TOWN OF LOWELL, LAKE COUNTY, INDIANA
TOWN COUNCIL
RESOLUTION NO. 2023-_06

A RESOLUTION ADOPTING THE ADA TRANSITION PLAN FOR THE TOWN OF LOWELL

WHEREAS, the Town Council of the Town of Lowell, Lake County, Indiana (hereinafter the "Town Council"), is the duly elected legislative body of the Town of Lowell, Lake County, Indiana (hereinafter the "Town"), a unit of local government; and

WHEREAS, in 1990 congress enacted the Americans with Disabilities Act (ADA) which, among other things, requires municipalities throughout the United States adopt standards to improve access and remove barriers for disabled persons in their use of public facilities and governmental services; and

WHEREAS, the Town believes it is in the best interest of the citizens of Lowell as well as the health and general welfare of the Town to adopt, maintain, and revise from time to time, procedures in the Town of Lowell, Indiana known as ADA Transition Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF LOWELL, LAKE COUNTY, INDIANA:

That the Town Council now approves and adopts the *Town of Lowell, ADA Transition Plan,* which is attached to this Resolution as Exhibit "A".

DULY PASSED, RESOLVED, AND ADOPTED by the Lowell Town Council of the Town of Lowell, Lake County, Indiana, this 24th day of July, 2023.

TOWN OF LOWELL, LAKE COUNTY, INDIANA
BY ITS TOWN COUNCIL:

Todd Angerman, President

John Yelkich, Vice-President

Michael Gruszka, Member

Shane Tucker, Member

John Alessia, Member

ATTEST:
Judith Walters, Clerk-Treasurer

ADA Self-Evaluation and Transition Plan

July 2023

TOWN OF LOWELL
EST. 1852

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1.0 INTRODUCTION

1.1 BACKGROUND

The Americans with Disabilities Act (ADA) was enacted in July 1990, as a comprehensive civil rights law to ensure equality by prohibiting discrimination against individuals with disabilities. The ADA was signed into law to provide civil rights protection and guarantees equal opportunity in areas of employment, transportation, state and local government services, public accommodations and telecommunications services. The ADA is an expansion of Section 504 of the Rehabilitation Act of 1973, which protects qualified individuals from discrimination based on their disability and requires federal agencies and any other organizations that receive federal funding to make their programs and services accessible to all individuals with disabilities.

According to Section 504 of the Rehabilitation Act of 1973, individuals with disabilities are defined as persons with a physical or mental impairment that substantially limits any major life activities. These life activities include, but are not limited to, seeing, hearing, speaking, breathing, walking, learning, caring for oneself, working and performing any manual tasks. Examples of disabilities as defined by a physical or mental impairment include blindness or visual impairment, deafness or hearing impairment, the inability to speak, read or write, paralysis, heart disease, cancer, diabetes, and any mental illnesses, as well as many more. According to the U.S. Census Bureau, nearly 58-million people in the United States have a disability, which is approximately one in every five individuals.

1.2 ADA OVERVIEW

When signed into law in 1990, the ADA was made up of five Titles, with each providing regulations, enforcement and exemptions. Information regarding the five Titles has been made available within *"A Guide to Disability Rights Laws"* issued by the U.S. Department of Justice (http://www.ada.gov/cguide.htm) and is included herein. The five Titles are as follows:

TITLE I: Employment

Title I requires employers with 15 or more employees to provide qualified individuals with disabilities an equal opportunity to benefit from the full range of employment-related opportunities available to others. This would include prohibiting discrimination in recruitment, hiring, promotions, training, pay, social activities, and other privileges of employment. It also restricts questions that can be asked about an applicant's disability before a job offer is made and requires that employers make reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual with disabilities, unless it results in undue hardship. Religious entities with 15 or more employees are also covered under Title I.

TITLE II: State and Local Government Activities, Public Transportation

Title II requires that State and local governments, along with their departments and agencies, give people with disabilities an equal opportunity to benefit from all of their programs, services, and activities, regardless of the department's size or receipt of federal funding. These would include, but are not limited to, public education, employment, transportation, recreation, health care, social services, courts, voting, and any town meetings.

State and local governments are required to follow specific architectural and accessibility standards in the new construction or alteration of their buildings. They must also relocate programs or provide access to otherwise inaccessible existing buildings. This would include communicating effectively with people who have hearing, vision, or speech disabilities. Public

entities are required to make reasonable modifications to policies, practices, and procedures where necessary to avoid discrimination, unless they can demonstrate that doing so would fundamentally alter the nature of the service, program, or activity being provided. They are not required to take actions that would result in undue financial or administrative burdens.

The transportation provisions of Title II cover public transportation services, such as city buses and public transit. Public transportation authorities may not discriminate against people with disabilities in the provision of their services. They must comply with requirements for accessibility in newly purchased vehicles, make good faith efforts to purchase or lease accessible used buses, remanufacture buses in an accessible manner, and unless it would result in an undue burden, provide paratransit where a fixed-route bus or rail system is currently in operation. Paratransit is an alternate mode of passenger transportation offered to individuals with a physical or mental disability that does not necessarily follow a fixed schedule, route or destination, and is generally defined as demand responsive transportation (DRT).

TITLE III: Public Accommodations

Title III covers businesses and nonprofit service providers that are public accommodations, privately operated entities offering certain types of courses and examinations, privately operated transportation, and commercial facilities. Public accommodations are private entities who own, lease, lease to, or operate facilities such as restaurants, retail stores, hotels, movie theaters, private schools, convention centers, doctors' offices, homeless shelters, transportation depots, zoos, funeral homes, day care centers, and recreation facilities including sports stadiums and fitness clubs.

Public accommodations must comply with basic nondiscrimination requirements that prohibit exclusion, segregation, and unequal treatment. They must also comply with specific requirements related to architectural standards for new and altered buildings; reasonable modifications to policies, practices, and procedures; effective communication with people with hearing, vision, or speech disabilities; and other access requirements. Additionally, public accommodations must remove barriers in existing buildings where it is easy to do so without much difficulty or expense, given the public accommodation's resources.

Courses and examinations related to professional, educational, or trade-related applications, licensing, certifications, or credentialing must be provided in a place and manner accessible to people with disabilities, or alternative accessible arrangements must be offered.

Commercial facilities, such as factories and warehouses, must comply with the ADA's architectural standards for new construction and alterations.

TITLE IV: Telecommunications Relay Services

Title IV addresses telephone and television access for people with hearing and speech disabilities. It requires common carriers (telephone companies) to establish interstate and intrastate telecommunications relay services (TRS) 24 hours a day, 7 days a week. TRS enables callers with hearing and speech disabilities who use TTYs (also known as TDDs), and callers who use voice telephones to communicate with each other through a third-party communications assistant. The Federal Communications Commission (FCC) has set minimum standards for TRS services. Title IV also requires closed captioning of federally funded public service announcements.

TITLE V: Miscellaneous Provisions

Title V contains several miscellaneous regulations, including construction standards and practices, provisions for attorney's fees and technical assistance provisions.

1.3 TITLE II COMPLIANCE

Title II of the ADA specifically addresses the requirement of making public services and public transportation accessible to those with disabilities. This is not limited to physical access to government facilities and programs, but also includes policy changes that must be made in order to provide equality to persons with disabilities and ensure they can benefit from services and programs provided by such facilities.

The Town of Lowell, including all its buildings, departments, agencies, services and accommodations, is required to be in compliance with Title II of the ADA according to the Department of Justice (DOJ). The DOJ administers the ADA, and subsequently published revised regulations for Titles II and III of the ADA in the *2010 ADA Standards for Accessible Design* in September of 2010. These regulations and guidelines require the Town of Lowell to perform certain administrative responsibilities that ensure there is no discrimination against individuals with disabilities. This includes the development of a Transition Plan.

2.0 TRANSITION PLAN DEVELOPMENT

2.1 RESPONSIBILITIES AND OBJECTIVES

In order to achieve the standards, set forth by the DOJ, the Town of Lowell is developing this Transition Plan to identify physical barriers throughout the town, begin improving such barriers and implement a monitoring and evaluation schedule to continue to improve the accessibility to all individuals. All new construction within the Town of Lowell shall adhere to the standards contained within this Transition Plan. Existing pedestrian facilities within public rights-of-way must also be evaluated for compliance with Title II. This Transition Plan outlines a plan and schedule for improvements to areas that are not compliant.

Certain administrative responsibilities must be performed and included in the Transition Plan that meet the regulations and guidelines of the ADA. These would include designating an ADA Coordinator, providing notice to the public about the requirements of the ADA, providing public involvement opportunities and establishing a grievance procedure. A Self-Evaluation of the town facilities and services must then be implemented, which will further develop a schedule and budget for the Transition Plan. The Transition Plan is meant to be a continuously developing document and will require sustained review and monitoring of the progress and execution of the Plan.

2.2 ADA COORDINATOR

An ADA Coordinator is trained in the requirements of the ADA and subsequent laws pertaining to discrimination of individuals with disabilities. The coordinator is also familiar with the facilities, programs and services provided by the town, and is able to deal effectively with advocacy groups and the general public.

The person appointed as ADA Coordinator for the Town of Lowell is:

Craig Hendrix, PE
ADA Coordinator / Town Manager
501 East Main Street
Lowell, Indiana 46356
T: (219) 696.7794
E: chendrix@lowell.net

The ADA Coordinator provides the benefit of making it easier for members of the public to identify a single person to help them with questions and concerns regarding discrimination against individuals with disabilities and provides a single source of information, so questions can be answered quickly and consistently.

2.3 NOTICE TO PUBLIC

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 ("ADA"), the Town of Lowell will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities.

Employment: The Town of Lowell does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under Title I of the ADA.

Effective Communication: The Town of Lowell will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in the Town of Lowell's programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modifications to Policies and Procedures: The Town of Lowell will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcomed in Town of Lowell offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of the Town of Lowell should contact the office of the ADA Coordinator as soon as possible, but no later than 72 hours before the scheduled event.

The ADA does not require the Town of Lowell to take any action that would fundamentally alter the nature of its programs or services or impose an undue financial or administrative burden.

Complaints that a program, service, or activity of the Town of Lowell is not accessible to persons with disabilities should be directed, in writing, to the ADA Coordinator.

The Town of Lowell will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

2.4 PUBLIC INVOLVMENT

Some of the most valuable information included in a Transition Plan is that which is gathered from the community. Participation from the disabled community and other interested parties is integral in the development of the Plan. This can include input from the disabled community, advocacy groups, activists, and any other similar organizations. The Town of Lowell will continue to distribute information regarding accessibility through their website and public meetings and urges the community to continue providing information regarding perceived barriers. Comments are always encouraged and should be sent to the ADA Coordinator.

2.5 GRIEVANCE PROCEDURE

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the Town of Lowell. The Town's Personnel Policy governs employment-related complaints of disability discrimination.

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint will be made available for persons with disabilities upon request.

The complaint should be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

Craig Hendrix, PE
ADA Coordinator / Town Manager
155 Indiana Avenue, Suite 205
Lowell, Indiana 46356

Within 15 calendar days after receipt of the complaint, the ADA Coordinator or his/her designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, the ADA Coordinator or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the Town of Lowell and offer options for substantive resolution of the complaint.

If the response by the ADA Coordinator or his/her designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the Lowell Town Council, President [hereinafter “Council President”] or his/her designee.

Within 15 calendar days after receipt of the appeal, the Council President or his/her designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the Council President or his/her designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with a final resolution of the complaint.

If the response by the Council President or his/her designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may file a complaint with the State Department of Human Rights, the Equal Employment Opportunity Commission, United States Department of

Justice, or other appropriate state or federal agency.

All written complaints received by the ADA Coordinator or his/her designee, appeals to the Council President or his/her designee, and responses from these two offices will be retained by the Town of Lowell Clerk-Treasurer for at least three years.

2.5.1 ADA GRIEVANCE FORM – ATTACHED AS APPENDIX A

3.0 FACILITY SELF-EVALUATION

In accordance with Title II of the ADA, each Town-owned building and program is required to perform an assessment of its current policies, activities and services. This is referred to as the self-evaluation process and includes identifying and documenting barriers within each facility or program that limits accessibility to individuals with disabilities. Barriers include both physical barriers with respect to accessing the public areas of the facility, as well as barriers relating to program accessibility.

Physical barriers were documented from site assessments performed by Town of Lowell staff with the use of an ADA Checklist for Readily Achievable Barrier Removal for each facility or program. These assessments included taking measurements and photo documentation of existing conditions to compare their level of compliance against the *2010 ADA Standards for Accessible Design*.

In addition to identifying and documenting barriers that limit the accessibility of the facilities and services, recommendations have been provided to remove such barriers. Included with these recommendations are the governing ADA code sections referencing the applicable accessible design standards that should be adhered to in the removal of such barriers.

The self-evaluation is also comprised of a priority for the removal of each barrier. The removal of barriers and making all public spaces accessible to individuals with disabilities has been categorized into four separate priorities, which span a timeline of 12-years. Priority 1 is considered the highest priority and these items should be resolved immediately in the first year. Priority 2 includes issues also with a high level of concern and should be corrected in years two through four. Priority 3 includes areas that are not as severe and should likely be rectified during years five through eight. All other remedies required are considered the least severe in Priority 4 and should be resolved in years nine through twelve. These priority levels may be adjusted or altered based on the actual needs of the town, implementation of other repairs that may factor into the issues noted, and availability of funding required in putting these renovations in place.

Finally, cost data has been included as budgetary information for each identified barrier and recommendation for removal. This cost data is only to be used as a guide.

The removal of barriers throughout the Town of Lowell is not solely predicated on priority, but also on the availability of funding necessary for the required renovations. Cost data has been provided in each detailed Self-Evaluation report for budgetary purposes. A comprehensive table has also been included in this Transition Plan that identifies each facility or program available to the community and the approximate costs required to rectify the barriers associated with each Priority level. This table has been included here within.

3.0.1 FACILITIES COST DATA – ATTACHED AS APPENDIX C

The detailed evaluation for each building or program will include the identification of barriers documented that limit the accessibility by individuals with disabilities, as well as recommendations for renovations, their priority level and cost data required to eliminate such barriers. These detailed self-evaluation reports have been included here within.

3.0.2 SELF-EVALUATION REPORTS – ATTACHED AS APPENDIX B

The facilities and programs identified by the Town of Lowell requiring evaluation that are included in Appendix B are provided below with additional information, including a short summary of what each of these provide to the public.

3.1 LOWELL TOWN HALL — 501 East Main Street

The Lowell Town Hall is a single-story facility with an adjacent connected parking lot. The facility consists of numerous Lowell offices including Planning and Zoning, Building, Clerk-Treasurer, Town Manager, Engineering, Public Works, Utility, Parks and the Lowell Town Court. Public meetings such as Town Council, Plan Commission, BZA, Police Merit Board, Lowell Redevelopment Commission and Town Court also utilize Town Hall. The areas of the facility considered available for the public use include various offices, Council Chambers, central corridors and public restrooms, which therefore are required to be accessible to individuals with disabilities. Major ADA upgrades were completed in 2021 including improvements to its website, its ability to live stream public meetings, enhancements to the public restrooms, automatic doors at the front entrance and a new accessible ramp and automatic door at the rear entrance to provide an additional accessible location.

3.2 LOWELL STREET DEPARTMENT — 598 Union Street

The Lowell Street Department consists of a number of buildings that house maintenance equipment and tools as well as the Street Superintendent's office and staff area. This facility is not meant for the public. Meetings between the public and the Street Superintendent are held at the Lowell Town Hall. The Town of Lowell anticipates beginning construction on a new facility in the fall of 2023. The new facility will be fully ADA compliant. No self-evaluation was conducted at this site. Selected plan sheets of the proposed facility can be found in Appendix F.

3.3 LOWELL WASTEWATER TREATMENT PLANT — 7505 Belshaw Road

The Lowell WWTP consists of one office and numerous wastewater processing buildings. The office building consists of the Superintendent's office, laboratory, staff room and restroom facilities. Limited areas of the facility are considered open and accessible to the public, which includes the Superintendent's office and public restrooms. The remaining buildings are wastewater process buildings and are not available to the public.

3.4 LOWELL POLICE DEPARTMENT — 1331 Commercial Avenue

The Lowell Police Department is a single-story facility with a full basement. The facility houses the staff offices, holding cells, evidence rooms and storage. The public enters the front entrance into a lobby area where they are greeted by a receptionist or an officer. Only those having official police business are allowed past the lobby.

3.5 LOWELL VOLUNTEER FIRE DEPARTMENT — 1331 Commercial Avenue

The Lowell Volunteer Fire Department Building is a single-story, metal frame building. It contains garage bays for housing firefighting equipment and vehicles and administration/living quarters. In 2022 Lowell completed a facility assessment. The facility lacks compliance with accessibility requirements. Lowell anticipates remodeling the facility in the near future. The facility assessment is attached as Appendix E.

3.6 EVERGREEN PARK — Comercial Avene

Evergreen Park consists of playground equipment, two covered shelters, basketball court, restroom facilities, storage building, fishing pond and shelter and a parking area. Extensive ADA improvements were completed in 2022 that included restroom remodeling, parking rehabilitation

and sidewalk construction. All areas except for the storage building are accessible to the public.

3.7 MOOSE PARK — Fremont Street

Moose Park is a small neighborhood park consisting of open space, playground equipment, covered shelter, and a parking area. Extensive ADA improvements were completed in 2022 that included parking rehabilitation and sidewalk construction. All areas are accessible to the public.

3.8 RESERVATION PARK — 731 Mohawk Drive

Reservation Park is a neighborhood park consisting of open space, playground equipment, covered shelter, and a basketball court. Parking is on-street. Extensive ADA improvements were completed in 2022 that included sidewalk construction and a new concrete shelter pad. All areas are accessible to the public.

3.9 FREEDOM PARK — 17105 Cline Avenue

Freedom Park is a 114-acre park consisting of playground equipment, covered shelter, skateboarding facility, soccer fields, gazebo, dog parks, disk golf, restroom facilities, parking lots and storage buildings. It is also the location of the town's former park offices. These offices are planned to be demolished in the winter of 2023. All areas except for the storage buildings and former park offices are accessible to the public. No self-evaluation was performed on the offices to be demolished.

3.10 NASSAU PARK (aka LIBERTY PARK) — 128 Washington Street

Nassau Park will be closed for renovation in the fall of 2023. The new facility will include a community room, performance stage, playground, splash pad, parking facilities, extension of Freedom Trail and other similar amenities. No self-evaluation was performed at this location due to its pending renovation. Selected renderings of the proposed park can be found in Appendix G.

3.11 LOWELL STREET DEPARTMENT STORAGE BUILDING — 248 Liberty Street

This facility is a conditioned storage building utilized for the storage of maintenance equipment. No staff are assigned to this facility and is not open to the public. No inspection was performed at this location.

3.12 LOWELL SOUTH PARKING LOT — 306 E. Commercial Avenue

This facility is a municipal parking lot. It was constructed in 2019 and is compliant with appropriate accessibility standards.

3.13 LOWELL NORTH PARKING LOT — 125 Clark Street

This facility is a municipal parking lot. It was constructed in 2018 and is compliant with appropriate accessibility standards.

4.0 FACILITY TRANSITION PLAN

4.1 ONGOING SELF-EVALUATION

Self-Evaluation is a continuous process of identifying barriers and is integral to the success of the Transition Plan. While thorough site assessments were administered to document all areas and services limiting access by individuals with disabilities, constant review by the Town of Lowell and input from the community is necessary to ensure ongoing compliance with the ADA. Periodic

public meetings shall be conducted seeking information from individuals with disabilities regarding perceived barriers that still exist. This information shall be constantly documented and integrated into the Transition Plan.

4.2 REMOVAL OF BARRIERS

The goal of the Transition Plan is to identify and remove all barriers in the facilities operated and programs offered by the Town. While it is critical to remove barriers and provide accessibility to all individuals with disabilities, it is simply not feasible to immediately eliminate all perceived barriers. Therefore, the implementation of corrections required must be a phased process based on a level of priority and funding resources available. Priorities have been included within each detailed Self-Evaluation report but will be modified based on public perception of individuals with disabilities. The priorities have been categorized in the following four levels:

4.2.1 Priority 1

Priority 1 is considered the highest level of priority. Issues noted in the Self-Evaluation reports marked as Priority 1 should be corrected immediately in the first year. These barriers will likely present a safety hazard or completely prohibit access for an individual with a disability. They may also be included in this priority based on frequency of use. Examples of barriers requiring removal or renovation in this category include, but are not limited to:

- No accessible parking or accessible routes to a facility are provided.
- Inaccessible public restrooms.
- Inaccessible restroom accessories due to extremely excessive reach ranges.
- Inaccessible door hardware and doors requiring too much pressure to operate.
- Lack of grab bars or handrails.
- Inaccessible countertops that are utilized more frequently.

4.2.2 Priority 2

Priority 2 is considered a high level of priority. Issues noted in the Self-Evaluation reports marked as Priority 2 should be corrected within the first four years. These barriers will likely partially prohibit access or require great effort for an individual with a disability. They will also be based on frequency of use. Examples of barriers requiring removal or renovation in this category include, but are not limited to:

- Insufficient accessible parking or accessible routes to a facility are provided.
- Excessive slope in ramps or walks on an accessible route.
- Excessive changes in level along an accessible route.
- Inaccessible restroom accessories due to slightly excessive reach ranges.
- Grab bars or handrails located extremely high or low.
- Inaccessible countertops that are utilized, but not as often.

4.2.3 Priority 3

Priority 3 is considered a medium level of priority. Issues noted in the Self-Evaluation reports marked as Priority 3 should be corrected as soon as feasibly possible, but likely between years five to eight. These barriers won't prohibit access but will likely require additional effort for an individual with a disability. Examples of barriers requiring removal or renovation in this category include, but are not limited to:

- Issues with signage or accessible parking designations.
- Minor slope issues in ramps or walks on an accessible route.
- Minor dimensional issues with fixture locations.
- Grab bars or handrails located a little too high or low.
- Incorrectly located flush valves.

4.2.4 Priority 4

Priority 4 is considered the lowest level of priority. Issues noted in the Self-Evaluation reports marked as Priority 4 should be corrected whenever possible, but within the first twelve years. These barriers will likely only require minimal additional effort for an individual with a disability. They will also be based on their irregularity of use. Examples of barriers requiring removal or renovation in this category include, but are not limited to:

- Minor issues with signage.
- Minor dimensional issues with fixture locations at auxiliary locations.
- Excessive slope in ramps or walks or changes in level along an auxiliary route.

5.0 RIGHT-OF-WAY SELF-EVALUATION

5.1 CURB RAMPS

Curb ramps provide critical access between the sidewalk and the street for people with mobility impairments. They allow a person in a wheelchair to navigate from the sidewalk to the street, or vice versa, without the barrier of a curb. However, since visually impaired people rely on the curb to identify a transition from sidewalk to street, the use of detectable warnings is necessary in a curb ramp. Curb ramps should be designed to minimize grade, cross-slope and changes in level experienced by users.

Each corner of an intersection should have two curb ramps, each oriented in the direction of pedestrian crossing to the adjacent corner. In some situations, only one curb ramp may be practical, located in the center of the radius. These options and types of ramps are described below.

Exception: In the case of an intersection where pedestrian travel is not permitted and only one curb ramp is provided for to serve only one direction of travel, the curb ramp shall be aligned and oriented parallel to the intended direction of travel.

5.2 SIDEWALKS

Sidewalks provide people the space to travel within the public right-of-way separated from motor vehicles and on-road bicycles. They should be level, hard surface and be separated from motor

vehicles traffic by a curb, buffer, or curb with buffer. Continuous and accessible sidewalk networks improve mobility for all pedestrians and are particularly important for pedestrians with disabilities.

Sidewalks should be part of all new and renovated development. Streets that do not have sidewalks, particularly those on routes with heavy users (e.g. schools, parks, shopping areas, transit stops, etc.), should be identified and assessed to determine if retrofitting these streets with sidewalks is appropriate. Where feasible, sidewalks should be provided on both sides of the street. A sidewalk on only one side forces pedestrians to either walk in the street or cross the street twice to get to the side with a sidewalk and back again.

6.0 PLAN & SCHEDULE FOR RIGHT-OF-WAY IMPROVEMENTS

6.1 INVENTORY METHODOLOGY

The Town's ramp and sidewalk self-evaluation process began 2013 with the development of its initial transition plan. As the town completed infrastructure improvements (i.e. street resurfacing, parking lot improvements, building renovations, etc.), inventories were modified to account for these improvements. New improvements constructed in new developments were also added to the inventory. Current sidewalk and curb ramp data and maps can be found in Appendix H.

6.2 EVALUATION

Sidewalks and curb ramps are evaluated taking into account the following criteria and the Public Rights-of-Way Accessibility Guidelines (PROWAG):

Curb Ramps: Whether existing curb ramp(s) are present at any of the corners within the intersection.

Sidewalks: Whether a sidewalk is present. If present, the paved sidewalk width at the intersection.

Directional Corner of Intersection: NE, SE, SW, NW (Note: All corners will be referred to by one of these compass points)

Obstructions and Obstacles: The general presence and nature of abrupt changes in sidewalk level greater than one-half inch, paving obstructions or accessibility obstacles immediately adjacent to the corner (e.g. utility pole, traffic signal pole, drain inlet, fire hydrant, street furniture, newsstand, etc).

Width: Width of the ramp section of the curb ramp.

Running Slope: Slope of the ramp or sidewalk in the direction that people travel when going up or down the ramp run.

Cross Slope: Slope of the ramp or sidewalk perpendicular to the running slope. Unlike the running slope, which runs along the ramp, the cross slope is measured *across* the ramp.

Gutter Slope: The gutter is the part of the street that borders the curb. The gutters slope is parallel to the ramp and perpendicular to the curb.

Transitions: Transitions on and off the curb ramp are the points where the gutter meets the bottom of the ramp and where the top meets the sidewalk. Transitions are required to be flush and cannot have any abrupt changes.

Detectable Warnings/Truncated Domes: Whether truncated domes are present. Truncated domes shall extend the entire width of the ramp.

Car Obstructions: Curb ramps shall be located where they will not be obstructed by parked vehicles.

Clear Space: Curb ramps shall have at least 36 inches of clear space at the "top" of the ramp for pedestrians to bypass the curb ramps without traveling over it. Sidewalks shall have at least 36 inches of clearance around obstructions and obstacles.

Side Slope(s): Whether a side slope or parallel slope is present, and if present, the slope of each sloping side or flare parallel to the street.

Built-up Curb Ramp: Whether a built-up ramp is present. A built-up ramp typically consists of asphalt or concrete that is placed and shaped into a ramp that runs at a 90-degree angle away from an intact curb down to the roadway.

Located in Crosswalk: Curb ramp wholly contained in marked crosswalk, if applicable.

Common Landing: Dimensions of any common landing for two curb ramps.

Traffic Control: Whether traffic signals, stop signs, yield control, roundabout, or no traffic control.

Median: If present, then the presence of curb ramps and push buttons.

Crosswalk: Whether crosswalk is present at any or all crossings. If present, the width, type, alignment, running slope, and cross slope.

Pedestrian Signal(s): Whether visual or accessible pedestrian signals are present. If present the type, size, height and location of actuator buttons. Additionally, the pedestrian signal timing shall be recorded for a walking speed of 3.5 ft/sec.

6.3 SCHEDULE OF IMPROVEMENTS

Generally speaking, the Town of Lowell includes modifications to bring curb ramps and sidewalks into compliance in its street resurfacing and site improvement projects. The Town also installs/repairs sidewalks and curb ramps in areas that don't currently have sidewalks as funds become available. 50/50 programs are being contemplated by the Lowell Town Council to assist residents in making repairs to sidewalks at their residence. On occasion, public requests are made by those with special needs. These requests are given priority depending upon the nature of their request.

The Town of Lowell will also work to implement necessary modifications to its facilities and programs pursuant to its priority schedule and available funding.

7.0 SETP CONTINUED COMPLIANCE

The Town of Lowell intends to remain compliant with its Self-Evaluation and Transition Plan (SETP) by revising it at least every three years and preparing annual Goals and Accomplishments reports. The Town will continue to implement the necessary modifications with the resources available to remove barriers perceived by individuals with disabilities. This includes providing equality among all citizens by offering accessible services and programs, including the availability of alternate forms of communication. The Town is also committed to providing ongoing education and training to all staff members with regards to the current ADA regulations in force.

While it is important to ensure that the renovations outlined are in accordance with current codes and standards, it is equally important that ADA improvements are constructed properly and in compliance with all applicable regulations. Therefore, the monitoring of construction activities and reporting of the continued status of improvements is vital in assuring an effective overall compliance program.

APPENDIX A

ADA GRIEVANCE FORM

Town of Lowell ADA Grievance Form

Please read the attached Complaint, Grievance and Appeal Process Policy & Procedures
Please Print Clearly

Today's Date: _____

Grievant: _____

Address: _____

City, State, Zip: _____

Individual Discriminated Against: _____

Address: _____

City, State, Zip: _____

Alleged Violation: Date(s) of Occurrence: _____

Describe violation and identify Town department involved: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Has complaint been filed with a State or Federal agency: YES _____ **NO** _____

Name of Agency: _____ **Date Filed:** _____

Contact Person: _____

Address: _____

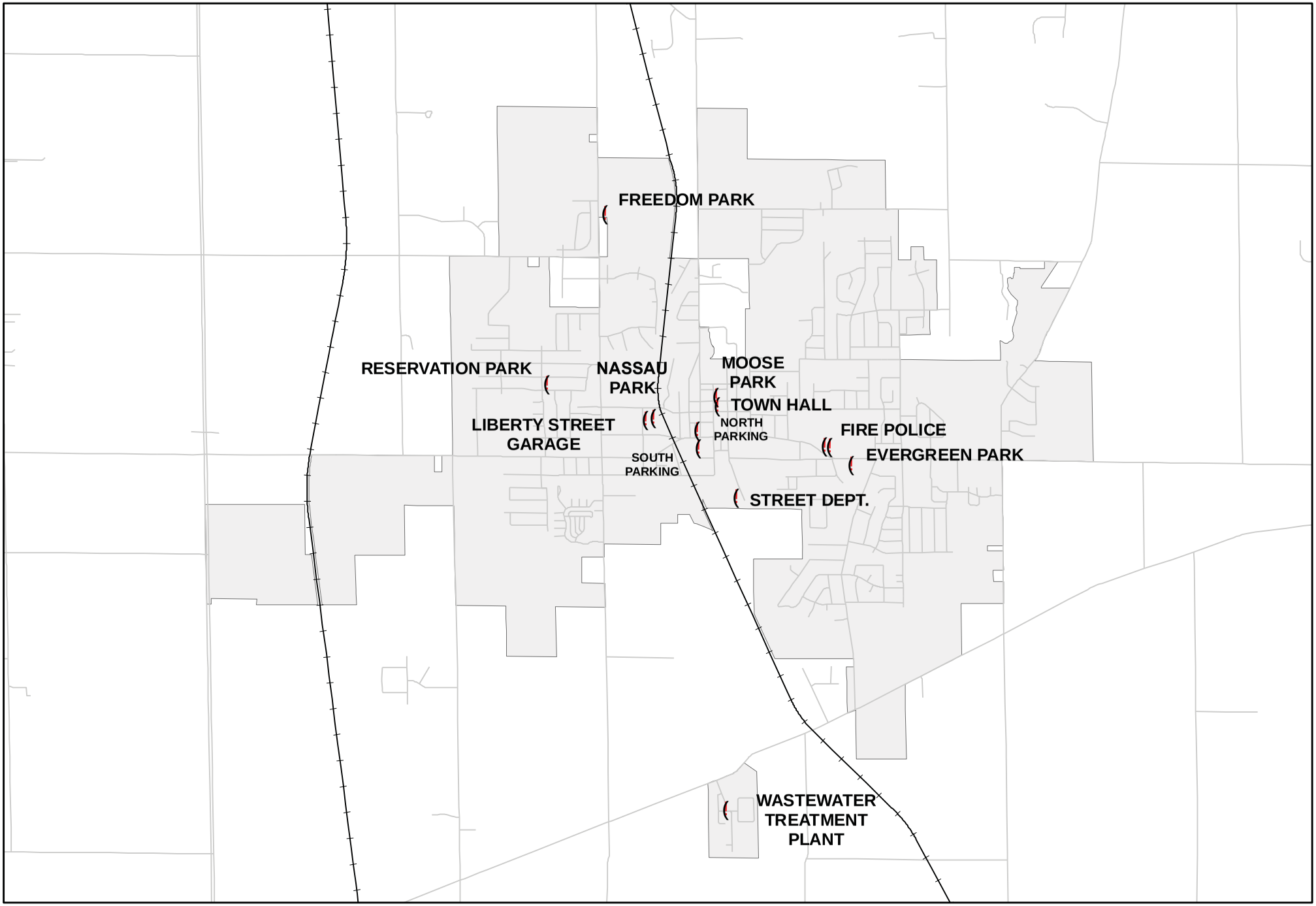
Phone: _____

Grievant's Signature: _____

For a complaint to be acted upon, it must be documented in writing with the complainant's signature and address. The initial complaint, whether verbal or written, should be directed to the ADA Coordinator within 60 calendar days of the incident. Forms are available on the Town's website (www.Lowell.net/) and at the Lowell Town Hall, 501 E. Main Street, Lowell, IN 46356. If you need assistance completing this form, please call (219) 696.7794.

APPENDIX B

FACILITY SELF-EVALUATIONS



Town of Lowell
Town Owned Facilities

Document Name: Lowell_Facility Map_2023

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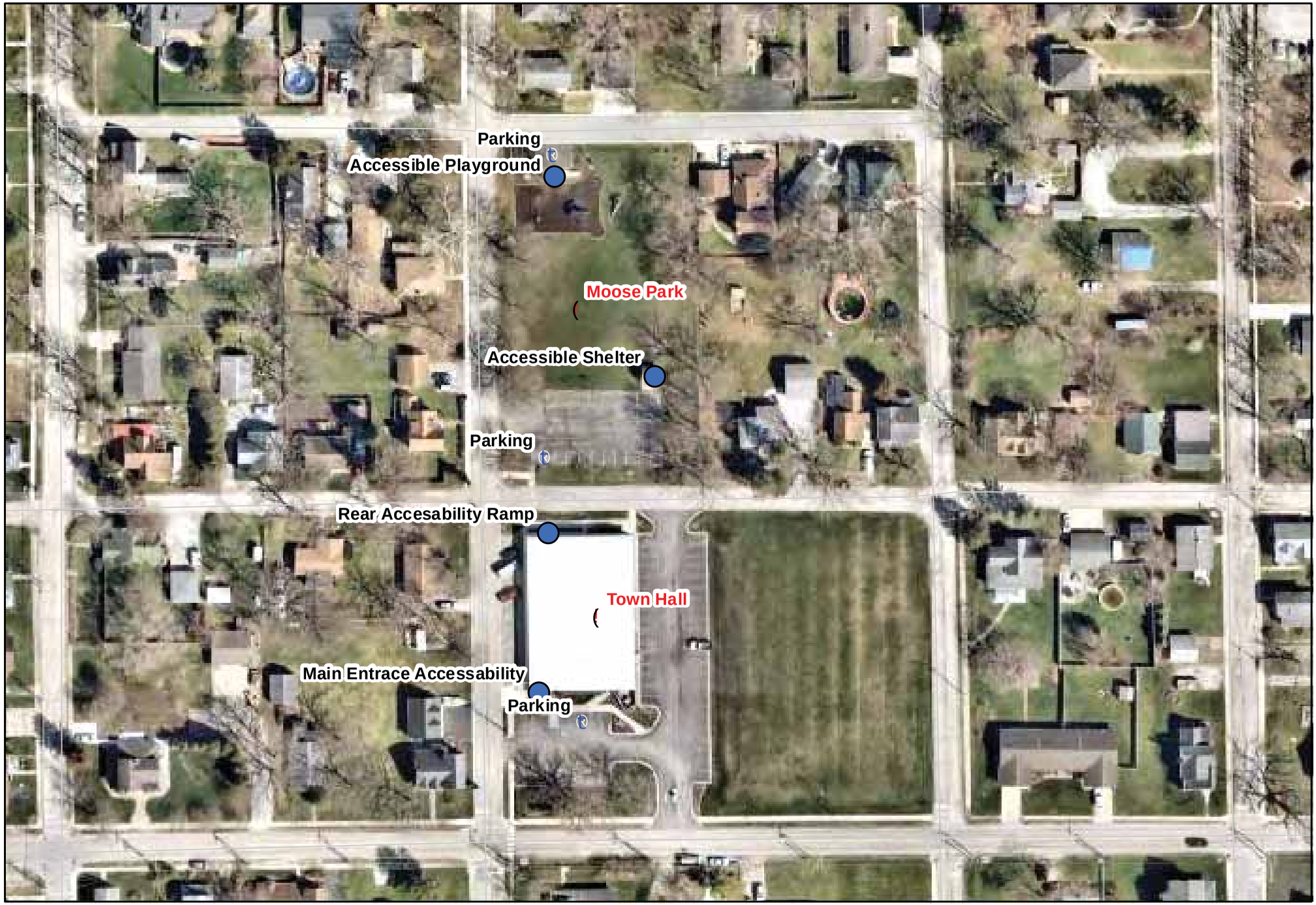

Town of Lowell
Town Hall and Moose Park Facilities

Document Name: MooseParkTownHalll_Facility Map_2023
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Town of Lowell
Fire and Police Facilities

Document Name: FirePolice_Facility Map_2023
Document Path: R:\MXD's\ADA 2023\FirePolice_Facility Map_2023.mxd

Town of Lowell

Nassau Park Liberty Garage Facilities

Document Name: Liberty Garage and Park_Facility Map_2023

Document Path: R:\MXD's\ADA 2023\Liberty Garage and Park_Facility Map_2023.mxd

Town of Lowell

South Parking Lot
Facilities

Document Name: South Parking Lot_Facility Map_2023

Document Path: R:\MXD's\ADA 2023\South Parking Lot_Facility Map_2023.mxd

Town of Lowell

North Parking Lot Facilities

Document Name: North Parking Lots_Facility Map_2023

Document Path: R:\MXD's\ADA 2023\North Parking Lots_Facility Map_2023.mxd

Town of Lowell

Reseration Park Facilities

Document Name: Reservation Parkt_Facility Map_2023

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Town of Lowell

Street Department
Garage Facilities

Document Name: Street Department_Facility Map_2023

Document Path: R:\MXD's\ADA 2023\Street Department_Facility Map_2023.mxd

Town of Lowell

Wastewater Treatment Plant Facilities

Document Name: WWTP_Facility Map_2023

Document Path: R:\MXD's\ADA 2023\WWTP_Facility Map_2023.mxd

Lowell Town Hall Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Exterior Locations						
Parking Facilities						
Striping	Striping is worn and difficult to see	Seal parking lot and restripe.	2	$ 12,000	502	
Signage	No accessible parking signage	Install signage including Van Accessible	1	$ 1,500	502	
Accessible Route						
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	4	$ 300		R302
Interior Locations						
Service Counters	The service counter for the Clerk-Treasurer's office exceeds allowable height.	Provide minimum 24" wide portion of each counter to be a maximum of 36" above floor. In the interium, utilize the service counter for the Building Department directly across.	4	$ 1,500	904	
Signage	No wall signage	Install directional, informational, and means of egress signage throughout building on latch side of doors between 48" to 60" above floor.	4	$ 600	216, 703	
Restrooms	Urinal exceeds maximum height of 17-inches	Reinstall urinal at correct height	4	$ 500	605	

Total Estimated Repair Cost	$ 16,400

Lowell Wastewater Treatment Plant Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Exterior Locations						
Parking Facilities						
Striping	No accessible parking space identified	Install Van Accessible striping	2	$ 500	502	
Signage	No accessible parking signage	Install signage including Van Accessible	1	$ 600	502	
Accessible Route						
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	4	$ 300		R302
Interior Locations						
Signage	No wall signage	Install directional, informational, and means of egress signage throughout building on latch side of doors between 48" to 60" above floor.	4	$ 250	216, 703	
Restrooms	Mirror not compliant	Install ADA compliant mirrors in the men's and women's restrooms	4	$ 500	605	

Total Estimated Repair Cost	$ 2,150

Lowell Police Department Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Exterior Locations						
Parking Facilities						
Accessible Parking Spaces	Existing space is parallel to the sidewalk and is not adequate.	Reconfigure parking space.	1	$ 8,000	502	
Signage	No accessible parking signage	Install signage including Van Accessible	1	$ 1,500	502	
Accessible Route						
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	4	$ 300		R302
Maneuvering Area	Insufficient Maneuvering area in front of entry door.	Replace existing sidewalk in front of entry door to allow for a minimum 60" of area perpenduclar to the door.	1	$ 600	404	
Automatic Door Opener	Entry door automatic opener doesn't work consistently.	Repair door opener push button	1	$ 200	404	
Interior Locations						
Service Counters	The service counter for the Clerk-Treasurer's office exceeds allowable height.	Provide minimum 24" wide portion of each counter to be a maximum of 36" above floor. In the interium, utilize the service counter for the Building Department directly across.	4	$ 1,500	904	
Signage	No wall signage	Install directional, informational, and means of egress signage throughout building on latch side of doors between 48" to 60" above floor.	4	$ 600	216, 703	
Public Restrooms	Clearence issues around toilet. Sink obstructs 60" min clearance from side wall. Entry door obstructs the maneuvering area. Mirror not compliant. No occupancy sensor.	Investigate options to expand room beyond current size.	4	$ 12,000	604	

Total Estimated Repair Cost	$ 24,700

Lowell Evergreen Park Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Parking, Trail and Sidewalk Locations						
Accessible Route						
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	3	$ 300		R302
Playgroud, Restroom and Shelter Locations						
Shelter Picnic Table	No accessible picnic tables	Intall ADA compliant picnic table.	1	$ 1,200	904	
Restroom	No insulation placed around lavatory drain and piping.	Install insulation around lavatory drain and piping to prevent burning.	2	$ 50	602	
Playground Accessible Route	No accessible route within play area	Playground surface consists of crum rubber. Surface needs maintenance to eliminate rutting. An accessible route should be installed to access ground level play equipment.	2	$ 6,000	206	

Total Estimated Repair Cost	$ 7,550

Lowell Moose Park Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Parking and Sidewalk Locations						
Accessible Route						
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	3	$ 300		R302
Playgroud and Shelter Locations						
Shelter Picnic Table	No accessible picnic tables	Intall ADA compliant picnic table.	1	$ 1,200	904	
Playground Accessible Route	No accessible route within play area	Playground surface consists of crum rubber. Surface needs maintenance to eliminate rutting. An accessible route should be installed to access ground level play equipment.	2	$ 3,000	206	

Total Estimated Repair Cost	$ 4,500

Lowell Reservation Park Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Parking and Sidewalk Locations						
Accessible Route						
Parking	No accessible parking space	Stripe one on-street accessible parking spot at park entrance. Construct sidewalk from curb to existing sidewalk. Provide accessible signage	1	$ 4,000		R302
Walkways	Areas of verticle and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	3	$ 300		R302
Playgroud and Shelter Locations						
Shelter Picnic Table	No accessible picnic tables	Intall ADA compliant picnic table.	1	$ 1,200	904	
Drinking Fountain	Drinking fountain not accessible	Remove and eliminate existing fountain.	1	$ 50	602	
Playground Accessible Route	No accessible route within play area	Playground surface consists of crum rubber. Surface needs maintenance to eliminate rutting. An accessible route should be installed to access ground level play equipment.	2	$ 3,000	206	
Total Estimated Repair Cost				$ 8,550		

Lowell Freedom Park Self-Evaluation

Location	Comment	Solution	Priority	Estimated Cost	2010 ADA Standards	PROWAG Standards
Parking, Trail and Sidewalk Locations						
Accessible Route						
Parking	Existing parking lots are stone. No designated accessible parking spots are identified.	Town will utilize bienial CDBG funding to reconstruct parking lots to provide accessible parking spots. Sidewalks will be installed to connect accessible spots to existing walking trails, sidewalks and dog park entrances.	1	$ 980,000		R302
Walkways	Areas of vertical and horizontal gaps exceed 1/2"	Edge grind, replace or install joint compound in gaps	3	$ 300		R302
Playground, Restroom and Shelter Locations						
Shelter Picnic Table	No accessible picnic tables	Install ADA compliant picnic table.	1	$ 1,200	904	
Restroom	Women's restroom does not provide sufficient maneuvering room.	Change restroom into single occupancy. Remove existing dividing walls and center toilet to increase maneuvering area.	1	$ 400	602	
Playground Accessible Route	No accessible route within play area	Playground surface consists of crum rubber. Surface needs maintenance to eliminate rutting. An accessible route should be installed to access ground level play equipment.	2	$ 3,000	206	

Total Estimated Repair Cost	$ 984,900

APPENDIX C

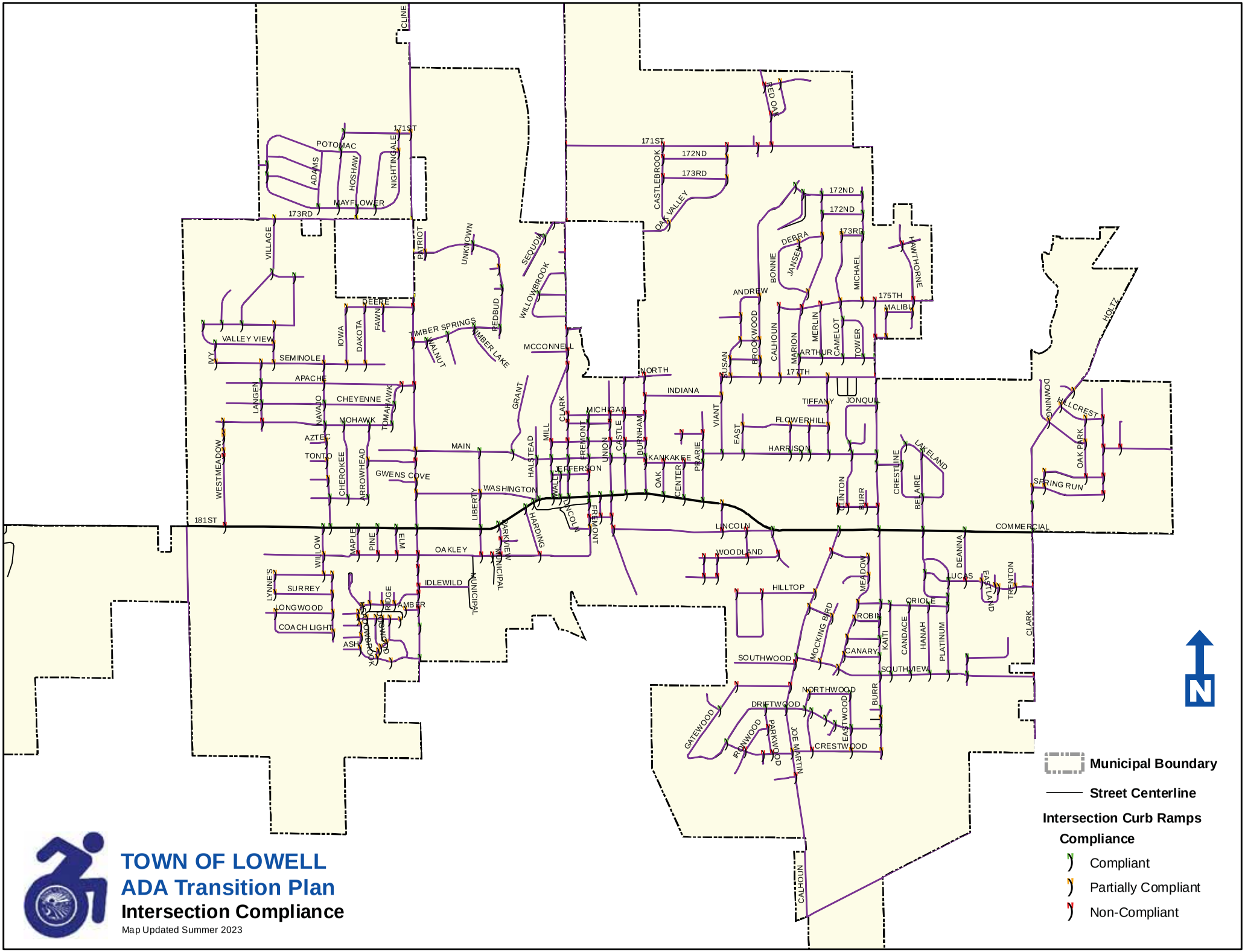
FACILITIES COST DATA

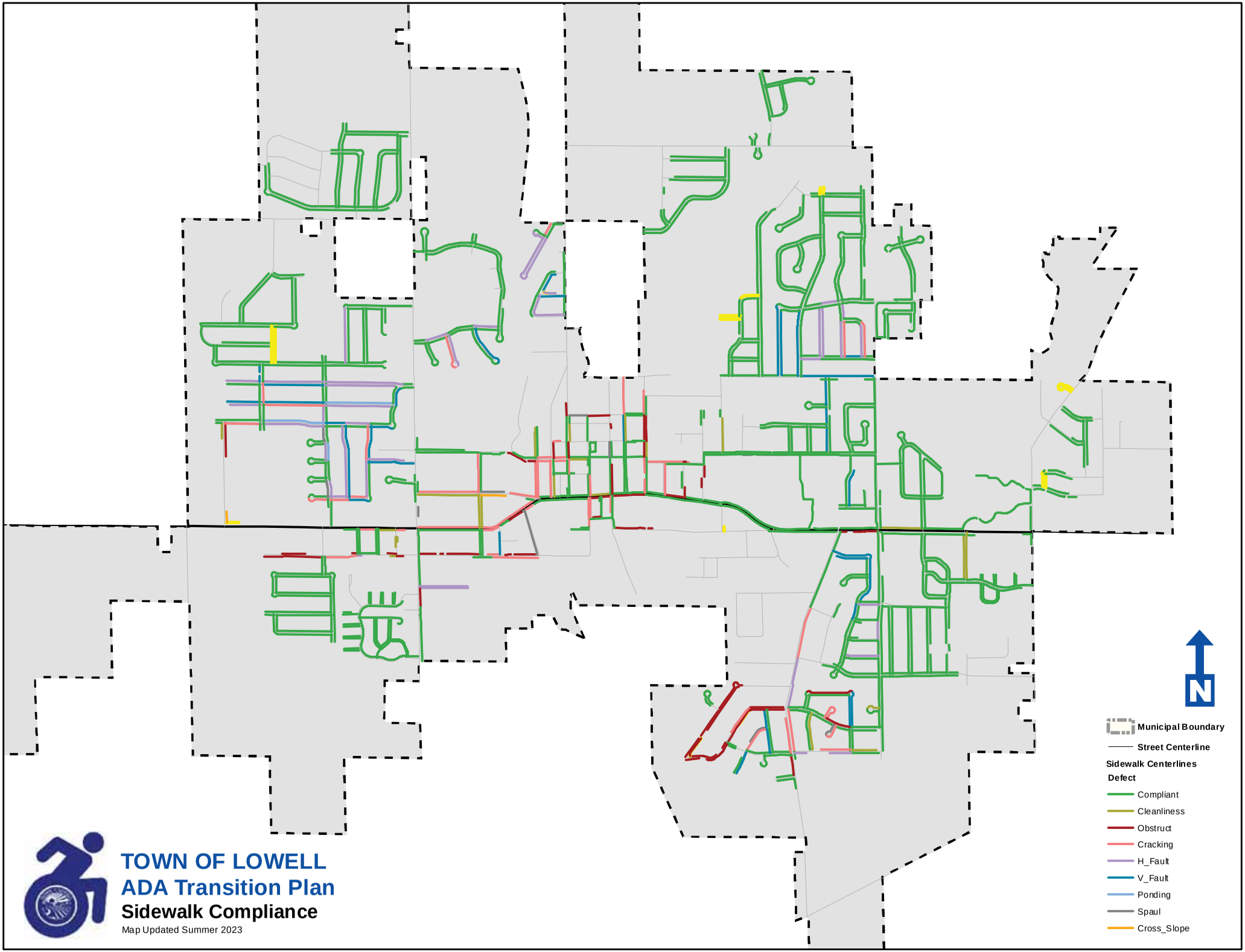
Facilities Cost Data

Facility Name	Priority 1	Priority 2	Priority 3	Priority 4	Total Cost
Lowell Town Hall	$ 1,500	$ 12,000		$ 2,900	$ 16,400
Lowell Street Department					$ -
Lowell Wastewater Treatment Plant	$ 600	$ 500		$ 1,050	$ 2,150
Lowell Police Department	$ 10,300			$ 14,400	$ 24,700
Lowell Volunteer Fire Department					$ 182,750
Evergreen Park	$ 1,200	$ 6,050	$ 300		$ 7,550
Moose Park	$ 1,200	$ 3,000	$ 300		$ 4,500
Reservation Park	$ 5,250	$ 3,000	$ 300		$ 8,550
Freedom Park	$ 980,000	$ 3,000	$ 300		$ 983,300
Nassau Park					$ -
Lowell Street Department Storage Building					$ -
Total Cost	$ 1,000,050	$ 27,550	$ 1,200	$ 18,350	$ 1,229,900

APPENDIX D

CURB RAMP AND SIDEWALK DATA


TOWN OF LOWELL
ADA Transition Plan
Intersection Compliance
Map Updated Summer 2023
Municipal Boundary
Street Centerline
Intersection Curb Ramps
Compliance
Compliant
Partially Compliant
Non-Compliant
N
ICLINE
171ST
POTOMAC
ADAMS
HOSHAW
NIGHTINGALE
MAYFLOWER
173RD
VILLAGE
PATRIOT
UNKNOWN
SEQUOIA
WILLOWBROOK
REDBUD
TIMBER SPRINGS
TIMBER LAKE
WALNUT
DEERE
IOWA
DAKOTA
FAWN
VALLEY VIEW
IVY
SEMINOLE
APACHE
LANGEN
NAVAJO
CHEYENNE
TOMAHAWK
MOHAWK
AZTEC
TONTO
CHEROKEE
ARROWHEAD
WESTMEADOW
GWENS COVE
MAIN
GRANT
MCCONNELL
CASTLEBROOK
OAK VALLEY
172ND
173RD
RED OAK
NORTH
INDIANA
MICHIGAN
CLARK
MILL
HALSTEAD
FREMONT
UNION
CASTLE
BURNHAM
KANKAKEE
OAK
CENTER
PRAIRIE
VIANT
EAST
JEFFERSON
WASHINGTON
LIBERTY
WALL
LINCOLN
FRANKLIN
HARDING
PARKVIEW
MUNICIPAL
181ST
WILLOW
MAPLE
PINE
ELM
OAKLEY
IDLEWILD
LYNNE'S
SURREY
LONGWOOD
COACH LIGHT
ASH
RIDGE
AMBER
ANDREW
BONNIE
DEBRA
JANSEN
MICHAEL
HAWTHORNE
175TH
MALIBU
BROOKWOOD
CALHOUN
MARION
ARTHUR
MERLIN
CAMELOT
TOWER
SUSAN
177TH
TIFFANY
JONQUIL
FLOWERHILL
HARRISON
LAKELAND
CRESTLINE
BELAIRE
CLINTON
BURR
COMMERCIAL
LINCOLN
WOODLAND
HILLTOP
MEADOW
DEANNA
LUCAS
FAIRFIELD
TRENTON
CLARK
ORIOLE
ROBIN
CANARY
SOUTHWOOD
SOUTHVIEW
MOCKING BIRD
KAITI
CANDACE
HANAH
PLATINUM
NORTHWOOD
DRIFTWOOD
EASTWOOD
CRESTWOOD
GATEWOOD
IRONWOOD
PARKWOOD
JOE MARTIN
CALHOUN
HOLTZ
DOMINION
HILLCREST
OAK PARK
SPRING RUN



TOWN OF LOWELL
ADA Transition Plan
Sidewalk Compliance

Map Updated Summer 2023

TOWN OF LOWELL CURB RAMP AND SIDEWALK DATA

Curb Ramps	
Total Intersections	369
Compliant Intersections	144
Partially Compliant Intersections	118
Non-Compliant Intersections	102
Intersections Updated Since 2018	93

SIDEWALKS	
Total Number of Sidewalks	383,212 linear feet

APPENDIX E

LOWELL VOLUNTEER FIRE DEPARTMENT FACILITY ASSESSMENT

Town of Lowell, Indiana

501 East Main Street
Lowell, IN 46356

Fire and EMS Facility Assessment

1331 E. Commercial Ave.
Lowell, IN 46356

9/23/2022

Prepared by:

Etica GROUP

In consultation with:

CE Solutions structural engineers

Applied Engineering Services

Table of Contents

1. Executive Summary

The team visited the site on August 3, 2022. The purpose of the visit was to record the conditions of the building's interior, exterior, structural system, site, and building systems. The site and building systems will be summarized later in this report.

The walls of the administration corridor are finished with a chrome plastic wallcovering, as wainscoting, with painted drywall above and a wood chair rail between the finishes. The flooring in the corridor, kitchen, restroom, meeting room, is finished with luxury vinyl tile. The flooring in the offices is finished with carpet tile. The ceiling, throughout the living quarters and administration area, is finished with acoustic ceiling tile that shows major signs of wear and tear. Some of the office walls have missing chair rails and painted wood paneling. The walls of the communication room have torn wood paneling wainscoting, as well as a combination of tile and terrazzo flooring. There is also chipped paint on the walls of the communication room

The layout of the administration / living quarters interior varies from the original floor plan. The original women's dormitory has been converted into a conference room. There are a couple of beds that are separated from the rest of the men's dormitory room by a partition wall and a couple of beds that are separated by a curtain. There is no separation between the men and women's toilet / shower rooms. There is no separation between the men and women's locker rooms. The original women's shower/toilet is now a private restroom.

Many of the spaces are being used as storage. The building lacks sufficient storage space. The area originally intended for the women's locker room is now a storage area. The mezzanine area of the garage is also used for storage. The closet in the dining and meeting room, originally indicated as chair & table storage in plan, is used as general storage.

Overall, it is recommended that the administration and living quarters be expanded to allow for more training areas and public meeting spaces. The building needs more space for restrooms and showers. The facility also lacks sufficient office space and reception area. The fire chief and assistant fire chief both occupy the same office. The sleeping areas should be expanded to allow for men and women dormitories. There is not enough space for IT equipment. The IT equipment is currently housed in a small closet. The restrooms and corridors need to be renovated to meet current accessibility requirements.

The exterior of the administration / living quarters is made up of a combination of metal wall panels and aggregate stone panels. The stone panels show wear and tear from freeze / thaw cycles. The exterior of the apparatus bay is made up of metal wall panels with no major defects.

The apparatus bay appears to be in good condition. The turnout gear lockers are spread out throughout the apparatus bay. The gear lockers are in adequate condition. Currently, the apparatus bay does not allow for future expansion for additional vehicles. There are 4 fire engines and 2 ambulances. The apparatus bay has six overhead doors on the south side and four overhead doors on the north side. The apparatus bay is where the gear is washed and stored. The facility does not have an area for gear decontamination. It is

recommended that the fire station develop new standards for decontamination. A transitional zone would allow firefighters to shower and change into clean clothing prior to entering the cleaning zone where clean gear is stored and dried.

2. Site Summary

2.1 Introduction

The existing site is located at 1331 E. Commercial Avenue in Lowell, Indiana. The Lake County GIS indicates the site to be approximately 2.2 acres. The site contains two buildings. Building 1, the Fire and EMS Building, is the subject of this assessment. Building 2 is the Police Station. The buildings are approximately 17-feet apart which has impact on the code requirements for the facility. It has been noted by the staff that conflicts arise when emergency vehicles from both agencies depart from the site. The access drive on the west side of the facility is narrow and contains blind spots for potential conflicts of emergency vehicles. It appears that the public access to the facility is through the same drive as the fire and EMS apparatus access. The needs of the site and facilities will be further studied in Task II of the comprehensive planning process.

2.2 Existing Site Layout

2.3 Site Zoning and Setbacks

- Based upon the Lowell, Indiana Code of Ordinances, the site is zoned R2 – Residential District. This district is established to provide for the medium density development of medium-sized single-family detached homes on medium-sized lots. This district should be protected from conflicting land uses and be in proximity to agriculture districts in a way that does not inhibit farming practices.
- The Zoning District Intent, Uses and Standards states fire and police stations are considered special uses within R2 zones. Therefore, fire and police stations are permitted in R2 districts, if approved by the Board of Zoning Appeals.
- Section 155.071 in the Ordinances states no structure, parking area, or other site feature shall be enlarged, altered, or expanded unless the minimum improvements required by District standards are met.
- R2 District standards:
    - Front setback 50 feet
    - Side setback 8 feet min.
    - Rear setback 30 feet min.
    - Refer to Appendix A for additional R2 – Residential District standards.

- Lowell, Indiana Code of Ordinances to reference:
    - Title I: General Provisions
    - Title V: Public Works
    - Title IX: General Regulations
    - Title XV: Land Usage

2.4 Site Utilities

- Electrical service 120/208V, 3-phase 200A power system.
- Natural gas.
- 2-inch domestic water service from 6-inch water main at Commercial Ave (SR 2).
- 8-inch sanitary sewer.
- Storm drains appear to function properly. No evidence of pooling or flooding was observed.

3. Building Summary

3.1 Introduction

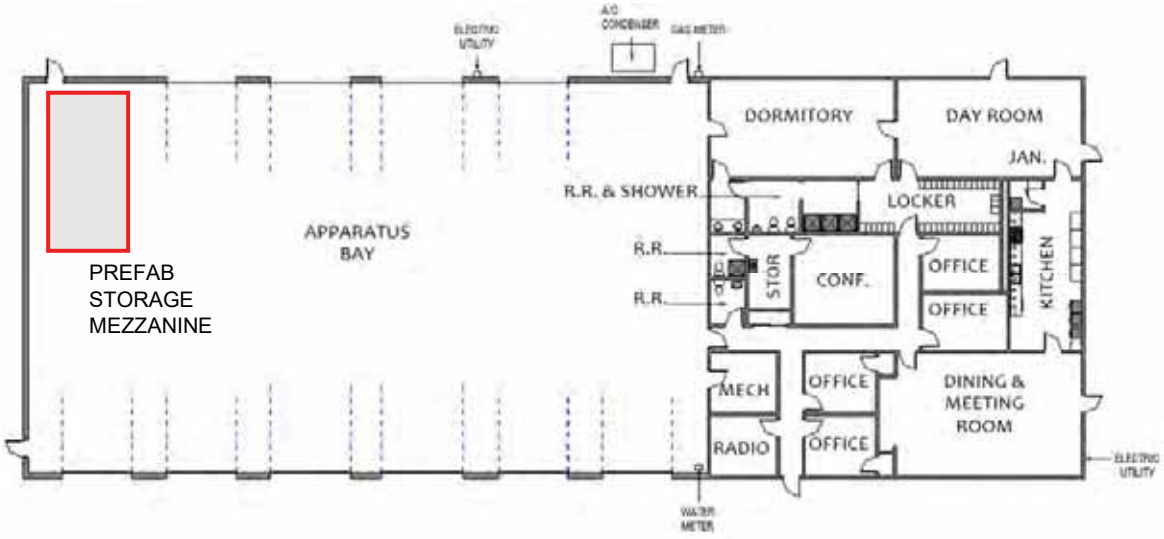
The existing building was designed and constructed in 1981 and 1982 according to the existing drawings. The apparatus bays are constructed utilizing a pre-engineered steel building with exposed fastener metal wall panels and standing seam roof panels The apparatus bay building structure is composed of steel rigid frames with conventional concrete spread footings, zee purlins spaced at 5’ supporting the roof panels, and multiple rows of zee girts supporting the wall panels. The Lateral Force Resisting System consists of a steel rod X-bracing roof diaphragm and steel rigid frames**.** The interior walls of the bays have continuous metal liner panels. The roofing system over the apparatus area is

a gable roof with a relatively low slope that appears to be 1" over 12", common for a pre-engineered structure. The area of the apparatus bay is 8,400 square feet.

A prefabricated storage mezzanine structure, manufactured by Equipto, has been installed in the northwest corner of the Apparatus Bay area. This structure has been set directly on the interior slab on grade and contains a flight of stairs to access the upper storage level. No load limit placard was posted on the mezzanine.

The administration and living quarters are constructed utilizing a steel frame, steel joists with conventional concrete spread footings and foundation walls. The exterior walls are framed with structural metals studs, stud cavity wall insulation, and clad with a stone aggregate panel. The interior is finished with drywall throughout this area. The original aroof was a low-sloped roof system, 4-ply asphalt according to the existing drawings. Since that time, new gable trusses were added along with an exposed fastener roof panel and wall siding. The area of the administration and living quarters is 4,620 square feet. Total gross square feet of the building is 13,020 square feet.

3.2 Floor Plan



3.3 Code Analysis

2014 Indiana Building Code (2012 IBC):

- The 2012 International Building Code would require three occupancy classifications for this facility (S-2 Parking garage, B-Business, and R-2 residential group). The Indiana amendments, classify police and fire stations as a business occupancy. This eliminates separation and mixed-use requirements between the occupancies. However, separation may be desirable to manage noise and contaminants.
- The existing building does not have an automatic fire suppression system. It is not required since the facility complies with the allowable area requirements.

- For the allowable area calculation, the least restrictive construction type has been utilized.
- Construction Type: Type V-B (combustible and non-rated).
- Allowable Area Calculation:
    - Tabular Area: 9,000 SF (Table 503)
    - Frontage Increase: 5,490 SF (Section 506.2)
    - Sprinkler Increase: 0 SF (Section 506.3)
- Total Allowable Area: 14,490 SF
- **Actual Building Area:** 13,020 SF

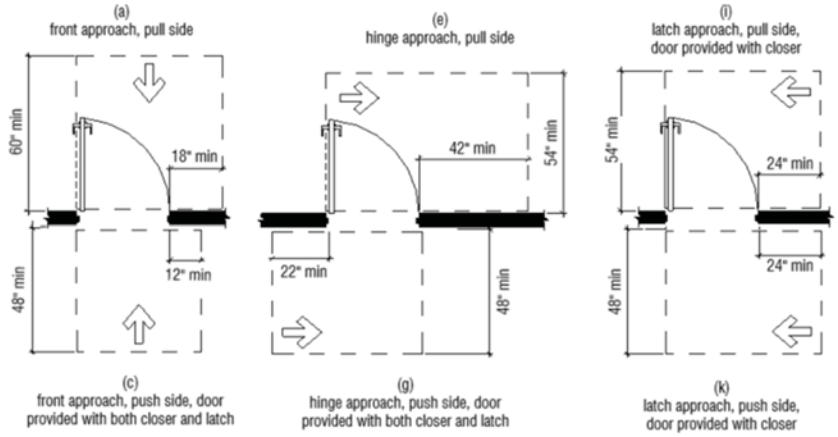
- Fire Rating Requirements
    - Fire Walls: None required.
    - Fire Barriers: None required.
    - Fire Partitions: A one-hour rated fire partitions and 20-minute rated openings area required in exit corridors where the occupant load exceeds 30.
    - Due to proximity of the building to the police station, the separation distance when using an imaginary property line, is less than 10 feet. A fire partition, for the west exterior wall, adjacent to the Police station is required to be one-hour rated. Openings are limited to 10 percent of allowable area of the west exterior wall.

- Occupancy and Egress
    - The quantity of exits in the facility meets the code requirements for occupancy. There are no spaces requiring two exits and doors with panic hardware in accordance with the existing space table under IBC Section 1021.
    - Travel distance and common path of travel requirements are met for the facility per IBC Sections 1014.3 and 1016.2.

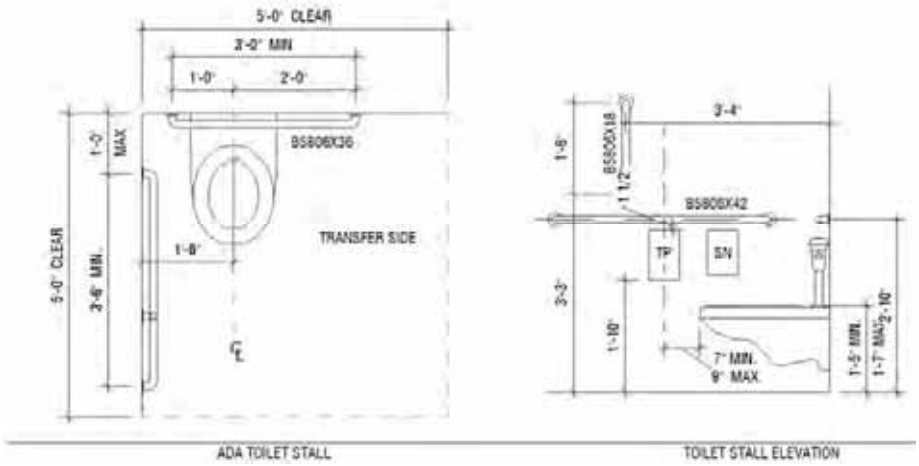
3.4 Accessibility

- In accordance with the Indiana Building Code 2014, which complies with the 2009 version of ANSI A117.1, the facility should comply with the applicable portions of the Code.
- Due to a state regulation, that fire service personnel are required to be ambulatory, it is common to seek a variance for sleeping areas and areas accessed only by the fire personnel to be exempted from the accessibility requirements. This would be mostly utilized for second floor spaces to eliminate the need for an elevator.
- This facility lacks compliance with accessibility requirements throughout the facility. The details are noted further in the facility assessment report. Several examples include:

- The building entrance does not comply with the accessibility code. The door widths in the public areas would need to be 3-0” wide in all locations to allow for 32” clearance along with the door approaches.
- Door approaches throughout the facility do not comply with current ADA standards. Refer to ADA Door diagram for allowable approaches and layouts.



- The primary circulation hallway connecting the public and private spaces is 4’-0” wide and does not allow for a proper turning radius or door approaches.
- In general, restrooms and shower have multiple non-compliant features. If the building is updated, the modifications should be made to provide compliant facilities.
- Restroom facilities would need to be upgraded to meet current standards. This would include updates to door width, fixtures, appropriate clearances, and accessories. Refer to ADA Toilet diagram below for layout requirements.



3.5 Existing Space Program

	Space	Net Sq. Ft.	OL Factor	Occ. Load
	Communication Room	126	100	2
	Mechanical	126	300	1
	Office 1	132	100	2
	Office 2	132	100	2
	Office 3	136	100	2
	Office 4	150	100	2
	Dining & Meeting Room	694	15	47
	Kitchen	304	200	2
	Day Room	549	15	37
	Dormitory	549	50	11
	Men's Toilet / Shower	233	----	NA
	Conference Room	263	15	18
	Locker Room	220	----	NA
	Janitor's Closet	28	300	1
	Women's Locker Room	99	----	NA
	Women's RR	49	----	NA
	Public Toilet	52	----	NA
	Apparatus Room	8,400	500	17
	Total Building (Gross Sq. Ft.)	**13,020**		**144**

4. HVAC System Summary

The administration and living quarters are currently served by two gas fired DX split-system residential-type furnaces. The furnaces are in the mechanical room and the condensing unit is ground mounted next to the exterior of the north wall of the building. The living area is treated as a single zone with the sole thermostat located in a corridor at the center of the building. The furnaces are equipped with wicking type humidifiers. The furnaces are in good condition and do not require replacement soon.

Insulated refrigerant lines run from the condensing unit to the furnace coils in the mechanical room. The condensing unit was installed in 2001 replacing the original equipment, greatly exceeding its 15-year life cycle. This unit is in marginal condition and replacement soon is recommended.

The ductwork and diffusers are original to the 1981 building. Sheet metal ductwork is used to feed the main branches of the system and flex ducts supply to the different rooms. Ductwork located at the return inlet and near the air filter of the furnaces show corrosion, typical as the material ages. Additionally, due to its age, leaks are typical to occur causing a loss in heating, cooling, and efficiency capabilities. The ductwork is in fair condition and remedial work is recommended. Similarly, the diffusers have exceeded their expected lifespan of 25 years and their condition varies from fair to marginal throughout units. Replacement in the near future is recommended.

The fire station bay is currently served by six gas fired unit heaters. These units show minimal signs of wear, most likely being a 2014 replacement for the original 1981 equipment. All six-unit heaters are in great condition and no replacement is needed in the near future.

Recirculation and exhaust in the fire station bay is provided by three ceiling fans and two exhaust extractors systems, respectively. The three ceiling fans installed in 2011 are approaching the end of their life span, however, visually they appear to be in good condition and do not require immediate replacement, although minor maintenance is recommended to conserve their condition. The two exhaust extractor systems have flexible snorkels at each bay mounted on rails to extract vehicle fumes through the extractor fans located on the outside of the north wall. The exhaust units were installed in 2011 and are a replacement for the original existing exhaust fans. These units are in good condition and no replacement is needed in the near future. A method of bringing fresh air to achieve the ventilation minimum during the winter is recommended.

5. Plumbing System Summary

The domestic plumbing system is connected to a municipal water supply. Hot and cold-water piping is copper and sanitary piping is iron. Copper piping will typically last 70 to 80 years. The iron pipe that has been installed in the concrete slab typically has a life span of about 80 years. The precast concrete mud / sand separator located on the north side engine has reached its end of life and will need to be replaced. The garage also contains 3 trench drains that appear to be in good condition. The grates on the drain have peeled paint and light surface rust but does not impact its ability to function. The floor drains located in the restrooms are Zurn with a bronze finish that connects to the iron sanitary pipe below the concrete slab. The drains and faceplates appear to be in good condition and have an average lifespan of about 20 years. On the exterior of the garage are a few, freeze-resistant hose bibs. The hose bibs face plate has faded due to outside exposure. The average lifespan of these are 20 years and should be considered for replacement.

The building contains two toilet fixture types and one urinal type. The public toilet is an ADA compliant floor mounted toilet using a manual flush valve. The other three toilets are floor mounted tank types. Each toilet has some surface stains, but it does not impact the functions of the toilets. The urinal in the men's restroom uses a manual flush valve and contains some surface stains. The cold-water pipe connecting to the urinal is not secured properly and the pipe is able to move. It potentially can cause a leak. It is recommended that the pipes be secured.

The lavatories in the building are all manual fixtures with some surface stains that does not impact its functionality. The sink in the breakroom has minimal staining and is in good condition. It contains a garbage disposal under the sink that appears to be in good condition. The sink does not get any hot water. The laundry room contains a plastic utility sink. The sink is in good condition but has surface stains. The building also contains two showers. Both showers appear to be in good condition, and both use Delta faucets that also appear to be in good condition. The average life expectancy for both the shower and the faucets are 10 years.

The domestic water heater for the building is in the mechanical room. The water heater is currently 13 years old and is approaching its end of life. The air compressor for the garage is also located in the mechanical room. The compressor is currently 35 years old and is approaching the equipment's end of life and should be replaced. Outside of the Mechanical room is the commercial washer. The washing machine appears to be in good condition and

the average life span of this equipment is typically 10 years. In the laundry room is a residential clothes washer and dryer. Both machines appear to be in good condition with minimal scratches and stains that do not impact its performance. Current installation date is unknown, but the average lifespan is 10 years for the pair. In the break room, there is a residential style dishwasher that appears to be in good condition and the typical lifespan of the equipment is 10 years. In the garage, there is an ice machine that appears to be in good condition. The average lifespan for ice machines is about 10 years from the install date. There are two water coolers located on the interior of the building. They both appear to be in good condition. The average lifespan is 10 years and should be replaced as needed.

6. Electrical System Summary

The electrical system is a 120/208V, 3-phase 200A power system – main Panelboard A. Two additional panelboards 'B' & 'C' that are fed from panel 'A'. Panel 'B' is a 60A & Panel 'C' is a 100A. Over the years as equipment and connections have been made, most of the available spare breakers and spaces have been used up. There are very few spare breakers available for expansion. The electrical equipment appears to be the original when the facility was constricted and looks to be in fair working condition.

The building has a gas-fired 60kW emergency generator that was replaced roughly 12 years ago with one transfer switch. The transfer switch is connected to Panel 'A' serving all power and lighting in the facility. The generator appears to be in good working condition.

Lighting system for the interior are old T-12 fluorescent tube and incandescent fixtures. The T-12 fluorescent tubes are being phased out but still can be found. The exterior pole mounted lighting fixtures have been replaced with LED type fixtures and appear to be in good working condition.

The building does not have a central fire alarm system. The facility has local residential-grade smoke detectors throughout.

Station Alerting System is located within the Meeting Room closet. The Station Alerting System is tied to mixer & amplifier to control audible information to the speakers throughout the facility. Miscellaneous A/V equipment is also located in this closet for Meeting Room.

The existing telecom equipment is in the Mechanical & Electrical room adjacent to the Garage. The telecom equipment consists of 110 termination blocks and appear to be original when facility was constructed. Access Control head end equipment also resides in this electrical equipment room.

7. Facility Condition Report

The report is organized by building systems and aligns with the FTA (Federal Transit Authority) guidelines for facility assessments. The systems and designations are outlined below:

A – Substructure

B – Superstructure

C – Interiors

D – Vertical and Conveyance Systems (not applicable)

E – Plumbing Systems

F – HVAC

G – Fire Protection (not applicable)

H – Electrical

I – Equipment

J – Site

K – Fire and Life Safety

L – Accessibility

M – Contamination Control (specific to fire stations)

There are additional sub systems within each category which are identified in the reports. Each system and subsystem are rated with a grade of A-F. This grade corresponds to the capital improvement cost for each system in the report. The grading system is outlined below:

A – (Excellent) No visible defects, new or near new condition. May still be under warranty of applicable. Capital improvement cost would be classified under the 15–20-year duration.

B – (Good) No longer new, may have some slightly defective or deteriorated component(s), but is overall functional. Capital improvement cost would be classified under the 10–15-year duration.

C – (Adequate) Moderately deteriorated or defective component(s); system has not exceeded useful like. Capital improvement cost would be classified under the 5-10-year duration.

D – (Marginal) Defective or deteriorated component(s) in need of replacement or updating; exceed useful life or no longer meet current standards (system, energy, code, life safety, ADA). Capital improvement cost would be classified under the 3-5 year duration.

E – (Poor) Critically damaged components or in need of immediate repair or replacement; well past useful life. Capital improvement cost classified under the 0-2 year duration.

A	SUBSTRUCTURE						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photo (Refer to assessment)	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
(GARAGE)											
A.01	Spread (column) footings	20	EA	-			$ -	$ -	$ -	$ -	$ -
A.02	Wall footings	380	LF	-			$ -	$ -	$ -	$ -	$ -
A.03	Column Connections / Pedestals	0	EA	C	- Moderate corrosion on column, baseplate, and anchors - Breakout cracking/delamination observed at one column location	Page 32	$ -	$ -	$ 5,000	$ -	$ 5,000
A.04	Perimeter foundation wall	380	LF	B	- Thin cracking observed, no displacement or spalling along cracks	Page 32	$ -	$ -	$ -	$ -	$ -
A.05	Interior Concrete SOG	8400	SF	B	- Thin cracking observed, no displacement or spalling along cracks		$ -	$ -	$ -	$ -	$ -
A.06	Trench Drains	150	LF	B	- Trench drains appear to be replaced since original building construction - Trench grating and surrounding concrete in good condition - Low spots adacent to trench drains are creating puddles on slab surface	Pages 32, 33	$ -	$ -	$ -	$ -	$ -
A.07	Exterior SOG / Garage Apron	2400	SF	B	- Thin cracking observed, no displacement or spalling along crack	Page 33	$ -	$ -	$ -	$ -	$ -
A.08	Wall Panels / Connections	0	LF	C	- Moderate corrosion along base of wall panels	Page 33	$ -	$ -	$ 2,000	$ -	$ 2,000
A.09	Bollards and Crash Barrier	28	EA	C	- Light corrosion on crash barrier posts - Heavy Corrosion on door jamb bollards - observed under PVC cover	Page 34	$ -	$ -	$ 41,000	$ -	$ -
(LIVING QUARTERS)											
A.11	Spread (column) footings	6	EA	-	-		$ -	$ -	$ -	$ -	$ -
A.12	Wall footings	202	LF	-	-		$ -	$ -	$ -	$ -	$ -
A.13	Column Connections / Pedestals	6	EA	-	-		$ -	$ -	$ -	$ -	$ -
A.14	Perimeter foundation wall	202	LF	-	-		$ -	$ -	$ -	$ -	$ -
A.15	Interior Concrete SOG	4620	SF	-	-		$ -	$ -	$ -	$ -	$ -
A.16	Exterior SOG / Man Door Stoops	1056	SF	C	- Cracking observed, slight displacement at cracks - Slab replacement is not a critical structural integrity item and is more a function of building owner discretion for mitigating trip hazard.		$ -	$ -	$ 7,500	$ -	$ -
A.17	Wall Panels / Connections	202	LF	-	-		$ -	$ -	$ -	$ -	$ -
(OTHERS)											
A.21	Antenna Tower Foundation	1	EA	A	- No cracking, spalling, or evidence of anchor breakout observed	Page 34	$ -	$ -	$ -	$ -	$ -
						A-Substructure Total	$ -	$ -	$ 55,500	$ -	$ 7,000

Cond. Rating	Description	Condition Description
A	Excellent	No visible defects, new or near new condition. May still be under warranty if applicable.
B	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional.
C	Adequate	Moderately deteriorated or defective component(s); system has not exceed useful life.
D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
F	Poor	Critically damaged component(s) or in need of immediate repair or replacement; well past useful life.

B.0	SHELL - SUPERSTRUCTURE						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photo (refer to assessment)	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
(GARAGE)											
B.0.01	Rigid Frame - Column	10	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed	Page 35	$ -	$ -	$ -	$ -	$ -
B.0.02	Rigid Frame - Beam	5	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed	Page 35	$ -	$ -	$ -	$ -	$ -
B.0.03	Side wall columns	10	EA	-	-		$ -	$ -	$ -	$ -	$ -
B.0.04	Roof Purlin	96	EA	B	- No deformation, sagging, or corrosion observed		$ -	$ -	$ -	$ -	$ -
B.0.05	Roof X-bracing steel rods	24	EA	A	- No deformation, sagging, or corrosion observed		$ -	$ -	$ -	$ -	$ -
B.0.06	Roof Deck	9000	SF	B	- No deformation or corrosion observed on topside of deck		$ -	$ -	$ -	$ -	$ -
B.0.07	Wall Girt	896	LF	-	-		$ -	$ -	$ -	$ -	$ -
B.0.08	E-W Lateral system - Rigid frames running btwn CL 2 and 3	2	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed		$ -	$ -	$ -	$ -	$ -
B.0.09	Self-supporting Storage Mezzanine Kit	1	EA	C	- Corrosion at base of supports posts - Multiple support posts not anchored to floor slab - Centereast support post not vertically oriented - Mezzanine load rating not posted - Clean and paint bottom portion of support posts - Straighten centereast support post prior ot reanchoring - Post storage load limit established by storage mezzanine kit manufacturer		$ -	$ -	$ 2,000	$ -	$ -
(LIVING QUARTERS)											
B.0.11	Columns	6	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed		$ -	$ -	$ -	$ -	$ -
B.0.12	Slope-Beam Girder	2	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed		$ -	$ -	$ -	$ -	$ -
B.0.13	Eave Strut Beam	4	EA	B	- No deformation, sagging, or corrosion observed - No missing fasteners observed		$ -	$ -	$ -	$ -	$ -
B.0.14	Bar Joists	30	EA	B	- No significant deformations or corrosion observed - Attachment of interior parition 2x bracing may or may not have been engineered		$ -	$ -	$ -	$ -	$ -
B.0.15	Exterior wall CFMF wall studs	202	LF	B	- No deformation or corrosion observed at tops of studs		$ -	$ -	$ -	$ -	$ -
B.0.16	Roof Deck (original decking set on joists)	5000	SF	B	-		$ -	$ -	$ -	$ -	$ -
B.0.17	Vertical Façade Structure *(Only Front Façade remains)*	66	LF	B	- No deformation, sagging, or corrosion observed from exterior		$ -	$ -	$ -	$ -	$ -
B.0.18	Gable roof overbuild	5000	SF	-	-		$ -	$ -	$ -	$ -	$ -
B.0.19	Roof Deck (new decking set on gabled roof overbuild)	5000	SF	B	- No deformation or corrosion observed on topside of deck		$ -	$ -	$ -	$ -	$ -
(OTHERS)											
B.0.21	Antenna Tower Structure *(excludes wires and conduits)*	1	EA	D	- Peeling paint finish - Minimimal surface corrosion - No missing fasteners observered - No deformations in steel observed - Clean and paint antenna tower structure		$ -	$ 15,000	$ -	$ -	$ -
						B.0 Shell-Superstructure Total	$ -	$ 15,000	$ 2,000	$ -	$ -

B.1	SHELL - ROOFING						CAPITAL IMPROVEMENT COST				
No.	**Description**	**Qty.**	**Units**	**Rating**	**Observations / Recommendations**	**Photos**	**0-3 yr**	**3-5 yr**	**5-10 yr**	**10-15 yr**	**15-20 yr**
B.1.01	Exposed Fastener Standing Seam Roof System	13,020	SF	C	Exposed fastener roof systems required maintenance and sealing of roof fasteners and joints. It is recommended to perform an inspection on an annual basis and correct any issues noted. $1.50/sf for sealant, $0.50/sf for fastener repairs.		$ -	$ -	$ 39,060	$ -	$ 39,060
B.1.02	Gutters and downspouts	18	EA	C	Some downspouts drain to underground stormwater drains. Other downspouts drain onto the surface concrete near the structure's foundation. To ensure the structure's integrity, it is suggested that all downspouts empty at least 24" away from the base of the building.		$ -	$ -	$ 3,500	$ -	$ -
B.1.03	Roof Edges	582	LF	C	Eve, fascia, and gutters are in good condition. Reseal gutter seams every 10 years.		$ -	$ -	$ 1,500	$ -	$ 1,500
B.1.04	Roof Transitions	70	LF	C	Inspect roof transitions annually.		$ -	$ -	$ 1,500	$ -	$ 1,500
B.1.07	Flashing systems	70	LF	C	Inspect roof flashing annually for sealant failure. Sealants should be replaced every 10 years. Sealant replacement is around $20/ft.		$ -	$ -	$ 1,500	$ -	$ 1,500
						B.1 Shell - Roofing Total	**$ -**	**$ -**	**$ 47,060**	**$ -**	**$ 43,560**

Cond. Rating	Description	Condition Description
A	Excellent	No visible defects, new or near new condition. May still be under warranty if applicable.
B	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional.
C	Adequate	Moderately deteriorated or defective component(s); system has not exceed useful life.
D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
F	Poor	Critically damaged component(s) or in need of immediate repair or replacement; well past useful life.

B.2	SHELL - WALLS AND OPENINGS						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos (refer to assessment)	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
B.2.a	Exposed fastener metal wall panels	6,650	SF	C	The metal panels around the apparatus bays are in good condition with no major defect. The metal panels above the offices/sleeping quarters are a different type of metal paneling, also in good condition. Observe sealants and fasteners on an annual basis and correct deficiencies. $3.00/sf		$ -	$ -	$ 20,000	$ -	$ 20,000
B.2.b	Vinyl windows	12	EA	C	Vinyl windows are in adequate condition. No major defects observed. Perimeter sealants should be replaced every 10 years. 432 total lf @ $20/lf		$ -	$ -	$ 8,700	$ -	$ 8,700
B.2.c	Aluminum doors	1	EA	B	No defects, but light wear-and-tear observed.		$ -	$ -	$ -	$ -	$ -
B.2.d	HM / Steel Doors	6	EA	C	No major rusting or deterioration, moderate wear of painted finishes and sealants observed. Recommend painting every 10 years.		$ -	$ -	$ 3,000	$ -	$ 3,000
B.2.e	Louvers	9	SF	D	The louvers on the west side of the apparatus bays has degraded considerably. These should be replaced.	Page 36	$ -	$ 1,200	$ -	$ -	$ -
B.2.f	Overhead doors	10	EA	A	No defects or damage observed. OH doors in good condition and recently new.		$ -	$ -	$ -	$ -	$ -
B.2.g	Aggregate stone panels	1,360	SF	C	Stone panels showing wear from age and freeze thawn cycles. No spalling was observed. Sealants are beyond life expectacy and need replacment.		$ -	$ -	$ 2,500	$ -	$ 2,500
B.2.h	Sealants			F	Replace sealants every 10-15 years.		$ 2,500	$ -	$ 2,500	$ -	$ 2,500
						B.2 Shell - Walls and Openings Total	**$ 2,500**	**$ 1,200**	**$ 36,700**	**$ -**	**$ 36,700**

Cond. Rating	Description	Condition Description
A	Excellent	No visible defects, new or near new condition. May still be under warranty if applicable.
B	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional.
C	Adequate	Moderately deteriorated or defective component(s); system has not exceed useful life.
D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
F	Poor	Critically damaged component(s) or in need of immediate repair or replacement; well past useful life.

C.0	INTERIORS - PARTITIONS AND DOORS						CAPITAL IMPROVEMENT COST				
No.	**Description**	**Qty.**	**Units**	**Rating**	**Observations / Recommendations**	**Photo (refer to assessment)**	**0-3 yr**	**3-5 yr**	**5-10 yr**	**10-15 yr**	**15-20 yr**
C.0.1a	Drywall / painted surfaces	3,227	SF	B	Normal wear for building of this age. Painting appears to be in good condition throughout. Painting will be required in 5-10 years.		$ -	$ -	$ -	$ 7,500	$ -
C.0.1b	Applied wainscot - metal plate	600	SF	A	Material is in good condition and utilized in high traffic areas to provide durability to wall surfaces.		$ -	$ -	$ -	$ -	$ -
C.0.2a	Wood Doors / wood frames	21	EA	C	The doors seem to be in moderate shape with some wear and tear. The wood trim shows many scratches. Door hardware should be changed to door levers that comply with ADA requirements.		$ -	$ -	$ 12,750	$ -	$ -
C.0.2b	Fire Doors	3	EA	F	These doors show major wear and tear. The fire door, going into the garage from the mens dorm, has a bent closer that needs to be replaced. The fire rating label have been painted over. A few of the doors are significantly. These openings should be repaired or replaced to comply with rating requirements.	Page 36	$ 9,500	$ -	$ -	$ -	$ -
C.0.2d	Folding Doors	3	EA	B	The doors are in good condition with little wear and tear.		$ -	$ -	$ -	$ -	$ -
C.0.2e	Accordion Doors	1	EA	B	The doors are in good condition with little wear and tear.		$ -	$ -	$ -	$ -	$ -
C.0.3a	Metal toilet partitions	3	EA	B	The metal partitions are painted. There are some signs of wear and tear but they are functional. Repainting may be required in the future.		$ -	$ -	$ -	$ 2,500	$ -
						C.0 Interiors - Partitions and Doors Total	**$ 9,500**	**$ -**	**$ 12,750**	**$ 10,000**	**$ -**

Cond. Rating	Description	Condition Description
A	Excellent	No visible defects, new or near new condition. May still be under warranty if applicable.
B	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional.
C	Adequate	Moderately deteriorated or defective component(s); system has not exceed useful life.
D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
F	Poor	Critically damaged component(s) or in need of immediate repair or replacement; well past useful life.

C.1	INTERIORS - FINISHES, CASEWORK, ACCESSORIES						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photo (refer to assessment)	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
C.1.01	**Floor finish**										
C1.01a	Carpet Tile	1,911	SF	C	There are moderate signs of wear. Carpet has a useful life of approximately 10 years, less in high traffic areas.		$ -	$ -	$ 8,600	$ -	$ -
C1.01b	Luxury Vinyl Tile	2,027	SF	A	LVT shows no signs of wear and tear. Looks to be in like new condition.		$ -	$ -	$ -	$ -	$ -
C1.01c	Ceramic Tile	126	SF	B	There is a 12" strip of terrazo flooring along the east wall of the communcations room that shows signs of age. The ceramic tile show signs of age but it is in good condition.		$ -	$ -	$ -	$ -	$ -
C1.01d	Concrete	126	SF	B	Concrete floor shows signs of wear but is in good condition.		$ -	$ -	$ -	$ -	$ -
C.1.02	**Ceiling finish**										
C.1.02a	Acoustic Ceiling Tile	4,064	SF	D	Ceiling tile shows major signs of wear and tear. There are panels that are bowing out. There are panels that are missing and some that show burn marks on them. There are locations where the ceiling is stained. Recommend replacing all of the ceiling tile and grid.	Page 37	$ -	$ 16,600	$ -	$ -	$ -
C.1.03	**Wall finish**										
C.1.03a	Resilient base	525	LF	B	Base shows some slight wear and tear, but it is in good condition and still serviceable.		$ -	$ -	$ -	$ -	$ -
C.1.03b	Wood baseboard	390	LF	B	Painted baseboard shows some wear and tear, but is in good condition and still serviceable.		$ -	$ -	$ -	$ -	$ -
C.1.03c	Painted drywall	3,227	SF	D	The painted drywall in the communications room has paint chipped from the walls. The walls in the rest of the spaces appears to have been recently painted.	Page 37	$ -	$ 5,000	$ -	$ -	$ -
C.1.03d	Wood chair rail	390	LF	B	Painted chair rail shows some wear and tear, but is in good condition and still serviceable.		$ -	$ -	$ -	$ -	$ -
C.1.03e	Chrome plastic wallcovering	815	SF	A	Chrome plastic wainscot shows no signes of wear and tear.		$ -	$ -	$ -	$ -	$ -
C.1.03f	Wood paneling	3,231	SF	C	There are two areas of painted wood paneling, divided by a painted wood chair rail. There are locations where the chair rail is missing. The panels, themselves, are in adequate condition.		$ -	$ -	$ 3,500	$ -	$ -
C.1.03g	Mosaic tile	232	SF	B	The tile shows signs of age, but it is in good condition and still serviceable.		$ -	$ -	$ -	$ -	$ -
C.1.03h	Ceramic Tile	280	SF	B	The ceramic tile is installed as a wainscot in the restroom. It shows some slight wear and tear and is in good condition and still serviceable.		$ -	$ -	$ -	$ -	$ -

C.1.03	**Wall finish (continued)**										
C.1.03j	Vinyl wallcovering	96	SF	F	The vinyl wall covering, in the restroom, shows major wear and tear. There are signs of mold in the seams between panels. Suggest removing and/or replace the vinyl wall covering and damaged drywall areas.	Page 37	$ 2,500	$ -	$ -	$ -	$ -
C.1.03k	FRP wallcovering	124	SF	A	FRP wallcovering, in the mens shower, shows no signs of wear and tear.		$ -	$ -	$ -	$ -	$ -
C.1.04	**Casework**										
C.1.04a	Wood base cabinetry	26	LF	B	There is a base cabinet that is missing a drawer cover. The remainder of the cabinets, in the kitchen, shows no wear and tear. Base cabinetry, in the mens restroom, shows minimal signs of defects.		$ -	$ -	$ -	$ -	$ -
C.1.04b	Wood wall cabinetry	34	LF	A	Wall cabinets, in the kitchen and laundry rooms, show no wear and tear.		$ -	$ -	$ -	$ -	$ -
C.1.04c	Wood tall cabinetry	12	LF	A	Tall cabinets, in the kitchen, shows no wear and tear.		$ -	$ -	$ -	$ -	$ -
C.1.04c	Plastic laminate countertop	26	LF	A	Plastic laminate countertop, in the kitchen, shows minimal signs of wear and tear. No visible defects.		$ -	$ -	$ -	$ -	$ -
C.1.04d	Wood countertop	3	LF	A	Wood countertop, in the kitchen, shows no signs of defects.		$ -	$ -	$ -	$ -	$ -
C.1.04e	Solid surface countertop	6	LF	C	The countertop and backsplash does not cover the total width of the lavatory.		$ -	$ -	$ 2,500	$ -	$ -
C.1.05	**Trim and millwork**										
C.1.05a	Wood door trim	20	EA	C	Many of the door and opening trims have scratches on them.		$ -	$ -	$ 5,500	$ -	$ -
C.1.06	**Accessories**										
C.1.06a	Metal Lockers	30	EA	B	There are 30 tall metal lockers with inserts for padlocks.		$ -	$ -	$ -	$ -	$ -
C.1.06b	Microwave	1	EA	A	Microwave is in good condition with no signs of wear and tear		$ -	$ -	$ -	$ -	$ -
C.1.06c	Gas stove	1	EA	A	Gas oven / stove is in good condition with no signs of wear and tear		$ -	$ -	$ -	$ -	$ -
C.1.06d	Dishwasher	1	EA	A	Dishwasher is in good condition with no signs of wear and tear		$ -	$ -	$ -	$ -	$ -
						C.1 Interiors - Finishes, Casework, Accessories Total	**$ 2,500**	**$ 21,600**	**$ 20,100**	**$ -**	**$ -**

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C	Adequate	Moderately deteriorated or defective component(s); system has not exceed useful life.
D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
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E	PLUMBING						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
E.01	Water Heater	1	EA	F	The water heater is currently 13 years old and is approaching it's end of life and should be replaced		$ 4,000	$ -	$ -	$ -	$ -
E.02	Air Compressor	1	EA	F	The compressor is currently 35 years old and is approaching the equipment's end of life and should be replaced.		$ 11,000	$ -	$ -	$ -	$ -
E.03	Washing Machine - Laundry Rm	1	EA	B	Both machines appear to be in good condition with minimal scratches and stains that do not impact its performance		$ -	$ -	$ -	$ 20,000	$ -
E.04	Clothes Dryer	1	EA	B			$ -	$ -	$ -	$ 2,000	$ -
E.05	Washing Machine - Garage	1	EA	B	The washing machine appears to be in good condition and the average life span of this equipment is typically 10 years		$ -	$ -	$ -	$ 2,000	$ -
E.06	Water Cooler	2	EA	B	There are two water coolers located on the interior of the building. They both appear to be in good condition. The average lifespan is 10 years and should be replaced as needed.		$ -	$ -	$ -	$ 1,500	$ -
E.07	Ice Machine - Garage	1	EA	B	There is an ice machine that appears to be in good condition. The average lifespan for ice machines is about 10 years from the install date.		$ -	$ -	$ -	$ 3,500	$ -
E.08	Hand sink - Break Rm	1	EA	B	The sink in the breakroom has minimal staining and is in good condition. It contains a garbage disposal under the sink that appears to be in good condition. The sink does not get any hot water.		$ -	$ -	$ -	$ 2,500	$ -
E.09	Lavatories	3	EA	B	Manual fixtures with some surface stains that does not impact its functionality. The sink in the breakroom has minimal staining and is in good condition		$ -	$ -	$ -	$ 1,800	$ -
E.10	Water Closets	4	EA	B	Each toilet has some surface stains, but it does not impact the functions of the toilets.		$ -	$ -	$ -	$ 7,000	$ -
E.11	Urinal	1	EA	C	The urinal in the men's restroom uses a manual flush valve and contains some surface stains. The cold-water pipe connecting to the urinal is not secured properly and the pipe is able to move. It potentially can cause a leak		$ -	$ -	$ 700	$ -	$ -
E.12	Mop sink	1	EA	B	The sink is in good condition but has surface stains.		$ -	$ -	$ -	$ 700	$ -
E.13	Trench Drain	3	EA	B	The garage also contains 3 trench drains that appear to be in good condition. The grates on the drain have peeled paint and light surface rust but does not impact its ability to function		$ -	$ -	$ -	$ 9,900	$ -
E.14	Showers	2	EA	B	Both showers appear to be in good condition, and both use Delta faucets that also appear to be in good condition		$ -	$ -	$ -	$ 4,000	$ -
E.15	Floor Drains	8	EA	A	The drains and faceplates appear to be in good condition and have an average lifespan of about 20 years		$ -	$ -	$ -	$ -	$ 6,000
E.16	Mud Intercepter	1	EA	D	The precast concrete mud / sand separator located on the north side engine has reached its end of life and will need to be replaced		$ -	$ 20,000	$ -	$ -	$ -
E.17	Hose Bibs	8	EA	D	The hose bibs face plate has faded due to outside exposure. The average lifespan of these are 20 years and should be considered for replacement.		$ -	$ 6,400	$ -	$ -	$ -
E.18	Dishwasher	1	EA	B	Residential style dishwasher that appears to be in good condition and the typical lifespan of the equipment is 10 years		$ -	$ -	$ -	$ 2,000	$ -

E	PLUMBING (continued)						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
E.19	Domestic Piping	500	EA	A	Hot and cold-water piping is copper and sanitary piping is iron. Copper piping will typically last 70 to 80 years until they need to be replaced. The iron pipe that has been installed in the concrete slab typically has a life span of about 80 years		$ -	$ -	$ -	$ -	$ -
E.20	Sanitary Piping	300	EA	A			$ -	$ -	$ -	$ -	$ -
E.21	Recirc Pump	1	EA	D	Recommended upgrades to existing system - Bell & Gosett		$ -	$ 3,500	$ -	$ -	$ -
						E Plumbing Total	**$ 15,000**	**$ 29,900**	**$ 700**	**$ 56,900**	**$ 6,000**

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D	Marginal	Defective or deteriorated component(s) in need of replacment or updating; exceeded useful life or no longer meet current standards (system, energy, code, life safety, ADA standards).
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F	HVAC						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
F.01	Furnace	2	EA	A	The furnaces are in good condition and do not require replacement in the near future. Provide yearly maintenance.		$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 4,820
F.02	Ductwork	4,600	SF	C	The ductwork is in adequate condition and remedial work is recommended		$ -	$ -	$ 9,200	$ -	$ -
F.03	Diffusers	15	EA	D	Diffusers have exceeded their expected lifespan of 25 years and their condition varies from fair to marginal throughout units. Replacement in the near future is recommended.		$ -	$ 6,015	$ -	$ -	$ -
F.04	Unit Heaters	6	EA	A	All six unit heaters are in great condition and no replacement is needed in the near future.		$ -	$ -	$ -	$ -	$ 27,600
F.05	Ceiling Fans	3	EA	C	The three ceiling fans installed in 2011 are approaching the end of their life span, however, visually they appear to be in good condition and do not require immediate replacement, although minor maintenance is recommended to conserve their condition.		$ -	$ -	$ 5,400	$ -	$ -
F.06	Exhaust Extractors	2	EA	A	These units are in good condition and no replacement is needed in the near future.		$ -	$ -	$ -	$ -	$ 40,000
F.07	Air Conditioning	4,600	SF	F	The condensing unit has exceeded its life span being prone to cease to function at any moment. A replacement of the air conditioner which includes a new condensing (10 Ton Air-cooled) unit and refrigerant lines is recommended.		$ 12,650	$ -	$ -	$ -	$ -
						F HVAC Total	$ 13,650	$ 7,015	$ 15,600	$ 1,000	$ 72,420

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H	ELECTRICAL						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
H.01	Electrical Service	1	EA	C	Panel appears to be in fair condition but is original when building was constructed.		$ -	$ -	$ 3,000	$ -	$ -
H.02	Electrical distributions	2	EA	C	Panel appears to be in fair condition but is original when building was constructed.		$ -	$ -	$ 3,500	$ -	$ -
H.03	Lighting - Interior	13,000	SF	C	Lighting fixtures are in fair working contition but are older T-12 fluorescent style.		$ -	$ -	$ 98,410	$ -	$ -
H.04	Lighting- Exterior		LUMP	B	Exterior lighting appears to be upgraded to LED.		$ -	$ -	$ -	$ 20,300	$ -
H.05	Branch wire and raceway	13,000	SF	B	Electrical equipment appears to be the original when the facility was constructed and is in fair working condition.		$ -	$ -	$ -	$ 33,400	$ -
H.06	Communications / Data	13	1000 SF	B	Telecom equipmnet consists of 110 termination blocks and appear to be original when the facility was constructed.		$ -	$ -	$ -	$ 15,470	$ -
H.07	Generators	1	EA	A	Gas fired 60KW emergency generator that was replaced 12 years ago with one transfer switch. The generator appears to be in good working condition.		$ -	$ -	$ -	$ -	$ 39,000
H.08	Door access control	1	EA	A	Door access control is 8 years old and appears to be in good condition.		$ -	$ -	$ -	$ -	$ 6,000
H.09	Dispatch Alert System	1	EA	B	The Station Alerting System is tied to mixer & amplifier to contorl audible information to the speakers throughout the facility.		$ -	$ -	$ -	$ 10,075	$ -
H.10	Electrical Service	1	EA	D	Recommended upgrades to existing system - 400A service		$ -	$ 16,380	$ -	$ -	$ -
						H Electrical Total	**$ -**	**$ 16,380**	**$ 104,910**	**$ 79,245**	**$ 45,000**

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I	EQUIPMENT						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
I.01	6 Step Rolling Safety Ladder	1	No.	B	Good condition. Not an opmital place to be kept, suggested to be stored in another location.		$ -	$ -	$ -	$ -	$ -
I.02	Washer / Extractor	1	No.	B	Alliance Laundry Systems 200-240 V 50-60Hz 47.2" high x 30.6" wide		$ -	$ -	$ -	$ -	$ -
I.03	Gear Dryer	1	No.	B	Alliance Laundry Systems 200 V		$ -	$ -	$ -	$ -	$ -
I.06	Oxygen Tank Filler	2	No.	B	Stationary Containment Fill Stations (SCFS). Minor wear and tear.						
I.07	SCBA cleaner			NA			$ -	$ -	$ -	$ -	$ -
						I Equipment Total	$ -	$ -	$ -	$ -	$ -

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J	SITE						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
J.01	Roadways / driveways	-	SF	C	The condition of the roadways and driveways is adequate. Heavy stripping repair throughout. The roadways had no major drainage issues. The lot seemed even and level with no major depressions.		$ -	$ -	$ 25,000	$ -	$ 25,000
J.03	Parking and signage	61	EA	F	Fire trucks enter from and exit onto E Commerical Ave. Fire trucks enter the apparatus bays from the north to park their vechicles. Existing parking spaces on the north side of the site impede with the fire trucks turning radii. The Owner expressed the need for additional parking spaces as well. We strongly suggest a new parking layout for better, clear access for fire trucks and additional parking for cars. (Cost evaluated during needs assessment.)		$ -	$ -	$ -	$ -	$ -
J.04	Pedestrian access	-		F	No sidewalk exists connecting the street to the fire station/police station. Firestations are typically open to the public, so a sidewalk connection to the FD and PD is strongly suggested.		$ 7,500	$ -	$ -	$ -	$ -
J.06	Landscaping	4,500	SF	B	Site is well kept. Landscaping seemed adequately maintaned.		$ -	$ -	$ -	$ -	$ -
J.07	Site drainage / grading	-		B	No issues reported or observed.		$ -	$ -	$ -	$ -	$ -
J.08	Sanitary drainage	-		B	No issues reported or observed.		$ -	$ -	$ -	$ -	$ -
J.09	Water service	-		B	No issues reported or observed.		$ -	$ -	$ -	$ -	$ -
J.10	Gas Service	-		B	No issues reported or observed.		$ -	$ -	$ -	$ -	$ -
							$ -	$ -	$ -	$ -	$ -
							$ -	$ -	$ -	$ -	$ -
							$ -	$ -	$ -	$ -	$ -
							$ -	$ -	$ -	$ -	$ -
						J Site Total	**$ 7,500**	**$ -**	**$ 25,000**	**$ -**	**$ 25,000**

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K	FIRE AND LIFE SAFETY (2014 INDIANA BUILDING CODE)						CAPITAL IMPROVEMENT COST				
No.	**Description**	**Qty.**	**Units**	**Rating**	**Observations / Recommendations**	**Photos**	**0-3 yr**	**3-5 yr**	**5-10 yr**	**10-15 yr**	**15-20 yr**
K.01	Occupancy Type			A	B Occupancy		$ -	$ -	$ -	$ -	$ -
K.02	Construction Type			A	V-B		$ -	$ -	$ -	$ -	$ -
K.03	Allowable Area			A	14,490 SF		$ -	$ -	$ -	$ -	$ -
K.04	Separation Requirements			A	None required		$ -	$ -	$ -	$ -	$ -
K.05	Fire Resitive Construction	1	EA	D	The exterior wall adjacent to the Police Station is required to have a one-hour rating since the fire separation distance to the imaginary property line is between 5'-10' (Table 602). Door and windows on the west façade are required to be 45 minute rated.		$ -	$ 15,000	$ -	$ -	$ -
K.06	Fire Protection Requirments			A	There are no fire protection requirements since the facility is a B-Occupancy and is under the allowable area requirements.		$ -	$ -	$ -	$ -	$ -
K.07	Egress - Doors	6	EA	B	B occupancy: 4 exits - Review egress door hardware		$ -	$ -	$ -	$ 7,500	$ -
K.08	Egress - Corridors			A	44 inches minimum		$ -	$ -	$ -	$ -	$ -
K.09	Occupant Load			A	S-1 = 42 occupants / B = 130 occupants		$ -	$ -	$ -	$ -	$ -
K.10	Exit Access			A	200 feet		$ -	$ -	$ -	$ -	$ -
						K Fire and Life Safety Total	**$ -**	**$ 15,000**	**$ -**	**$ 7,500**	**$ -**

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L	ACCESSIBILITY						CAPITAL IMPROVEMENT COST				
No.	Description	Qty.	Units	Rating	Observations / Recommendations	Photos	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
L.01	Parking Areas	2	EA	B	Access to the ADA parking spaces is adequate.		$ -	$ -	$ -	$ -	$ -
L.02	Building Entry / Access	-		D	Public entrance from the exterior side is compliant. Interior side of the door does not meet the door approach requirements. Door clearance requirements are show in Section 2 of the report.		$ -	$ 6,500	$ -	$ -	$ -
L.03	Public Accessible Rooms / Hallway	750	SF	D	Based on current ADA standards, most rooms are noncompliant. Door approaches are not met in most spaces. The cooridor width is only 4'-0" and would need to be modified to accommodate the door approaches and provide a 5'-0" turning radius. Changes should be consider when building modifications or renovaton is required.		$ -	$ 93,750	$ -	$ -	$ -
L.04	Restrooms	330	SF	D	Based on current ADA standards, these bathrooms are noncompliant.		$ -	$ 82,500	$ -	$ -	$ -
						L Accessibility Total	$ -	$ 182,750	$ -	$ -	$ -

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M	Contamination Control (NFPA 1585)						CAPITAL IMPROVEMENT COST				
No.	**Description**	**Qty.**	**Units**	**Rating**	**Observations / Recommendations**	**Photos**	**0-3 yr**	**3-5 yr**	**5-10 yr**	**10-15 yr**	**15-20 yr**
M.01	Decontamination Area	-		D	Contamination control is lacking for the facility. It is strongly recommended that the fire station adopt new standards and decontamination procedures. These procedures would include a "hot zone" where dirty gear are removed and placed into a washing area. A transitional zone would allow firefighters to shower and change into clean clothing prior to entering the clean zone where clean gear is stored and dried.		$ -	$ -	$ -	$ -	$ -
M.02	Gear Washing	-		D			$ -	$ -	$ -	$ -	$ -
M.03	Gear Drying	-		D			$ -	$ -	$ -	$ -	$ -
M.04	Gear Storage	45	No.	C	Turnout Gear Lockers are in adequate condition. Perhaps combining all lockers into a single area (rather than in various spots around the appartatus bays) would better oraganize the space.		$ -	$ -	$ -	$ -	$ -
M.05	Personnel Decon	-		D	Contamination control is lacking for the facility. It is strongly recommended that the fire station adopt new standards and decontamination procedures. These procedures would include a "hot zone" where dirty gear are removed and placed into a washing area. A transitional zone would allow firefighters to shower and change into clean clothing prior to entering the clean zone where clean gear is stored and dried.		$ -	$ -	$ -	$ -	$ -
M.06	Hot Zone	300	SF	D			$ -	$ 60,000	$ -	$ -	$ -
M.07	Transitional Zone	200	SF	D			$ -	$ 40,000	$ -	$ -	$ -
M.08	Green Zone	300	SF	D			$ -	$ 60,000	$ -	$ -	$ -
	FEMA Standards				https://www.usfa.fema.gov/downloads/pdf/publications/design_of_fire_ems_stations.pdf						
						M Contamination Control (NFPA 1585) Total	**$ -**	**$ 160,000**	**$ -**	**$ -**	**$ -**

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8. Key Facility Recommendations

The list below includes items that have been rated D or F in the report.

- **Item B.2.e Louvers**: The louvers on the west side of the apparatus bays has degraded considerably. These should be replaced.
- **Item C.0.2b Fire Doors**: These doors show major wear and tear. The fire door, going into the garage from the men's dorm, has a bent closer that needs to be replaced. The fire rating label have been painted over. These openings should be repaired or replaced to comply with rating requirements.
- **Item C.1.02a Acoustic Ceiling Tile**: Ceiling tile shows major signs of wear and tear. There are panels that are bowing out. There are panels that are missing and some that show burn marks on them. There are locations where the ceiling is stained. Recommend replacing all the ceiling tile and grid.
- **Item C.1.03c Painted Drywall**: The painted drywall in the communications room has paint chipped from the walls. The walls in the rest of the spaces appears to have been recently painted.
- **Item C.1.03j Vinyl Wall Covering**: The vinyl wall covering, in the restroom, shows major wear and tear. There are signs of mold in the seams between panels. Suggests removing and/or replacing the vinyl wall covering and damaged drywall areas.
- **Item E.01 Water Heater**: The water heater is currently 13 years old and is approaching it's end of life and should be replaced.
- **Item E.02 Air Compressor**: The compressor is currently 35 years old and is approaching the equipment's end of life and should be replaced.
- **Item E.16 Oil / Sand Interceptor**: The precast concrete mud / sand separator located on the north side engine has reached its end of life and will need to be replaced.
- **Item E.17 Hose Bibs:** The hose bibs face plate has faded due to outside exposure. The average lifespan of these are 20 years and should be considered for replacement.
- **Item E.21 Recirculation Pump:** Recommended upgrades to existing system - Bell & Gosett due to age of the existing equipment.
- **Item F.07 Air Conditioning**: The building's current air conditioning system, specifically the condensing unit has exceeded its life span being prone to cease to function at any moment. A replacement of the air conditioner which includes a new condensing (10 Ton Air-cooled) unit and refrigerant lines is recommended.
- **Plumbing System**: The building does not currently have a hot water return system installed. This would cause the further fixtures to not get hot water for some time. I

would recommend on adding the return loop to help improve energy efficiency and comfort of the people using the fixtures.

- **Item H.10 Electrical Service**: The building electrical service should be upgraded to a 120/208V – 3ph 400A power system if any additions or modifications are needed in the future. This would include a full panelboard replacement of all electrical panelboards within the facility.
- **Item J.04 Pedestrian Access**: No sidewalk exists connecting the street to the fire station/police station. Fire Stations are typically open to the public, so a sidewalk connection to the FD and PD is strongly suggested.
- **Item K.04 Fire Resistive Construction**: The exterior wall adjacent to the Police Station is required to have a one-hour rating since the fire separation distance to the imaginary property line is between 5'-10' (Table 602). Door and windows on the west façade are required to be 45 minute rated.
- **Accessibility**:
    - **Item L.02 Building Entry and Access**: Public entrance from the exterior side is compliant. Interior side of the door does not meet the door approach requirements. Door clearance requirements are show in Section 2 of the report.
    - **Item L.03 Public accessible rooms and hallways**: Based on current ADA standards, most rooms are noncompliant. Door approaches are not met in most spaces. The corridor width is only 4'-0" and would need to be modified to accommodate the door approaches and provide a 5'-0" turning radius. Changes should be consider when building modifications or renovation is required.
    - **Item L.04 Restrooms**: Based on current ADA standards, these bathrooms are noncompliant.
- Contamination Control: It is recommended that the facility updates include provisions for proper decontamination control for Fire and EMS facilities. The current standard is outlined by FEMA and found at Safety and Health Considerations for the Design of Fire and Emergency Medical Services Stations (fema.gov).

9. Cost Implications

CAPITAL IMPROVEMENT COST SUMMARY						
No.	System	0-3 yr	3-5 yr	5-10 yr	10-15 yr	15-20 yr
A	SUBSTRUCTURE	$ -	$ -	$ 55,500	$ -	$ 7,000
B0	SHELL - SUPERSTRUCTURE	$ -	$ 15,000	$ 2,000	$ -	$ -
B1	SHELL-ROOFING	$ -	$ -	$ 47,060	$ -	$ 43,560
B2	SHELL-WALLS AND OPENINGS	$ 2,500	$ 1,200	$ 36,700	$ -	$ 36,700
C0	INTERIORS-PARTITIONS / DOORS	$ 9,500	$ -	$ 12,750	$ 10,000	$ -
C1	INTERIOR FINISHES	$ 2,500	$ 21,600	$ 20,100	$ -	$ -
D	VERTICAL CIRCULATION (NA)	$ -	$ -	$ -	$ -	$ -
E	PLUMBING	$ 15,000	$ 29,900	$ 700	$ 56,900	$ 6,000
F	HVAC	$ 13,650	$ 7,015	$ 15,600	$ 1,000	$ 72,420
G	FIRE PROTECTION (NA)	$ -	$ -	$ -	$ -	$ -
H	ELECTRICAL	$ -	$ 16,380	$ 104,910	$ 79,245	$ 45,000
I	EQUIPMENT	$ -	$ -	$ -	$ -	$ -
J	SITE	$ 7,500	$ -	$ 25,000	$ -	$ 25,000
K	FIRE AND LIFE SAFETY	$ -	$ 15,000	$ -	$ 7,500	$ -
L	ACCESSIBILITY	$ -	$ 182,750	$ -	$ -	$ -
M	CONTAMINATION CONTROL	$ -	$ 160,000	$ -	$ -	$ -
	Subtotal	**$ 50,650**	**$ 448,845**	**$ 320,320**	**$ 154,645**	**$ 235,680**
	Escalation	5.0%	10.0%	20.0%	30.0%	40.0%
		$2,533	$44,885	$64,064	$46,394	$94,272
	Subtotal	**$53,183**	**$493,730**	**$384,384**	**$201,039**	**$329,952**
	Contingency (10%)	$5,318	$49,373	$38,438	$20,104	$32,995
	Subtotal	**$58,501**	**$543,102**	**$422,822**	**$221,142**	**$362,947**
	OH & P (10%)	$5,850	$54,310	$42,282	$22,114	$36,295
	Subtotal	**$64,351**	**$597,413**	**$465,105**	**$243,257**	**$399,242**
	General Conditions (5%)	$3,218	$29,871	$23,255	$12,163	$19,962
	Total	**$67,568**	**$627,283**	**$488,360**	**$255,419**	**$419,204**

10. Photos

A – Substructure

A.03 Column Connections / Pedestals


A.04 Perimeter Foundaton Wall




A.06 Trench Drains


A.06 Trench Drains (cont.)

A.07 Exterior SOG / Garage Apron

A.08 Wall Panels / Connections

A.09 Bollards and Crash Barrier

A.21 Antenna Tower Foundation

B0 – Shell-Superstructure

B.01 Rigid Frame – Column

B.02 Rigid Frame – Beam

B2 Shell – Walls & Openings

B.2.e – Louvers

C0 Interiors – Partitions and Doors

C.0.02b – Fire Doors

C1 Interiors – Finishes

C1.02a – Acoustic Ceiling Tile

C1.03c – Painted Drywall

C.1.03j – Vinyl Wallcovering

11. Appendices

Appendix A: R2 – Residential District Standards

Lot Disposition		
Lot area	>10,800 sq. ft.	
Lot width	80' min.	
Lot coverage	40% max.	
Lot frontage	70% lot width min.	
Building Disposition		
Primary Structure		
Front setback (adjacent to)	Arterial	50'
	Collector	40'
	Local road	30'
Side setback	8' each side min.	
	16' total	
Rear setback	30' min.	
Living area	1,350 sq. ft.	
Ground floor area	>40% of living area	
Wells (if applicable)	Installed >50' inside property line	
Connection to sewer and water	If possible, lot area depends on sanitary type	
Common open space	n/a	
Accessory Structure		
Side setback	5' min.	
Rear setback	15' min.	
Structures		
Number of Structures		
Primary	1 max.	
Accessory	2 max.	
Structure Heights		
Primary	2 stories/35' max.	
Accessory	1 story/16' max.	
All agriculture related structures are exempt		
All telecommunications facilities shall conform to the requirements of §§155.070 through 155.095		
All wind energy conversion systems shall conform to the requirement of §§155.070 through 155.095		
Parking		
Spaces required	2	
Configuration	n/a	
Other Issues		
May use public water, sewer or private well and septic systems		
Applicable Development Standards (§§ 155.070 - 155.095)		
Lot/yard 155.073	Adult-oriented use 155.085	
Height 155.074	Telecom facility 155.086	
Accessory 155.075(A),(B)	Mobile/mfg home 155.087	
Buffer yard 155.076	Public improvement 155.088	
Environmental 155.078	Temporary 155.089	
Flood hazard area 155.079	Fence and wall 155.090	
Parking 155.080	Landscaping 155.091	
Entrance/drive 155.082	Outdoor lighting 155.093	
Sight visibility 155.083	Streetscape 155.094	
Home occupation 155.084	Wind energy 155.095	

APPENDIX F

LOWELL PUBLIC WORKS MAINTENANCE FACILITY DRAFT PLANS

DIRECTORY

ARCHITECT

NERI ARCHITECTS
6400 N. NORTHWEST HWY. SUITE 4
CHICAGO, IL 60631
P. 847.825.9400
LICENSE # 001-12341
EXPIRATION DATE: NOVEMBER, 2020

SHEET INDEX

CODE SUMMARY

PROJECT DATA

SCOPE OF WORK: **NEW PUBLIC WORKS FACILITY**

APPLICABLE CODES:
2014 Indiana Building Code *based on: 2012 International Building Code (1st printing), with Indiana Amendments*
2014 Indiana Fire Prevention Code *based on: 2012 International Fire Code*
Indiana Supplementary Fire Safety Rules
2010 Indiana Energy Conservation Code
Indiana Plumbing Code (675 IAC 16, IPC), *based on: 1997 Uniform Plumbing Code, with Indiana Amendments*
Indiana Electrical Code (675 IAC 17, IEC), *based on: 2008 National Electrical Code (1st printing), with Indiana Amendments*
2014 Indiana Mechanical Code (675 IAC 18, IMC), *based on: 2012 International Mechanical Code with 2008 Indiana Amendments*
2014 Indiana Fuel Gas Code (675 IAC 25, IFGC), *based on: 2012 International Fuel Gas Code (1st printing), with Indiana Amendments*
Indiana Handicapped Accessibility Code

EXISTING USE: **VACANT**

BUILDING DESCRIPTION

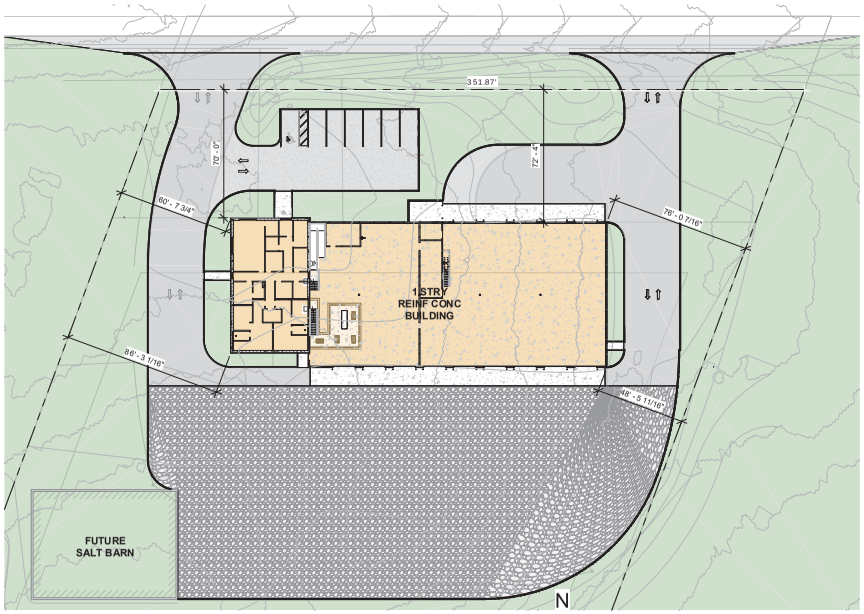
USE GROUP: **WHAREHOUSE S-1 Moderate-hazard storage**

CONSTRUCTION TYPE: **III-B**

BULDING AREA: **TW0 STORY**

SITE PLAN

SITE PLAN
SCALE 1" = 100'-0"



SITE PLAN (Blow-Up)
SCALE 1/32" = 1'-0"

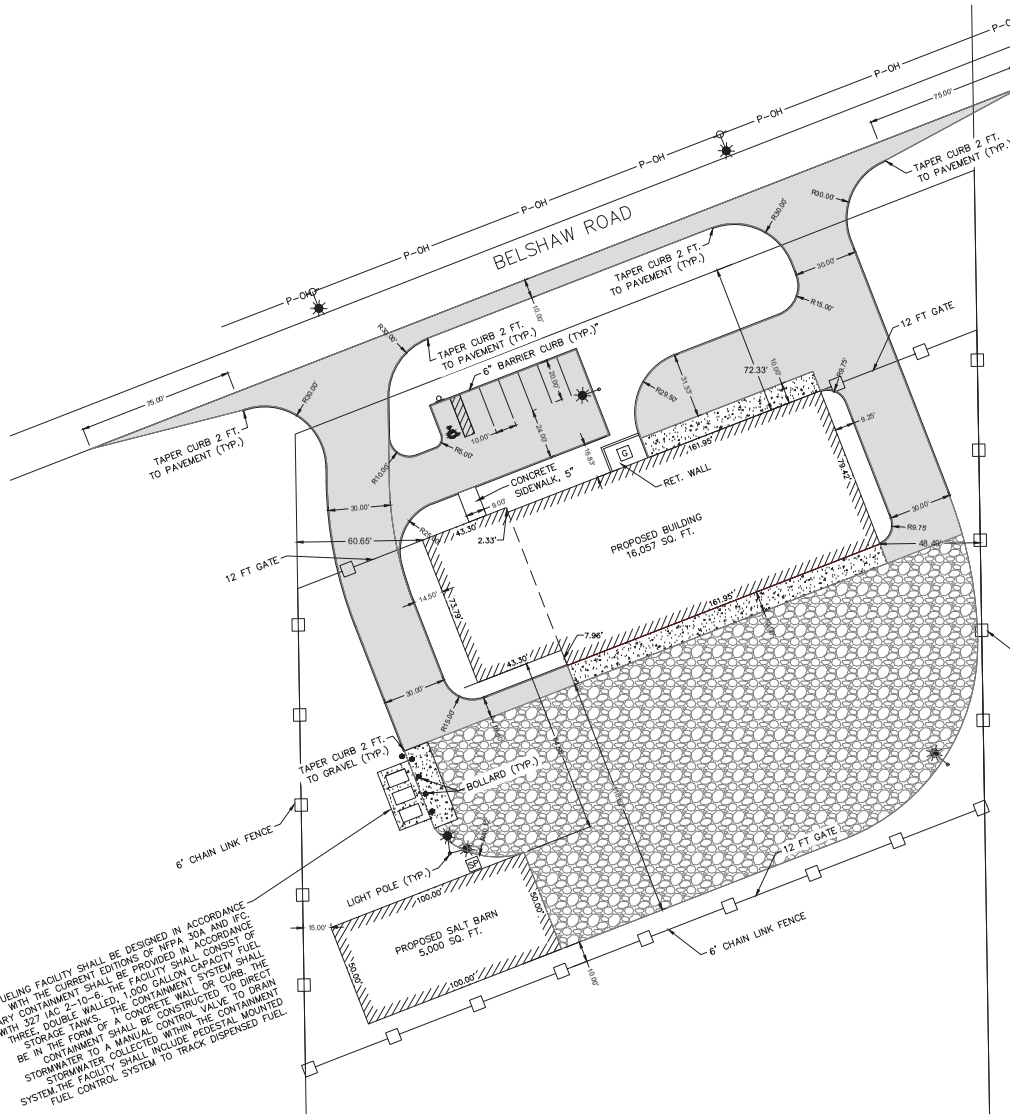
NERI ARCHITECTS
6400 N. NORTHWEST HWY. SUITE 4
CHICAGO, IL 60631
TEL 847.825.9400

PROJECT #	2102
DATE:	05/13/22

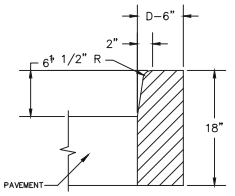
PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

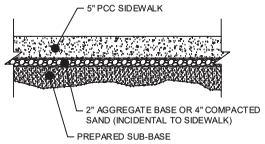
	00.00.00	ISSUED FOR PERMIT
▲		REVISIONS
DRAWN BY:	Author	
APPROVED BY:	Checker	
SCALE:	AS NOTED	
DESCRIPTION:	SITE PLAN & PROJECT INFO	
SHEET NO.	A-0.0	



THE FUELING FACILITY SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT EDITIONS OF NFPA 30A AND IFC: SECONDARY CONTAINMENT SHALL BE PROVIDED IN ACCORDANCE WITH 327 IAC 2-10-6. THE FACILITY SHALL CONSIST OF THREE, DOUBLE WALLED, 1,000 GALLON CAPACITY FUEL STORAGE TANKS. THE CONTAINMENT SYSTEM SHALL BE IN THE FORM OF A CONCRETE WALL OR CURB. THE CONTAINMENT SHALL BE CONSTRUCTED TO DIRECT STORMWATER TO A MANUAL CONTROL VALVE TO DRAIN STORMWATER COLLECTED WITHIN THE CONTAINMENT SYSTEM. THE FACILITY SHALL INCLUDE PEDESTAL MOUNTED FUEL CONTROL SYSTEM TO TRACK DISPENSED FUEL.

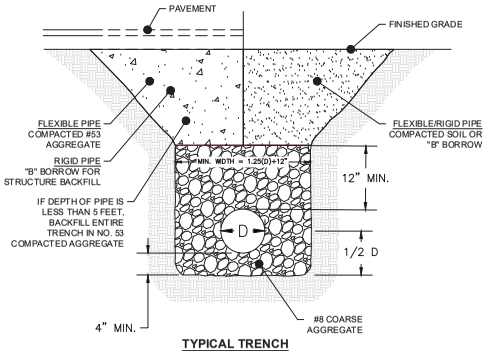


BARRIER CONCRETE CURB

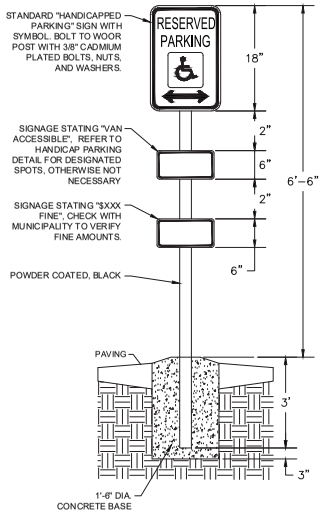


TYPICAL CONCRETE SECTION

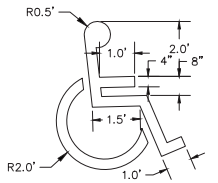
SIDEWALK, CONCRETE, 5 IN.



TYPICAL TRENCH



HANDICAP SIGN



NOTES:

1. PAINT TO BE CHLORINATED ALKYD FS TT, TYPE 111 QUICK DRYING, NONBLEEDING, COLOR PER TOWN CODE.

HANDICAP PAINTED SYMBOL

LEGEND

HEAVY – DUTY ASPHALT
1 1/2" HMA SURFACE, 9.5 mm
3" HMA INTERMEDIATE, 19.0 mm
12" COMPACTED AGGREGATE BASE NO. 53 GEOFABRIC, CLASS 2, NON-WOVEN, MIRAFI, 160N OR EQUIVALENT

GRAVEL LOT
6" COMPACTED AGGREGATE NO. 53
GEO-GRID
6" COMPACTED AGGREGATE NO. 53
GEO-GRID
GEOFABRIC

REINFORCED CONCRETE PAVEMENT
12" COMPACTED AGGREGATE
GEOFABRIC

CHAIN LINK FENCE

NOTE:
ALL RADII FROM EDGE OF PAVEMENT, NOT BACK OF CURB.

FILE NO.	LOWELL
PROJECT NO.	2021-1
ISSUE DATE	03/12/21
DRAWN BY:	RPO
DESIGNED BY:	RPO
CHECKED BY:	CLH

NO.	BY	DATE	REVISIONS

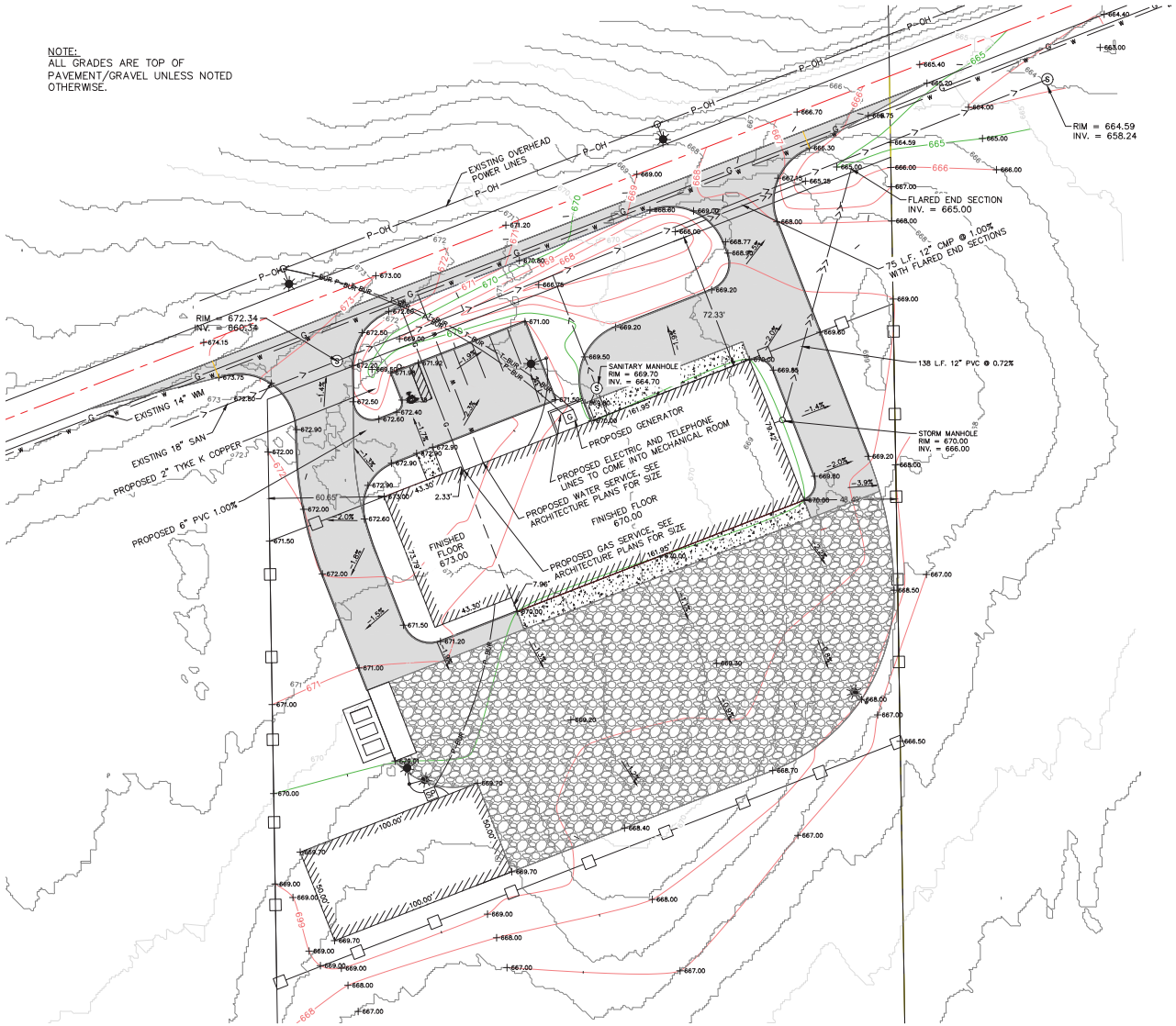
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF INDIANA.

CRAIG HENDRIX, P.E.
Date: 03/12/21 Lic. No. PE19500326

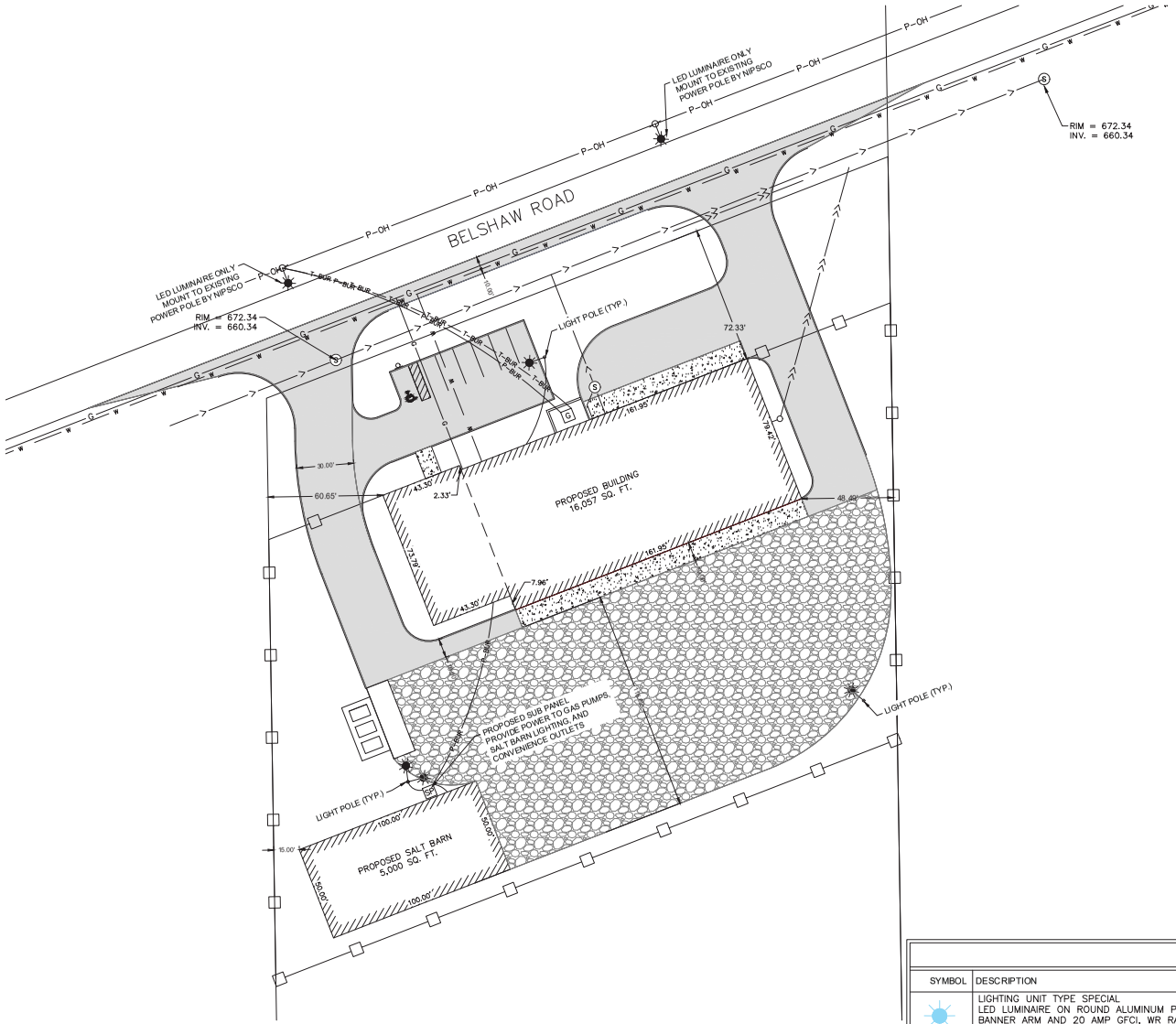
TOWN OF LOWELL
INDIANA

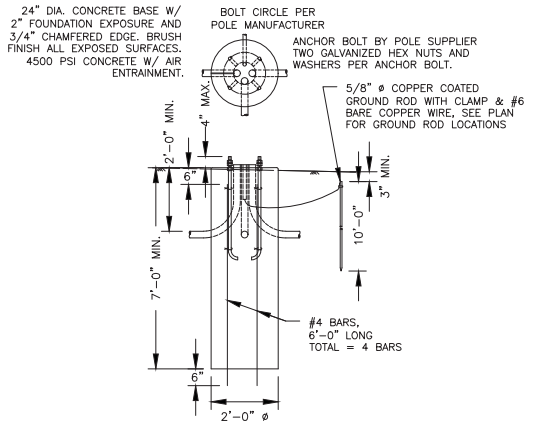
DIMENSIONAL SITE PLAN
MAINTENANCE BUILDING PROJECT

C1



FILE NO.	LOWELL				I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF INDIANA.		TOWN OF LOWELL INDIANA	GRADING AND UTILITY PLAN MAINTENANCE BUILDING PROJECT
PROJECT NO.	2021-1							
ISSUE DATE	03/12/21							
DRAWN BY:	RPO							
DESIGNED BY:	RPO				CRAIG HENDRIX, P.E.			
CHECKED BY:	CLH	NO.	BY	DATE	REVISIONS	Date: 03/12/21 Lic. No. PE19500326		C2





LIGHT POLE FOUNDATION DETAIL

EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	LAMP SOURCE	MOUNTING	OPTICS	MANUFACTURER & SERIES #
○	LIGHTING UNIT TYPE SPECIAL LED LUMINAIRE ON ROUND ALUMINUM POLE, BANNER ARM AND 20 AMP GFCI, WR RATED RECEPTACLE WITH METALLIC IN USE COVER ALL PAINTED BLACK	204 WATT LED 3000K	30' POLE ON LIGHT FOUNDATION	TYPE V	HOLOPHANE – LUMINAIRE: ATB2 60BLEDE10 MVOLT R5 BK POLE: SSS30-D2-W5-2BANNERARMS-BK1 (ABSET) RFD301374 ARM: HZ 08 BOW_2_180 BK FITTER: UMS POLE ADAPTER

FILE NO.	LOWELL
PROJECT NO.	2021-1
ISSUE DATE	03/12/21
DRAWN BY:	RPO
DESIGNED BY:	RPO
CHECKED BY:	CLH

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF INDIANA.

CRAIG HENDRIX, P.E.
Date: 03/12/21 Lic. No. PE19500326

TOWN OF LOWELL
INDIANA

LIGHTING PLAN
MAINTENANCE BUILDING PROJECT

C3

FRAMING NOTES

1. ALL BEAMS, LINTELS OR STRUCTURAL MEMBERS TO BE NO. 2 SOUTHERN PINE (KILN DRIED) W/ "E" = 1,600,000 AND Fb = 1,300 (OR EQUAL).
2. ALL FLOOR JOISTS SHALL BE 11-7/8" TJI-560 BY "TRUS-JOIST" CORP. @ 16" O.C. (UNLESS NOTED OTHERWISE) AND SHALL BE COVERED ON THE UNDERSIDE WITH A MINIMUM 5/8" TYPE X DRYWALL THROUGHHOUT. STAIR HEADERS TO BE 11-7/8" DEEP TJI (GIRDER TRUSS) AND TRIMMERS TO BE 2 - 1 3/4" x 11 7/8" "MICRO-LAM" (UNLESS NOTED OTHERWISE). FURNISH ONE (1) SET OF SEPIA SHOP DRAWINGS TO THE GENERAL CONTRACTOR TWO (2) WEEKS PRIOR TO FABRICATION FOR REVIEW AND COMMENT, AND SHALL BE SIGNED AND SEALED BY A REGISTERED STRUCTURAL ENGINEER LICENSED IN THE STATE OF INDIANA. ANY MATERIALS DELIVERED TO THE JOB SITE WITHOUT APPROVED SHOP DRAWINGS WILL BE REJECTED. ALSO THE TRUSS MANUFACTURER SHALL SUPPLY THE GENERAL CONTRACTOR WITH A COPY OF HIS CERTIFICATE OF INSURANCE. SEE 06190 AND 06195 FOR PRODUCT SPECIFICATIONS AND INFORMATION.
3. ALL WOOD LINTELS OVER DOORS AND WINDOWS SHALL BE 2 - 2 x 12's (UNLESS NOTED OTHERWISE).
4. ALL WOOD PLATES AND SILLS BEARING DIRECTLY ON CONCRETE SHALL BE PRESSURE TREATED FOR ROT AND TERMITES.
5. ALL EXTERIOR CORNERS SHALL BE LET-IN METAL DIAGONAL WIND BRACING BY "SIMPSON" #CWB-126, OR 5/8" CDX PLYWOOD.
6. ROOF: (LIVE LOAD = 20 P.S.F., DEAD LOAD = 10 P.S.F.)
7. FLOOR: (LIVE LOAD = 40 P.S.F., DEAD LOAD = 15 P.S.F.)
8. PARTITIONS: ASSUMED WALL LOAD = 20 lb/LF.
9. SNOW LOAD: 30 lb P.S.F.
10. ULTIMATE WIND DESIGN SPEEDS: 115 MPH
11. WIND EXPOSURE CATEGORY B. URBAN AND SUBURBAN AREAS, WOODED AREAS OR OTHER TERRAIN WITH NUMEROUS CLOSELY SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE FAMILY *DWELLINGS* OR LARGER. EXPOSURE B SHALL BE ASSUMED UNLESS THE SITE MEETS THE DEFINITION OF ANOTHER TYPE OF EXPOSURE.
12. ROOF SHEATHING SHALL BE 5/8" DOUGLAS FIR CDX PLYWOOD W/ IDENTIFICATION INDEX NO. 32/16. ALL TYPICAL FLOORS AND WALK ON DECKS SHALL BE 3/4" CDX PLYWOOD INDEX NO. 24/48. ALL TO BE GLUED AND NAILED.
13. 2 x 4 TOP PLATES TO BE DOUBLED BELOW FLOOR TRUSS BEARING.
14. ALL DOUBLE TRUSSES OR "MICRO-LAM" BEAMS BEARING ON FRAME WALLS TO BE CARRIED DOWN TO FOUNDATION ON TRIPLE STUDS GLUED AND SPIKED AS INDICATED.
15. REFLECTED FRAMING SHOWN ON PLAN.
16. EXTERIOR OR LOAD BEARING WALLS WITH PLATES CUT, DRILLED OR NOTCHED MORE THAN 50% OF THE WIDTH OF THE STUD SHALL HAVE A GALVANIZED METAL TIE 16 GAGE AND 11/2 INCHES (11/2") WIDE FASTENED TO EACH PLATE.
17. EXTERIOR OR LOAD BEARING WALLS WITH STUDS DRILLED WITHIN 5/8" OF THE FACE OF THE STUD SHALL BE REINFORCED WITH A STRUCTURAL STUD SHOE.
18. TYPE 1A-FIRECODE INTUMESCENT ACRYLIC FIRESTOP SEALANT- TO BE USED AS FIRESTOP AND DRAFTSTOP AT ALL REQUIRED LOCATIONS AS DESCRIBED IN IRC R602.8
19. CUTS, NOTCHES AND HOLES BORED IN TRUSSES, LAMINATED VENEER LUMBER, GLUE-LAMINATED MEMBERS OR I-JOISTS ARE NOT PERMITTED UNLESS THE EFFECTS OF SUCH ARE SPECIFICALLY ADDRESSED. (SECTION: R502.8.2)
20. MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR THE PRE-ENGINEERED TJI FLOOR JOISTS SHALL BE ON THE JOBSITE AT THE TIME OF INSPECTIONS.

MASONRY NOTES

1. STONE AND BRICK SHALL BE AS APPROVED BY THE OWNER. ALLOW $380/M FOR BRICK ONLY.
2. CONCRETE MASONRY UNITS (CMU) SHALL BE AS INDICATED ON THE PROJECT DRAWINGS.
3. ANCHORS AND TIES SHALL BE ZINC-COATED STEEL AND SHALL MEET "ASTM" A-525, CLASS G-60.
4. JOINT REINFORCING SHALL BE PREFABRICATED TRUSS-TYPE, SIMILAR TO "DUR-O-WALL" AND SHALL MEET "ASTM" A-153, CLASS B-2.
5. MORTAR SHALL CONSIST OF PORTLAND CEMENT, HYDRATED LIME AND SAND IN A PROPORTION OF 1:1:6 IN ACCORDANCE WITH "ASTM" C-270 FOR TYPE "N" MORTAR.
6. LIMESTONE SILLS AND CAPS WHERE REQUIRED SHALL BE "INDIANA" LIMESTONE, BUFF COLOR, VARIEGATED STONE SHALL NOT BE PERMITTED.
7. EXPANSION AND CONTROL JOINT FILLERS SHALL BE PRE-FORMED RUBBER. THE EXTENT AND LOCATION SHALL BE AS INDICATED ON THE PLANS.
8. FLASHING @ ALL MASONRY LINTEL OPENINGS AND WEEP HOLES SHALL BE OF THE TYPE AS INDICATED ON THE PROJECT DRAWINGS. WEEPS SHALL BE WICK TYPE, INSTALLED IN EXTERIOR WALLS AT TWENTY FOUR (24) INCH CENTERS (MAX) SPACING.
9. PROTECT ALL MASONRY MATERIAL AGAINST MOISTURE. DO NOT USE REINFORCING OR TIES HAVING LOOSE RUST OR OTHER COATING WHICH AFFECT BONDING.
10. LAY UP WALLS PLUMB AND TRUE WITH COURSES LEVEL, ACCURATELY SPACED AND COORDINATED WITH OTHER WORK. ALL BOND SHALL MATCH EXISTING UNLESS INDICATED OTHERWISE. ALL HORIZONTAL JOINTS SHALL BE LEVEL AND ALL VERTICAL JOINTS SHALL BE PLUMB, WITH A TOLERANCE OF PLUS OR MINUS ONE QUARTER (1/4) INCH FOR THE HEIGHT (TOP AND BOTTOM OF THE WALL.
11. BRICK WORK SHALL BE REINFORCED WITH CORROSION RESISTANT TIES, SPACED AT SIXTEEN (16) INCHES VERTICAL CENTERS AND THIRTY TWO (32) INCHES HORIZONTAL CENTERS.
12. EXPOSED JOINTS SHALL BE TOOLED AND BRUSHED.
13. CLEAN ALL MASONRY WORK INCLUDED IN THIS SECTION. PROTECT ADJOINING WORK FROM DAMAGE FROM ALL CLEANING OPERATIONS.
14. GROUT ALL VOIDS AT JAMBS, HEADERS, FOUNDATIONS AND SILLS. POINT JOINTS AS NECESSARY INCLUDING POCKETS AND VOIDS.
15. PROTECT ALL WORK FROM FREEZING.
16. SET STEEL LINTELS AND MISC. STEEL IN MASONRY AS INDICATED ON PLANS. PROVIDE 4" MIN. BEARING @ EACH END OF BEARING.

GENERAL CONCRETE NOTES

1. WHERE AND WHEN CALLED FOR ALL CLEAN GRANULAR FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF "ASTM" D-1557-70 (MINIMUM PROCTOR DENSITY).
2. EXCAVATIONS DEEPER THAN THE ELEVATION OF FOOTING MUST BE CLEARED THROUGH THE ENGINEERING OFFICE.
3. WALL FOOTINGS TO HAVE 6" PROTECTIONS FROM EACH FACE OF WALL AND BE 1'-0" DEEP (UNLESS NOTED OTHERWISE).
4. CONTRACTOR SHALL PROTECT FOUNDATION AGAINST LATERAL DISPLACEMENT, HEAT OR FREEZING CONDITIONS.
5. PROVIDE 2-#5 BARS (TOP AND BOTTOM) CONTINUOUS IN CONCRETE WALL UNLESS NOTED OTHERWISE. LAP AND TIE BARS 3'-0" AT SPLICES AND PROVIDE 4'-0" LONG CORNER BARS (UNLESS NOTED OTHERWISE).
6. ALL REINFORCED CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AS PUBLISHED BY "THE AMERICAN CONCRETE INSTITUTE" (A.C.I. STANDARD 318-83).
7. ALL CONCRETE TO HAVE A MINIMUM ULTIMATE STRENGTH OF 3000 P.S.I. AT THE END OF 28 DAYS UNLESS NOTED OTHERWISE).
8. ALL REINFORCING STEEL SHALL CONFORM TO "ASTM" A-615, GRADE 60 SPEC. FOR NEW BILLET STEEL.
9. ALL WELDED WIRE MESH SHALL BE LAPPED (2) TWO FULL MESH PANELS AND TIED SECURELY. WELDED WIRE MESH SHALL CONFORM TO "ASTM" A-185 SPEC.
10. CONCRETE COVER SHALL BE 1" TOP AND BOTTOM FOR SLABS; 1-1/2" FOR BEAMS, COLUMNS AND WALLS; 3" FOR FOOTINGS, MATS AND GRADE BEAMSALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED OF LAITANCE WITH A WIRE BRUSH AND WATER IMMEDIATELY PRIOR TO POURING OF SUBSEQUENT OR NEW CONCRETE.
11. POUR ALL SLABS-ON-GRADE IN CHECKERBOARD FASHION BETWEEN.CONSTRUCTION JOINTS IN AREAS NOT TO EXCEED 600 SQ. FT. WITH A MINIMUM OF 24 HOURS BETWEEN ADJACENT POURS.
12. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE OR MORTAR.
13. ALL STRUCTURAL STEEL SHALL CONFORM TO "ASTM" A-36 SPEC. (UNLESS NOTED OTHERWISE).
14. SPADE OR VIBRATE CONCRETE FOUNDATIONS AS NECESSARY TO AVOID HONEYCOMBING
15. INSTALL ALL THRU-WALL SLEEVES OR CHASES AS REQUIRED BY THE ELEC./PLUMBING/ OR HVAC CONTRACTOR, LOCATE AS DIRECTED.
16. CONCRETE CONTRACTOR TO SUBMIT ALTERNATIVE PRICE FOR REPLACING DAMAGED SECTIONS OF PUBLIC SIDEWALK
17. KEYNOTE SHOWN BY:
    1. 4" CONCRETE SLAB ON GRADE WITH ONE LAYER WWF 66-1010 AT 1-12" CLEAR @ TOP.
    2. SEE DETAILS FOR BRICK LEDGE REINFORCEMENT.
    3. DEPRESS TOP OF WALL 8" AT ENTRY (UNLESS NOTED OTHERWISE)- SEE ARCHITECTURAL FOR LOCATION.
    4. 5" CONCRETE SLAB ON GRADE WITH ONE LAYER WWF 66-1010 AT 1-1/2" CLEAR @ TOP. (GARAGE)
    5. ALL SECTIONS OF DRIVEWAY INCLUDING THE APRON SECTIONS OF THE DRIVE (FROM THE SIDEWALK TO THE HOUSE) TO BE CONSTRUCTED OF:
        A. A MINIMUM 4" COMPACTED GRADE C.A. 6 STONE BASE, WITH 6" CONCRETE;
        B. AN 8" COMPACTED GRADE C.A. 6 STONE BASE, WITH 2" CLASS I BITUMINOUS SURFACE. NO WIRE MESH ALLOWED UNDER PUBLIC WALK & PARKWAY. MESH REQUIRED ON PRIVATE SECTIONS OR ENTIRE POUR TO BE FIBER MESH. NO PEA GRAVEL ALLOWED
    6. PRIVATE SIDEWALKS ARE TO BE 4" THICK WITH A MINIMUM OF 4" GRADE CA-6 STONE BASE. PUBLIC SIDEWALKS ARE TO BE 5" THICK WITH A MINIMUM OF 4" GRADE CA-6 STONE BASE.
    7. BRICK PAVER PATIO TO BE CONSTRUCTED OF A MINIMUM 4" COMPACTED GRADE C.A. 6 STONE BASE AND 1-1½" SAND. A CONCRETE BASE IN LIEU OF THE MINIMUM OF CA-6 STONE IS ACCEPTABLE.

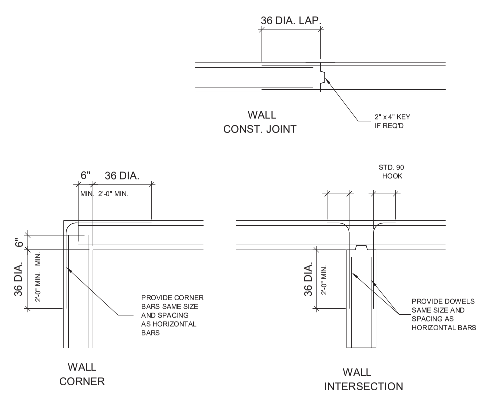
NOTE
CONCRETE CONTRACTOR SHALL COORDINATE ALL CHASES AND SLEEVES IN FOUNDATION WALLS WITH PLUMBING AND HEATING CONTRACTORS.

PLUMBING CONTRACTOR TO VERIFY SIZE AND LOCATION OF ALL SLEEVES AND CHASES NECESSARY TO INSTALL A COMPLETE SYSTEM AS REQUIRED PER THE PROJECT DRAWINGS. THE PLUMBING CONTRACTOR SHALL COORDINATE ANY CHANGES OR ADDITIONAL INFORMATION WITH THE CONCRETE AND GENERAL CONTRACTORS PRIOR TO ANY POURING OF FOOTINGS AND FOUNDATIONS. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING OFF AND MAKING WATERTIGHT ALL PENETRATIONS MADE BELOW GRADE.

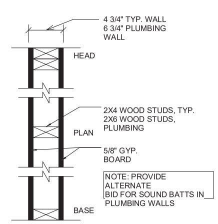
GENERAL NOTES

1. INCLUDED AS PART OF THESE DOCUMENTS IS THE "GENERAL CONDITIONS FOR CONSTRUCTION", AIA DOCUMENT A-201, ARTICLE 1 THROUGH 14 INCLUSIVE.
2. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF THE ARCHITECTURAL DESIGN CONCEPT, DIMENSIONS, MAJOR ELEMENTS AND MATERIALS. THESE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL COMPLETION OF THE PROJECT.
3. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL FURNISH ALL OF THOSE ITEMS AND LABOR REQUIRED FOR THE FULL COMPLETION OF THIS PROJECT IN A FIRST CLASS WORKMANSHIP LIKE MANNER.
4. ALL INTERIOR BEARING WALLS AND SHAFTS SHALL BE (1) ONE HOUR RATED CONSTRUCTION USING 5/8" TYPE-X U.L. RATED DRY WALL (BOTH SIDES)
5. THIS CONTRACTOR SHALL INSTALL SMOKE DETECTORS AS REQUIRED BY THE CITY OF LOWELL CODE
6. INTERIOR FINISHES SHALL NOT EXCEED CLASS 1, 0-25 FLAME SPREAD, 200 SMOKE.
7. INSULATION MATERIALS, INCLUDING FACINGS, SUCH AS VAPOR RETARDERS AND VAPOR-PERMEABLE MEMBRANES INSTALLED WITHIN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, WALL ASSEMBLIES, CRAWL SPACES AND ATTICS SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 WITH AN ACCOMPANYING SMOKE-DEVELOPED INDEX NOT TO EXCEED 450 WHERE TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
8. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS AND CONDITIONS BEFORE EXECUTION OF ANY WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IN WRITING.
9. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE ADHERENCE TO COMPLY WITH ALL APPLICABLE CITY, STATE, AND NATIONAL CODES AND ORDINANCES.
10. THE CONTRACTOR SHALL VERIFY ALL PARTITION LAYOUTS WITH THE ARCHITECT BEFORE PROCEEDING WITH ANY FRAMING.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL INCOMING UTILITIES.
12. WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS.
    A. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL:

       COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
    B. PERFORM ALL WORK IN A FIRST CLASS WORKMANSHIP LIKE MANNER AND IN NO WAY DAMAGE OR WEAKEN THE STRUCTURAL STRENGTH OF THE BUILDING.
    C. REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, (OSHA) LATEST ADDITION.
    D. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR AFTER SUBMITTAL OF COMPLETION OF WORK.
    E. MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD, A CERTIFICATE OF INSURANCE FOR ALL LIABILITIES, WITH A HOLD HARMLESS CLAUSE, PROTECTING THE OWNER AND ARCHITECT.
13. THE GENERAL CONTRACTOR'S SUBCONTRACTORS SHALL COMPLETELY HOOKUP AND CONNECT ALL EQUIPMENT AND FURNISH ALL NECESSARY APPENDAGES.
14. ALL WINDOW GLASS, MIRRORS, FLOORS AND WALL TILE SHALL BE CLEANED AND WASHED UPON COMPLETION OF THE PROJECT BY THE GENERAL CONTRACTOR.
15. THE PREMISES SHALL BE KEPT IN A BROOM SWEPT FINISH CONDITION DURING ALL PHASES OF THE CONSTRUCTION. (ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR CLEANING UP AND DISPOSING OF THEIR LITTER AND LEFT OVER MATERIALS ON A REGULAR BASIS AND LEAVE THE PROJECT IN A BROOM SWEPT FINISH CONDITION UPON COMPLETION OF THEIR PORTION OF THIS PROJECT).
16. THE ENTIRE INSTALLATION SHALL BE PERFORMED IN FIRST CLASS WORKMANSHIP LIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL. ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT.
17. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES IN ORDER TO AVOID INTERFERENCE, PRESERVE MAXIMUM HEAD ROOM AND AVOID OMISSIONS.
18. ALL WORK PERFORMED MUST COMPLY WITH THE CITY OF LOWELL BUILDING CODE.
19. THE EXCAVATOR SHALL REMOVE ALL EXCESS MATERIAL DOWN TO 6" (SIX INCHES) BELOW FINISH GRADE, INCLUDING PARKWAYS.
20. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ONE (1) 4 x 4 WOOD POST WITH A TEMPORARY METER HEAD AND TWO (2) 110 V. AND ONE (1) 220 V.OUTLET TO BE USED BY ALL OTHER TRADES DURING THE COURSE OF CONSTRUCTION OR UNTIL EACH UNIT IS ELECTRIFIED AND SHALL BE BILLED TO THE GENERAL CONTRACTOR.
21. THE GENERAL CONTRACTOR TO PROVIDE TEMPORARY FENCING AND BARRICADES AROUND THE ENTIRE SITE TO BE PROTECTED AND AT ANY INTERIOR FLOOR OPENINGS THAT MIGHT CAUSE A HAZARD TO ALL.
22. APPROVED PLANS SHALL BE ON SITE FOR ALL INSPECTIONS.
23. ALL CONTRACTORS AND THEIR REPRESENTATIVES WORKING ON THIS PROJECT SHALL AT ALL TIMES PRIOR AND DURING THE COURSE OF THEIR ACTIVITY BE RESPONSIBLE FOR THE SAFETY OF THEIR EMPLOYEES, AS WELL AS OTHERS AND IN THE CARE OF THE PROPERTY. EACH AS REPRESENTATIVES OF THEIR EMPLOYEES SHALL ASCERTAIN THAT THE CONDITIONS UNDER WHICH THEY WILL BE REQUIRED TO ACCOMPLISH THEIR WORK ARE SAFE WITHIN GOOD SAFETY PRACTICES AND MEET ALL CONCERNED REGULATIONS OF THE OCCUPATIONAL SAFETY AND HAZARD ACT OR OTHER GOVERNING REGULATIONS. THE BEGINNING OF WORK BY A CONTRACTOR SHALL INDICATE SATISFACTION CONCERNING SAFETY AND FULL RESPONSIBILITY FOR ACCIDENTS OR DAMAGE. IF UNSATISFIED, THE CONTRACTOR SHALL INDICATE WHAT SO EVER ACTION OR DEVICES NECESSARY TO RENDER SAFETY CONDITIONS FOR LIFE AND PROPERTY AS ARE RELATED TO HIS ACTIVITY. IF THE WORK OF OTHER PARTIES OUTSIDE OF THEIR ORGANIZATION IS UPON INSPECTION FOUND AT ANY TIME TO BE UNSAFE, HE SHALL STOP WORK IMMEDIATELY AND NOTIFY THE GENERAL CONTRACTOR, ARCHITECT AND OWNER. THE BEGINNING OF WORK SHALL INDICATE SATISFACTION. ACCEPTANCE OF A CONTRACT SHALL INDICATE ACCEPTANCE OF THESE REQUIREMENTS.
24. THE ARCHITECT ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION OTHER THAN SHOWN ON THESE DRAWINGS.
25. THIS SET OF PLANS IS PROTECTED UNDER UNITED STATES GOVERNMENT COPYRIGHT LAWS AND MAY NOT BE REPRODUCED, REPRINTED OR COPIED IN ANY MANNER, EXCEPT BY APPROVAL OF ARCHITECT IN WRITING. ANY PERSON OR FIRM KNOWINGLY REPRODUCING, REPRINTING, OR PHOTOCOYPING ANY OF THIS WORK WILL BE SUBJECT TO LAWSUITS AND SUCH PENALTIES AS THE LAW ALLOWS.
26. THESE DRAWINGS WERE PREPARED UNDER MY DIRECTION AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE BUILDING LAWS OF CITY OF LOWELL.

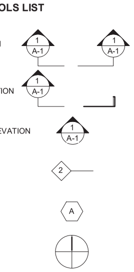


TYPICAL FOUNDATION WALL DETAILS
VERTICAL REINFORCING NOT SHOWN



SYMBOLS LIST

FULL BUILDING SECTION
PARTIAL BUILDING SECTION
EXTERIOR BUILDING ELEVATION
PARTITION TAG
WINDOW TAG
NORTH ARROW



NERI ARCHITECTS

PROJECT #	2102
DATE:	05/13/22

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

00.00.00	ISSUED FOR PERMIT
▲	REVISIONS
DRAWN BY:	Author
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	GENERAL NOTES
SHEET NO.	A-1.0

NERI ARCHITECTS
6400 N NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.825.3400

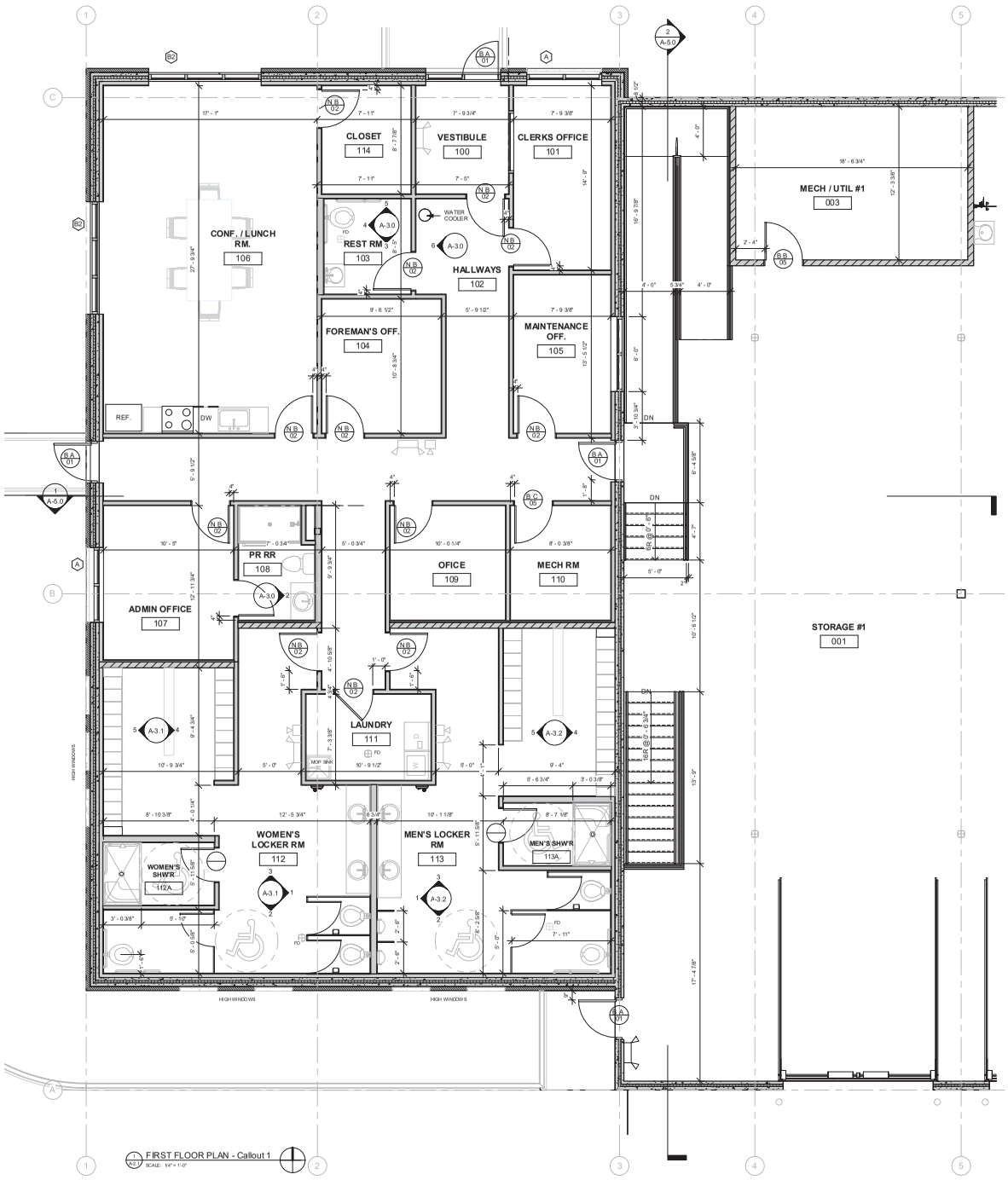
PROJECT #: 2102
DATE: 05/13/22

PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY

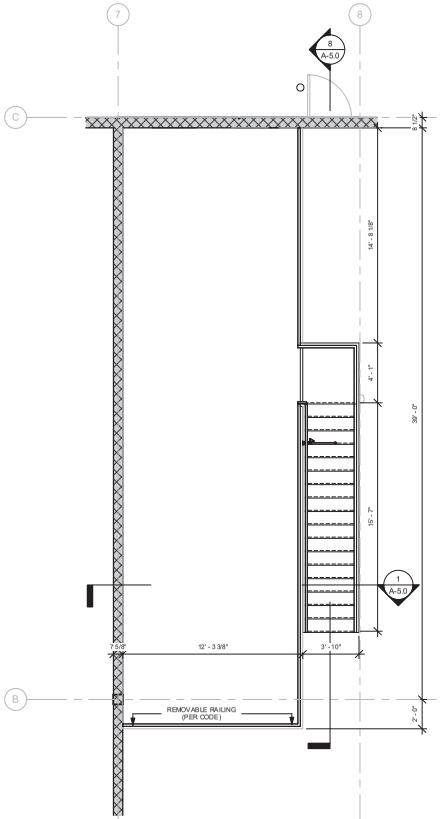
00.00.00	ISSUED FOR PERMIT	
	REVISIONS	
DRAWN BY:	Author	
APPROVED BY:	Checker	
SCALE:	AS NOTED	
DESCRIPTION:	FLOOR PLAN(S)	
SHEET NO.	A-2.0	

1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

2 BASEMENT/PIT
SCALE: 1/8" = 1'-0"



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



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

Room Schedule

LEVEL	ROOM #	ROOM NAME	CEILING FINISH	CEILING HEIGHT	FLOOR FINISH	WALL FINISH	BASE FINISH	REMARKS
Not Placed	115	EXPLOSION CONTAINMENT	Bottom of Slab	0' - 0"	Conc. Slab			
BASEMENT/PIT	005	PIT / BASEMENT	Bottom of Slab	8' - 0"	Conc. Slab	None	None	
FIRST FLOOR	001	STORAGE #1	Open to Trusses	18' - 0"	Conc. Slab	None	None	
FIRST FLOOR	002	STORAGE #2	Open to Trusses	18' - 0"	Conc. Slab			
FIRST FLOOR	003	MECH / UTIL #1	Bottom of Slab	18' - 0"	Conc. Slab			
FIRST FLOOR	004	MECH / UTIL #2	Bottom of Slab	8' - 0"	Conc. Slab			
FIRST FLOOR	006	STORAGE		8' - 8"				
FIRST FLOOR	100	VESTIBULE	2'x2' Acoustical Tile	11' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	101	CLERKS OFFICE	2'x2' Acoustical Tile	11' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	102	HALLWAYS	2'x2' Acoustical Tile	11' - 0"	Tile	Drywall	Tile	Wall finishes and Fixtures to comply w/ codes shown in diagrams on 2/A1-1
FIRST FLOOR	103	REST RM	2'x2' Acoustical Tile	9' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	104	FOREMAN'S OFF.	2'x2' Acoustical Tile	10' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	105	MAINTENANCE OFF.	2'x2' Acoustical Tile	10' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	106	CONF. / LUNCH RM.	2'x2' Acoustical Tile	11' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	107	ADMIN OFFICE	2'x2' Acoustical Tile	11' - 0"		Drywall		
FIRST FLOOR	108	PR RR	2'x2' Acoustical Tile	9' - 0"	Tile	Drywall	Tile	
FIRST FLOOR	109	OFICE	2'x2' Acoustical Tile	10' - 0"		Drywall		
FIRST FLOOR	110	MECH RM	2'x2' Acoustical Tile	10' - 0"		Drywall		
FIRST FLOOR	111	LAUNDRY	2'x2' Acoustical Tile	10' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	112	WOMEN'S LOCKER RM	2'x2' Acoustical Tile	11' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	112A	WOMEN'S SHWR.	Drywall	9' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	113	MEN'S LOCKER RM	2'x2' Acoustical Tile	11' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	113A	MEN'S SHWR.	Drywall	9' - 0"	Tile	Tile / Drywall	Tile	
FIRST FLOOR	114	CLOSET		8' - 0"				

NERO ARCHITECTS
4400 W NORTHWEST HWY
SUITE 4
CHICAGO, IL 60641
TEL 847.253.8400

PUBLIC WORKS BUILDING

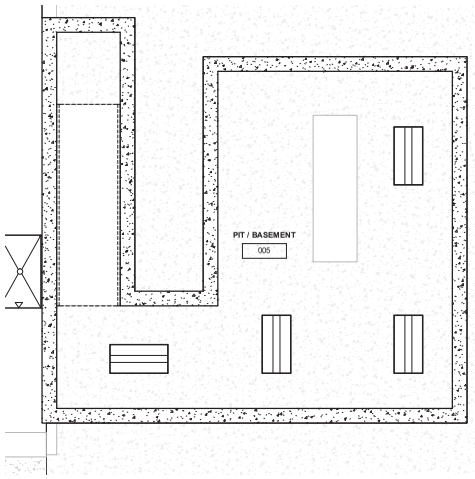
LOWELL, IN
LAKE COUNTY

PROJECT #	2102
DATE:	05/13/22
00.00.00	ISSUED FOR PERMIT
▲	REVISIONS
DRAWN BY:	Author
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	FLOOR PLAN BLOW UP
SHEET NO.	A-2.1

REFLECTED CEILING FIRST FLR
SCALE: 1/4" = 1'-0"

INTERIOR CEILING NOTES:

1. REFER TO MEP SHEETS FOR SWITCHING / POWER / FIXTURE CALLOUTS. (VERIFY w/ OWNER)
2. CONTRACTOR SHALL PROVIDE ACCESS PANELS IN GYPSUM BOARD CEILINGS AS REQUIRED TO SERVICE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEMS AND EQUIPMENT IN CEILINGS. LOCATIONS SHALL BE SHOWN ON CONTRACTOR'S COORDINATION DRAWINGS AND BE VERIFIED WITH ARCHITECT AND OWNER BEFORE INSTALLATION.
3. FIRE-RATED CEILING ASSEMBLIES SHALL BE PROVIDED WITH FIRE-RATED ACCESS PANELS THAT ARE TESTED AND HAVE A FIRE RATING THAT MATCHES THE ADJACENT CEILING CONSTRUCTION.
4. PROVIDE CONTROL JOINTS IN SUSPENDED GYPSUM BOARD CEILINGS AS REQUIRED BY THE CEILING CONSTRUCTION LOCATIONS SHALL BE REVIEWED AND ACCEPTED BY ARCHITECT PRIOR TO INSTALLATION.
5. PROVIDE ALL NECESSARY BLOCKING, SUPPORTS, ECT. FOR ACCESS PANELS, CEILING TRIM, LIGHT FIXTURES, WINDOW TREATMENTS, TOILET PARTITIONS, AND ALL OTHER CEILING MOUNTED EQUIPMENT.
6. FOR DIFFUSER LOCATIONS REFER TO DRAWINGS AND NOTES ON THE MECHANICAL DRAWINGS.
7. BOTTOM OF SLAB HEIGHTS AS FINALIAZED IN FIELD AND COORDINATED BY G.C.



BASEMENT/PIT
SCALE: 1/8" = 1'-0"

NERI ARCHITECTS
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CHICAGO, IL 60631
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PROJECT #	2102
DATE:	05/13/22

PUBLIC WORKS BUILDING

LOWELL, IN
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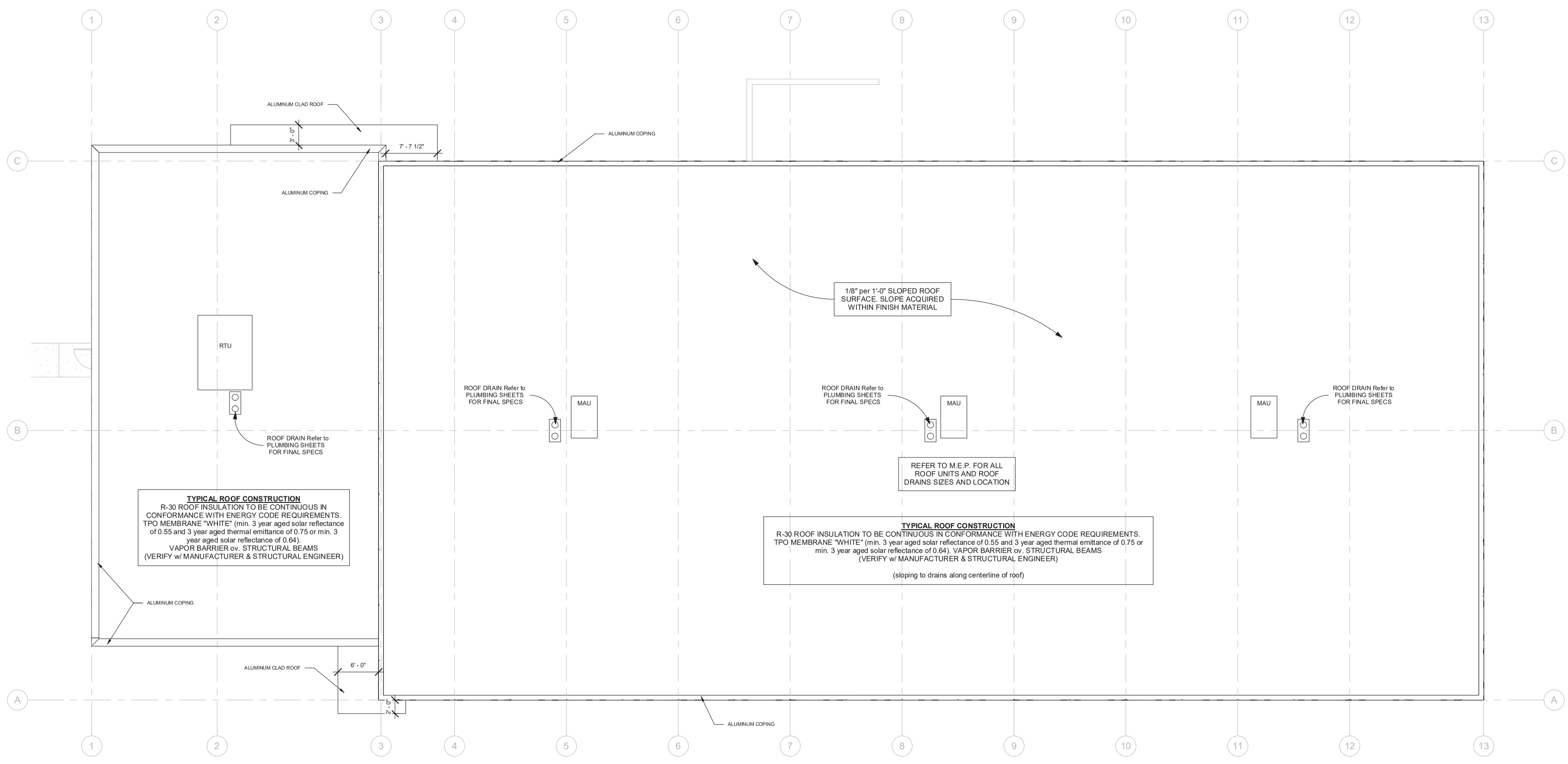
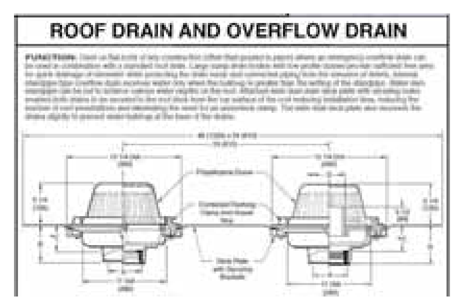
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	REFLECTED CLG'S - OFFICES
SHEET NO.	A-2.2



1 A-2.4 UPPER ROOF
SCALE: 1/8" = 1'-0"



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PROJECT #	2102
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PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

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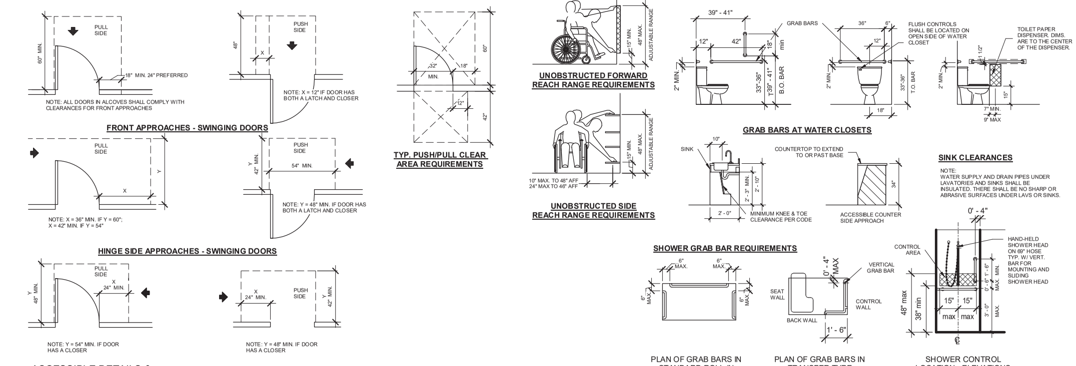
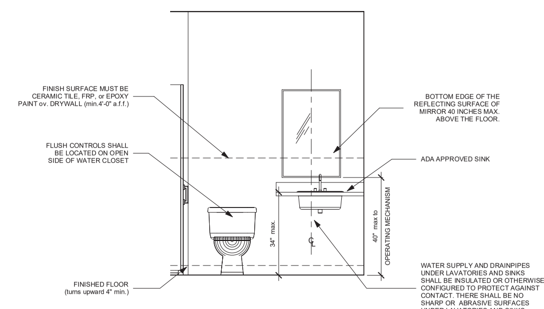
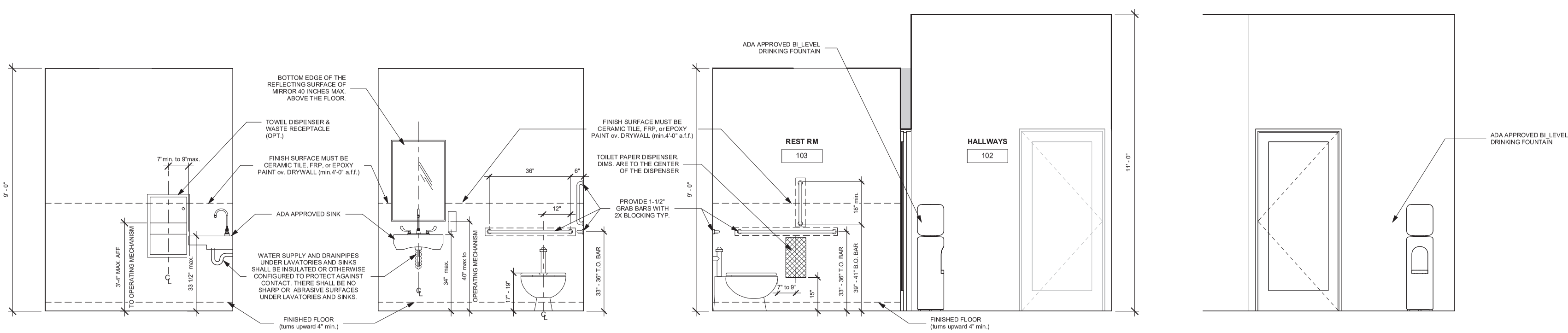
DRAWN BY:	Author
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	ROOF PLAN
SHEET NO.	A-2.4



ACCESSIBLE DETAILS & CLEARANCES
SCALE: 1/4" = 1'-0"



2 A-3.0 #108 PRIVATE RESTROOM
SCALE: 1/2" = 1'-0"



3 A-3.0 #103 RESTROOM-3 SCALE: 1/2" = 1'-0"
4 A-3.0 #103 RESTROOM-1 SCALE: 1/2" = 1'-0"
5 A-3.0 #103 RESTROOM-2 SCALE: 1/2" = 1'-0"
6 A-3.0 #102 HALLWAY SCALE: 1/2" = 1'-0"

NERI ARCHITECTS
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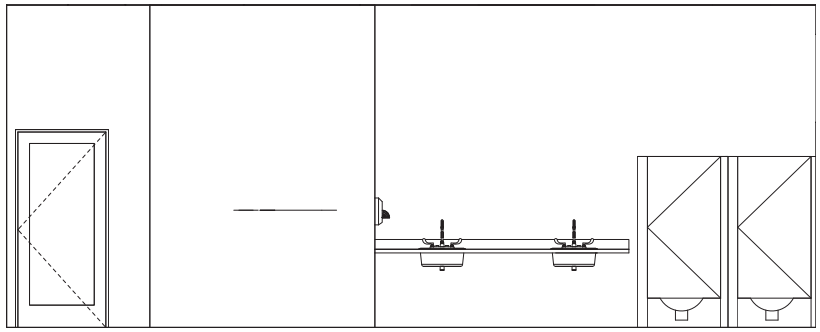
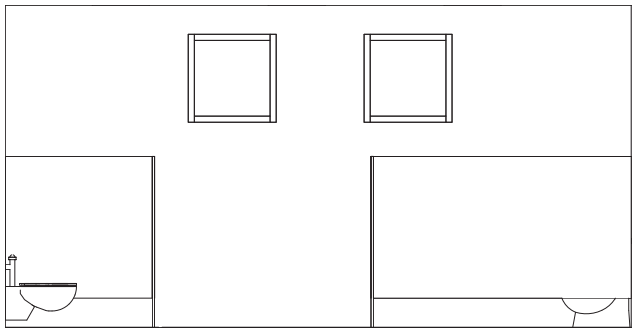
PROJECT #: 2102
DATE: 05/13/22

PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY

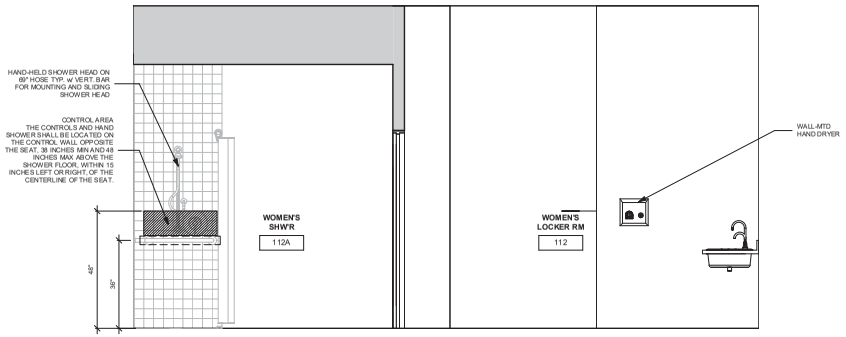
00.00.00 ISSUED FOR PERMIT
REVISIONS
DRAWN BY: Author
APPROVED BY: Checker
SCALE: AS NOTED
DESCRIPTION: INTERIOR ELEVATIONS
SHEET NO. A-3.0



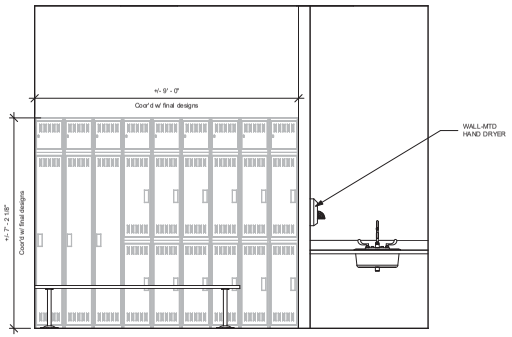
1 A-3.1 WOMEN'S LOCKER-1
SCALE: 1/2" = 1'-0"



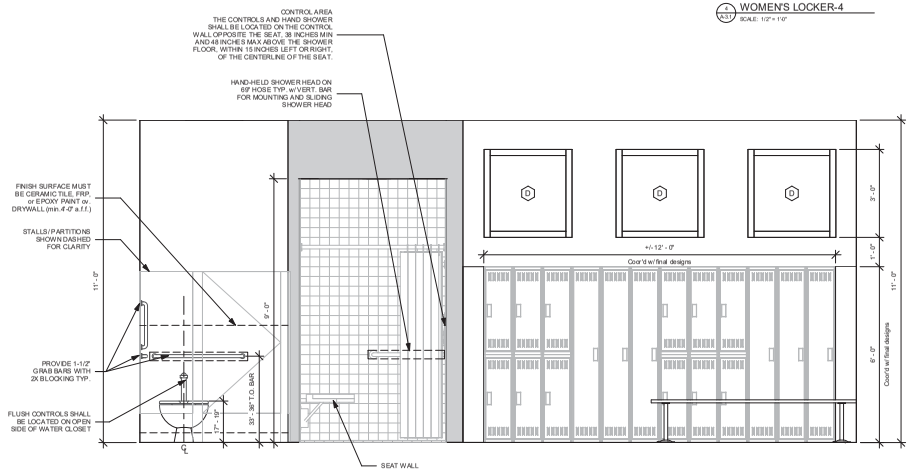
2 A-3.1 WOMEN'S LOCKER-2
SCALE: 1/2" = 1'-0"



3 A-3.1 WOMEN'S LOCKER-3
SCALE: 1/2" = 1'-0"



4 A-3.1 WOMEN'S LOCKER-4
SCALE: 1/2" = 1'-0"



5 A-3.1 WOMEN'S LOCKER-5
SCALE: 1/2" = 1'-0"

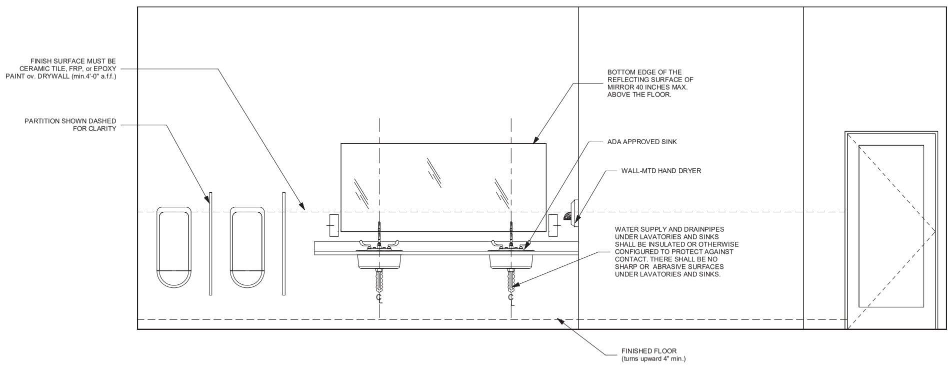
NERI ARCHITECTS
4400 W NORTHWEST HWY
SUITE 4
CHICAGO, IL 60641
TEL 847.823.8400

PROJECT #	2102
DATE:	05/13/22

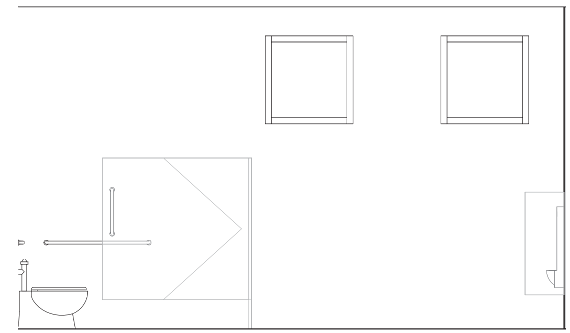
PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

	00.00.00	ISSUED FOR PERMIT
▲		REVISIONS
DRAWN BY:		Author
APPROVED BY:		Checker
SCALE:		AS NOTED
DESCRIPTION:		INTERIOR ELEVATIONS
SHEET NO.		A-3.1



1 A-3.2 MEN'S LOCKER-1
SCALE: 1/2" = 1'-0"



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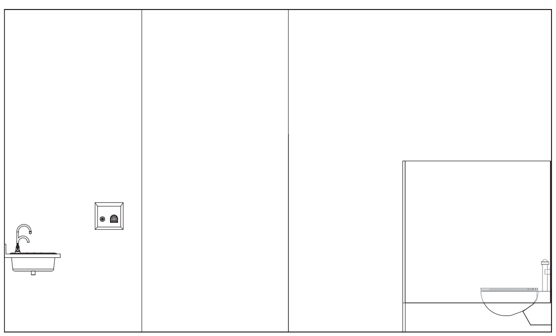
SCALE: 1/2" = 1'-0"



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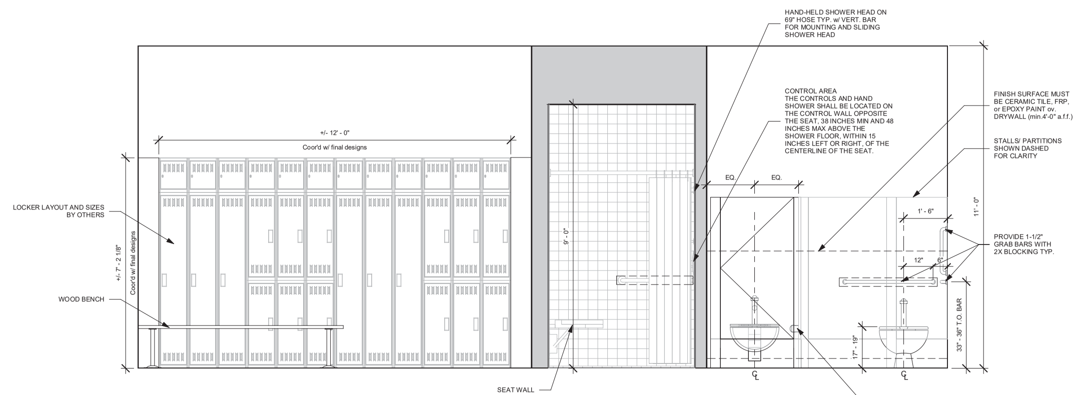

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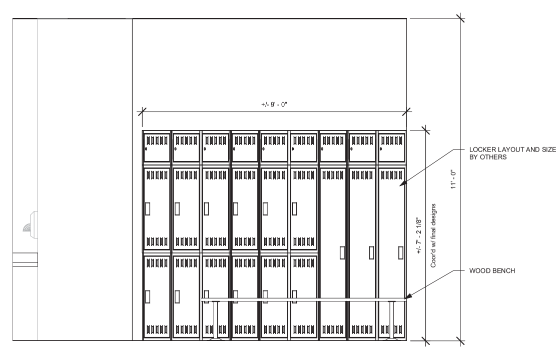

5 A-3.2 MEN'S LOCKER-5
SCALE: 1/2" = 1'-0"

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SUITE 4
CHICAGO, IL 60631
TEL 847.825.8400

PROJECT #	2102
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PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

00.00.00	ISSUED FOR PERMIT
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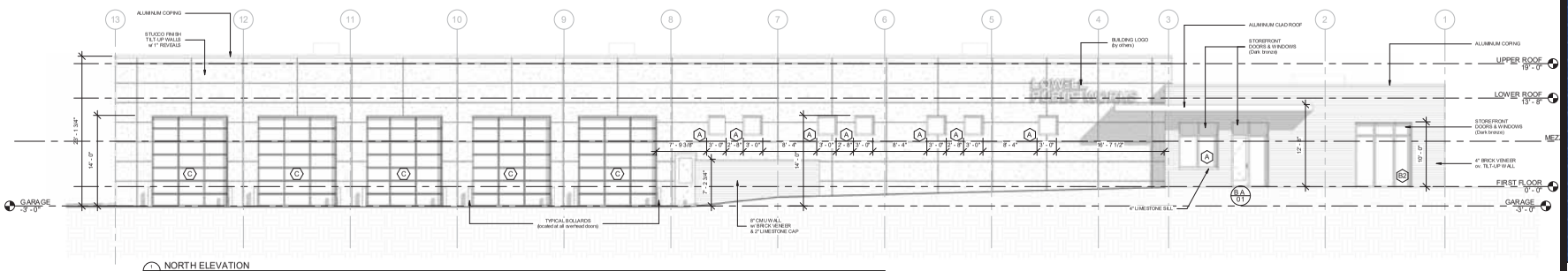
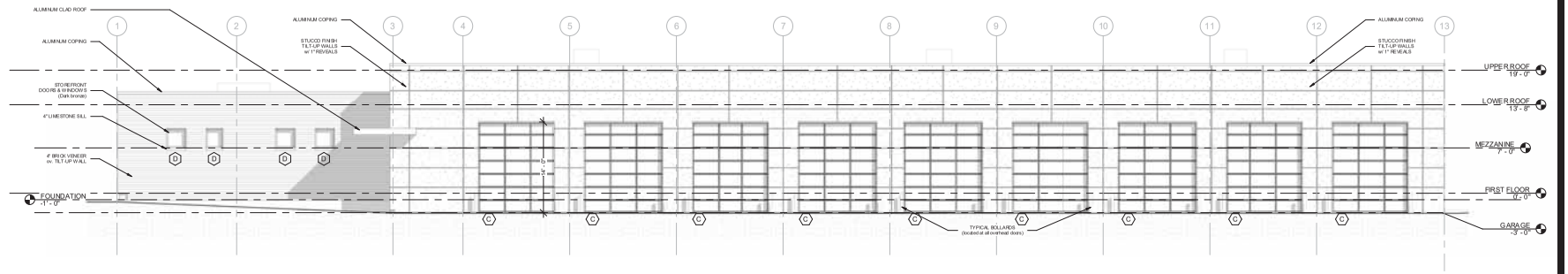
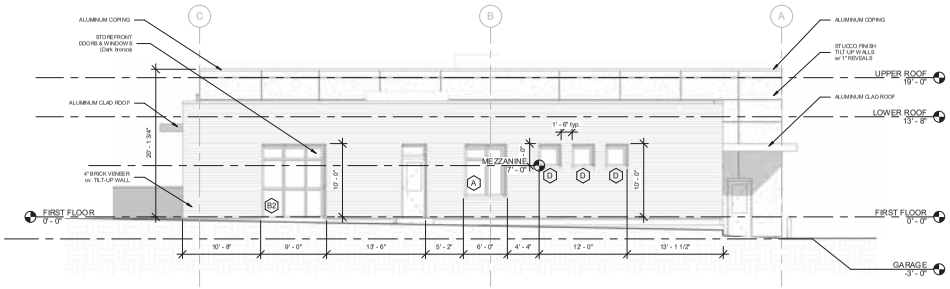
DRAWN BY:	Author
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	INTERIOR ELEVATIONS
SHEET NO.	A-3.2



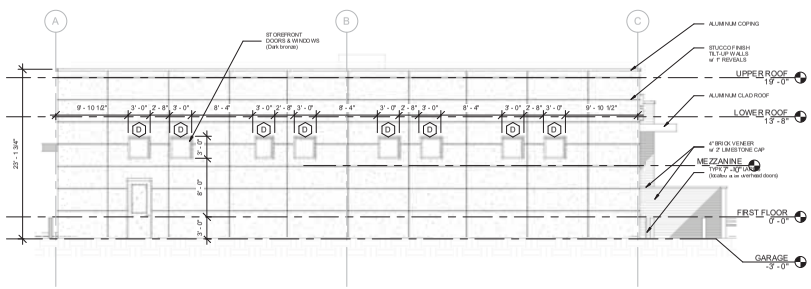
1 NORTH ELEVATION
A-4.0 SCALE: 1/8" = 1'-0"



2 SOUTH ELEVATION
A-4.0 SCALE: 1/8" = 1'-0"



3 WEST ELEVATION
A-4.0 SCALE: 1/8" = 1'-0"



4 EAST ELEVATION
A-4.0 SCALE: 1/8" = 1'-0"

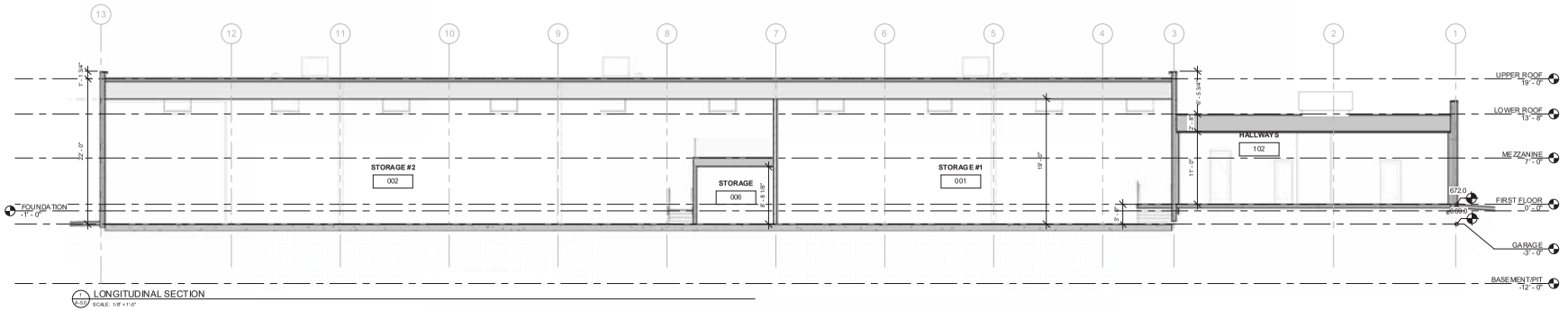
NERI ARCHITECTS
4400 W NORTHWEST HWY
SUITE 4
CHICAGO, IL 60641
TEL 847.255.8400

PROJECT #	2102
DATE:	05/13/22

PUBLIC WORKS BUILDING

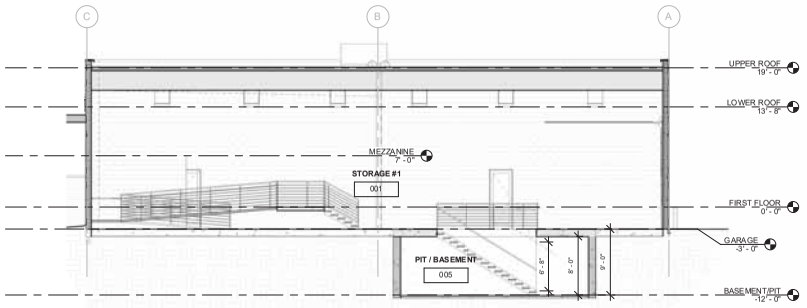
LOWELL, IN
LAKE COUNTY

	00.00.00	ISSUED FOR PERMIT
▲		REVISIONS
DRAWN BY:		Author
APPROVED BY:		Checker
SCALE:		AS NOTED
DESCRIPTION:		ELEVATIONS
SHEET NO.		A-4.0

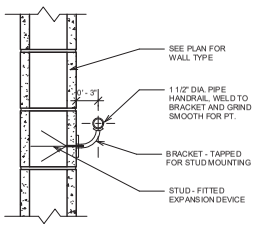


1 LONGITUDINAL SECTION
A5.0 SCALE: 1/8" = 1'-0"

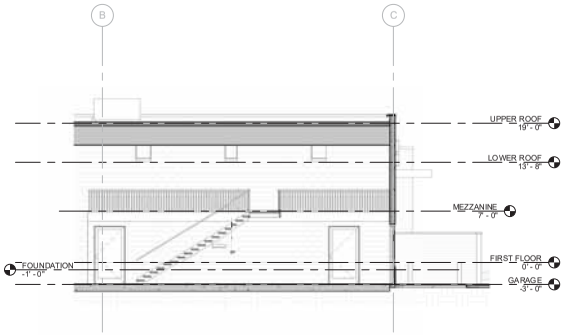
STAIR NOTES:
1. ALL TREADS TO BE 11" DEEP WITH 1" NOSING.
2. RISERS TO BE UNIFORM HEIGHT BETWEEN FLOORS FOR EACH STAIR RUN. RISER HEIGHTS ARE SHOWN ON PLANS.
3. HANDRAILS TO BE 36" HIGH. GUARDRAILS TO BE 42" HIGH.
4. ALL HANDRAILS TO BE ROUND PIPE, 1 1/2" OUTSIDE DIAMETER, AND ARE TO BE CONTINUOUS.
5. HANDRAILS TO EXTEND 1'-0" TYP. BEYOND TOP & BOTTOM TREAD EXCEPT FOR INTERIOR HANDRAILS AT SWITCHBACKS. HANDRAIL EXTENSIONS TO RETURN TO POSTS.
6. WALL MOUNTED HANDRAILS TO RETURN TO WALLS AT ENDS.
7. PROVIDE 1 1/2" CLEARANCE BETWEEN HANDRAILS & WALLS AND BETWEEN HANDRAILS & GUARDRAILS TYP.
8. OPENINGS IN GUARD RAILS SHALL COMPLY WITH OPENING RESTRICTIONS SET FORTH IN IBC SECTION 1015.4
9. STAIRS TO BE METAL PAN W/ 1 1/2" CONC. FILL.



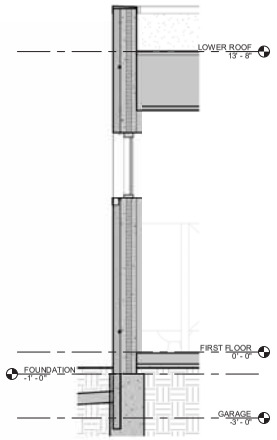
1 SECTION @ BASEMENT/PIT
A5.0 SCALE: 1/8" = 1'-0"



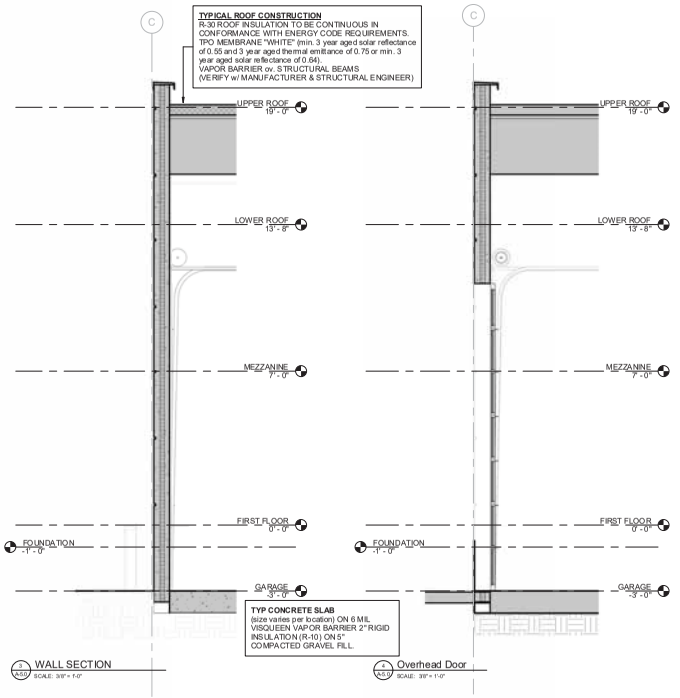
1 RAILING BRACKET DETAIL - CMU
A5.0 SCALE: 1 1/2" = 1'-0"



1 MEZZANINE SECTION
A5.0 SCALE: 1/8" = 1'-0"



1 WALL SECTION #2
A5.0 SCALE: 3/8" = 1'-0"



1 WALL SECTION
A5.0 SCALE: 3/8" = 1'-0"

4 Overhead Door
A5.0 SCALE: 3/8" = 1'-0"

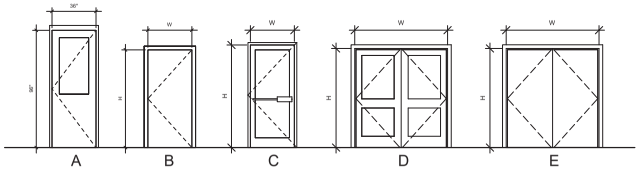
NERI ARCHITECTS
4450 W NORTHWEST HWY SUITE 4
CHICAGO, IL 60641
TEL 847.282.8400

PROJECT #	2102
DATE:	05/13/22

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

	00.00.00	ISSUED FOR PERMIT
▲		REVISIONS
DRAWN BY:	Author	
APPROVED BY:	Checker	
SCALE:	AS NOTED	
DESCRIPTION:	BUILDING SECTIONS	
SHEET NO.	A-5.0	



DOOR NOTES:

1. DOOR HARDWARE TO BE REVIEWED BY ARCHITECT, OWNER AND GENERAL CONTRACTOR BEFORE ORDERING.
2. CONTRACTOR TO USE THE ARCHITECTS DOOR TYPE PLAN DESIGNATION IN ADDITION TO THE ROOM NUMBER ON ALL SHOP DRAWING SCHEDULE SUBMITTALS.
3. DOOR THICKNESS SHALL BE 1 3/4" TYP. UNO.
4. ALL DOORS LEADING INTO HAZARDOUS ROOMS OR SPACES TO HAVE KNURLED HARDWARE AND FULLY GASKETED .
5. GLAZING AT LABELED DOORS TO BE FIRE-RESISTIVE. PROVIDE SAFETY GLAZING AT ALL NON-RATED DOORS.
6. GLAZING IN ALL EXTERIOR DOORS AND WINDOWS ARE TO COMPLY WITH 140 MPH WIND LOADS & IMPACT CODES
7. ALL UNIT ENTRY DOORS TO BE SMOKE / DRAFT CONTROL DOORS.
8. ALL EXTERIOR, OPAQUE, SWINGING DOORS TO HAVE A U-FACTOR ≤ 0.37.
9. ALL EXTERIOR, OPAQUE, NON-SWINGING DOORS TO HAVE AN R FACTOR ≥ 4.75.
10. PROVIDE LEVER OPERATED HARDWARE THROUGHOUT THE BUILDING. NO DOOR KNOBS.

DOOR DESIGNATION SYMBOL:

FIRE RATING LEGEND
A 3 HR. (CLASS A)
B 90 MIN. (CLASS B)
C 60 MIN. (CLASS B)
D 45 MIN. (CLASS C)
E 20 MIN.
N NON RATED

DOOR HARDWARE NOTE

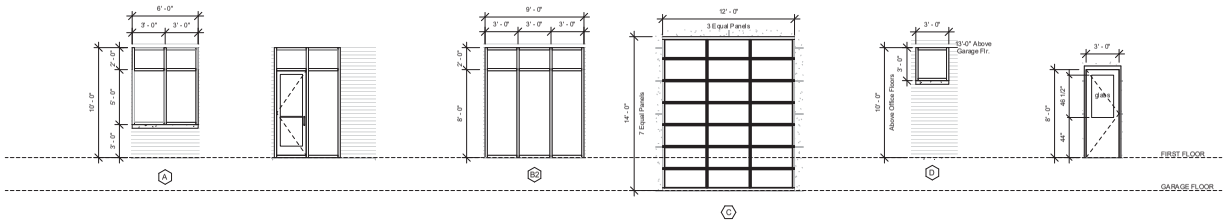
DOOR HARDWARE SHALL BE CAPABLE OF OPERATION WITH THE USE OF ONE (1) HAND AND SHALL NOT REQUIRE TIGHT PINCHING, TIGHT GRASPING OR TWISTING OF THE WRIST TO OPERATE. THUMB-TURN DEADBOLTS ARE PROHIBITED; LEVER OR PADDLE DEADBOLT RELEASES ARE ACCEPTABLE. DOOR THRESHOLD SHALL NOT EXCEED ONE-HALF INCH (1/2") IN HEIGHT. THRESHOLDS EXCEEDING ONE-QUARTER INCH (1/4") IN HEIGHT SHALL HAVE A 1:2 BEVEL. DOOR CLOSERS SHALL MEET OPENING FORCE AND SWEEP PERIOD REQUIREMENTS." SECTION: IAC 400.310 J) 7) 9), 9), 10)

DOOR TYPE SCHEDULE

TYPE (#)	WIDTH	HEIGHT	ELEV	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	REMARKS
01	3'-0"	8'-0"	A	WD	ALUM CLAD & PTD	WD	ALUM CLAD & PTD	
02	3'-0"	6'-8"	A	WD	PTD	WD	PTD	
03	4'-0"	7'-0"	B	MTL	PTD	MTL	PTD	
04	4'-0"	6'-8"	D	WD	PTD	WD	PTD	
05	4'-6"	6'-8"	D	WD	PTD	WD	PTD	
06	5'-0"	6'-8"	D	WD	PTD	WD	PTD	
07	6'-0"	6'-8"	D	WD	ALUM CLAD & PTD	WD	ALUM CLAD & PTD	
08	2'-4"	6'-8"	A	WD	PTD	WD	PTD	

HARDWARE SCHEDULE

SET #	OPENING TYPE	HINGES	LOCKSET	KNOB/LEVER	FINISH	CLOSER	STOP	WEATHERSTRIPPING	REMARKS
01	ENTRANCES	1 1/2 PAIR BUTT, 4 1/2"x4"	CYLINDER DEADLATCH. KEY EXTERIOR	PUSH BAR INTERIOR, PULL EXTERIOR	MATCH STOREFRONT	YES		YES	THRESHOLD
02	OFFICE	1 1/2 PAIR BB BUTT, 4 1/2"x4"	PRIVACY. ANSI F82 / KEYED(OUT)	LEVER	SATIN CHROME	NO	WALL	YES	
03	CLOSET	1 1/2 PAIR BB BUTT, 4 1/2"x4"	PASSAGE. ANSI F75	LEVER	SATIN CHROME	NO	WALL	YES	THRESHOLD
04	BATHROOMS	1 1/2 PAIR BB BUTT, 4 1/2"x4"	PRIVACY. ANSI F76A	LEVER	SATIN CHROME	NO	WALL	NO	
05	JANITOR'S CLOSET	1 1/2 PAIR BB BUTT, 4 1/2"x4"	STOREROOM. ANSI F86 / KEYED(OUT)	KNURLED LEVER	SATIN CHROME	YES	WALL	NO	
06	EXTERIOR SWING	1 1/2 PAIR BUTT, 4 1/2"x4"	CYLINDER DEADLATCH. KEY EXTERIOR	PUSH BAR INTERIOR, KNURLED LEVER EXTERIOR	SATIN CHROME	YES	TBD	YES	FULLY GASKETED



PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

PROJECT #	2102
DATE:	05/13/22
00.00.00	ISSUED FOR PERMIT
	REVISIONS
DRAWN BY:	Author
APPROVED BY:	Checker
SCALE:	AS NOTED
DESCRIPTION:	DOOR / WINDOW SCHEDULE
SHEET NO.	A-6.0

FIRESTOPPING NOTES

ALL PENETRATIONS THROUGH FIRE RATED FLOOR, WALL & ROOF/CEILING ASSEMBLIES BY ELECTRICAL, MECHANICAL & PLUMBING CONDUITS, PIPES TUBES, ETC., SHALL BE PROPERLY FIRE STOPPED TO COMPLY WITH ASTM E119 REQUIREMENTS. PROVIDE THROUGH PENETRATION SYSTEMS AS SPECIFIED FOR THE FOLLOWING ASSEMBLIES.

HOLLOW CORE CONCRETE PLANK FLOOR ASSEMBLY
PLASTIC PIPE
U.L. DES. NO. 64 - UP TO 2 HR. RATING

COMPONENTS
1. FIRE STOP WRAP STRIP AROUND PIPE/CONDUIT
2. FIRE RESTRICTING METAL COLLAR W/APPROPRIATE FASTENERS
3. FIRE STOP CAULK OR MOLDABLE PUTTY AROUND COLLAR

METAL PIPE
U.L. DES. NO. 319 - UP TO 2 HR. FIRE RATING
COMPONENTS
1. MINERAL WOOL PACKED INOT ANNULAR SPACE
2. FIRESTOP CAULK EACH SIDE OF PENETRATION

GYPSUM BOARD WALL ASSEMBLY
PLASTIC PIPE
U.L. DES. NO. 148 (B) - UP TO 2 HR. FIRE RATING
COMPONENTS:
1. FIRE STOP WRAP/STRIP AROUND PIPE/CONDUIT EACH SIDE OF PENETRATION
2. FIRE STOP CAULK OR MOLDABLE PUTTY EACH SIDE OF PENETRATION
METAL PIPE
U.L. DES. NO. 147 (A) - UP TO 2 HR. FIRE RATING
1. FIRE STOP CAULK EACH SIDE OF PENETRATION

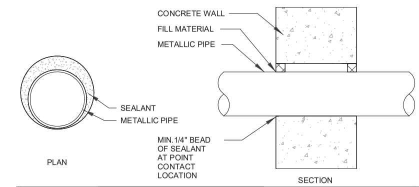
ROOF/CEILING ASSEMBLY
PLASTIC PIPE
U.L. DES. NO. 451 (B) - UP TO 1 HR. FIRE RATING
PROVIDE THE FOLLOWING COMPONENTS AT THE BOTTOM OF GYPSUM CEILING & AT THE BOTTOM SIDE OF ROOF DECK
1. FIRE STOP WRAP/STRIP AROUND PIPE/CONDUIT
2. FIRE RESTRICTING METAL COLLAR W/ APPROPRIATE FASTENERS
3. FIRE STOP CAULK OR MOLDABLE PUTTY AROUND COLLAR

MASONRY WALL ASSEMBLY

PLASTIC PIPE
U.L. DES. NO. 562 - UP TO 2 HR. FIRE RATING
COMPONENTS:
1. BACKER ROD PACKED AROUND PIPE EACH SIDE OF WALL
2. FIRE STOP EACH SIDE OF PENETRATION

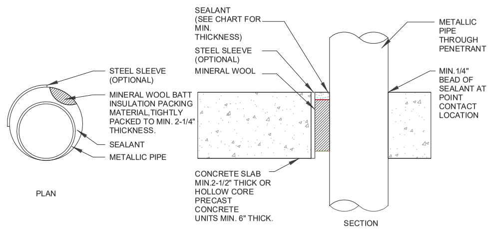
METAL PIPE
U.L. DES. NO. 161 - UP TO 2 HR. FIRE RATING
COMPONENTS:
1. MINIMUM 3 DEPTH MINERAL WOOL BACKING PACKED INTO ANNULAR SPACE
2. FIRE STOP CAULK EACH SIDE OF PENETRATION

METAL PIPE
U.L. DES. NO.453 - UP TO 1 HR. FIRE RATING
COMPONENTS:
1. PROVIDE FIRE STOP CAULK AROUND GYPSUM BOARD CEILING & ROOF DECK PENETRATIONS



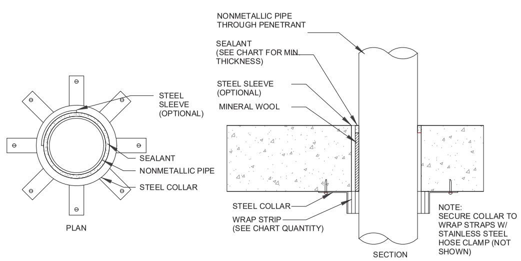
UL SYSTEM NO. W-J-1098					
TYPE OF PENETRANT	MAX. PIPE DIAM.	ANNULAR SPACE	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
STEEL OR IRON PIPE	8" OR LESS	0" TO 2"	5/8"	2 HR	1/4, 3/4, & 1 HR
COPPER PIPE	4" OR LESS	0" TO 2"	5/8"	2 HR	1/4, 3/4, & 1 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



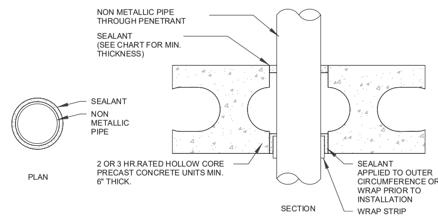
UL SYSTEM NO. C-AJ-1353					
MIN. CONCRETE THICKNESS	STEEL SLEEVE	MAX ANNULAR SPACE	PACKING MATERIAL	MIN. FILL MATERIAL THICKNESS	F RATING
2-1/2"	OPTIONAL	2"	REQUIRED	1/4"	3 HR
4-1/2"	NO	1"	OPTIONAL	1/2"	2 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



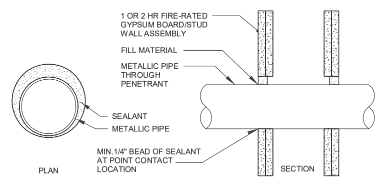
UL SYSTEM NO. C-AJ-2297									
PIPE TYPE	MAX PIPE DIAM.	MIN. CONCRETE THICKNESS	WRAP STRIP TYPE	MIN. NO. OF WRAP STRIP LAYERS	F RATING	T RATING	MIN. PACKING MATERIAL DEPTH	MIN. FILL MATERIAL DEPTH	MAX ANNULAR SPACE
PVC, ccPVC, CPVC, RNC, ABS, ccABS	2"	2-1/2"	RED, BLU OR BLU2	1	2	1	N/A	1/2"	1/16"
PVC, ccPVC, CPVC, RNC, ABS, ccABS	2"	2-1/2"	RED, BLU OR BLU2	1	2	1	2"	1/2"	3/14"
PVC, ccPVC, CPVC, RNC, ABS, ccABS	4"	2-1/2"	RED, BLU OR BLU2	2	2	1	2"	1/2"	3/14"
PVC, ccPVC, CPVC, RNC,	2"	4-1/2"	RED, BLU OR BLU2	1	3	2	N/A	1/4"	1/4"
PVC, ccPVC, CPVC, RNC,	3"	4-1/2"	RED, BLU OR BLU2	2	3	2	N/A	1/4"	1/4"
PVC, ccPVC, CPVC, RNC,	4"	4-1/2"	RED, BLU OR BLU2	3	3	2	N/A	1/4"	1/4"
PVC, ccPVC, CPVC, RNC,	6"	4-1/2"	RED	3	3	0	N/A	1/4"	1/2"
PVC, ccPVC, CPVC, RNC,	6"	4-1/2"	BLU OR BLU2	3	3	2	N/A	1/4"	3/16"
ABS, ccABS	2"	4-1/2"	RED	1	3	0	N/A	1/4"	1/2"
ABS, ccABS	2"	4-1/2"	BLU OR BLU2	1	3	2	N/A	1/4"	1/2"
ABS, ccABS	3"	4-1/2"	RED	2	2	0	N/A	1/4"	1/2"
ABS, ccABS	3"	4-1/2"	BLU OR BLU2	2	3	2	N/A	1/4"	1/2"
ABS, ccABS	4"	4-1/2"	RED	3	2	0	N/A	1/4"	1/2"
ABS, ccABS	4"	4-1/2"	BLU OR BLU2	3	3	2	N/A	1/4"	1/2"
ABS, ccABS	6"	4-1/2"	RED	3	3	0	N/A	1/2"	3/8"
ABS, ccABS	6"	4-1/2"	BLU OR BLU2	3	3	3	N/A	1/2"	3/8"

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT
WRAP STRIP: SPECIFIED TECHNOLOGIES-SPECSEAL RED WRAP STRIP, SPECSEAL BLU WRAP STRIP
OR
SPECSEAL BLU2 WRAP STRIP



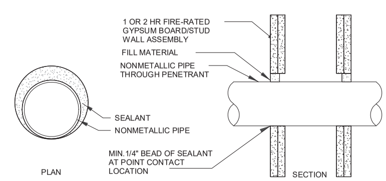
UL SYSTEM NO. F-B-2014					
MIN. HOLLOW CORE CONCRETE UNIT THICKNESS	PIPE DIAM	ANNULAR SPACE	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
6"	0 TO 2"	1/4 TO 5/16"	1/2"	2 HR	3 HR
6"	2" TO 3"	1/4 TO 5/16"	1/2"	2 HR	1 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



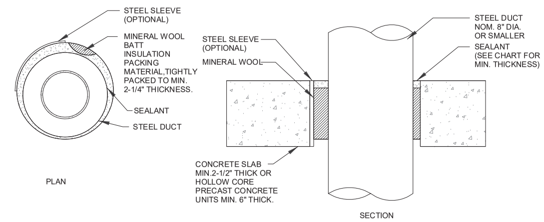
UL SYSTEM NO. W-L-1222					
TYPE OF PENETRANT	MAX. PIPE DIAM.	ANNULAR SPACE	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
STEEL OR IRON PIPE, STEEL CONDUIT OR EMT	2"	0" TO 2"	5/8"	1&2 HR	1HR
STEEL OR IRON PIPE, STEEL CONDUIT OR EMT	8"	0" TO 2"	5/8"	1&2 HR	3/4 HR
COPPER PIPE OR TUBE	4"	0" TO 2"	5/8"	1&2 HR	1/4 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



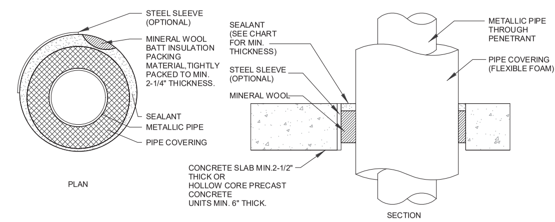
UL SYSTEM NO. W-L-2241					
TYPE OF PENETRANT	MAX. PIPE DIAM.	ANNULAR SPACE	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
POLYVINYL CHLORIDE (PVC) PIPE	2"	0" TO 1"	5/8"	1&2 HR	1/4 HR
CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE	2"	0" TO 1"	5/8"	1&2 HR	1/4 HR
RIGID NONMETALLIC CONDUIT	2"	0" TO 1"	5/8"	1&2 HR	1HR OR 1-3/4HR
ELECTRICAL NONMETALLIC TUBING	2"	0" TO 1"	5/8"	1&2 HR	1HR OR 1-3/4HR
CROSS LINKED POLYETHYLENE (PEX) TUBING	1"	0" TO 1"	5/8"	1&2 HR	1HR OR 1-3/4HR
ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE	1-1/2"	1/4" TO 3/4"	5/8"	1&2 HR	0HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



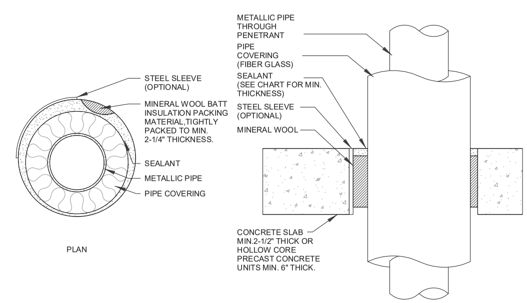
UL SYSTEM NO. C-AJ-7040						
MIN. CONCRETE THICKNESS	STEEL SLEEVE	ANNULAR SPACE	MIN. PACKING MATERIAL THICKNESS	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
4-1/2"	OPTIONAL	2" MAX	3"	1/2"	2 HR	1/4 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



UL SYSTEM NO. C-AJ-5155							
MIN. CONCRETE THICKNESS	STEEL SLEEVE	PIPE COVERING THICKNESS	ANNULAR SPACE	MIN. PACKING MATERIAL THICKNESS	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING
2-1/2"	YES	3/4"	1/4" TO 5/8"	1-1/2"	1"	2 HR	3/4 HR
4-1/2"	YES	3/4"	1/4" TO 5/8"	3"	1"	2 HR	3/4 HR
4-1/2"	NO	1/2"	0 TO 2"	3"	1/2"	2 HR	3/4 HR
4-1/2"	YES	1/2"	1/4" TO 1-5/8"	3"	1/2"	2 HR	3/4 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT



UL SYSTEM NO. C-AJ-5138							
MIN. CONCRETE THICKNESS	STEEL SLEEVE	MAX ANNULAR SPACE	MIN. PACKING MATERIAL DEPTH	MIN. FILL MATERIAL THICKNESS	F RATING	T RATING W/ SLEEVE	T RATING W/OUT SLEEVE
2-1/2"	OPTIONAL	1/4 " TO 5/8"	1-1/2"	1"	2 HR	3/4 HR	3/4 HR
4-1/2"	OPTIONAL	1/4 " TO 5/8"	3"	1/2"	2 HR	3/4 HR	1 HR

FILL MATERIAL: SPECIFIED TECHNOLOGIES-SPECSEAL LCI SEALANT

N E R I
ARCHITECTS
6400 N NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.825.8400

PROJECT #: 2102
DATE: 05/13/22

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

00.00.00 ISSUED FOR PERMIT
REVISIONS
DRAWN BY: RAM
APPROVED BY: GCN / MAM
SCALE: AS NOTED
DESCRIPTION: FIRESTOPPING DETAILS
SHEET NO. A-7.0

DRAWING INDEX	
S-101	GENERAL NOTES
S-201	FOUNDATION PLAN
S-202	FLOOR PLAN
S-203	ROOF PLAN
S-301	SECTIONS AND DETAILS

GENERAL NOTES:

THE FOLLOWING NOTES SHALL APPLY UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS:

1. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF LOWELL BUILDING CODE, LATEST EDITION.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES WHICH MAY EXIST.
3. INSPECTIONS SHALL BE MADE ON ALL MATERIALS AND PROCESSES AS SPECIFIED BELOW:
   A. CONCRETE HAVING A STRENGTH IN EXCESS OF 2000 PSI
   B. WELDING
4. MATERIAL TESTS SHALL BE MADE AS SPECIFIED. CONCRETE TEST CYLINDERS SHALL BE MADE FOR ALL CONCRETE. TEST RESULTS SHALL BE DETERMINED BY THE TESTING LABORATORY.
5. TOP OF FLOORS SHALL BE TRUE TO INDICATED ELEVATIONS. VARIATIONS SHALL NOT EXCEED 1/4" IN 10 FEET. CARE MUST BE EXERCISED IN FINISHING OPERATIONS TO OBTAIN A TRUE SURFACE.
6. DETAILS, SECTIONS AND NOTES SHOWN ON THIS DRAWING ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS OTHERWISE SHOWN.
7. USE BONDING ADHESIVE AND SEALER AT ALL CONSTRUCTION JOINTS IN SUPPORTED SLABS.
8. CONTRACTOR SHALL FURNISH ALL NECESSARY BRACING REQUIRED TO PROPERLY CONSTRUCT THE STRUCTURE. ALL BRACING TO BE DESIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER. SUBMIT BRACING / SHORING DRAWINGS TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO PROCEEDING. FOUNDATION WALLS SHALL REMAIN LATERALLY BRACED UNTIL FIRST FLOOR IS FULLY CONSTRUCTED.
9. DO NOT SCALE DRAWINGS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHEETING AND SHORING ADJACENT STRUCTURES AS REQUIRED SO THAT THEY ARE NOT ENDANGERED BY THIS CONSTRUCTION. SHORING SHALL BE DESIGNED BY LICENSED STRUCTURAL ENGINEER AND SEALED.
11. CONTRACTOR SHALL RELY ONLY ON WRITTEN COMMUNICATION WHEN COMMUNICATING WITH THE EOR. EOR WILL NOT PROVIDE ANY INFORMATION VERBALLY.

DESIGN LOADS:

1. DESIGN SELFWEIGHT LOADS ARE IN ACCORDANCE WITH SHOWN PHYSICAL STRUCTURE.
2. THE DESIGN SUPERIMPOSED LOADS ARE AS FOLLOWS:
   A. WAREHOUSE FLOOR:
      LIVE LOAD = 125 PSF
      DEAD LOAD = 15 PSF
      TOTAL LOAD = 140 PSF
   B. OFFICES:
      LIVE LOAD = 50 PSF
      DEAD LOAD = 15 PSF
      PARTITION LOAD = 20 PSF
      TOTAL LOAD = 85 PSF
   C. ROOF:
      SNOW LOAD = 30 PSF
      DEAD LOAD = 25 PSF
      TOTAL LOAD = 55 PSF
   D. WIND:
      MWFRS = 20 PSF
      CLADDING = 25 PSF

MATERIALS:

1. CONCRETE:
   A. CONCRETE STRENGTHS AT 28 DAYS SHALL BE AS FOLLOWS:
      A.1. GRADE SLABS F'c = 4000 PSI
      A.2. FOOTINGS F'c = 4000 PSI
      A.3. FOUNDATION WALLS F'c = 4000 PSI
   B. AIR ENTRAINMENT SHALL BE USED IN ALL CONCRETE EXCEPT CAISSONS AND FOOTINGS.
   C. CONCRETE MIX DESIGNS SHALL BE PREPARED BY AN APPROVED TESTING LABORATORY. MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE USE.
   D. FINE AND COARSE AGGREGATES SHALL BE STONE AGGREGATES CONFORMING TO ASTM C33.
   E. PORTLAND CEMENT SHALL BE TYPE I OR III CONFORMING TO ASTM C150.
   F. THE WATER-CEMENT RATIO FOR BEAMS AND SLABS SHALL NOT EXCEED 0.40. SUPERPLASTICIZERS MAY BE USED.
2. REINFORCEMENT:
   A. REINFORCING STEEL SHALL CONFORM TO ASTM 615 (60,000 PSI YIELD) FOR BEAMS, SLABS AND WALLS.
   B. WELDED WIRE FABRIC USED FOR SLAB ON GRADE CONSTRUCTION SHALL CONFORM TO ASTM A884 FOR WELDED WIRE EPOXY COATED.

MIXING PROPORTIONS FOR TYPE N OR O MORTAR			
	PARTS BY VOLUME		AGGREGATE MEASSURED IN A DAMP, LOOSE CONDITION
MORTAR TYPE	PORTLAND CEMENT	TYPE "S" HYDRATED LIME	
M	3	1	12
S	2	1	9
N	1	1	6
O	1	2	9

SUBMIT ALL SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND GENERAL CONFORMANCE TO THE CONSTRUCTION DOCUMENTS. STEEL SHOP SHALL DESIGN AND DETAIL ALL STEEL CONNECTIONS PER AISC AND SUBMIT TO THE EOR FOR APPROVAL. DO NOT BEGIN FABRICATION OF THE STEEL UNTIL ALL SHOP DRAWINGS HAVE BEEN APPROVED BY THE EOR. PRIOR TO SUBMISSION TO THE ENGINEER, THE GENERAL CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS. AN APPROVAL STAMP OF THE SHOP DRAWINGS IS REQUIRED. GC SHALL REVIEW AND APPROVE ALL DIMENSIONS, QUANTITIES AND CONTRACTIBILITY ASPECTS.

FOUNDATION NOTES:

1. NO SOIL INVESTIGATION HAS BEEN PERFORMED BY ANAX ENGINEERING, INC. THE BEARING CAPACITY USED FOR THE FOUNDATION DESIGN IS 3.0 KSF AS PER GEOTECHNICAL REPORT PREPARED BY ADVANCED ENGINEERING SERVICES DATED 12/24/20. THE BEARING VALUE SHALL BE VERIFIED IN THE FIELD BY A QUALIFIED TESTING AGENCY PRIOR TO CONSTRUCTION PROCEDURE.
2. THE OWNER SHALL PROVIDE THE SERVICES OF A GEOTECHNICAL ENGINEER TO VERIFY THE SOIL BEARING CAPACITIES AT THE BOTTOM OF THE FOOTINGS IF LESSER BEARING VALUES ARE ENCOUNTERED AT THE REQUIRED ELEVATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE THE PROCEEDING WITH THE PLACEMENT OF FOUNDATIONS.
3. FOOTINGS SHALL BE PLACED ON UNDISTURBED SOIL OR COMPACTED GRANULAR FILL. THE MINIMUM DEPTH FOR FOOTINGS SHALL BE 3'-6" BELOW GRADE, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND REMOVAL OF ALL EXCAVATION SUPPORT SYSTEMS.
5. CONTROL JOINTS IN CURBS, RETAINING AND OTHER WALLS SHALL BE EVERY 15'-0" O.C. (MAX.) OR AT CHANGES IN DIRECTION (UNLESS NOTED OTHERWISE).

GENERAL MASONRY NOTES:

1. MATERIALS:
   A. PORTLAND CEMENT SHALL BE IN ACCORDANCE WITH ASTM C-150 LATEST VERSION, TYPE 1, GRAY OR WHITE AS REQUIRED FOR COLOR SELECTED. COLOR FOR COLORED MORTAR TO BE BY GEORGE B. SMITH COLOR COMPANY OR SOLOMON GRIND-CHEM SERVICE, INC.
   B. HYDRATED LIME SHALL BE IN ACCORDANCE WITH ASTM-C-207 LATEST VERSION, TYPE S.
   C. AGGREGATE SHALL BE IN ACCORDANCE WITH ASTM C-144-66T, NATURAL SAND. FOR JOINTS 1/4" THICK OR LESS, ALL OF THE SAND MUST PASS THE NO. 8 SIEVE, AND 95% MUST PASS THE NO. 16 SIEVE.
   D. WATER SHALL BE CLEAN, FREE OF DELETERIOUS MATERIALS.
   E. MINIMUM BLOCK STRENGTH f'm = 1500 PSI U.N.O. AT SHEARWALLS.
2. PROPORTIONING: MORTAR SHALL BE PROPORTIONED BY VOLUME PER ASTM C-270-64T FOR TYPE N, S OR M.
3. MIXING: MIX CEMENTITIOUS MATERIALS AND AGGREGATE IN A MECHANICAL BATCH MIXER FOR AT LEAST 3 MINUTES WITH THE MAXIMUM AMOUNT OF WATER TO PRODUCE A WORKABLE CONSISTENCY. USE MORTAR WITHIN TWO HOURS AFTER MIXING. DO NOT RETEMPER MORTAR. DO NOT ADD ADMIXTURES WITHOUT WRITTEN APPROVAL. DO NOT ADD LIME TO MASONRY CEMENT MORTAR.
4. UNIT MASONRY: IN ADDITION TO THE REQUIREMENTS SPECIFIED HEREIN, COMPLY WITH THE APPLICABLE RECOMMENDATIONS OF THE PORTLAND CEMENT ASSOCIATION CONCRETE MASONRY HANDBOOK.
5. HANDLING AND STORAGE: HANDLE AND STORE MATERIALS IN SUCH A MANNER AS TO PREVENT DAMAGE. STORE BRICK, BLOCK, JOINT REINFORCEMENT AND PACKAGED MATERIALS ABOVE GROUND ON WOOD PALLETS OR BLOCKING AND PROTECT FROM THE WEATHER UNTIL USED. ALL DAMAGED OR OTHERWISE UNSUITABLE MATERIAL, WHEN SO ASCERTAINED, SHALL BE IMMEDIATELY REMOVED FROM JOB SITE.
6. PROTECTION: DURING CONSTRUCTION, THE TOPS OF ALL WALLS SHALL BE COVERED AT NIGHT, DURING INCLEMENT WEATHER AND DURING DELAYS TO ENSURE AGAINST DAMAGE TO FINISHED WORK. WALLS AT ALL TIMES SHALL BE PROTECTED FROM DRIPPINGS FROM ABOVE. WHERE NECESSARY OR DIRECTED, PROVIDE COVERING TO PROTECT PARTICULAR PORTIONS OF THE WORK. MAINTAIN ALL PROTECTION UNTIL REMOVED FOR FINAL CLEANING.
7. REINFORCEMENT: HORIZONTAL JOINT WALL REINFORCEMENT SHALL BE LADDER DESIGN, CRIMPED AT CENTER, GALVANIZED, FABRICATED FROM COLD DRAWN STEEL WIRE CONFORMING TO ASTM-A-82 LATEST VERSION, MINIMUM NO. 9 GAUGE DEFORMED SIDE RODS WITH WELD CONNECTED NO. 9 GAUGE CROSS-RODS @ 16" O.C. WIDTH 2" LESS THAN WALL THICKNESS. INCLUDE PREFABRICATED CORNERS AND TEE SECTIONS. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. VERTICAL REINFORCEMENT SHALL BE PER PLAN. IF NEEDED, REINFORCEMENT SHALL BE SPLICED PER LAP SPLICE SCHEDULE, WITH BARS BEING SPLICED SIDEWAYS, SO THAT BOTH BARS REMAIN AT THE CENTER OF WALL THICKNESS.
8. CORRUGATED METAL TIES: GALVANIZED STEEL, MINIMUM 7/8" WIDE, 22 GAUGE AND 7" LONG.
9. COMPRESSIBLE JOINT FILLERS: ASTM D-1056 LATEST VERSION, CLASS E, CLOSED CELL EXPANDED NEOPRENE, TYPE S, CLASS SCE 41.
10. CONCRETE MASONRY UNITS: AUTOCLAVED AND PRESHRUNK, MAXIMUM LINEAR SHRINKAGE OF 0.03 WHEN TESTED IN ACCORDANCE WITH ASTM C-426 LATEST VERSION.
    A. MAXIMUM MOISTURE CONTENT AT TIME OF DELIVERY SHALL BE 30%.
    B. HOLLOW LOAD BEARING UNITS SHALL CONFORM TO ASTM C-90 LATEST VERSION, TYPE 1, P-1.
    C. SOLID LOAD BEARING UNITS SHALL CONFORM TO ASTM C-145 LATEST VERSION, TYPE 1, GRADE U-1.
    D. LIGHTWEIGHT AGGREGATES SHALL CONFORM TO ASTM C-133 LATEST VERSION MACHINE EXPANDED SLAG,
    E. FACES OF UNITS SHALL BE NOMINAL 8" X 16" UNITS, NOMINAL THICKNESS SHALL BE AS SHOWN ON PLANS.
11. INSTALLATION: BUILD IN BLOCKING. FORM CHASES, SLOTS, CUTOUTS AND PATCH MASONRY WORK AS REQUIRED. SET ALL BUCKS, BLOCKING LINTELS AND ANCHORS AS REQUIRED. FILL ALL HOLLOW METAL FRAMES OCCURRING IN BRICK OR BLOCK WALLS WITH MASONRY MORTAR AND CAREFULLY POINT ALL JOINTS BETWEEN METAL FRAMES AND ADJACENT MASONRY AND OTHER CONSTRUCTION. USE HALF RUNNING BOND, UNLESS OTHERWISE SHOWN FOR BOTH BRICK AND BLOCK. DO NOT USE CHIPPED OR BROKEN BLOCK WHERE EXPOSED TO VIEW. PROVIDE 3/8" WIDE JOINTS, TOOLED CONCAVE UNLESS OTHERWISE SHOWN OR DIRECTED. USE SOLID MASONRY UNITS AS FIRST COURSE UNDER ALL STRUCTURAL MEMBERS BEARING ON WALLS. UNLESS SHOWN OTHERWISE ON THE PLANS, PROVIDE VERTICAL CONTROL JOINTS AT 40'-0" O.C. MAX. WHERE BLOCK WALLS EXTEND TO UNDERSIDE OF ROOF DECK AND WHERE BLOCK INTERSECTS STEEL COLUMNS, PROVIDE STEEL ANCHORS AT 24" O.C. TO SECURE WALL IN PLACE, GROUT JOINT AT ROOF DECK OR BEAM SOLID WITH MORTAR. WHERE FIRE RATED WALLS ARE SHOWN OR REQUIRED, USE UNITS AND INSTALLATION METHODS COMPLYING WITH CODE AND UL REQUIREMENTS.
12. FROZEN WORK: DO NOT BUILD UPON FROZEN WORK. DO NOT LAY MASONRY UNITS WHICH HAVE A FILM OR FROST. REMOVE AND REPLACE AS DIRECTED, MASONRY WORK WHICH IS OBSERVED TO BE DAMAGED BY FREEZING. DO NOT ALLOW GROUT TO REACH TEMPERATURE BELOW 40 DEGREES UNTIL FULLY CURED.
13. CLEANING: CLEAN EXPOSED BRICK MASONRY SURFACES BY THE BUCKET OF CLEAR WATER AND BRUSH HAND CLEANING METHOD OR BY HIGH PRESSURE WATER METHOD. CLEAN ALL EXCESS MORTAR AND FILM FROM EXPOSED SURFACES. DO NOT USE ACID OR ACID SOLUTIONS. USE COMMERCIAL CLEANING AGENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. WASH ALL SURFACES AFTER USING AGENTS WITH CLEAR WATER HOSING. CLEAN EXPOSED CMU MASONRY BY DRY BRUSHING AT THE END OF EACH DAYS WORK AND AFTER FINAL POINTING TO REMOVE MORTAR SPOTS AND DROPPINGS.
14. SHEAR WALLS: SHEAR WALLS SHALL BE CONSTRUCTED PER STRUCTURAL PLANS AND DETAILS. REINFORCEMENT SHALL BE PER PLANS AND SHEAR WALL SCHEDULE. THERE SHALL BE NO EXPANSION JOINTS OR OTHER DISCONTINUITIES IN THE SHEAR WALLS, UNLESS WRITTEN APPROVAL IS PROVIDED BY THE STRUCTURAL ENGINEER OF RECORD.
15. COMPOSITE WALL CONSTRUCTION: FOR WALLS DESIGNATED AS COMPOSITE, FILL JOINTS BETWEEN MASONRY BRICK AND BLOCK WITH TYPE S MORTAR. PROVIDE MINIMUM WALL TIE (WIRE TIE W2.8) EVERY OTHER COURSE. MINIMUM f'm = 1500 PSI.
16. TYPICAL WALL REINFORCEMENT IS #4 @ 32" O.C., U.N.O. WITH MINIMUM SPLICE LAP LENGTH OF 24" U.N.O.
17. MASONRY DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-530, LATEST EDITION.

REINFORCED CONCRETE NOTES:

1. REINFORCED CONCRETE WORK SHALL BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 LATEST EDITION.
2. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. IN SUCH CASES, HOPPERS OR VERTICAL CHUTES OR TRUNKS SHALL BE USED. CHUTES OR TRUNKS SHALL BE OF VARIABLE LENGTHS SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED SIX (6) FEET AND A SUFFICIENT NUMBER OF CHUTES OR TRUNKS SHALL BE USED TO INSURE THAT THE CONCRETE IS KEPT LEVEL AT ALL TIMES.
3. ALL DIMENSIONS SHOWN FOR LOCATIONS OF REINFORCING ARE TO BE TAKEN FROM THE FACE OF MAIN BARS AND DENOTE CLEAR MIN. COVERAGE. FOR BEAMS AND TIED COLUMNS, DIMENSIONS ARE TO MAIN BARS. UNLESS SPECIFICALLY NOTED, CONCRETE COVERAGES TO REINFORCING STEEL (NOT PRESTRESSING STEEL) SHALL BE AS FOLLOWS:
   A. 3" WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST GROUND (EXCEPT GRADE SLABS).
   B. 2" WHERE CONCRETE IS EXPOSED TO GROUND, BUT PLACED IN FORMS.
   C. 2" TO MAIN BARS OF TIED COLUMNS.
   A. 1-1/2" TO WALL BARS, UNLESS NOTED OTHERWISE.
   E. 1" TO BOTTOM BARS AND 2" TO TOP BARS IN SLABS IN FORMS.
   F. 2" TO BARS IN SLABS ON GRADE.
   G. 2" TO MAIN BARS OF BEAMS.
4. THE SPLICES IN ADJACENT BARS SHALL NOT BE LESS THAN FIVE (5') FEET APART. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. BARS MAY BE WIRED TOGETHER AT SPLICES OR LAPS EXCEPT FOR TOP REINFORCING OF BEAMS AND SLABS OR WHERE DEFINITELY DETAILED TO BE SEPARATED. SEE BEAM DETAILS OR SCHEDULES FOR SEPARATION OF BEAM OR GIRDER BARS OVER SUPPORTS. CONTINUOUS BARS IN SPANDRELS, WALL BEAMS, ETC., SHALL LAP AS FOLLOWS:
   A. TOP BARS AT CENTER LINE OF SPAN.
   B. BOTTOM BARS AT CENTER LINE OF SUPPORTS.
5. WALLS SHALL BE DOWELED TO FOOTINGS, WALLS, BEAMS OR SLABS WITH BARS OF THE SAME SIZE AND SPACING AS THE WALL BARS, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE.
6. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE SIZE AND LOCATION OF WALL AND FLOOR OPENINGS, WALL OFFSETS, PROVISIONS FOR FUTURE EQUIPMENT, STAIR DETAILS, PIPE, VENT, DUCT AND OTHER OPENINGS AND DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS. SEE ELECTRICAL DRAWINGS FOR SUPPORTS AND OPENINGS FOR ELECTRICAL EQUIPMENT.
7. REINFORCING STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI LATEST EDITION.
8. THE MINIMUM REINFORCEMENT FOR WALLS SHALL BE AS PER ACI 318 CHAPTER 14, SECTION 14.3, UNLESS NOTED OTHERWISE.
9. THE MINIMUM TEMPERATURE REINFORCEMENT SHALL BE AS PER ACI 318 CHAPTER 7, SECTION 7.12 UNLESS NOTED OTHERWISE.
10. AT A MINIMUM, CONCRETE WALLS SHALL HAVE #4 BARS @ 12" O.C. EA. FACE EA. WAY, UNLESS OTHERWISE SHOWN.

LAP SPLICE SCHEDULE (APPLIES TO REINF. CONC. & MASONRY)	
BAR SIZE	CLASS "B" SPLICE
#4	33
#5	41
#6	48
#7	70
#8	81

GENERAL PRECAST NOTES:

1. PRE-CAST CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR OPENINGS FOR DOOR FLOOR PIVOTS AND MECHANICAL/ELECTRICAL DRAWINGS FOR OPENING LOCATIONS.
2. PRECAST CONCRETE:
   THE PRECAST CONCRETE MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL PRECAST INCLUDING REINFORCING, INSERTS AND CONNECTIONS TO THE STRUCTURE NOT SPECIFICALLY CALLED OUT ON THE DRAWINGS. PRECAST CONCRETE SHALL BE PRESTRESSED TO STRUCTURALLY SUPPORT THE FLOOR STRUCTURE AND HANDLING (ERECTING) LOADS, AND SHALL BE DESIGNED SO THAT BOTH WYTHES OF CONCRETE, INNER AND OUTER, SHALL BE KEPT IN COMPRESSION UNDER ALL LOADING CONDITIONS. NO FLEXURAL TENSION IS TO BE ALLOWED IN THE PRE-COMPRESSED TENSILE ZONE. BOTH WYTHES SHALL BE STRESSED TO MINIMIZE ANY BOWING DUE TO ECCENTRICITY OF PRESTRESS FORCE.
3. ENGINEERING:
   ALL PRECAST SHALL BE DESIGNED FOR ANCHORAGE, ERECTION, REINFORCING, AND APPLIED LOADS BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF PROJECT LOCATION. THEY SHALL PROVIDE DRAWINGS AND CALCULATIONS TO WHICH THEY SHALL AFFIX THEIR SEAL AND SIGNATURE. THE PRESTRESS CONCRETE AND CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH STANDARDS OF THE PRECAST CONCRETE INSTITUTE MANUAL, ACI-318 AND ACI-308 AND THE AISC MANUAL OF STEEL CONSTRUCTION.
4. MATERIALS:
   ALL MATERIALS TO BE CLEAN AND NEW AND TO COMPLY WITH ARTICLES LISTED BELOW AS A MINIMUM STANDARD.

   PORTLAND CEMENT: ASTM C-150, TYPE 1, EXCEPT USE TYPE 3 WHERE HIGH EARLY STRENGTH IS REQUIRED.
   COURSE AGGREGATE AND SAND: ASTM C-33
   PRESTRESS STEEL STRANDS: ASTM A-416
   REINFORCING STEEL: ASTM A-615, GRADE 60, ASTM A-305
   MISCELLANEOUS STEEL: ASTM A-36
   COILS AND BOLTS: ASTM A-325, ASTM A-307
   INSULATION: SHALL BE POLYSTYRENE
   WATER: CLEAN AND VOID OF ALL DELETERIOUS MATERIALS.

   FOR MATERIALS NOT SPECIFIED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS, BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, PROVIDE NEW MATERIALS, FIRST QUALITY OF THEIR RESPECTIVE KINDS, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE REVIEW OF THE ARCHITECT AND THE OWNER'S REPRESENTATIVE.
5. FABRICATION:
   ALL CONCRETE TO BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH ACI-301, ACI-304, ACI-311, ACI-318, ACI-347, ACI-533, CRSI MANUAL OF STANDARD PRACTICE, PCI-116, AWS D1.0, AWS D12.1. CONCRETE STRENGTH SHALL BE AT LEAST 5,000 PSI AT 28 DAYS AND SHALL BE AT LEAST 3,000 PSI AT RELEASE. CONCRETE BACK SIDE SHALL BE TROWELED SMOOTH, FREE FROM OIL, GREASE, TROWEL MARKS, HONEYCOMBING AND EXPOSED AGGREGATE. MAKE EXPOSED EDGES SHARP, STRAIGHT AND SQUARE. MAKE FLAT SURFACES INTO A TRUE PLANE. ADDITIVES OR MIXTURES CONTAINING CALCIUM CHLORIDE WILL NOT BE PERMITTED IN THE CONCRETE. TOLERANCE SHALL BE 1/8" IN WIDTH, 1/2" IN LENGTH, AND 1/4" IN DEPTH FOR OVERALL DIMENSIONS. ALL WINDOW AND DOOR TOLERANCES ARE TO BE 1/4".
6. STORAGE:
   STORE UNITS AT THE JOB SITE IN A MANNER TO PREVENT CRACKING, DISTORTION, WARPING, STAINING AND OTHER PHYSICAL DAMAGE, AND IN A MANNER TO KEEP MARKINGS VISIBLE. GENERAL CONTRACTOR SHALL VERIFY STORAGE AREA(S). LIFT AND SUPPORT THE UNITS ONLY AT DESIGNATED LIFTING POINTS OR SUPPORTING POINTS AS SHOWN ON THE APPROVED SHOP DRAWINGS. NO PRESTRESSING STRAND MAY BE CUT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
7. UNLESS NOTED OTHERWISE, THE PRECAST PLANK SHALL HAVE A 2" BONDED STRUCTURAL 5000 PSI CONCRETE TOPPING.

STEEL JOIST / DECK NOTES:

FOLLOWING NOTES SHALL APPLY IN ADDITION TO THE STRUCTURAL STEEL NOTES:

1. THE STEEL JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, MANUFACTURE AND INSTALLATION OF THEIR PRODUCTS, INCLUDING ALL BRIDGING, ACCESSORIES AND CONNECTIONS NECESSARY FOR THE COMPLETE INSTALLATION. JOISTS SHALL BE DESIGNED FOR ALL LOADING CONDITIONS REQUIRED BY THE GOVERNING BUILDING CODES IN ADDITION TO ANY SPECIFIC LOADINGS SHOWN ON THE DRAWINGS. THE DESIGN, MANUFACTURE AND INSTALLATION OF ALL JOISTS, BRIDGING, ACCESSORIES, ETC. SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, INCLUDING LOAD TABLES, OF THE STEEL JOIST INSTITUTE, LATEST EDITION. IF ANY STEEL JOIST SIZES HAVE BEEN SHOWN ON THESE DRAWINGS, THEY ARE PRELIMINARY ONLY AND SUBJECT TO FINAL DESIGN BY THE STEEL JOIST MANUFACTURER'S STRUCTURAL ENGINEER LICENSED IN THE JURISDICTION OF THIS PROJECT.
2. ALL STEEL JOISTS TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE SPECIFICATIONS AND SO CERTIFIED. WHERE CONCENTRATED AND/OR NON-UNIFORM LOADS OCCUR, THE JOISTS MUST BE DESIGNED TO CARRY THE FULL COMBINATION OF UNIFORM, NON-UNIFORM AND CONCENTRATED LOADS. THE NON-UNIFORM AND CONCENTRATED LOADS ARE SPECIFIED ON THE PLANS AND/OR LOADING DIAGRAMS SHOWN. THE JOISTS MANUFACTURER SHALL BE RESPONSIBLE FOR THE JOIST DESIGNS BASED ON THE GIVEN LOADINGS AND SHALL SUBMIT CALCULATIONS FOR ALL SPECIAL JOISTS, PREPARED UNDER THE SUPERVISION OF A LICENSED STRUCTURAL ENGINEER.
3. ALL JOISTS SHALL BE WELDED TO THEIR STEEL SUPPORT MEMBERS, PER SJI SPECIFICATIONS, UNLESS NOTED OTHERWISE OR IF EXPANSION IS REQUIRED. ALL JOISTS, U.N.O., SHALL BE DESIGNED FOR A LIVE LOAD DEFLECTION. JOIST ENDS AT THE BUILDING PERIMETER SHALL BE DESIGNED TO TRANSFER AN ADDITIONAL HORIZONTAL FORCE, AS SPECIFIED ON THE STRUCTURAL DRAWINGS, TO THE SUPPORTING MEMBER. THIS LOAD SHALL BE APPLIED AT THE TOP OF THE TOP CHORD, ABOVE THE BEARING SEAT AND PERPENDICULAR TO THE JOIST SPAN.
4. IF SHOWN ON PLANS, EXTEND BOTTOM CHORDS OF ALL JOISTS AND BOLT TO $\frac{3}{4}$" STIFFENER PLATE ON BEAM OR CLIP ANGLE L3x3x$\frac{1}{4}$. ALL JOISTS ON COLUMN LINES TO BE BOLTED CONNECTIONS.
5. ABSOLUTELY NO HOLES SHALL BE DRILLED OR BURNED INTO TOP OR BOTTOM CHORDS OF OPEN WEB STEEL BAR JOISTS.
6. STEEL EQUIPMENT HANGERS ARE TO BE LOCATED AT JOIST PANEL POINTS.
7. WHENEVER CONCENTRATED LOAD IS PLACED ON THE STEEL JOISTS AT LOCATIONS OTHER THAN PANEL POINTS, THE STEEL JOISTS SHALL BE REINFORCED PER MANUFACTURER'S DETAILS. AT A MINIMUM, THE JOISTS SHALL BE REINFORCED WITH L2x2x$\frac{1}{4}$ STRUTS FIELD WELDED BETWEEN THE LOCATION OF THE POINT LOAD AT THE TOP CORD AND BOTTOM CHORD PANEL POINT.
8. ROOF DECK TO BE 1-1/2" DEEP WIDE RIB, 20 GAGE GALVANIZED METAL DECK (U.N.O.), CONTINUOUS OVER 3 SPANS MINIMUM. ALL METAL DECKS TO BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE AND SO CERTIFIED.
9. CONDUIT, PIPING, FIXTURES OR ANY OTHER ITEMS SHALL NOT BE SUPPORTED FROM THE METAL DECK.

STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE AS FOLLOWS:
   A. W-SHAPES SHALL BE ASTM A-992, Fy=50 K.S.I.
   B. HP-SHAPES SHALL BE ASTM A-572, GRADE 50, Fy=50 K.S.I.
   C. RECTANGULAR HSS-SHAPES SHALL BE ASTM A-500, GRADE B, Fy= 46 K.S.I.
   D. ROUND HSS-SHAPES SHALL BE ASTM A-500, GRADE B, Fy= 42 K.S.I.
   E. PIPES SHALL BE ASTM A-53, GRADE B, Fy=35 K.S.I.
   F. ALL OTHER SHAPES AND PLATES SHALL BE ASTM A-36, Fy=36 K.S.I.
2. ALL FABRICATION AND ERECTION OF STEEL TO BE IN ACCORDANCE WITH A.I.S.C. SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS LATEST EDITION, UNLESS OTHERWISE SHOWN OR NOTED, ALL CONNECTIONS SHALL DEVELOP ONE-HALF OF THE ALLOWABLE UNIFORM LOAD CAPACITY OF THE MEMBER USING WEB ANGLES AND ASTM A-325N H.S. BOLTS AS A MINIMUM.
3. STEEL CONNECTIONS ARE DELEGATED DESIGN ELEMENT PER AISC CODE OF STANDARD PRACTICE 303-10 3.12. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES. ALL CONNECTIONS SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND SHALL INCLUDE ENGINEERING CALCULATIONS ALONG WITH CONNECTION DETAIL DRAWINGS, PRIOR TO THE SUBMITTAL OF STRUCTURAL STEEL SHOP DRAWINGS. THE DESIGN CALCULATIONS SHALL BE PREPARED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF INDIANA. TYPICAL BEAM CONNECTIONS SHALL BE STANDARD AISC FRAMED BEAM CONNECTIONS, UNLESS OTHERWISE SHOWN. ALL FIELD CONNECTIONS, EXCEPT WHERE SHOWN WELDED, SHALL BE BOLTED WITH 3/4" DIAMETER HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 OR A490, UNLESS OTHERWISE NOTED. CONNECTIONS SHALL BE DESIGNED FOR 50% OF THE TOTAL ALLOWABLE UNIFORM LOAD (IN KIPS) DERIVED FROM THE AISC MANUALS TABLE OF "UNIFORM LOAD CONSTANTS" FOR NON-COMPOSITE BEAMS.
4. ALL COPED BEAMS TO BE DESIGNED IN ACCORDANCE WITH APPENDIX B OF THE AISC MANUAL "ENGINEERING FOR STEEL CONSTRUCTION". PROVIDE REINFORCING AS REQUIRED. ALL RE-ENTRANT CORNERS TO BE SHAPED, NOTCH-FREE, TO A RADIUS OF AT LEAST 1/2".
5. GENERAL CONTRACTOR SHALL PROVIDE AND PAY FOR SERVICES OF A REGISTERED LAND SURVEYOR WHO, AS WORK PROCEEDS, SHALL CHECK EVERY MAJOR ELEMENT FOR LINE, LEVEL AND PLUMB. GENERAL CONTRACTOR SHALL PROMPTLY NOTIFY OWNER AND ARCHITECT UPON DETECTION OF DEVIATIONS WHICH EXCEED STANDARD AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", EXCEPT AS OTHERWISE INDICATED.
6. ALL WELDING TO BE IN ACCORDANCE WITH A.W.S. AND AISC SPECIFICATIONS. WELDING ELECTRODES SHALL BE E70XX, Fy=70 KSI.
7. ALL ELEVATIONS ARE TO TOP OF STEEL BEAMS UNLESS NOTED OTHERWISE.
8. ALL BEAMS SPLICES, NOT INDICATED ON THE CONTRACT DOCUMENTS, SHALL BE PENETRATION WELDED TO RESTORE FULL CAPACITIES OF THE ORIGINAL BEAM, BOLTED CONNECTIONS SHALL BE USED FOR ERECTION PURPOSES ONLY, UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. IF SPLICES ARE REQUIRED FOR CONSTRUCTION PURPOSES, CONTRACTOR SHALL COORDINATE ALL SPLICE LOCATIONS WITH THE ARCHITECT AND THE VARIOUS PROJECT CONSULTANTS TO AVOID ANY INTERFERENCE/CONFLICTS WITH OTHER TRADES.
9. SEE ARCHITECTURAL DRAWINGS FOR MISCELLANEOUS STEEL, PLATES, ETC.
10. VERIFY ALL OPENINGS FOR MECHANICAL EQUIPMENT, ETC., WITH MECHANICAL CONTRACTORS BEFORE ERECTION OF ANY STEEL. PROVIDE ANGLE FRAMES FOR ALL OPENINGS LARGER THAN 12" SQUARE, AND PROVIDE ALL AUXILIARY FRAMING AS REQUIRED.
11. ALL STRUCTURAL STEEL TO HAVE ONE SHOP COAT OF MEDIUM GRAY RUST INHIBITIVE PAINT (INCLUDING ALL MISCELLANEOUS STEEL). FIELD TOUCH-UP AS REQUIRED ON ALL EXPOSED STEEL. STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED. STEEL MEMBERS ARE TO BE CLEANED OF ALL MUD, MARKINGS, ETC., AFTER INSTALLATION.
12. STEEL BEAMS TO BE SLOPED UNIFORMLY TO ROOF DRAINS AS INDICATED ON STEEL PLANS.

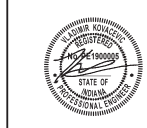
ANAX ENGINEERING, INC.
△ STRUCTURAL ENGINEERS △
122 S. MICHIGAN AVE., SUITE 1390
CHICAGO, IL 60603
PHONE: 847-461-9006
EMAIL: INFO@ANAXENG.COM
WWW.ANAXENGINEERING.COM

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
–	5-13-22	ISSUED FOR PERMIT

STATEMENT OF COMPLIANCE

I have prepared, or caused to be prepared under my supervision, the attached plans and specifications and state that, to the best of my knowledge and belief and to the extent of my contractual obligation, they are in compliance with the applicable Codes and Ordinances.



Signature Date: 5-13-2022
License Expires: 07-31-2022

PROJECT NAME:

Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

ISSUED FOR PERMIT

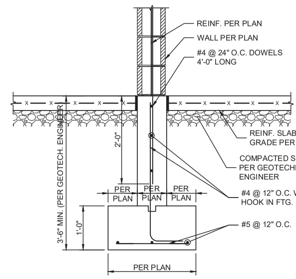
SHEET NAME:

GENERAL NOTES

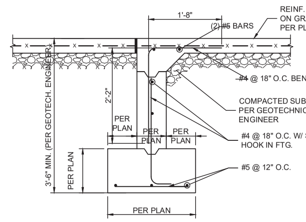
SHEET No.:

S-101

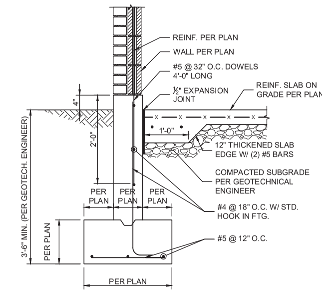
R:\21024 Lowell Public Works\21024 Drawings\21024 S-101.dwg



2 SECTION
Scale: 3/4" = 1'-0"



3 SECTION
Scale: 3/4" = 1'-0"



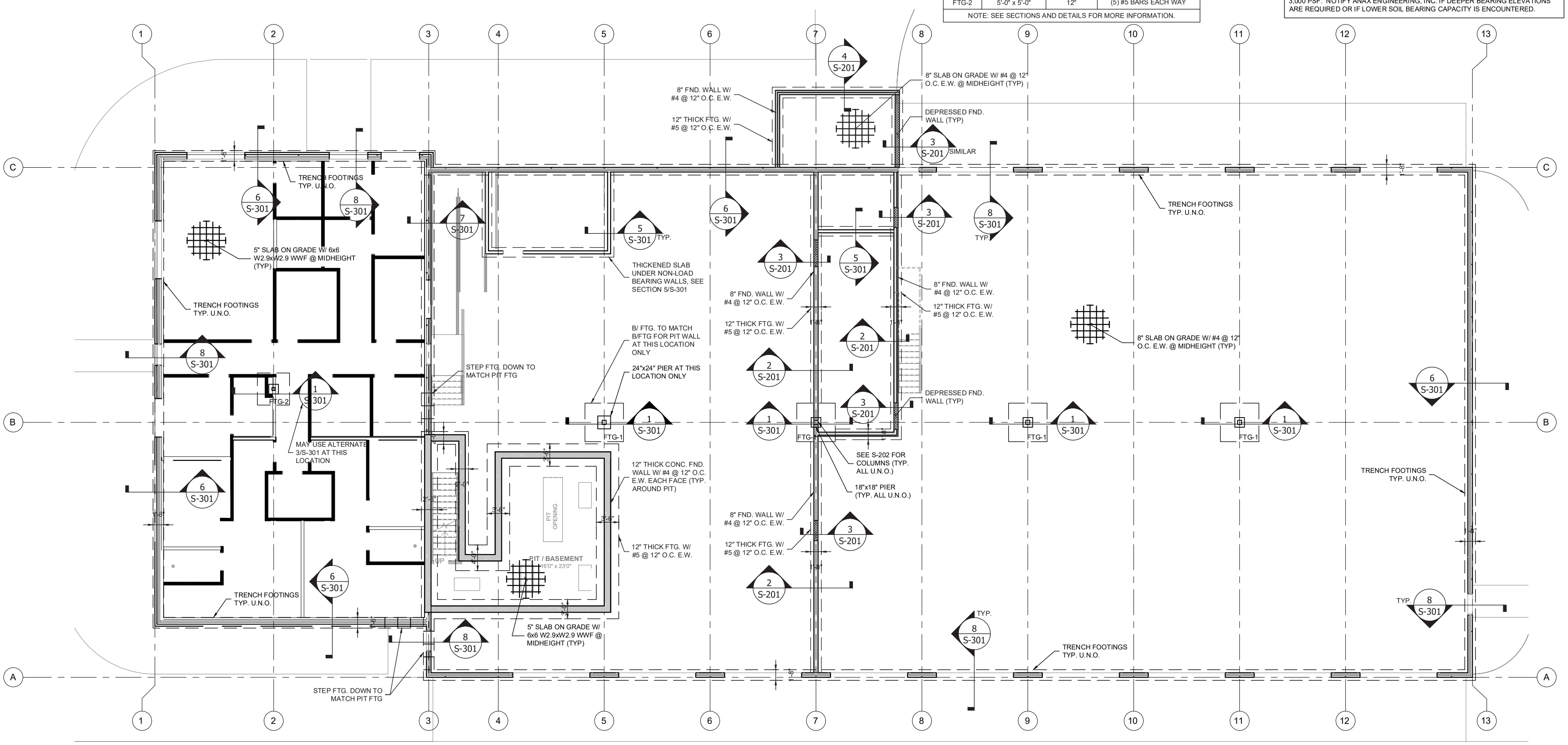
4 SECTION
Scale: 3/4" = 1'-0"

FOOTING SCHEDULE

MARK	SIZE	THICKNESS	REINFORCEMENT
FTG-1	6'-0" x 6'-0"	12"	(6) #6 BARS EACH WAY
FTG-2	5'-0" x 5'-0"	12"	(5) #5 BARS EACH WAY

NOTE: SEE SECTIONS AND DETAILS FOR MORE INFORMATION.

NOTE:
REFER TO GEOTECHNICAL ENGINEERING REPORT BY ADVANCED ENGINEERING SERVICES DATED DECEMBER 24, 2020. CONTRACTOR SHALL HAVE A LICENSED GEOTECHNICAL ENGINEER ON SITE TO CONFIRM ALL FOUNDATION BEARING ELEVATIONS AND SOIL CAPACITIES. SOIL BEARING CAPACITY REQUIRED IS 3,000 PSF. NOTIFY ANAX ENGINEERING, INC. IF DEEPER BEARING ELEVATIONS ARE REQUIRED OR IF LOWER SOIL BEARING CAPACITY IS ENCOUNTERED.



1 FOUNDATION PLAN
Scale: 1/8" = 1'-0"

ANAX ENGINEERING, INC.
△ STRUCTURAL ENGINEERS △
122 S. MICHIGAN AVE., SUITE 1390
CHICAGO, IL 60603
PHONE: 847-461-9006
EMAIL: INFO@ANAXENG.COM
WWW.ANAXENGINEERING.COM

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
–	5-13-22	ISSUED FOR PERMIT

STATEMENT OF COMPLIANCE
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Signature Date: 5-13-2022
License Expires: 07-31-2022

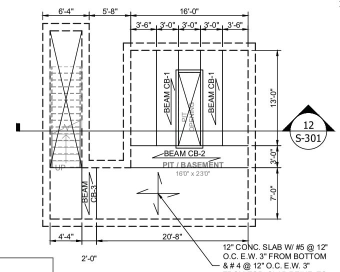
PROJECT NAME:
Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

ISSUED FOR PERMIT

SHEET NAME:
FOUNDATION PLAN

SHEET No.:
S-201

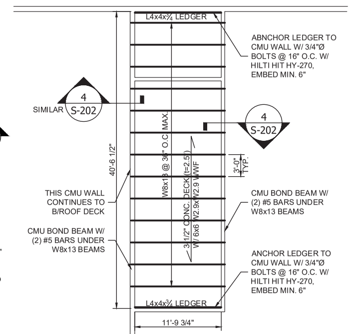


2 PIT FRAMING PLAN
Scale: 1/8" = 1'-0"

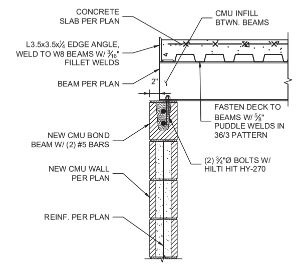
MARK	HEIGHT x WIDTH	REINFORCEMENT	STIRRUPS
CB-1	12" x 36"	(12) #6 BARS @ BOTTOM; (4) #4 BARS @ TOP	#4 @ 4" O.C. OVER 36" FROM EACH END, #4 @ 8" O.C. ELSEWHERE
CB-2	16" x 36"	(12) #6 BARS @ BOTTOM; (4) #4 BARS @ TOP	#4 @ 4" O.C. OVER 36" FROM EACH END, #4 @ 8" O.C. ELSEWHERE
CB-3	12" x 24"	(6) #5 BARS @ BOTTOM; (4) #4 BARS @ TOP	#4 @ 8" O.C.

CONCRETE BEAM SCHEDULE

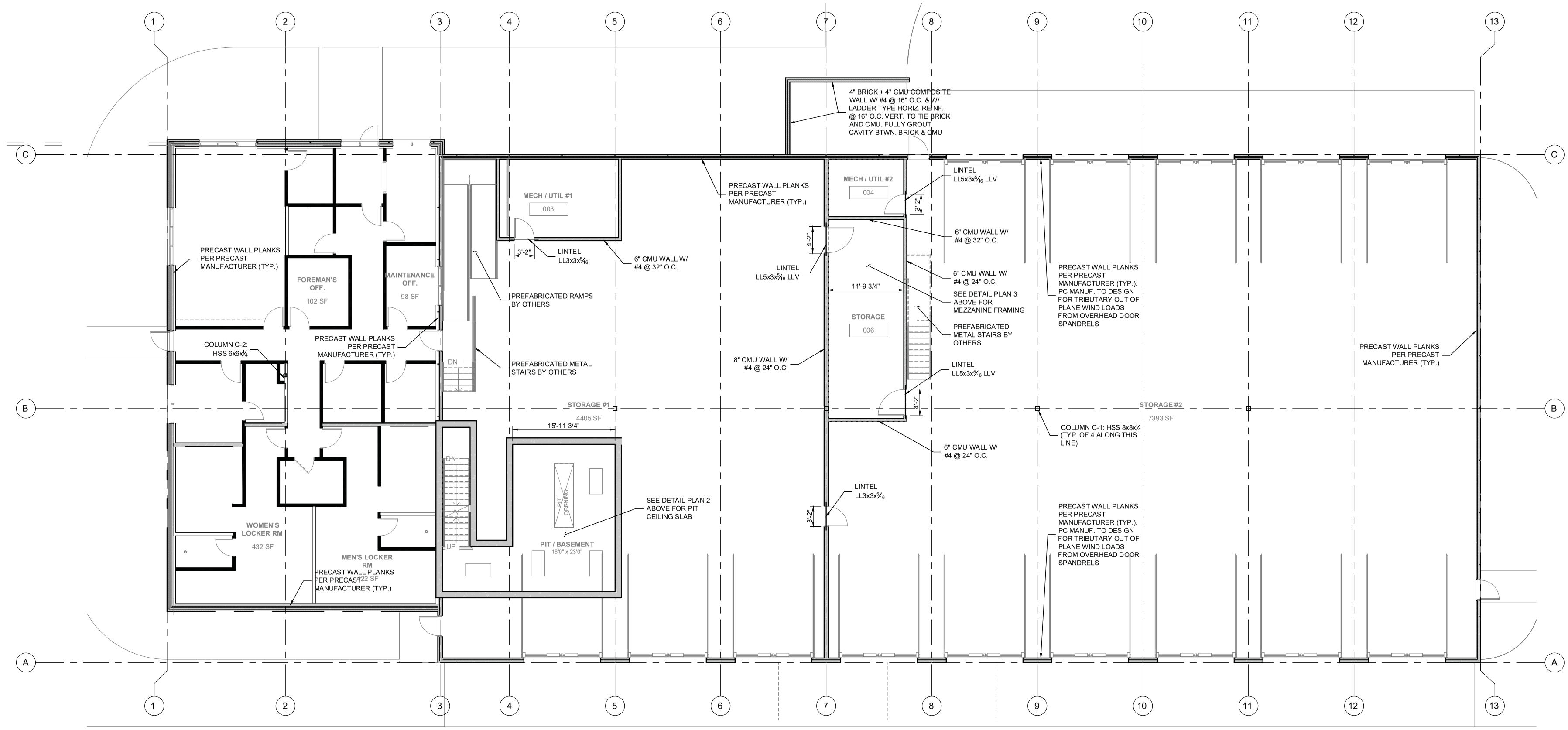
SEE NOTES ON S-101 FOR ADDITIONAL CONCRETE REINFORCEMENT INFORMATION.



3 MEZZANINE FRAMING PLAN
Scale: 1/8" = 1'-0"



4 SECTION
Scale: 1" = 1'-0"



1 FLOOR PLAN
Scale: 1/8" = 1'-0"

ANAX ENGINEERING, INC.
Structural Engineers
122 S. Michigan Ave., Suite 1390
Chicago, IL 60603
Phone: 847-461-9006
Email: info@anaxeng.com
www.anaxengineering.com

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
–	5–13–22	ISSUED FOR PERMIT

STATEMENT OF COMPLIANCE
I have prepared, or caused to be prepared under my supervision, the attached plans and specifications and state that, to the best of my knowledge and belief and to the extent of my contractual obligation, they are in compliance with the applicable Codes and Ordinances.

Signature Date: 5–13–2022
License Expires: 07–31–2022

PROJECT NAME:
Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

ISSUED FOR PERMIT

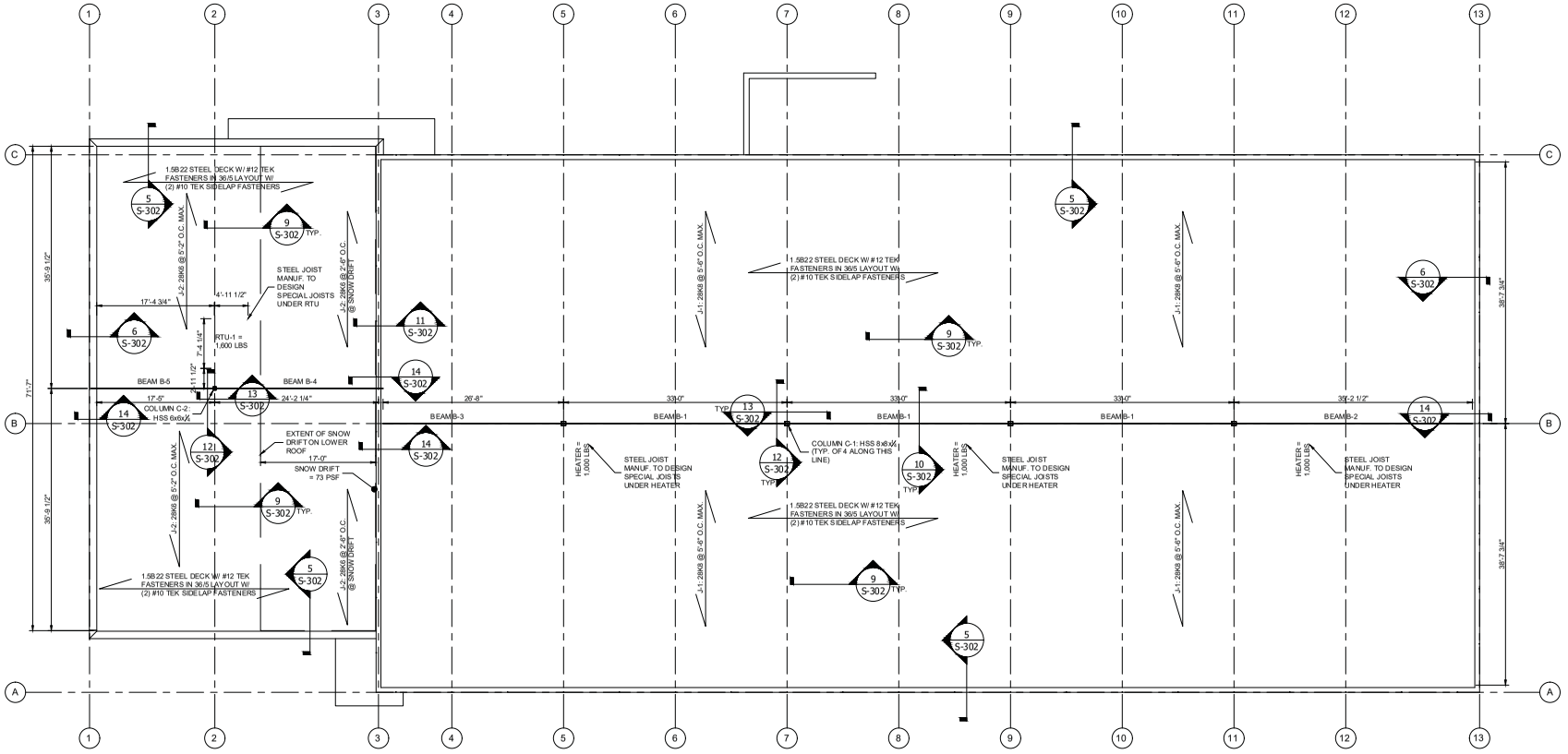
SHEET NAME:
FLOOR PLAN

SHEET No.:
S-202

STEEL BEAM SCHEDULE			
MARK	SECTION SIZE	MATERIAL	END CONDITION
B-1	W24x62	Fy=50 ksi	AISC STD. SHEAR TAB
B-2	W24x68	Fy=50 ksi	AISC STD. SHEAR TAB / P.C. EMBED PLATE
B-3	W21x48	Fy=50 ksi	AISC STD. SHEAR TAB / P.C. EMBED PLATE
B-4	W21x48	Fy=50 ksi	AISC STD. SHEAR TAB / P.C. EMBED PLATE
B-5	W16x26	Fy=50 ksi	AISC STD. SHEAR TAB / P.C. EMBED PLATE

NOTE:
STEEL JOIST MANUF. TO DESIGN JOISTS FOR SLOPE TO DRAINS.

NOTE:
STEEL JOIST MANUF. TO DESIGN SPECIAL JOISTS FOR SUPPORT OF ALL ROOF EQUIPMENT PER MECHANICAL DRAWINGS. VERIFY ALL WEIGHT AND LOCATIONS WITH MECH. ENGINEER & G.C.



1 ROOF PLAN
Scale: 1/8" = 1'-0"

ANAX ENGINEERING, INC.
A STRUCTURAL ENGINEERING FIRM
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EMAIL: INFO@ANAXENG.COM
WWW.ANAXENGINEERING.COM

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
–	5-13-22	ISSUED FOR PERMIT

STATEMENT OF COMPLIANCE

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Signature Date: 5-13-2022
License Expires: 07-31-2022

PROJECT NAME:

Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

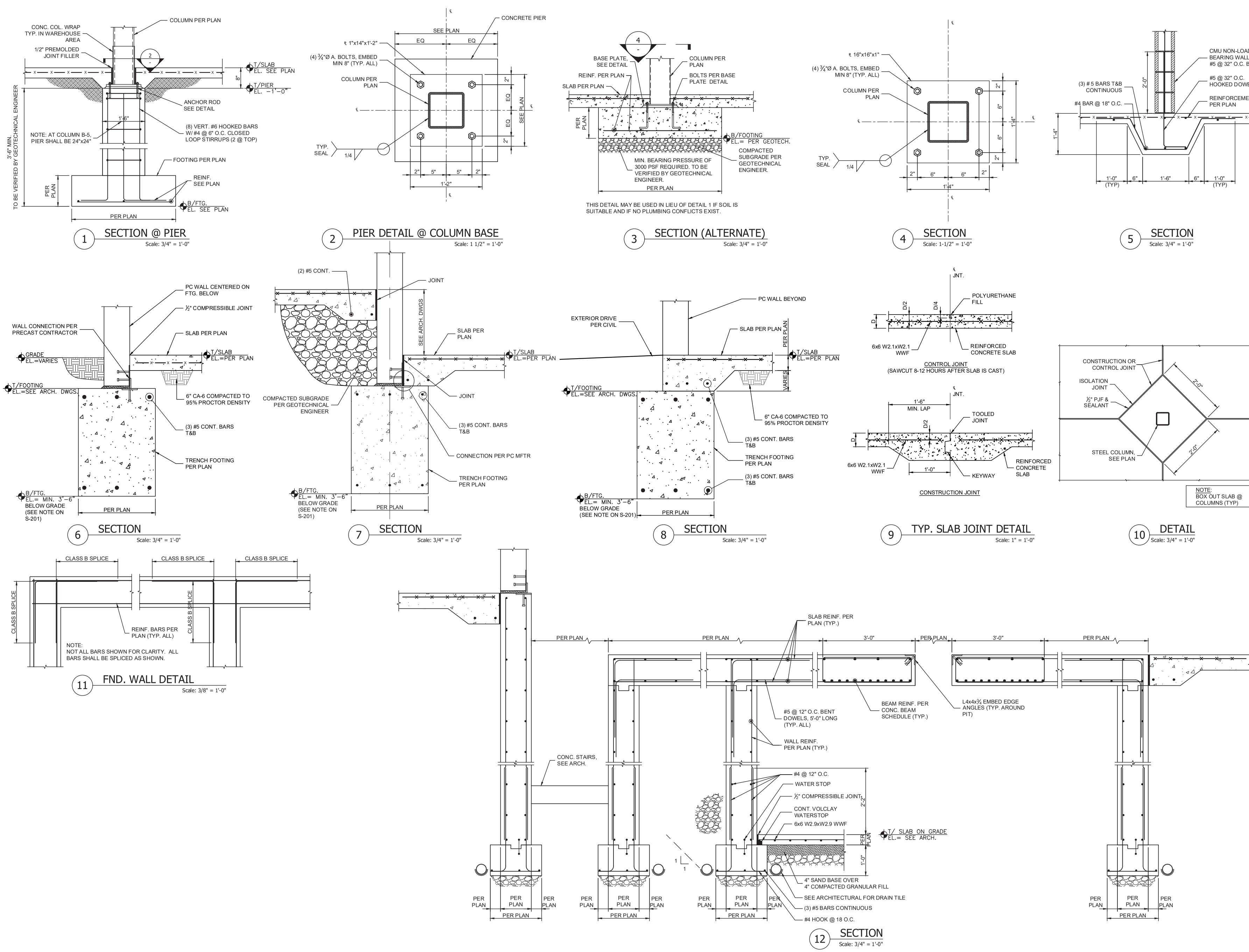
ISSUED FOR PERMIT

SHEET NAME:

ROOF PLAN

SHEET No.:

S-203



ANAX ENGINEERING, INC.
STRUCTURAL ENGINEERS
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CHICAGO, IL 60603
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WWW.ANAXENGINEERING.COM

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
–	5–13–22	ISSUED FOR PERMIT

STATEMENT OF COMPLIANCE

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Signature Date: 5–13–2022
License Expires: 07–31–2022

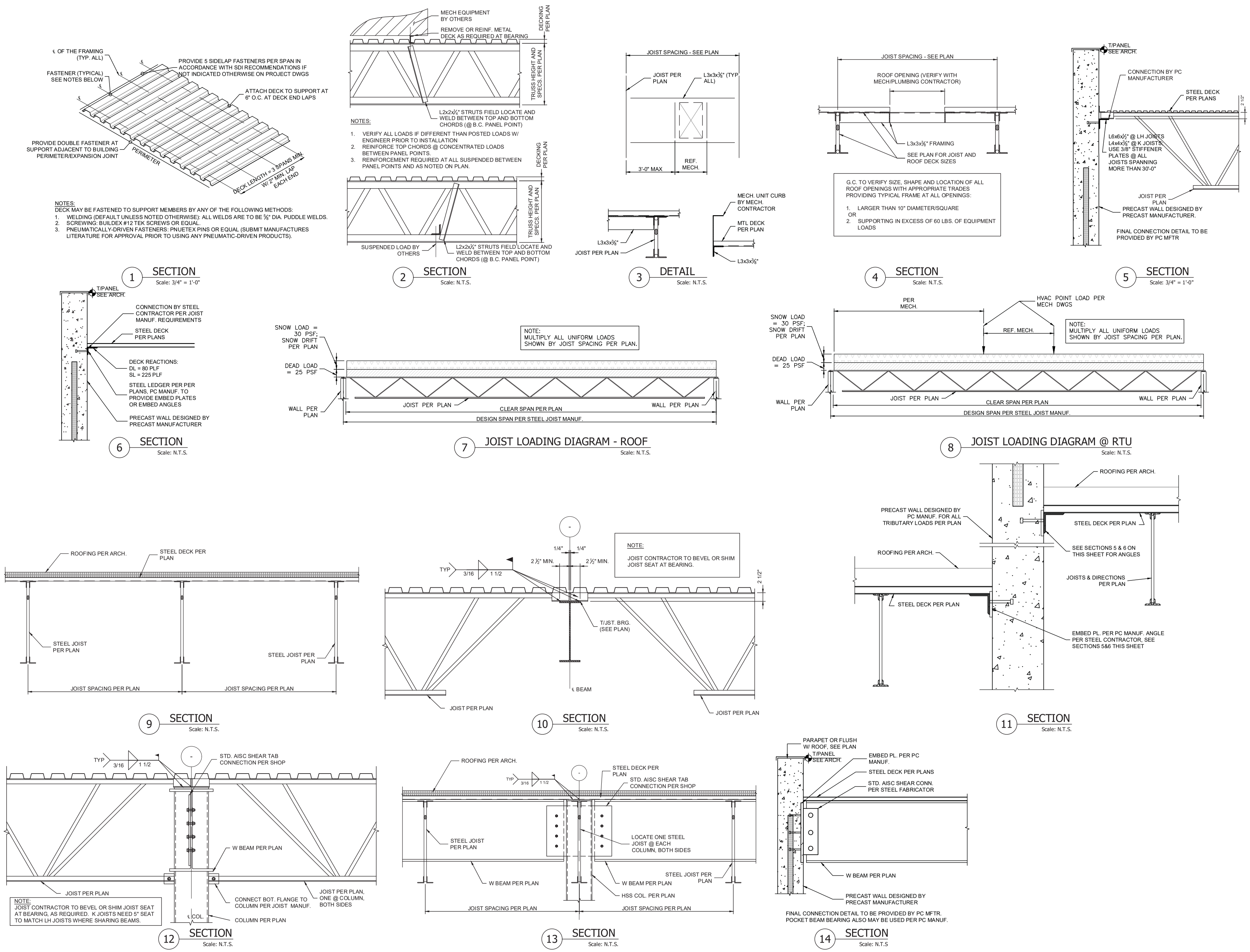
PROJECT NAME:
Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

ISSUED FOR PERMIT

SHEET NAME:
SECTIONS AND DETAILS

SHEET No.:
S-301



ANAX ENGINEERING, INC.
Δ STRUCTURAL ENGINEERS Δ
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WWW.ANAXENGINEERING.COM

SHEET REVISIONS:

No.	DATE	NATURE OF REVISION
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STATEMENT OF COMPLIANCE

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Signature Date: 5–13–2022
License Expires: 07–31–2022

PROJECT NAME:

Public Works Building
Lake County
Lowell, IN

PROJECT No.: 21024

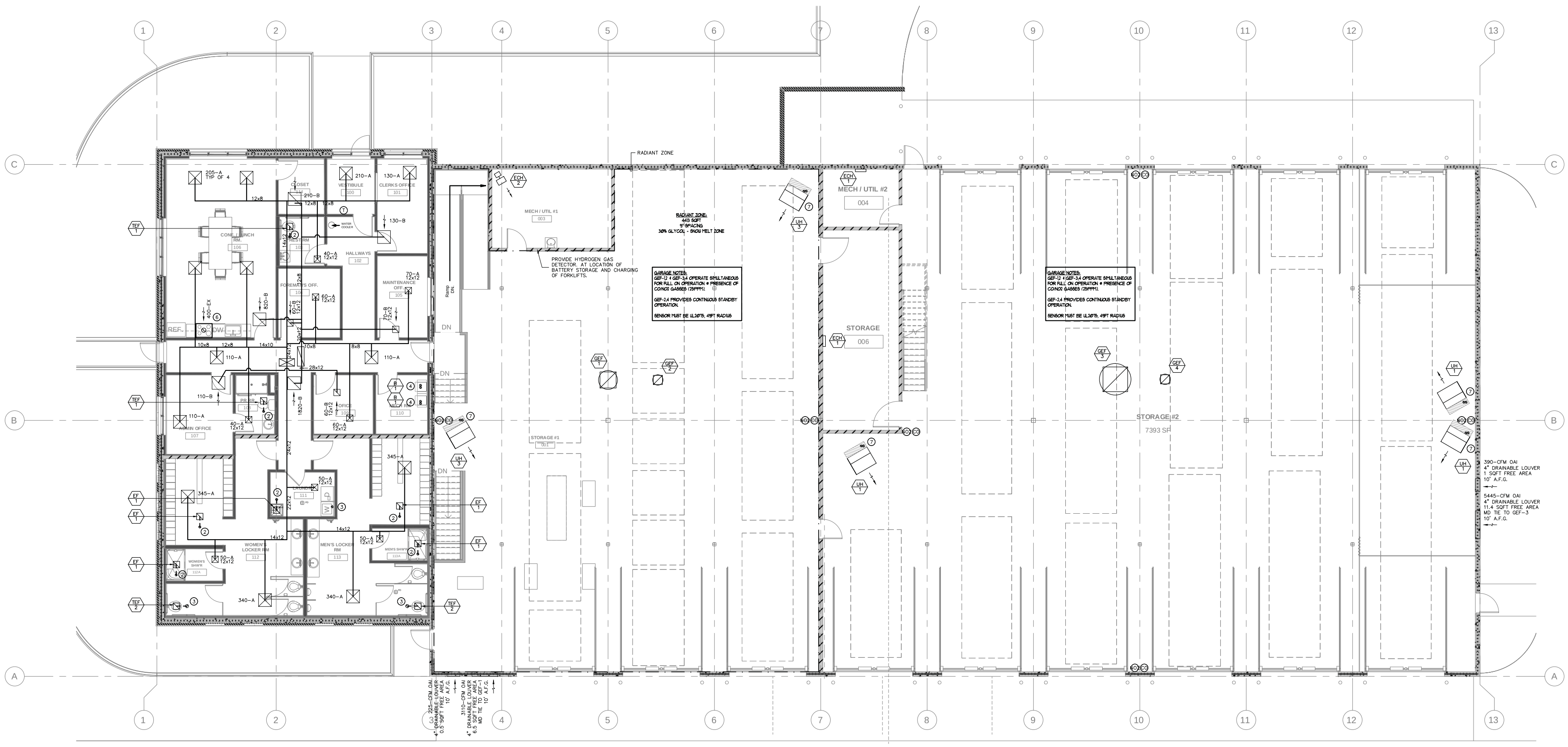
ISSUED FOR PERMIT

SHEET NAME:

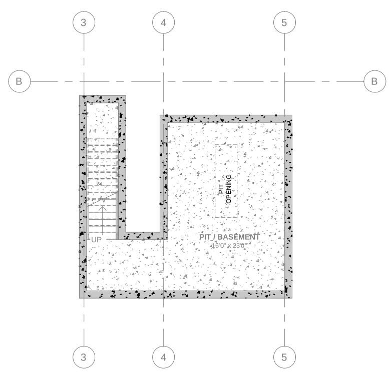
SECTIONS AND DETAILS (CONT.)

SHEET No.:

S-302



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



BASEMENT PIT
SCALE: 1/8" = 1'-0"

MECHANICAL NOTES:

1. 4"ø RIGID METAL DRYER VENT, WITH VENT HOOD
2. 4"ø TOILET EXHAUST
3. 6"ø TOILET EXHAUST
4. (2) 3"ø PVC EX/CAI FROM COMBI UNIT RESPECTIVELY.
5. PROVIDE ACCESS HATCH
6. 8"ø KITCHEN EXHAUST
7. (2) 4"ø PVC CAI/EX FRM UNIT HTRS

KE, TE, OR PVC/CAI (PROVIDE CONCENTRIC VENT), TERMINATE THRU WALL PROVIDE WALL CAP & BIRD SCREEN. 3'-0" MIN CLR FROM ANY OPENING INTO BUILDING.

CONTRACTOR/MANUFACTURE TO PROVIDE PIPING LAYOUT & PERFORMANCE FOR ALL RADIANT ZONES AS NOTED. SHOP DWG TO BE PROVIDED TO ENGINEER,OWNER & ARCH FOR REVIEW & APPROVAL. ALL MANIFOLDS SHOWN FOR CORD. PURPOSE CONFIRM QTY. BASED ON ACTUAL LAYOUT.

NERI ARCHITECTS

PROJECT #: 2133
DATE: 05.06.22

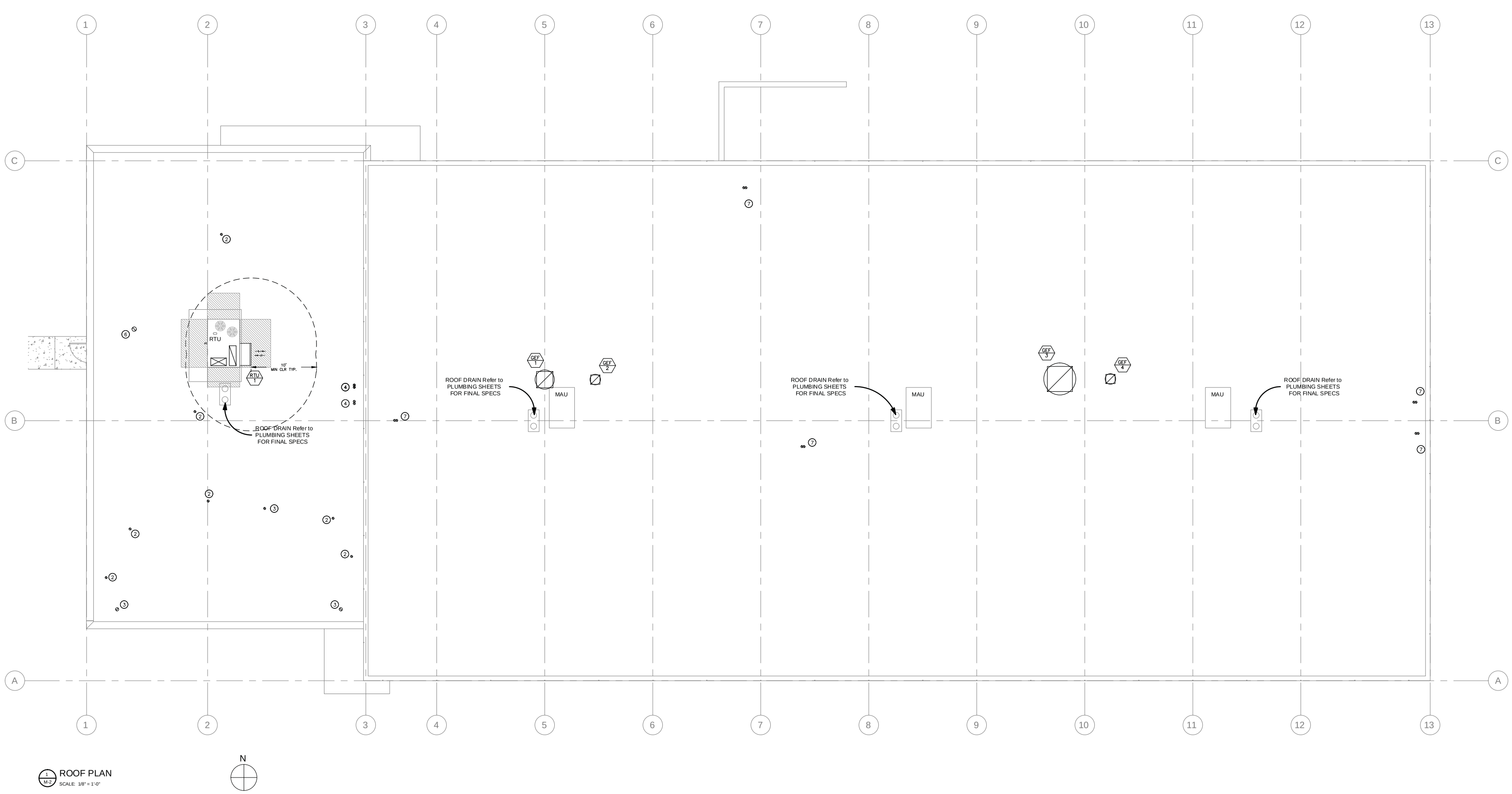
ROBERT N. RAFSON 062-049931 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	FLOOR PLAN(S)
SHEET NO.	M-1



NERI ARCHITECTS

PROJECT #	2133
DATE:	05.06.22

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
▲	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	ROOF PLAN
SHEET NO.	M-2

MECHANICAL NOTES:

1. 4"ø RIGID METAL DRYER VENT, WITH VENT HOOD
2. 4"ø TOILET EXHAUST
3. 6"ø TOILET EXHAUST
4. (2) 3"ø PVC EX/CAI FROM COMBI UNIT RESPECTIVELY.
5. PROVIDE ACCESS HATCH
6. 8"ø KITCHEN EXHAUST
7. (2) 4"ø PVC CAI/EX FRM UNIT HTRS

KE, TE, OR PVC/CAI (PROVIDE CONCENTRIC VENT), TERMINATE THRU WALL PROVIDE WALL CAP & BIRD SCREEN. 3'-0" MIN CLR FROM ANY OPENING INTO BUILDING.

CONTRACTOR/MANUFACTURE TO PROVIDE PIPING LAYOUT & PERFORMANCE FOR ALL RADIANT ZONES AS NOTED. SHOP DWG TO BE PROVIDED TO ENGINEER,OWNER & ARCH FOR REVIEW & APPROVAL. ALL MANIFOLDS SHOWN FOR CORD. PURPOSE CONFIRM QTY. BASED ON ACTUAL LAYOUT.

DIFFUSERS, REGISTERS, GRILLES, AND LOUVERS.

REFER TO DRAWINGS FOR:
1. DUCT SIZE OR NECK SIZE.
2. FACE SIZE – i.e.: 8"(24x24).
3. PATTERN (3-WAY,etc.) IF APPLICABLE.
4. CFM
5. SYMBOL

A EXT AIR EXTRACTOR
ALB AIR LIGHT BOOT, PLENUM AND VOLUME DAMPER
ASR ANTI-SMUDGE RING
AVD AUTOMATIC VOLUME DAMPER
BWE BAKED WHITE ENAMEL
EQE EQUALIZING GRID
FR-1 WITH 1-HOUR DAMPER
MSD MULTI SHUTTER DAMPER
OBD OPPOSED BLADE DAMPER
PC PRIME COAT

REFER TO ROOM FINISH SCHEDULE AND REFLECTED CEILING PLAN FOR PROPER COORDINATING OF DIFFUSERS, GRILLES, AND REGISTERS.

SYBMOL	TYPE	MODEL	FRAME	DAMPER	FINISH	REMARKS
A	SUPPLY	TITUS OMNI	LAYIN	OBD	BWE	24X24 SEE NECK SCHEDULE
B	RETURN	TITUS PAR	LAYIN	OBD	BWE	24x24 SEE NECK SCHEDULE
C	SUPPLY	TITUS FTI-10	LAY IN	OBD	BWE	1"SLOT,1SLOT, 2FT LENGTH, 6"INLET/PLENUM

CORDINATE LOCATIONS OF ALL DIFFUSERS, REGISTERS, GRILLES AND LOUVERS WITH ARCH PRIOR TO INSTALL, SS IN ALL WET AREAS

FOR OMNI TYPE DIFFUSER:

SUPPLY AIR DIFFUSER NECK SIZE SCHEDULE

CFM RANGE	NECK SIZE SQUARE	NECK SIZE ROUND	TOTAL PRESSURE	REMARKS
50-100	6" x 6"	6"ø	0.04	(1)
100-200	9" x 9"	8"ø	0.04	(1)
200-300	10" x 10"	10"ø	0.04	(1)
300-450	12" x 12"	12"ø	0.04	(1)
500-750	15" x 15"	14"ø	0.04	(1)
500-1000	18" x 18"	16"ø	0.04	(1)

(1) DIFFUSER SHALL BE LAY-IN CEILING TYPE. COORDINATE WITH DIFFUSER SCHEDULE.

FOR PAR TYPE DIFFUSER:

SUPPLY AIR DIFFUSER NECK SIZE SCHEDULE

CFM RANGE	NECK SIZE SQUARE	NECK SIZE ROUND	TOTAL PRESSURE	REMARKS
50-175	6" x 6"	6"ø	0.04	(1)
175-275	8" x 8"	8"ø	0.04	(1)
275-375	10" x 10"	10"ø	0.04	(1)
375-600	12" x 12"	12"ø	0.04	(1)
600-750	15" x 15"	14"ø	0.04	(1)
750-950	–	16"ø	0.04	(1)
950-1350	18" x 18"	–	0.04	(1)

(1) DIFFUSER SHALL BE LAY-IN CEILING TYPE. COORDINATE WITH DIFFUSER SCHEDULE.

EXHAUST FAN SCHEDULE

UNIT No.	MODEL	AREA SERVED	CFM	S.P. IN W.G.	FPM	FAN RPM	DRIVE	MOTOR HP	MOTOR RPM	MOTOR VOLT	MOTOR PHASE	REMARKS
TEF/EF-1	Panasonic FV0511VK1	TOILET RMS	80	0.10	–	659	DD	16.1W	1205	120	1	NOTE 1
TEF-2	Panasonic FV1115VK1	Toilet RMS	150	0.5	–	832	DD	21.7W	904	120	1	NOTE 1
GEF-1	GREENHECK G180VG	GARAGE	3110	0.2	–	861	DD	3/4	861	208	1	NOTE 2
GEF-2	GREENHECK G070VG	GARAGE	225	0.2	–	1334	DD	1/15	1334	115	1	NOTE 2
GEF-3	GREENHECK GB330VG	GARAGE	5445	0.2	–	293	BD	1	291	208	1	NOTE 2
GEF-4	GREENHECK G095VG	GARAGE	390	0.2	–	984	DD	1/6	984	208	1	NOTE 2
KEF-1	OWNER PROVIDED	BREAK RM	<400	–	–	–	DD	–	–	–	–	8"ø

NOTE 1: WALL SW, HUMIDITY SENSOR, ROOF CAP,INSULATED DAMPER & PROVIDE FABRIC FLEX CONNECTION FOR THERMAL BREAK AT EXTERIOR PENETRATION,WIRED TO TIMER
NOTE 2: BS,DS
NOTE 3: PROVIDE 4" VENT/WALL LOUVER

CABINET/UNIT HEATER SCHEDULE

LFV – LOUVER FIN (VERTICAL)
LFH – LOUVER FIN (HORIZONTAL)
H – HORIZONTAL TYPE
P – PROTECTION TYPE
FG – FAN GUARD
LCD – LOUVER CONE DIFFUSER

UNIT No.	UNIT DESCRIPTION	LOCATION	MOTOR HP	MOTOR RPM	MOTOR VOLT	MOTOR PHASE	TOTAL KW	AMPS	CFM @ FINAL AIR TEMP.	GAS INPUT [BTU]	GAS OUTPUT [BTU]	REMARKS
ECH-1	MARKEL F3422	VARIES	9.6A	1400	208	1	2.0	–	245	–	–	(1) (2) (4)
ECH-2	MARKEL UH Series	VARIES	9.2A	–	208	3	3.3	–	400	–	–	(1) (2) (4) WALL BRACKET
UH-1	MODINE PTC 260	VARIES	3/4	1125	208	3	–	6.06	4585	260	252.2	(1) (2) (4) (5) (6) ISOLATION HANGERS
UH-2	MODINE PTC 215	VARIES	1/2	1075	208	3	–	5.06	3865	215	202.1	(1) (2) (4) (5) (6) ISOLATION HANGERS
UH-3	MODINE PTC 156	VARIES	1/8	1440	208	3	–	3.73	2600	155	144	(1) (2) (4) (5) (6) ISOLATION HANGERS

(1) UNIT MTD. THERMOSTAT.
(2) UNIT MTD. DISCONNECT SW
(3) 4-WIRE SERVICE
(4) LOW-VOLTAGE CONTACTOR
(5) 60° DEFLECTOR HOOD
(6) 4"ø CAI AND EX PVC, PROVIDE DRIP LEG AND CONDENSATE DRAIN CONNECTION (VERTICAL 2PIPE FOR FLAT ROOFS)

MCFS-MIN. CIRCUIT FUSE SIZE
FLA-FULL LOAD AMP
*CORD COLOR W/ARCH

UNIT HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH THE LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUSPENDED TYPE HEATERS SHALL BE SUPPORTED BY ELEMENTS TAHT ARE DESIGNED TO ACCOMMODATE THE WEIGHT AND DYNAMIC LOADS. HANGERS AND BRACKETS SHALL BE OF NON-COMBUSTIBLE MATERIAL. IMC 2012 SECTION 920

SYMBOL LIST

CONTROL SYMBOLS

SYMBOL	DESCRIPTION
B	DIGITAL INPUT
B	ANALOG INPUT
B	DIGITAL OUTPUT
B	ANALOG OUTPUT
	CONTROL VALVE (ELECTRICAL)
	CONTROL VALVE (PNEUMATIC)
DPS	DIFFERENTIAL PRESSURE SWITCH
VSC	VARIABLE SPEED CONTROLLER
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
ES	END SWITCH
	MOTOR OPERATED DAMPER
V	VELOCITY SENSOR
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
SD	SMOKE DETECTOR

ABBREVIATIONS

SYMBOL	DESCRIPTION
FD	FIRE DAMPER
H.P.	HORSE POWER
EXP VLV	EXPANSION VAVLE
MBH	THOUSAND BRITISH THERMAL UNITS
MFG.	MANUFACTURER
MTD.	MOUNTED
PH.	PHASE
R.P.M.	REVOLUTIONS PER MINUTE
T-STAT	THERMOSTAT
V	VOLTS
VEL.	VELOCITY
W.C.	INCHES IN WATER COLUMN
TG	TRANSFER GRILLE
DN	DOWN
CFH	CUBIC FEET PER HOUR
GPS	GEOEXCHANGE PIPE SUPPLY
GPR	GEOEXCHANGE PIPE RETURN
CAI	COMBUSTION AIR INTAKE
RBD	ROUND BACKDRAFT DAMPER
TYP	TYPICAL
S.A.	SUPPLY AIR DUCT
R.A.	RETURN AIR DUCT
E.A.	EXHAUST AIR DUCT
O.S.A.	OUTSIDE AIR
C.D.	CEILING DIFFUSER
C.F.M.	CUBIC FEET PER MINUTE
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
CAP.	CAPACITY
CLG.	CEILING
CONN.	CONNECTION

VENTILATION SYMBOLS

SINGLE LINE	DOUBLE LINE	DESCRIPTION
20 x 12	20 x 12	NEW DUCTWORK – WxD AIRWAY DIMENSIONS
		DUCT SECTION – SUPPLY UP
		DUCT SECTION – SUPPLY DOWN
		DUCT SECTION – RETURN OR EXHAUST UP
		DUCT SECTION – RETURN OR EXHAUST DOWN
		DUCT SECTION – SUPPLY UP/DN
		INCLINED RISE W/RESPECT TO AIR FLOW
		INCLINED DROP W/RESPECT TO AIR FLOW
		FLEXIBLE CONNECTION TO EQUIPMENT
48x24	48x24	LOUVER & SCREEN WxD GROSS OPENING
		FLEXIBLE DUCT
		VOLUME DAMPER WITH QUADRANT LOCKING
		MOTORIZED DAMPER
		SPLITTER DAMPER
BDD	BDD	BACK DRAFT DAMPER (GRAVITY)
FD	FD	FIRE DAMPER, SLEEVE & ACCESS DOOR
		AIR EXTRACTING VANES
		TURNING VANES, DOUBLE THICKNESS AIRFOIL TYPE.
SYSTEM RISER NO.	SYSTEM RISER NO.	RISER MARK
T	T	THERMOSTAT 7-DAY PROGRAMMABLE (G) W/GUARD
S	S	SENSOR
H	H	HUMIDISTAT
		EXHAUST OR RETURN AIR REGISTER
		ROUND CEILING SUPPLY DIFFUSER
		RECTANGULAR CEILING SUPPLY DIFFUSER
		SIDE WALL SUPPLY REGISTER W/VOLUME DAMPER
		DOOR GRILLE W/BUILT-IN FIRE DAMPER IF LOCATED ON A FIRE DOOR.
		LINEAR DIFFUSER W/BOOT. NO VOLUME DAMPER IN BOOT.
		AIR VALVE
		TERMINAL UNIT-VARIABLE VOLUME INTEGRAL DIFFUSER
		UNDERCUT DOOR MINIMUM 1"
		ROOF MOUNTED POWER OR GRAVITY ROOF VENTILATOR
		ROOF MOUNTED AIR INTAKE
		ELECTRIC DUCT HEATER

NOTE: NOT ALL SYMBOLS ARE APPLICABLE TO THIS PROJECT.

MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION
	PRESSURE GAUGE AND COCK
	STRAINER
	STRAINER W/BLOW-OFF VALVE
	THERMOMETER
P/T	PRESSURE / TEMPERATURE SENSOR
	CAP
	UNION
	ANCHOR W/ALIGNMENT GUIDES
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	PRESSURE RED. VALVE
	RELIEF VALVE
	TRIPLE DUTY VALVE
	CHECK VALVE (SP) SPRING
	BALANCING VALVE
	GLOBE VALVE
	GATE VALVE
	BUTTERFLY VALVE – WHEN DIA. > 2"
	BALL VALVE – WHEN DIA. < 2"
M	VALVE WITH MEMORY STOP
	GAS COCK
	CONTROL VALVE, 2-WAY
	CONTROL VALVE, 3-WAY
	CIRCUIT SETTER
BF	CODE BACKFLOW PREVENTOR
	UNIT HEATER – HORIZONTAL
	PIPE DOWN
	PIPE UP
	NEW PIPING
	PIPING ASSEMBLY – SEE DETAIL
V	VENT (MANUAL OR AUTOMATIC)
	FLOW CONTROL FITTING
FI	FLOW INDICATOR
FS	FLOW SWITCH
PS	PRESSURE SWITCH
	BASE MOUNTED PUMP – SEE DETAIL
P	IN-LINE PUMP – SEE DETAIL
	EQUIPMENT (SPECIFIED BY TAG BELOW)
TAG	EQUIPMENT TAG W/NUMBER
D	DRAIN LINE
G	GAS LINE
V	VENT LINE
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
CHWS	CHILLED WATER HEATING SUPPLY
CHWR	CHILLED WATER HEATING RETURN
SL	REFRIGERANT SUCTION LINE
LL	REFRIGERANT LIQUID LINE
CR	CONDENSATE RETURN LINE
CDW	CONDENER WATER LINE

ROOFTOP UNIT SCHEDULE

TAG RTU-	LOCATION	SUPPLY AIR DATA CFM	SUPPLY AIR DATA O.A.	SUPPLY AIR DATA ESP	SUPPLY AIR DATA BHP	POWER EX. DATA CFM	POWER EX. DATA ESP	POWER EX. DATA HP	COOLING COIL DATA EAT/DB	EAT/WB	LAT/DB	LAT/WB	TMBH	SMBH	NOM.CAP. TON	HEATING COIL DATA INP/OUT (MBH)	ELECTRICAL DATA MCA	MOCP	VOLT	PH	MODEL	WEIGHT [LBS]	REMARKS
1	ROOF	3400	604	0.7	1.43	3400	0.25	–	95	78.6	55.8	54.8	100.5	83.7	8.5	120/148	42	50	208	3	Carrier 48TC09	1347	SEE NOTES 1

NOTE 1: COOLING CAPACITY AT 95F AMBIENT, ASHRAE 90.1 COMPLIANT, GAS FIRED, FILTER INDICATOR, C02 CONTROLS, MODULATING CENTRIFUGAL POWER EXHAUST, SS DRAIN PAN, DISCONNECT SWITCH, CONVENIENCE OUTLET. 7-DAY PROGRAMMABLE T-STAT., VFD CONTROLLER, ECONOMIZER FAULT DETECTION.

THE EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THESE INSTRUCTIONS SHALL BE ON-SITE AND AVAILABLE FOR ALL INSPECTIONS.

NERI ARCHITECTS

PROJECT # 2133
DATE: 05.06.22

ROBERT N. RAFSON
062-049931
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
▲	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	MECH SCHEDULES, NOTES & DETAILS
SHEET NO.	M-3

GAS MONITORING AND CONTROL SYSTEM

MGC2 SERIES CONTROL PANEL & AT-1130/LC-1112 GAS TRANSMITTERS

PART 1 – GENERAL

1.1 SCOPE: WORK UNDER THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A COMPLETE GAS MONITORING AND CONTROL SYSTEM INCLUDING ALL RELATED ACCESSORIES.

1.2 SUBMITTALS: FURNISH SUBMITTAL DATA FOR THE FOLLOWING MATERIALS AND EQUIPMENT

1. GAS MONITORING AND CONTROL SYSTEM.
2. ALL RELATED DEVICES.

PART 2 – PRODUCT SPECIFICATIONS

2.1 CONTROL PANEL

A. THE CONTROL PANEL SHALL PROVIDE CONTINUOUS MONITORING OF THE DESIGNATED GAS LEVELS IN THE ASSIGNED AREA AND CONTROL THE VENTILATION SYSTEM VIA DIGITAL OUTPUTS IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.

B. THE CONTROL PANEL SHALL HAVE THE ABILITY TO INTERFACE VIA ANALOG OR DIGITAL OUTPUTS TO ANY COMPATIBLE ELECTRONIC ANALOG CONTROL, DDC/PLC CONTROL OR AUTOMATION SYSTEM. THE CONTROL PANEL SHALL HAVE THE CAPABILITY TO ACCEPT ANY COMBINATION OF 4–20 MA TRANSMITTERS PROVIDED BY INTEC CONTROLS (A RELEVANT SOLUTIONS BRAND).

C. THE CONTROL PANEL SHALL ACCEPT UP TO 12 ANALOG INPUTS WITH FOUR (4) DIGITAL INPUTS. EACH ANALOG INPUT CAN HAVE FIVE (5) TRIP/SET-POINTS.

D. THERE SHALL BE FIVE (5) RELAY OUTPUTS FOR EVERY FOUR (4) ANALOG INPUTS AND TWO (2) INDEPENDENT 4–20 MA OUTPUTS AVAILABLE. THE OUTPUTS SHALL BE PROGRAMMABLE IN THE FIELD. EACH OF THE SENSING POINTS IS READILY ADDRESSABLE TO EITHER OF THE (2) ANALOG OUTPUTS BY SELECTING THE MINIMUM, MAXIMUM, OR AVERAGE VALUE.

E. THE ALARM SHALL BE ACKNOWLEDGED BY AN EXTERNAL MANUAL RESET SWITCH VIA THE DIGITAL INPUT OR THROUGH THE CONTROL PANEL MENU.

F. THE CONTROL PANEL SHALL HAVE STATUS INDICATOR LED'S LOCATED ON THE FRONT; RED = FAIL, YELLOW = ALARM.

G. THE CONTROL PANEL SHALL INCLUDE A TWO LINE, BACKLIT LCD DISPLAY OF 16 CHARACTERS, AT 1 DIGIT RESOLUTION.

H. THE CONTROLLER SHALL BE NRTL PERFORMANCE TESTED AND CERTIFIED TO ANSI/UL 2017.

I. THE CONTRACTOR SHALL SUPPLY THE POLYGARD® SERIES MGC2-12-1500US ANALOG CONTROLLER, BY INTEC CONTROLS (A RELEVANT SOLUTIONS BRAND); PHONE (858) 761-9319; FAX (858) 578-4633.

2.2 CARBON MONOXIDE (CO) SENSOR/TRANSMITTER

A. THE CARBON MONOXIDE SENSOR/TRANSMITTER SHALL PROVIDE MONITORING OF THE CARBON MONOXIDE LEVELS IN THE PARKING GARAGE AND CONTROL THE VENTILATION SYSTEM VIA THE CONTROL PANEL IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.

B. THE SENSORS SHALL BE ELECTROCHEMICAL TYPE. THE SENSOR/TRANSMITTER SHALL HAVE PLUG-IN TECHNOLOGY FOR EASE OF TROUBLESHOOTING AND REPLACEMENT OF BOTH THE ELEMENT AND THE PRINTED CIRCUIT BOARD. SOLID-STATE SENSING DEVICES SHALL NOT BE ACCEPTABLE.

THE SENSOR RANGE SHALL BE 0–250 PPM CARBON MONOXIDE. A MICROPROCESSOR–BASED TRANSMITTER SHALL GENERATE A PROPORTIONAL 4–20 MA OUTPUT SIGNAL. THE WIRING BETWEEN THE TRANSMITTER AND THE CONTROL PANEL SHALL BE A 2–WIRE, TWISTED AND SHIELDED, 4–20MA, 17–28 VDC CONFIGURATION. EACH SENSOR/TRANSMITTER SHALL COVER BETWEEN 5,000 AND 10,000 SQUARE FEET OF THE GARAGE FLOOR AND PLACEMENT SHALL BE APPLIED STRATEGICALLY AND APPROPRIATELY PER FLOOR PLAN REQUIREMENT.

C. THE SENSOR SHALL HAVE STABILITY AND RESOLUTION OF ± 3 PPM OF READING, REPEATABILITY OF ± 3% OF READING, AND A RESPONSE TIME OF 50 SECONDS TO A 90% STEP CHANGE. THE LONG–TERM OUTPUT DRIFT SHALL NOT EXCEED MORE THAN 0.4% OF SIGNAL LOSS PER MONTH. THE PERMISSIBLE AMBIENT WORKING TEMPERATURE SHALL BE 14F TO 122F (–10C TO 50C) AND PERMISSIBLE AMBIENT HUMIDITY SHALL BE 15 TO 95% RH, NON–CONDENSING. THE SENSOR SHALL REQUIRE NO ROUTINE MAINTENANCE OTHER THAN PERIODIC CALIBRATION. ITS LIFE EXPECTANCY SHALL BE 5 YEARS OF NORMAL SERVICE. THE MANUFACTURER SHALL PROVIDE A TWO 2–YEAR WARRANTY FOR MATERIALS AND WORKMANSHIP, AND A 12–MONTH WARRANTY ON THE SENSING ELEMENT UNDER NORMAL EXPOSURE.

D. THE SENSOR/TRANSMITTER PRINTED CIRCUIT BOARD SHALL HAVE THE CAPABILITY OF ADDING UP TO (2) ALARM RELAYS WITH INDIVIDUAL SETPOINTS FOR LOCAL CONTROL OR STATUS INDICATION.

E. THE SENSOR/TRANSMITTER SHALL BE CONTAINED IN A NEMA 4X METAL ENCLOSURE. THE ENCLOSURE FOR THE SENSOR/TRANSMITTER SHALL BE INSTALLED ON WALLS OR COLUMNS APPROXIMATELY 5 FEET ABOVE THE FLOOR.

F. THE OUTPUT SIGNAL FROM THE SENSOR/TRANSMITTER SHALL BE A DIRECT INPUT TO THE CONTROL PANEL. ALL SEQUENCES OF FAN AND ALARM CONTROL, INCLUDING TIME DELAY FUNCTIONS TO PREVENT HUNTING OF VENTILATION FANS SHALL BE A PART OF THE CONTROL PANEL.

G. IF THE LEVEL OF CARBON MONOXIDE REACHES 25 PPM IN THE AREA OF DETECTION, THE LOW ALARM SHALL ACTIVATE AND THE EXHAUST FANS WILL BE STARTED. IF THE LEVEL OF CO INCREASES TO 100 PPM, THE HIGH ALARM SHALL ACTIVATE.

H. THE SENSOR/TRANSMITTER SHALL BE NRTL PERFORMANCE TESTED AND CERTIFIED TO ANSI/UL 2075.

I. THE CONTRACTOR SHALL SUPPLY THE POLYGARD® SERIES LC–1112 CO SENSOR/TRANSMITTER, BY INTEC CONTROLS

2.3 NITROGEN DIOXIDE (NO2) SENSOR/TRANSMITTER

A. THE NITROGEN DIOXIDE SENSOR/TRANSMITTER SHALL PROVIDE MONITORING OF THE NITROGEN DIOXIDE LEVELS PRESENT IN DIESEL EXHAUST IN THE PARKING GARAGE AND CONTROL THE VENTILATION SYSTEM VIA THE CONTROL PANEL IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.

B. THE SENSORS SHALL BE ELECTROCHEMICAL TYPE. THE SENSOR/TRANSMITTER SHALL HAVE PLUG–IN TECHNOLOGY FOR EASE OF TROUBLESHOOTING AND REPLACEMENT OF BOTH THE SENSING ELEMENT AND THE PRINTED CIRCUIT BOARD. SOLID–STATE SENSING DEVICES SHALL NOT BE ACCEPTABLE.

THE SENSOR RANGE SHALL BE 0–10 PPM NITROGEN DIOXIDE. A MICRO–PROCESSOR–BASED TRANSMITTER SHALL GENERATE A POLARITY PROTECTED, PROPORTIONAL 4–20 MA OUTPUT SIGNAL. THE WIRING BETWEEN THE TRANSMITTER AND THE CONTROL PANEL SHALL BE A 2–WIRE, TWISTED AND SHIELDED, 4–20MA, 17–28 VDC CONFIGURATION. EACH SENSOR/TRANSMITTER SHALL COVER BETWEEN 4,000 AND 6,000 SQUARE FEET OF THE GARAGE FLOOR AND PLACEMENT SHALL BE APPLIED STRATEGICALLY AND APPROPRIATELY PER FLOOR PLAN REQUIREMENT.

C. THE SENSOR SHALL HAVE AN ACCURACY AND RESOLUTION OF ±0.1 PPM OF READING, REPEATABILITY OF ±2% OF READING, AND A RESPONSE TIME OF LESS THAN 40 SECONDS TO A 90% STEP CHANGE. THE SENSOR DRIFT SHALL NOT EXCEED MORE THAN 2% SIGNAL LOSS PER MONTH. THE PERMISSIBLE AMBIENT WORKING TEMPERATURE SHALL BE 14F TO 104F (–20C TO 40C) AND THE PERMISSIBLE AMBIENT HUMIDITY SHALL BE 15 TO 95% RH, NON–CONDENSING. THE SENSOR SHALL REQUIRE NO ROUTINE MAINTENANCE OTHER THAN PERIODIC CALIBRATION. ITS LIFE EXPECTANCY SHALL BE 2 YEARS OF NORMAL SERVICE. THE MANUFACTURER SHALL PROVIDE A TWO 2–YEAR WARRANTY FOR MATERIALS AND WORKMANSHIP, AND A 12–MONTH WARRANTY ON THE SENSING ELEMENT UNDER NORMAL EXPOSURE.

D. THE SENSOR/TRANSMITTER SHALL BE CONTAINED IN A NEMA 4X ENCLOSURE. THE ENCLOSURE WITH THE SENSOR/TRANSMITTER SHALL BE INSTALLED ON WALLS OR COLUMNS APPROXIMATELY 1.5 FT. ABOVE THE FLOOR.

E. THE SENSOR/TRANSMITTER SHALL HAVE THE CAPABILITY OF ADDING UP TO (2) RELAYS AS A SEPARATE COMPONENT TO THE PRINTED CIRCUIT BOARD OF THE SENSOR.

F. THE OUTPUT SIGNAL FROM THE SENSOR/TRANSMITTER SHALL BE A DIRECT INPUT INTO THE DIGITAL CONTROL BUILDING AUTOMATION SYSTEM. ALL SEQUENCES OF FAN AND ALARM CONTROL, INCLUDING TIME DELAY FUNCTIONS TO PREVENT HUNTING OF VENTILATION FANS SHALL BE A PART OF THE CONTROL PANEL.

G. IF THE LEVEL OF NO2 REACHES 2 PPM, THE LOW ALARM SHALL ACTIVATE. IF THE LEVEL OF NO2 INCREASES TO 5 PPM, THE HIGH ALARM SHALL ACTIVATE. THE CONTRACTOR SHALL SUPPLY THE POLYGARD® SERIES AT–1130 NO2 SENSOR/TRANSMITTER, BY INTEC CONTROLS

2.4 SUPPLIER: THE CONTRACTOR SHALL SUPPLY THE MGC–SERIES CONTROL PANEL AND ALL ASSOCIATED GAS TRANSMITTERS, BY INTEC CONTROLS

2.5 WARRANTY: THE MANUFACTURER SHALL PROVIDE A TWO 2–YEAR WARRANTY FOR MATERIALS AND WORKMANSHIP, AND A 12–MONTH WARRANTY ON THE SENSING ELEMENT UNDER NORMAL EXPOSURE.

PART 3 – EXECUTION

3.1 INSPECTION: GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH GAS MONITORING AND CONTROL SYSTEM SHALL BE INSTALLED. RELATED ITEMS SHALL BE EXAMINED AS WELL.

3.2 CONTROL SEQUENCE: THE CONTROLLER SHALL OPERATE ACCORDING TO THE SPECIFICATIONS RECOMMENDED BY THE MANUFACTURER. THE OPERATION SHALL BE AS FOLLOWS:

1. THE CONTROLLER SHALL BE CALIBRATED TO THE DESIRED SET–POINTS BEFORE OPERATION.
2. THE CONTROLLER SHALL CONTINUOUSLY DETECT THE SURROUNDING AIR FOR ANY TRACES OF THE GAS DETECTED.
3. WHEN THE FIRST SET–POINT IS REACHED, THE SENSOR SHALL ACTIVATE THE LOW ALARM ON THE CONTROLLER AND THE CORRESPONDING DEVICES, SUCH AS THE EXHAUST FANS, DAMPERS, ETC.
4. IF THE GAS LEVEL CONTINUES TO INCREASE TO THE SECOND SET–POINT, THE HIGH ALARM SHALL ACTIVATE WITH THE CORRESPONDING DEVICES, SUCH AS THE AUDIO/VISUAL ALARM, ETC.
5. THE SENSOR SHALL CONTINUE TO TRACE THE SPECIFIED GAS AND WILL NOT DISABLE THE ALARM UNTIL THE GAS LEVEL IS DROPPED A SIGNIFICANT PERCENTAGE BELOW THE ALARM SET–POINTS.

3.3 OPERATION AND MAINTENANCE MANUALS: THE OPERATION AND MAINTENANCE MANUALS SHALL CONTAIN ALL INFORMATION NECESSARY FOR THE OPERATION, MAINTENANCE, REPLACEMENT, INSTALLATION, AND PARTS PROCUREMENT FOR THE ENTIRE GAS DETECTION SYSTEM. THIS DOCUMENTATION SHALL INCLUDE SPECIFIC PART NUMBERS.

3.4 AS–BUILT DOCUMENTATION: FOLLOWING PROJECT COMPLETION AND TESTING, THE CONTRACTOR WILL SUBMIT AS–BUILT DRAWINGS REFLECTING THE EXACT INSTALLATION OF THE SYSTEM.

3.5 CALIBRATION: CALIBRATION SHALL NOT BE NECESSARY TO VERIFY SYSTEM OPERATION. THE USER SHALL VERIFY SIGNAL TRANSMISSION FROM THE SENSOR TO THE CONTROL PANEL BY APPLYING THE APPROPRIATE TEST GAS TO THE CORRESPONDING SENSOR. THE CALIBRATION KIT CAN BE USED FOR SYSTEM VERIFICATION OR SENSOR CALIBRATION WHEN REQUIRED. ONE CALIBRATION KIT SHALL BE PROVIDED BY THE CONTRACTOR SUPPLIED BY INTEC CONTROLS

PERMIT NOTES:

1. EQUIPMENT NOISE LEVEL NOT TO EXCEED 55 DB AT THE LOT LINE.
2. ALL EXPANSION VALVES, DEVICES AND CONNECTIONS SHALL BE REMOVED FROM THE AIRSTREAM OF ALL MECHANICAL EQUIPMENT AS PER LOCAL CODES.
3. THE MECHANICAL CONTRACTOR SHALL GUARANTEE, AS APPLICABLE, THAT THE PLENUM CHAMBER USED FOR RECIRCULATION OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF AIR CONTAMINANTS FROM TRAPS, SOIL STACKS, DOWN SPOUTS, VENTS. EXHAUST DISCHARGES AND OTHER SOURCES WILL BE ENCLOSED SO THAT NO CONTAMINATED AIR WILL BE RECIRCULATED.
4. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL A SAFETY RELIEF VALVE DESIGNED TO RELIEVE AND/OR PREVENT THE BUILDUP OF EXCESSIVE REFRIGERANT PRESSURE WITHIN THE DIRECT EXPANSION SYSTEMS. THE PRESSURE RELIEF DEVICE SHALL BE SET AT 400 PSI AND SHALL BE INSTALLED ON THE HIGH PRESSURE SIDE AT THE DISCHARGE OF THE COMPRESSOR AND UPSTREAM OF THE COMPRESSOR SHUTOFF (STOP) VALVE.
5. ALL FRESH AIR INTAKE OPENINGS SHALL BE A MINIMUM OF 15'–0" (CHICAGO) 10'–0" (OUTSIDE CHICAGO) AWAY FROM ANY EXHAUST OR POINT OF CONTAMINATE DISCHARGE.
6. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH "SMACNA" LOW VELOCITY DUCT MANUAL AND "ASHRAE" RECOMMENDATIONS.
7. THE EQUIPMENT IN THE VENTILATING AND HEATING SYSTEM SHALL BE SUFFICIENT TO MAINTAIN 72 DEGREES F WITHIN THE AREA SERVED AT ALL TIMES WHEN 33–1/3 PERCENT OF CODE REQUIRED AIR IS SUPPLIED FROM OUTDOORS AT –10 DEGREES F.
8. VOLUME DAMPERS OF LOCKING TYPE SHALL BE PLACED IN EACH FORCED WARM AIR RUN.

VENTILATION NOTES:

1. CLEARANCES FOR FORCED AIR FURNACES MUST CONFORM TO MANUFACTURERS REQUIREMENTS (OR SHOW CLEARANCES ON THE DRAWINGS).
2. ALL DUCTWORK MUST BE GALVANIZED STEEL OR STAINLESS STEEL., INTAKE MUST BE INSULATED.
3. SMOKE DETECTORS AND CARBON MONOXIDE DETECTORS ARE SHOWN ON ELECTRICAL DRAWING(S).
4. IF THE PROJECT INCLUDES A PLENUM CEILING OR FLOOR: THE CONTRACTOR SHALL GUARANTEE THAT THE PLENUM CHAMBER USED FOR RECIRCULATION OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF AIR CONTAMINATION FROM TRAPS, SOIL STACKS, DOWNSPOUTS, VENTS AND ALL OTHER SOURCES OF CONTAMINATION WILL BE ENCLOSE SUCH THAT NO CONTAMINATED AIR WILL BE RECIRCULATED.

GENERAL COORDINATION NOTES:

1. EACH TRADE CONTRACTOR SHALL VISIT CONSTRUCTION SITE PRIOR TO BIDDING, EXAMINE SCOPE AND CONDITIONS OF OTHER CONTRACT WORK, EXAMINE EXISTING CONDITIONS AND ALL INTERFERENCES AND REQUIRED COORDINATION IN ORDER TO INCLUDE EFFECT OF SAID CONDITIONS IN THEIR BID. BID DRAWINGS ARE DIAGRAMMATIC AND DO NOT INDICATE ALL REQUIRED RELOCATIONS, OFFSETS, CHANGE IN ASPECT RATIOS, OR ROUTING CHANGES REQUIRED TO INTEGRATE WORK WITH ALL OTHER CONDITIONS OR TRADES. WORK INSTALLED BEFORE COORDINATING SO AS TO CAUSE INTERFERENCES WITH OTHER TRADES SHALL BE REMOVED AND REWORKED WITHOUT COST TO OWNER. COST OF PROVIDING SUCH RELOCATIONS, OFFSETS, SIZE, CHANGES, REROUTING, ETC. SHALL BE INCLUDED IN BID. CODE CONFORMING SCALED (1/4") COORDINATED DRAWINGS SHALL BE PREPARED BY EACH TRADE TO FACILITATE AND VERIFY FIT AND CONGRUENCE OF THEIR INSTALLATION WITH OTHER TRADES.
2. WHERE ADDITIONAL DETAILS, DIAGRAMS, EQUIPMENT DATA, AND ISOMETRICS ARE REQUIRED BY BUILDING DEPARTMENT OR CODE AUTHORITIES FOR PERMIT OR APPROVAL, CONTRACTOR SHALL PROVIDE SAME AT NO ADDITIONAL COST.
3. BUILDING PLANS SHOWN ARE COMPILED FROM SOURCES BELIEVED TO BE ACCURATE. HOWEVER, THE INFORMATION SHOWN ON THESE PLANS IS SCHEMATIC AND CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPER DIMENSIONS, SIZES, SYSTEM VOLTAGES, QUANTITIES AND EXTENT OF WORK.
4. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR COORDINATION AND EXTENT OF THE WORK OF THE VARIOUS TRADES AND IMPACT ON THEIR WORK.
5. WITH THE APPROVAL OF THE ARCHITECT AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE MODIFICATIONS IN THE WORK, INCLUDING REROUTING AS REQUIRED BY INTERFERENCE WITH STRUCTURAL, GENERAL AND WORK OF OTHER TRADES FOR PROPER EXECUTION OF THE WORK.
6. REFER TO THE ARCHITECTURAL DRAWINGS, FIELD CONDITIONS AND DETAILS FOR EXACT LOCATION OF PARTITIONS.
7. CUTTING AND PATCHING FOR THEIR WORK SHALL BE PERFORMED BY EACH TRADE CONTRACTOR UNLESS NOTED OTHERWISE.

GENERAL MECHANICAL NOTES:

1. ALL WORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH BUILDING STANDARDS AND ALL APPLICABLE CODES.
2. MEDIUM/LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS.
3. PROVIDE MANUAL DAMPER ON ALL LOW PRESSURE SUPPLY BRANCH TAKE–OFFOF DUCTWORK.
4. ALL DUCT SIZES SHOWN SHALL BE CLEAR INSIDE DIMENSIONS.
5. DIFFUSERS, REGISTERS ARE AS SCHEDULED IN THE DRAWING. CONTRACTOR TO VERIFY AND COORDINATE WITH ARCHITECT TYPE OF CEILING TO DETERMINE FRAME TYPE.
6. BLANK–OFF WITH BLACK PAINTED PANEL WHERE SHOWN. DO NOT PAINT EXPOSED DUCTS OR REGISTERS.
7. PROVIDE UL APPROVED FIRE DAMPERS. PROVIDE UL APPROVED FIRE DAMPERS IN ALL DUCT PENETRATIONS THRU FIRERATED ASSEMBLIES WHETHER INDICATED OR NOT.
8. FLEXIBLE DUCTWORK:NOT TO BE USED
10. PROVIDE LINNING ON ALL SUPPLY AND RETURN AIR DUCTWORK AT A MIN. OF 15'–0" FROM THE HEAT PUMPS/FURNACES.
11. INSULATE ALL DUCTWORK LOCATED IN UNCONDITIONED SPACES. PER IECC C403.2.9
    INSULATE HVAC DUCTWORK AS FOLLOWS:
    - UNLESS INDICATED OTHERWISE, NEW HVAC SUPPLY AND RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED.
    - INSULATE COLD ROOM SUPPLY AND EXHAUST DUCTS.
    - IF DUCTS ARE INTERNALLY INSULATED, THEY ARE NOT EXTERNALLY INSULATED UNLESS SPECIFICALLY DIRECTED.
    - TRANSFER AND EXHAUST DUCTS ARE INTERNALLY INSULATED ONLY IF SPECIFICALLY DIRECTED.
    - INSTALL AN INSULATION JACKET ON EXTERNALLY–INSULATED HVAC DUCTWORK LOCATED OUTDOORS; AND INDOORS EXCEPT IN MECHANICAL ROOMS AND ABOVE CEILINGS.
    - INSULATE OUTSIDE AIR INTAKE DUCTS IF LOCATED IN NON–MECHANICAL ROOM INDOORS SPACE.
12. ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS IN METALLIC AND NONMETALLIC DUCTS SHALL BE CONSTRUCTED AS SPECIFIED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS—METAL AND FLEXIBLE AND NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC–PLUS–EMBEDDED–FABRIC SYSTEMS, LIQUID SEALANTS OR TAPES. CLOSURE SYSTEMS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED "181A–P"FOR PRESSURE–SENSITIVE TAPE, "181 A–M"FOR MASTIC OR "181 A–H"FOR HEAT–SENSITIVE TAPE. CLOSURE SYSTEMS USED TO SEAL FLEXIBLE AIR DUCTS AND FLEXIBLE AIR CONNECTORS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B–FX"FOR PRESSURE–SENSITIVE TAPE OR "181B–M" FOR MASTIC. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. MECHANICAL FASTENERS FOR USE WITH FLEXIBLE NONMETALLIC AIR DUCTS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B–C."CLOSURE SYSTEMS USED TO SEAL METAL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. UNLISTED DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY DUCT.

    EXCEPTION: CONTINUOUSLY WELDED AND LOCKING–TYPE LONGITUDINAL JOINTS AND SEAMS IN DUCTS OPERATING AT STATIC PRESSURES LESS THAN 2 INCHES OF WATER COLUMN (500 PA) PRESSURE CLASSIFICATION SHALL NOT REQUIRE ADDITIONAL CLOSURE SYSTEMS.
13. DUCTS SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 10 FEET AND SHALL BE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS–METAL AND FLEXIBLE. FLEXIBLE AND OTHER FACTORY–MADE DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
14. ALL EQUIPMENT AND APPLIANCES, INCLUDING THE AIR CONDITIONER, WATER HEATER AND FURNACE, SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTINGS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE PROVIDED ON SITE AT THE TIME OF INSPECTION.
15. ALL SYSTEMS >4.5 TONS REQUIRE ECONOMIZER FAULT DETECTION AND DIAGNOSIS. PER IECC C403.2.4.7
16. INSULATE ALL PIPING PER TABLE IECC C403.2.1
17. SYSTEM ADJUST AND BALANCE PROVIDE TEST AND BALANCE REPORT PER IECC C408.2.5.3
18. PROVIDE DRAIN PAN FOR ALL UNITS THAT MAY CAUSE DAMAGE TO BLDG COMPONENTS AS A RESULT OF OVERFLOW FROM CONDENSATE REMOVAL (COOLING COIL OR FUEL BURNING EQUIP.). EXCEPTION IF THE APPLIANCE AUTOMATICALLY SHUT DOWN IN EVENT OF STOPPAGE IN CONDENSATE DRAINAGE SYSTEM.

Gas Piping/Tubing Material Matrix(Based on IFGC 403)

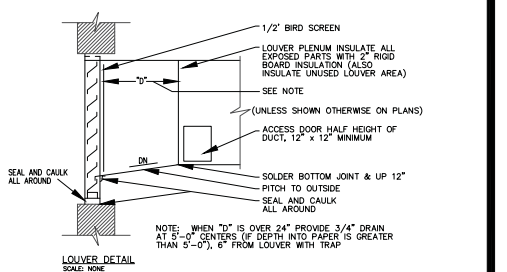
Material	Permitted	Not Permitted	Standards to Follow
Wrought–Iron	Schedule 40 or better		ASME B 36.10.10M or ASTM A35 or ASTM A106
Steel	Schedule 40 or better		ASME B 36.10.10M or ASTM A35 or ASTM A106

N.G. DISTRIBUTION PIPING SHALL BE SCHEDULE 40 STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A 53/A 53M WITH 150# MALLEABLE IRON FITTINGS. GAS PIPING LARGER THAN 3" OR MORE THAN 5 PSIG TO BE WELDED TO BE SCHEDULE 40 STEEL PIPING.

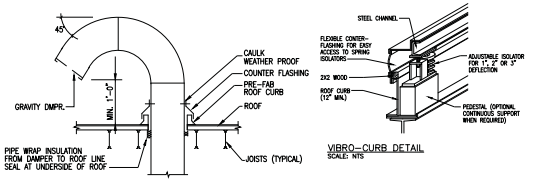
Note: The gas piping design shall conform to all the requirements of IFGC 403.

GENERAL GAS PIPING NOTES:

1. ALL WORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH BUILDING STANDARDS AND ALL APPLICABLE CODES.
2. FUEL GAS PIPING AND CONTROLS MUST CONFORM TO THE INTERNATIONAL FUEL GAS CODE(IFGC), CHAPTER 4 (WITH MODIFICATIONS AS NOTED IN ARTICLE 14). [18–28–1400]
3. GAS PIPING MUST BE SIZED IN ACCORDANCE WITH IFGC TABTES 402.(1) THROUGH 402.3(34). [IFGC 402.3]
4. THE MAXIMUM DESIGN OPERATING PRESSURE FOR GAS PIPING SYSTEMS LOCATED INSIDE BUILDINGS SHALL NOT EXCEED 5 PSIG (SOME EXCEPTIONS ARE NOTED). [TFGC 402.5]
5. GAS PIPING MATERIALS MUST CONFORM TO THE GAS PIPING & TUBING MATERIAL MATRIX (LFGC 403 REQUIREMENTS). [IFGC 403]
6. PIPING IN CONCEALED LOCATIONS MUST CONFORM TO THIS IFGC 404.3. [IFGC 404.3]
7. MINIMUM REQUIRED BURIAL DEPTH FOR UNDERGROUND PIPING SYSTEMS MUST CONFORM TO IFGC 404.9. (MINIMUM 12 INCHES BELOW GRADE). [IFGC 404.9]
8. GAS PIPES MUST BE SLOPED AT 1/4 INCH IN EVERY 15 FEET. [IFGC 408.1]
9. GAS PIPING GREATER THAN 2" INSIDE DIAMETER OR CARRYING MORE THAN 5 POUNDS(PSIG) SHALL BE SCHEDULE 40 STANDARD WELD FITTINGS.
10. PIPING METER IDENTIFICATION SHALL BE MARKED WITH AN APPROVED PERMANENT IDENTIFICATION AND BE READILY IDENTIFIABLE.
11. PAINT ALL GAS PIPING THAT IS EXPOSED TO THE ELEMENTS.
12. UNDERGROUND PIPING SHALL BE A MIN OF 18" BELOW GRADE. [IFGC 404.12]

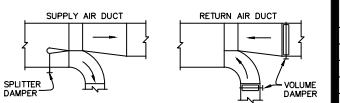


LOUVER DETAIL
SCALE: NONE

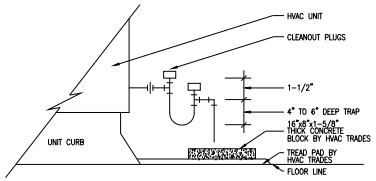


EXHAUST FAN GOOSENECK DETAIL
SCALE: NTS

VIBRO–CURB DETAIL
SCALE: NTS



TYPICAL DUCT BRANCH
SCALE: NTS



AHU/RTU UNIT CONDENSATE DRAIN DETAIL
SCALE: NTS

NERI ARCHITECTS

PROJECT# 2133
DATE: 05.06.22

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LOWELL, IN
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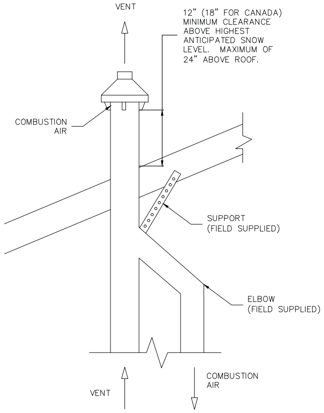
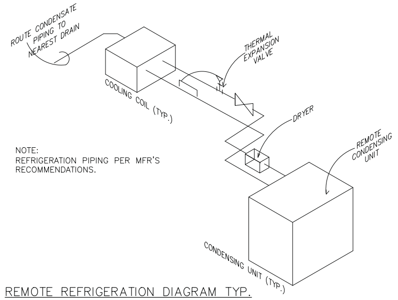
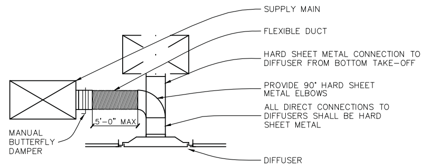
05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	MECH SCHEDULES, NOTES & DETAILS
SHEET NO.	M-4



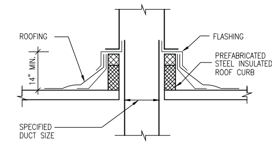
CONCENTRIC VENT DETAIL
SCALE: NTS



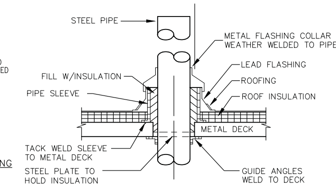
REMOTE REFRIGERATION DIAGRAM TYP.
SCALE: NTS



DIFFUSER INSTALLATION DETAIL
SCALE: NONE

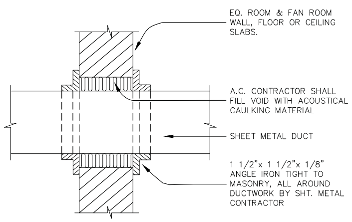


DUCT PENETRATION OF ROOF AND COUNTER FLASHING
SCALE: NTS

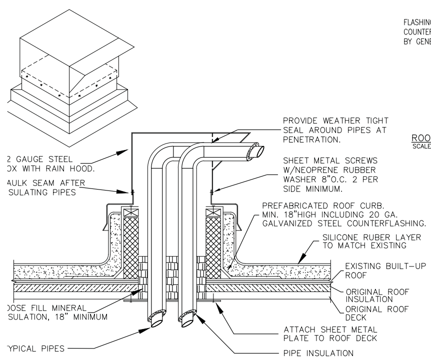


NOTE: PROVIDE EXPANDING TYPE SILICONE FIRE RATED SEALANT.

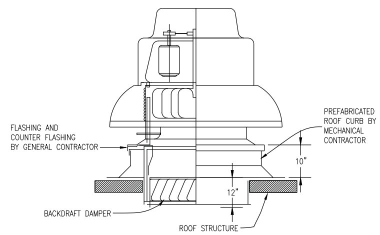
PIPE PENETRATION THRU ROOF
SCALE: NONE



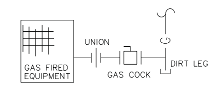
DETAIL OF ACOUSTICAL CAULKING OF DUCTS PIERCING EQ. AREA WALLS, FLOORS OR SLABS
SCALE: NONE



IPE PENETRATION DETAIL THRU ROOF AND ROOF CURB DETAIL
CALE: NTS

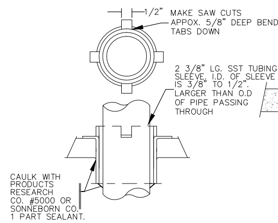


ROOF EXHAUST FAN DETAIL
SCALE: NTS

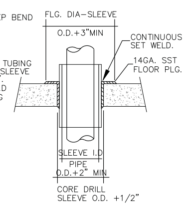


NOTE: PROVIDE REGULATORS ON EACH EQUIPMENT

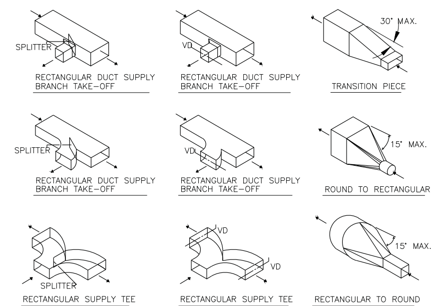
TYPICAL GAS PIPING DIAGRAM
SCALE: NONE



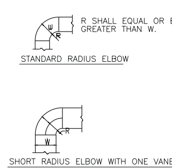
CEILING SLEEVE DETAIL
SCALE: NONE



FLOOR SLEEVE DETAIL
SCALE: NONE



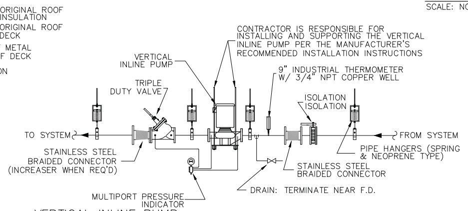
NOTES:
1. PROVIDE STANDARD RADIUS ELBOWS WHEN POSSIBLE - SHORT RADIUS WHERE REQUIRED.
2. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED & FASTENED AS RECOMMENDED BY SMACNA.
3. NO SQUARE OR RECTANGULAR HEEL ELBOWS SHALL BE ALLOWED.



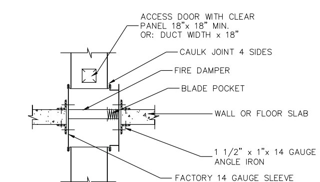
NOTE:
1. IF R IS LESS THAN W, THEN FULL ARC TURNING VANE(S) SHALL BE PROVIDED, SEE SCHEDULE BELOW.
2. INSIDE BEND MAY BE SQUARE FOR W > 12", NO SQUARE HEELS PERMITTED.

VANE SCHEDULE	
WIDTH	NO. OF VANES
< 12"	1
12"-24"	2
24"-36"	3
36"-60"	4
60"-84"	5
> 84"	6

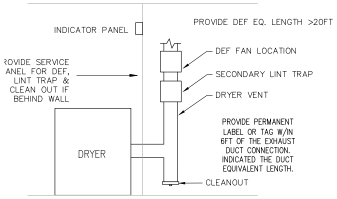
TYPICAL DUCT DETAILS
SCALE: NTS



VERTICAL INLINE PUMP
SCALE: NONE

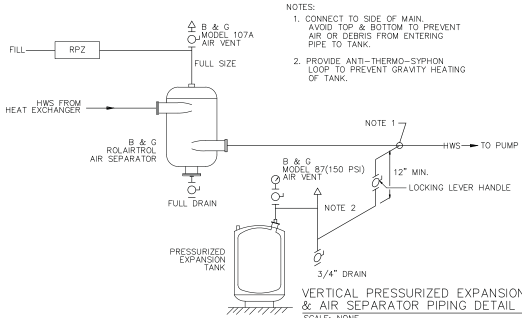


HORIZONTAL AND VERTICAL FIRE DAMPER DETAIL
SCALE: NONE

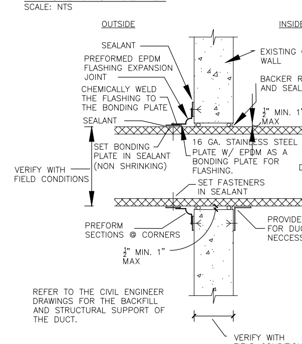


TYP. DRYER VENT DETAIL
SCALE: NTS

NOTES:
1. CONNECT TO SIDE OF MAIN. AVOID TOP & BOTTOM TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK.
2. PROVIDE ANTI-THERMO-SYPHON LOOP TO PREVENT GRAVITY HEATING OF TANK.

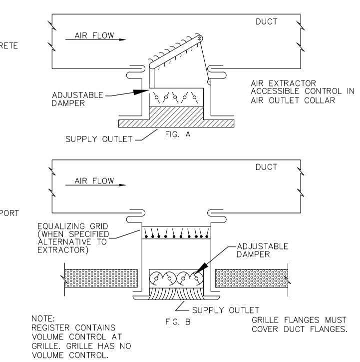


VERTICAL PRESSURIZED EXPANSION TANK & AIR SEPARATOR PIPING DETAIL
SCALE: NONE



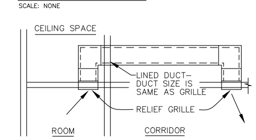
REFER TO THE CIVIL ENGINEER DRAWINGS FOR THE BACKFILL AND STRUCTURAL SUPPORT OF THE DUCT.

WALL PENETRATION DETAIL
SCALE: NONE

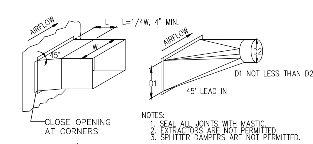


NOTE:
REGISTER CONTAINS VOLUME CONTROL AT GRILLE. GRILLE HAS NO VOLUME CONTROL.

GRILLE AND REGISTER CONNECTION
SCALE: NONE

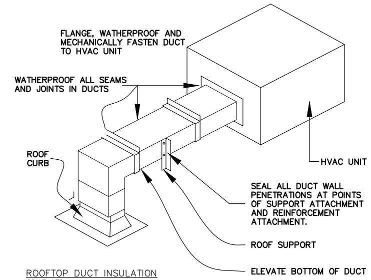


RELIEF TRANSFER DUCT-TYPICAL
SCALE: NONE



NOTES:
1. SEAL ALL JOINTS WITH MASTIC.
2. EXTRACTORS ARE NOT PERMITTED.
3. SPLITTER DAMPERS ARE NOT PERMITTED.

RECTANGULAR/ROUND DUCT BRANCH CONNECTION DETAILS
SCALE: NONE



ROOFTOP DUCT INSULATION
SCALE: NTS

NERI ARCHITECTS

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PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

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11.11.21	PROGRESS SET
▲	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	MECH SCHEDULES, NOTES & DETAILS
SHEET NO.	M-5

BOILER SCHEDULE

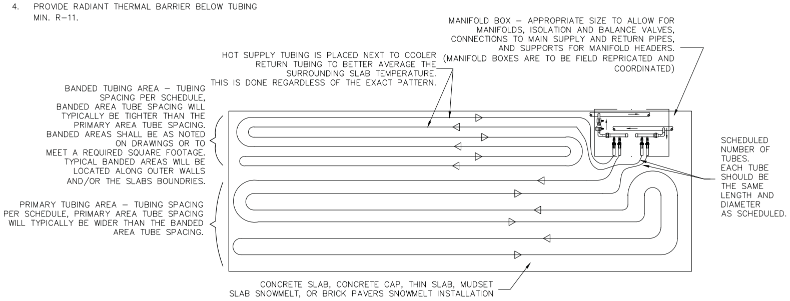
TAG	MANUFACTURER & MODEL No.	BOILER TYPE	GAS TYPE	INLET GAS PRES. IN.	CAPACITY INPUT (MBH)	CAPACITY OUTPUT (MBH)	OPER. EFF. (%)	EWT (°F)	LWT (°F)	MAX FLOW RATE (GPM)	MAX P.D. (FT.)	MAX WORKING PRES. (PSI)	VOLTAGE/ PHASE	AMPS	REMARKS
B-1	NAVIEN NFC-250/200H	CONDENSING	NG	1/2	199*	183*	95	180	160	4.5	1.42	80	120	<15	SEE NOTE1

*COMBI BOILER HTG ONLY LISTED

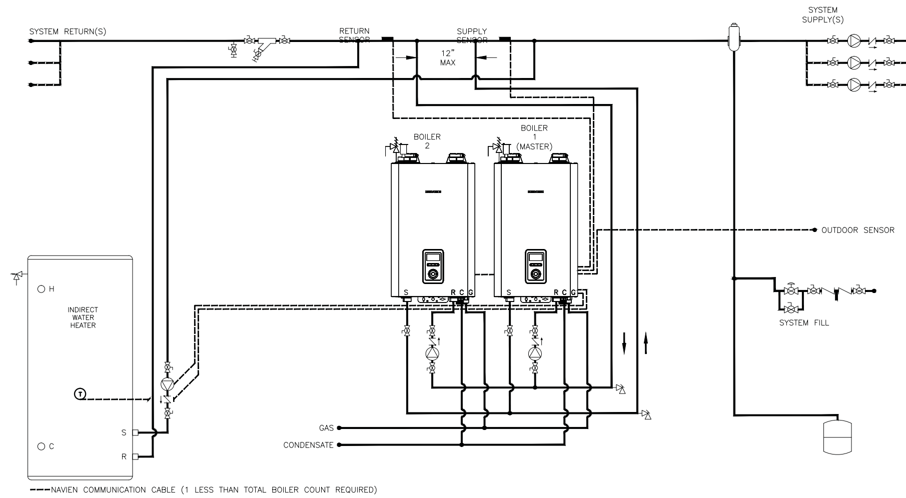
NOTE 1: STAINLESS STEEL HEAT EXCHANGER, FLOW SW, LOW WEAR CUTOFF W/ MANUAL RESET AND ST, MODULATING BURNER W 5:1 TURNDOWN, 50PSI RELIEF VALVE, AUTOMATIC RESET LIMIT, LOW Nox OPERATION, LOW GAS PRESSURE OPERATION, OUTDOOR RESET, PUMP RELAY W/ FREEZE PROTECTION, LOW WATER FLOW INDICATION, ON/OFF SW, CONTACTS ON ANY FAILURE, CONDENSATE NEUTRALIZATION KIT, SMART SYSTEM CONTROL PACKAGE. BOILER RECIRCULATING PUMP PROVIDED BY MANUFACTURER. 3" AIR INLET/3"VENT PROVIDE CONCENTRIC VENT KIT.

HYDRONIC NOTES:

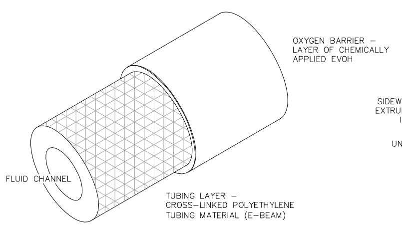
1. ALL OPENINGS IN CONCRETE OR MASONRY SHALL BE SLEEVED.
2. ALL HYDRONIC PIPING SHALL BE HYDROSTATICALLY TESTED FOR 15MIN. AND 30 MIN. FOR CONCRETE EMBEDDED PIPING AT 100 PSI MIN. IN WITNESS OF THE INSPECTOR.
3. MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F (41°C) OR BELOW 55°F (13°C) SHALL BE INSULATED TO A MINIMUM OF R-3
4. PROVIDE RADIANT THERMAL BARRIER BELOW TUBING MIN. R-11.



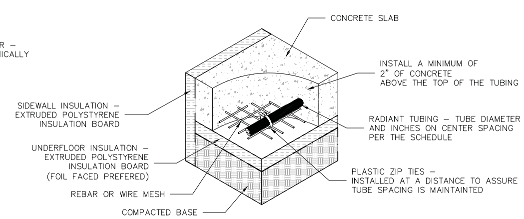
RADIANT TUBING LAYOUT – ENCAPSULATED TUBING INSTALLATION – DOUBLE SERPENTINE LAYOUT
SCALE: NTS



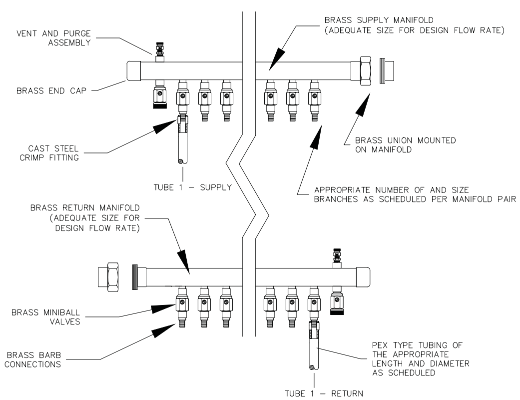
BOILER PIPING DETAIL
SCALE: NTS



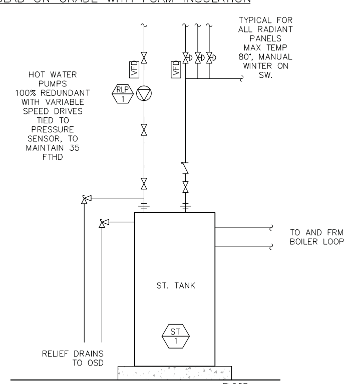
RADIANT TUBING MATERIAL – PEX
SCALE: NTS



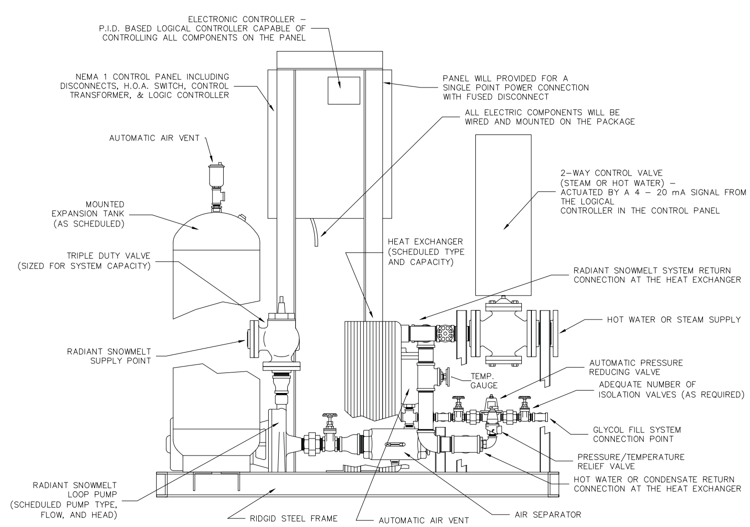
RADIANT SNOWMELT – SLAB ON GRADE WITH FOAM INSULATION
SCALE: NONE



RADIANT TUBING MANIFOLD – PEX TUBING (CRIMP LOCK DESIGN)
SCALE: NTS



TYPICAL HW RADIANT PIPING SCHEMATIC
NOT TO SCALE



RADIANT SNOWMELT PACKAGE DETAIL (HEAT TRANSFER AND CONTROL)
SCALE: NONE

NERI ARCHITECTS

PROJECT #	2133
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ROBERT N. RAFSON
062-049931
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

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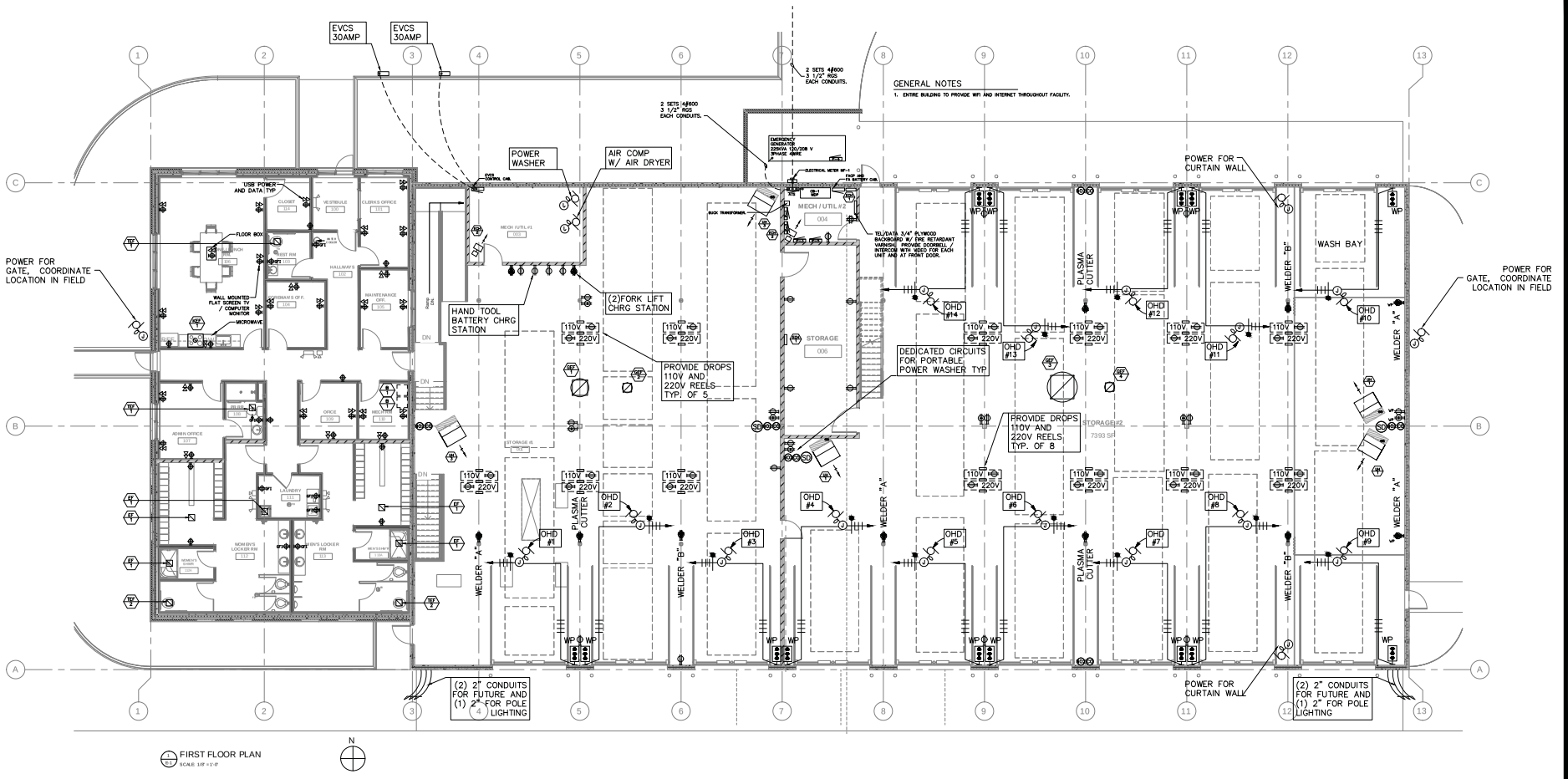
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	MECH SCHEDULES, NOTES & DETAILS
SHEET NO.	M-6



NERI ARCHITECTS

PROJECT #	2133
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062-049931 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

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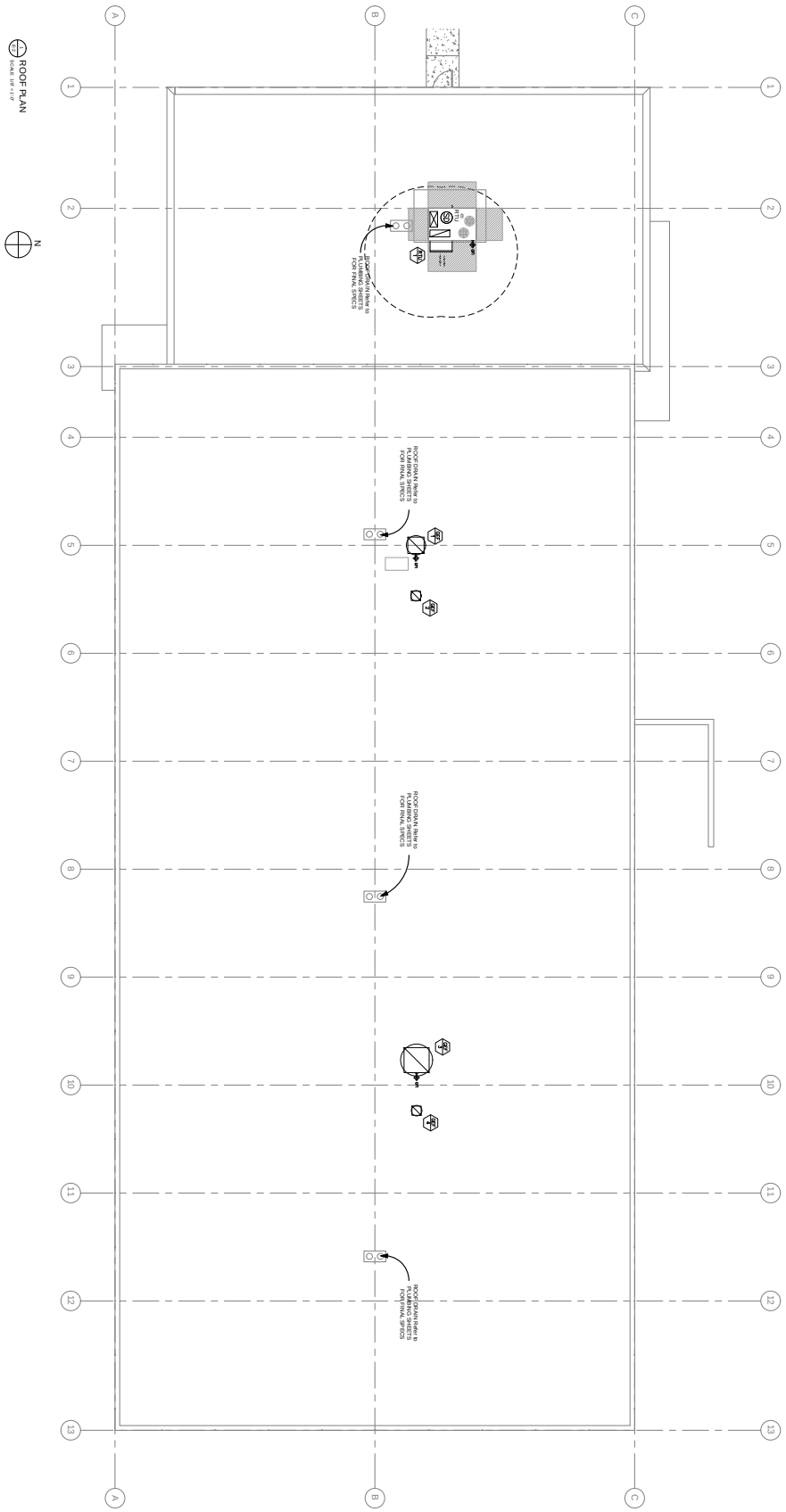
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	FLOOR PLAN(S)
SHEET NO.	E-1



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LOWELL, IN
LAKE COUNTY

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05.06.22	ISSUED FOR PERMIT

DRAWN BY: SMGV
APPROVED BY: SMGV
SCALE: AS NOTED
DESCRIPTION: ROOF PLAN
SHEET NO. E-2

PROJECT#: 2133
DATE: 05.06.22

NERI ARCHITECTS
8430 N. NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.828.9420

NERI ARCHITECTS

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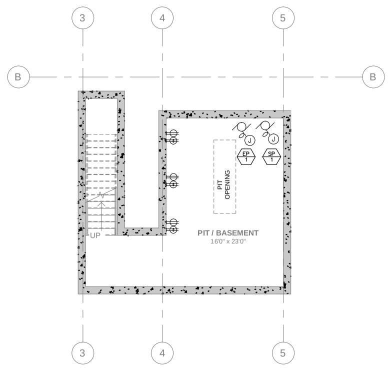
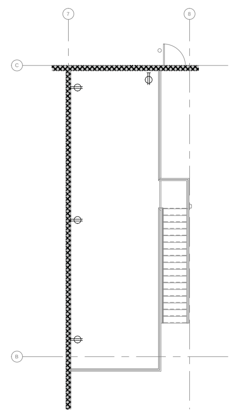
05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
	REVISIONS
DRAWN BY:	SMGV
APPROVED BY:	SMGV
SCALE:	AS NOTED
DESCRIPTION:	ELECTRICAL LIGHTING PLAN
SHEET NO.	E-3



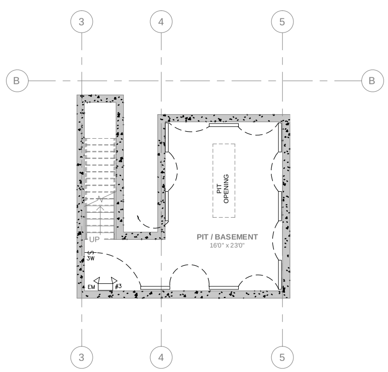
1 E-4 BASEMENT PIT POWER PLAN
SCALE: 1/8" = 1'-0"

N



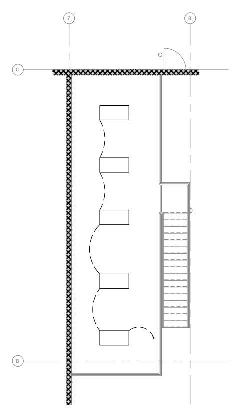
2 E-4 MEZZANINE POWER PLAN
SCALE: 1/8" = 1'-0"

N



3 E-4 BASEMENT PIT LIGHITNG PLAN
SCALE: 1/8" = 1'-0"

N



4 E-4 MEZZANINE LIGHTING PLAN
SCALE: 1/8" = 1'-0"

N

LIGHTING FIXTURE SCHEDULE NOTES:

1. ELECTRICAL CONTRACTOR SHALL SUBMIT EIGHT (8) SETS OF CATALOG CUTS TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING LIGHTING FIXTURES.
2. ALL BALLASTS SHALL BE PROGRAMMABLE RAPID START, ELECTRONIC ENERGY SAVING TYPE.
3. ALL EXIT SIGNS AND EMERGENCY LIGHT FIXTURES SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODE AUTHORITY. ALL EXIT SIGNS SHALL BE INSTALLED IN A VISIBLE LOCATION, WITHOUT ANY OBSTRUCTIONS IN ORDER TO FACILITATE VIEWING. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT STEMS WHERE NECESSARY TO DROP A SIGN BELOW AN OBSTRUCTION.
4. ALLOWANCES TO BE PER FIXTURE SHOWN ON PLANS.
5. ALLOWANCES TO INCLUDE FIXTURES, BULBS, TAX & DELIVERY.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE SUBMITTAL ON FULL LIGHTING FIXTURE PURCHASE FOR ARCHITECT'S APPROVAL PRIOR TO ORDER.
7. FIXTURES SHALL HAVE APPROPRIATE UL LABEL, DAMP, OR WET AS REQUIRED BY LOCAL CODES.
8. PROVIDE LAMPS FROM: OSRAM SYLVANIA, GE OR PHILIPS UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL VERIFY FINAL VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURES.
10. CEILING THICKNESS IN EXCESS OF 3/4" SHALL BE IDENTIFIED IN WRITING BY CONTRACTOR/ARCHITECT.
11. FIXTURES LOCATED IN AN INSULATED CEILING AREA, SHALL HAVE AN IC HOUSING (ELECTRICAL CONTRACTOR TO COORDINATE).
12. FIXTURES SHALL BE ORDERED WITH THE APPROPRIATE BALLASTS THAT HAVE UL AND CBM LABELS. BALLASTS SHALL CONFORM TO LOCAL CODE REQUIREMENTS FOR PERFORMANCE, SWITCHING, AND WIRING (I.E. TANDEM).
13. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR LIGHTING FIXTURES LOCATED IN A FIRE-RATED CEILING.
14. WALLS DIRECTLY ILLUMINATED SHALL BE INSTALLED AND FINISHED IN A MANNER TO ELIMINATE SHADOWS OR BLEMISHES (I.E. HANG DRY WALL VERTICALLY).
15. THE ARCHITECT AND LIGHTING DESIGNER SHALL APPROVE FIXTURE SUBSTITUTIONS PRIOR TO BID. CONTRACTOR SHALL SUPPLY A SAMPLE AND/OR PHOTOMETRIC DATA IF REQUESTED. IF SUBSTITUTION IS REJECTED, CONTRACTOR SHALL PROVIDE SPECIFIED PRODUCT.
16. FIXTURES SHALL INCLUDE ACCESSORIES FOR INSTALLATION ACCORDING TO LOCAL AND NATIONAL CODES.
17. PRIOR TO ORDERING LIGHTING EQUIPMENT, THE CONTRACTOR SHALL VERIFY LOCATIONS AND RECESS DEPTHS.
18. LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE.
19. VERIFY EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.

LIGHTING WIRING NOTE

1. Each 120 volt lighting branch circuit shall have no more that 1500 volt amperes per each 20 ampere 1 pole branch circuit.
2. Each 120 volt receptacle branch circuit shall be wired to no more than 8 duplex receptacles.
3. Each 277 volt lighting branch circuit shall have no more than 3800 volt amperes per each 20 ampere 1 pole branch circuit.

LIGHTING CONTROL NOTE

Provide acuity controls nlight relay panels with 0-10v dimming and switching for all interior lighting control. Each circuit and room shall have a separate control address. See plans for control device information. Relay panels shall be located in electrical closets. Control wiring shall utilize CAT 5e cabling connect the panel to a network backbone and system controller enables time based control, remote programming and monitoring from system software, and BMS integration capabilities. All relays shall have a separate local manual override lever and is individually programmable. System shall remotely configurable /upgradeable. System shall have a 5 year warranty.

NERI ARCHITECTS

8430 W NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.828.9400

PROJECT #: 2133
DATE: 05.06.22

ROBERT N. RAFSON 062-049931 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
▲	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	ELECTRICAL POWER AND LIGHTING PLAN
SHEET NO.	E-4

GENERAL ELECTRICAL SPECIFICATIONS (APPLICABLE TO ALL ELECTRICAL DRAWINGS)

1. DEFINITIONS:

"FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO DELIVERY OF AN ITEM OF EQUIPMENT TO THE PROJECT SITE, READY FOR INSTALLATION.

"INSTALL" MEANS TO SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER.

"PROVIDE" MEANS TO "FURNISH" AND "INSTALL".

"FUTURE", "BY OTHERS", "REFER (DISCIPLINE) DIVISION" AND SIMILAR EXPRESSIONS INDICATE WORK THAT MAY BE PERFORMED UNDER THE CONTRACT DOCUMENTS BUT, NOT NECESSARILY UNDER THE DIVISION OR DISCIPLINE ON WHICH THE NOTE APPEARS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK WITH SUPPLIERS, SUBCONTRACTORS, EMPLOYEES, ETC. SHOULD CLARIFICATION OF ANY PORTION OF THE WORK BE REQUIRED, CONTACT THE ARCHITECT/ENGINEER PRIOR TO SUBMITTING BID.

2. CODES:

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. THIS WOULD INCLUDE, BUT IS NOT LIMITED TO, THE CURRENT CITY BUILDING CODE, NFPA, ANSI, OSHA, AND ALL OTHER LOCAL OR MUNICIPAL BUREAUS AND DEPARTMENTS WHICH HAVE AUTHORITY OVER THE PROJECT; ANYTHING IN THESE CONTRACT DOCUMENTS NOT WITHSTANDING. THIS SHALL NOT BE CONSTRUED AS WAIVING COMPLIANCE WITH ANY REQUIREMENTS OF THE PLANS AND SPECIFICATIONS WHICH MAY BE IN EXCESS OF ANY REQUIREMENTS OF THESE CODES.

3. INTERPRETATION OF THE DOCUMENTS

THE CONTRACTOR SHALL CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING THE MEASUREMENTS AND CONDITIONS UNDER WHICH CONSTRUCTION IS TO BE IMPLEMENTED. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS AND/OR SPECIFICATIONS, THE DISPUTED ISSUE SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS WORK A COMPLETE AND READY-TO-USE INSTALLATION. IF NOT SO-STATED IN THE CONTRACTOR'S PROPOSAL, ANY SUCH WORK WILL NOT BE CONSIDERED ADDITIONAL.

4. COORDINATION

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. TO THIS EXTENT, DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL REQUIRED WORK AND EQUIPMENT WITH THAT OF THE OTHER TRADES. WHERE THERE ARE POTENTIAL CONFLICTS, THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO ACTUAL FIELD CONDITIONS. REFER TO ARCHITECTURAL/MECHANICAL DRAWINGS FOR PLANS, ELEVATIONS AND DETAILS INDICATING THE LOCATIONS OF CEILING ELEMENTS (E.G., LIGHTS, SPRINKLERS, DIFFUSERS, ETC.) AND WALL ELEMENTS. CEILING MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTIVE CEILING PLANS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL CEILING TYPES IN ALL AREAS.

5. SITE EXAMINATION

THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE CONDITIONS UNDER WHICH CONSTRUCTION WILL BE IMPLEMENTED. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. FAILURE TO DO SO SHALL NOT RELEIVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT. ANY LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.

6. PERMITS

THE CONTRACTOR SHALL SECURE, OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, TAXES, LICENCES, AND FEES TO ALL GOVERNMENT AGENCIES REQUIRED FOR THE EXECUTION AND COMPLETION OF THE ELECTRICAL WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PREPARE AND SUBMIT ALL SHOP DRAWINGS AS REQUIRED TO THE GOVERNMENTAL AGENCIES AND UTILITY COMPANIES FOR THEIR APPROVAL.

7. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE CLIENT'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CABLE, EQUIPMENT, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

8. CONTRACTOR'S DRAWING REVIEW

ALL CONTRACTORS/BIDDERS SHALL HAVE RECEIVED A COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR REVIEW AND REFERENCE TO WORK INDICATED. CONDUIT LOCATE SERVICES SHALL BE REQUESTED AND COMPLETED BEFORE DISTURBANCE OF ANY EXISTING GRADE OR ON-GRADE CONSTRUCTION, SLAB DEMOLITION, OR OTHER ACTIVITIES THAT MAY IMPACT BURIED UTILITIES OR COMMUNICATION CONDUITS. THE CONTRACTOR SHALL CONFIRM THAT CONDUIT LOCATE SERVICES HAVE BEEN COMPLETED AND THAT NO POTENTIAL CONFLICTS EXIST BEFORE EXISTING GRADE IS EXCAVATED OR EXISTING FLOORING DEMOLISHED, REGARDLESS OF THE LOCATION ON THE PROPERTY. THIS SHALL BE REVIEWED WITH THE OWNER'S PROJECT REPRESENTATIVE.

9. STATEMENT OF WORK

THE CONTRACTOR SHALL PROVIDE THE COMPLETE ELECTRICAL INSTALLATION OF WORK AS INDICATED IN THE CONSTRUCTION DOCUMENTS. PRIOR TO COMMENCEMENT, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL, ANY SEQUENCE OF WORK, MOP'S (METHOD OF PROCEEDURE) AND/OR COORDINATION SHOP DRAWINGS FOR THE INTENDED WORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING JURISDICTION

10. WORK PERFORMANCE REQUIREMENTS

ANY PENETRATIONS OR OPENINGS IN FIRE-RATED PARTITIONS (WALLS OR FLOORS) SHALL BE CLOSED AT THE END OF EACH WORK DAY, OR WHENEVER IT IS ANTICIPATED THAT NO FURTHER WORK WILL OCCUR IN THAT OPENING DURING THE DAY. THIS INCLUDES ALL TEMPORARY OPENINGS. CLOSURE SHALL BE IN COMPLIANCE WITH 3M FIREPROOFING PRODUCT SPECIFICATIONS. ALL ROOF PENETRATIONS SHALL BE SEALED WATERTIGHT AT THE END OF EACH WORK DAY. ALL TEMPORARY WALL AND FLOOR OPENINGS SHALL BE PROTECTED AND MARKED AT ALL TIMES. PAINTING SHALL BE SCHEDULED SUCH THAT DRYING TIME OCCURS DURING NON-WORKING HOURS FOR OPERATIONS PERSONNEL COMFORT. NO WELDING SHALL TAKE PLACE INSIDE OF OPERATING FACILITY WITHOUT THE WRITTEN AUTHORIZATION OF THE OWNER'S PROJECT REPRESENTATIVE. WELDING SHALL NOT TAKE PLACE WITHIN 5 FEET OF ANY TELECOM EQUIPMENT RACK WITHOUT ADEQUATE PROTECTIVE MEASURES, AS DEEMED APPROPRIATE BY THE OWNER'S PROJECT REPRESENTATIVE. THE CONTRACTOR SHALL CHECK, VERIFY AND LABEL PHASE ROTATION ANY TIME LEADS ARE CONNECTED TO A NEW OR EXISTING AC SERVICE, GENSET, RECTIFIER OR ANY MOTOR-EQUIPPED, 3-PHASE EQUIPMENT. ALL THREE-PHASE PANELS SERVING SINGLE-PHASE LOADS SHALL BE BALANCED WITHIN 10 PERCENT, USING AMMETER READINGS. MEASUREMENTS SHALL BE TAKEN AT THE END OF CONSTRUCTION AND AGAIN AFTER 30 DAYS IN SERVICE.

11. CUTTING AND PATCHING

ALL CUTTING, DRILLING AND PATCHING OF MASONRY STEEL OR IRON WORK BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT, EXCEPT AT THE DIRECTIONS OF THE ARCHITECT/ENGINEER OR THEIR REPRESENTATIVE.

12. AS-BUILT DRAWINGS

THE CONTRACTOR SHALL PROVIDE ALL "AS-BUILT" DRAWINGS SACLED 1/4" MINIMUM AND SUBMIT FOR APPROVAL TO THE ARCHITECT/ENGINEER.

13. FIRESTOPPING

ALL PENETRATIONS IN WALLS, FLOORS, OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH A FIRESAFING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. ONLY PRODUCTS MANUFACTURED BY HILTI SHALL BE PREFERRED (NO SUBSTITUTIONS).

14. TEMPORARY POWER AND LIGHTING

THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND LIGHTING FOR THIS WORK DURING CONSTRUCTION. TEMPORARY LIGHTING SHALL AT LEAST BE THE EQUAL OF (1)100-WATT FIXTURE EVERY 100 SQUARE FEET, WITH A MINIMUM ONE FIXTURE PER ROOM. TEMPORARY LIGHTING SHALL BE LEFT IN PLACE UNTIL PERMANENT LIGHTING IS COMPLETELY OPERATIONAL. COORDINATE TEMPORARY POWER REQUIREMENTS WITH THE OTHER TRADES AND PROVIDE ADEQUATE PROVISIONS. THE CONTRACTOR SHALL PERFORM ALL COORDINATION WITH THE OWNER AND/OR LANDLORD.

15. SWITCH AND RECEPTACLE IDENTIFICATION

PROVIDE MACHINE-PRINTED, PRESSURE SENSITIVE, ABRASION RESISTANT LABEL TAPE ON FACE OF ALL DEVICE PLATES TO IDENTIFY THE PANELBOARD AND CIRCUIT NUMBER FROM WHICH EACH DEVICE IS SERVED.

16. UTILITY COMPANY COORDINATION

THE CONTRACTOR SHALL PERFORM ALL COORDINATION AND SCHEDULING OF THE INSTALLATION OF THE NEW ELECTRICAL SERVICE WITH THE LOCAL UTILITY COMPANY.

17. EXCAVATION/UNDERGROUND UTILITIES

UNDERGROUND UTILITY LOCATE SERVICES SHALL BE REQUESTED AND COMPLETED BEFORE DISTURBANCE OF ANY EXISTING GRADE OR ON-GRADE CONSTRUCTION, SLAB DEMOLITION, OR OTHER ACTIVITIES THAT MAY IMPACT BURIED UTILITIES OR FIBER-OPTIC CABLE CONDUITS. THE CONTRACTOR SHALL CONFIRM THAT UTILITY LOCATE SERVICES HAVE BEEN COMPLETED BEFORE EXISTING GRADE IS EXCAVATED OR EXISTING FLOORING IS DEMOLISHED, DRILLED, OR CUT, REGARDLESS OF THE LOCATION ON THE PROPERTY.

18. PANELBOARDS

ALL PANELBOARDS IN WHICH WORK OCCURS PER THESE DOCUMENTS, SHALL BE PROVIDED WITH UPDATED-TYPEWRITTEN DIRECTORIES. GIVEN ONLY FOR CLARITY AND QUANTITY, CIRCUIT NUMBERS SHOWN IN THE PLANS MAY NOT NECESSARILLY REPRESENT ACTUAL CIRCUIT NUMBERS IN PANELBOARD. FROM FLUSH-MOUNTED PANELBOARDS, STUB-OUT ONE 3/4" CONDUIT INTO THE CEILING CAVITY FOR EACH SET OF 3 SPARES AND/OR SPACES OR FRACTION THEREOF.

19. CABLEING

UNLESS NOTED OTHERWISE, ALL WIRE AND CABLE SHALL BE 600-VOLT COPPER CONDUCTORS WITH TYPE "THHN/THWN" INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG FOR LIGHTING AND POWER CIRCUITS AND #14 AWG FOR CONTROL CIRCUITS. PROVIDE GROUNDING FOR CIRCUITS PER THE NEC. UNLESS SPECIFICALLY NOTED OTHERWISE IN THE PLANS, ALL CABLING SHALL BE (2) #12 AND (1) #12 G IN 3/4" C.

20. CABLE SIZING

BRANCH CIRCUIT CABLE SIZE SHALL BE ADJUSTED BASED ON THE CONDUCTOR LENGTH, AS INDICATED BELOW:

A.) 120/208V CABLING FROM PANEL TO ELECTRICAL LOAD SHALL BE AS FOLLOWS, UNLESS OTHERWISE INDICATED:

LESS THAN 100 FEET, USE #12 AWG MINIMUM
FROM 100 TO 200 FEET, USE #10 AWG MINIMUM
FROM 200 TO 250 FEET, USE #8 AWG MINIMUM

B.) 277/480277/480V CABLING FROM PANEL TO ELECTRICAL LOAD SHALL BE AS FOLLOWS, UNLESS OTHERWISE INDICATED:

FROM 0 TO 150 FEET, USE #12 AWG MINIMUM
FROM 150 TO 250 FEET, USE #10 AWG MINIMUM
FROM 250 TO 300 FEET, USE #8 AWG MINIMUM

21. COMMUNICATIONS WIRING CONDUIT SIZING

ALL DATA AND TELEPHONE OUTLET WIRING SHALL TERMINATE IN THE DATA/MDF ROOM. ALL DATA AND TELEPHONE WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AND SHALL BE INSTALLED IN CONDUIT. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUITS FOR DATA AND TELEPHONE OUTLETS AS FOLLOWS:

3 CABLES-3/4"C	13 CABLES-1 1/2"C	47 CABLES-3"C
5 CABLES-1"C	21 CABLES-2"C	63 CABLES-3 1/2"C
9 CABLES-1 1/4"C	30 CABLES-2 1/2"C	81 CABLES-4"C

22. CONDUIT/RACEWAY SYSTEMS

THE CONDUIT ROUTINGS INDICATED ARE ONLY DIAGRAMMATIC IN NATURE. FIELD CONDITIONS SHALL DICTATE THE CONTRACTOR'S EXACT CONDUIT ROUTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER THE NEC AND FOR COORDINATION WITH OTHER DISCIPLINES. ALL EXPOSED RACEWAYS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS OR STRUCTURAL MEMBERS, SUCH AS TO FOLLOW STRUCTURAL SURFACE CONTOURS AND NOT OBSTRUCT PASSAGEWAYS. MULTIPLE RACEWAYS SHALL BE RUN TOGETHER, IN GROUPING. ALL EXPOSED CONDUIT SHALL BE ROUTED PERPENDICULAR, PARALLEL AND TIGHT TO COLUMNS AND BEAMS. ALL EXPOSED CONDUIT SHALL BE COORDINATED WITH THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION. EXTRA TIME SHOULD BE ALLOWED FOR THIS REVIEW AND APPROVAL. NO ADDITIONAL COST TO OWNER WILL BE ALLOWED DUE TO LACK OF COORDINATION. ALL CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT) AND MINIMUM SIZE SHALL BE 3/4" UNLESS NOTED OTHERWISE. CONNECTORS AND COUPLINGS SHALL BE INSULATED-THROAT COMPRESSION TYPE ONLY. RIGID GALVANIZED-STEEL (RGS) CONDUIT SHALL BE USED WHEN CONDUIT IS INSTALLED IN OUTDOOR AREAS OR WHERE OTHERWISE EXPOSED TO PHYSICAL HARM. EMERGENCY SYSTEMS SHALL BE RUN IN SEPARATE RACEWAY/CONDUIT SYSTEM(S). A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE PULLED WITH THE CIRCUIT CONDUCTORS, WHETHER OR NOT INDICATED ON THE DRAWINGS. METAL RACEWAY OR CABLE ARMOR/SHEATH SHALL NOT BE USED AS THE PRIMARY EQUIPMENT GROUNDING CONDUCTOR. RACEWAY SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONTINUOUS AND SHALL BE BONDED AT ALL POINTS TO THE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH THE APPLICABLE PROVISIONS IN ARTICLE 250 OF THE NEC.

23. EQUIPMENT

ALL MATERIALS AND EQUIPMENT PROVIDED IN THIS WORK SHALL BE NEW AND SHALL HAVE THE APPROPRIATE UL LISTING AND/OR FM APPROVAL. UNLESS NOTED OTHERWISE, DISCONNECT/SAFETY SWITCHES SHALL BE NON-FUSED HEAVY-DUTY 600-VOLT TYPE. INDOOR ENCLOSURES SHALL BE NEMA 1 AND OUTDOOR ENCLOSURES SHALL BE NEMA 3R.

24. MECHANICAL EQUIPMENT

ALL MECHANICAL EQUIPMENT WILL BE INSTALLED BY THE DIVISION 15 CONTRACTOR. COORDINATE THE EXACT LOCATION AND NATURE OF ANY REQUIRED ELECTRICAL CONNECTION TO BE PROVIDED FOR MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN. VERIFY THE ELECTRICAL SERVICE REQUIRED FOR EACH ITEM OF MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO FURNISHING SUCH POWER. REFER TO MECHANICAL DRAWING FOR MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. MAKE CONNECTION AND PROVIDE APPROPRIATE WIRE, CONDUIT AND OVERCURRENT PROTECTION FOR EQUIPMENT. THE DISCONNECTING MEANS FOR ALL MECHANICAL EQUIPMENT SHALL BE ACCESSIBLE AND HAVE CLEARANCES AS REQUIRED BY THE NEC. MOTORS SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 15 WORK, WITH POWER CONNECTED UNDER DIVISION 16 WORK. FINAL CONNECTION SHALL BE MADE WITH SUITABLE LENGTH OF LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT. ALL MOTOR BRANCH CIRCUITS, ETC., SHALL BE FIELD-VERIFIED FOR PROPER SEQUENCE AND MOTOR ROTATION. PHASE SEQUENCE SHALL BE A-B-C (VIEWED FROM FRONT: LEFT TO RIGHT, TOP TO BOTTOM, FRONT TO REAR). REFER TO MECHANICAL DRAWINGS FOR MOTORS THAT ARE TO BE INTERLOCKED.

25. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES, CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, THREADED RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURES, LADDER TRAY OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL THREADED RODS SHALL BE A MINIMUM OF 3/8" IN DIAMETER. ALL LIGHTING FIXTURES AT SUSPENDED CEILINGS SHALL BE PROPERLY SUPPORTED IN ACCORDANCE WITH 2006 NEC ARTICLES 410, 300-11 ETC.

GENERAL ELECTRICAL NOTES
(APPLICABLE TO ALL ELECTRICAL DRAWINGS)

1 EMERGENCY SIGNS REQUIRED FOR ELEVATORS SHALL BE 7 INCHES BY 5 INCHES AND READ AS FOLLOWS: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.

2 DOORS INTO ELECTRICAL CONTROL PANEL ROOMS SHALL BE MARKED WITH A PLAINLY VISIBLE AND LEGIBLE SIGN STATING ELECTRICAL ROOM OR SIMILAR APPROVED WORDING.

3 THE DISCONNECTING MEANS FOR EACH SERVICE, FEEDER OR BRANCH CIRCUIT ORIGINATING ON A SWITCHBOARD OR PANELBOARD SHALL BE LEGIBLY AND DURABLY MARKED TO INDICATE ITS PURPOSE UNLESS SUCH A PURPOSE IS CLEARLY EVIDENT.

4 EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES AND HAVE EMERGENCY POWER BACKUP. PROPER LOCATION AND EFFECTIVENESS OF EMERGENCY LIGHTING AND FIRE EXTINGUISHERS WHERE APPLICABLE WILL BE VERIFIED DURING THE INSPECTION PROCESS. CHNGES OR ADDITIONAL EQUIPMENT MAY BE REQUIRED.

5 ALL NEW ELEVATORS SHALL BE QUIPED WITH EMERGENCY KEY OPENING DEVICE AT ALL LANDINGS. THE LOCATION AND SPECIFIC TYPE OF DEVICE SHALL BE APPROVED BY THE FIRE DEPARTMENT.

6 IF THE ELEVATOR USES AN AUTOMATIC DIALER, THE TEN DIGIT NUMBER 847.590.3470 SHALL BE USED. TH BIDIRECTIONAL COMMUNICATION IS AVAILABLE AND IS USED, THE ELEVATOR SHOULD CALL 911. THE PHONE LINE USED TO DIAL 911 MUST HAVE THE CORRECT ADDRESS INFORMATION AFFILIATED WITH THAT PHONE LINE.

7 FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED UNDER A SEPARATE PERMIT APPLICATION THE REVIEW AND APPROVAL PRIOR TO ANY INSTALLATION.

8 DUCT SMOKE DETECTORS SHALL BE LOCATED IN THE MAIN RETURN AIR AND EXHAUST AIR PLENUM OF EACH AIR CONDITIONING SYSTEM HAVING A CAPACITY GREATER THAT 2,000 CUBIC FEET PER MINUTE (CFM). DETECTORS SHALL BE LOCATED IN THE SERVICEABLE AREA DOWNSTREAM OF THE LAST DUCT INLET AND AT EACH CONNECTION TO A VERTICAL DUCT OR RISER SERVING TWO OF MORE STORIES FROM A RETURN AIR DUCT OR PLENUM OF AN AIR-CONDITIONING SYSTEM. SMOKE DETECTORS INSTALLED IN THE DUCTS SHALL BE LISTED FOR THE AIR VELOCITY, TEMPERATURE AND HUMIDITY PRESENT IN THE DUCT. DUCT SMOKE DETECTORS SHALL BE ACCESSIBLE AND CONNECTED TO THE BUILDINGS FIRE ALARM CONTROL UNIT WHEN A FIRE ALARM SYSTEM IS REQUIRED. ACTIVATION OF A DUCT DETECTOR SHALL INITIATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL. DUCT SMOKE DETECTORS SHALL NOT BE USED AS A SUBSTITUTE FOR REQUIRED OPEN AREA DETECTION.

9 ALL WORK MUST COMPLY WITH THE 2005 NATIONAL ELECTRICAL CODE 2008 STATE OF INDIANA ELECTRICAL CODE AND ANY ELECTRICAL AMENDMENTS FOUND IN THE MUNICIPAL CODE.

10 ALL CONDUCTORS SHALL BE COPPER

11 ½" INCH PLYWOOD SHALL BE INSTALLED BEHIND ALL WALL MOUNTED MAIN DISCONNECT PANELBOARDS. SECTION: 91(D).

12 ALL UNDERGROUND CONDUIT WITHIN THE FOUNDATION WALLS SHALL BE RIGID GALVANIZED STEEL SECTION: VAH 74(A)

13 RECEPTACLES AT THE EXTERIOR ROOF DECK AND ALL BALCONIES SHALL BE GFCI.

14 WATER PIPES AND GAS PIPE OF THE WATER HEATERS SHALL BE BONDED TOGETHER. SECTION: NEC 250.104(B)

15 DISHWASHERS SHALL HAVE A DISCONNECT SWITCH FOR EACH UNIT INCLUDING THE COMMUNITY ROOM.

16 APPLIANCES AND EQUIPMENT SHALL HAVE A DISCONNECT SWITCH INCLUDING EACH FURNACE, WATER HEATER AND AIR CONDITIONER.

17 RESIDENTIAL GENERAL LIGHTING SHALL NOT HAVE MOTE THAN 10 DEVICES PER CIRCUIT WITH A RATING OF NOT MORE THAT 15 AMPS.

18 ELECTRICAL BOXES SHALL BE AT LEAST 4"X4"X1 ½" IN SIZE.

19 GROUNDING CONDUCTORS SHALL BE INSULATED AND GREEN OR GREEN WITH YELLOW STRIPE.

20 WIRING FOR VOLTAGE ID: 120V-208V-240V SHALL BE BLACK,RED, AND BLUE WITH THE NEUTRAL WHITE ONLY. SECTION: 113(A)

21 EQUIPMENT GROUNDING CONDUCTOR FOR EACH PARKING LOT LIGHT POLE SHALL BE INSTALLED FROM THE ELECTRICAL PANEL TO EACH LIGHT POLE. THE CONDUCTOR SHALL BE SIZED PER 2008 STATE OF INDIANA ELECTRICAL CODE NEC TABLE 250.122 BASED ONT E SIZE OF THE CIRCUIT FOR THE PARKING LOT LIGHTS. BY VILLAGE ORDINANCE THE EQUIPMENT GROUNDING CONDUCTOR SHALL HAVE INSULATION OF GREEN OR GREEN WITH YELLOW STRIPE. SECTION: NEC 250.110 AND 410.15(B)

22 EQUIPMENT BONDING JUMPER SIZED ACCORDING TO 2008 TABLE 250.122 SHALL BOND EACH METAL LIGHT POLE TO THE EQUIPMENT GROUNDING CONDUCTOR.

23 LOCATION OF THE METER CLOSETS FOR EACH FLOOR SHALL BE PROPERLY LABELED.

24 ONE GROUND CONDUCTOR SHALL RUN UNINTERRUPTED TO THE WATER SERVICE.

25 SMOKE DETECTORS SHALL BE ARC-FAULT CIRCUIT INTERRUPTER PROTECTED.

NERI ARCHITECTS

PROJECT #	2133
DATE:	05.06.22

ROBERT N. RAFSON 062-049931 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

	05.06.22	ISSUED FOR PERMIT
	11.11.21	PROGRESS SET
▲		REVISIONS
DRAWN BY:		SM/GV
APPROVED BY:		SM/GV
SCALE:		AS NOTED
DESCRIPTION:		ELEC SCHEDULES, NOTES & DETAILS
SHEET NO.		E-5

LIGHTING CONTROLS SCHEDULE

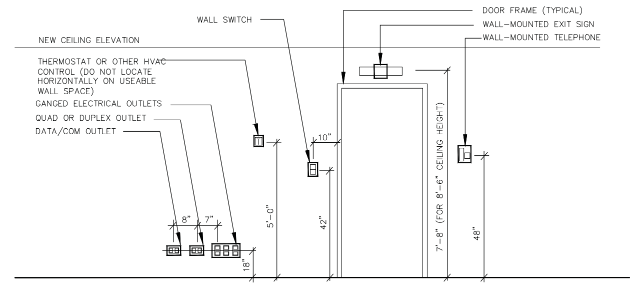
LIGHTING CONTROL NOTES:

1. ALL SENSORS SELF-ADAPTING.
2. VERIFY NUMBER OF CONTROL UNITS.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE 1/4" SCALED LIGHTING CONTROL SHOP DRAWINGS CONSISTING OF ENGINEERED PLANS AND LIGHTING CONTROL DEVICE SCHEDULE FROM LIGHTING CONTROL MANUFACTURER FOR ENGINEER'S REVIEW.

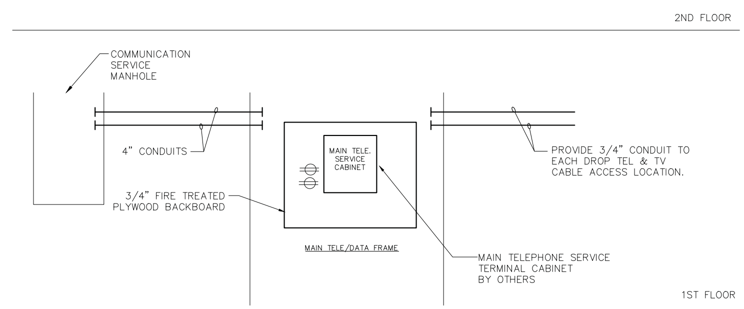
SENSOR TAG	MANUFACTURER AND CATALOG NUMBER	FIELD VIEW	VOLT	LOCATION	REMARKS
	SENSOR SWITCH ACUITY #WSX-PDT	SHORT: 20'	120 VAC	SMALL TOILET ROOMS, SMALL STORAGE ROOMS, UTILITY AND AUX. ROOMS	1-POLE DUAL TECHNOLOGY (PIR/MICROPHONICS) OCCUPANCY SENSOR, SELF-ADJUSTING WHITE, 120/277 VAC 800/1200 WATTS PER CIRCUIT WITH 180 DEGREE COVERAGE AND BUILT-IN MANUAL OVERRIDE CONTROL TO MANUALLY SHUT LIGHTS OFF WHEN DESIRED.
2P	SENSOR SWITCH ACUITY #WSX-PDT-2P	SHORT: 20'	120 VAC	CONF. ROOMS	2-POLE DUAL TECHNOLOGY (PIR/MICROPHONICS) OCCUPANCY SENSOR, SELF-ADJUSTING WHITE, 120/277 VAC 800/1200 WATTS PER CIRCUIT WITH 180 DEGREE COVERAGE AND TWO BUILT-IN MANUAL OVERRIDE CONTROL TO MANUALLY SHUT EITHER CIRCUIT OFF WHEN DESIRED.
OS	SENSOR SWITCH ACUITY WV-16	LONG: 30' SHORT: 12'	120 VAC	SURFACE CEILING GARAGE, LOCKER	DUAL TECHNOLOGY OCCUPANCY SENSOR, EXTENDED RANGE, SELF ADAPTING, UL LISTED POWER PACK. PROVIDE VIDE VIEW SENSOR MICROPHONIC-DUAL TECHNOLOGY-12 TO 24 VDC/VAC

SENSOR NOTES

1. **SENSORS IN ELECTRICAL/MECHANICAL LOCATIONS NEED TO BE VERIFIED WITH AUTHORITY HAVING JURISTICTION. REFER TO NEC 110.26.D): "ILLUMINATION. ILLUMINATION SHALL BE PROVIDED FOR ALL WORKING SPACES ABOUT SERVICE EQUIPMENT, SWITCHBOARDS, PANELBOARDS, OR MOTOR CONTROL CENTERS INSTALLED INDOORS. ADDITIONAL LIGHTING OUTLETS SHALL NOT BE REQUIRED WHERE THE WORK SPACE IS ILLUMINATED BY AN ADJACENT LIGHT SOURCE OR AS PERMITTED BY 210.70(A)(1), EXCEPTION NO. 1, FOR SWITCHED RECEPTACLES. IN ELECTRICAL EQUIPMENT ROOMS, THE ILLUMINATION SHALL NOT BE CONTROLLED BY AUTOMATIC MEANS ONLY."**
2. **SENSORS ON DRAWINGS WERE PLACED WITH CURRENT INFORMATION. ADDITIONAL SENSORS MAY BE REQUIRED TO PROVIDE COMPLETE COVERAGE DEPENDING ON CHANGES, FINAL PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT AND SHELVING HEIGHT/PLACEMENT.**
3. **SENSOR MASKING KITS MAY BE REQUIRED TO LIMIT COVERAGE DEPENDING ON THE PROJECT REQUIREMENTS.**



STANDARD ELECTRICAL MOUNTING HEIGHTS
NOT TO SCALE



TELEPHONE / LOW VOLTAGE SYSTEM ONE-LINE RISER DIAGRAM
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

FIXT. TAG	SYMBOL	LAMP(S)			VOLTS	MOUNTING		LOCATION	MANUFACTURER	CATALOG NUMBER	REMARKS
		QTY.	TYPE	TOTAL WATTS		TYPE	HEIGHT				
F1			LED	56	120	RECESSED	CEILING	THROUGHOUT	LIGHTOLIER		
F2			LED	28	120	RECESSED	CEILING	THROUGHOUT	LIGHTOLIER		
F3	NOT USED										

EXIT AND EMERGENCY LIGHTING FIXTURE SCHEDULE

FIXT. TAG	SYMBOL	LAMP(S)			VOLTS	MOUNTING		MANUFACTURER	CATALOG NO	REMARKS
		QTY.	TYPE	TOTAL WATTS		TYPE	HEIGHT			
EM		2	24W SEALED-BEAM		120	SURFACE WALL	8'-6"	SURE-LITES	HR12170C	EMERGENCY WALL PACK LIGHT FIXTURE WITH METALLIC ENCLOSURE; SEALED LEAD-CADMIUM 120 MINUTE BATTERY AND INTEGRAL TEST SWITCH
EX			LED SEALED-BEAM		120	SURFACE WALL	8'-6"	SURE-LITES		EMERGENCY EXIT SIGNS WITH INTEGRAL BATTERY PACK AS APPROVED BY LOCAL CODE AUTHORITIES

LIGHTING FIXTURE SCHEDULE NOTES:

1. ELECTRICAL CONTRACTOR SHALL SUBMIT CATALOG CUTS TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING LIGHTING FIXTURES.
2. ALL BALLASTS SHALL BE PROGRAMMABLE RAPID START, ELECTRONIC ENERGY SAVING TYPE.
3. ALL EXIT SIGNS AND EMERGENCY LIGHT FIXTURES SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODE AUTHORITY. ALL EXIT SIGNS SHALL BE INSTALLED IN A VISIBLE LOCATION, WITHOUT ANY OBSTRUCTIONS IN ORDER TO FACILITATE VIEWING. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT STEMS WHERE NECESSARY TO DROP A SIGN BELOW AN OBSTRUCTION.
4. NOT USED
5. NOT USED
6. ELECTRICAL CONTRACTOR SHALL PROVIDE SUBMITTAL ON FULL LIGHTING FIXTURE PURCHASE FOR ARCHITECT'S APPROVAL PRIOR TO ORDER.
7. FIXTURES SHALL HAVE APPROPRIATE UL LABEL, DAMP, OR WET AS REQUIRED BY LOCAL CODES.
8. PROVIDE LAMPS FROM: OSRAM SYLVANIA, GE OR PHILIPS UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL VERIFY FINAL VOLTAGES AND CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURES.
10. CEILING THICKNESS IN EXCESS OF 3/4" SHALL BE IDENTIFIED IN WRITING BY CONTRACTOR/ARCHITECT.
11. FIXTURES LOCATED IN AN INSULATED CEILING AREA, SHALL HAVE AN IC HOUSING (ELECTRICAL CONTRACTOR TO COORDINATE).
12. FIXTURES SHALL BE ORDERED WITH THE APPROPRIATE BALLASTS THAT HAVE UL AND CBM LABELS. BALLASTS SHALL CONFORM TO LOCAL CODE REQUIREMENTS FOR PERFORMANCE, SWITCHING, AND WIRING (I.E. TANDEM).
13. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR LIGHTING FIXTURES LOCATED IN A FIRE-RATED CEILING.
14. WALLS DIRECTLY ILLUMINATED SHALL BE INSTALLED AND FINISHED IN A MANNER TO ELIMINATE SHADOWS OR BLEMISHES (I.E. HANG DRY WALL VERTICALLY).
15. THE ARCHITECT AND LIGHTING DESIGNER SHALL APPROVE FIXTURE SUBSTITUTIONS PRIOR TO BID. CONTRACTOR SHALL SUPPLY A SAMPLE AND/OR PHOTOMETRIC DATA IF REQUESTED. IF SUBSTITUTION IS REJECTED, CONTRACTOR SHALL PROVIDE SPECIFIED PRODUCT.
16. FIXTURES SHALL INCLUDE ACCESSORIES FOR INSTALLATION ACCORDING TO LOCAL AND NATIONAL CODES.
17. PRIOR TO ORDERING LIGHTING EQUIPMENT, THE CONTRACTOR SHALL VERIFY LOCATIONS AND RECESS DEPTHS.
18. LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE.
19. VERIFY EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.

NERI ARCHITECTS

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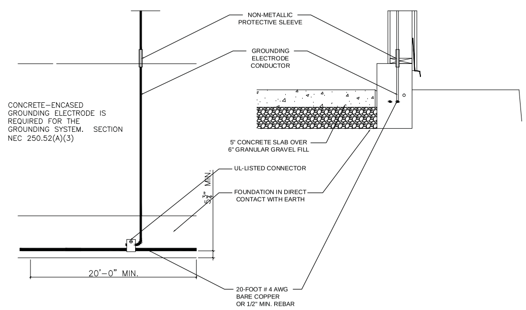
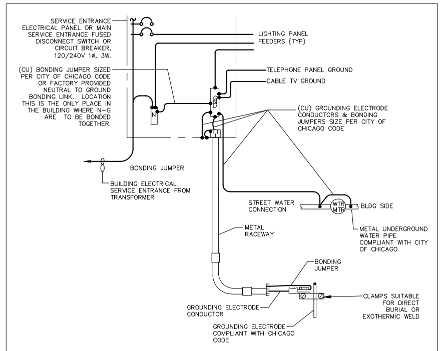
SHEET NO.	E-6



CONCRETE ENCASED ELECTRODE DETAIL

NOTE TO SCALE



BUILDING GROUNDING DETAIL

NOT TO SCALE

GENERAL GROUNDING NOTES

1. TWO-HOLE LONG BARREL (DOUBLE INDENT) BOLTED-TYPE HYDRAULIC COPPER COMPRESSION CONNECTORS SHALL BE USED FOR CONDUCTORS LARGER THAN #8 AWG. ALL COMPRESSION CONNECTORS FOR CABLE SIZES #1/0 AWG AND LARGER SHALL EMPLOY HEX OR CIRAIMFERENTIAL TYPE CRIMPS, AND SHALL HAVE AN INSPECTION HOLE BETWEEN THE TONGUE AND BARREL. THE CABLE SHALL BE COMPLETELY INSERTED INTO THE CONNECTOR BEFORE THE CRIMPS ARE MADE. CONNECTORS SHALL BE AS MANUFACTURED BY BURNDY, TYPE YA "HYLUG", AND ONLY ON STRANDED WIRE. ALL SOLID WIRE GROUND CONNECTIONS MUST BE EXOTHERMIC ALLY WELDED OR, IF RUN IN THE INTERIOR, SOLDERED.
2. USE HYDRAULIC COPPER COMPRESSION H-TAP CONNECTORS AS MANUFACTURED BY BURNDY, TYPE YH "H COPPER CRIMPIT". PROVIDE FLAME RETARDANT INSULATING COVERS. PROVIDE THOMAS AND BETTS HARD COVER TYPE "HTC".
3. ALL COMPRESSION AND MECHANICAL CONNECTIONS SHALL BE COATED WITH THE CORROSION PREVENTATIVE COMPOUND NO-OX-ID "A", AS MANUFACTURED BY DEARBORN CHEMICAL COMPANY.
4. ALL GROUND CONDUCTORS SHALL BE COPPER WITH GREEN (COLOR) INSULATION. GREEN-INSULATED GROUND WIRE FOR ALL SIZES IS AVAILABLE THROUGH QUAD CABLCON (TROY, MI (800) 969-9220) OR RELTEC SERVICES (800-927-2780). GROUND CONDUCTORS LARGER THAN #1 SWG SHALL BE TYPE RHH/RHW (BRAIDED-CLOTH JACKET, SYNTHETIC RUBBER INSULATION).
5. ALL GROUNDING CONDUCTORS SHALL BE IN METALLIC CONDUIT, UNLESS OTHERWISE NOTED. GROUND CONDUCTORS SHALL NOT BE RUN CONCEALED IN SLABS, COLUMNS, OR WALLS. USE RIGID GALVANIZED STEEL CONDUIT SLEEVES WHERE GROUND CONDUCTORS PENETRATE WALLS OR FLOOR SLABS.
6. METALLIC STRAPS SHALL BE USED TO SEAIRE GROUND CONDUCTOR CONDUITS EVERY 18" HORIZONTALLY AND EVERY 9" VERTICALLY TO THE BUILDING COLUMNS OR WALLS. IF METALLIC STRAPS ARE USED, THEY SHALL BE OF THE TYPE WHICH DO NOT COMPLETELY ENCIRCLE THE CONDUCTOR. PLASTIC "CLIC" CONNECTORS BY LITCHFIELD INTERNATIONAL COMPANY (800-345-CLIC) ARE ACCEPTABLE FOR USE AS CONDUIT AND CONDUCTOR SUPPORTS. DO NOT USE CONDUIT, CABLE TRAY, MECHANICAL DUCT, OR PLASTIC TIE WRAPS TO SEAIRE GROUND CONDUCTORS.
7. THE MINIMUM BEND RADII ON GROUND CONDUCTORS SHALL BE AS FOLLOWS:

#12 - #6	6"
#4 - #4/0	12"
#250- #750 KCMIL	24

8. PACK OPENINGS AROUND GROUND CONDUCTOR PENETRATIONS OF FLOOR SLABS OR WALLS WITH FIRE RETARDANT MATERIAL. APPROVED FIRE RETARDANT MATERIAL SHALL BE HILTI FIRE BARRIER CAULK (NO SUBSTITUTIONS).
9. TAG ALL GROUND CONDUCTOR TERMINATIONS AT GROUND BAR WITH GRAY OVAL FIBER "FAR-END DESTINATION" 145P TAGS AS MANUFACTURED BY ONE OF THE FOLLOWING:

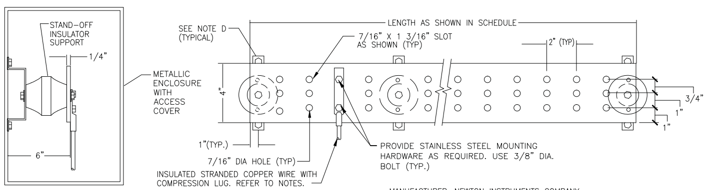
   A. ANIXTER (BLOOMINGTON, ILLINOIS) TEL. # 309/662-5162 OR 800/ANIXTER PART #847755246

   B. MARCONI (OHIO) TEL. # 800/927-2780 PART #847755246

   GROUND SERVICES MAY BE STAMPED, ENGRAVED, OR LEGIBLY/NEATLY HANDWRITTEN ON FIBER TAG. AT GROUND BAR TERMINATIONS ALSO PROVIDE ENGRAVED BRASS "DO NOT DISCONNECT" TAGS MANUFACTURED BY:

   C. ANIXTER (MANUFACTURED BY FLEXTRONICS AND SOLD BY ANIXTER) PART # P0411719

   D. GUS BERTHOLD ELECTRIC COMPANY (CHICAGO ILLINOIS) TEL. # 312/243- 5767 (BLANK TAGS PURCHASED BY GBE CO. AND STAMPED)
10. ALL TAGS AT GROUND BAR TERMINATIONS SHALL BE SEAIRED WITH 9-PLY OR 12-PLY TWINE/CORD MANUFACTURED BY ANIXTER. TIE WRAPS SHALL NOT BE USED.
    9-PLY PART # 095017, 12-PLY PART # 224758.
11. THE MAIN BUILDING GROUND BAR (MGB) SHALL BE THE EXTENSION OF THE BUILDING GROUNDING SYSTEM AND SHALL SERVE AS THE MAIN POINT OF BONDING WITHIN THE FACILITY AND SHALL COMPLY WITH CHICAGO BUILDING CODE. THE MGB SHALL BE THE COMMON GROUND POINT TO WHICH ALL GROUND POINTS FOR THE FACILITY ARE BONDED.
12. THE ROUTE OF THE BONDING CONDUCTORS FROM THE MGB TO THE FACILITY GROUND RING SHALL BE AS SHORT AND STRAIGHT AS PRACTICALLY POSSIBLE.
13. THE MGB WILL SHALL BE CONFIGURED TO MAINTAIN SEPARATION BETWEEN SURGE PRODUCERS, ABSORBERS, NON-ISOLATED AND ISOLATED GROUNDS. THE MGB SHALL BE PERMANENTLY AND APPROPRIATELY LABELED AND IDENTIFY WITH "P", "A", "N", AND "I" SECTIONS OF THE MGB.
14. BONDING CONDUCTORS BETWEEN THE MGB AND OTHER ANCILLARY GROUND BARS OR EQUIPMENT BAYS SHALL RUN IN THE STRAIGHTEST ROUTE MINIMIZING THE TOTAL LENGTH OF THE CONDUCTOR.
15. ALL GROUNDING SYSTEM CABLE RUNS THAT ARE ROUTED THROUGH WALLS, CEILINGS OR FLOORS SHALL BE PROTECTED BY METALLIC CONDUITS OR SLEEVES.
16. CONNECTIONS TO THE BURIED DELTA GROUND RING SHALL BE EXOTHERMIC ALLY WELDED BY TECHNICIANS CERTIFIED ON THE PROCESS. CONNECTIONS OTHER THAN EXOTHERMIC WELD SHALL BE LOCATED SO AS TO FACILITATE PERIODIC INSPECTION AND MAINTENANCE.
17. ALL BURIED CONNECTIONS SHALL BE EXOTHERMIC WELDS. ALL EXPOSED MECHANICAL AND/OR HIGH COMPRESSION CONNECTIONS SHALL BE TREATED WITH A PROTECTIVE, ANTI-OXIDANT COATING. ALL EXOTHERMIC WELDS TO GALVANIZING SURFACES SHALL BE SPRAYED WITH GALVANIZING PAINT.



GROUND BAR DETAIL NOTES:

A. GROUND BAR SHALL BE MOUNTED WITHIN A METALLIC ENCLOSURE WITH HINGED COVER.

B. CLEAN AND BURNISH GROUND BAR AND UTILIZE LIGHT COATING OF ANTI-OXIDATION GREASE PRIOR TO ATTACHING ANY HARDWARE.

C. ATTACH LUGS TO BAR WITH 3/8" DIAMETER STAINLESS STEEL OR CADMIUM-PLATED BOLTS, NUTS AND WASHERS. NICKEL PLATED HARDWARE SHALL NOT BE ACCEPTABLE. UTILIZE TWO FLAT AND ONE LOCK WASHER FOR EACH BOLTED CONNECTION.

D. 5/16" DIA. X 3 1/2" HEX HEAD CS WITH 3/8" DIA. PIPE SPACER 2" LONG AND 5/16" DIA. HS DROP IN ANCHOR.

E. PROVIDE BUS BARS OVER 20" IN LENGTH WITH ADDITIONAL STAND OFF INSULATOR SUPPORTS, AT LEAST TWO OR AS SPECIFIED IN THE GROUND BAR SCHEDULE.

MANUFACTURER: NEWTON INSTRUMENTS COMPANY, INC. TEL: 919-575-6426 (PART NO. A-10389)

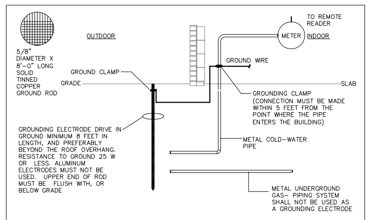
PART NO.	DESCRIPTION
A-6065	WALL MTG. BRKT.
3061-4	INSULATORS
3015-1	5/8-11 X 1 HHCS
3015-8	LOCKWASHERS-5/8"

PROVIDE PART QUANTITIES AS REQUIRED FOR EACH GROUND BAR ASSEMBLY.

GROUND BAR SCHEDULE			
TAG	LENGTH (INCHES)	THICKNESS (INCHES)	MOUNTING HEIGHT (IN)
MGB	24"	1/4"	18" A.F.F.

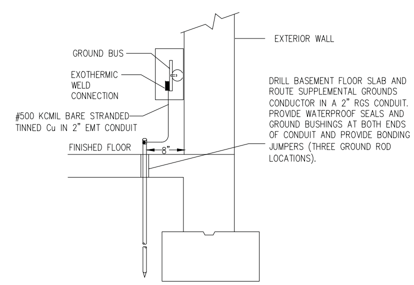
MAIN GROUND BAR DETAIL

NOT TO SCALE



COMPONENTS OF SERVICE GROUNDING SYSTEM

NOT TO SCALE

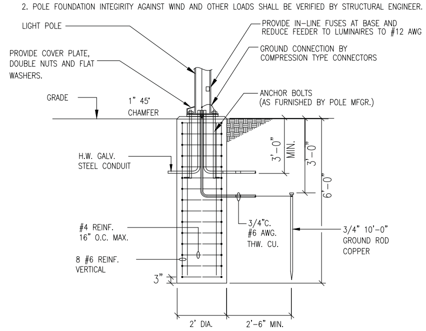


GROUND BUS CONNECTION TO BURIED GROUND ROD DETAIL

NOT TO SCALE

NOTES:

1. CO-ORDINATE WITH STRUCTURAL ENGINEER FOR ALL DIMENSIONS SHOWN.
2. POLE FOUNDATION INTEGRITY AGAINST WIND AND OTHER LOADS SHALL BE VERIFIED BY STRUCTURAL ENGINEER.



PARKING LOT LIGHTING POLE BASE

BUCK-BOOST TRANSFORMER SCHEDULE							
EQUIPMENT TAG	TRANSFORMER TAG	EQUIPMENT DESCRIPTION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	TRANSFORMER CATALOG NUMBER	SECONDARY WIRE	RECEPTACLE / DISCONNECT SWITCH
A	T-A	WELDER	208 V 1 PH	230 V 1 PH	[illegible]	[illegible]	[illegible] AMP RECPT
B	T-B	4 POST LIFT	208 V 1 PH	230 V 1 PH	[illegible]	[illegible]	HARD WIRED 30 AMP 2 POLE
B	T-C	2 POST LIFT	208 V 1 PH	230 V 1 PH	[illegible]	[illegible]	HARD WIRED 30 AMP 2 POLE
C	T-[illegible]	AIR COMPRESSOR	208 V 3 PH	230 V 3 PH	[illegible]	[illegible]	HARD WIRED [illegible] AMP 3 POLE
D	T-[illegible]	CUTTER	208 V 1 PH	230 V 1 PH	[illegible]	[illegible]	[illegible] AMP RECPT

NERI ARCHITECTS

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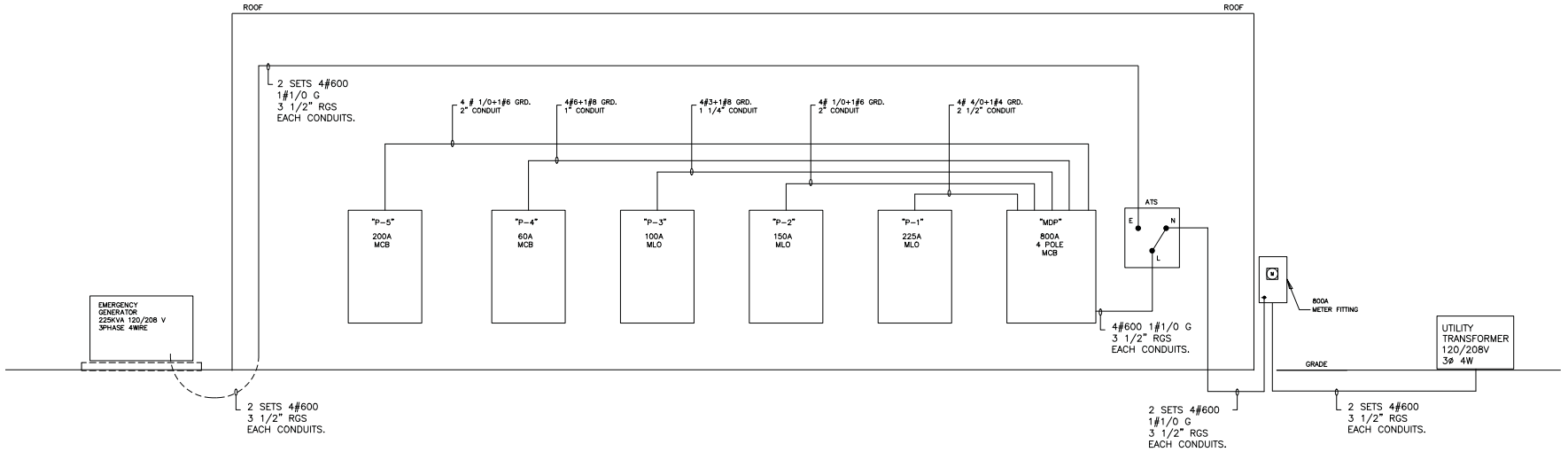
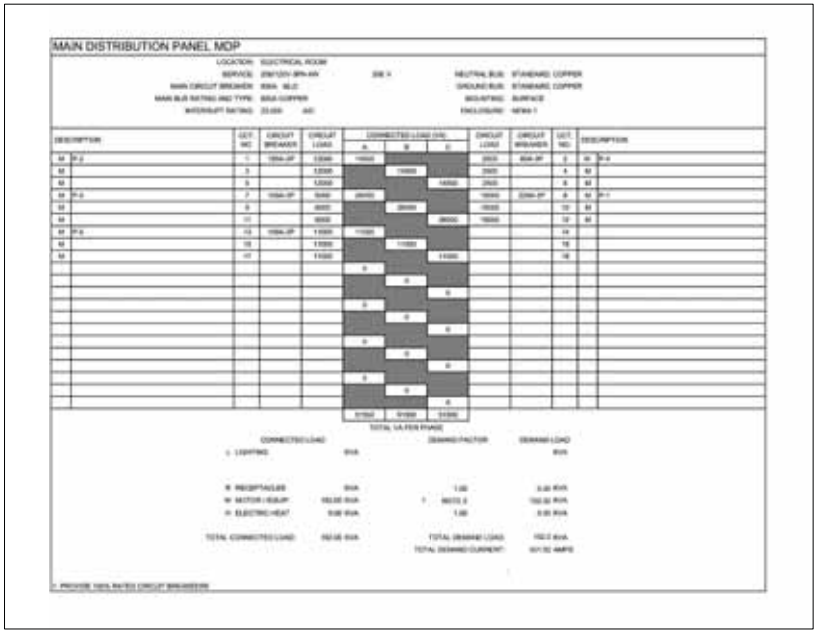
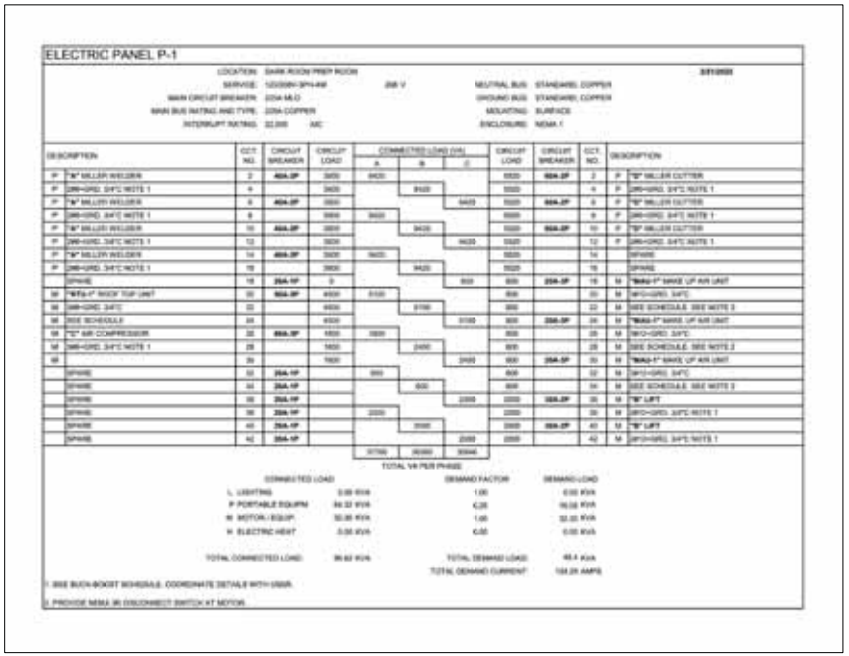
SHEET NO.	E-7



SINGLE LINE RISER DIAGRAM – 400A @ 120/208V, 3 PHASE, 4 WIRE



MAIN DISTRIBUTION PANEL MDP



ELECTRIC PANEL P-1

NERI ARCHITECTS

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APPROVED BY:	SMGV
SCALE:	AS NOTED
DESCRIPTION:	ELEC SCHEDULES, NOTES & DETAILS
SHEET NO.	E-8

ELECTRIC PANEL P-2

LOCATION: DARK ROOM/PREP ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 150A MLO
MAIN BUS RATING AND TYPE: 150A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
M	(6) "TEF-1" "EF-1" "TEF-2" NOTE 1	2	20A-1P	500	1700			1200	20A-1P	2	R	RECEPTACLES
M	"SEF-3" "SEF-4"	4	20A-1P	150		1350		1200	20A-1P	4	R	RECEPTACLES
M	"SEF-1"	6	20A-1P	500			1700	1200	20A-1P	6	R	RECEPTACLES
M	"SEF-2"	8	20A-1P	700	1900			1200	20A-1P	8	R	RECEPTACLES
	SPARE	10	20A-1P			1200		1200	20A-1P	10	R	RECEPTACLES
L	LIGHTING	12	20A-1P	1200			2400	1200	20A-1P	12	R	RECEPTACLES
L	LIGHTING	14	20A-1P	1200	2400			1200	20A-1P	14	R	RECEPTACLES
L	LIGHTING	16	20A-1P	1200		1200			20A-1P	16		SPARE
L	LIGHTING	18	20A-1P	1200			2400	1200	20A-1P	18	R	RECEPTACLES
L	LIGHTING	20	20A-1P	1200	2400			1200	20A-1P	20	R	RECEPTACLES
L	LIGHTING	22	20A-1P	1200		2400		1200	20A-1P	22	R	RECEPTACLES
L	LIGHTING	24	20A-1P	1200			2400	1200	20A-1P	24	R	RECEPTACLES
L	LIGHTING	26	20A-1P	1200	2400			1200	20A-1P	26	R	RECEPTACLES
L	LIGHTING	28	20A-1P	1200		1400		200	20A-1P	28	R	RECEPTACLES
L	LIGHTING	30	20A-1P	1200			1400	200	20A-1P	30	R	RECEPTACLES
L	LIGHTING	32	20A-1P	1200	1300			100	20A-1P	32	R	FIRE ALARM
L	LIGHTING	34	20A-1P	200		200			20A-1P	34		SPARE
L	LIGHTING	36	20A-1P	200			200			36		
L	EXTERIOR LIGHTING	38	20A-1P	1200	1200					38		
L	EXTERIOR LIGHTING	40	20A-1P	1200		1200				40		
L	EXTERIOR LIGHTING	42	20A-1P	1200			1200			42		
				TOTAL VA PER PHASE	13250	8950	11750					

CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD
L LIGHTING	17.20 KVA	1.00	17.20 KVA
R RECEPTACLES	14.85 KVA	1.00	14.85 KVA
M MOTOR / EQUIP.	1.85 KVA	1.00	1.85 KVA
H ELECTRIC HEAT	0.00 KVA	0.00	0.00 KVA
TOTAL CONNECTED LOAD	33.90 KVA	TOTAL DEMAND LOAD	33.9 KVA
		TOTAL DEMAND CURRENT	94.10 AMPS

1. PROVIDE LOCAL OCCUPANCY SENSOR FOR EACH FAN.

ELECTRIC PANEL P-3

LOCATION: DARK ROOM/PREP ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 150A MLO
MAIN BUS RATING AND TYPE: 150A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
M	OVERHEAD DOOR	2	20A-2P	500	1500			1000	20A-2P	2	H	"EOH-1" CAB HTR 2KW
M	NOTE 1	4		500		1500		1000		4	H	2#12+GRD, 3/4"C
M	OVERHEAD DOOR	6	20A-2P	500			1500	1000	20A-2P	6	H	"EOH-1" CAB HTR 2KW
M	NOTE 1	8		500	1500			1000		8	H	2#12+GRD, 3/4"C
M	OVERHEAD DOOR	10	20A-2P	500		1600		1100	20A-2P	10	H	"EOH-2" CAB HTR 3.3 KW
M	NOTE 1	12		500			1600	1100		12	H	2#12+GRD, 3/4"C
M	OVERHEAD DOOR	14	20A-2P	500	1600			1100		14	H	
M	NOTE 1	16		500		1000		500	20A-2P	16	M	OVERHEAD DOOR
M	OVERHEAD DOOR	18	20A-2P	500			1000	500		18	M	NOTE 1
M	NOTE 1	20		500	1000			500	20A-2P	20	M	OVERHEAD DOOR
M	OVERHEAD DOOR	22	20A-2P	500		1000		500		22	M	NOTE 1
M	NOTE 1	24		500			1000	500	20A-2P	24	M	OVERHEAD DOOR
M	OVERHEAD DOOR	26	20A-2P	500	1000			500		26	M	NOTE 1
M	NOTE 1	28		500		1000		500	20A-2P	28	M	OVERHEAD DOOR
	SPARE	30	20A-1P				500	500		30	M	NOTE 1
	SPARE	32	20A-1P		500			500	20A-2P	32	M	OVERHEAD DOOR
	SPARE	34	20A-1P			500		500		34	M	NOTE 1
	SPARE	36	20A-1P				500	500	20A-2P	36	M	OVERHEAD DOOR
	SPARE	38	20A-1P		500			500		38	M	NOTE 1
	SPARE	40	20A-1P			500		500	20A-2P	40	M	OVERHEAD DOOR
	SPARE	42	20A-1P				#REF!	500		42	M	NOTE 1
				TOTAL VA PER PHASE	7500	7100	#REF!					

CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD
L LIGHTING	0.00 KVA	1.00	0.00 KVA
R RECEPTACLES	0.00 KVA	1.00	0.00 KVA
M MOTOR / EQUIP.	14.00 KVA	1.00	14.00 KVA
H ELECTRIC HEAT	7.30 KVA	1.00	7.30 KVA
TOTAL CONNECTED LOAD	21.30 KVA	TOTAL DEMAND LOAD	21.3 KVA
		TOTAL DEMAND CURRENT	59.12 AMPS

1. PROVIDE CONTROL WIRING, CONTROL STATIONS, AND DISCONNECT SWITCH FOR EACH.

ELECTRIC PANEL P-4

LOCATION: DARK ROOM/PREP ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 60A MCB
MAIN BUS RATING AND TYPE: 60A COPPER
INTERRUPT RATING: 10,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
M	AIR COMPRESSOR	2	20A-2P	600	1200			600	20A-1P	2	R	RECEPTACLES
M		4		600		800		200	20A-1P	4	L	LIGHTING
M	BATTERY HEATER	6	20A-1P	600			700	100	20A-1P	6	M	CONTROL PANEL
M	RADIATOR HEATER	8	20A-2P	900	900				20A-1P	8		SPARE
M		10		900		900			20A-1P	10		SPARE
M	BATTERY CHARGER	12	20A-1P	200			200			12		SPACE
	SPACE	14			0					14		SPACE
M	ENCLOSURE HEATER	16	20A-2P	1000		1000				16		SPACE
	SPACE	18		1000			1000			18		SPACE
		20			0					20		
		22				0				22		
		24					0			24		
		26			0					26		
		28				0				28		
		30					0			30		
		32			0					32		
		34				0				34		
		36					0			36		
		38			0					38		
		40				0				40		
		42					0			42		
				TOTAL VA PER PHASE	1800	2000	1900					

CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD
L LIGHTING	0.20 KVA	1.00	0.20 KVA
R RECEPTACLES	0.60 KVA	1.00	0.60 KVA
M MOTOR / EQUIP.	4.30 KVA	1.00	4.30 KVA
H ELECTRIC HEAT	0.00 KVA	1.00	0.00 KVA
TOTAL CONNECTED LOAD	5.10 KVA	TOTAL DEMAND LOAD	5.1 KVA
		TOTAL DEMAND CURRENT	14.40 AMPS

1. PANEL LOCATED IN GENERATOR ENCLOSURE.

ELECTRIC PANEL P-5

LOCATION: DARK ROOM/PREP ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 200A MLO
MAIN BUS RATING AND TYPE: 200A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
R	POWER WASHER	2	20A-1P	300	1100			800	20A-3P	2	M	AIR DRYER
R	POWER WASHER	4	20A-1P	300		1100		800		4	M	
R	POWER WASHER	6	20A-1P	300			1100	800		6	M	
R	POWER WASHER	8	20A-1P	500	1200			700	15A-2P	8	H	"UH-1" UNIT HTR 5K
R	POWER WASHER	10	20A-1P	500		1200		700		10	H	2#12+GRD, 3/4"C
R	POWER WASHER	12	20A-1P	500			1200	700		12	H	
M	EVCS CHARGER	14	40A-2P	2000	2700			700	15A-2P	14	H	"UH-2" UNIT HTR 5K
M		16		2000		2700		700		16	H	2#12+GRD, 3/4"C
M	EVCS CHARGER	18	40A-2P	2000			2700	700		18	H	
M		20		2000	2700			700	15A-2P	20	H	"UH-1" UNIT HTR 5K
R	HAND TOOL CHARGER	22	20A-1P	200		900		700		22	H	2#12+GRD, 3/4"C
M	BOILER	24	20A-1P	200			900	700		24	H	
M	BOILER	26	20A-1P	200	560			360	15A-2P	26	H	"UH-3" UNIT HTR 3K
M	FORK LIFT CHARGER(S)	28	30A-2P	2200		2560		360		28	H	2#12+GRD, 3/4"C
M		30		2200			2560	360		30	H	
M	FORK LIFT CHARGERS	32	30A-2P	2200	2560			360	15A-2P	32	H	"UH-4" UNIT HTR 3K
M		34		2200		2560		360		34	H	2#12+GRD, 3/4"C
	SPARE	36	20A-1P				360	360		36	H	
	SPARE	38	20A-1P		0				20A-1P	38		SPARE
	SPARE	40	20A-1P			0			20A-1P	40		SPARE
	SPARE	42	20A-1P				0		20A-1P	42		SPARE
				TOTAL VA PER PHASE	10820	11160	9860					

CONNECTED LOAD		DEMAND FACTOR	DEMAND LOAD
L LIGHTING	0.00 KVA	1.00	0.00 KVA
R RECEPTACLES	3.20 KVA	1.00	3.20 KVA
M MOTOR / EQUIP.	19.60 KVA	1.00	19.60 KVA
H ELECTRIC HEAT	8.40 KVA	1.00	8.40 KVA
TOTAL CONNECTED LOAD	30.80 KVA	TOTAL DEMAND LOAD	30.8 KVA
		TOTAL DEMAND CURRENT	84.84 AMPS

1. PROVIDE CONTROL WIRING, CONTROL STATIONS, AND DISCONNECT SWITCH FOR EACH.

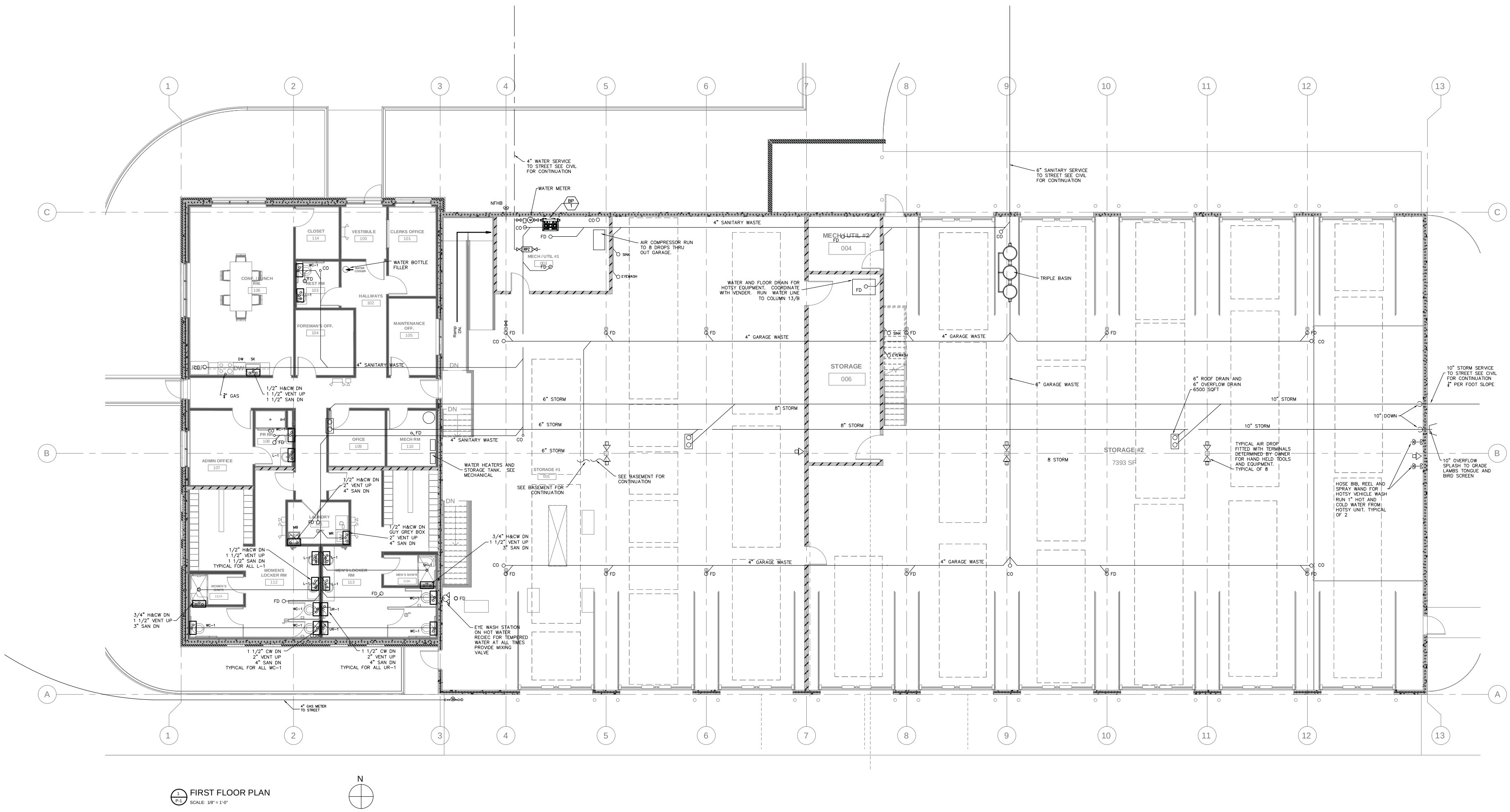
NERI ARCHITECTS
8430 N NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.825.9410

PROJECT #: 2133
DATE: 05.06.22

ROBERT N. RAFSON
062-049931
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY
FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT
11.11.21	PROGRESS SET
▲	REVISIONS
DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	ELEC SCHEDULES, NOTES & DETAILS
SHEET NO.	E-9



NERI ARCHITECTS

PROJECT #	2133
DATE:	05.06.22

PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

	05.06.22	ISSUED FOR PERMIT
	11.11.21	PROGRESS SET
▲		REVISIONS

DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	FLOOR PLAN(S)
SHEET NO.	P-1

NERI ARCHITECTS
4626 N NORTHWEST HWY
SUITE A
CHICAGO, IL 60631
TEL 847.631.9400

PROJECT # 2133
DATE: 05.06.22

PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

SHEET NO.	DESCRIPTION	SCALE	APPROVED BY	DRAWN BY	REVISIONS
P-2	FLOOR PLAN(S)	AS NOTED	SMGV	SMGV	
					05.06.22 ISSUED FOR PERMIT
					11.11.21 PROGRESS SET

N

ROOF PLAN
SCALE: 1/8" = 1'-0"

NERI ARCHITECTS
4626 N. NORTHWEST HWY
SUITE 4
CHICAGO, IL 60631
TEL 847.631.8400

PROJECT #: 2133
DATE: 05.06.22

PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY

FOR REFERENCE ONLY

05.06.22	ISSUED FOR PERMIT	
11.11.21	PROGRESS SET	
	REVISIONS	
DRAWN BY:	SMGV	
APPROVED BY:	SMGV	
SCALE:	AS NOTED	
DESCRIPTION:	FLOOR PLAN(S)	
SHEET NO.	P-3	

PLUMBING FIXTURE SCHEDULE					
TAG	FLOW RATE (GPM)	FIXTURE	MFR. / MODEL No.	DESCRIPTION	REMARKS
WC-1	1.6/1.1 GPF	TOILET WALL HUNG	FOR TYPICAL MFR/MODEL# SEE A7.3 FOR FIXTURE, FAUCET AND TRIM	PROVIDE OPEN FRONT, ANTIBACTERIAL TOILET SEAT WITH STAINLESS STEEL CHECK HINGE. PROVIDE VANDAL RESISTANT QUARTER TURN SUPPLY STOP	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN
UR-1	1.6/1.1 GPF	URINAL WALL HUNG	FOR TYPICAL MFR/MODEL# SEE A7.3 FOR FIXTURE, FAUCET AND TRIM	PROVIDE SLOAN "UPPERCUT" DUAL-FLUSH FLUSHOMETER MODEL No. WES-111. PROVIDE OPEN FRONT, ANTIBACTERIAL TOILET SEAT WITH STAINLESS STEEL CHECK HINGE. PROVIDE VANDAL RESISTANT QUARTER TURN SUPPLY STOP	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN
L-1.	0.5 GPM	LAVATORY	FOR TYPICAL MFR/MODEL# SEE A7.3 FOR FIXTURE, FAUCET AND TRIM	PROVIDE GRID STRAINER, ADA P-TRAP & TAILPIECE & VANDAL RESISTANT QUARTER TURN SUPPLY STOPS. PROVIDE TRU-BRO LAV GUARD III FOR ALL LAV'S. PROVIDE THERMOSTATIC MIXING VALVE FOR ALL LAV'S.	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN
MB.	2.5 GPM	MOP BASIN	ZURN 1996-24	PROVIDE ZURN SINK FAUCET MODEL Z843M1 WITH POLISHED CHROME FINISH, INTEGRAL SERVICE STOPS, CAST BRASS SPOUT WITH CHEMICAL RESISTANT VACUUM BREAKER 3/4" HOSE THREADED OUTLET, PAIL HOOK AND ADJUSTABLE WALL HOOK. SPECIFY -CS (CHECK STOPS), -WHK (WALL HOOK) AND -5H (5' VINYL HOSE). INSTALL VACUUM BREAKER 7'-6" ABOVE FINISHED FLOOR.	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN
FD	-----	FLOOR DRAIN	JR SMITH 2010	OPTIONS BY OWNER	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN
CO	-----	CLEAN OUT	JR SMITH 420	OPTIONS BY OWNER	SEE MFR. SPECIFICATIONS PRIOR TO ROUGH-IN

VARIABLE SPEED PUMP SCHEDULE									
PUMP NO.	LOCATION	DESCRIPTION	TYPE	FLOW RATE GPM	RATED PUMP HEAD	MOTOR			REMARKS
					PSI	V / PH / HZ	HP	RPM	
BP-1	FIRE PROTECTION, GAS & WATER METER ROOM 004	DUPLEX DOMESTIC WATER BOOSTER PUMP SYSTEM	CLOSE COUPLED VERTICAL MULTI-STAGE	160	60	208/3/60	25	3525	DUPLEX VARIABLE SPEED RATED FOR A SYSTEM CAPACITY OF 320 GPM WITH A MAINTAINED SYSTEM PRESSURE OF 60 PSI INCLUDING A MINIMUM SUCTION PRESSURE OF 10 PSI.
			CLOSE COUPLED VERTICAL MULTI-STAGE	160	60	208/3/60	25	3450	

HOSE BIBB SCHEDULE				
TAG	MFR. / MODEL No.	FIXTURE	DESCRIPTION	REMARKS
NFHB	ZURN ECOLOTROL MODEL 1300-15	NON-FREEZE WALL HYDRANT	ENCASED ANTI-SIPHON AUTOMATIC DRAINING WALL HYDRANT FOR FLUSH INSTALLATION w/INTEGRAL BACKFLOW PREVENTOR, BRONZE CASING. NICKEL BRONZE BOX w/HINGED COVER AND OPERATING KEY LOCK.	SEE MFR. SPEC SHEET PRIOR TO INSTALL.
HB	JR SMITH MODEL 5609QT	HOSE BIBB	QUARTER TURN NON-FREEZE HYDRANT, WITH 3/4" HOSE CONNECTION, BACKER PLATE AND INTEGRAL VACUUM BREAKER WITH VANDAL RESISTANT CAP AND "T" HANDLE. SPECIFY CHROME PLATED.	SEE MFR. SPEC SHEET PRIOR TO INSTALL.

EJECTOR & SUMP PUMP SCHEDULE										
PUMP NO.	LOCATION	MEDIA OR SYSTEM	PUMP DATA			MOTOR DATA			MANUFACTURER AND MODEL	REMARKS
			TYPE	CAPACITY (GPM)	HEAD (FT)	V / PH / HZ	HP	RPM		
SP-1	MECH. RM	STORM	SUBMERSIBLE DUPLEX	50	15	115/1/60	1/2	1725	ZOELLER MODEL M266	SEE MFR. SPEC. SHEET PRIOR TO INSTALL. WITH LEAD/LAG CONTROL
EP-1	MECH. RM.	SANITARY	SUBMERSIBLE DUPLEX EXPLOSION PROOF	50	15	115/1/60	1/2	1725	ZOELLER MODEL M266	SEE MFR. SPEC. SHEET PRIOR TO INSTALL.

SECTION 15400
PLUMBING
PART 1 - GENERAL
1.1 SCOPE OF WORK
A. FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, AND RELATED ITEMS NECESSARY TO COMPLETE THE INSTALLATION OF THE PLUMBING SYSTEM AS ILLUSTRATED ON THE DRAWINGS AND INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1.) HOT AND COLD WATER SYSTEMS WITH COMPLETE CONNECTIONS FROM THE WATER METER TO ALL PLUMBING FIXTURES AND EQUIPMENT REQUIRING WATER CONNECTIONS.
2.) SOIL, WASTE, VENT AND CONDENSATE SYSTEM LINES INSIDE THE BUILDING.
3.) PLUMBING FIXTURES, INCLUDING ALL THE REQUIRED TRIM AND SUPPORTS.
4.) TRENCHING AND BACKFILLING.
5.) FINAL PLUMBING CONNECTIONS TO HEATING AND AIR CONDITIONING EQUIPMENT.
6.) METERS AND UTILITY CONNECTIONS.

PART 2 - PRODUCTS
2.1 DESCRIPTION
A. SOIL, WASTE AND VENT PIPING BELOW FLOOR TO 5'-0" OUTSIDE BUILDING:
STANDARD WEIGHT COATED CAST IRON PIPE AND CAST IRON/NEOPRENE GASKET FITTINGS.
B. SOIL, WASTE AND VENT PIPING ABOVE FLOOR:
STANDARD WEIGHT COATED CAST IRON PIPE AND STAINLESS STEEL/NEOPRENE GASKET FITTING, OR ABS OR PVC-DWV SCHEDULE 40, AS APPROVED BY LOCAL AUTHORITY IN CONCEALED LOCATIONS.
C. HOT AND COLD WATER PIPING ABOVE FLOOR:
TYPE "L" COPPER, HARD DRAWN.
BELOW GROUND OUTSIDE OF BUILDING:
TYPE "K" HARD COPPER.
BELOW SLAB INSIDE OF BUILDING:
TYPE "K" SOFT DRAWN COPPER TUBING WITHOUT JOINTS.
D. CONDENSATE DRAIN PIPING:
BY MECHANICAL CONTRACTOR.
E. INSIDE STORM PIPING ABOVE GROUND:
STANDARD WEIGHT COATED CAST IRON PIPE AND STAINLESS STEEL/NEOPRENE GASKET FITTING OR ABS OR PVC-DWV SCHEDULE 40, AS APPROVED BY LOCAL AUTHORITY.
F. TRAPS AND VENTS FOR SERVICE SINKS:
ABS OR PVC SCHEDULE 40, AS APPROVED BY LOCAL AUTHORITY.

2.2 INSULATION
A. PROVIDE FOAM RUBBER INSULATION EQUAL TO ARMSTRONG ARMAFLEX TYPE "AP" ON COLD AND HOT WATER, AND CONDENSATE DRAIN PIPING. INSULATION TO BE SLIPPED ON WITH BUTT JOINTS. USE MITER CUT PIECES FOR FITTINGS AND PRE-FORMED FITTINGS FOR ALL VALVES. APPLY MANUFACTURER'S PAINT TO ALL EXPOSED RUNS. UTILIZE 1" THICK INSULATION ON HOT WATER PIPING AND 1/2" THICK ON COLD WATER AND CONDENSATE DRAIN PIPING.
B. INSULATE "P" TRAP AND EXPOSED HOT WATER SUPPLY LINES BELOW HANDICAPPED ACCESSIBLE HAND SINKS AND LAVATORIES IN ONE OF THE FOLLOWING MANNERS:
1.) MOLDED FLEXIBLE VINYL INSULATION SYSTEM, MODEL #101 "HANDI LAV-GUARD" AS MANUFACTURED BY TRUEBRO.
2.) PVC 2 PIECE "P" TRAP COVER WITH INSULATION TUBING, "TRAP-GUARD" AS MANUFACTURED BY BUCKAROOS.
3.) OTHER MANUFACTURERS/TYPES BY PRIOR APPROVAL ONLY.

2.3 FIXTURES
A. ALL FIXTURES: AS INDICATED ON DRAWINGS WITH EQUAL PRODUCTS FURNISHED BY AMERICAN STANDARD, KOHLER OR ELJER.

2.4 CLEANOUTS, FLOOR DRAINS, FLOOR SINKS AND ROOF DRAINS
A. ALL ACCESSORIES: AS INDICATED ON THE DRAWINGS THE EQUAL PRODUCTS FURNISHED BY WADE JOSAM OR ZURN BEING ACCEPTABLE.

2.5 EQUIPMENT
A. SHUT-OFF VALVES UNDERNEATH LAVATORIES, TANK TYPE WATER CLOSETS AND KITCHEN FIXTURES:
CHROME PLATED ANGLE STOP VALVES WITH CHROME PLATED ESCUTCHEON PLATES AND AS SCHEDULED ON DRAWINGS.
B. HOSE BIBBS:
AS SCHEDULED ON DRAWINGS.
C. VACUUM BREAKERS:
AS SCHEDULED ON DRAWINGS.
D. BACKFLOW PREVENTERS:
AS SCHEDULED ON DRAWINGS.

PART 3 - INSTALLATION
3.1 PIPING
A. RUN ALL PIPING CONCEALED EXCEPT WHERE OTHERWISE INDICATED ON DRAWINGS.
B. INSTALL VALVES, TRAPS, CLEAN-OUTS AND OTHER APPARATUS IN AN EASILY ACCESSIBLE LOCATION.
C. INSTALL SOIL, WASTE, VENT OFFSETS AND CONDENSATE DRAINS WITH A MINIMUM UNIFORM GRADE OF ONE QUARTER INCH TO THE FOOT.
D. MAINTAIN HOT AND COLD WATER LINES AT LEAST 6" APART WHERE PIPING IS PARALLEL.
E. PROVIDE ESCUTCHEON PLATES WHERE ALL PIPES PASS THROUGH A FINISHED WALL.

3.2 HANGERS AND SUPPORTS
A. SUPPORT COPPER PIPING AT INTERVALS NOT TO EXCEED 7'-0" AND AT EACH CHANGE IN HORIZONTAL OR VERTICAL DIRECTION.

3.3 PLUMBING FIXTURES
A. FURNISH AND INSTALL ALL PLUMBING FIXTURES COMPLETE WITH ALL EQUIPMENT FITTINGS, TRIMMINGS AND ACCESSORIES.
B. ALL FIXTURES: GRADE A, WHITE.
C. EXPOSED PIPING TO FIXTURES: A PRODUCT OF THE FIXTURE MANUFACTURER.
D. PROVIDE STOPS AS MANUFACTURED BY THE FIXTURE MANUFACTURER, WITH METAL-TO-METAL SEAT FOR ALL FIXTURES AND EQUIPMENT.

3.4 TEST
A. THE PLUMBING SYSTEM AND ASSOCIATED SYSTEM IS SUBJECT TO FINAL APPROVAL OF THE OWNER'S.

3.5 CLEANING
A. AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED AND APPROVED, FLUSH THE PIPING SYSTEM TO REMOVE ANY FOREIGN MATTER FROM THE PIPES. WHERE REQUIRED, USE CHLORINE OR HTH SOLUTION TO SANITIZE THE NEW PIPING.

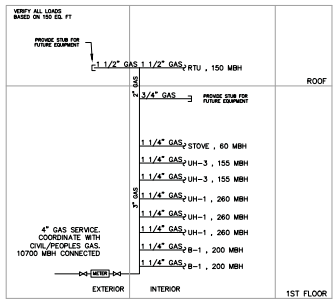
GENERAL PLUBMING NOTES:
1. ALL WORK TO MEET PLUMBING CODES AS SET FORTH BY THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH – 2014.
2. THE LICENSED PLUMBER OF RECORD LISTED ON THE PERMIT SHALL BE PRESENT ON ALL PLUMBING INSPECTIONS.
3. ACCORDING TO PUBLIC ACT 09401.32 SEC. 37 – A LETTER OF INTENT SHALL BE INCLUDED WITH ALL PERMIT APPLICATIONS. THE LETTER SHALL BE WRITTEN ON THE LICENSED PLUMBER OF RECORD'S BUSINESS STATIONARY AND SHALL INCLUDE THE LICENSE HOLDER'S SIGNATURE AND, IF THE LICENSE HOLDER IS INCORPRATED, THE LICENSE HOLDER'S CORPORATE SEAL. IF THE HOLDER IS NOT INCORPORATED, THE LETTER MUST BE NOTARIZED.
4. DOMESTIC WATER AS WELL AS SANITARY WASTE SHALL BE TESTED USING A TEST METHOD DESCRIBED IN 890.1930 a)-c)
5. ALL GAS PIPING TO MEET LOCAL AND NATIONAL APPLICABLE MATERIAL AND TESTING CODES
6. FOLLOW THE REQUIREMENTS SET FORTH IN ILLINOIS ENERGY CODE REGARDING WORK TO BE DONE.
7. PROVIDE PLAN REVIEW AT ALL INSPECTIONS.
8. ALL UNDERGROUND PIPING SHALL BE BACKFILLED PER IDPH INCLUDING 890.180, AS WELL AS MANUFACTURER SPECS. PROVIDE MANUFACTURER SPECS AT TIME OF INSPECTION.
9. ALL WORK SHALL BE INSPECTED AND APPROVED PRIOR TO BEING CONCEALED
10. SPRINKLER CONTRACTOR SHALL FOLLOW ILLINOIS PLUMBING LICENSE LAW (255 ILCS 320/2.5) IN ITS ENTIRETY.
11. ALL WORK SHALL MEET ALL ACCESSIBILITY CODES.
12. JOURNEYMAN PLUMBING LICENSE HOLDER SHALL PROVIDE PROOF OF UP TO DATE CONTINUING EDUCATION AT TIME OF INSPECTION.
13. ALL RPZ BACK FLOW PROTECTORS SHALL BE INSTALLED BY PLUMBER OF RECORD, THIS SHALL INCLUDE FIRE SUPPRESSION.
14. WATER SERVICE IS TO BE INSTALLED BY LICENSED PLUMBING CONTRACTOR. PROVIDE LETTER OF INTENT, IDPH PLUMBING CONTRACTOR REGISTRATION (055) AND IL OR CITY PLUMBING LICENSE.
15. COMPLY WITH THE REQUIREMENTS OF THE FIRE DEPARTMENT
16. COMPLY WITH THE REQUIREMENTS OF THE VILLAGE ENGINEER
17. COMPLY WITH THE REQUIREMENTS OF PUBLIC WORKS

Gas Piping/Tubing Material Matrix(Based on IFGC 403)			
Material	Permitted	Not Permitted	Standards to Follow
Wrought-Iron	Schedule 40 or better		ASME B 36.10.10M or ASTM A35 or ASTM A106
Steel	Schedule 40 or better		ASME B 36.10.10M or ASTM A35 or ASTM A106
N.G. DISTRIBUTION PIPING SHALL BE SCHEDULE 40 STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A 53/A 53M WITH 150# MALLEABLE IRON FITTINGS. GAS PIPING LARGER THAN 3" OR MORE THAN 5 PSIG TO BE WELDED TO BE SCHEDULE 40 STEEL PIPING.			

Note: The gas piping design shall conform to all the requirements of IFGC 403.

GENERAL GAS PIPING NOTES:
1. ALL WORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH BUILDING STANDARDS AND ALL APPLICABLE CODES.
2. FUEL GAS PIPING AND CONTROLS MUST CONFORM TO THE INTERNATIONAL FUEL GAS CODE(IFGC), CHAPTER 4 (WITH MODIFICATIONS AS NOTED IN ARTICLE 14). [18-28-1400]
3. GAS PIPING MUST BE SIZED IN ACCORDANCE WITH IFGC TABTES 402.(1) THROUGH 402.3(34). [IFGC 402.3]
4. THE MAXIMUM DESIGN OPERATING PRESSURE FOR GAS PIPING SYSTEMS LOCATED INSIDE BUILDINGS SHALL NOT EXCEED 5 PSIG (SOME EXCEPTIONS ARE NOTED). [IFGC 402.5]
5. GAS PIPING MATERIALS MUST CONFORM TO THE GAS PIPING & TUBING MATERIAL MATRIX (LFGC 403 REQUIREMENTS). [IFGC 403]
6. PIPING IN CONCEALED LOCATIONS MUST CONFORM TO THIS IFGC 404.3. [IFGC 404.3]
7. MINIMUM REQUIRED BURIAL DEPTH FOR UNDERGROUND PIPING SYSTEMS MUST CONFORM TO IFGC 404.9. (MINIMUM 12 INCHES BELOW GRADE). [IFGC 404.9]
8. GAS PIPES MUST BE SLOPED AT 1/4 INCH IN EVERY 15 FEET. [IFGC 408.1]
9. GAS PIPING GREATER THAN 2" INSIDE DIAMETER OR CARRYING MORE THAN 5 POUNDS(PSIG) SHALL BE SCHEDULE 40 STANDARD WELD FITTINGS.
10. PIPING METER IDENTIFICATION SHALL BE MARKED WITH AN APPROVED PERMANENT IDENTIFICATION AND BE READILY IDENTIFIABLE.
11. PAINT ALL GAS PIPING THAT IS EXPOSED TO THE ELEMENTS.
12. UNDERGROUND PIPING SHALL BE A MIN OF 18" BELOW GRADE. [IFGC 404.12]

GAS SERVICE ALTERNATE:
CITY OF CHICAGO TO UPGRADE GAS MAIN PRESSURE. IF CITY UP GRADE IS NOT COMPLETE BY THE TIME THIS ROJECT IS COMPLETE, ADD GAS BOOSTER EQUAL TO ECLIPSE COMPAC HB SERIES [PACKAGED HERMETICALLY SEALED GAS BOOSTER HB3314-1/2-N4, 1.2HP, 208V 3 PHASE.



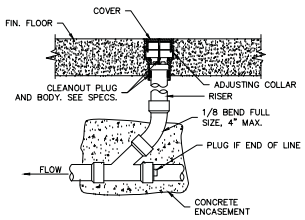
Gas Distribution
SCALE: NONE

NERI ARCHITECTS

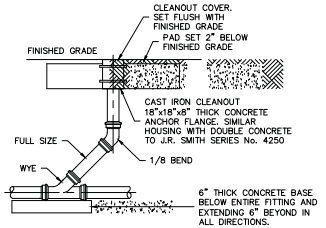
PUBLIC WORKS BUILDING
LOWELL, IN
LAKE COUNTY
FOR REFERENCE ONLY

PROJECT #	2133
DATE:	05.06.22

	05.06.22	ISSUED FOR PERMIT
	11.11.21	PROGRESS SET
▲		REVISIONS
DRAWN BY:		SM/GV
APPROVED BY:		SM/GV
SCALE:		AS NOTED
DESCRIPTION:		PLUM SCHEDULES, NOTES & DETAILS
SHEET NO.		P-4

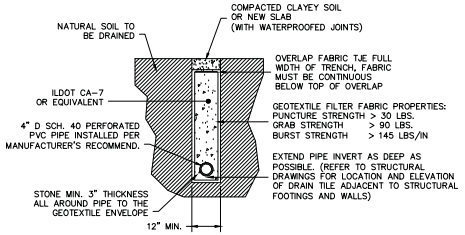


FLOOR CLEANOUT

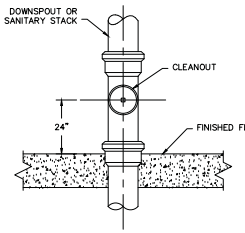


NOTE:
COORDINATE EXACT
ELEVATION OF FINISHED
GRADE WITH CIVIL DRAWINGS

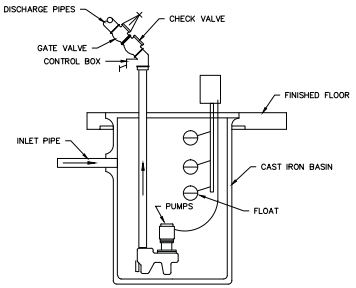
GRADE CLEANOUT DETAIL



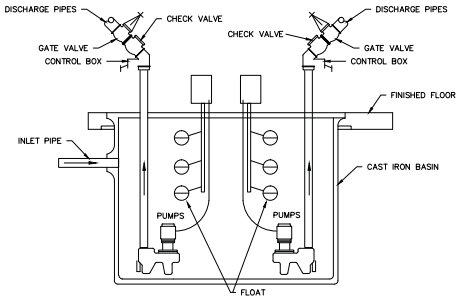
SUB-SOIL DRAIN TILE DETAIL



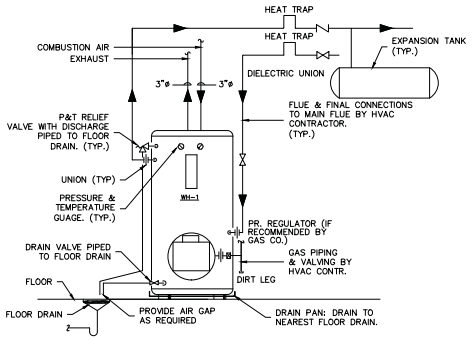
ELEVATION OF STACK CLEANOUT



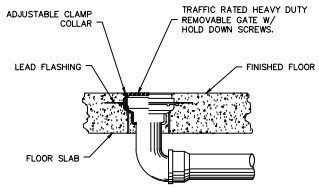
SEWAGE EJECTOR PUMP



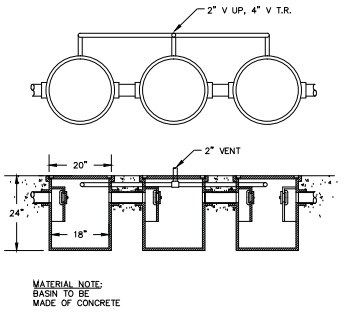
SUMP PUMP



WATER HEATER DETAIL



TYPICAL GARAGE DRAIN DETAIL



MATERIAL NOTE:
BASIN TO BE
MADE OF CONCRETE

TYPICAL GARAGE BASIN DETAIL

NERI ARCHITECTS

PROJECT #	2133
DATE:	05.06.22

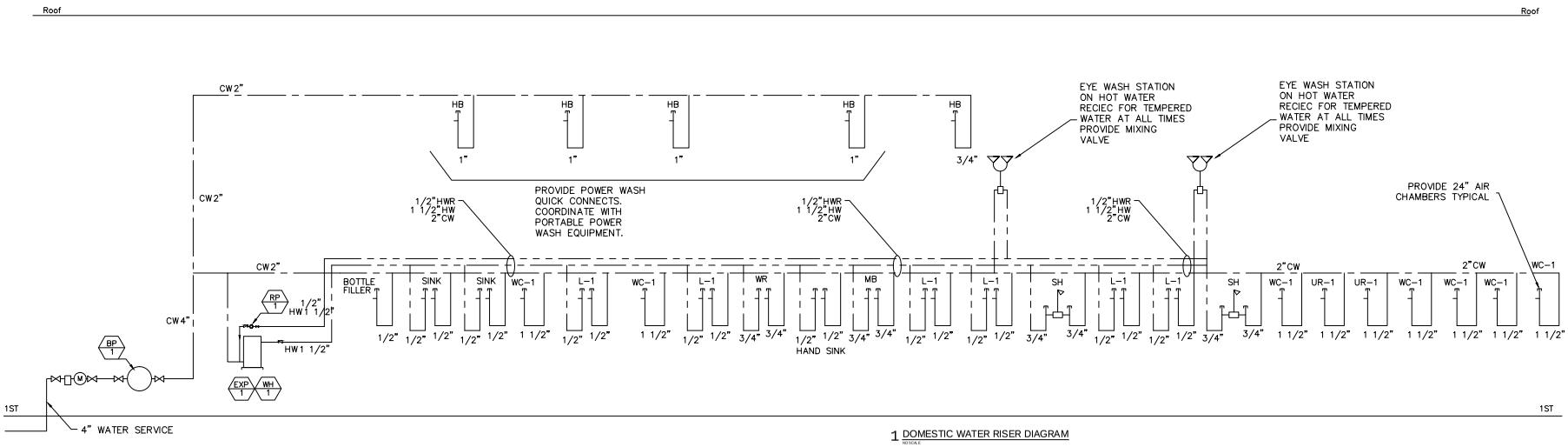
PUBLIC WORKS BUILDING

LOWELL, IN
LAKE COUNTY

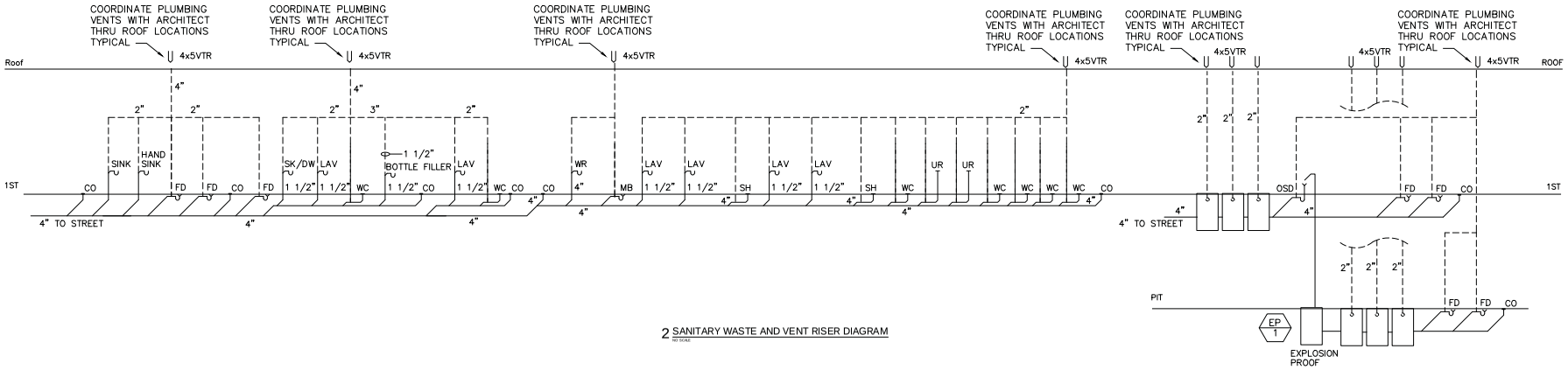
FOR REFERENCE ONLY

	05.06.22	ISSUED FOR PERMIT
	11.11.21	PROGRESS SET
▲		REVISIONS

DRAWN BY:	SM/GV
APPROVED BY:	SM/GV
SCALE:	AS NOTED
DESCRIPTION:	PLUM SCHEDULES, NOTES & DETAILS
SHEET NO.	P-5



1 DOMESTIC WATER RISER DIAGRAM
NO SCALE



2 SANITARY WASTE AND VENT RISER DIAGRAM
NO SCALE

NERI ARCHITECTS
EAST N NORTHWEST HWY
SUITE A
CHICAGO, IL 60631
TEL 847.823.8400

PROJECT #	2133
DATE:	05.06.22

ROBERT N. PARSON
062-049931
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

PUBLIC WORKS BUILDING

LOWELL, IN
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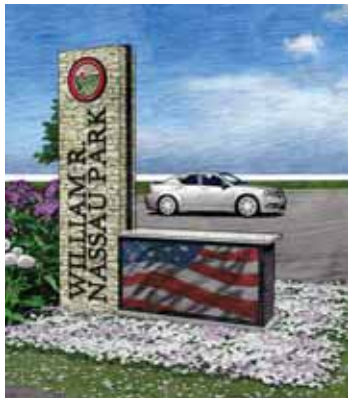
DESCRIPTION:	PLUM SCHEDULES, NOTES & DETAILS
SHEET NO.	P-6

APPENDIX G

NASSAU PARK DRAFT PLAN DETAILS



WILLIAM R. NASSAU PARK

TOWN OF LOWELL, INDIANA

JANUARY 23, 2023

WILLIAM R. NASSAU PARK

TOWN OF LOWELL, INDIANA

JANUARY 23, 2023