.19 |
| 12176 | Madison County | Refund Check 008006-000 | | 03/23/2023 | 207.79 |
| 12177 | Madison County | Refund Check 022136-000 | | 03/23/2023 | 292.61 |
| 12178 | Madison County | Refund Check 022144-000 | | 03/23/2023 | 72.70 |
| 12179 | MADISON COUNTY | Refund Check 022694-000 | | 03/23/2023 | 513.09 |
| 12180 | Madison County | Refund Check 007927-000 | | 03/23/2023 | 92.76 |
| 12181 | Madison County | Refund Check 022093-000 | | 03/23/2023 | 54.07 |
| 12182 | Madison County | Refund Check 020653-000 | | 03/23/2023 | 308.05 |
| 12183 | Madison County | Refund Check 017180-002 | | 03/23/2023 | 170.38 |
| 12184 | Madison County | Refund Check 019343-001 | | 03/23/2023 | 240.03 |
| 12185 | Madison County | Refund Check 017595-000 | | 03/23/2023 | 82.74 |
| | | | Total for Department: 000 Balance Sheet Accounts | | 2,734.48 |

Department: 101 Electric Admin

| | | | | | |
|---|---|---|---|---|---|
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 6.29 |
| 12193 | BHMG Engineers Inc | EPA & ANNUAL REPORTING | | 03/24/2023 | 860.08 |
| 12200 | City Of Highland | UTILITY CHARGE | | 03/24/2023 | 448.50 |
| 12231 | Highland Communication Services | COMMUNICATION CHARGE | | 03/24/2023 | 164.00 |
| 12243 | LEWIS BRISBOIS BISGAARD & SMITH LLP | LABOR AND EMPLOYMENT FILE NO: 15386-2 | | 03/24/2023 | 313.63 |
| 12247 | Mastercard | UBER TRIP - APPA RALLY | | 03/24/2023 | 5,184.01 |
| 12257 | Northern Safety Co Inc | SUPPLIES FOR POWER PLANT | | 03/24/2023 | 93.52 |
| 12282 | The Kwik Konnection Printing Inc | AMENDED ELECTRCI RATES AD | | 03/24/2023 | 615.00 |
| 12284 | Third Millennium Assoc Inc | UTILITY BILL RENDERING | | 03/24/2023 | 929.42 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 40.75 |
| 12312 | SPRINGBROOK HOLDING COMPANY LLC | CIVICPAY TRANSACTION FEE JANUARY 2023 | | 03/29/2023 | 1,535.50 |
| | | | Total for Department: 101 Electric Admin | | 10,190.70 |

Department: 102 Electric Production

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 109.16 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 112.08 |
| 12190 | Ameren Illinois | GAS CHARGE | | 03/24/2023 | 49.25 |

| | | | | | |
|---|---|---|---|---|---|
| 12192 | Aviston Lumber Company | 2X4, 2X8 'S | | 03/24/2023 | 52.38 |
| 12200 | City Of Highland | UTILITY CHARGE | | 03/24/2023 | 6,390.76 |
| 12231 | Highland Communication Services | COMMUNICATION CHARGE | | 03/24/2023 | 3.00 |
| 12247 | Mastercard | WOLVERINE CREDIT VOUCHER | | 03/24/2023 | 60.88 |
| 12260 | O'Reilly Automotive Inc | 1 QTY BATTERY | | 03/24/2023 | 86.18 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 13.54 |
| | | | Total for Department: 102 Electric Production | | 6,877.23 |

Department: 104 Electric Distribution

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 955.98 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 18.85 |
| 12191 | ANIXTER, INC | TAP04CUSOL-00 Coated SOft Drawn Copper #4 | | 03/24/2023 | 4,195.20 |
| 12196 | Carl's Four Wheel Drive & Performance Center LLC | PARTS FOR CHIPPER | | 03/24/2023 | 27.92 |
| 12211 | EDWARDSVILLE MACHINE & WELDING CO. INC | PARTS FOR CHIPPER | | 03/24/2023 | 75.00 |
| 12217 | JESSE FERRIS | CDL RENEWAL | | 03/24/2023 | 60.00 |
| 12218 | Fletcher Reinhardt Company | 401015-0215/ PDI-15 Insulator Deadend | | 03/24/2023 | 4,970.50 |
| 12221 | GEBKE BROS OUTDOOR PWR EQUIP.,INC. | TRUCK 52 INSPECTION | | 03/24/2023 | 33.00 |
| 12224 | Graybar | NRHD 3 in 1 Impact Socket | | 03/24/2023 | 1,794.53 |
| 12239 | Illinois Municipal Utilities Association | JANUARY SAFETY TRAINING - PPE & RESPIRATORY PROTECTION | | 03/24/2023 | 905.00 |
| 12247 | Mastercard | KEEN INC PORTLAND OR - CHRIS SCARBOROUGH BOOTS | | 03/24/2023 | 560.46 |
| 12257 | Northern Safety Co Inc | SUPPLIES FOR SHOP | | 03/24/2023 | 143.28 |
| 12267 | Power Line Supply | 67514 Sylvania 100W Sodium ECO E39 Mogal Base | | 03/24/2023 | 2,425.25 |
| 12268 | PRECISION MARKETING & SALES | LINEMANS CLOTHING | | 03/24/2023 | 2,729.94 |
| 12278 | T.R. MILLER MILL CO. INC. | 35' Class 3 | | 03/24/2023 | 11,646.60 |
| 12285 | Thole Fabrication & Welding Inc | STEEL BAR | | 03/24/2023 | 35.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 122.12 |
| 12292 | Vermeer Midwest | PARTS FOR TRENCHER | | 03/24/2023 | 526.90 |
| 12298 | Weis-Schrage Construction Co , Inc | REPAIR DAMAGE DUE TO POLE FALLING ON ROOF | | 03/24/2023 | 1,698.00 |
| 12300 | Jason Wiegand | CDL RENEWAL | | 03/24/2023 | 60.00 |
| | | | Total for Department: 104 Electric Distribution | | 32,983.53 |
| | | | Total for Fund:101 Electric Fund | | 52,785.94 |

Fund: 111 FTTP Fund

Department: 000

| | | | | | |
|---|---|---|---|---|---|
| 12228 | Kathi Heuberger | HCS REFUND | | 03/24/2023 | 43.28 |
| 12236 | HUG UPHOLSTERY | HCS REFUND | | 03/24/2023 | 57.48 |
| 12271 | PAUL RAGSDALE | HCS REFUND | | 03/24/2023 | 38.27 |
| | | | Total for Department: 000 | | 139.03 |

Department: 111

| | | | | | |
|---|---|---|---|---|---|
| ACH | INTERSTATE TRS FUND | FINANCE CHARGES FOR OVERDUE BALANCE 12/11/22 INV 832014600491122 | | 03/28/2023 | 502.61 |
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 5.96 |
| 12189 | AMAZON CAPITAL SERVICES | 2 QTY EBOXER GIGABIT ETHERNET ADAPTER TYPE C USB | | 03/24/2023 | 1,845.63 |
| 12190 | Ameren Illinois | GAS CHARGES | | 03/24/2023 | 116.68 |
| 12199 | Home Box Office Cinemax | MARCH VIDEO CONTENT FEE | | 03/24/2023 | 80.00 |
| 12202 | City Utilities | UTILITIES - 192 WOODCREST DR | | 03/24/2023 | 2,061.20 |
| 12203 | CLARITY BUSINESSES | MONTHLY CLEANING - MARCH 2023 | | 03/24/2023 | 220.00 |
| 12205 | COMSTAR SUPPLY INC | CAT6 Snagless UTP patch cable 10ft-blue | | 03/24/2023 | 236.00 |
| 12224 | Graybar | INBOUND FREIGHT | | 03/24/2023 | 5,662.75 |
| 12227 | Home Box Office HBO | MARCH VIDEO CONTENT FEE | | 03/24/2023 | 270.00 |
| 12240 | ILLINOIS TELECOMMUNICATIONS ACCESS CORP | LOCAL EXCHANGE CARRIER & INTERCONNECTED VOIP $ WIRELESS PROV REM | | 03/24/2023 | 14.74 |
| 12247 | Mastercard | COYOTE LOGISTICS LLC | | 03/24/2023 | 1,197.44 |
| 12286 | TIVO PLATFORM TECHNOLOGIES LLC | NC PT MOBI 868 ACCTS, 142 NDVR ADDT'L USAGE, 472 STREAMS ADDT | | 03/24/2023 | 7,645.80 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 81.37 |
| 12303 | Duane E. Zobrist | RT 160 SOUTHWEST CORNER OF HIGHLAND | | 03/24/2023 | 100.00 |
| 12311 | Southern Illinois University Edwardsville | INTERNSHIP FOR CITY OF HIGHLAND - 01/01/23 - 05/15/23 | | 03/29/2023 | 7,058.70 |
| | | | Total for Department: 111 | | 27,098.88 |

Department: 114

| | | | | | |
|---|---|---|---|---|---|
| 12195 | CALIX INC. | SHIPPING AND HANDLING | | 03/24/2023 | 2,087.26 |
| | | | Total for Department: 114 | | 2,087.26 |
| | | | Total for Fund:111 FTTP Fund | | 29,325.17 |

Fund: 201 Water Fund

Department: 000 Balance Sheet Accounts

| | | | | | |
|---|---|---|---|---|---|
| 12163 | DANIJACK DESIGNS | Refund Check 022803-000 | | 03/23/2023 | 2.57 |
| 12165 | KYLEE GARTZKE | Refund Check 021718-000 | | 03/23/2023 | 7.94 |
| 12166 | ELIZABETH KALOUS | Refund Check 022831-000 | | 03/23/2023 | 8.33 |
| 12168 | MADSON COUNTY | Refund Check 018793-001 | | 03/23/2023 | 67.00 |
| 12170 | JAMIE VOLKMAR | Refund Check 022482-000 | | 03/23/2023 | 13.53 |
| 12171 | LAURA WRIGHT | Refund Check 022874-000 | | 03/23/2023 | 0.23 |
| 12173 | MADISON COUNTY | Refund Check 009036-000 | | 03/23/2023 | 0.85 |
| 12181 | Madison County | Refund Check 022093-000 | | 03/23/2023 | 3.23 |
| | | | Total for Department: 000 Balance Sheet Accounts | | 103.68 |

Department: 201 Water Admin

| | | | | | |
|---|---|---|---|---|---|
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 2.09 |
| 12190 | Ameren Illinois | Utilities | | 03/24/2023 | 182.72 |
| 12202 | City Utilities | Utillities | | 03/24/2023 | 125.97 |
| 12247 | Mastercard | MIOUX FLORIST - MIKE BUSS FUNERAL FLOWERS | | 03/24/2023 | 92.70 |

| | | | | | |
|---|---|---|---|---|---|
| 12284 | Third Millennium Assoc Inc | UTILITY BILL RENDERING | | 03/24/2023 | 309.81 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 13.54 |
| 12312 | SPRINGBROOK HOLDING COMPANY LLC | CIVICPAY TRANSACTION FEE JANUARY 2023 | | 03/29/2023 | 614.20 |
| | | | Total for Department: 201 Water Admin | | 1,341.03 |

Department: 202 Water Production

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 734.47 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 113.94 |
| 12202 | City Utilities | Utillities | | 03/24/2023 | 11,008.32 |
| 12207 | Curry & Associates Engineers Inc | HYDRAULIC CALC, TOPOGRAPHICAL SURV&PREM DRAWING CONCRETE SPILLWA | | 03/24/2023 | 3,504.48 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 119.66 |
| 12250 | METRO-AG WASTE INJECTION SYSTEMS, INC | TOTAL 733,144 GAL - LAGOON SLUDGE REMOVAL & LAND APPLICATION | | 03/24/2023 | 78,000.00 |
| 12259 | Oates Associates Inc | PROF SERV. 01/28/23 TO 02/24/23 AT&T ANTENNA STRUCTURAL REVIEW | | 03/24/2023 | 480.00 |
| 12280 | Teklab Inc | Project - Highland 1190550 Drinking Water | | 03/24/2023 | 392.40 |
| 12290 | Vandevanter Engineering Inc | Lift Station Maintenance Contract - MAINTENCE PERFORMED 03/02/23 | | 03/24/2023 | 700.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 54.29 |
| 12296 | Water Solutions Unlimited | Sod. Hydrox. 50-T264, WSU 110-T300 | | 03/24/2023 | 21,178.72 |
| | | | Total for Department: 202 Water Production | | 116,286.28 |

Department: 203 Water Distribution

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 1,892.10 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 3.15 |
| 12198 | CENTRAL RUBBER EXTRUSIONS OF IL, INC | Hydraulic hose anc couplings | | 03/24/2023 | 15.86 |
| 12202 | City Utilities | Utillities | | 03/24/2023 | 546.03 |
| 12206 | CORE & MAIN LP | 2" Water Service Supplies for Car Wash | | 03/24/2023 | 2,490.00 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 2.00 |
| 12247 | Mastercard | U.S. SAWS INC | | 03/24/2023 | 879.00 |
| 12251 | Midwest Meter Inc | 2" Water Meter for Highland Auto Wash | | 03/24/2023 | 2,300.00 |
| 12252 | Midwest Municipal Supply Inc | 5/8 x 3/4 x 1" Meter Adaptor Kits | | 03/24/2023 | 93.02 |
| 12260 | O'Reilly Automotive Inc | CREDIT FROM INV 0985-263402 PAID TWICE | | 03/24/2023 | -55.98 |
| 12266 | Pollardwater.com | 3x20 Suct. Hose, 3 NPT STL Suct. Strn | | 03/24/2023 | 414.90 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 20.37 |
| | | | Total for Department: 203 Water Distribution | | 8,600.45 |
| | | | Total for Fund:201 Water Fund | | 126,331.44 |

Fund: 301 Sewer Fund

Department: 000 Balance Sheet Accounts

| | | | | | |
|---|---|---|---|---|---|
| 12163 | DANIJACK DESIGNS | Refund Check 022803-000 | | 03/23/2023 | 2.54 |
| 12165 | KYLEE GARTZKE | Refund Check 021718-000 | | 03/23/2023 | 7.89 |
| 12166 | ELIZABETH KALOUS | Refund Check 022831-000 | | 03/23/2023 | 8.42 |
| 12168 | MADSON COUNTY | Refund Check 018793-001 | | 03/23/2023 | 63.49 |
| 12170 | JAMIE VOLKMAR | Refund Check 022482-000 | | 03/23/2023 | 13.57 |
| 12171 | LAURA WRIGHT | Refund Check 022874-000 | | 03/23/2023 | 0.24 |
| 12173 | MADISON COUNTY | Refund Check 009036-000 | | 03/23/2023 | 0.84 |
| | | | Total for Department: 000 Balance Sheet Accounts | | 96.99 |

Department: 301 Sewer Admin

| | | | | | |
|---|---|---|---|---|---|
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 2.09 |
| 12230 | HIGHLAND AUTOWASH LLC | Monthly Membership - PWA - 2 cards | | 03/24/2023 | 40.00 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 225.00 |
| 12284 | Third Millennium Assoc Inc | UTILITY BILL RENDERING | | 03/24/2023 | 309.81 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 13.54 |
| 12299 | WELLS FARGO VENDOR FIN SERV | Ricoh Copier - IM-C3500 | | 03/24/2023 | 205.18 |
| 12312 | SPRINGBROOK HOLDING COMPANY LLC | CIVICPAY TRANSACTION FEE JANUARY 2023 | | 03/29/2023 | 614.20 |
| | | | Total for Department: 301 Sewer Admin | | 1,409.82 |

Department: 303 Sewer Collection

| | | | | | |
|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 544.26 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 3.15 |
| 12198 | CENTRAL RUBBER EXTRUSIONS OF IL, INC | Hydraulic hose anc couplings | | 03/24/2023 | 15.86 |
| 12202 | City Utilities | Utillities | | 03/24/2023 | 546.03 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 2.00 |
| 12247 | Mastercard | U.S. SAWS INC | | 03/24/2023 | 119.00 |
| 12252 | Midwest Municipal Supply Inc | 8x6" SDR-26 Reducer SxG | | 03/24/2023 | 104.80 |
| 12260 | O'Reilly Automotive Inc. | CREDIT FROM INV 0985-263402 PAID TWICE | | 03/24/2023 | -55.99 |
| 12266 | Pollardwater.com | 3x20 Suct. Hose, 3 NPT STL Suct. Strn. | | 03/24/2023 | 414.90 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 20.38 |
| 12294 | VISU-SEWER OF MISSOURI LLC | CIPP SEWER LINING 2022-PW-02-22 | | 03/24/2023 | 1,283.85 |
| | | | Total for Department: 303 Sewer Collection | | 2,998.24 |

Department: 304 Water Reclamation Facility

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|---|---|---|---|---|---|
| 12161 | JOHN DEERE FINANCIAL | HIGHLAND RURAL KING OPERATING ACCOUNT | | 03/18/2023 | 210.36 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 8.38 |
| 12202 | City Utilities | Utillities | | 03/24/2023 | 10,267.73 |
| 12226 | Hawkins Inc | Demurrage | | 03/24/2023 | 40.00 |
| 12231 | Highland Communication Services | Communication Services | | 03/24/2023 | 149.99 |
| 12238 | Illinois Electric Inc | Install & Laser Align- For Oxidation Ditch Aerators | | 03/24/2023 | 5,378.62 |
| 12247 | Mastercard | ILLINOIS RURAL WATER ASSOCIATION -R DONAHO, D NEIER | | 03/24/2023 | 405.00 |
| 12249 | McKay Auto Parts Inc | Engine Flush | | 03/24/2023 | 15.87 |
| 12263 | Pace Analytical Services Inc | Wet Test - HWRF Effluent - 2/22/23 | | 03/24/2023 | 960.00 |

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|---|---|---|---|---|---|
| 12270 | R P Lumber Co Inc | 3 Way Switch Box | | 03/24/2023 | 1 99 |
| 12289 | USA Blue Book | Paper Filter Element F8-108 | | 03/24/2023 | 80.69 |
| 12290 | Vandevanter Engineering Inc | 3 Year Annual Prev. Manten. Contract - City LS FLYGT Pumps | | 03/24/2023 | 12,332.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 54.29 |
| | | | Total for Department: 304 Water Reclamation Facility | | 29,904.92 |

Department: 305 WRF Pretreatment

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|---|---|---|---|---|---|
| 12202 | City Utilities | Utilities | | 03/24/2023 | 22.30 |
| 12204 | KIMBERLY A. COLE | Engineer - Compl. Evaluations, Spreadsheets,Annual Report, Plans | | 03/24/2023 | 11,737.50 |
| | | | Total for Department: 305 WRF Pretreatment | | 11,759.80 |
| | | | Total for Fund:301 Sewer Fund | | 46,169.77 |

Fund: 401 Ambulance Fund

Department: 401 Ambulance Fund

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|---|---|---|---|---|---|
| 12186 | Airgas USA,LLC | OXYGEN | | 03/24/2023 | 368.85 |
| 12189 | AMAZON CAPITAL SERVICES | IT Shared Cost | | 03/24/2023 | 14.67 |
| 12190 | Ameren Illinois | Utilities | | 03/24/2023 | 231.07 |
| 12194 | Broadway Battery & Tire | GE DISHWASHER MAINTENCE | | 03/24/2023 | 203.75 |
| 12202 | City Utilities | Utilities | | 03/24/2023 | 394.71 |
| 12229 | HFS Bureau of Fiscal Operations- GEMT | PROCEDURE CODE A0427,A0429 1ST & 2ND QTR GEMT PAYMENTS | | 03/24/2023 | 63,314.45 |
| 12231 | Highland Communication Services | HCS SERVICES - COH EMS | | 03/24/2023 | 280.99 |
| 12243 | LEWIS BRISBOIS BISGAARD & SMITH LLP | LABOR AND EMPLOYMENT FILE NO: 15386-2 | | 03/24/2023 | 1,818.12 |
| 12247 | Mastercard | CE SOLUTIONS | | 03/24/2023 | 1,264.77 |
| 12255 | MUNICIPAL EMERGENCY SERVICES, INC. | EMS SUPPLIES | | 03/24/2023 | 33.00 |
| 12269 | QUADMED, INC. | EMS SUPPLIES | | 03/24/2023 | 363.73 |
| 12281 | TELEFLEX LLC | 1 QTY EZ-IO POWER DRIVE | | 03/24/2023 | 308.50 |
| 12288 | U.S. BANK EQUIPMENT FINANCE | COPIER LEASE/USAGE | | 03/24/2023 | 242.00 |
| 12291 | Vantage Point Solutions, Inc | IT Shared Cost | | 03/24/2023 | 95.05 |
| 12305 | Zoll Data Systems Inc | ZOLL BILLING 04/01/23-04/30/23 | | 03/24/2023 | 1,706.11 |
| | | | Total for Department: 401 Ambulance Fund | | 70,639.77 |
| | | | Total for Fund:401 Ambulance Fund | | 70,639.77 |

Fund: 702 Police Pension Fund

Department: 702 Police Pension Fd

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|---|---|---|---|---|---|
| 12262 | DENNIS ORSEY | ADDT'L ATTY FEES & EXPENSES FOR QTR JULY 21, 22 - OCT 20, 22 | | 03/24/2023 | 635.90 |
| 12313 | THE HOWARD E NYHART CO. INC. | 2022 FUNDING REPORT VALUATION | | 03/29/2023 | 2,900.00 |
| | | | Total for Department: 702 Police Pension Fd | | 3,535.90 |
| | | | Total for Fund:702 Police Pension Fund | | 3,535.90 |

Fund: 713 Solid Waste Fund

Department: 000 Balance Sheet Accounts

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|---|---|---|---|---|---|
| 12163 | DANIJACK DESIGNS | Refund Check 022803-000 | | 03/23/2023 | 10.81 |
| 12164 | KAITLYN FULLER | Refund Check 021238-001 | | 03/23/2023 | 13.54 |
| 12165 | KYLEE GARTZKE | Refund Check 021718-000 | | 03/23/2023 | 20.83 |
| 12169 | LAITH & VALERIE FURLONG RUSSELL | Refund Check 022782-000 | | 03/23/2023 | 23.82 |
| 12170 | JAMIE VOLKMAR | Refund Check 022482-000 | | 03/23/2023 | 26.93 |
| 12173 | MADISON COUNTY | Refund Check 009036-000 | | 03/23/2023 | 1.83 |
| 12175 | Madison County | Refund Check 022875-000 | | 03/23/2023 | 1 99 |
| | | | Total for Department: 000 Balance Sheet Accounts | | 99.75 |

Department: 713 Solid Waste Fund

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|---|---|---|---|---|---|
| 12188 | ALLIED WASTE TRANSPORTATION INC | COMMERCIAL TRASH SERVICES 02/01/23-02/28/23 | | 03/24/2023 | 145,256.95 |
| 12284 | Third Millennium Assoc Inc | UTILITY BILL RENDERING | | 03/24/2023 | 309.81 |
| 12312 | SPRINGBROOK HOLDING COMPANY LLC | CIVICPAY TRANSACTION FEE JANUARY 2023 | | 03/29/2023 | 307.10 |
| | | | Total for Department: 713 Solid Waste Fund | | 145,873.86 |
| | | | Total for Fund:713 Solid Waste Fund | | 145,973.61 |
| | | | **Grand Total** | | **627,487.66** |

Accepted by City Council April 03, 2023

Mayor: Clerk: