

**AGENDA
REGULAR SESSION
HIGHLAND CITY COUNCIL
CITY HALL, 1115 BROADWAY
MONDAY, AUGUST 19, 2019
7:00 PM**

CALL TO ORDER / ROLL CALL / PLEDGE OF ALLEGIANCE:

MINUTES:

MOTION – Approve Minutes of August 5, 2019 Regular Session ([attached](#))

PUBLIC FORUM:

A. Citizens' Requests and Comments:

1. 2019 HHS Homecoming Parade & Pep Rally – Streets Closure and Square Use Request - HHS Homecoming Committee, Monica Rensing, Representative ([Special Event App](#)) ([Cert of Ins](#))

**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** – Bill #19-94/RESOLUTION Authorizing Allocation of Hotel / Motel Tax Funding for the Highland Flügel Fest ([Bill 19-94](#)) ([Ex A](#))
- B. **MOTION** – Bill #19-95/RESOLUTION Waiving Normal & Customary Bidding Procedures and Authorizing Execution of a Contract to Purchase Content from Indaward Broadcasting, LLC / Bulldog Radio to Provide Video Content for HCS Channel 3 as a Sole Source Purchase ([Bill 19-95](#)) ([Ex A](#)) ([Memo](#))
- C. **MOTION** – Bill #19-96/RESOLUTION Approving Amendment to Affiliation Agreement Between City d/b/a Highland Communication Services and Fox Sports Net, LLC ([Bill 19-96](#)) ([Ex A](#)) ([Memo](#))
- D. **MOTION** – Bill #19-97/RESOLUTION Approving the Local Public Agency Agreement for Federal Participation for Broadway Street Resurfacing from Helvetia Drive to Iberg Road ([Bill 19-97](#)) ([Ex A](#)) ([Memo](#))
- E. **MOTION** – Bill #19-98/ORDINANCE Declaring Personal Property of the City Surplus and Authorizing Its Sale and/or Disposal, Specifically, Thirty-Five (35) Fire Helmets ([Bill 19-98](#)) ([Memo](#))

Continued

- F. **MOTION** – Bill #19-99/ORDINANCE Authorizing the Donation/Gifting of Real Estate To City, from Anna Jo Ann Alberternst, Successor Trustee for William Anthony Alberternst, as Trustee of the William Anthony Alberternst Revocable Trust Dated November 18 1974, as Amended January 26, 1981, and as Amended by First Amended Trust Agreement Dated April 5, 2000, as to an Undivided One-Half Interest, and Anna Jo Ann Alberternst, Trustee of the Anna Jo Ann Alberternst Revocable Trust Dated November 18, 1974, as Amended January 26, 1981, and as Amended by First Amended Trust Agreement Dated April 5, 2000 as to an Undivided One-Half Interest ([Bill 19-99](#)) ([Ex A](#)) Closing Docs: ([PTAX Form](#)) ([Plat Act Affidavit](#)) ([Special Warranty Deed](#)) ([Affidavit of Non-Production and Non-Dev](#))
- G. **MOTION** – Bill #19-100/ORDINANCE Repealing and Replacing Ordinance Number 2843, Authorizing Incentives for Construction of New Single Family Residences in Newly Platted Subdivisions within the Corporate Boundaries of the City ([Bill 19-100](#))
- H. **MOTION** – Approve Notice of Municipal Letting, Bid #F-12-19 for Fire Station 1 Remodel ([Bid Packet](#)) ([Drawings](#)) ([Specifications](#))
- I. **MOTION** – Approve Notice of Municipal Letting, Bid #BZ-13-19 for Demolition of 1245 Poplar Drive ([Memo](#)) ([Bid Packet](#)) ([Ad](#))
- J. **MOTION** – Approve Notice of Municipal Letting, Bid #PR-14-19 for Construction of Silver Lake Park Fish Rearing Pond and Wetlands ([Memo](#)) ([Bid Packet](#)) ([Fish Pond Plans](#)) ([Wetlands Plans](#))

REPORTS:

- A. **MOTION** – Approve Warrant #1139 ([attached](#))

EXECUTIVE SESSION:

The City Council may conduct an Executive Session pursuant to the Illinois Open Meetings Act, citing **5 ILCS 120/2(c)(21) to discuss approval of executive session minutes.**

ADJOURNMENT:



Anyone requiring accommodations, provided for in the Americans with Disabilities Act (ADA), to attend this public meeting, please contact Dylan Stock, ADA Coordinator, by 3:00 PM on Monday, August 19, 2019.

**MINUTES OF REGULAR SESSION
HIGHLAND CITY COUNCIL
MONDAY, AUGUST 5, 2019**

Mayor Michaelis called the Regular Session to order at 7:00pm. Councilmembers Sloan, Frey, Bellm and Hipskind were present. Others in attendance were City Manager Mark Latham, City Attorney McGinley, Directors Conrad, Cook, Gillespie, Imming, Kim, Korte, Rosen and Slover; Chief Wilson, B&Z Administrator Speraneo, Deputy City Clerk Hediger, City Clerk Bellm, one member of news media, and 16 citizens.

MINUTES

Councilman Frey made a motion to approve the minutes of the August 5, 2019 Regular Session as attached; seconded by Councilwoman Bellm. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried.

SPECIAL RECOGNITION

Mayor Michaelis recognized recently retired Steve Plocher and Dennis Wernle for their long-time service on the Highland-Pierron Fire Protection District. Combined 73 years serving and serving well for the Highland-Pierron Fire Protection District. Mr. Wernle stated I am glad they gave me the opportunity to serve; it has been a real pleasure. Mr. Plocher stated it has been a unique opportunity to do what we have done. We have enjoyed the work we have done. Change. Things used to change fast; now they change faster. As leader of Highland-Pierron Fire District, we have to look towards tomorrow and support the community we are in. We are thankful for the community of Highland and the surrounding rural communities we serve. I think eventually, we will be together as a group. It means a lot to have all the people that have reached out and say “thank you”. Mayor Michaelis pointed out there was no ambulance call, years ago; however, now your department reports to 300+ per year. Mr. Wernle agreed a lot of change is ambulance calls. They used to load the patients up and go; now, we are on scene with them as do some treatment there. Mr. Plocher noted training has changed for fire department too. We are able to provide support and even assist those in emergency prior to EMS showing up. Mayor Michaelis added the levels of certification have really changed and evolved. Mr. Plocher recalled when we joined the training was that they gave us a fire hose and told us to put the fire out. Now, there is a lot of training involved. Recruiting is one thing, but finding those with the time, willingness to do this is difficult. Steve introduced his wife, Connie. Dennis introduced his wife, Lori. Also in attendance: Steve’s daughter, Jessica, who is a firefighter, as is her husband; Dennis’ son-in-law, who is also a firefighter; Dennis’ daughter and grandson; and, Steve’s two grandsons. Steve pointed out this service does runs in the family.

PUBLIC FORUM

Citizens' Requests and Comments:

Rebecca Kluk and Andrew Plocher, with Highland Jaycees, stated they are present to discuss the current food truck vendor ordinance that is proposed. We have some concerns with the proposed ordinance. Items listed in 33-8-4 of the ordinance and the proximity and number of food trucks at Schweizerfest, which is one of our larger events. These things would make it difficult. City Attorney McGinley stated there are many factors to be considered in making a determination in permitting. Ms. Kluk stated our concern is the number of licenses. As stated under 33-8-6 (C) that is currently one license. City Attorney McGinley agreed. After looking at this, again, this weekend, it should be similar to the liquor license and raffle ordinances with a Class A and Class E. Class A would be all the time; Class E would be for events.

Mayor Michaelis inquired about non-for-profit trailers. Attorney McGinley responded this does not apply to Optimists, Lions or Moose Lodge. Mayor Michaelis asked would this apply to Schweizerfest. Attorney McGinley reported it could go either way and that needs to be cleaned up. I am looking for input from the council. Councilwoman Bellm asked do we do it now or later. Mayor Michaelis suggested later when this comes up on the agenda. We can discuss and then have it tabled for other meeting, after it has been revised.

Andrew Plocher asked is the beer trailers considered part of this. Attorney McGinley replied the Jaycees are non-for-profit, so this does not apply. Ms. Kluk stated the majority of concerns relate to Schweizerfest and other community events that we sell food and beer. City Attorney McGinley stated I appreciate the questions and the issues brought. I recommend we discuss this, then table it so that we can make changes.

Requests of Council:

Councilman John Hipskind reported he received a call from Mr. Farmer today. He asked that a thank you be passed along to the city administration for putting up the attachments on the website.

A few comments from Highland Community Facebook page that I would like to address: One is already being addressed, with regards to the mention of the derelict property on Olive Street. Another was people expressing concern about speeding on Laurel Street, particularly at 9th & Laurel Street. A suggestion for possibly a stop sign at that intersection. In addition, the stop light at Hemlock produced some discussion. At Sportsman Road and Frank Watson Parkway, it is a two-way stop, currently. Many on Sportsman Road think traffic on Frank Watson Parkway will be stopping, at that intersection, but traffic does not. Possibly adding a sign that says, "cross traffic does not stop", would help. Mayor Michaelis reported it is a three-step process to address traffic issues. The chief review it, then it goes to Public Works, and they then forward to City Manager Latham, if in agreement, for signing off.

Councilman Frey asked Chief Wilson about the status of the old fire engines. Chief Brian Wilson reported a couple people have expressed interest.

Staff Reports:

City Manager Latham reported we had addressed the intersection of Hwy 40 & Hemlock even before Frank Watson Parkway was constructed. IDOT (Illinois Department of Transportation) continued to deny that anything was needed there. We spent a million dollars widening the intersection. Over the course of last two years, IDOT has agreed to the stoplight, since we offered to pay for it. The lengthiness of the process has been due to the permissions and sign off on everything from CSX.

City Manager Latham clarified, with the roundabout construction, it was a ninety-day working contract. The contractor had until November 1 to get the project done plus any rain dates would add onto it. We are still awaiting from the contractor the final markers.

David Slover has been working with IML (Illinois Municipal League) on a status report of our coverages. He has estimated that we have saved over \$650,000, over the last three years, that we have been under the min-mid-max plan for liability and workers' comp policies.

NEW BUSINESS

Award Bid #PD-10-19 Purchase of One Special Service Sport Utility Vehicle – Councilwoman Bellm made a motion to award Bid #PD-10-19 for purchase of one special service sport utility vehicle from one 2019 Dodge Durango, from McGinley, Inc., in the amount of \$26,995 as attached; seconded by Councilman Frey. Roll Call Vote: Councilmembers Frey, Bellm and Hipskind voted aye, none nay. Councilwoman Sloan abstained. Motion carried.

Bill #19-89/ORDINANCE Establishing Chapter 33, Licenses and Business Regulations, Article VIII, Mobile Food and Beverage Vendors – Councilman Frey made a motion to approve Bill #19-89/ Ordinance #2951 establishing Chapter 33, Licenses and Business Regulations, Article VIII, Mobile Food and Beverage Vendors, as attached; seconded by Councilwoman Bellm. Councilman Hipskind reported someone from the Jaycees reached out to me today. Those have been the primary concerns. He suggested Paragraph 33-8-7 include in the title, or created 33-8-7 (A), to include non-for-profit groups and or those vendors on their behalf are exempt from this ordinance. Councilwoman Bellm stated I could go along with that. I agree any food vendors at those kind of events should be the responsibility of the event host. City Attorney McGinley asked do we just make it very clear up front that the only ones that this covers is the annual licensed vendors. Councilwoman Bellm stated, if we specify non-for-profit, I do not know that they are all 501(c) non-for-profit; they may be a different class of non-for-profit. Councilwoman Sloan asked are we going to say there is one-time fee, if one wanted to come in from one evening. City Attorney McGinley suggested maybe leave it in there, but define who is non-for-profit. Councilman Hipskind agreed just define non-for-profit. Councilman Frey pointed out there are places now that bring in food trucks to handle larger crowds. How do we want to handle food trucks used on private property? Councilwoman Sloan pointed out the people that approached us, originally, discussed putting the truck out on Glik's Northtown Parking Lot, so would they have to get permission from property owners.

Mayor Michaelis asked if someone wants to have a stand at Schweizerfest, how is that handled. Andrew Plocher, Highland Jaycees, stated they do a contract with us and they have to get a license through Madison County Health Department.

Mayor Michaelis asked do the vendors pay a fee to Jaycees. Mr. Plocher responded they pay \$100 to Jaycees and then after a certain dollar amount they pay a percentage of sales to the Jaycees. He suggested a special event/one-day permit. City Attorney McGinley suggested any outdoor event, held on public property. It may be something that runs a couple of days. We may be able to use non-for-profit organizations hosting city special events are exempt. This provides information and control. It allows those organizations to handle the process of determining the food trucks that participate. Councilwoman Bellm asked how private property factors into this. What if the private property is within 200-ft of a restaurant. City Attorney McGinley advised by the requirement that the property is appropriately zoned for this. The Northtown parking lot is zoned for such use. Councilwoman Bellm pointed out there is a discrepancy in the proposed ordinance because it stated 500-feet in one place, but 250-feet in another section. Attorney McGinley stated it should be 250 feet.

Councilwoman Bellm noted the proposed ordinance says the number of licenses is one, under 33-8-6 (C) (3). We have had one person already inquire, to get this started. Let us give some and set the limit, so that we are not changing this every month. Attorney McGinley explained this functions the same as the liquor license. We can chose to grant, as we want. Councilwoman Bellm inquired, by doing that, we are not opening us up to anything if we allow to a certain number and keep increasing it, but then we say no? City Attorney McGinley stated, like the classifications of liquor licenses, we can increase the number, but as one license expires, the number also drops. He suggested make the daily licenses unlimited, so council is not bogged down with those.

Councilwoman Sloan asked what would be the reason for providing three references. Attorney McGinley explained it is simply to provide three people to vouch for them. Same as done for a liquor license. Councilman Frey noted there is an ice cream truck that goes around Highland and it parks in spots for periods. I would think that would fall under this ordinance. Attorney McGinley replied I thought we had addressed it already, with another ordinance; however, we will have to review the ordinances and check into that. City Attorney Mike McGinley requested the council postpone for one month to get everything right. Councilwoman Bellm made a motion to postpone this item until the Tuesday, September 3 Council Meeting. Motion seconded by Councilman Frey. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried; item postponed.

Bill #19-90/RESOLUTION Selecting a Placement Agent in Connection with proposed Issuance by the City for Electric System Refunding Revenue Bonds, Series 2019 and Acknowledging Certain Matter Pursuant to MSRB Rules – Councilwoman Bellm made a motion to approve Bill #19-90/Resolution #19-08-2632 selecting a Placement Agent in connection with proposed issuance by the City for Electric System refunding Revenue Bonds, Series 2019 and acknowledging certain matter pursuant to MSRB rules as attached; seconded by Councilman Frey. Councilman Frey stated since my background is not finance, I have some questions. Looking at estimated cost, I see some that are lower than the amount proposed by Stern Bros. & Bank of Edwardsville, but are very close. Director of Finance, Kelly Korte, reported Stern Bros. does not require us to get insurance and bonding. That is a tremendous amount of staff time and associated costs. I wish Joy was here and could answer these questions in more detail. She used a spreadsheet to factor in all estimated costs. She is including all fluctuations, other fees, and the number of years, to come to these recommendations. Councilman Frey noted some referenced a rate and different number of years. Director Korte reported when Joy originally calculated this, the savings was estimated at only \$350,000. With proposals that came in, she is estimating over \$650,000 over remainder of the loan. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried.

Bill #19-91/ORDINANCE Amending Ordinance No. 2819 and Other Related Matters Concerning the Borrowing of Funds from the Water Pollution Control Revolving Loan Program – Councilman Frey made a motion to approve Bill #19-91/Ordinance #2951 amending Ordinance No. 2819 and other related matters concerning the borrowing of funds from the Water Pollution Control Revolving Loan Program as attached; seconded by Councilwoman Bellm. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried.

Bill #19-92/RESOLUTION Approving and Authorizing the Execution of a Construction Agreement between CSX Transportation, Inc. and City – Councilwoman Bellm made a motion to approve Bill #19-92/Resolution #19-08-2633 approving and authorizing the execution of a construction agreement between CSX Transportation, Inc. and City as attached; seconded by Councilman Frey. Councilman Frey pointed out the amount is estimated at \$546,000. We are anticipating that ICC will come through with a grant. Do we have a plan if they do not come through? Public Works Director Joe Gillespie admitted until they have the final order, there is no guarantee. All the discussions have been very positive about assisting with the cost. They have not waived on that amount. City Manager Latham added City Attorney McGinley has been part of those conversations and getting everyone

together and holding everyone's feet to the fire. It is not a 100%, but we are very confident they will come through. There is a judge moving things forward. Councilman Hipskind expressed if we can save someone's life, it is a small price to pay. City Manager Latham reported we definitely have the commitment; we just have to show final commitment of the project. Most of the project is in the railroad cost. It is not the signals. Councilman Hipskind clarified with authorization to do this, the council is giving authorization to go out for bid on this project and continue moving the project forward. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried.

Bill #19-93/RESOLUTION Approving and Authorizing the Execution of an Illinois Department of Transportation Access Permit Application, and Authorizing the Execution of All Required Documents for a \$50,000 Highway Permit Bond – Councilman Frey made a motion to approve Bill #19-93/Resolution #19-08-2634 approving and authorizing the execution of an Illinois Department of Transportation Access Permit Application, and authorizing the execution of all required documents for a \$50,000 Highway Permit Bond as attached; seconded by Councilwoman Bellm. Roll Call Vote: Councilmembers Sloan, Frey, Bellm and Hipskind voted aye, none nay. Motion carried.

REPORT

Approve Warrants #1137 & #1138 – Councilwoman Bellm made a motion to approve Warrants #1137 & #1138 as attached; seconded by Councilman Frey. Roll Call Vote: Councilmembers Frey, Bellm and Hipskind voted aye, none nay. Councilwoman Sloan abstained, noting there is payment for a truck purchase in there. Motion carried.

Councilwoman Bellm made a motion to temporarily adjourn this regular session to enter into executive session under the Illinois Open Meetings Act under 5 ILCS 120/2(c)(21) to discuss approval of executive session minutes and 120/2(c)(2) to discuss collective negotiating matters. Motion seconded by Councilman Frey. Meeting adjourned at 8:02pm.

Mayor Michaelis reconvened the Regular Session at 8:35pm. Council members Hipskind, Bellm, Frey and Sloan were present. Others in attendance were City Manager Mark Latham, City Attorney Michael McGinley, Directors Cook, Imming and Slover, Deputy City Clerk Hediger, and City Clerk Bellm.

Mayor Michaelis stated that nothing discussed in Executive Session would be acted upon tonight.

Councilwoman Bellm made a motion to adjourn; seconded by Councilman Frey. All council members voted aye, none nay. Motion carried and meeting adjourned at 8:36pm.

Joseph R. Michaelis, Mayor

Barbara Bellm, City Clerk



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: Highland High School Homecoming Parade

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

Location of Event: Start: Lindendale Campus End: Highland Square

Sponsoring Organization/Individual: HHS Homecoming Committee

Event Responsible Party: Monica Bensing
Address: 1002 Helvetian Dr. Highland, IL
Phone(s): 618-781-7809
Email: _____

Secondary Contact: _____
Address: _____
Phone(s): _____
Email: _____

Date(s) of Set-up: Wednesday Sept. 25th Parade 6⁰⁰-7⁰⁰ pm

Event Date(s) / Times:
Wednesday Sept. 25th Parade 6⁰⁰-7⁰⁰ pm

Date(s) of Tear-down: Wednesday Sept 25th

Expected Attendance: 1,000

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

Sound Amplification System utilized: Yes No
If yes, hours of operation: on gazebo 6⁰⁰-10⁰⁰ pm

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:** _____

Street Closures: 5-7⁰⁰ pm Parade lineup between Spruce & Poplar
6-7⁰⁰ pm parade route (see attached)
Barricades: Poplar & Lindenthal, Paris & Maple, Paris & Oak,
Lindenthal & Park Hill Drive

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

Need electric, lighting, and sound at the gazebo on the square for pep rally after the parade.

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

Need 32 vests (orange/yellow) for parade route volunteers

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

N/A

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

Department: _____

Police escort for parade
Fire trucks and ambulance for parade

Application Checklist (Attachments):

Deputy Clerk Initial
Upon receipt or waiver:

Certificate of Insurance: (attached) _____
o Must be General liability
o \$1 Million per occurrence/\$2 million aggregate
o 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 _____

o **Date:** August 20th

Application Submittal (60+ days) _____

Monica Rensing
Event Sponsor Responsible Party

7-22-19

Date

City Manager

Date



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

03/22/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER		CONTACT NAME: Cherie Bircher	
Affiliated Insurance Agencies		PHONE (A/C, No. Ext): 618-654-4416	FAX (A/C, No): 618-654-4417
32 Zbinden		E-MAIL ADDRESS: cherieb@affiliatedinsag.com	
Highland	IL 62249	INSURER(S) AFFORDING COVERAGE	
INSURED		INSURER A: Markel Insurance Company	
Highland CUSD #5		INSURER B: Illinois Public Risk Fund	
400 Broadway		INSURER C:	
Highland		INSURER D:	
IL 62249		INSURER E:	
		INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		X	8502WS1038576-0	07/01/2017	07/01/2018	EACH OCCURRENCE	\$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 500,000
							MED EXP (Any one person)	\$ 15,000
							PERSONAL & ADV INJURY	\$ 1,000,000
							GENERAL AGGREGATE	\$ 2,000,000
							PRODUCTS - COMP/OP AGG	\$ 2,000,000
								\$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		X	1002WS1038577-0	07/01/2017	07/01/2018	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000		X	4602WS1038580-0	07/01/2017	07/01/2018	EACH OCCURRENCE	\$ 10,000,000
							AGGREGATE	\$ 10,000,000
								\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	1178	01/01/2017	01/01/2018	PER STATUTE	
							OTH-ER	
							E.L. EACH ACCIDENT	\$ 2,500,000
							E.L. DISEASE - EA EMPLOYEE	\$ 2,500,000
							E.L. DISEASE - POLICY LIMIT	\$ 2,500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Highland CUSD #5 using Madison County Fair Grounds for FFA Livestock Evaluation CDE on March 23rd, 2018; FFA painting the beef showbarn on March 29th, 2018; and FFA Safety Day with the 6th graders on May 4th, 2018.

CERTIFICATE HOLDER	CANCELLATION
Madison County Fair Board P.O. Box 111 Highland IL 62249	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Cherie Bircher</i>

RESOLUTION NO. _____

**A RESOLUTION AUTHORIZING
ALLOCATION OF HOTEL / MOTEL TAX FUNDING
(Highland Flügel Fest)**

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, and deposited and filed in the Office of the City Clerk, on the ____ day of _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis, 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):
City of Highland
1115 Broadway
Highland, IL 62249
- 2) Website Address: highlandil.gov
- 3) Contact Person:
 - a) Name: Mallord Hubbard
 - b) Phone: (618) 654-9891
 - c) Fax: (618) 654-4768
 - d) Email: mhubbard@highlandil.gov
- 4) Is this a Non-Profit Organization? Yes No
- 5) Status of Organization (i.e. Foundation, Corporation, etc): Municipal Government
- 6) Agency Tax ID # E9994-6939-07

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:

This event is specifically designed to draw interest from surrounding areas. Food themed festivals are a growing trend, and will attract visitors who may not have otherwise visited Highland.

- 7) Fiscal Year of the Event: 2019-2020
- 8) Name of the Event: Highland Flügel Fest
- 9) Date(s) of the Event: October 19, 2019 (rainout date: October 26, 2019)
- 10) Location of the Event: Plaza Square

11) Description of the Event:

Fundraiser Festival to benefit the fountain and Plaza Square Park. One day event will include Best Wings Contest, Wings Eating Contest, 50/50 Raffle, Kids Korner, Silent Auction, Games, food and drink vendors, and live music.

12) Funding Request Amount: \$ 3900.45 _____

13) Projected Attendance for the Event: _____

14) Expected Overnight Stays for the Event: _____

15) Description / Purpose of Funding Request:

The requested Hotel/Motel Tax Funds will be directed solely to marketing for the event. Attached is the proposed line item budget that we've partnered with Illinois South Tourism to implement for the event.

16) Other Sources of Project Funding:

Individual Donations: \$ _____

Grants: \$ _____

Private Businesses: \$1000 _____

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.

Appropriate City Staff (Public Safety, Parks & Rec, Building & Zoning, General Admin) have been included in every aspect of planning for the event and have approved resources that will be needed.

18) Continuing / New Activity:

- a) Is this event... New Continuing
- b) Do you expect it to be an Annual Event? Yes No
- c) Do you anticipate requiring regular and continued funding? Yes No
- d) Did you receive funding last year? Yes No
- e) If "d" = yes i) What amount did you receive? \$ _____

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
1. Korte Company	\$500
2. Lee's Loan and Jewelry	\$250 + silent auction item
3. Embrace	\$250
4. Baymont Hotel	Gift Certificate
5. Cheetah Mobil	Gift Certificate for silent auction
6. Korte Luitjohan	In-kind: Bags Sets

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

This chicken wing festival is a unique theme for the area. We hope to draw attention from surrounding communities and St. Louis by bringing in local and regional restaurant vendors and musicians. This is an all-day event that the City intends to grow year after year. Overnight stays will be encouraged for those traveling from neighboring cities. The Baymont Hotel is offering a Gift Certificate and discount for any attendees of the Flügel Festival.

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).

The Square is host to many events and occasions each year that support our community and service organizations, and allow our residents to celebrate special moments. The Parks and Recreation Department budgets carefully each year to be able to maintain and improve the park and fountain. However, some yearly maintenance and repairs could be reduced by implementing improvement projects that are currently beyond the budget. For example, removing the vegetation from around the fountain and replacing it with concrete will reduce maintenance and damage to the fountain by leaves and mulch that clog the water jets. Installing an in-ground hydration system will help recover the grass

following an event on the square and reduce time watering, which will allow labor to be distributed to other areas. The many requests to replace the hanging baskets could also be fulfilled.

22) 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.

Revenues:

Hotel / Motel Tax Grant	\$3900.45
Monetary Sponsors	\$1000.00
Total Revenues:	\$4900.45_____

Expenses:

Expenditure Types:	Amount
IllinoisSouth Tourism Marketing	\$3900.45
Logo Design	\$450.00
Postcards	\$115.37
Banner Printing	\$357.50
Trophy Tops	\$119.97
Trophy Bases	\$99.66
Trophy Engraving	TBD
Jeremy Wright (Musician)	\$200.00
Bottoms UP Blues Gang (Musician)	\$750.00
Posters	TBD
Games	\$250
Portable Toilets and hand washing	\$485

TOTAL EXPENSES:

\$6627.95

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

24) Can event occur without city financial assistance: ___ Yes __X__ No

25) Has event previously been held in Highland: ___ Yes __X__ No

If yes, how many years in existence?

26) Projected sales tax generation: Event _____ Indirect _____

27) Number of volunteers associated with event? _____ 70 _____

28) Nonprofit or for profit event? _____ nonprofit __x__ _____

29) Address security, traffic control for event, and Health Department and Fire Department approval in Event Plan? __X__ Yes _____ No

30) Why should event be funded? Attach narrative.

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.

Mallord Hubbard

Applicant

Mallord Hubbard

Signature of Representative / Officer

Economic Dev. Coordinator

Title

8/14/19

Date

Highland Flugelfest Budget

Tuesday, July 30, 2019 9:45 AM

<u>Round #s</u>	<u>With Discount</u>	<u>Description</u>
\$250	\$212.50	WDLJ (Breese) - 100 spots (3-4 spots per day)
\$125	\$106.25	Bulldog Radio - 100 spots (3-4 spots per day)
\$293.76	\$249.70	Breese Journal - 3x4 ad (4 ads in a month span)
\$500	\$425	Social Media Ad Campaign (1 month)
\$2,000	\$1,700	Geofencing Campaign (Contract through DDI Media)
\$540	\$459	WGEL - 30 spots (10 days prior to event) (Open Rate is \$18/spot)
\$400	\$340	Troy Times Tribune - 4 (3x4 color) ads (1 per week)
\$480	\$408	Madison County Pioneer - 4 (3x4 color) ads (1 per week)
ORIGINAL TOTAL	TOTAL AFTER DISCOUNT	TOTAL SAVINGS
\$4,588.76	\$3,900.45	\$688.31



4387 N. Illinois St., Suite 200
 Swansea, IL 62226
 P. 618.257.1488 800.442.1488
 F. 618.257.3403

Action Items	Department	Date
Establish Date of the Event and Rain-out date	Festival Committee	01/10/19
Contact Chamber of Commerce to get on the calendar	Economic Development	
Book musical performances	Economic Development	
Outline budget	Festival Committee	
Contact Digital Artz for Logo Design	Economic Development	02/21/19
Begin preparing Special Event Application	Economic Development, Parks & Rec, Public Safety	
Initiate Contact with Sponsors and Vendors via Letter	Economic Development	03/14/19
Confirm Jaycees as beer vendor	Economic Development	
Complete Special Events Application and get on City Council Agenda	Economic Development, Parks & Rec, Public Safety	04/04/19
City Council Meeting for approval to use the Square and Main Street	Economic Development	05/20/19
Finalize Flyer/Poster Design and order prints	Festival Committee, Economic Development	06/13/19
Distribute flyers and posters	Economic Development	07/04/19
Highland Highlights Write-up	Economic Development	08/08/19
Meeting with Civic Women's Club about Kids Korner and Pumpkin Patch		
Create Facebook Event		
Open registration for Bags & Wings Eating		
Begin Volunteer Recruitment		09/15/19
Vendor Commitment Deadline		09/19/19
Vendor Meeting		10/17/19
Final Committee Meeting		10/19/19
Highland Flugel Fest		
	Festival Committee	
	Festival Committee	

Committee Meeting Schedule

- 1/10/2019
- 2/21/2019
- 3/14/2019
- 4/4/2019
- 5/2/2019
- 5/23/2019
- 6/13/2019
- 8/8/2019
- 8/29/2019
- 9/19/2019 - Vendor Meeting
- 10/3/2019
- 10/17/2019
- 10/19/2019 - Day of Event

Schedule for Day of Event

- 11:00am- Bags Tournament Sign-up (\$30/team, winner takes 50% of entry fees)
- 12:00am- Bags Tournament begins
- 12:30pm-2:30pm - Musical Performance by Jeremy Wright
- 2:30pm-3pm- Announcements
- 3pm-3:30pm –Wings Eating Set-up on the Stage
- 3:30pm- Wings Eating Contest
- 5:00pm- Best Wings Voting Ends
- 5:30pm-50/50 raffle, silent auction winners
- 6:00pm- Best Wings Winners Announced
- 7:00pm-9:00pm-Musical Performance by Bottoms Up Blues Gang

RESOLUTION NO. _____

**RESOLUTION WAIVING COMPETITIVE BIDDING REQUIREMENT
AND APPROVING AND AUTHORIZING THE EXECUTION OF A CONTRACT
TO PURCHASE CONTENT FROM
INDAWARD BROADCASTING LLC / BULLDOG RADIO FOR
CITY OF HIGHLAND, AN ILLINOIS MUNICIPAL CORPORATION,
D/B/A HIGHLAND COMMUNICATION SERVICES
AS A SOLE SOURCE PURCHASE**

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 Director of Innovation and Technology for City of Highland, an Illinois Municipal Corporation, d/b/a Highland Communication Services (“HCS”) desires to purchase content from Indaward Broadcasting LLC / Bulldog Radio (“Bulldog Radio”); and

WHEREAS, the Director of Innovation and Technology for HCS has informed City Council that HCS desires to broadcast the content from Bulldog Radio on HCS Channel Three (3) for not less than fifty percent (50%) of each twenty-four (24) hour day for twelve (12) months; and

WHEREAS, the Director of Innovation and Technology for HCS has informed City Council that HCS will pay Bulldog Radio a total of \$1,006.00 for twelve (12) months of content from Bulldog Radio (*See Exhibit A*); and

WHEREAS, Bulldog Radio has agreed to indemnify, hold harmless, and accept the tender of defense regarding the affiliation with HCS should any legal issues arise, and comply with all state and federal regulations associated with providing content to HCS (*See Exhibit A*); and

WHEREAS, City Council finds that the contract between HCS and Bulldog Radio for the purchase of content to be broadcast on HCS Channel Three (3) for not less than fifty percent (50%) of each twenty-four (24) hour day for \$1,006.00 for twelve (12) months, including Bulldog Radio’s agreement to indemnify, hold harmless, and accept the tender of defense regarding the affiliation with HCS (“Contract”) and comply with all state and federal regulations associated with providing content to HCS, should be approved (*See Exhibit A*); and

WHEREAS, City Council deems it to be in the best interests of City to waive the competitive-bidding requirement that would otherwise apply to the Contract and approve the execution of the Contract as a sole source purchase (*See Exhibit A*); and

WHEREAS, the City Council also finds that the City Manager and/or Mayor should be authorized and directed, on behalf of the City of Highland, to execute whatever documents are necessary to waive the competitive-bidding requirement that would otherwise apply to the Contract and approve and execution of the Contract as a sole source purchase. *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 purchase of content from Bulldog Radio by HCS to be broadcast on HCS Channel Three (3) for not less than fifty percent (50%) of each twenty-four (24) hour day for a total of \$1,006.00 for twelve (12) months, including Bulldog Radio's agreement to indemnify, hold harmless, and accept the tender of defense regarding Bulldog Radio's affiliation with HCS, and comply with all state and federal regulations associated with providing content to HCS, pursuant to the Contract, 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 (**Exhibit A**) between City and Bulldog Radio.

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, and deposited and filed in the Office of the City Clerk, on the ____ day of _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis, Mayor
City of Highland
Madison County, Illinois

ATTEST:

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

TENDER OF DEFENSE, INDEMNITY, HOLD HARMLESS, AND CONTRACT

THIS IS A LEGALLY BINDING CONTRACT. IF NOT UNDERSTOOD, SEEK COMPETENT LEGAL ADVICE.

THIS CONTRACT ("Agreement") is made and entered into effective as of the date passed by Resolution and by the affirmative vote of a majority of the corporate authorities then holding office of the CITY OF HIGHLAND, AN ILLINOIS MUNICIPAL CORPORATION, d/b/a HIGHLAND COMMUNICATION SERVICES ("HCS"), and INDAWARD BROADCASTING LLC / BULLDOG RADIO ("Bulldog Radio")

I. Agreement.

1. Bulldog Radio attests and confirms that all copyright filings and related fees owed are and will be the sole responsibility of Bulldog Radio.
2. Bulldog Radio attests and confirms that compliance with applicable federal and state regulations and filings, and payment of all regulatory fees related to its webcasting service and related content will also be the sole responsibility of Bulldog Radio.
3. Bulldog Radio will defend and hold harmless HCS against any and all claims of copyright infringement, and any and all complaints related to content or and/or production of the programming purchased under this Agreement.
4. HCS hereby notifies Bulldog Radio that it shall place a notice and/or disclaimer on Channel 3 informing the public that **"the content of this program has not been approved by HCS nor does it reflect the opinions or ideas of HCS, its staff or management"**, or some notice and/or disclaimer similar to the aforesaid.
5. In no event will HCS be liable for any special, direct, indirect, consequential, or incidental damages, or any damages whatsoever, whether in an action of contract, negligence or other tort, arising out of or in connection with the use of Bulldog Radio's service or the content of Bulldog Radio's service.

II. Notices. Any notice, request, approval, demand, instruction or other communication to be given to either party hereunder, shall be in writing, and shall be conclusively deemed to be delivered when personally delivered, transmitted by telefax to the applicable telefax number, delivered by email, or mailed by regular United States mail, addressed as follows:

If to City: City of Highland
Madison County, Illinois
Attention: Mark Latham
City Manager
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218
Telephone (618) 654-9891
Facsimile: (618) 654-4768
Email: mlatham@highlandil.gov

If to Bulldog Radio: Dennis (Taylor) Worflar
Email: indaward@gmail.com
Email: bulldogradiohighland.com
Telephone: (618) 530-0754

III. Litigation.

a. Governing Law. This agreement shall be governed by and construed in accordance with the laws of the State of Illinois and/or Federal Law. The parties hereby consent to the exclusive jurisdiction of the State of Illinois and hereby consent and agree that any action or proceeding involving the interpretation of, enforcement of, or in any way relating to this agreement, shall be brought in the Circuit Court in Madison County, Illinois, or the Southern District of Illinois.

IV. Miscellaneous

- a. Binding Effect. This Agreement is binding upon and inures to the benefit of the parties hereto and their respective heirs, legal representatives, executors, administrators, successors and assigns. This Agreement may not be assigned without the written approval of City.
- b. Person Defined. The word "person" as used herein shall include all individuals, partnerships, limited liability companies, corporations, municipalities, public entities, any business entities of any kind, or any other entities whatsoever.
- c. Exhibits/Time Periods. Any reference herein to any exhibits, addenda or attachments refers to the applicable exhibit, addendum, or attachment that is attached to this Agreement, and all such exhibits, addenda or attachments shall constitute a part of this Agreement and are expressly made a part hereof. If any date, time period or deadline hereunder falls on a weekend or a state or federal holiday, then such date shall be extended to the next occurring business day.
- d. Agreement Separable. If any provision hereof is for any reason held to be unenforceable or inapplicable, the other provisions hereof will remain in full force

and effect in the same manner as if such unenforceable or inapplicable provision had never been contained herein, and any such unenforceable provision shall be reformed to, as nearly as possible, reflect the parties' intent in an enforceable manner.

- e. Counterparts. This Agreement may be executed in several counterparts, via email, and/or via facsimile, and all such executed counterparts shall constitute the same agreement. It shall be necessary to account for only one such counterpart in proving this Agreement. The parties further agree that signatures transmitted by email, facsimile, or in Portable Document Format (pdf) may be considered an original for all purposes, including, without limitation, the execution of this Agreement and the enforcement of this Agreement.
- f. Fees. In the event of any dispute between the parties arising in connection with the subject matter of this Agreement, the party prevailing on the merits in any resulting action, mediation, arbitration, proceeding, or litigation shall be entitled to recover from the other party all fees, costs, and expenses including, without limitation, attorneys' fees, consultants' fees, and litigation costs, incurred in connection therewith.
- g. Entire Agreement. This Agreement constitutes the entire agreement between City and Bulldog Radio, and, except for any addenda attached hereto, there are no other covenants, agreements, promises, terms and provisions, conditions, undertakings, or understandings, either oral or written, between the parties concerning the Property other than those herein set forth. No subsequent alteration, amendment, change, deletion or addition to this Agreement shall be binding upon City or Bulldog Radio unless in writing and signed by both City and Bulldog Radio. No subsequent amendment or change to an addendum shall be binding, unless signed by both parties.
- h. Construction. This Agreement shall not be construed more strictly against one party than against the other merely by virtue of the fact that it may have been prepared by one of the parties or party's brokers, it being recognized that both City and Bulldog Radio have contributed substantially and materially to the preparation and/or negotiation of this Agreement.
- i. Compliance with Laws, Regulations, and Accreditation. Bulldog Radio and City believe and intend that this Agreement complies with all relevant federal and state laws as well as relevant regulations. Should City have a good faith belief that this Agreement creates a material risk of violating any such laws or regulations, or any revisions or amendments thereto, City shall give written notice to the Bulldog Radio regarding such belief. The parties shall then make a good faith effort to reform the Agreement to comply with such laws and regulations. If, within thirty (30) days of City first providing notice to the Bulldog Radio of the need to amend this Agreement to comply with the laws and regulations, the parties, acting in good faith, are (i) unable to mutually agree upon and make amendments or alterations to this Agreement to meet the requirements in question, or (ii) alternatively, the parties determine in

good faith that amendments or alterations to the requirements are not feasible, then either may terminate this Agreement upon thirty (30) days prior written notice.

j. Indemnity, Hold Harmless, and Tender of Defense. Bulldog Radio shall indemnify and hold harmless City, 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 reasonable attorney's fees) which may arise directly or indirectly from Bulldog Radio's affiliation with HCS. Bulldog Radio understands and agrees that in no way does this Agreement create any liability of any kind for City regarding Bulldog Radio's affiliation with HCS. Bulldog Radio shall, at its own cost and expense, appear, defend and pay all charges of attorneys, costs and other expenses arising therefrom or incurred in connection therewith with Bulldog Radio's affiliation with HCS. If any judgment shall be rendered against City, its agents, officers, officials or employees in any such action, Bulldog Radio shall, at its expense, satisfy and discharge the same.

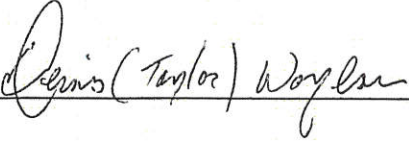
k. Termination of Bulldog Radio Content by City. City shall have the absolute and immediate right to terminate the content of Bulldog Radio on the HCS system without any notice to Bulldog Radio. City will be responsible for Bulldog Radio fees, as agreed upon pursuant to this contract, up to and including the day of termination. Bulldog Radio agrees it has no property right to broadcast content on HCS and no cause of action or remedy for termination of this contract by HCS.

V. Acceptance of Contract. Bulldog Radio and City intend to execute this Agreement prior to City obtaining the approvals necessary to give force and effect to this Agreement. City represents that this Agreement must be passed by Resolution and the affirmative vote of the majority of the corporate authorities then holding office. Neither Bulldog Radio nor City shall have any obligation under this Agreement until City has obtained all necessary approvals to this Agreement having full force and effect.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have executed the Agreement as of the date(s) below:

Dennis (Taylor) Worflar

By: 

Date: August 13, 2019

**City of Highland
Madison County, Illinois
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218**

Mark Latham
City Manager
City of Highland, Illinois

By: _____

Date: _____



To: Mark Latham, City Manager
From: Angela Imming, Director, Technology and Innovation
Date: July 5, 2019
Subject: Content for Channel 3

Recommendation:

I recommend entering into a contract to provide Bulldog Radio content on the HCS channel 3 at least 50% of each 24 hour cycle.

Discussion:

Highland Communication Services owns and operates channel 3 but has no means to produce content for programming 24 hours per day. It has long been desired to find content that is suitable, community focused and insightful for our viewers. Bull Dog radio airs Highland High School sporting events, offers talk shows, featuring local guests and plays music other times. While not all programming will have a visual component, local programming that is focused on community will be an asset to the City our citizens and to Highland Communication Services.

Financial Impact:

HCS will pay .08 per subscriber per month for a total of \$1006.00 from July 2019 to July 2020. Our video content budget is \$975,770.00.

RESOLUTION NO. _____

**A RESOLUTION APPROVING AMENDMENT TO AFFILIATION AGREEMENT
BETWEEN CITY OF HIGHLAND, AN ILLINOIS MUNICIPAL CORPORATION,
D/B/A HIGHLAND COMMUNICATION SERVICES, AND FOX SPORTS NET, LLC**

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 City of Highland, an Illinois Municipal Corporation, d/b/a Highland Communication Services (hereinafter “HCS”) is a Member of the National Telco Television Consortium LLC (hereinafter “NTTC”) by way of the City Council’s resolution adopted and approved on February 6, 2012, approving the *National Telco Television Consortium Membership Agreement*; and

WHEREAS, the NTTC is now known as Vivicast Media, LLC as successor-in-interest to National Telco Television Consortium, LLC (hereinafter “Vivicast”); and

WHEREAS, City desires to obtain for HCS, as a member of Vivicast, the right to broadcast content from Fox Sports Net, LLC, including content from Fox College Sports and FS Midwest; and

WHEREAS, City desires to obtain for HCS, as a member of Vivicast, a non-exclusive license and right to distribute certain program content from Fox College Sports and FS Midwest; and

WHEREAS, the Telecommunications Advisory Board, in the exercise of the plenary authority concerning editorial control, conferred on it by Ordinance No. 2399, adopted on January 18, 2010, and by Section 613(e)(2) of the Cable Franchise Policy Act of 1984 (47 U.S.C. §533(a)(2), has determined that HCS’ acquisition and distribution of the programming would be appropriate; and

WHEREAS, Fox Sports Net, LLC has presented a proposed Amendment to Affiliation Agreement to City for consideration (*See* Amendment to Affiliation Agreement attached hereto as **Exhibit A**); and

WHEREAS, City Council finds that the terms of the Amendment to Affiliation Agreement (**Exhibit A**) should be approved; and

WHEREAS, the City Manager and/or Mayor should be authorized and directed, on behalf of City, to execute all documents required to enter the Amendment to Affiliation Agreement between City and Fox Sports Net, LLC (**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. City Council has determined the Amendment to Affiliation Agreement (**Exhibit A**) between City and Fox Sports Net, LLC is approved.

Section 3. The City Manager and/ or Mayor is authorized and directed, on behalf of City, to execute all documents required to enter the Amendment to Affiliation Agreement (**Exhibit A**) between City and Fox Sports Net, LLC.

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 _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis
Mayor
City of Highland
Madison County, Illinois

ATTEST:

Barbara Bellm
City Clerk
City of Highland
Madison County, Illinois

AMENDMENT TO AFFILIATION AGREEMENT

This Amendment (this “Amendment”) is effective and entered into as of August 31, 2019 (“Amendment Date”) by and between FOX SPORTS NET, LLC (“Network”), on behalf of itself and its affiliates that own and operate the Services (each such affiliate as an assignee of Fox Cable Network Services, LLC) and HIGHLAND COMMUNICATION SERVICES, for itself and on behalf of its controlled affiliates (“Affiliate”), and amends that certain Affiliation Agreement, dated as of January 1, 2017 between Network and Affiliate (as amended from time to time, the “Agreement”) related to the distribution of certain television video programming services. Capitalized terms used in this Amendment and not otherwise defined shall have the meanings set forth in the Agreement.

WHEREAS, Network and Affiliate mutually desire to amend the Agreement as provided herein.

NOW THEREFORE, in consideration of the foregoing, the covenants contained herein and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the parties hereto, intending to be legally bound hereby, agree as follows:

1. Section I(a) of the Agreement is hereby amended by deleting the table therein and replacing it with the following table:

National Services	Regional Sports Services (“ <i>RSNs</i> ”)
<i>Fox College Sports</i>	<i>FS Midwest</i>

2. Section II of the Agreement is hereby amended by replacing it in its entirety with the following:

“**Term**: With respect to each Service, the term (“**Term**”) of this Agreement commences on the Effective Date and ends December 31, 2021, unless earlier terminated in accordance with the terms of this Agreement.

The parties acknowledge that, as of August 31, 2019, Affiliate currently distributes FCS as a member affiliate pursuant to that certain Affiliation Agreement, by and between Fox College Sports, Inc. (as assignee of Fox Cable Network Services, LLC) and Vivicast Media, LLC (as amended from time to time, and as such agreement may be renewed or extended, the “Vivicast Agreement”). The parties hereby agree that Affiliate shall be permitted to continue distribution of FCS under the Vivicast Agreement, provided that, if at any time during the Term hereof, Affiliate ceases distribution of FCS as a COOP Member (as defined in the Vivicast Agreement) pursuant to the Vivicast Agreement (the date of such cessation, the “FCS Term Start Date”), then beginning as of the FCS Term Start Date and continuing through the remainder of the Term, (i) Affiliate will continue to carry and distribute FCS on all Systems on which it carried FCS immediately prior to the FCS Term Start Date pursuant to the terms and condition of this Agreement and (ii) Affiliate will not at any time move or migrate FCS to any less-penetrated package or tier of services, or withdraw or discontinue distribution of FCS.”

3. *FS Midwest*. The Base Rate table set forth in Exhibit C-1 of the Agreement is hereby amended by inserting the following columns:

Zone	9/1/19- 12/31/19	2020	2021
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1A	\$7.48	\$8.19	\$8.92
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4. Fox College Sports. The Agreement is hereby amended by inserting a new Exhibit C-2 in the form of Exhibit C-2 attached hereto.

5. Effect on the Agreement. Each reference in the Agreement to “this Agreement” or words of similar meaning will mean and be a reference to the Agreement as amended by this Amendment. Except as specifically amended and supplemented in this Amendment, (i) the Agreement is, and will continue to be, in full force and effect and (ii) this Amendment will not operate as a waiver of any provision of the Agreement.

6. Counterparts. This Amendment may be executed in separate counterparts, each of which when executed and delivered (including without limitation via facsimile) shall be deemed an original and all of which together shall constitute the same agreement and shall be binding upon the parties.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the Amendment Date.

FOX SPORTS NET, LLC

HIGHLAND COMMUNICATION
SERVICES

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

EXHIBIT C-2
FOX COLLEGE SPORTS

Permissible Tier: For each System, First Tier, Second Tier or Sports Tier.

Add-on Service: *Fox College Sports* is an add-on, complementary digital service to all in-market regional sports networks owned and operated by, or affiliated with, Network (each an "RSN") that are available for distribution by such System. Affiliate covenants that *Fox College Sports* shall not be (i) distributed on any Affiliate System that does not also carry each RSN available for distribution by such Affiliate System; (ii) distributed on any Affiliate System in a tier or package that is more widely penetrated than any package or tier that includes any RSN (an "RSN Tier"); or (iii) made available to a subscriber to a System unless such subscriber also receives each RSN Tier carried by such System. In the event that Affiliate anticipates that it will fail to carry any RSN or repositions any RSN or *Fox College Sports* on any System in violation of the foregoing covenants, Affiliate will give Network at least 30 days' prior written notice of such discontinuation or repositioning. Network may, upon 30 days' prior written notice, terminate this Agreement with respect to *Fox College Sports* on such System at any time on or after the date on which Affiliate delivers such notice.

Carriage: Carriage shall be on a Permissible Tier.

Permissible Channel Position: Notwithstanding anything to the contrary in the Agreement, Affiliate will cause each System to distribute *Fox College Sports* to its Service Subscribers so that it is viewed on three designated, contiguous channels and otherwise within the channel neighborhood of other sports and sports-related video programming services.

Base Rates:

Carriage/Actual Service Penetration*	9/1/19-12/31/19	2020	2021
First Tier or $\geq 70\%$ digital penetration	\$0.4488	\$0.4667	\$0.4854
$\geq 30\%$ and $< 70\%$ digital penetration	\$0.5582	\$0.5805	\$0.6038
$< 30\%$ penetration	\$0.6567	\$0.6830	\$0.7103

*Actual Service penetration for each System shall be calculated by dividing the total number of such System's Service Subscribers by the total number of such System's Second Tier subscribers.

For the avoidance of doubt, the Base Rate applicable to *Fox College Sports* shall be a single rate applicable to all feeds of such Service carried by any System.

Commercial Fee: The "Commercial Fee" payable with respect to each Commercial Subscriber will be determined as follows:

- A. For each Commercial Subscriber that is either licensed to serve alcohol on-premises or derives at least 80% of its revenues from entry fees and/or the sale of food or beverages (each a "Hospitality Subscriber"), the Commercial Fee will be (1) for each Hospitality Subscriber that receives the Service a la carte, the greater of (a) the applicable Base Hospitality Subscriber Fee (as defined

below) and (b) 50% of the retail license fee charged to such Hospitality Subscriber for the Service and (2) for each Hospitality Subscriber that receives the Service other than a la carte, the applicable Base Hospitality Subscriber Fee.

- B. For each Commercial Subscriber that is not a Hospitality Subscriber, the Commercial Fee will be twice the Base Rate that would apply if such Service Subscriber were not a Commercial Subscriber or, if greater and the Service is received a la carte, 50% of the retail license fee charged to such Commercial Subscriber.
- C. The “Base Hospitality Subscriber Fee” is \$23.00. For each calendar year beginning after the Effective Date, Network may, on 60 days’ prior written notice, increase the Base Hospitality Subscriber Fee by the lesser of the then-applicable CPI Increase and five percent. “CPI Increase” means, for each applicable calendar year, the percentage increase during the immediately preceding calendar year in the Consumer Price Index for All Urban Consumers (CPI-U): U.S. City Average, All Items.

Bulk Rate Percentage: 50%

Payment Address: Affiliate will pay any amounts due under the Agreement by delivering immediately available funds to Network at PO Box 55652, Los Angeles, California 90074-5652 (or any other location as Network may designate).



To: Mark Latham, City Manager
From: Angela Imming, Director, Technology and Innovation
Date: Aug 2nd, 2019
Subject: Fox Sports MidWest Renewal

Recommendation:

I recommend HCS renew the contract allowing HCS to carry Fox Sports MidWest.

Discussion:

Fox Sports is a wildly popular channel carrying local sporting content, including Cardinal baseball. We currently provide Fox Sports MidWest in our lowest tier.

Financial Impact:

The new contract with FoxSports Midwest includes significant pricing increases and is a 3-year-term. Also included is additional college sports programming. Total financial impact is expected to be an increase of \$25,000 annually.

Under the new contract, our rates will be as follows:

Period	FSMW	College Sports	Total HCS Rate
9/1/2019- 12/31/2019	\$7.48	.4488	\$7.9288
1/1/ 2020 - 12/31/2020	\$8.19	.4667	\$8.6567
1/1/2021 / 12/31/2021	\$8.92	.4854	\$9.4054

RESOLUTION NO. _____

A RESOLUTION APPROVING THE LOCAL PUBLIC AGENCY AGREEMENT FOR FEDERAL PARTICIPATION FOR BROADWAY STREET RESURFACING FROM HELVETIA DRIVE TO IBERG ROAD

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 it to be in the best interests of public health, safety, general welfare and economic welfare to resurface Broadway Street from Helvetia Drive to Iberg Road (hereinafter “Project”); and

WHEREAS, the Project is approximately .53 miles in length and known to the Illinois Department of Transportation (“IDOT”) as Section Number 16-00069-00-RS, Job Number C-98-325-16, and Project Number XR6R(307) (*See* Local Public Agency Agreement for Federal Participation attached hereto as **Exhibit A**); and

WHEREAS, the Project consists of roadway resurfacing, sidewalk replacement, associated drainage improvements, and all necessary work to complete the Project (**Exhibit A**); and

WHEREAS, the total cost of the Project is estimated to cost \$677,000.00 (**Exhibit A**); and

WHEREAS, the total cost of the Project has necessitated the use of federal funds in the amount of \$375,000.00 (**Exhibit A**); and

WHEREAS, the federal fund source requires a partial match of local funds in the amount of \$302,000.00; and

WHEREAS, of the \$302,000.00 of local funds required for the federal fund source partial match, Madison County, Illinois, has agreed to fund \$125,000.00 of City’s share of the required local fund match through its County Matching Tax Fund; and

WHEREAS, if approved, City shall be responsible for \$177,000.00 of the \$677,000.00 cost of the Project; and

WHEREAS, City’s costs associated with the Project will be funded through the Non-Home Rule Sales Tax, and City committed to fund the Project in 2015; and

WHEREAS, City has determined it to be in the best interests of public health, safety, general welfare, and economic welfare to authorize City’s payment of \$177,000.00, or as much of such sum as may be needed to partially match federal funds, for the completion of the Project, and as indicated in the Local Public Agency Agreement for Federal Participation (**Exhibit A**); and

WHEREAS, City finds that the terms of the proposed Local Public Agency Agreement for Federal Participation (**Exhibit A**) are fair and reasonable, and that the proposed Local Public Agency Agreement for Federal Participation (**Exhibit A**) should be approved; and

WHEREAS, City finds that the Mayor and/or City Manager should be authorized and directed, on behalf of City, to execute and date the proposed Local Public Agency Agreement for Federal Participation (**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 proposed Local Public Agency Agreement for Federal Participation (**Exhibit A**) is approved.

Section 3. The Mayor and/or City Manager is authorized and directed, on behalf of the City of Highland, to execute and date the Local Public Agency Agreement for Federal Participation (**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, and deposited and filed in the Office of the City Clerk, on the ____ day of _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis, Mayor
City of Highland
Madison County, Illinois

ATTEST:

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



LOCAL PUBLIC AGENCY

Local Public Agency: City of Highland, County: Madison, Section Number: 16-00069-00-RS, Fund Type: STU, MPO Name: EWGCG, MPO TIP Number: 6773-20

Construction on State Letting, Construction Local Letting, Day Labor, Local Administered Engineering, Right-of-Way

Construction, Engineering, Right of Way job and project numbers

This Agreement is made and entered into between the above local public agency, hereinafter referred to as the "LPA" and the State of Illinois, acting by and through its Department of Transportation, hereinafter referred to as "STATE".

LOCATION

Local Street/Road Name: Broadway Street, Key Route: FAU 8846, Length: 0.53, Stationing: From 0.50 To 1.03

Location Termini: Helvetia Drive to Iberg Road

Current Jurisdiction: City of Highland, Existing Structure Number(s): N/A, Add Location button

PROJECT DESCRIPTION

The project consists of roadway resurfacing, sidewalk replacement associated drainage improvements and all necessary work to complete the project.

LOCAL PUBLIC AGENCY APPROPRIATION - REQUIRED FOR STATE LET CONTRACTS

By execution of this Agreement the LPA attests that sufficient moneys have been appropriated or reserved by resolution or ordinance to fund the LPA share of project costs.

METHOD OF FINANCING - (State-Let Contract Work Only)

Check One

METHOD A - Lump Sum (80% of LPA Obligation)

Lump Sum Payment - Upon award of the contract for this improvement, the LPA will pay the STATE within thirty (30) calendar days of billing, in lump sum, an amount equal to 80% of the LPA's estimated obligation incurred under this agreement.

METHOD B - Monthly Payments of due by the of each successive month.

Monthly Payments - Upon award of the contract for this improvement, the LPA will pay to the STATE a specified amount each month for an estimated period of months, or until 80% of the LPA's estimated obligation under the provisions of the agreement has been paid.

METHOD C - LPA's Share Balance divided by estimated total cost multiplied by actual progress payment.

Progress Payments - Upon receipt of the contractor's first and subsequent progressive bills for this improvement, the LPA will pay to the STATE within thirty (30) calendar days of receipt, an amount equal to the LPA's share of the construction cost divided by the estimated total cost multiplied by the actual payment.

Failure to remit the payment(s) in a timely manner as required under Methods A, B, or C shall allow the **STATE** to internally offset, reduce, or deduct the arrearage from any payment or reimbursement due or about to become due and payable from the **STATE** to the **LPA** on this or any other contract. The **STATE** at its sole option, upon notice to the **LPA**, may place the debit into the Illinois Comptroller's Offset System (15 ILCS 405/10.05) or take such other and further action as may be required to recover the debt.

THE LPA AGREES:

1. To acquire in its name, or in the name of the **STATE** if on the **STATE** highway system, all right-of-way necessary for this project in accordance with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and established State policies and procedures. Prior to advertising for bids, the **LPA** shall certify to the **STATE** that all requirements of Titles II and III of said Uniform Act have been satisfied. The disposition of encroachments, if any, will be cooperatively determined by representatives of the **LPA**, the **STATE**, and the **FHWA** if required.
2. To provide for all utility adjustments and to regulate the use of the right-of-way of this improvement by utilities, public and private, in accordance with the current Utility Accommodation Policy for Local Public Agency Highway and Street Systems.
3. To provide for surveys and the preparation of plans for the proposed improvement and engineering supervision during construction of the proposed improvement.
4. To retain jurisdiction of the completed improvement unless specified otherwise by addendum (addendum should be accompanied by a location map). If the improvement location is currently under road district jurisdiction, a jurisdictional addendum is required.
5. To maintain or cause to be maintained the completed improvement (or that portion within its jurisdiction as established by addendum referred to in item 4 above) in a manner satisfactory to the **STATE** and the **FHWA**.
6. To comply with all applicable Executive Orders and Federal Highway Acts pursuant to the Equal Employment Opportunity and Nondiscrimination Regulations required by the U.S. Department of Transportation.
7. To maintain for a minimum of 3 years after final project close out by the **STATE**, adequate books, records and supporting documents to verify the amounts, recipients and uses of all disbursements of funds passing in conjunction with the contract. The contract and all books, records, and supporting documents related to the contract shall be available for review and audit by the Auditor General and the **STATE**. The **LPA** agrees to cooperate fully with any audit conducted by the Auditor General, the **STATE**, and to provide full access to all relevant materials. Failure to maintain the books, records, and supporting documents required by this section shall establish presumption in favor of the **STATE** for recovery of any funds paid by the **STATE** under the contract for which adequate books, records and supporting documentation are not available to support their purported disbursement.
8. To provide if required, for the improvement of any railroad-highway grade crossing and rail crossing protection within the limits of the proposed improvement.
9. To comply with Federal requirements or possibly lose (partial or total) Federal participation as determined by the **FHWA**.
10. (Local Contracts or Day Labor) To provide or cause to be provided all of the initial funding, equipment, labor, material and services necessary to complete the project.
11. (Preliminary Engineering) In the event that right-of-way acquisition for, or construction of, the project for which this preliminary engineering is undertaken with Federal participation is not started by the close of the tenth fiscal year following **FHWA** authorization, the **LPA** will repay the **STATE** any Federal funds received under the terms of this agreement.
12. (Right-of-Way Acquisition) In the event construction has not commenced by the close of the twentieth fiscal year following **FHWA** authorization using right-of-way acquired this agreement, the **LPA** will repay the **STATE** any Federal Funds received under the terms of this agreement.
13. (Railroad Related Work) The **LPA** is responsible for the payment of the railroad related expenses in accordance with the **LPA/** railroad agreement prior to requesting reimbursement from the **STATE**. Requests for reimbursement should be sent to the appropriate **IDOT** District Bureau of Local Roads and Streets Office. Engineer's Payment Estimates shall be in accordance with the Division of Cost.
14. Certifies to the best of its knowledge and belief that its officials:
 - a. are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency;
 - b. have not within a three-year period preceding this agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements receiving stolen property;
 - c. are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, Local) with commission of any of the offenses enumerated in item (b) of this certification; and
 - d. have not within a three-year period preceding the agreement had one or more public transactions (Federal, State, Local) terminated for cause or default.
15. To include the certifications, listed in item 14 above, and all other certifications required by State statutes, in every contract, including procurement of materials and leases of equipment.
16. (**STATE** Contracts). That execution of this agreement constitutes the **LPA's** concurrence in the award of the construction contract to the responsible low bidder as determined by the **STATE**.
17. That for agreements exceeding \$100,000 in federal funds, execution of this agreement constitutes the **LPA's** certification that:
 - a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of congress, an officer or employee of congress, or any employee of a member of congress in connection with the awarding of any federal contract, the making of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.

- b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of congress, an officer or employee of congress or an employee of a member of congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit standard form - LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
 - c. The **LPA** shall require that the language of this certification be included in the award documents for all subawards (including subcontracts, subgrants and contracts under grants, loans and cooperative agreements), and that all subrecipients shall certify and disclose accordingly.
18. To regulate parking and traffic in accordance with the approved project report.
 19. To regulate encroachments on public rights-of-way in accordance with current Illinois Compiled Statutes.
 20. To regulate the discharge of sanitary sewage into any storm water drainage system constructed with this improvement in accordance with the current Illinois Compiled Statutes.
 21. To comply with the federal Financial Integrity Review and Evaluation (FIRE) program, which requires States and subrecipients to justify continued federal funding on inactive projects. 23 CFR 630.106(a)(5) defines an inactive project as a project in which no expenditures have been charged against federal funds for the past twelve (12) months.
 22. (Reimbursement Requests) For reimbursement requests the **LPA** will submit supporting documentation with each invoice. Supporting documentation is defined as verification of payment, certified time sheets or summaries, vendor invoices, vendor receipts, cost plus fix fee invoice, progress report, personnel and direct cost summaries, and other documentation supporting the requested reimbursement amount (Form BLR 05621 should be used for consultant invoicing purposes). **LPA** invoice requests to the **STATE** will be submitted with sequential invoice numbers by project.
 23. (Final Invoice) The **LPA** will submit to the **STATE** a complete and detailed final invoice with applicable supporting documentation of all incurred costs, less previous payments, no later than twelve (12) months from the date of completion of work or from the date of the previous invoice, which ever occurs first. If a final invoice is not received within this time frame, the most recent invoice may be considered the final invoice and the obligation of the funds closed. Form BLR 05613 (Engineering Payment Record) is required to be submitted with the final invoice on the engineering projects.
 24. (Project Closeout) The **LPA** shall provide the final report to the appropriate **STATE** district office within twelve (12) months of the physical completion date of the project so that the report may be audited and approved for payment. If the deadline cannot be met, a written explanation must be provided to the district prior to the end of the twelve (12) months documenting the reason and the new anticipated date of completion. If the extended deadline is not met, this process must be repeated until the project is closed. Failure to follow this process may result in the immediate close-out of the project and loss of further funding.
 25. (Project End Date) For Preliminary Engineering projects the end date is ten (10) years from the execution date of the agreement. For Right-of-Way projects the end date is fifteen (15) years from the execution date of the agreement. For Construction projects the end date is five (5) years for projects under \$1,000,000 or seven (7) years for projects over \$1,000,000 from the execution date of the agreement. Requests for time extensions and joint agreement amendments must be received and approved prior to expiration of the project end date. Failure to extend the end date may result in the immediate close-out of the project and loss of further funding.
 26. (Single Audit Requirements) That if the **LPA** expends \$750,000 or more a year in federal financial assistance they shall have an audit made in accordance with 2 CFR 200. **LPA's** expending less than \$750,000 a year shall be exempt from compliance. A copy of the audit report must be submitted to the **STATE** (Office of Internal Audit, Room 201, 2300 South Dirksen Parkway, Springfield, Illinois, 62764) within 30 days after the completion of the audit, but no later than one year after the end of the **LPA's** fiscal year. The CFDA number for all highway planning and construction activities is 20.205.
 27. That the **LPA** is required to register with the System for Award Management or SAM, which is a web-enabled government-wide application that collects, validates, stores, and disseminates business information about the federal government's trading partners in support of the contract award and the electronic payment processes. To register or renew, please use the following website: <https://www.sam.gov/SAM/>
 28. (Required Uniform Reporting) To comply with the Grant Accountability and Transparency Act (30 ILCS 708) that requires a uniform reporting of expenditures. Uniform reports of expenditures shall be reported no less than quarterly using IDOT's BoBS 2832 form available on IDOT's web page under the "Resources" tab. Additional reporting frequency may be required based upon specific conditions, as listed in the accepted Notice of State Award (NOSA). Specific conditions are based upon the award recipient/grantee's responses to the Fiscal and Administrative Risk Assessment (ICQ) and the Programmatic Risk Assessment (PRA).

NOTE: Under the terms of the Grant Funds Recovery Act (30 ILCS 705/4.1), "Grantor agencies may withhold or suspend the distribution of grant funds for failure to file requirement reports" if the report is more than 30 calendar days delinquent, without any approved written explanation by the grantee, the entity will be placed on the Illinois Stop Payment List. (Refer to the Grantee Compliance Enforcement System for detail about the Illinois Stop Payment List: <https://www.illinois.gov/sites/GATA/Pages/ResourceLibrary.aspx>)

THE STATE AGREES:

1. To provide such guidance, assistance, and supervision to monitor and perform audits to the extent necessary to assure validity of the **LPA's** certification of compliance with Title II and III Requirements.
2. (State Contracts) To receive bids for construction of the proposed improvement when the plans have been approved by the **STATE** (and **FHWA**, if required) and to award a contract for construction of the proposed improvement after receipt of a satisfactory bid.
3. (Day Labor) To authorize the **LPA** to proceed with the construction of the improvement when agreed unit prices are approved, and to reimburse the **LPA** for that portion of the cost payable from Federal and/or State funds based on the agreed unit prices and engineer's pay estimates in accordance with the division of cost page.

- b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of congress, an officer or employee of congress or an employee of a member of congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit standard form - LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
 - c. The **LPA** shall require that the language of this certification be included in the award documents for all subawards (including subcontracts, subgrants and contracts under grants, loans and cooperative agreements), and that all subrecipients shall certify and disclose accordingly.
18. To regulate parking and traffic in accordance with the approved project report.
 19. To regulate encroachments on public rights-of-way in accordance with current Illinois Compiled Statutes.
 20. To regulate the discharge of sanitary sewage into any storm water drainage system constructed with this improvement in accordance with the current Illinois Compiled Statutes.
 21. To comply with the federal Financial Integrity Review and Evaluation (FIRE) program, which requires States and subrecipients to justify continued federal funding on inactive projects. 23 CFR 630.106(a)(5) defines an inactive project as a project in which no expenditures have been charged against federal funds for the past twelve (12) months.
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 23. (Final Invoice) The **LPA** will submit to the **STATE** a complete and detailed final invoice with applicable supporting documentation of all incurred costs, less previous payments, no later than twelve (12) months from the date of completion of work or from the date of the previous invoice, which ever occurs first. If a final invoice is not received within this time frame, the most recent invoice may be considered the final invoice and the obligation of the funds closed. Form BLR 05613 (Engineering Payment Record) is required to be submitted with the final invoice on the engineering projects.
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 25. (Project End Date) For Preliminary Engineering projects the end date is ten (10) years from the execution date of the agreement. For Right-of-Way projects the end date is fifteen (15) years from the execution date of the agreement. For Construction projects the end date is five (5) years for projects under \$1,000,000 or seven (7) years for projects over \$1,000,000 from the execution date of the agreement. Requests for time extensions and joint agreement amendments must be received and approved prior to expiration of the project end date. Failure to extend the end date may result in the immediate close-out of the project and loss of further funding.
 26. (Single Audit Requirements) That if the **LPA** expends \$750,000 or more a year in federal financial assistance they shall have an audit made in accordance with 2 CFR 200. **LPA's** expending less than \$750,000 a year shall be exempt from compliance. A copy of the audit report must be submitted to the **STATE** (Office of Internal Audit, Room 201, 2300 South Dirksen Parkway, Springfield, Illinois, 62764) within 30 days after the completion of the audit, but no later than one year after the end of the **LPA's** fiscal year. The CFDA number for all highway planning and construction activities is 20.205.
 27. That the **LPA** is required to register with the System for Award Management or SAM, which is a web-enabled government-wide application that collects, validates, stores, and disseminates business information about the federal government's trading partners in support of the contract award and the electronic payment processes. To register or renew, please use the following website: <https://www.sam.gov/SAM/>
 28. (Required Uniform Reporting) To comply with the Grant Accountability and Transparency Act (30 ILCS 708) that requires a uniform reporting of expenditures. Uniform reports of expenditures shall be reported no less than quarterly using IDOT's BoBS 2832 form available on IDOT's web page under the "Resources" tab. Additional reporting frequency may be required based upon specific conditions, as listed in the accepted Notice of State Award (NOSA). Specific conditions are based upon the award recipient/grantee's responses to the Fiscal and Administrative Risk Assessment (ICQ) and the Programmatic Risk Assessment (PRA).

NOTE: Under the terms of the Grant Funds Recovery Act (30 ILCS 705/4.1), "Grantor agencies may withhold or suspend the distribution of grant funds for failure to file requirement reports" if the report is more than 30 calendar days delinquent, without any approved written explanation by the grantee, the entity will be placed on the Illinois Stop Payment List. (Refer to the Grantee Compliance Enforcement System for detail about the Illinois Stop Payment List: <https://www.illinois.gov/sites/GATA/Pages/ResourceLibrary.aspx>)

THE STATE AGREES:

1. To provide such guidance, assistance, and supervision to monitor and perform audits to the extent necessary to assure validity of the **LPA's** certification of compliance with Title II and III Requirements.
2. (State Contracts) To receive bids for construction of the proposed improvement when the plans have been approved by the **STATE** (and **FHWA**, if required) and to award a contract for construction of the proposed improvement after receipt of a satisfactory bid.
3. (Day Labor) To authorize the **LPA** to proceed with the construction of the improvement when agreed unit prices are approved, and to reimburse the **LPA** for that portion of the cost payable from Federal and/or State funds based on the agreed unit prices and engineer's pay estimates in accordance with the division of cost page.

4. (Local Contracts) For agreements with federal and/or state funds in engineering, right-of-way, utility work and/or construction work:
 - a. To reimburse the **LPA** for federal and/or state share on the basis of periodic billings, provided said billings contain sufficient cost information and show evidence of payments by the **LPA**;
 - b. To provide independent assurance sampling and furnish off-site material inspection and testing at sources normally visited by **STATE** inspectors for steel, cement, aggregate, structural steel, and other materials customarily tested by the **STATE**.

IT IS MUTUALLY AGREED:

1. Construction of the project will utilize domestic steel as required by Section 106.01 of the current edition of the Standard Specifications for Road and Bridge Construction and federal Buy America provisions.
2. That this Agreement and the covenants contained herein shall become null and void in the event that the **FHWA** does not approve the proposed improvement for Federal-aid participation within one (1) year of the date of execution of this agreement.
3. This agreement shall be binding upon the parties, their successors and assigns.
4. For contracts awarded by the **LPA**, the **LPA** shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any USDOT - assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The **LPA** shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of USDOT - assisted contracts. The **LPA's** DBE program, as required by 49 CFR part 26 and as approved by USDOT, is incorporated by reference in this agreement. Upon notification to the recipient of its failure to carry out its approved program, the **STATE** may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S. C 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C 3801 et seq.). In the absence of a USDOT - approved **LPA** DBE Program or on state awarded contracts, this agreement shall be administered under the provisions of the **STATE'S** USDOT approved Disadvantaged Business Enterprise Program.
5. In cases where the **STATE** is reimbursing the **LPA**, obligation of the **STATE** shall cease immediately without penalty or further payment being required if, in any fiscal year, the Illinois General Assembly or applicable federal funding source fails to appropriate or otherwise make available funds for the work contemplated herein.
6. All projects for the construction of fixed works which are financed in whole or in part with funds provided by this agreement and/or amendment shall be subject to the Prevailing Wage Act (820 ILCS 130/0.01 et seq.) unless the provisions of the act exempt its application.

ADDENDA

Additional information and/or stipulations are hereby attached and identified below as being a part of this agreement.

<input checked="" type="checkbox"/>	1. Location Map
<input checked="" type="checkbox"/>	2. Division of Cost
<input checked="" type="checkbox"/>	3. Appropriation Resolution
<input type="button" value="Add Row"/>	

The LPA further agrees as a condition of payment, that it accepts and will comply with the applicable provisions set forth in this agreement and all Addenda indicated above.

APPROVED

Local Public Agency

Name of Official (Print or Type Name)

Joseph R. Michaelis

Title of Official

Mayor

Signature

Date

--	--

The above signature certifies the agency's Tin number is 376001429 conducting business as a Governmental Entity.

Duns Number 071998876

APPROVED

State of Illinois
Department of Transportation

Omer Osman P.E., Acting Secretary

Date

--	--

By:

Director of Planning & Programming

Date

--	--

Director of Planning & Programming

Date

--	--

Philip C. Kaufmann, Chief Counsel

Date

--	--

Chief Fiscal Officer (CFO)

Date

--	--

NOTE: if the LPA signature is by an APPOINTED official, a resolution authorizing said appointed official to execute this agreement is required.

ADDENDA NUMBER 2

Local Public Agency City of Highland	County Madison	Section Number 16-00069-00-RS
---	-------------------	----------------------------------

Construction		Engineering		Right of Way	
Job Number	Project Number	Job Number	Project Number	Job Number	Project Number
C-98-325-16	XR6R(307)				

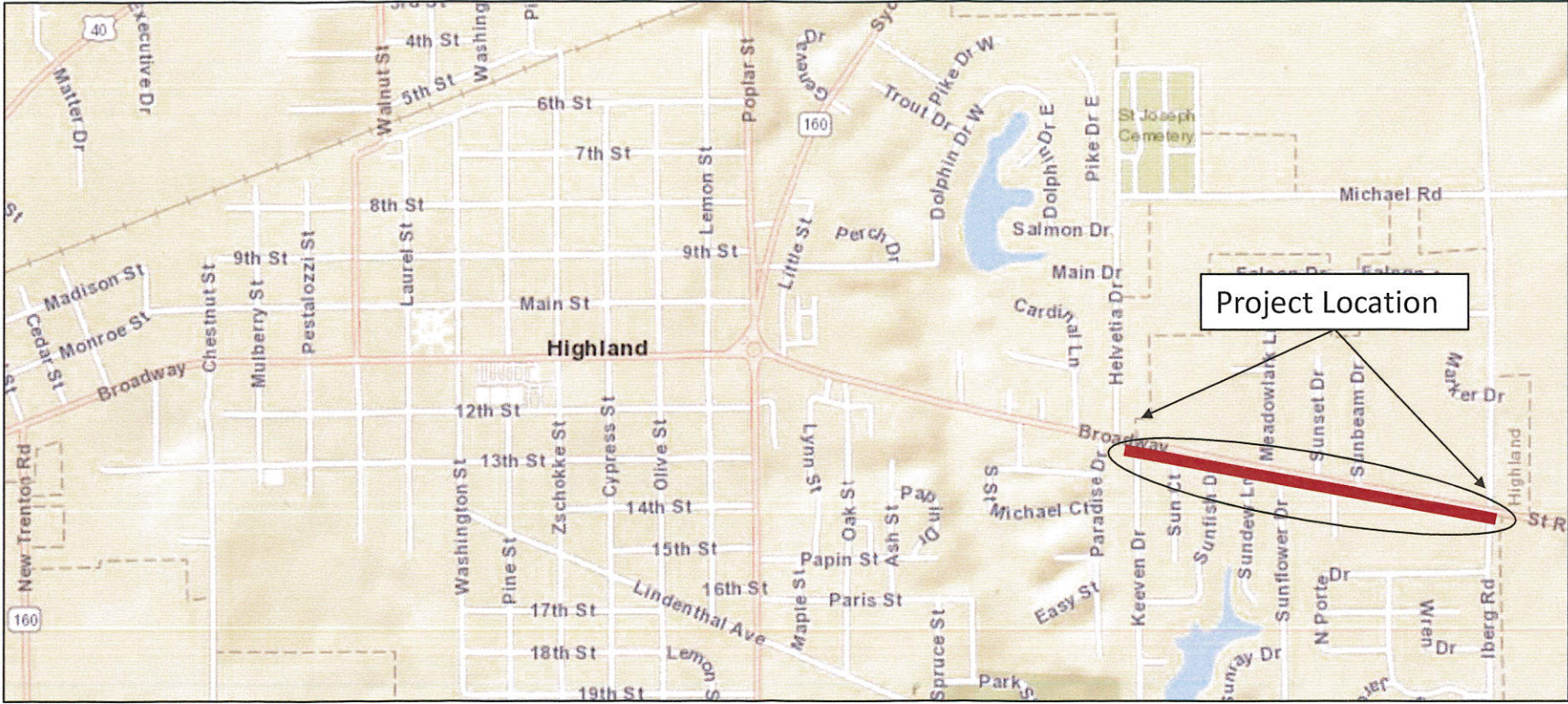
DIVISION OF COST

Type of Work	Federal Funds			State Funds			Local Public Agency			Totals
	Fund Type	Amount	%	Fund Type	Amount	%	Fund Type	Amount	%	
- Participating Construction	STU	\$375,000.00	*				Local Match	\$302,000.00	BAL	\$677,000.00
-										
-										
-										
-										
-										
-										
-										
-										
Total		\$375,000.00		Total			Total		\$302,000.00	\$677,000.00

Add

If funding is not a percentage of the total place an asterisk (*) in the space provided for the percentage and explain below:
 *75% STU Funds not to exceed \$375,000

NOTE: The costs shown in the Division of Cost table are approximate and subject to change. The final LPA share is dependent on the final Federal and State participation. The actual costs will be used in the final division of cost for billing and reimbursement.



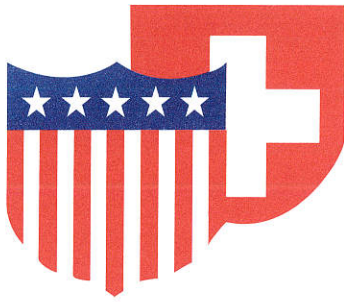
Addendum 1 - Location Map
Highland
16-00069-00-RS, C-98-325-16

ADDENDUM #3

Local Appropriation Resolution

PLACEHOLDER

To be replaced for final Joint Agreement by Local Agency



City of Highland

MEMO TO: Mark Latham, City Manager

FROM: Joe Gillespie, Director of Public Works

DATE: August 13, 2019

SUBJECT: Broadway Resurfacing Helvetia to Iberg, PW-07-18
Recommendation for Approval of Local Agency Agreement for
Federal Participation

RECOMMENDATION

I recommend that you request council approval of a Local Agency Agreement for Federal Participation between the state of Illinois and the city of Highland appropriating \$302,000 for the local share of the Broadway Resurfacing project as attached.

DISCUSSION

We received approval of STP (Surface Transportation Program) funding through East West Gateway for this project five years ago. The estimated total project cost is \$677,000 and the City is responsible for any costs in excess of this amount. The federal grant is \$375,000 (not to exceed) and we are responsible for the remainder. Madison County has agreed to fund our portion in the amount of \$125,000 through its County Matching Tax Fund. The City committed to funding this project in February 2015.

FISCAL IMPACT


The project is funded through the Non-Home Rule Sales Tax and partially reimbursed by a county grant.

CONCURRENCE

Recommended by: _____


Joe Gillespie, Director of Public Works

Approved by: _____


Mark Latham, City Manager

ORDINANCE NO. _____

**AN ORDINANCE DECLARING PERSONAL PROPERTY OF THE
CITY OF HIGHLAND, ILLINOIS, SURPLUS AND
AUTHORIZING ITS SALE AND/OR DISPOSAL,
SPECIFICALLY, THIRTY-FIVE (35) SURPLUS FIRE HELMETS**

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, 65 ILCS 5/11-76-4 provides that whenever a municipality in the state of Illinois owns any personal property which, in the opinion of a simple majority of the corporate authorities then holding office, is no longer necessary or useful to, or in the best interests of the municipality to keep, a majority of the corporate authorities at any regular or special meeting called for that purpose, may: (1) by Ordinance authorize the sale of such personal property in whatever manner they designate with or without advertising the sale; or (2) may authorize any municipal officer to convert that personal property to the use of the City; or (3) may authorize any municipal officer to convey or turn in any specified article of personal property as part payment on a new purchase of any similar article; and

WHEREAS, City currently owns thirty-five (35) fire helmets that have become unsuitable for use and, in the opinion of this City Council, are no longer necessary or useful to or in the best interests of the City to retain, and should be declared surplus personal property; and

WHEREAS, City has determined the Fire Chief and/or Emergency Services Chief should be permitted to dispose of the surplus personal property, specifically the thirty-five (35) fire helmets, for the maximum value that can be obtained, or to dispose of them where appropriate, to be determined solely by the Fire Chief and/or Emergency Services Chief; and

WHEREAS, City has determined it to be in the best interest of public health, safety, general welfare and economic welfare to declare the aforementioned personal property surplus, and sell and/or dispose of the same.

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. That the City personal property, specifically, thirty-five (35) fire helmets, are hereby declared no longer useful to the City or necessary for City purposes, and that it is in the best interest of the City to sell and/or dispose of the same.

Section 3. That the Fire Chief and/or Emergency Services Chief is directed and authorized to sell for the maximum value that can be obtained, or to dispose of the surplus personal property where appropriate, specifically the thirty-five (35) fire helmets, as they deem appropriate.

Section 4. That this Ordinance shall be known as Ordinance No. _____ and shall be in full force and effect from and after its passage, approval, and publication in pamphlet form as provided by law.

Passed by the City Council and approved by the Mayor of the city of Highland, Illinois and deposited and filed in the office of the City Clerk on the _____ day of _____, 2019, the vote being taken by ayes and noes and entered upon the legislative record as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis, Mayor
City of Highland
Madison County, Illinois

ATTEST:

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



City of Highland Fire Department

J. Brian Wilson, Emergency Services Chief

MEMORANDUM #19-014

To: City Manager Mark Latham, Honorable Mayor Michaelis and City Council Members

From: Chief Brian Wilson

Date: August 9, 2019

Re: Surplus Fire Helmets

CC: Chief Chris Conrad, Public Safety Director

RECOMMENDATION

The fire department has 35 fire helmets that are outdated and no longer approved to be used for firefighting activities. Wearing outdated equipment is a liability issue.

DISCUSSION

We respectfully request that these helmets be declared surplus so that we may dispose of them. Unserviceable helmets may be sold to the department members for a nominal fee if they wish to use them for decorative or display purposes only in or around their home. All other helmets will be discarded.

FINANCIAL IMPACT

Proceeds for any saleable items will be turned over to the treasurer for deposit back into the fire department budget.

ORDINANCE NO. _____

**AN ORDINANCE AUTHORIZING THE DONATION / GIFTING OF REAL ESTATE
FROM ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE FOR
WILLIAM ANTHONY ALBERTERNST, AS TRUSTEE
OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED
NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND
AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000,
AS TO AN UNDIVIDED ONE-HALF INTEREST,
AND ANNA JO ANN ALBERTERNST, TRUSTEE
OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED
NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND
AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000,
AS TO AN UNDIVIDED ONE-HALF INTEREST, TO CITY OF HIGHLAND**

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, ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE FOR WILLIAM ANTHONY ALBERTERNST, AS TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest, AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest ("Alberternst Trust") desires to donate real estate to City as a gift, including:

LOTS 7, 8, 9, AND 10 OF WOODCREST PROFESSIONAL PARK — PHASE ONE, A RESUBDIVISION OF PART OF LOTS "E" AND "F" OF THE FOURTH RESUBDIVISION OF LOT NO. 1 WOODCREST PLAT ONE, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT CABINET 52 PAGE 175 IN THE RECORDER'S OFFICE OF MADISON COUNTY, ILLINOIS, TOGETHER WITH ITS UNDIVIDED PERCENTAGE IN THE COMMON ELEMENTS.

Situated in Madison County, Illinois

PPN: 02-2-18-32-15-401-028 (Lot 7) 02-2-18-32-15-401-029 (Lot 8) 02-2-18-32-15-401-030 (Lot 9) 02-2-18-32-15-401-031 (Lot 10)

(hereinafter "Woodcrest Real Estate"); and

WHEREAS, City has the authority, pursuant to 65 ILCS 5/2-2-12, to contract and be contracted with; and

WHEREAS, City and the Alberternst Trust have agreed to a real estate contract whereby the Alberternst Trust will donate / gift the Woodcrest Real Estate to City, and City will accept the Woodcrest Real Estate from the Alberternst Trust as a donation / gift (*See Exhibit A*); and

WHEREAS, City has determined it would be in the best interests of public health, safety, general welfare, and economic welfare to accept the Woodcrest Real Estate from the Alberternst Trust as a donation / gift; and

WHEREAS, the Woodcrest Real Estate is near Hoffman Park and could be used for expansion of Hoffman Park, additional parking for Hoffman Park, another public purpose, or any purpose to the benefit of City; and

WHEREAS, City has determined the City Manager and/or Mayor is authorized and directed to execute any documents necessary to accept the Woodcrest Real Estate as a donation / gift from the Alberternst Trust.

NOW, THEREFORE, BE IT ORDAINED, 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. City has determined it to be in the best interest of public health, safety, general welfare and economic welfare to accept the Woodcrest Real Estate as a donation / gift from the Alberternst Trust, and pursuant to the real estate contract attached hereto as **Exhibit A**.

Section 3. City has determined it to be in the best interest of public health, safety, general welfare and economic welfare to authorize the City Manager and/or Mayor to execute whatever

documents may be necessary to accept the Woodcrest Real Estate as a donation / gift from the Alberternst Trust, and pursuant to the real estate contract attached hereto as **Exhibit A**.

Section 4. This Ordinance shall be known as Ordinance 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, and deposited and filed in the Office of the City Clerk, on the _____ day of _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis, Mayor
City of Highland
Madison County, Illinois

ATTEST:

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

COMMERCIAL REAL ESTATE SALES CONTRACT

THIS IS A LEGALLY BINDING CONTRACT. IF NOT UNDERSTOOD, SEEK COMPETENT LEGAL ADVICE.

THIS REAL ESTATE CONTRACT ("Agreement") is made and entered into effective as of the last date of signature below (the "Effective Date"), by and between ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE FOR WILLIAM ANTHONY ALBERTERNST, AS TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest (together as "Donor") and CITY OF HIGHLAND, ILLINOIS, an Illinois municipal corporation ("Donee").

- I.** **Gift of Property.** Donor agrees to gift, transfer, and convey to Donee and Donee agrees to accept from Donor, in accordance with the terms of this Agreement, all of Donor's right, title, estate, and interest in and to a portion of that certain real property known as **Parcel Number: 02-2-18-32-15-401-028 (Lot 7), 02-2-18-32-15-401-029 (Lot 8), 02-2-18-32-15-401-030 (Lot 9), 02-2-18-32-15-401-031 (Lot 10)**, as more particularly described on **Exhibit A** attached hereto and incorporated herein (the "Property").
- II.** **Prorations and Adjustments.** The following prorations and adjustments shall be made at Closing:

 - a.** **Taxes.** All ad valorem real estate taxes ("Taxes") imposed on the Property for the year in which Closing occurs and any prior years which are not yet due and payable shall be prorated and adjusted to the Closing Date, hereinafter defined, based on the latest information available with respect to Taxes. All prorations will be on the basis of a 365-day year with the Closing Date being charged to Donee. The Taxes which are charged to Donee pursuant hereto shall be a Permitted Encumbrance, as defined below; and Donee shall be responsible for the payment of all of such Taxes, when they become due.
 - b.** **Release of Encumbrances.** Donor shall convey to Donee, good, marketable and insurable fee simple title to the Property, free and clear of all liens and encumbrances, subject only to: (i) the lien of taxes not yet due and payable, (ii) all matters shown in public records, (iii) any matter that is waived or not timely objected to by Donee that is shown on the Commitment (defined below), (iv) any matter that is waived or not timely objected to by Donee that would be shown by a current and accurate survey and/or inspection of the Property, (v) any matter created by or arising from an act, omission or

acquiescence of Donee, its employees, agents, contractors or subcontractors; (vi) any lien or encumbrance relating to general or special assessments; (vii) any other matters of title to which Donee expressly consents to in writing. Each item listed shall be a "Permitted Encumbrance" and shall be collectively referred to as the "Permitted Encumbrances." Other than the Permitted Encumbrances, on or before Closing, Donor shall cause, at Donor's cost, any and all assessments, liens, security interests, mortgages or deeds of trust and other encumbrances affecting the Property that were not caused by Donee ("Donor Encumbrances"), to be satisfied and released, unless they are assumed by Donee at Closing. The proceeds due at Closing may be applied to satisfy or pay any such Donor Encumbrances.

- c. Expenses. Donor shall be responsible to pay for all expenses in connection with the payment of any Donor Encumbrances and recording costs to release any Donor Encumbrances, Donor's attorneys' fees, real estate transfer or documentary taxes, and customary escrow or closing fees charged by the Title Company.

Donee shall be responsible to pay for the recording fee for the deed, Donee's attorney's fees, the customary escrow or closing fees charged by the Title Company, Donee's title insurance endorsements, if any, Donee's lender's policy of title insurance and any endorsements thereto, if any, Donee's tests and inspections, Donee's survey, the premium for Donee's basic owner's policy of title insurance in the amount of the appraised amount, and such other expenses provided to be paid by Donee herein.

DONEE AGREES TO PAY ALL CLOSING COSTS ASSOCIATED WITH THIS REAL ESTATE TRANSACTION.

III. Items to be delivered to Donee. After purchase of the Property, Donor shall deliver to Donee, in the form of photocopies of executed originals, any documents related to the Property that Donor is aware of and able to locate ("Donor Documents"). Donee acknowledges and agrees that Donor acquired the Property years ago and, as a result, Donor may not be aware of the location or existence of some or all of the Donor Documents. Based on this information, Donee acknowledges and agrees that Donor will be deemed to have complied with this Section if Donor provides to Donee the Donor Documents that are known to exist, if any, by Donor after purchase of the Property, and without any obligation or duty being imposed on Donor to investigate or to confirm the accuracy or completeness of the Donor Documents.

IV. Investigation of the Property. From and after the date that this Agreement is signed by the last party hereto, Donor grants to Donee and its agents and representatives access to the Property for the sole purpose of conducting a complete physical inspection of the Property including, without limitation, preparation of boundary line, spot and topographical surveys, soil sampling and boring tests, and such other

engineering, environmental, and mechanical inspections and investigations as Donee may reasonably require (collectively, "Investigations").

Donee shall indemnify, protect, defend and hold harmless the Donor against all mechanic's liens and other claims, demands, causes of action, liens, fines, damages, losses, costs and expenses (including attorneys' fees and litigation costs) and all other liabilities asserted against or incurred by the Property or Donor's ownership therein in connection with Donee's entry upon the Property or Donee's inspection, surveying, test borings or other work performed by or through Donee and Donee shall restore the Property to substantially the same condition as in which it existed prior to such Investigations. The Donee shall pay for all inspections and reports ordered by Donee, promptly; and shall not allow any liens to be filed against the Property. For purposes of Donee's indemnification of Donor described herein, the term "Donee" shall mean any agent, broker, contractor, employee, or representative of Donee. This provision shall survive Closing or other termination of this Agreement.

V. **Contingencies.** In addition to any other conditions set forth in this Agreement, Donee's acceptance of the Property shall be subject to the fulfillment of the following items by Donee on or before thirty (30) business days from execution of this contract and any and all required action(s) by City (the "Contingency Date") (each a "Contingency" and collectively, the "Contingencies"):

- a. **Title Commitment/Examination.** Donee, at Donee's cost and expense, may order a title search and commitment for title insurance ("Commitment") on the Property, together with complete copies of all exception documents to title ("Exceptions") from Title Company. Donee shall notify Donor, in writing on or prior to the expiration of the Contingency Date, if the Commitment reveals any Exceptions which are unacceptable to Donee; otherwise said Commitment shall be deemed approved and such Exceptions shall be deemed Permitted Encumbrances to which the deed conveying the Property to Donee shall be subject.
- b. **Physical Inspection.** Donee shall be satisfied with the results of the Investigations. Donee shall notify Donor, in writing, of any condition disclosed during its Investigations that is not satisfactory to Donee and Donor shall have thirty days (30) days to cure such condition, with the Contingency Date automatically extended for such period, if cure is undertaken.
- c. **Survey.** Donee, at its sole cost and expense, may order a survey of the Property (the "Survey"). Donee shall notify Donor, in writing on or prior to the expiration of the Contingency Date, if the Survey reveals any matter(s) affecting the Property unacceptable to Donee, including, but not limited to, discrepancies in the legal description on the Survey as compared to the legal description recorded in the chain of title, verification of the total acreage of the Property, the Property boundary lines, and the location of all recorded easements and other encroachments, if any, the location of the improvements on the Property, and any other considerations deemed necessary by Donee.

Donee shall notify Donor, in writing, if the Survey reveals any encroachments or other survey conditions which are unacceptable to Donee. If Donee fails to provide written notice of its objection to any items, prior to the expiration of the Contingency Date, to Donor that (i) are disclosed on the Survey, or (ii) would have been disclosed on a survey of the Property if Donor would have secured a survey, such items shall be Permitted Encumbrances.

- d. Permitted Use. Donee shall determine the existing zoning and other governmental regulations that permit the use of the Property for Donee's intended use.

If Donee does not give written notice to Donor on or before the Contingency Date that any one of the Contingencies has not been satisfied, then Donee's obligation under this Agreement shall be enforceable by Donor pursuant to the terms set forth herein.

If Donee does give Donor written notice of Donee's inability to satisfy one or more of the Contingencies on or before the expiration of the Contingency Date, this Agreement shall be terminated and be of no further force or effect, except for Donee's obligations and indemnity as stated herein.

VI. Closing

- a. Place and Closing Date. Subject to the terms of this Agreement, the closing of the purchase and sale of the Property ("Closing") shall take place at the offices of Sandberg Phoenix & von Gontard located at 101 W. Vandalia Street, 3rd Floor, Edwardsville, Illinois 62025, on or before August 30, 2019, or after all Contingencies are waived by Donee ("Closing Date"), or on a mutually agreed to date.
- b. Donee waives any claim to contingencies or any right to the Contingency Date on the Closing Date as stated herein. **In all instances, the Closing Date and Contingency Date shall be the same date.**
- c. Possession. Donor shall deliver possession of the Property to Donee at Closing and shall remove all personal property that will be retained by Donor at that time.
- d. Donor's Obligations at Closing. At Closing, Donor shall execute and acknowledge in recordable form if necessary, the following documents (collectively, "Donor's Obligations") upon satisfaction of Donee's Obligations (as defined below):
 - 1. Deed. A Special Warranty Deed conveying fee simple title of the Property to Donee, subject to the Permitted Encumbrances.
 - 2. P-Tax Declaration. Execute along with Donee, an Illinois Transfer Tax Declaration Form.

3. Donor's Plat Act Affidavit. A commercially reasonable Donor's Plat Act Affidavit.
 4. Affidavit of Non-Production and Non-Development. A commercially reasonable Donor's Affidavit of Non-Production and Non-Development.
 5. Non-Foreign Donor Affidavit. An affidavit of Donor in form and substance satisfactory to Donee setting forth Donor's United States taxpayer identification number and certifying that Donor is not a foreign person as that term is used and defined in Section 1445 of the United States Internal Revenue Code.
 6. Miscellaneous. Any other documents reasonably required by this Agreement, or Donee to be delivered by Donor or necessary to implement and effectuate the Closing hereunder, including without limitation, a settlement statement, or other documents, consents, and approvals from Donor and any Tenant under any lease being assumed by Donee satisfactory to Donee.
- e. Donee's Obligations at Closing. At Closing, Donee shall, in addition to any other obligations of Donee as set forth in this Agreement, execute and deliver the following items to Donor, as the case may be (collectively, "Donee's Obligations"):
1. P-Tax Declaration. Execute along with Donor an Illinois Transfer Tax Declaration.
 2. Deed. Acknowledge and accept a copy of Donor's Special Warranty Deed conveying fee simple title of the Property to Donee, subject to the Permitted Encumbrances.
 3. Miscellaneous. Any other documents reasonably required by this Agreement, or Donor to be delivered by Donee or necessary to implement and effectuate the Closing hereunder, including, without limitation, a settlement statement, or other documents, consents, and approvals from Donee satisfactory to Donor.

VII. Notices. Any notice, request, approval, demand, instruction or other communication to be given to either party hereunder, except those required to be delivered at Closing, shall be in writing, and shall be conclusively deemed to be delivered when personally delivered or when (a) transmitted by telefax to the applicable telefax number followed with mailing by regular United States mail, addressed as follows:

If to Donor: ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED
6500 Lee Road
Aviston, Illinois 62216

If to Donee: CITY OF HIGHLAND, ILLINOIS
Attention: Mark Latham
City Manager
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218
Telephone (618) 654-9891
Facsimile: (618) 654-4768

VIII. Additional Covenants.

- a. Brokerage. Donor and Donee each hereby represent and warrant to the other that neither has dealt with any broker or finder in connection with the transaction contemplated hereby, and each hereby agrees to indemnify, defend and hold the other harmless against and from any and all manner of claims, liabilities, loss, damage, attorneys' fees and expenses, incurred by either party and arising out of, or resulting from, any claim by any such broker or finder in contravention of its representation and warranty herein contained.

IX. AS IS.

- a. DONEE ACKNOWLEDGES AND AGREES THAT DONOR HAS NOT MADE, DOES NOT MAKE, AND SPECIFICALLY NEGATES AND DISCLAIMS ANY REPRESENTATIONS, WARRANTIES (OTHER THAN THE WARRANTY OF TITLE), PROMISES, COVENANTS, AGREEMENTS OR GUARANTIES OF ANY KIND OR CHARACTER WHATSOEVER, WHETHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, PAST, PRESENT OR FUTURE, OF, AS TO, CONCERNING OR WITH RESPECT TO (I) THE VALUE, NATURE, QUALITY OR CONDITION OF THE PROPERTY, INCLUDING, WITHOUT LIMITATION, THE WATER, SOIL AND GEOLOGY; (II) THE INCOME TO BE DERIVED FROM THE PROPERTY; (III) THE SUITABILITY OF THE PROPERTY FOR ANY AND ALL ACTIVITIES AND USES WHICH DONEE OR ANYONE ELSE MAY CONDUCT THEREON; (IV) THE COMPLIANCE OF THE PROPERTY OR ITS OPERATION WITH ANY LAWS, RULES, ORDINANCES OR

REGULATIONS OF ANY APPLICABLE GOVERNMENTAL AUTHORITY OR BODY; (V) THE HABITABILITY, MERCHANTABILITY, MARKETABILITY, PROFITABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PROPERTY; (VI) THE MANNER OR QUALITY OF THE CONSTRUCTION OR MATERIALS, IF ANY, INCORPORATED INTO THE PROPERTY; (VII) THE MANNER, QUALITY, STATE OF REPAIR OR LACK OF REPAIR OF THE PROPERTY; OR (VIII) ANY OTHER MATTER WITH RESPECT TO THE PROPERTY, AND, SPECIFICALLY, THAT DONOR HAS NOT MADE, DOES NOT MAKE AND SPECIFICALLY DISCLAIMS ANY REPRESENTATIONS REGARDING COMPLIANCE WITH ANY ENVIRONMENTAL PROTECTION, POLLUTION, ZONING OR LAND USE LAWS, RULES, REGULATIONS, ORDERS OR REQUIREMENTS, INCLUDING THE EXISTENCE IN OR ON THE PROPERTY OF HAZARDOUS MATERIALS EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT. DONEE FURTHER ACKNOWLEDGES AND AGREES THAT, HAVING BEEN GIVEN THE OPPORTUNITY TO INSPECT THE PROPERTY, DONEE IS RELYING SOLELY ON ITS OWN INVESTIGATION OF THE PROPERTY AND NOT ON ANY INFORMATION PROVIDED OR TO BE PROVIDED BY DONOR ITS AGENTS, BROKERS, CONTRACTORS, OR EMPLOYEES. DONEE FURTHER ACKNOWLEDGES AND AGREES THAT ANY INFORMATION PROVIDED OR TO BE PROVIDED WITH RESPECT TO THE PROPERTY WAS OBTAINED FROM A VARIETY OF SOURCES; THAT DONOR HAS NOT MADE ANY INDEPENDENT INVESTIGATION OR VERIFICATION OF SUCH INFORMATION; AND THAT DONOR MAKES NO REPRESENTATIONS AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION. DONOR IS NOT LIABLE OR BOUND IN ANY MANNER BY ANY VERBAL OR WRITTEN STATEMENTS, REPRESENTATIONS, OR INFORMATION PERTAINING TO THE PROPERTY, OR THE OPERATION THEREOF, FURNISHED BY ANY REAL ESTATE BROKER, AGENT, EMPLOYEE, SERVANT, OR OTHER PERSON. DONEE FURTHER ACKNOWLEDGES AND AGREES THAT, TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE SALE OF THE PROPERTY AS PROVIDED FOR HEREIN IS MADE ON AN "AS-IS" CONDITION AND BASIS WITH ALL FAULTS. ALL PROVISIONS OF THIS SUBSECTION SHALL SURVIVE CLOSING OR THE TERMINATION OF THIS AGREEMENT WITHOUT CLOSING, AS APPLICABLE.

X. Litigation.

- a. Governing Law. This agreement shall be governed by and construed in accordance with the laws of the State of Illinois. The parties hereby consent to the exclusive jurisdiction of the State of Illinois and hereby consent and agree that any action or proceeding involving the interpretation of, enforcement of, or in any way relating to this agreement shall be brought in the Circuit Court in Madison County, Illinois.

XI. Defaults and Remedies

- a. **Default by Donor.** In the event that Donor shall have failed to have timely performed any of Donor's Obligations, covenants, and/or agreements contained herein which are to be performed by Donor, then Donee, at its option and as its sole and exclusive remedy, may either: (i) specifically enforce the provisions of this Agreement; or (ii) cancel and terminate this Agreement.
- b. **Default by Donee.** In the event that Donee shall have failed to have timely performed any of Donee's Obligations, covenants, and/or agreements contained herein which are to be performed by Donee, then Donor, at its option and as its sole and exclusive remedy, may either: (i) specifically enforce the provisions of this Agreement; or (ii) cancel and terminate this Agreement.

XII. Miscellaneous

- a. **Binding Effect.** This Agreement is binding upon and inures to the benefit of the parties hereto and their respective heirs, legal representatives, executors, administrators, successors and assigns. This Agreement may not be assigned by Donee without the written approval of Donor.
- b. **Person Defined.** The word "person" as used herein shall include all individuals, partnerships, limited liability companies, corporations, municipalities, public entities, any business entities of any kind, or any other entities whatsoever.
- c. **Exhibits/Time Periods.** Any reference herein to any exhibits, addenda or attachments refers to the applicable exhibit, addendum, or attachment that is attached to this Agreement, and all such exhibits, addenda or attachments shall constitute a part of this Agreement and are expressly made a part hereof. If any date, time period or deadline hereunder falls on a weekend or a state or federal holiday, then such date shall be extended to the next occurring business day.
- d. **Agreement Separable.** If any provision hereof is for any reason held to be unenforceable or inapplicable, the other provisions hereof will remain in full force and effect in the same manner as if such unenforceable or inapplicable provision had never been contained herein, and any such unenforceable provision shall be reformed to, as nearly as possible, reflect the parties' intent in an enforceable manner.
- e. **Counterparts.** This Agreement may be executed in several counterparts, via email, and/or via facsimile, and all such executed counterparts shall constitute the same agreement. It shall be necessary to account for only one such counterpart in proving this Agreement. The parties further agree that signatures transmitted by email, facsimile, or in Portable Document Format (pdf) may be considered an original for all purposes, including, without limitation, the execution of this Agreement and the enforcement of this Agreement.

- f. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Illinois.
- g. Fees. In the event of any dispute between the parties arising in connection with the subject matter of this Agreement, the party prevailing on the merits in any resulting action, mediation, arbitration, proceeding, or litigation shall be entitled to recover from the other party all fees, costs, and expenses including, without limitation, attorneys' fees, consultants' fees, and litigation costs, incurred in connection therewith.
- h. Entire Agreement. This Agreement constitutes the entire agreement between Donor and Donee, and, except for any addenda attached hereto, there are no other covenants, agreements, promises, terms and provisions, conditions, undertakings, or understandings, either oral or written, between the parties concerning the Property other than those herein set forth. No subsequent alteration, amendment, change, deletion or addition to this Agreement shall be binding upon Donor or Donee unless in writing and signed by both Donor and Donee. No subsequent amendment or change to an addendum shall be binding, unless signed by both parties.
- i. Construction. This Agreement shall not be construed more strictly against one party than against the other merely by virtue of the fact that it may have been prepared by one of the parties or party's brokers, it being recognized that both Donor and Donee have contributed substantially and materially to the preparation and/or negotiation of this Agreement.
- j. Compliance with Laws, Regulations, and Accreditation. Donee and Donor believe and intend that this Agreement complies with all relevant federal and state laws as well as relevant regulations. Should Donor have a good faith belief that this Agreement creates a material risk of violating any such laws or regulations, or any revisions or amendments thereto made prior to the Closing, Donor shall give written notice to the Donee regarding such belief. The parties shall then make a good faith effort to reform the Agreement to comply with such laws and regulations. If, within thirty (30) days of Donor first providing notice to the Donee of the need to amend this Agreement to comply with the laws and regulations, the parties, acting in good faith, are (i) unable to mutually agree upon and make amendments or alterations to this Agreement to meet the requirements in question, or (ii) alternatively, the parties determine in good faith that amendments or alterations to the requirements are not feasible, then either may terminate this Agreement upon thirty (30) days prior written notice. Upon the termination of this Agreement pursuant to this Section, and notwithstanding anything to the contrary set forth herein, any Earnest Money shall be returned to Donee and both Donor and Donee shall be relieved of their respective obligations under this Agreement unless such obligations survive the termination of the Agreement.

XIII. Acceptance of Contract. Donee and Donor intend to execute this Agreement prior to Donee obtaining the approvals necessary to give force and effect to this Agreement. Donee represents that this Agreement must be passed by Ordinance and by the affirmative vote of 2/3 of the corporate authorities then holding office. Neither Donee nor Donor shall have any obligation under this Agreement until Donee has obtained all necessary approvals to this Agreement having full force and effect; and, if such approvals have not been obtained by Donee prior to August 31, 2019, this Agreement shall have no force or effect unless an extension is agreed to by both parties.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have executed the Agreement as of the date(s) below:

DONOR:

**ANNA JO ANN ALBERTERNST,
SUCCESSOR TRUSTEE FOR
WILLIAM ANTHONY
ALBERTERNST, AS TRUSTEE OF
THE WILLIAM ANTHONY
ALBERTERNST REVOCABLE
TRUST DATED NOVEMBER 18,
1974, AS AMENDED
6500 Lee Road
Aviston, Illinois 62216**

By: *Anna J Alberternst*
Trustee
Date: 8-17-19

DONEE:

**CITY OF HIGHLAND, ILLINOIS
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218**

Mark Latham
City Manager
City of Highland, Illinois

By: _____
Date: _____

**ANNA JO ANN ALBERTERNST, TRUSTEE
OF THE ANNA JO ANN ALBERTERNST
REVOCABLE TRUST DATED NOVEMBER
18, 1974, AS AMENDED JANUARY 26,
1981, AND AS AMENDED BY FIRST
AMENDED TRUST AGREEMENT
DATED APRIL 5, 2000**

By: *Anna J Alberternst*
Trustee
Date: 8-12-19

EXHIBIT A

LEGAL DESCRIPTION OF PROPERTY

LOTS 7, 8, 9, AND 10 OF WOODCREST PROFESSIONAL PARK – PHASE ONE, A RESUBDIVISION OF PART OF LOTS “E” AND “F” OF THE FOURTH RESUBDIVISION OF LOT NO. 1 WOODCREST PLAT ONE, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT CABINET 52 PAGE 175 IN THE RECORDER’S OFFICE OF MADISON COUNTY, ILLINOIS, TOGETHER WITH ITS UNDIVIDED PERCENTAGE IN THE COMMON ELEMENTS.

Situated in Madison County, Illinois

PPN: 02-2-18-32-15-401-028 (Lot 7)
02-2-18-32-15-401-029 (Lot 8)
02-2-18-32-15-401-030 (Lot 9)
02-2-18-32-15-401-031 (Lot 10)



PTAX-203

Illinois Real Estate Transfer Declaration

Please read the instructions before completing this form.
This form can be completed electronically at tax.illinois.gov/retd.

Step 1: Identify the property and sale information.

1 Lots 7,8,9 & 10 Woodcrest Professional Park
 Street address or property (or 911 address, if available)
 Highland 62249
 City or village Zip
 Saline
 Township

2 Write the total number of parcels to be transferred. 4

3 Write the parcel identifying numbers and lot sizes or acreage.

Parcel identifying number	Lot size or acreage
a 02-2-18-32-15-401-028	30.87 x 90 IRR
b 02-2-18-32-15-401-029	45.85 x 115 IRR
c 02-2-18-32-15-401-030	45 x 165 IRR
d 02-2-18-32-15-401-031	45 x 165 IRR

Write additional parcel identifiers and lot sizes or acreage in Step 3.

4 Date of instrument: 7 / 2019
 Month Year

5 Type of deed/trust document (Mark with an "X"):
 Warranty deed
 Quit claim deed Executor deed Trustee deed
 Beneficial interest Other (specify): _____

6 Yes No. Will the property be the buyer's principal residence?

7 Yes No. Was the property advertised for sale?
 (i.e., media, sign, newspaper, realtor)

8 Identify the property's current and intended primary use.

Current	Intended	(Mark only one item per column with an "X.")
a <input type="checkbox"/>	<input type="checkbox"/>	Land/lot only
b <input type="checkbox"/>	<input type="checkbox"/>	Residence (single-family, condominium, townhome, or duplex)
c <input type="checkbox"/>	<input type="checkbox"/>	Mobile home residence
d <input type="checkbox"/>	<input type="checkbox"/>	Apartment building (6 units or less) No. of units _____
e <input type="checkbox"/>	<input type="checkbox"/>	Apartment building (over 6 units) No. of units _____
f <input type="checkbox"/>	<input type="checkbox"/>	Office
g <input type="checkbox"/>	<input type="checkbox"/>	Retail establishment
h <input type="checkbox"/>	<input type="checkbox"/>	Commercial building (specify): _____
i <input type="checkbox"/>	<input type="checkbox"/>	Industrial building
j <input type="checkbox"/>	<input type="checkbox"/>	Farm
k <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other (specify): Commercial Vacant Land

County: _____
 Date: _____
 Doc. No.: _____
 Vol.: _____
 Page: _____
 Received by: _____

9 Identify any significant physical changes in the property since January 1 or the previous year and write the date of the change.
 Date of significant change: _____ / _____
 (Mark with an "X.") Month Year
 Demolition/damage Additions Major remodeling
 New construction Other (specify): _____

10 Identify only the items that apply to this sale. (Mark with an "X.")

- a Fulfillment of installment contract – year contract initiated: _____
- b Sale between related individuals or corporate affiliates
- c Transfer of less than 100 percent interest
- d Court-ordered sale
- e Sale in lieu of foreclosure
- f Condemnation
- g Short Sale
- h Bank REO (real estate owned)
- i Auction sale
- j Seller/buyer is a relocation company
- k Seller/buyer is a financial institution or government agency
- l Buyer is a real estate investment trust
- m Buyer is a pension fund
- n Buyer is an adjacent property owner
- o Buyer is exercising an option to purchase
- p Trade of property (simultaneous)
- q Sale-leaseback
- r Other (specify): _____
- s Homestead exemptions on most recent tax bill:

1 General/Alternative	\$	0.00
2 Senior Citizens	\$	0.00
3 Senior Citizens Assessment Freeze	\$	0.00

Step 2: Calculate the amount of transfer tax due.

Note: Round Lines 11 through 18 to the next highest whole dollar. If the amount on Line 11 is over \$1 million and the property's current use on Line 8 above is marked "e," "f," "g," "h," "i," or "k," complete Form PTAX-203-A, Illinois Real Estate Transfer Declaration Supplemental Form A. If you are recording a beneficial interest transfer, do not complete this step. Complete Form PTAX-203-B, Illinois Real Estate Transfer Declaration Supplemental Form B.

11 Full actual consideration	11	\$	10.00
12a Amount of personal property included in the purchase	12a	\$	0.00
12b Was the value of a mobile home included on Line 12a?	12b		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
13 Subtract Line 12a from Line 11. This is the net consideration for real property.	13		0.00
14 Amount for other real property transferred to the seller (in a simultaneous exchange) As part of the full actual consideration on Line 11	14	\$	0.00
15 Outstanding mortgage amount to which the transferred real property remains subject	15	\$	0.00
16 If this transfer is exempt, use an "X" to identify the provision.	16		<input type="checkbox"/> b <input checked="" type="checkbox"/> K <input type="checkbox"/> M
17 Subtract Lines 14 and 15 from Line 13. This is the net consideration subject to transfer tax.	17	\$	0.00
18 Divide Line 17 by 500. Round the result to the next highest whole number (e.g. 61,002 rounds to 62)	18		0.00
19 Illinois tax stamps – multiply Line 18 by 0.50.	19	\$	0.00
20 County tax stamps – multiply Line 18 by 0.25	20	\$	0.00
21 Add Lines 19 and 20. This is the total amount of transfer tax due.	21	\$	0.00

See instructions
PTAX-203(R-8/05)

This form is authorized in accordance with 35 ILCS 20031-1 of seq. Disclosure of this information is REQUIRED. This form has been approved by the forms Management Center. IL-492-0227

Step 3: Write the legal description from the deed. Write, type (minimum 10-point font required), or attach the legal description from the deed. If you prefer, submit an 8½" x 11" copy of the extended legal description with this form. You may also use the space below to write additional parcel identifiers and lots sizes or acreage from Step 1, Line 3.

LOTS 7, 8, 9, AND 10 OF WOODCREST PROFESSIONAL PARK – PHASE ONE, A RESUBDIVISION OF PART OF LOTS "E" AND "F" OF THE FOURTH RESUBDIVISION OF LOT NO. 1 WOODCREST PLAT ONE, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT CABINET 52 PAGE 175 IN THE RECORDER'S OFFICE OF MADISON COUNTY, ILLINOIS, TOGETHER WITH ITS UNDIVIDED PERCENTAGE IN THE COMMON ELEMENTS.

Situated in Madison County, Illinois

PPN: 02-2-18-32-15-401-028 (Lot 7); 02-2-18-32-15-401-029 (Lot 8); 02-2-18-32-15-401-030 (Lot 9) and 02-2-18-32-15-401-031 (Lot 10)

Step 4: Complete the requested information.

The buyer and seller (or their agents) hereby verify that to the best of their knowledge and belief, the full actual consideration and facts stated in this declaration are true and correct. If this transaction involves any real estate located in Cook County, the buyer and seller (or their agents) hereby verify that to the best of their knowledge, the name of the buyer shown on the deed or assignment of beneficial interest in a land trust is either a natural person, an Illinois corporation or foreign corporation authorized to do business or acquire and hold title to real estate in Illinois, a partnership authorized to do business or acquire and hold title to real estate in Illinois, or other entity recognized as a person and authorized to do business or acquire and hold title to real estate under the laws of the State of Illinois. Any person who willfully falsifies or omits any information required in this declaration shall be guilty of a Class B misdemeanor for the first offense and a Class A misdemeanor for subsequent offenses. Any person who knowingly submits a false statement concerning the identity of a grantee shall be guilty of a Class C misdemeanor for the first offense and of a Class A misdemeanor for subsequent offenses.

Seller Information (Please print.)

William Anthony Alberternst Trust & Anna Jo Ann Alberternst Trust

Seller's or trustee's name

Seller's trust number (if applicable – not an SSN or FEIN)

6500 Lee Road

Street address (after sale)

Avistan

IL

62216

City

State

ZIP

William A. Alberternst, Trustee
Seller's or agent's signature

Seller's daytime phone

Buyer Information (Please print.)

City of Highland, City Manager, Mark Latham

Buyer's or trustee's name

Buyer's trust number (if applicable – not an SSN or FEIN)

1115 Broadway, P.O. Box 218

Street address (after sale)

Highland

IL

62249

City

State

ZIP

Buyer's or agent's signature

Buyer's daytime phone

Mail tax bill to:

City of Highland, City Manager, Mark Latham, 1115 Broadway, P.O. Box 218

Name or company

Street address

Highland

IL

62249

City

State

ZIP

Preparer Information (Please print.)

Michael McGinley, Sandberg Phoenix & von Gontard

Preparer's and company's name

Preparer's file number (if applicable)

101 W. Vandalia Street, 3rd Floor

Edwardsville

IL

62249

City

State

ZIP

Preparer's signature

(618) 659-9861

Preparer's daytime phone

Identify any required documents submitted with this form. (Mark with an "X.")

Extended legal description

Form PTAX-203-A

Form PTAX-203-B

Itemized list of personal property

<p>To be completed by the Chief County Assessment Officer</p>					
1	County	Township	Class	Cook-Minor	Code 1 Code 2
2	Board of Review's final assessed value for the assessment year Prior to the year of the sale				
	Land				
	Buildings				
	Total				
<p>Illinois Department of Revenue Use</p>			<p>Tab Number</p>		

Prepared by and Return to:

Michael P. McGinley
City of Highland, Illinois
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218
Telephone (618) 659-9523

RECORDING COVER SHEET

TITLE OF DOCUMENT: SPECIAL WARRANTY DEED

DATE OF DOCUMENT: _____, 2019

GRANTOR (Owner): ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED
6500 Lee Road
Aviston, Illinois 62216
(618) _____

GRANTEE: City of Highland, Madison County, Illinois,
Attention: Mark Latham, City Manager
1115 Broadway; P.O. Box 218
Highland, Illinois 62249-0218
Telephone (618) 654-9891

FUTURE TAX BILLS TO: City of Highland, Madison County, Illinois,
an Illinois Municipal Corporation
Attention: Mark Latham, City Manager
1115 Broadway
P.O. Box 218
Highland, Illinois 62249-0218

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED, is made and entered into this ____ day of _____, 2019, by and between,

ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE FOR WILLIAM ANTHONY ALBERTERNST, AS TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest (together as “Grantor”), whose address is 6500 Lee Road, Aviston, Illinois 62216,

and

CITY OF HIGHLAND, ILLINOIS, an Illinois municipal corporation (“Grantee”), whose address is 1115 Broadway, Highland, Illinois 62249.

WITNESSETH, that Grantor, subject to the laws of the State of Illinois, for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, represents that Grantor owns the fee simple title to and hereby CONVEYS, WARRANTS, GRANTS, AND CONFIRMS, unto the Grantee the following legally described real estate, situated in the City of Highland, Madison County, State of Illinois (the “Premises”):

LOTS 7, 8, 9, AND 10 OF WOODCREST PROFESSIONAL PARK – PHASE ONE, A RESUBDIVISION OF PART OF LOTS “E” AND “F” OF THE FOURTH RESUBDIVISION OF LOT NO. 1 WOODCREST PLAT ONE, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT CABINET 52 PAGE 175 IN THE RECORDER’S OFFICE OF MADISON COUNTY, ILLINOIS, TOGETHER WITH ITS UNDIVIDED PERCENTAGE IN THE COMMON ELEMENTS.

Situated in Madison County, Illinois

- PPN: 02-2-18-32-15-401-028 (Lot 7)
- 02-2-18-32-15-401-029 (Lot 8)
- 02-2-18-32-15-401-030 (Lot 9)
- 02-2-18-32-15-401-031 (Lot 10)

AS SHOWN ON EXHIBIT “A” PREMISES DRAWING ATTACHED HERETO AND MADE A PART HEREOF.

Exempt under provisions of Paragraph (b) Section 31-45 of the Real Estate Transfer Tax Law (35 ILCS 200/31-45).

Date: 8-12, 2019

Anna J. Alberternst, Trustee
(Seller, Buyer or Representative)

Together with all appurtenances and improvements.

Subject to the general taxes and assessments for the year of this conveyance and subsequent years, if applicable.

Subject to the building and zoning regulations, building lines, easements, covenants, conditions and restrictions, apparent or of record, if any.

The above described real estate and improvements located thereon are herein referred to as the "Premises."

TO HAVE AND TO HOLD the same, together with all rights and appurtenances to the same belonging unto Grantee, and to Grantee's successors and assigns forever. The Grantor hereby covenanting that Grantor and Grantor's heirs and assigns, shall and will WARRANT AND DEFEND, the title to the Premises unto Grantee, and to Grantee's successors and assigns forever against the lawful claims of all persons whomsoever, excepting, however, the general taxes for the current calendar year and thereafter, and the special taxes becoming a lien after the date of this deed.

As to the Premises, Grantor hereby releases and waives all rights under and by virtue of the Homestead Exemption Laws of the State of Illinois, if any.

Grantor, without limiting the interest above granted and conveyed, acknowledges that upon receipt of the agreed upon consideration, all claims arising out of the above acquisition have been settled, including without limitation, any diminution in value to any remaining property of the Grantor caused by the opening, improving and using the premises for highway purposes. This acknowledgment does not waive any claim for trespass or negligence against the Grantee or Grantee's agents which may cause damage to the Grantor's remaining property.

[The remainder of this page is intentionally left blank.]

REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED, on the Trusts' behalf and she signed and acknowledged this instrument to be a free act and deed for the purposes therein stated.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.



Camille Michel Lane
NOTARY PUBLIC

IN WITNESS WHEREOF, the CITY OF HIGHLAND, ILLINOIS, as Grantee, has executed this instrument this the ____ day of _____ 2019, and has caused its municipal corporate name to be hereunto subscribed by its City Manager, in the County of Madison and State of Illinois on the day and year first above written.

GRANTEE:

CITY OF HIGHLAND, ILLINOIS, an Illinois Municipal Corporation

By: _____
Joseph R. Michaelis, Mayor

ATTEST:

By: _____
Lana Hediger, Deputy City Clerk

STATE OF ILLINOIS)
) SS.
COUNTY OF MADISON)

On this ____ day of _____, 2019, before me, _____, a Notary Public in and for the State of Illinois, personally appeared Joseph R. Michaelis, and Lana Hediger who being by me duly sworn did say that they are the City Manager and the Deputy City Clerk of the CITY OF HIGHLAND, ILLINOIS, an Illinois Municipal Corporation, and that this Warranty Deed was signed and attested to on behalf of CITY OF HIGHLAND, ILLINOIS, and acknowledged said instrument to be the free act and deed for the purposes therein stated.

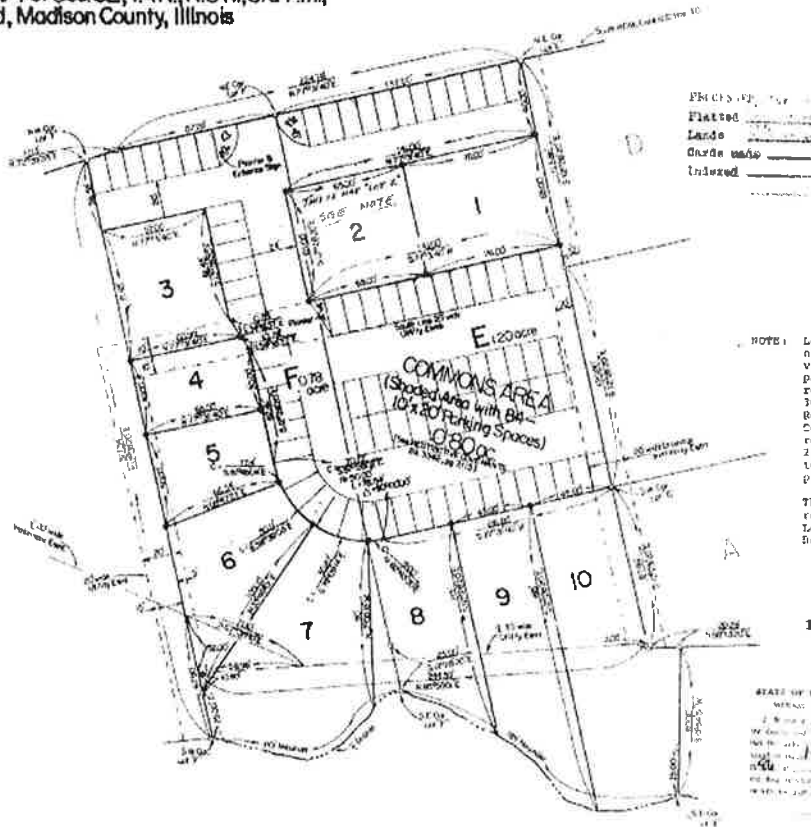
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

NOTARY PUBLIC

**EXHIBIT A
PREMISES DRAWING**

File SE 32-4-5 PC 52/175 Rec. 7-11-86

PLAT of
WOODCREST PROFESSIONAL PARK - Phase One
 A Resubdivision of Part of Lots E and F of the Fourth Resubdivision of Lot No. 1 "Woodcrest Plat One"
 Part of the S.E. 1/4 of Sec. 32, T.4N., R.5W., 3rd P.M.,
 City of Highland, Madison County, Illinois
 Zoned: C-3



NOTE: Lot 2, as shown, is the property of Land Trust 71 of the Edwardsville National Bank & Trust Company, Edwardsville, Illinois, as recorded in Deed Book 1243, pages 306 & 307 of the Madison County Records, and is subject to the Covenants & Restrictions as recorded in Deed Book 1342, page 2115 of the Madison County Records, together with the rights and privileges therein set forth.

The Commons Area Plat is further referenced as Exhibit A on said Lot 2 Deed and recorded in Plat Book 53, page 90.

1623 5M

STATE OF ILLINOIS
 MADISON COUNTY
 I, _____, Clerk of said County, do hereby certify that the above is a true and correct copy of the original plat on file in my office.
 Witness my hand and the seal of said County this 10th day of July, 1986.

 Clerk

AFFIDAVIT OF NON-PRODUCTION AND NON-DEVELOPMENT

STATE OF ILLINOIS)

COUNTY OF MADISON)

Before me, Camille Lane, a Notary Public in and for the State of Illinois, personally appeared one of the following named trustee, ANNA JO ANN ALBERTERNST, SUCCESSOR TRUSTEE FOR WILLIAM ANTHONY ALBERTERNST, AS TRUSTEE OF THE WILLIAM ANTHONY ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest AND ANNA JO ANN ALBERTERNST, TRUSTEE OF THE ANNA JO ANN ALBERTERNST REVOCABLE TRUST DATED NOVEMBER 18, 1974, AS AMENDED JANUARY 26, 1981, AND AS AMENDED BY FIRST AMENDED TRUST AGREEMENT DATED APRIL 5, 2000, as to an undivided one-half interest, who being duly sworn, deposed and stated as follows:

- 1. Affiant, ANNA JO ANN ALBERTERNST, is personally familiar with the location, use and occupation of a certain tract of land in Madison County, Illinois described as follows:

LOTS 7, 8, 9, AND 10 OF WOODCREST PROFESSIONAL PARK – PHASE ONE, A RESUBDIVISION OF PART OF LOTS “E” AND “F” OF THE FOURTH RESUBDIVISION OF LOT NO. 1 WOODCREST PLAT ONE, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT CABINET 52 PAGE 175 IN THE RECORDER’S OFFICE OF MADISON COUNTY, ILLINOIS, TOGETHER WITH ITS UNDIVIDED PERCENTAGE IN THE COMMON ELEMENTS. Situated in Madison County, Illinois

PPN: 02-2-18-32-15-401-028 (Lot 7)
02-2-18-32-15-401-029 (Lot 8)
02-2-18-32-15-401-030 (Lot 9)
02-2-18-32-15-401-031 (Lot 10)

- 2. Affiant further states there are not now, nor have there been for at least ten (10) years prior to the date of this statement, any well or wells producing oil or gas, nor any shut-in gas well, nor any operations for the drilling, repairing or reworking of a well, nor any well or mine for any other mineral, at any location on the above-described lands.

By: Anna Jo Ann Alberternst, trustee
Anna Jo Ann Alberternst, Affiant & Trustee

SUBSCRIBED AND SWORN TO before me this 12th day of August, 2019

My Commission Expires: 11/16/22

Camille Michel Lane
Notary Public



[Acknowledgment]

ORDINANCE NO. _____

**AN ORDINANCE REPEALING AND REPLACING ORDINANCE NUMBER 2843
AUTHORIZING INCENTIVES FOR CONSTRUCTION OF NEW SINGLE FAMILY
RESIDENCES IN NEWLY PLATTED SUBDIVISIONS WITHIN THE CORPORATE
BOUNDARIES OF THE CITY OF HIGHLAND, ILLINOIS**

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, on April 2, 2018, City Council passed Ordinance Number 2843, “Ordinance Authorizing Incentive for Construction of New Single Family Residences in Newly Platted Subdivisions Within the Corporate Boundaries of the City of Highland, Illinois;” and

WHEREAS, City has determined no incentives have been paid by City according to Ordinance Number 2843, Ordinance Authorizing Incentive for Construction of New Single Family Residences in Newly Platted Subdivisions Within the Corporate Boundaries of the City of Highland, Illinois; and

WHEREAS, pursuant to Ordinance Number 2843, the City Manager or City Manager’s Designee had the right to determine whether the terms “Qualifying Residence,” “Developer,” “Incentive for Construction of New Family Residence,” and “Newly Platted Subdivision” apply for purposes awarding or denying any incentives for construction of new single family homes; and

WHEREAS, City has determined Ordinance Number 2843 shall be repealed and replaced for purposes of clarifying eligibility for payment of the incentives for construction of new single family homes in newly platted subdivisions within the corporate boundaries of City; and

WHEREAS, City has determined the following definitions shall apply to the Ordinance Authorizing Incentives for Construction of New Single Family Residences in Newly Platted Subdivisions in City:

1. “Newly Platted Subdivision,” as used herein, means a new subdivision platted within the corporate boundaries of City between May 1, 2018 and May 1, 2025, and pursuant to all City and State of Illinois requirements regarding development and dedication of a subdivision;
2. “Qualifying Residence,” as used herein, means a detached single-family residence newly constructed in a Newly Platted Subdivision within the corporate boundaries of City, with construction completed and verified by City between May 1, 2018 and May 1, 2025;
3. “Builder,” as used herein, means a person, sole proprietorship, partnership, corporation, limited liability company, professional corporation, or any other legally recognized business entity that completes construction of and owns a Qualifying Residence in a Newly Platted Subdivision within the corporate boundaries of City;
4. “Developer,” as used herein, means a person, sole proprietorship, partnership, corporation, limited liability company, professional corporation, or any other legally recognized business entity that develops and completes construction of a Newly Platted Subdivision platted within the corporate boundaries of City between May 1, 2018 and May 1, 2025;
5. “Incentive for Construction of New Single Family Residence(s),” as used herein, means a one-time payment of \$4,000.00 by City to Developer for completion of construction of a Qualifying Residence by Builder in a Newly Platted Subdivision within the corporate boundaries of City; and

WHEREAS, City has determined it is in the best interests of public health, safety, general welfare and economic welfare to encourage the construction of detached single-family Qualifying Residences in Newly Platted Subdivisions within the corporate boundaries of City; and

WHEREAS, City has determined it is in the best interests of public health, safety, general welfare and economic welfare to offer an Incentive for Construction of New Single Family Residences to Developers for construction of a Qualifying Residence in a Newly Platted Subdivision within the corporate boundaries of City between May 1, 2018 and May 1, 2025; and

WHEREAS, for Developer to redeem the Incentive for a New Single Family Residence, a final inspection of a Qualifying Residence must be completed by City, City must determine Builder has completed construction of a Qualifying Residence, City must determine whether the Qualifying Residence is in a Newly Platted Subdivision within the corporate boundaries of City, and City must determine Developer is eligible for the Incentive for Construction of New Single Family Residence; and

WHEREAS, Developer must submit a written request to City to redeem the Incentive for Construction of New Single Family Residence within sixty (60) days of the final inspection of the Qualifying Residence; and

WHEREAS, the Incentive for Construction of New Family Residences will be available for no more than fifteen (15) Qualifying Residences per year in a Newly Platted Subdivision within the corporate boundaries of City, from May 1, 2018 to May 1, 2025; and

WHEREAS, City funding for the Incentive for Construction of New Family Residences will be provided to eligible Developers through City utility revenues appropriated to the economic development fund; and

WHEREAS, only one (1) Incentive for Construction of New Family Residences will be paid by City for each Qualifying Residence, and it is the Developer's sole responsibility to redeem the Incentive for Construction of New Family Residences; and

WHEREAS, City is entitled to request any documentation from Developer to ensure the Incentive for Construction of New Family Residences is being paid for a Qualifying Residence and is being paid to the Developer eligible to redeem the Incentive for Construction of New Family Residences.

NOW, THEREFORE, BE IT ORDAINED, BY THE CITY COUNCIL OF THE CITY OF HIGHLAND:

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

Section 2. Between May 1, 2018 and May 1, 2025, construction of a Qualifying Residence in a Newly Platted Subdivision within the corporate boundaries of City may entitle Developer to be eligible for the Incentive for Construction of New Single Family Residences conditioned upon all of the following: 1) The Qualifying Residence passing a final inspection from City; 2) City must determine Builder has completed construction of a Qualifying Residence, 3) City must determine Developer is eligible for the Incentive for Construction of New Single Family Residences; and 4) Developer must submit a written request to City to redeem the Incentive for Construction of New Single Family Residences within sixty (60) days of the final inspection of the Qualifying Residence.

Section 3. If Developer satisfies all requirements stated in Section 2, *supra*, to City's satisfaction, City Treasurer shall make payable to Developer a check in the amount of \$4,000.00 within one (1) month of Developer's accepted request.

Section 4. If Developer does not satisfy all of the requirements stated in Section 2, *supra*, Developer has waived the right to redeem the Incentive for Construction of New Single Family Residences.

Section 5. City utility revenues appropriated to the economic development fund shall be allocated to fund the Incentive for Construction of New Single Family Residences.

Section 6. The Incentive for Construction of New Family Residences will be capped at fifteen (15) Qualifying Residences per year in Newly Platted Subdivisions within the corporate boundaries of City, between May 1, 2018 and May 1, 2025.

Section 7. This Ordinance shall be known as Ordinance 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 _____, 2019, the vote being taken by ayes and noes, and entered upon the legislative records, as follows:

AYES:

NOES:

APPROVED:

Joseph R. Michaelis
Mayor
City of Highland
Madison County, Illinois

ATTEST:

Barbara Bellm
City Clerk
City of Highland
Madison County, Illinois

CITY OF HIGHLAND, ILLINOIS
PUBLIC SAFETY DEPARTMENT

HIGHLAND CITY HALL
1115 BROADWAY PO BOX 218
HIGHLAND, ILLINOIS 62249

BID NUMBER & PROPOSAL:

#F-12-19

GENERAL REMODELING
OF FIRE STATION #1

Approved: _____
Mark Latham, City Manager

PROPOSAL SUBMITTED BY: _____
Company Name

ADDRESS: _____

CITY & STATE: _____

CONTACT PERSON: _____
Name Phone

CITY OF HIGHLAND, ILLINOIS
INVITATION AND INSTRUCTIONS TO BIDDER
FOR THE GENERAL REMODELING OF FIRE STATION #1
FOR THE CITY OF HIGHLAND
BID PROPOSAL #F-12-19

Invitation

The City of Highland, Illinois is accepting sealed bids for the remodeling of Fire Station #1. Bid packets for the remodeling of Fire Station #1 will be available beginning Friday, August 30th, 2019 from David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249, OTX: 618-654-2328 or mloyet@loyet-architects.com. There will be a required refundable plan deposit of \$250.00 per set, plus \$50 for shipping/handling.

The remodeling of Fire Station #1 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.

The City of Highland, Illinois, will receive sealed bids for general construction until 2:00p.m., Friday, September 27, 2019 at the City Hall, Attn: Mark Latham 1115 Broadway P.O. Box 218, Highland, IL 62249, at which time they will be opened and read.

After tabulation, bids will be presented to the City Council at their regular meeting scheduled at 7:00p.m., Monday, October 7, 2019. Any questions or clarifications concerning this bid, please contact Architect Matt Loyet at 618-654-2328 or mloyet@loyet-architects.com.

Instructions

Bid proposals should be for the remodeling of Fire Station #1 as described in the plans, specifications, instructions and construction documents provided by David A. Loyet and Associates Architects.

Interested parties should submit their form of proposal as called for in the specifications and bid documents in a sealed bid format to the above address. Authorized signature must be provided.

DO NOT include taxes in your prices. The City of Highland is exempt from Federal Excise, Transportation and State Sales Taxes.

Each sealed bid shall be submitted in an opaque envelope, clearly marked **Bid #F-12-19** and addressed to the City of Highland, Attn: Mark Latham, 1115 Broadway, PO Box 218, Highland Illinois 62249 and include all required materials.

Interested parties must also submit a Certificate of Non-Delinquency of Taxes as required by Section 11-42.1-1 of the Illinois Municipal Code, a Certificate of Compliance with sections 33E-3 and 33E-4 of Chapter 38 of the Illinois Revised Statutes regarding bid rigging and bid rotating, and a Certificate of Compliance with the Substance Abuse Prevention on Public Works Projects Act 820 ILCS 265/1. All three certificates are included with this document and shall be submitted with the bidder's form of proposal.

The remodeling of Fire Station #1 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.

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.

The Bid prices shall remain valid and no bidder may withdraw his bid for at least ninety (90) days after established deadline for receipt of bids.

Bids will be available for inspection after award.

By submitting this Bid, Bidder acknowledges that he/she is familiar with the specifications and all other applicable regulatory and contract requirements for the project.

Basis for Bid

The Bid price shall be all inclusive and account for all labor, plant, material, transportation, and other costs estimated by the bidder to be necessary for the completion of the project.

The Bid price is to include all discounts, preparation costs and all other charges or credits.

The Bid price shall be the net price described by the specifications, instructions and construction documents provided by David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, email: mloyet@loyet-architects.com

The remodeling of Fire Station #1 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.

BID #F-12-19
SPECIFICATIONS
CITY OF HIGHLAND

Interested parties/bidders shall submit bids conforming to the specifications, instructions, design and constructions documents as provided by David A. Loyet and Associates Architects for the City of Highland, Illinois Combined Public Safety Building. Bid Packets and Construction Documents will be available beginning Friday, August 30, 2019 from David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, email: mloyet@loyet-architects.com, Attn: Matt Loyet.

Bidder must complete and return their form of proposal and the Bid Price Sheet attached to the bid documents provided by David A. Loyet and Associates Architects and the Certificates of Non-Delinquency of Tax, Compliance with regard to bid rigging/rotating and the Substance Abuse Prevention on Public Works Act.

The remodeling of Fire Station #1 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.

Bids for the remodeling of Fire Station #1 will be opened at 2:00p.m., Friday, Friday, September 27th, 2019 at City Hall, 1115 Broadway, Highland, Illinois 62249.

Additional information, if required, may be obtained from David A. Loyet and Associates, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, or mloyet@loyet-arcitects.com, Attn: Matthew Loyet.



City of Highland

Police Department

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 who 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.

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 / State / Postal Code

Signature / Title

Signed and sworn to before me this _____ day of _____, 20__.

Notary Public

Return with Bid

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

ADDITION & RENOVATIONS TO FIRE STATION #1

CITY OF HIGHLAND

HIGHLAND, ILLINOIS 62249

DAVID A. LOYET & ASSOC., INC.
ARCHITECTS
902 WALNUT STREET
HIGHLAND, ILLINOIS 62249

GENERAL CONSTRUCTION F-12-19

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A-3	ELEVATIONS
A-4	ELEVATIONS
A-5	PARTITION TYPES & DETAILS
A-6	BUILDING SECTION
A-7	WALL SECTIONS
A-8	ENLARGED PLANS
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SP-1	FIRE SPRINKLER PLAN - 1ST FLOOR
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E-1	POWER PLAN - 1ST FLOOR
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E-4	ELECTRICAL DEMO PLAN

ADDITION & RENOVATIONS TO
 FIRE STATION #1
 CITY OF HIGHLAND
 HIGHLAND, IL 62249

902 WALNUT STREET
 HIGHLAND, IL 62249
 PH. 618-654-2328
 FAX 618-654-3823

Loyet
 ARCHITECTS

SHEET NO.
TS-1
 JOB NO. 1824
 BID NO. F-12-19
 DATE: 8-18-19

ABBREVIATIONS	
AC. T.	- SUSPENDED ACOUSTICAL TILE
ALT.	- ALTERNATE
ALUM.	- ALUMINUM
BM.	- BEAM
CAB.	- CABINET
C.B.	- CHALK BOARD
C.L.	- CENTER LINE
C.L.C.	- CEILING
CONC.	- CONCRETE
CONSTR.	- CONSTRUCTION
CONT.	- CONTINUOUS
CONTR.	- CONTRACTOR
C.J.	- CONTROL JOINT
C.P.	- CEMENT PLASTER
DET.	- DETAIL
D.F.	- DRINKING FOUNTAIN
DIAM.	- DIAMETER
DWGS.	- DRAWINGS
DOWNSP.	- DOWNSPOUT
E.A.	- EACH
E.J.	- EXPANSION JOINT
ELEV.	- ELEVATION
E.W.C.	- ELECTRIC WATER COOLER
EXPAN.	- EXPANSION
F.F.E.	- FIRST FLOOR ELEVATION
F.E.	- FIRE EXTINGUISHER
GALV.	- GALVANIZED
G.C.	- GENERAL CONTRACTOR
H.C.	- HANDICAPPED
HORIZ.	- HORIZONTAL
H.M.	- HOLLOW METAL
H.P.	- HIGH POINT
HR.	- HOUR
H.R.	- HAND RAIL
INSUL.	- INSULATION OR INSULATING
LAM.	- LAMINATE OR LAMINATED
L.P.	- LOW POINT
MAS.	- MASONRY
MAX.	- MAXIMUM
MECH.	- MECHANICAL
MPOR.	- MANUFACTURER
MIN.	- MINIMUM
MTL.	- METAL
N.I.C.	- NOT IN CONTRACT
N.O.	- NUMBER
O.C.	- ON CENTER
OPER.	- OPERABLE
OPNG.	- OPENING
PL. OR P.	- PLATE
POL.	- POLISHED
PREFAB.	- PREFABRICATED
REINF.	- REINFORCED OR REINFORCING
RM.	- ROOM
RUB. STR.	- RUBBER STRINGER MATERIAL
RUB. TRD.	- RUBBER TREAD MATERIAL
SECT.	- SECTION
SHT.	- SHEET
S.M.	- SHEET METAL
SPECS.	- SPECIFICATIONS
S.S.	- SERVICE SINK
STD.	- STANDARD
STL.	- STEEL
STRUCT.	- STRUCTURAL
T.B.	- TACK BOARD
TYP.	- TYPICAL
VENT.	- VENT THRU ROOF
V.C.T.	- VINYL COMPOSITION TILE
VERT.	- VERTICAL
V.P.	- VENEER PLASTER
W/	- WITH
WD.	- WIRE
WD.	- WOOD
W.W.F.	- WELDED WIRE FABRIC

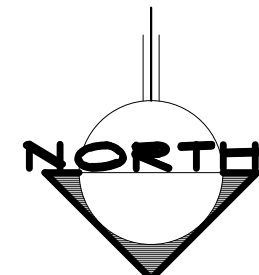
SYMBOLS	
	FACED CONC. BLOCK ONE SIDE
	FACED CONC. BLOCK BOTH SIDES
	CONCRETE BLOCK
	CONCRETE
	EXISTING MATERIALS
	WOOD BLOCKING
	PLYWOOD
	SECTION NO.
	SHEET SHOWN
	SHEET CUT

GENERAL NOTES:

- DO NOT SCALE SIZES OR DIMENSIONS FROM THESE DRAWINGS. ANY QUESTIONS CONCERNING DIMENSIONS SHALL BE REFERRED TO THE ARCHITECT FOR CLARIFICATION OR INTERPRETATION.
- 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 DISCRETION OF THE ARCHITECT.
- 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.
- THE CONTRACTOR SHALL DO ALL WORK AS REQUIRED FOR MAINTAINING THE INTEGRITY OF WALLS AND PARTITIONS INDICATED ON THE PLANS AS FIRE-RATED WALLS.
- 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.

SITE PLAN
SCALE 1/8"=1'-0"

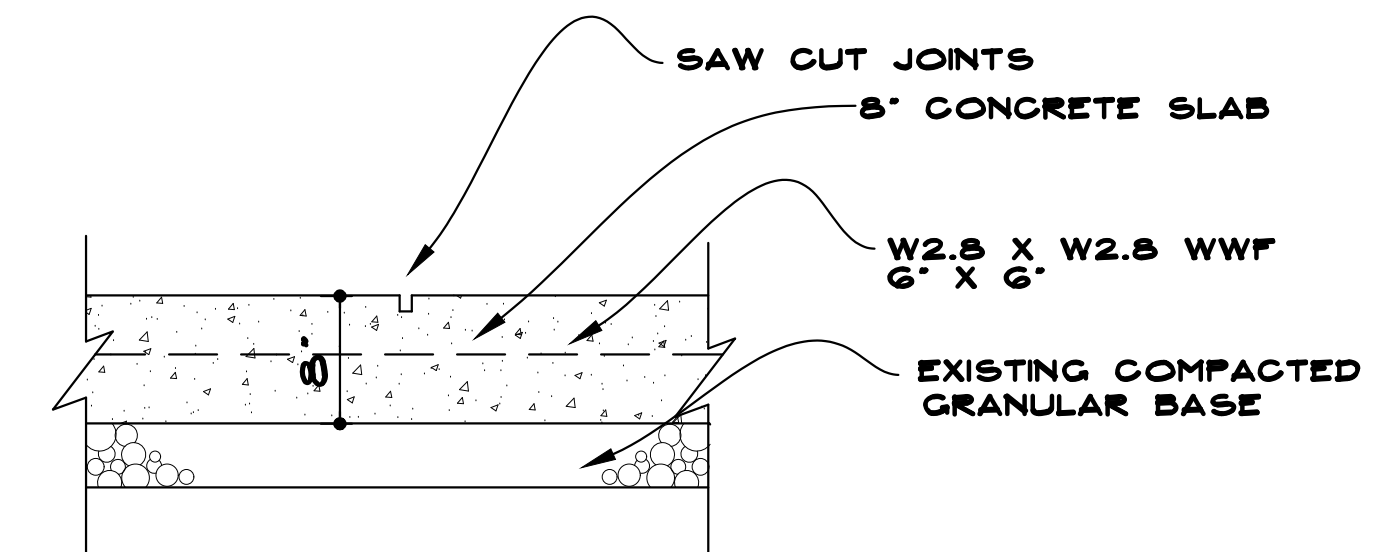
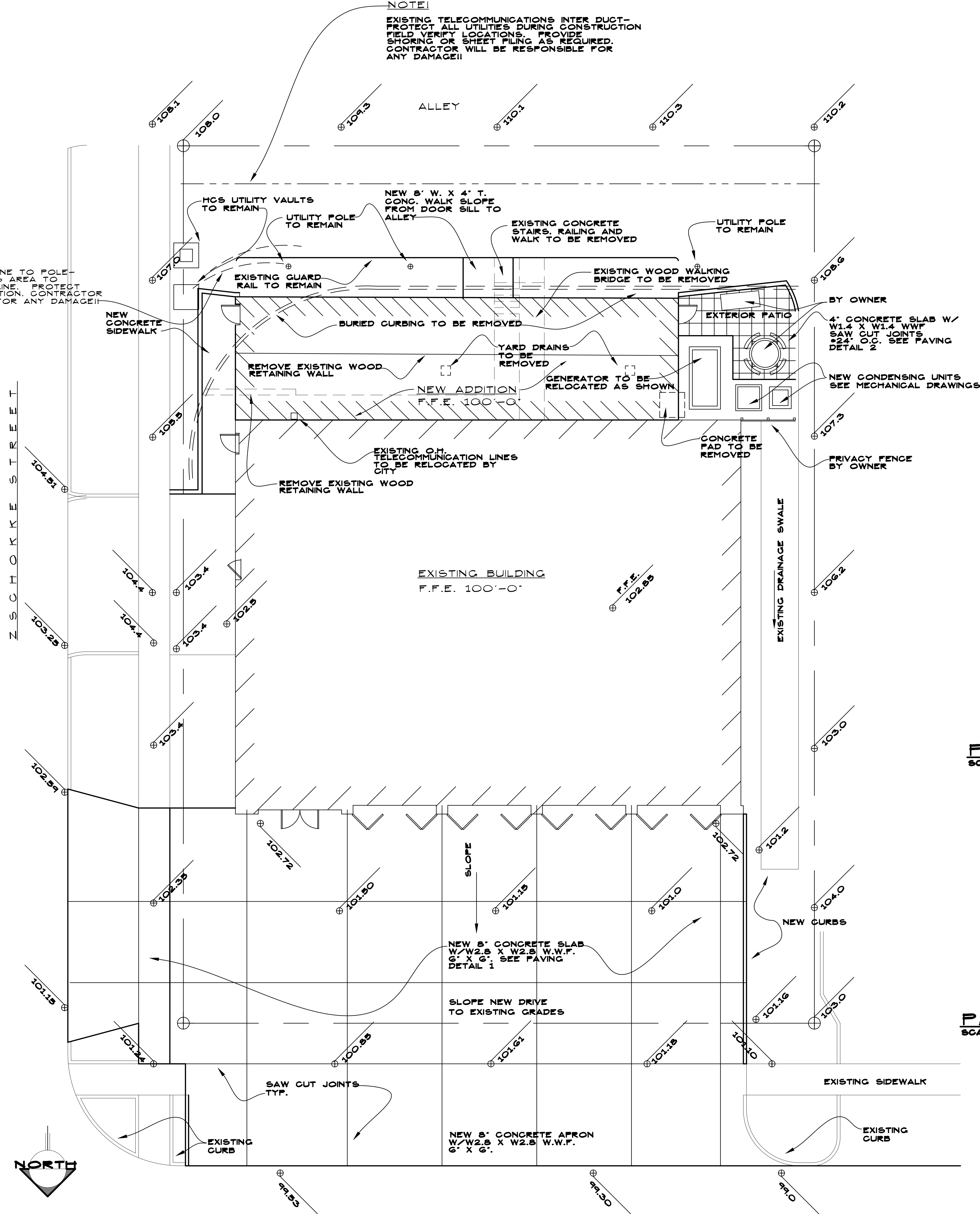
EXISTING GRADE
EXISTING GRADE



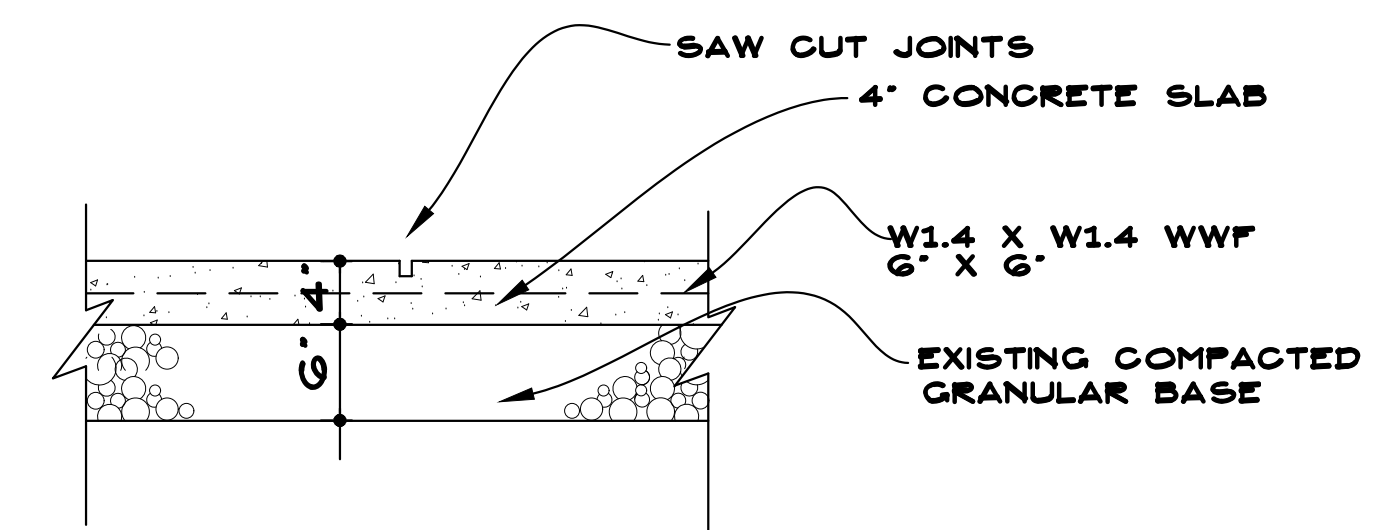
BROADWAY

NOTE!
EXISTING FIBER OPTIC LINE TO FOLE-HAND DIG ONLY IN THIS AREA TO PROTECT FIBER OPTIC LINE. PROTECT LINE DURING CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE!!

NOTE!
EXISTING TELECOMMUNICATIONS INTER DUCT-PROTECT ALL UTILITIES DURING CONSTRUCTION. FIELD VERIFY LOCATIONS. PROVIDE SHORING OR SHEET PILING AS REQUIRED. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE!!



PAVING DETAIL 1
SCALE 1/8"=1'-0"



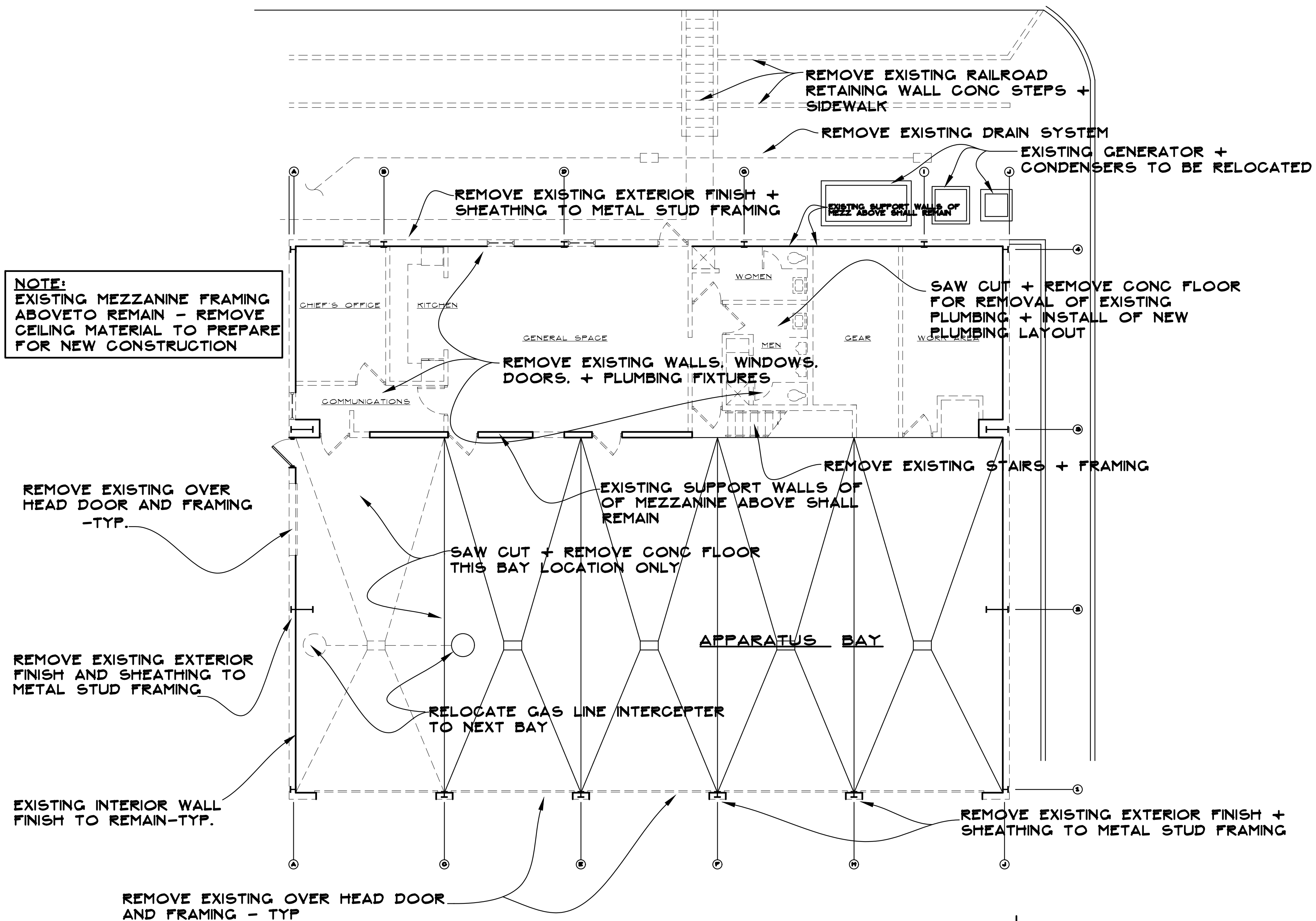
PAVING DETAIL 2
SCALE 1/8"=1'-0"

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

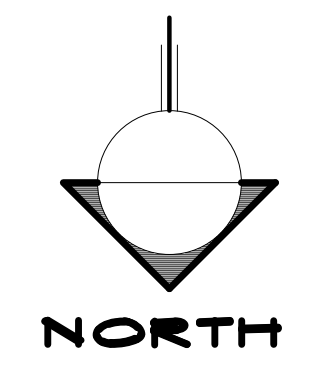
902 WALNUT STREET
HIGHLAND, IL 62249
PH. 618-654-2328
FAX 618-654-2823

Loyal
ARCHITECTS

SHEET NO.
C-1
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19

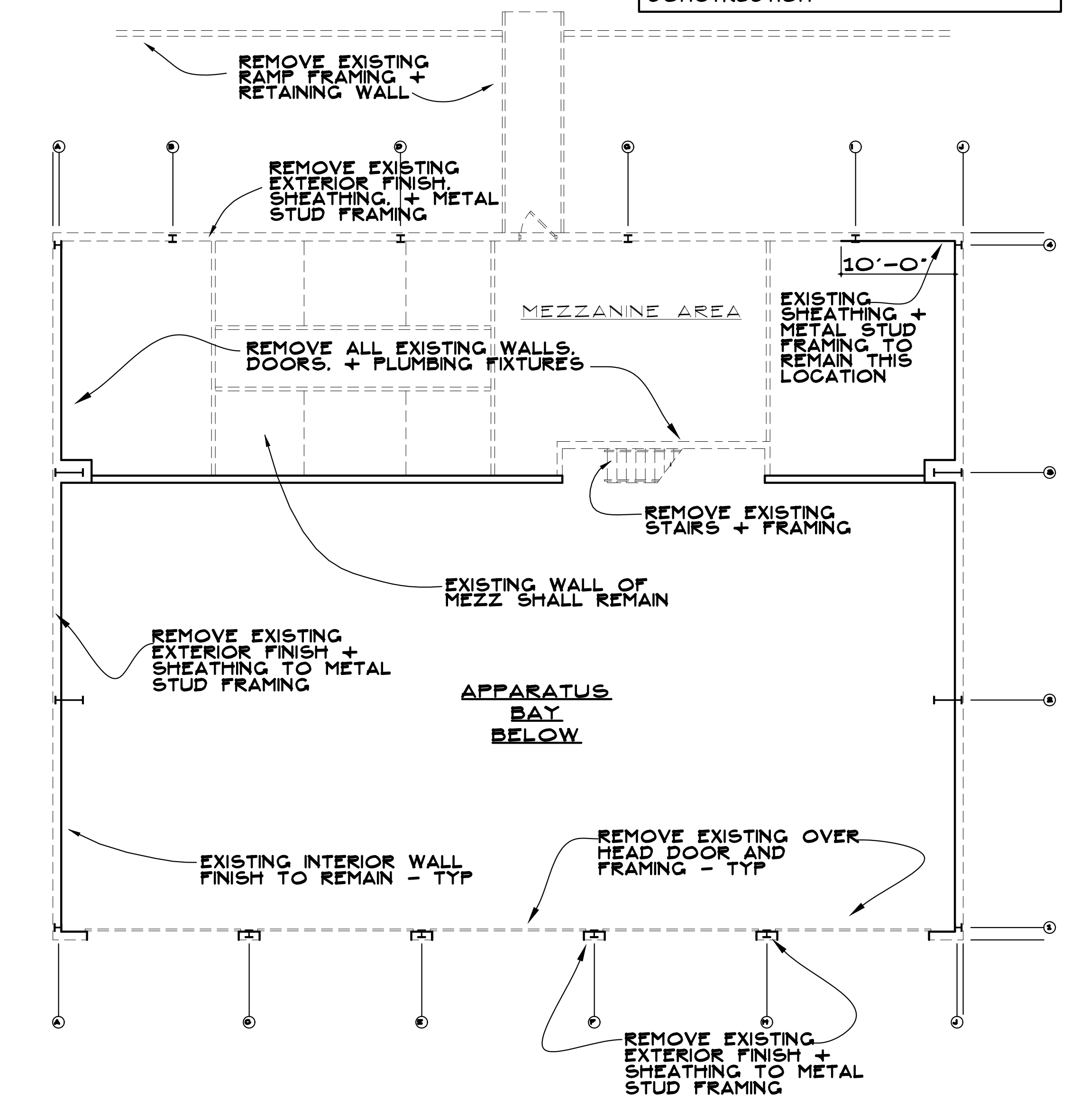


FIRST FLOOR DEMO PLAN
SCALE 1/4"=1'-0"

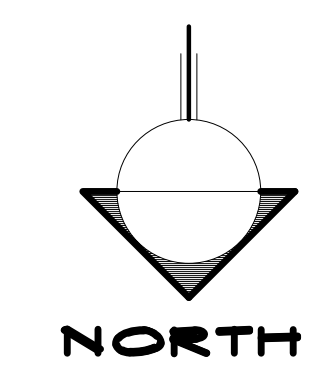


NOTE:
EXISTING MEZZANINE FRAMING ABOVE TO REMAIN - REMOVE CEILING MATERIAL TO PREPARE FOR NEW CONSTRUCTION

NOTE:
EXISTING MEZZANINE FLOOR FRAMING TO REMAIN - REMOVE CEILING MATERIAL TO ALLOW FOR NEW CONSTRUCTION



SECOND FLOOR DEMO PLAN
SCALE 1/4"=1'-0"

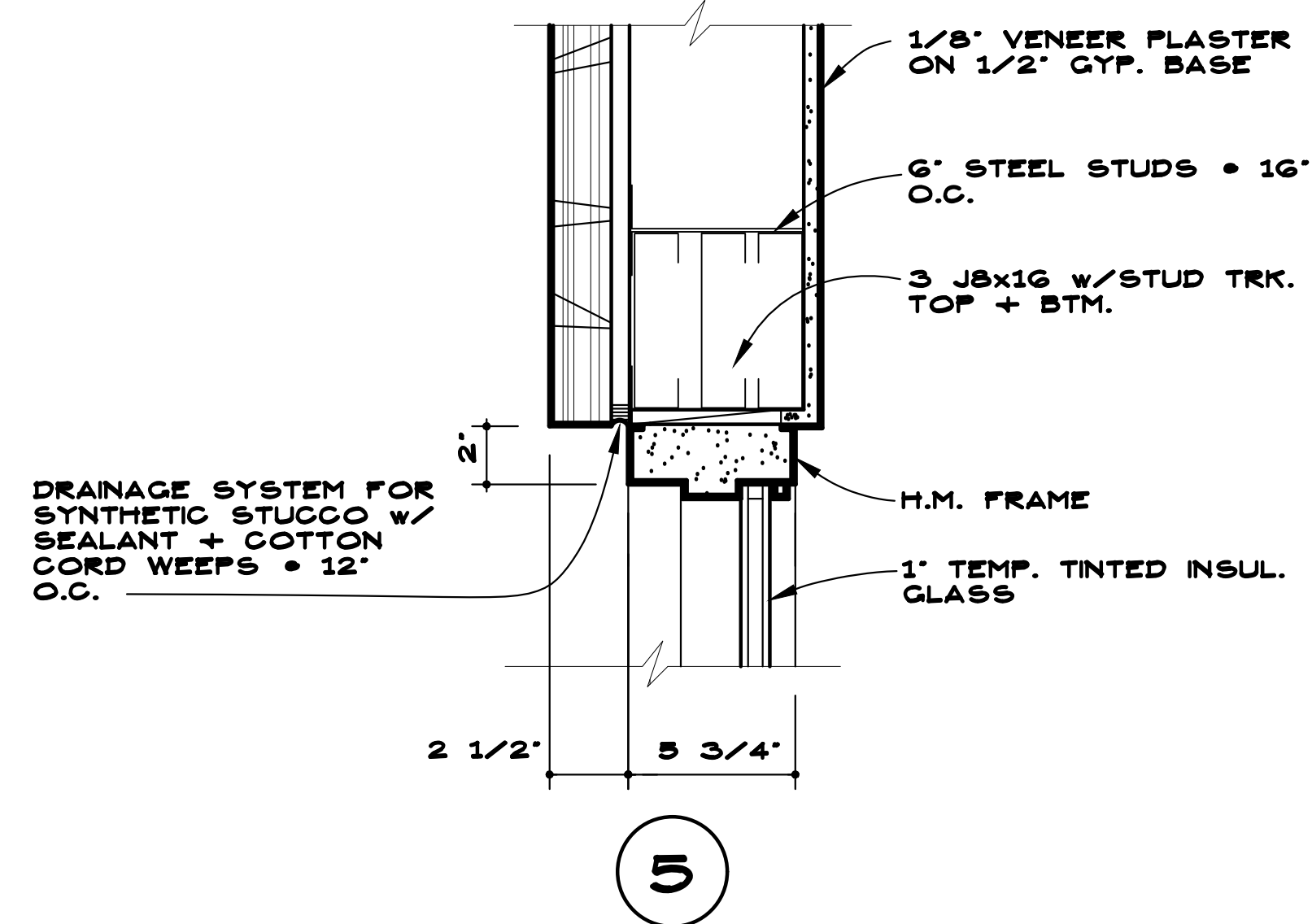


ADDITION + RENOVATIONS TO
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CITY OF HIGHLAND
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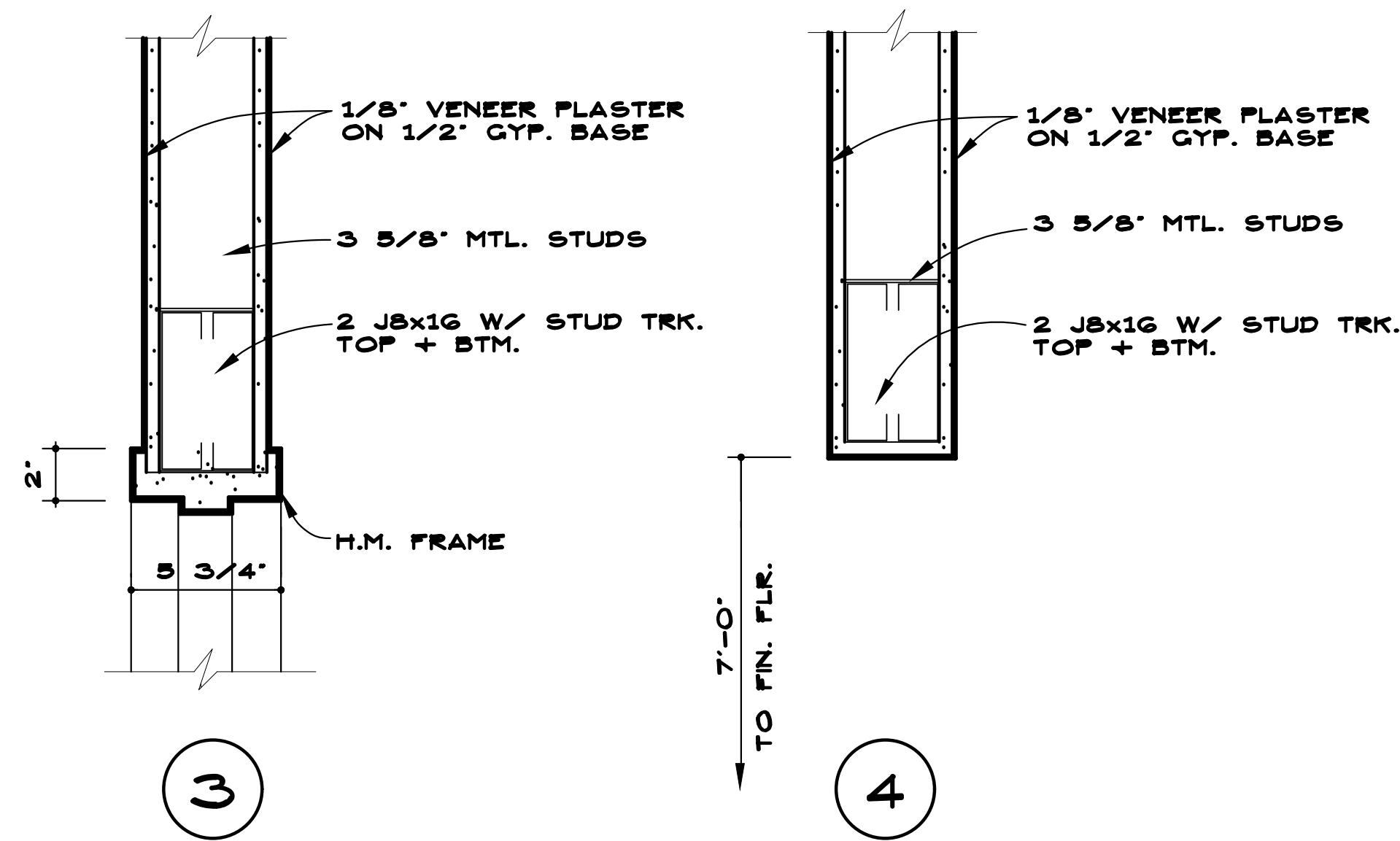
Loyal
ARCHITECTS

SHEET NO.
D-1
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BID NO. F-12-19
DATE: 8-18-19



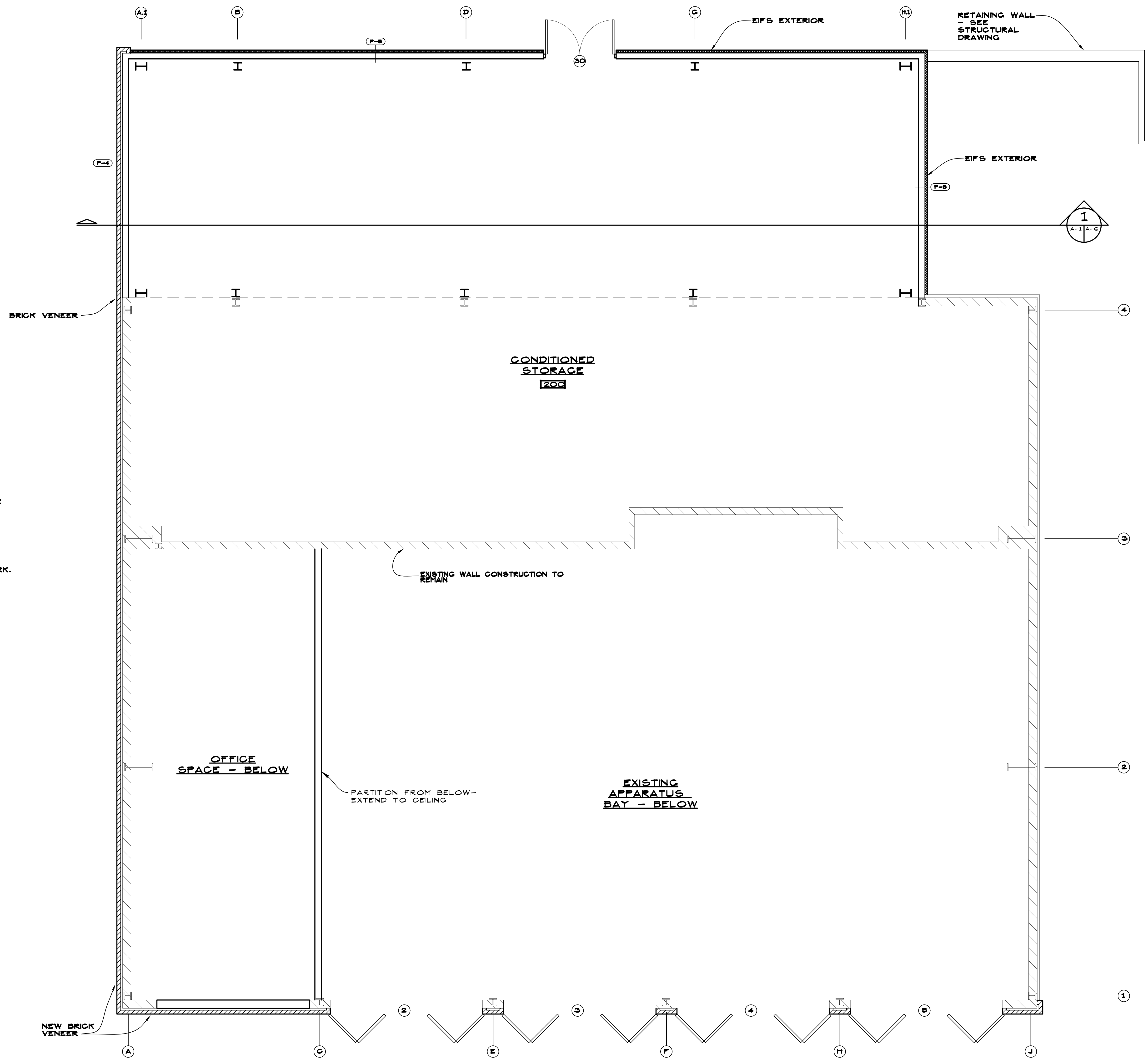
- NOTE:**
1. GROUT SOLID ALL H.M. FRAMES (CTYP.) MINIMUM HEADER SIZE
 2. J8x16 W/STUD TRACK TOP + BOTTOM

HEADER DETAIL
SCALE: 1 1/2" = 1'-0"



- NOTE:**
1. GROUT SOLID ALL H.M. FRAMES (CTYP.)
 2. MINIMUM 3 JAMB ANCHORS PER JAMB
 3. ATTACH JAMBS TO EXISTING MASONRY WITH EXPANSION SCREWS - GRIND AND FILL SMOOTH.

JAMB DETAILS
SCALE: 1 1/2" = 1'-0"



SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

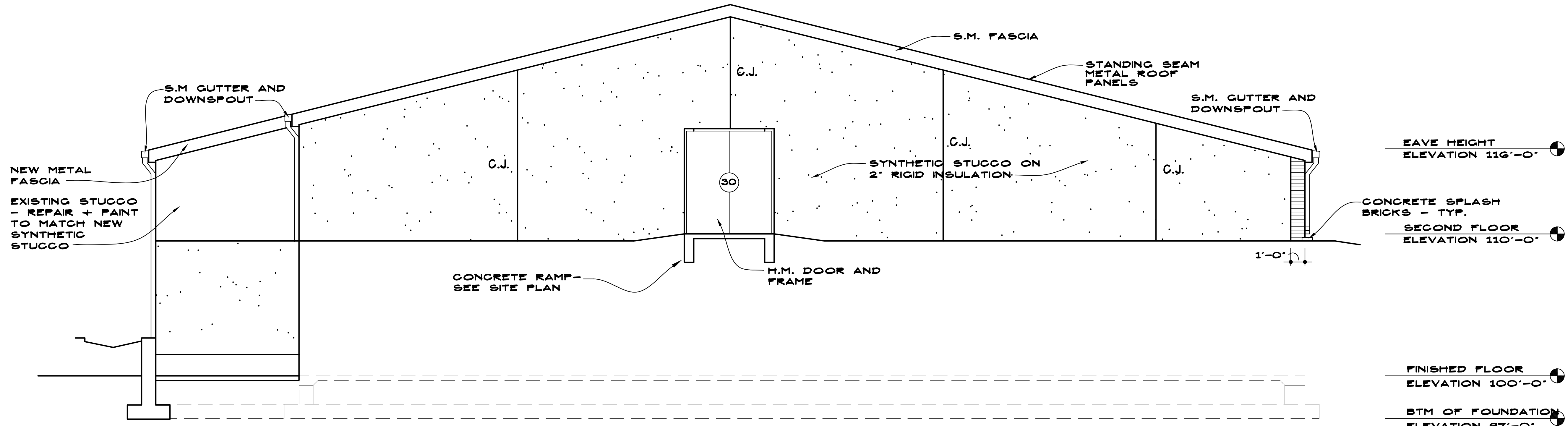
NOTE: FIELD VERIFY ALL DIMENSIONS WITH EXISTING CONSTRUCTION. VERIFY WALL THICKNESSES

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

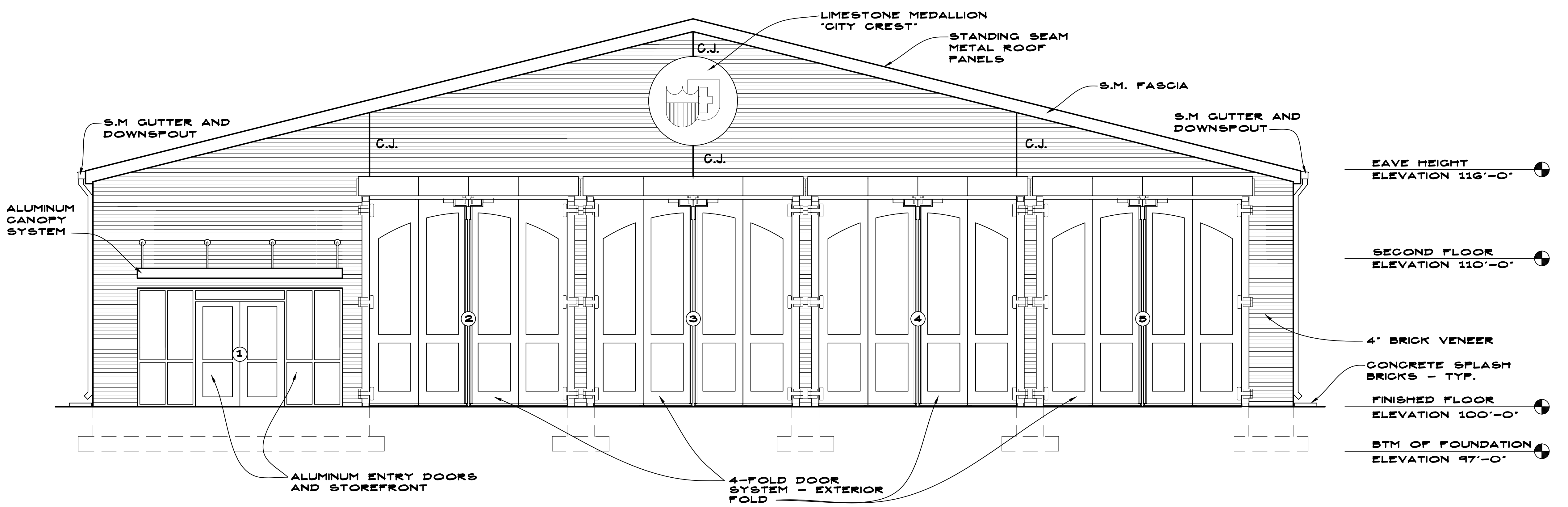
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SHEET NO.
A-2
JOB NO. 1824
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SOUTH ELEVATION
SCALE 1/4"=1'-0" 1
A1/A3



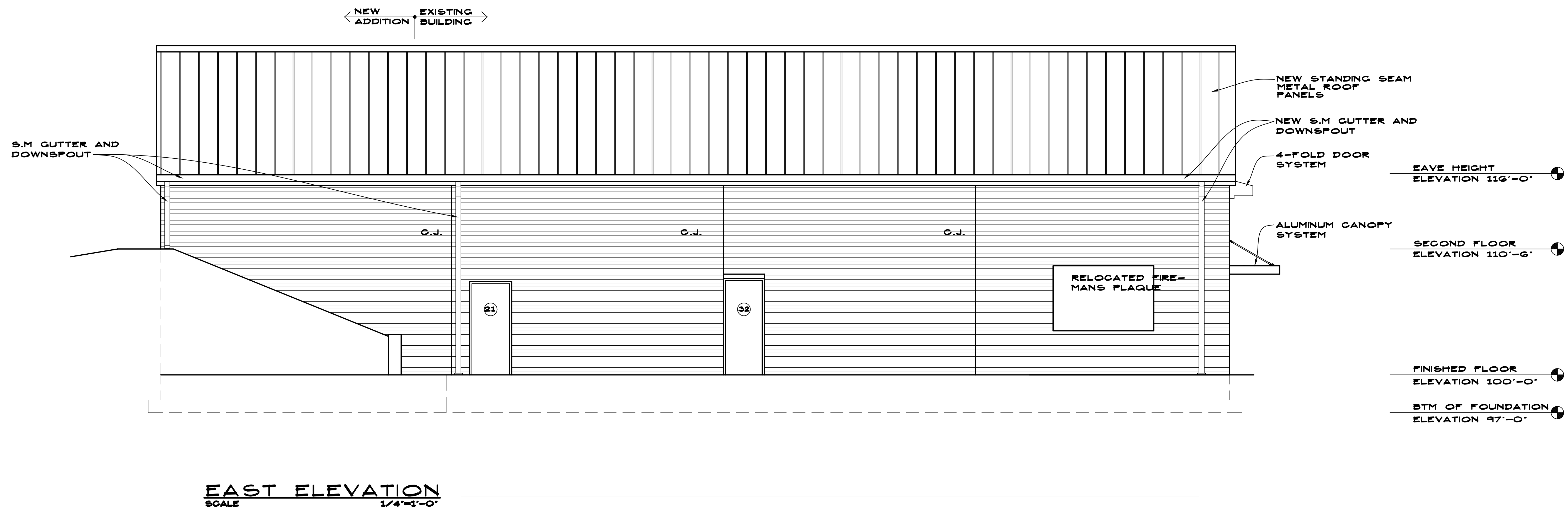
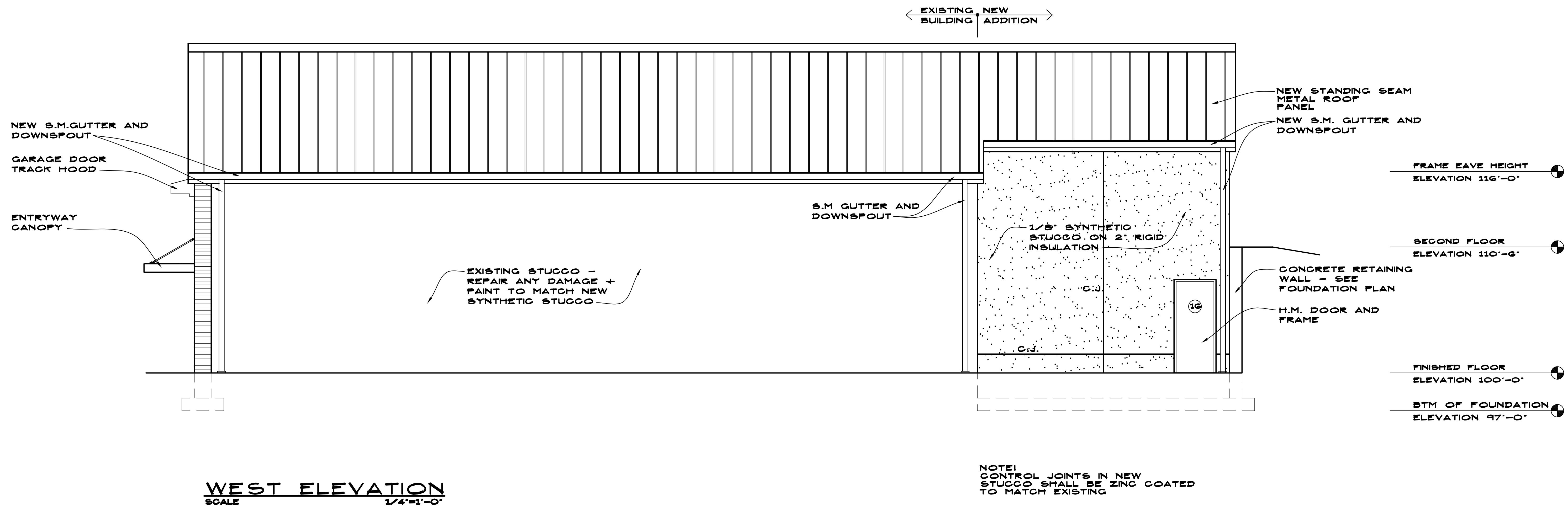
NORTH ELEVATION
SCALE 1/4"=1'-0"

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SHEET NO.
A-3
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



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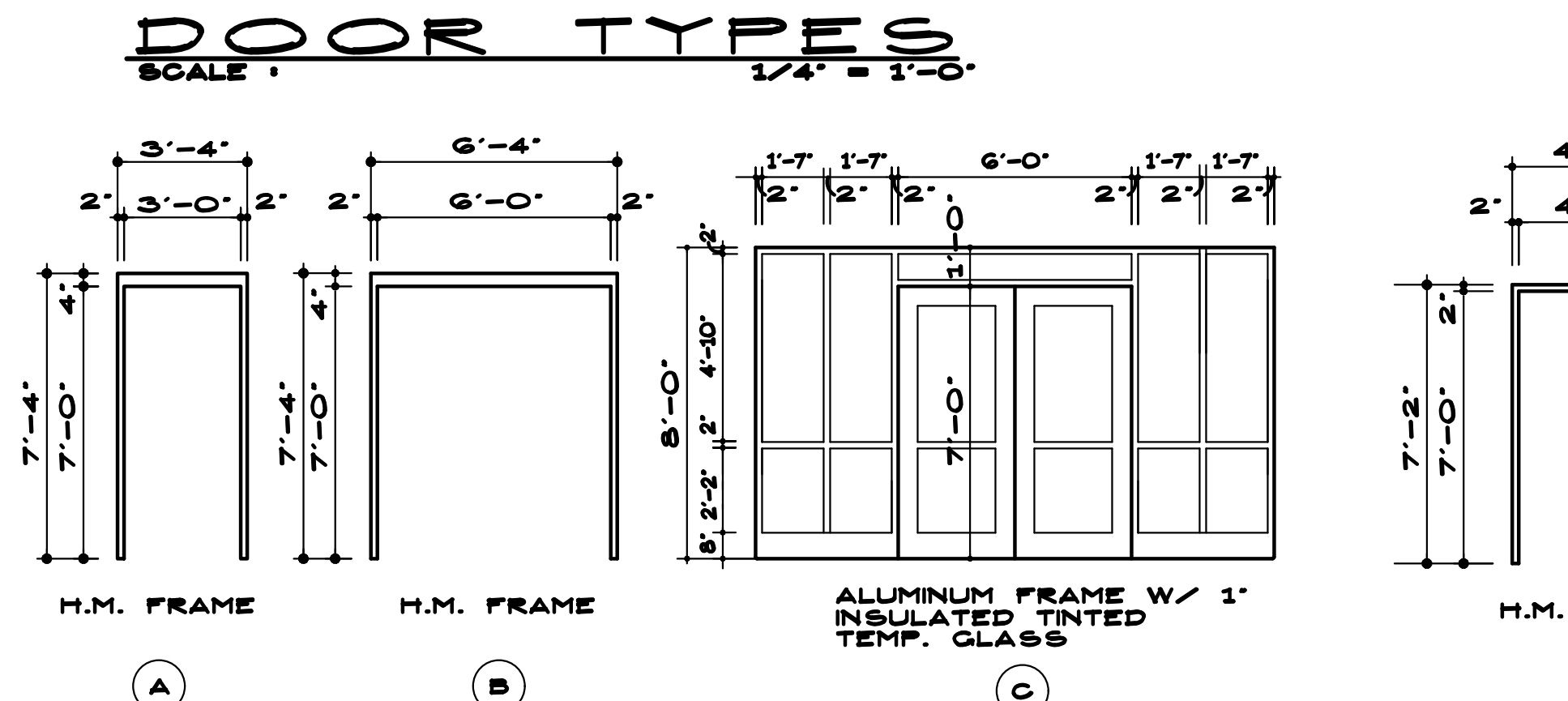
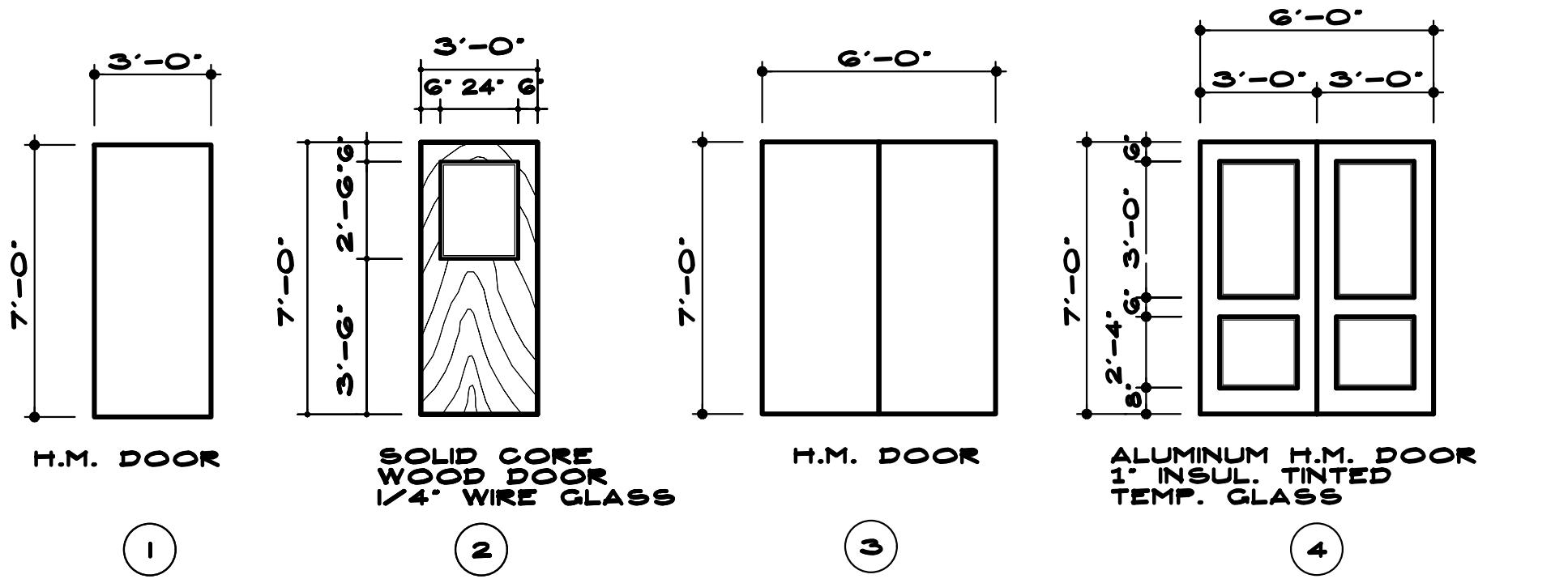
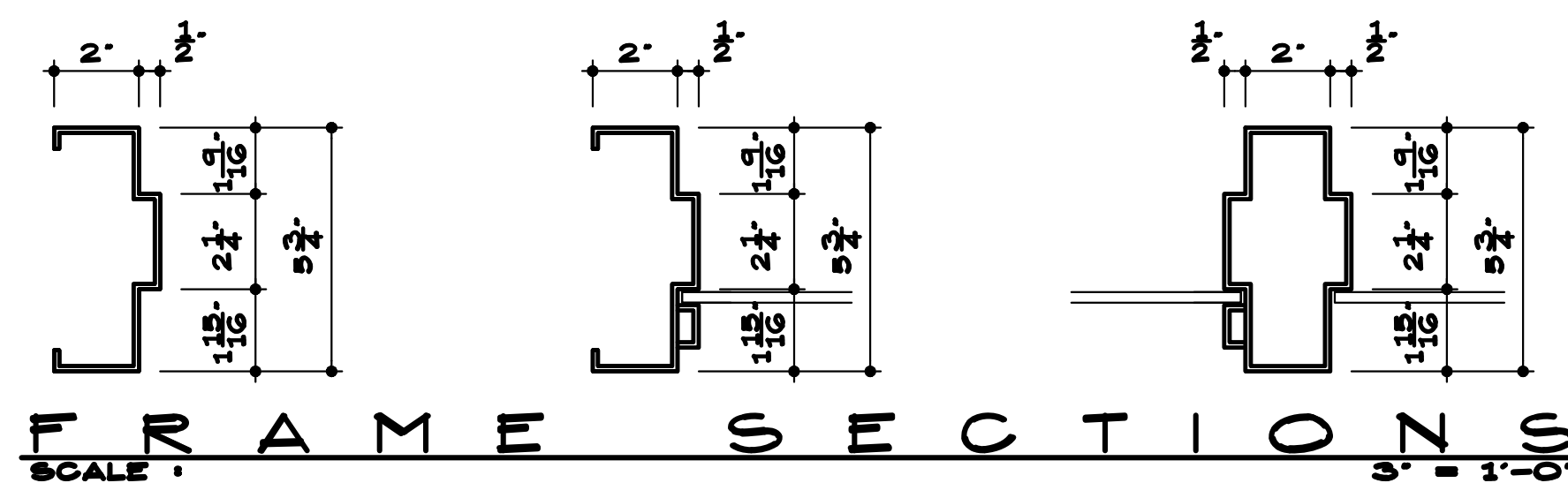
SHEET NO.

A-4

JOB NO. 1824

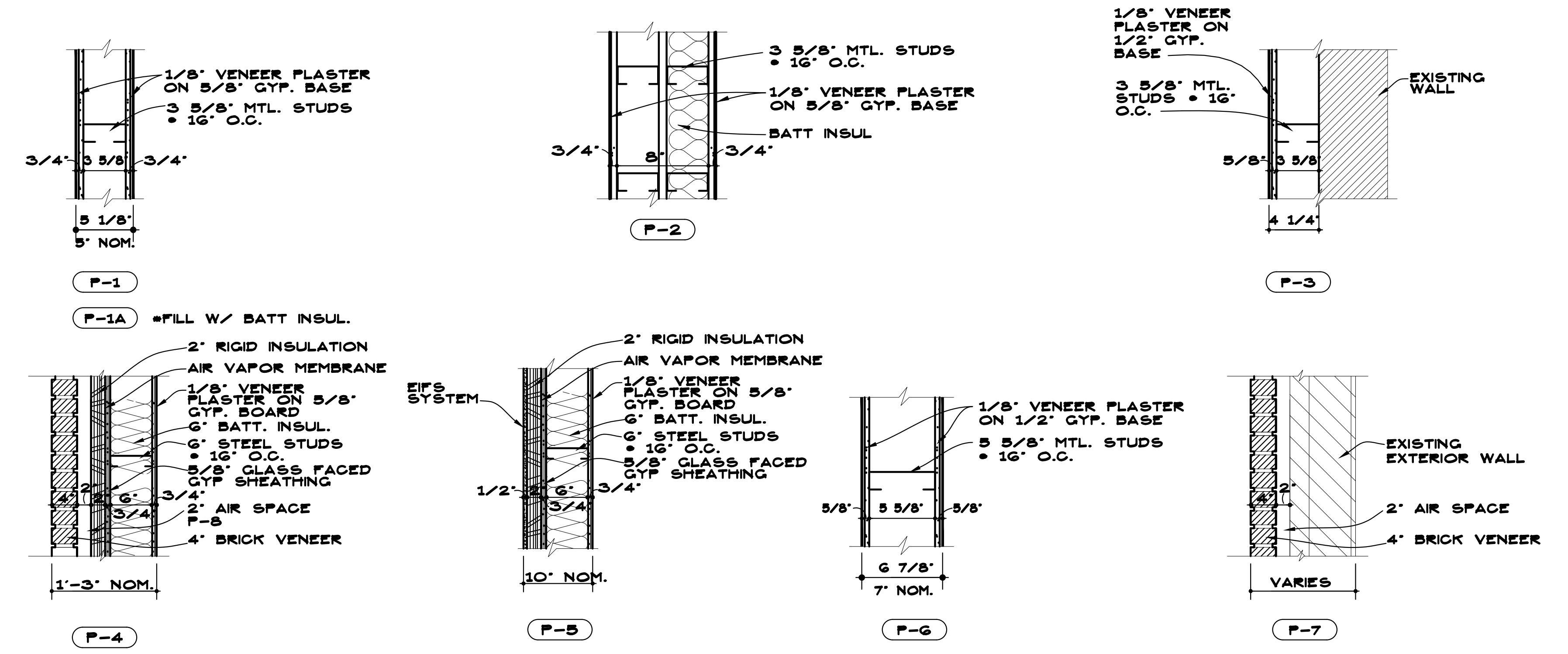
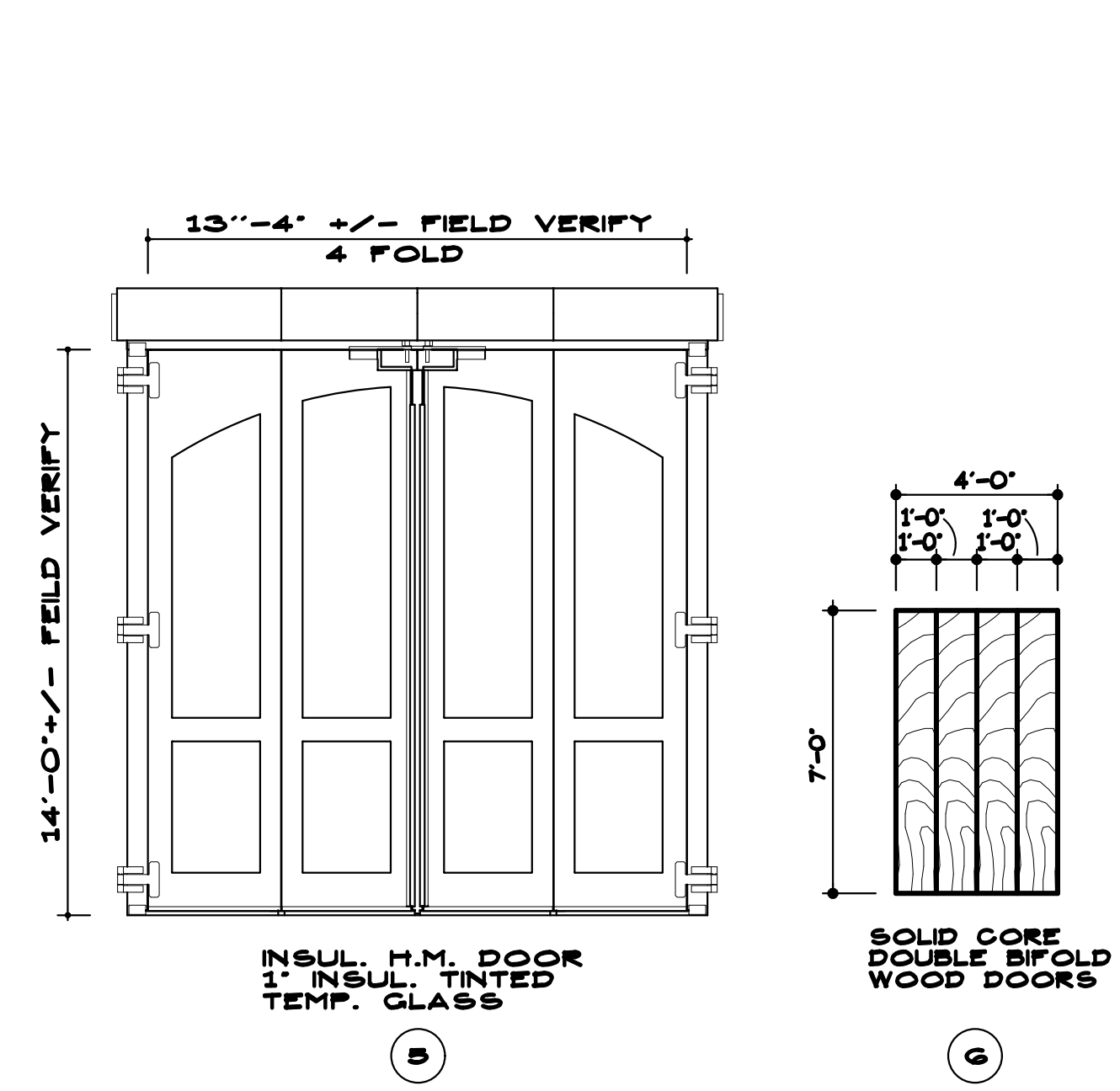
BID NO. F-12-19

DATE: 8-18-19



DOOR TYPES
SCALE: 1/4" = 1'-0"

FRAME TYPES
SCALE: 1/4" = 1'-0"



PARTITION TYPES
SCALE: NONE

NOTE:
ALL WALL LAYOUT
DIMENSIONS ARE FACE
OF STUD TO FACE OF STUD

DOOR SCHEDULE										
NO.	ROOM NO.	SIZE	TYPE	MATL.	FRAME	MATL.	HEAD	JAMB	HARD.	REMARKS
1	101	FR. 3'-0" x 7'-0" x 1 3/4"	4	ALUM.	C	ALUM.	3/4"	4/4"	O1.O1	
2	100	13'-4" x 14'-0"	5	H.M.	-	-	-	-	OO1	
3	100	13'-4" x 14'-0"	5	H.M.	-	-	-	-	OO1	
4	100	13'-4" x 14'-0"	5	H.M.	-	-	-	-	OO1	
5	100	13'-4" x 14'-0"	5	H.M.	-	-	-	-	OO1	
6	101	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O2.O4	
7	102	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O2.O3	
8	102	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O2.O1	
9	103	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O2.O1	
10	104	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O2.O1	
11	105	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O2.O2	
12	107	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O2.O2	
13	108	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O4.O1	
14	110	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O7.O3	
15	111	3'-0" x 7'-0" x 1 3/4"	2	H.M.	A	H.M.	1	2	O7.O3	
16	123	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O1.O2	
17	112	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O4.O1	
18	113	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O7.O2	
19	114	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O4.O1	
20	115	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O4.O2	
21	116	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O1.O2	
22	124	4'-0" x 7'-0" x 1 3/4"	6	H.M.	D	H.M.	1	2	O4.O4	BI-FOLD
23	118	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O6.O1	
24	119	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O6.O1	
25	120	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O4.O2	
26	125	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O6.O1	
27	126	3'-0" x 7'-0" x 1 3/4"	1	H.M.	A	H.M.	1	2	O6.O1	
28	124	4'-0" x 7'-0" x 1 3/4"	6	H.M.	D	H.M.	1	2	O4.O4	BI-FOLD
29	124	4'-0" x 7'-0" x 1 3/4"	6	H.M.	D	H.M.	1	2	O4.O4	BI-FOLD
30	200	FR. 3'-0" x 7'-0" x 1 3/4"	9	H.M.	B	H.M.	1	2	O1.O3	
31	116	3'-0" x 7'-0" x 1 3/4"	2	H.M.	B	H.M.	1	2	O2.O1	
32		EXISTING							OO2	
33	124	4'-0" x 7'-0" x 1 3/4"	6	H.M.	D	H.M.	1	2	O4.O4	BI-FOLD

ROOM FINISH SCHEDULE									
NO.	NAME	W A L L S				FLOOR	BASE	CEILING	REMARKS
		NORTH	SOUTH	EAST	WEST				
100	EXISTING APPARATUS BAY	EXISTING	EXISTING	EXISTING	V.P.	EXISTING	EXISTING	MTL. PNL.	
101	ENTRY VESTIBULE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
102	TRIAGE ROOM	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
103	BILLING OFFICE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
104	OPERATIONS MANAGER	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
105	STORAGE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
106	CORRIDOR	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
107	RADIO ROOM	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
108	TURN-OUT GEAR	V.P.	V.P.	V.P.	V.P.	CONC.	RUBBER	AC. T.	
109	MEN'S	V.P.	V.P.	V.P.	V.P.	CONC.	RUBBER	AC. T. II	
110	LAUNDRY	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T. II	
111	WORK AREA	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
112	WOMEN'S	V.P.	V.P.	V.P.	V.P.	CONC.	RUBBER	AC. T. II	
113	STORAGE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
114	STORAGE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
115	WOMEN'S LOCKER ROOM	V.P.	V.P.	V.P.	V.P.	CONC.	RUBBER	AC. T. II	
116	CORRIDOR	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
117	STORAGE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
118	BUNK	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
119	BUNK	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
120	MEN'S LOCKER ROOM	V.P.	V.P.	V.P.	V.P.	CONC.	RUBBER	AC. T. II	
121	DAY ROOM	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
122	KITCHEN	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
123	DINING	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
124	CORRIDOR	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
125	BUNK	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
126	BUNK	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	AC. T.	
127	STORAGE	V.P.	V.P.	V.P.	V.P.	L.V.T.	RUBBER	ACT	
200	STORAGE	V.P.	V.P.	V.P.	V.P.	WOOD	RUBBER	AC. T. II	

LEGEND

- - EPOXY PAINT
- AC. T. - SUSPENDED ACOUSTICAL TILE
- V.P. - VENEER PLASTER ON GYP. LATH
- L.V.T. - LUXURY VINYL TILE
- E. - EXPOSED
- MTL.PNL.-METAL PANEL

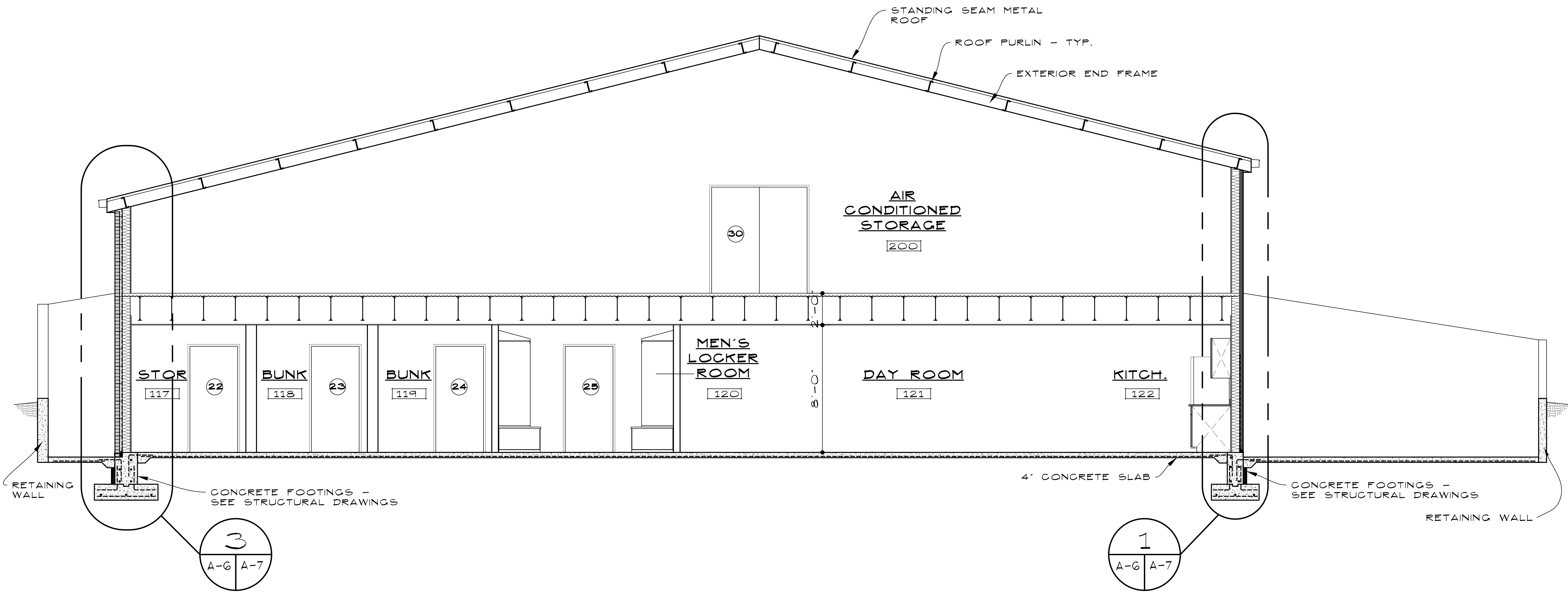
EACH CLOSET SHALL HAVE THE FOLLOWING:
A. METAL CLOTHES ROD AND SHELF
B. ALL WALLS AND CLO. TO BE PAINTED VENEER PLASTER
C. RUBBER BASE AND L.V.T. FLOORING
D. CEILING LIGHT WITH OUTLET

ADDITION + RENOVATIONS TO
FIRE STATION #1
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HIGHLAND, IL 62249

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FAX 618-654-2823

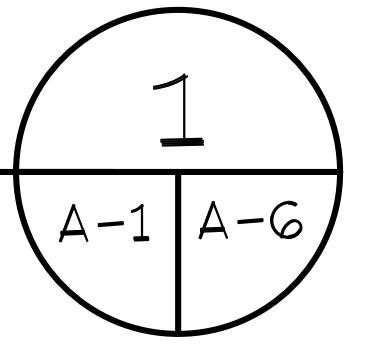
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ARCHITECTS

SHEET NO.
A-5
JOB NO. 1824
BD NO. F-12-19
DATE: 8-18-19



BUILDING SECTION

SCALE 1/4"=1'-0"

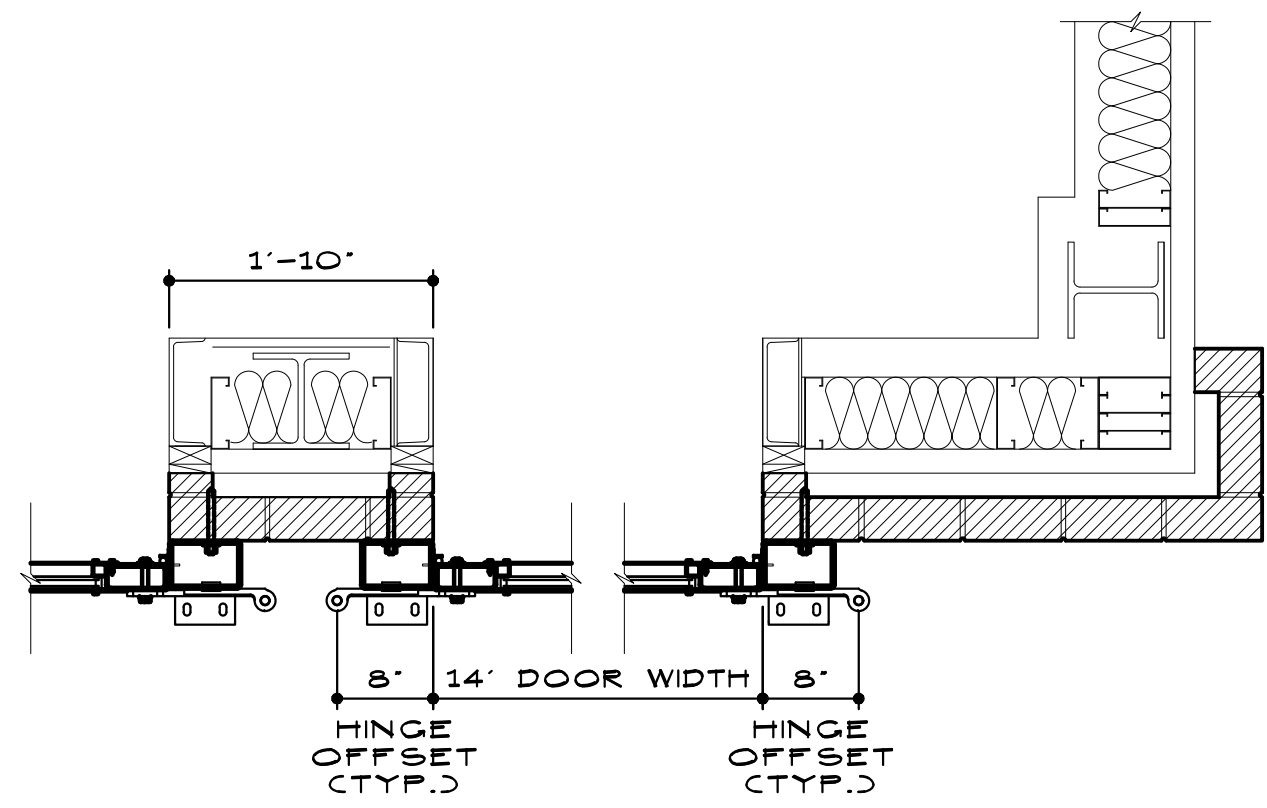


ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

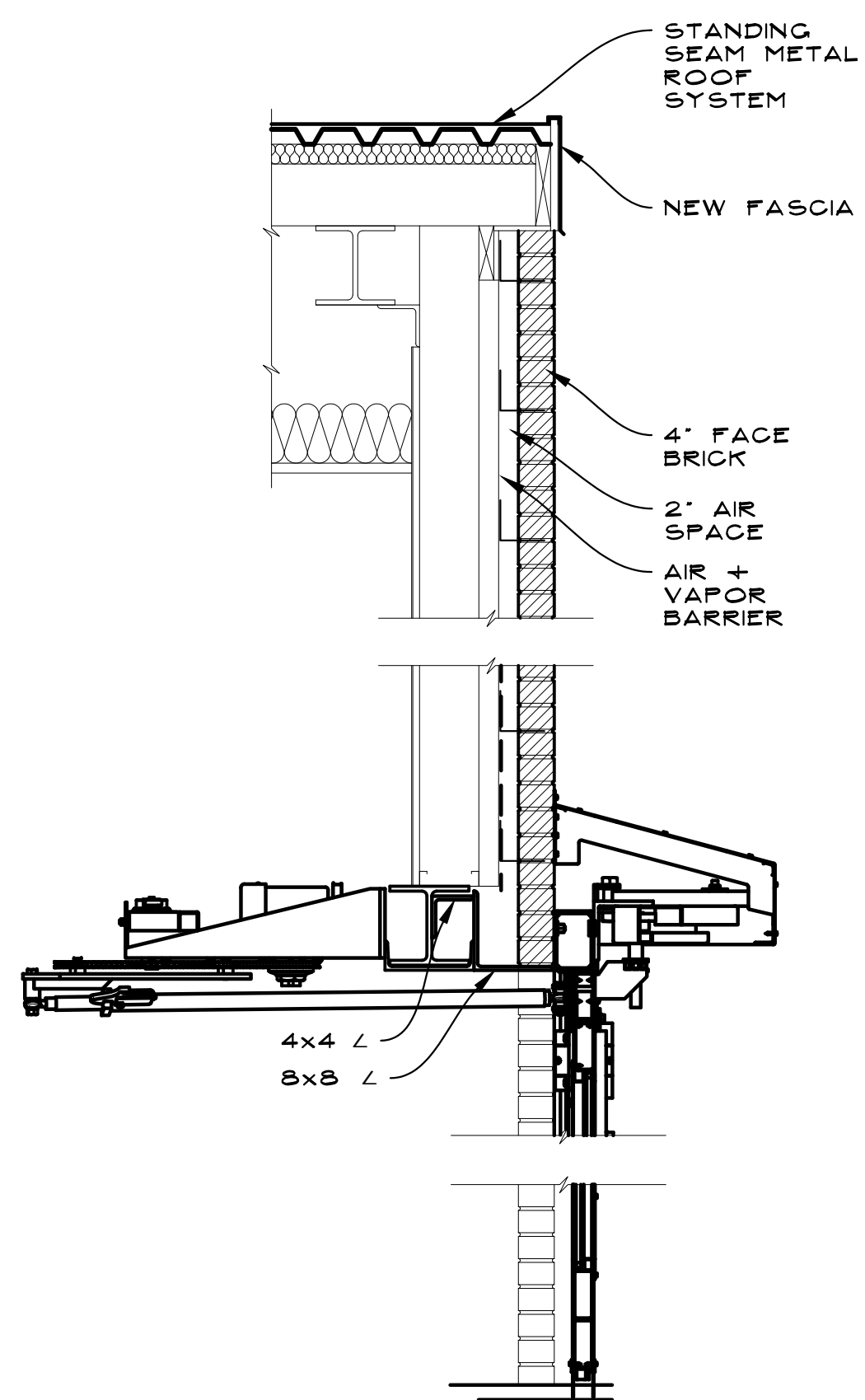
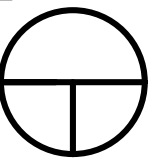
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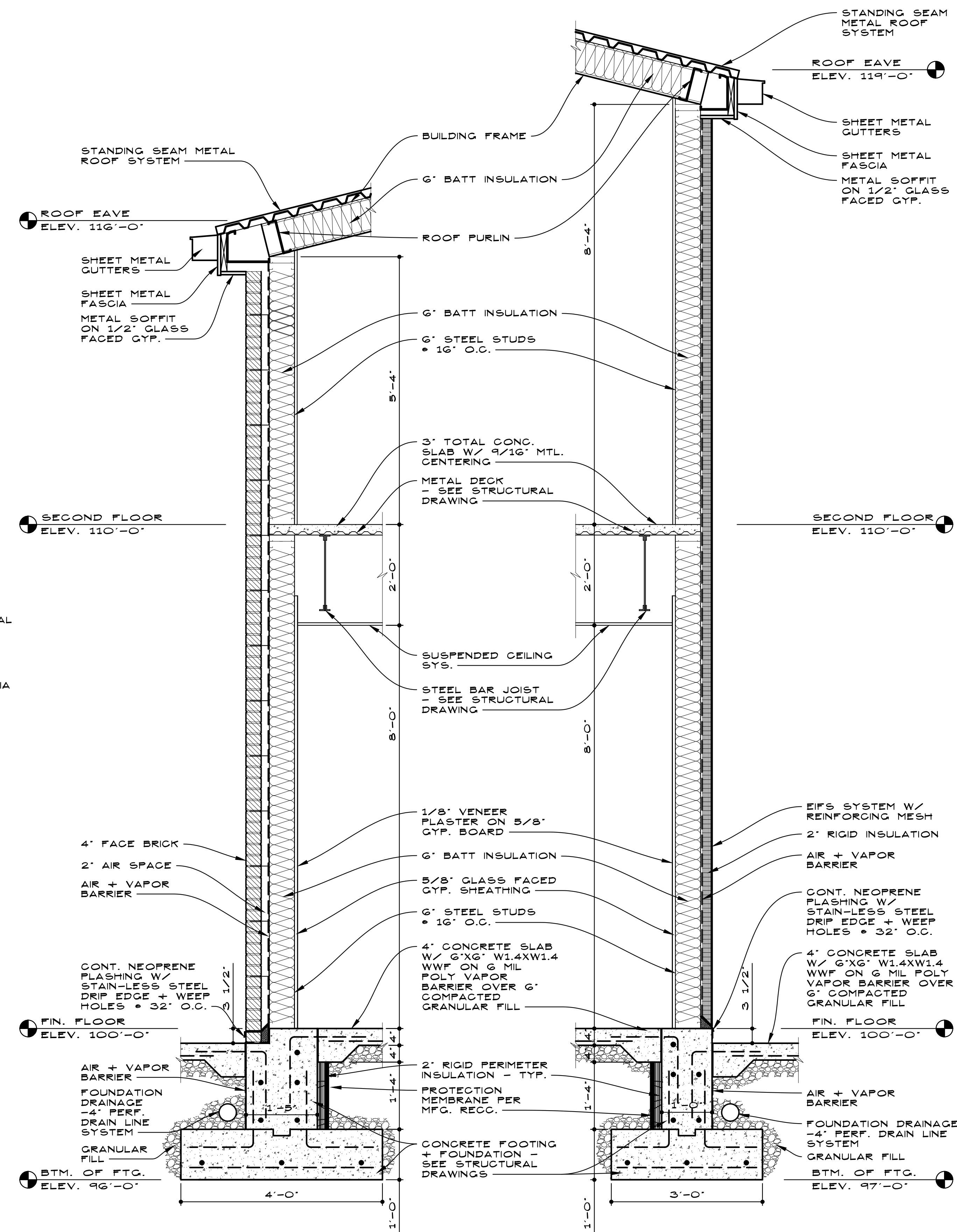
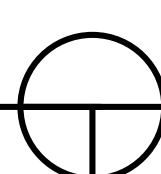
SHEET NO.
A-6
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



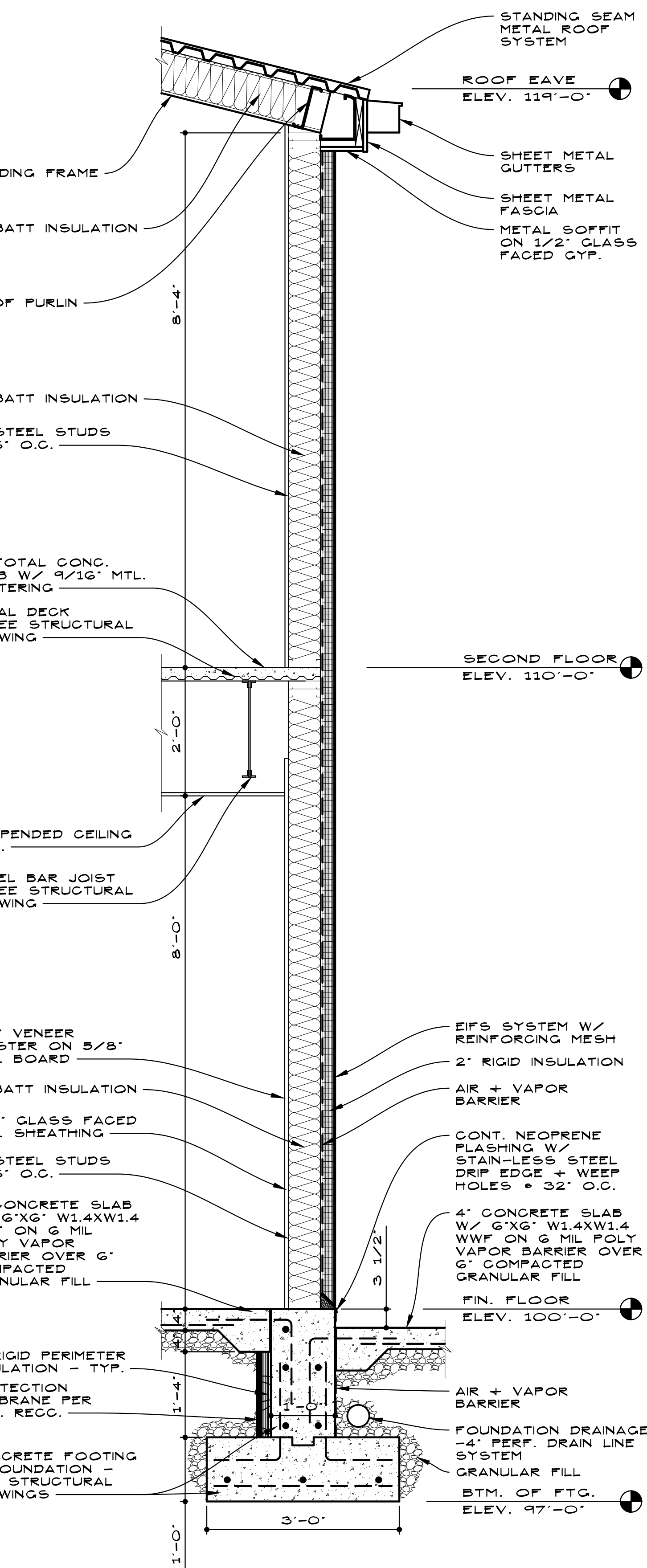
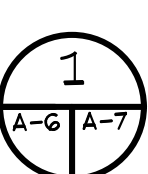
GARAGE DOOR WALL SECTION
SCALE 3/4"=1'-0"



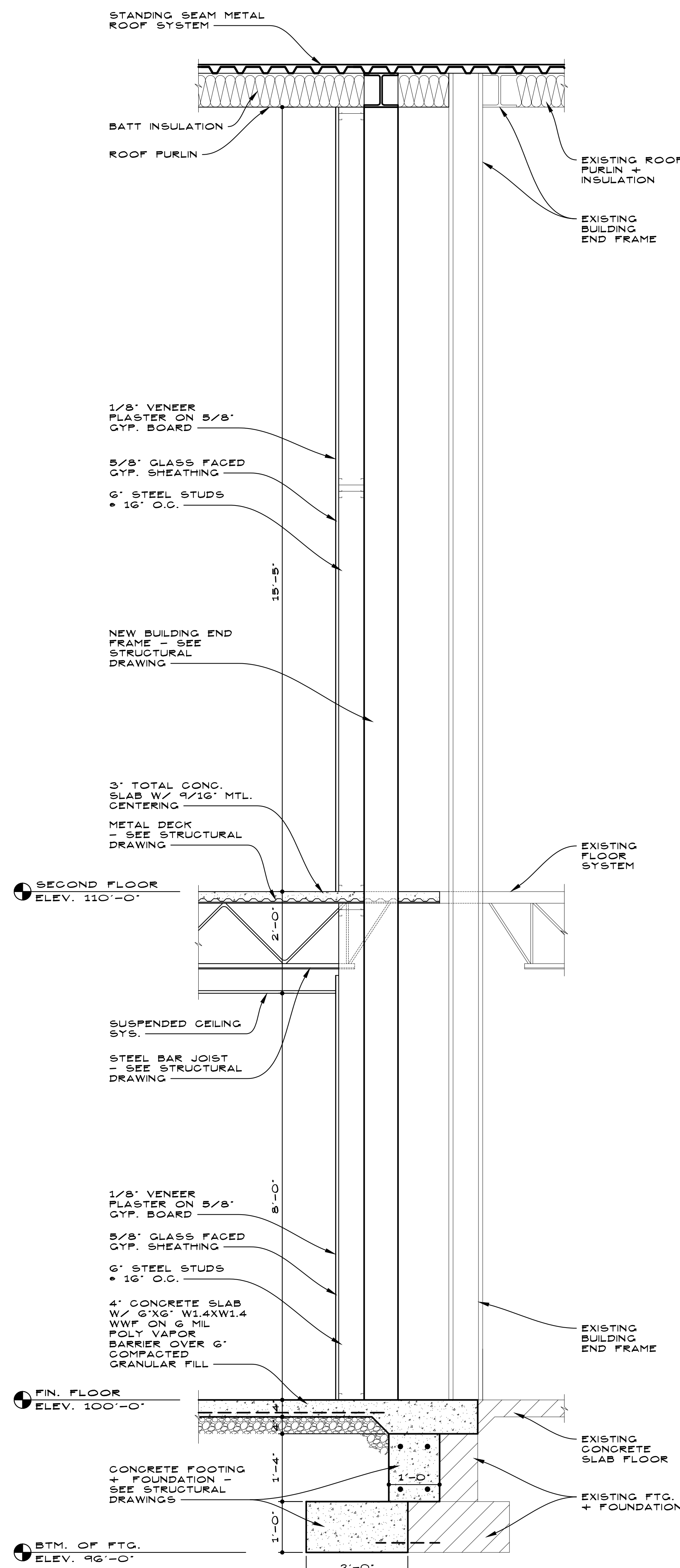
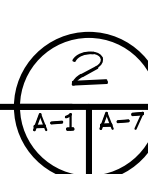
FRONT WALL SECTION
SCALE 3/4"=1'-0"



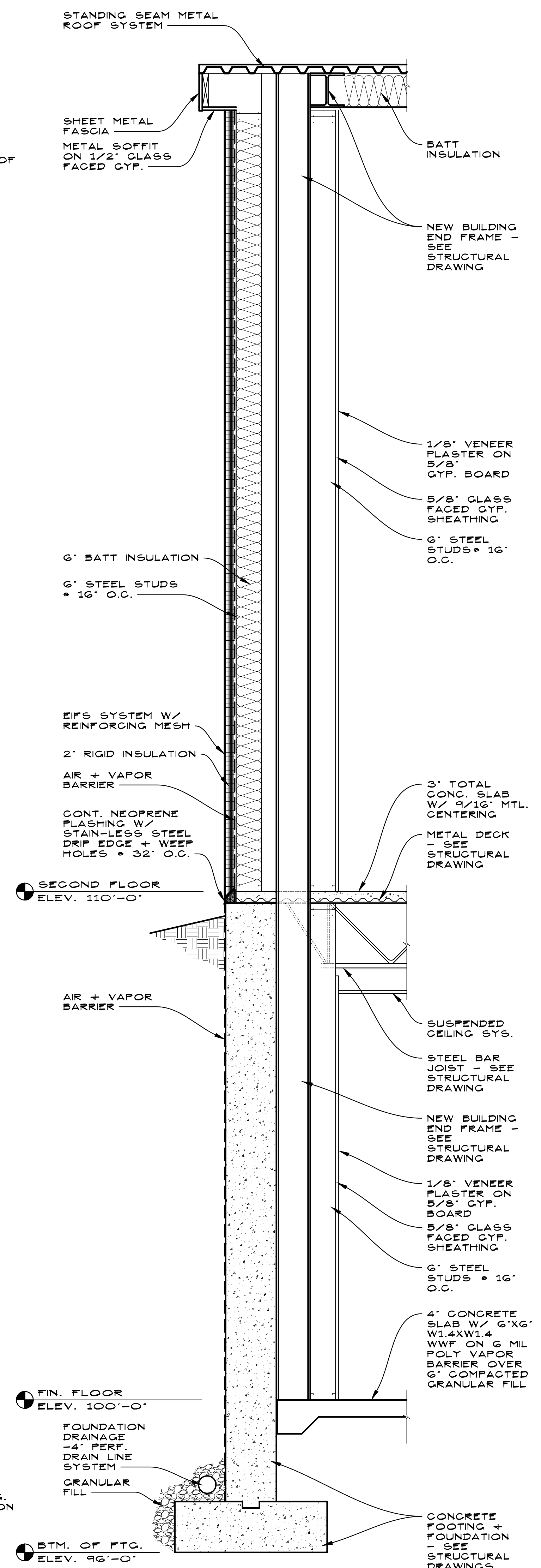
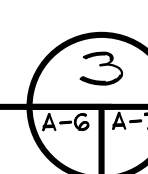
BRICK WALL SECTION
SCALE 3/4"=1'-0"



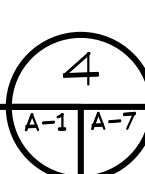
EIFS WALL SECTION
SCALE 3/4"=1'-0"



EXIST BLDG TIE-IN SECTION
SCALE 3/4"=1'-0"



END WALL SECTION
SCALE 3/4"=1'-0"

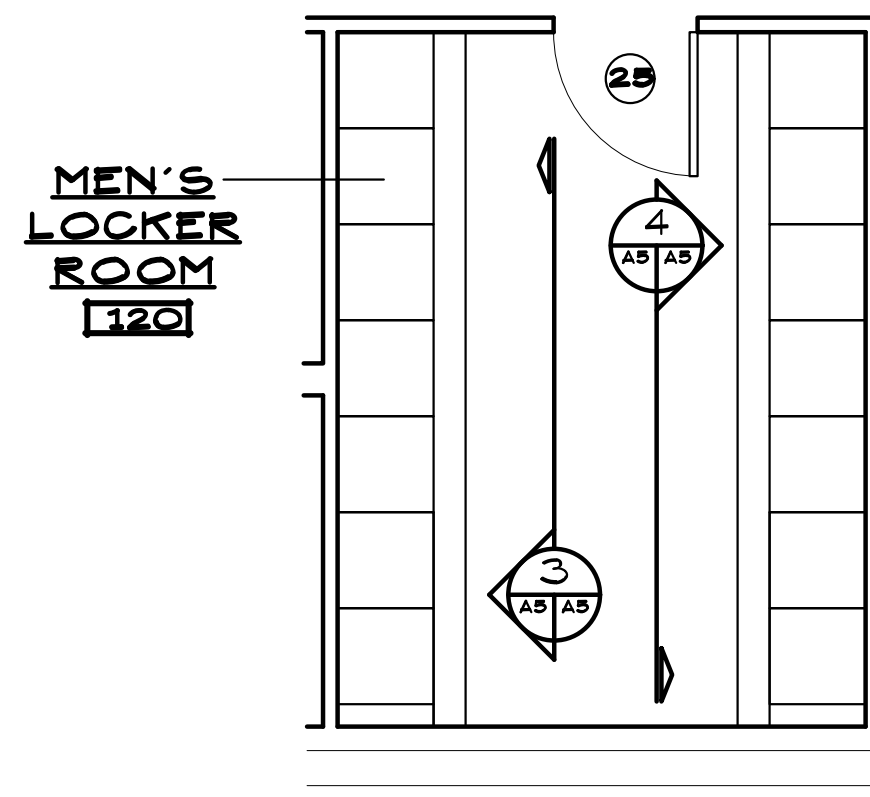
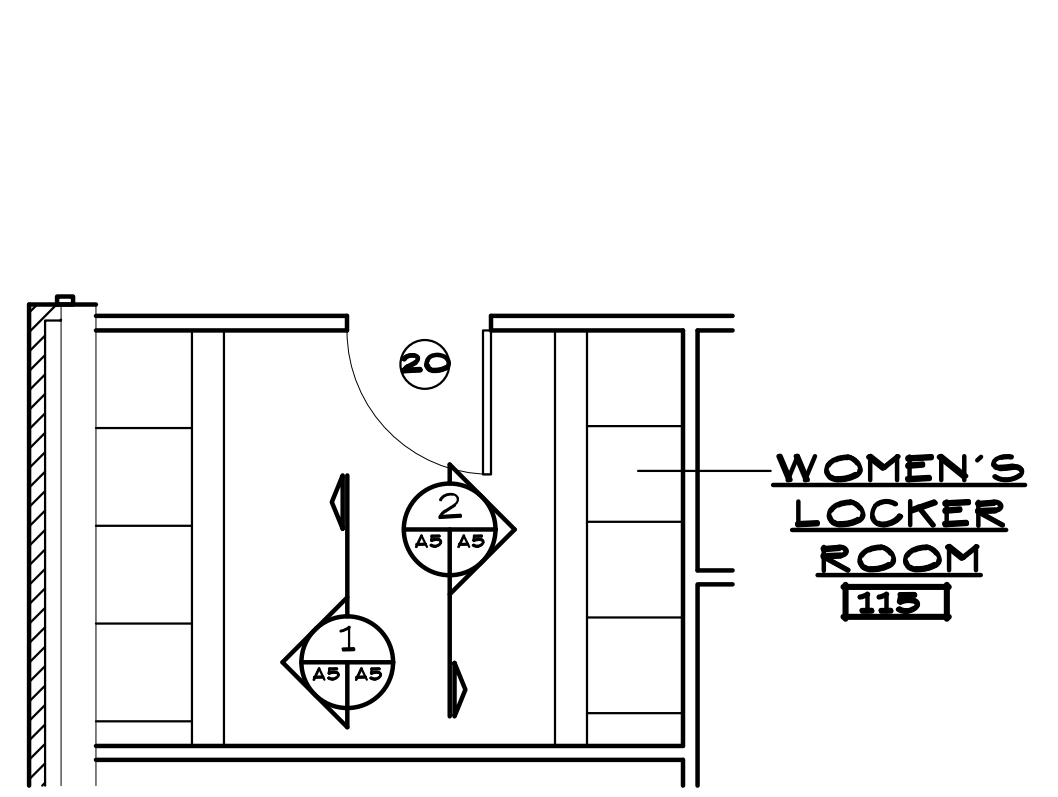


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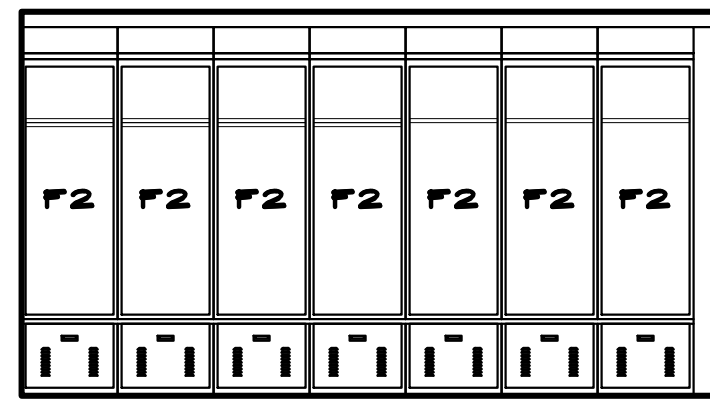
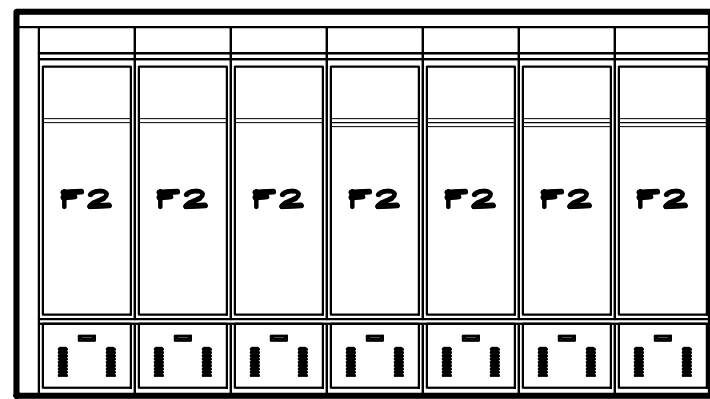
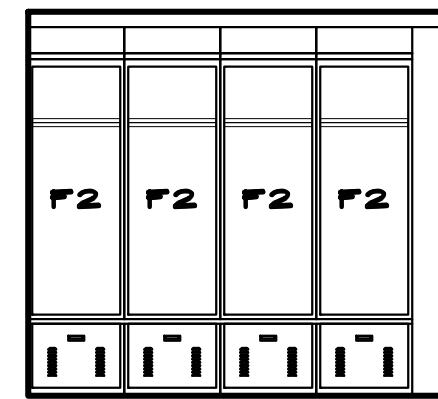
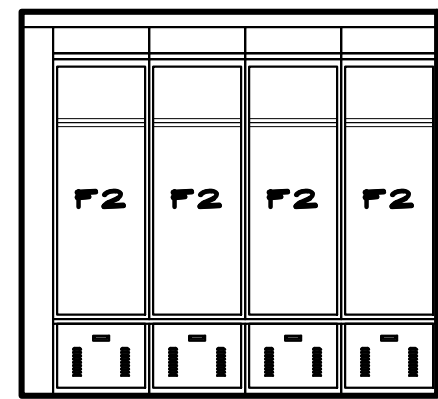
Loyal ARCHITECTS

SHEET NO. **A-7**
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



ENLARGED WOMEN'S LOCKER ROOM PLANS
SCALE: 1/2" = 1'-0"

ENLARGED MEN'S LOCKER ROOM PLANS
SCALE: 1/2" = 1'-0"

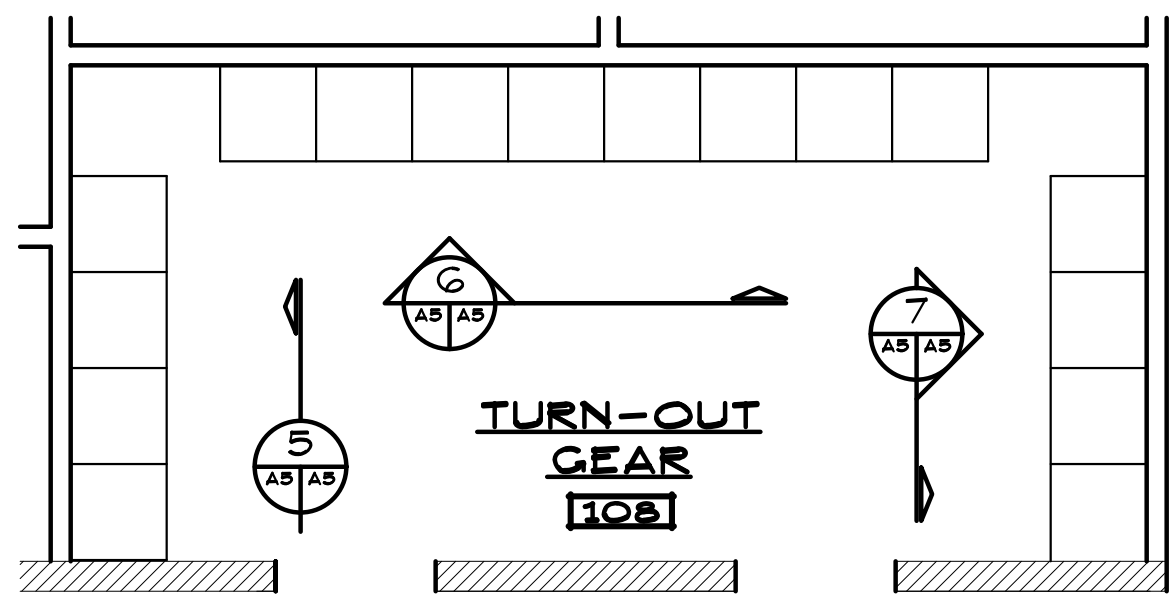


ELEVATIONS WOMEN'S LOCKER 115
SCALE: 1/4" = 1'-0" (1)

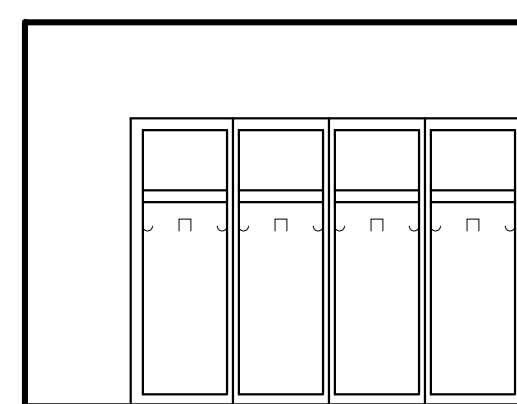
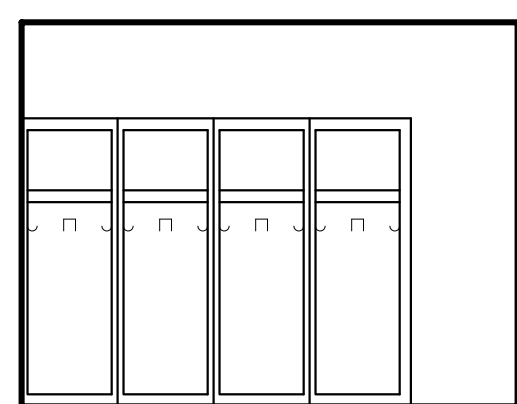
ELEVATIONS WOMEN'S LOCKER 115
SCALE: 1/4" = 1'-0" (2)

ELEVATIONS MEN'S LOCKER 120
SCALE: 1/4" = 1'-0" (3)

ELEVATIONS MEN'S LOCKER 120
SCALE: 1/4" = 1'-0" (4)



ENLARGED TURN-OUT GEAR PLAN
SCALE: 1/2" = 1'-0"

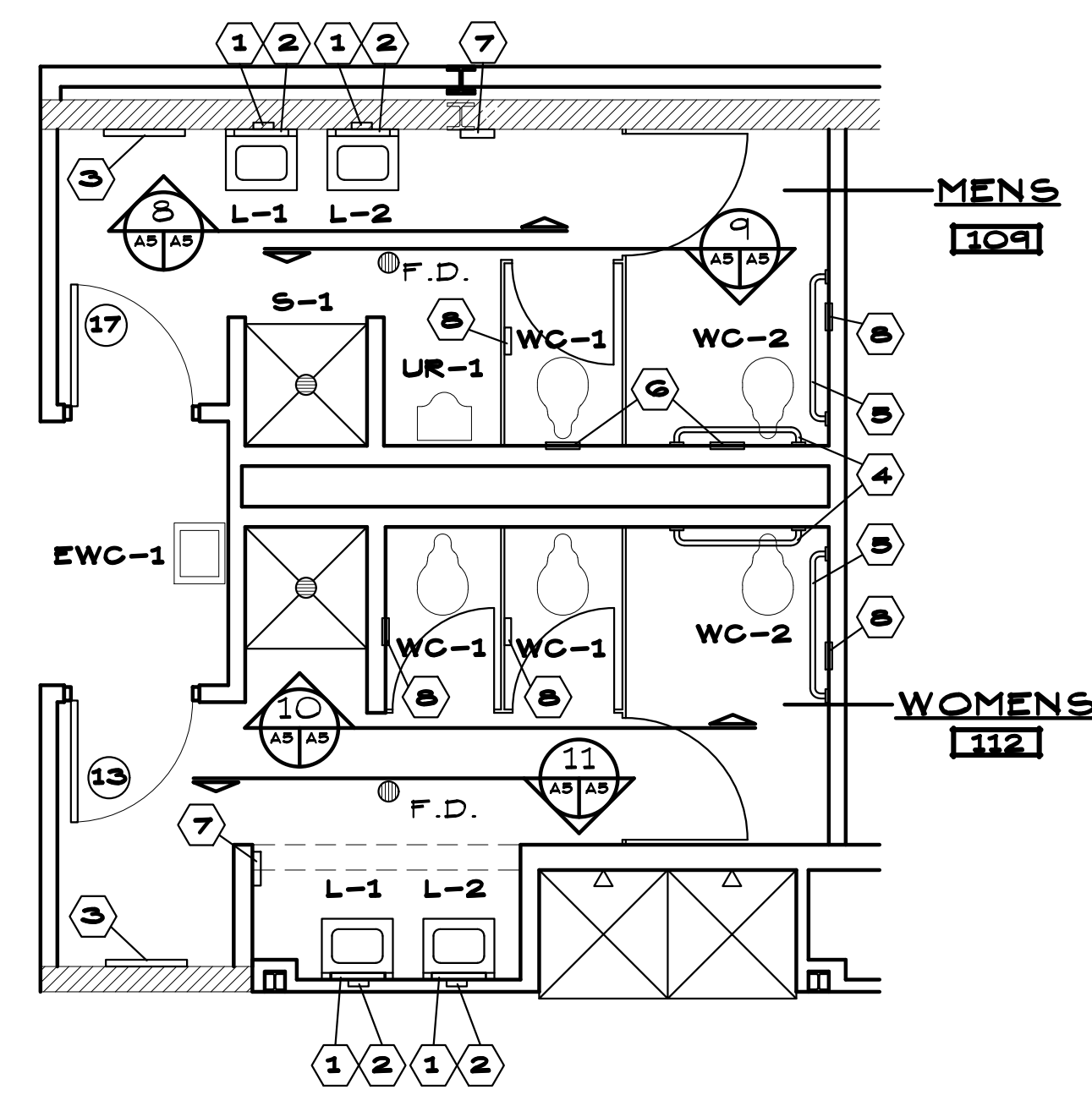


ELEVATIONS TURN-OUT GEAR 108
SCALE: 1/4" = 1'-0" (5)

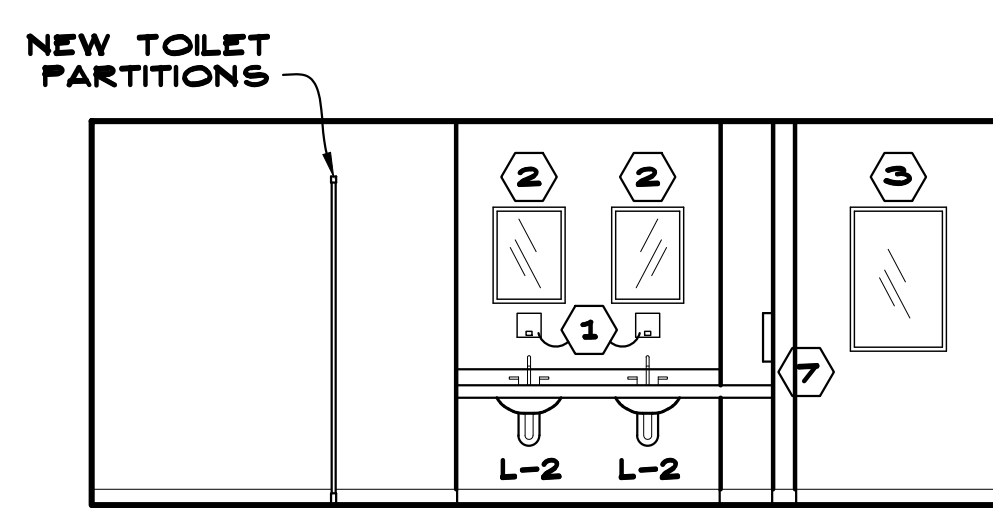
ELEVATIONS TURN-OUT GEAR 108
SCALE: 1/4" = 1'-0" (6)

ELEVATIONS TURN-OUT GEAR 108
SCALE: 1/4" = 1'-0" (7)

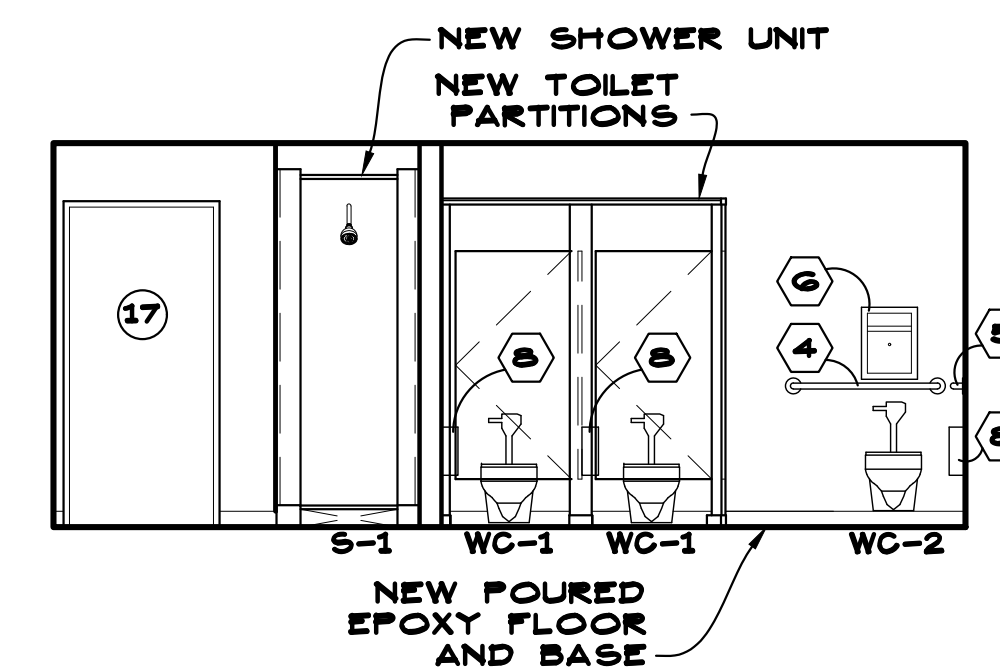
- TOILET ROOM ACCESSORIES**
- (1) RECESSED SOAP DISPENSER (BY OWNER)
 - (2) 16"W. x 24"H. MIRROR
 - (3) 24"W. x 36"H. MIRROR
 - (4) 36"L. GRAB BAR
 - (5) 42"L. GRAB BAR
 - (6) RECESSED SANITARY NAPKIN DISPOSAL
 - (7) SURFACE-MOUNTED TOWEL DISPENSER (BY OWNER)



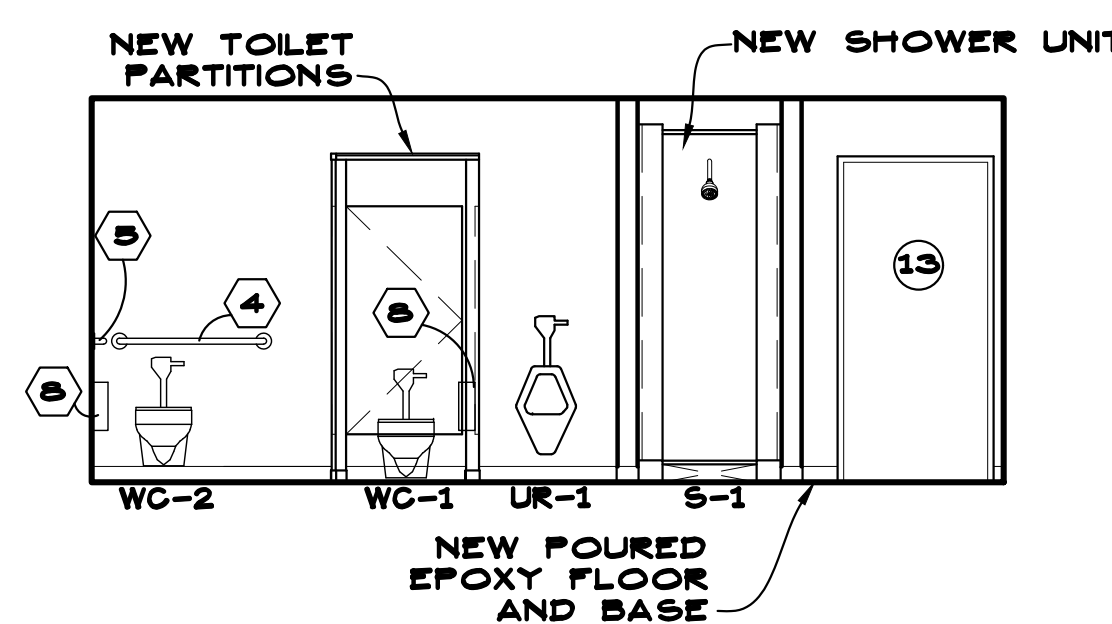
ENLARGED TOILET ROOM PLANS
SCALE: 1/2" = 1'-0"



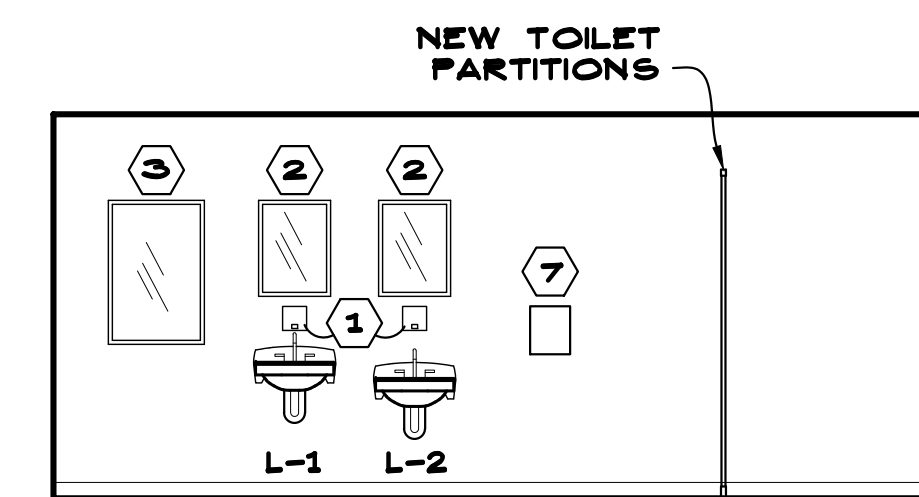
ELEVATIONS WOMEN'S BATH 112
SCALE: 1/4" = 1'-0" (8)



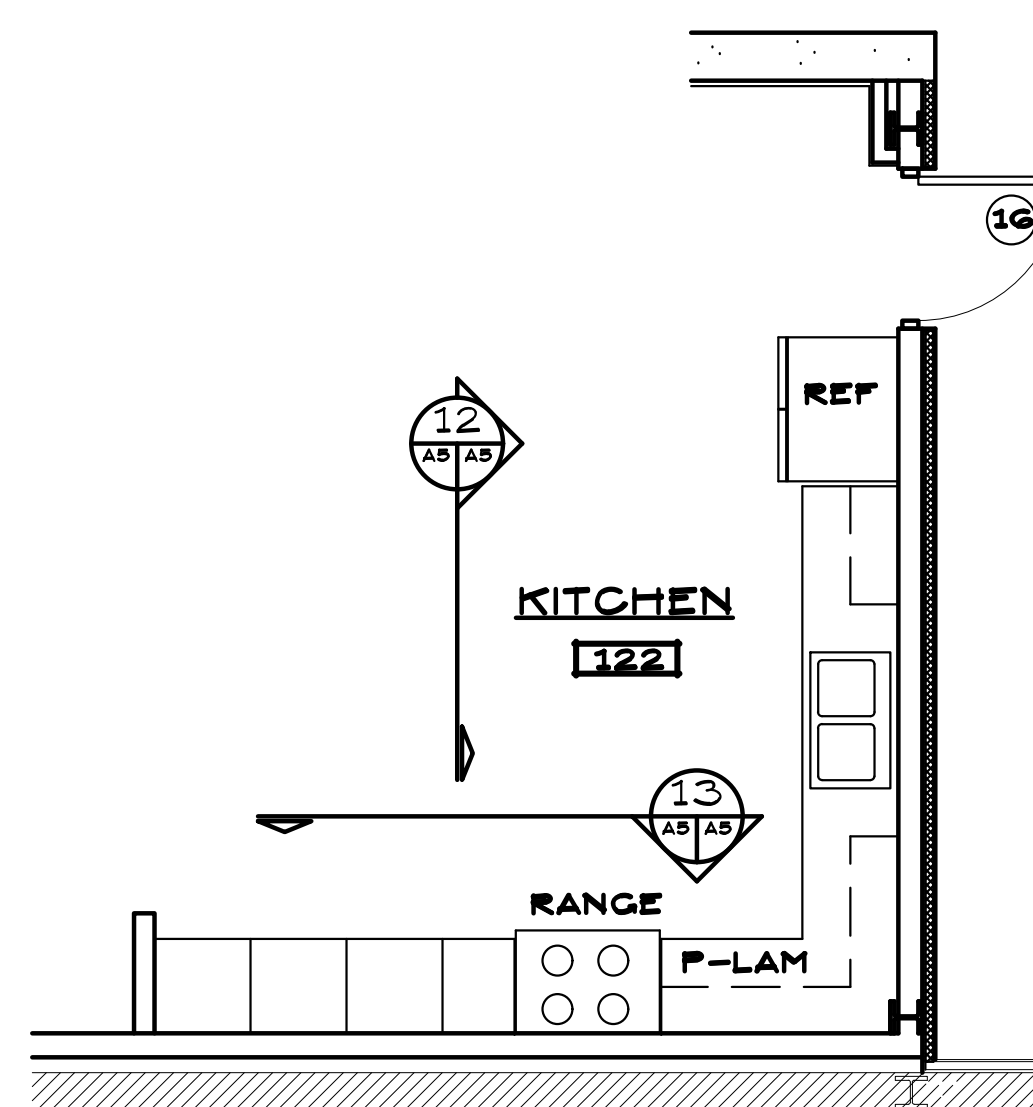
ELEVATIONS WOMEN'S BATH 112
SCALE: 1/4" = 1'-0" (9)



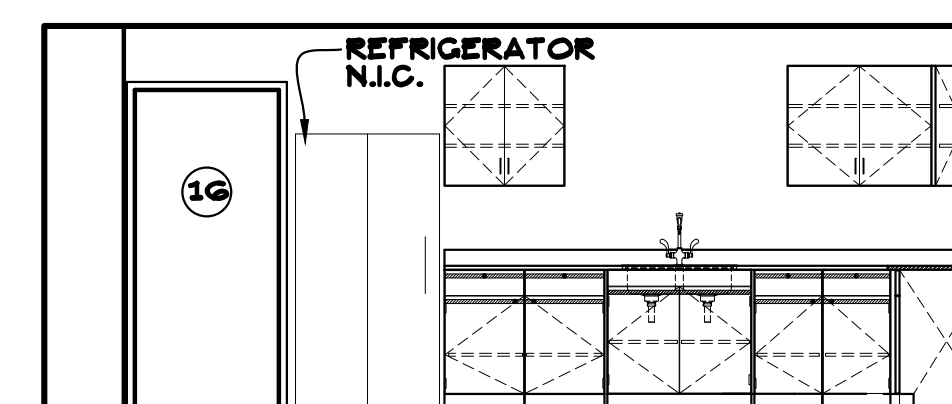
ELEVATIONS MEN'S BATH 109
SCALE: 1/4" = 1'-0" (10)



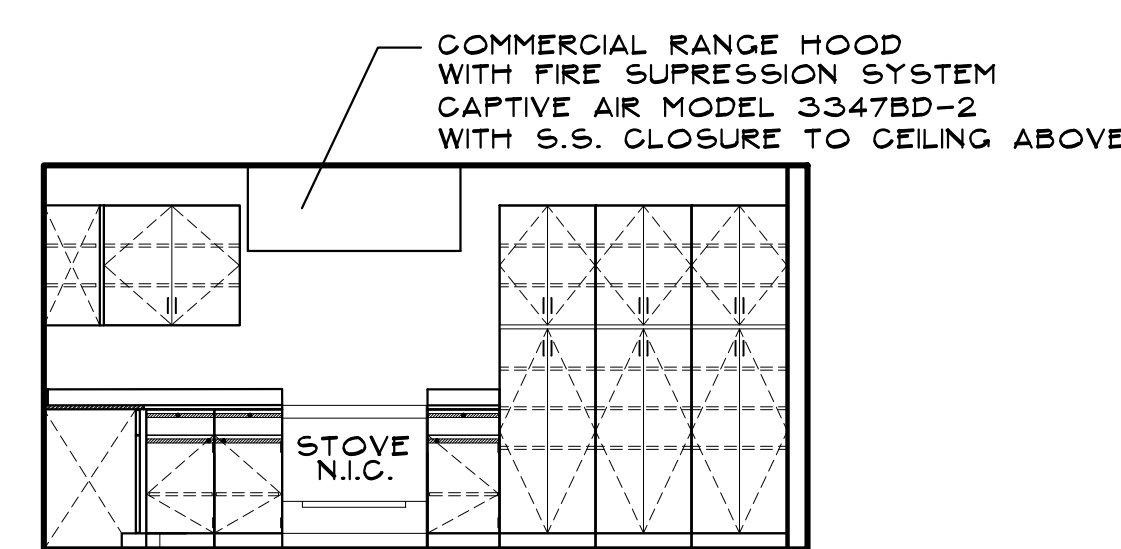
ELEVATIONS MEN'S BATH 109
SCALE: 1/4" = 1'-0" (11)



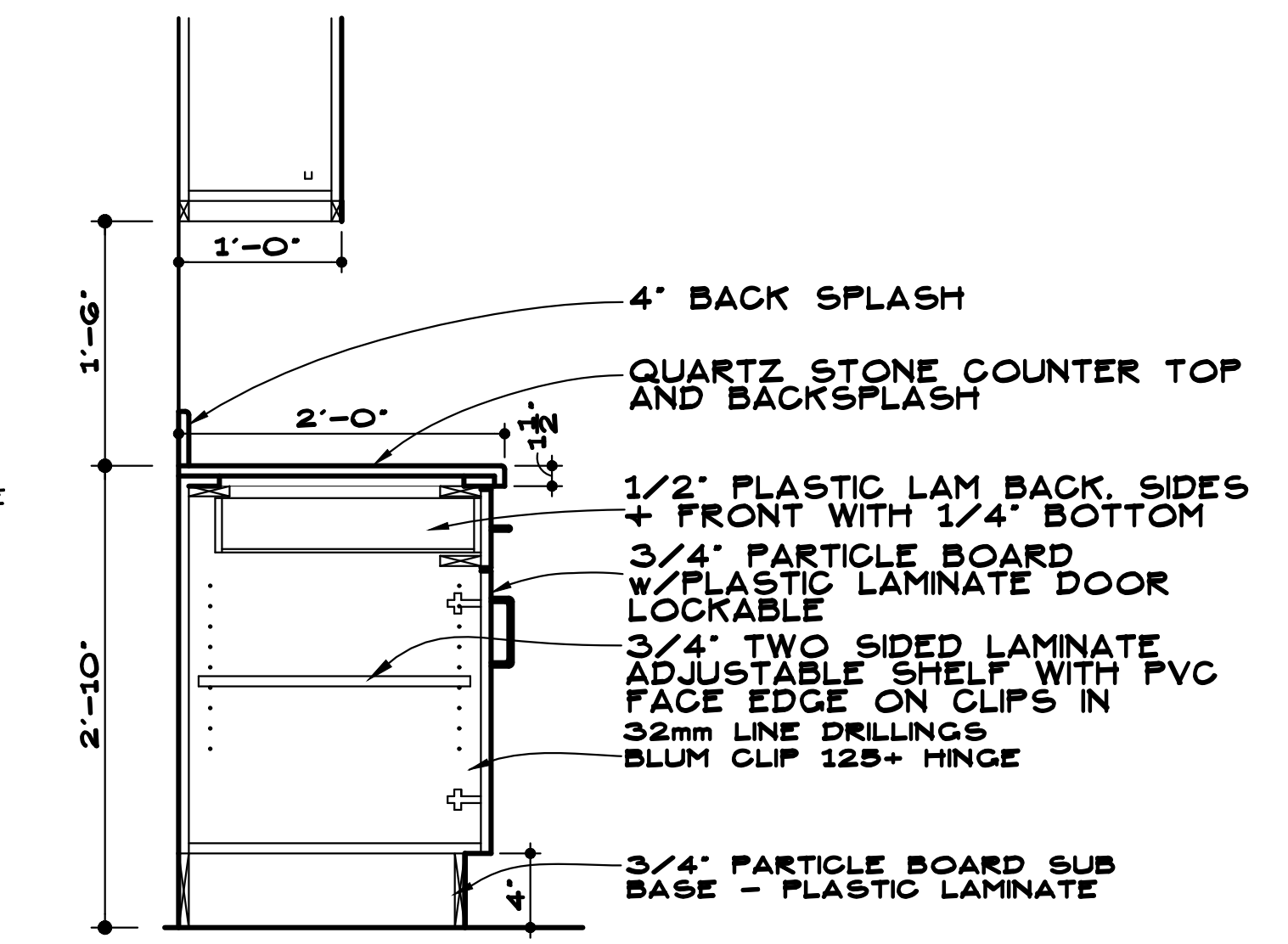
ENLARGED KITCHEN PLANS
SCALE: 1/2" = 1'-0"



ELEVATIONS KITCHEN 122
SCALE: 1/4" = 1'-0" (12)



ELEVATIONS KITCHEN 122
SCALE: 1/4" = 1'-0" (13)



TYPICAL CABINET SECTION
SCALE: 1" = 1'-0"

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

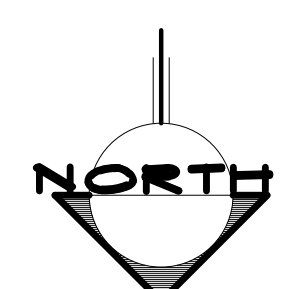
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SHEET NO.
A-8
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



FIRST FLOOR REFLECTED CEILING PLAN
SCALE 1/4"=1'-0"

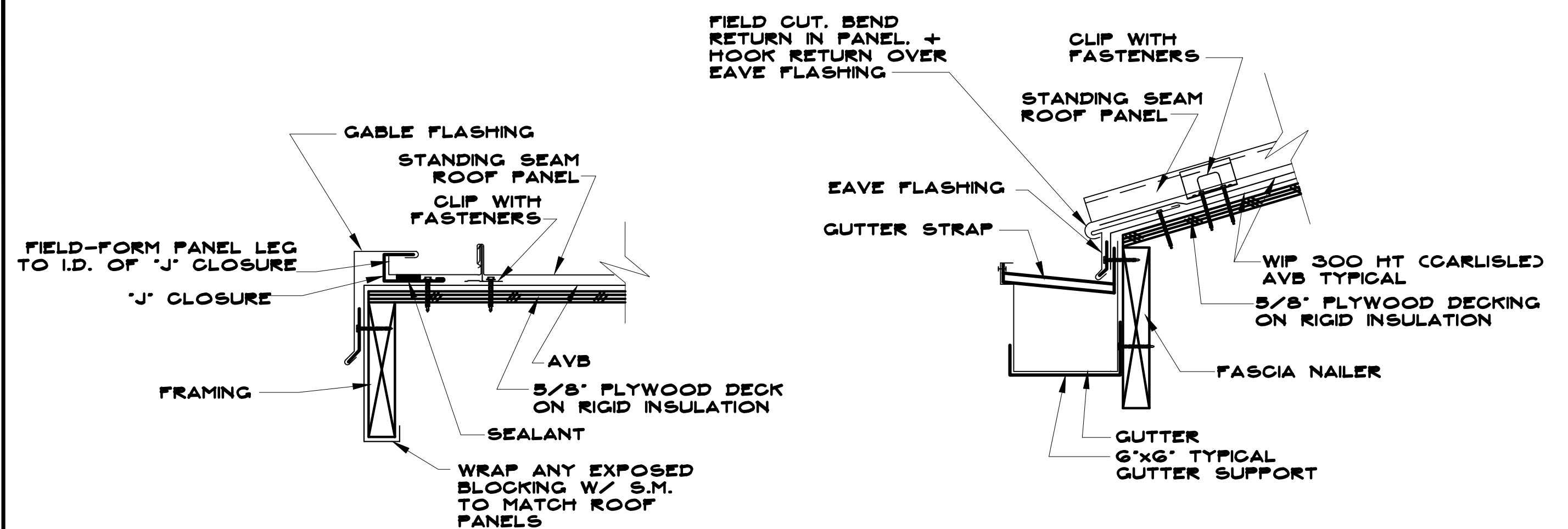


ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

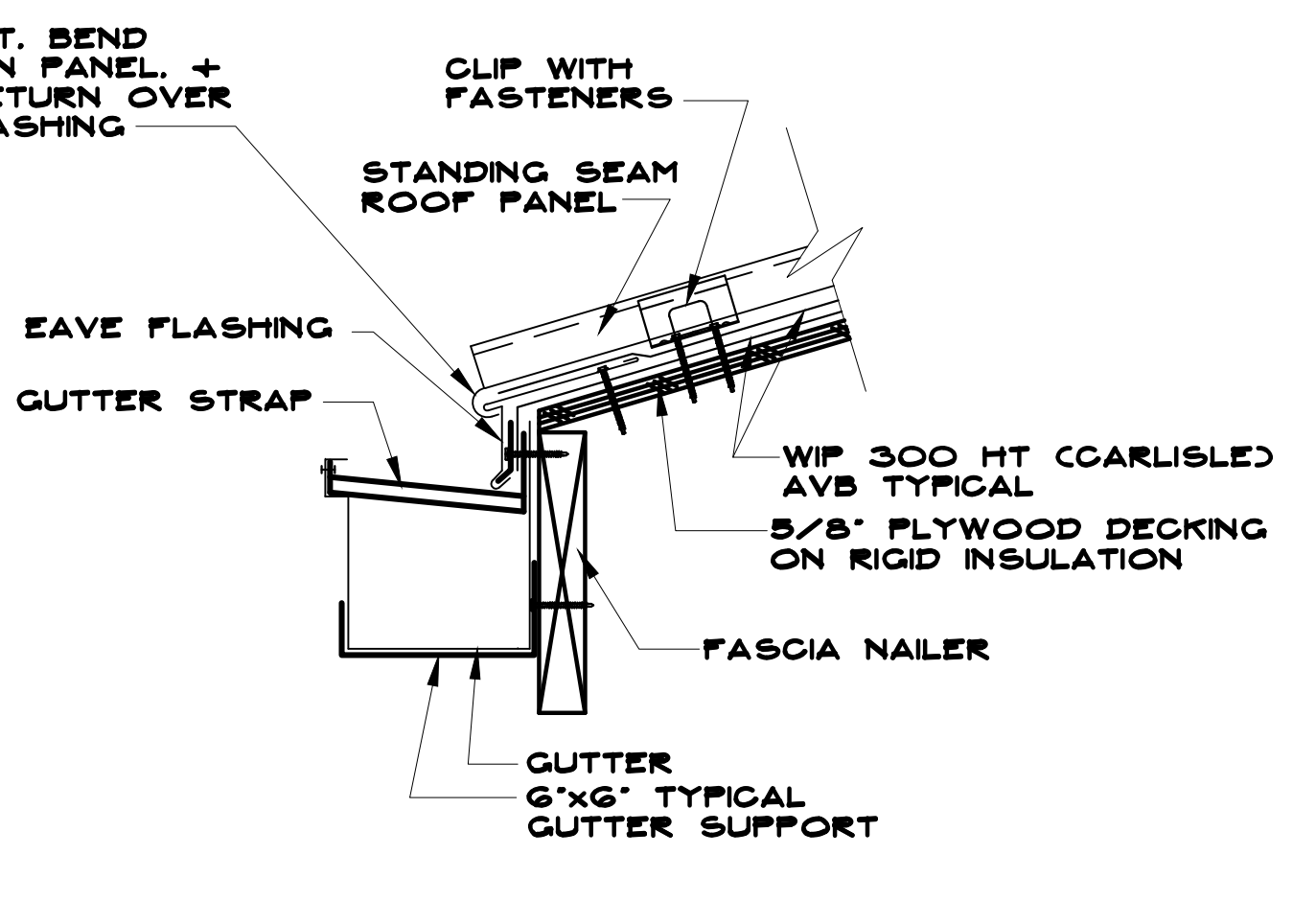
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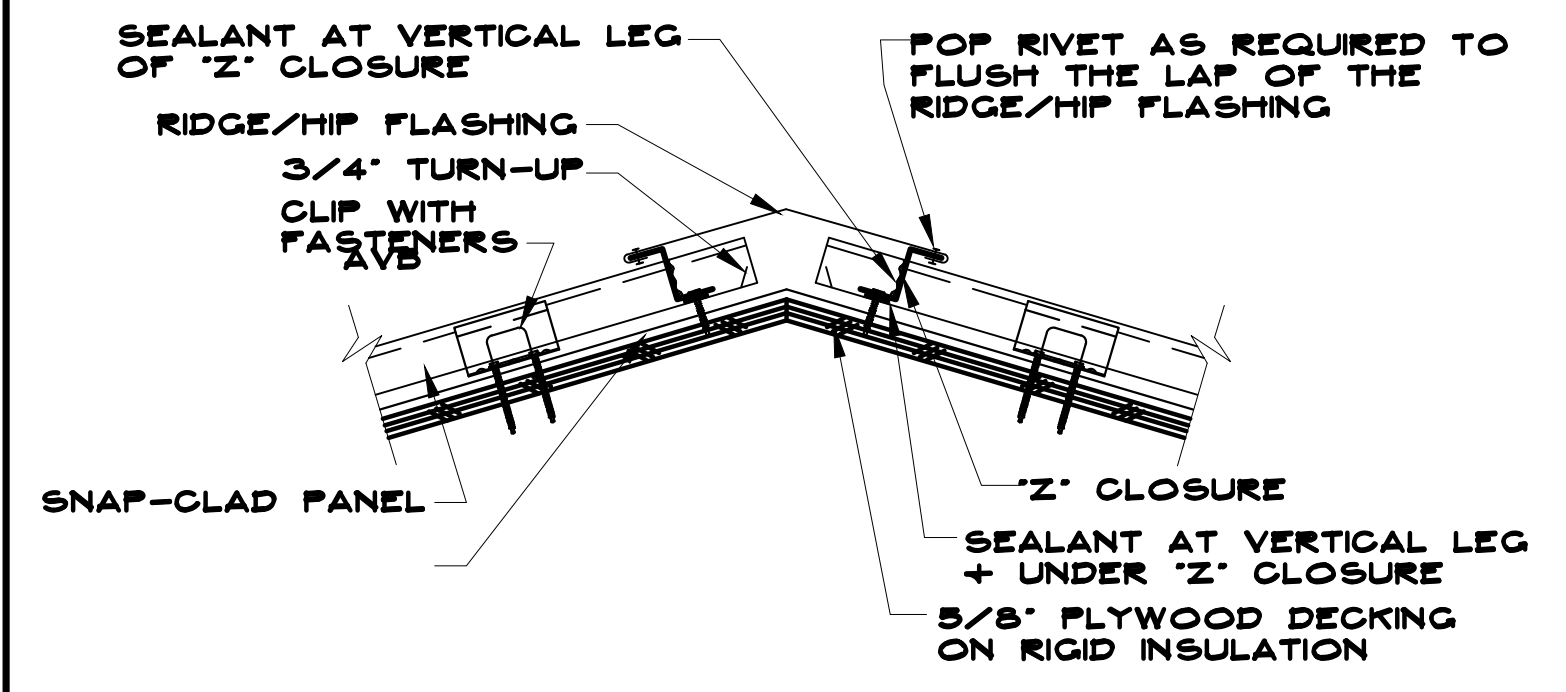
SHEET NO.
A-9
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



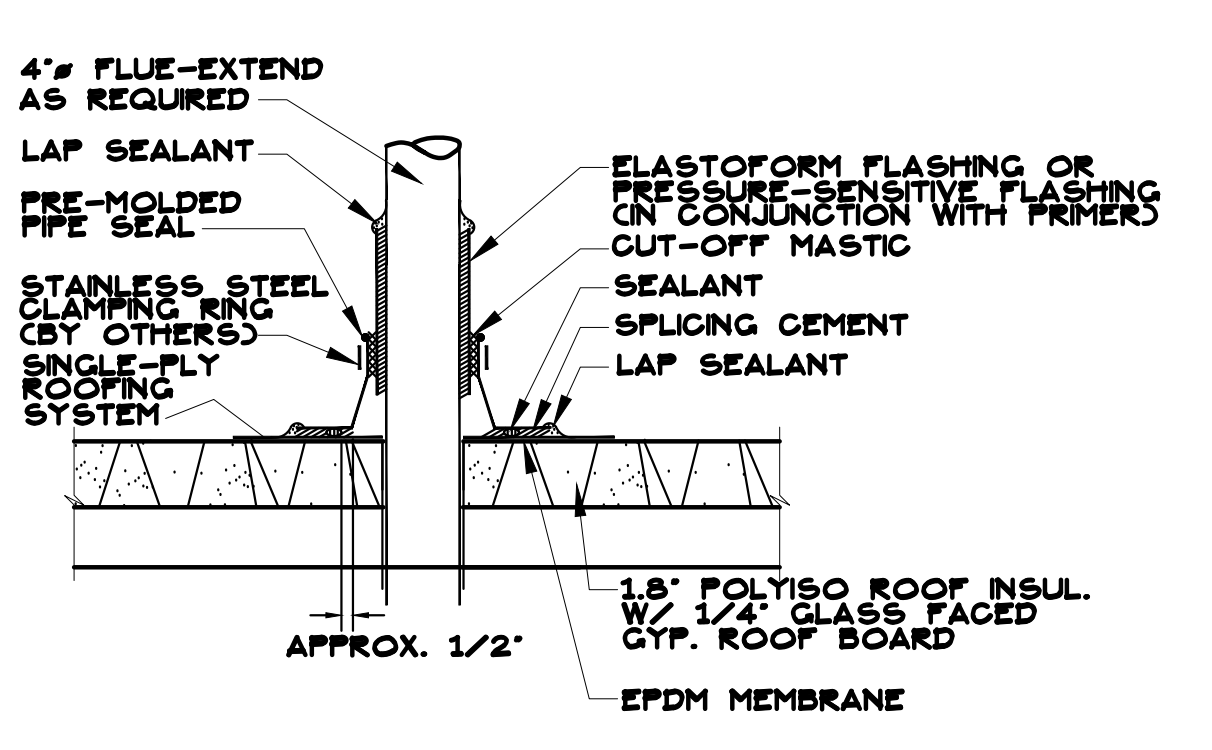
GABLE DETAIL 1
SCALE: NONE ARCHITECT



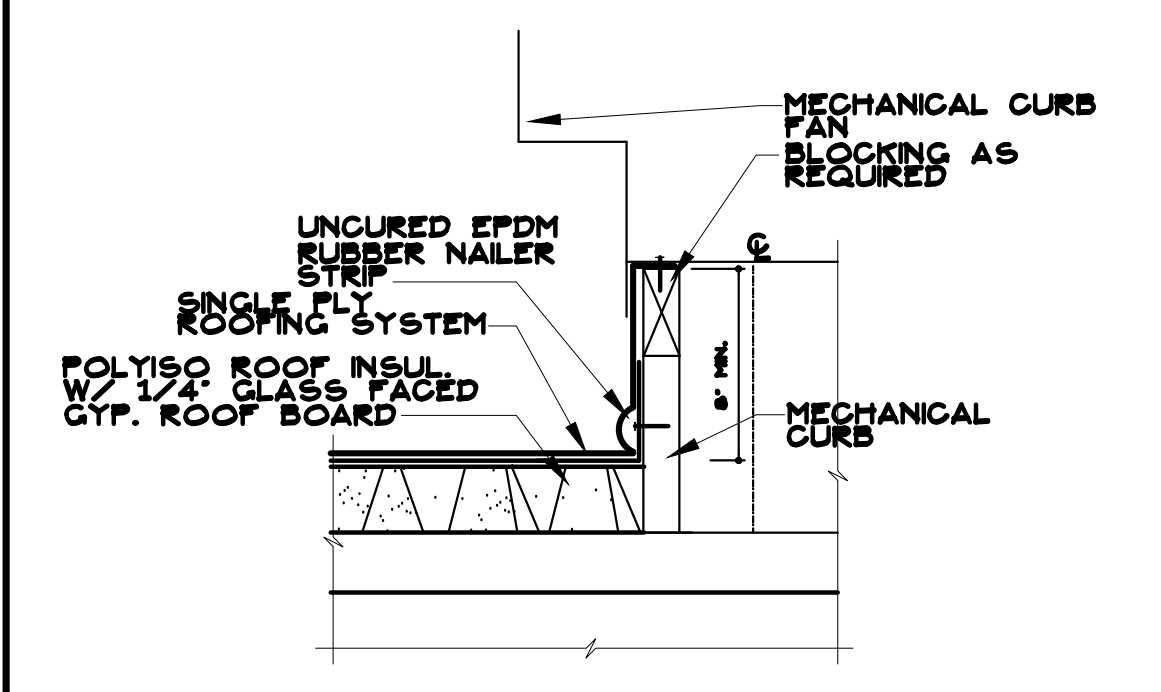
GUTTER DETAIL 2
SCALE: NONE ARCHITECT



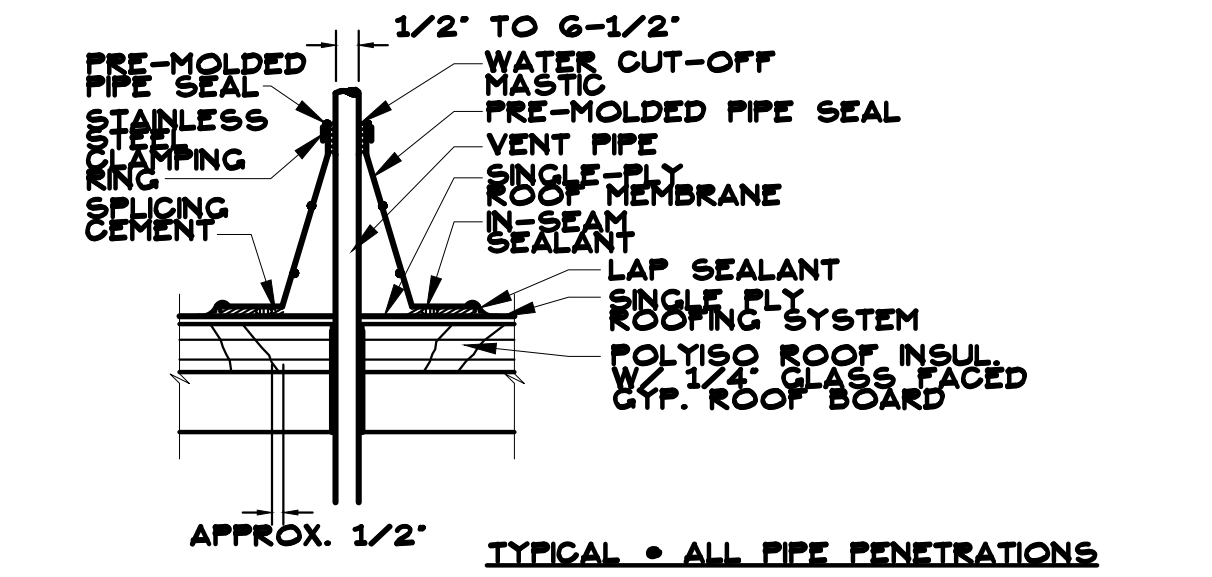
DETAIL RIDGE/HIP 3
SCALE: NONE ARCHITECT



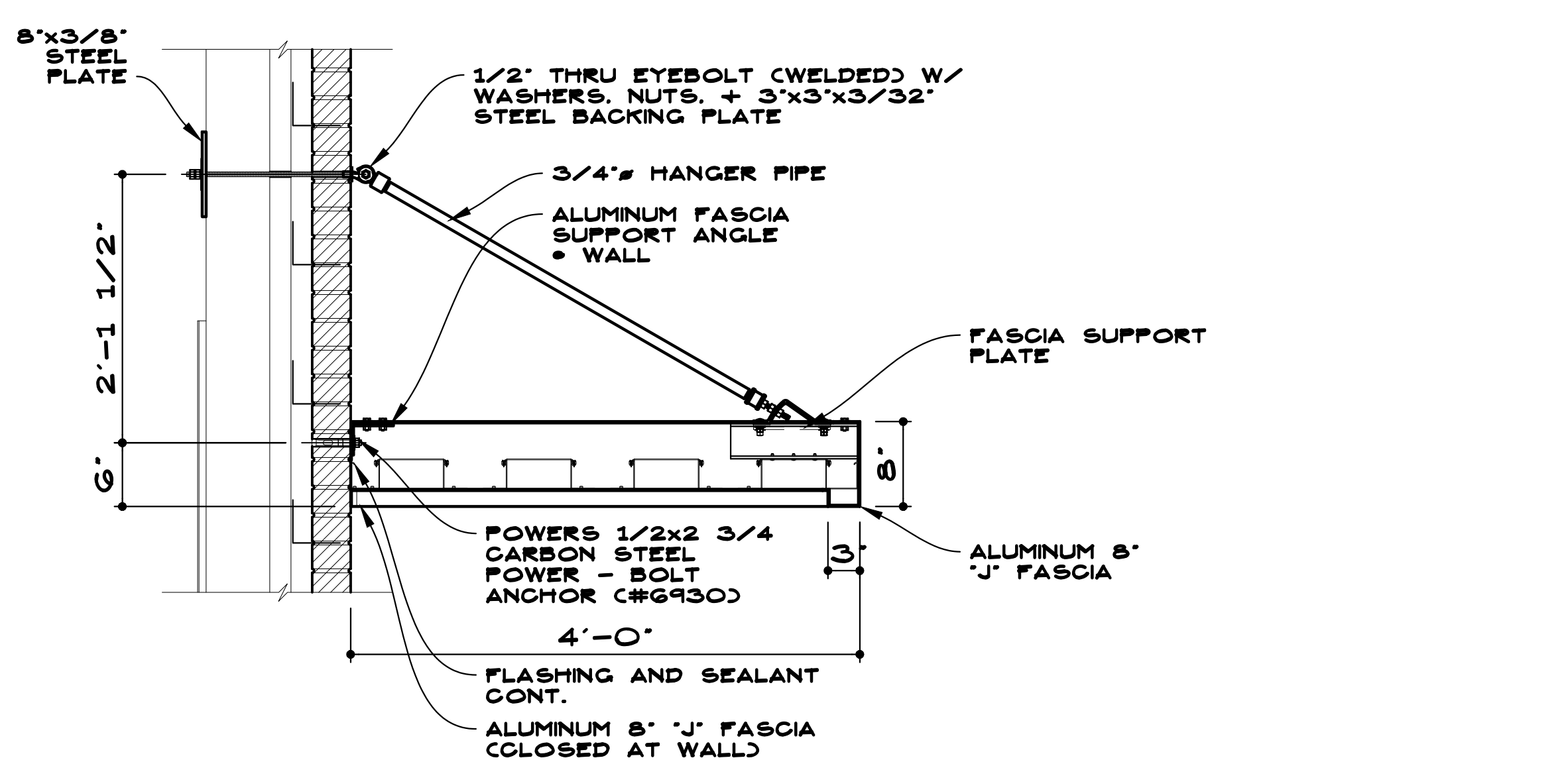
TYPICAL FLUE PIPE FLASHING 4
SCALE: NONE ARCHITECT



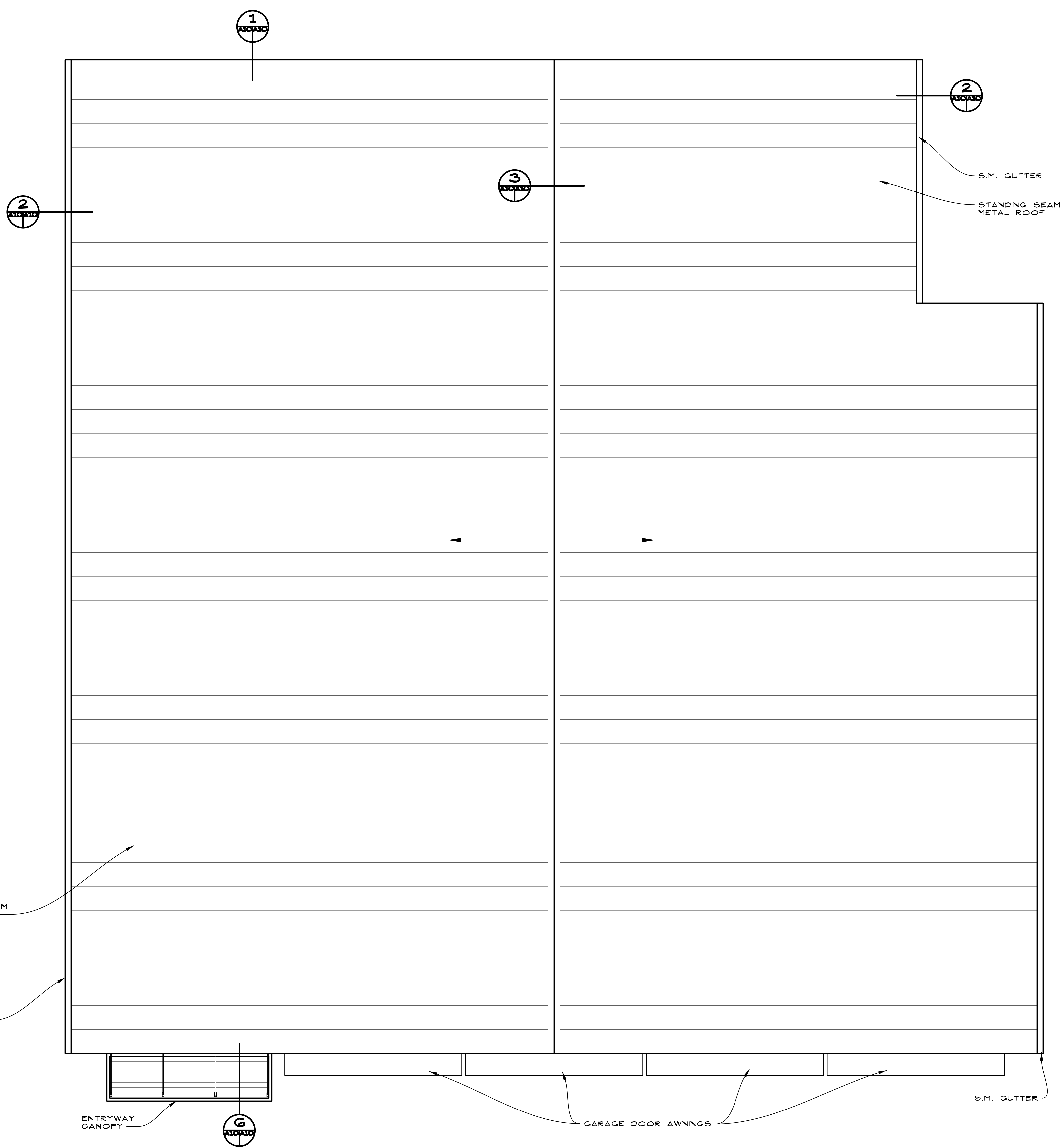
TYPICAL EXHAUST FAN CURB DETAIL 5
SCALE: NONE ARCHITECT



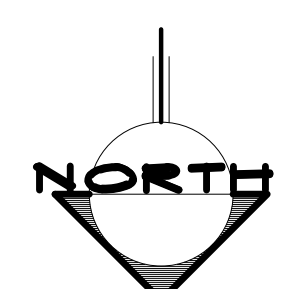
TYPICAL VENT FAN 6
SCALE: NONE ARCHITECT



ENTRYWAY CANOPY SECTION 6
SCALE: 1\"/>



FIRST FLOOR PLAN
SCALE: 1/4\"/>

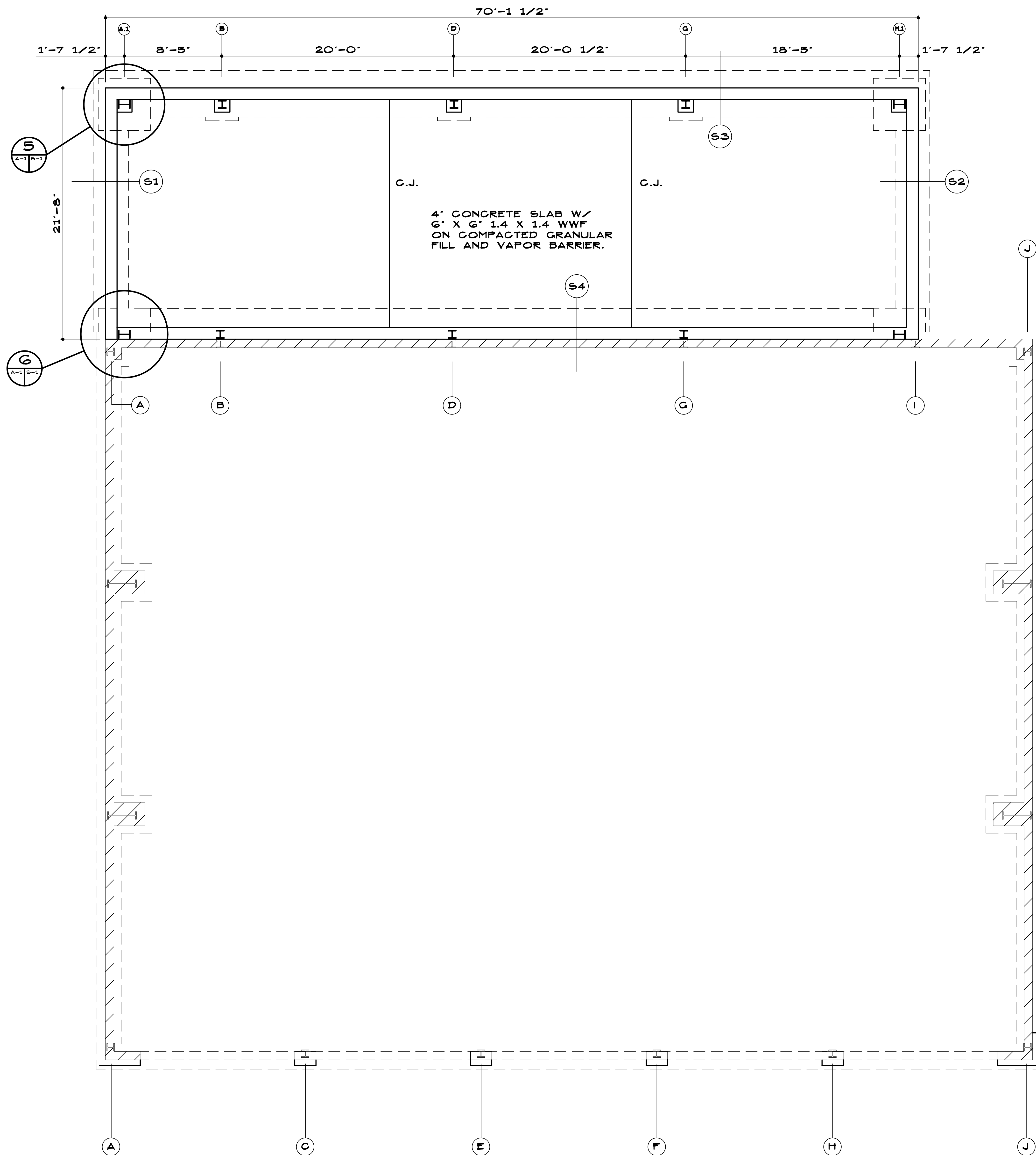


ADDITION + RENOVATIONS TO
FIRE STATION #1
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HIGHLAND, IL 62249

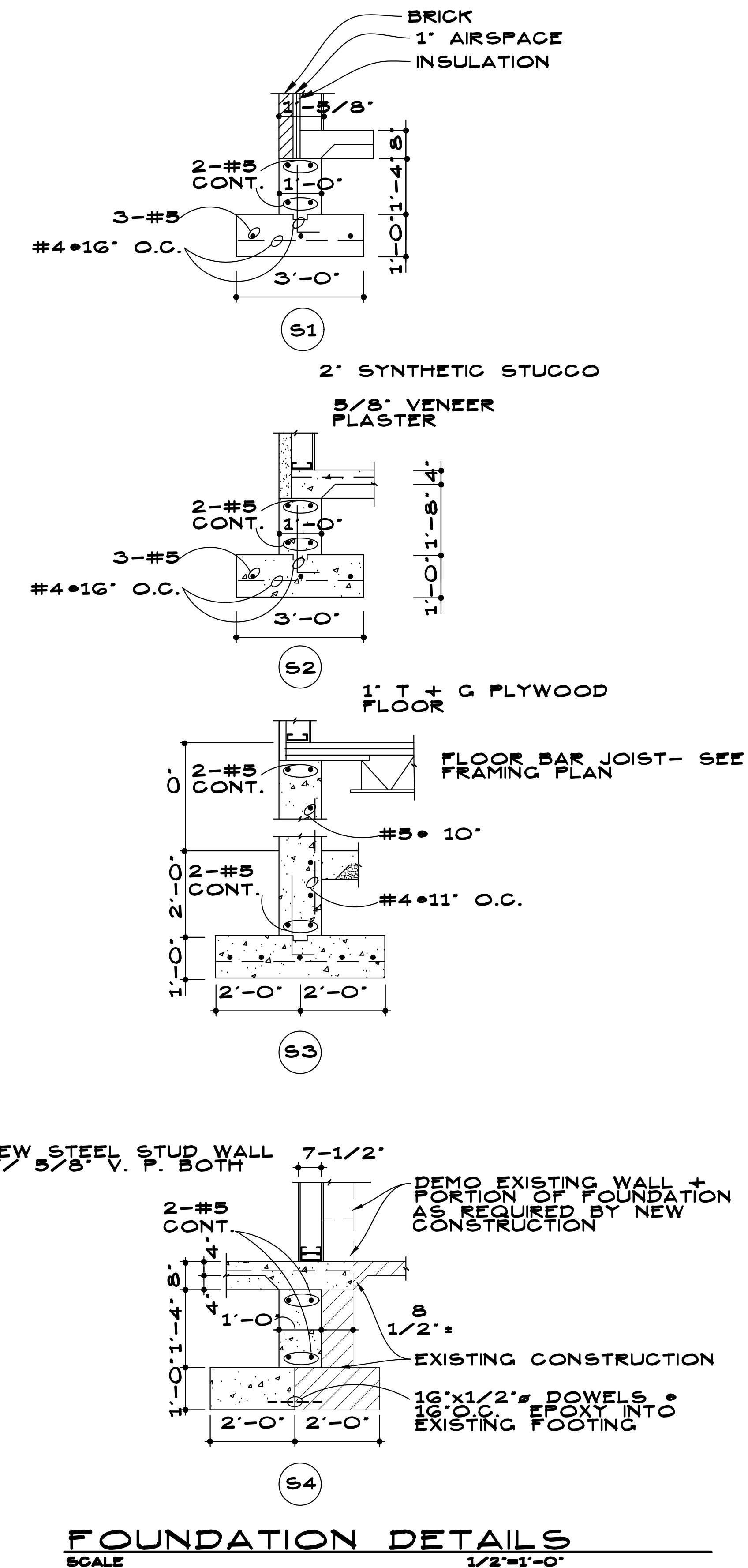
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SHEET NO.
A-10
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



FOUNDATION PLAN
SCALE 1/4"=1'-0"



FOUNDATION DETAILS
SCALE 1/2"=1'-0"

NOTES |

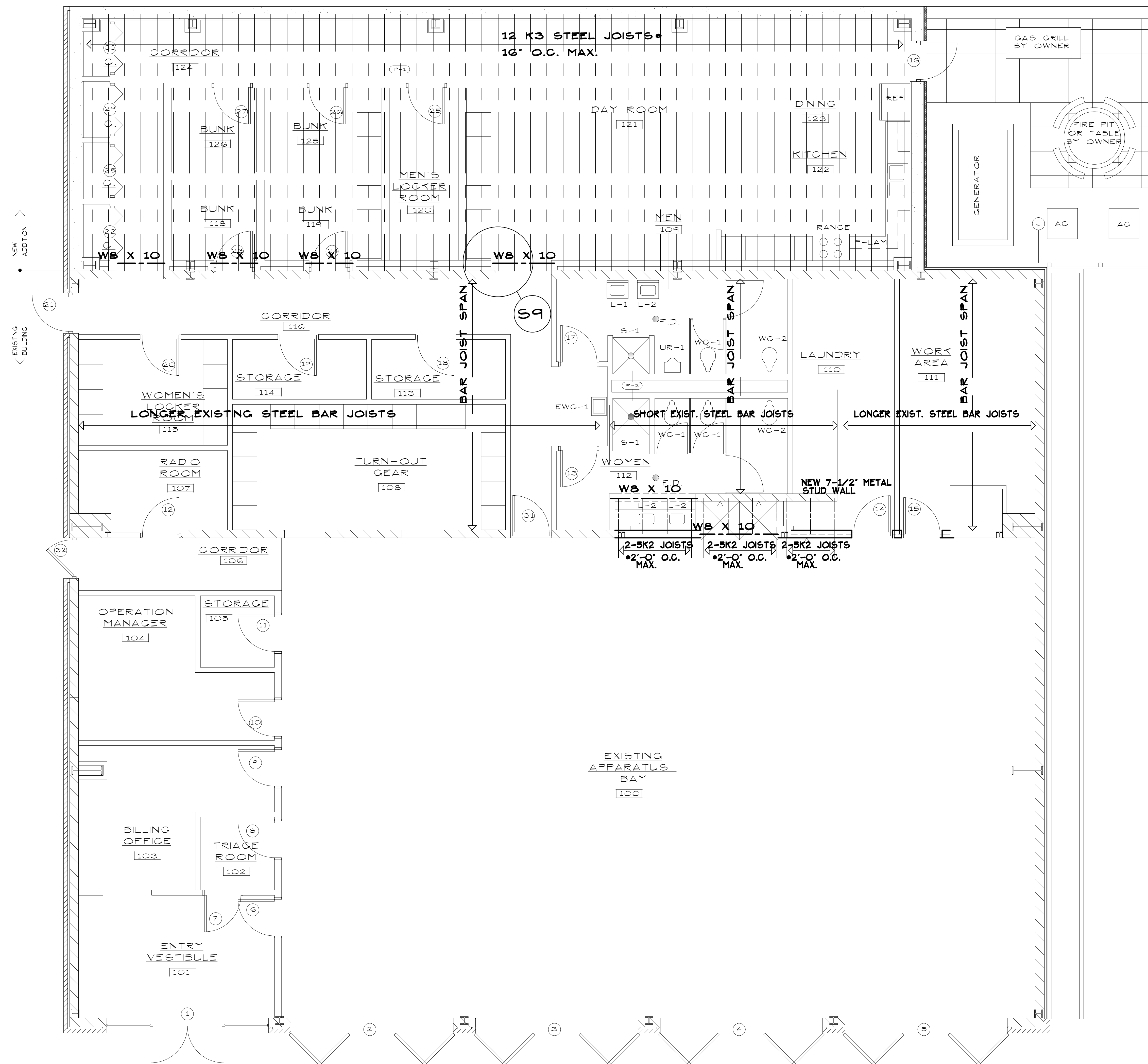
1. ALLOWABLE SOIL BEARING PRESSURE = 2000 LBS/SQ. FT. AS RECOMMENDED IN ORIGINAL LAYNE-WESTERN REPORT.
2. ALL FILL SHALL BE PLACED IN 8" LOOSE LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.
3. ALL CONCRETE = 4000 PSI IN 28 DAYS.
4. REINFORCING STEEL ASTM A615 GR. 60 SHALL BE A615 GR. 40.
5. STRUCTURAL STEEL SHALL BE A-992 MATERIAL UNLESS SPECIFIED OTHERWISE BY THE STEEL BUILDING FABRICATOR.
6. STEEL JOISTS SHALL BE FABRICATED + ERECTED IN ACCORDANCE WITH THE LATEST SJI CODE - SECURE TO SUPPORTING STEEL BY WELDING.

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

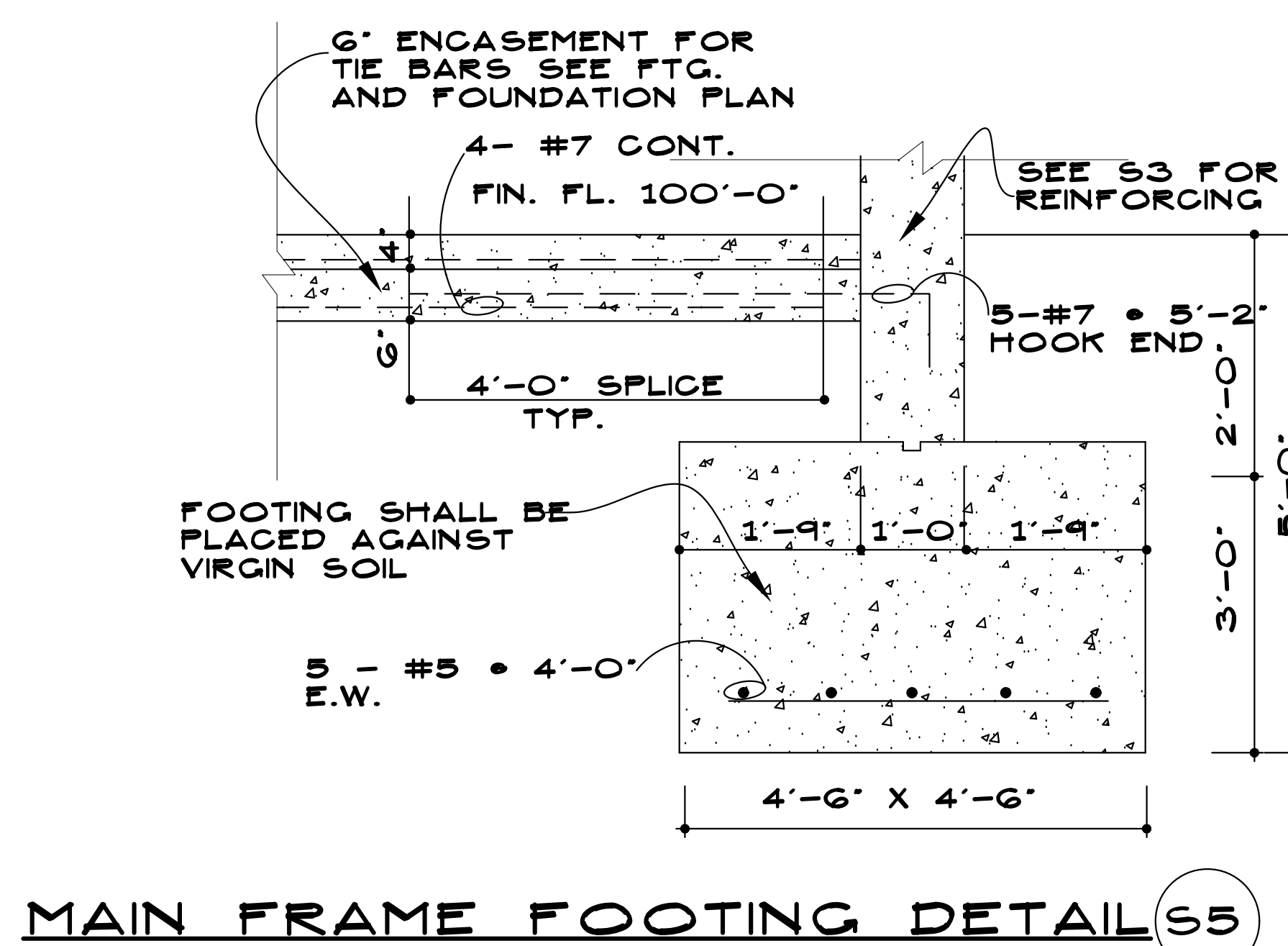
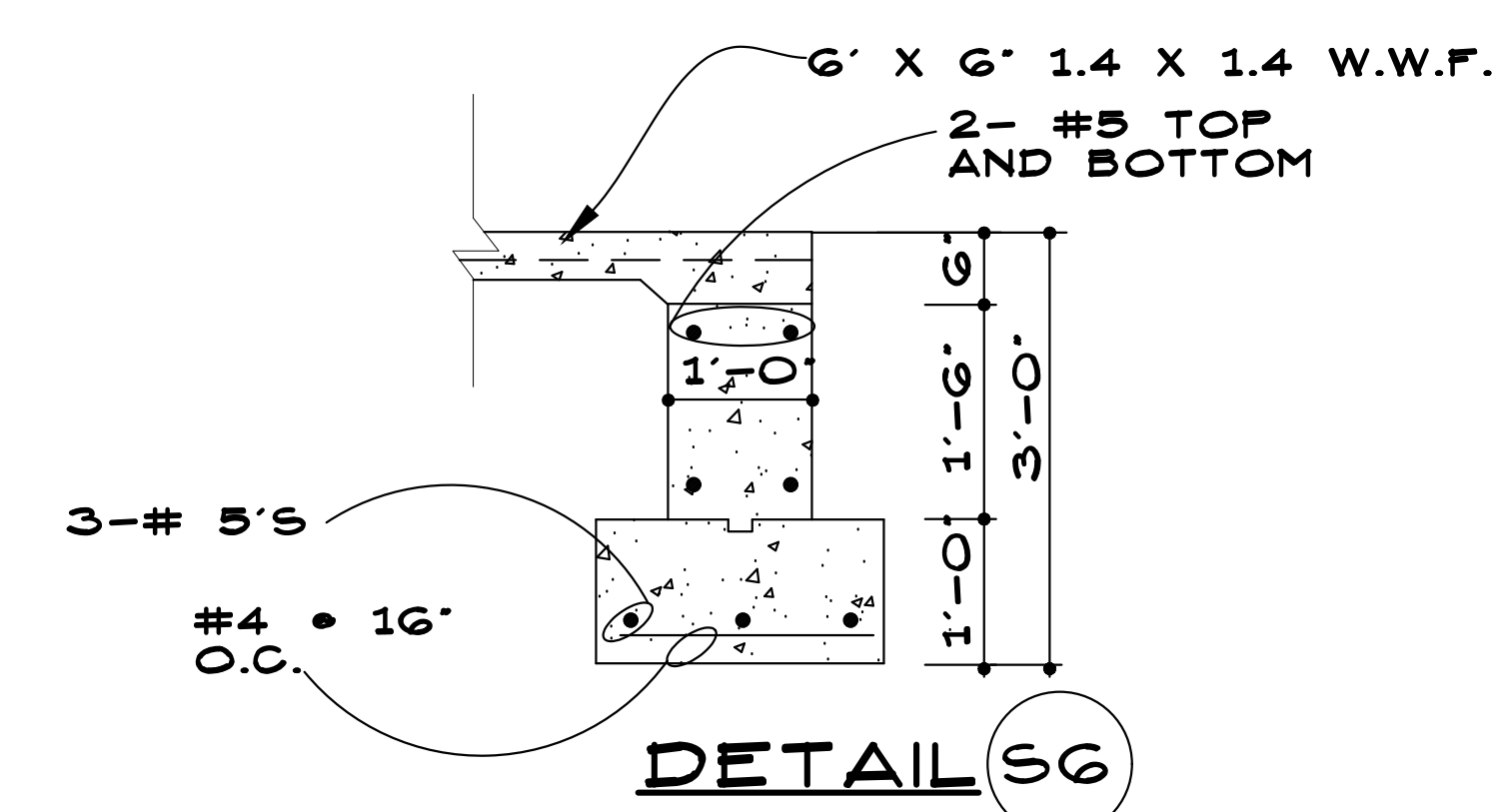
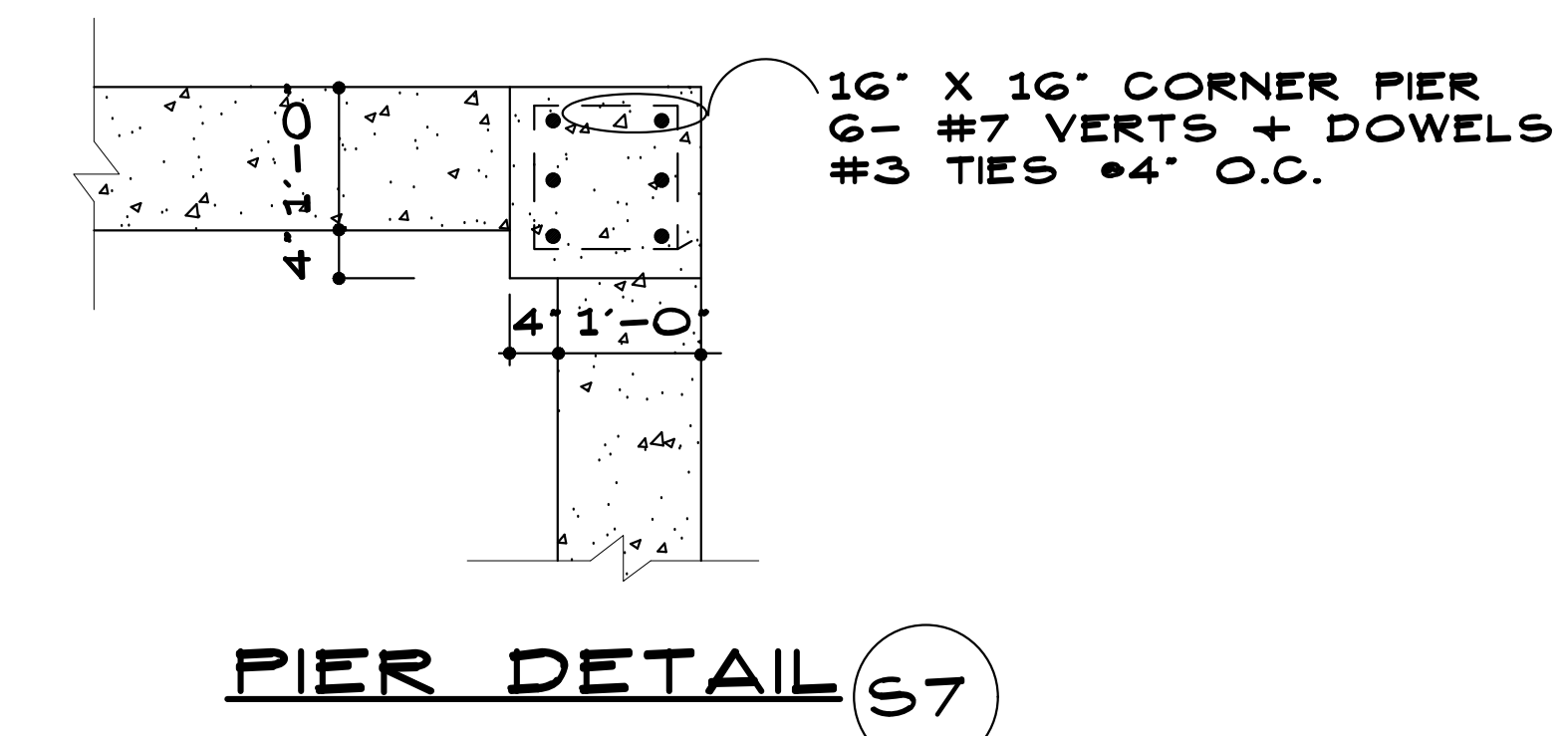
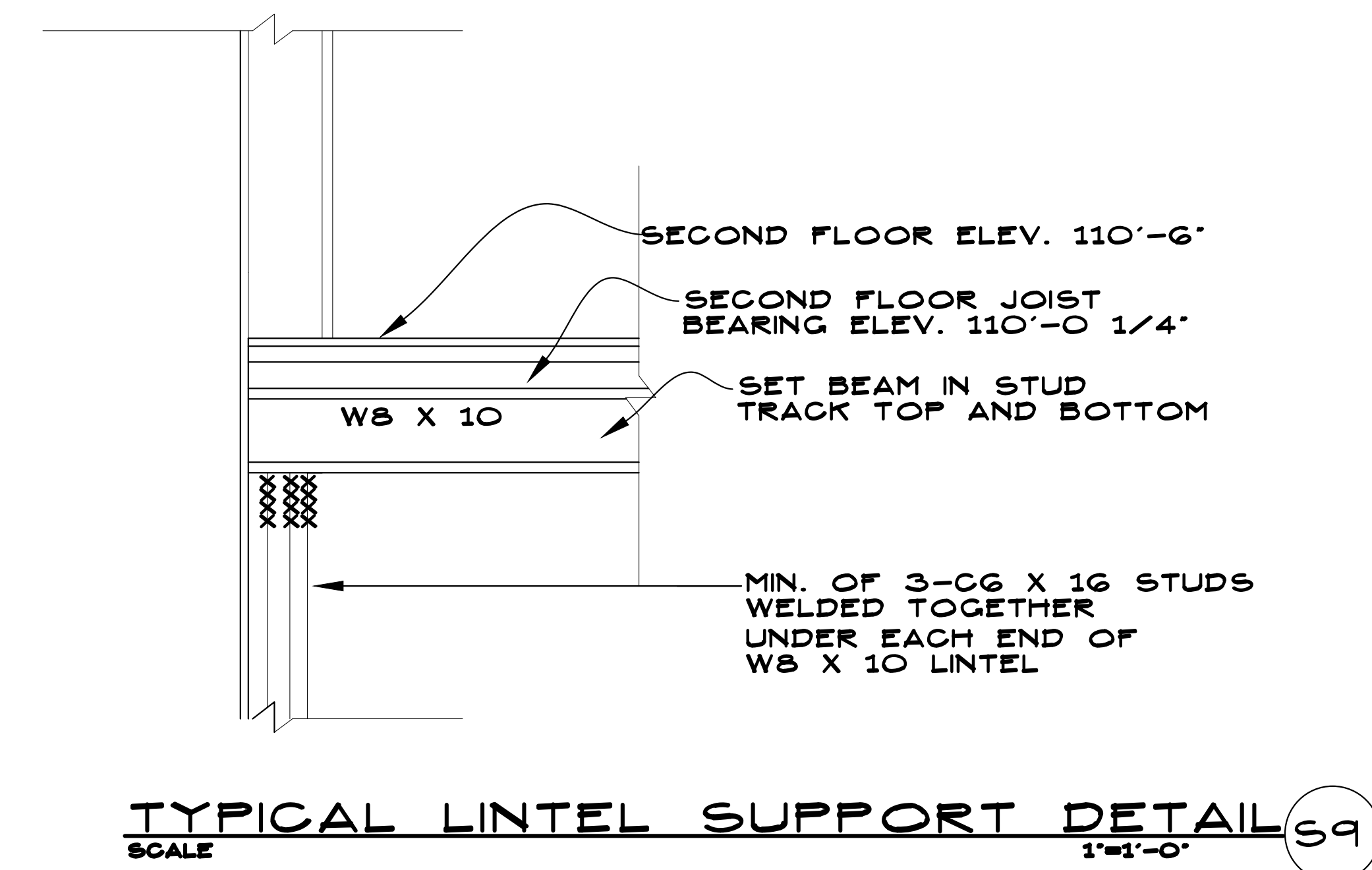
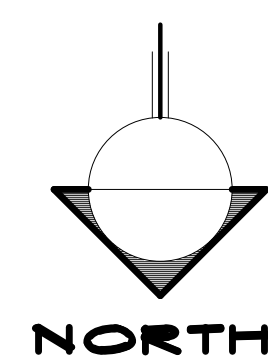
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SHEET NO.
S-1
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



SECOND FLOOR FRAMING PLAN
SCALE 1/4"=1'-0"



FOUNDATION DETAILS
SCALE 3/4"=1'-0"

ADDITION + RENOVATIONS TO
FIRE STATION #1
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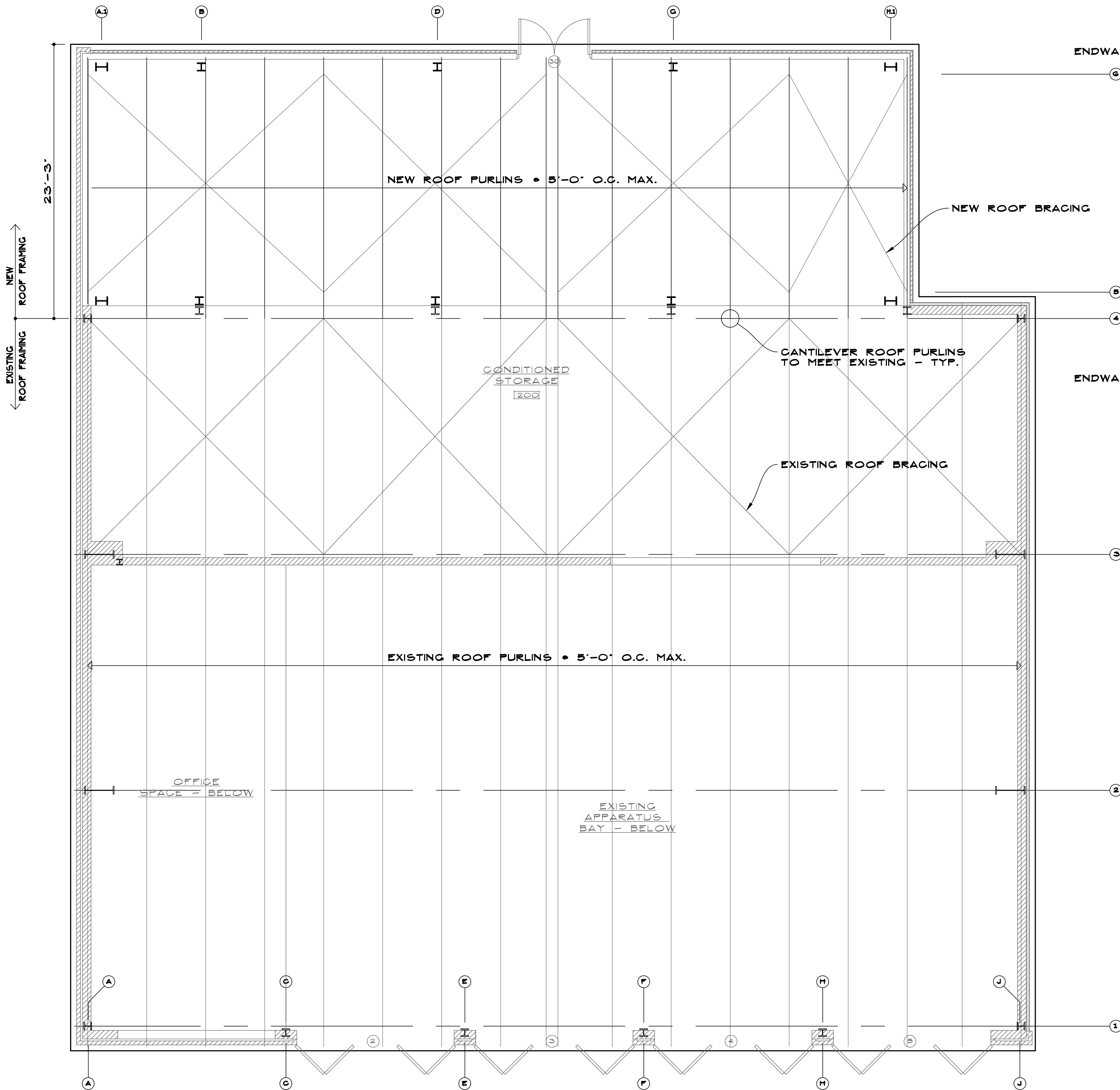
SHEET NO.

S-2

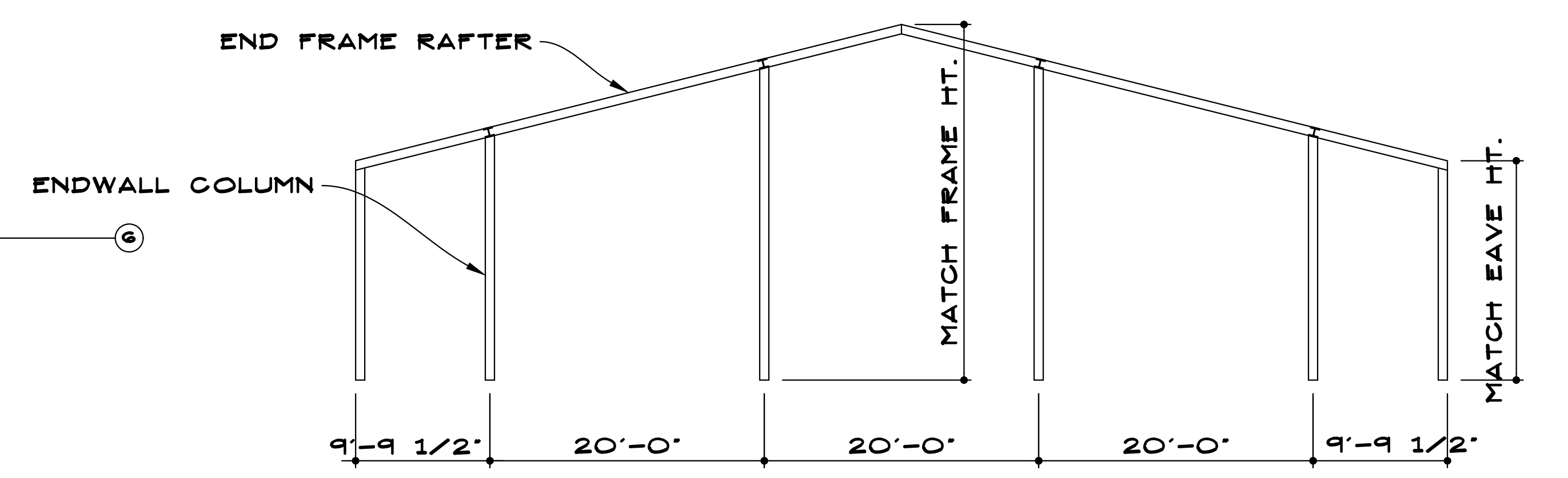
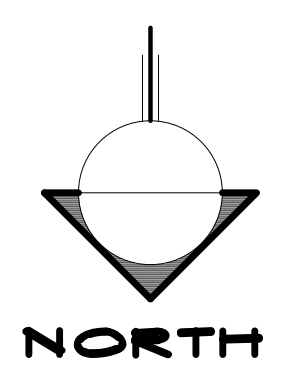
JOB NO. 1824

BID NO. F-12-19

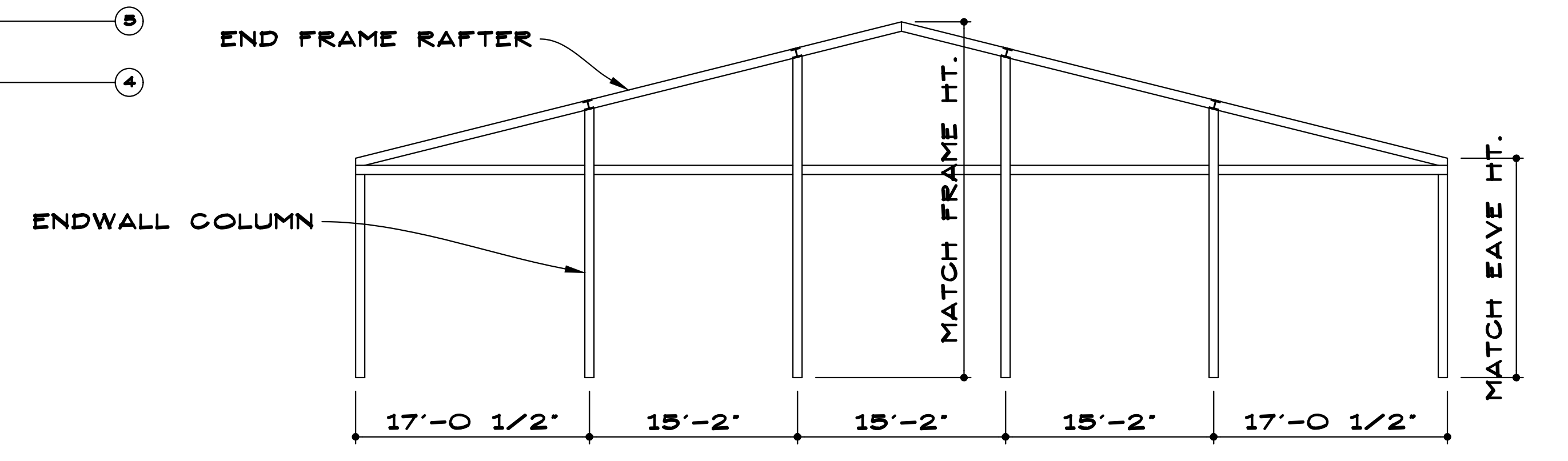
DATE: 8-18-19



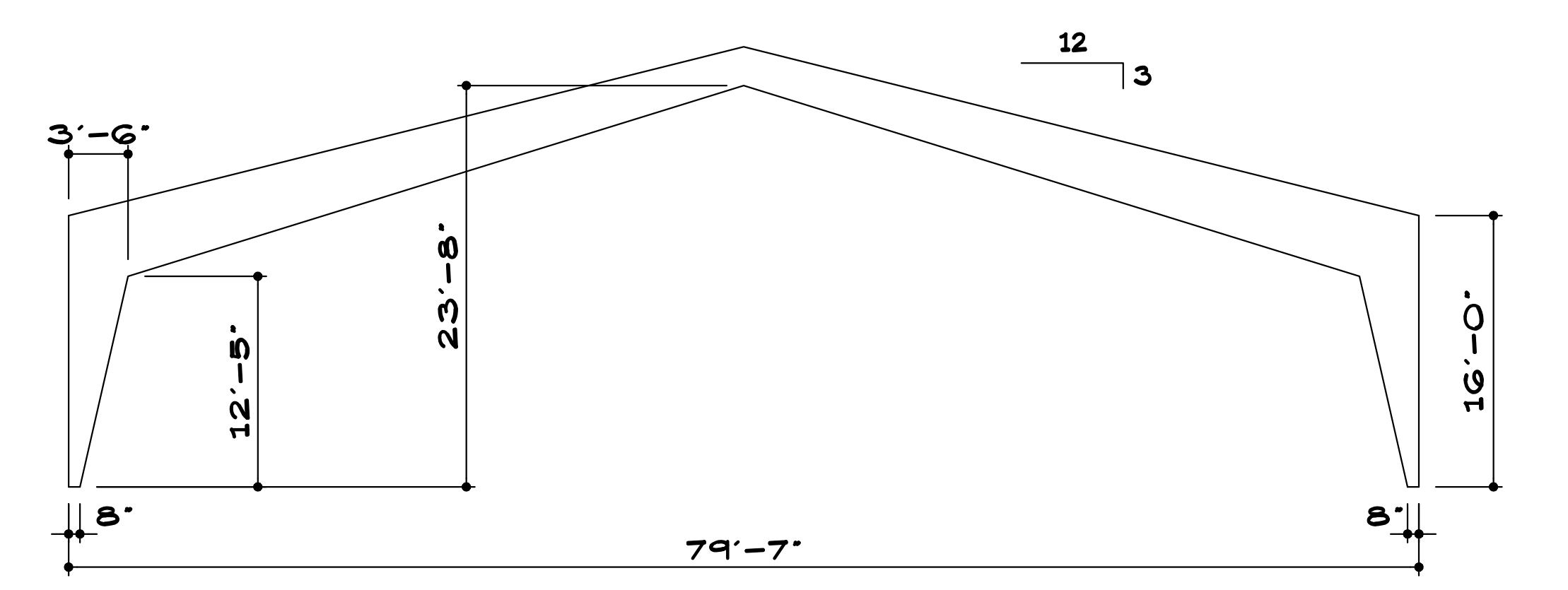
ROOF FRAMING PLAN
SCALE 1/4"=1'-0"



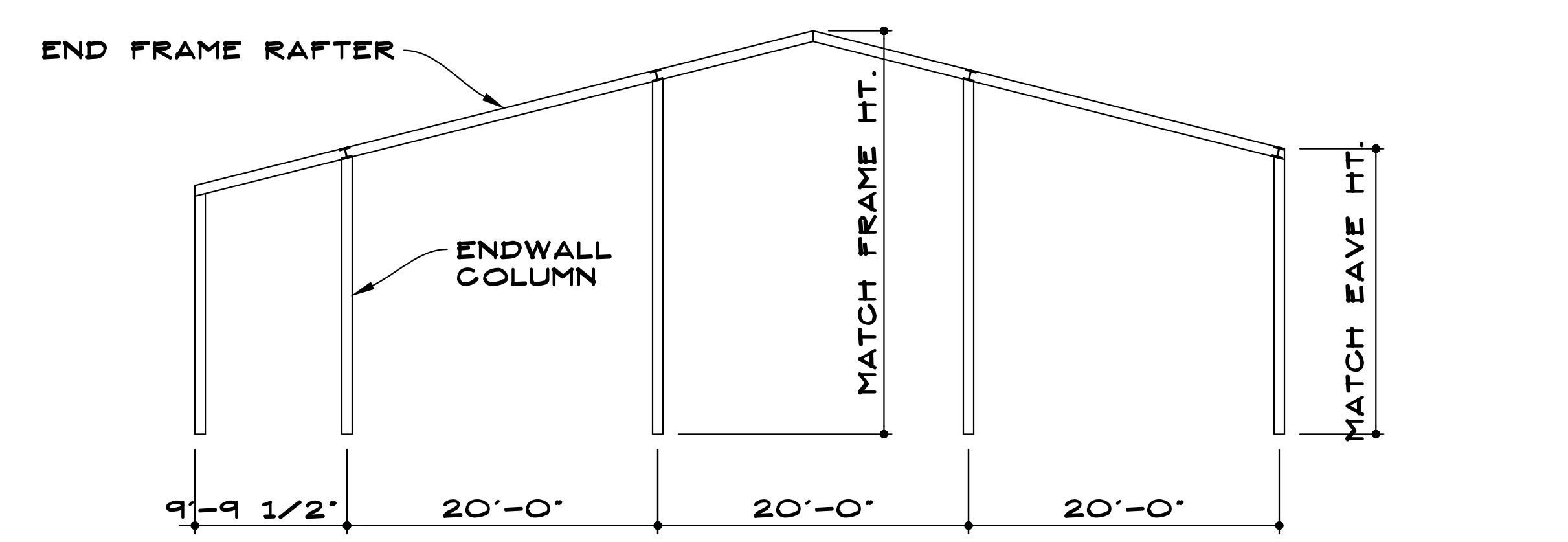
EXIST EXTERIOR END FRAME - COL. LINE 4
SCALE 1/8"=1'-0"



EXIST EXTERIOR END FRAME - COL. LINE 1
SCALE 1/8"=1'-0"



EXIST INTERIOR BAY FRAME - COL. LINE 2 + 3
SCALE 1/8"=1'-0"



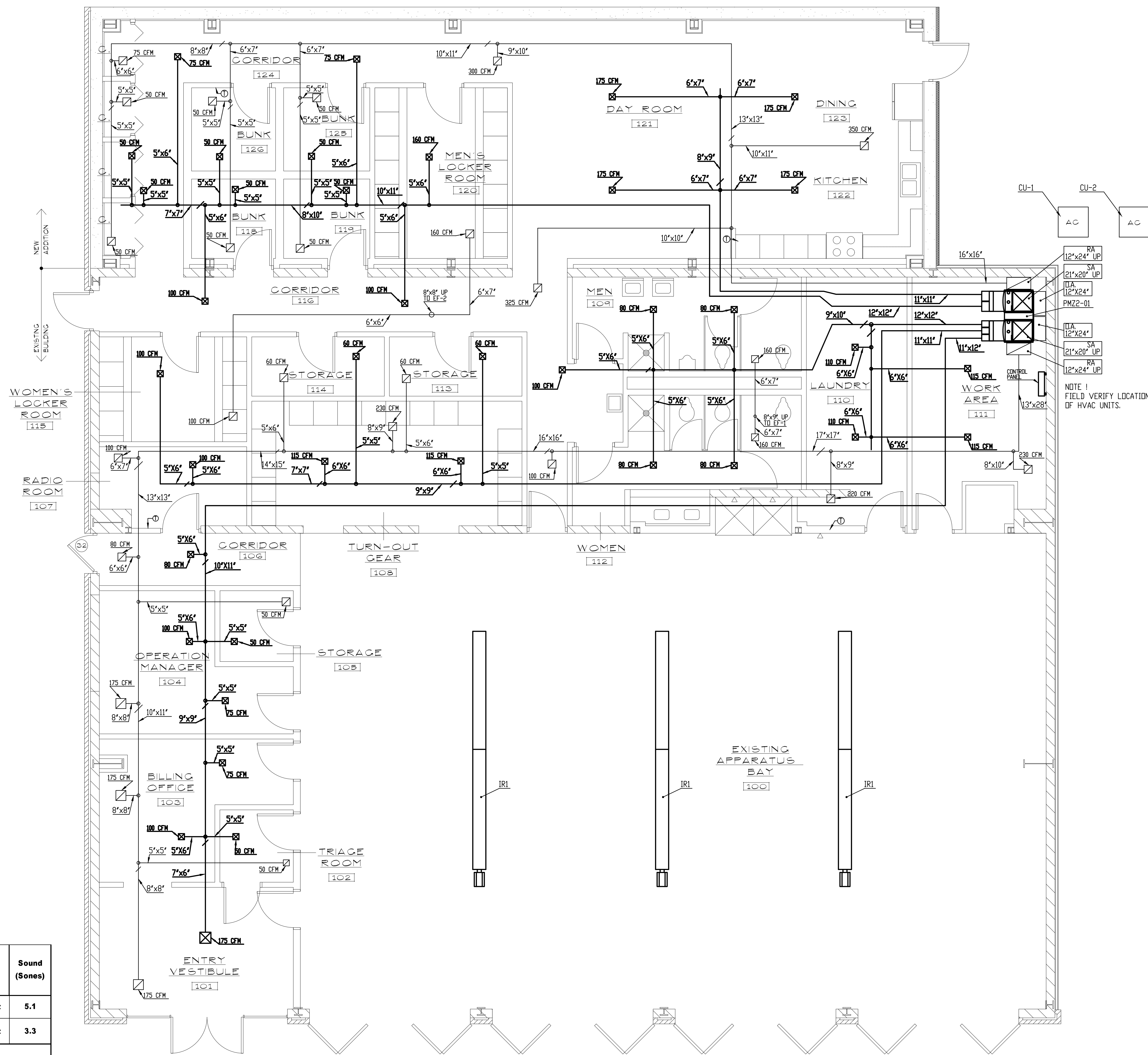
NEW EXTERIOR END FRAME - COL. LINE 5 + 6
SCALE 1/8"=1'-0"

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
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SHEET NO.
S-3
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19



NOTE: FIELD VERIFY LOCATION OF HVAC UNITS.

AIR DIFFUSER SCHEDULE						
TYPE	CFM RANGE	SIZE	NECK	FRAME	MANUF	MODEL
A	0-75 SUPPLY	12"x12"	40	LAY-IN	PRICE	SCDA
B	76-150 SUPPLY	12"x12"	60	LAY-IN	PRICE	SCDA
C	151-225 SUPPLY	24"x24"	80	LAY-IN	PRICE	SCDA
D	226-400 SUPPLY	24"x24"	100	LAY-IN	PRICE	SCDA
E	0-75 RETURN	12"x12"	50	LAY-IN	PRICE	SCD
F	76-150 RETURN	12"x12"	80	LAY-IN	PRICE	SCD
G	151-275 RETURN	24"x24"	100	LAY-IN	PRICE	SCD
H	276-400 RETURN	24"x24"	120	LAY-IN	PRICE	SCD

FAN UNIT NO.	Tag	Bldg Room NO.	Manufacturer	Model	Drive	CFM	External static P. in. WG.	RPM	Electrical			Fan Type	Sound (Sones)
									Volt/Ph	FLA	HP		
1	EF-1	MENS 109 / WOMENS 112 REST ROOMS	Greenheck	G-070HP-D	Direct	320	0.125	1550	115/1	1.3	1/30	Downblast	5.1
2	EF-2	MENS 120 / WOMENS 115 LOCKER ROOMS	Greenheck	G-070HP-G	Direct	260	0.125	1300	115/1	1.2	1/60	Downblast	3.3

NOTES: A. FAN RPM SHALL NOT EXCEED RPM INDICATED ON THE SCHEDULE
 B. PROVIDE INTEGRAL FAN PRE-WIRED DISCONNECT SWITCH
 C. PROVIDE BIRDSCREEN
 D. PROVIDE INTEGRAL BACKDRAFT DAMPER (AS LARGE AS POSSIBLE)
 E. PROVIDE 18" ALUMINUM ROOF CURB.

FIRST FLOOR HVAC PLAN
SCALE 1/4"=1'-0"



GAS FIRED INFRARED HEATER SCHEDULE									
QTY	LABEL	MODEL	BTU/HR INPUT	EMMITER LENGTH	FLUE DIA	ELECTRICAL REQUIREMENTS	GAS TYPE	GAS PRESSURES MIN - MAX	MOUNTING HEIGHT
3	IR1	LTS60-20-N5	60,000	20'	4"	120VAC - 60Hz	NATURAL GAS	5"W.C. - 14"W.C.	AS HIGH AS POSSIBLE

1. Stainless steel or cast iron burners.
2. First radiant fire tube and all emitter tubes shall be calorized / heat treated aluminumized steel (ALCO)
3. (C3) Setback 5000 line voltage Thermostat with metal lock box (P/N: 43240050) Mounted 5'-6" AFF
4. Heater and thermostat subject to field verification and coordinated with other equipment in the building.
5. Consult heater specification sheet and I + O instructions. For further information please visit www.spaceray.com
6. the heaters shall be design certified to American National Standard Z83.20-2014

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
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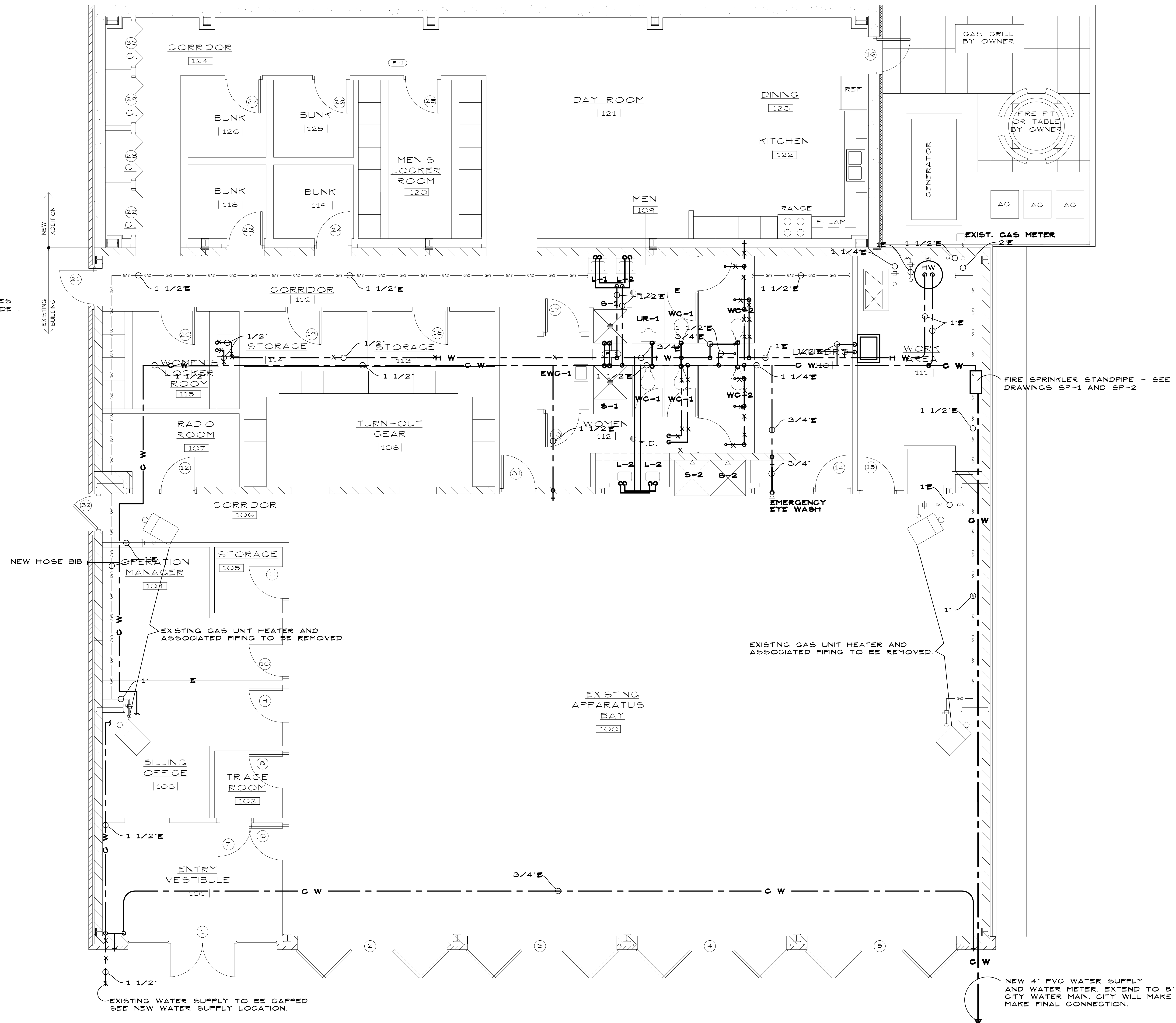
SHEET NO.
M-1
JOB NO. 1824
SD NO. F-12-14
DATE: 8-18-14

LEGEND

- C W — COLD WATER
- H W — HOT WATER
- X — LINE TO BE REMOVED
- GAS — GAS LINE

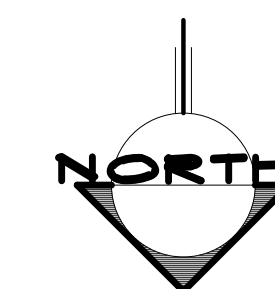
GENERAL NOTES:

- EXISTING GAS LINES SHOWN ARE FOR REFERENCE ONLY. PLUMBING CONTRACTOR SHALL SIZE AND RUN NEW GAS LINES TO ALL NEW DEVICES. ABANDON ANY UNUSED GAS LINES.
- EXISTING CW AND HW LINES SHOWN ARE FOR REFERENCE ONLY. PLUMBING CONTRACTOR SHALL ADJUST EXISTING LINES AND ADD NEW LINES TO ALL NEW FIXTURES AS REQ'D. TO MEET ILLINOIS STATE PLUMBING CODE.



WATER + GAS DISTRIBUTION PLAN

SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
FIRE STATION #1
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SHEET NO.

P-1

JOB NO. 1824

BID NO. F-12-19

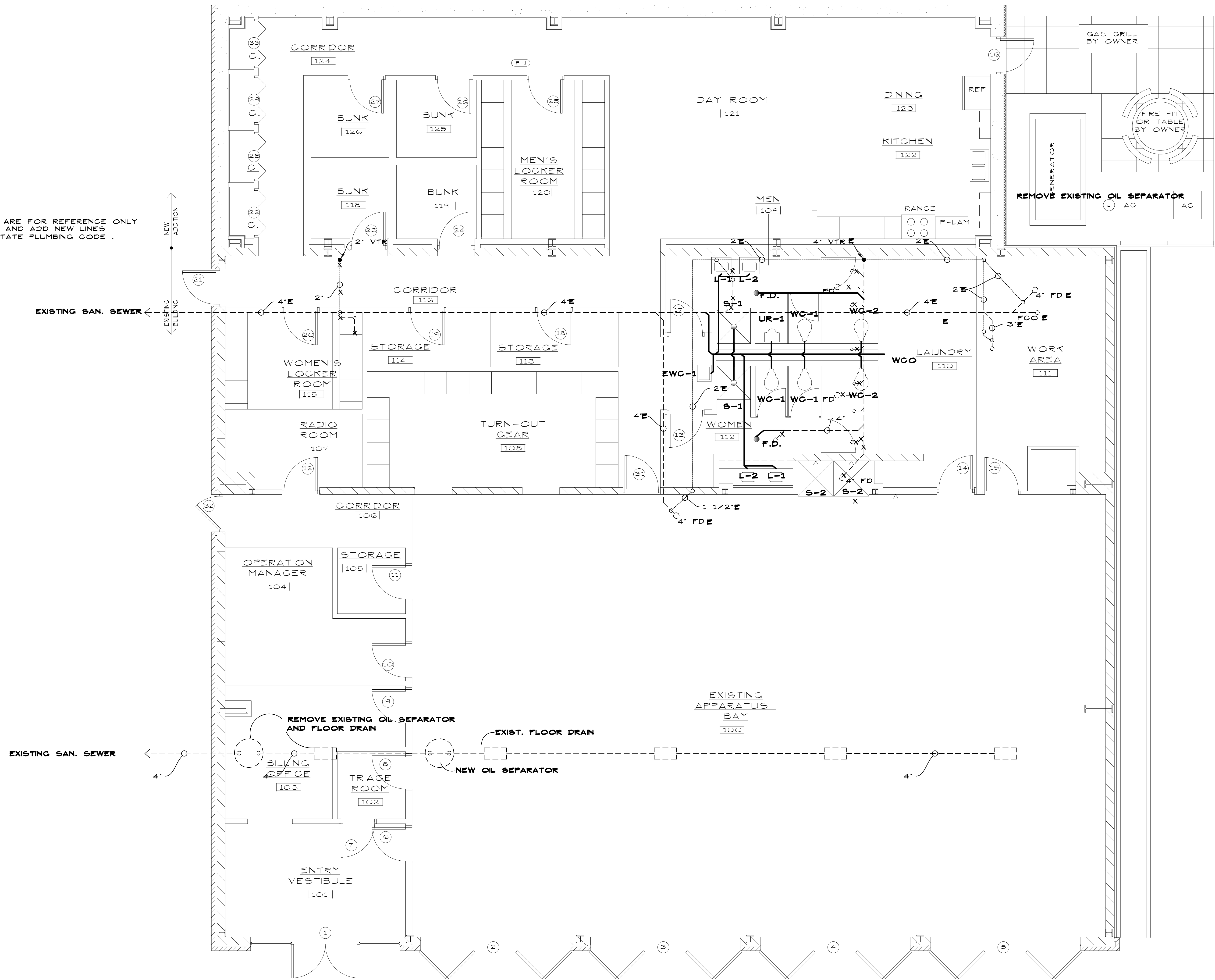
DATE: 8-18-19

LEGEND

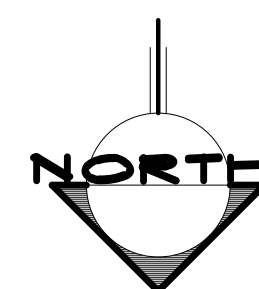
- EXIST. SEWER LINE
- EXIST. VENT LINE
- NEW SEWER LINE
- X - X - LINE TO BE REMOVED

GENERAL NOTES:

- EXISTING SANITARY SEWER AND VENT LINES SHOWN ARE FOR REFERENCE ONLY. PLUMBING CONTRACTOR SHALL ADJUST EXISTING LINES AND ADD NEW LINES TO ALL NEW FIXTURES AS REQ'D. TO MEET ILLINOIS STATE PLUMBING CODE.



SEWER PLAN
SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

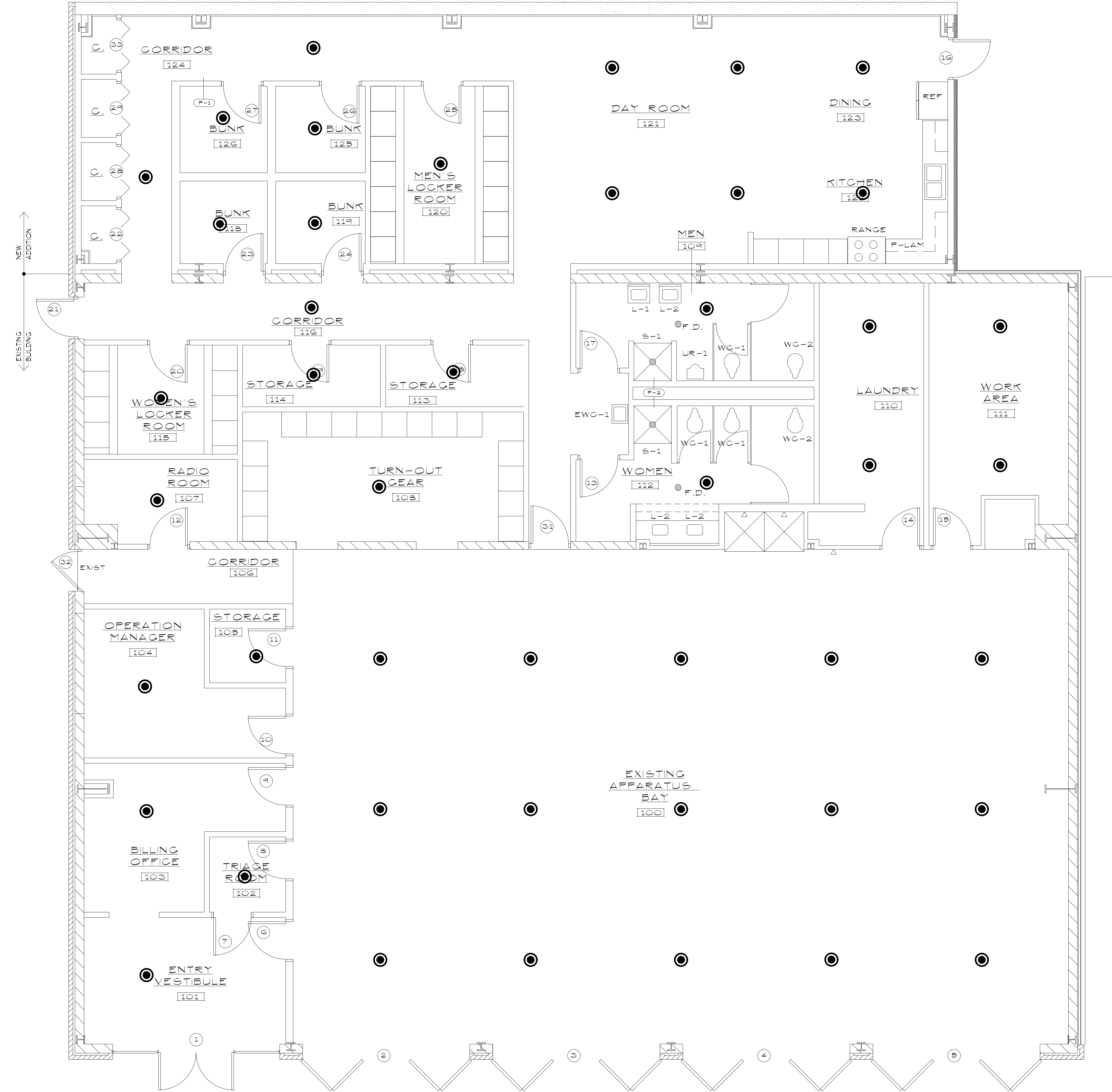
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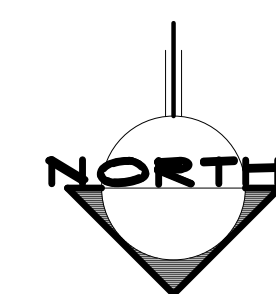
SHEET NO.
P-2
JOB NO. 1824
BID NO. F-12-19
DATE: 8-18-19

GENERAL NOTES

1. THE SPRINKLER DRAWINGS ARE SCHEMATIC AND FOR GENERAL REFERENCE. THE SPRINKLER CONTRACTOR SHALL ADJUST DRAWINGS AS REQUIRED TO CONFORM TO THE LATEST EDITION OF NFPA 13 GUIDELINES.
2. ALL SPRINKLER LINES SHALL BE CONCEALED, WHERE EVER POSSIBLE.
3. CONSULT WITH ELECTRICAL AND HVAC CONTRACTORS TO COORDINATE SPRINKLER LOCATION WITH LIGHTING AND HVAC LAYOUT.
4. THIS SYSTEM IS TO TIE INTO AN EXISTING 8" MUNICIPAL WATER MAIN WITH:
 STATIC PRESSURE - 70 PSI.
 RESIDUAL PRESSURE - 45 PSI.
 FLOW RATE - 1050 GPM



FIRST FLOOR FIRE SPRINKLER PLAN
 SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
 FIRE STATION #1
 CITY OF HIGHLAND
 HIGHLAND, IL 62249

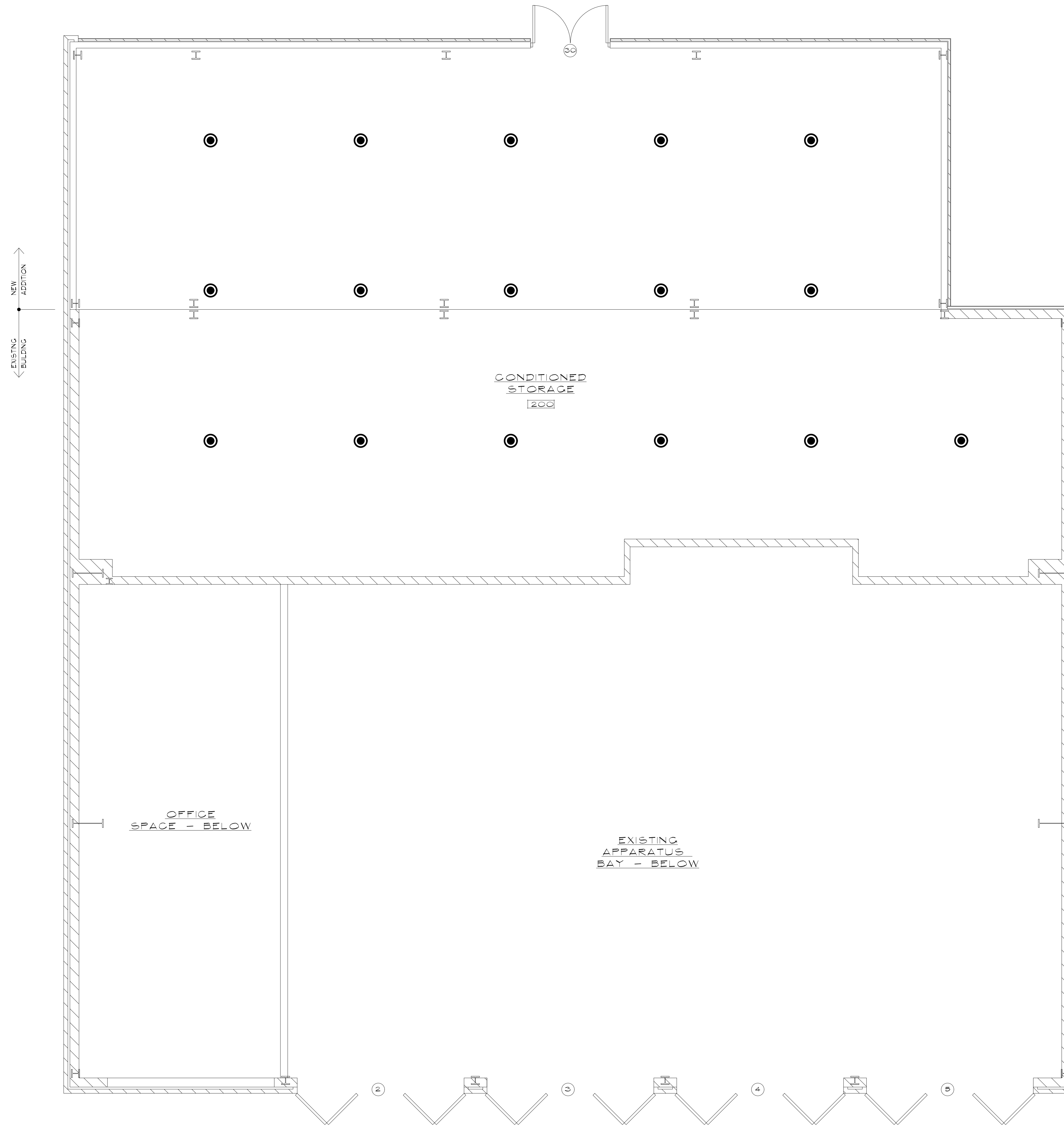
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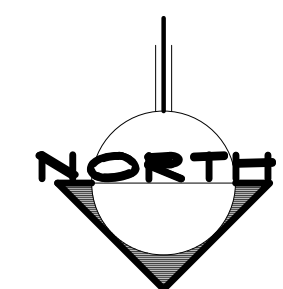
SHEET NO.
SP-1
 JOB NO. 1824
 BID NO. F-12-19
 DATE: 8-18-19

GENERAL NOTES

1. THE SPRINKLER DRAWINGS ARE SCHEMATIC AND FOR GENERAL REFERENCE. THE SPRINKLER CONTRACTOR SHALL ADJUST DRAWINGS AS REQUIRED TO CONFORM TO THE LATEST EDITION OF NFPA 13 GUIDELINES.
2. ALL SPRINKLER LINES SHALL BE CONCEALED, WHERE EVER POSSIBLE
3. CONSULT WITH ELECTRICAL AND HVAC CONTRACTORS TO COORDINATE SPRINKLER LOCATION WITH LIGHTING AND HVAC LAYOUT.
4. THIS SYSTEM IS TO TIE INTO AN EXISTING 8" MUNICIPAL WATER MAIN WITH:
 STATIC PRESSURE - 70 PSI.
 RESIDUAL PRESSURE - 45 PSI.
 FLOW RATE - 1080 GPM



SECOND FLOOR FIRE SPRINKLER PLAN
 SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
 FIRE STATION #1
 CITY OF HIGHLAND
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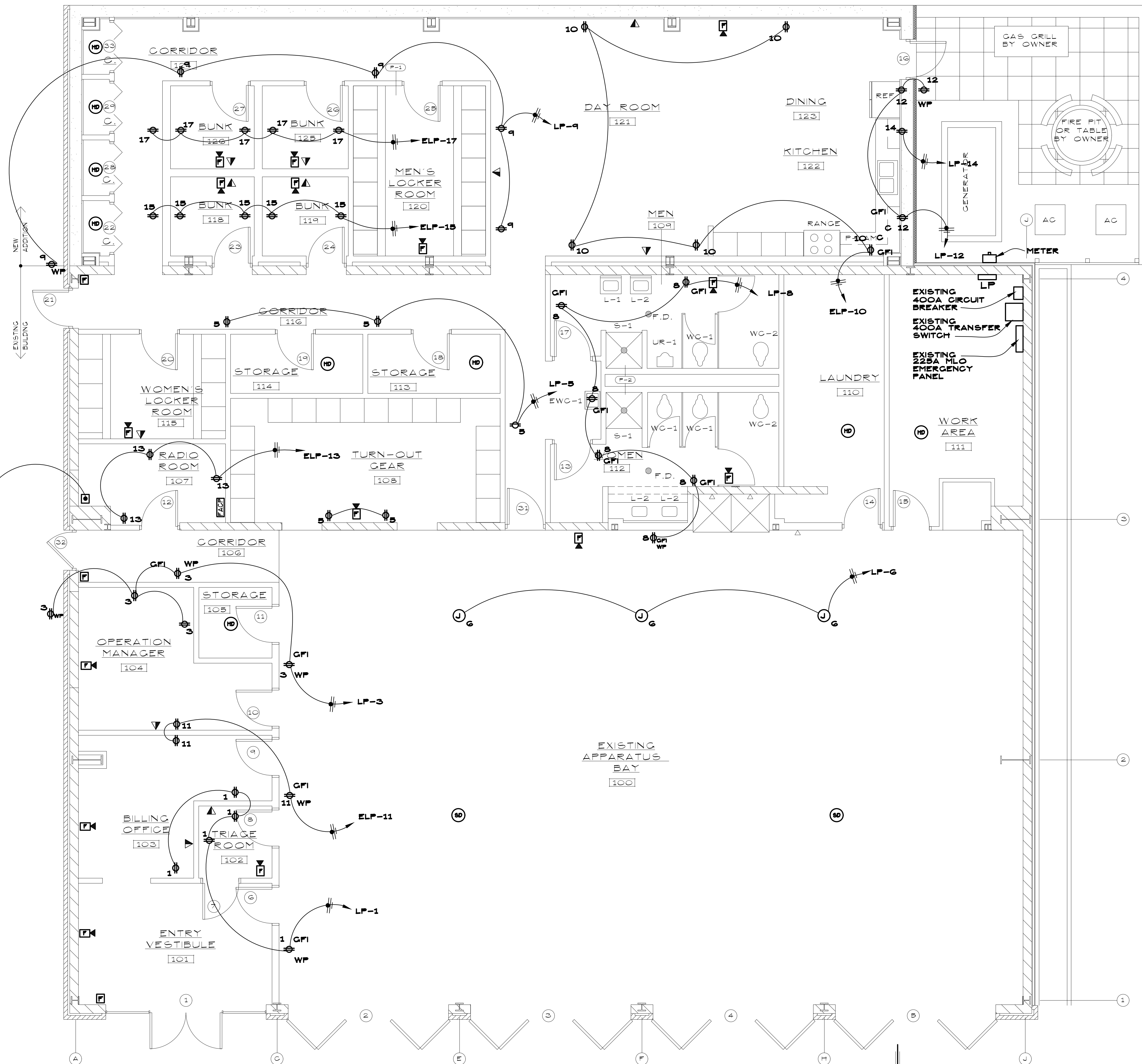
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 ARCHITECTS

SHEET NO.
SP-2
 JOB NO. 1824
 BID NO. F-12-19
 DATE: 8-18-19

PANEL SCHEDULE						
PANEL:	LP	LOCATION: XXX		VOLTAGE: 120/240V 1# 3W		
MAIN DEVICE:	400A					
CIRCUIT	CIR. #	BRKR	LOAD	LOAD BRKR	CIR. #	CIRCUIT
LIGHTING	1	1P20	1850	1000	1P20	2 LIGHTING
LIGHTING	3	1P20	1600	600	1P20	4 LIGHTING
GUM (C2)	5	1P20	2-F	1/2 HP	1P20	6 DOOR OPEN
DOOR OPEN	7	1P20	1/2 HP	1/2 HP	1P20	8 DOOR OPEN
DRYER	9	2P40	GKW	1/2 HP	1P20	10 DOOR OPEN
WASHER	13	2P20	1/2 HP	1/2 HP	1P20	12 DOOR OPEN
A/C	17	2P60		1000	1P20	14 DOOR OPEN
FURNACE	21	2P20	1 HP	1000	1P20	16 RECEPTACLE
LIGHTING	25	1P20	1100	400	1P20	18 RECEPTACLE
LIGHTING	27	1P20	1200	200	1P20	20 GUM (C2)
RECEPTACLE	29	1P20	800	400	1P20	22 RECEPTACLE
LIGHTING	31	1P20	1300	1000	1P20	24 RECEPTACLE
RECEPTACLE	33	1P20	400	400	1P20	26 RECEPTACLE
RECEPT. (CTB)	35	1P20	200	200	1P20	28 RECEPTACLE
SPARE	37	1P20		1200	1P20	30 RECEPTACLE
SPARE	39	1P20			1P20	32 RECEPTACLE
SPARE	41	1P20			1P20	34 RECEPTACLE
						36 RECEPTACLE
						38 RECEPTACLE
						40 SPARE
						42 SPARE

PANEL: ELP		EMERGENCY PNL EA		LOCATION: ELECTRICAL ROOM 128																																																																																																																																																													
MAN DEVICE: 225A MLO		VOLTAGE: 240/120 VOLTS 1P3W																																																																																																																																																															
CONNECTED		DEMAND		AMPS																																																																																																																																																													
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- SYMBOLS**
- ▲ - DUAL DATA PORT RUN CAT5 CABLE TO RADIO ROOM FOR TERMINATION
 - ⊕ - DUPLEX WALL OUTLET
 - ⊕_{WP} - DUPLEX WALL OUTLET GFI/WEATHER PROOF
 - ⊕_{GFI} - DUPLEX WALL OUTLET-GFI
 - ⊕_{WP} - DUPLEX WALL OUTLET-GFI/WEATHER PROOF
 - ⊕ - SWITCH
 - ⊕_{ACP} - FIRE ALARM CONTROL PANEL
 - ⊕_{MD} - HEAT DETECTOR
 - ⊕_{SD} - SMOKE DETECTOR
 - ⊕_J - JUNCTION BOX
 - ⊕ - SHORT-PHASE, LONG-NEUTRAL, LONG WITH DOT EQUIPMENT GROUND
 - ⊕₁ - FIRE ALARM HORN/STROBE
 - ⊕₂ - FIRE ALARM STROBE ONLY
 - ⊕₃ - FIRE ALARM PULL STATION



FIRST FLOOR ELECTRICAL PLAN
SCALE: 1/4"=1'-0"

MARK #	DESCRIPTION/LOCATION	VOLT	PHASE	RZE/CB	FURNISH BY	INSTALL BY	EQUIPMENT CONTROL		REMOTE DISCONNECT		CONTROL		FEEDER		NOTES	MARK #	TOTAL LOAD RYA	LOAD PER PHASE RYA					
							TYPE	NEHA SIZE	AUX. CONTACT	LOCATION	FURNISH BY	INSTALL BY	SIZE	TYPE OF W/P					NEHA CL. 3RD	LOCATION	FURNISH BY	INSTALL BY	PANEL NO.
BF2	BIFOLD DOOR 2/APPARATUS BAY	120	1	20A	MF	EC	-	-	-	W/ UNIT	EC	EC	30	NF	1	AT UNIT	MF	EC	2-#12, 1-#12 GRD, 3/4" C	1.2	BF2	1420	1420
BF3	BIFOLD DOOR 3/APPARATUS BAY	120	1	20A	MF	EC	-	-	-	W/ UNIT	EC	EC	30	NF	2	AT UNIT	MF	EC	2-#12, 1-#12 GRD, 3/4" C	1.2	BF3	1420	1420
BF4	BIFOLD DOOR 4/APPARATUS BAY	120	1	20A	MF	EC	-	-	-	W/ UNIT	EC	EC	30	NF	3	AT UNIT	MF	EC	2-#12, 1-#12 GRD, 3/4" C	1.2	BF4	1420	1420
BF5	BIFOLD DOOR 5/APPARATUS BAY	120	1	20A	MF	EC	-	-	-	W/ UNIT	EC	EC	30	NF	4	AT UNIT	MF	EC	2-#12, 1-#12 GRD, 3/4" C	1.2	BF5	1420	1420
AHU#1	AIR HANDLER AHU#1	240	1	3BA	MF	EC													2-#8, 1-#10 GRD, 3/4" C		AHU#1	4272	2136
AHU#2	AIR HANDLER AHU#2	240	1	4BA	MF	EC													2-#8, 1-#10 GRD, 3/4" C		AHU#2	5968	2784
AHU#3	AIR HANDLER AHU#3	240	1	4BA	MF	EC													2-#8, 1-#10 GRD, 3/4" C		AHU#3	5968	2784
FCP	FURNACE CONTROL PANEL	120	1	60A	MF	EC													2-#8, 1-#10 GRD, 1" C		FCP	3432	3432
RI-3	INFRARED HEATERS 1-3	120	1	20A															2-#12, 1-#12 GRD, 3/4" C		RI-3	720	360

ABBREVIATIONS:
 OW - OWNER
 GC - GENERAL CONTRACTOR
 MC - MECHANICAL CONTRACTOR
 HC - HEATING CONTRACTOR
 FC - FURNISHING CONTRACTOR
 VFD - VARIABLE FREQUENCY DRIVE
 MF - MANUFACTURER (WITH UNIT)
 NO - NORMALLY OPEN
 FVR - FULL VOLTAGE REVERSING STARTER
 FVNR - FULL VOLTAGE NON-REVERSING STARTER

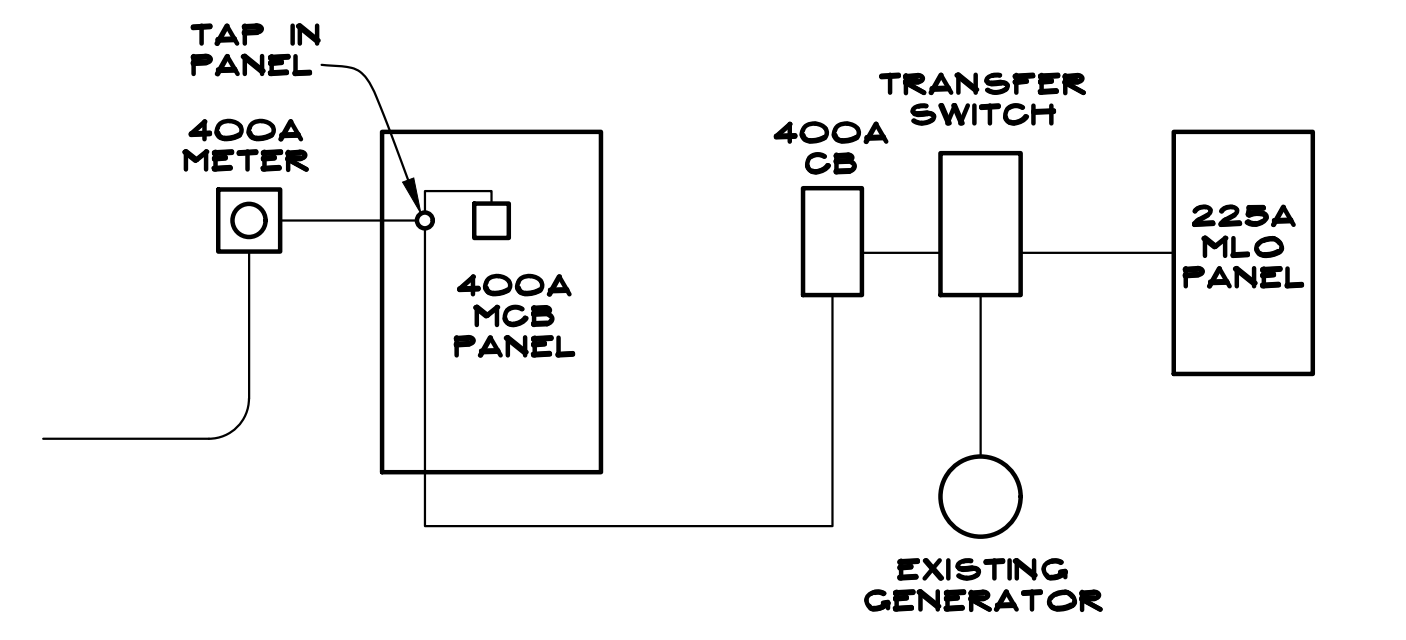
NOTES:
 1. CONTROL PANEL WITH UNIT.
 2. REMOTE PUSH BUTTON STATION WITH 'OPEN/CLOSE/STOP' PUSH BUTTONS.
 3. FIVE CONDENSING UNITS ON SINGLE PALLET WITH DISTRIBUTION CENTER - SINGLE POWER SOURCE.
 4. MULTIPLE FANS, COMMON CONTROL PANEL.
 5. CONTROLLED BY LOCAL SWITCH.
 6. PROVIDE TWO (2) FAN OCCUPANCY SENSOR TO CONTROL FAN FROM BOTH BATHROOMS.
 7. PROVIDE COMBINATION MANUAL STARTER WITH CIRCUIT BREAKER.
 8. EC TO MOUNT AND WIRE THE RANGE HOOD CONTROL PANEL AND LIGHTS.
 9. EC TO MOUNT AND WIRE THE DUPLICATE DOOR CONTROLS 'OPEN/CLOSE/STOP' PUSH BUTTONS ADJACENT TO DOOR 32.

ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

902 WALNUT STREET
HIGHLAND, IL 62249
PH. 618-654-2325
FAX 618-654-3823

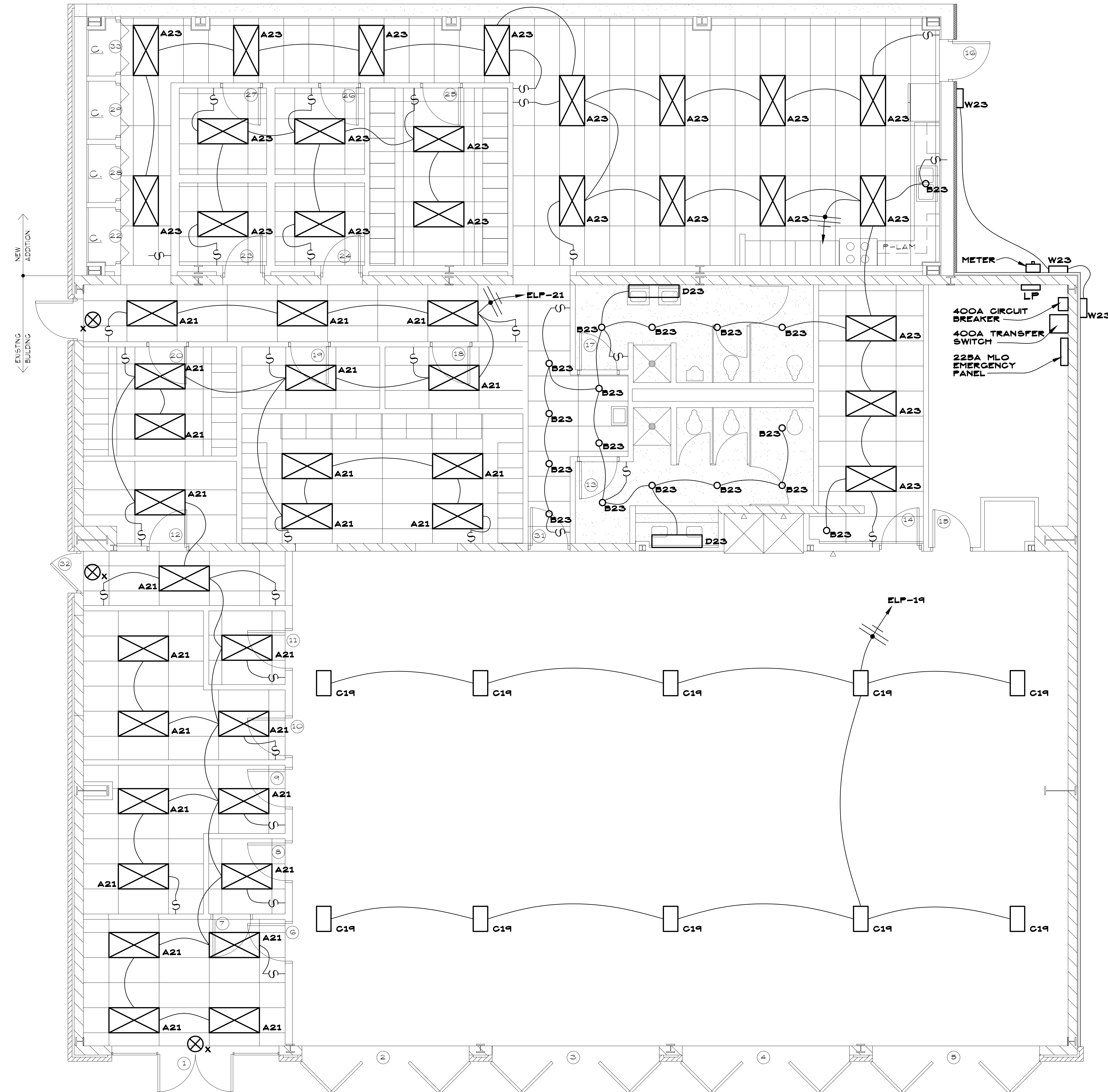
Loyal
ARCHITECTS

SHEET NO. **E-1**
JOB NO. 1824
SD NO. F-12-19
DATE: 8-18-19

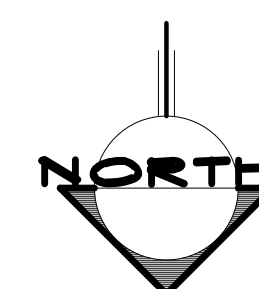


EXISTING ONELINE/RISER

FIXTURE SCHEDULE						
SYMBOL	TYPE	LIGHT ENGINE	MOUNTING	CATALOG #	REMARKS	
A	2x4	LED 4000K	5200 LU	GRID	COLUMBIA	FIXED LIGHT OUTPUT
B	6" CAN	LED 4000K	1400 LU	RECESSED	FRESCOLITE	DIMMING / 1% UNIVERSAL
C	HI-BAY	LED 4000K	2400 LU	PENDANT	COLUMBIA	FIXED LIGHT OUTPUT
D	4' WALL	LED 4000K	4800 LU	SURFACE	COLUMBIA	FIXED LIGHT OUTPUT
W	WALL	LED 4000K	2800 LU	SURFACE	HUBBELL	12 FT AFG
X	EXIT	LED 4000K		SURFACE	COMPASS	120VAC, RED LED-, UNIVERSAL



FIRST FLOOR LIGHTING PLAN
SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

902 WALNUT STREET
HIGHLAND, IL 62249
PH. 618-654-2328
FAX 618-654-2823

Loyal
ARCHITECTS

SHEET NO.

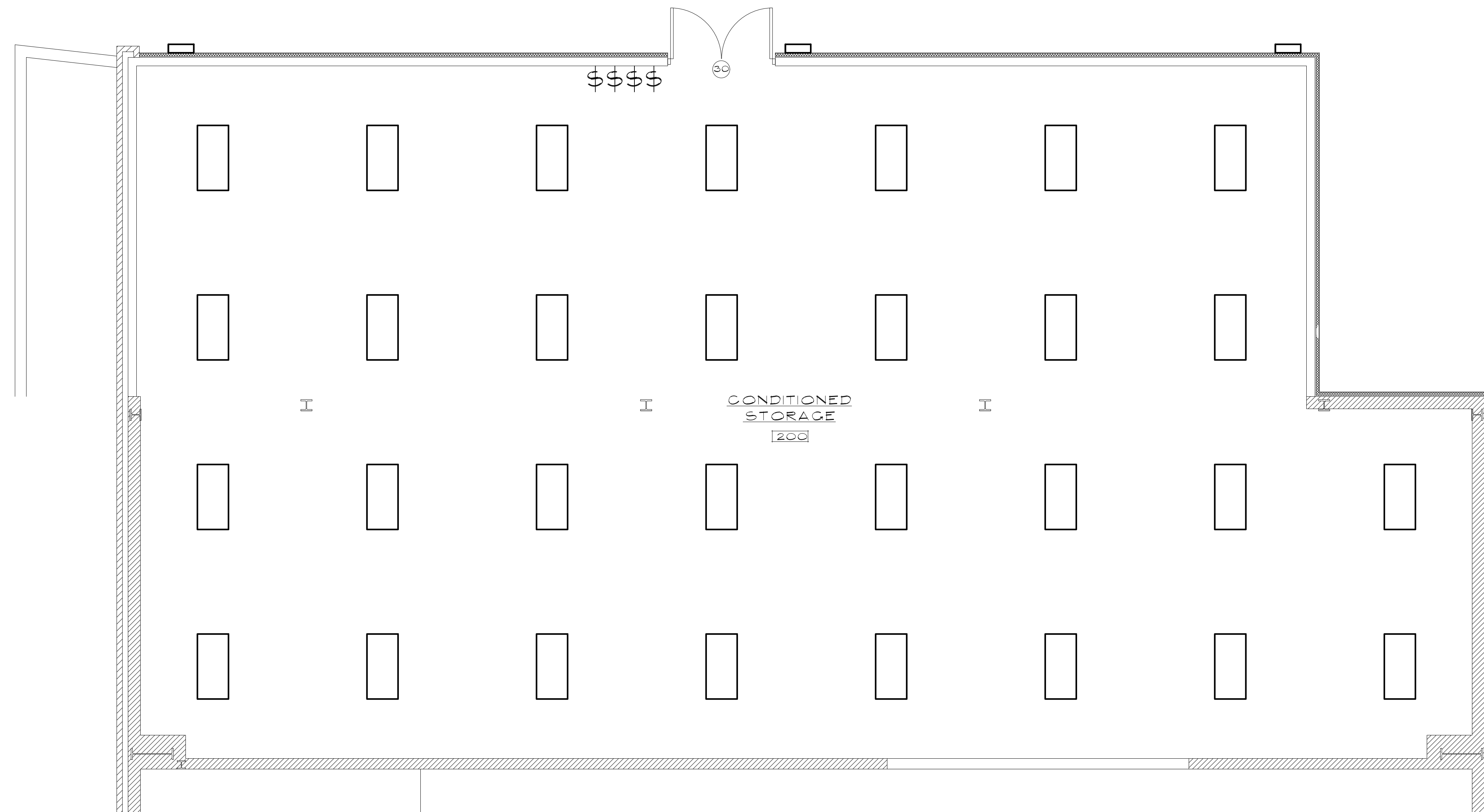
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JOB NO. 1824

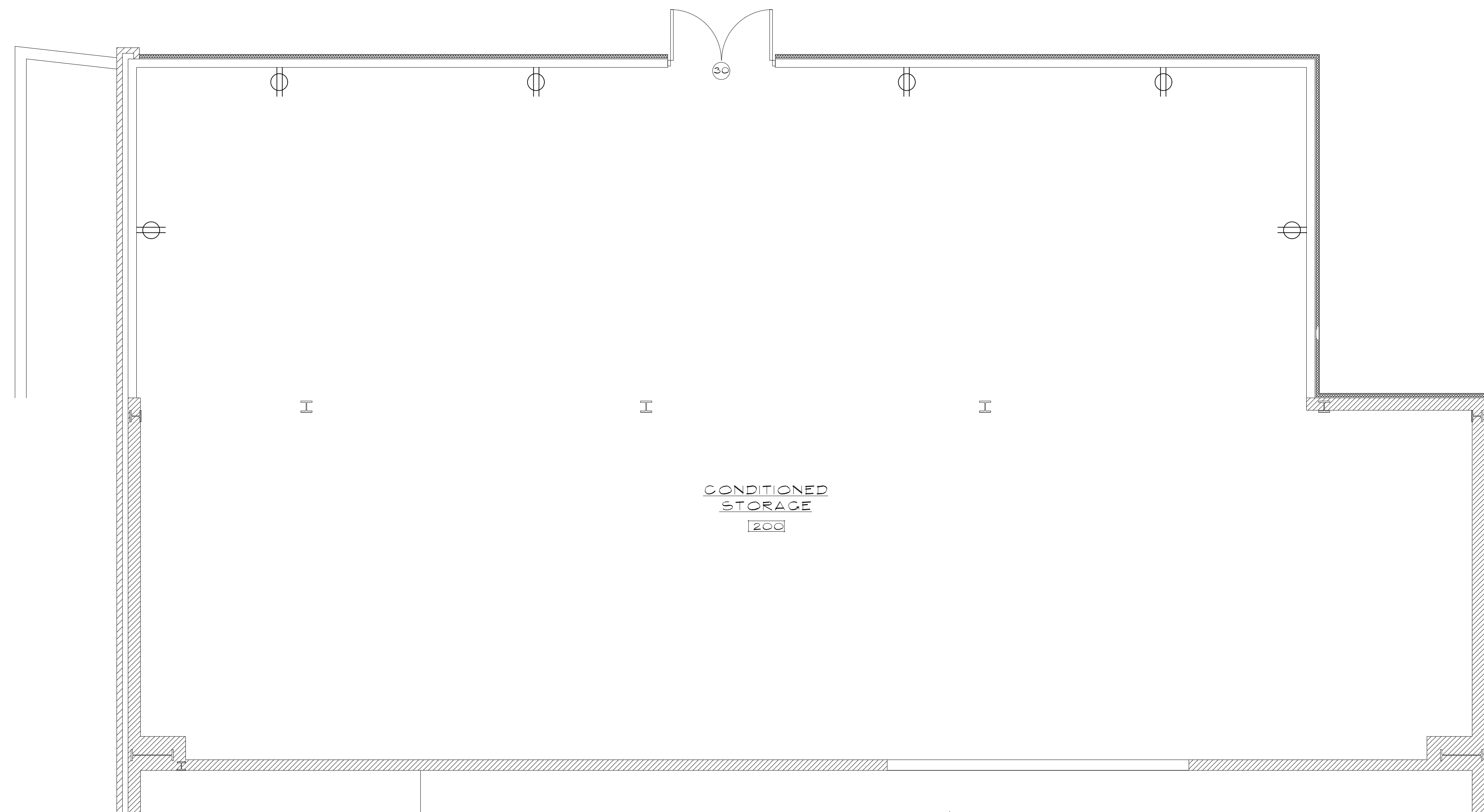
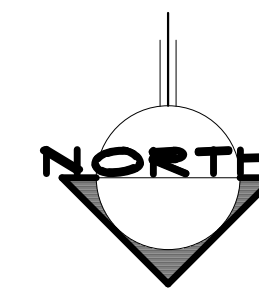
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DATE: 8-18-19

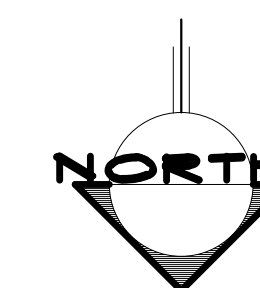
FIXTURE SCHEDULE						
SYMBOL	TYPE	LIGHT ENGINE		MOUNTING	CATALOG #	REMARKS
A	2x4	LED 4000K	5200 LU	GRID	COLUMBIA	FIXED LIGHT OUTPUT
B	6" CAN	LED 4000K	1400 LU	RECESSED	PRESCOLITE	DIMMING / 1/2
C	HI-BAY	LED 4000K	2400 LU	PENDANT	COLUMBIA	FIXED LIGHT OUTPUT
D	4" WALL	LED 4000K	4800 LU	SURFACE	COLUMBIA	FIXED LIGHT OUTPUT
W	WALL	LED 4000K	2800 LU	SURFACE	HUBBELL	12 FT AFG
X	EXIT	LED 4000K		SURFACE	COMPASS	120AAC. RED LED-. UNIVERSAL



2ND FLOOR LIGHTING PLAN
SCALE 1/4"=1'-0"



2ND FLOOR POWER + FIRE ALAM PLAN
SCALE 1/4"=1'-0"



ADDITION + RENOVATIONS TO
FIRE STATION #1
CITY OF HIGHLAND
HIGHLAND, IL 62249

902 WALNUT STREET
HIGHLAND, IL 62249
PH. 618-654-2328
FAX 618-654-2823

Loyal
ARCHITECTS

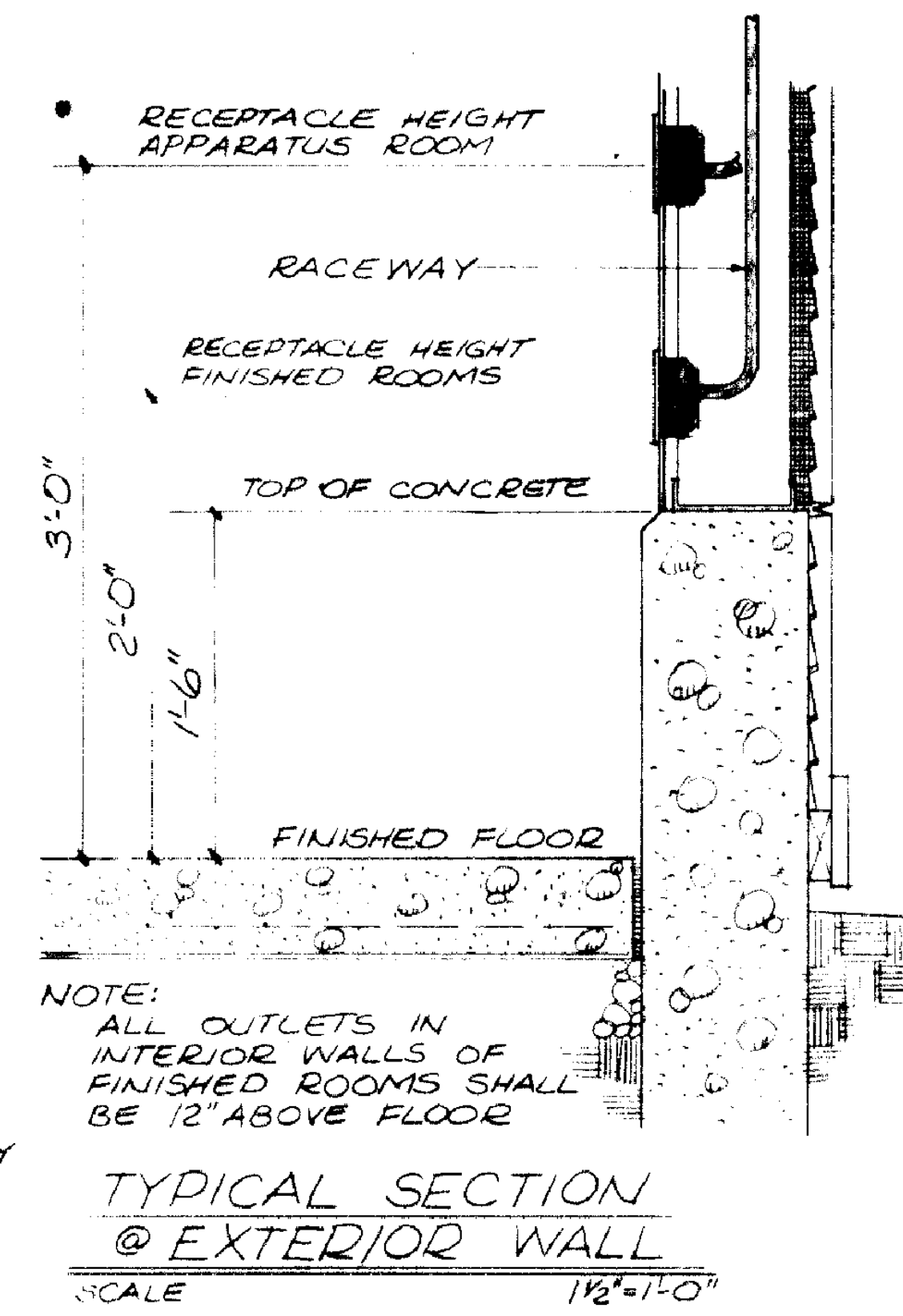
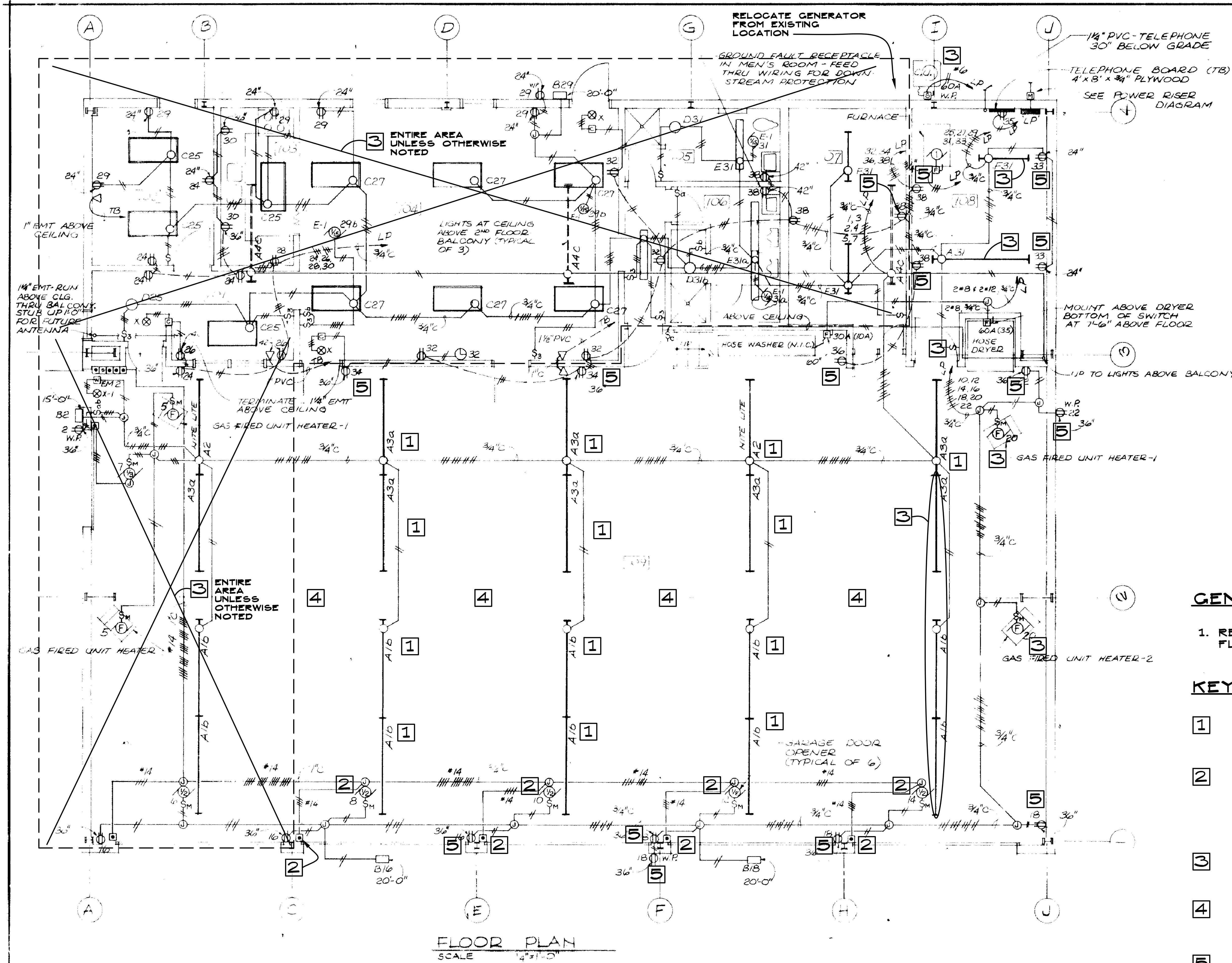
SHEET NO.

E-3

JOB NO. 1824

BID NO. F-12-19

DATE: 8-18-19



GENERAL NOTES

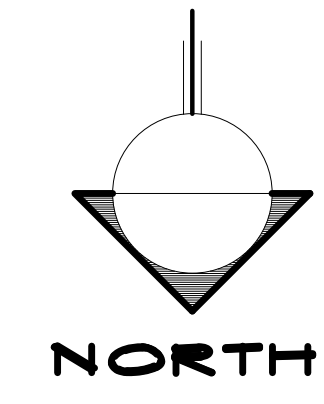
1. REMOVE ALL ELECTRICAL ON 2ND FLOOR.

KEYED NOTES

- 1 REMOVE EXISTING LIGHTS IN APPARATUS BAY.
- 2 DISCONNECT AND REMOVE EXISTING DOOR OPERATORS, CONTROLS, + SAFETY SWITCHES. RETAIN DOOR POWER CONDUIT AND WIRING.
- 3 DISCONNECT AND REMOVE.
- 4 RETAIN ALL VEHICLE CORE REELS/WIRING FOR VEHICLE POWER.
- 5 RETAIN RECEPTACLE WIRING. REPLACE DEVICES WITH NEW.

EXISTING FIRST FLOOR ELECTRICAL DEMO PLAN
SCALE NONE

NOTE 1
THIS EXISTING DRAWING OF THE ORIGINAL BUILDING HAS BEEN INCLUDED FOR BID CLARIFICATION.



NEW FIRE STATION FOR
THE CITY OF HIGHLAND
HIGHLAND ILL.

903 MAIN STREET
HIGHLAND ILL.
62249
TELEPHONE 562-2825

David A. Loyet & Assoc. Inc.
ARCHITECTS
J. B. ENGINEERS, INC.
ELECTRICAL ENGINEERS

INZG
R
A

SHEET

JOB NO.
DATE

ADDITION AND RENOVATIONS TO FIRE STATION NO.1 FOR CITY OF HIGHLAND

PROJECT #1824

August 19, 2019

Bid Number: F-12-19

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**

**Broadway Fire Station Renovations for the City of Highland
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16000-1 thru 16000-17
16720-1 thru 16720-9

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 until 2:00 Friday September 27, 2019.
2. Combined bids will be received on: F-12-19
 - A. General Construction.
 - B. Mechanical.
 - C. Plumbing.
 - D. Electrical.
 - E. Sprinkler Systems
3. Bids will be addressed and delivered to Mr. Mark Latham, City Manager, 1115 Broadway, Highland, Illinois 62249, enclosed in an envelope marked "Sealed 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 \$250.00/per set and \$20.00/shipping and handling. Plans and specifications must be returned for a refund to the architect's office by April 12, 2019. 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 "Successful Bidder". The term "Successful 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 not apply. 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 01000-5, Paragraph 3, Items D and E.)

24. A prime contractor 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 \$1,000,000 bodily injury per person, \$1,000,000 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 \$600,000 employer's liability protection. Contractor may provide a commercial umbrella liability policy with a \$2,000,000 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 12, 1935, as amended (Illinois Statutes, Revised, Chapter 126 1/2, 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, 1939, 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 COMBINED BID F-12-19

(COPY ON YOUR LETTERHEAD IN DUPLICATE)

1. Having carefully examined the drawings and specifications entitled "**BROADWAY FIRE STATION RENOVATION FOR THE CITY OF HIGHLAND**", 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)

2. If the undersigned contractor is notified of the acceptance of this proposal within sixty (60) 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.
4. We acknowledge receipt of Addenda # _____
5. 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 _____

CITY OF HIGHLAND, ILLINOIS
PUBLIC SAFETY DEPARTMENT

HIGHLAND CITY HALL
1115 BROADWAY PO BOX 218
HIGHLAND, ILLINOIS 62249

BID NUMBER & PROPOSAL:

#F-12-19

GENERAL REMODELING
OF FIRE STATION #1

Approved: _____
Mark Latham, City Manager

PROPOSAL SUBMITTED BY: _____
Company Name

ADDRESS: _____

CITY & STATE: _____

CONTACT PERSON: _____
Name Phone

CITY OF HIGHLAND, ILLINOIS
INVITATION AND INSTRUCTIONS TO BIDDER
FOR THE GENERAL REMODELING OF FIRE STATION #1
FOR THE CITY OF HIGHLAND
BID PROPOSAL #F-12-19

Invitation

The City of Highland, Illinois is accepting sealed bids for the remodeling of Fire Station #1. Bid packets for the remodeling of Fire Station #1 will be available beginning Friday, August 30, 2019 from David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249, OTX: 618-654-2328 or mloyet@loyet-architects.com. There will be a required refundable plan deposit of \$250.00 per set, plus \$50 for shipping/handling.

The remodeling of Fire Station #1 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.

The City of Highland, Illinois, will receive sealed bids for general construction until 2:00p.m., Friday, September 27, 2019 at the City Hall, Attn: Mark Latham 1115 Broadway P.O. Box 218, Highland, IL 62249, at which time they will be opened and read.

After tabulation, bids will be presented to the City Council at their regular meeting scheduled at 7:00p.m., Monday, October 7, 2019. Any questions or clarifications concerning this bid, please contact Architect Matt Loyet at 618-654-2328 or mloyet@loyet-architects.com.

Instructions

Bid proposals should be for the remodeling of Fire Station #1 as described in the plans, specifications, instructions and construction documents provided by David A. Loyet and Associates Architects.

Interested parties should submit their form of proposal as called for in the specifications and bid documents in a sealed bid format to the above address. Authorized signature must be provided.

DO NOT include taxes in your prices. The City of Highland is exempt from Federal Excise, Transportation and State Sales Taxes.

Each sealed bid shall be submitted in an opaque envelope, clearly marked **Bid #F-12-19** and addressed to the City of Highland, Attn: Mark Latham, 1115 Broadway, PO Box 218, Highland Illinois 62249 and include all required materials.

Interested parties must also submit a Certificate of Non-Delinquency of Taxes as required by Section 11-42.1-1 of the Illinois Municipal Code, a Certificate of Compliance with sections 33E-3 and 33E-4 of Chapter 38 of the Illinois Revised Statutes regarding bid rigging and bid rotating, and a Certificate of Compliance with the Substance Abuse Prevention on Public Works Projects Act 820 ILCS 265/1. All three certificates are included with this document and shall be submitted with the bidder's form of proposal.

The remodeling of Fire Station #1 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.

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.

The Bid prices shall remain valid and no bidder may withdraw his bid for at least ninety (90) days after established deadline for receipt of bids.

Bids will be available for inspection after award.

By submitting this Bid, Bidder acknowledges that he/she is familiar with the specifications and all other applicable regulatory and contract requirements for the project.

Basis for Bid

The Bid price shall be all inclusive and account for all labor, plant, material, transportation, and other costs estimated by the bidder to be necessary for the completion of the project.

The Bid price is to include all discounts, preparation costs and all other charges or credits.

The Bid price shall be the net price described by the specifications, instructions and construction documents provided by David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, email: mloyet@loyet-architects.com

The remodeling of Fire Station #1 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.

BID #F-12-19
SPECIFICATIONS
CITY OF HIGHLAND

Interested parties/bidders shall submit bids conforming to the specifications, instructions, design and constructions documents as provided by David A. Loyet and Associates Architects for the City of Highland, Illinois Combined Public Safety Building. Bid Packets and Construction Documents will be available beginning Tuesday, August 20, 2019 from David A. Loyet and Associates Architects, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, email: mloyet@loyet-architects.com, Attn: Matt Loyet.

Bidder must complete and return their form of proposal and the Bid Price Sheet attached to the bid documents provided by David A. Loyet and Associates Architects and the Certificates of Non-Delinquency of Tax, Compliance with regard to bid rigging/rotating and the Substance Abuse Prevention on Public Works Act.

The remodeling of Fire Station #1 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.

Bids for the remodeling of Fire Station #1 will be opened at 2:00p.m., Friday, Friday, September 27th, 2019 at City Hall, 1115 Broadway, Highland, Illinois 62249.

Additional information, if required, may be obtained from David A. Loyet and Associates, 902 Walnut Street, Highland, IL 62249 OTX: 618-654-2328, or mloyet@loyet-architects.com, Attn: Matthew Loyet.

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 phases.
4. Work under other contracts.
5. 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: Broadway Fire Station Renovation for the City of Highland.

1. Project Location: Highland, Illinois.

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

1. Owner's Representative: Mark Latham, 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 consists of a 1530 Square foot addition to and the renovation of the the existing Highland Fire Department and EMS department building at 1122 Broadway, Highland Il.

1.4. TYPE OF CONTRACT:

A. Project will be constructed under a single combined 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. **Unknown Conditions:**
 - 1. The contractor shall provide an allowance of \$10,000.00 to correct deficiencies in this project due to unknown conditions.

- C. **Medallions:**
 - 1. The contractor shall provide an allowance of \$7,000 for the purchase of exterior medallions. The medallion will be approximately 5' 6" in diameter and will be carved-relief limestone approximately 3 1/2" thick. The general contractor will set the medallion in the exterior brick work.

- D. **Low Voltage Camera and Door Alarms:**
 - 1. The electrical contractor shall provide and allowance of \$38,000 for the purchase and installation of a complete camera surveillance system and door access control center. This is above and beyond the items shown on the bid document . This work will be completed by a subcontractor selected by the owner.

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 installation of the translucent canopy shown on the North end of Corridor 101 and Vestibule 101A.

- B. Alternate No. 2: This alternate consists of the installation of a rubber floor system in Weight Room 108. This system consists of 3/8" thick 23" x 23" interlocking rubber tile as manufactured by E-Core and as distributed by Stalker Flooring. Color to be selected by Architect at a later date.

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. Compile specified warranties and bonds.
2. Co-execute specified submittals.
3. Review submittals. Verify compliance with contract documents.
4. Submit to the Architect for review and transmittal to Owner.

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. 02361 - Termite Control.
 2. 07530 - Flexible Sheet Roofing System.
 3. 07610 - Flashing & Sheet Metal.
 4. 08211 - Flush Wood Doors.
 5. 08410 - Aluminum Entrances & Storefronts.
 6. 08630 - Metal Framed Skylights.
 7. 08800 - Glass and Glazing.
 8. 09120 - Metal Suspension Systems
 9. 09550 - Wood Gymnasium Flooring.
 10. 09690 - Acoustical Wall Panels
 11. 10101 - Markerboards and Tackboards.
 12. 10500 - Metal Lockers.
 13. 10830 - Mirror Units.
 14. 11480 - Volleyball System.
 15. 12760 - Telescoping Bleachers.
 16. Div. 15 - HVAC.
 17. Div. 16 - Electrical Work.

END OF SECTION 01740.

DIVISION 2 - SITEWORK
Section 02070 - Selective Demolition

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 selective demolition work is indicated on drawings.
- B. Types of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:
1. Portions of building structure indicated on drawings and as required to accommodate new construction.
 2. Removal of existing site utilities required by new construction.
 3. Removal of concrete slabs.
 4. Removal of exterior light standards and fixtures.
 5. Concrete slabs, concrete curbs, gutters, ect.
 6. Concrete driveway and sidewalks
 7. Wood exterior trim
 8. Interior partitions
 9. Exterior ramp
 10. Exterior doors/frames
 11. Ceilings where noted
 12. Metal pan stair
 13. Plumbing

14. Gas line interceptor
15. HVAC vents and grills
16. Electrical light fixtures, switches, and outlets
17. Other electrical components as required by drawings

1.3. SUBMITTALS:

A. Schedule:

1. Submit schedule indicating proposed methods and sequence of operations for selective demolition work to include coordination for review prior to commencement of work. Include coordination for shut-off, capping, and continuation of utility services as required, together with details for dust and noise control protection.
2. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
3. Coordinate with Owner's continuing occupation of all of existing building, with Owner's partial occupancy of completed new addition.

1.4. JOB CONDITIONS:

A. Occupancy: Owner will be continuously occupying areas of the building areas of selective demolition. Conduct selective demolition work in a manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will severely impact Owner's normal operations.

B. Condition of Structures:

1. Owner assumes no responsibility for actual conditions of items or structures to be demolished.
2. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable.

- C. Partial Demolition and Removal:
1. Items indicated to be removed but of salvageable value to the Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
 2. Storage or sale of removed items on site will not be permitted.
- D. Protections:
1. Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.
 2. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to and from occupied portions of the building.
 3. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or work to remain.
 4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 5. Protect floors with suitable coverings when necessary.
 6. Construct temporary insulated solid dust-proof partitions where required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dust-proof doors and security locks if required.
 7. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces, and installation of new construction to insure that no water leakage or damage occurs to structure or interior areas of existing building.
 8. Remove protections at completion of work.
- E. Damages: Promptly repair damages caused to facilities by demolition work at no cost to Owner.

F. Traffic:

1. Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
2. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

G. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.

2. PRODUCTS (Not Applicable):

3. EXECUTION:

3.1. INSPECTION:

A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions to structure surfaces, equipment or to surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting work.

3.2. PREPARATION:

A. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.

B. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

C. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms in areas from which such items have not been removed.

D. Erect and maintain dust-proof partitions and closures as required to

prevent spread of dust or fumes to occupied portions of the building.

1. Where selective demolitions occurs immediately adjacent to occupied portions of the building, construct dust-proof partitions of minimum 4" studs, 5/8" drywall (joints taped) on occupied side, 1/2" fire-retardant plywood on demolition side, and fill partition cavity with sound deadening insulation.
 2. Provide weatherproof closures for exterior openings resulting from demolition work.
- E. Locate, identify, stub off and disconnect utility services that are not indicated to remain.
1. Provide by-pass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shutdown of service is necessary during change-over.

3.3. DEMOLITION:

- A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on the drawings in accordance with demolition schedule and governing regulations.
1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-drive impact tools.
 2. For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.
 3. Completely fill below-grade areas and voids resulting from demolition work. Provide fill consisting of approved earth, gravel or sand, free of trash and debris, stones over 6" diameter, or roots or other organic matter.
- B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Owner's Representative, rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.4. DISPOSAL OF DEMOLISHED MATERIALS:

- A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.
- B. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.
- C. Burning of removed materials is not permitted on project site.

3.5. CLEAN-UP AND REPAIR:

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commence of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02070.

DIVISION 2 – SITE CONSTRUCTION
Section 02300 - Earthwork

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 earthwork is indicated on drawings and includes, but not limited to:

1. Site grading.
2. Topsoil stripping.
3. Preparation of subgrade for building slabs, walks, and pavements is included as part of this work.
4. Subbase fill course for support of building slabs is included as part of this work.
5. Backfilling of trenches within building lines is included as part of this work.
6. Compacting fill to bring to required subgrade levels and to compact fill in areas of building demolition as required.
7. Temporary erosion and sedimentation control.

B. Excavation of Mechanical/Electrical Work: Refer to Divisions 15 and 16 sections of excavation and backfill required in conjunction with underground mechanical and electrical utilities, and buried mechanical and electrical appurtenances; not work of this section. Consult with the City of Highland to determine type of fill required under driveways and exterior paving.

C. Definition: "Excavation" consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.

1.3. QUALITY ASSURANCE:

- A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
- B. Testing and Inspection Service:
 - 1. The City of Highland will employ a testing laboratory to perform soil testing and inspection service for quality control testing during earthwork operations. See paragraph 3.7.

1.4. SUBMITTALS:

- A. Test Reports - Excavating: The testing requirements will include the following:
 - 1. Test reports on borrow material.
 - 2. Field density test reports.
 - 3. One optimum moisture-maximum density curve for each type of soil encountered.

1.5. JOB CONDITIONS:

- A. Existing Utilities:
 - 1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
 - 2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- B. Protection of Persons and Property:
 - 1. Barricade open excavations occurring as part of this work and post with warning lights.
 - 2. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout

and other hazards created by earthwork operations.

2. PRODUCTS:

2.1. DEFINITIONS:

- A. Subbase Material: A 3/4" clean, hard, crushed, white limestone rock base shall be installed and compacted, thickness as indicated on drawings, under all slabs on grade.
- B. Backfill and Fill Materials: Satisfactory soil materials free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter. The contractor shall provide the testing laboratory with samples of fill material for testing prior to installation. Do not use sand as backfill material.

3. EXECUTION:

3.1. EXCAVATION:

- A. Excavation is unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.
- B. Prior to placing of fill, remove all topsoil from entire area to be occupied by the building and drives. Stockpile for use in finish grading. The areas beneath the building should be stripped of the asphalt and the upper 4 in. to 8 in. of grass, topsoil, and any other surface fill or vegetative materials. Any existing fill material containing man-made materials such as bricks, rubble or miscellaneous fill should be removed and replaced with compacted fill. The stripped surface should then be proof rolled by several passes of a static type compactor. Localized soft zones identified in this manner should be undercut and recompacted or replaced with a well compacted material. Place fill loosely in horizontal layers; maximum thickness for each lift of compacted fill shall not exceed 6". Successive lifts shall not be placed until the preceding lift has been accepted by testing laboratory.
- C. Any fill placed beneath floor slabs should be placed in thin lifts and compacted to 98% of the maximum dry density as obtained by the Standard Proctor compaction test (ASTM D-698). The fine grained site materials may be used for this purpose and would be best compacted by sheepsfoot rollers. Any granular material which might be imported for use as fill under slab areas would be most effectively compacted by

vibratory methods. It is further recommended that all fill be placed in floor slab areas before footing excavations are made.

D. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect/Engineer. Unauthorized excavation, as well as remedial work directed by Architect/Engineer, shall be at Contractor's expense.

1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to Architect/Engineer.
2. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the Architect.

E. Additional Excavation:

1. When excavation has reached required sub-grade elevations, notify Architect who will make an inspection of conditions.
2. If unsuitable bearing materials are encountered at required sub-grade elevations, carry excavations deeper and replace excavated material as directed by Architect.
3. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.

F. Dewatering:

1. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
2. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, wellpoints, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
3. Establish and maintain temporary drainage ditches and other

diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

G. Material Storage:

1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
2. Locate and retain soil materials away from edge of excavations.
3. Dispose of excess soil material and waste materials as herein specified.

H. Excavation for Structures:

1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
2. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
3. Due to the silty nature of the subsurface soils, the bases of footing excavations may be easily disturbed by the combined action of ground water infiltration, runoff water, and construction activity. If, during wetter construction periods, foundation excavations are to be left open for an extended period, or if the bases of foundation excavations cannot be trimmed effectively due to adverse soil-moisture-disturbance conditions, then a 2 to 3 in. lean concrete "mud" or "sealer" slab should be placed immediately after the excavations are completed and trimmed to prevent disturbance of foundation support material.

I. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations and grades as shown or as required.

J. Excavation for Trenches:

1. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9" clearance on both sides of pipe or conduit.
 2. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flowlines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
 3. For pipes or conduit 5" or less in nominal size and for flat-bottomed multiple-duct conduit units, do not excavate beyond indicated depths. Hand excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
 4. For pipes or conduit 6" or larger in nominal size, excavate to subbase depth indicated, or, if not otherwise indicated, to 6" below bottom of work to be supported.
 5. Grade bottoms of trenches as indicated, notching underpipe bells to provide solid bearing for entire body of pipe.
 6. Backfill trenches with concrete where trench excavations pass within 18" of column or wall footings and which are carried below bottom of such footings, or which pass underwall footings. Place concrete to level of bottom of adjacent footing.
 7. Concrete is specified in Division 3.
 8. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Architect/Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.
 9. For piping or conduit less than 2'-6" below surface of roadways, provide 4" thick concrete base slab support. After installation and testing of piping or conduit, provide minimum 4" thick encasement (sides and top) of concrete prior to backfilling or placement of roadway subbase.
- K. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 deg.F (1 deg. C).

3.2. COMPACTION:

- A. General: Control soil compaction during construction providing

minimum percentage of density specified for each area classification indicated below.

B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density.

1. Building Slabs: Compact top 6" of subgrade and each layer of backfill or fill material in lift thicknesses of 6" to 8" to a density of not less than 95% of that obtained in the Standard Proctor Test.
2. Walks, Driveways, Parking Lots: Compact top 6" of subgrade and each layer of fill in lift thicknesses of 6" to 8" to a density of not less than 95% of that obtained in the Standard Proctor Test.
3. Lawn or Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material to not less than 95% of that obtained in the Standard Proctor Test.

C. Moisture Control:

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 - a. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.3. BACKFILL AND FILL:

A. General:

1. Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
 - a. In excavations, use satisfactory excavated or borrow material.
 - b. Under walks and pavements, use subbase material, or

satisfactory excavated or borrow material, or combination of both.

c. Under building slab, use subbase material.

B. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
2. Inspection, testing, approval, and recording locations of underground utilities.
3. Removal of concrete formwork.
4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
5. Removal of trash and debris.

C. Ground Surface Preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
2. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

D. Placement and Compaction:

1. Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand-operated tampers.

2. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
3. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

3.4. GRADING:

- A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Grading Outside Building Lines:
 1. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
 2. Finish surfaces free from irregular surface changes, and as follows:
 - a. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below required subgrade elevations. Place topsoil in areas where seeding will be performed. Place to a minimum depth of 6" up to finish grade elevations. All disturbed areas are to be seeded under landscape work. Use topsoil in a relatively dry state. Place during dry weather. Fine grade topsoil, eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles, and contours of subgrades. Remove stone, roots, grass, weeds, debris and other foreign materials while spreading. Lightly compact placed topsoil.

- b. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation.
 - c. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation.
- C. Grading Surface of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/2" when tested with a 10' straightedge.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.5. PAVEMENT SUBBASE COURSE:

- A. General:
 - 1. See other Division 2 - sections for paving specifications.

3.6. BUILDING SLAB SUBBASE COURSE:

- A. General: Subbase course consists of placement of 3/4" clean crushed stone fill material, in layers of indicated thickness, over subgrade surface to support concrete building slabs.
- B. Placing: Place stone fill material on prepared subgrade in layer of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.

3.7. FIELD QUALITY CONTROL:

- A. Quality Control Testing During Construction:
 - 1. All compacted fill shall be coordinated with and performed under continuous supervision or an approved testing laboratory. Laboratory approval of materials, methods, and tests will be required by the Architect. Proctor tests shall be completed and accepted on each lift before succeeding lift is started. Provide a minimum of one (1) test per lift for each 5,000 sq.ft. at locations approved by the Architect. At interior foundation wall backfill, take at least two (2) field density tests at locations and elevations

as directed. Laboratory reports showing progress, conformance of work to specified requirements, and approval or rejection recommendations will be supplied to the Contractor by the testing laboratory.

2. All costs of laboratory work and tests shall be paid by the City of Highland. Fill and backfill not meeting the specified requirements will be scarified and recompacted at the contractor's expense until the desired results are obtained.

3.8. MAINTENANCE:

- A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

3.9. DISPOSAL OF EXCESS AND WASTE MATERIALS:

- A. Remove excess excavated material, trash, debris, and waste materials and dispose of it from owner's property and deliver to an approved landfill.

3.10. TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to a sediment and erosion control plan, specific to the site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION 02300.

DIVISION 2 – SITE CONSTRUCTION
Section 02361 - Termite Control

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. This Section includes the following for termite control.
 - 1. Soil treatment.

1.3. DEFINITIONS:

- A. EPA: Environmental Protection Agency.
- B. PCO: Pest control operator.

1.4. SUBMITTALS:

- A. Product Data: Treatments and application instructions, including EPA-Registered Label.
- B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.
- C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following as applicable:
 - 1. Date and time of application.
 - 2. Moisture content of soil before application.

3. Brand name and manufacturer of termiticide.
 4. Quantity of undiluted termiticide used.
 5. Dilutions, methods, volumes, and rates of application used.
 6. Areas of application.
 7. Water source for application.
- E. Warranties: Special warranties specified in this Section.

1.5. QUALITY ASSURANCE:

- A. Applicator Qualifications: A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of successful in-service performance.
- B. Regulatory Requirements: Formulate and apply termiticides, and label with a Federal registration number, to comply with EPA regulations and authorities having jurisdiction.

1.6. PROJECT CONDITIONS:

- A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.
- B. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings and ground-supported slabs, before construction.

1.7. WARRANTY:

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Written warranty, signed by applicator and

Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, Contractor will re-treat soil and repair or replace damage caused by termite infestation.

C. Warranty Period: 5 years from date of Substantial Completion.

1.8. MAINTENANCE SERVICE:

A. Continuing Service: Provide a proposal for continuing service, including monitoring, and retreatment for occurrences of termite activity, from applicator to Owner, in the form of a standard yearly (or other period) continuing service agreement, starting on the date of Substantial Completion. State services, obligations, conditions, and terms for agreement period and for future renewal options.

2. PRODUCTS:

2.1. SOIL TREATMENT:

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in a soluble or emulsible, concentrated formulation that dilutes with water or foaming agent, and formulated to prevent termite infestation. Use only soil treatment solutions that are not harmful to plants. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to the product's EPA-Registered Label.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. DowElanco.
2. FMC Corp.; Pest Control Specialties.
3. Zeneca Professional Products.

3. EXECUTION:

3.1. EXAMINATION:

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of the soil,

interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control. Proceed with application only after unsatisfactory conditions have been corrected.

3.2. PREPARATION:

- A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.
- B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.
- C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3. APPLICATION, GENERAL:

- A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4. APPLYING SOIL TREATMENT:

- A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.
 - 1. Slabs-on-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

2. Foundations: Adjacent soil including soil along entire inside perimeter inside of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers and piers; and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
 3. Masonry: Treat voids.
 4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.
- B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.
 - C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.
 - D. Post warning signs in areas of application.
 - E. Reapply soil treatment solution to areas disturbed by subsequent excavation, landscaping, or other construction activities following application.

END OF SECTION 02361.

DIVISION 2 – SITE CONSTRUCTION
Section 02821 Concrete Sidewalks and Curbs and Gutters

GENERAL

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 182 (2005) Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats

ASTM INTERNATIONAL (ASTM)

ASTM A 185/A 185M (2006; E 2006) Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete

ASTM A 615/A 615M (2006a) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM C 143/C 143M (2005a) Standard Test Method for Slump of Hydraulic-Cement Concrete

ASTM C 171 (2003) Standard Specification for Sheet Materials for Curing Concrete

ASTM C 172 (2004) Standard Practice for Sampling Freshly Mixed Concrete

ASTM C 173/C 173M (2001e1) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

ASTM C 231 (2004) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C 309 (2006) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete

ASTM C 31/C 31M (2006) Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C 920 (2005) Standard Specification for Elastomeric Joint Sealants

ASTM D 1751 (2004) Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)

ASTM D 1752 (2004a) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion

ASTM D 5893 (2004) Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements

ILLINOIS DEPARTMENT OF TRANSPORTATION

2007 Illinois Standard Specifications for Road and Bridge Construction and all supplements.

SUBMITTALS

The following shall be submitted in accordance with Section 01330 Submittal Procedures:

SD-03 Product Data

Concrete

Copies of certified delivery tickets for all concrete used in the construction.

SD-06 Test Reports

Field Quality Control

Copies of all test reports within 24 hours of completion of the test.

WEATHER LIMITATIONS

Placing During Cold Weather

Concrete placement shall not take place when the air temperature reaches 40 degrees F and is falling, or is already below that point. Placement may begin when the air temperature reaches 35 degrees F and is rising, or is already above 40 degrees F. Provisions shall be made to protect the concrete from freezing during the specified curing period. If necessary to place concrete when the temperature of the air, aggregates, or water is below 35 degrees F, placement and protection shall be approved in writing. Approval will be contingent upon full conformance with the following provisions. The underlying material shall be prepared and protected so that it is entirely free of frost when the concrete is deposited. Mixing water and aggregates shall be heated as necessary to result in the temperature of the in-place concrete being between 50 and 85 degrees F. Methods and equipment for heating shall be approved. The aggregates shall be free of ice, snow, and frozen lumps before entering the mixer. Covering and other means shall be provided for maintaining the concrete at a temperature of at least 50 degrees F for not less than 72 hours after placing, and at a temperature above freezing for the remainder of the curing period.

Placing During Warm Weather

The temperature of the concrete as placed shall not exceed 85 degrees F except where an approved retarder is used. The mixing water and/or aggregates shall be cooled, if necessary, to maintain a satisfactory placing temperature. The placing temperature shall not exceed 95 degrees F at any time.

PLANT, EQUIPMENT, MACHINES, AND TOOLS

General Requirements

Plant, equipment, machines, and tools used in the work shall be subject to approval and shall be maintained in a satisfactory working condition at all times. The equipment shall have the capability of producing the required product, meeting grade controls, thickness control and smoothness requirements as specified. Use of the equipment shall be discontinued if it produces unsatisfactory results. The Engineer shall have access at all times to the plant and equipment to ensure proper operation and compliance with specifications.

Slip Form Equipment

Slip form paver or curb forming machine, will be approved based on trial use on the job and shall be self-propelled, automatically controlled, crawler mounted, and capable of spreading, consolidating, and shaping the plastic concrete to the desired cross section in 1 pass.

PRODUCTS

CONCRETE

Concrete shall conform to Section 1020 Portland Cement Concrete of the Illinois Standard Specifications for Road and Bridge Construction, dated January 1, 2007, except as otherwise specified. Concrete shall have a minimum compressive strength (flexural strength) of 3500 psi at 28 days. Maximum size of aggregate shall be 1½ inches.

Air Content

Mixtures shall have air content by volume of concrete of 5 to 8 percent, based on measurements made immediately after discharge from the mixer.

Slump

The concrete slump shall be 2-4 inches where determined in accordance with ASTM C 143/C 143M. Slump for slip forming shall be ½ to 1½ inches.

Reinforcement Steel

Reinforcement bars shall conform to ASTM A 615/A 615M. Wire mesh reinforcement shall conform to ASTM A 185/A 185M.

CONCRETE CURING MATERIALS

Impervious Sheet Materials

Impervious sheet materials shall conform to ASTM C 171, type optional, except that polyethylene film, if used, shall be white opaque.

Burlap

Burlap shall conform to AASHTO M 182.

White Pigmented Membrane-Forming Curing Compound

White pigmented membrane-forming curing compound shall conform to ASTM C 309, Type 2.

CONCRETE PROTECTION MATERIALS

Concrete protection materials shall be a linseed oil mixture of equal parts, by volume, of linseed oil and either mineral spirits, naphtha, or turpentine. At the option of the Contractor, commercially prepared linseed oil mixtures, formulated specifically for application to concrete to provide protection against the action of deicing chemicals may be used, except that emulsified mixtures are not acceptable.

JOINT FILLER STRIPS

Contraction Joint Filler for Curb and Gutter

Contraction joint filler for curb and gutter shall consist of hard-pressed fiberboard.

Expansion Joint Filler, Premolded

Expansion joint filler, premolded, shall conform to ASTM D 1751 or ASTM D 1752, 1/2 inch thick, unless otherwise indicated.

JOINT SEALANTS

Joint sealant, cold-applied shall conform to ASTM C 920 or ASTM D 5893.

FORM WORK

Form work shall be designed and constructed to ensure that the finished concrete will conform accurately to the indicated dimensions, lines, and elevations, and within the tolerances specified. Forms shall be of wood or steel, straight, of sufficient strength to resist springing during depositing and consolidating concrete. Wood forms shall be surfaced plank, 2 inches nominal thickness, straight and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a nominal length of 10 feet. Radius

bends may be formed with 3/4 inch boards, laminated to the required thickness. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Ends of steel forms shall be interlocking and self-aligning. Steel forms shall include flexible forms for radius forming, corner forms, form spreaders, and fillers. Steel forms shall have a nominal length of 10 feet with a minimum of 3 welded stake pockets per form. Stake pins shall be solid steel rods with chamfered heads and pointed tips designed for use with steel forms.

Sidewalk Forms

Sidewalk forms shall be of a height equal to the full depth of the finished sidewalk.

Curb and Gutter Forms

Curb and gutter outside forms shall have a height equal to the full depth of the curb or gutter. The inside form of curb shall have batter as indicated and shall be securely fastened to and supported by the outside form. Rigid forms shall be provided for curb returns, except that benders or thin plank forms may be used for curb or curb returns with a radius of 10 feet or more, where grade changes occur in the return, or where the central angle is such that a rigid form with a central angle of 90 degrees cannot be used. Back forms for curb returns may be made of 1½ inch benders, for the full height of the curb, cleated together. In lieu of inside forms for curbs, a curb "mule" may be used for forming and finishing this surface, provided the results are approved.

EXECUTION

SUBGRADE PREPARATION

The subgrade shall be constructed to the specified grade and cross section prior to concrete placement. Subgrade shall be placed and compacted in conformance with Section 301 Subgrade of the Illinois Standard Specifications for Road and Bridge Construction latest edition.

Sidewalk Subgrade

Sidewalk subgrade shall conform to the requirements of Section 424 of the Illinois Standard Specifications for Road and Bridge Construction dated January 1, 2007.

The subgrade shall be tested for grade and cross section with a template extending the full width of the sidewalk and supported between side forms.

Curb and Gutter Subgrade

Curb and gutter subgrade shall conform to the requirements of Section 606 of the Illinois Standard Specifications for Road and Bridge Construction dated January 1, 2007

The subgrade shall be tested for grade and cross section by means of a template extending the full width of the curb and gutter. The subgrade shall be of materials equal in bearing quality to the subgrade under the adjacent pavement.

Maintenance of Subgrade

The subgrade shall be maintained in a smooth, compacted condition in conformity with the required section and established grade until the concrete is placed. The subgrade shall be in a moist condition when concrete is placed. The subgrade shall be prepared and protected to produce a subgrade free from frost when the concrete is deposited.

FORM SETTING

Forms shall be set to the indicated alignment, grade and dimensions. Forms shall be held rigidly in place by a minimum of 3 stakes per form placed at intervals not to exceed 4 feet. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Clamps, spreaders, and braces shall be used where required to ensure rigidity in the forms. Forms shall be removed without injuring the concrete. Bars or heavy tools shall not be used against the concrete in removing the forms. Any concrete found defective after form removal shall be promptly and satisfactorily repaired. Forms shall be cleaned and coated with form oil each time before concrete is placed. Wood forms may, instead, be thoroughly wetted with water before concrete is placed, except that with probable freezing temperatures, oiling is mandatory.

Sidewalks

Forms for sidewalks shall be set with the upper edge true to line and grade with an allowable tolerance of 1/8 inch in any 10 foot long section. After forms are set, grade and alignment shall be checked with a 10 foot straightedge. Forms shall have a transverse slope of 1/4 inch per foot with the low side adjacent to the roadway. Side forms shall not be removed for 12 hours after finishing has been completed.

Curbs and Gutters

The forms of the front of the curb shall be removed not less than 2 hours nor more than 6 hours after the concrete has been placed. Forms back of curb shall remain in place until the face and top of the curb have been finished, as specified for concrete finishing. Gutter forms shall not be removed while the concrete is sufficiently plastic to slump in any direction.

SIDEWALK CONCRETE PLACEMENT AND FINISHING

Formed Sidewalks

Concrete shall be placed in the forms in one layer. When consolidated and finished, the sidewalks shall be of the thickness indicated. After concrete has been placed in the forms, a strike-off guided by side forms shall be used to bring the surface to proper section to be compacted. The concrete shall be consolidated with an approved vibrator, and the surface shall be finished to grade with a strike off.

Concrete Finishing

After straight-edging, when most of the water sheen has disappeared, and just before the concrete hardens, the surface shall be finished with a wood float or darby to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. A scored surface shall be produced by brooming with a fiber-bristle brush in a direction transverse to that of the traffic, followed by edging.

Edge and Joint Finishing

All slab edges, including those at formed joints, shall be finished with an edger having a radius of 1/8 inch. Transverse joint shall be edged before brooming, and the brooming shall eliminate the flat surface left by the surface face of the edger. Corners and edges which have crumbled and areas which lack sufficient mortar for proper finishing shall be cleaned and filled solidly with a properly proportioned mortar mixture and then finished.

Surface and Thickness Tolerances

Finished surfaces shall not vary more than 5/16 inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to 1/4 inch.

CURB AND GUTTER CONCRETE PLACEMENT AND FINISHING

Formed Curb and Gutter

Concrete shall be placed to the section required in a single lift. Consolidation shall be achieved by using approved mechanical vibrators. Curve shaped gutters shall be finished with a standard curb "mule".

Curb and Gutter Finishing

Approved slipformed curb and gutter machines may be used in lieu of hand placement.

Concrete Finishing

Exposed surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform in texture. Floated surfaces shall then be brushed with a fine-hair brush with longitudinal strokes. The edges of the gutter and top of the curb shall be rounded with an edging tool to a radius of $\frac{1}{2}$ inch. Immediately after removing the front curb form, the face of the curb shall be rubbed with a wood or concrete rubbing block and water until blemishes, form marks, and tool marks have been removed. The front curb surface, while still wet, shall be brushed in the same manner as the gutter and curb top. The top surface of gutter and entrance shall be finished to grade with a wood float.

Joint Finishing

Curb edges at formed joints shall be finished as indicated.

Surface and Thickness Tolerances

Finished surfaces shall not vary more than $\frac{1}{4}$ inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to $\frac{1}{4}$ inch.

SIDEWALK JOINTS

Sidewalk joints shall be constructed to divide the surface into rectangular areas. Transverse contraction joints shall be spaced at a distance equal to the sidewalk width or 5 feet on centers, whichever is less, and shall be continuous across the slab. Longitudinal contraction joints shall be constructed along the centerline of all sidewalks 10 feet or more in width. Transverse expansion joints shall be installed at sidewalk returns and opposite expansion joints in adjoining curbs. Where the sidewalk is not in contact with the curb, transverse expansion joints shall be installed as indicated. Expansion joints shall be formed about structures and features which project through or into the sidewalk pavement, using joint filler of the type, thickness, and width indicated. Expansion joints are not required between sidewalks and curb that abut the sidewalk longitudinally.

Sidewalk Contraction Joints

The contraction joints shall be formed in the fresh concrete by cutting a groove in the top portion of the slab to a depth of at least one-fourth of the sidewalk slab thickness, using a jointer to cut the groove, or by sawing a groove in the hardened concrete with a power-driven saw, unless otherwise approved. Sawed joints shall be constructed by sawing a groove in the concrete with a $\frac{1}{8}$ inch blade to the depth indicated. An ample supply of saw blades shall be available on the job before concrete placement is started, and at least one standby sawing unit in good working order shall be available at the jobsite at all times during the sawing operations.

Sidewalk Expansion Joints

Expansion joints shall be formed with ½ inch joint filler strips. Joint filler in expansion joints surrounding structures and features within the sidewalk may consist of preformed filler material conforming to ASTM D 1752 or building paper. Joint filler shall be held in place with steel pins or other devices to prevent warping of the filler during floating and finishing. Immediately after finishing operations are completed, joint edges shall be rounded with an edging tool having a radius of 1/8 inch, and concrete over the joint filler shall be removed. At the end of the curing period, expansion joints shall be cleaned and filled with cold-applied joint sealant. Joint sealant shall be gray or stone in color. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and atmospheric and concrete temperatures shall be above 50 degrees F at the time of application of joint sealing material. Excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.

Reinforcement Steel Placement

Reinforcement steel shall be accurately and securely fastened in place with suitable supports and ties before the concrete is placed.

CURB AND GUTTER JOINTS

Curb and gutter joints shall be constructed at right angles to the line of curb and gutter.

Contraction Joints

Contraction joints shall be constructed directly opposite contraction joints in abutting portland cement concrete pavements and spaced so that monolithic sections between curb returns will not be less than 5 feet nor greater than 15 feet in length.

Contraction joints (except for slip forming) shall be constructed by means of 1/8 inch thick separators and of a section conforming to the cross section of the curb and gutter. Separators shall be removed as soon as practicable after concrete has set sufficiently to preserve the width and shape of the joint and prior to finishing.

When slip forming is used, the contraction joints shall be cut in the top portion of the gutter/curb hardened concrete in a continuous cut across the curb and gutter, using a power-driven saw. The depth of cut shall be at least one-fourth of the gutter/curb depth and 1/8 inch in width.

Expansion Joints

Expansion joints shall be formed by means of preformed expansion joint filler material cut and shaped to the cross section of curb and gutter. Expansion joints shall be provided in curb and gutter directly opposite expansion joints of abutting portland cement concrete pavement, and shall be of the same type and thickness as joints in the pavement. Where curb and gutter do not abut portland cement concrete pavement, expansion joints at least ½ inch in width shall be provided at intervals not less than 30 feet nor greater than 120 feet. Expansion joints shall be provided in nonreinforced concrete gutter at locations indicated. Expansion joints shall be sealed immediately following curing of the concrete or as soon thereafter as weather conditions permit. Expansion joints and the top 1 inch depth of curb and gutter contraction-joints shall be sealed with joint sealant. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and atmospheric and concrete temperatures shall be above 50 degrees F at the time of application of joint sealing material. Excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.

CURING AND PROTECTION

General Requirements

Concrete shall be protected against loss of moisture and rapid temperature changes for at least 7 days from the beginning of the curing operation. Unhardened concrete shall be protected from rain and flowing water. All equipment needed for adequate curing and protection of the concrete shall be on hand and ready for use before actual concrete placement begins. Protection shall be provided as necessary to prevent cracking of the pavement due to temperature changes during the curing period.

Mat Method

The entire exposed surface shall be covered with 2 or more layers of burlap. Mats shall overlap each other at least 6 inches. The mat shall be thoroughly wetted with water prior to placing on concrete surface and shall be kept continuously in a saturated condition and in intimate contact with concrete for not less than 7 days.

Impervious Sheeting Method

The entire exposed surface shall be wetted with a fine spray of water and then covered with impervious sheeting material. Sheets shall be laid directly on the concrete surface with the light-colored side up and overlapped 12 inches when a continuous sheet is not used. The curing medium shall not be less than 18 inches wider than the

concrete surface to be cured, and shall be securely weighted down by heavy wood planks, or a bank of moist earth placed along edges and laps in the sheets. Sheets shall be satisfactorily repaired or replaced if torn or otherwise damaged during curing. The curing medium shall remain on the concrete surface to be cured for not less than 7 days.

Membrane Curing Method

A uniform coating of white-pigmented membrane-curing compound shall be applied to the entire exposed surface of the concrete as soon after finishing as the free water has disappeared from the finished surface. Formed surfaces shall be coated immediately after the forms are removed and in no case longer than 1 hour after the removal of forms. Concrete shall not be allowed to dry before the application of the membrane. If any drying has occurred, the surface of the concrete shall be moistened with a fine spray of water and the curing compound applied as soon as the free water disappears. Curing compound shall be applied in two coats by hand-operated pressure sprayers at a coverage of approximately 200 square feet/gallon for the total of both coats. The second coat shall be applied in a direction approximately at right angles to the direction of application of the first coat. The compound shall form a uniform, continuous, coherent film that will not check, crack, or peel and shall be free from pinholes or other imperfections. If pinholes, abrasion, or other discontinuities exist, an additional coat shall be applied to the affected areas within 30 minutes. Concrete surfaces that are subjected to heavy rainfall within 3 hours after the curing compound has been applied shall be resprayed by the method and at the coverage specified above. Areas where the curing compound is damaged by subsequent construction operations within the curing period shall be resprayed. Necessary precautions shall be taken to insure that the concrete is properly cured at sawed joints, and that no curing compound enters the joints. The top of the joint opening and the joint groove at exposed edges shall be tightly sealed before the concrete in the region of the joint is resprayed with curing compound. The method used for sealing the joint groove shall prevent loss of moisture from the joint during the entire specified curing period. Approved standby facilities for curing concrete pavement shall be provided at a location accessible to the jobsite for use in the event of mechanical failure of the spraying equipment or other conditions that might prevent correct application of the membrane-curing compound at the proper time. Concrete surfaces to which membrane-curing compounds have been applied shall be adequately protected during the entire curing period from pedestrian and vehicular traffic, except as required for joint-sawing

operations and surface tests, and from any other possible damage to the continuity of the membrane.

Backfilling

After curing, debris shall be removed and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

Protection

Completed concrete shall be protected from damage until accepted. The Contractor shall repair damaged concrete and clean concrete discolored during construction. Concrete that is damaged shall be removed and reconstructed for the entire length between regularly scheduled joints. Refinishing the damaged portion will not be acceptable. Removed damaged portions shall be disposed of as directed.

Protective Coating

Protective coating, of linseed oil mixture, shall be applied to the exposed-to-view concrete surface after the curing period, if concrete will be exposed to de-icing chemicals within 6 weeks after placement. Concrete to receive a protective coating shall be moist cured.

Application

Curing and backfilling operation shall be completed prior to applying two coats of protective coating. Concrete shall be surface dry and clean before each application. Coverage shall be by spray application at not more than 50 square yards/gallon for first application and not more than 70 square yards/gallon for second application, except that the number of applications and coverage for each application for commercially prepared mixture shall be in accordance with the manufacturer's instructions. Coated surfaces shall be protected from vehicular and pedestrian traffic until dry.

Precautions

Protective coating shall not be heated by direct application of flame or electrical heaters and shall be protected from exposure to open flame, sparks, and fire adjacent to open containers or applicators. Material shall not be applied at ambient or material temperatures lower than 50 degrees F.

FIELD QUALITY CONTROL

General Requirements

The Contractor shall perform the inspection and tests described and meet the specified requirements for inspection details and frequency of testing. Based upon the results of these inspections and tests, the

Contractor shall take the action and submit reports as required below, and any additional tests to insure that the requirements of these specifications are met.

Concrete Testing

Strength Testing

The Contractor shall provide molded concrete specimens for strength tests. Samples of concrete placed each day shall be taken not less than once a day nor less than once for every 250 cubic yards of concrete. The samples for strength tests shall be taken in accordance with ASTM C 172. Cylinders for acceptance shall be molded in conformance with ASTM C 31/C 31M by an approved testing laboratory. Each strength test result shall be the average of 2 test cylinders from the same concrete sample tested at 28 days, unless otherwise specified or approved. Concrete specified on the basis of compressive strength will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed the specified strength, and no individual strength test result falls below the specified strength by more than 500 psi.

Air Content

Air content shall be determined in accordance with ASTM C 173/C 173M or ASTM C 231. ASTM C 231 shall be used with concretes and mortars made with relatively dense natural aggregates. Two tests for air content shall be made on randomly selected batches of each class of concrete placed during each shift. Additional tests shall be made when excessive variation in concrete workability is reported by the placing foreman or the owner's inspector. If results are out of tolerance, the placing foreman shall be notified and he shall take appropriate action to have the air content corrected at the plant. Additional tests for air content will be performed on each truckload of material until such time as the air content is within the tolerance specified.

Slump Test

Two slump tests shall be made on randomly selected batches of each class of concrete for every 250 cubic yards, or fraction thereof, of concrete placed during each shift. Additional tests shall be performed when excessive variation in the workability of the concrete is noted or when excessive crumbling or slumping is noted along the edges of slip-formed concrete.

Thickness Evaluation

The anticipated thickness of the concrete shall be determined prior to placement by passing a template through the formed section or by measuring the depth of opening of the extrusion template of the curb

forming machine. If a slip form paver is used for sidewalk placement, the subgrade shall be true to grade prior to concrete placement and the thickness will be determined by measuring each edge of the completed slab.

Surface Evaluation

The finished surface of each category of the completed work shall be uniform in color and free of blemishes and form or tool marks.

SURFACE DEFICIENCIES AND CORRECTIONS

Thickness Deficiency

When measurements indicate that the completed concrete section is deficient in thickness by more than $\frac{1}{4}$ inch the deficient section will be removed, between regularly scheduled joints, and replaced.

High Areas

In areas not meeting surface smoothness and plan grade requirements, high areas shall be reduced either by rubbing the freshly finished concrete with carborundum brick and water when the concrete is less than 36 hours old or by grinding the hardened concrete with an approved surface grinding machine after the concrete is 36 hours old or more. The area corrected by grinding the surface of the hardened concrete shall not exceed 5 percent of the area of any integral slab, and the depth of grinding shall not exceed $\frac{1}{4}$ inch. Pavement areas requiring grade or surface smoothness corrections in excess of the limits specified above shall be removed and replaced.

Appearance

Exposed surfaces of the finished work will be inspected by the engineer and any deficiencies in appearance will be identified. Areas which exhibit excessive cracking, discoloration, form marks, or tool marks or which are otherwise inconsistent with the overall appearances of the work shall be removed and replaced.

END OF SECTION 02821

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. Exterior drives and walks

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. Weyerhaeuser 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.
 - f. Concrete ramp.
 - g. Concrete drives

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 C171.
 - 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 306.11-90.
- 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 3/4"
 - 2. Beams and columns 1 1/2"
- 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 1/4" 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. Non-slip Broom Finish:

- a. Apply non-slip broom finish to exterior concrete drives, platforms, steps, and ramps, and elsewhere as indicated.
- b. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

4. 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.

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.

D. Pitch floors to drains as shown.

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 w2.9 x w2.9 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.

3.11. Drives and Ramps:

- A. See drawings for thickness and reinforcing required in concrete drives and ramps.

END OF SECTION 03300.

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:
1. Brick.
 2. Concrete unit masonry.
 3. Stonework.
 - a. Window Sills
 - b. Accent Bands
 4. 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.

J. Mockups: Build mockup to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup for [typical exterior wall] in sizes approximately [48 inches] long by [48 inches] high by full thickness and backup withes and accessories.
 - a. Include a sealant-filled joint at least 16 inches long in exterior wall mockup.
 - b. Include metal studs, sheathing, veneer anchors, flashing, and weep holes in exterior masonry-veneer wall mockup.

2. PRODUCTS:

2.1. BRICK MADE FROM CLAY OR SHALE:

- A. General: Comply with referenced standards and other requirements indicated below applicable to each form of brick required.
 1. Type: Brick to be modular size burgundy blend, velour texture by Endicott Clay Products.
 2. Provide special molded shapes where indicated and for application requiring brick of form, size and finish on exposed surfaces which cannot be produced from standard brick sizes by sawing.
 3. For sills, caps and similar applications resulting in exposure of brick surfaces which otherwise would be concealed from view, provide uncored or unfroged units with all exposed surfaces finished.
- B. Facing Brick: ASTM C-216-89.
 1. Grade FBX.

2.3. 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. For colored pigmented mortars: Premix colored masonry cements.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Aggregate for Mortar: ASTM C 144, meramec sand.
- E. Aggregate for Grout: ASTM C 404.
- F. 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.
- G. Water: Clean and potable.

2.4 LIMESTONE:

- A. Limestone building stone standard: ASTM C568.
- B. Classification: Category II (Medium Density).
- C. Variety: Indiana Limestone.
- D. Stone Fabrication:
 - 1. General: Fabricate stonework in sizes and shapes required to comply with the requirements shown on approved shop drawings.
 - 2. Comply with recommendations of the Indiana Limestone Institute of America, Inc. (ILI) as published in the *Indiana Limestone Handbook* (latest edition).
 - 3. Cut stones to produce pieces of thickness, size and shape indicated or required and within fabrication tolerances recommended by ILI.
 - 4. Provide required attachment details.

2.6. 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" Drill-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.

2.7. CONCEALED FLASHING MATERIALS:

- A. Materials:
1. Material for flashing all heads, sills, shelf angles, spandrels, throughwall conditions and other locations where flashing is shown on the drawings will be York 304 self adhering stainless steel flashing.
 2. Prefabricated flashing corners will be made of York 304 flashing and used at all corners where flashing is shown on the drawings.
 3. Prefabricated York 304 flashing end dams will be used at the extremities of all openings in the walls where flashing is shown on the drawings, both above and below the openings.
 4. York 304 stainless steel drip edge will be used and it will extend 1/4" beyond the vertical face of the masonry.

B. Installation:

1. Install stainless steel drip edge with gun-grade, fast-setting construction adhesive on the edges of the exterior masonry or shelf angle. Extend the stainless steel 1/4" beyond the face of the masonry.
2. Surfaces to receive the adhesive side of the York 304 flashing will be free of dust, dirt, foreign matter and protrusions, and will be dry. If the flashing does not readily adhere to surface, use York 304 primer on those surfaces (following application directions). Install York 304 flashing over the stainless steel drip edge and flush with the vertical face of the masonry wall. Overlap the flashing a minimum of 4" and install it in a manner which will conduct the flow of water to the exterior and/or weepholes. Prime the overlaps when temperatures fall below 40 degrees F. Do not install flashing when temperatures are below 25 degrees F. Do not expose flashing to sunlight for more than 30 days.
3. Install York 304 flashing corners and York 304 flashing end dams by removing the release paper and setting the corner and/or end dam in place. Overlap the existing flashing 4" and adhere it to the corner and/or end dam.

2.8. 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 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.

2.9. 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.

2.10 Masonry-Cell Insulation

- A. Molded-Polystyrene Insulation Units: Rigid, cellular thermal insulation formed by the expansion of polystyrene-resin beads or granules in a closed mold to comply with ASTM C 578, Type I. Provide Specialty shaped units designed for installing in cores of masonry units.

3. EXECUTION:

3.1. INSTALLATION, GENERAL:

- A. Wetting Clay Brick: Wet brick made from clay or shale which have ASTM C-67 initial rates of absorption (suction) of more than 30 grams per 30 sq. in. per minute. Use wetting methods which ensure each clay masonry unit being nearly saturated but surface dry when laid.
- B. Do not wet concrete masonry units.
- C. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.
- D. 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.
- E. 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.
- F. 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.
- G. 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 than 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. SETTING STONE, GENERAL:

- A. Execute stonework by skilled mechanics, and employ skilled stone fitters at the site to do necessary field cutting as stones are set.
- B. Set stones to comply with requirements indicated on drawings and final shop drawings. Install anchors, supports, fasteners and other attachments indicated or necessary to secure stonework in place. Shim and adjust anchors, supports and accessories to set stones accurately in locations indicated with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances.

3.5. 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.

3.6. 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.

3.7. 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.

3.8. 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.

- B. Provide minimum bearing of 8" at each jamb, unless otherwise indicated.
- C. Exterior lintels shall be galvanized.

3.12. 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 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 5 - METALS
Section 05120 - Structural Steel

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 structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections, and type of steel required.
- B. Structural steel is that work defined in American Institute of Steel Construction (AISC) "Code of Standard Practice" and as otherwise shown on drawings.
- C. Refer to Division 3 for anchor bolt installation in concrete.
- D. Source Quality Control:
 - 1. Materials and fabrication procedures are subject to inspection and tests in mill, shop, and field, conducted by a qualified inspection agency. Such inspections and tests will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.
 - 2. Promptly remove and replace materials or fabricated components which do not comply.
- F. Design of Members and Connections:
 - 1. Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.

2. Promptly notify Architect whenever design of members and connections for any portion of structure are not clearly indicated.

1.3. SUBMITTALS:

A. Shop Drawings:

1. Submit shop drawings prepared under supervision of a licensed structural engineer in the State of Illinois, including complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams. Each submittal shall be accompanied with the seal and signature of that structural engineer.
2. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS A2.1 and A2.4 symbols, and show size, length, and type of each weld.
3. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed as work of others sections.

1.4. QUALITY ASSURANCE:

A. Codes and Standards:

1. Comply with provisions of following, except as otherwise indicated:
 - a. AISC "Code of Standard Practice for Steel Buildings and Bridges".
 - (1) Paragraph 4.2.1 of the above code is hereby modified by deletion of the following sentence: "This approval constitutes the owner's acceptance of all responsibility for the design adequacy of any connections designed by the fabricator as a part of his preparation of these shop drawings".
 - b. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including "Commentary" and Supplements thereto as issued.
 - c. AISC "Specifications for Structural Joints using ASTM A-325 or A-490 Bolts" approved by the Research Council on

Riveted and Bolted Structural Joints of the Engineering Foundation.

- d. American Welding Society (AWS) D1.1 "Structural Welding Code - Steel".
- e. ASTM A-6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".

B. Qualifications for Welding Work:

- 1. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".
- 2. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.
- 3. If recertification of welders is required, retesting will be Contractor's responsibility.

1.5. DELIVERY, STORAGE, AND HANDLING:

- A. Deliver materials to site at such intervals to insure uninterrupted progress of work.
- B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not to delay work.
- C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.
 - 1. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

2. PRODUCTS:

2.1. MATERIALS:

- A. Structural Steel W Shapes: ASTM A-992.
- B. Structural Steel Other Shapes, Plates and Bars: ASTM A-36.

- C. Structural Steel Tube: ASTM A-500.
- D. Steel Pipe: ASTM A-53, Type E or S, Grade B; or ASTM A-501.
- E. Anchor Bolts: ASTM A-36, nonheaded type unless otherwise indicated.
- F. High-Strength Threaded Fasteners:
 - 1. Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:
 - a. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A-325-80a.
- G. Direct tension indicator washers may be used at Contractor's option.
- H. Electrodes for Welding: Comply with AWS Code.
- I. Structural Steel Primer Paint: SSPC - Paint 13.

2.2. FABRICATION:

- A. Shop Fabrication and Assembly:
 - 1. Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated.
 - 2. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
 - 3. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.
- B. Connections:
 - 1. Weld or bolt shop connections, as indicated.
 - 2. Bolt field connections, except where welded connections or other

connections are indicated.

3. Provide high-strength threaded fasteners for all bolted connections.
 4. Unfinished threaded fasteners may be used for temporary bracing to facilitate erection.
- C. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A-325 or A-490 Bolts" (RCRBSJ).
- D. Welded Construction:
1. Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.
 2. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.
- E. Holes for Other Work:
1. Provide holes required for securing other work to structural steel framing.
 2. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

2.3. SHOP PAINTING:

- A. General:
1. Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel which is partially exposed on exposed portions and initial 2" of embedded areas only.
 2. Do not paint surfaces which are to be welded or high-strength bolted with friction-type connections.
- B. Painting: Provide a one-coat shop applied paint system complying with Steel Structures Painting Council (SSPC)-Paint System Guide Latest Edition.

3. EXECUTION:

3.1. ERECTION:

- A. Check elevations of concrete bearing surfaces and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Architect.
- B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.
- C. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate.
- D. Field Assembly:
 - 1. Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 2. Level and plumb individual members of structure within specified AISC tolerances.
 - 3. Splice members only where indicated and accepted on shop drawings.
- E. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 - 1. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.
- F. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be

permitted only on secondary members which are not under stress, as acceptable to Architect. Finish gas-cut sections equal to a sheared appearance when permitted.

G. Touch-Up Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
2. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

3.2. QUALITY CONTROL:

A. City of Highland will engage an independent testing and inspection agency to inspect high-strength bolted connections and welded connections and to perform tests and prepare test reports.

1. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.
2. Provide access for testing agency to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.
3. Testing agency may inspect structural steel at plant before shipment; however, Architect reserves right, at any time before final acceptance, to reject material not complying with specified requirements.

B. Correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's expense, as may be necessary to reconfirm any non-compliance of original work, and as may be necessary to show compliance of corrected work.

C. Shop Bolted Connections: Inspect or test in accordance with AISC specifications.

D. Shop and Field Welding:

1. Inspect and test during fabrication of structural steel assemblies, as follows:

- a. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
- b. Perform visual inspection of all welds.
- c. Tests of welds will be performed as follows. Inspection procedures listed are to be used at testing agency's option.
 - (1) Liquid Penetrant Inspection: ASTM E-165.
 - (2) Magnetic Particle Inspection: ASTM E-109; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration not acceptable.
 - (3) Radiographic Inspection: ASTM E-94 and ASTM E-142; minimum quality level "2-2T".
 - (4) Ultrasonic Inspection: ASTM E-164.
- E. Field bolted connections to be inspected in accordance with AISC specifications.

END OF SECTION 05120.

DIVISION 5 - METALS
Section 05210 - Steel Joists

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 steel joists including basic layout and type of joists required shall be as indicated on the drawings.

1.3. SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications and installation instructions for each type of joist and accessories. Include manufacturer's certification that joists comply with SJI "Specifications".
- B. Shop Drawings: Submit detailed drawings showing layout of joist units, special connections, joining and accessories. Include mark, number, type, location and spacing of joists and bridging.

1.4. QUALITY ASSURANCE:

- A. Provide joists fabricated in compliance with the following, and as herein specified.
 - 1. Steel Joist Institute (SJI) "Standard Specifications, Load Tables and Weight Tables" for:
 - a. K-Series Open Web Steel Joists.
 - 2. Joists noted "KSP" on the drawings are special joists to be designed by the joist manufacturer for the design loads shown in the general notes on the drawings.
- A. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with American Welding Society "Structural Welding Code," AWS D1.1.

- B. Inspection: Inspect joists in accordance with SJI specifications.

1.5. DELIVERY, STORAGE, AND HANDLING:

- A. Deliver, store and handle steel joists as recommended in SJI "Specifications". Handle and store joists in a manner to avoid deforming members and to avoid excessive stresses.

1.6 General

- A. Steel joists shall have bridging sized and spaced in accordance with SJI standard specifications.
- B. Steel roof joists shall be designed for a minimum net uplift as follows:
 - 1) 13 psf for a 8'3" X 8'3" area at the building corners.
 - 2) 13 for a 8'3" wide strip along building edges.
 - 3) 9 psf for all other areas.
- C. K-Series Joists:
 - 1) Steel K joists shall be designed, fabricated, and erected in accordance with SJI "Standard Specifications for Open Web Steel Joists, K-Series."

2. PRODUCTS:

2.1. MATERIALS:

- A. Steel: Comply with SJI "Specifications".
- B. High-Strength Threaded Fasteners: ASTM A 325 or A 490 heavy hexagon structural bolts with nuts and hardened washers.
- C. Steel Prime Paint: Comply with SJI "Specifications".

2.2. FABRICATION:

- A. General: Fabricate steel joists in accordance with SJI "Specification".
- B. Holes in Chord Members: Provide holes in chord members where shown for securing other work to steel joists; however, deduct area of holes from the area of chord when calculating strength of member.

- C. Extended Ends: Provide extended ends on joists where shown, complying with manufacturer's standards and requirements of applicable SJI "Specifications" and load tables.
- D. Bridging: Provide horizontal or diagonal type bridging for joists, complying with SJI "Specifications".
 - 1. Provide bridging anchors for ends of bridging lines terminating at walls or beams.
- E. End Anchorage: Provide end anchorage including bearing plates, to secure joists to adjacent construction, complying with SJI "Specifications", unless otherwise indicated.
- F. Header Units: Provide header units to support tail joists at openings in floor or roof system not framed with steel shapes.
 - 1. Provide bridging anchors for ends of bridging lines terminating at walls or beams.
- G. Shop Painting: Remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories before application of shop paint.
 - 1. Apply one shop coat of steel prime paint to joists and accessories, by spray, dipping, or other method to provide a continuous dry paint film thickness of not less than 0.50 mil.

3. EXECUTION:

3.1. ERECTION:

- A. Place and secure steel joists in accordance with SJI "Specifications", final shop drawings, and as herein specified.
- B. Placing Joists:
 - 1. Do not start placement of steel joists until supporting work is in place and secured. Place joists on supporting work, adjust and align in accurate locations and spacing before permanently fastening.
 - 2. Provide temporary bridging, connections, and anchors to ensure

lateral stability during construction.

3. Where “open web” joist lengths are 40 feet and longer, install a center row of bolted bridging to provide lateral stability before slackening of hoisting lines.

C. Bridging:

1. Install bridging simultaneously with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords where terminating at walls or beams.
2. Comply with SJI standards for bridging configuration, size and spacing.

D. Fastening Joists:

1. Field weld joists to supporting steel framework in accordance with SJI “Specifications” for type of joists used. Coordinate welding sequence and procedure with placing of joists.
2. Bolt joists to supporting steel framework in accordance with SJI “Specifications” for type of joists used.

E. Touch-Up Painting:

1. After joist installation, paint welded areas, abraded or rusty surfaces on joists and steel supporting members. Wire brush surfaces and clean with solvent before painting. Use same type of paint as used on shop painting.

END OF SECTION 05210.

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 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 5- Metals

Section 05410- Aluminum Hanger Rod Canopy

Part 1: General

1.1 Description of Work

- A. Work in this section includes furnishing and installation of extruded aluminum overhead hanger rod style canopies as manufactured by Mapes Industries Inc.
- B. Related Items and Considerations
 - 1. Flashing of various designs may be required. Supplied by the installer.
 - 2. Determine wall construction, make-up and thickness.
 - 3. Ensure adequate wall condition to carry canopy loads where required.
 - 4. Consider water drainage away from canopy where necessary.
 - 5. Any necessary removal or relocation of existing structures, obstructions or materials.

1.2 Quality Assurance

- A. Products meeting these specifications established standard of quality required as manufactured by Mapes Industries, Inc. Lincoln, Nebraska 1-888-273-1132.

1.3 Field Measurement

- A. Confirm dimensions prior to preparation of shop drawings when possible.
- B. If requested, supply manufacturer's standard literature and specifications for canopies.
- C. Submit shop drawings showing structural component locations/positions, material dimensions and details of construction and assembly.

1.4 Performance Requirements

- A. Canopy must conform to local building codes.
- B. Determine if specific load requirements have been established for canopies and if stamped calculations are required for location in which canopy is installed.
- C. The canopy must handle a minimum of PSF live load.

1.5 Deliver, Storage, Handling

- A. Deliver and store all canopy components in protected areas.

Part 2: Products

2.1 Manufacturer

- A. Mapes Canopies

Lincoln, Nebraska

B. Approved alternate manufacturer, Innotech Manufacturing.

2.2 Materials

- A. Decking to be 3" extruded flat soffit .078 decking
- B. Fascia shall be standard 8" extruded "J" style (minimum .125 aluminum)
- C. Hanger rods and attachment hardware shall be powder coated to match canopy.
- D. Decking and fascia shall be extruded aluminum, alloy 6063-T6, in profile and thickness shown in current Mapes brochures.

2.3 Finishes

- A. Provide finish with standard 2-coat Kynar colors. Color to be selected by owner.

2.4 Fabrication

- A. All connections shall be mechanically assembled utilizing 3/16" fasteners with a minimum shear stress of 350 lb. Pre-welded or factory-welded connections are not acceptable.
- B. Decking shall be designed with interlocking extruded aluminum members with mechanical fasteners field applied to provide structural integrity for the completed assembly.
- C. Concealed drainage. Water shall drain from covered surfaces into integral fascia gutter and directed to either the front for front drainage or to the rear for ground level discharge via one or more designated downspouts.

Part 3: Execution

3.1 Inspection

- A. Confirm that surrounding area is ready for the canopy installation.
- B. Installer shall confirm dimensions and elevations to be as shown on drawings provided by Mapes Industries.
- C. Erection shall be performed by an approved installer and scheduled after all concrete, masonry and roofing in the area is completed

3.2 Installation

- A. Installation shall be in strict accordance with manufacturer's shop drawings. Particular attention should be given to protecting the finish during handling and erection.

3.3 After installation, entire system shall be left in a clean condition.

End of Section 05401

DIVISION 5 - METALS

Section 05500 - Metal Fabrications

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: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.
- B. Extent of metal fabrications is indicated on drawings and schedules.
- C. Types of work in this section include metal fabrications for:
 - 1. Loose steel lintels.
 - 2. Miscellaneous framing and supports.
 - 3. Steel pipe railings.
 - 4. Floor grating.
- D. Structural steel is specified in another section within Division 5.

1.3. SYSTEM PERFORMANCES:

- A. Structural Performances: Provide assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.
 - 1. Ladders: Capable of withstanding a concentrated load of 300 lbf so located as to produce maximum stress conditions.
 - 2. Handrails and Toprails: Capable of withstanding the following loads applied as indicated when tested per ASTM E935:
 - a. Concentrated loads of 200 lbf applied at any point in any direction.

- b. Uniform load of 50 lbf per linear ft. Applied simultaneously in both vertical and horizontal directions.
3. Guards: Intermediate rails, balusters and panel fillers capable of withstanding a uniform load of 25 lbf per sq. ft. Of gross area of guard, including any open areas, of which they are a part.

1.4. QUALITY ASSURANCE:

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.5. SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.
- B. Shop Drawings:
 1. Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.
 2. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis.
- C. Samples: Submit two (2) sets of representative samples of materials and finished products as may be requested by Architect.

2. PRODUCTS:

2.1. MATERIALS:

- A. Ferrous Metals:
 1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are

smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

2. Steel Plates, Shapes and Bars: ASTM A36.
3. Steel Tubing: Cold-formed, ASTM A500; or hot-rolled, ASTM A501.
4. Structural Steel Sheet: Hot-rolled, ASTM A570; or cold-rolled ASTM A611, Class 1; or grade required for design loading.
5. Galvanized Structural Steel Sheet: ASTM A446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
6. Steel Pipe: ASTM A52, type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
7. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
8. Grout:
 - a. Metallic Non-Shrink Grout: Pre-mixed, factory-packaged, ferrous aggregate grout applying with CE CRD-C588, Type M.
 - b. Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior application of type specified in this section.
9. Fasteners: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
10. Paint:
 - a. Shop Primer for Ferrous Metal: Manufacturer's or Fabricator's standard, fast-curing, lead-free, "universal" primer; selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound

foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS Tt-P-645.

2.2. FABRICATION, GENERAL:

- A. Workmanship: Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.
1. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
 2. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
 3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.
 4. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
 5. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
 6. Galvanizing: Provide a zinc coating for those items indicated or specified to be galvanized, as follows:
 - a. ASTM A153 for galvanizing iron and steel hardware.
 - b. ASTM A123 for galvanized rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.
 - c. ASTM A386 for galvanizing assembled steel products.
 7. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may

accumulate.

E. Shop Painting:

1. Apply shop primer to surfaces of metal fabrications except those which are galvanized or as indicated to be embedded in concrete or masonry, unless otherwise indicated, and in compliance with requirements of SSPC-PA1 "Paint Application Specification No. 1", for shop painting.

2.3. LOOSE STEEL LINTELS:

- A. Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown. Weld adjoining members together to form a single unit where indicated. Provide not less than 8" bearing at each side of openings, unless otherwise indicated. See Section 04200, paragraph 3.9 Lintels.

2.4. MISCELLANEOUS FRAMING AN SUPPORTS:

- A. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.
- B. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise indicated, fabricated from structural steel shapes, plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

2.5. STEEL PIPE RAILING AND HANDRAILS:

- A. Fabricate steel pipe railings and handrails to design, dimensions, and details indicated. Provide railings and handrails members formed of pipe of sizes and wall thickness indicated, but not less than that required to support design loading. If not indicated, use 1 1/2" \varnothing pipe for handrails& supports vertical "Picket fence" rail, use 34" \varnothing @ 4" O.C.
- B. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.

- C. At tee and cross intersections provide coped joints.
- D. At bends interconnect pipe by means of prefabricated elbow fittings or flush radius bends, as applicable, of radiuses indicated.
 - 1. At elbow bends provide mitered joints.
 - 2. Form bends by use of prefabricated elbow fittings and radius bends or by bending pipe, at fabricator's option.
- E. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting or otherwise deforming exposed surfaces of pipe.
- F. Provide wall returns at ends of wall-mounted handrails, except where otherwise indicated.
- G. Close exposed ends of pipe by welding 3/16" thick steel plate in place or by use of prefabricated fittings.

2.6. BRACKETS, FLANGES, FITTINGS and ANCHORS:

- A. Provide wall brackets, end closures, flanges, miscellaneous fittings and anchors for interconnections of pipe and attachment of railings and handrails to other work. Furnish inserts and other anchorage devices for connecting railings and handrails to concrete or masonry work.
- B. For railing posts set in concrete provide sleeves of galvanized steel pipe not less than 6" long and with an inside diameter not less than 1/2" greater than the outside diameter of pipe. Provide steel plate closure welded to bottom of sleeve and of width and length not less than 1" greater than outside diameter of sleeve.
- C. Galvanize steel railings, including pipe, fittings, brackets, fasteners and other ferrous metal components.
- D. Where handrails are replacing existing, verify existing sleeves or attachments and adapt new as required.

2.7. Elevator Accessories:

- A. Refer to division 14240 conveying systems and provide elevator accessories required by that division. In general provide the following:
 - a. Hoist Beam
 - b. 4' Pit Ladder

3. EXECUTION:

3.1. PREPARATION:

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2. INSTALLATION:

- A. General:
 - 1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.
 - 2. Cutting, Fitting, and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.
 - 3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
 - 4. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds

made, and methods used in correcting welding work.

5. **Setting Loose Plates:** Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
6. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated.

B. Steel Pipe Railings and Handrails:

1. Adjusting railing prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated, or if not indicated, as required by design loadings. Plumb posts in each direction. Secure posts and railing ends to building construction as follows:
 - a. Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-metallic grout, mixed and placed to comply with grout manufacturer's direction.
 - b. Cover anchorage joint with a round steel flange welded to post.
2. Anchor rail ends into concrete and masonry with steel round flanges welded to rail ends and anchored into wall construction with lead expansion shields and bolts.
3. Anchor rail ends to steel with steel oval or round flanges welded to rail ends and bolted to structural steel members, unless otherwise indicated.
4. Secure handrails to wall with wall brackets and end fittings. Provide bracket with not less than 1-1/2" clearance from inside face of handrail and finished wall surface. Locate brackets as indicated, or if not indicated, at spacing required for design

loading. Secure wall brackets and wall return fittings to building construction as follows:

- a. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
- b. For concrete and solid masonry anchorage, use drilled-in expansion shield and either concealed hanger bolt or exposed lag bolt, as applicable.
- c. For stud partitions use lag bolts set into wood backing between studs. Coordinate with stud installations for accurate location of backing members.

3.3. ADJUST AND CLEAN:

- A. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 of these specifications.
- B. For galvanized surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05500.

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 #1 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. 1 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 AWPB 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 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. Plastic laminate covered 3/4" plywood window stool at windows.
- 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 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 I Specification Sections, apply to this section.

1.2. SUMMARY:

- A. This section includes the following:
 - 1. Cabinet tops.
 - 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 I 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.
 - I. 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 A135.4.
 - 2. High Pressure Laminate: NEMA LD 3.
 - 3. Medium Density Fiberboard: ANSI A208.2.

4. Particleboard: ANSI A208.1.
5. Softwood Plywood: PS I.

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: High pressure decorative laminate complying with the following:

1. Grade: Premium.

2. Laminate Cladding for Horizontal Surface: High pressure decorative laminate as follows:

a. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

(1) Provide selections made by Architect from manufacturer's full range of standard colors and finishes in the following categories:

(a) Solid colors.

(b) Wood grains.

- b. Grade: GP-50 (0.050" nominal thickness).
- c. Edge Treatment: Same as laminate cladding on horizontal surfaces.

- 3. 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:

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" 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:

- 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 - THERMAL AND MOISTURE PROTECTION

Section 07241 – Exterior Insulation and Finishes Systems – Class PB

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 exterior insulation and finish systems is indicated on drawings.
- B. Types of exterior insulation and finish system applications in this section include the following:
 - 1. Applications over gypsum sheathing.
- C. Gypsum sheathing behind system for field application to steel studs is specified in a Division-9 section.
- D. Metal stud system for exterior and interior walls supporting gypsum sheathing behind system is specified in a Division-5 section.
- E. Sealing joints is specified in this section.

1.3. DEFINITIONS:

- A. Exterior insulation and finish system refers to an exterior assembly composed of an inner layer of thermal insulation board and an outer layer forming the protective finish coating. The assembly is applied to a supporting substrate of construction indicated. Designations below for the class and type of exterior insulation and finish system specified in this section are based on those developed by the Exterior Insulation Manufacturers Association (EIMA).
 - 1. Class PB Type A designates a polymer-based protective finish coating (Class PB), externally reinforced (Type A), moisture drainage system.
- B. System in this section refers to Class PB Type A exterior insulation and finish systems, including moisture drainage insulation.
- C. System manufacturer refers to the manufacturer of the exterior

insulation and finish system.

1.4. SYSTEM DESCRIPTION:

- A. Provide system complying with the following performance requirements:
 - 1. **Bond Integrity:** Free from bond failure within system components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
 - 2. **Weathertightness:** Resistant to water penetration from exterior into system and assemblies behind it or through them into interior of building which results in deterioration of thermal-insulating effectiveness or other degradation of system and assemblies behind system including substrates, supporting wall construction, and interior finish.

1.5. SUBMITTALS:

- A. **Product Data:** Manufacturer's technical data for each component of exterior insulation and finish system.
- B. **Samples for Initial Selection Purposes:** Manufacturer's standard color charts and small scale samples indicating textural choices available.
 - 1. Submit sealant manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available.
- C. **Samples for Verification Purposes:** Samples, 2' square, for each finish, color, and texture indicated; prepare samples using same tools and techniques intended for actual work.
 - 1. Incorporate within each sample a typical control joint filled with sealant of color indicated or selected.
- D. **Installer certificates signed by manufacturer certifying that Installers comply with specified requirements.**
- E. **Sealant compatibility and test report from sealant manufacturer certifying that materials forming joint substrates of system have been tested for compatibility and adhesion with joint sealants; include sealant manufacturer's interpretation of results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.**

1.6. QUALITY ASSURANCE:

- A. **Manufacturer Qualifications:** Firm regularly engaged in manufacturing products for system indicated and with at least five years successful experience in applications similar to that required for this project.
- B. **Installer Qualifications:** Engage an installer that is certified in writing by system manufacturer as qualified for installation of systems indicated.
- C. **Single Source Responsibility:** Obtain materials for system from either a single manufacturer or from manufacturers approved by the system manufacturer as compatible with other system components.

1.7. DELIVERY, STORAGE, AND HANDLING:

- A. Deliver products in original, unopened packages with manufacturer's labels identifying products legible and intact.
- B. Store materials inside and under cover; keep them dry, protected from the weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, damage from construction traffic and other causes.
- C. Stack insulation board flat and off the ground.

1.8. PROJECT CONDITIONS:

- A. **Environmental Conditions:** Do not install system when ambient outdoor temperatures are 40 deg F (4 deg C) and falling unless temporary protection and heat is provided to maintain ambient temperatures above 40 deg F (4 deg C) during installation of wet materials and for 24 hours after installation or longer to allow them to become thoroughly dry and weather resistant.

1.9. SEQUENCING AND SCHEDULING:

- A. Sequence installation of system with related work specified in other sections to ensure that wall assemblies, including flashing, trim, and joint sealers, are protected against damage from weather, aging, corrosion, or other causes.

2. PRODUCTS:

2.1. MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide Class PB Type A system of one of the following:
 - 1. Synergy
 - 2. Dryvit System, Inc.
 - 3. Sto Industries, Inc.

2.2. MATERIALS:

- A. Compatibility: Provide adhesive, board insulation, reinforcing fabrics, base and finish coat materials, sealants, and accessories which are compatible with one another and approved for use by system manufacturer.
- B. Provide colors and texture of protective coating to comply with following requirements:
- C. Provide selection made by Architect from manufacturer's full range of standard colors and textures available for type of finish coat indicated.
- D. Surface-Sealer: System manufacturer's standard adhesion intermediary designed to improve bond between substrate of type indicated and adhesive for application of insulation.
- E. Adhesive for Application of Insulation: System manufacturer's standard formulation designed for indicated use, compatible with substrate and complying with the following requirements:
 - 1. Factory-mixed formulation designed for adhesive attachment of insulation to substrates of type indicated, as approved by system manufacturer.
- F. Molded Polystyrene Board Insulation: Rigid, cellular thermal insulation formed by the expansion of polystyrene resin beads or granules in a closed mold to comply with ASTM C-578 for Type I; aged in block form prior to cutting and shipping by air drying for not less than 6 weeks or by another method approved by system manufacturer and producing equivalent results; 2' x 4' x thickness indicated but not less than the minimum thickness allowed by system manufacturer; and complying with requirements of system manufacturer for corner squareness and other dimensional tolerances.
- G. Reinforcing Fabric: Balanced, alkali-resistant open weave glass fiber

fabric treated for compatibility with other system materials; made from continuous multi-end strands with tensile strength of not less than 120 lbs. and 140 lbs. in warp and fill directions, respectively, per ASTM D-1682 and complying with ASTM D-578 and the following requirements:

1. Weight of Heavy Weight Resistant Reinforcing Fabric: Not less than 21 oz. per sq. yd.
 2. Weight of Standard Weight Reinforcing Fabric: Not less than 5.5 oz. per sq. yd.
 3. Weight of Strip Reinforcing Fabric: Not less than 3.75 oz. per sq. yd.
- H. Base Coat Materials: System manufacturer's standard, job-mixed formulation of portland cement complying with ASTM C-150, Type I, white or natural color; and system manufacturer's standard polymer-based adhesive designed for use indicated.
- I. Finish Coat Materials: System manufacturer's standard mixture complying with the following requirements for material composition and method of combining materials:
1. Factory-mixed formulation of polymer emulsion admixture, color-fast mineral pigments, sound stone particles, and fillers.
- J. Water: Clean and potable.
- K. Mechanical Fasteners: System manufacturer's standard corrosion-resistant fastener assemblies, complete with system manufacturer's standard washer and shaft attachments, selected for properties of pull-out, tensile, and shear strength required to resist design loads of application indicated, capable of pulling fastener head below surface of insulation board, and of the following description:
1. For attachment to steel studs from 0.033" to 0.112" in thickness provide steel drill screws complying with ASTM C-954.

2.3. ELASTOMERIC SEALANTS:

- A. Sealant Products: Provide exterior insulation finish systems manufacturer's standard chemically curing, elastomeric sealant which is compatible with joint fillers, joint substrates, and other related materials and complies with requirements of Division-7 section "Joint Sealers" for products corresponding to description indicated below.

1. Multi-Part Nonsag Urethane Sealant.
- B. Sealant Color: Provide color of exposed sealants to comply with the following requirement:
1. Match finish coat color of system.

2.4. MIXING:

- A. General: Comply with system manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as approved by system manufacturer. Mix materials in clean containers. Use materials within time period specified by system manufacturer or discard.

3. EXECUTION:

3.1. EXAMINATION:

- A. Examine substrates, with Installer present, to determine if they are in satisfactory condition for installation of system. Do not proceed with installation of system until unsatisfactory conditions have been corrected.

3.2. PREPARATION:

- A. Protect contiguous work from moisture deterioration and soiling resulting from application of systems. Provide temporary covering and other protection needed to prevent spattering of exterior finish coatings on other work.
- B. Protect system, substrates, and wall construction behind them from inclement weather during installation. Prevent infiltration of moisture behind system and deterioration of substrates.
- C. Substrate Preparation: Prepare and clean substrates to comply with system manufacturer's requirements to obtain optimum bond between substrate and adhesive for insulation.
1. Apply surface-sealer over substrates where required by system manufacturer for improving adhesion.

3.3. INSTALLATION:

- A. General: Comply with system manufacturer's current published instructions for installation of system as applicable to each type of substrate indicated.
- B. Adhesively attach insulation to comply with the following requirements:
 - 1. Allow adhered insulation to remain undisturbed for period prescribed by system manufacturer but not less than 24 hours, prior to beginning rasping and sanding insulation or application of base coat and reinforcing fabric.
 - 2. Apply boards over dry substrates in courses with long edges oriented horizontally; begin first course from a level baseline and work upwards.
- C. Stagger vertical joints in successive courses to produce running bond pattern.
 - 1. Offset joints of insulation from joints in sheathing.
- D. Interlock ends at internal and external corners.
- E. Abut boards tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between insulation boards. If gaps occur, fill with insulation cut to fit gaps exactly; insert without use of adhesive.
- F. Rasp or sand any irregularities projecting more than 1/32" from surface of insulation; do not create depressions deeper than 1/16".
- G. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes conforming to details indicated.
- H. Interrupt insulation where expansion joints are required by manufacturer in substrates behind exterior insulation and finish systems.
- I. Form joints for sealant application by leaving gaps of width needed between adjoining insulation edges as well as between insulation edges and dissimilar adjoining surfaces projecting through insulation that produce joint widths indicated after encapsulation of joint substrates with base coat, reinforcing fabric, and finish coat.

1. Treat exposed edges of insulation board, including those forming substrates of sealed joints within system or between system and other work, by encapsulating with base coat, reinforcing fabric, and finish coat.
 2. Coordinate flashing installation with installation of insulation to produce a wall system which does not allow water to penetrate behind protective coating.
- J. Apply base coat to exposed surfaces of insulation in minimum thickness specified by system manufacturer.
- K. Fully embed reinforcing fabric of weight indicated below in wet base coat to produce wrinkle-free installation with fabric continuous at corners and lapped or otherwise treated at joints to comply with system manufacturer's requirements. Use this "Panzer Mesh" system on all exterior EIFS walls from 8'-0" above floor. Above 8'0" use standard mesh.
1. Fabric Weight: Heavy (20.5 oz.).
- L. Double Layer Application: Apply a second base coat and second layer of reinforcing fabric of weight indicated below, in same manner as first application. Do not apply until first base coat has cured.
1. Fabric Weight: Standard (5.5 oz.).
- M. Apply finish coat over dry base coat in thickness required by system manufacturer to produce a uniform finish of texture and color matching approved sample.
- N. Direct application to exterior cement board: Attach exterior cement board to metal furring. Embed one layer standard weight fabric 1 #70 base coat and then apply finish coat. Divide area with plastic control joints 6' o.c. E.W.

3.4. INSTALLATION OF JOINT SEALANTS:

- A. Prepare joints and apply sealants, of type and at locations indicated, to comply with applicable requirements of Division-7 section "Joint Sealers".

3.5. CLEANING AND PROTECTION:

- A. Remove temporary covering and protection of other work. Promptly

remove protective coatings from window and door frames, and any other surfaces outside areas indicated to receive protective coating.

- B. Provide final protection and maintain conditions, in a manner acceptable to Installer and system manufacturer, which ensures system being without damage or deterioration at time of Substantial Completion.

END OF SECTION 07241.

Division 7- THERMAL AND MOISTURE PROTECTION

SECTION 07410-PREFORMED METAL STANDING SEAM ROOFING

1. GENERAL

1.1 DESCRIPTION OF WORK

- A. This section covers the pre-finished, pre-fabricated Architectural standing seam roof system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
- C. The Existing Standing seam roof is to be removed and new metal standing seam roofing is to be installed on both the existing and new roof areas.

1.2 SUMMARY

- A. Section Includes
 - 1. Factory formed Standing Seam metal roof panels
- B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
 - 1. Section 07600 - Flashing and Sheet Metal
 - 2. Section 13120 – Steel building System

1.3 DEFINITIONS

- A. Metal Roof Panel Assembly: Metal roof panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight roofing system.
- B. References:
 - 1. American Society for Testing and Materials (ASTM)
 - a. ASTM A 653: Steel Sheet, Zinc Coated by the Hot Dip Process
 - b. ASTM A 792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process
 - c. ASTM B 209: Aluminum and Aluminum Alloy Sheet and Plate
 - d. ASTM B370 Standard Specification for Copper Sheet and Strip for Building Construction
 - 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - a. SMACNA Architectural Sheet Metal Manual, 1993 edition
 - 3. American Iron and Steel Institute (AISI)
 - a. AISI Cold Formed Steel Design Manual
 - 4. Aluminum Association

- a. Aluminum Design Manual
- 5. Metal Construction Association
 - a. Preformed metal Wall Guidelines
- 6. Code References
 - a. ASCE, Minimum Loads for Buildings and Other Structures
 - b. BOCA National Building Codes
 - c. UBC Uniform Building Code
 - d. SBC Standard Building Code

1.4 QUALITY ASSURANCE

- A. Petersen Aluminum Corp, Elk Grove Village, IL, 800-323-1960 products establish a minimum of quality required.
- B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- C. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

1.5 SUBSTITUTIONS

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.6 SYSTEM DESCRIPTION

- A. Material to comply with:
 - 1. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process

1.7 ROOF SYSTEM PERFORMANCE TESTING

- A. General Performance: Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Roof System shall be designed to meet Standard Building Code Wind Load requirements.
- C. Panels to meet:
 - 1. Water Penetration: When tested per ASTM E-283/1680 and ASTM E-331/1646 there shall be no uncontrolled water penetration or air infiltration through the panel joints.

2. Roof System shall be designed to meet a UL Class 90 wind uplift in accordance with UL standard 580 and panel system shall be ASTM 1592 Tested and approved
3. UL 2218 - Impact Resistance rated.

1.8 WARRANTIES

- A. Weathertight warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
 1. Warranty Period: 20 Years from date of Substantial Completion
- B. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.
 1. Exposed Panels Finish - deterioration includes the following:
 - a. Color fading more than 5 hunter units when tested according to ASTM D 2244
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
 - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
 2. Warranty Period: 20 Years from the date of substantial completion
- C. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition.

1.9 SUBMITTALS

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal roof panels, metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
- D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, base don input from installer of the items involved:
 1. Roof panels and attachments
 2. Metal trusses, bracings and supports
 3. Roof-mounted items including snow guards and items mounted on roof curbs.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal roof panels and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.
- C. Unload, store and erect metal roof panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.11 PROJECT CONDITIONS

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.12 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
- B. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leakproof, secure and noncorrosive installation.

2. PRODUCTS

2.1 PANEL DESIGN

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates and accessories required for a weathertight installation.
- B. Roof panels shall be Tile-loc Plus standing seam in 16" widths with 1 3/4" high seam.
- C. Panels to be produced with Factory supplied hot melt mastic in the seams.
- D. Panels to be produced With Stiffening Ribs.

- E. Panels to be designed for attachment with concealed fastener clips, spaced as required by the manufacturer to provide for both positive and negative design loads, while allowing for the expansion and contraction of the entire roof system resulting from variations in temperature.
- F. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.

2.2 ACCEPTABLE MANUFACTURERS

- A. This project is detailed around the roofing product of Petersen Aluminum Corporation Petersen Aluminum Corp, Elk Grove Village, IL, 800-323-1960, Snap Clad.

2.3 MATERIALS AND FINISHES

- A. Preformed roofing panels shall be fabricated of 22 GA Steel
- B. Color shall be *Standard Non-metallic Pac-Clad Finish
- C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
- D. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
- E. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- F. Closures: use composition or metal profiled closures at the top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.
- G. Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates.
- H. Substrate shall be Plywood
- I. Roofing Underlayment
 - 1. On all surfaces to be covered with roofing material, furnish and install a 40 mil "Peel & Stick membrane", required as outlined by metal panel manufacturer. Membrane to be a minimum of 40 mil thickness, smooth, non-granular, by one of the following manufacturers:

- a. W.R Grace "Ice & water Shield"
 - b. Cetco Strongseal
 - c. Carlisle CCW WIP 300HT
 - d. Interwrap Titanium PSU
 - e. MFM Corp "Wind & Water Shield"
 - f. Polyguard Deck Guard HT or Polyglas HT
 - g. Tamko TW Tile and Metal Underlayment
2. Underlayment shall be laid in horizontal layers with joints lapped toward the eaves a minimum of 6", and well secured along laps and at ends as necessary to properly hold the felt in place. All underlayment shall be preserved unbroken and whole.
 3. Ice and Water Shield shall lap all hips and ridges at least 12" to form double thickness and shall be lapped 6" over the metal of any valley or built-in gutters and shall be installed as required by the Standing Seam Panel Manufacturer to attain the desired 20 Year Weathertightness Warranty.
- J. Sealants
1. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
 2. one part polysulfide not containing pitch or phenolic extenders or
 3. Exterior grade silicone sealant recommended by roofing manufacturer or
 4. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

2.4 FABRICATION

- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
- B. Fabricate components of the system in factory, ready for field assembly.
- C. Fabricate components and assemble units to comply with fire performance requirements specified.
- D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

3. EXECUTION

3.1 INSPECTION

- A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FASTENERS

- A. Secure units to supports
- B. Place fasteners as indicated in manufacturer's standards.

3.3 INSTALLATION

- A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.
- C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

3.4 DAMAGED MATERIAL

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION

DIVISION 7 -THERMAL AND MOISTURE PROTECTION

SECTION 07412 PREFORMED METAL SIDING, CONCEALED FASTENING

1. GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section covers the pre-finished, pre-fabricated Factory Manufactured Architectural Concealed attachment Metal Ceiling and Wall system. All metal trim, accessories, fasteners, insulation, and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section
- C. Related Work Specified Elsewhere
 - 1. Roof Deck structural steel, flat roof systems, preformed metal standing seam roofing, perimeter edge systems, firestopping not included in this section

1.2 SUMMARY

- A. Section Includes
 - 1. Factory formed metal wall panels
- B. Related work specified elsewhere (Note: select from the below or add appropriate sections)
 - 1. Wood Framing and Decking: Division 6 Rough Carpentry Section
 - 2. Flashing and Trim: Division 7- Flashing and Sheet Metal
 - 3. Sealants: Division 7 Joint Sealers Sections

1.3 QUALITY ASSURANCE

- A. Petersen Aluminum Corp products establish a minimum of quality required.
 - 1. Elk Grove Village, IL, 800-323-1960
- B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- C. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual and National Roofing Contractors Association (NRCA) details applicable to wall panels and wall flashings.
- D. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted

1.4 SUBSTITUTIONS

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.5 SYSTEM DESCRIPTION

- A. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated by the Hot-Dip Process ASTM A792/A792M Standard Specification for Sheet Steel, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip process

1.6 WALL PANEL SYSTEM PERFORMANCE TESTING

- A. Air Penetration: When tested per ASTM E-283 @ 6.24 PSF the air penetration shall be .005 or less when tested in accordance here.
- B. Water Penetration: When tested per ASTM E-331 @ 12.48 PSF for the 15 minute test period, the water penetration shall be none.
- C. Dynamic Water Penetration: When tested per AAMA 501 @ 15 PSF, the water penetration shall be none.
- D. Structural Performance: When tested per ASTM E 1592, withstand the effects of wind loads and deflection limits of the span as indicated on the drawings.
- E. Negative Load Testing per ASTM E-330: The panel shall have been tested per ASTM E-330 to show negative wind uplifts at spans of 1'0" through 4'0" spans, both double and triple spans and the Manufacturer shall provide a Negative Wind Uplift Table for this panel at the above-listed spans, with current 2.0 Safety Factor as per IBC current code and 1.65 Safety Factor as per US Corps of Engineers.

1.7 WARRANTIES

- A. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace wall panels that show evidence of deterioration of factory-applied finish within specified warranty period.
 - 1. Exposed Panels Finish – deterioration includes the following:
 - a. Color fading more than 5 hunter units when tested according to ASTM D 2244 (varies for Award Blue/Cardinal Red)
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214 (varies for Award Blue/Cardinal Red)
 - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
 - 2. Warranty Period (specifier to select):
 - a. 30 Years from the date of substantial completion
 - b. 20 Years from the date of substantial completion

1.8 SUBMITTALS

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and type of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
- D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved:

1.9 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal soffit panels and other manufactured items so as not to be damaged or deformed. Package metal soffit panels for protection during transportation and handling.
- C. Unload, store and erect metal soffit panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal wall panels on platforms or pallets, covered with suitable weathertight and ventilated covering.
- E. Store metal wall panels to ensure dryness. Do not store metal wall panels in contact with other materials that might cause staining, denting or other surface damage.
- F. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.10 PROJECT CONDITIONS

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication

2. PRODUCTS

2.1 PANEL DESIGN

- A. Provide factory-formed ceilings and wall panels that shall be concealed attachment in nominal width with high panel corrugations that are mechanically attached to wall supports and do not have any exposed fasteners on the panel face for attachment to the wall supports. Panels can be specified
- B. Architect to select from the following:
 - 1. Select Panel Profile

2.2 ACCEPTABLE MANUFACTURERS

- A. This project is detailed around the wall panel product of Petersen Aluminum Corporation, Elk Grove Village, IL: PAC Precision Series HWP.

2.3 MATERIAL AND FINISHES

- A. Preformed metal panels shall be fabricated of .040" thick aluminum.032" thick aluminum.050" thick aluminum24 GA G-90 Galvanized steel 22 GA galvalume steel.
- B. Color shall be Standard Non-metallic Pac-clad finish
- C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over 0.25 to 0.31 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 or Hylar 5000 finish supplier.
- D. Field protection must be provided by the Contractor at the job site so material is not exposed to weather and moisture.
- E. Forming: use continuous and rolling method. No "portable rollforming" machines will be permitted on this project; no installer-owned or installer-rented machines shall be permitted. It is the intent of the Architect to provide Factory-Manufactured wall panel systems only for this project.
- F. Trim: Trim shall be fabricated of the same material and finish to match the profiled sheeting and press broken in lengths of 10 – 12 feet. Trim shall be formed only by the manufacturer or their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- G. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the wall panel system.
- H. Exposed fasteners shall not restrict free movement of the wall panel system resulting from thermal forces, except at designed points of wall panel fixity. May require the use of PAC factory clips to alleviate thermal movement for panels over 20' in length. Consult PAC factory on use of wall panel clips.

- I. Closures: Use composition or metal profiled closures at top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.
- J. Fasteners: Fasteners shall be galvanized steel, dished washers, galvanized steel with bonded neoprene.
- K. Zees: Where required by design of primary structural framing system shall be used to span between beams and/or joists.
- L. Insulation: See Section 07 210: Building Insulation.
- M. Sealants
 - 1. Provide two part polysulfide class "B" non-sag type for vertical and horizontal joints, brand name: NP-1. Geocell 2300, Weathermaster "Titebond" or similar performing caulking.
 - 2. One part polysulfide not containing pitch or phenolic extenders, or;
 - 3. Exterior grade silicone sealant recommended by roofing manufacturer, or;
 - 4. One part non-sag, gun grade, exterior type polyurethane recommended by roofing manufacturer.

2.4 FABRICATION

- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown and, if not shown, provide manufacturer's standard product fabrication.
- B. Fabricate components of the system in factory, ready for field assembly.
- C. Fabricate components and assemble units to comply with fire and performance requirements specified.
- D. Apply specified finishes in conformance with manufacturer's standards, and according to manufacturer's instructions.

3. EXECUTION

3.1 INSPECTION

- A. Examine alignment of structural steel and related supports prior to installation and do not proceed until the defects are corrected by the responsible contractor.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FASTENERS

- A. Secure units to supports.
- B. Place fasteners as indicated in manufacturer's standards.

3.3 INSTALLATION

- A. Panels shall be installed plumb and true in proper alignment and relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be by manufacturer's installation instructions and details for this wall panel system
- C. Remove all strippable coating and provide a dry wipe-down cleaning of the panels as they are erected.
- D. Panels attached to any TREATED LUMBER MUST HAVE AN APPROPRIATE VAPOR BARRIER INSTALLED OVER THE TREATED LUMBER PRIOR TO INSTALLING ANY SOFIT PANELS OR RELATED FLASHINGS. DO NOT ALLOW ANY METAL PRODUCTS TO COME INTO DIRECT CONTACT WITH TREATED LUMBER

3.4 DAMAGED MATERIAL

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION 07412

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 gauge 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 B62N71, 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 gage 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 8360A- Four-fold Door 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.

1.2 SUMMARY

A. This Section includes Four-Fold metal doors with surface mounted tube frames.

B. Operation of Four-Fold metal doors includes overhead mounted electro-mechanical operators.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of product specified consisting of manufacturer's technical Product Data and installation instructions for each type of door required, including data substantiating that products comply with requirements.

C. Submittal Drawings showing fabrication and installation of Four-Fold metal doors including plans, elevations, sections, details of components, hardware, operating mechanism, and attachments to the other units of Work. Include wiring diagrams for coordination with electrical trade.

m.

D. Reference list including (5) successful installations of this type of door within the past two (2) years.

1.4 QUALITY ASSURANCE

A. Doors shall be designed to withstand external or internal horizontal wind loads of 25 pounds minimum per square foot. The maximum allowable deflection shall not exceed 1/120 of the span. Fiber stresses in main members shall be limited to 27,000 pounds per square inch. Steel frames

shall be designed in accordance with the AISC "Steel Construction Manual".

- B. Door manufacturer shall have at least 10 years experience in manufacturing door type specified.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store delivered materials and equipment in dry locations with adequate ventilation, free from dust and water, and so as to permit access for inspection and handling.
- B. Handle materials carefully to prevent damage.

1.6 WARRANTY

- A. The door manufacturer shall provide a written standard limited warranty for material and workmanship.

2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Four-Fold industrial metal doors manufactured by Door Engineering and Manufacturing, 400 Cherry Street, Kasota, MN 56050, (800)-959-1352 or equal products by other manufacturers approved in advance.

FF300 Series: Glazed

2.2 MATERIALS

- A. Steel Tube: ASTM A513 and ASTM A500/A500M
- B. Steel Sheets: Steel sheets of commercial quality, complying with ASTM A1011/A1011M hot-rolled steel sheet.
- C. Hardware: Manufacturer's standard components.
- D. Fasteners: Zinc-coated steel.

2.3 FOUR-FOLD DOORS

- A. Construction: Door framing shall be minimum 11-gauge structural steel tube with 14-gauge steel sheet on the exterior and interior faces. Sheeting shall be formed on the vertical edges with no visible welds on the interior or exterior panel faces. All frames and framing members shall be true to dimension and square in all directions, and no door shall be bowed, warped, or out of line, in the vertical or horizontal plane of the door opening by more than 1/8 inch in 20 feet. Exposed welds and welds which interfere with the installation of various parts shall be ground smooth and flush.
- B. Surface Mounted Tube Frame: Supply pre-hung tube frame system constructed of minimum TS6x4x0.25, designed to anchor to masonry wall construction or weld to steel structure. All hinges, track supports and operator supports shall be factory attached.
 - n.
 - C. Factory finish: Door Panels and Tube Frames shall be finished with manufacturer's standard PPG Spectracron epoxy primer and polyurethane top coat. Customer to select from Manufacturer's standard color chart or furnish sample to match.
 - o.
 - 1. Operator and operating hardware shall be powder-coated manufacturer's standard gray.
 - D. Hardware: Hardware shall include guide tracks and brackets, trolleys, center guides, not less than three pairs of jamb and fold hinges per opening, and all bolts, nuts, fasteners, etc. necessary for complete installation and operation.
 - 1. All hardware, including hinges and trolleys, shall be bolted to the panel for easy removal for service or panel replacement.
 - 2. Doors up to 16' wide and under 30psf windload shall require no floor mounted supports, guides or tracks.
 - p.
 - 3. Top tracks shall be adjustable on the end track hangers to allow for adjustment of the door panels in the open position and easily replaceable without removal of the door framing or operators.
- E. Hinges: Jamb hinges shall be dual shear and have two thrust bearings and two needle bearings. Fold hinges shall be stainless steel and be dual shear with two thrust bearings. All bearings shall be completely concealed within the hinge barrel and include grease zerks. All hinge pins shall be minimum 3/4" diameter hardened steel.

- F. Hinge Guards: Provide plastic guards at jamb hinges to prevent access through hinge space.
- G. Weatherstripping: Material shall be adjustable and readily replaceable and provide a substantially weather-tight installation. Weatherstripping at center shall be 1/16" cloth inserted neoprene and include no exposed fasteners on the exterior face of the panel. Weatherstripping at sill shall include two 1/16" cloth inserted neoprene sweeps with an aluminum retainer. The retainer shall be attached to the door with adhesive.
- H. Perimeter Weatherstripping: Provide jamb and head weatherstripping of 1/16" cloth-inserted neoprene bulb (or closed cell neoprene).
- I. Vision Panels: Provide 1" insulated, tempered, vision panels of the size, shape and location as noted on the drawings.

2.4 OPERATOR

- A. Each Four-Fold door shall be operated by an overhead mounted electro-mechanical drive unit designed for high cycle operation. Operator consists of an electric motor, gear reducer, and rotating drive arm. The door shall be operated with connecting rods attached to the rotating drive arm on the operator and to control arms attached to the jamb door section and to the door lintel. The connecting rods shall be positive drive, keeping the door under firm control at all times. The connecting rods shall be fitted with spherical bearings and control arms shall be equipped with oil impregnated bronze bearings on polished shafts.
- B. Operator shall be instantly reversible, open and close rapidly and start and stop gradually. Operator shall be adjustable to allow door to fully clear the opening. Operator shall automatically lock the door in the closed position. Operator shall be equipped with disengaging mechanism to convert to manual operation.
- C. Electric motor shall be of sufficient size to operate doors under normal operating conditions at no more than 75 percent of rated capacity. The motor shall be wound for three phase 208/230/480 VAC, 60 Hertz operation.
- D. Electric Controls: Controls shall be furnished by the door manufacturer and shall be complete for each door, and built in accordance with the latest NEMA standards. Incoming electrical shall be (Choose One): 120VAC single phase, 208VAC single phase, 208/230VAC 3-phase, 480VAC 3-phase.

1. Control panel assemblies shall be UL listed as per NFPA70.
 2. Controls shall include a programmable logic controller with digital message display or LED indicators. Controller shall include programmable close timers and programmable inputs/outputs.
 3. Controls shall include a variable frequency drive with independent adjustment of the opening and closing speeds.
 4. Enclosures shall be NEMA 4 with disconnect switch.
 5. Pushbuttons (interior) for each door shall have one (1) momentary pressure three-button push-button station marked "OPEN", "CLOSE" and "STOP". Push button enclosure shall be NEMA 4.
 6. Limit switches shall be provided to stop the travel of the door in its fully open or fully closed position.
 7. Safety edges: Provide 4-wire fail-safe electric safety edges on leading edge of all doors to reverse door upon contact with obstruction.
 8. Photo eyes: Provide (1) exterior, jamb mounted, light Curtain type photo eyes, NEMA 4 rated. Photo eye shall cover from floor level to 72" above floor.
- q.
9. Presence Sensor: Provide (1) interior, overhead mounted, presence sensor with pre-open and pre-close safety fields. Sensor shall be LZR-Widescan or equal.
 10. Radio controls: Provide one (1) radio receiver and (1) single button remotes per door. Remotes to open and close doors with single button.
- r.
11. (Option) Timer Activation Loop Detectors (fire station applications): Provide "pulse on exit type" loop detector to activate auto close timer once loop has been activated and cleared, include hand/auto switch to deactivate timer. G.C. to coordinate installation of preformed loop with installer prior to exterior apron being poured.

12. Warning Horn/Strobe: Provide warning light and strobe. Include outputs PLC to allow for activation while door is in motion both opening and closing, along with activation prior to closing. Include programmable "delay-to-close" timer which activates the warning horn for a set time, prior to the door closing.
13. Wiring: Door manufacturer shall supply controls and components only. Electrical contractor shall install controls and furnish and install conduits and wiring for jobsite power and control wiring.

3 EXECUTION

3.1 INSTALLATION

- A. Install Four-Fold metal doors in strict accordance with the approved drawings by qualified door erection crews. All door openings shall be completely prepared by the general contractor prior to the installation of the doors. Permanent or temporary electric wiring shall be brought to the door opening before installation is started and shall be completed so as not to delay the inspection test.
- B. Doors shall be set plumb, level, and square, and with all parts properly fastened and mounted. All moving parts shall be tested and adjusted and left in good operating condition.

3.2 ADJUSTING AND CLEANING

- A. Inspection of the doors and a complete operating test will be made by the installer in the presence of the general contractor or architect as soon as the erection is complete. Any defects noted shall be corrected. After door approval in the above test, the general contractor must assume the responsibility for any damage or rough handling of the doors during construction until the building is turned over to the owner and final inspection is made.
- B. Clean surfaces and repaint abraded or damaged finished surfaces to match factory-applied finish.

END OF SECTION 08360A

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 windows, 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.
3. Section 08 51 13 – Aluminum Windows.

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. Kawneer Co. Inc.

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.

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, Class 1. Color to be selected by owner.

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 AND WINDOWS

SECTION 08511- ALUMINUM WINDOWS

PART 1 GENERAL

1.01 Work Included

- A. Furnish and install aluminum architectural windows complete with hardware and related components as shown on drawings and specified in this section.
 - 1. EFCO Series HX32 Thermal AW-PG50-H Single Hung Windows
 - 2. EFCO Series 325 Thermal AW-PG140-FW Grade Fixed Windows
 - 3. Storm Defend SD-TH600 FEMA Tornado Window (48"H x 96"W)
- B. Other approved manufactures are Kawneer OptiQ AA4325 and Wausau Invent Plus. Other approved manufacturers. No additional substitutions allowed.
 - 1. Wausau 310i Single Hung and Fixed Invent Plus
 - 2. Kawneer OptiQ AA5450 Single Hung and AA4325 Fixed
- C. Glass and Glazing
 - 1. All units shall be factory glazed.
- D. Single Source Requirement
 - 1. All products listed in Section 1.02 shall be by the same manufacturer.

1.02 Related Work

- A. Section 08 41 13 – Aluminum – Framed Entrances and Storefronts

1.03 Laboratory Testing and Performance Requirements

- A. Test Units
 - 1. Air, water, and structural test unit shall conform to requirements set forth in AAMA/WDMA/CSA 101/I.S.2/A440-08 and manufacturer's standard locking/operating hardware and insulated glazing configuration.
 - 2. Thermal test unit sizes shall be 47" (1194 mm) x 59" (1499 mm). Unit shall consist of a single hung window.
- B. Test Procedures and Performances
 - 1. Windows shall conform to all AAMA/WDMA/CSA 101/I.S.2/A440-08

- requirements for the window type referenced in 1.01.B. In addition, the following specific performance requirements shall be met.
2. Air Infiltration Test
 - a. With window sash closed and locked, test unit in accordance with ASTM E 283 at a static air pressure difference of 6.24 psf (299 Pa).
 - b. Air infiltration shall not exceed 0.3 cfm/SF (1.16 l/s•m²) of unit.
 3. Water Resistance Test
 - a. With window sash closed and locked, test unit in accordance with ASTM E 331/ASTM E 547 at a static air pressure difference of 10.0 psf (479 Pa).
 - b. There shall be no uncontrolled water leakage.
 4. Uniform Load Deflection Test
 - a. With window sash closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 50.0 psf (2394 Pa), positive and negative pressure.
 - b. No member shall deflect over L/175 of its span.
 5. Uniform Load Structural Test
 - a. With window sash closed and locked, test unit in accordance with ASTM E 330 at a static air pressure difference of 75.0 psf (3591 Pa), both positive and negative.
 - b. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanisms, nor any other damage that would cause the window to be inoperable.
 6. Forced Entry Resistance
 - a. Windows shall be tested in accordance to ASTM F 588 or AAMA 1302.5 and meet the requirements of performance level 10.
 7. Condensation Resistance Test (CRF)
 - a. Test unit in accordance with AAMA 1503.1.
 - b. Condensation Resistance Factor (CRF) shall not be less than 65 (frame) when glazed with 0.24 center of glass U-Factor.
 8. Condensation Resistance (CR)
 - a. With ventilators closed and locked, test unit in accordance with NFRC 500-2010.
 - b. Condensation Resistance (CR) shall not be less than 52 when glazed with 0.24 center of glass U-Factor.
 9. Thermal Transmittance Test (Conductive U-Factor)
 - a. With ventilators closed and locked, test unit in accordance with NFRC 100-2010.
 - b. Conductive thermal transmittance (U-Factor) shall not be more than 0.38 BTU/hr•ft²•°F (2.15 W/m²•K) when glazed with 0.24 center of glass U-Factor.

C. Project Wind Loads

1. The system shall be designed to withstand the following minimum loads normal to the plane of the wall. Refer to structural drawings for exact design pressures.
 - a. Positive pressure of 20 psf (958 Pa) at non-corner zones.
 - b. Negative pressure of 20 psf (958 Pa) at non-corner zones.

1.06 Field Testing and Performance Requirements

- A. None Required.
- A.

1.07 Quality Assurance

- B. Provide test reports from AAMA accredited laboratories certifying the performance as specified in 1.05.
- C. Test reports shall be accompanied by the window manufacturer's letter of certification, stating the tested window meets or exceeds the referenced criteria for the appropriate window type.

1.09 Submittals

- A. Contractor shall submit shop drawings; finish samples, test reports, and warranties.
 1. Samples of materials as may be requested without cost to owner, i.e., metal, glass, fasteners, anchors, frame sections, mullion section, corner section, etc.
- B. An NFRC Component Modeling Approach (CMA) generated label certificate shall be provided by the manufacturer. The label certificate shall be project specific and will contain the thermal performance ratings of the manufacturer's framing combined with the specified glass, and the glass spacer used in the fabrication of the glass, at NFRC standard test size as defined in table 4-3 in NFRC 100-2010.

1.10 Warranties

- A. Total Window Installation
 1. The responsible contractor shall assume full responsibility and warrant for one year the satisfactory performance of the total window installation which includes that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.

2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor at their expense during the warranty period.
- B. Window Material and Workmanship
1. Provide written guarantee against defects in material and workmanship for ___ years from the date of final shipment.
- C. Glass
1. Provide written warranty for insulated glass units that they will be free from obstruction of vision as a result of dust or film formation on the internal glass surfaces caused by failure of the hermetic seal due to defects in material and workmanship.
 2. Warranty period shall be for 10 (ten) years.
- D. Finish
1. Warranty period shall be for 5 years from the date of final shipment.

PART 2 PRODUCTS

2.01 Materials

- A. Aluminum
1. Extruded aluminum shall be 6063-T6 alloy and tempered.
- B. Hardware
1. Sweep latches shall be of die cast metal with a painted finish.
 2. An optional extruded aluminum spring catch shall be provided at the sill of the lower sash.
 3. Windows with spring latches shall also have standard sweep latches at the meeting rail.
- C. Balances
1. Balances shall be of appropriate size and capacity to hold sash in position in accordance with AAMA 101, Section 2.2.1.3.2, and AAMA 902, Section 8.1.
 2. Balances shall be high performance sash balances that are tested in accordance with AAMA 902 "Voluntary Specification for Sash Balances".
 3. Balances shall meet all minimum AAMA 902 Class 5 requirements with a minimum .30 Manually Applied Force ratio (MAF).
 4. Balances shall be attached to a locking carrier system that slides in the jamb channel. Sash shall be field removable for installation and maintenance. Mounting brackets that are screw attached to the sash will not be allowed.
- D. Weather-Strip

1. All primary weather-strip shall be FIN-SEAL® or equal.

C. Glass

1. Insulated glass shall be 1" thick with a center of glass U-Factor of 0.24 constructed as follows:

- a. Exterior lite – 1/4" thick, clear color, tempered glass, with a surface coating of Solarban 60 or Guardian SN68 on the number 2 surface.
- b. Air space of 1/2" inch argon filled
- c. Interior lite – 1/4" thick, clear color, tempered glass.

E. Thermal Barrier

1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
2. The thermal barrier shall be thermal struts, consisting of glass reinforced polyamide nylon, mechanically crimped in raceways extruded in the exterior and interior extrusions.
3. Poured and debridged urethane thermal barriers shall not be permitted.

2.02 Fabrication

A. General

1. All aluminum frame and vent extrusions shall have a minimum wall thickness of .062" (1.5 mm).
2. Mechanical fasteners, welded components, and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and vent corners.
3. Depth of frame shall not be less than 3 1/4" (82 mm).

B. Frame

1. Frame components shall be mechanically fastened.

C. Sash

1. All sash extrusions shall have a minimum wall thickness of .062" (1.5 mm).
2. All horizontal sash extrusions shall be tubular.
3. Corner connections shall be mechanically fastened.

D. Screens

1. Screen frames shall be extruded aluminum.
2. Screen mesh shall be aluminum or fiberglass.

E. Glazing

1. All units shall be glazed with the manufacturer's standard sealant process provided the glass is held in place by a removable, extruded aluminum, glazing bead. The glazing bead must be isolated from the glazing material by a gasket.
2. All units shall be glazed with a minimum of 1/2" glass bite.

F. Finish

1. Anodic
 - a. Finish all exposed areas of aluminum windows and components with electrolytically deposited color in accordance with Aluminum Association Designation AA-M10-C22- Color shall be as selected by the architect.

High performance 70% PVDF fluoropolymer Ultrapon™ finishes are available in standard colors. Reference the EFCO color brochure for assistance in color and resin selection

AA Description	Description	AAMA Guide Spec.
AA-M12-C42-R1X	70% PVDF Ultrapon™	2605-98

PART 3 EXECUTION

3.01 Inspection

A. Job Conditions

1. Verify that openings are dimensionally within allowable tolerances, plumb, level, clean, provide a solid anchoring surface, and are in accordance with approved shop drawings.

3.02 Installation

- A. Use only skilled tradesmen with work done in accordance with approved shop drawings and specifications.
- B. Plumb and align window faces in a single plane for each wall plane, and erect windows and materials square and true. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.
- C. Adjust windows for proper operation after installation.
- D. Furnish and apply sealants to provide a weather tight installation at all joints and intersections and at opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

3.03 Anchorage

- A. Adequately anchor to maintain positions permanently when subjected to normal thermal movement, specified building movement, and specified wind loads.

3.04 Protection and Cleaning

- A. After completion of window installation, windows shall be inspected, adjusted, put into working order and left clean, free of labels, dirt, etc. Protection from this point shall be the responsibility of the general contractor.

End of section 08511

Division 8-Doors, Windows, and Glass

SECTION 08710 – DOOR HARDWARE

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

Section includes:

Mechanical and electrified door hardware for:

Swinging doors.

Electronic access control system components, including:

Electronic access control devices.

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.

Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

Windows

Cabinets (casework), including locks in cabinets

Signage

Toilet accessories

Overhead doors

Related Sections:

Division 01 Section "Alternates" for alternates affecting this section.

Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.

Division 08 sections for Doors and Frames

- Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
- Division 26 sections for connections to electrical power system and for low-voltage wiring.
- Division 28 sections for coordination with other components of electronic access control system.

REFERENCES

UL - Underwriters Laboratories

- UL 10B - Fire Test of Door Assemblies
- UL 10C - Positive Pressure Test of Fire Door Assemblies
- UL 1784 - Air Leakage Tests of Door Assemblies
- UL 305 - Panic Hardware

DHI - Door and Hardware Institute

- Sequence and Format for the Hardware Schedule
- Recommended Locations for Builders Hardware
- Key Systems and Nomenclature

ANSI - American National Standards Institute

- ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties.

1. ANSI/DHI A115.IG – Installation Guide for Doors and Hardware

B. ICC – International Code Council, Inc

1. ICC/ANSI A117.1 – Accessible and Usable Buildings and Facilities.
2. ICC IBC – International Building Code

C. NFPA – National Fire Protection Agency

1. NFPA 101 - Life Safety Code
2. NFPA 80 - Fire Doors and Windows

D. Builders Hardware Manufacturing Association (BHMA)

SUBMITTALS

General:

Submit in accordance with Conditions of Contract and Division 01 requirements.

Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

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.

Action Submittals:

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.

Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

Wiring Diagrams: For power, signal, and control wiring and including:
Details of interface of electrified door hardware and building safety and security systems.

Schematic diagram of systems that interface with electrified door hardware.

Point-to-point wiring.

Risers.

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.

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.

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: Door Index; include door number, heading number, and Architects hardware set number.

Opening Lock Function Spreadsheet: List locking device and function for each opening.

Quantity, type, style, function, size, and finish of each hardware item.

Name and manufacturer of each item.

Fastenings and other pertinent information.

Location of each hardware set cross-referenced to indications on Drawings.

Explanation of all abbreviations, symbols, and codes contained in schedule.

Mounting locations for hardware.

Door and frame sizes and materials.

Name and phone number for local manufacturer's representative for each product.

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.

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.

Key Schedule:

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.

Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.

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.

Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.

Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

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.

Informational Submittals:

Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.

Product data for electrified door hardware:

Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

Certificates of Compliance:

UL listings for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.

Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.

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.

Warranty: Special warranty specified in this Section.

Closeout Submittals:

Operations and Maintenance Data: Provide in accordance with Division 01 and include:

Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.

Catalog pages for each product.

Factory order acknowledgement numbers (for warranty and service) Name, address, and phone number of local representative for each manufacturer.

Parts list for each product.

Final approved hardware schedule, edited to reflect conditions as-installed.

Final keying schedule

Copies of floor plans with keying nomenclature

As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

Copy of warranties including appropriate reference numbers for manufacturers to identify project.

QUALITY ASSURANCE

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.

Warehousing Facilities: In Project's vicinity.

Scheduling Responsibility: Preparation of door hardware and keying schedules.

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.

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.

Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

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:

For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).

Can provide installation and technical data to Architect and other related subcontractors.

Can inspect and verify components are in working order upon completion of installation.

Capable of producing wiring diagrams.

Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

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.

Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.

Keying Conference

Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.

Preliminary key system schematic diagram.

Requirements for key control system.

Requirements for access control.

Address for delivery of keys.

Pre-installation Conference

Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

Inspect and discuss preparatory work performed by other trades.

Inspect and discuss electrical roughing-in for electrified door hardware.

Review sequence of operation for each type of electrified door hardware.

Review required testing, inspecting, and certifying procedures.

Coordination Conferences:

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.

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.

DELIVERY, STORAGE, AND HANDLING

Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

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.

Deliver each article of hardware in manufacturer's original packaging.

Project Conditions:

Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

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.

Protection and Damage:

Promptly replace products damaged during shipping.

Handle hardware in manner to avoid damage, marring, or scratching.

Correct, replace or repair products damaged during Work.

Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

Deliver keys and permanent cores to Owner by registered mail or overnight package service.

COORDINATION

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.

Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

WARRANTY

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.

Warranty Period: Beginning from date of Substantial Completion, for durations indicated.

Closers:

Mechanical: 30 years

Electrified: 2 years.

Automatic Operators: 2 years

Exit Devices:

Mechanical: 3 years.

Electrified: 1 year.

Locksets:

Mechanical: 10 years

Electrified: 1 year.

Continuous Hinges: Lifetime warranty.

Key Blanks: Lifetime

Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

PRODUCTS

MANUFACTURERS

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."

Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

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.

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.

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.

MATERIALS

Fasteners

Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.

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.

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.

Install hardware with fasteners provided by hardware manufacturer.

Modification and Preparation of Existing Doors: Where existing door hardware is indicated to

Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

Where fasteners are exposed to view: Finish to match adjacent door hardware material.

Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:

Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.

DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.

Provide type of data and DC power cabling required by access control device manufacturer for this installation.

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.

HINGES

Manufacturers and Products:

Scheduled Manufacturer and Product: Ives 5BB series.

Acceptable Manufacturers and Products: Hager BB series, McKinney TA/T4A series, Stanley FBB Series.

Requirements:

Provide hinges conforming to ANSI/BHMA A156.1.

1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

Exterior: Standard or heavy weight, bronze or stainless steel, 4-1/2 inches (114 mm) high

Interior: Standard or heavy weight, steel, 4-1/2 inches (114 mm) high

1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:

Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high

Interior: Heavy weight, steel, 5 inches (127 mm) high

2 inches or thicker doors:

Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high

Interior: Heavy weight, steel, 5 inches (127 mm) high

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.

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.

Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

Steel Hinges: Steel pins

Non-Ferrous Hinges: Stainless steel pins

Out-Swinging Exterior Doors: Non-removable pins

Out-Swinging Interior Lockable Doors: Non-removable pins

Interior Non-lockable Doors: Non-rising pins

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.

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.

Provide mortar guard for each electrified hinge specified.

CONTINUOUS HINGES

Aluminum Geared

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Select, Stanley.

Requirements:

Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.

Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.

Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.

Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.

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.

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.

Install hinges with fasteners supplied by manufacturer.

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.

ELECTRIC POWER TRANSFER

Manufacturers:

Scheduled Manufacturer: Von Duprin EPT-10.

Acceptable Manufacturers: ABH PT1000, Securitron CEPT-10.

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.

Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

FLUSH BOLTS

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Requirements:

Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

COORDINATORS

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Requirements:

Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.

Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

CYLINDRICAL LOCKS – GRADE 1

Manufacturers and Products:

Scheduled Manufacturer and Product: Schlage ND series – No Substitutions

Requirements:

Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3 hour fire doors.

Cylinders: Refer to “KEYING” article, herein.

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.

Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.

Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.

Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.

Provide electrified options as scheduled in the hardware sets.

Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.

Lever Design: As indicated

Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

EXIT DEVICES

Manufacturers and Products:

Scheduled Manufacturer and Product: Von Duprin 99/33A series – No Substitutions

Requirements:

Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.

Cylinders: Refer to “KEYING” article, herein.

Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.

Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.

Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.

Provide flush end caps for exit devices.

Provide exit devices with manufacturer's approved strikes.

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.

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.

Provide cylinder or hex-key dogging as specified at non fire-rated openings.

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.

Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.

Provide electrified options as scheduled.

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.

Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

CYLINDERS

Manufacturers and Products:

Scheduled Manufacturer and Product: Schlage Everest 29 Primus.

Requirements:

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.

Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.

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.
Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent-protected until the year, 2029.

Nickel silver bottom pins.

Replaceable Construction Cores

Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.

3 construction control keys

12 construction change (day) keys.

Replace temporary construction cores with permanent cores unless directed otherwise at keying conference.

KEYING

Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

Requirements:

Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.

Master Keying system as directed by the Owner.

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.

Provide keys with the following features:

Material: Nickel silver; minimum thickness of .107-inch (2.3mm)

Patent Protection: Keys and blanks protected by one or more utility patent(s) until the year, 2029.

Identification:

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.

Identification stamping provisions must be approved by the Architect and Owner.

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.

Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.

Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

Quantity: Furnish in the following quantities.

Change (Day) Keys: 3 per cylinder/core.

Permanent Control Keys: 3.

Master Keys: 6.

KEY CONTROL SYSTEM

Manufacturers:

Scheduled Manufacturer: Telkee.

Acceptable Manufacturers: HPC, Lund.

Requirements:

Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.

Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.

Provide hinged-panel type cabinet for wall mounting.

DOOR CLOSERS

Manufacturers and Products:

Scheduled Manufacturer and Product: LCN 4040XP series.

Acceptable Manufacturers and Products: Corbin-Russwin DC8000 series, Sargent 281 series.

Requirements:

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.

Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.

Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.

Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.

Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.

Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.

Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.

Pressure Relief Valve (PRV) Technology: Not permitted.

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).

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.

ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

Manufacturers and Products:

Scheduled Manufacturer and Product: LCN 4600 series.

Acceptable Manufacturers and Products: Norton 6000 series, Besam Power Swing.

Requirements:

Provide low energy automatic operator units with hydraulic closer complying with ANSI/BHMA A156.19.

Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.

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

Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.

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.

Provide drop plates, brackets, or adapters for arms as required for details.

Provide hard-wired actuator switches for operation as specified.

Provide weather-resistant actuators at exterior applications.

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.

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.

Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

ELECTRO-MECHANICAL AUTOMATIC OPERATORS

Manufacturers and Products:

Scheduled Manufacturer and Product: LCN Senior Swing.

Acceptable Manufacturers and Products: Besam Swingmaster MP, Horton 4000LE series.

Requirements:

Provide low energy automatic operator units that are electro-mechanical design complying with ANSI/BHMA A156.19.

Opening: Powered by DC motor working through reduction gears.

Closing: Spring force.

Manual, hydraulic, or chain drive closers: Not permitted.

Operation: Motor is off when door is in closing mode. Door can be manually operated with power on or off without damage to operator. Provide variable adjustments, including opening and closing speed adjustment.

Cover: Aluminum.

Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, and logic terminal to interface with accessories, mats, and sensors.

Provide drop plates, brackets, or adapters for arms as required to suit details.

Provide hard-wired motion sensors and/or actuator switches for operation as specified. Provide weather-resistant actuators at exterior applications.

Provide key switches, with LED's, recommended and approved by manufacturer of automatic operator as required for function as described in operation description of hardware sets. Cylinders: Refer to "KEYING" article, herein.

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.

Provide units with inputs for smoke evacuation doors, where specified, which allow doors to power open upon fire alarm activation and hold open indefinitely or until fire alarm is reset, presence detector input, which prevents closed door from opening or door that is fully opened from closing, hold open toggle input, which allows remote activation for indefinite hold open and close second time input is activated, vestibule inputs, which allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

DOOR TRIM

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Requirements:

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.

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.

Provide offset pulls of solid bar stock, diameter and length as scheduled.

Where required, mount back to back with push bar.

Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.

Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.

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.

Provide wire pulls of solid bar stock, diameter and length as scheduled.

Provide decorative pulls as scheduled. Where required, mount back to back with pull.

PROTECTION PLATES

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Requirements:

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.

Sizes of plates:

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

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

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

OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

Manufacturers:

Scheduled Manufacturers: Glynn-Johnson.

Acceptable Manufacturers: Rixson, Sargent.

Requirements:

Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.

Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.

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.

Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

DOOR STOPS AND HOLDERS

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Provide door stops at each door leaf:

Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.

Where a wall stop cannot be used, provide universal floor stops for low or high rise options.

Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

Manufacturers:

Scheduled Manufacturer: Zero International.

Acceptable Manufacturers: National Guard, Reese.

Requirements:

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.

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.

Size of thresholds:

Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width

Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width

Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

SILENCERS

Manufacturers:

Scheduled Manufacturer: Ives.

Acceptable Manufacturers: Burns, Rockwood.

Requirements:

Provide "push-in" type silencers for hollow metal or wood frames.

Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.

Omit where gasketing is specified.

EXECUTION

EXAMINATION

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.

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.

Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION

Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

Standard Steel Doors and Frames: ANSI/SDI A250.8.

Custom Steel Doors and Frames: HMMA 831.

Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

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.

Lock Cylinders: Install construction cores to secure building and areas during construction period.

Replace construction cores with permanent cores unless directed otherwise at keying meeting.

Wiring: Coordinate with Division 26, ELECTRICAL sections for:

Conduit, junction boxes and wire pulls.

Connections to and from power supplies to electrified hardware.

Connections to fire/smoke alarm system and smoke evacuation system.

Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.

Testing and labeling wires with Architect's opening number.

Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

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.

Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

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.

Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

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.

Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

FIELD QUALITY CONTROL

Engage qualified manufacturer trained representative to perform inspections and to prepare inspection reports.

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.

ADJUSTING

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.

Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

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.

CLEANING AND PROTECTION

Clean adjacent surfaces soiled by door hardware installation.

Clean operating items as necessary to restore proper function and finish.

Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

DOOR HARDWARE SCHEDULE

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. 00.1

For use on Door #(s):

2 3 4 5

Provide each RU door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	ITEMID	FINISH	MFR
		HARDWARE BY DOOR			
		MANUFACTURER			

HARDWARE GROUP NO. 00.2

For use on Door #(s):

32

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		ITEMID	FINISH	MFR
1	EA	ELEC PANIC HARDWARE	99-NL-OP-110MD	⚡		626	VON
1	EA	QEL LATCH RETRACTION & CONNECTORS	BY OTHERS	⚡			VON
1	EA	FSIC CORE	CONST CORE			622	SCH
1	EA	RIM HOUSING	AS REQ'D			626	SCH
1	EA	FSIC CORE	PERMANENT CORE			626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 12" O			630- 316	IVE
1	EA	MULTITECH READER	BY OTHERS	⚡		BLK	SCE
1	EA	DOOR CONTACT	BY OTHERS	⚡		WHT	SCE
1			BALANCE OF HARDWARE EXISTING				
1		POWER SUPPLY	BY OTHERS				

OPERATIONAL DESCRIPTION

RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL AFTER RETRACTING LATCHBOLT WITH KEY.

ACCESS CONTROL SOFTWARE OR PRESENTING AUTHORIZED CREDENTIAL SHALL RELEASE ELECT STRIKE ALLOWING DOOR TO BE PULLED OPEN. FAIL SECURE.

DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

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	99-EO	⚡	626	VON
1	EA	ELEC PANIC HARDWARE	99-NL-OP-110MD	⚡	626	VON
2	EA	QEL LATCH RETRACTION & CONNECTORS	BY OTHERS	⚡		VON
1	EA	MORT CYL HOUSING	AS REQ'D		626	SCH
2	EA	FSIC CORE	CONST CORE		622	SCH
1	EA	RIM HOUSING	AS REQ'D		626	SCH
2	EA	FSIC CORE	PERMANENT CORE		626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 12" O		630- 316	IVE
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA MC		689	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	⚡	628	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.

SELF-CLOSING WITH EDA ARM. EXTRA DUTY ARM. PUSH SIDE MOUNTED.
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):

16 21

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	POWER TRANSFER	EPT10 CON	⚡	689	VON
1	EA	ELEC PANIC	99-NL-OP-110MD	⚡	626	VON
		HARDWARE				
1	EA	QEL LATCH	BY OTHERS	⚡		VON
		RETRACTION & CONNECTORS				
1	EA	RIM HOUSING	AS REQ'D		626	SCH
1	EA	FSIC CORE	CONST CORE		622	SCH
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 12" O		630- 316	IVE
1	EA	OH STOP	90S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA MC ST- 2731		689	LCN
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 POWER SUPPLY	BY OTHERS BY OTHERS	⚡	WHT	SCE

OPERATIONAL DESCRIPTION

RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL AFTER RETRACTING LATCHBOLT WITH KEY.
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.
SURFACE MOUNTED OVERHEAD STOP.
DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

HARDWARE GROUP NO. 01.03

For use on Door #(s):

30

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		ITEMID	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP			630	IVE
2	EA	POWER TRANSFER	EPT10 CON	⚡		689	VON
1	EA	REMOVABLE MULLION	KR4954			689	VON
1	EA	ELEC PANIC HARDWARE	99-NL-OP-110MD	⚡		626	VON
1	EA	ELEC PANIC HARDWARE	99-EO	⚡		626	VON
2	EA	QEL LATCH RETRACTION & CONNECTORS	BY OTHERS	⚡			VON
2	EA	FSIC CORE	CONST CORE			622	SCH
1	EA	RIM HOUSING	AS REQ'D			626	SCH
2	EA	FSIC CORE	PERMANENT CORE			626	SCH
1	EA	MORT CYL HOUSING	AS REQ'D			626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 12" O			630- 316	IVE
2	EA	OH STOP	100S			630	GLY
2	EA	SURFACE CLOSER	4040XP EDA MC			689	LCN
2		CLOSER BRACKETS, SPACERS, ETC	AS REQ'D				LCN
1	EA	MULLION SEAL	8780NBK PSA			BK	ZER
1	EA	GASKETING	328AA-S			AA	ZER
1	EA	RAIN DRIP	142AA			AA	ZER
2	EA	DOOR SWEEP	39A			A	ZER
1	EA	THRESHOLD	655A-223			A	ZER
2	EA	WIRE HARNESS	CON-6W				SCH
2	EA	WIRE HARNESS	CON X LENGTH AS REQ'D				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.

SELF-CLOSING WITH EDA ARM. EXTRA DUTY ARM. PUSH SIDE MOUNTED.
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. 02.01

For use on Door #(s):

8 9 10 31

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	WIRELESS ELECTRONIC LOCK	NDE80JDD RHO 6 VDC BY OTHERS	⚡	626	SCE
1	EA	ENGAGE GATEWAY	BY OTHERS			SCE
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	FSIC CORE	CONST CORE		626	SCH
1	EA	SURFACE CLOSER	4040XP MC		689	LCN
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

OPERATIONAL DESCRIPTION

WIRELESS ELECTRONIC STOREROOM LOCK - LOCKSET NORMALLY SECURE WITH OUTSIDE LEVER DISENGAGED. VALID CREDENTIAL OR KEY MOMENTARILY UNLOCKS DOOR. VALID CREDENTIAL OR ACCESS CONTROL SOFTWARE MAY BE USED TO CHANGE TO A PASSAGE OR SECURED STATE. INSIDE LEVER ALWAYS ALLOWS FREE EGRESS.
SELF-CLOSING .

HARDWARE GROUP NO. 02.02

For use on Door #(s):

11 12

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	WIRELESS ELECTRONIC LOCK	NDE80JDD RHO 6 VDC BY OTHERS	⚡	626	SCE
1	EA	ENGAGE GATEWAY	BY OTHERS			SCE
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	FSIC CORE	CONST CORE		626	SCH
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP MC ST-1630		689	LCN
1		CLOSER BRACKETS, SPACERS, ETC	AS REQ'D			LCN
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

OPERATIONAL DESCRIPTION

WIRELESS ELECTRONIC STOREROOM LOCK - LOCKSET NORMALLY SECURE WITH OUTSIDE LEVER DISENGAGED. VALID CREDENTIAL OR KEY MOMENTARILY UNLOCKS DOOR. VALID CREDENTIAL OR ACCESS CONTROL SOFTWARE MAY BE USED TO CHANGE TO A PASSAGE OR SECURED STATE. INSIDE LEVER ALWAYS ALLOWS FREE EGRESS.
SELF-CLOSING.
CONCEALED OVERHEAD STOP

HARDWARE GROUP NO. 02.03

For use on Door #(s):

7

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	WIRELESS ELECTRONIC LOCK	NDE80JDD RHO 6 VDC BY OTHERS	⚡	626	SCE
1	EA	ENGAGE GATEWAY	BY OTHERS			SCE
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
3	EA	SILENCER	SR64		GRY	IVE

OPERATIONAL DESCRIPTION

WIRELESS ELECTRONIC STOREROOM LOCK - LOCKSET NORMALLY SECURE WITH OUTSIDE LEVER DISENGAGED. VALID CREDENTIAL OR KEY MOMENTARILY UNLOCKS DOOR. VALID CREDENTIAL OR ACCESS CONTROL SOFTWARE MAY BE USED TO CHANGE TO A PASSAGE OR SECURED STATE. INSIDE LEVER ALWAYS ALLOWS FREE EGRESS.

SELF-CLOSING WITH SCUSH ARM. SPRING LOADED STOP INCLUDED WITH SOFFIT SHOE. PUSH SIDE MOUNTED.

HARDWARE GROUP NO. 02.04

For use on Door #(s):

6

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	WIRELESS ELECTRONIC LOCK	NDE80JDD RHO 6 VDC BY OTHERS	⚡	626	SCE
1	EA	ENGAGE GATEWAY	BY OTHERS			SCE
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	FSIC CORE	CONST CORE		626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH MC		689	LCN
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

OPERATIONAL DESCRIPTION

WIRELESS ELECTRONIC STOREROOM LOCK - LOCKSET NORMALLY SECURE WITH OUTSIDE LEVER DISENGAGED. VALID CREDENTIAL OR KEY MOMENTARILY UNLOCKS DOOR. VALID CREDENTIAL OR ACCESS CONTROL SOFTWARE MAY BE USED TO CHANGE TO A PASSAGE OR SECURED STATE. INSIDE LEVER ALWAYS ALLOWS FREE EGRESS.

SELF-CLOSING WITH SCUSH ARM. SPRING LOADED STOP INCLUDED WITH SOFFIT SHOE. PUSH SIDE MOUNTED.

HARDWARE GROUP NO. 03.01

For use on Door #(s):

29

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	PANIC	CD-99-NL-OP-110MD		626	VON
		HARDWARE				
2	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	MORT CYL	AS REQ'D		626	SCH
		HOUSING				
2	EA	FSIC CORE	CONST CORE		622	SCH
1	EA	RIM HOUSING	AS REQ'D		626	SCH
1	EA	90 DEG OFFSET	8190EZHD 12" O		630-	IVE
		PULL			316	
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA MC		689	LCN
1		CLOSER	AS REQ'D			LCN
		BRACKETS, SPACERS, ETC				
1	EA	GASKETING	328AA-S		AA	ZER
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER
1	EA	DOOR CONTACT	BY OTHERS	⚡	628	SCE

OPERATIONAL DESCRIPTION

RIM EXIT DEVICE. FREE EGRESS AT ALL TIMES BY PRESSING PUSHBAR. ENTRY BY PULL AFTER RETRACTING LATCHBOLT WITH KEY.

DOGGING BY KEYED CYLINDER LOCKS DOWN THE PUSHBAR SO THE LATCHBOLT REMAINS RETRACTED AND DOOR FUNCTIONS AS A PUSH/PULL.

SELF-CLOSING WITH EDA ARM. EXTRA DUTY ARM. PUSH SIDE MOUNTED.

CONCEALED OVERHEAD STOP.

DOOR POSITION SWITCH(S) MONITOR WHETHER THE DOOR IS OPEN OR CLOSED.

HARDWARE GROUP NO. 04.01

For use on Door #(s):

13 17

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	ITEMID	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	PULL PLATE	8303 10" 4" X 16"		630	IVE
1	EA	PUSH PLATE	8200 4" X 16"		630	IVE
1	EA	SURFACE CLOSER	4040XP MC		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER

OPERATIONAL DESCRIPTION

FREE EGRESS AT ALL TIMES BY PRESSING PUSHPLATE. ENTRY BY PULL. NON-LOCKING, NON-LATCHING.
SELF CLOSING

HARDWARE GROUP NO. 04.02

For use on Door #(s):

20 25

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	ITEMID	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	PULL PLATE	8303 10" 4" X 16"		630	IVE
1	EA	PUSH PLATE	8200 4" X 16"		630	IVE
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP MC		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

OPERATIONAL DESCRIPTION

FREE EGRESS AT ALL TIMES BY PRESSING PUSHPLATE. ENTRY BY PULL. NON-LOCKING, NON-LATCHING.
SELF CLOSING
CONCEALED OVERHEAD STOP

HARDWARE GROUP NO. 06.01

For use on Door #(s):

23 24 26 27

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	PRIVACY LOCK	ND40S RHO		626	SCH
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER

OPERATIONAL DESCRIPTION

PRIVACY LOCK - PUSH-BUTTON LOCKING. WHEN LOCKED, CAN BE OPENED FROM OUTSIDE WITH SMALL SCREWDRIVER. TURNING INSIDE LEVER OR CLOSING DOOR RELEASES BUTTON. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

HARDWARE GROUP NO. 07.01

For use on Door #(s):

22 28

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	CLASSROOM LOCK	ND70JD 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

CLASSROOM LOCK - OUTSIDE LEVER LOCKED AND UNLOCKED BY KEY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

HARDWARE GROUP NO. 07.02

For use on Door #(s):

18 19

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	CLASSROOM LOCK	ND70JD RHO		626	SCH
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	FSIC CORE	CONST CORE		626	SCH
1	EA	OH STOP	90S		630	GLY
3	EA	SILENCER	SR64		GRY	IVE

OPERATIONAL DESCRIPTION

CLASSROOM LOCK - OUTSIDE LEVER LOCKED AND UNLOCKED BY KEY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

SURFACE MOUNTED OVERHEAD STOP.

HARDWARE GROUP NO. 07.03

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	CLASSROOM LOCK	ND70JD RHO		626	SCH
1	EA	FSIC CORE	CONST CORE		626	SCH
1	EA	FSIC CORE	PERMANENT CORE		626	SCH
1	EA	SURFACE CLOSER	4040XP H MC		689	LCN
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488SBK PSA		BK	ZER
1	EA	DOOR SWEEP	39A		A	ZER
1	EA	THRESHOLD	655A-223		A	ZER

OPERATIONAL DESCRIPTION

CLASSROOM LOCK - OUTSIDE LEVER LOCKED AND UNLOCKED BY KEY. INSIDE LEVER ALWAYS UNLOCKED. INSIDE LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS.

SELF-CLOSING WITH HOLD OPEN

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 Wire Glass:**
 - a. AFG Industries, Inc.
 - b. Guardian Industries Corp.
 - c. Hordis Brothers, Inc.
 - d. Pilkington Sales (North America) Limited.

2. 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.

3. 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.

4. 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. Wired Glass: Type II (patterned and wired glass, flat), Class 1 (translucent), Quality q8 (glazing); complying with ANSIZ97.1; 1/4" thick; of form and mesh pattern indicated below:
 - 1. Polished Wire Glass: Form 1 (wired, polished both sides), Mesh m1 (diamond).
- D. 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.
- E. 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.

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" wire glass.
- 3. 1/4" clear glass.
 - a. Tinted.
 - b. Tempered.
- 4. 5/8" insulating 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 or board base 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. 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. 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.
- 6. Fasteners for Furring Members: Type and size recommended by furring manufacturer for substrate and application indicated.
- 7. 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 areas with shower area on walls and ceiling.
 - 2. Edges: Manufacturer's standard.
 - 3. Thickness: 1/2", unless otherwise indicated. Abuse resistant.

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. Imperial 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. Imperial 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.

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, or 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 12" 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 stairwells and similar 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.

B. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

1. Fasten 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 (Throughout Unless Otherwise Noted):**
 - 1. **Mineral Composition Panels - Water Felted, with Standard Washable Painted Finish, fire rated:** Provide Type III, Form 2 units, per ASTM E1264 "ce" 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/ Shower Areas):**

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.

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.

3. EXECUTION:

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 – Resilient 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 Resilient 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 density; 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. Amtico Flooring Div., American Biltrite Inc.
 - b. Armstrong World Industries, Inc.

- c. Azrock Floor Products Div., Azrock Industries, Inc.
- d. Kentile Floors, Inc.
- e. Tarkett Inc.
- 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 laid-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 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: 419XX 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. Concrete Block:
 1. Exterior Acrylic Emulsion Finish: Three coats.
 - a. One Primer Coat: Masonry Conditioner.
 - b. Two Finish Coats: A-100 Acrylic Latex Flat Exterior Finish A-6 Series.
- C. 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).

D. 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).

END OF SECTION 09910.

DIVISION 10 - SPECIALTIES
Section 10160 - Toilet Partitions

1. GENERAL:

1.1. RELATED DOCUMENTS:

- C. 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 toilet partitions is indicated on drawings.
- B. Types of toilet compartments include:
 - 1. Solid plastic, homogeneous color.
- D. Styles of toilet compartments include:
 - 1. Floor-anchored, overhead braced.
- E. Styles of screens include:
 - 6. Floor-to-ceiling post.
- F. Toilet Accessories:
 - 7. Provide a toilet paper holder and coat hook in each compartment.

1.3. SUBMITTALS:

- G. Product Data: Submit manufacturer's detailed technical data for materials, fabrication, and installation, including catalog cuts of anchors, hardware, fastenings, and accessories.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of toilet partition assemblies not fully described by product drawings, templates, and instructions for installation of anchorage devices built into other work.

- C. Samples: Submit full range of color samples for each type of unit required. Submit 6" square samples of each color and finish on same substrate to be used in work, for color verification after selections have been made.

1.4. QUALITY ASSURANCE:

- H. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication where possible, to ensure proper fitting of work. However, allow for adjustments within specified tolerances where ever taking of field measurements before fabrication might delay work.
- B. Coordination: Furnish inserts and anchorages which must be built into other work for installation of toilet partitions and related work; coordinate delivery with other work to avoid delay.

2. PRODUCTS:

2.1. MANUFACTURERS:

- I. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Capitol Partitions, Inc.
 - 2. Columbia Partitions, Inc.
 - 3. Knickerbocker Partition Corp.
 - 4. Santana Products Co.

2.2. MATERIALS:

- A. General: Provide materials which have been selected for surface flatness and smoothness. Exposed surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable.
- J. Solid Plastic: High density, solid polyethylene with homogenous color throughout. Provide material not less than 1" thick, seamless construction with edges eased.
- C. Pilaster Shoes: ASTM A-167, Type 302/304 stainless steel, not less than 3" high, 20 gage, finished to match hardware.
- D. Stirrup Brackets: Manufacturer's standard design for attaching panels to

walls and pilasters, either chromium-plated non-ferrous cast alloy ("Zamac") or anodized aluminum.

- E. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories of chromium-plated non-ferrous cast alloy ("Zamac").
- F. Overhead-Bracing: Continuous extruded aluminum, anti-grip profile, with clear anodized finish.
- K. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, chromium-plated steel, or brass finished to match hardware, with theft-resistant type heads and nuts. For concealed anchors, use hot-dip galvanized, cadmium-plated, or other rust-resistant protective-coated steel.

2.3. FABRICATION:

- L. General: Furnish standard doors, panels, screens, and pilasters fabricated for partition system, unless otherwise indicated. Furnish units with cutouts, drilled holes, and internal reinforcement to receive partition-mounted hardware, accessories, as indicated.
- B. Doors Dimensions: Unless otherwise indicated, furnish 24" wide in swinging doors for ordinary toilet stalls and 32" wide (clear opening) outshining doors at stalls equipped for use by handicapped.
- M. Overhead-braced Partitions: Furnish galvanized steel supports and leveling bolts at pilasters, as recommended by manufacturer to suit floor conditions. Make provisions for setting and securing continuous extruded aluminum anti-grip overhead-bracing at top of each pilaster. Furnish shoe at each pilaster to conceal supports and leveling mechanism.
- N. Floor-Supported Partitions: Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjustment nuts at pilasters, to permit structural connection at floor. Furnish shoe at each pilaster to conceal anchorage.
- E. Floor-Supported Screens: Furnish pilasters not less than 1" in thickness, panels and pilasters of same construction and finish as toilet partitions. Furnish galvanized steel anchorage devices, complete with threaded rods, lock washers, and leveling adjusting nuts at pilasters, to permit structural connection to floor. Furnish shoe at pilaster to conceal anchorage.

- O. Hardware: Furnish hardware for each compartment in partition system, as follows.
 - 8. Hinges: Cutout inset type, adjustable to hold door open at any angle up to 90 degrees. Provide gravity type, spring-action cam type, or concealed torsion rod type, to suit manufacturer's standards.
 - 9. Latch and Keeper: Manufacturer's standard surface-mounted latch unit, designed for emergency access, with combination rubber-faced door strike and keeper.
 - 3. Coat Hook: Manufacturer's standard unit, combination hook and rubber-tipped bumper, sized to prevent door hitting mounted accessories.

Door Pull: Manufacturer's standard unit for out-swing doors.

3. EXECUTION:

3.1. INSTALLATION:

P. General: Comply with manufacturer's recommended procedures and installation sequence. Install partitions rigid, straight, plumb, and level. Provide clearances of not more than 1/2" between pilasters and panels, and not more than 1" between panels and walls. Secure panels to walls with not less than two stirrup brackets attached near top and bottom of panel. Locate wall brackets so that holes for wall anchorages occur in masonry or tile joints. Secure panels to pilasters with not less than two stirrup brackets located to align with stirrup brackets at wall. Secure panels in position with manufacturer's recommended anchoring devices.

Q. Overhead-Braced Partitions: Secure pilasters to floor and level, plumb, and tighten installation with devices furnished. Secure overhead-brace to each pilaster with not less than two fasteners. Hang doors and adjust so that tops of doors are parallel with overhead-brace when doors are in closed position.

- C. Screens: Attach with concealed anchoring devices, as recommended by manufacturer to suit supporting structure. Set units to provide support and to resist lateral impact.

3.2. ADJUST AND CLEAN:

Hardware Adjustment: Adjust and lubricate hardware for proper operation. Set hinges on in swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out swinging doors

(and entrance swing doors) to return to fully closed position.

- B. Clean exposed surfaces of partition systems using materials and methods recommended by manufacturer, and provide protection as necessary to prevent damage during remainder of construction period.

END OF SECTION 10160.

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 1" high. All signage to meet ADA requirements.

a. Provide and install plastic door signs as follows:

- (1) Billing Office-1
- (2) Men's-1
- (3) Women's-1
- (4) Triage Room-1
- (5) Operation Manger-1
- (6) Bunk- 4
- (7) Radio Room-1
- (8) Laundry-1
- (9) Work Area-1
- (10) Women's Locker Room-1
- (11) Men's Locker Room-1

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 10500 – WELDED METAL LOCKERS (TACTICAL LOCKER WITH BUILT-IN BENCH DRAWER)

S. GENERAL

SUMMARY

For proper evaluation, it is required to list a separate price for each type of locker listed below. Each locker section pricing should include equipment, freight and installation:

[6] Tactical Lockers with Built-In Bench Drawer

Related Work, Not Furnished:

Finish floor covering material and installation.

Final power connections to the Tactical Lockers from adequate power supply shall be performed by a licensed electrician supplied by the owner.

DESCRIPTION

Finishes:

Fabricated Metal Components and Assemblies: All components to be painted with an electro-statically applied Powder Coat paint that can meet or exceed test requirements set out by ASTM standard D3451-06 Standard Guide for Testing Coating Powders and Powder Coatings.

Sizes:

Tactical Lockers with built-in bench drawers: height is [84] inches; built-in bench drawer height is [18] inches; depth is [37.125] inches; width is [24] inches. Sloped top adds [8] inches to height.

PERFORMANCE REQUIREMENTS

Design Requirements:

Limit overall width not to exceed specified nominal width; locker width designed for zero growth.

Seismic Requirements: Provide a **site specific seismic evaluation report** of the lockers performed by an independent structural engineer licensed in the state of Illinois. The seismic anchorage report will calculate the loads of the lockers and will analyze/design the components from the bottom of the locker to the

connection to the structure. The report will include the length, diameter and minimum embedment of anchors to be used. This report must be provided with submittals and be specific to this installation site. A blanket statement without calculations stating the product meets seismic code is unacceptable. **This report is mandatory.**

SUBMITTALS

Product Data: Submit manufacturer's product literature for each type of welded metal locker. Include technical data substantiating that products to be furnished comply with specifications.

Shop Drawings: Provide layout, dimensions and show complete extent of installation layout including clearances, spacings, and relation to adjacent construction in plan, elevation, and sections.

Selection Samples: For initial selection of colors and textures, submit manufacturer's color charts, showing full range of colors and textures available.

Warranty: Provide 5 year parts and 1 year labor warranty.

QUALITY ASSURANCE

Manufacturer Qualifications: Engage an experienced manufacturer who is ISO 9001 certified for the design, production, installation and service of welded metal lockers. Furnish certification attesting ISO 9001 quality system registration.

Installer Qualifications: Engage an experienced installer who is the manufacturer's authorized representative for the specified products for installing welded metal lockers and seismically anchoring shelving units to the structure.

T. PRODUCTS

BASIS OF DESIGN

Manufacturer:

Products of Spacesaver (Penco where noted) by Bradford Systems, 1735 Larkin Williams Road, Fenton MO (636-343-2336) are specified to establish desired quality and performance of work.

1. Although the listed specifications are based upon a specific performance level, nobody is excluded from bidding this project. It is the

bidder's responsibility to submit a bid that meets all mandatory specifications stated herein.

2. Because of the complexity and number of required specifications, the bidder must compare their product bid with the required listed minimum point by point, and identify any deviations from the specifications. A descriptive brochure of the product may not be acceptable as proper identification of deviations from the written specification. Any deviation from mandatory requirements may render the bid non-responsive and incapable of award. The client reserves the right to assess each deviation in terms of its acceptability and its impact on competition.

1.2 TACTICAL LOCKER WITH BUILT-IN BENCH DRAWER

A. Welded Frame:

1. The welded frame must consist of top, bottom, back, and sides constructed of a minimum of 18-gauge steel. All frame components shall be joined using resistance welding. Riveting of structural members will not be permitted.
2. Horizontal front flanges will be a minimum of [2] inches. Vertical front flanges will be a minimum of [1] inch. Horizontal and vertical flanges will overlap and be secured with a minimum two (2) resistance welds per corner.
3. Corner gussets shall be MIG and spot welded in each of the four front corners of the locker for increased stiffness and rigidity.
4. Provide side panel lances evenly spaced on [3] inch centers. Lances to provide the flexibility of on-site, end-user reconfiguration/addition of internal components anytime, anywhere, now or in the future.
5. Bench Housing for built-in bench drawer
6. Welded frame construction shall consist of top, bottom, and side components joined by using resistance welding. Riveting of bench housing structural members will not be permitted.
7. Corner gussets shall be welded in the two (2) front bottom corners of the bench housing for increased stiffness and rigidity.
8. Horizontal front flanges will be a minimum of [1] inch
9. Vertical front flanges will be a minimum of [1] inch
10. Horizontal and Vertical front flanges will overlap and shall be secured with minimum of one (1) resistance weld per corner.

11. Side panels – Lances symmetric and evenly spaced to provide optimum component locations (standard based on [3] inch on center vertical placement to match mating locker lance design).
12. Return flanges on housing to securely fasten housing to welded frame of locker.
13. Base of bench housing shall include four (4) 3/8"-16 UNC threaded weld-nuts and corresponding leveling feet.
14. Top of bench housing shall include hole pattern for mating bench seat.
15. Sides of bench housing shall include mounting holes in the event lockers are ganged together.
16. Lockers with built-in bench drawer and built-in external access drawer shall have intermediate base shelf with interlocking mechanism for securing drawer when locker door is closed.
17. Provide four (4) [0.875] inch diameter electrical knock-outs per locker, two (2) located on top of the locker in both right and left rear corners, and two (2) located in the back of locker centered at a distance no greater than [24] inches from the top and bottom. Knock-outs allow end-user flexibility of adding electrical capability to lockers.
18. Lockers shall be prepared with mounting holes for use with the continuous sloped top system.
19. Lockers shall be prepared with mounting holes for attaching necessary trim components
20. Locker shall be prepared with mounting holes for ganging lockers back-to-back or side-by-side
21. Base of lockers shall include four (4) 3/8"-16 UNC threaded weld-nuts and corresponding leveling feet.
22. End/Back Panels: End/Back Panels with no exposed fasteners shall be provided on the exposed end or back of each locker run; thus providing a clean and aesthetically pleasing appearance.

B. Ventilation:

1. Provide ventilation holes in top of locker to allow mechanically extracted air to be pulled up through the locker system as required. Ventilation shall be controlled by eight (8) evenly spaced [0.625] inch diameter holes. Proper ventilation system ensures odors are removed from locker system.
2. Provide an adjustable air baffle for system balancing when mechanical air extraction is used. Upon balancing system, air baffle shall be secured with a fastener to maintain ventilation setting.

3. Provide louvered air vents in bottom of the main locker door/s to allow mechanically extracted air to be pulled up through the locker system.
4. Provide louvered air vents in drawer front when built-in bench drawer or built-in external access drawer models are required.
5. Minimum [0.500] inch gap between back of shelving components and back of locker to provide uninterrupted air flow up the rear of the locker system.
6. Minimum [2.00] inches gap between front of shelving and locker door to provide uninterrupted air flow up the front of the locker system.
7. Upon request manufacturer shall provide HVAC tech data to serve as a guideline for the General Contractor and HVAC Contactor.
8. Provide [8] decorative "Chimney" covers to hide HVAC duct coming down from the ceiling into the sloped tops of the lockers.

C. Electrical

1. Shall provide four (4) electrical knock-outs per locker. This feature provides the end-user the opportunity for hard wire electrical connection points for each locker. End-user or General Contractor is responsible for final electrical connection.
2. Shall provide a minimum of one (1) duplex outlet receptacle per locker.
3. Shall provide UL Listed manufactured electrical wiring system as required. Manufactured electrical wiring system provides connection for a maximum of 78 receptacles per hardwired power in-feed. Manufactured electrical wiring system is a modular, unique, flexible, and cost effective method of providing electrical capability to the lockers.

D. Drawers:

1. Drawer body wrapper shall have welded frame construction. Riveting of structural members will not be permitted.
2. Drawers for locker with built-in bench drawers and built-in external access drawers shall have box-formed drawer front.
3. Provide automatic interlocking system for securing bottom drawer. Provide a passive system so when the main locker door is closed the bottom drawer is locked. When the main door is open the bottom drawer is unlocked without any additional end user action.
4. Built-in bench drawer shall have a nominal [36] inches in depth.
5. Provide a flush mounted pull handle.

6. Drawer Slides: Provide [200] lbs. maximum load capacity and pass 50,000 cycle performance testing (Max. load, uniform distribution) (Test data to be provided by manufacturer upon request)
7. Bench drawer minimum [26.5] inches drawer extension
8. Provide louvered air vents in drawer front when built-in bench drawer or built-in external access drawer models are required.

E. Bench Seat:

1. Provide [9.0] inches deep laminated kiln dried maple bench seat; material thickness [1.25] inches.
2. Front (leading edge) of bench seat to have [.625] inch radius bull nose.
3. Finish of bench seat shall be sanded smooth and have two (2) coats of catalyzed varnish applied.

F. Welded Doors

1. Shall be formed from two (2) pieces of minimum 18-gauge cold rolled steel box formed and welded together using modern GMAW techniques. Single-piece door with inner and outer door panels shall have a combined steel thickness of no less than [0.096] inches thick. Welded door design with inner panel optimizes structural integrity of locker door system over and above any single frame door design. Manufacturer's standard latching mechanism with slam shut feature, no moving parts for function with owner supplied padlock
2. Exterior door panel shall be constructed with formed flanges and return flanges to add stiffness.
3. Internal door panel shall be constructed with formed flanges for added stiffness.
4. All inner door panel (except Multi-Tier) heights shall be minimum 70% of external door height.
5. Single-piece welded door frame shall consist of internal door panel nested inside exterior door panel and welded per the following requirements:
6. Top / bottom. Exterior and Interior panels to be welded in a minimum of three (3) places with weld spacing not to exceed [6] inches between adjacent welds and [1] inch from any corner.
7. Sides. Exterior and interior panels to be welded with spacing not to exceed [12] inches between adjacent welds and [1] inch from any corner.

8. Inner door panel to have peg board style hole pattern, allowing the attachment of Document Holder and any standard peg board accessory.
9. Inner door panel to have [4] inch rectangular slot centered towards the top of the locker.
10. External door panel shall have louvers to provide adequate air circulation throughout locker system.
11. Louvered air vents shall be located at the bottom of the locker door to enhance circulation of mechanically extracted air from the bottom of the locker out of the top.
12. Louvered air vents shall be approximately [3] inches in width and [0.75] inches or in height and spaced on [1] inch centers.
13. All doors shall have neoprene silencers on each door for noise reduction
14. Door torsional deflection shall not exceed [0.1875] inch with a [20] lb. point load. (Test data to be provided by manufacturer upon request)
15. Provide 16-gauge full length hinge for increased strength and security of locker system.
16. Hinges to be welded to door frame with spot welds not to exceed [6] inch or separation.
17. Door assembly to be riveted to door frame on factory pre-established hole pattern.
18. Provide Padlock hasp only. Pad locks to be provided by client.

G. Interior/Accessory components:

1. All interior components must be constructed of minimum 18-gauge steel (unless otherwise clarified in specification).
2. For added security, internal component can be secured utilizing blind rivets, threaded fasteners, or bending specially designed tab.
3. All interior components available at time of order and as post-installation upgrades in the future.
4. Provide Shelf with integral hanger bracket
 - 1) Size specified by locker width
 - 2) Hanger bracket designed with perforations on approximately [3] inch centers to insure clothing separation for optimum ventilation
 - 3) Performance: Uniform load rating [300] lbs.

- b. Shelf rear return flange stops minimum [0.50] inch short of locker back panel on order to allow air circulation throughout entire locker assembly
 - c. All performance test data shall be provided by manufacturer upon request.
5. Provide Boot Tray
- a. Material – Rubber
 - b. Dimensions:
 - 1) Width – [12.90] inches
 - 2) Depth – [19.90] inches
 - 3) Height – [1.25] inches
 - c. Manufactured from Natural rubber compounds, environmentally friendly, durable, water repellent easily cleaned with soap and water, resistant to alkalis and weak acids, mold, mildew, and dust mites.
6. Provide Body Armor Drying Rack for Bench Drawer Model
- a. Size of tray is controlled by locker width
 - b. Bottom of drying tray shall have louvered pattern to provide air circulation throughout
 - c. Shall have the ability to adjust/glide frontward and backward, while mounted in the bench drawer.

H. Locker Tag Numbers

- 1. Shall provide locker numbers on each locker per customer requirement

I. Accessories:

- 1. Provide Trim and Fillers: Provide manufacturer's standard if gap between lockers and wall is greater than 2 ³/₄".
- 2. Provide Continuous Sloped Tops: Provide manufacturers standard.

U. EXECUTION

INSTALLATION

System to be installed in accordance with manufacturer's written instructions.

Adjust components and accessories to provide smoothly operating, visually acceptable installation.

Immediately upon completion of installation, clear components and surfaces.
Remove surplus materials, rubbish and debris resulting from installation upon completion of work and leave areas of installation in neat, clean condition.

END OF SECTION 10500

Division 10- Specialties
SECTION 10501- Turnout Gear Lockers

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Design, fabrication and installation of wall mounted turnout gear lockers as specified herein.
- B. Turnout gear lockers wall mounted super jumbo – 24” deep.

1.2 RELATED SECTIONS

- A. Section 10: Metal Lockers.
- B. Sections of Division 16: electrical as applicable.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer’s product data and installation instructions.
- B. Shop Drawings: Submit manufacturer’s shop drawings for each individual run of lockers.
- C. Samples: Submit manufacturer’s standard color samples.
- D. Owner’s Manual: Provide maintenance manual at closeout.
- E. Warranty: Submit manufacturer’s standard warranty.

1.4 QUALITY ASSURANCE

- A. Manufacturer shall have a minimum of fifteen years experience in the direct manufacture of lockers.
- B. Installer Qualifications: Installer shall have experience necessary to assure lockers are installed properly and according to manufacturer’s instructions.
- C. Reference:
 - 1. ASTM A513 – Minimum properties of Electric-Resistance-Welded Carbon Allow Steel Mechanical Tubing
 - 2. ASTM A510 - Minimum properties of Wire Rods and Coarse Round Wire, Carbon Steel and Alloy Steel

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers with labels identifying product and manufacturer's name.
- B. Storage: Store materials in a clean dry area.
- C. Handling: Protect materials and finish during installation and handling to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. **Acceptable Manufacturers:** Subject to compliance with requirements of the contract documents, acceptable manufacturer's are as follows:

- 1. GearGrid Corporation, 670 SW 15th Street, Forest Lake, MN 55025. Toll-free 888-643-6694. Phone 651-464-4468. Fax 651-464-4780. Web site www.geargrid.com. Email sales@geargrid.com.
- 2. Additional manufacturer's may be approved, however approval does not preclude the manufacturer from providing documentation supporting their product meets or exceeds all aspects of this specification section. Failure to provide proper documentation will result in the rejection of submitted product.

2.2 TURNOUT GEAR LOCKER FABRICATION

- A. Lockers must be fabricated and manufactured in the U.S.A. Products not manufactured in the U.S.A will be rejected at the time of submittals.
- B. **Model:** GEARGRID Wall Mounted Storage System.
- C. **Locker Sizes:** (Please reference project drawings for indicated sizes)
 - 1. Super Jumbo 24": Overall dimension- 74.5" high x 25.25" wide x 24" deep.
 - a) Clear Opening Width: 22.75"
- D. **Construction:** Units shall be welded at all applicable joints. Forming of metal shall be completed by standard cold-forming operations. Use of fasteners will only be required to allow for knock-down shipping, securing units to mounting surface and on applicable accessories.
- E. **Vertical Dividers:**

1. Outer Frames: 1.25" O.D. x 16 gauge wall thickness ASTM A513 steel tubing.
2. Inner Grid: .25" diameter ASTM 510 cold drawn steel wire resistance welded to a 3" square pattern.
3. Inner Grid wires must be full length and width of inside vertical divider frame. Wires not running full length or width, thus creating exposed wire ends will not be acceptable.
4. Inner Grid wires must run horizontally and vertically creating a square or rectangular grid pattern only. Grid wires not creating a square or rectangular grid pattern will not be acceptable.
5. Inner Grid wires shall intersect and cross all perpendicular wires, and shall be welded at all intersections.

F. Back Panel:

1. Required on each locker to protect the locker contents and wall substrate, as well as provide an additional panel for accessory attachment.
2. Grid: .25" diameter ASTM 510 cold drawn steel wire resistance welded to a 3" square pattern.
3. Back panel must engage and be secured to vertical dividers via horizontal wires which extend into mounting holes pre-drilled in vertical dividers. Back panels are sandwiched between vertical dividers, preventing them from being removed after assembly is complete.
4. Inner Grid wires must be full length and width of inside vertical divider frame. Wires not running full length or width, thus creating exposed wire ends will not be acceptable.
6. Inner Grid wires must run horizontally and vertically creating a square or rectangular grid pattern only. Grid wires not creating a square or rectangular grid pattern will not be acceptable.
5. Inner Grid wires shall intersect and cross all perpendicular wires, and shall be welded at all intersections.

- G. Shelves:** (1) Upper, (1) Lower. .25" diameter ASTM 510 cold drawn steel wire resistance welded and cold formed. Upper shelf shall include an integrated 20 gauge steel bracket to accept a 2" x 16" name placard, unless doors are selected as an option, in which case the name placard will be integrated into the door.

H. Apparel Hooks: (3) per locker opening. .192" diameter ASTM 510 cold drawn steel wire resistance welded, cold formed and powder coated. Apparel hooks must securely engage and snap onto side or back grid, to prevent unintentional disengagement of hook.

2.3 ACCESSORIES –

All of the following accessories are *OPTIONAL* and should be removed from specification if not desired.

A. Door (optional):

1. Frame: 1.25" O.D. x 16 gauge wall thickness ASTM A513 steel tubing.
2. Inner Grid: .25" diameter ASTM 510 cold drawn steel wire resistance welded to a 3" square pattern.
3. Inner Grid wires must be full length and width of inside vertical divider frame. Wires not running full length or width, thus creating exposed wire ends will not be acceptable.
4. Inner Grid wires shall intersect and cross all perpendicular wires, and shall be welded at all intersections
5. Top Cover: .25" diameter ASTM 510 cold drawn steel wire resistance welded to a 3" square pattern. To securely enclose the top of the locker. Top cover must engage and be secured to vertical dividers via horizontal wires which extend into mounting holes pre-drilled in vertical dividers. Top Covers are sandwiched between vertical dividers, preventing them from being removed after assembly is complete.
6. Hinge: Single pin welded style with brass pivot bushing. Door and Vertical Divider hinge components must be welded and not mechanically fastened.
7. Placard Channel: 20 gauge steel to accept a 2" x 12" name placard, securely welded to inner grid panel
8. Latch/Hasp: Self-latching with padlock hasp, constructed as follows; Vertical Divider side latch shall be minimum .125 in. sheet steel welded to Vertical Divider frame. Door side latch shall be constructed of .125 in. sheet steel and .1875 in. wire. Latch components manufactured from formed wire will not be acceptable. Lock by owner.

B. Hang Bar (Optional)

1. Hang Bars must be manufactured to allow each locker user to install at their desired height. Hang Bars that span multiple locker openings are not acceptable.
2. Tube: 1.25" O.D. x 16 gauge 304 stainless steel tubing.
3. Brackets: Allow Hang Bars to be securely attached to each vertical divider, powder coated.

C. Heavy Hanger (optional):

1. .25" diameter 304 stainless steel wire cold formed and resistance welded.
2. Black vinyl coating on hook end.

D. Gear Dryer Hanger (optional):

1. .25" diameter 304 stainless steel wire cold formed and resistance welded. Includes formed loops to prop open sleeves on jackets to promote better circulation throughout the garment.
2. Black vinyl coating on hook end.

E. Glove Drying Hanger (optional):

1. .25" diameter 304 stainless steel wire cold formed and resistance welded.
2. Black vinyl coating on hook end.

F. Helmet Holder (optional, not recommended when Door and Top Cover option or Top Side Storage option is also selected):

1. .25" diameter ASTM 510 cold drawn steel wire resistance welded. Powder coated finish in specified color.

G. Secure Box (optional):

1. 6" wide x 6" high x 12" deep 6061 Aluminum enclosure with hinged, lockable door at outer end. Design shall include an integrated mail slot. Powder coated finish in specified color.

H. Power Bar (optional on 20" and 24"):

1. 16 gauge steel chase integrated into the upper framework of the locker assembly allowing provision for the installation of a 120VAC duplex outlet at each locker location. Powder coated finish in specified color.

a. No outlets or electrical connections included with Power Bars.

I. Top Side Storage (optional):

1. Shelf spanning across the top of the lockers for additional gear storage above lockers. .25" diameter ASTM 510 cold drawn steel wire resistance welded to a 3" square pattern. Powder coated finish in specified color.

2.4 FINISH

A. General: All system components excluding assembly and mounting hardware and stainless steel components are to receive the standard finish.

B. Standard Finish: Components to be cleaned using a phosphatized bath, clear water rinse and electro-statically coated with a durable and UV-stable TGIC powder coating process. Thickness of applied finish shall be 3 – 4 mm for added protection.

1. Anti-Corrosive Primer: (Optional)

C. Color: Owner to select color (Manufacturer must provide a minimum 7 standard color choices for selection)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine area to receive lockers. Notify architect if area are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A. Install lockers in accordance with manufacturer's instructions.
- B. Use manufacturer's hardware for assembly.
- C. Anchor to mounting surface with proper hardware.

END OF SECTION 10501

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.
 - 3. Grab bars.
 - 4. Sanitary napkin disposal unit.
 - 5. Electric hand dryers.

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.
 - 1. Bobrick Washroom Equipment, Inc.
 - 2. Bradley Corporation.
 - 3. Hallmack-Nutone/Div. Scovill.
 - 4. Watrous, Inc.
 - 5. Architectural and Janitorial Washroom Accessories.

2.2. MATERIALS, GENERAL:

- B. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 22 gage (.034") minimum, unless otherwise indicated.
- C. Galvanized Steel Mounting Devices: ASTM A-153, hot-dip galvanized after fabrication.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

2.3. GRAB BARS:

- E. Stainless Steel Type: Provide grab bars with wall thickness not less than 18 (.050") gage and as follows:

Mounting: Exposed, manufacturer's standard flanges and anchorages.

Clearance: 1-1/2" clearance between wall surface and inside face of bar.

Gripping Surfaces: Manufacturer's standard non-slip texture.

Medium-Duty Size: Outside diameter of 1-1/4".

2.4. SANITARY NAPKIN DISPOSAL UNITS:

- F. 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. ELECTRIC HANDRYER:

- A. Surface mounted "No-touch" operation with two-position adjustable nozzle. Cover to be white. Design equal is Bobrick B-700. Electric and installation by Electrical Contractor.

2.6. FABRICATION:

- G. 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.
- H. 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:

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.

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:

- F. 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.
- G. Types of mirror units required include the following:
 - 1. Stainless steel framed mirrors (18" x 24").
 - 10. Fixed frame stainless steel mirrors (18" x 30"). Use this unit over each handicapped lavatory.
- H. 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.
- I. 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:

- J. Manufacturer: Subject to compliance with requirements, provide mirror

units of one of the following:

1. American Specialties, Inc.
11. Bobrick Washroom Equipment, Inc.
12. Bradley Corp.
13. Hallmack-NuTone/Div. Scovill.
14. Watrous, Inc.

2.2. MATERIALS:

- K. 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:

- L. 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:

Clean exposed surfaces of mirror units in compliance with manufacturer's recommendations.

END OF SECTION 10830.

Division 13- Special construction
SECTION 13120 STEEL BUILDING SYSTEMS

C. GENERAL

1. SECTION INCLUDES

- A. Pre-engineered building and components including the following:
 - 1. Structural steel frame.
 - 2. Roof covering system including exterior roof panels, panel attachments, sealants, mastics, trim and flashings.

2. RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Foundations and anchor bolts.
- B. Section 08810 - Glass: Glass and glazing requirements for glazed openings.
- C. Section 09900 - Paints and Coatings: Finish painting of structural members, doors, roof curbs, and factory prime painted miscellaneous items.

3. REFERENCES

- A. AAMA 101 - Voluntary Specification for Aluminum and Poly (Vinyl Chloride) (PVC) Prime Windows and Glass Doors; American Architectural Manufacturers Association.
- B. American National Standards Institute (ANSI):
 - 1. ANSI 156.2 - Bored and Preassembled Locks and Latches.
 - 2. ANSI 250.1 - Salt Spray Resistance: Acceptance Criteria for Prime Painted Steel Doors and Frames.
 - 3. ANSI 250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Painted. Steel Surfaces for Steel Doors and Frames.
- C. ASTM International (ASTM):
 - 1. ASTM A 36/ASTM A 36M - Standard Specification for Carbon Structural Steel.
 - 2. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
 - 3. ASTM A 490 - Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength.
 - 4. ASTM A 500 - Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 5. ASTM A 529/A 529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality.

6. ASTM A 563 - Standard Specification for Carbon and Alloy Steel Nuts.
7. ASTM A 572/A 572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Steel.
8. ASTM A 653/A 653M - Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
9. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55 percent Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
10. ASTM A 1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low Alloy with Improved Formability.
11. ASTM B 117 -
12. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.
13. ASTM D 870 - Standard Practice for Testing Water Resistance of Coatings Using Water Immersion.
14. ASTM D 1737 - Method of Test for Elongation of Attached Organic Coatings with Cylindrical Mandrel Apparatus.
15. ASTM D 1929 - Standard Test Method for Ignition Properties of Plastics.
16. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
17. ASTM D 2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
18. ASTM D 2843 - Standard Test Method for Smoke from the Burning or Decomposition of Plastics.
19. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.
20. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
21. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
22. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
23. 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.
24. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
25. ASTM E 774 - Standard Specification for Sealed Insulating Glass Units.

- 26. ASTM E 1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
 - 27. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
 - 28. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
 - 29. ASTM G 23 - Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
 - 30. ASTM G 26 - Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
- D. AWS D1.1 - Structural Welding Code; American Welding Society.
 - E. Factory Mutual (FM): Wind classification rating system.
 - F. IAS AC472 International Accreditation Services.
 - G. NAIMA 202 - Standard for Flexible Fiber Glass Insulation Used in Metal Buildings; North American Insulation Manufacturers Association.
 - H. SDI 100 - Recommended Specifications for Standard Steel Doors and Frames; Steel Door Institute.
 - I. UL 580 - Tests for Wind Uplift Resistance of Roof Assemblies; Underwriters Laboratories Inc.
 - J. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.
 - K. Canadian Welding Bureau: A660 Certification.

4. DEFINITIONS

- A. Building Width: Measured from outside to outside of sidewall girts. Typically edge to edge of concrete.
- B. Building Length: Measured from outside to outside of end wall girts. Typically edge to edge of concrete
- C. Building Line: Outside face of steel/girt.
- D. Building Eave Height: Measured from the top of the eave member at the outside of the sidewall girt line to the bottom of the sidewall column base plate or to finished floor if columns are on grout or recessed below

finished floor.

- E. Bay Spacing: Measured from centerline to centerline of primary frames for interior bays and from centerline of the first interior frame to outside of end wall girts for end bays.
- F. Roof Pitch: The ratio of the vertical rise to the horizontal run (i.e. 1:12 = 1 inch of rise for every foot of horizontal dimension).

5. SYSTEM DESCRIPTION

A. General:

- 1. Provide metal building frame, metal wall panels, metal roof panels, accessories and miscellaneous materials for a complete enclosure including supports for building components specified in other sections.
- 2. Design structural systems according to professionally recognized methods and standards and legally adopted building codes.
- 3. Design under supervision of professional engineer licensed in the jurisdiction of the Project.

B. Design Requirements:

- 1. Bay size: 1592 sq.ft.
- 2. Roof pitch: 3/12.
- 3. Building location zip code: 62249
- 4. Roof Live Load: 20 psf (___ MPa), non-reducible.
- 5. Ground Snow Load: 20 psf (___ MPa).
- 6. Seismic Loads: Calculate in accordance with applicable code Building use/importance category 15, Soil Profile 0
- 7. Floor Load:
 - A. Live Load: ___ psf (___ MPa).
 - B. Dead Load: ___ psf (___ MPa).
 - C. Collateral Loads: ___ psf (___ MPa).
 - D. Partition Load: ___ psf (___ MPa).
 - E. Beam max deflection L/___ Joist max deflection L/___
- 8. Dead loads, including the weight of all indicated permanent construction:
 - A. Elements required for support of lights and light battens, hanging fixtures, mechanical equipment, piping, ceiling hanger wires, and all other items required to provide a complete building and not specifically indicated on the drawings.
- 9. Wind Loads:
 - A. Roof Wind Load: Calculate in accordance with applicable code, using 120 mph

C. Performance Requirements:

1. System to withstand gravity and lateral loads in compliance with contract documents.
 2. Refer to contract drawings for additional concentrated loads to pre-engineered building hanger beams and support jacks.
 3. Allowable Deflections: Deflection/drift criteria shall follow recommendations outlined in AISC Design Guide 3 and MBMA Serviceability recommendations.
 - D. Serviceability Criteria: Deflection limits for major components based on manufactures Buildings standards unless otherwise noted.
6. SUBMITTALS
- A. Submit under provisions of Section 01300.
 - B. Design Data: Provide detailed design criteria and calculations prepared by a licensed structural engineer.
 - C. Certification: Manufacturer certification that the building conforms to the contract documents and manufacturer's standard design procedures.
 - D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
7. QUALITY ASSURANCE
- A. Manufacturer Qualifications: Not less than 5 years experience in the actual production of specified products.
 1. Member of the Metal Building Manufacturer's Association (MBMA).
 2. Primary manufacturer of frames, secondary steel, roof and wall sheeting, and trim.
 - B. Installer Qualifications - Firm experienced in application or installation of systems similar in complexity to those required for this project, plus the following:
 1. Acceptable to or licensed by manufacturer.
 2. 3 years experience with systems.
 3. Successfully completed not less than 5 comparable scale projects using this system.
 - C.
8. DELIVERY, STORAGE, AND HANDLING
- A. Store products in manufacturer's unopened packaging until ready for installation.
9. PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

10. WARRANTY

- A. Manufacturer shall warranty installed system for the periods described herein, starting from Date of Substantial Completion or ninety days from delivery, whichever comes first, against all the conditions indicated below. When notified in writing from Owner, manufacturer/installer shall, promptly and without inconvenience and cost to Owner, correct said deficiencies.

- 1. Materials and Workmanship Warranty:

- A. Warranty Period: 3 years, standard.
- B. Warranty Period: 5 years, premium.

D. PRODUCTS

1. MANUFACTURERS

- A. Acceptable Manufacturer: Varco Pruden Buildings is the design standard as specified. Acceptable manufacturers are Butler Manufacturing and Chief Buildings.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2. STRUCTURAL STEEL FRAMING

- A. Primary Framing: Rigid Frame (RF Series) solid web framing consisting of tapered or uniform depth rafters rigidly connected to tapered or uniform depth columns. Provide a clear span that supports the loads at bay spacing indicated. Frames can have a roof pitch as low as 1/4:12 and span can typically range from 30 feet to 300 feet (9.14 m to 91.5 m) in increments of 1/16 inch (1.6 mm) spacing, with the steel yield of 55 ksi.
- B. End Wall Framing: Corner posts, end posts and rake beams.

3. MATERIALS

- A. Structural Steel Plate, Bar, Sheet, and Strip for Use in Bolted and Welded Constructions: ASTM A 572/A 572M, A 529/A 529M, A 1011 or A 36/A 36M Modified 50, with minimum yield strength of 55,000 psi (380 MPa).

- B. Galvanized Structural Steel Material for Use in Roll Formed or Press Broken Secondary Structural Members: ASTM A 563, with minimum yield

strength of 60,000 psi (410 MPa).

C. Hot Rolled Steel Shapes: W, M and S shapes, angles, rods, channels and other shapes; ASTM A 500, ASTM A 572/A 572M or ASTM A 36/A 36M as applicable; with minimum yield strengths required for the design.

D. Structural Bolts and Nuts Used with Primary Framing: High strength, ASTM A 325 bolts and ASTM A563 Grade C nuts.

4. FABRICATION

A. Fabrication: Fabricate according to manufacturer's standard practice.

1. Fabricate structural members made of welded plate sections by jointing the flanges and webs by continuous automatic submerged arc welding process.

2. Welding operators and processes: Qualified in accordance with AWS D1.1.

3. Field connections: Prepare members for bolted field connection by making punched, drilled, or reamed holes in the shop.

B. Component Identification: Mark all fabricated parts, either individually or by lot or group, using an identification marking corresponding to the marking shown on the shop drawings, using a method that remains visible after shop painting.

5. FINISH

A. Shop Coat: Manufacturer's standard rust inhibitive primer paint; manufacturer's standard color.

1. Finish all structural steel members using one coat of manufacturer's standard shop coat, after cleaning of oil, dirt, loose scale and foreign matter.

B. KXL Pre-Painted Finish: 1 mil (0.025 mm) 70 percent Kynar 500, Hylar 5000 coating on exterior surface.

E. EXECUTION

1. EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper and or timely completion.

1. Verify foundations are properly installed, to correct dimensions and within acceptable tolerances.

2. Verify location of covered or built-in work.

3. Do not proceed until unsatisfactory conditions have been corrected.

2. PREPARATION

- A. Framing Erection: Erect framing in compliance with AIS Specification and the latest edition of the MBMA metal building systems manual.
- B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing. Locate braced bays as required by manufacturer.

3. ERECTION OF FRAME

- A. Install in accordance with manufacturer's instructions.
- B. Do not erect frames without complete installation of tie beams and anchorages.
- C. Set column base plates with non-shrink grout to full plate bearing.
- D. Do not field cut or alter structural members without written approval.
- E. After erection, prime bolts, welds, abrasions, and surfaces not primed with primer used in shop painting.

4. FIELD QUALITY CONTROL

- A. Testing by Contractor:
 - 1. Roof installation inspection by roof manufacturer's representative; as required as part of warranty provision.
- B. Testing by Owner:
 - 1. High Strength Bolted Connections: Specification for Structural Joints Using ASTM A 325 or A 490 Bolts, with minimum testing of bolted connections per the arbitration inspection procedure.
 - 2. Welded Connections: AWS. Visual inspection of 100 percent of welds. Ultrasonic inspection of 50 percent of full and partial penetration welds. A rejection rate greater than 5 percent will increase the inspection to 100 percent.
 - 3. General Testing: For materials and installed tolerances.

END OF SECTION 13120

Division 14 Conveying Systems
Section 14240 Hydraulic Passenger Elevators

1. GENERAL

1.01 SUMMARY

Section includes: Hydraulic passenger elevators as shown and specified. Elevator work includes:

1. Standard pre-engineered hydraulic passenger elevators.
2. Elevator car enclosures, hoistway entrances and signal equipment.
3. Operation and control systems.
4. Jack(s).
5. Accessibility provisions for physically disabled persons.
6. Equipment, machines, controls, systems and devices as required for safely operating the specified elevators at their rated speed and capacity.
7. Materials and accessories as required to complete the elevator installation.

Related Sections:

1. Division 1 General Requirements: Meet or exceed all referenced sustainability requirements.
2. Division 3 Concrete: Installing inserts, sleeves and anchors in concrete.
3. Division 4 Masonry: Installing inserts, sleeves and anchors in masonry.
4. Division 5 Metals:
 - a. Providing hoist beams, pit ladders, steel framing, auxiliary support steel and divider beams for supporting guide-rail brackets.
 - b. Providing steel angle sill supports and grouting hoistway entrance sills and frames.
5. Division 9 Finishes: Providing elevator car finish flooring and field painting unfinished and shop primed ferrous materials.
6. Division 16 Sections:
 - a. Providing electrical service to elevators, including fused disconnect switches.
 - b. Emergency power supply, transfer switch and auxiliary contacts.
 - c. Heat and smoke sensing devices.
 - d. Convenience outlets and illumination in control room, hoistway and pit.
7. Division 22 Plumbing

- a. Sump pit and oil interceptor.
- 8. Division 23 Heating, Ventilation and Air Conditioning
 - a. Heating and ventilating hoistways and/or control room.

Work Not Included: General contractor shall provide the following in accordance with the requirements of the Model Building Code and ANSI A17.1 Code. For specific rules, refer to ANSI A17.1, Part 3 for hydraulic elevators. State or local requirements must be used if more stringent. The cost of this work is not included in the thyssenkrupp Elevator's proposal, since it is a part of the building construction.

1. Elevator hoist beam to be provided at top of elevator shaft. Beam must be able to accommodate proper loads and clearances for elevator installation and operation.
2. Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports and bracing including all setting templates and diagrams for placement.
3. Hatch walls require a minimum two hours of fire rating. Hoistway should be clear and plumb with variations not to exceed 1/2" at any point.
4. Elevator hoistways shall have barricades, as required.
5. Install bevel guards at 75° on all recesses, projections or setbacks over 2" (4" for A17.1 2000 areas) except for loading or unloading.
6. Provide rail bracket supports at pit, each floor and roof. For guide rail bracket supports, provide divider beams between hoistway at each floor and roof.
7. Pit floor shall be level and free of debris. Reinforce dry pit to sustain normal vertical forces from rails and buffers.
8. Where pit access is by means of the lowest hoistway entrance, a vertical ladder of non-combustible material extending 42" minimum, (48" minimum for A17.1-2000 areas) shall be provided at the same height, above sill of access door or handgrips.
9. Machine room to be enclosed and protected.
10. Machine Room temperature must be maintained between 55° and 90° F.
11. If machine room is remote from the elevator hoistway, clear access must be available above the ceiling or metal/concrete raceways in floor for oil line and wiring duct from machine room.
12. Access to the machinery space and machine room must be in accordance with the governing authority or code.

13. Provide an 8" x 16" cutout through machine room wall, for oil line and wiring duct, coordinated with elevator contractor at the building site.
14. All wire and conduit should run remote from the hoistways.
15. When heat, smoke or combustion sensing devices are required, connect to elevator control cabinet terminals. Contacts on the sensors should be sided for 12 volt D.C.
16. Install and furnish finished flooring in elevator cab.
17. Finished floors and entrance walls are not to be constructed until after sills and door frames are in place. Consult elevator contractor for rough opening size. The general contractor shall supply the drywall framing so that the wall fire resistance rating is maintained, when drywall construction is used.
18. Where sheet rock or drywall construction is used for front walls, it shall be of sufficient strength to maintain the doors in true lateral alignment. Drywall contractor to coordinate with elevator contractor.
19. Before erection of rough walls and doors; erect hoistway sills, headers, and frames. After rough walls are finished; erect fascias and toe guards. Set sill level and slightly above finished floor at landings.
20. To maintain legal fire rating (masonry construction), door frames are to be anchored to walls and properly grouted in place.
21. The elevator wall shall interface with the hoistway entrance assembly and be in strict compliance with the elevator contractor's requirements.
22. General Contractor shall fill and grout around entrances, as required.
23. Elevator sill supports shall be provided at each opening.
24. All walls and sill supports must be plumb where openings occur.
25. For applications with jack hole, free and clear access to the elevator pit area for the jack hole-drilling rig is required.
26. Where jack hole is required, remove all spoils from jack hole drilling.
27. When not provided by Elevator Contractor, jack hole shall accommodate the jack unit. If required the jack hole is to be provided in strict accordance with the elevator contractor's shop drawings.
28. Locate a light fixture (200 lx / 19 fc) and convenience outlet in pit with switch located adjacent to the access door.

29. A light switch and fused disconnect switch for each elevator should be located inside the machine room adjacent to the door, where practical, per the National Electrical Code (NFPA No. 70).
30. For signal systems and power operated door: provide ground and branch wiring circuits, including main line switch.
31. For car light and fan: provide a feeder and branch wiring circuits, including main line switch.
32. Wall thickness may increase when fixtures are mounted in drywall. These requirements must be coordinated between the general contractor and the elevator contractor.
33. Provide supports, patching and recesses to accommodate hall button boxes, signal fixtures, etc..
34. Locate telephone and convenience outlet on control panel.

1.02 SUBMITTALS

- A. Product data: When requested, the elevator contractor shall provide standard cab, entrance and signal fixture data to describe product for approval.
- B. Shop drawings:
 1. Show equipment arrangement in the corridor, pit, and hoistway and/or optional control room. Provide plans, elevations, sections and details of assembly, erection, anchorage, and equipment location.
 2. Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.
 3. Show floors served, travel distances, maximum loads imposed on the building structure at points of support and all similar considerations of the elevator work.
 4. Indicate electrical power requirements and branch circuit protection device recommendations.
- C. Powder Coat paint selection: Submit manufacturer's standard selection charts for exposed finishes and materials.
- D. Plastic laminate selection: Submit manufacturer's standard selection charts for exposed finishes and materials.
- E. Metal Finishes: Upon request, standard metal samples provided.

Operation and maintenance data. Include the following:

1. Owner's manuals and wiring diagrams.
2. Parts list, with recommended parts inventory.

1.03 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** An approved manufacturer with minimum 15 years of experience in manufacturing, installing, and servicing elevators of the type required for the project.
 1. The manufacturer of machines, controllers, signal fixtures, door operators cabs, entrances, and all other major parts of elevator operating equipment.
 - a. The major parts of the elevator equipment shall be manufactured by the installing company, and not be an assembled system.
 2. The manufacturer shall have a documented, on-going quality assurance program.
 3. ISO-9001:2000 Manufacturer Certified
 4. ISO-14001:2004 Environmental Management System Certified
 5. LEED Gold certified elevator manufacturing facility.
- B. **Installer Qualifications:** The manufacturer or an authorized agent of the manufacturer with not less than 15 years of satisfactory experience installing elevators equal in character and performance to the project elevators.
- C. **Regulatory Requirements:**
 1. ASME A17.1 Safety Code for Elevators and Escalators, latest edition or as required by the local building code.
 2. Building Code: National.
 3. NFPA 70 National Electrical Code.
 4. NFPA 80 Fire Doors and Windows.
 5. Americans with Disabilities Act - Accessibility Guidelines (ADAAG)
- D. **Fire-rated entrance assemblies:** Opening protective assemblies including frames, hardware, and operation shall comply with ASTM E2074, CAN4-S104 (ULC-S104), UL10(b), and NFPA Standard 80. Provide entrance assembly units bearing Class B or 1 1/2 hour label by a Nationally Recognized Testing Laboratory (2 hour label in Canada).
- E. **Inspection and testing:**
 1. Elevator Installer shall obtain and pay for all required inspections, tests, permits and fees for elevator installation.

2. Arrange for inspections and make required tests.
3. Deliver to the Owner upon completion and acceptance of elevator work.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Manufacturing shall deliver elevator materials, components and equipment and the contractor is responsible to provide secure and safe storage on job site.

1.05 PROJECT CONDITIONS

- A. Temporary Use: Elevators shall not be used for temporary service or for any other purpose during the construction period before Substantial Completion and acceptance by the purchaser unless agreed upon by Elevator Contractor and General Contractor with signed temporary agreement.

1.06 WARRANTY

- A. Warranty: Submit elevator manufacturer's standard written warranty agreeing to repair, restore or replace defects in elevator work materials and workmanship not due to ordinary wear and tear or improper use or care for 12 months after final acceptance.

1.07 MAINTENANCE

- A. Furnish maintenance and call back service for a period of 12 months for each elevator after completion of installation or acceptance thereof by beneficial use, whichever is earlier, during normal working hours excluding callbacks.
 1. Service shall consist of periodic examination of the equipment, adjustment, lubrication, cleaning, supplies and parts to keep the elevators in proper operation. Maintenance work, including emergency call back repair service, shall be performed by trained employees of the elevator contractor during regular working hours.
 2. Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts. Parts shall be produced by manufacturer of original equipment.
 3. Manufacturer shall have a service office and full time service personnel within a 100 mile radius of the project site.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: Design based around thyssenkrupp Elevator's endura hydraulic elevator.

2.02 MATERIALS, GENERAL

- A. Colors, patterns, and finishes: As selected by the Architect from manufacturer's full range of standard colors, patterns, and finishes.

- B. Steel:
 - 1. Shapes and bars: Carbon.
 - 2. Sheet: Cold-rolled steel sheet, commercial quality, Class 1, matte finish.
 - 3. Finish: Factory-applied baked enamel for structural parts, powder coat for architectural parts. Color selection must be based on elevator manufacture's standard selections.

Plastic laminate: Decorative high-pressure type, complying with NEMA LD3, Type GP-50 General Purpose Grade, nominal 0.050" thickness. Laminate selection must be based on elevator manufacture's standard selections.

Flooring by others.

2.03 HOISTWAY EQUIPMENT

- A. Platform: Fabricated frame of formed or structural steel shapes, gusseted and rigidly welded with a wood sub-floor. Underside of the platform shall be fireproofed. The car platform shall be designed and fabricated to support one-piece loads weighing up to 25% of the rated capacity.

- B. Sling: Steel stiles bolted or welded to a steel crosshead and bolstered with bracing members to remove strain from the car enclosure.

Guide Rails: Steel, omega shaped, fastened to the building structure with steel brackets.

- C. Guides: Slide guides shall be mounted on top and bottom of the car.

- D. Buffers: Provide substantial buffers in the elevator pit. Mount buffers on continuous channels fastened to the elevator guide rail or securely anchored to the pit floor. Provide extensions if required by project conditions.

Jack: A jack unit shall be of sufficient size to lift the gross load the height specified. Factory test jack to insure adequate strength and freedom from

leakage. Brittle material, such as gray cast iron, is prohibited in the jack construction. Provide the following jack type: Twin post holeless. Two jacks piped together, mounted one on each side of the car with a polished steel hydraulic plunger housed in a sealed steel casing having sufficient clearance space to allow for alignment during installation. Each plunger shall have a high pressure sealing system which will not allow for seal movement or displacement during the course of operation. Each Jack Assembly shall have a check valve built into the assembly to allow for automatically re-syncing the two plunger sections by moving the jack to its fully contracted position. The jack shall be designed to be mounted on the pit floor or in a recess in the pit floor. Each jack section shall have a bleeder valve to discharge any air trapped in the section..

- E. **Automatic Self-Leveling:** Provide each elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for over travel or under travel. Self-leveling shall, within its zone, be automatic and independent of the operating device. The car shall be maintained approximately level with the landing irrespective of its load.

Wiring, Piping, and Oil: Provide all necessary hoistway wiring in accordance with the National Electrical Code. All necessary code compliant pipe and fittings shall be provided to connect the power unit to the jack unit. theoiltype

Pit moisture/water sensor located approximately 1 foot above the pit floor to be provided. Once activated, elevator will perform "flooded pit operation", which will run the car up to the designated floor, cycle the doors and shut down and trip the circuit breaker shunt to remove 3 phase power from all equipment, including pit equipment.

Motorized oil line shut-off valve shall be provided that can be remotely operated from the controller landing service panel. Also a means for manual operation at the valve in the pit is required.

2.04 POWER UNIT

- A. **Power Unit (Oil Pumping and Control Mechanism):** A self-contained unit consisting of the following items:
 1. An oil reservoir with tank cover.
 2. An oil hydraulic pump.
 3. An electric motor.

4. An oil control valve with the following components built into single housing; high pressure relief valve, check valve, automatic unloading up start valve, lowering and leveling valve, and electro-magnetic controlling solenoids.
- B. Pump: Positive displacement type pump specifically manufactured for oil-hydraulic elevator service. Pump shall be designed for steady discharge with minimum pulsation to give smooth and quiet operation. Output of pump shall not vary more than 10 percent between no load and full load on the elevator car.
- C. Motor: Standard manufacture motor specifically designed for oil-hydraulic elevator service. Duty rating shall be selected for specified speed and load.
- D. Oil Control Unit: The following components shall be built into a single housing. Welded manifolds with separate valves to accomplish each function are not acceptable. Adjustments shall be accessible and be made without removing the assembly from the oil line.
1. Relief valve shall be adjustable and be capable of bypassing the total oil flow without increasing back pressure more than 10 percent above that required to barely open the valve.
 2. Up start and stop valve shall be adjustable and designed to bypass oil flow during start and stop of motor pump assembly. Valve shall close slowly, gradually diverting oil to or from the jack unit, ensuring smooth up starts and up stops.
 3. Check valve shall be designed to close quietly without permitting any perceptible reverse flow.
 4. Lowering valve and leveling valve shall be adjustable for down start speed, lowering speed, leveling speed and stopping speed to ensure smooth "down" starts and stops. The leveling valve shall be designed to level the car to the floor in the direction the car is traveling after slowdown is initiated.
 5. Provided with constant speed regulation in both up and down direction. Feature to compensate for load changes, oil temperature, and viscosity changes.
 6. Solid State Starting: Provide an electronic starter featuring adjustable starting currents.
 7. Oil Type: Provide a zinc free, inherently biodegradable lubricant formulated with premium base stocks to provide outstanding protection

for demanding hydraulic systems, especially those operating in environmentally sensitive areas.

2.05 HOISTWAY ENTRANCES

- A. Doors and Frames: Provide complete hollow metal type hoistway entrances at each hoistway opening bolted\knock down construction.
 - 1. Manufacturer's standard entrance design consisting of hangers, doors, hanger supports, hanger covers, fascia plates (where required), sight guards, and necessary hardware.
 - 2. Typical door & frame finish: Stainless steel panels, No. 4 brushed finish.

- B. Interlocks: Equip each hoistway entrance with an approved type interlock tested as required by code. Provide door restriction devices as required by code.

- C. Door Hanger and Tracks: Provide sheave type two point suspension hangers and tracks for each hoistway horizontal sliding door.
 - 1. Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.
 - 2. Hangers: Provide an adjustable device beneath the track to limit the up-thrust of the doors during operation.
 - 3. Tracks: Drawn steel shapes, smooth surface and shaped to conform to the hanger sheaves.

Hoistway Sills: Extruded metal, with groove(s) in top surface. Provide mill finish on aluminum.

2.06 PASSENGER ELEVATOR CAR ENCLOSURE

- A. Car Enclosure:
 - 1. Walls: Cab type a laminate wall design, durable wood core finished on both sides with high pressure plastic laminate.
 - 2. Canopy: Cold-rolled steel with hinged exit.
 - 3. Ceiling: Suspended type, LED lighting with translucent diffuser mounted in a metal frame. Framework shall be finished with a factory applied powder coat finish.
 - 4. Cab Fronts, Return, Transom, Soffit and Strike: Provide panels faced with No. 4 brushed stainless steel

5. Doors: Horizontal sliding car doors reinforced with steel for panel rigidity. Hang doors on sheave type hangers with polyurethane tires that roll on a polished steel track and are guided at the bottom by non-metallic sliding guides.
 - a. Door Finish: Stainless steel panels: No. 4 brushed finish.
 - b. Cab Sills: Extruded aluminum, mill finish.
 6. Handrail: Provide 1.5" diameter cylindrical metal on side and rear walls on front opening cars and side walls only on front and rear opening cars. Handrails shall have a stainless steel, No. 4 brushed finish.
 7. Ventilation: Manufacturer's standard exhaust fan, mounted on the car top.
 8. Protection pads and buttons: Provide one set of vinyl protection pads with metal grommets for the project. Provide pad buttons on cab front(s) and walls.
- B. Car Top Inspection: Provide a car top inspection station with an "Auto-Inspection" switch, an "emergency stop" switch, and constant pressure "up and down" direction and safety buttons to make the normal operating devices inoperative. The station shall give the inspector complete control of the elevator. The car top inspection station shall be mounted in the door operator assembly.

2.07 DOOR OPERATION

- A. Door Operation: Provide a direct or alternating current motor driven heavy duty operator designed to operate the car and hoistway doors simultaneously. The door control system shall be digital closed loop and the closed loop circuit shall give constant feedback on the position and velocity of the elevator door. The motor torque shall be constantly adjusted to maintain the correct door speed based on its position and load. All adjustments and setup shall be through the computer based service tool. Door movements shall follow a field programmable speed pattern with smooth acceleration and deceleration at the ends of travel. The mechanical door operating mechanism shall be arranged for manual operation in event of power failure. Doors shall automatically open when the car arrives at the landing and automatically close after an adjustable time interval or when the car is dispatched to another landing. AC controlled units with oil checks, or other deviations are not acceptable.

1. **No Un-Necessary Door Operation:** The car door shall open only if the car is stopping for a car or hall call, answering a car or hall call at the present position or selected as a dispatch car.
 2. **Door Open Time Saver:** If a car is stopping in response to a car call assignment only (no coincident hall call), the current door hold open time is changed to a shorter field programmable time when the electronic door protection device is activated.
 3. **Double Door Operation:** When a car stops at a landing with concurrent up and down hall calls, no car calls, and no other hall call assignments, the car door opens to answer the hall call in the direction of the car's current travel. If an onward car call is not registered before the door closes to within 6 inches of fully closed, the travel shall reverse and the door shall reopen to answer the other call.
 4. **Nudging Operation:** The doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening. If door closing is prevented for a field programmable time, a buzzer shall sound. When the obstruction is removed, the door shall begin to close at reduced speed. If the infra-red door protection system detects a person or object while closing on nudging, the doors shall stop and resume closing only after the obstruction has been removed.
 5. **Door Reversal:** If the doors are closing and the infra-red beam(s) is interrupted, the doors shall reverse and reopen. After the obstruction is cleared, the doors shall begin to close.
 6. **Door Open Watchdog:** If the doors are opening, but do not fully open after a field adjustable time, the doors shall recycle closed then attempt to open six times to try and correct the fault.
 7. **Door Close Watchdog:** If the doors are closing, but do not fully close after a field adjustable time, the doors shall recycle open then attempt to close six times to try and correct the fault.
 8. **Door Close Assist:** When the doors have failed to fully close and are in the recycle mode, the door drive motor shall have increased torque applied to possibly overcome mechanical resistance or differential air pressure and allow the door to close.
- B. **Door Protection Device:** Provide a door protection system using microprocessor controlled infra-red light beams. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall immediately reopen.

2.08 CAR OPERATING STATION

- A. Car Operating Station, General: The main car control in each car shall contain the devices required for specific operation mounted in an integral swing return panel requiring no applied faceplate. Wrap return shall have a No. 4 brushed stainless steel finish. The main car operating panel shall be mounted in the return and comply with handicap requirements. Pushbuttons that illuminate using long lasting LED's shall be included for each floor served, and emergency buttons and switches shall be provided per code. Switches for car light and accessories shall be provided.
- B. Emergency Communications System: Integral phone system provided.
- C. Auxiliary Operating Panel: Not Required
- D. Column Mounted Car Riding Lantern: A car riding lantern shall be installed in the elevator cab and located in the entrance. The lantern, when illuminated, will indicate the intended direction of travel. The lantern will illuminate and a signal will sound when the car arrives at a floor where it will stop. The lantern shall remain illuminated until the door(s) begin to close.

2.09 CONTROL SYSTEMS

- A. Controller: The elevator control system shall be microprocessor based and software oriented. Control of the elevator shall be automatic in operation by means of push buttons in the car numbered to correspond to floors served, for registering car stops, and by "up-down" push buttons at each intermediate landing and "call" push buttons at terminal landings.
- B. Automatic Light and Fan shut down: The control system shall evaluate the system activity and automatically turn off the cab lighting and ventilation fan during periods of inactivity. The settings shall be field programmable.
- C. Emergency Power Operation: (Battery Lowering 10-DOC) When the loss of normal power is detected, a battery lowering feature is to be activated. The elevator will lower to a predetermined level and open the doors. After passengers have exited the car, the doors will close and the car will shutdown. When normal power becomes available, the elevator will automatically resume operation. The battery lowering feature is included in the elevator contract and does not utilize a building-supplied standby power source.

- D. Special Operation: Not Applicable

2.10 HALL STATIONS

- A. Hall Stations, General: Provide buttons with white-illuminating or blue-illuminating LED halos to indicate that a call has been registered at that floor for the indicated direction. Provide 1 set of pushbutton risers.
 - 1. Provide one pushbutton riser with faceplates having a No. 4 brushed stainless steel finish.
 - a. Phase 1 firefighter's service key switch, with instructions, shall be incorporated into the hall station at the designated level.
- B. Floor Identification Pads: Provide door jamb pads at each floor. Jamb pads shall comply with Americans with Disabilities Act (ADA) requirements.

2.11 MISCELLANEOUS ELEVATOR COMPONENTS

- A. Oil Hydraulic Silencer: Install multiple oil hydraulic silencers (muffler device) at the power unit location. The silencers shall contain pulsation absorbing material inserted in a blowout proof housing.

3. EXECUTION

3.1. EXAMINATION

- A. Before starting elevator installation, inspect hoistway, hoistway openings, pits and/or control room, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed. Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.
- B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.02 INSTALLATION

- A. Install elevator systems components and coordinate installation of hoistway wall construction.
 - 1. Work shall be performed by competent elevator installation personnel in accordance with ASME A17.1, manufacturer's installation instructions and approved shop drawings.

2. Comply with the National Electrical Code for electrical work required during installation.

Jack unit excavation (if required by the type of jack provided): Drill or otherwise excavate below elevator pit construction as required to install the jack unit.

3. Install casing for jack unit.
 4. Provide HDPE jack protection system for all in ground jacks.
 5. Set casing for jack unit assembly plumb, and partially fill with water set-tled sand, eliminating voids. Back fill depth shall be sufficient to hold the bottom of the jack in place over time.
- B. Perform work with competent, skilled workmen under the direct control and supervision of the elevator manufacturer's experienced foreman.
 - C. Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.
 - D. Welded construction: Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualification of welding operators.
 - E. Coordination: Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Contractor, to ensure dimensional coordination of the work.
 - F. Install machinery, guides, controls, car and all equipment and accessories to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.
 - G. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with cars. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum safe, workable dimensions at each landing.

- H. Erect hoistway sills, headers, and frames before erection of rough walls and doors; erect fascia and toe guards after rough walls finished. Set sill units accurately aligned and slightly above finish floor at landings.
- I. Lubricate operating parts of system, where recommended by manufacturer.

3.03 FIELD QUALITY CONTROL

- A. Acceptance testing: Upon completion of the elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by Code and governing regulations or agencies. Perform other tests, if any, as required by governing regulations or agencies.
- B. Advise Owner, Contractor, Architect, and governing authorities in advance of dates and times tests are to be performed on the elevator.

3.04 ADJUSTING

- A. Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.

3.05 CLEANING

- A. Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided. Stainless steel shall be cleaned with soap and water and dried with a non-abrasive surface; it shall not be cleaned with bleach-based cleansers.
- B. At completion of elevator work, remove tools, equipment, and surplus materials from site. Clean equipment rooms and hoistway. Remove trash and debris.
 - 1. Use environmentally preferable and low VOC emitting cleaners for each application type. Cleaners that contain solvents, pine and/or citrus oils are not permitted.

3.06 PROTECTION

- A. At time of Substantial Completion of elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods or

procedures to protect elevator work from damage or deterioration. Maintain protective measures throughout remainder of construction period.

3.07 DEMONSTRATION

- A. Instruct Owner's personnel in proper use, operations, and daily maintenance of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies. Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.

Make a final check of each elevator operation, with Owner's personnel present, immediately before date of substantial completion. Determine that control systems and operating devices are functioning properly.

3.08 ELEVATOR SCHEDULE

- A. Elevator Qty. 1
 - 1. Elevator Model: endura Above-Ground (1-Stage)
 - 2. Elevator Type: Hydraulic Passenger
 - 3. Rated Capacity: 3500 lbs.
 - 4. Rated Speed: 80 ft./min.
 - 5. Operation System: TAC32H
 - 6. Travel: 12'-0"
 - 7. Landings: 2 total
 - 8. Openings:
 - a. Front: 2
 - b. Rear: 0
 - 9. Clear Car Inside: 6' - 8" wide x 5' - 5" deep
 - 10. Cab Height: 8'-0" standard
 - 11. Hoistway Entrance Size: 3' - 6" wide x 7'-0" high
 - 12. Door Type: Single Speed
 - 13. Power Characteristics: 460 volts, 3 Phase, 60 Hz.
 - 14. Seismic Requirements: Zone 1
 - 15. Hoistway Dimensions: 8' - 4" wide x 6' - 11" deep
 - 16. Pit Depth: 4' - 0"
 - 17. Button & Fixture Style: Signa4 Signal Fixtures

END OF SECTION

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 **BROADWAY FIRE STATION RENOVATION FOR THE CITY OF HIGHLAND** .
- 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 (GRINNELL, 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 & 2 – Water Closet:**

2257101W American Standard- Aftwall Millennium Flowise
Elongated Flushometer Toilet Vitreous China

1115MO Sloan- Flush Valve Assembly

2155SSCT Church- Elongated Open Front Toilet Seat

0211Y Jay R. Smith- Adjustable Fixture Supports

2. **UR-1&2 – 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- $\frac{1}{2}$ " x 6"– 17 gauge Tailpiece

LFBV09 Mcguire MFG- Quarter- Turn Brass Ball Valve, $\frac{1}{2}$ "
Nominal x $\frac{3}{8}$ " 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. L-2 – Wall Hung Lavatory:

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 1-1/2" x 6"– 17 gauge Tailpiece

707 Dearborn Brass-Brass Tubular 1-1/4" P-Trap With Cleanout

LFBV09 Mcguire MFG- Quarter- Turn Brass Ball Valve, 1/2" 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

0700 Jay R. Smith- Pro Set For High Back Lavatories

USGBM2 Watts- Thermal Mixing Valve

5. S-1 – Shower Unit ADA:

WS-1X-HN Bradley Corp.- Individual Pivoting Barrier-Free Wall Shower

B-5181 Bobrick- Reversible Folding Shower Seat

R8936 Moen- Stainless 36" Concealed Screw Grab Bar

823-60PSS Sioux Chief- Streamline Drain Pvc 60 Slot Stainless

6. TVM-B/ Rest Room Mixing Valve

LFMMV-M1-US Watts- Thermostatic Mixing Valves

7. EWC-1/ Bi-Level Cooler

LZSTL8WSSK Elkay- EZH2O Elkay Bottle Filling Station & Versatile Bi-Level ADA Cooler

8. GWH/ Water Heater

SUF100-199NE State Water Heaters- Commercial Gas Water Heater

PLT-12 Watts- Potable Water Expansion Tanks

9. CP/ CIRC Pump

009-SF5 Taco- Stainless Steel Circulator, 1/8 hp

10. Decontamination System

G1696 Guardian- Emergency Shower, Free Standing, Stainless Steel

Z882 Zurn- Perma-Trench System

BB-275 Striem- Decontamination Tank

ETV200-13 Powers- Hydroguard Xp Emergency Tempeing Valve

11. EW-ES/ Emergency Eye-Wash & Eye-Wash Shower

G1950 Guardian- Safety Station with Eye/Face Wash, Stainless Steel

ETV200-13 Powers- Hydroguard Xp Emergency Tempeing Valve

12. Hb/Wall Hydrant

67C Woodford- Freezeless Wall Hydrant

13. 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

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. Attachment 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 (l/r) of braces shall not exceed 200, where (l) 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

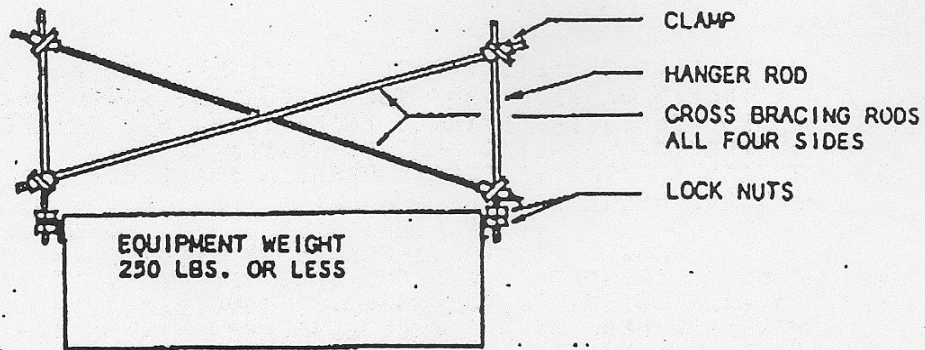
9. Brace all pipes 2 1/2 inches diameter and larger. In mechanical rooms also 1 1/4, 1 1/2 and 2 inch piping as for 2 1/2 inch piping.
10. Transvers and vertical bracing shall occur at 40 foot intervals, maximum. Longitudinal bracing shall occur at 80 foot intervals, maximum.
11. At pipe risers, wherever 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

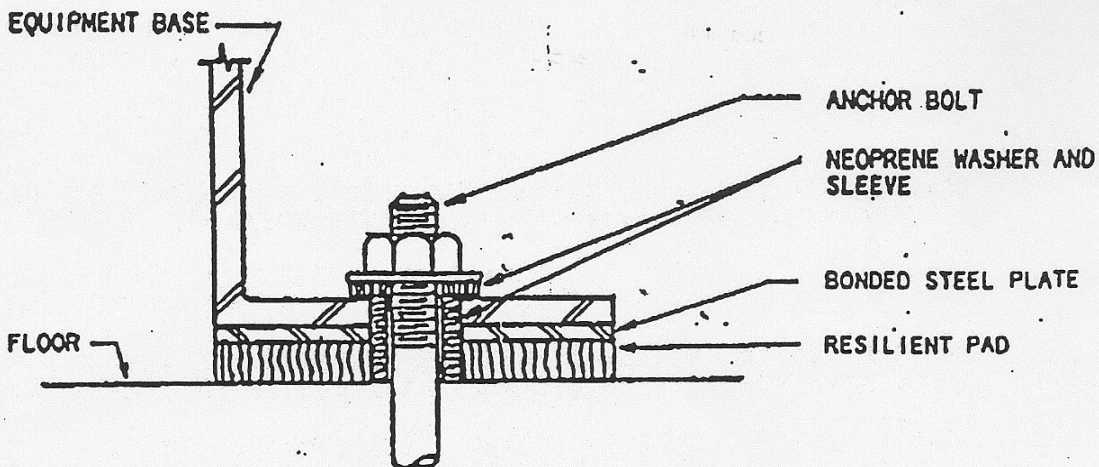
14. Refer to specifications section 15200.

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.



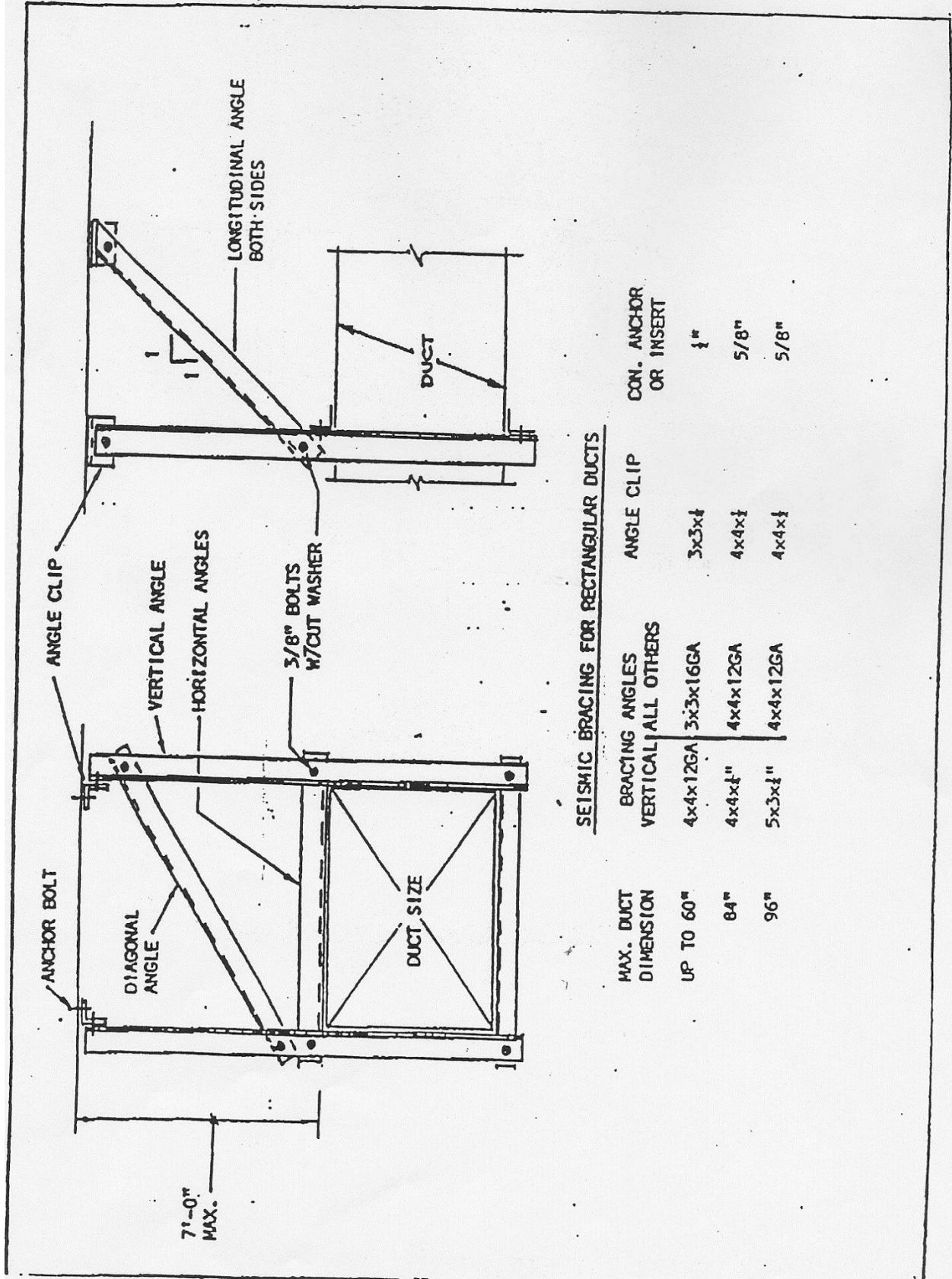
SEISMIC BRACING FOR LIGHT SUSPENDED EQUIPMENT

NOTE: NOT REQUIRED FOR AIR TERMINAL UNITS.



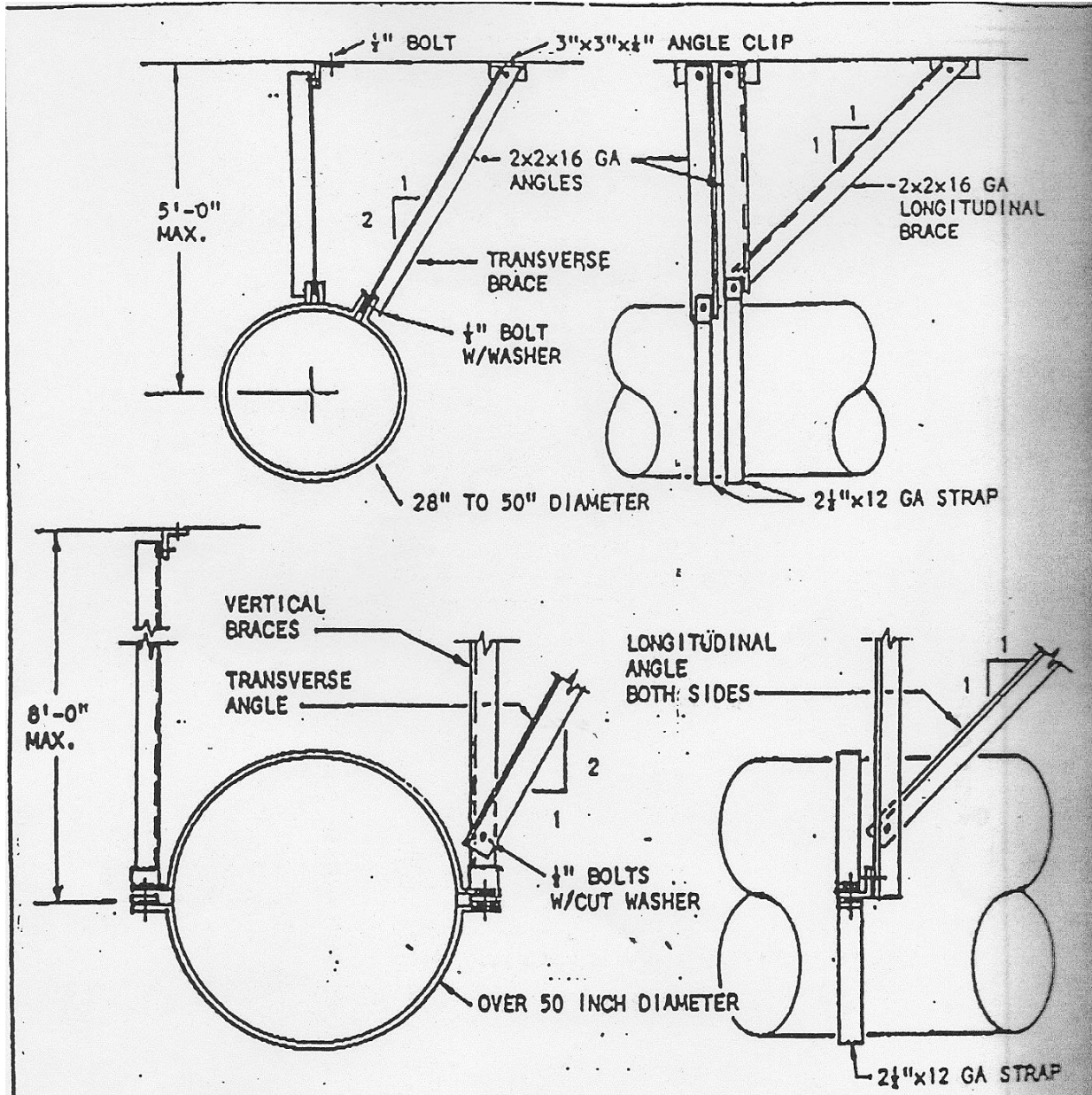
EQUIPMENT RESTRAINED BY RESILIENT PADS (TYPE DS)

Designers Note: Show this type for control air compressors and for centrifugal chillers on slab on grade.



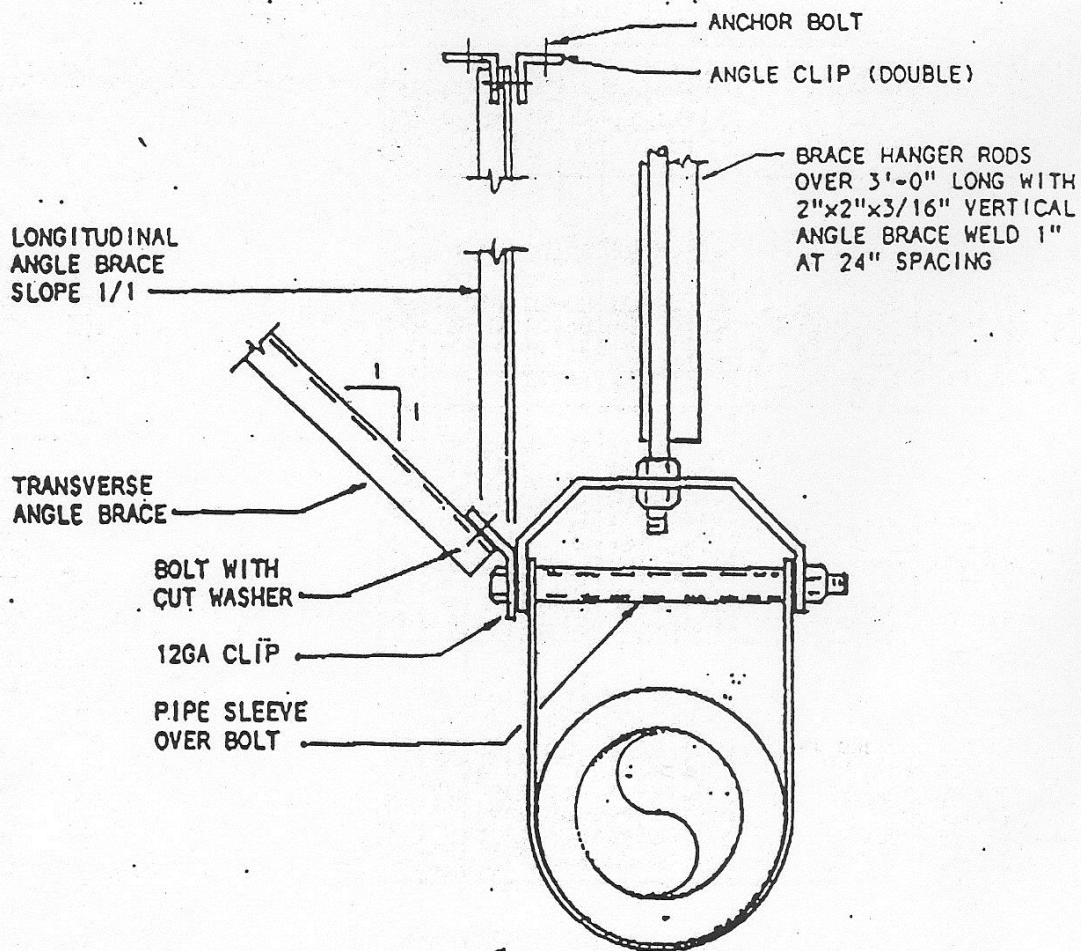
SEISMIC BRACING FOR RECTANGULAR DUCTS

MAX. DUCT DIMENSION	BRACING ANGLES VERTICAL ALL OTHERS	ANGLE CLIP	CON. ANCHOR OR INSERT
UP TO 60"	4x4x12GA 3x3x16GA	3x3x½	½"
84"	4x4x½"	4x4x½	5/8"
96"	5x3x½"	4x4x½	5/8"



SEISMIC BRACING FOR ROUND/OVAL DUCTS

MAX. DIA.	ANGLE CLIP	CONC. ANCHOR OR INSERT	BRACING ANGLES
60"	5"x3"x $\frac{1}{4}$ "	$\frac{1}{2}$ "	4" x 4" 12 GA.
84"	5"x3"x $\frac{1}{4}$ "	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"x½"	3/8
3,4	2½"x2½" 16GA	3/8	3"x3"x½"	1/2
5,6	2½"x2½" 16GA	1/2	5"x3"x½"	3/4
8	3"x3" 12GA	5/8	2-5x3x½"	2-5/8
10	3"x3" 12GA	3/4	2-5x3x½"	2-3/4

* 1 5/8 x 1 5/8 x 12 GAGE CHANNEL MAY BE USED.

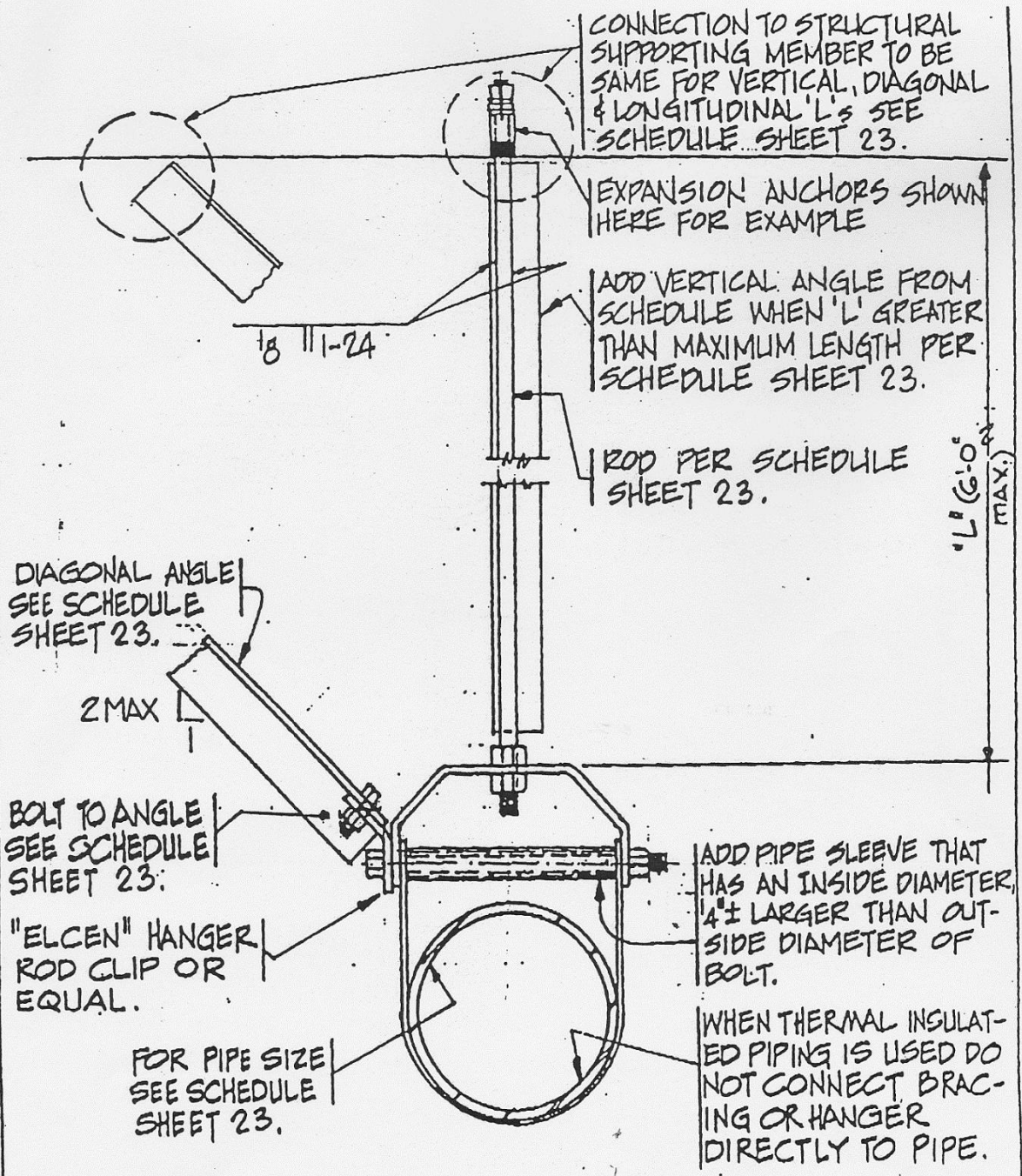
SCHEDULE FOR BRACING PIPES

PIPE SIZE	"ECCS" (OR EQUAL) HANGER TYPE	BOLTS TO "L" (2)	VERTICAL ANGLE (3)	DIAGONAL ANGLE	LONGITUDINAL DIAGONAL ANGLE (4)	TOP CONNECTION OF DIAGONAL & LONGITUDINAL "L" (1)	ROD SIZE	MAX LENGTH FOR RODS
2 1/2	CLEVIS TYPE	3/8" φ	2 x 2 x 16 GA.	2 x 2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE II	1 1/2" φ	25"
3	DO	3/8" φ	2 x 2 x 16 GA.	2 x 2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE II	1 1/2" φ	25"
3 1/2	DO	3/8" φ	2 x 2 x 16 GA.	2 x 2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE III	1 1/2" φ	25"
4	DO	3/8" φ	2 x 2 x 16 GA.	2 x 2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE IV	5/8"	31"
5	DO	1/2" φ	2 x 2 x 16 GA.	2 x 2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE IV	5/8"	31"
6	DO	1/2" φ	2 1/2 x 2 1/2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	2 1/2 x 2 1/2 x 16 GA.	TYPE V	3/4"	37"
8	DO	3/8" φ	2 1/2 x 2 1/2 x 12 GA.	2 1/2 x 2 1/2 x 12 GA.	2 1/2 x 2 1/2 x 12 GA.	TYPE VI	7/8" φ	43"
10	DO	3/4" φ	2 1/2 x 2 1/2 x 12 GA.	3 x 3 x 12 GA.	3 x 3 x 12 GA.	TYPE VII	7/8" φ	43"

'L' DENOTES ANGLE

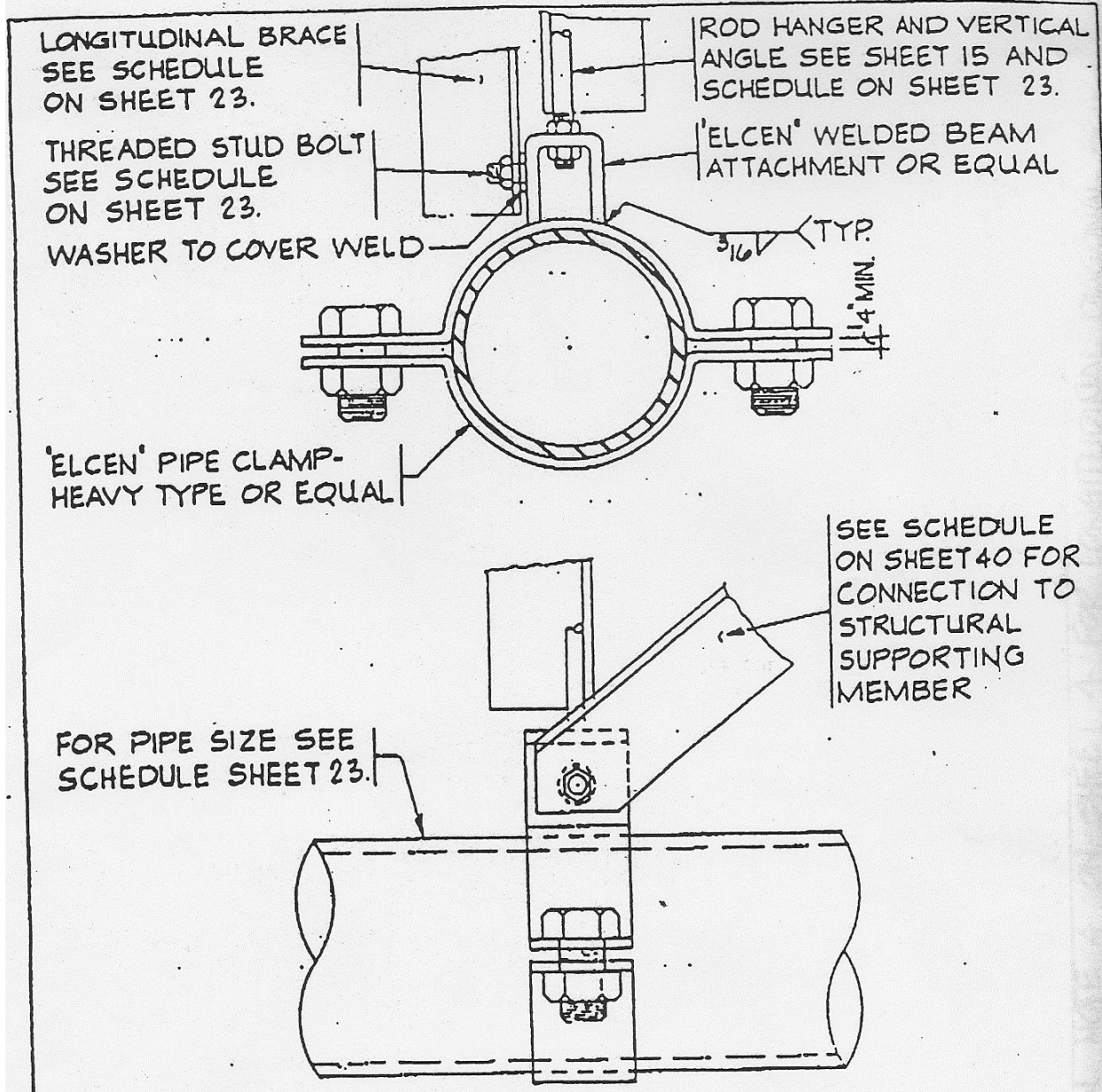
- (1) SEE SCHEDULE ON SHEET 40, FOR TYPICAL CONNECTION TO STRUCTURAL SUPPORTING MEMBERS.
- (2) PLACE STANDARD CUT WASHERS BETWEEN SHEET METAL L'S & NUT.
- (3) VERTICAL ANGLE IN THE SCHEDULE IS REQUIRED IN ADDITION TO HANGER ROD ONLY WHEN MAXIMUM LENGTH FOR RODS IS EXCEEDED.
- (4) SEE GENERAL NOTE 4 ON SHEET 4 FOR LONGITUDINAL DIAGONAL BRACE REQUIREMENT.





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 LONG ITUDINAL 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 (M/A)(S)(W)		CONC. CAST-IN PLACE INSERT	MACHINE BOLT AT STL. BM. CLAMP	SPREADER SIZE (SEE SHEET 31)	MACHINE BOLT AT WOOD	SPAN-CHUTE ROD	ANGLE TO SUPPORTING STRUCTURAL MEMBER (1)	ROD SIZE FOR PIPES
		LT. WT.	HARD ROCK							
I	400	5 ⁸ "	1 ² "	3 ⁸ "	3 ⁸ "	64x5.4	1 ² "	3 ⁸ "	L3 ² x2 ¹ / ₂ x1 ³ / ₈ x0'-3" ¹ LH	1 ² " φ
II	550	3 ⁴ "	5 ⁸ "	1 ² "	3 ⁸ "	64x5.4	1 ² "	3 ⁸ "	L5x3x3 ⁸ x0'-3" ¹ LH	5 ⁸ " φ
III	900	2-1 ² "	2-3 ⁸ "	1 ² "	3 ⁸ "	65x6.7	3 ⁴ "	3 ⁸ "	2-L4x3x5 ¹ / ₈ x0'-4" ¹ LH	3 ⁴ " φ
IV	1300	2-3 ⁸ "	2-5 ⁸ "	1 ² "	1 ² "	66x8.5		1 ² "	2-L5x3x3 ⁸ x0'-4" ¹ LH	3 ⁴ " φ
V	1800	2-3 ⁴ "	2-5 ⁸ "	5 ⁸ "	1 ² "	68x11.5		1 ² "	2-L5 ¹ / ₂ x3 ¹ / ₂ x2x0'-4" ¹ LH	7 ⁸ " φ
VI	2600	4-5 ⁸ "	4-1 ² "	2-1 ² "	5 ⁸ "	69x13.4			2-L5x3x3 ⁸ x0'-10" ¹ LH	7 ⁸ " φ
VII	3700	4-3 ⁴ "	4-5 ⁸ "	2-5 ⁸ "	5 ⁸ "	610x15.3			2-L5 ² / ₂ x3 ¹ / ₂ x2x0'-11 ¹ / ₂ " LH	7 ⁸ " φ

- 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.



END SECTION 15025.

DIVISION 15 - MECHANICAL

Section 15320 - Fire Protection System

1. GENERAL:

1.1. GENERAL NOTES:

- A. All materials and equipment under this section of the specifications shall be listed by Factory Mutual or Underwriters Laboratories for fire protection system installation. Drawings, General and Supplementary Conditions and Division-1 Specifications apply to the work of this section.

1.02. SCOPE:

- A. Furnish all required labor, materials, equipment, and services necessary to provide a complete fire protection system for the building as hereinafter described and as shown on the drawings.
- B. The contractor's work shall begin at the location shown on the plans. The contractor shall coordinate the sprinkler shop drawings with other sections.
- C. It is intended that the drawings and specifications shall describe and provide for a working installation complete in every detail and all items necessary for such complete installation shall be furnished whether specifically mentioned or not.
- D. The automatic sprinkler system shall provide fire protection for all the areas of the building. This system shall be interfaced with the building fire alarm. The sprinkler system shall have three (3) zones: Apparatus bay? Office, Bunks/ Dayroom, and Storage

1.03. APPROVALS:

- A. All work shall be installed in accordance with the Village of Meadowbrook, Illinois, and NFPA 13, 1996 edition.
- B. and approval prior to commencing the work.
- C. The system shall not be accepted until completely approved in writing by the Architect as meeting the criteria contained herein and on the approved shop drawings including final testing.
- D. All work shall meet the requirements of the owner, authority having jurisdiction, owner's insurance underwriter, Architect and Engineer. The Architect will review the shop drawings for consistency with the engineering documents. Any work performed prior to the satisfactory review of the shop drawings and approval by the authority having jurisdiction and insurance underwriter will be solely at the contractor's risk.

- E. The contractor shall not pursue any approvals or interpretations of the design documents except through the office of the Architect.

1.04. TESTING:

- A. The entire automatic sprinkler system piping shall be tested in the presence of an authorized representative of the Architect and the governing agencies having jurisdiction for approval. Preliminary testing procedures shall be conducted as mentioned above to assure proper operation when the final testing is performed.
- B. The contractor's Material and Test Certificate as shown in NFPA 13 must be completed and submitted to the Architect before final acceptance may be given.

1.05. PERMITS:

- A. This contractor shall secure and pay for all necessary permits and fees required for the execution of his work.
- A. Upon job completion, this contractor shall prepare and submit two (2) sets of operating manuals to the owner. These manuals shall include:
 - 1. As-built drawings.
 - 2. Shop drawings.
 - 3. Equipment warranties and cut sheets.
 - 4. Operation and maintenance instructions.

1.06. SCHEDULING:

- A. This contractor shall cooperate with all reasonable scheduling requests established by the general contractor both prior to commencing work and as the work progresses to the final completion date. Every reasonable effort shall be made by this contractor to complete the job on schedule.

1.7. DESIGN:

- A. The following criteria shall be used in the sprinkler system design and hydraulic calculations. Hydraulic calculations shall be furnished by the successful contractor as used in the development of shop drawings. Areas to be sprinklered are indicated on the drawings.
- B. The contractor is to provide all necessary offsets, raises or drops in piping and auxiliary drains required by building conditions.

1.8. WATER SERVICE:

- A. The sprinkler system shall be supplied from a connection to the city water main. Contractor shall conduct flow test at the site prior to initiating

hydraulic calculations, and shall design system in accordance with available pressures.

- B. Contractor shall furnish Department of Natural Resources (DNR) approved backflow preventer.

1.9. FIRE DEPARTMENT CONNECTION:

- A. Furnish and install fire department connections as indicated on the plans including an approved check valve.
- B. Fire department connection shall be equal to Potter Roemer No. 5404, 4" x (2) 2-1/2" cast brass body and trim, polished chrome plated complete with identification plate, plugs and chains and lettered "AUTO SPKR". Threads shall conform to the City of Highland. Ball drip shall be provided in the check valve in the pipe connecting the fire department connection with the sprinkler system riser.

1.10. WATER FLOW SWITCH:

- A. Vane-type zone waterflow detectors shall be installed on the sprinkler system as indicated. Detectors shall be mounted in accordance with the manufacturer's instructions. They shall be designed to signal any flow of water that equals or exceeds 10 gpm. Detector switch mechanisms shall incorporate an instantly recycling pneumatic retard element with an adjustable range of 0 to 60 seconds. Switches shall be suitable for operation on 125-volt A.C. or 24-volt D.C. Detectors shall be of dust tight construction. Detector switch enclosures shall be tamperproof. Detectors shall be furnished and installed under this section and be wired complete under Division 16000.
- B. The detector shall be furnished, installed under this section and wired complete under Division 16000.

1.11. SUPERVISORY SWITCH:

- A. Supervisory switches shall be installed on all indicating and zone shutoff valves. Switch shall be mounted so as not to interfere with the normal operation of the valve and shall be adjusted to operate within two revolutions of the valve control or when the stem has moved no more than one-fifth of the distance from its normal position. The mechanism shall be contained in a rust resistant housing. The switch mechanism shall be suitable for operation at 125-volt A.C. or 24-volt D.C. The entire installed assembly shall be tamperproof and arranged to cause a switch operation if the housing cover is removed or if the unit is removed from its mounting.

- B. Supervisory switches shall be furnished and installed under this section and wired complete under Division 16000.

1.12. ALARM BELL:

- A. Furnish and install one electric operated alarm bell approved for outside use on the exterior of the wall adjacent to the mechanical room to be wired complete under Division 16000.

1.13. SPRINKLERS:

- A. Sprinklers shall be of two types:

- 1. pendent.
- 2. upright.

- a) Pendent heads shall be equivalent to the Viking standard pendent flush, bright chrome with a white escutcheon plate, 1/2" NPT. Upright heads shall be equivalent to the Viking standard upright sprinkler Model C with natural bronze finish. The types of heads and their locations are to be as required by the building design. All sprinkler heads are to be ordinary temperature rated (165 degrees F.) with a 1/2" orifice and a K factor of 5.65.
- b) Furnish and install at the work area a 12-head sprinkler cabinet stocked with a sprinkler head wrench and twelve (12) extra sprinklers. The types and temperatures of extra sprinklers are to be proportion to those installed on the system.

1.14. VALVES:

- A. Control valves inside the building shall be 175-pound WOG OS & Y valves or approved equivalent such as butterfly valves (indicating type).
- B. Check valves shall be 175-pound WOG, swing check valves or approved equivalent such as wafer check valves.
- C. Drain and test valves shall be 175-pound WOG, bronze threaded globe valves with renewable composition disc.

1.15. OVERHEAD PIPE AND FITTINGS:

- A. Overhead pipe shall be standard weight black steel pipe or approved equivalent such as thin wall seamless steel pipe or lightweight steel pipe per NFPA 13, Section 3-1, 175 psi rating.
- B. Fittings shall be 175-pound screwed or flanged black cast-iron or approved equivalent such as for use with mechanical groove or welded connections. Bushings shall not be used.
- C. Pipe may be installed level as per NFPA 13.

1.16. HANGERS, SLEEVES AND ESCUTCHEONS:

- A. All hangers shall be of approved materials and spaced in accordance with NFPA 13.
- B. Sleeves shall be set for all pipes passing through concrete floors or masonry walls.
- C. Provide primed escutcheon plates at all wall penetrations.
- D. Failure to set sleeves: In the event this contractor fails to set sleeves for passage of pipe through concrete floors, he shall pay the general contractor to cut and install same.

1.17. AUXILIARY DRAINS:

- A. Auxiliary drain consisting of a 1" globe valves and pipe shall be provided to drain the lowest portion of the system where the capacity of water which may not be drained to the main drain by gravity exceeds 5 gallons.

1.18. INSPECTOR'S TEST CONNECTION:

- A. Furnish and install an inspector's test connection.
- B. Globe valve to be located not more than 7'-0" above finished floors. Pipe directly outside at valve elevation.

1.19. SIGNS:

- A. Approved enameled metal signs shall be securely attached at the main drain, auxiliary drains, inspector's test connection, control valves and electric alarm bell.
- B. Signs shall also be provided at the main riser to indicate the hydraulic design criteria for the system.

1.20. ELECTRICAL WORK:

- A. All electrical wiring for the alarm and signaling devices shall be in accordance with the National Electric Code (NFPA 70) and (NFPA 72A).

END OF SECTION 15320.

DIVISION 15 - MECHANICAL
Section 15400 - Interior HVAC Units

1. GENERAL:

1.1. GENERAL NOTES:

- A. All of the provisions of the General Conditions, Supplementary General Conditions and Division I - General Requirements, and any applicable provisions elsewhere in the contract documents shall apply to the work of this section as fully as if repeated herein.
- B. In addition, this Contractor shall comply with all provisions of the accompanying drawings and these specifications.
- C. This Contractor shall notify the Architect if any details necessary for a complete and satisfactory installation are omitted from the specifications and accompanying drawings, and shall include such items in his bid.
- D. Before submitting a proposal, this Contractor shall carefully examine the drawings and specifications, visit the site of the work to inform himself fully as to all conditions. It is expressly understood that his proposal is based on the above requirements and conditions and that it covers everything necessary to do and to complete the work.
- E. 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.
- F. All equipment and materials furnished shall be new, and they shall conform to the A.S.A. Specifications and ASTM Standards, whichever are applicable. Where two or more items of the same kind of equipment are required, they shall be the product of a single manufacturer.
- G. This Contractor shall plan and execute his work so as to not interfere with occupants in the building. He shall refer the drawings for dimensions and details of the building and locations of the equipment but he shall not scale the drawings for exact dimensions. He shall check all measurements at the building and adjust his work to fit space allotted for same. Close cooperation between all trades will be required throughout the work to prevent interferences in their respective installations.

- H. All workmanship shall be thoroughly first class in both effectiveness and appearance whether finally concealed or exposed and shall be executed by none but experienced mechanics.
- I. The Contractor is responsible for the exact sizes and locations of openings required. Pipe sleeves shall be furnished and installed by this Contractor. This Contractor shall do all cutting and repairing for the installation of the apparatus included under this contract, caused by defective or ill-timed work. All cutting shall be neatly done, and in no case shall holes be cut larger than necessary to allow convenient installation of the work. No columns, beams, joists or ceiling hanger rods shall be cut.
- J. The Contractor shall have all roofing work as required by the project, to be performed by an approved applicator, so as to protect the existing roofing warranties.
- K. The information given herein and on the drawings 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, location, pipe sizes, etc., before starting the work.
- L. The rules, regulations, and requirements of State, or City Ordinances, Department of Public Health, The State Fire Marshall's Office, Utility Companies and Local Civil Authorities in force at the time of execution of the contract shall become a part of this specifications, to the same extent as if bound herein. If anything on the drawings or in the specifications is to the contrary, it shall be installed in accordance with the above ordinances or codes. Should the drawings and specifications call for work which is in excess of the minimum requirements of the code and/or of a higher quality the work shall be furnished and installed according to the drawings and specifications except where a conflict occurs with the codes. Inspections, fees, bonds, permits, licenses or certificates that may be required for the performance of this contract shall be secured and paid for by this Contractor.
- M. Should patented articles, methods, materials, fixtures, apparatus be used in the work, this Contractor shall acquire the right to use 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.
- N. 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 normal operation of the building. This Contractor shall bear any cost due to changes made contrary to the drawings, and specifications. Failure to report discrepancies or interferences to the Architect/Engineer automatically places this Contractor responsible for same.

- O. All labor and materials herein mentioned and any material not mentioned, but obviously necessary for the successful and economical operation of the systems, shall be installed by this Contractor unless specifically stated to the contrary. The Architect/Engineer reserves the right to reject any and all material not in accordance with the drawings and specifications either before or after the installation.
- P. All above mentioned and hereinafter specified equipment, specialties, piping, etc., shall be erected in place in a neat and workmanlike manner, in accordance with the best accepted practice for this class of work subject to the Architect/Engineer's approval, and in perfect cooperation with other contractors whose work touches this and delivered to the Owners in operating order. All specialties must be made accessible.

1.2. SUBSTITUTION OF MATERIAL:

- A. This Contractor shall be governed by the requirements of the "Instructions to Bidders" included in this specification.
- B. This Contractor shall be held responsible for all physical changes in piping, equipment, electrical requirements, ductwork, etc., resulting from substitution and shall likewise bear any increased cost to other trades in making substitution. Review by the Architect/Engineer of equipment other than specified does not relieve this Contractor of this responsibility.

1.3. LIST OF SUB-CONTRACTORS AND MANUFACTURERS:

- A. Immediately upon execution of the contract, this Contractor shall submit to the Architect for review, a complete list of sub-contractors he proposes to employ. This list shall also give the name of the manufacturer of each different kind of material and equipment called for by the drawings and specifications. A partial list will not be considered. This Contractor shall not employ any sub-contractor to whom the Owner, Architect, or Engineer may have reasonable

objection.

1.4. SHOP DRAWINGS:

A. Submittals:

1. As soon as practicable after the list of sub-contractors and manufacturers have been reviewed, this Contractor shall submit to the Architect for review six (6) copies of shop drawings and descriptive literature, cuts, specifications, wiring and other pertinent diagrams, of all equipment to be furnished under this contract, before fabrication and starting work. A copy of the transmittal covering the shop drawings submitted shall be sent to the Architect.
2. 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.
3. Contractors shall not submit catalogs unless requested.
4. All material, equipment and specialties shall be new and shall be standard and regularly manufactured, and have the properties of which are published and regularly catalogued to the trade. Items specially assembled for this installation for which replacement parts will not be readily available will not be reviewed, when standard assembled, catalogued items are available.

B. Review:

1. Corrections or comments made on the shop drawings during the review do not relieve Contractor from compliance with requirements of the drawings and specifications. The check is only for review of general conformance with the design concept of the project and general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing the work in a safe and satisfactory manner.

1.5. WIRING AND WIRING DIAGRAMS:

- A. This Contractor shall furnish instructions and all necessary wiring diagrams of electrical equipment and controls furnished by him and shall be responsible for their proper working installation.
- B. All wiring furnished or furnished and installed by this Contractor to conform with local and National Electrical Codes now in effect and the Electrical Specifications for this project. All wiring in finished areas shall be run concealed and all wiring shall be run in conduit.

1.6. CONSTRUCTION OBSERVATIONS:

- A. This Contractor shall in writing, notify the Architect/Engineer five (5) working days prior to:
 - 1. Any work is to be concealed or backfilled so that the Architect/Engineer representative can observe the installation.
 - 2. Final completion of work.
- B. Failure by the Contractor to so inform the Architect/Engineer will be cause to have Architect/Engineer order visual and working access to covered and/or concealed work at the expense of this Contractor.

1.7. SELECTION OF EQUIPMENT:

- A. This Contractor is cautioned to check all physical dimensions, space allotments, piping connections, electrical requirements, etc., in making selection of the equipment he proposes to furnish.
- B. This Contractor shall be responsible for all changes in piping, electrical requirements, etc., resulting from his equipment selection and shall bear any increased cost to his or other trades resulting therefrom, and at no additional cost to the owner.
- C. Review by the Architect/Engineer of equipment selected does not relieve this Contractor of this responsibility.

1.8. OPERATING INSTRUCTIONS AND PARTS LISTS:

- A. After all tests and adjustments have been made, the Contractor shall furnish the necessary qualified attendants and shall put the plant in continuous operation for a period of not less than three days, during which time he shall give complete operating and maintenance instructions to operating engineer selected by the owner. Fuel, power and other supplies required during this period will be furnished by the

owner.

- B. Three (3) complete sets of operating instructions and list of parts of materials and equipment installed under this contract shall be turned over to the owner's representative at the time of final acceptance to the work herein included.

1.9. GUARANTEE:

- A. This Contractor shall furnish written guarantee to replace all defective work and materials, furnished under this section without cost to the owner for a period of one (1) year from the date of final acceptance.
- B. The guarantee shall not include such work as the servicing of equipment, oiling of motors, or any other work or services not due to defective work or material.
- C. All equipment warranties and guarantees shall be delivered to the owner at the time of final acceptance.
- D. Review of the installation by the Architect/Engineer shall in no way be construed as releasing this Contractor from his guarantee.
- E. All equipment warranties shall be in accordance with Section 2.2 of this specification.

1.10. "AS-BUILT" DRAWINGS:

- A. As the work progresses, this Contractor shall maintain a day-to-day record of all deviations from the original drawings on a set of blueline prints, furnished by the Architect.
- B. At the completion of the project, this Contractor shall at his own expense obtain a set of reproducible mylar sepia tracings of the contract drawings relating to his work and shall eradicate, indicate and transfer the record conditions to the reproducible tracings.
- C. The record reproductions, as corrected and recorded by the Contractor, shall be submitted to the Architect/Engineer for review prior to authorization for final payment. Record drawings shall be certified as to their correctness by the signature of the Contractor and shall be stamped or otherwise identified as "Record Drawings" or "As-Built" drawings.

1.11. MISCELLANEOUS IRON WORK:

- A. This Contractor will furnish and install all angles, rods, supports, frames, braces, hangers, anchors, brackets, clamps, etc., as shown on the drawings, as herein described in these specifications, and as necessary for the support and all hanging of equipment furnished under this contract, which is either wall hung, self-supporting or ceiling hung. All such supports, etc., shall be adequate in strength and suitable for the intended service.
- B. Provide all miscellaneous structural steel shapes required for suspension between principal roof framing members. Attach substructure to principal roof members by means of thru bolts, lock washers and nuts or by welding.
- C. Furnish all appurtenances required for a complete installation.

2. WORK INCLUDED:

2.1. GENERAL:

- A. This section of the specifications and accompanying drawings cover the requirements for all labor, materials, equipment, and services necessary for the heating, ventilating, and air-conditioning or other systems installation as indicated on the accompanying drawings and as described herein.

2.2. INDOOR MULTIZONE AIR CONDITIONING UNITS:

A. SPECIFIED EQUIPMENT:

- 1. Approved equipment must include multiple independent heating, cooling, fan and economizer sections to provide system redundancy, improve reliability, increase system efficiency, and reduce energy usage. Equipment that requires reheat will not be acceptable. Any manufacturer not meeting these specifications must provide a detailed explanation of the deviation(s) from the specifications and all performance information necessary for the owner to complete a comparative life cycle cost analysis. The Owner reserves the right to reject any bids not meeting all specifications.

B. TECHNICAL SPECIFICATIONS:

- 1. The indoor multizone units shall be field assembled design and

be listed by ETL as an approved HVAC appliance. The following components shall be factory assembled, installed, wired and plumbed on the unit and packaged for individual shipping:

- a. High efficiency 2-stage heating sections (min. 94% AFUE)
- b. Evaporator coils
- c. Fully modulating economizer dampers
- d. Low voltage control center
- e. Line and low voltage wiring in control panel
- f. Condensate piping to single point connection
- g. 30% efficient 2" pleated filters
- h. Barometric pressure relief dampers
- i. Main exterior electrical disconnect switch
- j. Step-down transformers (as required)
- k. Phase Protection
- l. Open protocol DDC Controller

C. STRUCTURE AND INSTALLED COMPONENTS:

1. Structure: Indoor unit shall be constructed of an aluminum welded structure. All return air and outside air enclosures shall be constructed of aluminum sheeting.
2. Heating - Each heating section shall be gas fired 94.6% 90,000 btu furnaces. A minimum of five independent heating sections shall be supplied in each unit. Each heating section can serve a maximum of two control zones with appropriate controls. Units shall be certified by AGA Laboratories and the ratings certified by GAMA and tested according to DOE test procedures and FTC labeling regulations. Heating of air cooled by mechanical means, reheat, or through an economizer will not be allowed.
3. Supply Air Fan - An independent, 1 Hp fan section is required for each heating section. Each blower assembly shall be statically and dynamically balanced. Maximum speed is 1800 RPM. Blower speed shall be reduced a minimum of one third of the design rotational speed to lower energy costs and reduce drafts when space conditions allow. High and low speed fan settings must be manually adjustable through a simple procedure. Change in blower speed must be gradual utilizing a VSM (DC) motor or Variable Frequency Drive. Control sequence and equipment must be pre-approved by the Owner. Belt-driven fans shall not be acceptable.
4. Cooling – An independent, direct expansion cooling system shall

be provided for each heating section. Evaporator coils shall be made with seamless copper tubing, aluminum fins and galvanized steel frame. Balanced port, adjustable thermal expansion valves shall be factory-installed. Refrigerant shall be R-410a. Each coil shall be thoroughly tested under high pressure and charged with nitrogen prior to shipment to further assure leak-proof construction. An independent air-cooled condensing unit shall be provided for each cooling coil. Units shall be set directly on the roof on walkpads supplied by roofer. Condenser fan shall be TEFC, direct drive motor with vertical discharge, rain shield and PVC coated steel wire fan guard. All refrigerant piping shall be type "L" hard drawn refrigerant grade copper tubing. Brass service valves shall provide access to refrigerant system. Field installed piping shall be as required by the manufacturer. Condenser coil is to be factory tested to insure leak-proof construction. Entire coil shall be accessible for cleaning. Refrigerant compressor shall be a Copeland Compliant Scroll. Unit shall be rated for a minimum 11.0 EER at ARI conditions with the evaporator coil and condenser section provided.

5. Economizers - An independent economizer section shall be provided for each heating section. Units shall be fully modulating with enthalpy or dry-bulb changeover and a manually adjustable minimum damper position. Outdoor air intake damper leakage shall not exceed three cfm/sq. ft. at 3" static pressure differential across the damper.
6. Filters – Sufficient surface area of 2" pleated, 30% efficient filters shall be provided (Farr 30/30 or equivalent). Filter replacement shall be made without the use of any tools. All air shall pass through these filters prior to entering any fan, coil or heat exchanger.
7. Unit Control – DDC Controller Specification - The controller used shall be 32-bit microprocessor based and graphically programmable to control each unit with 96 input/output (I/O) points:
 - a. Up to 44 universal inputs (individually jumper-selectable to select either a dry contact, thermistor, 0-20mA, 0-5 VDC, 0-10 VDC, or RTD ... with 12-bit resolution on all analog inputs)

- b. Up to 16 digital outputs (relayed outputs with individual LED indication and individual HOA switches)
- c. Up to 24 analog outputs (0-10 VDC or 0-20 mA)

Capacity requirements greater than 96 I/O's can be added as an option. The maximum number of inputs and outputs the controller can accept is 192 (92 universal inputs, 48 digital outputs and 48 analog outputs).

There shall be no limits on the number of control loops that the controller can handle nor any programming limitations imposed. The controller shall have an on-board, jumper-selectable EIA-232 or EIA-485 open protocol port that supports the following communication protocols: BACnet (modes supported: MS/TP, PTP, and ARCnet), Modbus (modes supported: RTU and ASCII), N2 Bus, and LonWorks. If a controller does not support all of these protocols, then the equipment manufacturer shall include and provide in their price all of the necessary additional communication gateway(s) to support all of these protocols.

All programming memory shall be stored in Flash memory (512-KB minimum), thus requiring no battery-backup and providing for rugged electrical noise immunity. The controller shall contain an on-board battery-backed (up to 10,000 hours) hardware clock for stand-alone scheduling capability and accurate recording of date/time on alarm events and data logging. The time/date maintained by the hardware clock shall automatically adjust for daylight savings time and leap years.

As simple-to-use keypad/display (KPD) unit with a minimum 4-line by 40 characters per line backlit LCD with 22 function buttons will be supplied with each unit. Software and hardware features of the KPD shall include:

- a) Custom definable displays and menus
- b) Alarm indicator light and horn as well as an acknowledge (or "mute") button. The alarm light shall be active anytime there is an active alarm, and the alarm horn shall be active anytime there is an active, unacknowledged alarm. It shall be software selectable which individual alarm conditions, if any, that activate the horn.
- c) Alarm history buffer displaying the 64 most recent alarms, including custom alarm text and time stamping of time of alarm occurrence and time when the alarm condition returned-to-normal.
- d) User password protection for KPD editing access as well as separate technician password protection
- e) View and adjustment of operating schedules – normal, holiday, and

- override schedule modes
 - f) Ability to connect or disconnect the KPD "on-the-fly" without the need to cycle power to the controller for the KPD to be fully functional.
 - g) Option to mount the KPD component itself up to 1,500 feet away from the unit
 - h) Ability to reset the controller's time/date
 - i) Ability to field-adjust through the KPD which protocol the controller communicates through its open protocol port as well as the ability to adjust certain protocol parameters (such as baud rate, stop bits, parity, protocol mode, etc.)
8. Duct System - Unit shall have field-installed external duct system. Sub-zone control actuators shall be provided for field installation.
9. Electrical – 240 volt, single phase with main over current protection device and branch circuit breakers shall be provided in each unit. Condensing unit disconnect switches shall be mounted on the exterior of the penthouse adjacent to the respective condensing units. A main electrical disconnect switch shall be factory mounted on each unit. Unit shall include a factory-installed power quality monitor to disable unit during phase loss, high voltage or low voltage conditions.
10. Warranties - The unit shall include the following manufacturer's parts warranties.
- a. Heat exchangers shall have a ten-year limited warranty with 60 °F sustained minimum inlet air temperature.
 - b. Solid-state ignition modules shall have a one-year limited warranty.
 - c. Blower motors shall have a limited one-year warranty.
 - d. The compressor shall have a limited five-year warranty.
 - e. All other covered components shall have a limited one-year warranty.
11. Equipment Manufacturer Requirements:
- a. Inspect existing equipment and site prior to construction.
 - b. Complete system design to match equipment with building requirements.

- c. Provide customized submittal data matching job requirements.
- d. Fabricate all equipment in accordance with job schedule.
- e. Control equipment delivery to meet schedule requirements.
- f. Provide a project manager to supervise the installation.
- g. Start-up equipment with the assistance of the installing contractor. Installing contractor responsibilities include properly adjusting heating and cooling components and completing the required system air balance.
- h. Complete detailed training of system operation, maintenance and trouble-shooting for the owner and installing contractor.
- i. Provide 4 copies of Operating and Maintenance instructions, including color-coded unit wiring diagrams showing actual wiring colors.
- j. Provide dry contact and analog inputs on integrated unit control for interface of building EMS.

12. Manufacturer – Custom Mechanical Equipment, INC through Lennox Industries, Inc.

2.3. REFRIGERANT PIPING:

- A. Type “L” hard drawn refrigerant grade copper tubing with forged fittings shall be used.
- B. Line sizes and installation shall be as required by the manufacture of the equipment furnished. Extreme care should be taken to keep the entire system clean and dry during installation. All systems shall be placed under a 24 hour vacuum pulled down below 500 PPM before being charged with refrigerant.

2.4. CONDENSATE PIPING:

- A. Provide condensate piping routed to internal building drain as shown on the plans, or as directed by the Architect.

2.5. START-UP:

C. Upon installation of heating, cooling and ventilation system, equipment shall be placed into operation and all operation and safety controls checked for proper function. Readings shall be taken and recorded at the following locations:

1. Air temperatures across unit both in the heating and cooling modes.
2. Air flow in the heating, cooling and ventilation modes.
3. Blower speed tap setting.
4. Refrigerant pressures and temperatures.
5. Ambient air temperatures.
6. Voltage and amperage at all motors.
7. Gas pressures at the furnaces with all units running.

B. System shall be adjusted to reach values specified by the manufacture.

C. All readings shall be recorded, put into report form and submitted to the engineer for review.

2.6. SEQUENCE OF OPERATION:

A. **GENERAL:** The Integrated unit controller contains all necessary controls and relays to operate all PMZ2 functions. The system changes blower speeds, enables heating and cooling, provides minimum ventilation and disables equipment for night setback operation and emergency shutdown. Independent zone temperature control is regulated by individual thermistors.

B. **VENTILATION MODE:** When power is supplied to the unit, each blower is enabled at its manually adjustable ventilation blower speed. Each economizer is driven to its manually adjustable minimum position.

C. **HEATING MODE:** Upon a zone heating call, the corresponding heating section is enabled. The corresponding blower is ramped to its manually adjustable high speed. When the zone heating demand is met, the blower returns to the ventilation mode.

- D. **COOLING MODE:** Upon a zone cooling call, the corresponding blower is ramped to its manually adjustable high speed. The outdoor air sensor for that zone is enabled (enthalpy or dry bulb). If outdoor conditions permit, the mixed air temperature control modulates economizer dampers to maintain a fixed mixed air temperature. Otherwise, the corresponding condensing unit provides mechanical cooling. When the zone cooling demand is met, the blower returns to the ventilation mode.
- E. **NIGHT SETBACK:** During occupied periods, the PMZ2 operates as described above. During unoccupied periods, the unit is idle with all outdoor air dampers closed. During a call for heating or cooling, the PMZ2 is enabled as described above except all outdoor air dampers remain closed. When the demand is met the unit returns to idle mode.
- F. **BLOWER CONTROL:** Variable speed direct drive blower. Statically and dynamically balanced. Adaptive blower control technology, optimizes dehumidification sequence and simplifies unit air balancing. Simple user adjustment to dial in air flow. No dip switch settings.
- G. **CONTROL INTEGRATION:** PMZ2 unit will operate after start-up in a stand alone mode, and is factory pre-programmed for BACNET integration.

3. PIPING:

- A. Refrigerant piping shall be Type "L" "ACR" seamless hard tempered copper pipe with wrought copper fittings, sweat type. Unions shall be copper to copper, solder all joint with "Silfos" or "Easyflo" in a nitrogen atmosphere.
- B. Condensate drain piping shall be Schedule 40, PVC plastic pipe and fittings. Run piping with as few offsets as possible using long radius ells. Provide running trap in each line.

4. AIR BALANCE TEST:

Start-up assistance and training by factory authorized service technician. One year warranty and preventive maintenance by installing contractor, including filter changes every three months. Air balance by contractor.

END OF SECTION 15400.

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 Ameran.

1.3. QUALITY ASSURANCE:

- A. Comply with NFPA 54 "National Fuel Gas Code" for gas piping materials and components, installations, and inspection, testing, and purging.
- B. Comply with NFPA 70 "National 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:

- 13. 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 "Pipe 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 Division 15 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. Strainers: 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 "Basic 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 "Gas 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 all 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 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 astragal 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. Cord reels
18. Uninterruptible Power Supply UPS
19. Engine Generator with circuit breaker and automatic transfer switch

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.

1.5. ELECTRICAL SERVICE:

- A. The existing electrical service shall be from Highland City Utilities
- B. 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, 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.

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.

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.

1.11. CONDUIT:

- B. 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. 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 or 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.

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 ampere, 120/277 volt, AC type with ivory handles, unless noted otherwise, as follows:
 - 1. Single pole Hubbell #1201-1
 - 2. Three way Hubbell #1203-1
- 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 ampere, 125 volt with white molded face, unless noted otherwise. Emergency outlets shall be red. Receptacle plates shall match the receptacle.
- B. Weatherproof outlets shall be duplex grounding type, rated 20 ampere, 125 volt receptacles mounted in a cast box with weatherproof gasketed spring door.
- D. Duplex receptacle GFI type, flush mounted rated 20 amperes, 125 volt with ivory face, unless noted otherwise. Hubbell .
- E. Receptacles shall be mounted with long axis horizontal 24" above finished floor to bottom unless noted otherwise.
- F. Contractor shall review drawings and check with Architect for rooms that are to have receptacles of different color and/or type.
- G. The following are approved manufacturers:
 1. Hubbell
 2. Leviton
 3. Eagle
 4. Pass and Seymour

1.17. DEVICE PLATES:

- A. Device plates shall be plastic with white finish and Slater or Hubbell type P unless noted otherwise, emergency outlet plates shall be red.
- B. This contractor shall examine the plaster, block, brick, wood drywall, painting, an other finishes before making his installation to insure that his 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.
- C. Contractor shall review drawings and check with Architect for rooms that are to have device plates of different color and/or type.

1.18. 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.

1.19. 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 so as 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.
- H. 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.

1.20. PANELBOARDS:

- 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 1200 amp bus with 1200 amp main breaker with branch breakers as shown on the panel schedules
 - I. The following are approved manufacturers:
 - 1. Eaton Corp./Cutler-Hammer
 - 2. Square D
 - 3. General Electric
 - 4. Siemens

N. **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. ABOVE GRADE

1. Rectangular stamped steel for use above grade on poured concrete slab a steel decking.
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-SS

C. 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: Legrand – Wiremold

- a. Non-flanged: FPBTBZ
- b. Flanged: FPBTCBZ

1.26. RACEWAY SYSTEM:

- A. Legrand – Wiremold A4000 raceway system.
 - 1. Two piece aluminum wire way with pre-punched activation openings with a divider. The raceway shall be 4 ¾" wide and 1 ¾" deep.
 - 2. The covers and pre-punched activation covers are to be 1'-0" factory cut and punched.
 - 3. Mount the raceway above the counter in the Dispatch area.
 - 4. The bottom channel shall be used for receptacle power. The top channel shall be used for data/communication.
 - 5. Provide all activation devices as shown or directed by Owner.

1.27. CORD REEL:

- A. The cord reels shall be manufactured by Legrand catalog # CR14L104N40F20B.
- B. The cord reels shall have 40 foot of 10AWG 4 conductor cable pre-installed.
- C. Mount the reels on substantial welded steel structure mounted even with bottom of the roof welded to building structure in location to match Owners' vehicle locations.
- D. Provide receptacles to match Owners' vehicle plugs.
- E. Teach Owners' representative how to maintain the reels.

1.28. BASKET CABLE TRAY:

- A. B-Line FLEXPAY wire basket 2" deep, 8" wide, 10 length #FT2X8X10.

- 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 of both levels. Terminate main level tray system in the electrical 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. PROGRAMMABLE LIGHTING CONTROL SYSTEM:

- A. Provide a Hubbell NX DISTRIBUTED INTELEGENCE lighting control system as indicated on the drawings.
- B. The lighting control system shall include an area controller NXAC interface panel to interface with Owners' computer system via the HUBBNET Ethernet system.
- C. Provide the system components as shown. Include category 5 wiring to interconnect the system components.
 - a. Area controller NXAC
 - b. Bridge hubs NXHNB
 - c. Room controllers NXRC
 - d. RJ45 converters
 - e. Occupancy sensors
 - f. Switches
 - g. Special switches
 - h. The sequence of operation and programming shall be worked out

with the Architect, Engineer, and/or the Owner.

1.30. POWER AND CONTROL 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.

1.31. 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 ampere, 120/240 volt, single phase, three wire. The Electrical Contractor shall provide and maintain throughout the construction period temporary lighting to meet all OSHA requirements.

1.32. 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. In general, all electrical cable and conduits shall be buried 3'-0" below grade in parking lot 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.

1.33. 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.

1.34. 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 with regard to 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.

1.35. 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 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.

1.36. 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.

1.37. 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.

O. 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:
 - a. 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.

16. 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.

End of Section 16720



City of Highland
Building and Zoning

August 9, 2019

To: Mark Latham, City Manager

From: Breann Speraneo, Planning & Zoning Administrator

RE: NOML for demolition of 1245 Poplar Drive; Bid #BZ-13-19

This notice of municipal letting calls for a wet demolition of the residential structure located at 1245 Poplar Drive. An asbestos inspection was unable to be performed by Quality Testing and Engineering, Inc. due to the interior condition of the property.

The listed property owner passed away in 2017 and the City has been unable to locate a beneficiary. Many property maintenance complaints have been received.

City of Highland, Illinois

Department of Community Development
Building and Zoning Division



**DEMOLITION OF STRUCTURES
1245 POPLAR DRIVE, HIGHLAND, IL.
BZ-13-19**

**Bid Opening: 10:00 a.m., Wednesday, September 11, 2019
City Hall
1115 Broadway
Highland, Illinois**

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

Proposal Submitted by: _____

Building demolition 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.

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BID FORM

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.

In addition to this Bid, the undersigned herewith submits complete information including descriptive literature and product specifications to fully define the fencing material being offered.

AUTHORIZED
SIGNATURE: _____ TITLE: _____

Print Name: _____

1245 Poplar Drive \$ _____

Total Bid Price \$ _____

Building demolition 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.

RETURN WITH BID

(If an individual)

Signature of Bidder _____

Business Address _____

(If a partnership)

Firm Name _____

Signed By _____

Business Address _____

Insert
Names and
Addresses of
All Partners

} _____

(If a corporation)

Corporate Name _____

Signed By _____

President

Business Address _____

Insert
Names of
Officers

} President _____
Secretary _____
Treasurer _____

Attest: _____

Secretary

CONTRACT ADMINISTRATION

INVITATION

The City of Highland, Illinois, will receive sealed bids until 10:00 a.m., Wednesday, September 11, 2019 at City Hall, at which time they will be publicly opened and read. After tabulation and review, bids will be presented to the City Council at its regular meeting scheduled for September 16, 2019 for consideration. If there are any questions concerning this solicitation, please contact Ms. Kim Kilcauski, Administrative Assistant at (618) 654-7115.

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

REQUIRED DOCUMENTS

The Certificate of Non-Delinquency of Taxes and Certificate of Compliance must be returned with the bid. The City Council is prohibited from awarding the contract without these documents.

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 form will be considered.

The successful bidder shall submit executed copies of Performance and Payment Bonds (separate), each in an amount equal to the Contract Price, and Certificate of Insurance as security for the faithful performance and payment of all Contractors' obligations under the Contract.

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

BID SECURITY

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 amount of five percent (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 five

BASIS OF PAYMENT

The contractor will be paid in monthly payments upon receipt of the contractor's invoice. The invoice shall be for actual progress as approved by the City's representative and documented on the schedule of prices. The invoices are due at the Department of Community Development seven (7) days prior to the scheduled council meeting. The city will withhold 10% from each invoice. After 50% or more of the work is completed, the City shall retain 5% of the total adjusted contract price from each invoice. Final payment and retainage shall not be released until all lien waivers are received from the Contractor, subcontractors and suppliers.

Payment will be made only after all materials are received and accepted, as specified, and within 30 days of receipt of invoice for the same.

Building demolition 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.

SPECIFICATIONS

DESCRIPTION

The project consists of a wet demolition of the structures at 1245 Poplar Drive in Highland.

EXAMINATION OF THE SITE

It is recommended that the Bidder visit the project site to determine such details, which may require other incidental items affecting the cost of the work to be performed.

The cost of meeting existing topography features or any incidental work necessary for the successful completion of the project shall be considered incidental to the contract and no additional compensation will be allowed.

If the City determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

SAFETY AND HEALTH

The Contractor shall be responsible for enforcing all O.S.H.A. Safety and Health Standards (29 CFR 1926/1910), pertaining to the construction industry, as established by the United States Department of Labor, Occupational Safety and Health Administration 2207.

SAFETY AND PROTECTION

- A. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety and precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. All employees on the Work and other persons and organizations who may be affected thereby;
 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 3. Other property at the site adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.
- B. CONTRACTOR shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons and property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation and replacement of their property.

All damage, injury or loss to any property referred to in paragraph 2 or 3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts either of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR. CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

- C. CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent, unless otherwise designated in writing by CONTRACTOR to OWNER.
- D. In EMERGENCIES affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instructions or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss.
- E. CONTRACTOR shall give ENGINEER prompt, written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.

DUST CONTROL

CONTRACTOR shall take dust suppression measures during all phases of demolition to ensure there are no visible emissions. This is generally considered as a "wet demolition." This requirement is independent of presence of non-friable asbestos containing material. Fire hydrants are not to be used as water source without expressed permission from the City of Highland.

REMOVAL OF STRUCTURES

The CONTRACTOR shall completely demolish and remove the main structure including all foundation, footing, and basement floors. In addition; the CONTRACTOR shall also remove all private sidewalks, driveways, basketball poles, fences, detached accessory structures and similar appurtenances located in and upon the premises.

BACKFILLING OF LOT

After the demolition and removal work described in the preceding paragraph, the CONTRACTOR shall backfill the lot up to the level grade of the existing surrounding area.

The CONTRACTOR shall backfill only with masonry rubble, sand, or clean dirt up to the level 12” below the grade of the existing surrounding area. Fill shall be compacted to 95% standard proctor. The top layer of fill is to be a minimum of 12” of soil capable of sustaining vegetative cover. Any open wells shall be filled in accordance with the State of Illinois regulations. Any cisterns or similar obstacles found on the site, shall be filled with masonry rubble, sand or clean dirt up to the grade level of the existing surrounding area.

The CONTRACTOR shall not backfill with lumber, lath, or other organic materials. The CONTRACTOR shall not backfill with slag.

The CONTRACTOR shall, after complete removal of the structures and backfilling of the excavated area, top dress, reseed and mulch the entire disturbed area to the satisfaction of the city of Highland.

PROTECTION OF PROPERTY

The CONTRACTOR shall be responsible for repairing any and all city of Highland improvements that may be damaged during the demolition project, including – but not limited to – streets, curbs, street signs, public sidewalks, sanitary sewer lines, storm sewer lines, and electric and fiber lines (regardless of whether those electric or fiber lines are aerial or buried).

The CONTRACTOR shall be responsible for repairing or restoring and all adjoining private properties to pre-construction condition, or better, that may become damaged during the demolition project, including – but not limited to- structures, open lands, private sidewalks, sewers, or other underground services lines that may not be visible otherwise.

UTILITIES

The CONTRACTOR shall notify all utility companies of the demolition prior to beginning the project. All rules and regulations of the utility companies and city or county codes must be complied with before, during and after the demolition project. Sanitary service sewers shall be plugged to prevent ground infiltration.

EROSION CONTROL

The CONTRACTOR shall, at all times, control any and all erosion and dust from the site resulting from the demolition and fill material of the project. Erosion control protection (silt fences) shall be placed on any downhill sides of the disturbed area as necessary. The CONTRACTOR shall remove the silt fences after sufficient vegetative cover is in place to check erosion.

OFF-SITE DISPOSAL

Material from the demolition which is not suitable for use as backfill material, shall not be used as backfill but, instead, shall be removed from the site of the work and disposed of at the CONTRACTOR’s expense.

The CONTRACTOR must dispose of all such materials at a landfill permitted by the Illinois Environmental Protection Agency. The CONTRACTOR shall retain its receipts for disposal transactions, and shall present those receipts of all disposal transactions to the City before final payment to the CONTRACTOR.

The City will delay final acceptance and payment until all unauthorized material, remaining on the premises at the completion of the demolition work, has been removed from the site. The CONTRACTOR shall leave the premises in an orderly and clean condition, free of debris and building materials.

There is no guarantee of salvageable materials in the building(s) involved in this CONTRACT, and no responsibility shall be assumed by any party for loss of salvageable material.

The CONTRACTOR shall not burn any materials on site. The CONTRACTOR shall not bury any materials on site, except to the extent that the materials resulting from the demolition work are suitable for use as backfill, as set forth above.

PERMITS

The CONTRACTOR shall obtain the necessary demolition permits and perform all work in strict conformity therewith. The City shall waive all associated fees for its permits.

PROJECT ACCESS

The CONTRACTOR can access this project site with ingress and egress from Poplar Drive.

PHOTOS





EMPLOYMENT REQUIREMENTS AND WAGE RATES

1. The City of Highland is a “public body” and the subject of this Contract is a “public work” within the meaning of Section 2 of the Prevailing Wage Act (820 ILCS 130/2). Consequently, the project specifications require – and the Contract, when awarded, will require – that “not less than the prevailing rate of wages as found by the public body or Department of Labor or determined by the court on review shall be paid to all laborers, workers and mechanics performing work under the Contract.” See 820 ILCS 130/4(a-1). It shall be mandatory upon the contractor, to whom the contract is awarded, to insert into each subcontract and the project specifications for each subcontract a written stipulation to the effect that not less than the prevailing rate of wages shall be paid to all laborers, workers, and mechanics performing work under the contract. It shall also be mandatory upon each subcontractor to cause to be inserted into each lower tiered subcontract and into the project specifications for each lower tiered subcontract a stipulation to the effect that not less than the prevailing rate of wages shall be paid to all laborers, workers, and mechanics performing work under the contract. See 820 ILCS 130/4(b). The City of Highland requires in all contractor’s and subcontractor’s bonds that the contractor or subcontractor include such provision as will guarantee the faithful performance of such prevailing wage clause as provided by contract or other written instrument. See 820 ILCS 130/4(c). The City of Highland’s Prevailing Wage Ordinance, in effect at the time the Contract is awarded, adopts the specification of prevailing wage rates made by the Illinois Department of Labor, applicable to all laborers, workers and mechanics in Madison County, Illinois, for each craft or type of worker or mechanic needed to execute the contract. See 820 ILCS 130/4(c). The Illinois Department of Labor’s specification of prevailing wage rates in Madison County, Illinois, is set forth on the following pages:
2. The contractor, to whom the Contract is awarded, shall comply with the Employment of Illinois Workers on Public Works Act (30 ILCS 570/), which requires – during any period of excessive unemployment in Illinois – that the contractor “employ at least 90% Illinois laborers on [the] project.” See 30 ILCS 570/3.

Building demolition 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 7/15/2019

Trade Title	Rg	Type	C	Base	Foreman	Overtime				H/W	Pension	Vac	Trng	Other Ins
						M-F	Sa	Su	Hol					
ASBESTOS ABT-GEN	NW	ALL		31.09	31.59	1.5	1.5	2.0	2.0	6.30	16.85	0.00	0.80	
ASBESTOS ABT-GEN	SE	ALL		31.94	32.44	1.5	1.5	2.0	2.0	8.25	14.05	0.00	0.80	
ASBESTOS ABT-MEC	All	BLD		31.75	32.75	1.5	1.5	2.0	2.0	8.00	6.25	2.00	0.55	
BOILERMAKER	All	BLD		36.54	39.04	1.5	1.5	2.0	2.0	7.07	24.08	1.50	1.05	
BRICK MASON	All	BLD		33.38	35.38	1.5	1.5	2.0	2.0	9.10	12.82	0.00	0.87	
CARPENTER	All	ALL		39.58	41.08	1.5	1.5	2.0	2.0	7.42	9.25	0.00	0.50	0.50
CEMENT MASON	All	ALL		34.50	35.50	1.5	1.5	2.0	2.0	9.95	14.50	0.00	0.30	
CERAMIC TILE FINISHER	All	BLD		28.29	28.29	1.5	1.5	2.0	2.0	7.45	6.86	0.00	0.81	
ELECTRIC PWR EQMT OP	NW	ALL		44.38		1.5	1.5	2.0	2.0	8.75	12.43	0.00	0.44	
ELECTRIC PWR EQMT OP	SE	ALL		45.57	54.94	1.5	1.5	2.0	2.0	6.95	12.76	0.00	0.46	
ELECTRIC PWR GRNDMAN	NW	ALL		28.54		1.5	1.5	2.0	2.0	8.75	8.00	0.00	0.29	
ELECTRIC PWR GRNDMAN	SE	ALL		34.02	54.94	1.5	1.5	2.0	2.0	5.19	9.54	0.00	0.34	
ELECTRIC PWR LINEMAN	NW	ALL		51.79	54.71	1.5	1.5	2.0	2.0	8.75	14.50	0.00	0.52	
ELECTRIC PWR LINEMAN	SE	ALL		52.41	54.94	1.5	1.5	2.0	2.0	7.99	14.69	0.00	0.52	
ELECTRIC PWR TRK DRV	NW	ALL		33.17		1.5	1.5	2.0	2.0	8.75	9.29	0.00	0.33	
ELECTRIC PWR TRK DRV	SE	ALL		37.20	54.94	1.5	1.5	2.0	2.0	5.68	10.42	0.00	0.37	
ELECTRICIAN	NW	ALL		43.41	45.66	1.5	1.5	2.0	2.0	9.50	12.96	0.00	0.22	
ELECTRICIAN	SE	ALL		40.70	43.14	1.5	1.5	2.0	2.0	7.99	11.87	0.00	1.02	2.44
ELECTRONIC SYSTEM TECH	NW	BLD		32.09	34.09	1.5	1.5	2.0	2.0	9.50	7.11	0.00	0.40	
ELECTRONIC SYSTEM TECH	SE	BLD		34.57	36.57	1.5	1.5	2.0	2.0	3.65	9.79	0.00	0.40	
ELEVATOR CONSTRUCTOR	All	BLD		50.09	56.35	2.0	2.0	2.0	2.0	15.57	17.51	4.50	0.62	
FLOOR LAYER	All	BLD		34.21	34.96	1.5	1.5	2.0	2.0	7.42	9.25	0.00	0.50	0.50
GLAZIER	All	BLD		35.91	37.91	1.5	1.5	2.0	2.0	6.25	11.23	0.00	0.68	
HEAT/FROST INSULATOR	All	BLD		38.86	39.96	1.5	1.5	2.0	2.0	10.50	12.86	0.00	0.75	0.05
IRON WORKER	All	ALL		32.25	34.25	1.5	1.5	2.0	2.0	9.71	16.25	0.00	0.42	
LABORER	NW	ALL		30.59	31.09	1.5	1.5	2.0	2.0	6.30	16.85	0.00	0.80	
LABORER	SE	ALL		31.44	31.94	1.5	1.5	2.0	2.0	8.25	14.05	0.00	0.80	
MACHINIST	All	BLD		48.93	51.43	1.5	1.5	2.0	2.0	7.68	8.95	1.85	1.32	
MARBLE FINISHER	All	BLD		27.48	0.00	1.5	1.5	2.0	2.0	6.45	5.70	0.00	0.58	
MARBLE MASON	All	BLD		33.38	35.38	1.5	1.5	2.0	2.0	9.10	12.82	0.00	0.87	
MILLWRIGHT	All	ALL		39.58	41.08	1.5	1.5	2.0	2.0	7.42	9.25	0.00	0.50	0.50

OPERATING ENGINEER	All	BLD	1	38.30	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	2	37.17	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	3	32.69	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	4	32.75	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	5	32.42	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	6	40.85	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	7	41.15	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	8	41.43	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	BLD	9	39.30	41.30	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	1	36.80	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	2	35.67	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	3	31.19	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	4	31.25	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	5	30.92	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	6	39.35	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	7	39.65	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	8	39.93	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
OPERATING ENGINEER	All	HWY	9	37.80	39.80	1.5	1.5	2.0	2.0	12.85	18.25	0.00	1.05	
PAINTER	All	BLD		31.25	32.75	1.5	1.5	2.0	2.0	6.05	11.42	0.00	0.70	
PAINTER	All	HWY		32.45	33.95	1.5	1.5	2.0	2.0	6.05	11.42	0.00	0.70	
PAINTER OVER 30 FT.	All	BLD		32.25	33.75	1.5	1.5	2.0	2.0	6.05	11.42	0.00	0.70	
PAINTER PWR EQMT	All	BLD		32.25	33.75	1.5	1.5	2.0	2.0	6.05	11.42	0.00	0.70	
PAINTER PWR EQMT	All	HWY		33.45	34.95	1.5	1.5	2.0	2.0	6.05	11.42	0.00	0.70	
PILEDRIVER	All	ALL		39.58	41.08	1.5	1.5	2.0	2.0	7.42	9.25	0.00	0.50	0.50
PIPEFITTER	N	BLD		42.66	44.79	1.5	1.5	2.0	2.0	5.00	8.75	0.00	0.35	
PIPEFITTER	S	BLD		40.25	44.25	1.5	1.5	2.0	2.0	8.04	9.80	0.00	1.55	
PLASTERER	All	BLD		33.00	34.50	1.5	1.5	2.0	2.0	9.95	9.75	0.00	0.45	
PLUMBER	N	BLD		42.66	44.79	1.5	1.5	2.0	2.0	5.00	8.75	0.00	0.35	
PLUMBER	S	BLD		39.35	41.85	1.5	1.5	2.0	2.0	7.70	8.00	0.00	1.25	
ROOFER	All	BLD		33.30	35.30	1.5	1.5	2.0	2.0	9.10	8.90	0.00	0.41	
SHEETMETAL WORKER	All	ALL		34.94	36.44	1.5	1.5	2.0	2.0	9.65	8.94	2.10	0.54	0.35
SPRINKLER FITTER	All	BLD		42.31	45.31	1.5	2.0	2.0	2.0	8.72	12.95	0.00	1.10	
TERRAZZO FINISHER	All	BLD		31.83	31.83	1.5	1.5	2.0	2.0	7.00	6.80	0.00	0.82	
TERRAZZO MASON	All	BLD		32.53	32.83	1.5	1.5	2.0	2.0	6.45	5.87	0.00	0.45	
TRUCK DRIVER	All	ALL	1	38.17	42.29	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	ALL	2	38.71	42.29	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	

TRUCK DRIVER	All	ALL	3	39.01	42.29	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	ALL	4	39.34	42.29	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	ALL	5	40.39	42.29	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	O&C	1	30.54	33.83	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	O&C	2	30.97	33.83	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	O&C	3	31.21	33.83	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	O&C	4	31.47	33.83	1.5	1.5	2.0	2.0	13.00	6.60	0.00	0.25	
TRUCK DRIVER	All	O&C	5	32.31	33.83	1.5	1.5	2.0	2.0	13.00	6.60	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, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, 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, Excavators, 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 Heads or Apparatuses (Two), Light Plants (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, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments,

skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (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. Asphalt Spreader Oilers, 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).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms, including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Master Mechanic

OPERATING ENGINEERS - Highway

GROUP I. Cranes, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, 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, Excavators, 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, Well Drilling Machines, Boring Machines, Track Jacks, Mixers, Conveyors (Two), Air Compressors (Two), Water Pumps regardless of size (Two), Welding Machines (Two), Siphons or Jets (Two), Winch Heads or Apparatuses (Two), Light Plants (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, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments, skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators (except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (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. Asphalt Spreader Oilers, 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).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms, including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Mechanic

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.

- On August 7, 2018, IDOL published changes to the HT/Frost Insulator classification in Alexander County, the Sheetmetal Worker classification in Alexander, Bond, Clay, Clinton, Crawford, Edwards, Effingham, Fayette, Franklin, Gallatin, Greene, Hamilton, Hardin, Jackson, Jasper, Jefferson, Jersey, Johnson, Lawrence, Macoupin, Madison, Marion, Massac, Monroe, Montgomery, Perry, Pope, Pulaski, Randolph, Saline, St. Clair, Union, Wabash, Washington, Wayne, White, and Williamson Counties, and the Iron Worker trade in Richland County.

**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



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.

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

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

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

**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

City of Highland, Illinois

Notice of Municipal Letting

**DEMOLITION OF STRUCTURES
1245 POPLAR DRIVE
BZ-13-19**

The City of Highland, Illinois invites sealed bids for demolition of structures until 10:00a.m., Wednesday, September 11, 2019. Bids are publicly opened and read at that time.

This project includes the demolition of the structures and restoration of the grounds at 1245 Poplar Drive in Highland, IL.

Contractor shall not pay less than the prevailing rates of wages to all laborers, workmen, and mechanics performing work under this contract, and shall comply with the requirements of the Illinois Wages of Employees on Public Works Act (820 ILCS 130/1-12).

Copies of the bidding documents are available at the:

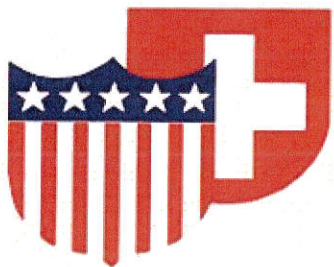
City of Highland
Building and Zoning Department
2610 Plaza Drive
Highland, Illinois 62249

There will be a non-refundable \$10.00 fee for any set picked up. Electronic versions are available upon request at no charge by calling (618) 654-7115 or by emailing highlandzoning@highlandil.gov.

By the order of the Mayor and City Council

Mark Latham, City Manager

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- Publish in The Pioneer's August 28, 2019 and September 4, 2019 editions.
 - Publish in the Troy Times-Tribune's August 29, 2019 and September 5, 2019 editions.



City of Highland

Department of Parks & Recreation

P.O. Box 218

Highland, IL 62249

Phone: 618.651.1386 - Fax: 618.651.1387

To: Mark Latham, City Manager

From: Mark Rosen, Director of Parks & Recreation

Date: August 19, 2019

Subject: NOML PR-14-19 Construction of Silver Lake Park fish Rearing Pond and Wetlands

RECOMMENDATION

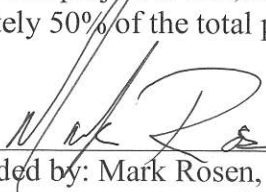
I am recommending to seek City Council support to advertise a Notice of Municipal Letting for the Construction of Silver Lake Park Fish Rearing Pond & Wetlands.

DISCUSSION

The construction of the pond and wetlands is one of the many projects included in the 319 Grant the city secured. This pond will operate in two capacities; the first is to provide a water body capable of raising game fish that will be released directly into Silver Lake. The second benefit will be to serve as a structure to hold back sediment from entering the lake. A final benefit will be an opportunity to improve the aesthetics of this popular park for nature lovers and photographers.

FISCAL IMPACT

The engineers estimate for this project is \$57,000 and funds from the 319 Grant will be used to pay for approximately 50% of the total project.


Recommended by: Mark Rosen, Dir. of Parks & Recreation


Approved by: Mark Latham, City Manager

City of Highland, Illinois

Parks & Recreation Department

**Bid Number:
PR-14-19**

Construction of Silver Lake Park Fish Rearing Pond & Wetlands

Monday, September 30, 2019

**9:00 AM
City Hall
1115 Broadway
Highland, IL 62249**

Approved: _____
Mark Latham: City Manager

Date: _____, 2019

Proposal Submitted By: _____

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BID SHEET

Bid Amount.....	BS-1
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CONTRACT ADMINISTRATION

INVITATION

The City of Highland, Illinois, will receive sealed bids until Monday, September 30, 2019 at 9:00 am CST at City Hall (1115 Broadway), at which time they will be publicly opened and read. After tabulation and review, bids will be presented to the City Council at its regular meeting schedule for Monday, October 7, 2019 at 7:00PM CST for consideration. If there are any questions concerning this solicitation, please contact Mark Rosen at 618.651.1386. For questions related to specifications and technical operations, please contact Mr. Michael Andreas at 618-792-0748

INSTRUCTIONS

Bids must be made on the forms furnished and **NO ALTERATION, ADDITION, OR VARIATION**, to the bid form will be permitted. The following documents must be returned with the bid:

1. Cover Page
2. Bid Form
3. Bid Security
4. Certificate of Non-Delinquency of Taxes
5. Certificate of Compliance – Substance Abuse on Public Works Projects Act
6. Hold Harmless
7. Warranty Information

Authorized signature must be included.

Bids shall be submitted in an opaque, sealed envelope containing the bidder's name, address, and labeled **“Sealed Bid PR-14-19“Construction of Silver Lake Park Fish Rearing Pond & Wetlands”**. Facsimile bids are not acceptable.

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 Sheets will be evaluated. The lowest responsible and responsive bid shall be deemed the successful bidder and upon City Council approval, will be issued a Notice of Award. Bids will be available for inspection after bid opening and recording.

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 amount of five percent (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 five percent (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.

Construction of Silver Lake Park Fish Rearing Pond & Wetlands 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.

The bid price shall remain valid and no participating party may withdraw his/her bid for at least thirty, (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 Director of Parks & Recreation’s attention as soon as possible.

REQUIRED DOCUMENTS

The Certificate of Non-Delinquency of Taxes and Certificate of Compliance must be returned with the bid. The City Council is prohibited from awarding the contract without these documents.

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 form will be considered.

Following issuance by the City of the Notice of Award, the Contractor shall return the signed Contract within fifteen (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 Contractors’ obligations under the Contract.

Upon receipt of the required documents, the City shall sign the executed documents and return a copy to the Contractor including the Notice to Proceed.

BASIS FOR BID

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

The bid price will include all discounts, preparation costs and all other charges or credits.

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

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.



City of Highland

Department of Public Works

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

**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

Construction of Silver Lake Park Fish Rearing Pond & Wetlands 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.

Scope of Work:**Pond:**

This project will require the successful bidder to construct an earth-fill dam with a 12-inch diameter pipe with stoplog spillway structure and appurtenances as shown on the engineering plans and specifications. The site will require tree and brush clearing, silt fence and seeding and mulching.

Wetlands:

Construct an earth berm with an 8-inch diameter pipe with stoplog water control structure, rock riprap, chute overflow structure and appurtenances as defined in the engineering plans and specifications. Site will be seeded and mulched.

Detailed specifications are included in the following attachments.

**City of Highland, Illinois
BID SHEET
PR-14-19**

Construction of Silver Lake Park Fish Rearing Pond & Wetlands

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, including the Contract Administration and the Specifications.

We propose to make delivery of the outlined workmanship and materials within 40 days of the date stated in the Notice to Proceed to complete the Construction of Silver Lake Park Fish Rearing Pond, in Silver Lake Park, 3035 Highland Park Road, Highland, IL 62249.

In addition to this Bid, the undersigned herewith submits complete information including descriptive literature and product specification to fully define the equipment being offered.

AUTHORIZED SIGNATURE: _____

TITLE: _____

Please Print Name: _____

Construction of Silver Lake Park Fish Rearing Pond & Wetlands

Total Bid: \$ _____

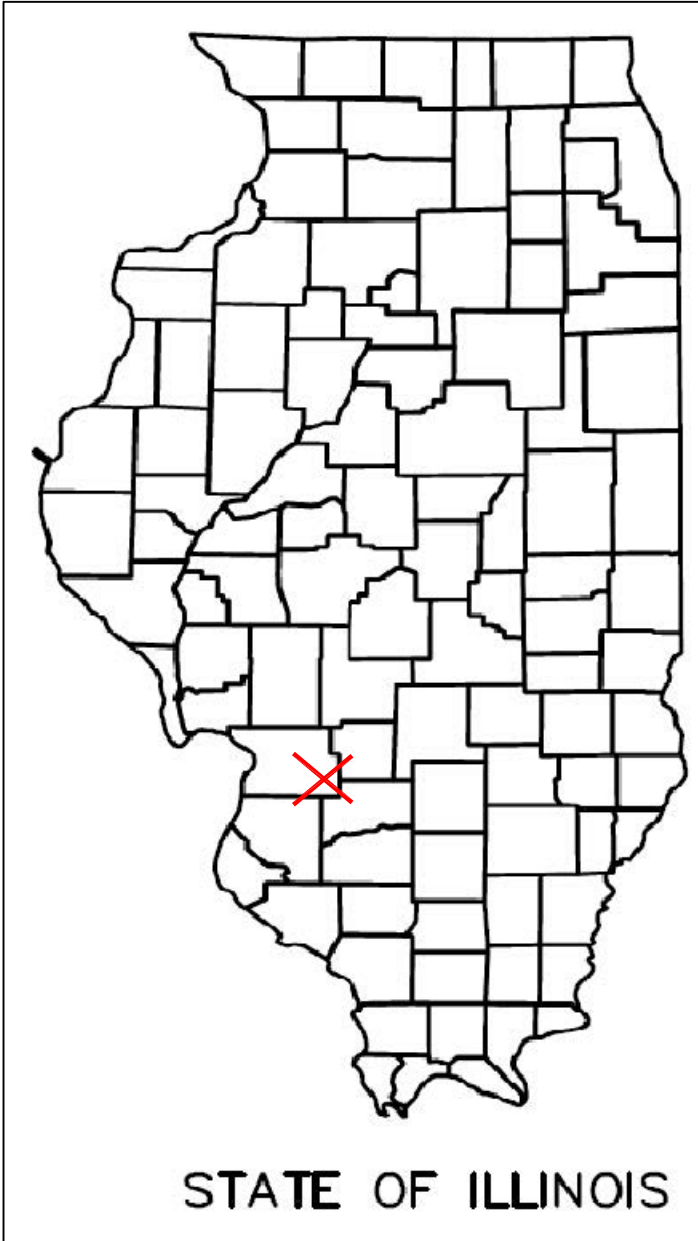
Bid Checklist

All numbered items are to be returned with the bid.

1. Cover Page
2. Bid Sheet
3. Bid Security
4. Certificate of Compliance
5. Certificate of Non-Delinquency of Taxes
6. Certificate of Compliance – Substance Abuse on Public Works Projects Act
7. Hold Harmless
8. Prevailing Wage

Construction Plans

Prepared by Andreas Consulting Services for
*City of Highland – Pond
Highland Silver Lake 319 Project
Section 30, Township 4N, Range 5W
Madison County, Illinois*



Index of Sheets

1. Cover Sheet
2. JULIE Form
3. Location Map
4. Site Map
5. Dam, Auxiliary, Borrow Excavation Layout
6. Plan View Dam & Auxiliary Spillway
7. Profile along Centerline of Dam
8. Cross Section of Pool & Borrow Area
9. Auxiliary Spillway Profile & Cross Sections
10. Profile along Principal Spillway
11. In-Line Water Control Structure
12. Polyethylene Anti-Seep Collars
13. Brood Pond Catch Basin
14. Sediment Control & Seeding Plan
Pond-Embankment
15. Silt Fence Plan – IUM-620A
- 16.-17. Critical Area Planting JS342
- 18.-19. Mulching – IL JS 484
- 20.-23. Construction Specification IL378
24. Operation & Maintenance – Pond
25. Bill of Materials

Contractor is responsible for
contacting Illinois JULIE
811 or 1-800-892-0123
www.illinois1call.com

Adapted from NRCS, IL-ENG-6



Andreas Consulting Services

21 Belmont Pl
Maryville, IL 62062
618-792-0748
andreasconsulting@sbcglobal.net

CITY OF HIGHLAND Plans Cover Sheet

Highland Silver Lake WS Madison County, IL

Designed <u>MEA</u> ^{Date} <u>7/17/2019</u>	File Name <u>ASC Cover Sheet.dwg</u>
Drawn <u>MEA</u> <u>7/17/2019</u>	Drawing Name
Checked <u>Michael Andreas</u>	
Approved <u>Andreas Consulting Services</u>	

LOCATE REQUEST FORM

It's Smart. It's Free. It's the Law.

1-800-892-0123



1	COMPANY PHONE NUMBER WITH AREA CODE		CALLER NAME		
2	COMPANY NAME				
3	COMPANY ADDRESS				
4	CITY, STATE, ZIPCODE			FAX NUMBER WITH AREA CODE	
5	SITE CONTACT NAME		PHONE NUMBER WITH AREA CODE		EXTENSION (IF APPLIES)
6	COUNTY (MUST provide this information) Madison	Check one and list location name	<input type="checkbox"/> VILLAGE	<input type="checkbox"/> CITY (URBAN)	UNINCORPORATED TOWNSHIP (RURAL)
7	SUBDIVISION NAME		EXCAVATION SITE ADDRESS OR LOT NUMBER		
8	NEAREST CROSS STREET/CROSS ROAD, REGARDLESS OF SIZE, WITHIN A 1/4 MILE (<i>indicate street, road, lane, drive, avenue, etc.</i>)				
9	The standard we accept is North American Datum 83 (NAD83): format is degrees, minutes & seconds		LATITUDE		LONGITUDE
10	JULIE Members and their subcontractors must provide the section - quarter/section information.		TIER 4N	RANGE 5W	SECTION 30 QUARTER/SECTION
11	ADDITIONAL LOCATION INFORMATION (<i>Examples: directions, landmarks, distance from nearest town, etc.</i>)				
12					
13	TYPE OF WORK (<i>Examples: trench for sewer, cable/telephone drops, fence/deck installation, plant trees/shrubs, foundation, ditch work, etc.</i>) Grassed Waterway Construction				
14	ARE YOU DIRECTIONAL BORING OR HORIZONTAL DIRECTIONAL DRILLING?		(Check one) <input type="checkbox"/> YES <input type="checkbox"/> NO		WILL YOU BE DIGGING DEEPER THAN 7 FEET? (<i>Check one</i>) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNSURE
15	EXTENT OF WORK (<i>Examples: locate north side of building, along rear lot line, front of property to curb, lot line to lot line, etc.</i>)				
16					
17	EXCAVATION SITE OWNER OR RENTER'S NAME (<i>If other than caller</i>) City of Highland			IS THE SITE PRE-MARKED? (<i>Check one</i>) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNSURE	
18	NOTES TO UTILITIES ABOUT EXCAVATION SITE				
19					
20					
21	START DATE AND TIME OF EXCAVATION (<i>given to caller by operator</i>)			IS THIS A JOINT MEET? (<i>Check one</i>) <input type="checkbox"/> YES <input type="checkbox"/> NO	
22	DIG NUMBER (<i>given to caller by operator</i>)		KEEP YOUR DIG NUMBER AS PROOF OF YOUR CALL TO JULIE AND AS A REFERENCE NUMBER FOR THIS CALL.		
23	DIG NUMBER EXPLANATION: JULIE system reference numbers		A OR X 555 5555 Julian Calendar Date		Request sequence number for that day
JULIE MEMBER COMPANIES SENT THIS MESSAGE (<i>given to caller by operator</i>)					

For your protection, JULIE recommends that you search the area for the facilities of others who are not JULIE members and notify them separately. In addition, you should communicate with the owner of the dig site to determine if there are any privately installed lines which are not marked by member utilities.

Revised 6-2005

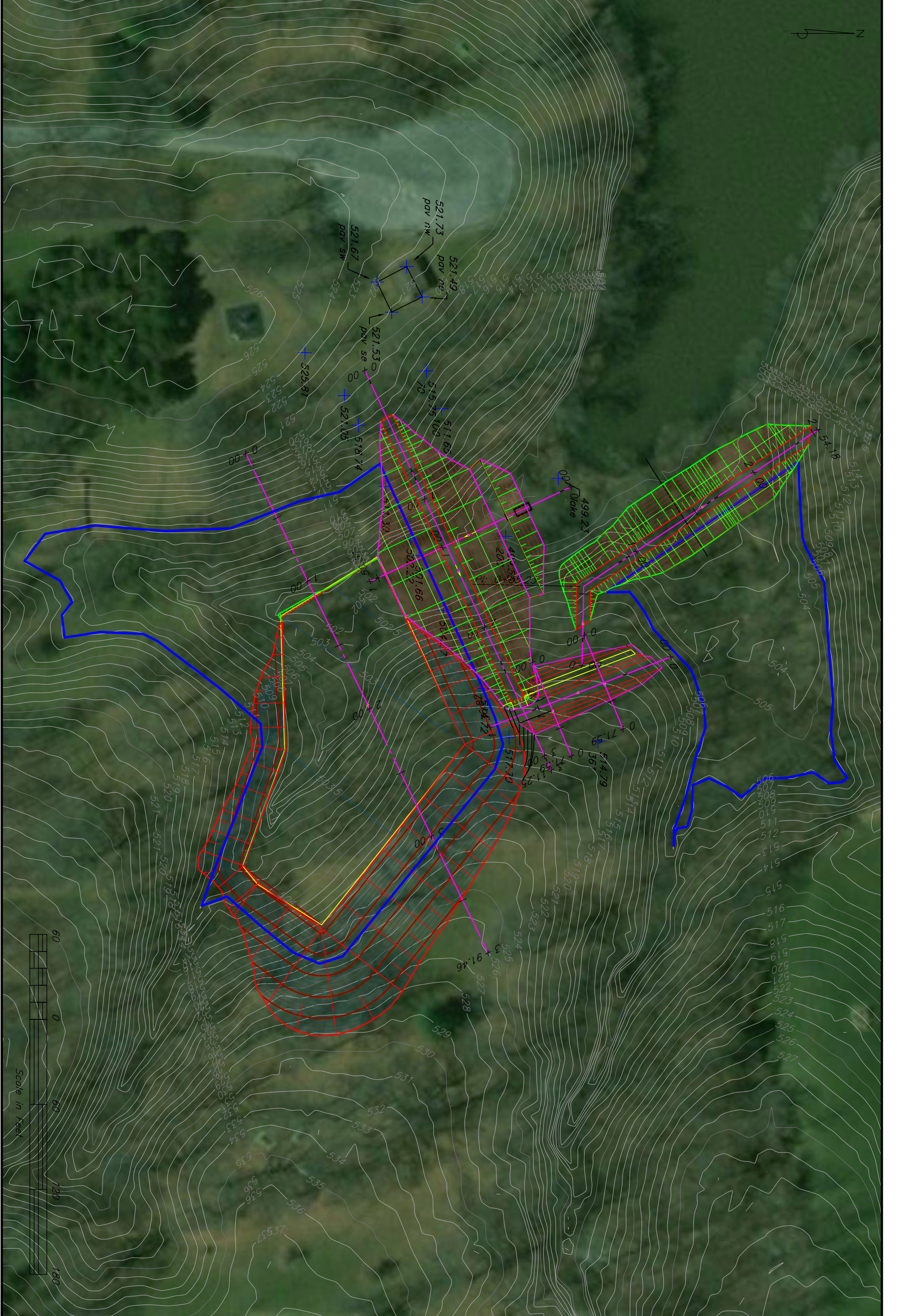
CITY OF HIGHLAND POND LOCATION MAP

Highland Silver Lake 319



Prepared by Andreas Consulting Services
21 Belmont PL
Maryville, IL 62062





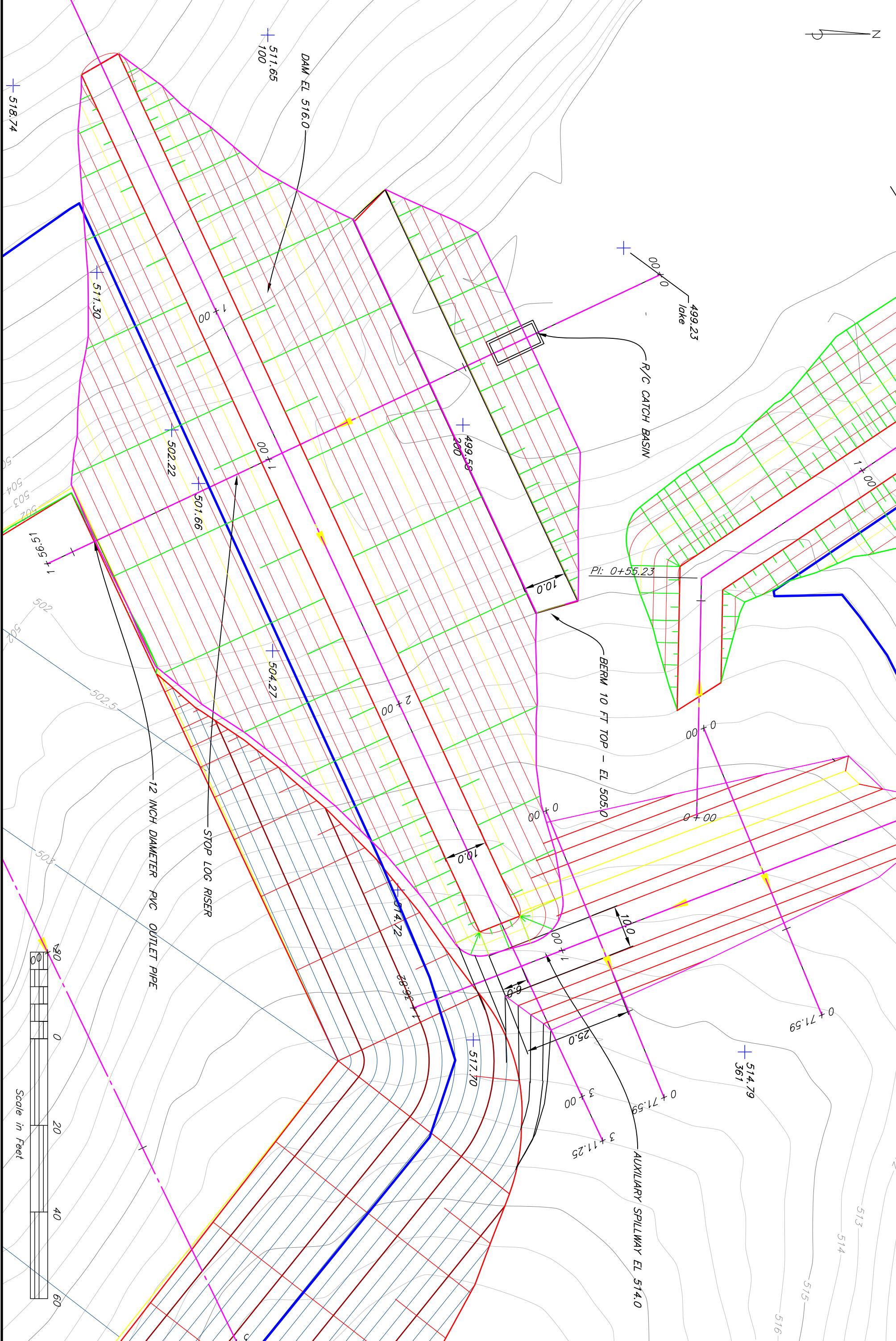
Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

SITE MAP
DAM, BORROW AREA AND AUXILIARY
SPILLWAY
 Highland Silver Lake 319 W/S Project

Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas		7/16/2019
Checked			
Approved			

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File No. ACS 2017 City Pond2.dwg
 Drawing No.



**PLAN VIEW
DAM AND AUXILIARY SPILLWAY**


Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

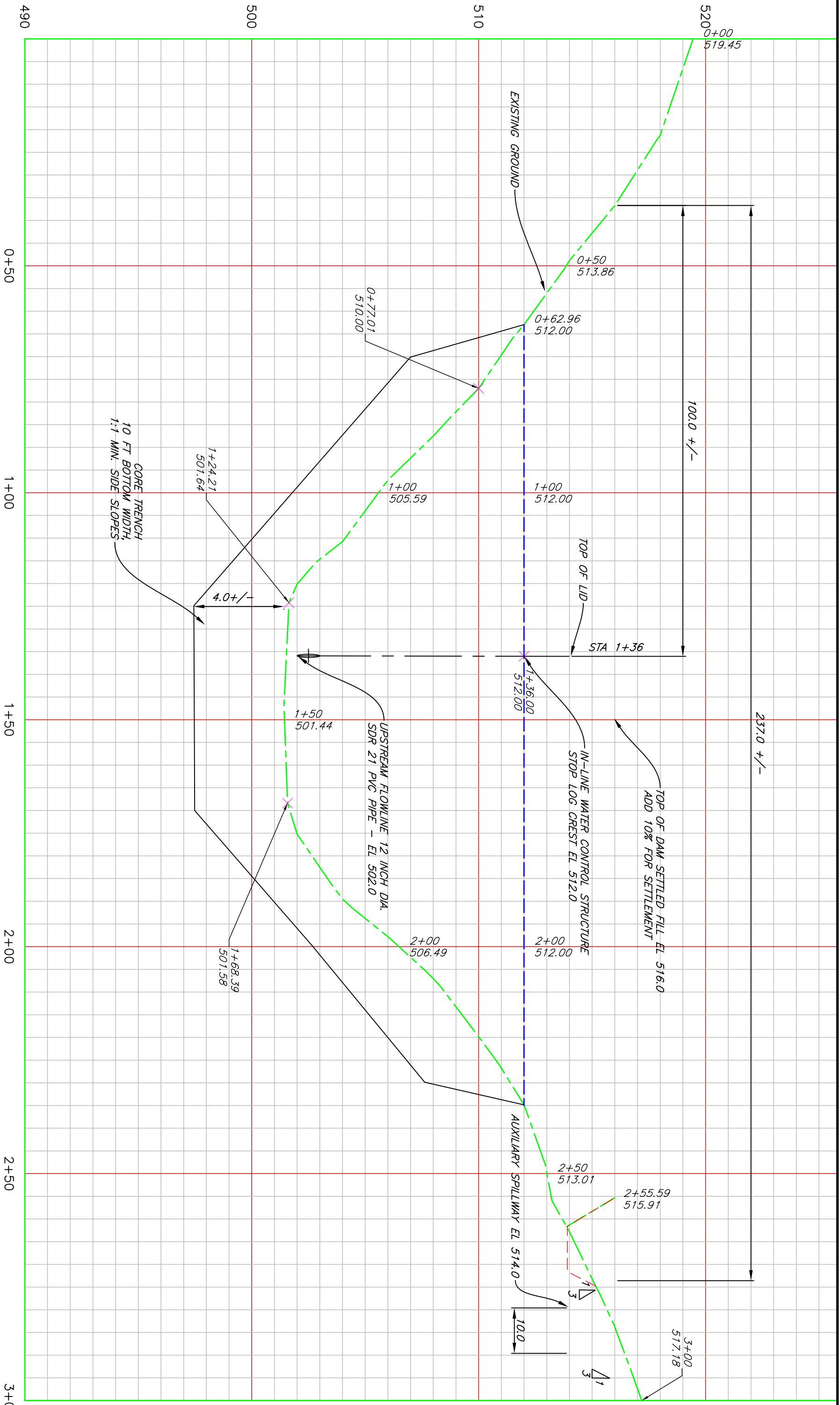
File No. ACS 2017 City Pond2.dwg
 Drawing No.

Highland Silver Lake 319 W/S Project

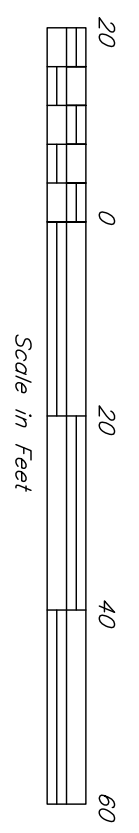
Madison County, IL

Designed	ME Andreas	6/11/2019
Drawn	ME Andreas	7/16/2019
Checked		
Approved		

Page 6 of 25



Alignment – Dam Centerline PROFILE



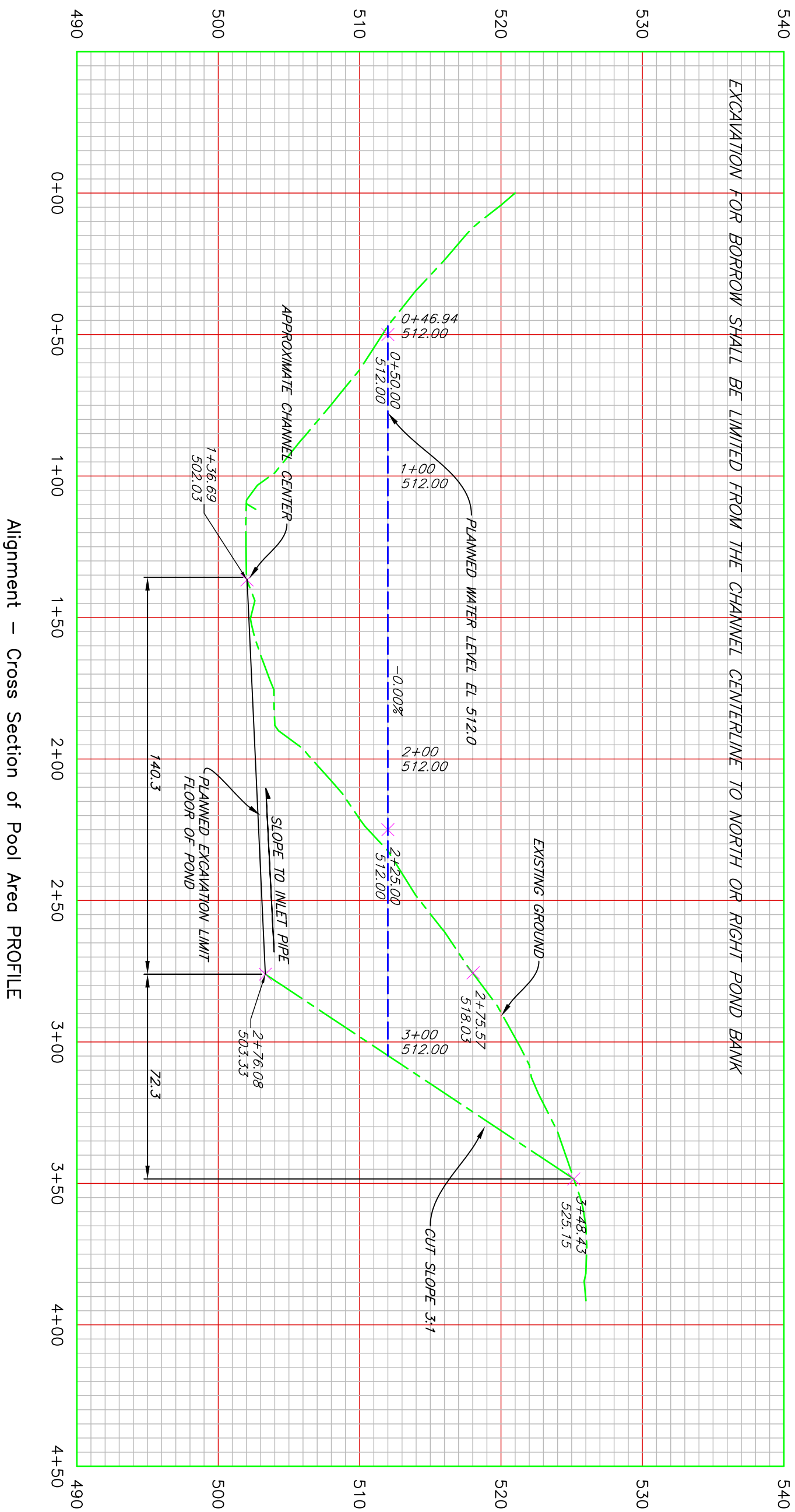
PROFILE ALONG DAM CENTERLINE CITY OF HIGHLAND

Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

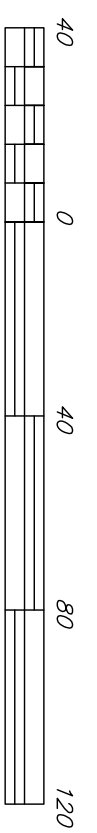
Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas		6/11/2019
Checked			
Approved			

Page 7 of 25

File No. ACS 2017 City Pond2.dwg
 Drawing No.



Alignment – Cross Section of Pool Area PROFILE



CROSS SECTION OF POND POOL AND BORROW AREA

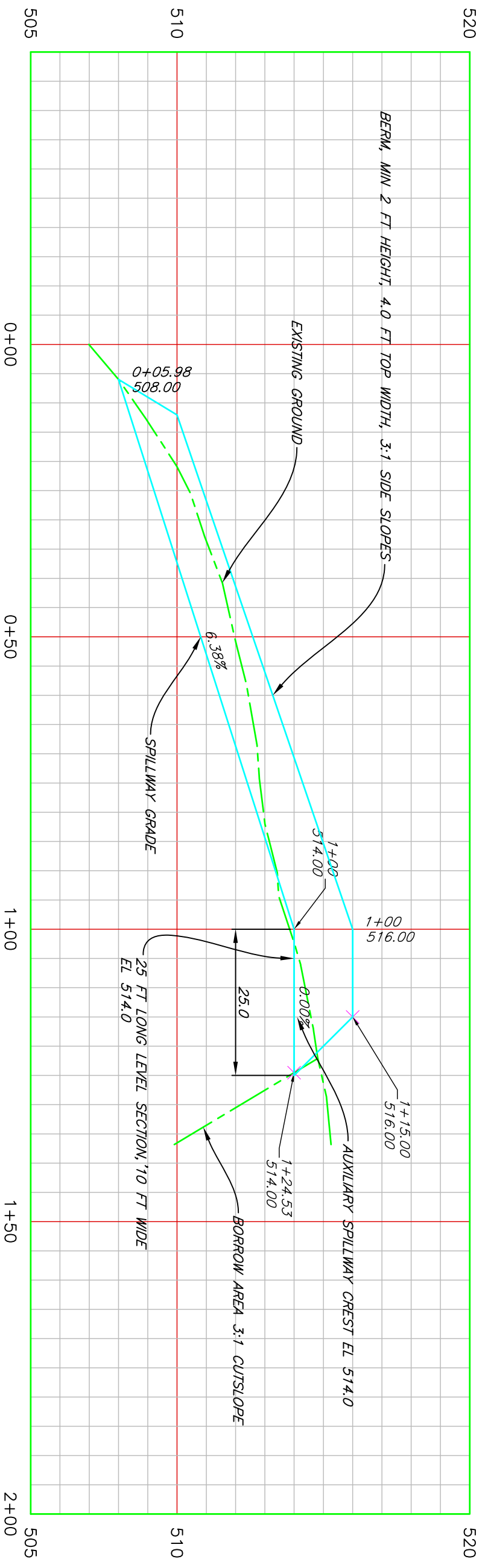
Highland Silver Lake 319 W/S Project

Madison County, IL

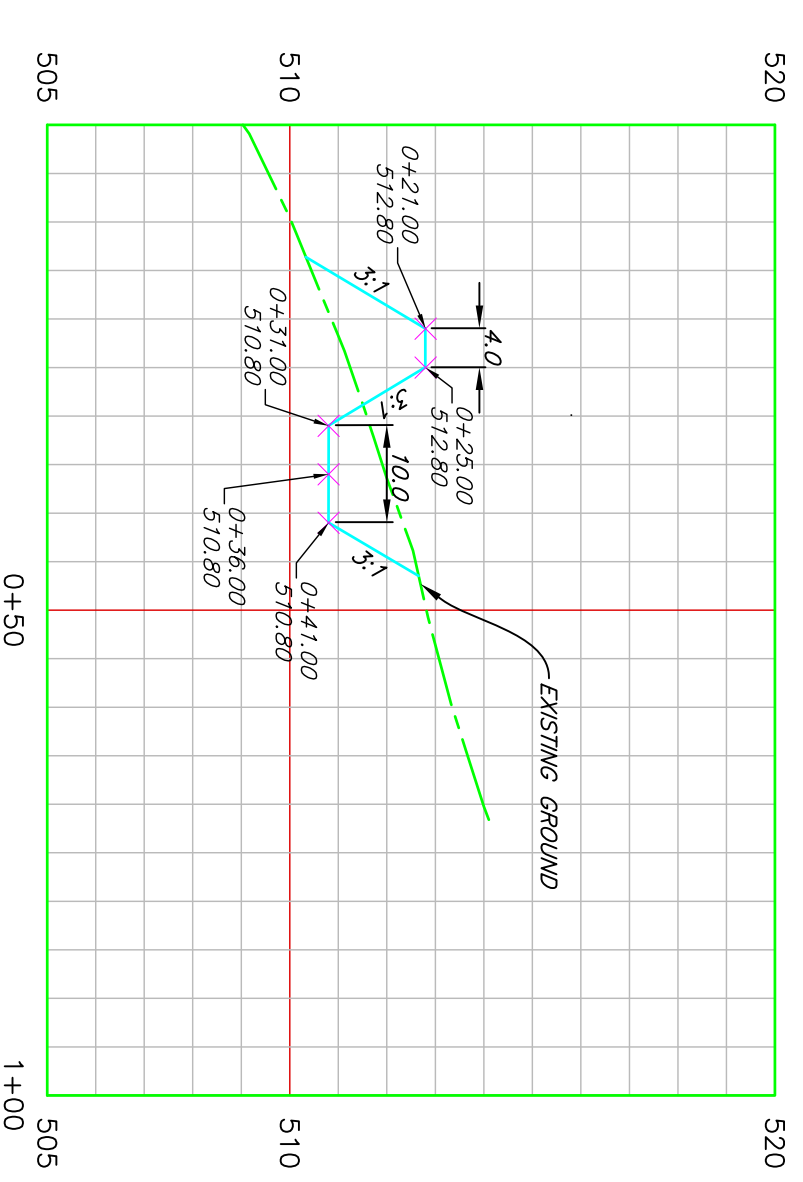
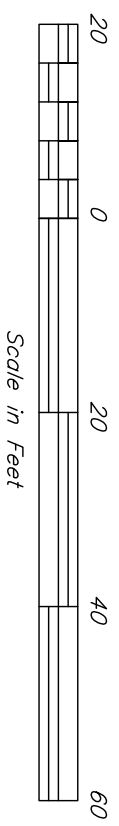
Date 6/11/2019
 Designed ME Andreas
 Drawn ME Andreas 7/16/2019
 Checked _____
 Approved _____

Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

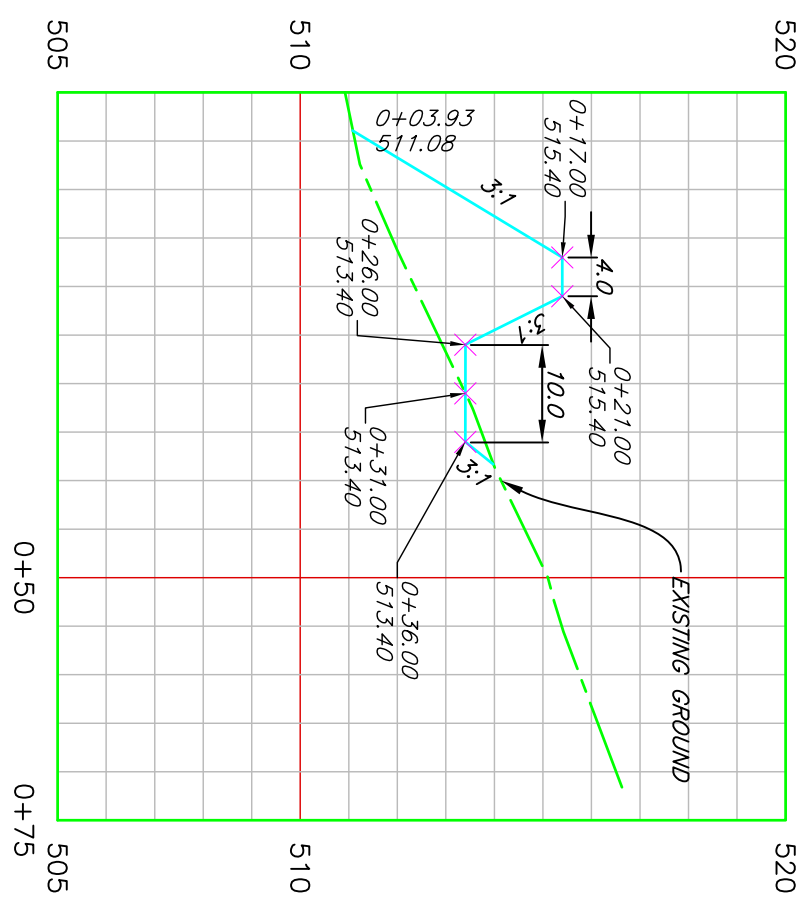
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 Drawing No. _____



Auxiliary Spillway PROFILE



Auxiliary Sta 0+50 PROFILE



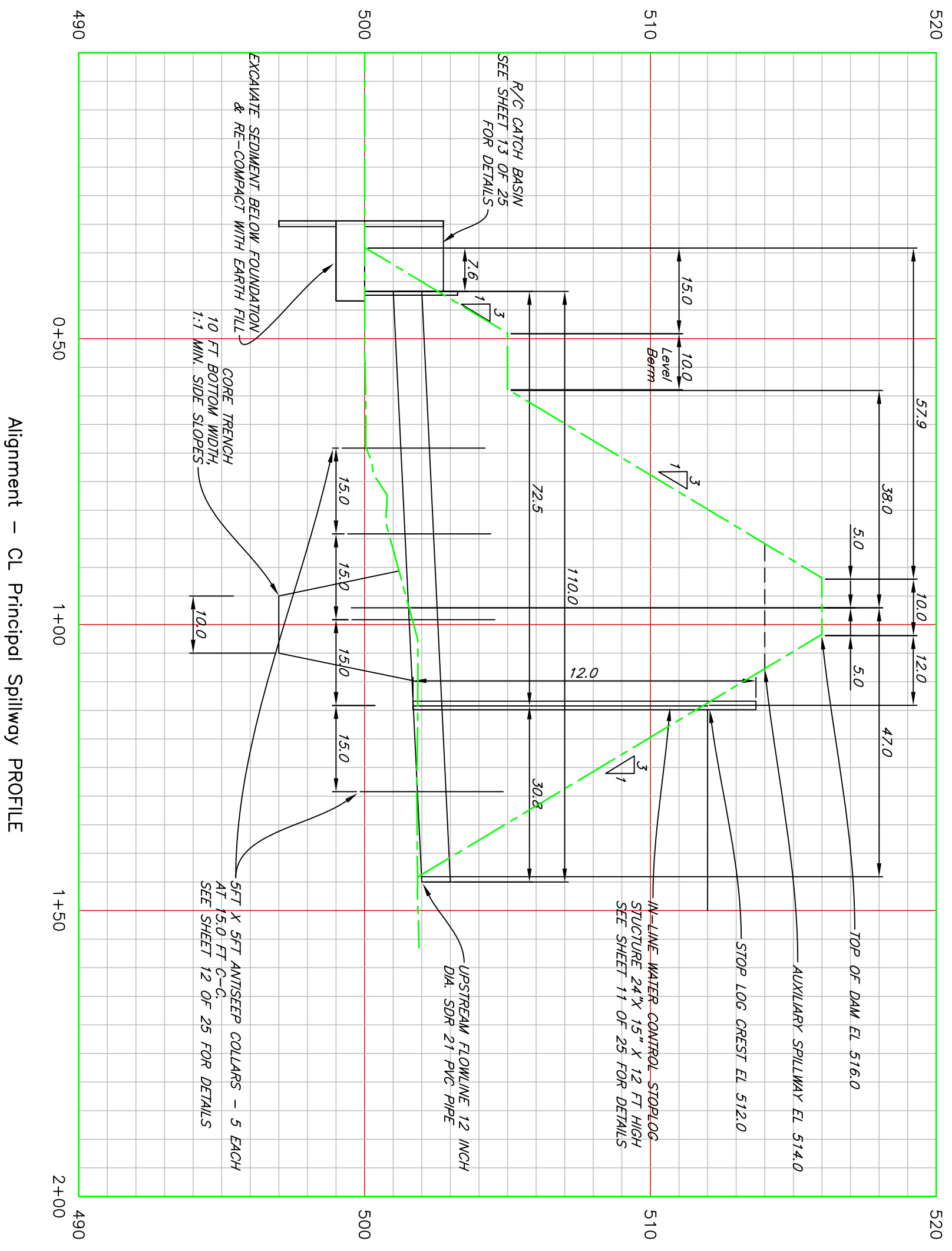
Auxiliary Sta 0+91 PROFILE

Date 7/16/2019
 Designed ME Andreas
 Drawn ME Andreas
 Checked _____
 Approved _____

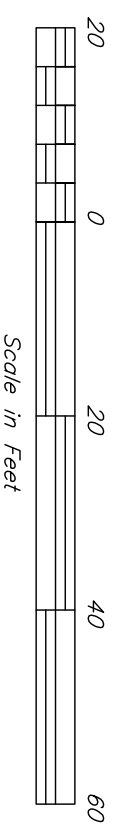
AUXILIARY SPILLWAY PROFILE AND CROSS SECTIONS

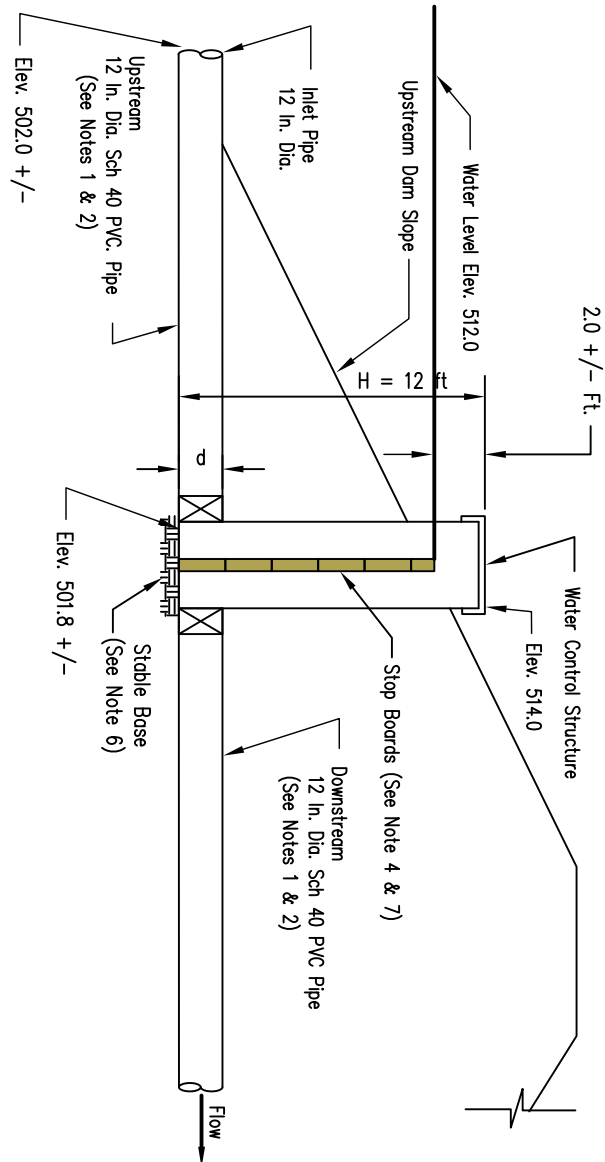
Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

File No. ACS 2017 City Pond2.dwg
 Drawing No. _____



Alignment – CL Principal Spillway PROFILE





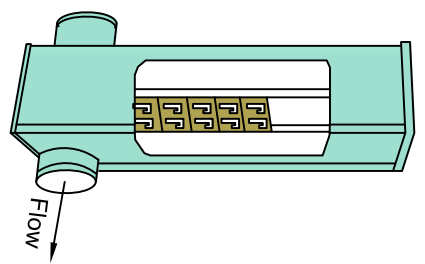
TYPICAL SECTION

Materials Schedule			
Water Control Structure			
No.	Width/Diameter (Inches)	H (Feet)	d (Inches)
1		12	12

Non Perforated PVC Pipe			
Diameter (Inches)	Upstream Length (Ft)	Downstream Length (Ft)	
12	SEE PROFILE	SEE PROFILE	

Couplers	
No.	Diameter (Inches)
2	12

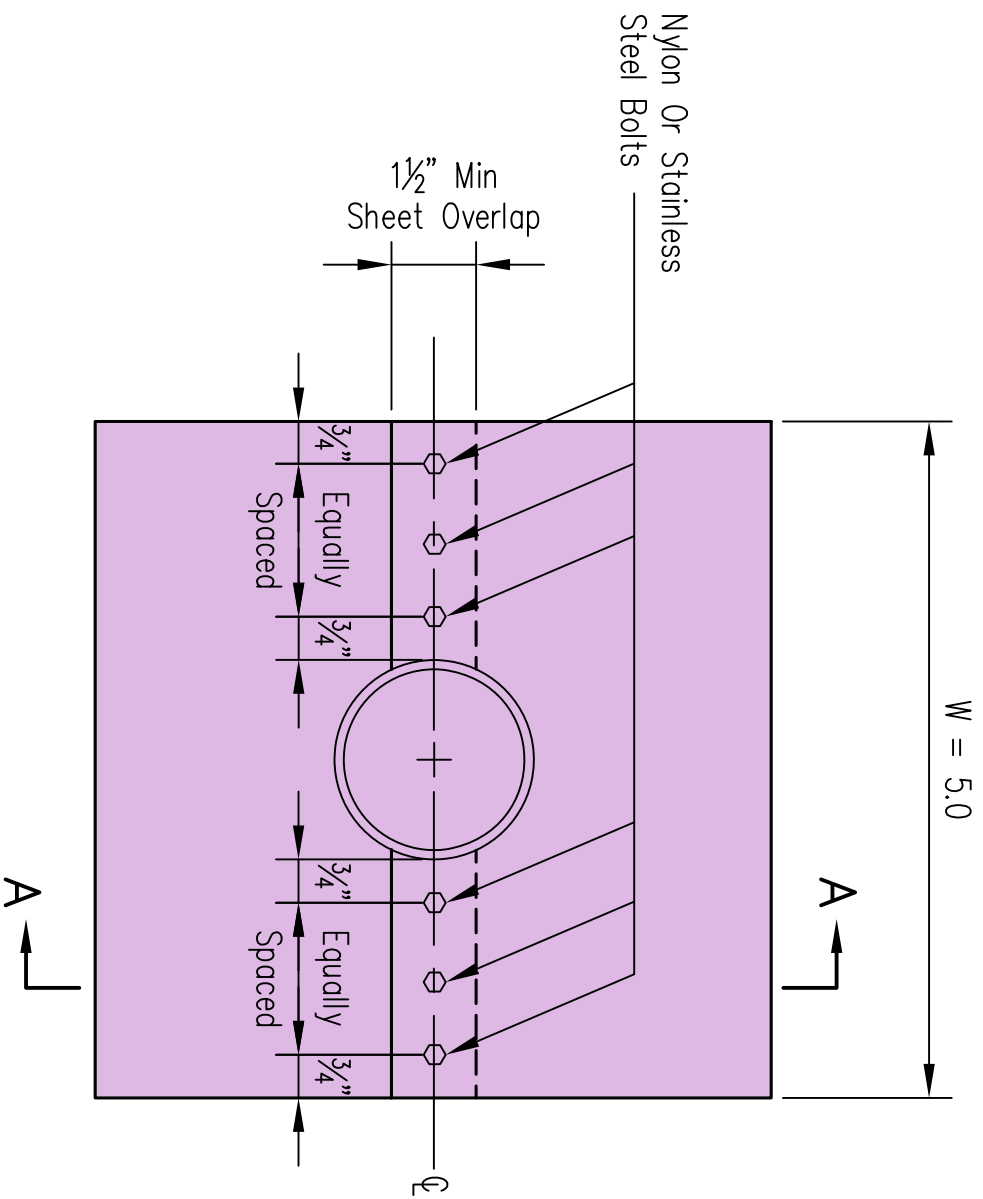
- NOTES:**
1. Install 12 inch diameter PVC on the upstream and downstream ends as shown on the plans.
 2. PVC pipe must conform to ASTM Standard D2241 or D1785, with material 1120 or 1220.
 3. Couplings between the water control section and the PVC pipe must be water tight.
 4. Stop boards must provide water tight seals under a minimum of 1 foot pressure head.
 5. Locate structure on the upstream dam slope set 2 ft above the water level.
 6. Place structure and pipe coupler on a stable base. A stable base may be compacted earth, compacted fill sand, or a concrete pad. Extend the stable base no less than 1 foot around structure.
 7. Stoplogs must remain in track during structure installation and aligned to one side of track.
 8. Excavated material placed around structure and pipes must be hand compacted in 4" lifts.



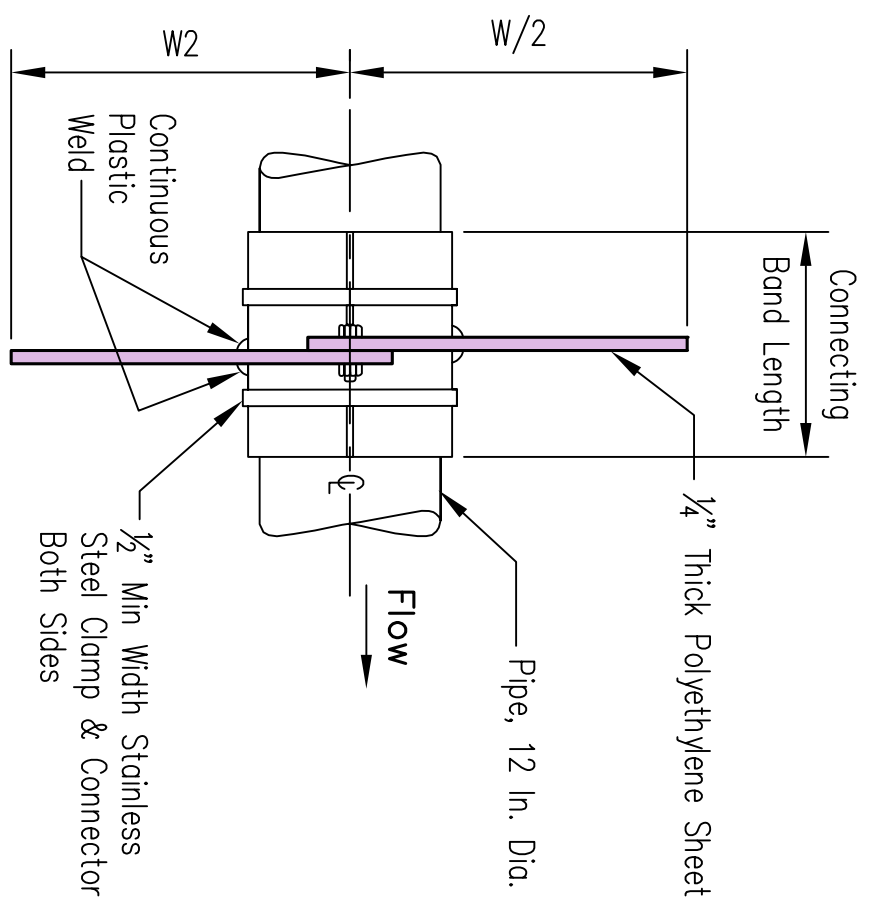
IN-LINE CONTROL STRUCTURE

ADAPTED FROM NRCS IL-ENG-130

 <p>Andreas Consulting Services</p> <p>21 Belmont Pl Maryville, IL 62062 618-792-0748</p>	<p>IN-LINE WATER CONTROL STRUCTURE 2 COMPARTMENTS</p>		<p>Designed ME ANDREAS 7/16/2019</p> <p>Drawn M.QUINONES 3/1/17</p> <p>Checked _____</p> <p>Approved _____</p>
	<p>Sheet _____ of _____</p>		



ELEVATION



SECTION A-A

- NOTES:**
1. Pipe, connecting band and seam coating can be either silicon caulk (recommended), or mastic (asphalt or tar based)
 2. Apply silicon caulk, tar or mastic to bottom half of connecting band and lay pipe on connecting band.
Apply silicon caulk or mastic to top half of collar and set in place, lining up bolt holes.
 3. Install clamps on split halves of collar and tighten bolts and clamps.
 4. Apply silicon caulk, tar or mastic on seams as needed to insure a good seal so that completed installation is watertight.
 5. Backfill and hand tamp soil around completed installation.
 6. Polyethylene antiseep collars can be used on corrugated and smooth PVC plastic, smooth steel and galvanized pipes.

TABLE OF QUANTITIES					
W FEET	Polyethylene Sheet Sq. Ft.	Stainless Steel Clamp & Connector	Connecting Band Min Length	Bolts & Nuts 3/8" x 1"	No. Of Collars
3	9.5	2	6"	6	
4	16.7	2	6"	6	
5	25.8	2	8"	6	5
6	37.0	2	8"	6	
Totals	129.0	10	N/A	30	5

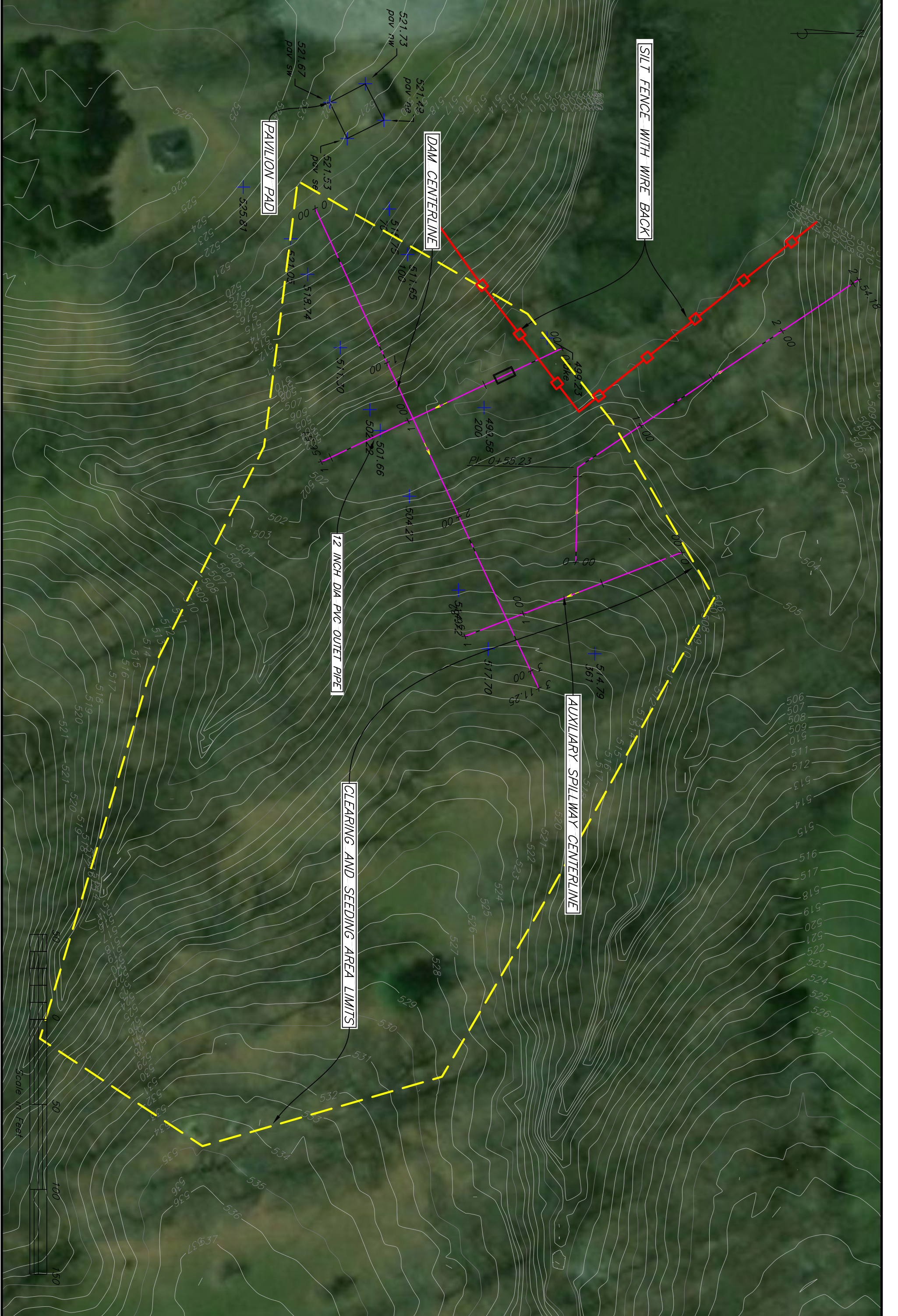
ADAPTED BY ANDREAS CONSULTING SERVICES, 21 BELMONT PL, MARYVILLE, IL 62062

		Date
Designed	M.E. ANDREAS	7/16/2019
Drawn	M. QUINONES	11/1/13
Checked		
Approved		

**POLYETHYLENE SHEET ANTISEEP COLLAR
FOR 4" TO 24" DIAMETER PIPE**

United States
Department of
Agriculture

Natural Resources
Conservation Service




Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748

File No. ACS 2017 City Pond Seeding.dwg
 Drawing No.

SITE MAP

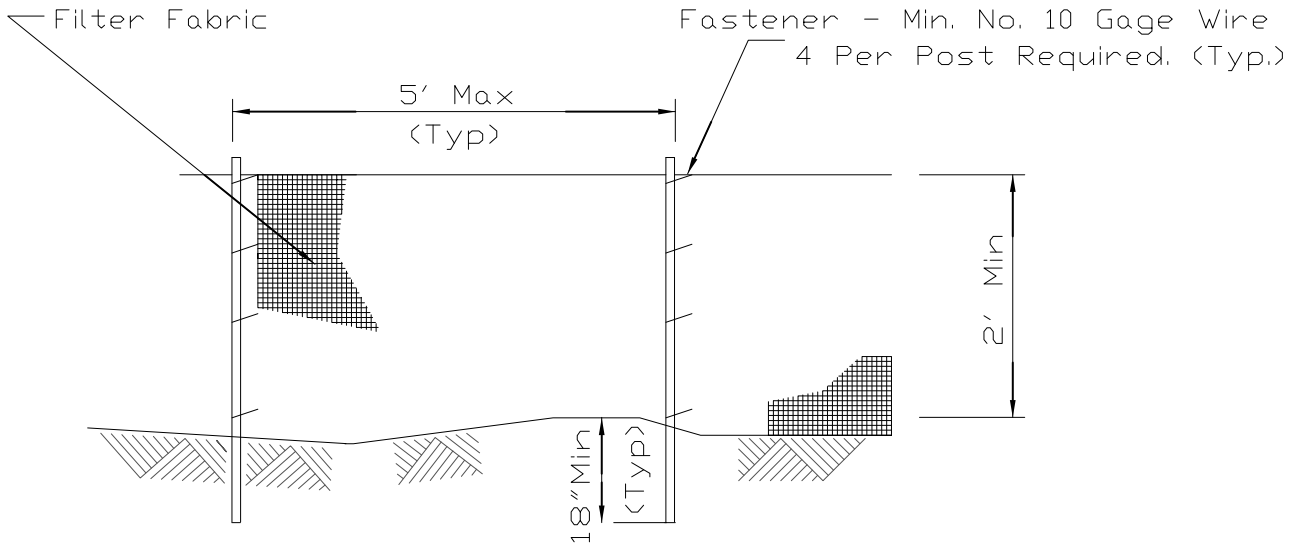
SEDIMENT CONTROL & SEEDING AREA

Highland Silver Lake 319 W/S Project Madison County, IL

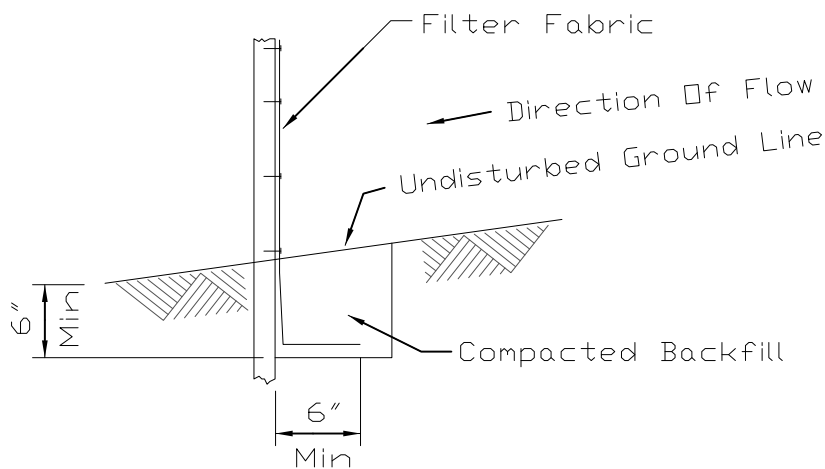
Designed <u>ME Andreas</u>	Date <u>6/11/2019</u>
Drawn <u>ME Andreas</u>	Date <u>7/16/2019</u>
Checked _____	Date _____
Approved _____	Date _____

Page 14 of 25

SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REFERENCE	City of Highland Fish Pond	
Project	ME	Date 7/17/19
Designed	ME	Date 7/17/19
Checked	ME	Date 7/17/19
Approved		Date



Andreas Consulting Services

21 Belmont Pl
Maryville, IL 62062
618-792-0748



STANDARD DWG. NO.	IUM-620A
SHEET	1 OF 2
DATE	3-16-12



Natural Resources Conservation Service

Critical Area Planting

Illinois Conservation Practice Job Sheet 342

Field/Site:	POND, BORROW & AUX. SPY	Area (Acres):	2.0
Name:	POND SITE	Date:	7/17/19
Farm #		Tract #	

Definition

The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

Purpose(s)

- Stabilize stream and channel banks, pond and other shorelines
- Stabilize areas with existing or expected high rates of soil erosion by wind or water
- Stabilize areas, such as sand dunes and riparian areas

Conditions where practice applies

The practice applies to highly disturbed areas such as:

- active or abandoned mined lands;
- urban restoration sites;
- construction areas;

- conservation practice construction sites;
- areas needing stabilization before or after natural disasters such as floods, hurricanes, tornados and wildfires;
- eroded banks of natural channels, banks of newly constructed channels, and lake shorelines;
- other areas degraded by human activities or natural events.

Seedbed preparation and seeding

Incorporate required amendments to depth of 3 inches leaving a firm seedbed free of large clods, stones, and debris larger than 6 inches in diameter. Seedbed must be firmed with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed. Seedbeds are considered firm when footprints leave no more than a 1/2 inch deep depression. Apply seed uniformly at a depth of 1/4-1/2 inch with a drill or cultipacker type seeder. Broadcast methods are acceptable where the seed will be applied uniformly and covered 1/4-1/2 inch deep with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed.

Seed, Lime, and Fertilizer (Specify rates per acre)

Species	Rate per Acre PLS lbs./ac	Acres	Total Quantity Needed	Amount Applied
SMOOTH BROMEGRASS	24	2	48	
ALFALFA	8	2	16	
Companion Crop				
Oats				
Wheat or Cereal Rye	20	2	40	
Amendments				
Nitrogen(N)	120	2	240	
Phosphorus(P205)	120	2	240	
Potassium(K20)	120	2	240	
Lime (Tons/acre)	PER SOIL TEST		AS-NEEDED	

Seeding Dates:	August 1 – September 20, Dormant 11/15 till Freeze. Spring Late Winter-5/15
-----------------------	---

All seed shall be of high quality and comply with Illinois Seed and Weed Laws and originate from the United States or Canada.

Seed rates are based on Pure Live Seed (PLS) per acre. Pure Live Seed will be calculated using the following formula:

$$\text{PLS} = \frac{(\% \text{ germination} + \% \text{ dormant seed}) \times \% \text{ purity}}{100}$$

Germination tests are required for all warm and cool season grasses and legumes (excluding companion crops). Germination tests may not be older than 12 months at time of seeding excluding the month of testing.

I certify that this practice, as implemented, meets NRCS standards and specifications.

Planner Signature

Date

Note: Make pen and ink changes to any specifications that were changed during implementation and attach supporting documentation (e.g. bills, seed tag data, photos, etc.) to the Job Sheet. All deliverables as shown in the statement of work are to be documented.





Natural Resources Conservation Service

Mulching

Illinois Conservation Practice Job Sheet 484

Landowner/Operator: CITY OF HIGHLAND	Farm #:	Tract#:
Date: 7/17/19	Fields: Pond Dam, Auxiliary Spillway and Borrow area	

Definition

Applying plant residues or other suitable materials not produced on the site to the land surface.

Purpose (Check all Planned Purposes)

- Conserve soil moisture
- Reduce energy use associated with irrigation
- Provide erosion control
- Facilitate the establishment of vegetation
- Improve soil health
- Reduce airborne particulates



Photo courtesy of NRCS

Where Used

On soils subject to erosion, on critical areas, on soils that have a low infiltration rate, where needed for control of weeds, and where needed to establish seedlings, trees and shrubs.

OPERATION AND MAINTENANCE:

Mulched areas will be periodically inspected, and mulch shall be reinstalled or repaired as needed to accomplish the intended purpose.

Evaluate the effectiveness of the mulch (application, amount of cover provided, durability, etc.) and adjust the management or type of mulch to better meet the intended purpose(s).

Removal or incorporation of mulch materials shall be consistent with the intended purpose and site conditions.

Operation of equipment near and on the site shall not compromise the intended purpose of the mulch.

Prevent or repair any fire damage to the mulch material.

Properly collect and dispose of artificial mulch material after intended use.

Monitor and control undesirable weeds in mulched areas.



SPECIFICATIONS:

Location #1:	Dam, auxiliary spillway & borrow area		
Site Preparation:	2.0		
Type Of Mulch:	BRIGHT CLEAN STRAW	Rate: Specify depth, lbs/1000 ft², or tons/acre:	2 ton per acre
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:
2.0 acres	4 TON	Anchoring tool or straight disk	
Location #2:			
Site Preparation:			
Type Of Mulch:		Rate: Specify depth, lbs/1000 ft², or tons/acre:	
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:
Location #3:			
Site Preparation:			
Type Of Mulch:		Rate: Specify depth, lbs/1000 ft², or tons/acre:	
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:

I certify that this practice, as implemented, meets NRCS standards and specifications.

Planner Signature

Date

Note: Make pen and ink changes to any specifications that were changed during implementation and attach supporting documentation (e.g. bills, check out notes, photos, etc.) to the Job Sheet. All deliverables as shown in the statement of work are to be documented.

NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS CONSTRUCTION SPECIFICATION
POND – EMBANKMENT

Scope

The work consists of excavation and earthfill, along with furnishing and installing pipe and appurtenances for the pond as shown on the drawings and specified herein.

Utilities

The landowner and/or contractor is responsible for locating all buried utilities in the project area, including drainage tile and other structural measures.

General

Carry out construction operations in a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

The completed job must present a workmanlike appearance and conform to the line, grades, and elevations shown on the drawings or as staked in the field.

Carry out all operations in a safe and skillful manner. Observe safety and health regulations and use appropriate safety measures. Contractor must be assured that all state laws concerning buried utilities have been met.

Save documentation of materials used (rock or concrete delivery tickets, geotextile tags, seed tags, photographs of pipe labeling, etc) and provide to NRCS.

Remove all trees, stumps, roots, brush, weeds, and other objectionable materials from designated work area.

Strip designated locations for excavation and earthfill of all vegetation and topsoil containing substantial amounts of organic matter. Stockpile topsoil for use to topsoil areas disturbed by the construction, embankment slopes, and other required topsoil areas (if the percentage of organic materials is not too great).

Excavation

To the extent they are suitable and approved by the inspector, excavated materials are to be used as fill materials.

All excavations must conform to the lines, grades, elevations, bottom width, and side slopes shown on the construction plans or as staked in the field. Cutoff trench depth may be revised by the inspector during excavation. Keep cutoff and principal spillway trenches free of standing water during backfill operations.

Backfill with selected impervious material approved by the inspector and place in the same manner as specified for earthfill.

The location, extent, and depth of the borrow area must be as shown on the construction plans or as staked in the field.

Excavate and dress borrow pits in a manner to eliminate steep or unstable side slopes or other hazardous conditions. Side slopes of borrow pits must be no steeper than 3:1. Grade and shape surfaces of the borrow pits not covered by permanent water to prevent the ponding of water.

Existing Subsurface Drains

Remove subsurface drains as shown on the plans. Remove all envelope, filter material or other flow-enhancing material. Fill the trench in 12 inch lifts of similar soils and compacted to achieve a density equal to the adjacent natural soils.

Block the ends of the abandoned and disconnected drains with manufactured caps or plugs, plug with concrete, or otherwise seal and make the drains inoperable in such a manner that the water holding integrity of the pond is not impaired.

Bring existing drains found during construction to the attention of the NRCS inspector.

Principal Spillway

NRCS, Illinois

June 2015

The materials and manufacture of the pipe, anti-seep collars, coupling bands, coatings, and other appurtenances must be as shown on the construction plans and conform to the NRCS material specifications in the approved design.

The pipe must be laid to the line and grade and elevations shown on the drawings and firmly and uniformly bedded throughout its entire length. Install the pipe according to the manufacturer's instructions.

Anti-seep collars must be of materials compatible with that of the pipe and be installed so that they are watertight.

Lay the pipe with the outside laps of circumferential joints pointing upstream and with longitudinal laps on the sides at approximately the vertical mid-height of the pipe. Field welding of corrugated galvanized steel pipe will not be permitted. Join the pipe sections with coupling bands or other approved methods, as shown on the construction drawings.

Take special care during backfill operations not to disturb the grade and alignment. The pipe must be tied down or loaded sufficiently during backfilling around the sides to prevent its being lifted from the bedding.

Backfill material must have sufficient moisture so that optimum compaction can be obtained. Place backfill around the pipe in layers not more than 4 inches thick before compaction.

Compact each layer of backfill with power tampers, hand tampers, or plate vibrators to the same density requirements as specified for the adjacent embankment. Bring backfill over and around the pipe up uniformly on all sides. The passage of earth moving equipment will not be allowed over the pipe until backfill has been placed above the top of the pipe surface to a depth of two (2) feet.

Use only hand tamping to compact the earthfill under the bottom half of circular pipes. Equipment weighing 400 pounds or more per foot of width must not be operated within 2 feet of any structure or pipe.

Place selected impervious backfill material around the conduit, anti-seep collars and other appurtenances in layers not more than four (4) inches thick before compaction; and thoroughly compact each layer by hand

tamping, manually directed power tampers, or plate vibrators to the density of the surrounding material. Increase the height of fill at approximately the same rate on all sides of the structure. Heavy equipment must not be operated within 2 feet of any structure.

Earthfill

Scarify the foundation area where the embankment is to be built to a minimum depth of 4 inches before the fill material is placed, so that the first layer of fill material can be bonded to the foundation.

The material placed in the fill must be free of sod, roots, frozen soil, stones over 6 inches in diameter, and other objectionable material. Start the placing and spreading of fill material at the lowest point of the foundation and the fill brought up in horizontal layers of such thickness that the required compaction can be obtained. Construct the fill in continuous horizontal layers except where openings or sectionalized fills are called for. In those cases, the slope of the bonding surfaces between embankment in place and embankment to be placed must not be steeper than 3:1. Treat the bonding surface the same as that specified for the foundation so as to ensure a good bond with the new fill.

The distribution and gradation of materials must be such that there are no lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. Where it is necessary to use materials of varying texture and gradation, place the more impervious material in the center and upstream portions of the fill. Where zoned fills are specified of substantially differing materials, place the zones according to lines and grades shown on the construction plans.

The completed work must conform to the lines, grades, and elevations shown on the construction plans or as staked in the field.

Place stockpiled topsoil on the outer portion of the embankment as a part of each lift. Topsoil must not be less than 6 inches nor more than 2 feet thick measured vertically and must be compacted concurrently with the earthfill.

Moisture Control

The moisture content of the fill material must be adequate for obtaining the required

compaction. Material that is too wet must be dried to meet this requirement, and material that is too dry must have water added and mixed until the requirement is met.

The moisture content of the fill material must be such that a ball formed with the hands does not crack or separate when struck sharply with a pencil and will easily ribbon out between the thumb and finger.

Prevent earth foundations under and adjacent to concrete structures from drying and cracking before concrete and backfill are placed.

Where water needs to be added, apply water to the fill materials at the borrow areas insofar as possible.

Earthfill Compaction

Compact earthfill as specified on the plans. If no method is specified, compaction will be in accordance with Method 1.

Method 1 – Place earthfill so that the wheels of the loaded, rubber tired, hauling equipment traveling in a direction parallel to the centerline of fill pass over the entire surface of the layer being placed.

The maximum thickness of a lift of fill before compaction is nine (9) inches, unless otherwise indicated on the drawings. Place fill adjacent to structures, pipe conduits, and anti-seep collars in layers not more than four (4) inches thick and compact to a density equivalent to that of the surrounding fill by hand tamping, manually directed power tampers, or plate vibrators. Take care so that compaction around the spillway pipe does not cause uplift of the pipe resulting in a void beneath the pipe. Use only hand tamping to compact the earthfill under the bottom half of circular pipes. Equipment weighing 400 pounds or more per foot of width must not be operated within 2 feet of any structure or pipe.

Concrete

Concrete must have minimum design strength as specified on the construction drawings.

Forms must be wood, plywood, steel, or other approved materials and be mortar-tight. The forms must be unyielding and be constructed so the finished concrete conforms to the specified dimensions and contours.

Prior to placement of concrete, the forms and subgrade must be free of chips, sawdust,

debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Remove any oil on the reinforcing steel or other surfaces required to be bonded to the concrete. All surfaces must be firm and damp prior to placing concrete. Placement of concrete on mud, dried earth, uncompacted fill, or frozen subgrade will not be permitted.

Convey concrete from the mixer to the forms as rapidly as practical by methods that will prevent segregation of the aggregates and loss of mortar. Concrete must not be dropped more than 5 feet vertically except where suitable equipment is used to prevent segregation.

Immediately after the concrete is placed in the forms, it must be consolidated by spading, hand tamping, or vibration as necessary to ensure smooth surfaces and dense concrete. Accurately screed all exposed surfaces of the concrete to grade and then float. A non-wooden float is recommended for air entrained concrete.

Concrete must not be mixed nor placed when the atmospheric temperature is less than 40° F or more than 90° F unless facilities are provided to prevent freezing or for cooling as required.

Remove forms in such a way to prevent damage to the concrete.

The minimum period from completion of the concrete placement to the removal of the forms is 12 hours.

Prevent concrete from drying for a curing period of at least 7 days after it is placed. Keep exposed surfaces continuously moist for the entire period or until curing compound is applied.

If concrete is placed when temperatures may fall below 40° F during the curing period, it will be insulated or heated to maintain a temperature of 50° F for the first 3 days of the curing period.

Vegetation

Add topsoil, if needed to establish vegetation. Establish a protective cover of vegetation on all earth surfaces in the construction area that have been altered or disturbed by the construction operation. Establish a protective cover of vegetation on all exposed surfaces of the embankment, spillway, outlet channel, and

borrow areas exposed above the permanent waterline. Seedbed preparation, seeding, fertilizing, and mulching must comply with the

construction drawings and Construction Specification 342, Critical Area Planting.

NATURAL RESOURCES CONSERVATION SERVICE**ILLINOIS OPERATION AND MAINTENANCE****POND**

Follow the operation and maintenance plan below to keep your pond functioning as intended:

- Inspect after significant storm events and at least twice a year to identify repair and maintenance needs.
- Inspect the downstream face of the embankment annually. Wet areas, indicated by seeps, wetland plants or unusually vigorous vegetation the downstream face of an embankment could indicate a serious problem.
- Clear accumulated trash away from water control infrastructure, including pipe inlets, rock riprap, and vegetated spillways. Remove debris that may accumulate in the pond and immediately upstream or downstream from the pond.
- Inspect control gates (if any) for proper functioning. Guards must remain in place to keep structures operating as planned. Promptly repair or replace damaged or inoperable components.
- Repair any settlement or erosion that occurs along the pipe. If this problem persists, evaluate the pipe for leakage and erosion of the fill material into or along the pipe.
- Fill rills and gullies that occur on the embankments and in the vegetated spillway. Reseed the filled areas. Repair erosion at pipe outlets promptly.
- Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenances.
- Repair spalls, cracks and weathered areas in concrete surfaces. Repair or replace rusted or damaged metal. Replace any displaced rock riprap to constructed grade.
- Protect the structure from damage by farm equipment and livestock. Repair or replace damaged fences to keep livestock out of the pond, where applicable.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and mowing as needed. Use caution during mowing operations so as not to tip or rollover mowing equipment and cause injury or loss of life. When applying fertilizer to vegetative cover, use caution to prevent degradation to water quality.
- Prevent woody vegetation from growing on or around the embankment, abutment, or vegetated spillway areas. Control tree and bush growth by hand cutting, mowing, or chemicals. Avoid damaging grass or aquatic vegetation with herbicide sprays.
- Maintain a riparian filter around the perimeter of the pond to trap sediment, where applicable.

Additional Details:

Bill of Materials

City of Highland Pond - Highland Silver Lake 319

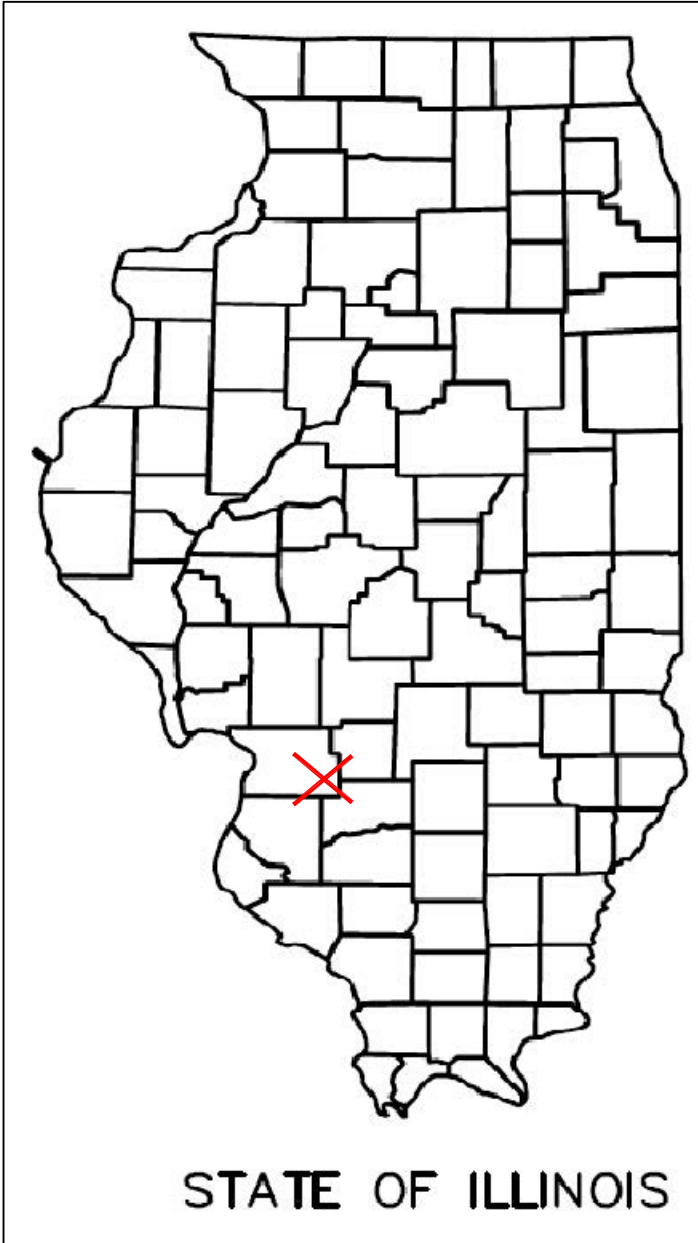
Item	Quantity/Unit	
Earthwork		
Dam (includes 10%)	3695	cubic yard
Core Trench	469	cubic yard
Stripping - includes sediment volume along base for dam and catch basin outlet	1088	cubic yard
Total	5252	cubic yard
Principal Spillway Pipe		
In-line water control valve - 24" x20" x 12 ft high with 12 inch diameter PVC connectors	1	ea
12 inch dia. SDR 21 or equivalent PVC pipe	104	lin-ft
5' x 5' Polyethylene Collars	5	ea
Catch Basin concrete	4.2	cubic yard
Catch Basin #4 rebar	532	lin-ft
Tree and Brush Clearing	2.9	acre
Critical Area Seeding	2	acre
Mulching	2	acre
Silt Fence - Wire backed	300	ft

Construction Plans

Prepared by Andreas Consulting Services for
 City of Highland – Constructed Wetland
 Highland Silver Lake 319 Project
 Section 30, Township 4N, Range 5W
 Madison County, Illinois

Index of Sheets

1. Cover Sheet
2. JULIE Form
3. Location Map
4. Site Map
5. Wetland Berm with Pond &, Auxiliary Spillway
6. Wetland Layout
7. Profile along Centerline of Wetland Berm
8. Profile along Pipe Centerline
9. Plan for Wetland Berm
10. In-Line Water Control Structure
11. Polyethylene Anti-Seep Collars
12. Plunge Pool Riprap Outlet
13. Rock Riprap Chute Overflow Spillway Layout
14. Riprap Chute Profile & Cross Section
15. Riprap Chute Details
16. Silt Fence Plan – IUM-620A
17. Erosion & Seeding Site Map
- 18.-19. Critical Area Planting JS 342
- 20.-21. Mulching JS 484
- 22.-25. Construction Specification Constructed Wetland IL656sp
- 26-27. Construction Specification Grade Stabilization Structure – Rock Chute
- 28.-29. O&M Constructed Wetland
30. O&M Grade Stabilization Structure
31. Bill of Materials



Contractor is responsible for contacting Illinois JULIE
 811 or 1-800-892-0123
www.illinois1call.com

Adapted from NRCS, IL-ENG-6



Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748
andreasconsulting@sbcglobal.net

CITY OF HIGHLAND Plans Cover Sheet

Highland Silver Lake WS Madison County, IL

Designed	ME A	Date	7/22/2019
Drawn	ME A	Date	7/22/2019
Checked	_____		
Approved	_____		

File Name	ASC Cover Sheet.dwg
Drawing Name	_____

LOCATE REQUEST FORM

It's Smart. It's Free. It's the Law.

1-800-892-0123



1	COMPANY PHONE NUMBER WITH AREA CODE		CALLER NAME		
2	COMPANY NAME				
3	COMPANY ADDRESS				
4	CITY, STATE, ZIPCODE			FAX NUMBER WITH AREA CODE	
5	SITE CONTACT NAME		PHONE NUMBER WITH AREA CODE		EXTENSION (IF APPLIES)
6	COUNTY (MUST provide this information) Madison	Check one and list location name	<input type="checkbox"/> VILLAGE	<input type="checkbox"/> CITY (URBAN)	UNINCORPORATED TOWNSHIP (RURAL)
7	SUBDIVISION NAME		EXCAVATION SITE ADDRESS OR LOT NUMBER		
8	NEAREST CROSS STREET/CROSS ROAD, REGARDLESS OF SIZE, WITHIN A 1/4 MILE (indicate street, road, lane, drive, avenue, etc.)				
9	The standard we accept is North American Datum 83 (NAD83): format is degrees, minutes & seconds		LATITUDE		LONGITUDE
10	JULIE Members and their subcontractors must provide the section - quarter/section information.		TIER 4N	RANGE 5W	SECTION 30 QUARTER/SECTION
11	ADDITIONAL LOCATION INFORMATION (Examples: directions, landmarks, distance from nearest town, etc.)				
12					
13	TYPE OF WORK (Examples: trench for sewer, cable/telephone drops, fence/deck installation, plant trees/shrubs, foundation, ditch work, etc.) Grassed Waterway Construction				
14	ARE YOU DIRECTIONAL BORING OR HORIZONTAL DIRECTIONAL DRILLING?		(Check one) <input type="checkbox"/> YES <input type="checkbox"/> NO		WILL YOU BE DIGGING DEEPER THAN 7 FEET? (Check one) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNSURE
15	EXTENT OF WORK (Examples: locate north side of building, along rear lot line, front of property to curb, lot line to lot line, etc.)				
16					
17	EXCAVATION SITE OWNER OR RENTER'S NAME (If other than caller) City of Highland		IS THE SITE PRE-MARKED? (Check one) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNSURE		
18	NOTES TO UTILITIES ABOUT EXCAVATION SITE				
19					
20					
21	START DATE AND TIME OF EXCAVATION (given to caller by operator)		IS THIS A JOINT MEET? (Check one) <input type="checkbox"/> YES <input type="checkbox"/> NO		
22	DIG NUMBER (given to caller by operator)		KEEP YOUR DIG NUMBER AS PROOF OF YOUR CALL TO JULIE AND AS A REFERENCE NUMBER FOR THIS CALL.		
23	DIG NUMBER EXPLANATION:		JULIE system reference numbers → A OR X 555 5555 ← Request sequence number for that day Julian Calendar Date		
JULIE MEMBER COMPANIES SENT THIS MESSAGE (given to caller by operator)					

For your protection, JULIE recommends that you search the area for the facilities of others who are not JULIE members and notify them separately. In addition, you should communicate with the owner of the dig site to determine if there are any privately installed lines which are not marked by member utilities.

Revised 6-2005

CITY OF HIGHLAND CONSTRUCTED WETLAND LOCATION MAP

Highland Silver Lake 319



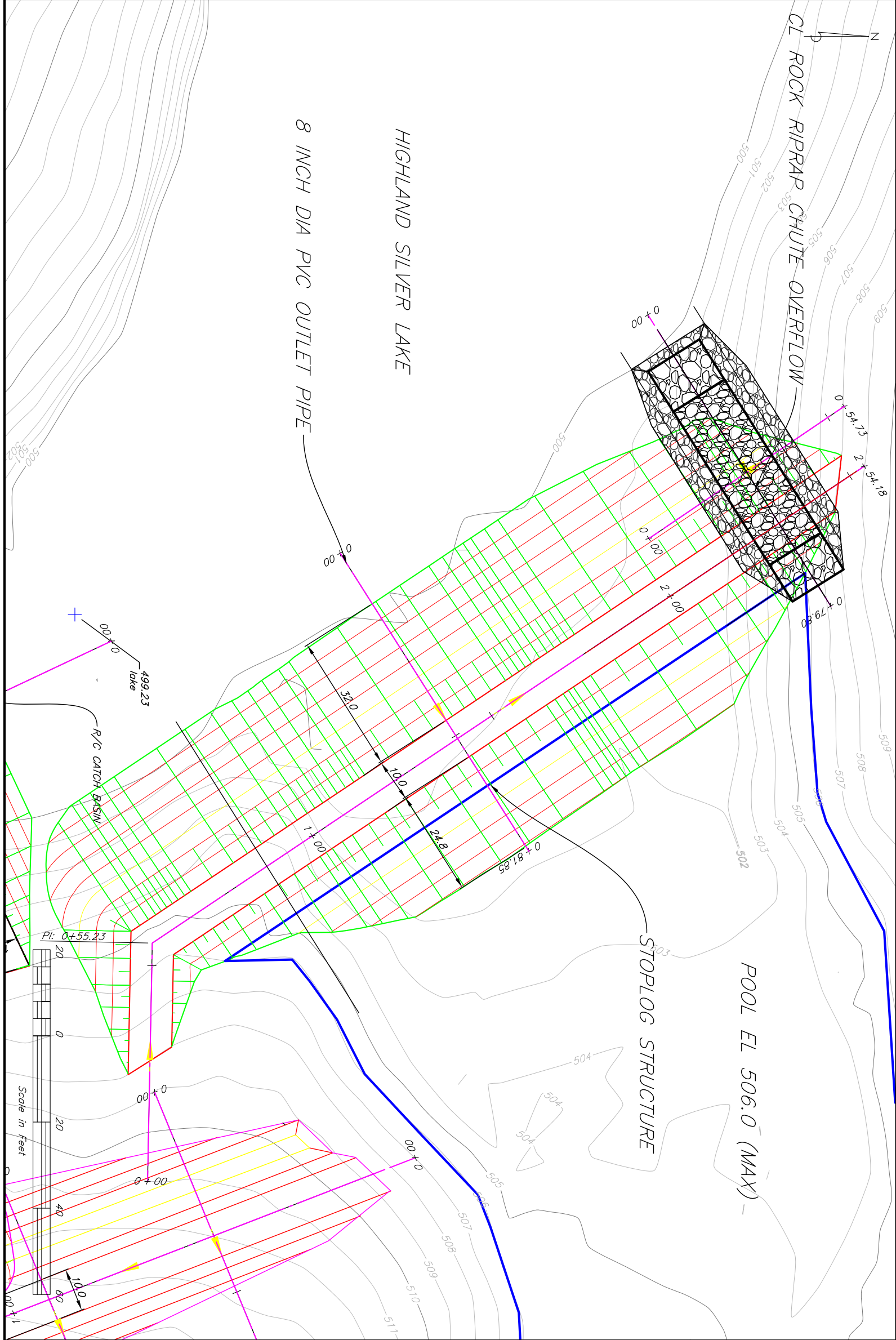
Prepared by Andreas Consulting Services
21 Belmont PL
Maryville, IL 62062



Andreas Consulting Services

1,100 550 0 1,100 Feet

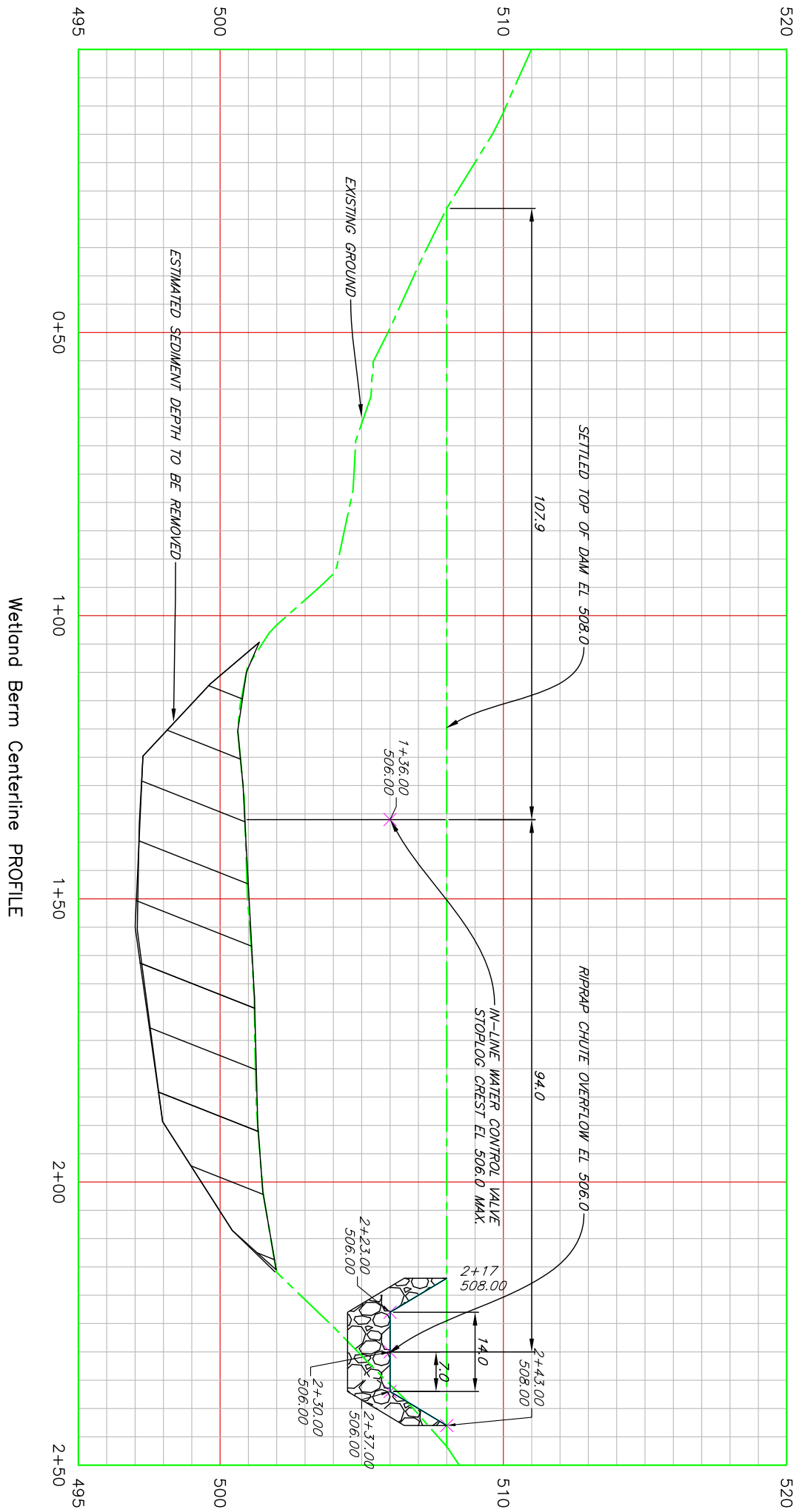




File No. ACS 2017 City Wetland.dwg Drawing No.	
	21 Belmont Pl Maryville, IL 62062 618-792-0748

WETLAND LAYOUT
 Highland Silver Lake 319 W/S Project
 Madison County, IL

Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas		7/16/2019
Checked			
Approved			



PROFILE ALONG WETLAND BERM CITY OF HIGHLAND

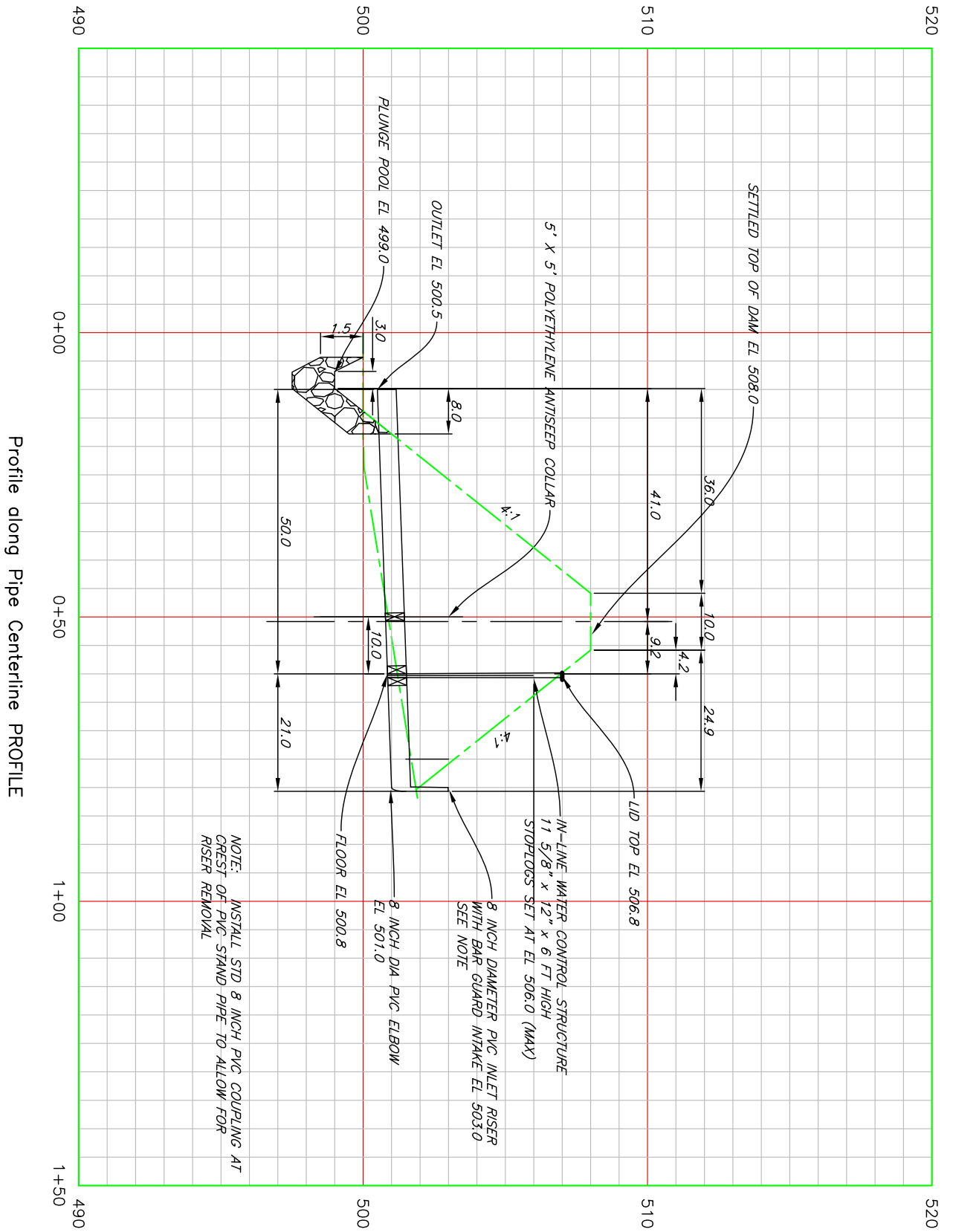
Highland Silver Lake 319 W/S Project

Madison County, IL

	Designed	Date
	ME Andreas	6/11/2019
	Drawn	ME Andreas
	Checked	
	Approved	

File No.
ACS 2017 City
Wetland.dwg
Drawing No.

Andreas Consulting Services
21 Belmont Pl
Maryville, IL 62062
618-792-0748



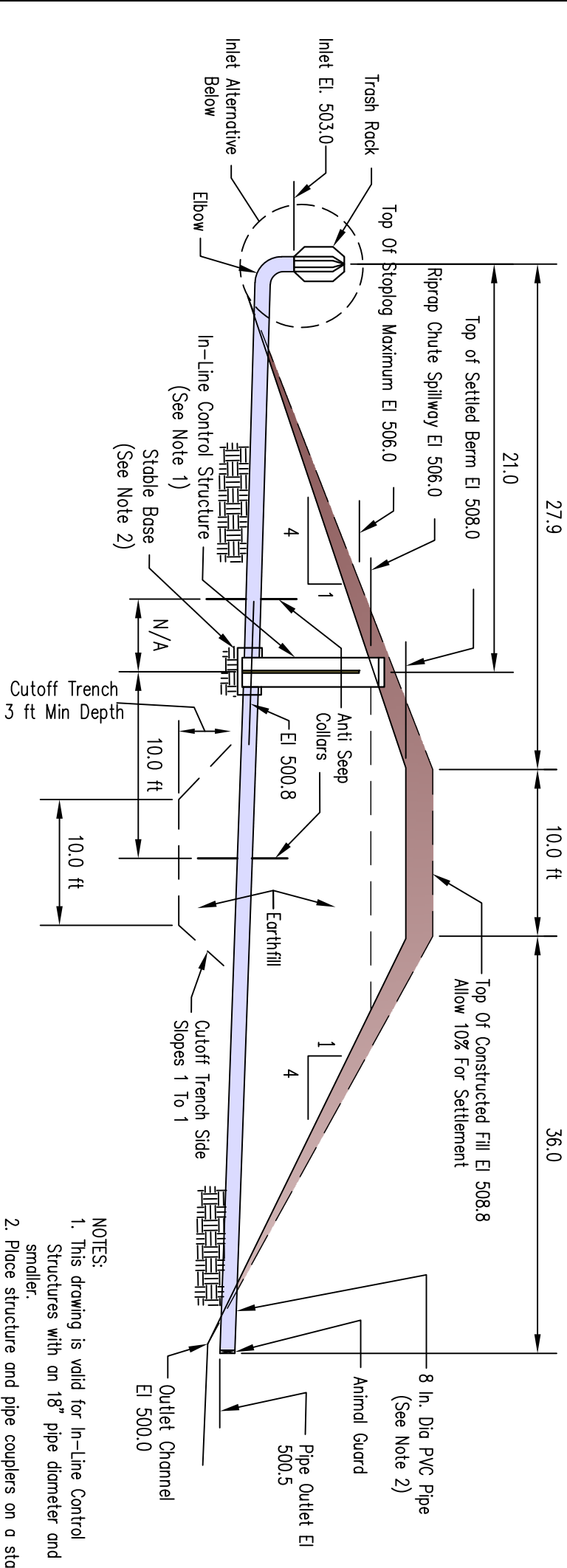
NOTE: INSTALL STD 8 INCH PVC COUPLING AT GREST OF PVC STAND PIPE TO ALLOW FOR RISER REMOVAL



<p>Andreas Consulting Services</p> <p>21 Belmont Pl Maryville, IL 62062 618-792-0748</p>	<p>File No. ACS 2017 City Wetland.dwg</p> <p>Drawing No.</p>
	<p>Highland Silver Lake 319 W/S Project</p>

<h2>PROFILE ALONG PIPE CENTERLINE WETLAND OUTLET</h2>	
<p>Highland Silver Lake 319 W/S Project</p>	<p>Madison County, IL</p>

Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas	Date	7/15/2019
Checked	_____	Date	_____
Approved	_____	Date	_____



TYPICAL BERM CROSS SECTION

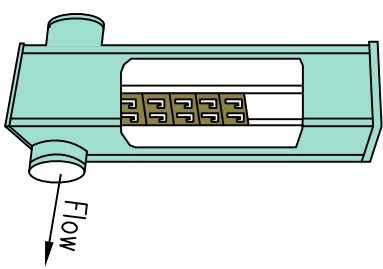
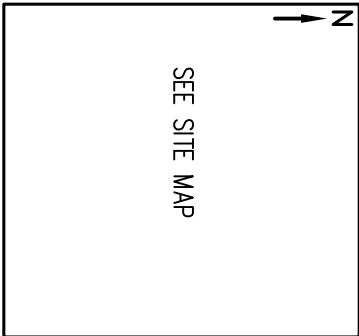
NOTES:

1. This drawing is valid for In-Line Control Structures with an 18" pipe diameter and smaller.
2. Place structure and pipe couplers on a stable base. A stable base may be compacted earth, compacted fill sand, or a concrete pad. Extend the stable base no less than 1 foot around structure.
3. PVC Pipe must conform to ASTM Standard D 2241 or D 1785. Pipe material must be PVC 1120 or PVC 1220.
4. Excavated material placed around structure, spillway pipe and anti-seep collar must be hand compacted in 4 inch lifts to some density requirements specified for the adjacent embankment.

TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
Embankment Earthfill	Cu. Yd.	1800
Cutoff Trench Earthfill	Cu. Yd.	200
PVC Pipe 8" Dia, 8 Sch 40	L.F.	71
Control Structure 8" Dia x 6' High, 11 5/8" Weir Length	Ea	1
Antiseep Collar (Specify Material) 5 ft x 5 ft Polyethylene	Ea	1
PVC Pipe Elbow 8" Dia	Ea	1
PVC Coupling 8" Dia	Ea	1
Trash Rock	Ea	1
Animal Guard - 8 inch	Ea	1

LOCATION PLAN



IN-LINE CONTROL STRUCTURE

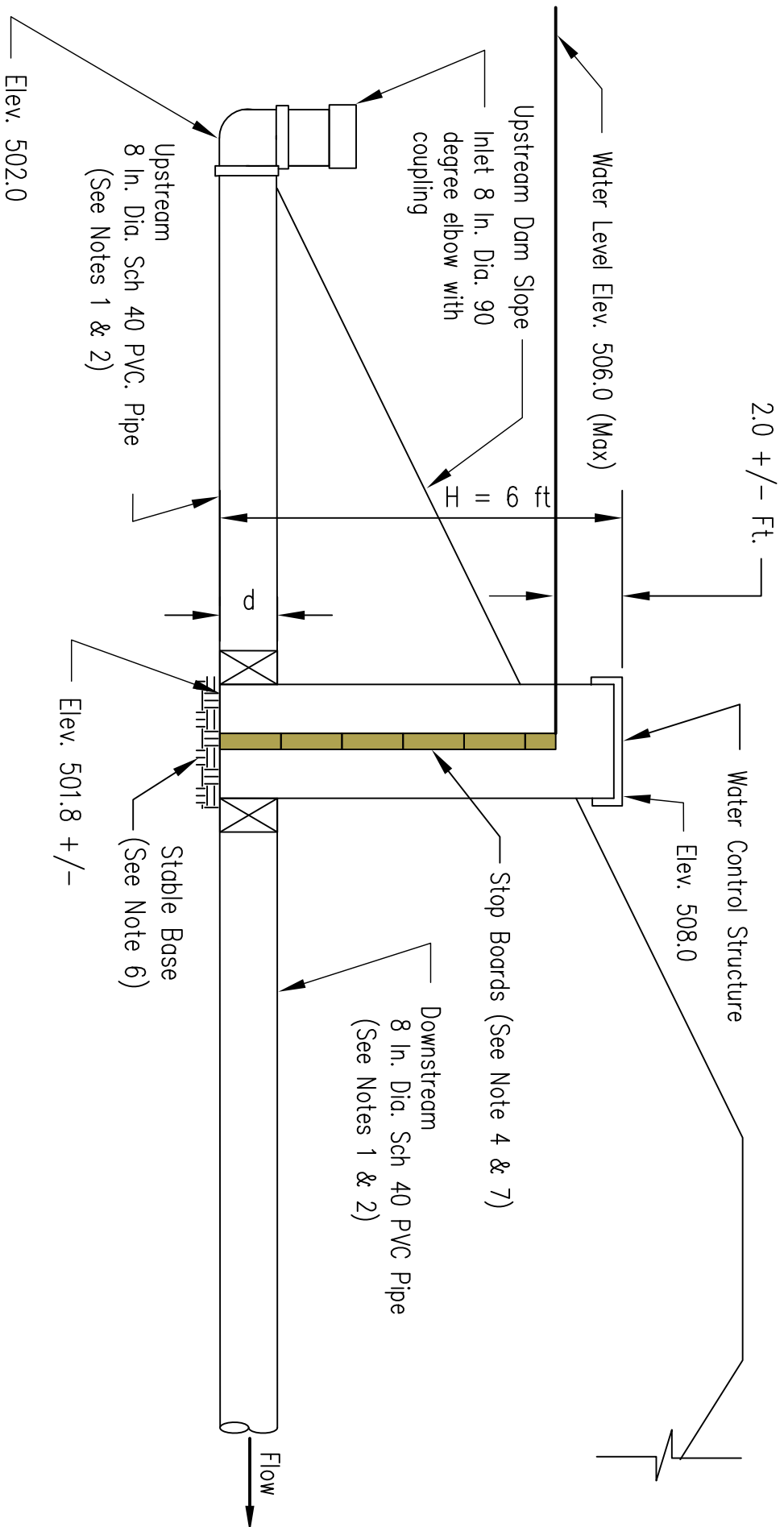
Sec. 30, T. 4N, R. 5W
 B.M. Elevation 521.43
 B.M. Description SE Corner Pavilion
 Concrete Pad

PLAN FOR WETLAND BERM

	Designed	ME ANDREAS	Date	7/22/2019
	Drawn	M. QUINONES		3/1/17
	Checked			
	Approved			

USDA United States Department of Agriculture
Natural Resources Conservation Service

File No. IL-ENG-156
 Drawing No. 1 of 2
 Page 1 of 2
 Sheet of



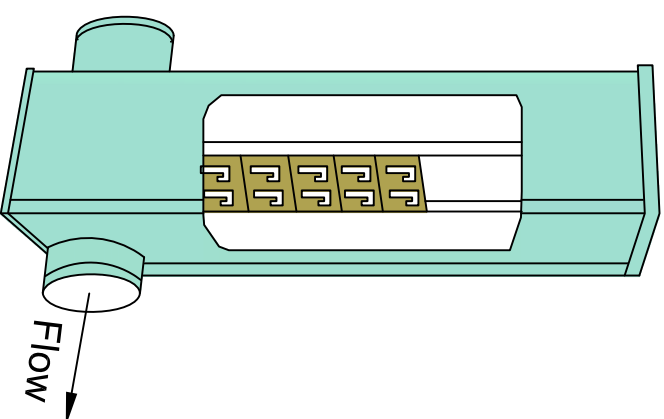
TYPICAL SECTION

Materials Schedule Water Control Structure			
No.	Width/Diameter (Inches)	H (Feet)	d (Inches)
1	11 5/8 x 12	6	8

Non Perforated PVC Pipe			
Diameter (Inches)	Upstream Length (Ft)	Downstream Length (Ft)	
8	SEE PROFILE	SEE PROFILE	

Couplers	
No.	Diameter (Inches)
2	8

- NOTES:
1. Install 12 inch diameter PVC on the upstream and downstream ends as shown on the plans.
 2. PVC pipe must conform to ASTM Standard D2241 or D1785, with material 1120 or 1220.
 3. Couplings between the water control section and the PVC pipe must be water tight.
 4. Stop boards must provide water tight seals under a minimum of 1 foot pressure head.
 5. Locate structure on the upstream dam slope set 2 ft above the water level.
 6. Place structure and pipe coupler on a stable base. A stable base may be compacted earth, compacted fill sand, or a concrete pad. Extend the stable base no less than 1 foot around structure.
 7. Stoplogs must remain in track during structure installation and aligned to one side of track,
 8. Excavated material placed around structure and pipes must be hand compacted in 4" lifts.



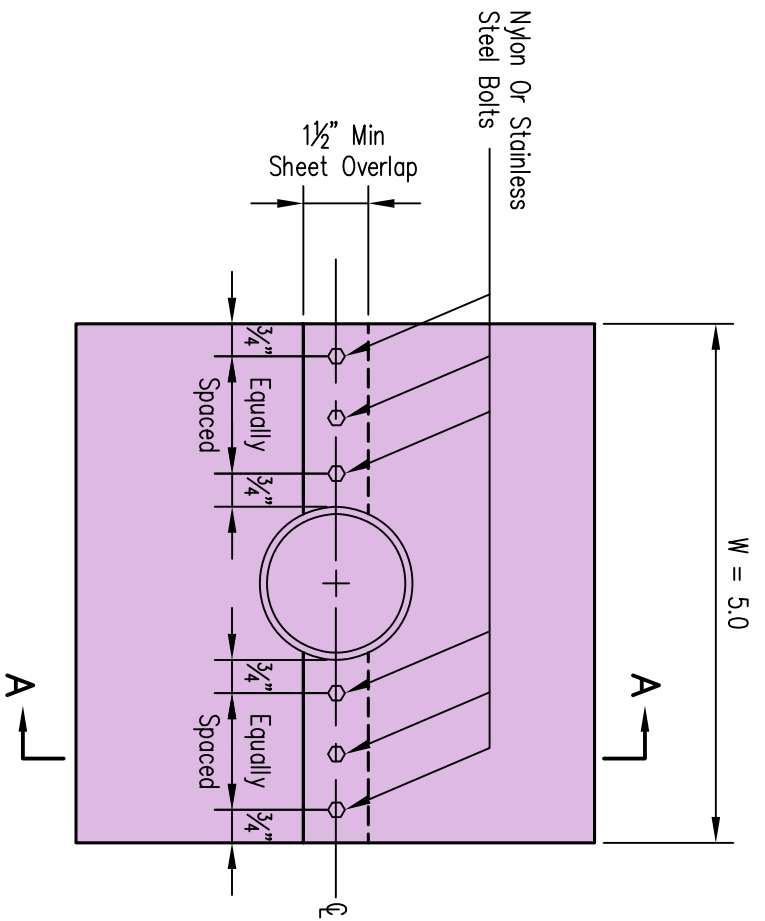
IN-LINE CONTROL STRUCTURE

ADAPTED FROM NRCS IL-ENG-130

Designed	ME ANDREAS	7/22/2019
Drawn	M.QUINONES	3/1/17
Checked		
Approved		

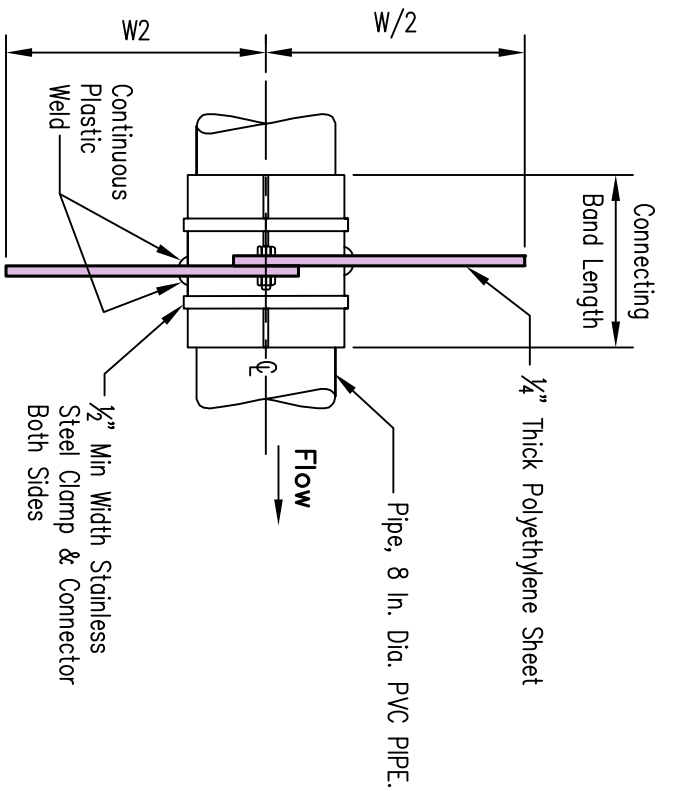
**IN-LINE
WATER CONTROL STRUCTURE
2 COMPARTMENTS**

Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748



ELEVATION

Independent



SECTION A-A

NOTES:

1. Pipe, connecting band and seam coating can be either silicon caulk (recommended), or mastic (asphalt or tar based)
2. Apply silicon caulk, tar or mastic to bottom half of connecting band and lay pipe on connecting band.
Apply silicon caulk or mastic to top half of collar and set in place, lining up bolt holes.
3. Install clamps on split halves of collar and tighten bolts and clamps.
4. Apply silicon caulk, tar or mastic on seams as needed to insure a good seal so that completed installation is watertight.
5. Backfill and hand tamp soil around completed installation.
6. Polyethylene antiseep collars can be used on corrugated and smooth PVC plastic, smooth steel and galvanized pipes.

TABLE OF QUANTITIES

W FEET	Polyethylene Sheet Sq. Ft.	Stainless Steel Clamp & Connector	Connecting Band Min Length	Bolts & Nuts 3/8" x 1"	No. Of Collars
3	9.5	2	6"	6	
4	16.7	2	6"	6	
5	25.8	2	8"	6	1
6	37.0	2	6"	6	
Totals	25.8	2	N/A	30	1

ADAPTED BY ANDREAS CONSULTING SERVICES, 21 BELMONT PL, MARYVILLE, IL 62062

Adapted From Wisconsin Standard Drawing WI-246

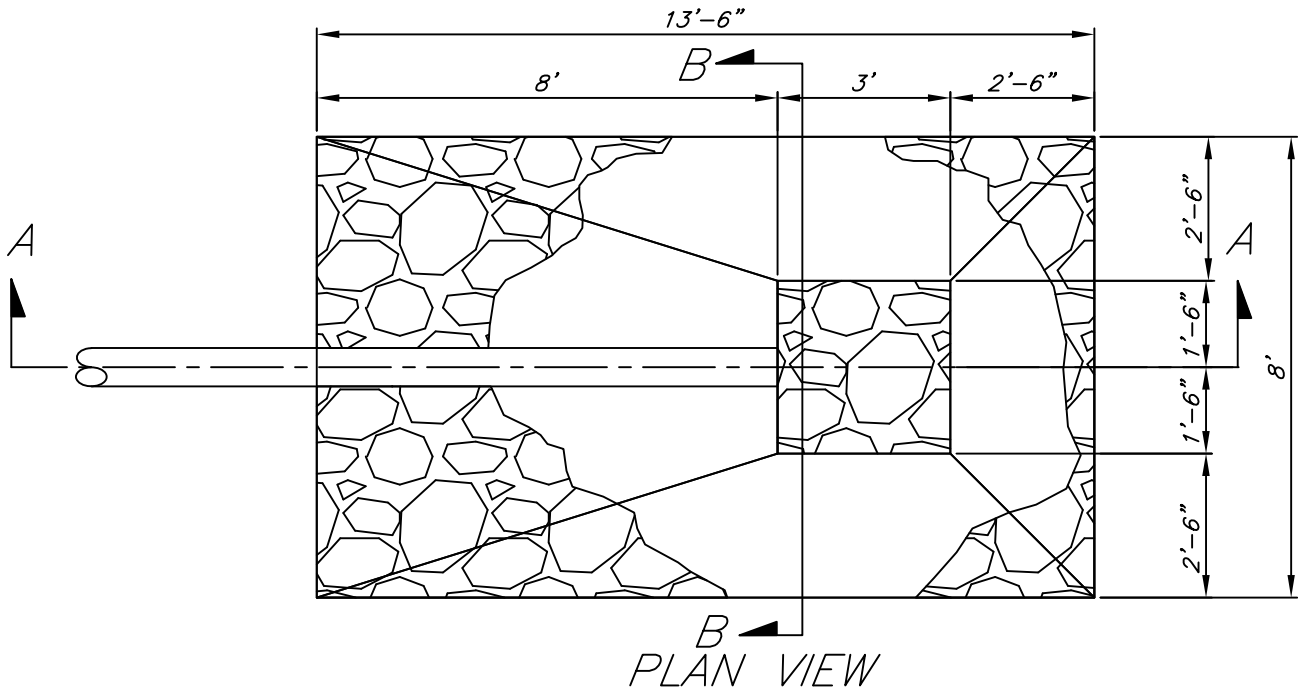
POLYETHYLENE SHEET ANTISEEP COLLAR FOR 4" TO 24" DIAMETER PIPE



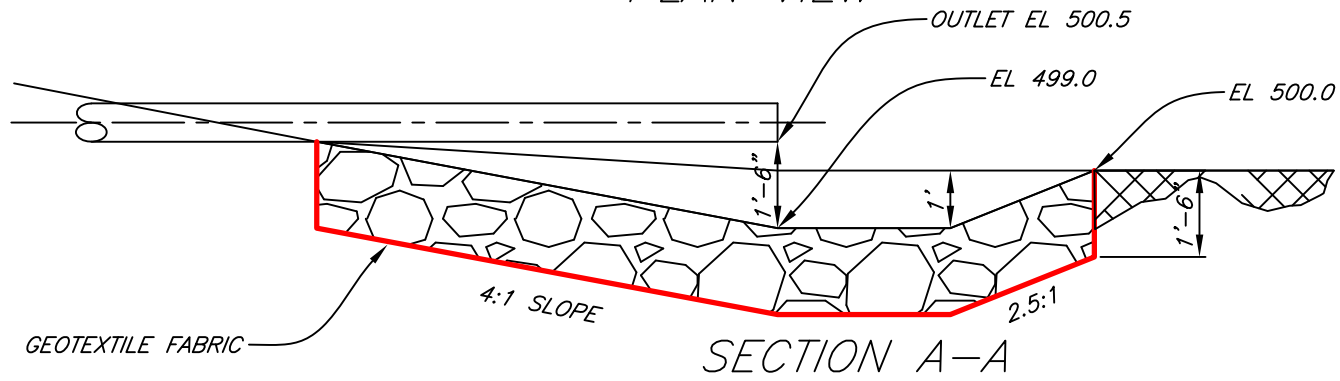
		Date
Designed	M.E. ANDREAS	7/16/2019
Drawn	M. QUINONES	11/1/13
Checked		
Approved		

File No. IL-ENG-215
Drawing No.

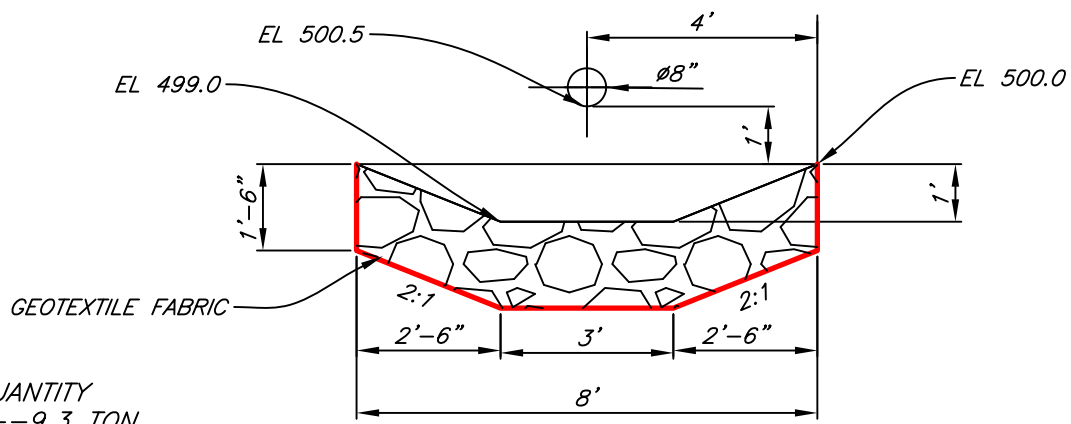
Page 1 of 1
Sheet of



PLAN VIEW



SECTION A-A



SECTION B-B

ESTIMATED QUANTITY
 A-4 ROCK RIPRAP ---9.3 TON
 NON-WOVEN GEOTEXTILE FABRIC-22 SQYDS

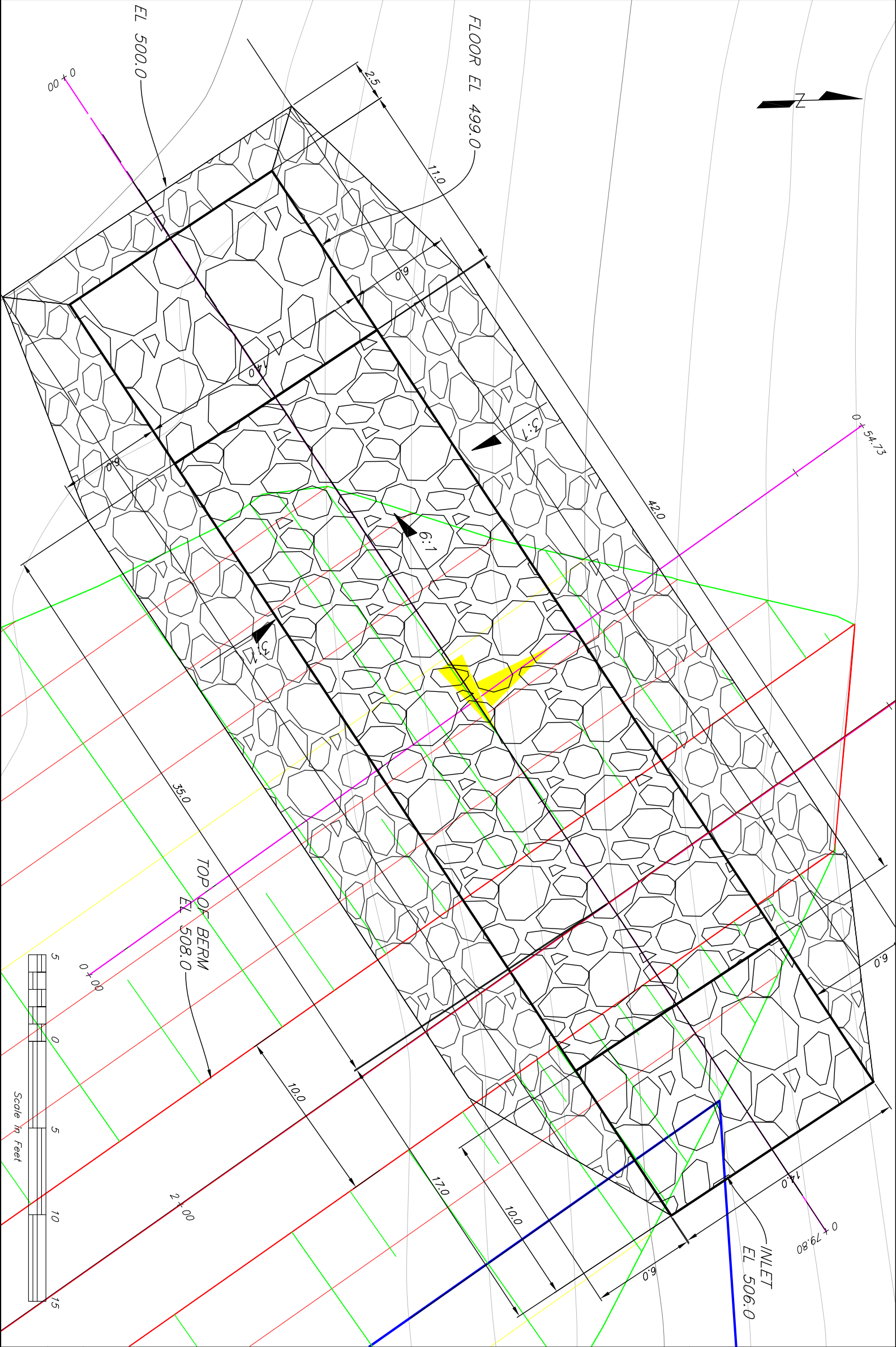
NOT-TO-SCALE

Andreas Consulting Services
 21 Belmont Pl
 Maryville, IL 62062
 618-792-0748
andreasconsulting@sbcglobal.net

**PLUNGE POOL
 RIPRAP OUTLET**
 HIGHLAND SILVER LAKE 319 MADISON CO, IL

Designed ..ME ANDREAS Date 7/22/19.
 Drawn ..ME ANDREAS 7/22/19.
 Checked ..ME ANDREAS 7/22/19.
 Approved : _____

File Name
ASC 2018 PLUNGE POOL.dwg
 Sheet of _____

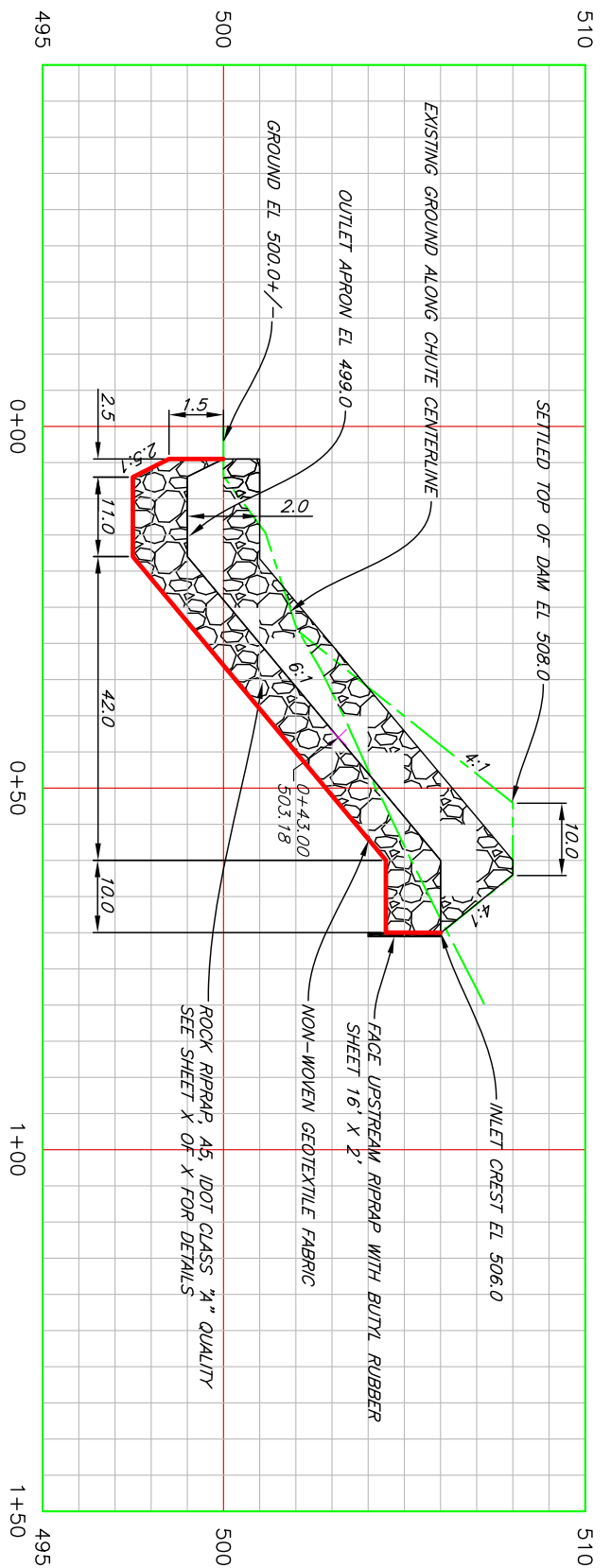


File No. ACS 2017 City Wetland.dwg Drawing No.	
	21 Belmont Pl Maryville, IL 62062 618-792-0748

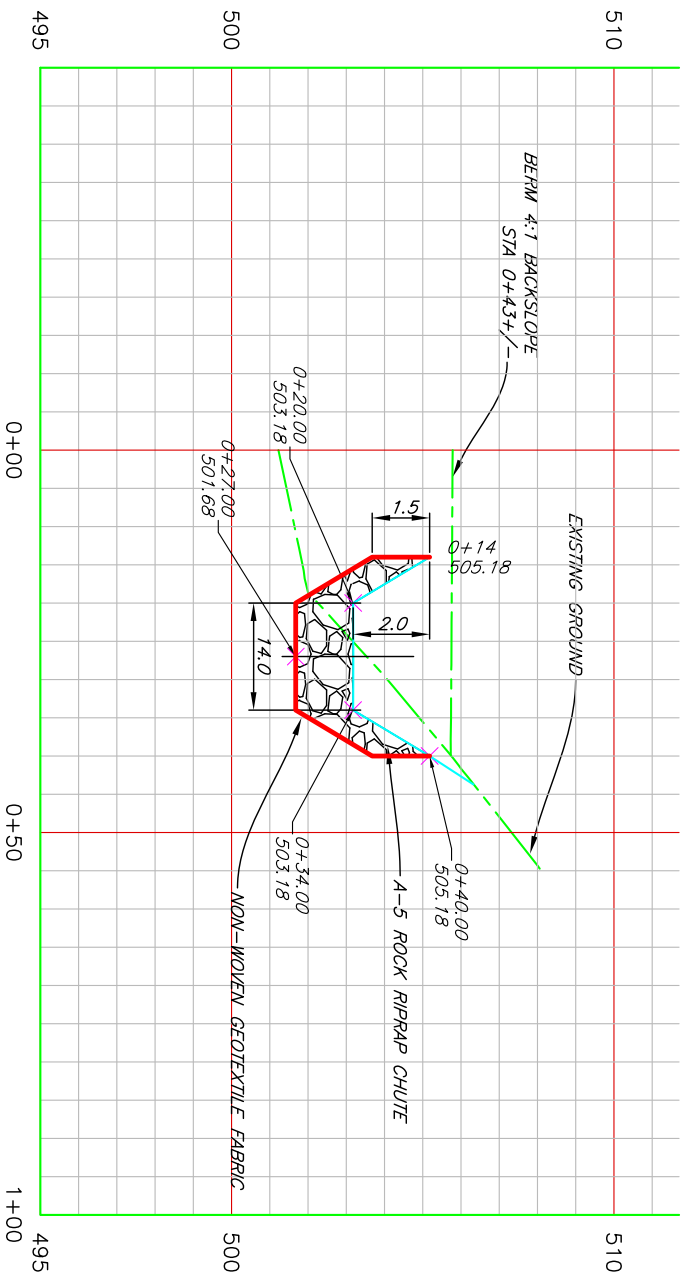
**ROCK RIPRAP CHUTE OVERFLOW
 SPILLWAY L;AYOUT**

Highland Silver Lake 319 W/S Project
Madison County, IL

Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas		7/22/2019
Checked			
Approved			



Riprap Chute Profile PROFILE



CHUTE CROSS SECTION STA 0+43 PROFILE

Designed	ME Andreas	Date	7/16/2019
Drawn	ME Andreas	Date	7/21/2019
Checked			
Approved			

RIPRAP CHUTE OVERFLOW PROFILE AND CROSS SECTION @ STA 0+43

Highland Silver Lake 319 W/S Project

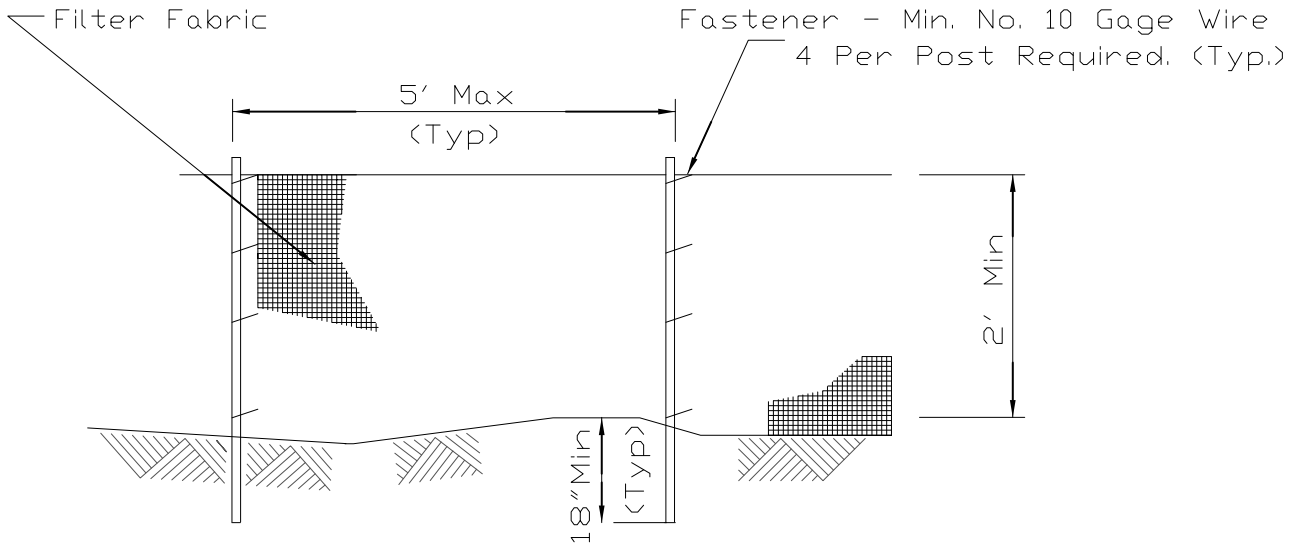
Madison County, IL



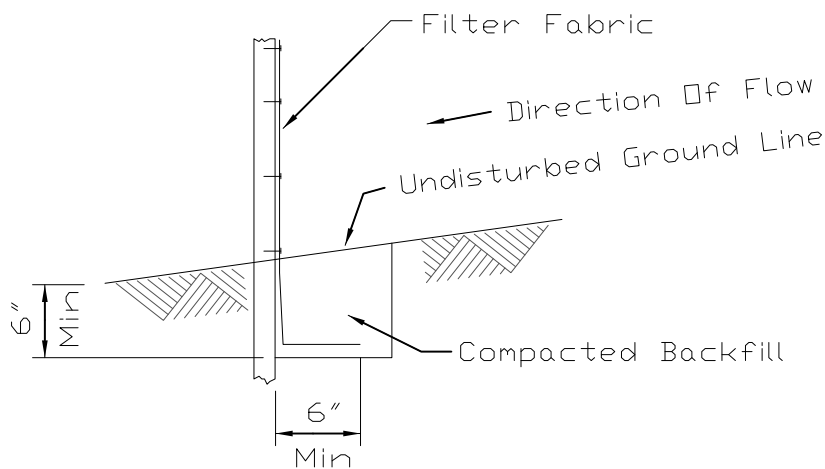
21 Belmont Pl
Maryville, IL 62062
618-792-0748

File No.
ACS 2017 City
Wetland.dwg
Drawing No.

SILT FENCE PLAN



ELEVATION



FABRIC ANCHOR DETAIL

NOTES:

1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REFERENCE	City of Highland - Wetland	
Project	ME	Date 7/22/19
Designed	ME	Date 7/22/19
Checked	ME	Date 7/22/19
City of Highland - Wetland 319		Date

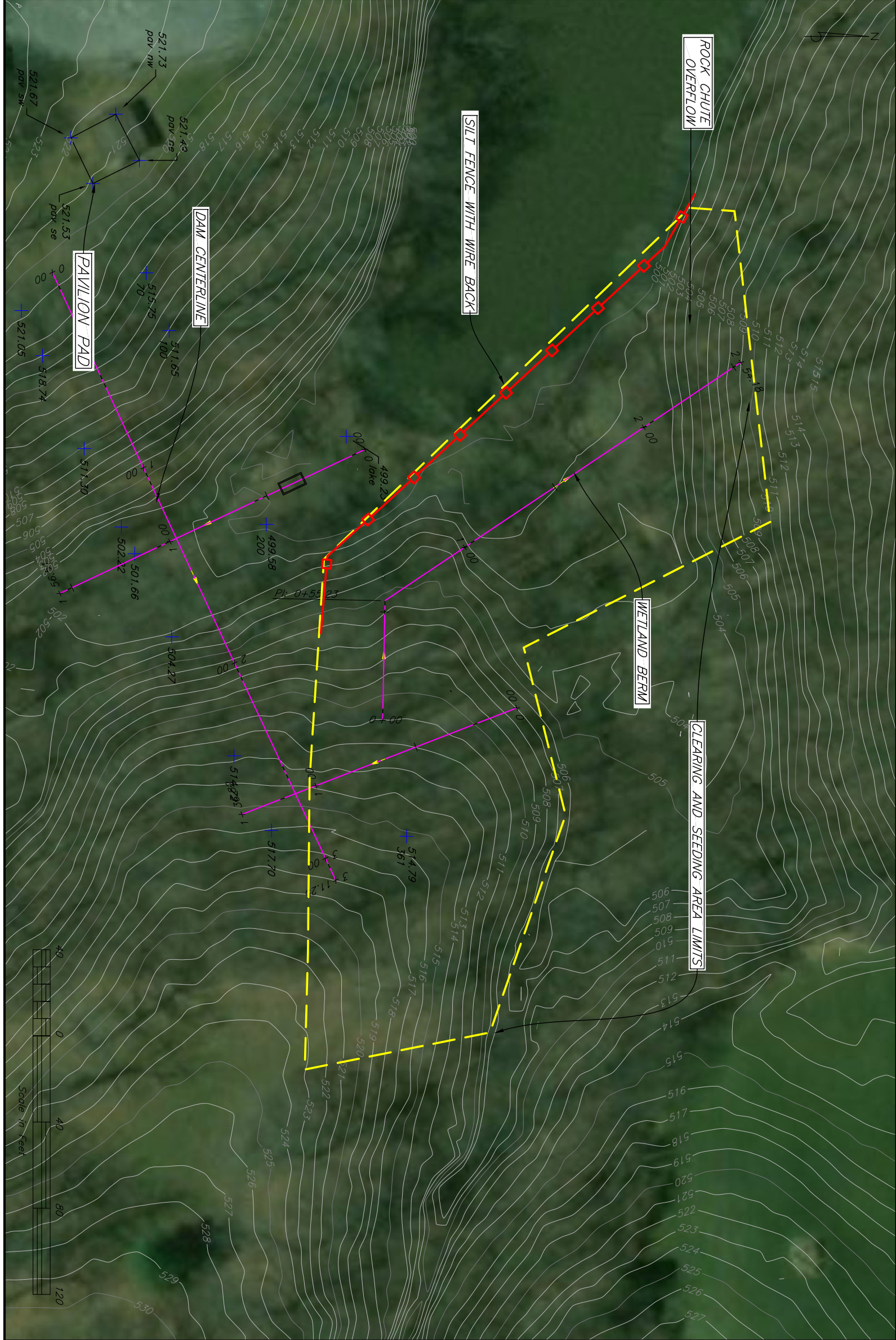


Andreas Consulting Services

21 Belmont Pl
Maryville, IL 62062
618-792-0742/23/2019



STANDARD DWG. NO.	IUM-620A
SHEET	1 OF 2
DATE	3-16-12



<p>Andreas Consulting Services</p> <p>21 Belmont Pl Maryville, IL 62062 618-792-0748</p>	<p>File No. ACS 2017 City Pond Seeding</p> <p>Drawing No. _____</p>
	<p>Scale in Feet</p> <p>0 40 80 120</p>

SEDIMENT CONTROL & SEEDING AREA SITE MAP

Highland Silver Lake 319 W/S Project Madison County, IL

Designed	ME Andreas	Date	6/11/2019
Drawn	ME Andreas		7/22/2019
Checked	_____		_____
Approved	_____		_____



Natural Resources Conservation Service

Critical Area Planting

Illinois Conservation Practice Job Sheet 342

Field/Site:	Wetland berm and borrow area	Area (Acres):	1.0
Name:	City of Highland	Date:	7/22/2019
Farm #		Tract #	

Definition

The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

Purpose(s)

- Stabilize stream and channel banks, pond and other shorelines
- Stabilize areas with existing or expected high rates of soil erosion by wind or water
- Stabilize areas, such as sand dunes and riparian areas

Conditions where practice applies

The practice applies to highly disturbed areas such as:

- active or abandoned mined lands;
- urban restoration sites;
- construction areas;

- conservation practice construction sites;
- areas needing stabilization before or after natural disasters such as floods, hurricanes, tornados and wildfires;
- eroded banks of natural channels, banks of newly constructed channels, and lake shorelines;
- other areas degraded by human activities or natural events.

Seedbed preparation and seeding

Incorporate required amendments to depth of 3 inches leaving a firm seedbed free of large clods, stones, and debris larger than 6 inches in diameter. Seedbed must be firmed with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed. Seedbeds are considered firm when footprints leave no more than a 1/2 inch deep depression. Apply seed uniformly at a depth of 1/4-1/2 inch with a drill or cultipacker type seeder. Broadcast methods are acceptable where the seed will be applied uniformly and covered 1/4-1/2 inch deep with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed.

Seed, Lime, and Fertilizer (Specify rates per acre)

Species	Rate per Acre PLS lbs./ac	Acres	Total Quantity Needed	Amount Applied
SMOOTH BROMEGRASS	24	1	24	
ALFALFA	8	1	8	
Companion Crop				
Oats				
Wheat or Cereal Rye	20	1	20	
Amendments				
Nitrogen(N)	120	1	120	
Phosphorus(P205)	120	1	120	
Potassium(K20)	120	1	120	
Lime (Tons/acre)	PER SOIL TEST		AS-NEEDED	

Seeding Dates:	August 1 – September 20, Dormant 11/15 till Freeze. Spring Late Winter-5/15
-----------------------	---

All seed shall be of high quality and comply with Illinois Seed and Weed Laws and originate from the United States or Canada.

Seed rates are based on Pure Live Seed (PLS) per acre. Pure Live Seed will be calculated using the following formula:

$$PLS = \frac{(\% \text{ germination} + \% \text{ dormant seed}) \times \% \text{ purity}}{100}$$

Germination tests are required for all warm and cool season grasses and legumes (excluding companion crops). Germination tests may not be older than 12 months at time of seeding excluding the month of testing.

Legumes not pre-inoculated will be inoculated within 24 hours of seeding.

Pre-inoculated seed must be seeded within 60 days of inoculation unless coated. Coated pre-inoculated seed must be seeded within 12 months of inoculation. In no cases shall inoculum be used after the inoculum expiration date including inoculum that is included with the seed as a pre-treatment.

I certify that this practice, as implemented, meets NRCS standards and specifications.	
_____	_____
Planner Signature	Date
<p>Note: Make pen and ink changes to any specifications that were changed during implementation and attach supporting documentation (e.g. bills, seed tag data, photos, etc.) to the Job Sheet. All deliverables as shown in the statement of work are to be documented.</p>	



Natural Resources Conservation Service

Mulching

Illinois Conservation Practice Job Sheet 484

Landowner/Operator: CITY OF HIGHLAND	Farm #:	Tract#:
Date: 7/22/2019	Fields: Wetland Berm and Borrow area	

Definition

Applying plant residues or other suitable materials not produced on the site to the land surface.

Purpose (Check all Planned Purposes)

- Conserve soil moisture
- Reduce energy use associated with irrigation
- Provide erosion control
- Facilitate the establishment of vegetation
- Improve soil health
- Reduce airborne particulates



Photo courtesy of NRCS

Where Used

On soils subject to erosion, on critical areas, on soils that have a low infiltration rate, where needed for control of weeds, and where needed to establish seedlings, trees and shrubs.

OPERATION AND MAINTENANCE:

Mulched areas will be periodically inspected, and mulch shall be reinstalled or repaired as needed to accomplish the intended purpose.

Evaluate the effectiveness of the mulch (application, amount of cover provided, durability, etc.) and adjust the management or type of mulch to better meet the intended purpose(s).

Removal or incorporation of mulch materials shall be consistent with the intended purpose and site conditions.

Operation of equipment near and on the site shall not compromise the intended purpose of the mulch.

Prevent or repair any fire damage to the mulch material.

Properly collect and dispose of artificial mulch material after intended use.

Monitor and control undesirable weeds in mulched areas.



SPECIFICATIONS:

Location #1:	Wetland Berm and Borrow Area		
Site Preparation:	Anchor mulch after seeding		
Type Of Mulch:	BRIGHT CLEAN STRAW	Rate: Specify depth, lbs/1000 ft², or tons/acre:	2 ton per acre
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:
1.0 acres	2 TON	Anchoring tool or straight disk	
Location #2:			
Site Preparation:			
Type Of Mulch:		Rate: Specify depth, lbs/1000 ft², or tons/acre:	
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:
Location #3:			
Site Preparation:			
Type Of Mulch:		Rate: Specify depth, lbs/1000 ft², or tons/acre:	
Square Ft. or Acres to be Mulched	Estimated Quantity of Mulch Needed	Type of Anchoring	Additional Remarks:

I certify that this practice, as implemented, meets NRCS standards and specifications.

Planner Signature

Date

Note: Make pen and ink changes to any specifications that were changed during implementation and attach supporting documentation (e.g. bills, check out notes, photos, etc.) to the Job Sheet. All deliverables as shown in the statement of work are to be documented.

**NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS CONSTRUCTION SPECIFICATION**

CONSTRUCTED WETLAND

Scope

The work shall consist of constructing a constructed wetland, and excavating, filling and shaping as required by the construction plans.

Utilities

The landowner and/or contractor shall be responsible for locating all buried utilities in the project area, including drainage tile and other structural measures. The landowner will obtain all necessary permissions from regulatory agencies, or document that no permits are required.

General

Construction operations shall be carried out in a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used. Contractor shall be assured that all state laws concerning buried utilities have been met.

Documentation of materials used (rock or concrete delivery tickets, geotextile tags, seed tags, photographs of pipe labeling, etc) shall be saved and provided to NRCS.

All trees, stumps, roots, brush, weeds, and other objectionable materials shall be removed from work area as designated on the plans.

Designated locations for excavation and earthfill shall be stripped of all vegetation and topsoil containing substantial amounts of organic matter. Topsoil will be stockpiled for use to topsoil areas disturbed by the

construction, embankment slopes, and other required topsoil areas (if the percentage of organic materials is not too great).

Excavation

To the extent they are suitable and approved by the inspector, excavated materials are to be used as fill materials.

Excess spoil material shall be placed, spread, leveled, or shaped as shown on the construction plans or as staked in the field. Spoil material shall not be spread on existing wetland areas. The completed job shall be finished to a degree so the surface can be traveled with farm-type equipment unless otherwise specified in the construction plans.

All excavations shall conform to the lines, grades, elevations, bottom width, and side slopes shown on the construction plans or as staked in the field.

The location, extent, and depth of the borrow area shall be as shown on the construction plans or as staked in the field. Borrow shall not be taken within 10 feet of the embankment unless shown on the plans.

Borrow pits will be excavated and dressed in a manner to eliminate steep or unstable side slopes or other hazardous conditions. Side slopes of borrow pits shall be no steeper than 3:1 or as specified on the construction plans. Surfaces of the borrow pits outside of the wetland area shall be graded and shaped to prevent the ponding of water.

Existing Subsurface Drains

Subsurface drains shall be removed as shown on the plans. All envelope, filter material or other flow-enhancing material shall be removed. The trench shall be filled in 12 inch lifts of similar soils and compacted to achieve a density equal to the adjacent natural soils.

The ends of the abandoned and disconnected drains shall be blocked with manufactured

caps or plugs, plugged with concrete, or otherwise sealed and made inoperable in such a manner that the waterholding integrity of the wetland is not impaired.

Existing drains found during construction shall be brought to the attention of the NRCS inspector.

Water Control Structure and Pipe

The materials and manufacture of the water control structure, pipe, anti-seep collars, coupling bands, coatings, and other appurtenances shall be as shown on the construction plans and shall conform to the NRCS material specifications in the approved design.

The pipe shall be laid to the line and grade and elevations shown on the drawings and shall be firmly and uniformly bedded throughout its entire length. The pipe shall be installed according to the manufacturer's instructions.

Anti-seep collars shall be of materials compatible with that of the pipe and shall be installed so that they are watertight.

The pipe shall be laid with the outside laps of circumferential joints pointing upstream and with longitudinal laps on the sides at approximately the vertical mid-height of the pipe. Field welding of corrugated galvanized steel pipe will not be permitted. The pipe sections shall be joined with coupling bands or other approved methods, as shown on the construction drawings.

Special care shall be taken during backfill operations not to disturb the grade and alignment. The pipe shall be tied down or loaded sufficiently during backfilling around the sides to prevent its being lifted from the bedding.

Backfill material shall have sufficient moisture so that optimum compaction can be obtained. Backfill around the pipe shall be placed in layers not more than 4 inches thick before compaction.

Each layer of backfill shall be compacted with power tampers, hand tampers, or plate vibrators to the same density requirements as specified for the adjacent embankment. Backfill over and around the pipe shall be brought up uniformly on all sides. The passage of earth moving equipment will not be allowed over the pipe until backfill has been

placed above the top of the pipe surface to a depth of two (2) feet.

Hand tamping only shall be used to compact the earthfill under the bottom half of circular pipes. Equipment weighing 400 pounds or more per foot of width shall not be operated within 2 feet of any structure or pipe.

Selected impervious backfill material shall be placed around the conduit, anti-seep collars and other appurtenances in layers not more than four (4) inches thick before compaction; and each layer shall be thoroughly compacted by hand tamping, manually directed power tampers, or plate vibrators to the density of the surrounding material. The height of fill shall be increased at approximately the same rate on all sides of the structure. Heavy equipment shall not be operated within 2 feet of any structure.

Animal Guards

All inlet and outlet pipes shall have animal guards, as shown on the construction plans. Guards on outlet pipe should be hinged to allow passage of debris.

Earthfill

The foundation area where the embankment is to be built shall be scarified to a minimum depth of 4 inches before the fill material is placed, so that the first layer of fill material can be bonded to the foundation.

Fill material shall be free of detrimental amounts of sod, roots, frozen soil, stones more than 6 inches in diameter, and other objectionable material that might endanger the performance of the embankment. The moisture content of the fill material shall be sufficient to permit satisfactory compaction. Moisture content can generally be considered satisfactory if fill material can be molded into a ball with the hands without readily separating, squeezing out free water, and will easily ribbon out between the thumb and finger. Material that is too wet shall be dried and material that is too dry shall have water added and mixed until the requirements are met.

The placing and spreading of fill shall be started at the lowest point of the foundation and the fill brought up in horizontal layers not to exceed 9 inches in thickness prior to compaction. Each lift shall be compacted by routing hauling equipment over the fill in such

a manner that the entire surface will be traversed by not less than one wheel track.

The completed work shall conform to the lines, grades, and elevations shown on the construction plans or as staked in the field.

Auxiliary Spillway Lining

Where specified on the construction plans, auxiliary spillways are to be lined with protective materials such as Turf Reinforcement Mat (TRM) or geotextile-lined rock. TRM is to be installed according to the construction plans and manufacturer's specifications.

Geotextile

If geotextile is specified on the construction plans, geotextile shall be nonwoven, needle-punched, and meet the minimum criteria specified in the plan.

Place geotextile fabric on the base/subgrade as shown on the drawings, over and outside of the entire area of base/subgrade. The fabric shall be loosely laid (not stretched). No cuts or punctures in the fabric will be permitted. Fabric edges should extend at least 12 inches past the edges of the rock when laid. Use a minimum lap of 18 inches if the filter fabric is installed in more than one piece, with upstream or upslope geotextile overlapping the downslope geotextile.

Geotextile fabric shall not be left exposed for more than 48 hours.

Rock Riprap

If rock is specified on the construction plans, rock shall be dense; sound; and free from cracks, seams, or other defects conducive to accelerated weathering. The rock fragments shall be angular to sub-round in shape with the least dimensions not less than 1/3 the greatest dimension of the fragment. Riprap will meet the IDOT gradation and quality designation shown on the plans.

The rock shall be placed to the depths specified on the drawings. The riprap shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials. The rock in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another and with the smaller rocks filling the

voids. Some hand placing may be required to provide a neat and uniform surface. Rock riprap shall be placed in a manner to prevent damage to geotextile.

Liner

If required in the construction plans, a liner shall be installed in the constructed wetland as designated in the construction plans. Separate specifications for the liner will be provided.

Planting Medium

Topsoil stockpiled on the site shall be used to fill the bottom of the wetland cells, unless otherwise specified in the construction plans. The topsoil shall not be placed in the wetland until the liner has been inspected and approved by the engineer. Topsoil shall be placed to the depth specified in the construction plans. Equipment operation shall be controlled to minimize compaction of the topsoil, and to prevent damage to the liner. Care shall be taken to finish the top of the soil to the grades shown on the drawings.

Vegetation - Embankments

A protective cover of vegetation shall be established on constructed embankments and other non-wetland areas as specified in the design plans. Refer to Construction Specification (342), Critical Area Seeding, for detailed seeding requirements. Vegetation should be established as soon after construction as possible.

Vegetation - Wetland

Transplanting Method

Wetland plants need a full growing season to become established before winter. Planting should be done from early spring to mid-June. If the wetland has been constructed after the wetland vegetation planting season, keep the water control structure open until after the wetland plants have been planted.

To prepare for planting, flood the site with a few inches of water to settle the soil. After the site is dry enough planting may begin. Refer to plan map for locations of each type of plant.

Plant Species:

SEE CRITICAL AREA PLANTING JOB SHEET

Establishment of the above species by transplanting rhizomes, stolons and plants is the fastest and most reliable method. Transplants should be healthy pieces of rhizomes, stolons or plants that have live shoots or buds. The source should be from commercial nurseries, grown for a specific project or collected from a maintenance operation such as a ditch cleanout. Natural wetlands are not to be used as a donor site of plant material. If wild sources of plant material are used, the donor site must be inspected to ensure that unwanted exotic species do not exist at the site.

Depending on the type and size of stock, modified tree planters can be used or hand planted with a dibble bar. Plant stock at a minimum of 4 foot by 4 foot spacing. Rhizomes and stolons should be placed in the ground with 1 inch of cover. Plants should be set with the entire root in the ground, with part of the shoot out of the ground.

As soon as the wetland is planted, flood the new planting with a few inches of water. The wetland should remain saturated to ponded up to 1 inch in depth for the first growing season. The following spring, as the plants grow in height, raise the water level, always leaving a minimum of 4 to 6 inches of plant tops out of the water. After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.

Seeding Method

Apply seed in the fall after the first killing frost and before March 1.

To prepare for the seedbed, flood the site with a few inches of water to settle the soil. After the site is dry enough seeding may begin. Refer to plan map for locations of each type of seed.

Broadcast the specified amount of seed over the seedbed and roll to ensure good seed to

soil contact but keep the seed on or near the surface.

Seed Species: Rate (lb/acre):

SEE CRITICAL AREA PLANTING JOB SHEET

As soon as the wetland is seeded, reset the control valve to keep the wetland area saturated to ponded up to 1 inch in depth for the first growing season. The following spring, as the plants grow in height, raise the water level, always leaving a minimum of 4 to 6 inches of plant tops out of the water. After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.

Natural Regeneration Method

Stockpile the top 6 inches of soil from the construction area. Construct the wetland according to the plans, bringing the pool area to an elevation 6 inches below the desired final grade. Remove surface irregularities and lightly scarify to loosen the surface. Spread the stockpiled topsoil over the wetland pool area and compact by routing hauling equipment over the fill in such a manner that the entire surface will be traversed by not less than one wheel track.

Reset the control valve to keep the wetland area saturated to ponded up to 1 inch in depth for the first growing season. The following spring, as the plants grow in height, raise the water level, always leaving a minimum of 4 to 6 inches of plant tops out of the water. After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.

**NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS CONSTRUCTION SPECIFICATION**

**GRADE STABILIZATION STRUCTURE –
ROCK-LINED CHUTE**

Scope

The work shall consist of excavation and earthfill, along with furnishing and installing all materials for the rock-lined chute grade stabilization structure as shown on the drawings and specified herein.

Utilities

The landowner and/or contractor shall be responsible for locating all buried utilities in the project area, including drainage tile and other structural measures.

General

Construction operations shall be carried out in a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used. Contractor shall be assured that all state laws concerning buried utilities have been met.

Documentation of materials used (rock or concrete delivery tickets, geotextile tags, seed tags, photographs of pipe labeling, etc) shall be saved and provided to NRCS.

All trees, stumps, roots, brush, weeds, and other objectionable materials shall be removed from designated work area.

Designated locations for excavation and earthfill shall be stripped of all vegetation and topsoil containing substantial amounts of organic matter. Topsoil will be stockpiled for use to topsoil areas disturbed by the

construction, embankment slopes, and other required topsoil areas (if the percentage of organic materials is not too great).

Excavation

To the extent they are suitable and approved by the inspector, excavated materials are to be used as fill materials. Excess spoil material shall be placed at locations shown on the drawings or as directed by the inspector.

The subgrade surface on which the base/geotextile is to be placed shall be cut and graded to the lines grades and elevations shown on the drawings. Unless otherwise shown on the drawings, no earth fill is acceptable under the geotextile.

The elevations of the base/subgrade for the chute bottom width along the entrance apron shall be level within 0.2 of a foot. The side and chute slopes of the base/subgrade shall match the slopes shown on the drawings within 0.3 :1.

Where over excavation occurs in excess of the above acceptable tolerances, the contractor shall (with the approval of the designer) shift the layout of the structure as needed to assure the specified lines, grades and tolerances are met with the subgrade fully on undisturbed material.

Earthfill

The foundation area where the embankment is to be built shall be scarified to a minimum depth of 4 inches before the fill material is placed, so that the first layer of fill material can be bonded to the foundation.

The material placed in the fill shall be free of sod, roots, frozen soil, stones over 6 inches in diameter, and other objectionable material. The distribution and gradation of materials shall be such that there are no lenses,

pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material.

The moisture content of the fill material shall be adequate for obtaining compaction. The moisture content of the fill material shall be such that a ball formed with the hands does not crack or separate when struck sharply with a pencil and will easily ribbon out between the thumb and finger.

The placing and spreading of fill material shall be started at the lowest point of the foundation and the fill brought up in horizontal lifts not to exceed nine (9) inches, so that the required compaction can be obtained.

Stockpiled topsoil strippings will be placed on the outer portion of the embankment as a part of each lift. Topsoil shall not be less than 6 inches nor more than 2 feet thick measured vertically and shall be compacted concurrently with the earthfill.

Earthfill shall be placed so that the wheels of the loaded, rubber tired, hauling equipment traveling in a direction parallel to the centerline of fill pass over the entire surface of the layer being placed.

The completed work shall conform to the lines, grades, and elevations shown on the construction plans or as staked in the field.

Geotextile

The geotextile shall be nonwoven, needle-punched, and meet the minimum criteria specified in the plan.

Place geotextile fabric on the base/subgrade as shown on the drawings, over and outside of the entire area of base/subgrade. The fabric shall be loosely laid (not stretched). No cuts or punctures in the fabric will be permitted. Fabric edges should extend at least 12 inches past the edges of the rock when laid. Use a minimum lap of 24 inches if the filter fabric is

installed in more than one piece, with upstream or upslope geotextile overlapping the downslope geotextile.

Geotextile fabric shall not be left exposed for more than 48 hours.

Rock Riprap

The rock shall be dense; sound; and free from cracks, seams, or other defects conducive to accelerated weathering. The rock fragments shall be angular to sub-round in shape with the least dimensions not less than 1/3 the greatest dimension of the fragment. Riprap will meet the IDOT gradation and quality designation shown on the plans.

The rock shall be placed to the depths specified on the drawings. The riprap shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials. The rock in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another and with the smaller rocks filling the voids. Some hand placing may be required to provide a neat and uniform surface. Rock riprap shall be placed in a manner to prevent damage to geotextile.

Vegetation

Topsoil shall be added, if needed to establish vegetation. A protective cover of vegetation shall be established on all earth surfaces in the construction area that have been altered or disturbed by the construction operation. A protective cover of vegetation shall be established on all exposed surfaces of the embankment, spillway and outlet channel as designated on the construction plans. Seedbed preparation, seeding, fertilizing, and mulching shall comply with the construction drawings and Construction Specifications 342, Critical Area Planting.

NATURAL RESOURCES CONSERVATION SERVICE

ILLINOIS OPERATION AND MAINTENANCE

CONSTRUCTED WETLAND

Follow the operation and maintenance plan below to establish wetland plants and keep your constructed wetland functioning as intended:

- Establishing wetland plants using the Transplanting method:
 - When construction of the wetland is completed, keep the wetland dry (water control structure open) until after the basin is planted with emergent herbaceous macrophytes in the spring.
 - For the first year after planting, adjust the water control structure(s) so that the topsoil is kept moist to saturated with fresh water, up to a maximum of 1 inch of ponded water, for the first growing season or until 75% of the plants in the wetland pool area show new growth.
 - Then gradually increase the water level to the normal operating level as the wetland plants mature, always leaving a minimum of 4 to 6 inches of plant tops out of the water.
 - After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.
 - After the first growing season, if there is an area larger than 20% of the wetland without satisfactory vegetation, then that part of the wetland should be replanted.
- Establishing wetland plants using the Seeding method:
 - For the first year after seeding, adjust the water control structure(s) so that the topsoil is kept moist to saturated with fresh water, up to a maximum of 1 inch of ponded water.
 - Then gradually increase the water level to the normal operating level as the wetland plants mature, always leaving a minimum of 4 to 6 inches of plant tops out of the water.
 - After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.
 - After the first growing season, if there is an area larger than 20% of the wetland without satisfactory vegetation, contact NRCS for assistance with a revegetation plan.
- Establishing wetland plants using the Natural Regeneration method:
 - For the first year after construction, adjust the water control structure(s) so that the topsoil is kept moist to saturated with fresh water, up to a maximum of 1 inch of ponded water.
 - Then gradually increase the water level to the normal operating level as the wetland plants mature, always leaving a minimum of 4 to 6 inches of plant tops out of the water.
 - After the permanent pool water depth has been reached, the constructed wetland is ready for normal operation.
 - After the first growing season, if there is an area larger than 20% of the wetland without satisfactory vegetation, contact NRCS for assistance with a revegetation plan.
- Lock structures when not in use to prevent tampering and or vandalism.

- Inspect after significant storm events and at least twice a year to identify repair and maintenance needs.
- Inspect the downstream face of embankments annually. Wet areas, indicated by seeps, wetland plants or unusually vigorous vegetation the downstream face of an embankment could indicate a serious problem.
- Clear accumulated trash away from water control infrastructure, including pipe inlets, rock riprap, and vegetated spillways.
- Inspect valves for proper functioning. Guards must remain in place to keep structures operating as planned. Promptly repair or replace damaged or inoperable components.
- Repair any settlement or erosion that occurs along the pipe. If this problem persists, evaluate the pipe for leakage and erosion of the fill material into or along the pipe.
- Fill rills and gullies that occur on embankments and in the vegetated spillway. Reseed the filled areas. Repair erosion at pipe outlets promptly.
- Eradicate or otherwise remove all rodents or burrowing animals from any embankments. Immediately repair any damage caused by their activity.
- Protect the structure from damage by farm equipment and livestock. Repair or replace damaged fences to keep livestock out of wetland, where applicable.
- Maintain vigorous growth of desirable vegetative coverings on the embankment. This includes reseeding, fertilization, and mowing as needed. Time the first mowing after August 1 when most ground nesting birds have finished nesting. When applying fertilizer to vegetative cover, use caution to prevent degradation to water quality.
- Prevent woody vegetation from growing on or around the embankment, abutment, or vegetated spillway areas. Control tree and bush growth by hand cutting, mowing, or chemicals. Avoid damaging grass or aquatic vegetation with herbicide sprays.
- Maintain a vegetated buffer around the perimeter of the wetland to trap sediment. Follow the operation and maintenance instructions for the buffer.

Structure Summary

Structure ID	Elevation, ft		Boards in Control Structure (maximum)	
	Top of Box	Highest Board Level	Height, ft	Number of Boards
1	506.8	506.0	5.0 +/-	As Needed

Additional Details:

SEE GRADE STABILIZATION STRUCTURE OPERATION AND MAINTENANCE FOR ROCK CHUTE STRUCTURE OVERFLOW

**NRCS, Illinois
May 2013**

NATURAL RESOURCES CONSERVATION SERVICE

ILLINOIS OPERATION AND MAINTENANCE

GRADE STABILIZATION STRUCTURE

Follow the operation and maintenance plan below to keep your grade stabilization structure functioning as intended:

- Inspect after significant storm events and at least twice a year to identify repair and maintenance needs.
- Inspect the downstream face of the embankment annually. Wet areas, indicated by seeps, wetland plants or unusually vigorous vegetation the downstream face of an embankment could indicate a serious problem.
- Remove debris that may accumulate immediately upstream or downstream from the structure. Clear accumulated trash from pipe, if applicable. Guards must remain in place to keep structure operating as planned.
- For a pipe structure, repair any settlement or erosion that occurs along the pipe. If this problem persists, evaluate the pipe for leakage and erosion of the fill material into or along the pipe.
- Fill rills and gullies that occur on the embankments and in the vegetated spillway. Reseed the filled areas. Repair erosion at pipe outlets promptly, as applicable.
- Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenances.
- Repair spalls, cracks and weathered areas in concrete surfaces. Repair or replace rusted or damaged metal. Replace any displaced rock riprap to constructed grade.
- Protect the structure from damage by farm equipment and livestock. Repair or replace damaged fences to keep livestock away from the structure, where applicable.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and mowing as needed. Use caution during mowing operations so as not to tip or rollover mowing equipment and cause injury or loss of life. When applying fertilizer to vegetative cover, use caution to prevent degradation to water quality.
- Prevent woody vegetation from growing on or around the structure, embankment, or vegetated spillway areas. Control tree and bush growth by hand cutting, mowing, or chemicals. Avoid damaging grass or aquatic vegetation with herbicide sprays.

Additional Details:

Bill of Materials

City of Highland Constructed Wetland - Highland Silver Lake 319

Item	Quantity/Unit	
Earthwork		
Dam (includes 10%)	1800	cubic yard
Core Trench	200	cubic yard
Stripping - includes sediment volume along base of berm	200	cubic yard
Total	2200	cubic yard
Principal Spillway Pipe		
In-line water control valve - 11 5/8" x 12" x 6 ft high with 8 inch diameter PVC	1	ea
8 inch dia. Sch 40 or equivalent PVC pipe with 90 degree elbow and 8" coupling	71	lin-ft
5' x 5' Polyethylene Collars	1	ea
Trash Rack - Bar guard intake 8 inch diameter	1	ea
Animal Guard - 8 inch diameter	1	ea
Rock Riprap Plunge Pool	9.3	ton
Geotextile Fabric -Non Woven	22	sq yds
Tree and Brush Clearing	1	acre
Critical Area Seeding	1	acre
Mulching	1	acre
Silt Fence - Wire backed	280	ft

CITY OF HIGHLAND

WARRANT # 1139

August 19, 2019

001	General Fund	\$	163,296.35
011	TIF#2 Debt Repayment Fund	\$	-
007	Community Development	\$	8,372.65
008	Motor Fuel Tax Fund	\$	4,861.04
009	Parks & Recreation Fund	\$	502,041.01
050	Street Bond	\$	26,302.50
101	Electric Fund	\$	93,040.25
119	FTTP Bond & Int	\$	-
111	Fiber To The Premise Fund	\$	207,336.01
207	Water Depr/Equip Repl	\$	-
201	Water Fund	\$	17,767.61
301	Sewer Fund	\$	7,529.43
401	Ambulance Fund	\$	16,516.60
713	Solid Waste Fund	\$	9,430.20
706	Liability Insurance	\$	-
705	Audit Fund	\$	-
802	Payroll Account	\$	2,416.79
	TOTAL WARRANT	\$	1,058,910.44

CITY CLERK
August 19, 2019

MAYOR

Accounts Payable

Computer Check Proof List by Vendor

User: rdixon
 Printed: 08/16/2019 - 12:57PM
 Batch: 00012.08.2019

Invoice No	Description	Amount	Payment Date	Acct Number
Vendor: 1569 114009 114102	4COM Inc JULY 2019 PROGRAMMING AUGUST 2019 PROGRAMMING	9,663.66 9,636.49	08/20/2019 08/20/2019	Check Sequence: 1 111-111-5-390-52 111-111-5-390-52
	Check Total:	19,300.15		
Vendor: 5236 R-1030	A n J SERVICES INC 4H RECLOSER SERVICE, L RECLOSER SERVICE	649.80	08/20/2019	Check Sequence: 2 101-104-5-360-00
	Check Total:	649.80		
Vendor: 2732 INV-ACC47766 INV-ACC47766 INV-ACC47766 INV-ACC47766	Accela, Inc. #774375 JULY WEB PAYMENTS JULY WEB PAYMENTS JULY WEB PAYMENTS JULY WEB PAYMENTS	245.60 491.20 491.20 1,228.00	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 3 713-713-5-390-00 201-201-5-390-00 301-301-5-390-00 101-101-5-390-00
	Check Total:	2,456.00		
Vendor: 193 11093	ADR Inc TOWING OF AMB (VIN 53567)	450.00	08/20/2019	Check Sequence: 4 401-401-5-360-10
	Check Total:	450.00		
Vendor: 2294 INV01138360 INV01138360 INV01138360 INV01138360.1	ADVANCED MEDIA TECHNOLOGIES, INC. Quantenna AC-Single port Wireless VAP (m Co-axial IPTV splitter - 2-way horizonta Zxyel 8 port Desktop Gateway Ethernet FREIGHT	960.00 89.00 900.00 56.05	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 5 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00
	Check Total:	2,005.05		
Vendor: 2323 90482A	AGT BATTERY SUPPLY, LLC KENWOOD GENERIC BATTERIES, MINITOR VI PROGRAMMING CRADLE	654.87	08/20/2019	Check Sequence: 6 001-014-5-430-00
	Check Total:	654.87		
Vendor: 2632 9091516277	Airgas USA, LLC OXYGEN	179.96	08/20/2019	Check Sequence: 7 401-401-5-430-00
	Check Total:	179.96		
Vendor: 3006 2019 muny band	Greg Allen muny band 2019 payroll	735.00	08/20/2019	Check Sequence: 8 009-016-5-390-57
	Check Total:	735.00		
Vendor: 3775 2019 muny band	Sandra Allen 2019 summer band payroll	2,320.00	08/20/2019	Check Sequence: 9 009-016-5-390-57
	Check Total:	2,320.00		
Vendor: 60 11224927 11228204 50447928 50448176	Altec Industries Inc UD11R Safety Glasses UD11R Safety Glasses PARTS AND LABOR PARTS AND LABOR FOR TREE TRUCK	8.49 98.39 1,010.17 847.82	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 10 101-104-5-440-00 101-104-5-440-00 101-104-5-360-00 101-104-5-360-00
	Check Total:	1,964.87		
Vendor: 4674 0797748017 S&A 1033144016 2634386099 4742177616819 5736662735 WTP 5983358251 7059173000 PW 7072262256819 9305822894	Ameren Illinois Utilities GAS CHARGES GAS CHARGES gas utilities - park maint shed Utilities GAS CHARGES Utilities gas utilities - KR GAS CHARGES FOR POLICE DEPT UTILITIES	126.25 58.96 88.65 70.23 63.68 76.87 163.84 175.02 63.89	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 11 001-017-5-330-00 111-111-5-330-00 001-014-5-330-00 009-016-5-330-00 201-201-5-330-00 001-014-5-330-00 001-017-5-330-00 009-009-5-330-00 001-012-5-330-00
	Check Total:	887.39		
Vendor: 206 8008	American Response Vehicles Inc HANDLE, LEFT LOCKING, W/ BEZEL, HANDLE, TM, OUTSIDE, RIGHT	383.55	08/20/2019	Check Sequence: 12 401-401-5-460-00
	Check Total:	383.55		

Vendor: 5522	SANDRA ANDRICK			Check Sequence: 13
2019 muny payro	2019 summer muny band	171.00	08/20/2019	009-016-5-390-57
	Check Total:	171.00		
Vendor: 3076	ANIXTER, INC.			Check Sequence: 14
4262997-02	704001 SMU- 20 Fuse Unit	1,867.80	08/20/2019	101-104-5-430-00
4324284-00	CT 200:5 CMS 2" 10KVBL INDOOR OUTDOOR FOR HPPD	324.00	08/20/2019	101-104-5-430-00
4326444-00	ES4W4W- Insulated Service Sleeve	37.00	08/20/2019	101-104-5-430-00
4326444-00	C7 Insulating Covers	47.00	08/20/2019	101-104-5-430-00
4326444-00	CF44-1 Copper Compression Tap Connector	294.00	08/20/2019	101-104-5-430-00
4326446-00	ES25R25R- Insulated Service Sleeve	41.00	08/20/2019	101-104-5-430-00
4330044-00	RS6RC Hard Hat Ratchet Suspension	77.70	08/20/2019	101-104-5-430-00
4335345-00	3PH Meter Testing	3,699.25	08/20/2019	101-104-5-390-00
	Check Total:	6,387.75		
Vendor: 2058	Aramark Uniform Services			Check Sequence: 15
315130396	JULY RUG SERVICES	35.05	08/20/2019	101-101-5-390-00
315130397	JULY UNIFORM AND RUG SERVICES	39.97	08/20/2019	101-102-5-390-00
315130406	JULY RUG SERVICES	25.50	08/20/2019	001-012-5-390-00
315154080	JULY RUG SERVICES	5.75	08/20/2019	101-101-5-390-00
315154081	JULY UNIFORM AND RUG SERVICES	30.01	08/20/2019	101-102-5-390-00
315154082	JULY RUG SERVICES	38.97	08/20/2019	111-111-5-390-00
315177813	JULY RUG SERVICES	35.05	08/20/2019	101-101-5-390-00
315177814	JULY UNIFORM AND RUG SERVICES	39.97	08/20/2019	101-102-5-390-00
315177823	JULY RUG SERVICES	25.50	08/20/2019	001-012-5-390-00
315201716	JULY RUG SERVICES	5.75	08/20/2019	101-101-5-390-00
315201717	JULY UNIFORM AND RUG SERVICES	34.83	08/20/2019	101-102-5-390-00
315201718	JULY RUG SERVICES	38.97	08/20/2019	111-111-5-390-00
315201726	JULY RUG SERVICES	46.50	08/20/2019	001-011-5-390-00
315225319	JULY RUG SERVICES	35.05	08/20/2019	101-101-5-390-00
315225320	JULY UNIFORM AND RUG SERVICES	35.15	08/20/2019	101-102-5-390-00
315225329	JULY RUG SERVICES	25.50	08/20/2019	001-012-5-390-00
	Check Total:	497.52		
Vendor: 20009	Arthur J Lager Monument Company			Check Sequence: 16
10190562B	light gray markers for wullschleger's	250.00	08/20/2019	009-715-5-390-00
	Check Total:	250.00		
Vendor: 3849	Tom Baker			Check Sequence: 17
2019 summer mun	2019 summer muny band payroll	399.00	08/20/2019	009-016-5-390-57
	Check Total:	399.00		
Vendor: 237	Banner Fire Equipment Inc			Check Sequence: 18
01P12063	AIR FILTER	201.06	08/20/2019	001-014-5-460-00
01P12155	ROPE THROW RED BAG PRO	47.50	08/20/2019	401-401-5-430-00
01P12176	KIT VLV, AKRON REPAIR KIT SS BALL, KIT VLV 2.5 SS AKR	446.78	08/20/2019	001-014-5-430-00
01S4902	FIRE ENGINE 3 MTN/REPAIRS	1,567.69	08/20/2019	001-014-5-360-10
	Check Total:	2,263.03		
Vendor: 245	Karen Barker			Check Sequence: 19
2019 muny band	2019 summer muny band payroll	285.00	08/20/2019	009-016-5-390-57
	Check Total:	285.00		
Vendor: 4390	Ty Barr			Check Sequence: 20
INVREIMB	REIMB FOR SAFETY BOOTS	150.00	08/20/2019	401-401-5-440-00
	Check Total:	150.00		
Vendor: 1890	BASS COMPANY LLC			Check Sequence: 21
6179	BLANKETS FOR THE CITY EMPLOYEE PICNIC	852.50	08/20/2019	001-011-5-390-00
	Check Total:	852.50		
Vendor: 2810	Nigel Bennett			Check Sequence: 22
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 6103	BHMG Engineers Inc			Check Sequence: 23
1935.303	design layout for street lighting on broadway	8,723.71	08/20/2019	101-101-5-230-00
1937.301	westside & northtown sub transformer installation	3,672.90	08/20/2019	101-104-5-505-00
	Check Total:	12,396.61		
Vendor: 4552	Blue Cross & Blue Shield of IL 121			Check Sequence: 24
2018-12-24 0005	AMBULANCE REFUND	67.21	08/20/2019	401-401-5-390-25
	Check Total:	67.21		
Vendor: 310	Bluff Equipment Inc			Check Sequence: 25

97566	misc supplies for maint of mower/equipment	272.36	08/20/2019	009-016-5-450-00
	Check Total:	272.36		
Vendor: 401 P52759	Bobcat of St. Louis OI Fluid	89.02	08/20/2019	Check Sequence: 26 301-304-5-450-00
	Check Total:	89.02		
Vendor: 317 2019 muny band	William Bojanowski 2019 summer muny band payroll	399.00	08/20/2019	Check Sequence: 27 009-016-5-390-57
	Check Total:	399.00		
Vendor: 2811 2019 muny band	William BonDurant 2019 summer muny band payroll	114.00	08/20/2019	Check Sequence: 28 009-016-5-390-57
	Check Total:	114.00		
Vendor: 2812 2019 muny band	Ethan Boulanger 2019 summer muny band payroll	513.00	08/20/2019	Check Sequence: 29 009-016-5-390-57
	Check Total:	513.00		
Vendor: 1291 83286016 83289120 83293950 83293951 83297290	Bound Tree Medical, LLC ONSITE AED PEDIATRIC DEFIBRILLATION PADS 1/PR EMS SUPPLIES EMS SUPPLIES EMS SUPPLIES EMS SUPPLIES	151.37 439.27 119.25 235.90 582.16	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 30 401-401-5-430-00 401-401-5-430-00 401-401-5-430-00 401-401-5-430-00 401-401-5-430-00
	Check Total:	1,527.95		
Vendor: 4861 59524	Bradford National Bank Street Sweeper Loan #59524 pmt.	3,900.97	08/20/2019	Check Sequence: 31 001-017-5-530-00
	Check Total:	3,900.97		
Vendor: 2293 2019 muny band	Patricia Bringaze 2019 summer muny band payroll	513.00	08/20/2019	Check Sequence: 32 009-016-5-390-57
	Check Total:	513.00		
Vendor: 360 G126167	Broadway Battery & Tire anti freeze	14.99	08/20/2019	Check Sequence: 33 009-016-5-460-00
	Check Total:	14.99		
Vendor: 1717 2019 muny band	Nathan Brown 2019 summer muny band payroll	57.00	08/20/2019	Check Sequence: 34 009-016-5-390-57
	Check Total:	57.00		
Vendor: 10044 1077075	BUILDINGSTARS INC KRC monthly cleaning service charge	1,852.00	08/20/2019	Check Sequence: 35 009-009-5-380-01
	Check Total:	1,852.00		
Vendor: 243 2019 muny band	Catherine Burge 2019 summer muny band payroll	399.00	08/20/2019	Check Sequence: 36 009-016-5-390-57
	Check Total:	399.00		
Vendor: 712 1420031 1420031.1 1420427 1420427.1 1420574 1420574.1	Calix Networks Inc 844E-1 Gigacenter w/power adapter 844E-1 Gigacenter w/power adapter- FREIGHT ONT SFU enclosure ONT SFU enclosure- FREIGHT SFP GPON/B-20Km 1490m SC/UPC CT- single SFP GPON/B-20Km 1490m SC/UPC CT- single - FREIGHT	5,450.00 198.35 986.00 114.05 2,864.00 12.61	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 37 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00 111-111-5-470-00
	Check Total:	9,625.01		
Vendor: 1909 011070 011070	Carl's Four Wheel Drive & Performance Center LLC Coupler, Spray Paint FOrd Candy Apple Red Coupler, Spray Paint FOrd Candy Apple Red	65.45 65.44	08/20/2019 08/20/2019	Check Sequence: 38 201-203-5-460-00 301-303-5-460-00
	Check Total:	130.89		
Vendor: 1719 2019 muny band	Joshua Case 2019 summer muny band payroll	1,188.00	08/20/2019	Check Sequence: 39 009-016-5-390-57
	Check Total:	1,188.00		
Vendor: 244 2019 muny band	Ruth Chaput 2019 summer muny band payroll	171.00	08/20/2019	Check Sequence: 40 009-016-5-390-57
	Check Total:	171.00		

Vendor: 4981 0000001346	Christ Bros Inc N50 Surface-LEB - Hot Mix	790.16	08/20/2019	Check Sequence: 41 008-008-5-430-00
	Check Total:	790.16		
Vendor: 457	City Of Highland			Check Sequence: 42
JULY2019	JULY CENTRAL PURCHASING	786.99	08/20/2019	009-009-5-430-00
JULY2019	JULY CENTRAL PURCHASING	42.30	08/20/2019	001-017-5-430-00
JULY2019	JULY CENTRAL PURCHASING	67.00	08/20/2019	001-014-5-430-00
JULY2019	JULY CENTRAL PURCHASING	65.55	08/20/2019	401-401-5-430-00
JULY2019	JULY CENTRAL PURCHASING	165.20	08/20/2019	009-016-5-430-00
JULY2019	JULY CENTRAL PURCHASING	360.32	08/20/2019	001-011-5-430-00
JULY2019	JULY CENTRAL PURCHASING	306.32	08/20/2019	001-013-5-430-00
JULY2019	JULY CENTRAL PURCHASING	17.05	08/20/2019	201-203-5-430-00
JULY2019	JULY CENTRAL PURCHASING	79.36	08/20/2019	009-503-5-430-00
JULY2019	JULY CENTRAL PURCHASING	162.14	08/20/2019	001-012-5-430-00
JULY2019	JULY CENTRAL PURCHASING	118.98	08/20/2019	101-102-5-430-00
JULY2019	JULY CENTRAL PURCHASING	17.05	08/20/2019	301-303-5-430-00
JULY2019	JULY CENTRAL PURCHASING	49.52	08/20/2019	201-202-5-430-00
JULY2019	JULY CENTRAL PURCHASING	85.20	08/20/2019	009-016-5-430-00
JULY2019	JULY CENTRAL PURCHASING	187.54	08/20/2019	101-101-5-430-00
JULY2019	JULY CENTRAL PURCHASING	30.79	08/20/2019	201-201-5-430-00
JULY2019	JULY CENTRAL PURCHASING	93.98	08/20/2019	111-111-5-430-00
	Check Total:	2,635.29		
Vendor: 451 0079906 010101-001819 010101-002819	City Of Highland Electric dumpster for fireworks quarterback club quarterback club	205.00 103.99 97.23	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 43 009-016-5-390-00 009-016-5-330-00 009-016-5-330-00
	Check Total:	406.22		
Vendor: 461	City Petty Cash			Check Sequence: 44
1	REIMB FOR POSTAGE IN MAIL BAG- CERTIFIED MAIL	8.35	08/20/2019	001-011-5-320-00
2	IDC MEETING- JIMMY JOHNS TIP	5.00	08/20/2019	007-007-5-390-00
3	IDC MEETING LUNCHEON- MAZZIOS TIP	5.00	08/20/2019	007-007-5-390-00
4	EMS CASH DRAWER FOR EMS BILLING	50.00	08/20/2019	401-000-0-102-00
5	IDC MEETING/LUNCHEON- JIMMY JOHNS TIP	10.00	08/20/2019	007-007-5-390-00
6	IDC MEETING/LUNCHEON- JIMMY JOHNS TIP	5.00	08/20/2019	007-007-5-390-00
7	POSTAGE	25.50	08/20/2019	111-111-5-320-00
8	IDC MEETING/LUNCHEON- MAZZIOS TIP	5.00	08/20/2019	007-007-5-390-00
	Check Total:	113.85		
Vendor: 481 71674	Coe Equipment Inc Beacon Assy, Tractor	357.01	08/20/2019	Check Sequence: 45 001-017-5-450-00
	Check Total:	357.01		
Vendor: 5523 2019 muny band	JORDAN COMISH 2019 summer muny band payroll	114.00	08/20/2019	Check Sequence: 46 009-016-5-390-57
	Check Total:	114.00		
Vendor: 352 008.2018.54	Curry & Associates Engineers Inc WATER MAIN REPLACEMENT ALONG RT 143,BWAY,DEAL,CEDAR,MONROE,BEEC	897.74	08/20/2019	Check Sequence: 47 201-203-5-505-00
	Check Total:	897.74		
Vendor: 3406 2019 muny band	KELLY DAMANN 2019 summer muny band payroll	442.00	08/20/2019	Check Sequence: 48 009-016-5-390-57
	Check Total:	442.00		
Vendor: 3396 T89700 T89702 T89831	Dave Schmidt Truck Service Inc Truck # 603 - DOT Inspect., Sticker Road Call - Truck #65 - No power. Repair. Truck # 57 - DOT Inspect., Sticker, repair wire, bulb- light.	70.67 1,251.38 158.74	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 49 001-017-5-360-10 001-017-5-360-10 001-017-5-360-10
	Check Total:	1,480.79		
Vendor: 5524 2019 muny band	LUKE DAVIS 2019 summer muny band payroll	57.00	08/20/2019	Check Sequence: 50 009-016-5-390-57
	Check Total:	57.00		
Vendor: 3261 2019 muny band	JOHN DEA 2019 summer muny band payroll	513.00	08/20/2019	Check Sequence: 51 009-016-5-390-57
	Check Total:	513.00		
Vendor: 2611 10316380943 10316380943 10316380943 10316380943	Dell Marketing L P HARD DRIVE TO INCREASE SPACE HARD DRIVE TO INCREASE SPACE HARD DRIVE TO INCREASE SPACE HARD DRIVE TO INCREASE SPACE	133.00 266.00 67.00 133.00	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 52 001-017-5-391-00 009-016-5-391-00 101-104-5-391-00 009-503-5-391-00

10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	201-201-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	133.00	08/20/2019	201-202-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	201-203-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	466.00	08/20/2019	009-009-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	001-014-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	167.00	08/20/2019	001-013-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	866.00	08/20/2019	001-012-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	931.04	08/20/2019	001-011-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	007-007-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	301-303-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	200.00	08/20/2019	301-304-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	266.00	08/20/2019	101-101-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	101-102-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	67.00	08/20/2019	301-303-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	466.00	08/20/2019	401-401-5-391-00
10316380943	HARD DRIVE TO INCREASE SPACE	233.00	08/20/2019	111-111-5-391-00
	Check Total:	4,796.04		
Vendor: 4184	DigitalArtz LLC			Check Sequence: 53
7854	signage for WCC gym	89.72	08/20/2019	009-016-5-390-00
7854	signage for KRC gym	179.44	08/20/2019	009-009-5-390-00
7868	sponsor list update	45.94	08/20/2019	009-016-5-390-00
7881	fluegefest posters	279.00	08/20/2019	009-016-5-390-00
	Check Total:	594.10		
Vendor: 10058	Drive Social Media			Check Sequence: 54
17339	AUGUST SOCIAL MEDIA MONTHLY SERVICE	1,316.67	08/20/2019	111-111-5-390-33
	Check Total:	1,316.67		
Vendor: 3263	EMILY DUNCAN			Check Sequence: 55
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 3914	KATELYN DUNCAN			Check Sequence: 56
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 5160	ED M. FELD EQUIPMENT CO., INC.			Check Sequence: 57
0352632-IN	FIT TESTING OF MASK	150.00	08/20/2019	001-014-5-390-00
	Check Total:	150.00		
Vendor: 1933	Emerald Transformer			Check Sequence: 58
222001666	225 KVA Three Phase Pad	9,610.00	08/20/2019	101-104-5-540-20
	Check Total:	9,610.00		
Vendor: 2143	Leah Erickson			Check Sequence: 59
2019 muny band	2019 summer muny band payroll	399.00	08/20/2019	009-016-5-390-57
	Check Total:	399.00		
Vendor: 679	Essenpreis Plumbing & Htg			Check Sequence: 60
29371	chamber restrooms - replaced batterisl and flush valves	192.61	08/20/2019	009-016-5-390-00
7-25-19 W&S	4" Clay - 4" PVC Fernco	6.20	08/20/2019	301-303-5-450-00
	Check Total:	198.81		
Vendor: 1496	Will Fairbanks			Check Sequence: 61
2019 muny band	2019 summer muny band payroll	479.00	08/20/2019	009-016-5-390-57
	Check Total:	479.00		
Vendor: 2786	Fastenal			Check Sequence: 62
ILHIG75112	2: WHT (FB1) Hat	37.98	08/20/2019	201-203-5-430-00
ILHIG75130	24: Sfty Grn Inv. Mkg 17 Oz.	61.85	08/20/2019	301-303-5-430-00
ILHIG75218	31808, 31809 PARTS	15.58	08/20/2019	111-111-5-430-00
	Check Total:	115.41		
Vendor: 4089	Leslie E Fear			Check Sequence: 63
B-18-180234	15 Silver Fox Ct - Final Electrical Inspection	78.00	08/20/2019	001-013-5-390-81
B-18-180439	12611 Iberg Rd - Outside Electrical Service Inspection	90.00	08/20/2019	001-013-5-390-81
B-19-190075	50 Arbor Crest Dr - Electrical Rough-in Inspection	60.00	08/20/2019	001-013-5-390-81
B-19-1900751	50 Arbor Crest Dr - Meter Base Inspection	60.00	08/20/2019	001-013-5-390-81
B-19-190198	37 KORTE DR- ELECTRICAL ROUGH IN	45.00	08/20/2019	001-013-5-390-81
B-19-190216	1304 Broadway - Final Electrical Inspection	834.00	08/20/2019	001-013-5-390-81
	Check Total:	1,167.00		
Vendor: 991	Fehrmann Garage Doors Inc			Check Sequence: 64
25049	ADJUSTED CLUTCH ON OPERATOR, LUBED DOOR	49.75	08/20/2019	201-203-5-380-00
25049	ADJUSTED CLUTCH ON OPERATOR, LUBED DOOR	49.75	08/20/2019	301-303-5-380-00

	Check Total:		99.50		
Vendor: 2299 2019 muny band	Buddy Ferguson 2019 summer muny band payroll		513.00	08/20/2019	Check Sequence: 65 009-016-5-390-57
	Check Total:		513.00		
Vendor: 5525 2019 muny band	JAYSON FLEMING 2019 summer muny band payroll		57.00	08/20/2019	Check Sequence: 66 009-016-5-390-57
	Check Total:		57.00		
Vendor: 5536 28359	FMG PUBLISHING INC. BUSINESS IN FOCUS, HALF PAGE AD SPACE		4,990.00	08/20/2019	Check Sequence: 67 007-007-5-390-33
	Check Total:		4,990.00		
Vendor: 253 2019 muny band	Dennis Franke 2019 summer muny band payroll		285.00	08/20/2019	Check Sequence: 68 009-016-5-390-57
	Check Total:		285.00		
Vendor: 776 2019 muny band	Kevin Frey 2019 summer muny band payroll		513.00	08/20/2019	Check Sequence: 69 009-016-5-390-57
	Check Total:		513.00		
Vendor: 1098 080119 6186542146 6186543568 6186544671 6510017819 6541026819	FRONTIER Service 8/1/19 to 8/31/19 PHONE CHARGES PHONE CHARGES POLICE DEPT FAX LINE telephone exp krc security system telephone exp wcc fax		112.92 46.46 46.78 39.53 180.59 47.01	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 70 001-013-5-310-00 001-014-5-310-00 001-011-5-310-00 001-012-5-310-00 009-009-5-310-00 009-016-5-310-00
	Check Total:		473.29		
Vendor: 20702 S4051687.001	FROST Electric Supply M125A026 30" Mast Arm		517.50	08/20/2019	Check Sequence: 71 101-104-5-430-00
	Check Total:		517.50		
Vendor: 788 S4036381.001 S4060009.001	Frost Electric Supply Co M125A026 30" Mast Arm CHAMBER LIGHTS- METALUX		155.00 209.50	08/20/2019 08/20/2019	Check Sequence: 72 101-104-5-430-00 001-011-5-430-00
	Check Total:		364.50		
Vendor: 8299 30001771 30001771 30001771 30001824 30001876 30001876	FS Turf Solutions AQUALIGHT, RANGER PRO 2X2.5 GAL ESPLANADE EZ 2X2.5 GAL LAST CALL 4X1GL STRIDER, CELERO SURE POWER TALPRIRID MOLE BAIT BOX		154.75 285.00 592.00 534.75 165.00 48.00	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 73 009-016-5-490-00 009-715-5-490-00 009-016-5-490-00 009-016-5-490-00 009-715-5-490-00 009-016-5-490-00
	Check Total:		1,779.50		
Vendor: 1500 2019 muny band	Constance L. Galbraith 2019 summer muny band payroll		456.00	08/20/2019	Check Sequence: 74 009-016-5-390-57
	Check Total:		456.00		
Vendor: 3705 2781 2916	GELLY EQUIPMENT REPAIR LLC 5300 Bobcat service & repair. MTN/REPAIRS TO UNIT 1543		1,279.39 755.65	08/20/2019 08/20/2019	Check Sequence: 75 301-304-5-360-00 401-401-5-360-10
	Check Total:		2,035.04		
Vendor: 5279 2019 muny band	MIA GONZALEZ 2019 summer muny band		456.00	08/20/2019	Check Sequence: 76 009-016-5-390-57
	Check Total:		456.00		
Vendor: 858 9311293841 9311293841 9311486575 9311486575.1 9311518507	Graybar Quiktron cat5 e non-booted 10' jumper -b Quiktron cat5 e non-booted 10' jumper -p PDI-15 Insulator PDI-15 Insulator- FREIGHT Quiktron cat5 e non-booted 10' jumper -p		334.00 143.62 588.59 50.62 190.38	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 77 111-111-5-430-00 111-111-5-430-00 101-104-5-430-00 101-104-5-430-00 111-111-5-430-00
	Check Total:		1,307.21		
Vendor: 3333 0118473-IN 0118586-IN	GREAT LAKES DATA SYSTEMS SMS OUTBOUND MESSAGING FEES SOFTWARE SUPPORT SERVICES		150.00 800.00	08/20/2019 08/20/2019	Check Sequence: 78 111-111-5-390-00 111-111-5-390-00

	Check Total:		950.00		
Vendor: 5280 2019 muny band	JILL GRIFFIN 2019 summer muny band payroll		57.00	08/20/2019	Check Sequence: 79 009-016-5-390-57
	Check Total:		57.00		
Vendor: 5526 2019 muny band	DELANEY GRIMES 2019 summer muny band payroll		57.00	08/20/2019	Check Sequence: 80 009-016-5-390-57
	Check Total:		57.00		
Vendor: 1721 2019 muny band	Nathan Harris 2019 summer muny band payroll		513.00	08/20/2019	Check Sequence: 81 009-016-5-390-57
	Check Total:		513.00		
Vendor: 1503 2019 muny band	Bill Hausmann 2019 summer muny band payroll		57.00	08/20/2019	Check Sequence: 82 009-016-5-390-57
	Check Total:		57.00		
Vendor: 907 INVREIMB	Troy Hemann REIMB FOR BOOTS		80.00	08/20/2019	Check Sequence: 83 401-401-5-440-00
	Check Total:		80.00		
Vendor: 10 2019 muny band	Jacob Henss 2019 summer muny band payroll		57.00	08/20/2019	Check Sequence: 84 009-016-5-390-57
	Check Total:		57.00		
Vendor: 921 181563 181624 181625	Heros In Style C. FLAKE SPECIAL EVENT POLOS (2) CHIEF UNIFORMS 4 SHIRTS 4 PANTS B. SUTTON UNIFORM SHIRT AND PANTS		106.48 496.70 169.90	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 85 001-012-5-440-00 001-012-5-440-00 001-012-5-440-00
	Check Total:		773.08		
Vendor: 936 2486	Highland Chamber Of Commerce GIFT CERTIFICATES FOR ANNUAL EMPLOYEE PICNIC		200.00	08/20/2019	Check Sequence: 86 001-011-5-390-00
	Check Total:		200.00		
Vendor: 1423 200-301431 200-303703819 200-303706819 200-303712819 200-303713 200-303714 200-303716 200-304025 200-304045 200-305702 8/8/19 PWA 8/8/19 S&A	Highland Communication Services HCS SERVICES telephone/computer/tv krc asset protection charge WCC asset protection charge park maint shed HCS SERVICES ASSET PROTECTION CHARGE TV/PHONE/INTERNET POLICE DEPT. HCS SERVICES HCS SERVICES HCS SERVICES Communication Services Communication Services		500.14 335.31 2.00 2.00 2.00 2.00 494.90 2.00 51.95 287.25 204.00 33.95	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 87 001-011-5-390-50 009-009-5-390-50 009-016-5-390-50 009-016-5-390-50 401-401-5-390-50 101-102-5-390-50 001-012-5-390-50 401-401-5-390-50 001-011-5-390-50 401-401-5-390-50 201-201-5-390-50 001-017-5-390-50
	Check Total:		1,917.50		
Vendor: 1537 931637	Highland Optimist Club Optimist Garbage Bags - Central Purchasing		681.00	08/20/2019	Check Sequence: 88 001-000-0-157-00
	Check Total:		681.00		
Vendor: 984 003018741348 3781 5050 9285	Highland's Tru Buy WCC senior meeting prizes CENTRAL PURCHASING SUPPLIES CENTRAL PURCHASING SUPPLIES WATER FOR BATTERIES AT POWER PLANT		71.26 216.74 0.12 7.20	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 89 009-016-5-390-65 001-000-0-157-00 001-000-0-157-00 101-102-5-430-00
	Check Total:		295.32		
Vendor: 8069 603525583	Hillyard St Louis Inc WCC floor maint/supplies for yearly maint.		363.12	08/20/2019	Check Sequence: 90 009-016-5-450-00
	Check Total:		363.12		
Vendor: 1014 18018	Houseman Supply Inc Portable RPZ Backflow -Rebuild Backflow for Hydrants-Then Tested		208.80	08/20/2019	Check Sequence: 91 201-203-5-450-00
	Check Total:		208.80		
Vendor: 4884 066730 067035 JULY JULY	Huels Oil Co GALLON PREMIUM OFF ROAD DIESEL GALLON PREMIUM OFF-ROAD DIESEL STREET & ALLEY- 235 JULY DIESEL FUEL JULY DIESEL FUEL		15,046.68 474.98 1,367.39 305.64	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 92 101-102-5-490-00 001-017-5-420-00 101-104-5-420-00 001-014-5-420-00

JULY	JULY DIESEL FUEL	542.05	08/20/2019	201-203-5-420-00
JULY	JULY DIESEL FUEL	542.05	08/20/2019	301-303-5-420-00
JULY	JULY DIESEL FUEL	383.10	08/20/2019	009-016-5-420-00
JULY	JULY DIESEL FUEL	362.09	08/20/2019	111-111-5-420-00
JULY	JULY DIESEL FUEL	3,195.95	08/20/2019	401-401-5-420-00
JULY	JULY DIESEL FUEL	1,543.61	08/20/2019	001-017-5-420-00
	Check Total:	23,763.54		
Vendor: 1039	IL Department Of Revenue			Check Sequence: 93
JULY2019	JULY SALES TAX	293.00	08/20/2019	009-503-5-390-00
JULY2019	JULY SALES TAX	102.00	08/20/2019	009-009-5-390-00
JULY2019	JULY SALES TAX	149.00	08/20/2019	009-016-5-390-00
	Check Total:	544.00		
Vendor: 1038	IL Dept Of Revenue			Check Sequence: 94
JULY2019	JULY UTILITY TAX	36,801.96	08/20/2019	101-101-5-710-00
	Check Total:	36,801.96		
Vendor: 4925	ILEAS			Check Sequence: 95
DUES9132	ILEAS 2019 MEMBERSHIP DUES	120.00	08/20/2019	001-012-5-390-00
	Check Total:	120.00		
Vendor: 3633	ILLINOIS DEPT OF REVENUE			Check Sequence: 96
RT-10 JULY	RT-10 TELECOMMUNICATIONS INFRASTRUCTURE MTN FEE RETURN	117.14	08/20/2019	111-111-5-390-00
RT-2 JULY	RT-2 TELECOMMUNICATIONS TAX RETURN	3,076.61	08/20/2019	111-111-5-390-00
	Check Total:	3,193.75		
Vendor: 20635	Illinois Dept of Transportation			Check Sequence: 97
123025	BROADWAY/ST. ROSE ROAD	40,958.63	08/20/2019	001-017-5-540-00
	Check Total:	40,958.63		
Vendor: 5075	Illinois Electric Inc			Check Sequence: 98
R19959	maint/repairs for spa filter pump at krc	8,934.75	08/20/2019	009-009-5-390-00
	Check Total:	8,934.75		
Vendor: 1065	Illinois Municipal Utilities Association			Check Sequence: 99
19-07006	JULY SAFETY TRAINING- BLOOD BOURNE PATH. & RESP PROTECTION	600.00	08/20/2019	101-102-5-240-00
	Check Total:	600.00		
Vendor: 3634	ILLINOIS TELECOMMUNICATIONS ACCESS CORP.			Check Sequence: 100
JULY2019	LOCAL EXCHANGE CARRIER & INTERCONNECTED VOIP & WIRELESS PROVIDER	16.54	08/20/2019	111-111-5-390-00
	Check Total:	16.54		
Vendor: 3748	J.W. Pepper & Son Inc.			Check Sequence: 101
165643723	sheet music for muny band	50.00	08/20/2019	009-016-5-390-57
	Check Total:	50.00		
Vendor: 3083	JM TEST SYSTEMS INC			Check Sequence: 102
S603959-IN	SERVICE PACK AND TELESCOPIC STICK	42.00	08/20/2019	101-104-5-360-00
	Check Total:	42.00		
Vendor: 5304	JOHN DEERE FINANCIAL			Check Sequence: 103
11113-57860	HIGHLAND RURAL KING SUPPLIES	19.07	08/20/2019	101-102-5-450-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	121.01	08/20/2019	101-104-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	6.48	08/20/2019	001-017-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	165.24	08/20/2019	111-111-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	23.97	08/20/2019	101-104-5-460-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	25.08	08/20/2019	001-017-5-420-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	12.38	08/20/2019	101-104-5-360-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	66.30	08/20/2019	001-014-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	53.28	08/20/2019	201-202-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	12.29	08/20/2019	401-401-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	8.05	08/20/2019	201-202-5-450-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	66.18	08/20/2019	201-203-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	62.42	08/20/2019	301-303-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	98.19	08/20/2019	201-203-5-450-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	114.49	08/20/2019	301-304-5-450-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	191.14	08/20/2019	101-104-5-440-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	11.64	08/20/2019	101-104-5-450-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	67.32	08/20/2019	001-014-5-380-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	75.24	08/20/2019	101-102-5-430-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	92.76	08/20/2019	001-017-5-470-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	183.96	08/20/2019	001-017-5-490-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	597.52	08/20/2019	001-017-5-470-90
11113-57860	HIGHLAND RURAL KING SUPPLIES	141.13	08/20/2019	201-203-5-440-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	198.71	08/20/2019	301-303-5-440-00
11113-57860	HIGHLAND RURAL KING SUPPLIES	18.94	08/20/2019	401-401-5-460-00

various july in	outdoor pool misc daily maint/repair splys	29.34	08/20/2019	009-503-5-430-00
various july in	park maint mower/tools repair labor and splys	535.28	08/20/2019	009-016-5-360-00
various july in	park maint minor equipment	11.58	08/20/2019	009-016-5-470-00
various july in	park maint lawn/yard chemicals	450.46	08/20/2019	009-016-5-490-00
various july in	cemetery misc maint/repair splys	124.37	08/20/2019	009-715-5-450-00
various july in	cemetery misc lawn/yard chemicals	569.04	08/20/2019	009-715-5-490-00
various july in	cemetery misc daily operating splys	14.49	08/20/2019	009-715-5-430-00
various july in	cemetery misc equipment labor/parts repair costs	259.99	08/20/2019	009-715-5-360-00
various july in	KRC misc daily maint/repair splys	22.28	08/20/2019	009-009-5-450-00
various july in	park maint misc operating splys	74.83	08/20/2019	009-016-5-430-00
various july in	park maint misc maint/repair splys	387.92	08/20/2019	009-016-5-450-00
	Check Total:	4,912.37		
Vendor: 1137	Journal Printing			Check Sequence: 104
59984	BOAT REGISTRATIONS	99.50	08/20/2019	009-016-5-390-00
59990	1 BOTTLE BLACK STAMP INK	3.25	08/20/2019	001-011-5-430-00
60003	3 rolls single tickets	11.25	08/20/2019	009-503-5-430-00
60012	REPORT JACKET ENVELOPES AND STAMP	346.90	08/20/2019	001-012-5-390-00
60080	WATER & SEWER ARCHITECTURAL PRINT	3.00	08/20/2019	201-201-5-430-00
60081	100 EMPLOYEE HANDBOOKS	203.00	08/20/2019	001-011-5-430-00
	Check Total:	666.90		
Vendor: 1151	Kalmer Landscape Supply			Check Sequence: 105
1470	dirt for cemetery	297.05	08/20/2019	009-715-5-450-00
	Check Total:	297.05		
Vendor: 1507	Melody Kapp			Check Sequence: 106
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 3798	Heather Kastelein			Check Sequence: 107
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 5534	JAMES KEASTER			Check Sequence: 108
2017-10-24 0015	AMBULANCE REFUND	87.37	08/20/2019	401-401-5-390-25
	Check Total:	87.37		
Vendor: 1724	Jamie Keys			Check Sequence: 109
2019 muny band	2019 summer muny band payroll	342.00	08/20/2019	009-016-5-390-57
	Check Total:	342.00		
Vendor: 951	KGP Logistics Inc			Check Sequence: 110
INV16964935	bulk pack White Cat5e jack modules (200	196.00	08/20/2019	111-111-5-470-00
INV16964935	bulk pack Blue Cat5e jack modules (200 t	196.00	08/20/2019	111-111-5-470-00
	Check Total:	392.00		
Vendor: 20485	Mallory Klostermann			Check Sequence: 111
2019 muny band	2019 summer muny band payroll	114.00	08/20/2019	009-016-5-390-57
	Check Total:	114.00		
Vendor: 3267	BRIANNA KORTE			Check Sequence: 112
2019 muny band	2019 summer muny band payroll	171.00	08/20/2019	009-016-5-390-57
	Check Total:	171.00		
Vendor: 435	Korte Landscaping			Check Sequence: 113
1	REPAIR YARD ON ARROWLEAF	381.31	08/20/2019	111-114-5-390-00
	Check Total:	381.31		
Vendor: 2932	GLENDA KURTZ			Check Sequence: 114
2019 muny band	2019 summer muny band payroll	171.00	08/20/2019	009-016-5-390-57
	Check Total:	171.00		
Vendor: 4997	Joey Kurtz			Check Sequence: 115
2019 muny band	2019 summer muny band payroll	57.00	08/20/2019	009-016-5-390-57
	Check Total:	57.00		
Vendor: 1258	Leon Uniform Company Inc			Check Sequence: 116
477531	UNIFORM SUPPLIES	146.00	08/20/2019	001-014-5-440-00
478864	UNIFORM SUPPLIES	212.95	08/20/2019	401-401-5-440-00
479365	UNIFORM SUPPLIES	105.98	08/20/2019	401-401-5-440-00
	Check Total:	464.93		
Vendor: 20448	William Link			Check Sequence: 117

2019 muny band	2019 summer muny band payroll	171.00	08/20/2019	009-016-5-390-57
	Check Total:	171.00		
Vendor: 4438	London Shoe Shop			Check Sequence: 118
AEGERTER	SAFETY BOOTS FOR BILL AEGERTER	157.50	08/20/2019	001-017-5-440-00
BRINKER	SAFETY BOOTS FOR BEN BRINKER	76.88	08/20/2019	201-203-5-440-00
BRINKER	SAFETY BOOTS FOR BEN BRINKER	76.87	08/20/2019	301-303-5-440-00
GILOMEN	SAFETY BOOTS FOR DUSTIN GILOMEN	93.75	08/20/2019	201-203-5-440-00
GILOMEN	SAFETY BOOTS FOR DUSTIN GILOMEN	93.75	08/20/2019	301-303-5-440-00
TEBBE	SAFETY BOOTS FOR TRAVIS TEBBE	81.00	08/20/2019	201-203-5-440-00
TEBBE	SAFETY BOOTS FOR TRAVIS TEBBE	81.00	08/20/2019	301-303-5-440-00
	Check Total:	660.75		
Vendor: 24	Craig Loyet			Check Sequence: 119
B-18-180234	15 Silver Fox Ct - Final Plumbing Inspection	37.50	08/20/2019	001-013-5-390-82
B-19-190075	50 Arbor Crest Dr - Plumbing Rough-in Inspection	37.50	08/20/2019	001-013-5-390-82
B-19-190190	2715 Gardenia St - Final Plumbing Inspection	10.25	08/20/2019	001-013-5-390-82
	Check Total:	85.25		
Vendor: 5527	DARBY MAGUIRE			Check Sequence: 120
2019 muny band	2019 summer muny band payroll	171.00	08/20/2019	009-016-5-390-57
	Check Total:	171.00		
Vendor: 5362	MOLLY MARSHALL			Check Sequence: 121
2019 muny band	2019 summer muny band payroll	456.00	08/20/2019	009-016-5-390-57
	Check Total:	456.00		
Vendor: 1328	Mazzio's Pizza			Check Sequence: 122
110584	IDC MEETING/LUNCHEON	59.59	08/20/2019	007-007-5-390-00
JULY	ODP PIZZAS FOR PARTIES	129.00	08/20/2019	009-503-5-430-00
JULY	KRC PIZZAS FOR PARTIES	399.00	08/20/2019	009-009-5-430-00
	Check Total:	587.59		
Vendor: 5222	MCFA DEATH BENEFIT			Check Sequence: 123
461	DEATH BENEFITS- IRVIN HELMER OF HIGHLAND PIERRON #1377	84.00	08/20/2019	001-014-5-390-00
461	DEATH BENEFITS- CHARLES COPE OF EAST ALTON # 1376	84.00	08/20/2019	001-014-5-390-00
	Check Total:	168.00		
Vendor: 1924	McKay Auto Parts Inc			Check Sequence: 124
796334	BATTERY	254.97	08/20/2019	401-401-5-460-00
796347	LAMP	17.98	08/20/2019	101-104-5-460-00
796390	Antifreeze	119.94	08/20/2019	301-304-5-450-00
796666	GAS CAP NON LOCKING	11.15	08/20/2019	401-401-5-460-00
797047	Chev. 2002 Brake Pads	35.00	08/20/2019	301-303-5-460-00
797047	Chev. 2002 Brake Pads	34.99	08/20/2019	201-203-5-460-00
797051	FUSE BLOCK. PLUG, OUTL BX	86.96	08/20/2019	001-014-5-460-00
797062	Oil Filters, 5w20 Frmla 500 Syn, 10w30 Form 500 Syn Blend	71.57	08/20/2019	301-304-5-450-00
797340	AIR FILTER	158.54	08/20/2019	101-102-5-450-00
797630	Hub Nut, 4 way Lug Wrench	14.53	08/20/2019	301-303-5-470-00
797630	Hub Nut, 4 way Lug Wrench	14.54	08/20/2019	201-203-5-470-00
797878	SLIDE TERMINAL, HEAT SHRINK TUBING, BULK TRAILER WIRE	34.16	08/20/2019	001-014-5-460-00
797897	Antifreeze	239.88	08/20/2019	301-304-5-450-00
797933	OIL FILTER AND OIL	23.07	08/20/2019	101-104-5-460-00
798102	BATTERY	79.99	08/20/2019	101-104-5-460-00
798158	BLADE	18.99	08/20/2019	101-104-5-430-00
798545	battery and deposit	233.98	08/20/2019	009-016-5-450-00
798560	credit for battery	-36.00	08/20/2019	009-016-5-450-00
	Check Total:	1,414.24		
Vendor: 2643	MEREDITH CORPORATION			Check Sequence: 125
HIGHLAND-43647	JULY VIDEO CONTENT FEE- KMOV AND MMOV	5,592.90	08/20/2019	111-111-5-390-52
	Check Total:	5,592.90		
Vendor: 5257	MID-STATE CONSULTANTS			Check Sequence: 126
1907-0039	PROJECT MANAGER/ INSPECTOR	236.00	08/20/2019	111-114-5-505-00
	Check Total:	236.00		
Vendor: 1386	Midwest Municipal Supply Inc			Check Sequence: 127
2006462	12 x 6"Wye GxG, 14- SDR-26 Wall Pipe	382.22	08/20/2019	301-303-5-430-00
2006925	6" x 4" Clay x PVC RC Femco	932.76	08/20/2019	301-303-5-450-00
2007046	12 x 6" SDR-26 WYE GxG	217.30	08/20/2019	301-303-5-450-00
2007409	8" Femco Clay PVC, 8x4SDR-26 Tee GxG	182.63	08/20/2019	301-303-5-450-00
	Check Total:	1,714.91		
Vendor: 2555	Mike A Maedge Trucking Inc			Check Sequence: 128
34959	CA6 Rock -Tickets # 1540620 & 1540562	372.60	08/20/2019	008-008-5-430-00

	Check Total:		372.60		
Vendor: 20050 64365	Missouri Machinery & Engineering Inc serv, labor & materials to inspect and clean jet nozzles in krc		2,560.32	08/20/2019	Check Sequence: 129 009-009-5-390-00
	Check Total:		2,560.32		
Vendor: 2392 27488	Missouri Network Alliance LLC DATA CONTENT FEE- MAY	12,569.40		08/20/2019	Check Sequence: 130 111-111-5-390-53
28224	VIDEO CONTENT FEE	430.00		08/20/2019	111-111-5-390-52
28224	DATA CONTENT FEE	13,700.00		08/20/2019	111-111-5-390-53
28224	VOICE CONTENT FEE	375.00		08/20/2019	111-111-5-390-51
28572	AUGUST VOICE CONTENT FEE	8,021.72		08/20/2019	111-111-5-390-51
28572	AUGUST VIDEO CONTENT FEE	6,750.00		08/20/2019	111-111-5-390-52
28572	AUGUST FUSC AND ICB	466.50		08/20/2019	111-111-5-390-50
	Check Total:		42,312.62		
Vendor: 3761 325794	MOMENTUM TELECOM, INC. JUNE & AUGUST VOICE CONTENT FEE	23,484.69		08/20/2019	Check Sequence: 131 111-111-5-390-51
	Check Total:		23,484.69		
Vendor: 20084 1228388-00	MTI Distributing, Inc. maint/repair splys park maint	56.78		08/20/2019	Check Sequence: 132 009-016-5-450-00
	Check Total:		56.78		
Vendor: 5528 2019 muny band	JUSTIN MUMFORD 2019 summer muny band payroll	399.00		08/20/2019	Check Sequence: 133 009-016-5-390-57
	Check Total:		399.00		
Vendor: 3150 2017-10-24 0015	NATIONAL GOVERNMENT SERVICES, INC. AMBULANCE OVERPAYMENT- JAMES KEASTER	342.53		08/20/2019	Check Sequence: 134 401-401-5-390-25
	Check Total:		342.53		
Vendor: 5529 2019 muny band	ANN MARIE NOGA 2019 summer muny band payroll	171.00		08/20/2019	Check Sequence: 135 009-016-5-390-57
	Check Total:		171.00		
Vendor: 1512 7608-185354	Northtown Auto & Tractor V BELT TOP COG	17.99		08/20/2019	Check Sequence: 136 001-014-5-460-00
	Check Total:		17.99		
Vendor: 5530 2019 muny band	CHARLES NOUD 2019 summer muny band payroll	419.00		08/20/2019	Check Sequence: 137 009-016-5-390-57
	Check Total:		419.00		
Vendor: 1518 1551736 1553113	Nu Way Concrete Forms Troy LLC misc. supplies for cemetery maint. dee nail stake	140.92 65.00		08/20/2019 08/20/2019	Check Sequence: 138 009-715-5-450-00 009-016-5-450-00
	Check Total:		205.92		
Vendor: 3903 0985-114206 0985-114336 0985-118784 0985-119062 0985-119078 0985-119144 0985-119144 0985-119235 0985-119269 0985-120201 0985-120906 0985-121772 0985-122303 0985-122418 0985-122710 0985-122763 0985-124797	O'Reilly Automotive Inc. BRK HARNESS BRK HARNESS- RETURN FOR REESE TOWPO CAPSULE FREON, CAN TAPPER, THERMOMETER OIL FILTER BRK CLEANER BRK CLEANER OIL AND OIL FILTER TIRE SHINE WIPER BLADE OIL FILTER OIL FILTER, FUEL FILTER, OIL REPAIR KIT COOLANT HOSE- FAIRBANKS GENERATOR V BELT, GATES XL WD40 oil change MR jeep	19.99 -1.00 55.39 34.95 -3.04 14.94 14.94 54.04 18.98 38.38 4.70 161.90 6.10 39.71 28.05 6.99 57.98		08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 139 009-016-5-460-00 009-016-5-460-00 001-012-5-460-00 101-104-5-460-00 101-104-5-460-00 201-203-5-460-00 301-303-5-460-00 101-104-5-460-00 001-012-5-460-00 101-101-5-460-00 101-104-5-460-00 101-102-5-460-00 101-102-5-450-00 001-014-5-460-00 001-014-5-460-00 009-009-5-360-10
	Check Total:		553.00		
Vendor: 20167	Joshua O'Toole paint east wall of KRC	7,125.00		08/20/2019	Check Sequence: 140 009-009-5-390-00
	Check Total:		7,125.00		
Vendor: 4670 32722	Oakley Services Inc RADIO TOWER GENERATOR REPAIR TRANSFER SWITCH	1,321.20		08/20/2019	Check Sequence: 141 001-012-5-360-00

	Check Total:		1,321.20		
Vendor: 2139	Oates Associates Inc				Check Sequence: 142
31618	FEMA MAP REVISION STUDY	927.50		08/20/2019	007-007-5-230-00
31619	CSXT RAILROAD CULVERT OVER LINDENTHAL CREEK	2,152.50		08/20/2019	007-007-5-505-00
31620	BROADWAY/IBERG RD/VHP ROUNDABOUT- CONSTRUCTION SERVICES	1,245.00		08/20/2019	001-017-5-505-00
31622	IL RTE 160 SHARED USE PATH CONNECTOR	1,560.00		08/20/2019	009-016-5-505-00
31623	BELLM ROAD ROW	97.50		08/20/2019	001-017-5-230-00
31624	BROADWAY RESURFACING	2,897.50		08/20/2019	050-050-5-505-00
31625	HEMLOCK TRAFFIC SIGNAL PLANS- RR PREEMPTION	1,522.50		08/20/2019	050-050-5-505-00
31626	BROADWAY STREETScape PHASE I	21,382.50		08/20/2019	050-050-5-505-00
31629	WALNUT AND MAIN STREET PARKING LOT	2,253.30		08/20/2019	001-017-5-505-00
	Check Total:		34,038.30		
Vendor: 3001	Robert Otis				Check Sequence: 143
2019 muny band	2019 summer muny band payroll	456.00		08/20/2019	009-016-5-390-57
	Check Total:		456.00		
Vendor: 1541	Overhead Door Company				Check Sequence: 144
SVC/612816	MTN/REPAIRS TO DOOR AT STATION	333.40		08/20/2019	001-014-5-380-00
	Check Total:		333.40		
Vendor: 8594	PAETEC				Check Sequence: 145
71555573	telephone exp	0.22		08/20/2019	009-009-5-310-00
	Check Total:		0.22		
Vendor: 3945	ALLISON PEERY				Check Sequence: 146
2019 muny band	2019 summer muny band payroll	356.25		08/20/2019	009-016-5-390-57
	Check Total:		356.25		
Vendor: 3987	Matthew Pellock				Check Sequence: 147
2019 muny band	2019 summer muny band payroll	1,263.00		08/20/2019	009-016-5-390-57
	Check Total:		1,263.00		
Vendor: 20453	Steve Pellock				Check Sequence: 148
2019 muny band	2019 summer muny band payroll	1,056.00		08/20/2019	009-016-5-390-57
	Check Total:		1,056.00		
Vendor: 3967	AMANDA PENBERTHY				Check Sequence: 149
2019 muny band	2019 summer muny band payroll	513.00		08/20/2019	009-016-5-390-57
	Check Total:		513.00		
Vendor: 1574	Pepsi				Check Sequence: 150
98798704	soda/water/gatorade krc	814.16		08/20/2019	009-009-5-430-50
98798708	drink products for odp	648.80		08/20/2019	009-503-5-430-50
	Check Total:		1,462.96		
Vendor: 2677	PERSONAL PREFERENCE SERVICES				Check Sequence: 151
7213	MONTHLY CLEANING	69.00		08/20/2019	111-111-5-380-00
7215	WEEKLY CLEANING	130.00		08/20/2019	001-013-5-380-00
7215	WEEKLY CLEANING	130.00		08/20/2019	101-101-5-380-00
	Check Total:		329.00		
Vendor: 2818	Kris Pineda				Check Sequence: 152
2019 muny band	2019 summer muny band payroll	57.00		08/20/2019	009-016-5-390-57
	Check Total:		57.00		
Vendor: 5260	POPLAR JUNCTION LANES				Check Sequence: 153
INV08082019	CITY EMPLOYEE PICNIC- BOWLING (56) \$2.50 AND SODA (113) \$1.50	309.50		08/20/2019	001-011-5-390-00
	Check Total:		309.50		
Vendor: 1881	Power & Telephone				Check Sequence: 154
6753480-00	3M 88T black vinyl tape 1.5" x 44'	85.00		08/20/2019	111-111-5-430-00
6753480-00	low voltage box - single gang white	171.72		08/20/2019	111-111-5-470-00
6753482-00	Quiktron 10' purple Cat5e Non-booted pat	169.16		08/20/2019	111-111-5-470-00
6753482-01	Quiktron 10' Blue Cat5e Non-booted patch	169.16		08/20/2019	111-114-5-470-00
	Check Total:		595.04		
Vendor: 1126	Amber Price				Check Sequence: 155
2019 muny band	2019 summer muny band payroll	57.00		08/20/2019	009-016-5-390-57
	Check Total:		57.00		
Vendor: 3354	PRILL'S GARAGE				Check Sequence: 156
23306	STATE INSPECTIONS 1542,1541, 1543	99.00		08/20/2019	401-401-5-360-10

	Check Total:		99.00		
Vendor: 4211	R P Lumber Co Inc				Check Sequence: 157
1907-105275	misc maint/repair sply	51.24		08/20/2019	009-016-5-450-00
1907-107072	maint/repair splys for concrete form boards	86.80		08/20/2019	009-016-5-450-00
1907-108776	20A LOCKING CORD PLUG	19.98		08/20/2019	001-014-5-460-00
1908-117314	misc maint/repair splys park maint	29.76		08/20/2019	009-016-5-450-00
1908-153653	misc maint/repair splys park maint	65.12		08/20/2019	009-016-5-450-00
	Check Total:		252.90		
Vendor: 3275	JIM REAGAN				Check Sequence: 158
2019 muny band	2019 summer muny band payroll	525.00		08/20/2019	009-016-5-390-57
	Check Total:		525.00		
Vendor: 969	Red E Mix LLC				Check Sequence: 159
824829	concrete for pads for vosholler and beckman benches	321.75		08/20/2019	009-016-5-430-00
824947	kiraly bench concrete pad	259.00		08/20/2019	009-016-5-430-00
824948	washed sand for cemetary	110.00		08/20/2019	009-715-5-430-00
825531	88PCCEP19 PP -1, SUPER-P, (7bag) Ticket #60120928	918.75		08/20/2019	008-008-5-430-00
825621	88PCCEP19 PP -1, SUPER-P, (7bag) Ticket #60120968	857.50		08/20/2019	008-008-5-430-00
	Check Total:		2,467.00		
Vendor: 1238	Reding Tire & Battery Inc				Check Sequence: 160
2115521	ford ranger service - ryan h	223.49		08/20/2019	009-016-5-360-10
2115561	Car 2 TIRE REPAIR	20.00		08/20/2019	001-012-5-360-10
	Check Total:		243.49		
Vendor: 3604	KEITH W. REECE				Check Sequence: 161
497	1311 Oak St and Main St Property	305.00		08/20/2019	001-013-5-390-00
	Check Total:		305.00		
Vendor: 3988	Richard Robbs				Check Sequence: 162
2019 muny band	2019 summer muny band payroll	114.00		08/20/2019	009-016-5-390-57
	Check Total:		114.00		
Vendor: 2224	ROBERT (BOB) SANDERS WASTE SYSTEMS, INC.				Check Sequence: 163
217873	TEMP DUMPSTER SERVICES- 6/10-7/12/19	9,184.60		08/20/2019	713-713-5-390-00
	Check Total:		9,184.60		
Vendor: 1011	Ron Hunsche Excavating Inc				Check Sequence: 164
18298	ENGINEERING & LAYOUT FEES-SANITARY SWR/WTR MAIN EXT/JANET BETHWA	6,500.00		08/20/2019	201-203-5-505-00
	Check Total:		6,500.00		
Vendor: 3514	SANDBERG PHOENIX & VON GONTARD P.C.				Check Sequence: 165
JULY2019	JULY LEGAL FEES	986.39		08/20/2019	001-012-5-220-00
JULY2019	JULY LEGAL FEES	64.05		08/20/2019	201-201-5-220-00
JULY2019	JULY LEGAL FEES	128.10		08/20/2019	301-301-5-220-00
JULY2019	JULY LEGAL FEES	5,828.66		08/20/2019	001-013-5-220-00
JULY2019	JULY LEGAL FEES	217.77		08/20/2019	009-016-5-220-00
JULY2019	JULY LEGAL FEES	960.77		08/20/2019	101-101-5-220-00
JULY2019	JULY LEGAL FEES	1,793.43		08/20/2019	001-017-5-220-00
JULY2019	JULY LEGAL FEES	4,675.87		08/20/2019	001-011-5-220-00
JULY2019	JULY LEGAL FEES	192.15		08/20/2019	009-009-5-220-00
JULY2019	JULY LEGAL FEES	1,447.56		08/20/2019	111-111-5-220-00
	Check Total:		16,294.75		
Vendor: 20456	Anastasia Saponova				Check Sequence: 166
2019 muny band	2019 summer muny band payroll	563.00		08/20/2019	009-016-5-390-57
	Check Total:		563.00		
Vendor: 3793	Garrett Schmidt				Check Sequence: 167
2019 muny band	2019 summer muny band payroll	57.00		08/20/2019	009-016-5-390-57
	Check Total:		57.00		
Vendor: 5531	NICOLE SCHMIDT				Check Sequence: 168
2019 muny band	2019 summer muny band payroll	57.00		08/20/2019	009-016-5-390-57
	Check Total:		57.00		
Vendor: 1884	Schulte Supply Inc				Check Sequence: 169
S1150980.001	1" Coppersetter ball Valve Inlet, Dual Check Valve Outlet 18" H	908.84		08/20/2019	201-203-5-430-00
S1151302.001	Sewer Spade, Rain Jacket, Blue Mkg. Flags "WATER"	294.61		08/20/2019	201-203-5-430-00
S1151302.001	Sewer Spade, Rain Jacket, Blue Mkg. Flags "WATER"	294.61		08/20/2019	301-303-5-430-00
S1151303.001	4"x5" Plain White Marking Flags	95.00		08/20/2019	301-303-5-430-00
S1151303.001	4"x5" Plain White Marking Flags	95.00		08/20/2019	201-203-5-430-00

	Check Total:		1,688.06		
Vendor: 3410 1431	Jeff & Jill Schwend UNIFORM CLEANING- PEREZ			7.75	08/20/2019
					Check Sequence: 170 401-401-5-260-00
	Check Total:		7.75		
Vendor: 1882 03561390	Secretary Of State, License Renewal REG RENEWAL FOR H218211 POLICE DEPT.			101.00	08/20/2019
					Check Sequence: 171 001-012-5-390-00
	Check Total:		101.00		
Vendor: 5535 0083	SEW HAUTE EMBROIDERY POLO EMBROIDERY HIGHLAND EMS/FIRE LOGO			60.00	08/20/2019
					Check Sequence: 172 401-401-5-440-00
	Check Total:		60.00		
Vendor: 5278 2019 muny band	NOAH SIEGFRIED 2019 summer muny band payroll			513.00	08/20/2019
					Check Sequence: 173 009-016-5-390-57
	Check Total:		513.00		
Vendor: 3935 32813	Sievers Equipment Co. Hydraulic leak, bleed brakes. Case Tractor			428.37	08/20/2019
					Check Sequence: 174 001-017-5-360-00
	Check Total:		428.37		
Vendor: 3930 2019 muny band	MAILE SIGNOROTTI 2019 summer muny band payroll			285.00	08/20/2019
					Check Sequence: 175 009-016-5-390-57
	Check Total:		285.00		
Vendor: 4052 2019 muny band	Kyle Simpson 2019 summer muny band payroll			57.00	08/20/2019
					Check Sequence: 176 009-016-5-390-57
	Check Total:		57.00		
Vendor: 1587 B-18-180234 B-19-190075 B-19-190190	Timothy Singler 15 Silver Fox Ct - Final Plumbing Inspection 50 Arbor Crest Dr - Plumbing Rough-in Inspection 2715 Gardenia St - Final Plumbing Inspection			37.50 37.50 10.25	08/20/2019 08/20/2019 08/20/2019
					Check Sequence: 177 001-013-5-390-82 001-013-5-390-82 001-013-5-390-82
	Check Total:		85.25		
Vendor: 1953 33442	SIUA Inc Rogier Insurance IDOT HWY PERMIT BOND-HEMLOCK INTERSECTION 5YR BOND			500.00	08/20/2019
					Check Sequence: 178 050-050-5-540-10
	Check Total:		500.00		
Vendor: 5277 2019 muny band	ROBIN STANISH 2019 summer muny band payroll			513.00	08/20/2019
					Check Sequence: 179 009-016-5-390-57
	Check Total:		513.00		
Vendor: 5151 2241858 2245200 L306673042 L306673042 L306746037	SUMNER ONE, INC. COLOR OVERAGES contract base rate for wcc copier LEASE/RENTAL CHARGE LEASE/RENTAL CHARGE LEASE/RENTAL CHARGE			57.20 44.00 122.34 122.33 172.24	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019
					Check Sequence: 180 111-111-5-340-00 009-016-5-390-00 101-101-5-340-00 001-013-5-340-00 111-111-5-340-00
	Check Total:		518.11		
Vendor: 2158 2019 muny band	Madisyn Swift 2019 summer muny band payroll			456.00	08/20/2019
					Check Sequence: 181 009-016-5-390-57
	Check Total:		456.00		
Vendor: 2011 151216-00 152813	Switzer Food and Supplies PBJ supplies ODP concession splys			266.07 218.51	08/20/2019 08/20/2019
					Check Sequence: 182 009-016-5-390-58 009-503-5-430-50
	Check Total:		484.58		
Vendor: 3994 2019 muny band	Brent D Tebbe 2019 summer muny band payroll			342.00	08/20/2019
					Check Sequence: 183 009-016-5-390-57
	Check Total:		342.00		
Vendor: 2789 233087 239715	TEGNA JAN 2019 VIDEO CONTENT FEE MARCH 2019 VIDEO CONTENT FEE			3,404.52 3,431.54	08/20/2019 08/20/2019
					Check Sequence: 184 111-111-5-390-52 111-111-5-390-52
	Check Total:		6,836.06		
Vendor: 2028 231587 231925	Teklab Inc Coliform, Total Membrane Filter Total Suspended Solids, Aqueous			152.90 42.00	08/20/2019 08/20/2019
					Check Sequence: 185 201-203-5-390-23 201-202-5-390-23

	Check Total:		194.90		
Vendor: 1007 39193	The Cornerstone Insurance Group PREPARATION OF FORM 720 FOR PCORI FEE		50.00	08/20/2019	Check Sequence: 186 001-011-5-390-00
	Check Total:		50.00		
Vendor: 111111 43131 43132 43132 43132 43149 43149	The Kwik Konnection Printing Inc CELEBRATING AMERICA-JULY 4TH CITY AD HPD ACCEPTING APPLICATIONS- LATERAL POLICE OFFICER HPD ACCEPTING APPLICATIONS- LATERAL POLICE OFFICER NOTICE OF MUNICIPAL LETTING 2020 MFT fireworks adv. fireworks adv.		140.00 81.00 81.00 85.50 490.00 490.00	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 187 001-011-5-390-00 001-012-5-390-00 001-012-5-390-00 001-017-5-390-00 001-011-5-390-31 001-011-5-390-00
	Check Total:		1,367.50		
Vendor: 8216 858066 887375 887375	The Lifeguard Store rescue tube/rescue tube jacket leaf skimmer for ODP chemical splys ODP		110.90 33.00 29.25	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 188 009-503-5-440-00 009-503-5-470-00 009-503-5-490-00
	Check Total:		173.15		
Vendor: 374 4323-0 4631-6 4631-6	The Sherwin Williams Co 80 Gal. of Street Marking Paint Glass Beads 500 lb 80 Gal. of Street Marking Paint		1,548.80 373.23 58.51	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 189 008-008-5-430-00 008-008-5-430-00 001-017-5-430-00
	Check Total:		1,980.54		
Vendor: 1733 2019 muny band	Melissa Thomason 2019 summer muny band payroll		399.00	08/20/2019	Check Sequence: 190 009-016-5-390-57
	Check Total:		399.00		
Vendor: 2317 175025-201907-1	TRANSUNION RISK AND ALTERNATIVE TLO BACKGROUND CHECKS INVESTIGATIONS		71.90	08/20/2019	Check Sequence: 191 001-012-5-390-00
	Check Total:		71.90		
Vendor: 2089 5129855 6187296 6188772/1 6189672/2	Tri Ford Inc CAP-FILLER CAR 1 REPAIR TENSIONER BELT MTN/REPAIRS FOR UNIT 1527 MTN/REPAIRS TO CITY MANAGER VEHICLE		5.88 265.31 547.94 49.95	08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 192 401-401-5-460-00 001-012-5-360-10 001-014-5-360-10 001-011-5-360-10
	Check Total:		869.08		
Vendor: 5275 2019 muny band	CHRIS TRIMBLE 2019 summer muny band payroll		399.00	08/20/2019	Check Sequence: 193 009-016-5-390-57
	Check Total:		399.00		
Vendor: 5420 336335	TRIPACK, INC. CENTRAL PURCHASING SUPPLIES		1,190.09	08/20/2019	Check Sequence: 194 001-000-0-157-00
	Check Total:		1,190.09		
Vendor: 3627 INV08152019	U S Postal Service POSTAGE READINGS FROM 6/13/19 TO 8/15/2019		14.90 13.50 0.50 166.75 0.50 464.95 1,960.55 1.50 37.50 87.50 184.65 78.40 659.00 0.50	08/20/2019 08/20/2019	Check Sequence: 195 101-101-5-320-00 001-017-5-320-00 201-201-5-320-00 001-013-5-320-00 001-017-5-320-00 401-401-5-320-00 111-111-5-320-00 201-202-5-320-00 009-016-5-320-00 007-007-5-320-00 009-009-5-320-00 001-012-5-320-00 001-011-5-320-00 301-304-5-320-00
	Check Total:		3,670.70		
Vendor: 4739 391154770	U.S. BANK EQUIPMENT FINANCE COPIER LEASE/USAGE		150.73	08/20/2019	Check Sequence: 196 401-401-5-390-00
	Check Total:		150.73		
Vendor: 2823 2019 muny band	Christopher Uhe 2019 summer muny band payroll		513.00	08/20/2019	Check Sequence: 197 009-016-5-390-57
	Check Total:		513.00		

Vendor: 1516 2019 muny band	Megan Washburn 2019 summer muny band payroll	513.00	08/20/2019	Check Sequence: 209 009-016-5-390-57
	Check Total:	513.00		
Vendor: 1734 2019 muny band	Rachel Washburn 2019 summer muny band payroll	513.00	08/20/2019	Check Sequence: 210 009-016-5-390-57
	Check Total:	513.00		
Vendor: 2157 2019 muny band	Rodney Washburn 2019 summer muny band payroll	3,500.00	08/20/2019	Check Sequence: 211 009-016-5-390-57
	Check Total:	3,500.00		
Vendor: 4979 918504 920489	Watts Copy Systems Inc. COPIER LEASE/USAGE FOR BOTH COPIERS CITY HALL BACK OFFICE COPIER LEASE/USAGE- FIREHOUSE #2	438.49 177.39	08/20/2019 08/20/2019	Check Sequence: 212 001-011-5-340-00 001-014-5-390-00
	Check Total:	615.88		
Vendor: 20812 1077	Weis-Schrage Construction Co., Inc. labor/materials for repairs to stan wessel home - tree fell	372.00	08/20/2019	Check Sequence: 213 009-016-5-390-00
	Check Total:	372.00		
Vendor: 3152 69868848	WELLS FARGO VENDOR FIN SERV Copier MP C3503	231.98	08/20/2019	Check Sequence: 214 201-201-5-340-00
	Check Total:	231.98		
Vendor: 5273 2019 muny band	BAILEY WETZEL 2019 summer muny band payroll	456.00	08/20/2019	Check Sequence: 215 009-016-5-390-57
	Check Total:	456.00		
Vendor: 1963 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234 60537234	WEX BANK JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL JULY FUEL	291.85 4,018.04 2,663.31 183.32 521.07 289.91 264.20 192.07 91.92 351.71 291.85 981.95 281.43	08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019 08/20/2019	Check Sequence: 216 301-303-5-420-00 001-012-5-420-00 009-016-5-420-00 001-011-5-420-00 001-017-5-420-00 301-304-5-420-00 101-104-5-420-00 001-013-5-420-00 201-202-5-420-00 401-401-5-420-00 201-203-5-420-00 101-102-5-420-00 101-101-5-420-00
	Check Total:	10,422.63		
Vendor: 8456 2416190740157	WGEL adv for krc on radio	70.00	08/20/2019	Check Sequence: 217 009-009-5-390-33
	Check Total:	70.00		
Vendor: 20457 2019 muny band	Justin Wheeler 2019 summer muny band payroll	342.00	08/20/2019	Check Sequence: 218 009-016-5-390-57
	Check Total:	342.00		
Vendor: 5272 2019 muny band	ALEXIS WHITE 2019 summer muny band payroll	228.00	08/20/2019	Check Sequence: 219 009-016-5-390-57
	Check Total:	228.00		
Vendor: 5271 2019 muny band	BROCK WILKINSON 2019 summer muny band payroll	399.00	08/20/2019	Check Sequence: 220 009-016-5-390-57
	Check Total:	399.00		
Vendor: 8126 560573	William F. Brockman Co KRC concession splys	235.50	08/20/2019	Check Sequence: 221 009-009-5-430-50
	Check Total:	235.50		
Vendor: 504 1454 1541 2814	Woodcrest Small Engine trimmer supplies/string and trimmer line TILLER LABOR, SPARK PLUG, OIL, CHAIN/BLADE	70.98 199.99 101.10	08/20/2019 08/20/2019 08/20/2019	Check Sequence: 222 009-016-5-450-00 101-102-5-470-00 101-102-5-360-00
	Check Total:	372.07		
Vendor: 4008 INV00045060	Zoll Data Systems Inc QTRLY MTN ON EMS SYSTEMS	1,950.00	08/20/2019	Check Sequence: 223 401-401-5-390-00

INV00045061	SQL 4 CORE ANN MAINT. 9-1-19 TO 8-31-20	4,000.00	08/20/2019	401-401-5-390-00
	Check Total:	5,950.00		
	Total for Check Run:	959,865.40		
	Total of Number of Checks:	223		

Invoice No	Description	Amount	Payment Date	Acct Number
Vendor: 4719	KRC Administration PR Batch 00001.08.2019 KRC Membership	144.34	08/07/2019	Check Sequence: 1 802-000-1-216-25
	Check Total:	144.34		
Vendor: 4513	Russell C Simon PR Batch 00001.08.2019 Withholding order Russell Simo	134.00	08/07/2019	Check Sequence: 2 802-000-1-216-20
	Check Total:	134.00		
Vendor: 3077	State Disbursement Unit PR Batch 00001.08.2019 Child Support State Disb Unit PR Batch 00001.08.2019 Child Support State Disb Unit	276.92 325.53	08/07/2019 08/07/2019	Check Sequence: 3 802-000-1-216-20 802-000-1-216-20
	Check Total:	602.45		
Vendor: 2954	Vantagepoint Trans Agts-301638 PR Batch 00001.08.2019 ICMA	1,536.00	08/07/2019	Check Sequence: 4 802-000-1-215-03
	Check Total:	1,536.00		
Vendor: 2643 2018-10 KMOV 2018-10 MMOV 2018-11 KMOV 2018-11 MMOV 2018-12 KMOV 2018-12 MMOV 2018-7 KMOV 2018-7 MMOV 2018-8 KMOV 2018-8 MMOV 2018-9 KMOV 2018-9 MMOV	MEREDITH CORPORATION OCTOBER 2018 VIDEO CONTENT FEE- KMOV OCTOBER 2018 VIDEO CONTENT FEE- MMOV NOVEMBER 2018 VIDEO CONTENT FEE- KMOV NOVEMBER 2018 VIDEO CONTENT FEE- MMOV DECEMBER 2018 VIDEO CONTENT FEE- KMOV DECEMBER 2018 VIDEO CONTENT FEE- MMOV JULY 2018 VIDEO CONTENT FEE- KMOV JULY 2018 VIDEO CONTENT FEE- MMOV AUGUST 2018 VIDEO CONTENT FEE- KMOV AUGUST 2018 VIDEO CONTENT FEE- MMOV SEPTEMBER 2018 VIDEO CONTENT FEE- KMOV SEPTEMBER 2018 VIDEO CONTENT FEE- MMOV	3,116.90 1,668.20 3,124.00 1,672.00 3,155.95 1,689.10 3,070.75 1,643.50 3,056.55 1,635.90 3,095.60 1,656.80	08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019 08/07/2019	Check Sequence: 1 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52 111-111-5-390-52
	Check Total:	28,585.25		
Vendor: 2089 113016084	Tri Ford Inc 2019 FORD F550 VIN# 1FDOX5HT6KED68191	68,043.00	08/13/2019	Check Sequence: 1 001-017-5-530-00
	Check Total:	68,043.00		
	Total for Check Run:	99,045.04		
	GRAND TOTAL:	\$ 1,058,910.44		