APPENDIX A

Part A1

PZC PACKET

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PROJECT NARRATIVE
NVA PROPERTIES OF IL LLC
NEW SANDS ROAD FACILITY (REVISED PROJECT)
CRYSTAL LAKE, ILLINOIS 60014 (PINs 19-03-401-021, 19-03-453-003)

NVA PROPERTIES OF IL LLC ("Applicant") is a family-owned business affiliated with NVA TRANSPORTATION which has its headquarters in Crystal Lake. Applicant provides this narrative in support of its application for a planned development with a single exception or planned development variation (to allow a span of fence along the north lot line with a height of twelve (12) feet as recommended during the entitlement process). This narrative was prepared with the design team and Joseph Abel, AICP. Under the Unified Development Ordinance ("UDO"), the planned unit development mechanism allows the City of Crystal Lake ("City") to impose more specialized and direct regulation to a project that meets the Zoning Ordinance while also recognizing planning for use at transitional locations that bring amenity to the zoning district while screening and buffering adjoining areas.

Applicant proposes a land use on a tract that carries two zoning classifications, with the heavier of the two use groups (those in the manufacturing district) planned to the south and the less intensive of the use groups (those in the limited manufacturing district) planned to the north. The busier headquarters building, with repair bays, loading and warehousing, is at the south end of the property while the remainder to the north will be used for parking of vehicles. The more intense use of the property lies behind two existing similar uses—one being NVA Transportation's current location which has become too small and inconvenient for its purposes and the other being active indoor and outdoor storage. The north end of the property offers transition to the north lot line which will feature substantial and continuous lines of trees with the above-noted fence. These same trees and the fence will also screen the uses north of the driveway entrance, which also involve outdoor and evening operations.

The request has generated concern among residents living in an area situated on the north side of a large and longstanding territory featuring some of the heavier industrial uses in the area, including archived superfund sites. Several residents raised concerns over subsurface groundwater. At staff's request, Applicant installed wells to model groundwater movements (which were confirmed to be similar to that which was known before—from west to east). Residents also asked Applicant to bore and sample down to possible aquifers at a substantial depth out of concern that there would be an interconnection of wells, but Applicant is not relying on well water and will install an extension of the public water system from south of the railroad to the north lot line along Sands Road. These residents have also voiced concerns over vehicles tied to the site slowing traffic along Sands Road (industrial in character in this area) or using Sands Road north of the driveway. Applicant is now planning to install a dedicated left turn lane and entrance restriction that will avoid vehicles entering from the north or exiting to the north.

Applicant proposes a use in an area that is manufacturing in character. Residents reside next to an area that is manufacturing in character. Their concerns arise from the existence of two archived superfund sites in the area—one of which Applicant converted to a use that posed less risk to the environment and surrounding homeowners. The property has been zoned according to the historic uses in the area and in light of existing environmental impacts which limit the uses to

those which can operate within applicable laws and regulations as manufacturing uses. Applicant proposes a use that meets nearly all applicable regulations, the intent and purpose of the UDO, comprehensive plan and other plans, and respects neighbors.

APPLICANT'S REQUESTS

Applicant asks the City to approve its development. Applicant notes that it largely has the ability to proceed without zoning authorization from the City Council. The City allows a more collaborative approach to development under its planned unit development regulations and, indeed, a planned unit development is intended to allow a project to better fit on its site and within its surroundings. A planned unit development also allows the City to impose conditions on the development and use of the development site.

Applicant respectfully requests that the Planning and Zoning Commission recommend and the City Council approve the following relief for the Subject Property, which is a single zoning lot as the term is defined in Section 10-200(A):

1. An amendment to classify the Subject Property as entirely within the M manufacturing district;

2. A preliminary and final planned unit development for a truck terminal under Section 9-100(C)(6)(a), Section 9-100(C)(6)(b)(ii) and Section 9-100(D)(E) to allow:

    a. A truck terminal—an undefined use viewed by staff as encompassing several of the following uses identified within the M and M-L districts (use authorization noted for M/M-L in parentheses):

        i. Warehousing and transportation (permitted/limited);
        ii. Office headquarters and logistics (permitted/permitted);
        iii. Truck leasing (limited/not permitted);
        iv. Automotive repair (minor) (permitted/permitted)
        v. Automotive repair (major) (limited/special);
        vi. Automotive Oil/Lube (permitted/permitted);
        vii. Automotive Parts, Accessories and Tire Stores (not permitted/permitted);
        viii. Private parking with vehicle service plan (special/special); and
        ix. Outdoor storage (limited/limited);

    The use does not include overnight or long-term lounging accommodation or general activities that one would find in what is commonly known as a truck stop. The addition of a fueling area would be the subject of an amendment if one is added. Installation of plug-ins or EV charging stations accessory to parking spaces would not be viewed as "fueling" and it is possible that these would be added now or later as technology allows.

3. Conditions and adjustments as deemed necessary, including:

    a. As may be deemed necessary by the City, designation of a height of twelve (12) feet for the north fence line;

    b. A Council-granted exception from engineering requirements related to the technical design of detention and retention areas that arises solely in relation to the topography of the site and does not affect off-site stormwater flow;

    c. Approval of the screening and landscape plan with the requirement that Applicant maintain and replace screening and landscaping;

    d. Deferral of burial of utility lines and a waiver of sidewalks;

    e. Allowance of the use subject to the following conditions:

        i. Installation of a water main to serve the building on the Subject Property subject to a reasonable recapture agreement and provided that the water main be extended to the north line of the Subject Property at Sands Road;

        ii. Construction of a dedicated left turn lane for northbound Sands Road south of the driveway entrance;

        iii. Installation of signs and entryway to restrict vehicular access to passenger vehicles from the north and those entering from, and exiting to, the south;

        iv. No overnight accommodations;

        v. Substantial compliance with the plans and drawings on file, including the landscape plan, grading plan, lighting plan and the orientation and placement of the building as shown in these plans;

        vi. Installation of shields for the north row of pole lighting sufficient to prevent glare in a northerly direction towards the north lot line;

        vii. No outdoor assembly or vehicle repair;

        viii. No outdoor speakers except for emergencies, on the buildings or at the entrance gate;

ix. Loading to or from vehicles shall occur only within the building or using the bays in the building;

x. No storage of inoperable or unlicensed vehicles, except to the extent required for ongoing service, maintenance or repair of the vehicles;

xi. Control of records of individuals entering or exiting the Subject Property whether by an employee or electronically;

xii. Maintenance of gated access at least during those periods after the general office headquarters use or the repair bay operation has closed during the day;

xiii. Repair operations that include any pneumatic tools (not including air compressors for tire inflation) shall occur in bays with their doors closed;

xiv. Use of any vehicles or equipment with flashing, spotlighting or beeping warning devices shall be limited as set forth in the conditions at the end of this narrative;

xv. The use shall comply with all of the measures noted in the Applicant's environmental impact assessment as well as all applicable federal and state laws and regulations.

The conditions noted above are those that have been provided as explanations of Applicant's operations in response to various inquiries. Further, the prior variation noted for the landscape buffer between commercial and manufacturing districts remains published, but plans revised since the initial hearing have eliminated the necessity for this relief. Applicant will maintain at least a 30-foot landscape buffer to the west commercial use with additional shrubs.

The tract is susceptible to development under the plans provided. Section 1-1(B) of the City Code defines "subdivision" as "Any change, division, resubdivision, lease, or rearrangement of any tract, piece, or parcel of land, block, lot, or sublot, or any part thereof, that results in two or more lots, pieces, or parcels of land or two or more discrete uses on any lot, piece, or parcel of land, block, lot, or sublot, or any part thereof that are not otherwise authorized by the Unified Development Ordinance." The Subject Property will remain a single tract of land under Section 9-100(E)(12)(a). Following planned unit development approval, an assessment plat is available to consolidate parcel numbers.

Applicant submitted a building permit application for the principal building and use. Although aspects of the building may change during this process or during building permit review, the use of the building as well as its size will remain in substantial conformity with the

City's planned unit development authorization. Since the last hearing, one of the most significant changes is the orientation of the building. The building will continue to host vehicle maintenance and repair operations in the service bays and a substantial component of operations on site relate to the maintenance and repair program inasmuch as no vehicle will be on site unless it is owned or leased by Applicant or under a contract that provides for maintenance and repair as part of a program or a singular repair. Applicant is aware of a series of design modifications identified by staff and these will be addressed during permitting.

In a distraction, certain neighbors purport to have filed a written protest against rezoning in order to defeat the application. The protest simply has no legal effect on the recommendation or the decision. The City has one of the more experienced zoning attorneys in Illinois, and Applicant's counsel will address this matter separately if necessary. The Commission and Council should not consider the protest.

CHANGES SINCE THE INITIAL HEARING

Applicant has substantially modified plans on three occasions since the July 2023 hearing. First, Applicant prepared a new set of site, engineering and landscaping plans that re-oriented the building, avoided the variation at the north/northwest corner of the property, planned for screening with lines of tall trees in addition to fencing, and placed the heavier use of the property further to the south than proposed. Second, after presenting the plans to an open meeting with neighbors, Applicant fully enclosed the property with a fence. Third, following availability of the final traffic report and final engineering comments, Applicant added the left turn lane from Sands Road, restricted its driveway access, and extended the water main further to the north. These are the most pertinent design modifications, but there have been several other comments from staff to which the Applicant has responded through its design team members.

THE PROPOSED USE

Since 2011, Applicant and its affiliates have provided services in the transportation and logistics industry. NVA Transportation is Applicant's primary affiliate, and it will be a tenant at the property. This narrative uses the term "Applicant" to refer to NVA Properties of IL LLC and to affiliates that have a form of common ownership with NVA Properties of IL LLC. Dun and Bradstreet independently reports that Applicant provides support services for transportation, transportation and warehousing, and cargo loading and unloading services. *(https://www.dnb.com/ business-directory/company-profiles.nva_transportation_inc. 5baf47f53f50 23f2142c33d15e5c9857.html)* In 2022, Applicant had 47 units reported to the U.S. Department of Transportation and at least 47 drivers who collectively logged over 7.5 million miles. *(https:// truckingdatabase.com/ companies/dot/ 2294990)* All vehicles in the fleet meet current federal standards for clean trucking and will comply with all applicable federal and state regulations. From Crystal Lake, Applicant is currently active in 49 states, offers over-the-road (national and regional) and specialized and expedited trucking and transportation services ranging from dry van shipping, refrigerated shipping, to heavy haul shipping. The more

restrictive regulations tend to be in other states such as California and due to Applicant's operations in other states, Applicant will be operating to standards higher than those that apply in Illinois.

Applicant relies on employees and contractors driving fleet vehicles or their own vehicles in setting clients on the right transport course. Applicant also engages in operations where drivers will operate exclusively for Applicant while their truck is under a lease. All operators for Applicant fall under Applicant's umbrella for insurance and other purposes.

The site will host Applicant's headquarters in roughly 11,000 square foot of office area with standard private office and open floor plan office planning. General dispatch will occur from the open floor area within the office space. The office area will occupy the north 120 feet of the building, though building use and use locations are subject to change during permitting.

There will be a maintenance and repair facility that engages in general maintenance, general repairs, heavy repairs and related activities in six or seven bays likely to be staffed by as many as 18 employees, though the initial staffing is less. The bay area is supported by a warehouse and parts department as well as washroom and locker facilities for employees. Repairs and maintenance will occur indoors. Insulated garage doors will be closed when work on trucks involving pneumatic equipment (other than tire inflation) is in progress.

The repair facility is primarily for the fleet operated by Applicant's affiliates, but it will also service those with service and repair contracts who also rely on the site for long term parking. A small portion of repair and maintenance work will be for persons with vehicles needing repair that do not have a corporate or contractual affiliation with Applicant or its affiliates—meaning an individual or company could schedule work even though not a driver for Applicant or under a service contract. Drivers waiting for a vehicle repair would have a small lounge area on the east side of the parts department to wait for work to be done if necessary. Vehicles in current need of maintenance, servicing or repair will be parked south of the north wall of the building.

Applicant engages in warehousing. The warehouse has five vehicular or equipment access doors and is planned for the south portion of the building. Within the warehouse, Applicant can reconstitute loads using pallets stacked in accordance with applicable fire and life safety codes and in accordance with the standards of the U.S. Occupational Safety and Health Administration. The most common use of the warehouse will be for dividing shipments in order to redirect portions of loads according to the most efficient and practical shipping plan. (This is often referred to in the industry as "less than load" operation.)

The parts areas within the building include storage, receiving and delivery, and business sections. A bay on the east face of the building allows access for parts receiving and delivery. Additionally, the warehouse area can be used for large parts shipments when necessary. The parts division serves Applicant's operations in the bays and its fleet operations generally. The parts

division will operate between the office area and the repair and maintenance bays, with parts storage in areas on two levels of the building. The parts department will also engage in sales to the public that will be made in person, via third-party shipping or via direct shipping. Where applicable, sales taxes will apply to parts sales. A sales tax analysis has not been prepared since sales taxes do not apply to several categories of transactions involving parts. Future revenues for the City are not a material part of the zoning application, but there could be some benefit from year to year.

Applicant will operate its fleet from the Subject Property. Applicant primarily engages in over-the-road hauling and special project hauling. Applicant uses a variety of trailers that include box trailers, flatbed trailers and refrigerated trailers, among others that are generally similar to these three better-known types. Past history indicates that vehicles should be on the road and success depends on the trucks not being parked on site. Currently, 20% of the vehicles will be on site most days, with a slight increase on weekends, and a slightly larger increase on holidays. So that Applicant maintains control over the north end of the site, Applicant will designate the north portion of the site for its fleet activities and parking, first, then for vehicles Applicant leases, second. Third in line will be vehicles under a lease (exclusive driver for Applicant) or maintenance and repair plan (parking but not affiliated with the Applicant except through the service agreement), but these vehicles will first be parked starting from the south of the north two rows of parking. At no time will Applicant park vehicles requiring repair in the north two rows of spaces.

Part of the trailer portion of Applicant's vehicle fleet is typically less active on a seasonal basis. In winter months, demand is less for flatbed trailer deliveries. In summer months, demand can be less for box trailers. Applicant will designate the northernmost row of spaces for portions of its fleet that will remain in place for longer periods in order to avoid unnecessary activity closer to neighbors.

Applicant will lease trucks and trailers to those driving exclusively for Applicant. Persons driving for Applicant under a lease arrangement will have the ability to park their vehicles in the parking area. These persons will also have maintenance and repair priority. Applicant will also have various contracts to provide parking and maintenance and repair services to the vehicles parked for a set term at the property.

The last category of visitors to the site will include those with no prior relationship with Applicant who need maintenance or repairs. These vehicles will be parked south of the north wall of the building and west of the building. Vehicles for pickup after maintenance or repairs will be parked south of the north wall of the building.

Over seventy percent of the maintenance and repair work falls in the minor or oil/lube/fluids category. The breadth of the City's definition of major repair encompasses a portion of the remaining thirty percent of the work that can be done on site to repair a damaged vehicle. Some repair work will include engine work, body work and touching up. Applicant will

not engage in chassis modification or in vehicle painting, though touching up will occur. The service bays are intended primarily for fleet and contracted drivers, but there is an area of parking at the south end of the Subject Property for unaffiliated or noncontracted persons who require maintenance and repairs.

Driveway widths are sufficient to accommodate backing of trucks at all vehicle parking spaces. Applicant's fleet vehicles will offload goods or materials from one trailer onto another using the warehouse. Trailers can be offloaded inside the building or while backed up to the building. It is possible that some loading activity will occur outdoors, but this is limited to only those times when, for a reason not contemplated by Applicant, the warehouse area becomes unavailable. Applicant will not engage in this activity north of the building.

Applicant will comply with all applicable state and federal laws and regulations. Applicant's drivers, contracted drivers (exclusive driver lessees), and maintenance and repair lessees will provide for this as well. All of the foregoing services will meet the minimum requirements noted in the environmental impact assessment. Those bringing vehicles into the site for repair are required to comply with applicable regulations, and Applicant's repair technicians and other staff will be trained in advising these persons on matters that need correction when on site.

The uses meet applicable regulations in the Unified Development Ordinance.

APPLICANT'S FACILITY

Applicant proposes a 35,538 square foot building with a footprint of 31,648 square feet situated amid a parking field with outdoor storage offering 64 employee and client parking spaces (staff has requested additional inlands, causing a reduction to 60 spaces) and 328 trailer parking spaces with a depth of 69 feet. Site access will be via a restricted access driveway that affords left turns from and right turns to Sands Road (signed and designed to physically prohibit a tractor and trailer from making either a right turn in from Sands Road or a left turn out onto Sands Road). Applicant will work with the City to install a left turn lane to allow appropriate stacking of entering vehicles from northbound Sands Road. This lane has not proven to be necessary in the past, and it is not clearly necessary under the traffic analysis, but CivilTech and staff have suggested the right of way improvement. As a result of the left turn lane, the physical improvement to Sands Road will be widened within the existing right of way.

The driveway into the facility exceeds 500 feet. It has a gated and controlled entrance and exit point that connects to solid fencing surrounding the facility. Five tractors with trailers would be able to stack before the gate even though this type of stacking has not been needed once in the history of NVA Transportation. The configuration of the Subject Property (not frequency of need for the stacking) forces the stacking through the narrowest east extension to Sands Road. This portion of the Subject Property can host only the driveway and stormwater improvements with accessory fencing and landscaping.

Applicant proposes a 28-foot tall building with approximately 36,200 square feet, seven repair and service bays, storage areas and a warehouse area with an interior loading dock. The 86' x 369' building has been relocated and reoriented since the July 2023 hearing. The exterior north corner of the office portion of the building will be more than 600 feet from the nearest residence. The repair area will be over 700 feet from the nearest residence. Wall lighting on the building will be directed LED lighting. During permitting, Applicant will modify elevations and parapets to satisfy the City's design regulations. This may lead to an increase in height or total building coverage.

Wall signs on the building comprise a small portion of the building area and will comply with the City's sign regulations. Applicant provides for some building signage that serves to direct activities on site, so there is more than one wall sign. The planned unit development approval would encompass the wall signs reflected in the building elevations. It would also include all reasonable or necessary directional signage and a monument sign that may be placed without any variance or exception from the Unified Development Ordinance.

Interior demising remains subject to change during permitting, but the present design calls for an office area with roughly 11,000 square feet, including private offices and open floor offices, material and equipment storage, break and conference rooms, reception, security, a lobby, and other elements standard to office use. The main office entrance is at the north end of the building.

The maintenance and repair area features access to the parts department and warehouse. An indoor crane will allow for activities that require lifting a vehicle or equipment. New fluids will be stored as required by applicable regulations, including local, state and federal rules. Disposed fluids and parts will be handled on the inside of the building. This would include tires which would not be stored outside. Applicant uses a commercial hauler to legally dispose of waste and others to recycle special materials according to demand. Applicant has compliance offices situated in an area with access to all of Applicant's operations.

The site will be monitored with security (electronic, alarmed and human). The bulk of the site can be viewed from a balcony on the north end of the west building façade. The repair and maintenance area can be observed from the main floor and from the mezzanine. Applicant will rely on employees and use a digital entry and exit system so that it understands who is on site and entering and exiting the site.

Pole lighting will feature directed LED lights mounted on poles above a base, with a total height of 30 feet. Staff has requested shields on the north lighting and Applicant is currently consulting with its supplier on the issue. At a minimum, Applicant will provide the shield as an extension from the pole support, but the specifications for the fixtures may change. *Without considering any of the fencing and dense tree planting* on the property, Applicant planned to

reduce footcandle measurements to zero at the lot lines. The photometric review does not consider either landscaping or fencing.

The substantial plantings offer a meaningful screen that will be planted at the height of the preserved evergreen trees or new trees planted at a height that will be 8-10 feet. Evergreens will reach heights of 40-60 feet. The shade trees on the interior of the fence will be planted at a likely height of 20 feet and canopy diameter of 10-12 feet. These trees will also reach a height of 40-60 feet. Applicant will use care when trimming lower limbs and branches from these trees in order to allow a better lower screen above the fenceline. Applicant will engage in safety and health trimming of all trees as is necessary.

The fencing will be a solid fence that blends into the landscape. Applicant proposes an 8-foot fence at all locations, but it can step the fence up to 10 or 12 feet. The minimum fence height is 8 feet. Staff can insist on a taller fence without a variance. Applicant requested a variance or exception to allow the 12-foot fence on the north lot line as a protective measure. The taller fence will wind along and through the planned rows of trees north of the parking area as shown in the landscape plans.

The facility will meet all storage, disposal and other environmental regulations. The environmental consultants from Jacob & Hefner filed a complete Environmental Impact Statement which concluded that sound from operations will not have an impact on neighboring uses. Not only does the site fall well within background noise levels, but it meets applicable Illinois Environmental Protection Agency standards for noise.

The facility meets and exceeds applicable regulations in the Unified Development Ordinance.

STORMWATER DESIGN

The site faces some stormwater challenges due to changes in grade, but the project will comply with all applicable stormwater regulations at the state and federal level. Plans for civil engineering are far beyond the preliminary stage. Certain relief from the City Council will be necessary in order to continue with the stormwater design, but there is nothing in the engineering to date that will prevent the project from going forward. There is also nothing in the civil work to date that indicates any harm to neighbors or abutting public or railroad uses.

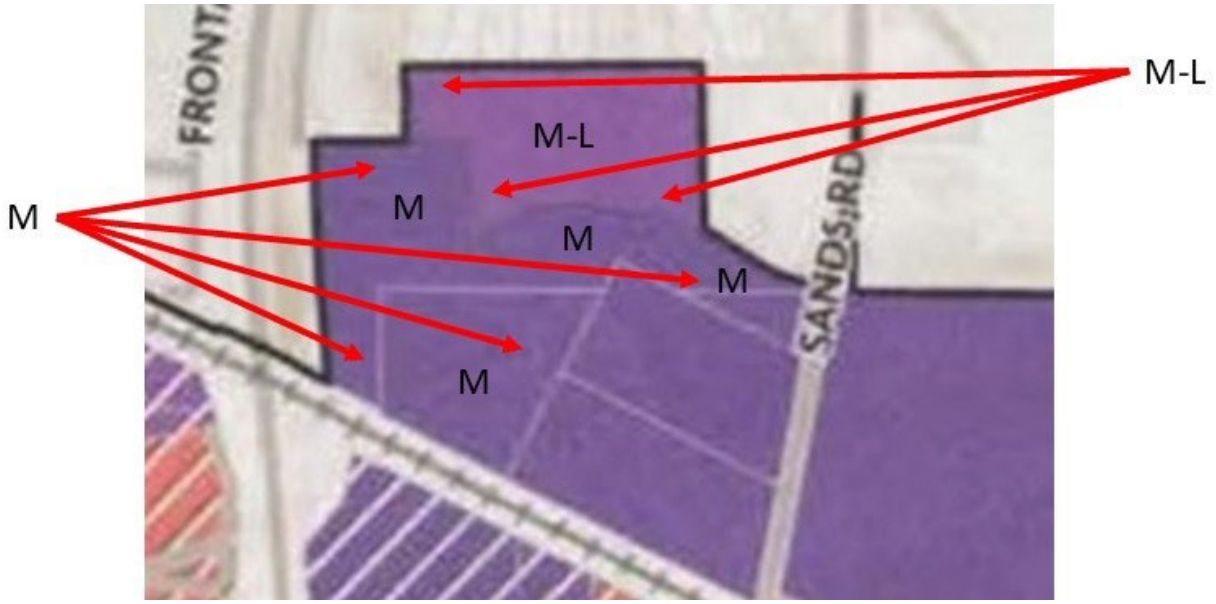
WATER RESOURCES

The site is not in a protected area such as an overlay or a wellhead protection area. Jacob & Hefner utilized four boring and monitoring well locations to determine that the flow of groundwater was as modeled (from west to east). This is consistent with the findings east of the Subject Property. Applicant has proposed, subject to reasonable recapture, to extend the City's water main from south of the Chicago and Northwestern Railroad north along Sands Road to a

point from which it will draw its public water supply and this is a point to which the neighbors may connect (or from which the City may extend the main north). This is a costly improvement. In addition to serving Applicant, once extended, the water main will allow for service connections to the north—adding amenity and significant value to nearby properties. Within the project improvements, Jacob & Hefner will plan as necessary for BMPs. The volume of sheet flow will be reduced. These efforts should contribute to an overall improvement to the watershed.

ABOUT THE SUBJECT PROPERTY

The Subject Property comprises roughly 21 acres situated primarily on the west side of Sands Road at the northeast corner of the junction of Illinois State Route 31 and the Chicago and Northwestern Railway line. Most of the land (15 acres) is within the City's M Manufacturing zoning classification. The north six (6) acres of the Subject Property is in the City's M-L Limited Manufacturing zoning classification. The official 2023 zoning map (see https://www.crystallake.org/home/showdocument?id=22038&t=638131919137857054) depicts the zoning of the Subject Property in shades of purple:



The City's 2030 Land Use Plan (Sec. 26-3(B), Plan at 13, 20, 23) calls for industrial uses at the Subject Property. Ordinance Nos. 7087 and 7088 (Smith Cartage, January 6, 2015) provided for the annexation of territory east-southeast of the Subject Property where NVA Transportation currently has operations. Ordinance No. 7089 approved an M Manufacturing zoning classification for this land, with a planned unit development special use permit for outdoor storage and certain variations to which NVA Transportation succeeded. The site includes outdoor storage and gravel parking by ordinance. There are several similarities between the

proposed use of the Subject Property and the existing use of the property to the east-southeast, but the two sites will remain distinct and governed by different ordinances. One site will not be accessory to the other.

Illinois State Route 31 is the highest topographical feature in the area. The fall across the Subject Property from the paved highway area to Sands Road is 60-61 feet. Portions of the Subject Property have unnatural elevation features compared to the agricultural land use that prevailed between prior to 1939 (U.S. Department of Agriculture (USDA) aerials) and 1975 (Chicago Metropolitan Agency for Planning (CMAP) aerials). There are no surface water features on site. Substantial changes in elevation exist on the west side and at various other locations. Following the first hearing night, Applicant evaluated groundwater flow utilizing four monitoring wells and it confirmed that groundwater flows to the east, away from residents. This direction of flow was previously modeled, and the easterly flow is similar to the flow analyzed for areas east of the Subject Property.

The Subject Property is a limited frontage parcel. If the Illinois Department of Transportation were to allow access to Illinois State Route 31, the access would occur via a frontage road and operate in a fashion that is inconsistent with the religious assembly use and/or farmstead use that currently use the uncontrolled intersection at Oak Valley Drive which has an entry throat depth shorter than that the length of a semi-tractor and trailer and a width of only 24 feet (right-of-way damage visible in aerial photographs reflects that existing radii at the intersection are insufficient for current uses). Planning for the Sands Road area has always contemplated use of Sands Road south of the residential development for access to the manufacturing, limited manufacturing and industrial land along Sands Road.

There is no knowledge of any prior development on the Subject Property other than for agricultural purposes. Dating from March 1939 to at least the 1970's, confirmed through discussion and through review of 1939, 1954, and 1967 USDA aerial photography, the land was used for cultivation. Remnants of agricultural zoning and land use remain in the area, including near the northeast and northwest corners of the Subject Property. East of the Subject Property there was substantial mining, waste disposal, and industrial use. By 1969, some homes developed north of the Subject Property at a distance of between 2,000 and 2,500 feet (Laurie Lane), but the territory south of Laurie Lane hosted cropland, farmsteads and a church according CMAP, 1970 aerial photographs. CMAP aerial photographs reflect that the first buildings in the manufacturing district developed closer to the intersection of U.S. Route 14 and Sands Road before 1970, and the buildings north of the Chicago and Northwestern Railway developed before 1980, prior to the construction of homes along the north lot line of the Subject Property. The use east and north of the Subject Property developed between 1980 and 1985, before homes to the north were fully constructed.

There are no known environmental conditions on the Subject Property that would prevent its use for the project. Sands Road is a two-lane minor arterial road that connects Crystal Lake Road with Three Oaks Road where it connects with Lutter Drive to the south. Sands Road is

designed and intended to serve commercial vehicles, including semi-tractors and trailers. The intersection of Sands Road with U.S. Route 14 is planned in accord with Federal Aid Highway standards, offers ample stacking for eastbound trucks making the left turn onto Sands Road. The turn lanes and two through lanes in each direction of Illinois Route 14 are sufficient for existing and developing uses in the area.

THE AREA SURROUNDING THE SUBJECT PROPERTY

The Subject Property is in Crystal Lake (population (+/-40,000) and McHenry County (population +/-312,000). McHenry County has grown fivefold since the 1960's, leading to more modern planning for the attraction and preservation of jobs in the area. Situated along the west side of Sands Road, the Subject Property has near immediate access to U.S. Route 14 and Illinois State Route 31 (the latter being a limited access highway abutting the west line. The Subject Property also abuts the Chicago and Northwestern Railway line (also the Union Pacific Northwest, operated by Metra) at its south lot line.

As noted above, the split M Manufacturing and M-L Limited Manufacturing zoning classifications on the Subject Property leave this tract as one of the larger locations available for single use in the area. The Subject Property comprises more than 25% of the immediate 80-acre territory the City classified within the M and M-L zoning districts. The larger industrial use complex extends from west of Illinois State Route 31 a distance of 1.7 miles to the east along the north side of U.S. Route 14, well beyond the City's limits. The whole of the industrial complex comprises 520 acres zoned for manufacturing and industrial uses by the City and County. The area is a longstanding contiguous area for manufacturers and industry.

The purposes of the McHenry County industrial districts appear in Section 16.36.010(D) of the County Zoning Ordinance:

> 2. Purpose of the I-1 Light Industrial District. The purpose of the I-1 Light Industrial District is to provide for a wide variety of light manufacturing, fabricating, processing, research, wholesale distributing, and warehousing uses. Light industrial uses are enclosed low-intensity, non-nuisance light fabrication, and assembly-type manufacturing, as well as research facilities with little to no outside impacts. The industrial zoning districts are generally located away from residential development and near transportation facilities and municipalities. Dwellings are permitted above or behind ground-floor light industrial uses to allow for a mixed-use environment, typically for caretaker residences.
>
> 3. Purpose of the I-2 Heavy Industrial District. The purpose of the I-2 Heavy Industrial District is to provide for a wide variety of general manufacturing, fabricating, processing, wholesale distributing, and warehousing uses. General industrial uses include fabrication, warehousing, and assembly-type manufacturing, as well as office and research facilities, which may result in some moderate external effects such as smoke, noise, glare, or vibration, and typically include outdoor storage and related outdoor activities. The

industrial zoning districts are generally located away from residential development and near transportation facilities and municipalities.

Table 16.32-1 of the County Zoning Ordinance includes the following industrial uses: adult use (conditional); airports (conditional); freight terminal (conditional and permitted); landscape business with outdoor storage (permitted); industry (light permitted in I-1 and I-2, heavy permitted in I-2); recycling collections (permitted); recycling processing (conditional and permitted); sawmills (conditional and permitted); storage yards (permitted); truck washes (permitted); warehousing (permitted).

North of the property is an unincorporated residential subdivision that developed between the 1970's and late 1980's. The six residential lots that share their entire rear lot lines with the Subject Property have an average lot area of 0.56 acres (a reasonable lot size for homes on private wells and septic). There are two farmstead lots at the northwest and northeast corners of the Subject Property. The northwest tract is zoned County B-3 and County A-1. East of this tract lie nine homes (County R-1, 0.50 acre minimum, 0.60 average lot area) platted in the Lor-El subdivision in 1979. East of these lots is another farmstead parcel that still carries County A-1 zoning. Otherwise, the nearest residential use is across Illinois State Route 31 (County A-1, E-1, R-3). Wyndwood Subdivision Unit 3 is roughly 1,300 feet north-northeast of the entrance to the proposed development, adjacent to a large County I-2 zoning district.

Between the Subject Property and Wyndwood Unit 3, lies a County I-1 zoning district that hosts a multitenant industrial building with outdoor storage and operations. Commonly known as 6711 Sands Road, this parcel hosts Delta Therm (heating cable manufacturer), Barrington Hardwoods (hardwood flooring and lumber supplier and manufacturer), and Pure Sweat Basketball Education Center (athletic training) on approximately 5 acres zoned Manufacturing Limited (M/L). East of these uses on the east side of Sands Road is a nonconforming County E1 parcel hosting a live-work environment with two residential occupancies and a contractor's shop or garage with industrial garage capacity and an office in a detached steel building. Further east lies the east extension of the City's M Manufacturing zoning district and the remainder of the large McHenry County I-1 and I-2 zoning districts.

There is a collection of industrial uses south and east of the Subject Property. Most of these were closer to U.S. Route 14 but they have been active since before 1970 (CMAP aerials). The existing NVA site was originally constructed for a more intensive use, but current operations involve trucking and warehousing for the 47 trucks and several employees. An outdoor storage facility operates north of this site with interior storage and work areas provided in three buildings with an aggregate area of more than 40,000 square feet, one of which is 29,000 square feet. South of the Chicago and Northwestern Railway, All American Wood Register Co. operates a plant that manufactures HVAC vent covers and registers as well as mouldings, treads and risers. To the west of All American, there is a large self-storage facility situated behind a multi-use automotive repair and service center. Still further west is LL Flooring (formerly Lumber Liquidators) and a corporate U-Haul rental, storage and propane service facility, the latter of

which was operated as a publishing and distribution facility by Follett Books for a few decades. Most of these uses feature unscreened outdoor storage and outdoor operations on compacted soil and gravel surfaces.

A Casey's automotive service station and convenience store is being developed at the northeast corner of the intersection of Sands Road and U.S. Route 14 (4220 Northwest Highway). Following several years of underutilization after an RV business closed, the Casey's development is part of a three-lot subdivision. East of this site on the north side of Northwest Highway lies the active remainder of the industrial complex, and the uses include precast concrete operations (Wells), asphalt operations (Geske), landscape businesses, contractors, iron works, electrical fabricators, and the Sands Dump site (an abandoned sanitary landfill and archived superfund site that was operational when homes nearby developed) a bit further to the north. Suburban Propane is the most visible of the uses in this area, and Nimco Drive hosts others. Nimco Drive is named after Nimco Corporation, a designer and manufacturer of packaging lines. The Hollows Conservation Area is east of the industrial complex.

All of the uses rely on trucking. Most have outdoor storage of materials and outdoor parking of trucks and trailers among other commercial vehicles. All of these uses contribute to the existing volume and type of commercial vehicle traffic on the roadways. Sands Road itself is designed to carry industrial and manufacturing traffic between industrial and manufacturing uses along Sands Road and nearby highways.

Land use south of Northwest Highway transitions to automotive, retail, hotel and office use, extending west of Illinois State Route 31. Uses closest to the interchange between Northwest Highway and State Route 31 include flex office and self-storage. West and northwest of the Subject Property, across Route 31, are a few unincorporated former farmstead properties and an incorporated residential subdivision. The City's M Manufacturing district resumes north of Menards and extends northwest along the south side of the Chicago and Northwestern Railway.

The planned unit development mechanism is common in this portion of Crystal Lake due to the importance of planning for a variety of more intense uses amid key arterials, the Chicago and Northwestern Railway, and the varied zoning districts. Residential, commercial, office and manufacturing districts along Illinois State Route 31 almost uniformly involve planned unit developments. Planned unit developments also dominate territory west of the Subject Property between Illinois State Route 31 and Main Street.

PLANNED UNIT DEVELOPMENT STANDARDS

The UDO guides the City in its application of standards for planned unit developments. In general, Applicant proposes unique and innovative development of land inasmuch as it has placed an appropriate use designed in a fashion to have an amplified buffer and transition area between the north improvements and the north lot line. Applicant accomplishes this through two types of trees, fencing, grading and directed LED lighting as well as operational controls. It also

plans retention and detention on a complex site. The development allows private investment in two public improvements: (1) the extension of the water main to the north lot line along Sands Road; and (2) installation of a dedicated left turn lane into the Subject Property from Sands Road.

The proposed development will immediately support at least 30-35 on-site staff (20 currently in the office and 8 in the repair and parts area) with the headquarters office space and the parts and vehicle repair space. NVA currently operates roughly fifty (50) commercial vehicles and slightly more trailers of varying types (70-80). The project will support more drivers and allow an expansion of the number of staff in the office and repair area to 50 or so individuals. Like many companies, NVA has some people working remotely. NVA operates in shifts with the administrative and management staff working a normal workday schedule, dispatch working 40-hour weeks but in shifts, and repair and maintenance working primarily Monday through Saturday with shortened hours on Saturday. Demand will alter the dispatch and repair and maintenance scheduling of staff. NVA anticipates having someone on site 24 hours a day once demand for this scheduling ramps up.

Transportation, including trucking, is one of the more obvious cogs in the warehousing and distribution network, and those engaged in this work contribute significantly to our high quality of life. From traffic and bulk perspectives, the proposed use is less intense than other uses that are allowed in the M and M-L districts. Applicant displayed a distribution center plan to neighbors and provided this plan to staff in order to allow a comparison of how the distribution center use—one that could include cold storage and movements 24 hours a day all days of the week—would fit on the site as a matter of right. The proposed development does more to preserve interests of neighbors to the north than would another development or collection of developments that would necessarily involve more vehicle trips.

The watermain extension, dedicated left turn lane and amplified buffer (featuring a fence at the height staff prefers (up to a noticed height of 12 feet as well as at least three rows of evergreens and canopy trees that will reach substantial heights) all indicate that the development is of a high quality. The environmental impact statement indicates that the plan is environmentally sensitive and capable of adjustment to meet evolving energy efficiency options that are developing in the transportation industry. The plan also reflects compliance with City goals ranging from zoning rules and regulations (no zoning variation is required for the development and the project falls within allowed uses in the UDO) to comprehensive planning (the project extends and improves the water system and roadway network, maintains jobs, increases the employment base, and dedicates land to uses within the stated purposes of the zoning districts).

Applicant proposes a taller fence as deemed necessary and that it believes that the landscaping meets the requirements of the UDO by providing far more along the north lot line than the minimum (the ordained minimum includes shrubs). Further, some relief is required from the City Council to allow for proper stormwater planning amid the topographical conditions

across the Subject Property. These small adjustments benefit from the intended planned unit development protections imposed through detailed review of the proposed development.

> Notably, the UDO would allow this use without a change in zoning classification:
>
> This special regulatory technique is included in this Ordinance in recognition of the fact that ***traditional use***, bulk, space, setback and yard regulations that may be useful in protecting the character of substantially developed and stable areas may impose rigid regulation upon the development or redevelopment of parcels or areas that lend themselves to an individual, planned approach.

(UDO, Sec. 4-500(A)) The proposal meets the intent of the planned unit development chapter by allowing greater flexibility in planning design amenities, allowing greater latitude in integrating residential and nonresidential land uses, and promoting high-quality design and environmentally sensitive development in light of site characteristics, location and use.

Under Section 4-500(B)(1), "[t]he permitted uses within a PUD are subject to the discretion and approval of the City Council with recommendations from the Planning and Zoning Commission, based on the land uses prescribed in the City's adopted plans." As noted above, all aspects fall within the range of uses contemplated by the permitted, limited or special uses in the UDO. The primary concern of staff has been that the ratio of truck and trailer parking to building or interior distribution facility is higher than they would expect. There is no ordained ratio. There is also no provision requiring all of the distribution process be facilitated on one site, and it is common for companies with products and materials to outsource components of the distribution process. The project allows the City to regulate the use at the Subject Property so that the perceived higher ratio of trucks and trailers is screened and buffered and so that it is under the operation of one entity while also avoiding any other concerns.

Under Section 4-500(B)(2), "[t]he PUD ordinance shall indicate, either directly or by reference, the land use, development and design requirements and other applicable specifications that shall govern the planned unit development." In doing so, the PUD will specify particular land uses and incorporate various development and design plans and specifications. The bulk of the ordinance requested in this instance will address the use and related design parameters, most of which meet the requirements of the UDO. In this instance, Applicant particularly seeks authorization of a truck terminal inclusive of the following uses:

i. Warehousing and transportation (permitted/limited);
ii. Office headquarters and logistics (permitted/permitted);
iii. Truck leasing (limited/not permitted);
iv. Automotive repair (minor) (permitted/permitted)
v. Automotive repair (major) (limited/special);
vi. Automotive Oil/Lube (permitted/permitted);
vii. Automotive Parts, Accessories and Tire Stores (not permitted/permitted);

viii. Private parking with vehicle service plan (special/special); and
ix. Outdoor storage (limited/limited).

The increase of the height of the fence is not a "lessening of the required standards of the Unified Development Ordinance" since staff can require a taller fence, but the fence is an added, solid barrier between the parking and storage areas and the homes to the north and it unquestionably directly relates to the creative design, merits and benefits of the PUD to the City since no fence is required and because the fence serves as a benefit to screening along a north property line that varies in topography. Although one might view the omission of shrubs from the landscape plan as a shortcoming, the provision of trees instead of shrubs is a material enhancement of the plan and it exceeds the requirements of any number of shrubs while offering a more substantial landscape screen.

The area designated in the PUD will remain under single-ownership and/or unified control. Since Applicant has already applied for a building permit, the City should have substantial confidence that the proposed structures will conform to the approved final PUD.

Section 4-500(C) provides the City's PUD development standards. These are addressed in the proposed findings of fact attached to this narrative.

PROPOSED FINDINGS OF FACT AND CONDITIONS OF SPECIAL USE PUD

Applicant submits the following proposed findings of fact and conditions. More detailed factual support is provided in the narrative to which these are attached and in staff reports. The conditions recited below are an attempt to collect a reasonable set of conditions with the understanding that Applicant will substantially comply with the plans on file and with the statements pertaining to operations in the Environmental Impact Statement. The conditions will be the subject of some discussion, but they assemble various points raised in the prior hearing and in communications from staff.

Section 9-200(B)(3) Findings (Rezoning)

The existing uses and zoning of nearby property support reclassification of the M-L portion of the Subject Property so that the entirety of the Subject Property is zoned M Manufacturing. According to the official zoning map published by the City, most of the Subject Property, including all of its frontage along Sands Road, State Route 31 and the Chicago and Northwestern Railroad, is zoned M Manufacturing. Applicant provided a copy of the official zoning map obtained from the City's website which reflects a different line for the boundary between the M and M-L districts than the figure in the staff report. The staff report also reflects that the M-L portion of the Subject Property is larger than the M portion. Whether this was the result of proceedings that occurred in conjunction with the 1985 annexation or the result of some other circumstance, viewing the Subject Property as a whole, the M district extends across the Sands Road frontage and along most of the railroad.

The Subject Property is part of a large manufacturing and industrial complex extending far east and far west of the Subject Property. Several residential lots abut the complex at points where the zoning classification is either City M-L, County I-1 or County I-2. There is no non-manufacturing zoning classification that will operate efficiently at the Subject Property since there is limited or no access to State Route 31, there is no visible frontage that would operate to support anything other than manufacturing use, and the northern M-L portion of the Subject Property draws its characteristics from the Sands Road frontage which is zoned M from the Subject Property south to Northwest Highway.

Applicant presented an extensive recitation of use in the area, including its similar but much smaller, distinct use adjacent to the Subject Property. Incorporated and unincorporated uses north of the railroad and west of Sands Road uniformly feature outdoor storage, commercial hauling, and outdoor operations. This circumstance prevails throughout the larger complex with the most notable exception being the former County waste disposal site (identified as an archived superfund site).

The extent to which property values are diminished by a particular zoning classification or restriction is substantial. Staff has reported that the Subject Property was part of a failed 1985 effort to develop multiple subdivided industrial lots. Despite this history, over the next nearly four decades, the Subject Property has remained the only unutilized tract in the large manufacturing and industrial complex. Applicant has asserted that the split classification disregards the absence of access to State Route 31 and the relatedness of the M-L district territory to the rest of the Subject Property and its point of access between two other M parcels and a County I-1 parcel. Due to the extreme changes in topography across the Subject Property, the M-L portion cannot be planned and utilized independently from the M portion.

The minimal extent to which the destruction of property value of the Subject Property promotes the health, safety, morals or general welfare of the public no longer justifies split zoning. Since 1970, the trend of development has been towards industrial use south of the north lot line of the Subject Property and residential use north of this line. As industrial use extended north from Northwest Highway, residential use extended south. The homes north of the Subject Property were developed in the County at a time when the Subject Property was planned for nonresidential use and zoned for industrial use. Similarly, along the east side of Sands Road, heavy industrial use (a County landfill) was in progress and later closed. In light of the prolonged vacant status of the Subject Property as well as the City's setback and transitional use regulations for both the M and the M-L districts, the M-L classification for the north portion of the Subject Property is no longer appropriate to buffer or screen the residential area to the north.

The gain to the public is de minimis under the current regulations in the UDO and it pales in comparison to the hardship imposed on Applicant. The hardship imposed by the split zoning is substantial, and this hardship has caused the Subject Property to sit in an unutilized state since 1985. Regulations for the M district and the M-L district call for similar buffering,

spacing and screening under either classification. Applicant has asserted that rezoning is unnecessary since the UDO allows Applicant to seek PUD approval with modifications for the uses within the PUD. However, other provisions in the UDO and staff indicate a preference for zoning consistent with particular permitted uses. For this reason, the current regulations do present a practical prohibition of development (even when it has been approved, as in 1985). The gain to the homes developed when industrial use was contemplated to their south is nominal when taking into consideration the range of available uses in the M-L district and existing UDO regulations.

The Subject Property is not suitable for M-L zoned purposes. As part of a large territory with significance not only to the City, but also to the County, for job creation and retention in the industrial use category, the entirety of the Subject Property is suitable for M district use. Historically, the Subject Property has not proven capable of development for the currently-zoned purposes, with M-L zoning district use at the north end of the Subject Property or at least in areas removed from Sands Road frontage which is the only point of access for such uses in light of the design of State Route 31. The topography of the Subject Property does not afford any expectation that the M-L portion of the Subject Property can be developed independently of the remainder of the Subject Property.

The Subject Property stands vacant sixty years after other industrial development in the area and forty years after the last northerly expansion of industrial use nearby . The Subject Property has been zoned M-L for nearly forty years. A failed attempt to develop independent industrial lots occurred in 1985, but no other option for use of the Subject Property has arisen since then. This vacancy does not align with the demand for and use of other industrial lots in the City or in the vicinity of the Subject Property.

The Comprehensive Plan designation and the current applicability of that designation. The proposed zoning is in line with the City's objectives under the Comprehensive Plan. Although M-L zoning is also consistent with the Comprehensive Plan, the M-L zoning classification has not afforded any opportunity for development under the M-L classification. Manufacturing and industry use underlies the Comprehensive Plan designations for the Subject Property.

There is a community need for the use proposed. Applicant has presented ample evidence that the development of the whole of the Subject Property is necessary to avoid a continued discordant vacancy. Further, development of the whole of the Subject Property is necessary to manage topographical conditions at the Subject Property. Public infrastructure improvements necessary to development can also be achieved with development of the whole of the Subject Property when development of the parts has not only failed in the past, but also has not offered any extension or improvements to existing public infrastructure. Lastly, there is a demand for Applicant's use inasmuch as the growing population of the City and County consumes products that require shipping and transportation services and there are users in the immediate area who can benefit from services offered from the Subject Property.

Section 2-400(B) Findings (Special Use Criteria)

Applicant seeks a special use permit for a freight terminal based on meeting with staff during which staff concluded that the entirety of the use described in the narrative most closely resembled this use. The term "freight terminal" is not defined in the UDO. Collins Dictionary defines "freight terminal" as "a place where freight is stored while awaiting onward transport." https://www.collinsdictionary.com/us/dictionary/english/freight-terminal Merriam-Webster does not define "freight terminal" but it defines "freight" as "goods to be shipped" (a noun) or "to load with goods for transportation" (a verb) and "terminal" as "either end of a carrier line having facilities for the handling of freight and passengers" or "a freight or passenger station that is central to a considerable area or serves as a junction at any point with other lines."

One foundation for staff's classification of use lies in the warehouse component of the project where freight is broken down and reloaded for delivery, but warehousing distribution is a limited use and a permitted uses in the M-L and M districts, respectively. Another possible foundation may lie in the circumstance that truckers begin and end their journeys at the Subject Property. Applicant seeks a special use permit for a "freight terminal" featuring (a) warehousing and transportation (permitted/limited), (b) office headquarters and logistics (permitted/ permitted); (c) truck leasing (limited/not permitted), (d) automotive repair (minor) (permitted/ permitted), (e) automotive repair (major) (limited/special), (f) automotive oil/lube (permitted/ permitted), (g) automotive parts, accessories and tire stores (not permitted/permitted), (h) private parking with vehicle service plan (special/special), and (i) outdoor storage (limited/limited).

The evidence from staff and from the initial hearing night supports staff's interpretation under Section 2-200(D)(1) that the proposed use has similarities to a freight terminal. All of the factual findings below arise from and rely on the plans and reports submitted at hearing, compliance with which is mandatory under the UDO. Further, maintenance and repair of site improvements and landscaping, including replacement of trees, is required.

The use is necessary or desirable, at the proposed location, to provide a service or facility which will further the public convenience and general welfare. The Subject Property is situated in the middle portion of a large manufacturing and industrial area that covers areas within the City and unincorporated McHenry County. Sands Road is a minor arterial designed to serve manufacturing and industrial uses north of Northwest Highway (U.S. Route 14) and uses along Sands Road and Northwest Highway also have access to State Route 31. As planned, the most passive component of the use is planned to the north of the Subject Property in a fashion to reasonably transition from vehicle parking and storage to residential use and the most active use areas are 600 feet south in an area generally south of the north wall of the building. The proposed use is less intensive than other uses allowed in the M and M-L zoning districts. The retention of jobs in the City is necessary and desirable, and the continuation of a trucking and logistics firm in the City is also necessary since several members of the community and residents of the County work in this field. Additionally, the City's and County's economy depends on trucking

and allowing a logistics firm like NVA to operate from the Subject Property furthers the City's interests by not only having a local firm engaged in over-the-road service but also in less-than-load service. Shipping of goods and materials is an essential public convenience.

The extension of the watermain and widened Sands Road at the entrance add public convenience.

The use will not be detrimental to area property values. The manufacturing and industrial complex developed prior to the abutting single family residential uses and homes east and west of Sands Road. The area has included light and heavy industry since prior to the 1960's, including the sanitary landfill. The industrial use north and east of the Subject Property on the west side of Sands Road preexisted most of the homes in the subdivision north of the Subject Property and it has outdoor operations and storage under the County's I-1 classification. The project will add certainty to land use in the area and this business involves a use that is less intensive than a full distribution center. The project now features a buffer that provides multiple rows of trees and a fence, when fewer trees and shrubs are required along the north lot line. The project does not cause concerns relating to the environment, groundwater, drainage, or noise. As planned, the project complies with nearly every regulation which, in itself, is a sign that there will not be a detriment to area property values.

The Applicant's extension of the public watermain north will benefit these homes. Applicant will not tap into the existing aquifer(s) in the area or pose a risk to the aquifer(s) for those residents who do not wish to eventually connect to the watermain. Additionally, Applicant is providing for turn restrictions and a left turn lane that will avoid neighbors' concerns over their use of Sands Road north of the entrance to the site.

Applicant presented testimony from a licensed Member of the Appraisal Institute to support the determination that the property values for homes to the north will not suffer. The report notes the progression of development and the environment from which the original and resale values of homes arose. At original sale and each resale period, the Subject Property was planned for manufacturing and industrial use and was part of a district that included active industrial and manufacturing uses. The written report is part of the record at hearing.

The use will comply with the zoning districts regulations. The project complies with all zoning regulations. Where Applicant seeks relief for a fence, the City can impose a condition requiring a taller fence (in some cases at the staff level). Staff has some concerns with a 30-foot landscape buffer between the improvements and the abutting use at the northwest corner of the Subject Property, and all plans shall reflect compliance with this 30-foot landscape buffer. As noted in the recitations of use (principal and accessory), the uses are permitted, limited or special uses. The Applicant will need to comply with the City's design guidelines and conform its permit drawings to meet the requirements noted by staff.

The use will not negatively impact traffic circulation. The City's traffic consultant reported that the use will not negatively impact traffic circulation in the area. Where the consultant raised issues that have been debated, particularly the designated left turn lane and southbound right turns into the development, Applicant agreed to meet the suggestions of the consultant. Sands Road is a minor arterial street that has been improved to serve manufacturing and industrial uses and the character of traffic on this road from the residential area south to Northwest Highway is manufacturing and industrial. In addition to the left turn lane, the site offers ample stacking for at least five trucks with trailers once they exit the public right of way.

The use will not negatively impact public utilities or municipal service delivery systems. If required, the use will contribute financially to the upgrading of public utilities and municipal service delivery systems. Applicant will perform the extension of the watermain at its expense subject to a reasonable recapture agreement. The extension shall be to the north line of the Subject Property where it intersects with Sands Road. Adequate utilities are available to the Subject Property or can be made available to the Subject Property (for example, when on-site EV charging is a significant component of the logistics operation). Applicant seeks a deferral of relocating overhead utility lines underground since there is a substantial overhead utility system and the Subject Property comprises only a small fraction of the land that would have to participate in the burying of utility service lines. This request is reasonable in light of the historic development north and south of the Subject Property.

The use will not negatively impact the environment or be unsightly. As noted above, the building substantially complies with local ordinances, but there are still elements of design that need to be adjusted during permitting related, for example, to the roofline and the anti-monotony efforts on the building elevations. Applicant will meet the City's design standards. Applicant submitted an Environmental Impact Statement, cross-section views, operational plans and constraints and parking and storage plans. Applicant also provided for multiple rows of trees as well as a fence along the north lot line when the fence or trees and shrubs were required. Applicant's lighting plan contemplates zero footcandles at the north lot line without considering the fence or the trees. Lighting will be directed LED lighting with a shield when deemed necessary by staff in the north row of lights. Applicant will comply with Illinois law concerning truck idling. Staff has recommended idling constraints which Applicant will comply with. Exceptions with respect to idling arise during cold weather events, but Applicant has committed to complying with these except when weather causes deviations.

The use, where possible, will preserve existing mature vegetation, and provide landscaping and architecture, which is aesthetically pleasing, compatible or complementary to surrounding properties and acceptable by community standards. Applicant hired a landscape professional to preserve existing trees that were removed pursuant to a City permit and it is determined to replant these trees within the area of the north lot line. Applicant must add landscape islands at a cost of four planned employee/guest parking spaces and it must add shrubs in a few areas on the west side of the Subject Property, but its landscape plan otherwise exceeds the requirements of the City—particularly along the north lot line. Applicant's realignment of the

building diminishes the impact of the large facility and also serves to redirect any external sound from operations near the building. As part of Applicant's building permitting, Applicant shall meet the design regulations of the City to break up the elevations and differentiate the roofline.

The use will meet requirements of all regulating governmental agencies. The Environmental Impact Statement notes that Applicant will meet U.S. and Illinois EPA standards. Applicant will be required to enter into a public improvement agreement with the City concerning the Sands Road improvement and the watermain extension, both of which will meet local and state regulatory requirements.

The use will conform to any conditions approved as part of the issued Special Use Permit. The conditions and commitments of the Applicant are set forth at the conclusion of the findings section. There is no indication that Applicant will be unable to meet the conditions imposed. Further, there is no indication that Applicant will be unable to meet the terms of the City's ordinances which are not the subject of the planned unit development adjustments.

The use will conform to the regulations established for specific special uses, where applicable. Please see the industrial planned unit development findings below. There are no special regulations for a freight terminal other than those imposed as conditions below.

Section 4-500(C) Findings (PUD General)

The PUD implements the vision and land use policies of the Comprehensive Plan and the adopted subarea plans. The project does not implicate the Watershed Development Guidelines (Code, 26-3(A)), and it will improve conditions through appropriate civil engineering and best management practices that serve to reduce sheet runoff and soil erosion. The project is consistent with the Comprehensive Plan and Map. (Code, 26-3(B)) The extension of the watermain improves upon the existing water system and supports carrying out the Water System Master Plan in a fashion that allows for future service to unincorporated areas as they annex. (Code, 26-3(C)) To the extent that the City carries out green initiatives or green infrastructure, the project has relied on a professional landscaper to preserve trees removed under a City permit and a landscape architect and planning firm to plan for the relocation of these trees to the north lot line and planting of additional trees, resulting in the provision of more trees than are required for the development. Ultimately, there is space available at the site for the installation of EV technology once it catches up with the transportation industry. Applicant is willing to work with the City to reduce loading of nutrients or sediment provided this can be accomplished within the site plan and on an appropriate scale without causing any changes in groundwater flow or an inappropriate recharging from an industrial area of an aquifer that serves a residential area.

The PUD will not result in a substantial adverse effect on adjacent property, natural resources, infrastructure, public sites or other matters affecting public health, safety or general welfare, as they exist at the time of application or as they may exist in the future. The project adequately screens and buffers adjacent properties, avoids problems with noise or other

pollution, and relies only on the portion of Sands Road south of the entrance. As noted above, the engineering of the site will reduce sheet runoff and sedimentation. Proper management of vehicle idling will occur. The additional trees are also a benefit to area natural resources. The addition of the left turn lane and the extension of the watermain will benefit the City's infrastructure. Sidewalks are not appropriate at this location since there are no sidewalks and Sands Road is not a pedestrian friendly right-of-way. Underground utility lines are not practical in the area unless there is a far broader effort under way that involves multiple owners across a larger area. No public sites will be impacted by the project inasmuch as access to these sites is the only immediate issue and Applicant has not relied on, and will not rely on, Sands Road north of the entrance. There are no known future plans that would change these findings.

Proposed development along the perimeter of the PUD is compatible with adjacent existing future development. This is the last vacant and undeveloped site in the immediate area. The plan is consistent with development to the east, northeast, southeast, and south and it is divided from non-industrial use by two major arterials (Route 31 to the west and Northwest highway to the south). The industrial area developed before the residential area abutting the Subject Property on its north lot line, with the industrial lot northeast of the site constructed before homes to the north and west were fully constructed. The project provides for adequate and compliant setbacks, with the north landscape buffer planned for more trees than required by code as well as a continuous fence. The more intense use areas and the building are situated at the south end of the Subject Property near the railroad. Applicant included in its request a willingness to increase the height of a solid fence on the north lot line to as tall as 12 feet. This fence meanders through the planned evergreen trees, many of which are the same trees that existed on site prior to application. Applicant also adds canopy trees where they did not exist. Exterior lighting planned relies on zero footcandles measured at the north lot line—before considering any fence or trees. The buffer on the north lot line will screen the project sufficiently and it also provides a screen from the existing industrial use that abuts the homes extending west from the northeast corner of the site.

No phases of development are proposed for the PUD other than those which will apply under the public improvement agreement with the City that covers the watermain extension and the Sands Road improvement.

The density for residential developments and the intensity of the project is consistent with the Comprehensive Plan and adopted subarea plans, and there is no need for an allowance of excess density. The project complies with regulations pertaining to use and the purpose statements in the Comprehensive Plan as well as the purpose statements in the UDO for the M and M-L districts.

The project meets lot area, lot width, setback, building coverage, impervious coverage, and floor area ratio regulations. The building complies with height limits and it will do so even with adjustments of the roofline for building permit design review. The only dimensional standard the project considers altering relates to the height of a fence that meanders through the

trees on the north lot line. The eight-foot height is sufficient, particularly in light of the rows of evergreens and the canopy trees. However, neighbors may perceive a benefit if the fence is 12 feet tall since there is a significant change in grade north of the property that occurs from east to west and also heading north from the lot line depending on the particular location at issue. This and other adjustments may be specified in the PUD approval.

Applicant is the responsible party for all on-site and other required public improvements. A full engineering set has been provided. Due to the complexity of the site, Applicant provides more detail than ordinarily required for zoning review. Necessary easements governing access for stormwater purposes will be provided if deemed necessary by the City.

There are no public or private streets within the PUD. There is adequate access for emergency service vehicles, more off-street parking than required, and adequate space for public utilities and the Sand Road improvement within the right-of-way. Applicant will have some work relating to easements for the watermain extension if ultimate engineering drives the installation of the main outside of the Sands Road right-of-way. There are no sidewalks in the area.

The PUD provides sufficient detail for the right-of-way work and watermain extension. It is Applicant's responsibility to perform the Sands Road improvement and entrance driveway connection as well as the watermain extension. Applicant is also bound (PUD or not) to provide for soil erosion and sedimentation control among other matters during development. Public infrastructure will not be located inside the development, but the City may determine that it desires a stormwater easement which would be a consequence of development even without a PUD. There are no dedications contemplated, but Applicant will provide for a bill of sale and other appropriate documentation for the watermain extension and Sands Road improvement according to the terms of a public improvement agreement.

Applicant will provide necessary bonding or letters of credit required public improvements (the watermain extension and Sands Road work) as well as private improvements for which a performance bond may be required. There are no school and park cash contributions since there are no residents.

Section 4-500(D)(3) Additional Industrial PUD Standards

The industrial PUD is located in the M-L Manufacturing Limited or M Manufacturing District on land proposed to be uniformly zoned within the M Manufacturing classification.

The principal permitted use for a "freight terminal" is an authorized use permitted in the M Manufacturing. Other uses permitted under Article II for the M and M-L districts are principal and accessory uses that are allowed within the PUD. Applicant pursues the PUD within staff's determination that the use comprises a "truck terminal" even though this is also the headquarters for Applicant and several of the other categories of use are permitted on the Subject Property.

PROJECT CONDITIONS

Under Section 9-2000(D)(6), the Planning and Zoning Commission may recommend and the City Council, in granting any special use, may impose such conditions or restrictions as appear necessary to minimize possible detrimental effects of such special use upon other properties in the neighborhood. Planned unit developments are special use permits and subject to the same power to condition approvals under Section 9-200(E)(7).

The conditions provided below are a compilation of commitments by the Applicant and conditions recommended by staff, adjusted to conform more to expectations relating to the project.

1. Development shall be substantially in accord with approved plans, subject to revisions to reflect staff and advisory board recommendations, as approved by the City Council:

   a. Application (NVA Transportation, received 03/01/23)
   b. Architecture Plans (DDCA, dated 05/12/23, received 06/08/23), provided that, as long as the exterior appearance or intensity of use of the building does not materially deviate from these plans, the plans may be revised within the general footprint of the building for compliance with design regulations, applicable building and fire and life safety codes or other matters, including interior and exterior planning, during the permitting process;
   c. Site Plan (Jacob & Hefner, dated 11/20/23, received 12/22/23);
   d. Landscape Plan (Gary Weber Assoc., dated 12/22/23, received 12/22/23);
   e. Engineering Plans (Jacob & Hefner, dated 12/20/23, received 12/22/23);
   f. Water Main Extension (Jacob & Hefner, dated 10/20/23, received 12/22/23), provided that the main shall be extended to the intersection of the eastern north line of the Subject Property with Sands Road;
   g. Stormwater Report (Jacob & Hefner, dated 12/20/23, received 12/22/23)
   h. Environmental Report (Jacob &Hefner Associates, dated October 23, 2023, received 10/24/23); and
   i. Photometric Plan (Chicago Lightworks, dated 09/04/23, received 10/24/23), provided that staff may require screens on lights or on poles during permitting or up to and including verification of lighting performance prior to issuance of a certificate of occupancy;

2. The use of the north 350 feet of the Subject Property shall be limited to freight terminal parking unrelated to repairs and storage unrelated to repairs. Except as reflected in the PUD plans noted in Item 1, the use of the north 350 feet must comply with the Article II regulations pertaining to the M-L zoning district;

3. Applicant shall require its tenant to require all persons operating trucks on the Subject Property to comply with the following: (a) the Illinois idling regulations; (b) trucks

powered by diesel or other motor fuel may not (i) idle in the north 350 feet of the Subject Property after 9:00 PM or before 7:00 AM) or (ii) anywhere on the Subject Property, idle for more than one consecutive half hour. These regulations will not apply when idling regulations are lifted under Illinois law for weather events, relating to repairs and maintenance or otherwise as provided by statute or regulation. These regulations do not apply to vehicles that rely on electricity or alternative fuel not requiring diesel or gasoline combustion;

4. Drivers of any trucks shall not be permitted to sleep on the Subject Property in any of the trucks or in any of the buildings after 9:00 PM or before 7:00 AM;

5. The following shall modify the site plan and drawings noted in Item 1, above:

a. Applicant shall add a northbound left turn lane into the site on Sands Road which shall be approved by the City and the subject of a public improvement agreement, which turn lane should be designed with at least 115 feet of storage and taper rates as detailed in IDOT's Bureau of Local Roads and Streets Manual;

b. Applicant shall restrict outbound left turns from the Subject Property through pavement markings, signage and appropriate median or division to be approved by the City Engineer in a form substantially similar to that shown in the plans noted in Item 1 above;

c. Only passenger and EMS or other emergency vehicles will have the ability to enter the subject property southbound on Sands Road;

d. The Subject Property will be (i) gated (at least between the hours of 9:00 PM and 5:00 AM) and (ii) enclosed with a solid fence for security purposes, with the fence situated in substantially the same location as depicted in the plans noted in Item 1, above;

6. Applicant and its tenant(s) shall communicate the restrictions noted in Items 3, 4, 5(a), 5(b) and 5(c) to all tenants, employees, suppliers and any drivers known to it to utilize the site and do so on a reasonable frequency during the year;

7. The following shall apply to architecture during the permitting process:

a. No LED lighting shall be permitted on the exterior, outlining portions of the building, windows or doors, and not inside the windows, and all LED strips shall be deemed removed from the building plans noted in Item 1, above;

b. Applicant shall create the following projections:

i. At least two feet in depth at least every 75 feet along the building;

ii. The two darker brown areas over the office windows shall project a minimum of two feet; and

iii. A similar decorative projection to that mentioned in Item 7(b)(ii) shall be added around the two-bay door area;

c. Applicant shall add a darker color base around the entire building to give the building a sense of weight along the bottom;

d. Applicant shall paint or otherwise color the top cap portion of the building the darkest brown from the color palette;

e. Applicant shall increase the height of the parapet walls in certain sections, for example to screen rooftop equipment when desired or over the front entry way and over the bay door area to break up the long expanse of the roof;

f. All ground-mounted or roof-mounted mechanical equipment must be installed according to the UDO or other applicable code provisions, including screening where required by ordinance;

8. The following shall apply to landscaping and screening during the permitting process:

a. The northwest commercial landscape buffer shall meet the ordinance requirements, Applicant shall add some additional trees and up to 30 shrubs to widen the buffer on either side of the detention basin to make up for the pinch point;

b. Landscape islands in the customer/employee parking area shall be:

i. Provided every 10 spaces;

ii. Planted with trees and shrubs;

iii. Inclusive of the triangular area including the 12 parking spaces and the island north of the building on the north side of the drive aisle and these areas shall be planted with trees and shrubs;

c. Applicant shall add three trees to the foundation base area adjacent to the building;

d. Where trees preserved from the City-permitted work are not capable of use, Applicant shall not re-plant these;

e. Applicant shall provide a greater variety of evergreen, spruce and cedar species in the landscape buffers relating to 15% of the trees, with the variety being appropriately spaced and placed in light of the preference to place more mature trees along lines of sight from homes to the north;

f. Applicant shall add groupings of shrubs and grasses along the north line of the entrance drive and endeavor, where possible, to add three (3) trees along said north line of the entrance drive;

g. Landscape is required to be maintained per the approved landscape plan;

h. The fence shall be as provided in the fence detail provided by Applicant prior to hearing;

9. The following shall apply to lighting during the permitting process:

a. Lighting in the north 60 feet of the Subject Property shall dimmed to the minimum level allowed for insurance and security purposes between the hours of 9:00 PM and 6:00 AM, provided that this requirement shall not apply if Applicant connect parking lot lights in the north 60 feet to motion sensing equipment and these lights only turn on if movement is detected;

b. If, prior to issuance of a certificate of occupancy, the City demands that Applicant do so, Applicant shall install shields from fixtures or from poles to a distance of at least six (6) inches below the lens of the light fixture to shield the view to the lens from the north (the shield may need to wrap the corners of the lens extended to the location of the shield in order to screen the lens from residences to the north);

10. Applicant shall provide abutting neighbors cell telephone numbers for the manager of Applicant and of Applicant's tenant and shall post an active non-emergency telephone number on a sign at the inbound portion of the gate with reference to call 9-1-1 in the event of an emergency;

11. Applicant shall address outstanding review comments and requirements of the City Departments of Public Works and Engineering, Fire Rescue, and Community Development, the City's Stormwater Consultant and the City's Traffic Consultant incorporating conditions from the traffic study;

12. To the extent required in order to allow the City to construct a safe pedestrian path across the entrance, Applicant shall grant the City an permanent easement and related temporary construction easement to properly align the sidewalk with entrance movements;

13. Applicant shall extend the watermain to serve the building on the Subject Property subject to a reasonable public improvement and recapture agreements and provided that the watermain be extended to the north line of the Subject Property at Sands Road;

14. No assembly or vehicle repair shall occur in the north 350 feet of the Subject Property;

15. Applicant shall place appropriate waste and recycling receptacles at reasonably-spaced locations throughout the parking area;

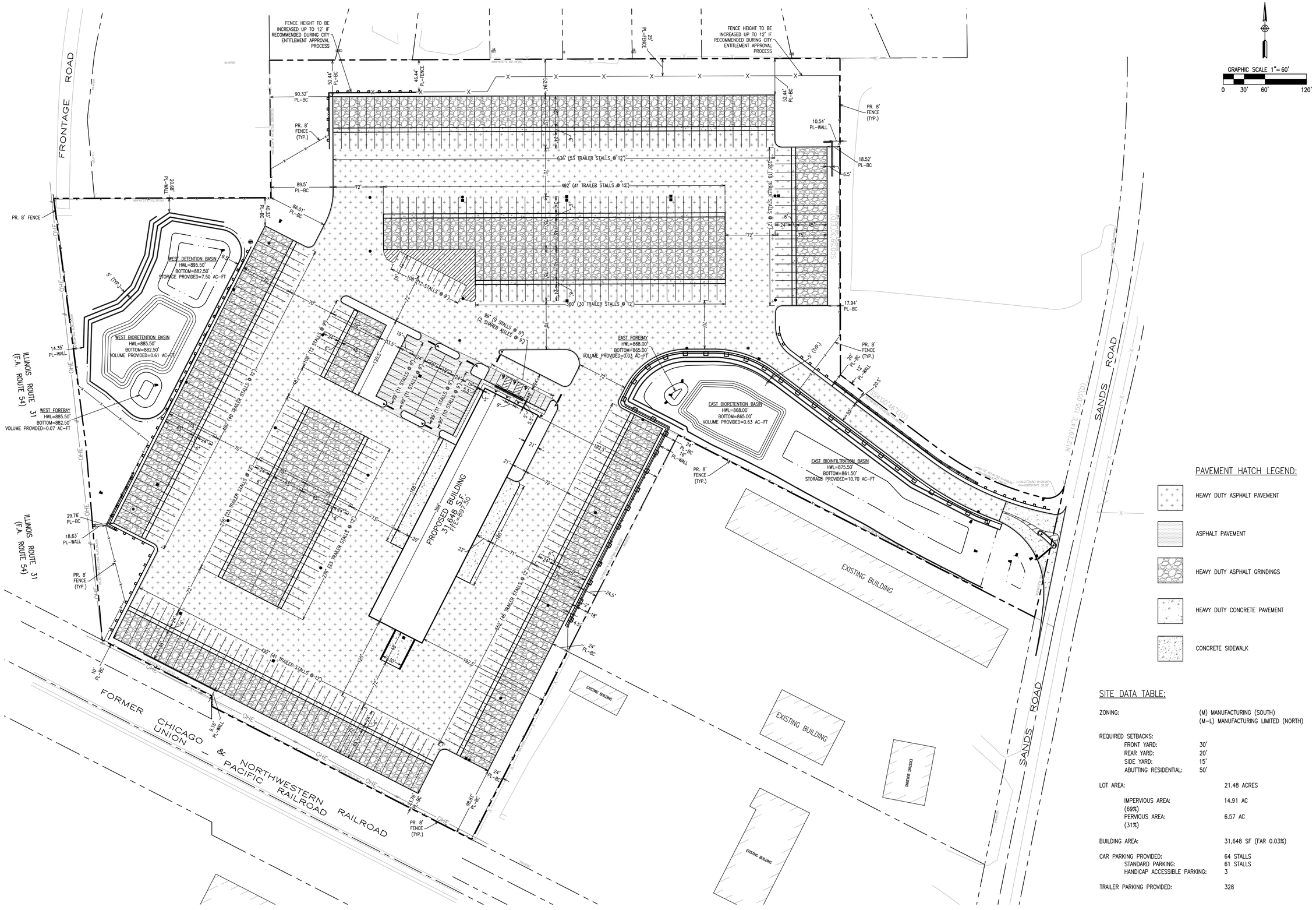
16. There shall be no outdoor speakers except for emergencies, provided that Applicant may maintain audio and/or video and/or digital communications devices at the driveway entrance and exit and on the building with all such devices not being audible at any residential lot line;

17. Except in the event of a disabled vehicle, loading of freight to or from vehicles shall occur only within the building or using the bays in the building;

18. No storage of inoperable or unlicensed vehicles, except to the extent required for actual ongoing service, maintenance or repair of the vehicles;

19. Repair operations that include any pneumatic tools (not including air compressors for tire inflation) shall occur only in bays with their doors closed; and

20. Use of any vehicles or equipment with flashing, spotlighting or beeping warning devices shall not occur at all in the north 350 feet of the Subject Property and shall not otherwise occur after 9:00 PM or before 7:00 AM.



PAVEMENT HATCH LEGEND:

- HEAVY DUTY ASPHALT PAVEMENT
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT GRINDINGS
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK

SITE DATA TABLE:

ZONING:		(M) MANUFACTURING (SOUTH) (M-L) MANUFACTURING LIMITED (NORTH)
REQUIRED SETBACKS:		
FRONT YARD:	30'	
REAR YARD:	20'	
SIDE YARD:	15'	
ABUTTING RESIDENTIAL:	50'	
LOT AREA:		21.48 ACRES
IMPERVIOUS AREA: (69%)		14.91 AC
PERVIOUS AREA: (31%)		6.57 AC
BUILDING AREA:		31,648 SF (FAR 0.03%)
CAR PARKING PROVIDED:		64 STALLS
STANDARD PARKING:		61 STALLS
HANDICAP ACCESSIBLE PARKING:		3
TRAILER PARKING PROVIDED:		328

No.	Description	DATE
2	PER CITY	11/20/23
1	ORIGINAL PLAN	10/20/23

SITE PLAN

NVA TRUCKING FACILITY EXPANSION

NVA PROP IL LLC

CRYSTAL LAKE, IL

JACOB & HEFNER ASSOCIATES
1333 Butterfield Rd, Suite 300, Downers Grove, IL 60515
PHONE: (630) 652-4600, FAX: (630) 652-4601
www.jacobandhefner.com

1" = 60'

G985

SP-1

\\PE2950-1\Projects\G\G985\E\Dwg\Final\Exhibits\G985-Site Plan.dwg

Preliminary Landscape Plan

NVA TRUCKING FACILITY EXPANSION

Crystal Lake, Illinois

December 22, 2023

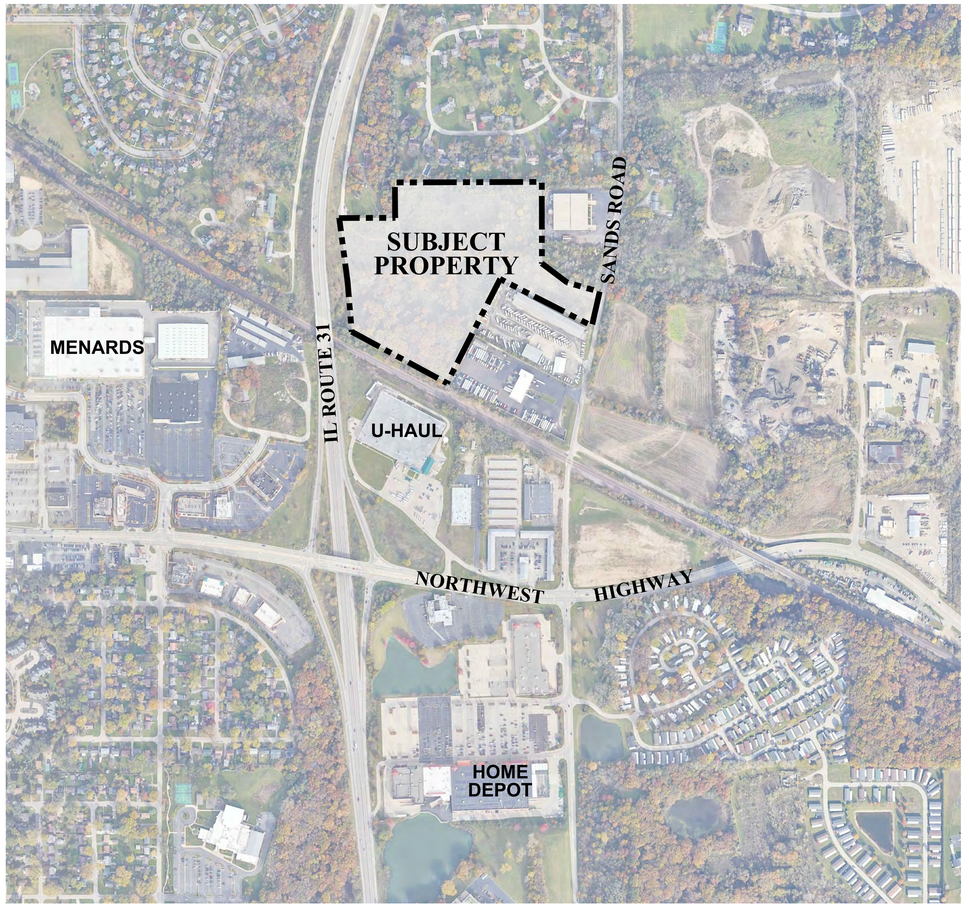
CONSULTANTS:

LANDSCAPE ARCHITECT:

GARY R. WEBER ASSOCIATES, INC
402 WEST LIBERTY DRIVE
WHEATON, ILLINOIS 60187
(630) 668-7197

CIVIL ENGINEER:

JACOB & HEFNER ASSOCIATES, INC.
1333 BUTTERFIELD ROAD, SUITE 300
DOWNERS GROVE, ILLINOIS 60515

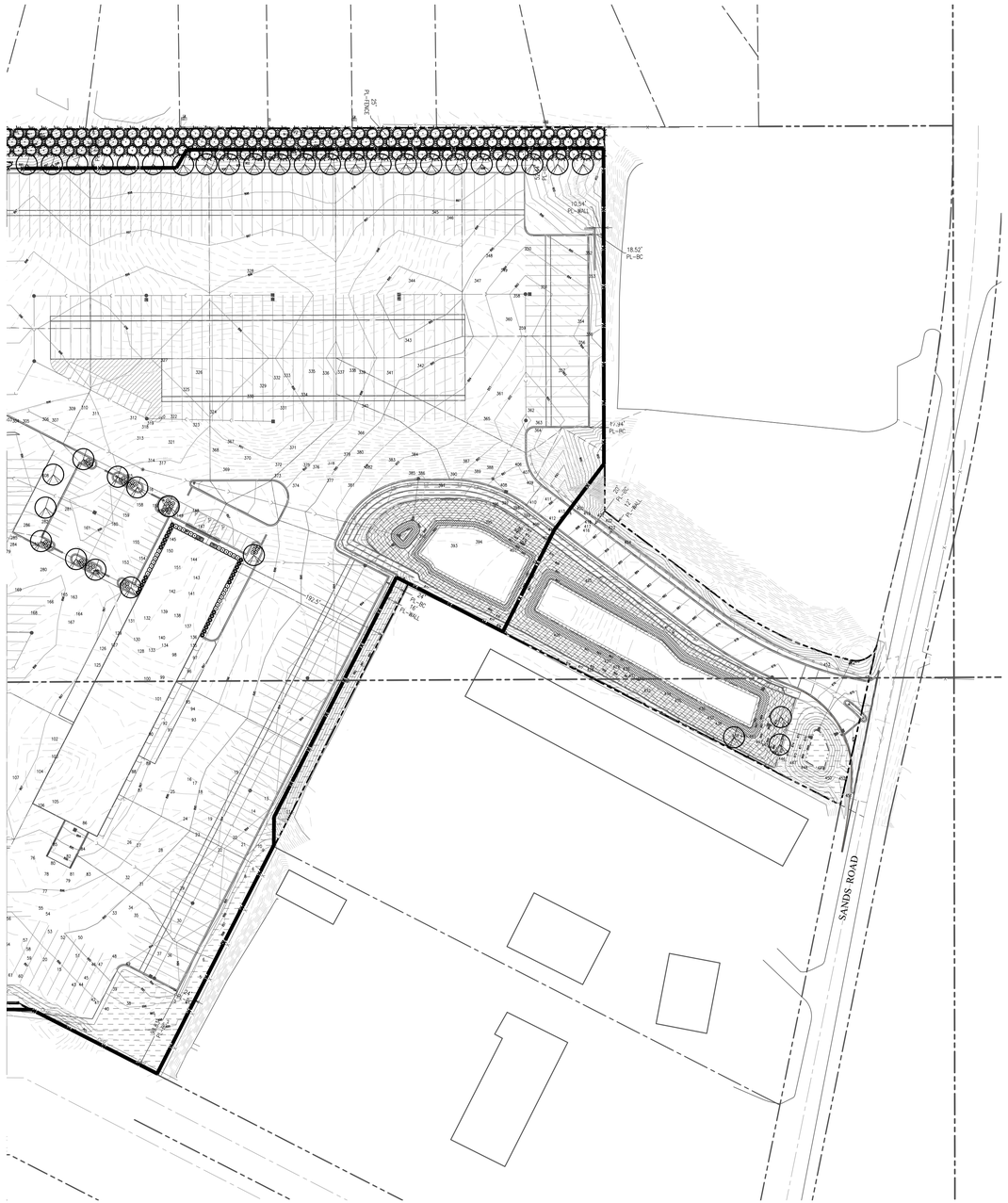


LOCATION MAP

SCALE: 1"=400'

IN

SHEE



NATIVE LEGEND

Key	Description
	EMERGENT PLANTINGS
	WET MEADOW SEED MIX
	LOW PROFILE PRAIRIE SEED MIX
	NO MOW FESCUE SEED MIX

0' 40' 80' 160' 240'
SCALE: 1"=80'

NORTH

REPRESENTATIVE PLANT LIST

Key	Botanical/Common Name	Size	Remarks
	SHADE TREES		
	Acer x freemanii 'Jeffer's Red' AUTUMN BLAZE MAPLE	2 1/2" Cal.	
	Acer x saccharum 'Green Mountain' GREEN MOUNTAIN SUGAR MAPLE	2 1/2" Cal.	
	Celtis occidentalis COMMON HACKBERRY	2 1/2" Cal.	
	Gleditsia triacanthos var. inermis 'Skycole' SKYLINE HONEYLOCUST	2 1/2" Cal.	
	Quercus bicolor SWAMP WHITE OAK	2 1/2" Cal.	
	Quercus macrocarpa BUR OAK	2 1/2" Cal.	
	Tilia americana 'Redmond' REDMOND AMERICAN LINDEN	2 1/2" Cal.	
	Tilia cordata 'Greenspire' GREENSPIRE LITTLELEAF LINDEN	2 1/2" Cal.	
	Ulmus carpinifolia 'New Horizon' NEW HORIZON SMOOTHLEAF ELM	2 1/2" Cal.	
	EVERGREEN TREES		
	Abies concolor WHITE FIR	6-10' Ht.	
	Picea abies NORWAY SPRUCE	6-10' Ht.	
	Picea glauca var. densata BLACK HILLS SPRUCE	6-10' Ht.	
	Picea omorika SERBIAN SPRUCE	6-10' Ht.	
	Pinus strobus EASTERN WHITE PINE	6-10' Ht.	
	DECIDUOUS SHRUBS		
	Cornus sericea 'Bailey' BAILEY'S REDTWIG DOGWOOD	36" Tall	5' O.C.
	Hydrangea paniculata 'SMHPLQF' LITTLE QUICK FIRE HYDRANGEA	24" Tall	3' O.C.
	Physocarpus opulifolius 'Seward' SUMMER WINE NINEBARK	30" Tall	4' O.C.
	Rhus aromatica 'Gro-low' GRO-LOW SUMAC	24" Wide	4' O.C.
	Syringa meyeri 'Palabin' DWARF KOREAN LILAC	24" Tall	4' O.C.
	Viburnum x juddii JUDD VIBURNUM	36" Tall	4' O.C.
	Weigela florida 'Bramwell' FINE WINE WEIGELA	24" Tall	3' O.C.
	EVERGREEN SHRUBS		
	Juniperus chinensis 'Kallays Compact' KALLAYS COMPACT PFITZER JUNIPER	24" Wide	4' O.C.
	Juniperus chinensis 'Sea Green' SEA GREEN JUNIPER	30" Wide	5' O.C.
	Taxus x media 'Densiformis' DENSE YEW	24" Wide	4' O.C.
	PERENNIALS AND ORNAMENTAL GRASSES		
	Allium 'Summer Beauty' SUMMER BEAUTY ONION	#1	18" O.C.
	Calamagrostis x acutiflora 'Karl Foerster' FEATHER REED GRASS	#1	30" O.C.
	Echinacea 'CBG Cone 2' PIXIE MEADOWBRITE CONEFLOWER	#1	18" O.C.
	Hemerocallis 'Happy Returns' HAPPY RETURNS DAYLILY	#1	18" O.C.
	Nepeta racemosa 'Walker's Low' WALKER'S LOW CATMINT	#1	18" O.C.
	Panicum virgatum 'Heavy Metal' HEAVY METAL SWITCHGRASS	#1	24" O.C.
	Perovskia atriplicifolia RUSSIAN SAGE	#1	24" O.C.
	Schizachyrium scoparium 'Twilight Zone' TWILIGHT LITTLE BLUESTEM	#1	24" O.C.
	Sporobolus heterolepis PRAIRIE DROPSEED	#1	24" O.C.

GENERAL LANDSCAPE NOTES

1. Contractor shall verify underground utility lines and is responsible for any damage.
2. Contractor shall verify all existing conditions in the field prior to construction and shall notify landscape architect of any variance.
3. Material quantities shown are for contractors convenience only. The Contractor must verify all material and supply sufficient materials to complete the job per plan.
4. The landscape architect reserves the right to inspect plant materials either at place of growth or at site before planting, for compliance with requirements of variety, size and quality.
5. Work shall conform to American Standard for Nursery Stock, State of Illinois Horticultural Standards, and Local Municipal requirements.
6. Contractor shall secure and pay for all permits, fees, and inspections necessary for the proper execution of this work and comply with all codes applicable to this work.
7. See General Conditions and Specifications for landscape work for additional requirements.

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DOWNERS GROVE, ILLINOIS 60515

NVA TRUCKING FACILITY EXPANSION

7013 SANDS ROAD
CRYSTAL LAKE, ILLINOIS

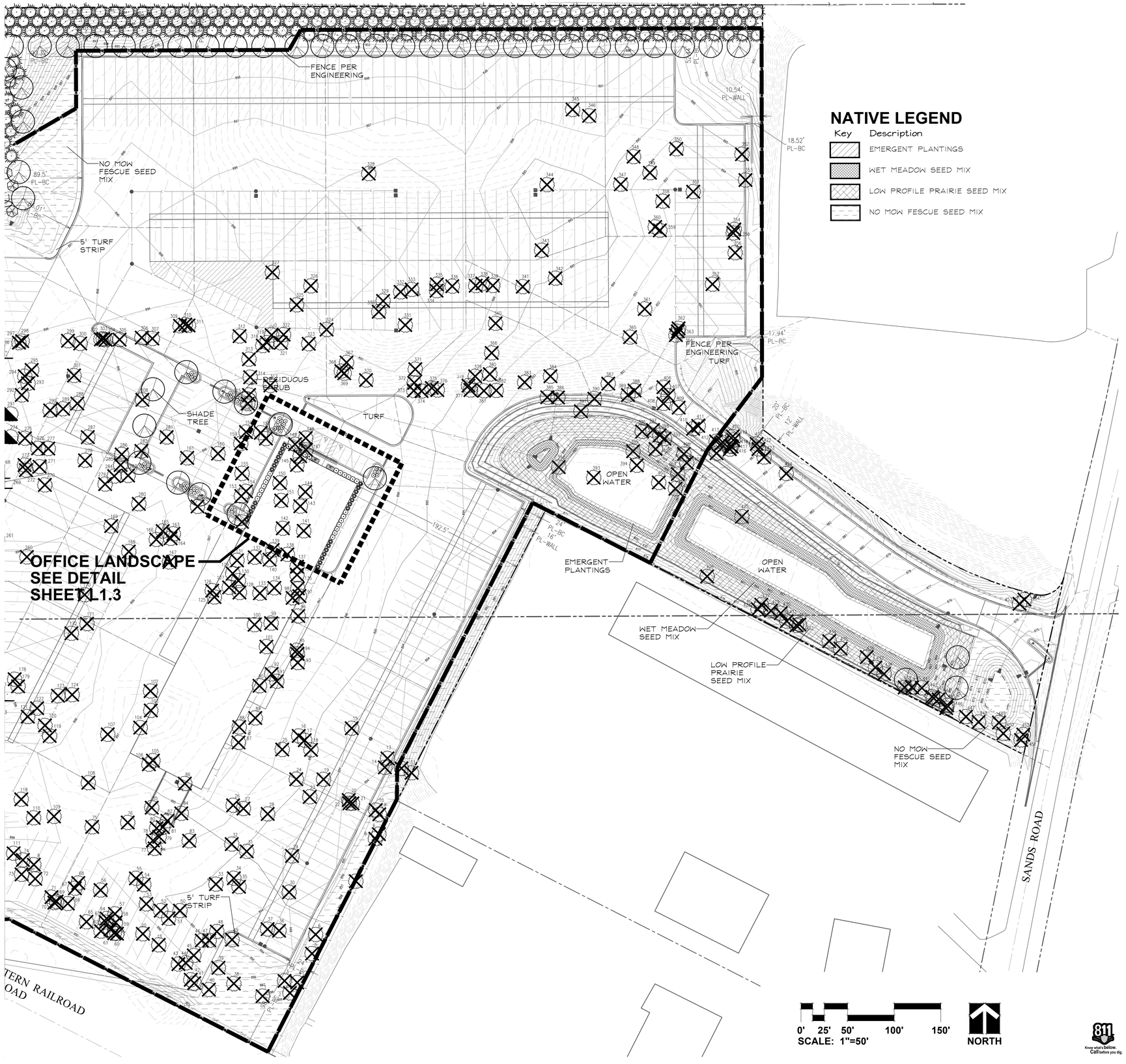
OVERALL PRELIMINARY LANDSCAPE PLAN

1	12.01.2023
REVISIONS	

DATE	10.20.2023
PROJECT NO.	JH23187
DRAWN	MNW
CHECKED	JWC
SHEET NO.	

L1.1

811 Know what's below. Call before you dig.



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PRELIMINARY LANDSCAPE PLAN

1	12.01.2023
REVISIONS	

DATE	10.20.2023
PROJECT NO.	JH23187
DRAWN	MNW
CHECKED	JWC
SHEET NO.	

L1.2

811 Know what's below. Call before you dig.

C		
000		
000		
C	Plugs / AC.	
250	494	
125	494	
250	988	
250	494	
500	988	
500	494	
125	494	
250	494	
250	988	
250	494	
750	6422	
AC.		
988		
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Low Profile Prairie with Flowers Seed Mix
Upper basin slopes

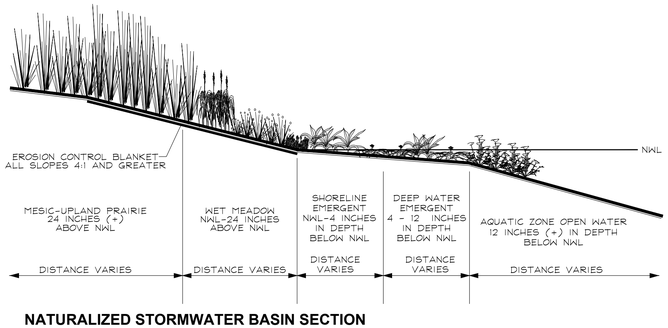
Botanical Name	Common Name	lbs / AC
Grasses		
Bouteloua curtipendula	Side Oats Grama	8.000
Panicum virgatum	Prairie Switch Grass	0.125
Elymus trachycaulus	Slender Wheatgrass	2.000
Elymus canadenesis	Prairie Wild Rye	1.000
Schizachyrium scoparium	Little Bluestem	6.000
	Total Grasses	**17.125**
Wildflowers/Broadleaves		
Allium cemuum	Nodding Wild Onion	0.190
Amorpha canscens	Lead Plant	0.125
Asclepia canadensis	Whorled Milkweed	0.063
Asclepias tuberosa	Butterflyweed	0.500
Astragalus canadensis	Canada Milk Vetch	0.063
Coreopsis palmata	Prairie Coreopsis	0.025
Echinacea pallida	Pale Purple Coneflower	1.000
Echinacea purpurea	Purple Coneflower	0.500
Eryngium yuccifolium	Rattlesnake Master	0.125
Lespedeza capitata	Round-Headed Bush Clover	0.125
Liatris aspera	Rough Blazing Star	0.250
Liatris pycnostachya	Prairie Blazing Star	0.188
Monarda fistulosa	Prairie Bergamot	0.063
Parthenium integrifolium	Wild Quinine	0.016
Penstemon digitalis	Foxglove Beard Tongue	0.125
Petalostemum candidum	White Prairie Clover	0.125
Petalostemum purpureum	Purple Prairie Clover	0.156
Potentilla arguta	Prairie Cinquefoil	0.031
Pycnanthemum tenuifolium	Slender Mountain Mint	0.031
Ratibida pinnata	Yellow Coneflower	0.125
Rudbeckia fulgida var. sullivantii	Showy Black-Eyed Susan	0.500
Rudbeckia hirta	Black-Eyed Susan	0.500
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	0.063
Symphyotrichum leave	Smooth Blue Aster	0.063
Tradescantia ohiensis	Common Spiderwort	0.063
Verbena stricta	Hoary Vervain	0.125
Zizia aurea	Golden Alexanders	0.500
	Total Forbs	**5.640**
	Total Low Profile Prairie Seed Mix	**22.765**

Compensatory Storage Seed Mix

Botanical Name	Common Name	lbs / AC
Grasses		
Agrostis stolenifera	Creeping Bentgrass	2.000
Carex bebbii	Bebb's Oval Sedge	0.125
Carex cristatella	Crested Sedge	0.250
Carex molesta	Field Oval Sedge	0.250
Carex stipata	Common Fox Sedge	0.600
Carex vulpinoidea	Brown Fox Sedge	0.250
Eleocharis erythropoda	Bald Spike Rush	0.250
Eleocharis obtusa	Blunt Spike Rush	0.250
Elymus virginicus	Virginia Wild Rye	3.000
Glyceria striata	Fowl Manna Grass	0.250
Juncus dudleyi	Dudley's Rush	0.025
Juncus effuses	Common Rush	0.025
Juncus torreyi	Torrey's Rush	0.015
Leersia onyzoides	Rice Cutgrass	1.000
Schoenplectus tabernaemontani	Great Bulrush	0.125
Scirpus atrovirens	Dark Green Rush	0.600
Scripus pendulus	Red Bulrush	0.030
	Total Grasses	**9.045**

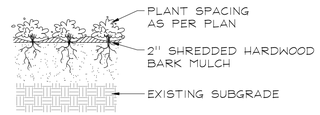
No Mow Fescue Seed Mixture - Mixture -7 lbs. / 1,000 sq. ft.

Festuca longifolia	Hard Fescue	25%
Festuca rubra var. commutate	Chewing Fescue	25%
Festuca rubra var. rubra	Creeping Red Fescue	25%
Festuca ovina	Sheeps Fescue	25%

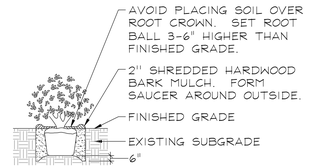


NATURALIZED STORMWATER BASIN SECTION
NOT TO SCALE

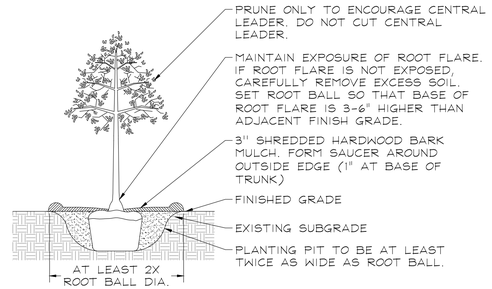
PLANTING DETAILS



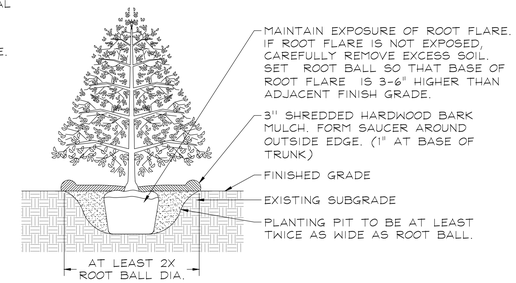
PERENNIALS AND GROUNDCOVERS
NOT TO SCALE



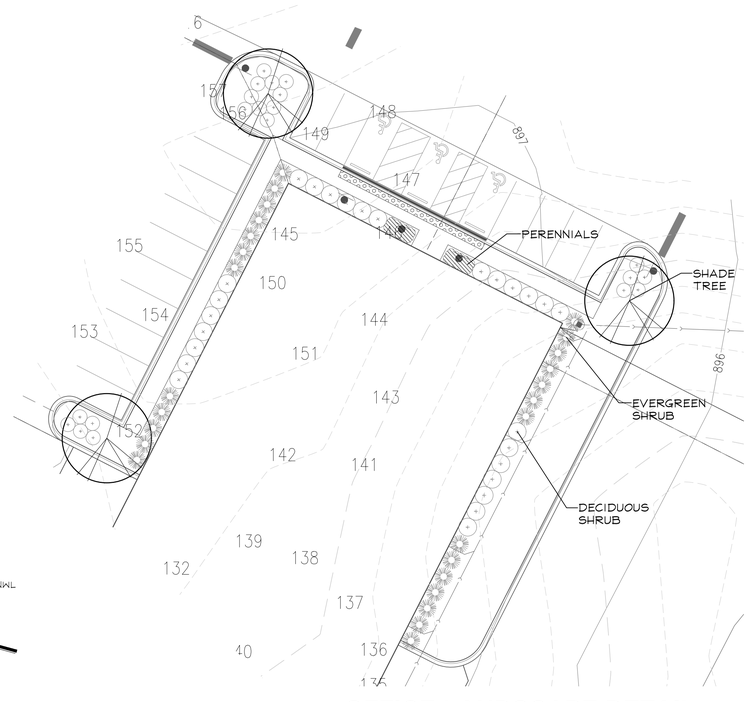
DECIDUOUS AND EVERGREEN SHRUBS
NOT TO SCALE



DECIDUOUS TREES
NOT TO SCALE



EVERGREEN TREES
NOT TO SCALE



OFFICE LANDSCAPE DETAIL
0' 10' 20' 40' 60'
SCALE: 1"=20'
NORTH

GARY R. WEBER ASSOCIATES, INC.
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DOWNERS GROVE, ILLINOIS 60515

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7013 SANDS ROAD
CRYSTAL LAKE, ILLINOIS

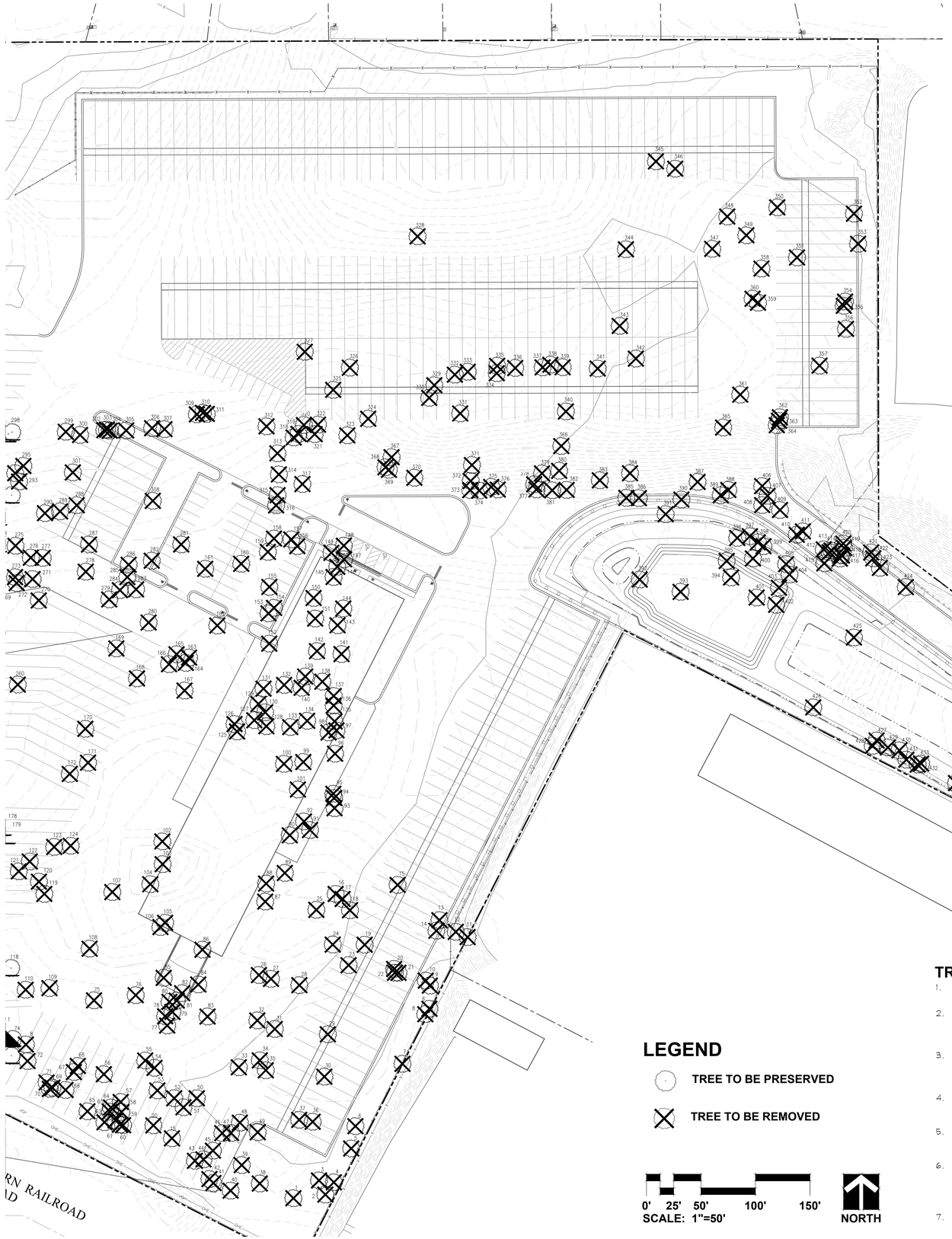
LANDSCAPE DETAILS

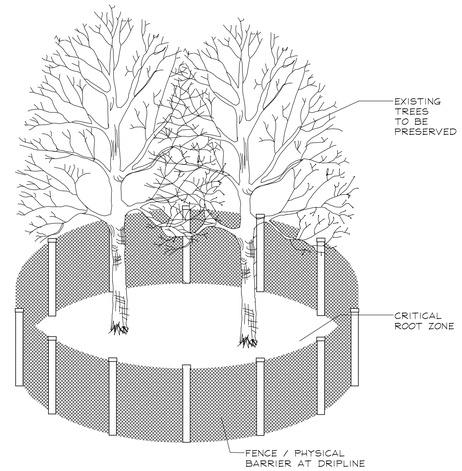
1	12.01.2023
REVISIONS	

DATE	10.20.2023
PROJECT NO.	JH23187
DRAWN	MNW
CHECKED	JWC
SHEET NO.	

L1.3

Know what's below. Call before you dig.





TREE PRESERVATION DETAIL

(NOT TO SCALE)
SEE NOTES

LEGEND

- TREE TO BE PRESERVED
- TREE TO BE REMOVED

0' 25' 50' 100' 150'
SCALE: 1"=50'

NORTH

TREE PRESERVATION NOTES

1. The contractor shall flag trees to be preserved prior to site work beginning for village review.
2. 48" high snow fence or wood barriers shall extend to the dripline of the tree or tree mass whenever possible, shall be installed before construction begins, and should not be removed until the completion of construction.
3. All accidental damage to existing trees that are to be preserved shall be promptly treated as required in accordance with recognized horticultural practices and the instructions of the professional Arborist, Landscape Architect or Horticulturist.
4. Broken or badly bruised branches shall be removed with a clean cut, if recommended by the professional Arborist, Landscape Architect or Horticulturist.
5. Care shall be exercised by the contractors to protect all overhead limbs and branches from damage by contact with material, machinery or equipment and by damage from engine exhaust.
6. Contractors shall protect trees and vegetation against spills or discharge of fuels, lubricating oils, hydraulic fluids, anti-freeze and coolants, calcium chloride, lime and all other similar hydrocarbons, organic chemicals, and other materials which can be harmful.
7. When underground utilities are proposed within 5' of a preserved tree trunk, they must be augered if possible.

Know what's below. Call before you dig.

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NVA TRUCKING FACILITY EXPANSION

7013 SANDS ROAD
CRYSTAL LAKE, ILLINOIS

TREE PRESERVATION PLAN

REVISIONS	
1	12.01.2023

DATE	10.20.2023
PROJECT NO.	JH23187
DRAWN	MNW
CHECKED	JWC
SHEET NO.	L1.4

Action	Tree Category	Replacement Caliper
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	C	1.4
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	A	14.5
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	B	14.4
Remove		
Remove	B	6.0
Remove	A	15.5
Remove		
Remove	B	3.9
Remove		
Remove	A	13.5
Remove		
Remove		
Remove		
Remove		
Remove	A	13.0
Remove		
Remove	A	17.0
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	A	14.5
Remove		
Remove		
Remove	B	1.8
Remove		
Remove		
Remove	A	16.0
Remove	A	11.5
Remove	A	14.0
Remove		
Remove	A	15.5
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	B	4.8
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	A	19.5
Remove		
Remove		
Remove		
Remove	A	15.0
Remove	A	12.5
Remove		

Tag No.	Common Name	Scientific Name	Condition	Stem 1	Stem 2	Total DBH	Action	Tree Category	Replacement Caliper
79	White Oak	Quercus alba	4	18.0		18.0	Remove		
80	White Oak	Quercus alba	4	17.0		17.0	Remove		
81	White Oak	Quercus alba	4	20.0		20.0	Remove		
82	White Oak	Quercus alba	4	19.0		19.0	Remove		
83	White Oak	Quercus alba	3	27.0		27.0	Remove	A	13.5
84	White Oak	Quercus alba	4	23.0		23.0	Remove		
85	White Oak	Quercus alba	4	20.0		20.0	Remove		
86	White Oak	Quercus alba	4	29.0		29.0	Remove		
87	Chokecherry	Prunus virginiana	5	16.0		16.0	Remove		
88	Boxelder	Acer negundo	5	42.0		42.0	Remove		
89	Boxelder	Acer negundo	5	20.0		20.0	Remove		
90	Green Ash	Fraxinus pennsylvanica	6	20.0		20.0	Remove		
91	Chokecherry	Prunus virginiana	6	14.0		14.0	Remove		
92	Chokecherry	Prunus virginiana	5	16.0		16.0	Remove		
93	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
94	Chokecherry	Prunus virginiana	4	19.0		19.0	Remove		
95	Chokecherry	Prunus virginiana	5	17.0		17.0	Remove		
96	Chokecherry	Prunus virginiana	4	30.0		30.0	Remove		
97	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
98	Chokecherry	Prunus virginiana	5	19.0		19.0	Remove		
99	Chokecherry	Prunus virginiana	5	34.0		34.0	Remove		
100	Chokecherry	Prunus virginiana	5	18.0		18.0	Remove		
101	Boxelder	Acer negundo	5	20.0		20.0	Remove		
102	Chokecherry	Prunus virginiana	3	20.0		20.0	Remove	B	6.0
103	Red Oak	Quercus rubrm	4	9.0		9.0	Remove		
104	Burr Oak	Quercus macrocarpa	5	24.0		24.0	Remove		
105	Boxelder	Acer negundo	5	17.0		17.0	Remove		
106	Red Oak	Quercus rubrm	3	19.0		19.0	Remove	B	5.7
107	Red Oak	Quercus rubrm	3	22.0		22.0	Remove	B	6.6
108	Burr Oak	Quercus macrocarpa	2	33.0		33.0	Remove	A	16.5
109	White Oak	Quercus alba	4	24.0		24.0	Remove		
110	White Oak	Quercus alba	6	31.0		31.0	Remove		
111	White Oak	Quercus alba	4	19.0		19.0	Remove		
112	White Oak	Quercus alba	4	27.0		27.0	Remove		
113	White Oak	Quercus alba	4	21.0		21.0	Remove		
114	White Oak	Quercus alba	5	26.0		26.0	Remove		
115	White Oak	Quercus alba	5	20.0		20.0	Remove		
116	White Oak	Quercus alba	3	29.0		29.0	Remove	A	14.5
117	Burr Oak	Quercus macrocarpa	4	24.0		24.0	Remove		
118	White Oak	Quercus alba	4	27.0		27.0	Remove		
119	Burr Oak	Quercus macrocarpa	4	9.0		9.0	Remove		
120	Burr Oak	Quercus macrocarpa	3	6.0		6.0	Remove	A	3.0
121	Burr Oak	Quercus macrocarpa	4	8.0		8.0	Remove		
122	Burr Oak	Quercus macrocarpa	4	9.0		9.0	Remove		
123	Burr Oak	Quercus macrocarpa	4	20.0		20.0	Remove		
124	Burr Oak	Quercus macrocarpa	4	12.0		12.0	Remove		
125	Boxelder	Acer negundo	5	18.0		18.0	Remove		
126	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
127	Chokecherry	Prunus virginiana	5	17.0		17.0	Remove		
128	Boxelder	Acer negundo	5	13.0		13.0	Remove		
129	Chokecherry	Prunus virginiana	5	26.0		26.0	Remove		
130	Green Ash	Fraxinus pennsylvanica	6	12.0		12.0	Remove		
131	Chokecherry	Prunus virginiana	5	13.0		13.0	Remove		
132	Chokecherry	Prunus virginiana	5	18.0		18.0	Remove		
133	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
134	Green Ash	Fraxinus pennsylvanica	6	12.0		12.0	Remove		
135	Chokecherry	Prunus virginiana	5	14.0	16.0	30.0	Remove		
136	Chokecherry	Prunus virginiana	5	11.0		11.0	Remove		
137	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
138	Chokecherry	Prunus virginiana	4	16.0		16.0	Remove		
139	Chokecherry	Prunus virginiana	5	22.0		22.0	Remove		
140	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
141	Chokecherry	Prunus virginiana	5	33.0		33.0	Remove		
142	Chokecherry	Prunus virginiana	5	23.0		23.0	Remove		
143	Chokecherry	Prunus virginiana	5	16.0		16.0	Remove		
144	Chokecherry	Prunus virginiana	5	29.0		29.0	Remove		
145	Chokecherry	Prunus virginiana	5	14.0		14.0	Remove		
146	Boxelder	Acer negundo	5	16.0		16.0	Remove		
147	Chokecherry	Prunus virginiana	5	18.0		18.0	Remove		
148	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
149	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
150	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
151	Chokecherry	Prunus virginiana	4	17.0		17.0	Remove		
152	Chokecherry	Prunus virginiana	4	15.0		15.0	Remove		
153	Chokecherry	Prunus virginiana	6	12.0		12.0	Remove		
154	Chokecherry	Prunus virginiana	5	24.0		24.0	Remove		
155	Chokecherry	Prunus virginiana	5	24.0		24.0	Remove		

Tag No.	Common Name	Scientific Name	Condition	Stem 1	Stem 2	Total DBH	Action	Tree Category	Replacement Caliper
156	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
157	Boxelder	Acer negundo	5	18.0		18.0	Remove		
158	Chokecherry	Prunus virginiana	4	36.0		36.0	Remove		
159	Boxelder	Acer negundo	5	15.0		15.0	Remove		
160	Boxelder	Acer negundo	5	34.0		34.0	Remove		
161	Chokecherry	Prunus virginiana	5	18.0	17.0	35.0	Remove		
162	Chokecherry	Prunus virginiana	6	29.0		29.0	Remove		
163	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
164	Chokecherry	Prunus virginiana	5	15.0	14.0	29.0	Remove		
165	Chokecherry	Prunus virginiana	5	12.0	13.0	25.0	Remove		
166	Chokecherry	Prunus virginiana	5	11.0		11.0	Remove		
167	Chokecherry	Prunus virginiana	5	14.0	9.0	23.0	Remove		
168	Chokecherry	Prunus virginiana	5	36.0		36.0	Remove		
169	Chokecherry	Prunus virginiana	5	39.0		39.0	Remove		
170	Siberian Elm	Ulmas pumila	5	28.0		28.0	Remove		
171	Boxelder	Acer negundo	5	19.0		19.0	Remove		
172	Chokecherry	Prunus virginiana	5	38.0		38.0	Remove		
173	Boxelder	Acer negundo	5	40.0		40.0	Remove		
174	Chokecherry	Prunus virginiana	5	15.0		15.0	Remove		
175	Boxelder	Acer negundo	6	12.0	12.0	24.0	Remove		
176	Cottonwood	Populus deltoides	5	31.0		31.0	Remove		
177	Red Oak	Quercus rubrm	4	16.0		16.0	Remove		
178	White Oak	Quercus alba	4	10.0		10.0	Remove		
179	Chokecherry	Prunus virginiana	5	29.0		29.0	Remove		
180	Burr Oak	Quercus macrocarpa	4	12.0		12.0	Remove		
181	Burr Oak	Quercus macrocarpa	4	8.0		8.0	Remove		
182	Burr Oak	Quercus macrocarpa	4	6.5		6.5	Remove		
183	Chokecherry	Prunus virginiana	5	10.0		10.0	Remove		
184	Burr Oak	Quercus macrocarpa	4	29.0		29.0	Remove		
185	White Oak	Quercus alba	4	14.0		14.0	Remove		
186	White Oak	Quercus alba	5	22.0		22.0	Remove		
187	White Oak	Quercus alba	4	21.0		21.0	Remove		
188	Chokecherry	Prunus virginiana	5	7.0		7.0	Remove		
189	Chokecherry	Prunus virginiana	5	8.0		8.0	Remove		
190	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
191	Chokecherry	Prunus virginiana	5	9.0		9.0	Remove		
192	Chokecherry	Prunus virginiana	6	13.0		13.0	Remove		
193	White Oak	Quercus alba	4	29.0		29.0	Remove		
194	Chokecherry	Prunus virginiana	5	13.0		13.0	Remove		
195	White Oak	Quercus alba	4	29.0		29.0	Remove		
196	White Oak	Quercus alba	5	21.0		21.0	Remove		
197	Burr Oak	Quercus macrocarpa	4	28.0		28.0	Remove		
198	Burr Oak	Quercus macrocarpa	5	20.0		20.0	Remove		
199	Red Oak	Quercus rubrm	5	26.0		26.0	Remove		
200	Red Oak	Quercus rubrm	5	36.0		36.0	Remove		
201	White Oak	Quercus alba	5	14.0		14.0	Remove		
202	White Oak	Quercus alba	5	25.0		25.0	Remove		
203	Red Oak	Quercus rubrm	5	12.0		12.0	Remove		
204	White Oak	Quercus alba	4	30.0		30.0	Remove		
205	White Oak	Quercus alba	4	23.0		23.0	Remove		
206	American Elm	Ulmus americana	4	21.0		21.0	Remove		
207	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
208	Chokecherry	Prunus virginiana	5	17.0		17.0	Remove		
209	Chokecherry	Prunus virginiana	5	13.0		13.0	Remove		
210	White Oak	Quercus alba	3	22.0		22.0	Remove	A	11.0
211	Chokecherry	Prunus virginiana	5	16.0		16.0	Remove		
212	Chokecherry	Prunus virginiana	5	8.0		8.0	Remove		
213	Chokecherry	Prunus virginiana	6	10.0		10.0	Remove		
214	Chokecherry	Prunus virginiana	5	11.0		11.0	Remove		
215	Chokecherry	Prunus virginiana	5	10.0		10.0	Remove		
216	Chokecherry	Prunus virginiana	5	9.0		9.0	Remove		
217	Chokecherry	Prunus virginiana	5	10.0		10.0	Remove		
218	Chokecherry	Prunus virginiana	5	9.0		9.0	Remove		
219	White Oak	Quercus alba	3	29.0		29.0	Remove	A	14.5
220	Chokecherry	Prunus virginiana	4	11.0		11.0	Remove		
221	Chokecherry	Prunus virginiana	5	12.0		12.0	Remove		
222	White Oak	Quercus alba	4	21.0		21.0	Remove		
223	White Oak	Quercus alba	4	35.0		35.0	Remove		
224	Burr Oak	Quercus macrocarpa	3	12.0		12.0	Remove	A	6.0

Rating	Description	General Criteria
1	Excellent	The tree is typical of the species, has less than 10% deadwood in the crown that is attributable to normal cause, has no other observed problems, and requires no remedial action.
2	Good to Fair	The tree is typical of the species and/or has less than 20% deadwood in the crown, only one or two minor problems that are easily corrected with normal care.
3	Fair	The tree is not typical of the species and/or has less than 30% deadwood in the crown, one or two minor problems that are not eminently lethal to the tree, and no significant decay or structural problems, but the tree must have remedial care above normal care in order to minimize the impact of future stress and to ensure continued health.
4	Fair to Poor	The tree is typical of the species and/or has significant problems such as 30% to 50% deadwood in the crown, serious decay or structural defect, insects, disease or other problems that can be eminently lethal to the tree or create a hazardous tree if not corrected in a short period of time or if the tree is subjected to additional stress.
5	Poor	The tree is not typical of the species and/or has over 50% deadwood in the crown, major decay or structural problems, is hazardous or is severely involved with insects, disease, or other problems, that even if aggressively corrected, would not result in the long-term survival of the tree.
6	Dead	Less than 10% of the tree show signs of life.

811 Know what's below. Call before you dig.

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NVA TRUCKING FACILITY EXPANSION

7013 SANDS ROAD
CRYSTAL LAKE, ILLINOIS

TREE INVENTORY

1 12.01.2023
REVISIONS

DATE 10.20.2023
PROJECT NO. JH23187
DRAWN MNW
CHECKED JWC
SHEET NO.

L1.5

Action	Tree Category	Replacement Caliper
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove		
Remove	A	16.5
Remove	A	23.0
Remove		
Remove	B	4.2
Remove		
Remove	B	4.2
Remove		
Remove		
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Remove	

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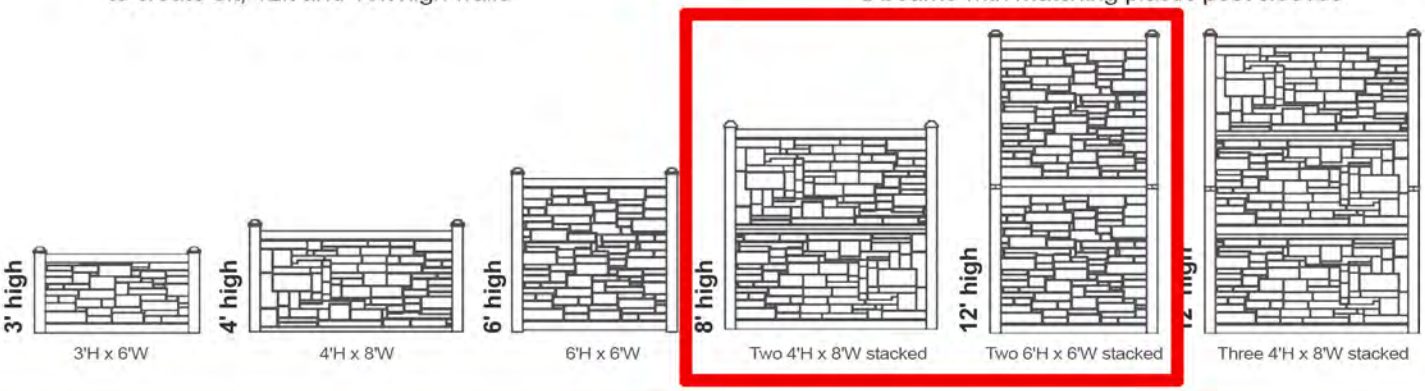


PANELS

- Panels come in 3ft x 6ft, 6ft x 6ft, and 4ft x 8ft
- All panels contain high-grade galvanized steel in both top and bottom rails
- Panel heights cannot be modified; however, panels can be cut to any custom width
- Our panels have been engineered to allow stacking to create 8ft, 12ft and 16ft high walls

POSTS

- Posts come in 8.5ft and 12ft heights and have a five-inch outer diameter
- All posts contain full-length internal, molded, steel stiffeners for optimum strength
- Posts are made from 50% recycled polyethylene plastic
- For 12ft and16ft high projects, we supply metal I-beams with matching plastic post sleeves



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TRANSPORTATION

OLYMPUS
DESIGN & DEVELOPMENT

DDCA
architects

JULY 03, 2023



NVA TRANSPORTATION

NVA TRANSPORTATION

MAIN ENTRANCE FROM ACROSS PARKING LOT

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

NVA TRANSPORTATION

CORNER PERSPECTIVE FROM PARKING LOT

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

SITE AERIAL FROM NORTHWEST



NVA TRANSPORTATION

(DAYTIME)



NVA TRANSPORTATION

NVA TRANSPORTATION

(CORNER PERSPECTIVE FROM SOUTHWEST)

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT



NVA TRANSPORTATION

(DUSK)

DDCA architects

OLYMPUS DESIGN & DEVELOPMENT

NVA TRANSPORTATION & NORTHWEST TRUCK & TRAILER REPAIR SERVICE

7013 SANDS RD
CRYSTAL LAKE, IL



RENDERING SHOWN FOR REFERENCE ONLY

RENDERING SHOWN FOR REFERENCE ONLY

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M2.2	MECHANICAL PLAN - LOFT	•
M4.0	MECHANICAL DETAILS	•
E1.0	ELECTRICAL SPECIFICATIONS	•
E2.0	ELECTRICAL POWER PLAN - OVERALL	•
E2.1	ELECTRICAL POWER PLAN - OFFICE	•
E2.2	ELECTRICAL POWER PLAN - LOFT	•
E3.0	ELECTRICAL LIGHTING PLAN - OVERALL	•
E3.1	ELECTRICAL LIGHTING PLAN - OFFICE	•
E3.2	ELECTRICAL LIGHTING PLAN - LOFT	•
E4.0	ELECTRICAL PANELS AND RISER	•
P1.0	PLUMBING SPECIFICATIONS	•
P2.0	PLUMBING WASTE AND VENT PLAN - OVERALL	•
P2.1	PLUMBING WASTE AND VENT PLAN - OFFICE	•
P2.2	PLUMBING WASTE AND VENT PLAN - LOFT	•
P3.0	PLUMBING WATER PLAN - OVERALL	•
P3.1	PLUMBING WATER PLAN - OFFICE	•
P3.2	PLUMBING WATER PLAN - LOFT	•
P4.0	PLUMBING RISERS	•

SPECIAL INSPECTIONS & TESTS

THE OWNER SHALL HAVE THE FOLLOWING SPECIAL INSPECTIONS PERFORMED BY A ILLINOIS CERTIFIED TESTING LABORATORY.

SOILS:

ALL WORK SHALL CONFORM TO THE SOIL BORINGS REPORT
DATED: SEPTEMBER 9, 2022
PREPARED BY: MIDLAND STANDARD ENGINEERING & TESTING

CONCRETE:

-REINFORCING STEEL PLACEMENT (PERIODIC)
-CONCRETE SLUMP AND CYLINDER TESTING
-CONCRETE PLACING

STRUCTURAL STEEL:

-FABRICATED LOAD BEARING MEMBERS AND ASSEMBLIES.
-STEEL ELEMENTS INCLUDING FABRICATED ITEMS (BOLTS, WELDINGS, ETC.)

THE NAMES OF THE INDIVIDUALS, APPROVED AGENCIES, OR FIRMS INTENDED TO BE RETAINED FOR CONDUCTING THESE SPECIAL INSPECTIONS SHALL BE ON FILE WITH THE VILLAGE OF WAUCONDA BUILDING DEPARTMENT PRIOR TO COMMENCING CONSTRUCTION.

* Terracon Testing Engineers & Consultants, Inc. - www.terracon.com - Tel: 815.873.0990 is the recomended Illinois Certified Testing Agency

LOCATION MAP

PROJECT SITE LOCATION



GENERAL NOTES

1. ALL CONTRACTORS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND INCLUDE ALL WORK REQUIRED TO COMPLETE THEIR SCOPE OF WORK READY FOR OCCUPANCY. NO CHANGE ORDERS SHALL BE ACCEPTED FOR FAILURE TO VISIT THE SITE PRIOR TO SUBMITTING YOUR BID.
2. PLANS ARE DIAGRAMMATIC; ALL CONTRACTORS MUST INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE THEIR SCOPE OF WORK. NO CHANGE ORDERS SHALL BE ACCEPTED FOR FAILURE TO INCLUDE ALL REQUIRED LABOR, MATERIALS AND EQUIPMENT TO COMPLETE YOUR SCOPE OF WORK AS SHOWN ON THE PLANS.
3. ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES MUST BE MET BY ALL CONTRACTORS WHETHER SPECIFIED AND DETAILED IN THE DRAWINGS OR NOT.
4. ALL CONTRACTORS SHALL FIELD VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES PRIOR TO START OF WORK.
5. ALL CONTRACTORS MUST COORDINATE THEIR WORK WITH OTHER TRADES. CONTRACTORS MUST NOT CAUSE UNNECESSARY WORK FOR OTHER TRADES DUE TO LACK OF COORDINATION.
6. ALL WORK TO CONFORM WITH MANUFACTURERS INSTALLATION REQUIREMENTS. ALL CONTRACTORS MUST PROVIDE MANUFACTURES WRITTEN INSTALLATION INSTRUCTIONS FOR ALL MATERIALS AND EQUIPMENT SUPPLIED.
7. ALL CONTRACTORS SHALL PROVIDE A LETTER OF WORK GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER SUBSTANTIAL COMPLETION IS VERIFIED IN WRITING BY THE OWNER.
8. ALL CONTRACTORS SHALL SUBMIT ALL WARRANTIES, GUARANTEES, OPERATION MANUALS, AND CARE AND MAINTENANCE MANUALS TO OWNER PRIOR TO RECEIVING FINAL PAYMENT.
9. ALL CONTRACTORS SHALL SUPPLY SHOP DRAWINGS, AS-BUILT DRAWINGS, ENGINEERING DRAWINGS, PERMITS AND INSPECTION CERTIFICATES PRIOR TO FINAL PAYMENT.
10. ALL SHOP DRAWINGS SHALL BE SUPPLIED FOR REVIEW PRIOR TO FABRICATION.
11. ALL CONTRACTORS ARE RESPONSIBLE FOR DAILY REMOVAL OF CONSTRUCTION DEBRIS TO AN ONSITE DUMPSTER. ALL TRADES SHALL LEAVE THEIR WORK FOR THE DAY COMPLETELY FINISHED AND THE PREMISES BROOM CLEAN.
12. ALL CONTRACTORS SHALL COMPLY WITH OSHA STANDARDS.

CONSTRUCTION & CODE DATA

CITY OF CRYSTAL LAKE AMENDMENTS
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2014 ILLINOIS STATE PLUMBING CODE, LATEST EDITION
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE (NFPA 70)
2018 INTERNATIONAL FUEL AND GAS CODE
2018 ILLINOIS ACCESSIBILITY CODE

BUILDING USE GROUP: B / S-1 NON-SEPARATED, NO RATED SEPARATION REQ.

CONSTRUCTION TYPE: 2B

FIRE SPRINKLER: YES, FULLY SPRINKLERED WITH STORAGE TANK. SYSTEM DESIGN & PERMIT DRAWINGS BY SPRINKLER CONTRACTOR.

AREA OF BUILDING: 31,851 S.F. FIRST FLOOR
886 S.F. LOFT
3,470 S.F. MEZZANINE
36,207 S.F. TOTAL

OCCUPANT LOAD (EGRESS): 152

FOUNDATION DESIGN CRITERIA:
REFERENCE THE SOILS REPORT FOUNDATION RECOMENDATIONS PERFORMED BY MIDLAND STANDARD ENGINEERING & TESTING (MSET), FILE NO. 22354 ON 2022.09.09

PLUMBING FIXTURE CALCULTATION

PER ILLINOIS PLUMBING CODE 2014

(7) SERVICE BAYS W/(1) PERSON EACH	= 7 OCC.
WAREHOUSE (8) PERSONS	= 8 OCC.
OFFICE AREA 5,001 SF/200	= 25 OCC.
PARTS AREAS 2,283 SF/400	= 7 OCC.
TOTAL OFFICE PERSONS	**25 (13 M, 13 F)**
TOTAL SERVICE PERSONS	**22 (11 M, 11 F)**

NOTE: ACTUAL FIXTURE COUNTS MEET OR EXCEED REQUIRED FIXTURES, SEE FLOOR PLAN

REQUIRED FIXTURES:
OFFICE: 1 WC (M), 1 WC (F), 1 LAV (M), 1 LAV (F), 1 BOTTLED WATER DISPENSER
SERVICE: 1 WC (M), 1 WC (F), 1 LAV (M), 1 LAV (F), 1 BOTTLED WATER DISPENSER
BUILDING: 1 SERVICE SINK

COMPLIANCE STATEMENT

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT 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 ENVIRONMENTAL BARRIERS ACT (410 ILCS 25) AND THE ILLINOIS ACCESSIBILITY CODE (71 ILL. ADMIN. CODE 400), EFFECTIVE OCTOBER 23, 2018.

SIGNED:

ILLINOIS REGISTRATION No.: 001-012383

DATE: 5/12/2023

ILLINOIS PROFESSIONAL DESIGN FIRM REGISTRATION NO. 184-002823

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STATE OF ILLINOIS
JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
Signature
5/12/2023
Date
11.30.24
Expires

PROJECT NO.	122148
PROJECT MGR.	TPL

TITLE SHEET

T1.1

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LIFE-SAFETY PLAN LEGEND

- EGRESS PATH
- XX' TRAVEL DISTANCE (T.D.)
- EXIT SIGN
- EMERGENCY LIGHT
- MIN. 1-HR FIRE SEPARATION
- S1 EXIT SIGN - SEE BELOW FOR DETAILS
  - ES1 ADA SIGN: "EXIT"
  - ES2 ADA SIGN: "EXIT ROUTE"
  - ES3 ADA SIGN: "EXIT STAIR UP"
- S2 STAIR SIGN - SEE #3/A2.0 FOR DETAILS
- FEB FIRE EXTINGUISHER BRACKET
- KB KNOX BOX
- EXTERIOR EMERGENCY LIGHT W/ INTERIOR BATTERY BACKUP

LIFE SAFETY PLAN NOTES

1. FINAL NUMBER AND LOCATION OF FIRE EXTINGUISHERS TO BE VERIFIED IN FIELD WITH THE LOCAL FIRE AUTHORITY.

2. BUILDING IS FULLY SPRINKLED.

3. MAXIMUM ALLOWABLE TRAVEL DISTANCE = 250'.

4. MAXIMUM DEAD END CORRIDOR LENGTH = 50'.

5. SEE ELECTRICAL PLANS FOR LIFE SAFETY DEVICES.

6. ENTRANCE DOOR KEYS ARE REQUIRED AT FINAL INSPECTION FOR PLACEMENT IN THE KNOX BOXES.

7. LABEL "SPRINKLER CONTROLS" AND "FACP" ON EXTERIOR SIDE OF SPRINKLER ROOM DOOR. 4" HIGH LETTERS.

8. LABEL "ELECTRICAL ROOM" DOOR AND "ROOF ACCESS" DOOR.

9. FIRE EXTINGUISHERS SHALL BE INSTALLED PER NFPA 10 AND HAVE CURRENT CERTIFICATION TAGS AND SHALL BE PROVIDED SO THAT THE TRAVEL DISTANCE FROM ANYWHERE IN THE BUILDING DOES NOT EXCEED 75 FEET TO THE EXTINGUISHER. THEY SHALL BE LOCATED ALONG THE NORMAL PATH OF TRAVEL AND IN A READILY VISIBLE AND ACCESSIBLE LOCATION, WITH THE BOTTOM OF THE EXTINGUISHER AT LEAST 4" ABOVE THE FLOOR.

10. LOCATION AND CLASSIFICATION OF EXTINGUISHERS SHALL BE IN ACCORDANCE WITH LOCAL FIRE AUTHORITY.

11. DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE AND CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, AND WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC SECTION 3315.1

12. IN BUILDINGS REQUIRING STANDPIPES, STANDPIPES SHALL BE PROVIDED DURING CONSTRUCTION WHEN THE HEIGHT REACHES 40 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT VEHICLE ACCESS. A FIRE DEPARTMENT CONNECTION SHALL BE NO MORE THAT 100 FT. FROM AVAILABLE FIRE DEPARTMENT VEDHICLE ACCESS ROADWAYS.

13. EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL

14. OCCUPANCY - SEE BELOW

15. STAIRWAY EGRESS - SEE BELOW

16. FIRE RESISTIVE RATING FOR BUILDING ELEMENTS PER TABLE 601 0 HOURS. NONE REQUIRED

BUILDING CODE CALCS

CODE: 2018 IBC W/ CRYSTAL LAKE AMENDMENTS

CHAPTER 3 USE AND OCCUPANCY
SECTION 304 (B) BUSINESS USE GROUP
SECTION 307.1.1 HAZARDOUS MATERIALS AMOUNTS AND STORAGE MUST NOT BE ENOUGH TO QUALIFY AS A HAZARD USE GROUP.
SECTION 311.2 (S-1) MODERATE HAZARD STORAGE (REPAIR GARAGE)

CHAPTER 4 SPECIAL USE
406.2.8 MIXED USE OCCUPANCY IS ALLOWED IN ACCORDANCE WITH SECTION 508.1
SECTION 406.8.2 A GAS DETECTION SYSEM SHALL BE PROVIDED
SECTION 406.8.3 A REPAIR GARAGE SHALL HAVE AN AUTOMATIC SPRINKLER SYSTEM

CHAPTER 5 HEIGHT AND AREA
SECTION 505.2.1 MEZZANINE ALLOWABLE LIMITATION
THE MEZZANINE AREA SHALL BE LESS THAN 1/2 OF THE ROOM IT IS LOCATED. 13,280/2= 6,640 S.F. MAXIMUM ALLOWED.

PER 2018 ILLINOIS ACCESSIBILITY CODE 206.2.3 EX.8: **SPACES** GREATER THAN 1,000 SQUARE FEET BUT LESS THAN 3,000 SQUARE FEET IN AREA THAT ARE USED EXCLUSIVELY FOR PRODUCT STORAGE IN A BUSINESS OCCUPANCY SHALL NOT BE REQUIRED TO BE ON AN ACCESSIBLE ROUTE. (THUS **SPACE** TO **MEZZANINE** ACCESSED BY STAIR IS NOT REQUIRED TO BE ON AN ACCESSIBLE ROUTE.)

TABLE 506.2 BUILDING AREA:
ALLOWABLE AREA FOR 2B: 3-STORY, 69,000 S.F.
ACTUAL TOTAL AREA: 2-STORY, 36,207 S.F.

CHAPTER 6 TYPES OF CONSTRUCTION
TABLE 601: TYPE 2B

CHAPTER 10: MEANS OF EGRESS

TABLE 1004.5 - OCCUPANT LOAD
WAREHOUSE 500 GROSS S.F. 8,098/500 = 17 PEOPLE
REPAIR GARAGE 200 GROSS S.F. 14,713/200 = 74 PEOPLE
PARTS STORAGE ROOM 1,450 S.F./300 = 5 PEOPLE
MEZZANINE STORAGE 3,000/300 = 10 PEOPLE

BUSINESS AREAS 150 GROSS S.F. - OFFICE AREA 6,924 S.F./150 = 51

TOTAL PEOPLE = 152 PEOPLE

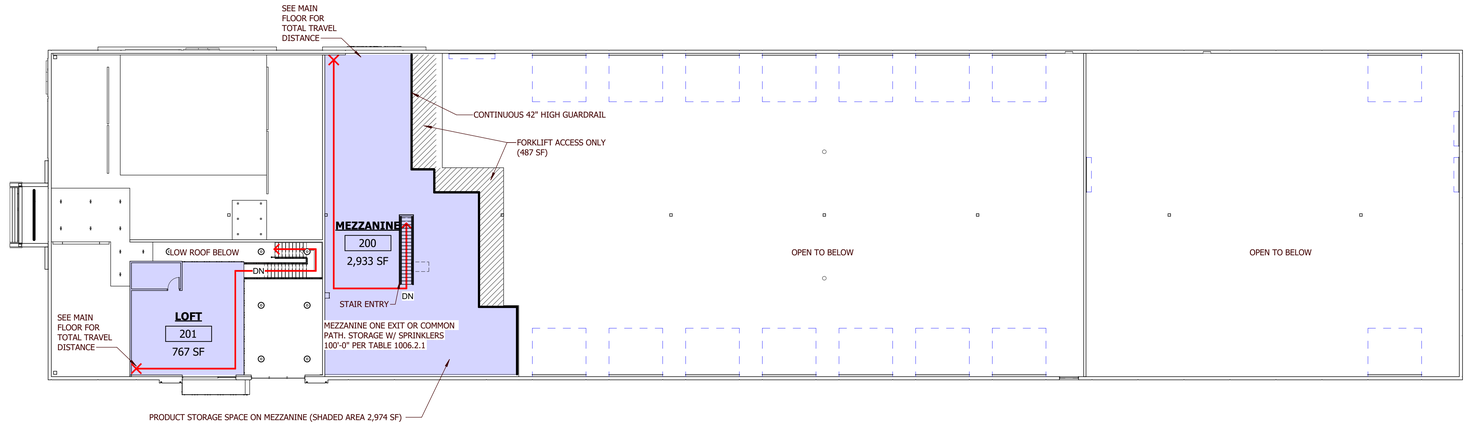
SECTION 1005.3.1 EXCEPTION 1
EGRESS STAIR WIDTH 0.2" x 10 = 2" REQUIRED
1011.2 expt.1 MINIMUM STAIR WIDTH 36" W/ OCCUPANT LOAD <50.
SECTION 1005.3.2 EXCEPTION 1
EGRESS WIDTH 0.15 x 151 = 23" REQUIRED
(FIRE ALARM FIRE DETECTOR IS REQUIRED PER SECTION 907.5.2.2
SEE ELECTRICAL AND SPRINKLERS PER 903.1.1 OR 903.3.1.2)

PER TABLE 1006.2.1 SPACES WITH ONE EXIT OR EXIT ACCESS
MEZZ. - STORAGE S OCCUPANT LOAD <29, W/ SPRINKLER = 100 FEET.
MEZZANINE TRAVEL DISTANCE TO B/STAIR TO BE 100 FEET MAX.

1007.1.1 E2 TWO OR MORE EXIT ACCESS DOORWAYS (REMOTENESS)
SEPARATION DISTANCE TO BE NOT < 1/3 MAX DIAGONAL DISTANCE WITH SPRINKLERS.

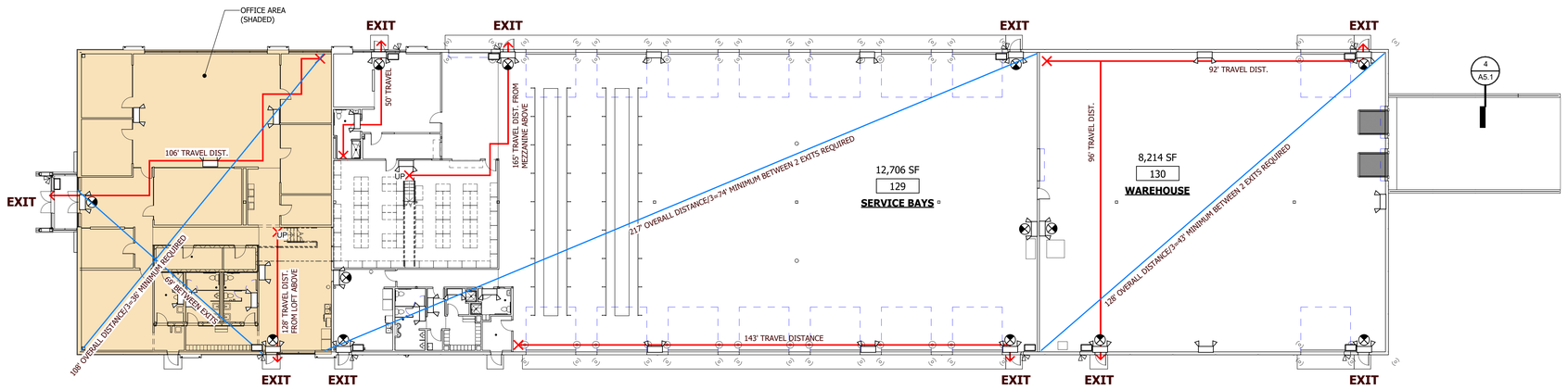
1011.2 E1 STAIRWAYS SERVING AN OCCUPANT LOAD LESS THAN 50 SHALL NOT HAVE A WIDTH LESS THEN 36".

EXIT TRAVEL DISTANCE PER TABLE 1017.2.
S-1= 250' WITH SPRINKLER
1020.4.2 MAXIMUM ALLOWBALE DEAD END CORRIDOR : 50'



2 LOFT & MEZZANINE LIFE SAFETY PLAN
1/16" = 1'-0"

NORTH TRUE



1 MAIN FLOOR LIFE SAFETY PLAN
1/16" = 1'-0"

NORTH TRUE

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JOHN F. SWIERK
001-012383
LICENSED ARCHITECT
Signature 5/12/2023 Date
Expires 11.30.24

PROJECT NO.	122148
PROJECT MGR.	TPL
LIFE SAFETY PLAN	

T1.2

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SITE DATA

ZONING DISTRICTS:
(M) MANUFACTURING

LOT AREA:
935,562 (21.48 ACRES)

BUILDING FOOTPRINT: 31,851 SF
BUILDING AREA: 36,207 SF

REQUIRED SETBACKS:

FRONT:	30 FT
SIDE:	15 FT
REAR:	20 FT
YARD ABUTTING RES. DIST:	50 FT

F.A.R.: 1.0 MAX. (ACTUAL 0.034)

PARKING

TRUCK / TRAILER PARKING:

TRAILER STALLS (12' x 75') = 325

BOBTAIL STALLS (12' x 25') = 9

TOTAL TRUCK STALLS 334

CAR PARKING

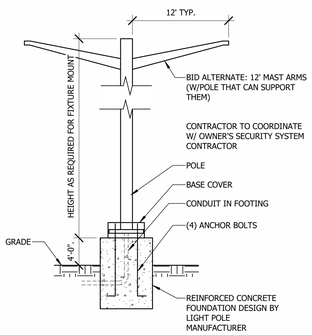
REQUIRED CAR PARKING PER ORD. SECTION 4-200:
COMMERCIAL VEHICLE AND PARTS:
- (3) PER SERVICE BAY
- (1) PER EMPLOYEE DURING BUSIEST TIME
- (5) PER 1000 SF OF SALES AREA

CALCULATION:

3 X 7 BAYS =	21
27 EMPLOYEES =	27
600 SF SALES =	3
TOTAL REQUIRED =	51

ACTUAL CAR SPACES:

CAR SPACES (9' X 19') =	48
H.C. SPACES (SEE PLAN) =	3
TOTAL	51



2 POLE DETAIL

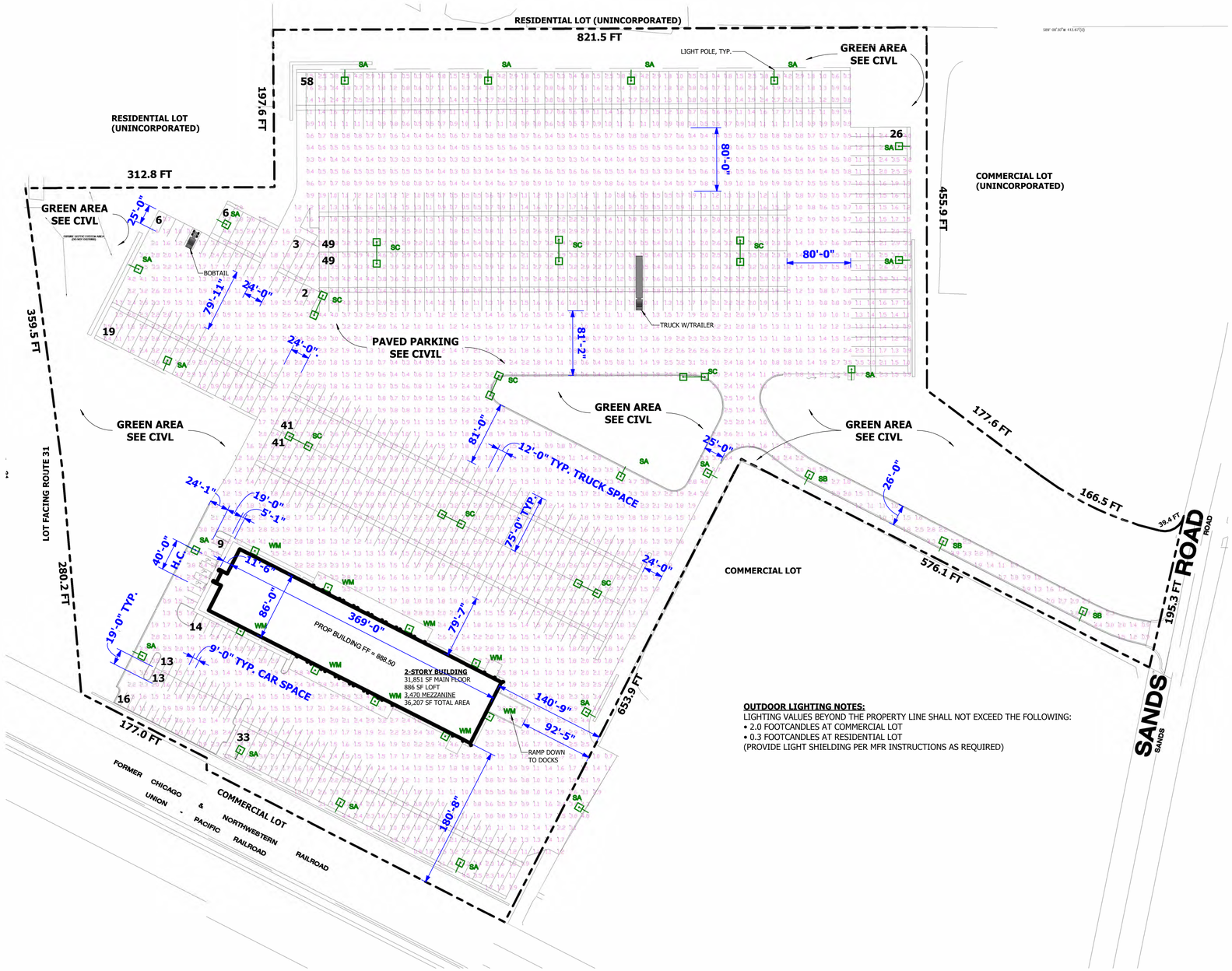


MOUNT TO POLE OR TO WALL
SEE LUMINAIRE SCHEDULE FOR MOUNTING HEIGHT
(GC TO VERIFY COLOR W/OWNER)

BID ALTERNATE: MAST ARMS
12' MAST ARMS AT EACH POLE MOUNTED LIGHT
(USE SLIP-FITTER MODEL WITH THIS ALTERNATE,
USE ALTERNATE POLE IF REQUIRED FOR MAST ARMS)

3 LIGHT FIXTURE IMAGE (POLE OR WALL MOUNT)

12" = 1'-0"



1 ARCHITECTURAL SITE PLAN & PHOTOMETRIC

1" = 60'-0"

NORTH

OUTDOOR LIGHTING NOTES:
LIGHTING VALUES BEYOND THE PROPERTY LINE SHALL NOT EXCEED THE FOLLOWING:
- 2.0 FOOTCANDLES AT COMMERCIAL LOT
- 0.3 FOOTCANDLES AT RESIDENTIAL LOT

(PROVIDE LIGHT SHIELDING PER MFR INSTRUCTIONS AS REQUIRED)

Luminaire Schedule

Symbol	Qty*	Label	Description	Lum. Watts	LLF	Lum. Lumens
	19	SA	GARDCO#: ECF-L-80L-1A-NW-G2-4-HIS / MTD AT 30' AFG	264.9	0.900	27730
	3	SB	GARDCO#: ECF-S-64L-1A-NW-G2-2-HIS / MTD AT 30' AFG	205.9	0.900	20575
	9	SC	GARDCO#: (2) ECF-L-80L-1A-NW-G2-5W / MTD AT 30' AFG	264.9	0.900	34246
	9	WM	GARDCO#: ECF-S-48L-1A-NW-G2-4 / WALL MTD AT 24' AFG	158.7	0.900	20880

*GC TO VERIFY QUANTITY W/ OWNER

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SERVICE CENTER	Illuminance	Fc	1.71	4.9	0.3	5.70	16.33

SERVICE CENTER
MCHENRY COUNTY, ILLINOIS

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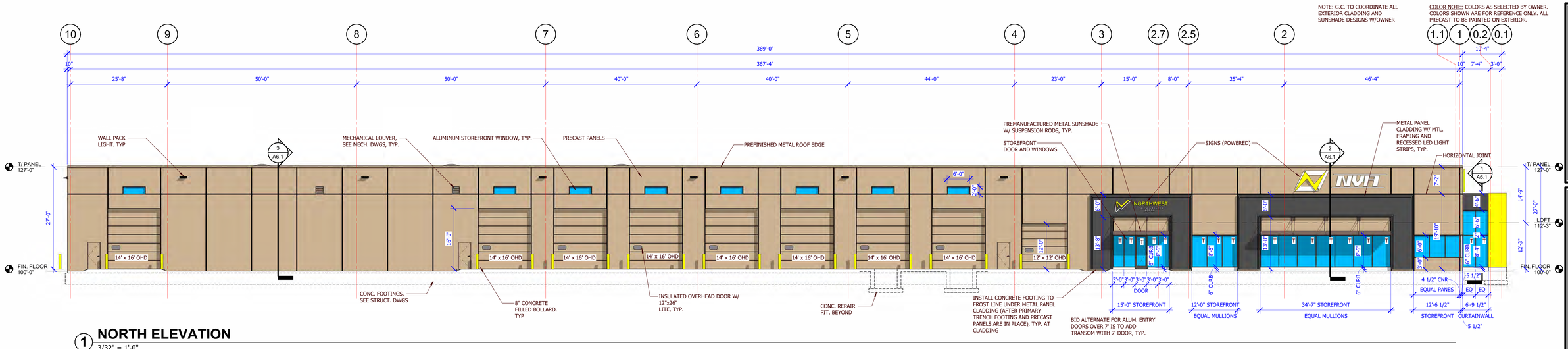
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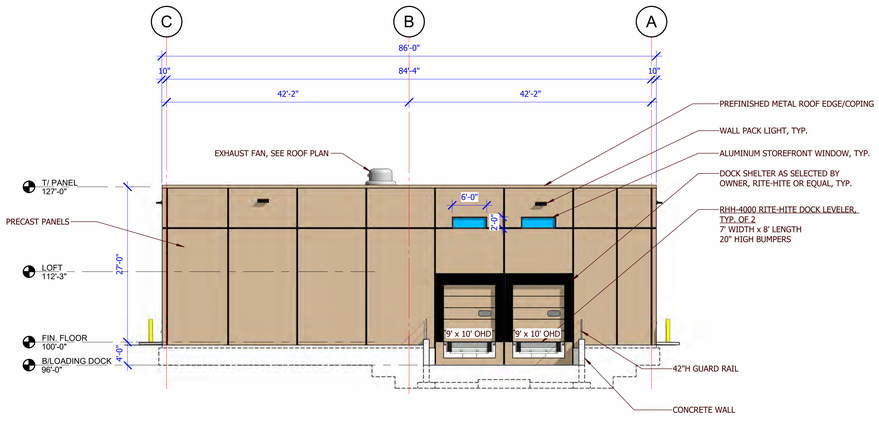
PROJECT NO.	122148
PROJECT MGR.	
ARCHITECTURAL SITE PLAN & PHOTOMETRIC	

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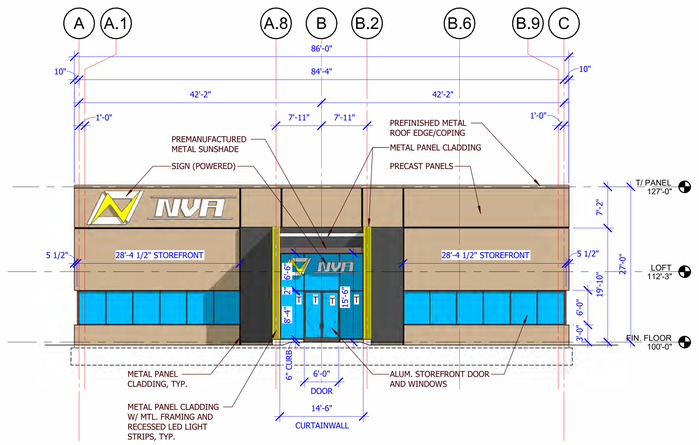
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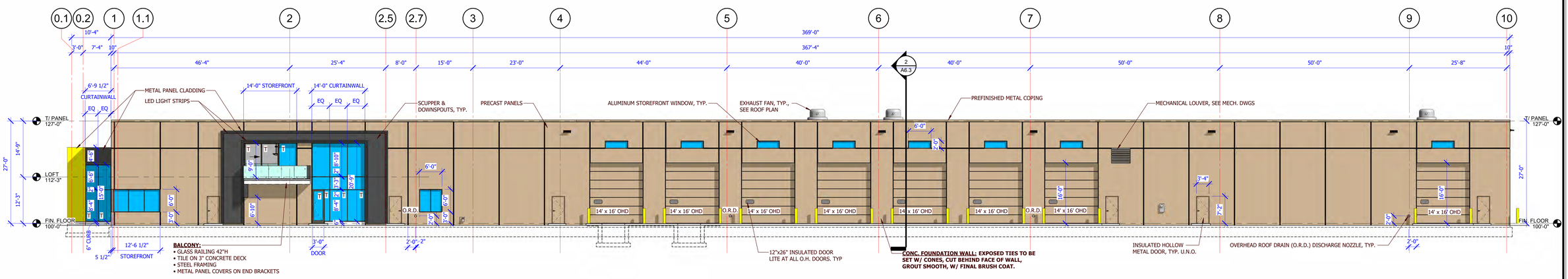
1 NORTH ELEVATION
3/32" = 1'-0"



2 EAST ELEVATION
3/32" = 1'-0"



3 WEST ELEVATION
3/32" = 1'-0"



4 SOUTH ELEVATION
3/32" = 1'-0"

EXTERIOR GLASS LEGEND*

EXTERIOR INSULATED GLASS: CLEAR
1" INSULATED UNIT OF 1/4" OUTBOARD CLEAR FLOAT GLASS, 1/2" ARGON-FILLED AIR SPACE, 1/4" INBOARD CLEAR FLOAT GLASS. LOW-E COATING

EXTERIOR TEMPERED (T): CLEAR TEMPERED
1" INSULATED UNIT OF 1/4" OUTBOARD CLEAR **TEMPERED** SAFETY GLASS, 1/2" ARGON-FILLED AIR SPACE, 1/4" INBOARD CLEAR **TEMPERED** SAFETY GLASS. LOW-E COATING

BALCONY RAILING (42" HIGH):
SAFETY GLAZING PER IBC 2018 SECTION 2407

*NOTES:

1. ALL GLAZING TO MEET OR EXCEED THE FOLLOWING ENERGY CODE VALUES: **U-VALUE 0.37, SHGC 0.38**
2. GLASS MARKED WITH 'T' DENOTES 'TEMPERED'
3. STOREFRONT IS 2" X 4 1/2" THERMALLY BROKEN. MAX HEIGHT 10'-0".
4. CURTAINWALL (HEIGHT > 10'-0") IS TO BE SIZED BY MFR WITH STEEL REINFORCING AS REQUIRED FOR WIND LOADS. HEAVY DUTY STOREFRONT MAY BE USED IF ALLOWED PER MFR STANDARDS.

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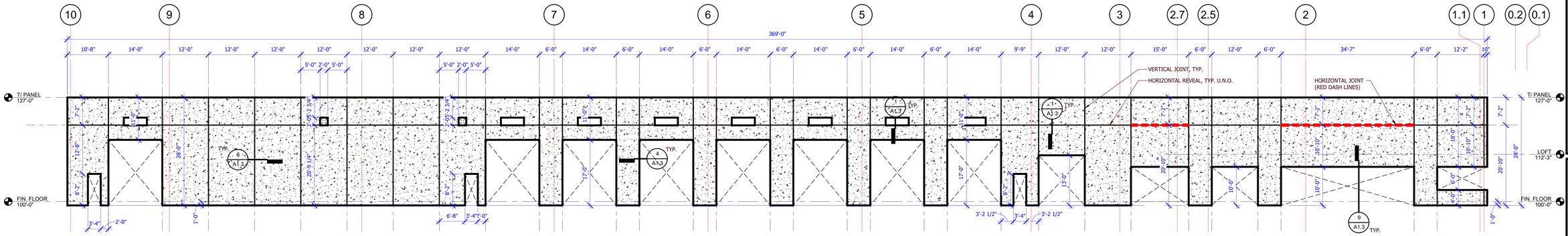
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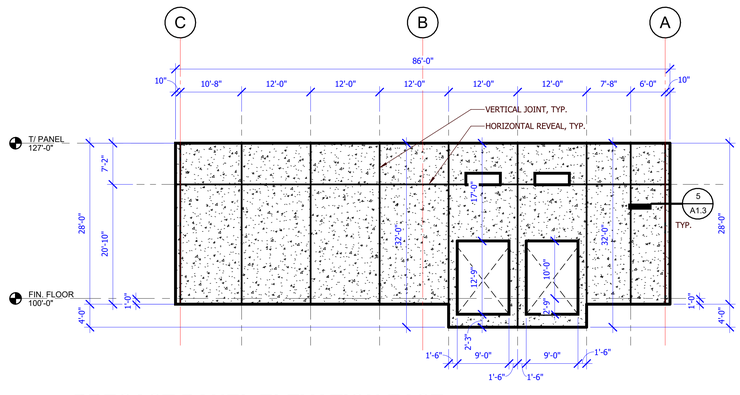
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PROJECT MGR.	TPL
EXTERIOR ELEVATIONS	
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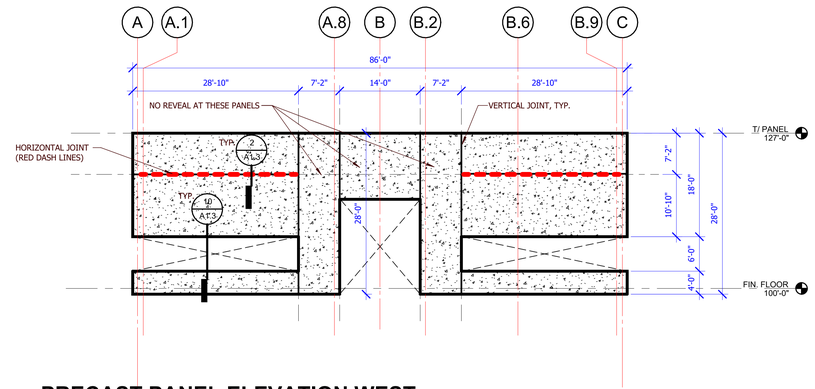
PRECAST PANEL NOTES:
1. ALL OPENING DIMENSIONS ARE NOMINAL, ADJUST AS REQUIRED FOR ROUGH OPENINGS
2. SHIM SPACE AT FOUNDATION PER PANEL MFR STANDARDS



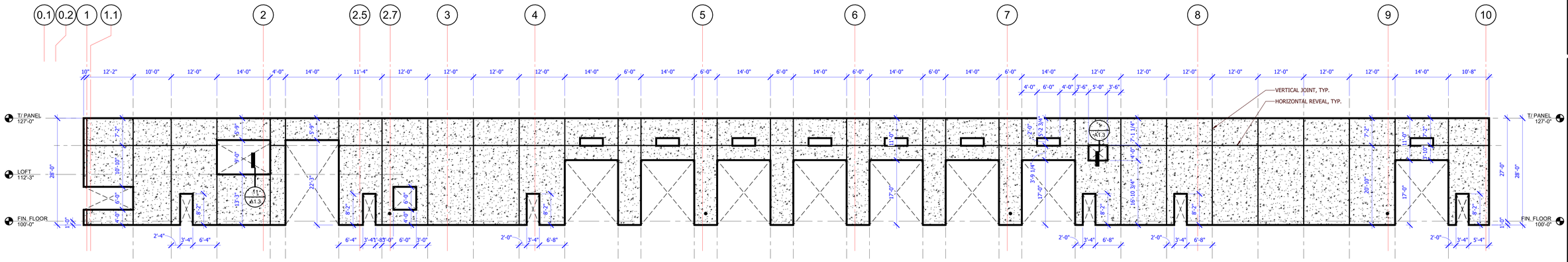
1 PRECAST PANEL ELEVATION NORTH
3/32" = 1'-0"



2 PRECAST PANEL ELEVATION EAST
3/32" = 1'-0"



3 PRECAST PANEL ELEVATION WEST
3/32" = 1'-0"



4 PRECAST PANEL ELEVATION SOUTH
3/32" = 1'-0"

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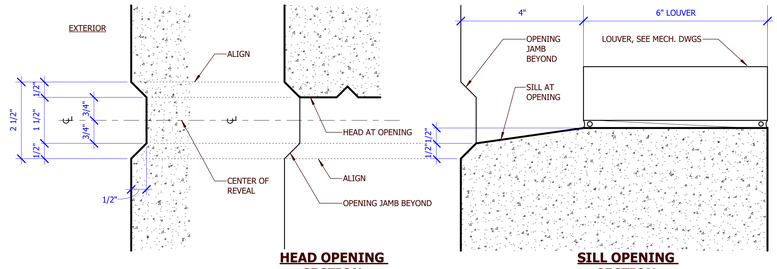
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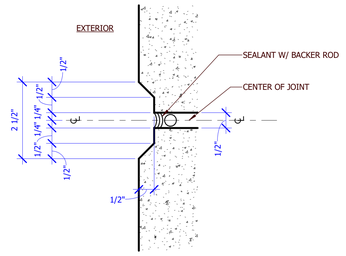
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001-012383
LICENSED ARCHITECT
STATE OF ILLINOIS
5/12/2023
Signature Date
11.30.24
Expires

PROJECT NO.	122148
PROJECT MGR.	TPL
PRECAST PANEL ELEVATIONS	
A1.2	

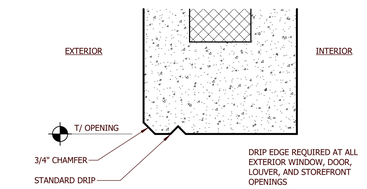
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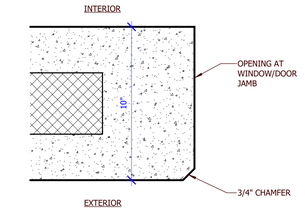
1 PANEL REVEAL (HORIZONTAL)
6" = 1'-0"



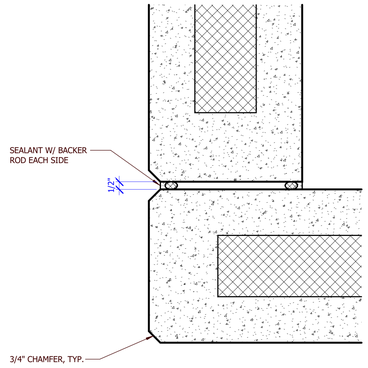
2 PANEL JOINT (HORIZONTAL)
6" = 1'-0"



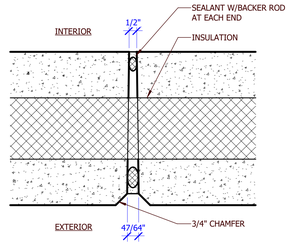
3 PANEL DRIP EDGE @ HEAD
3" = 1'-0"



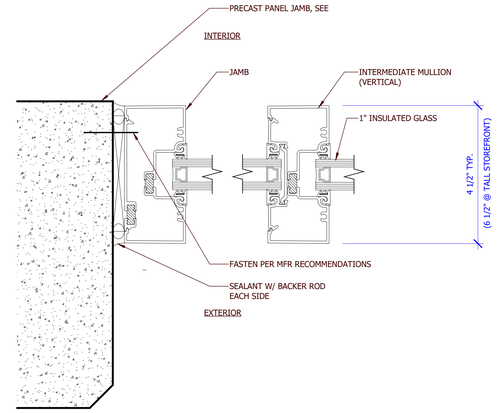
4 PANEL JAMB
3" = 1'-0"



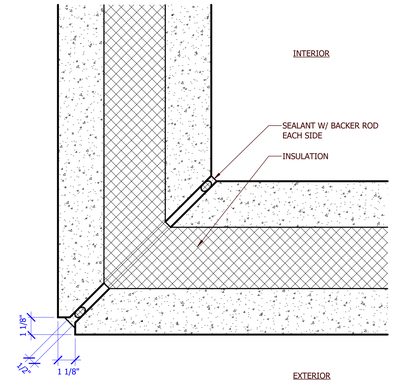
5 SQUARE CORNER DETAIL
3" = 1'-0"



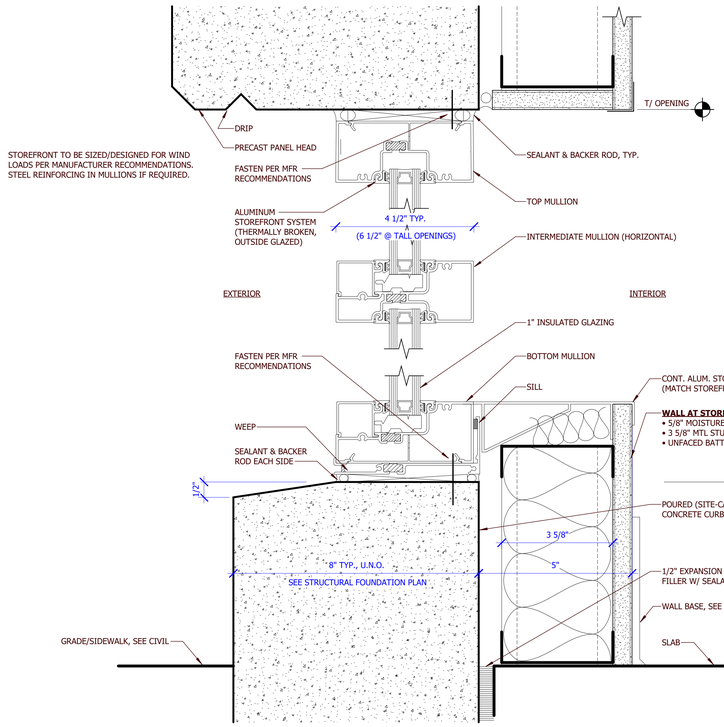
6 VERTICAL PANEL JOINT
3" = 1'-0"



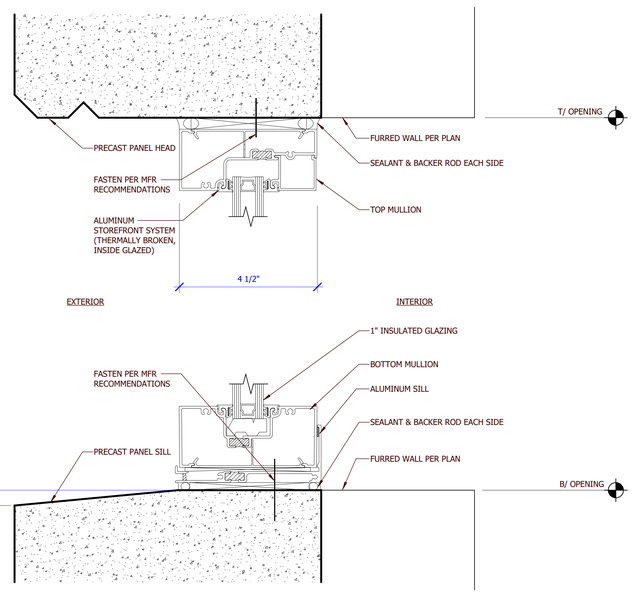
7 STOREFRONT/WINDOW JAMB DETAIL
6" = 1'-0"



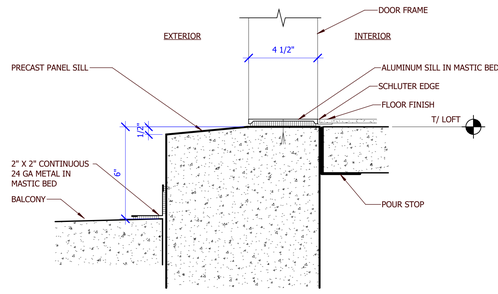
8 MITERED CORNER DETAIL
3" = 1'-0"



9 STOREFRONT SECTION DETAIL
6" = 1'-0"



10 WINDOW SECTION
6" = 1'-0"



11 BALCONY SILL
3" = 1'-0"

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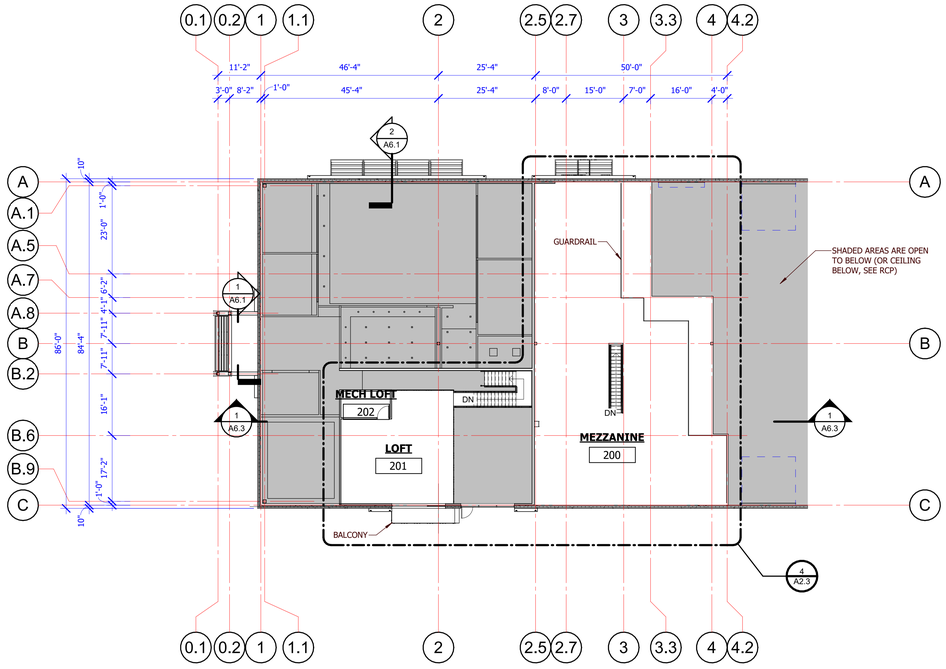
PROJECT NO.	122148
PROJECT MGR.	TPL

PRECAST PANEL & WINDOW DETAILS

A1.3

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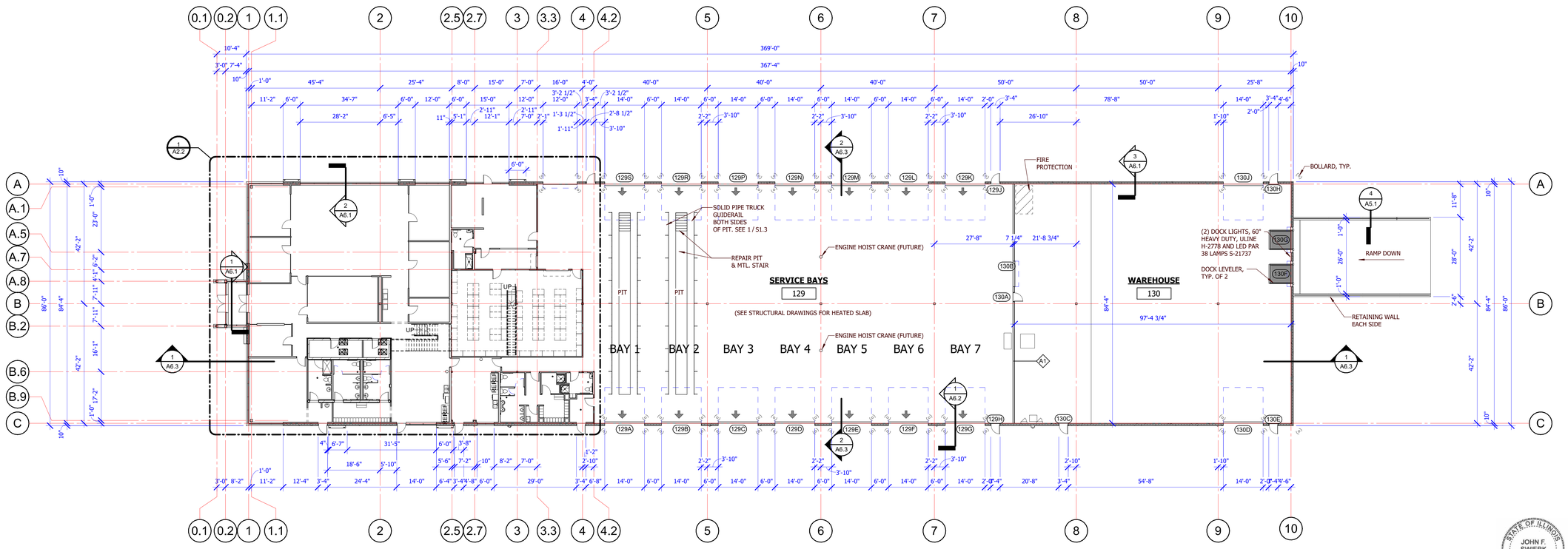
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1 LOFT AND MEZZANINE PLAN

1/16" = 1'-0"

NORTH TRUE



2 FLOOR PLAN

1/16" = 1'-0"

NORTH TRUE

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Signature 5/12/2023 Date

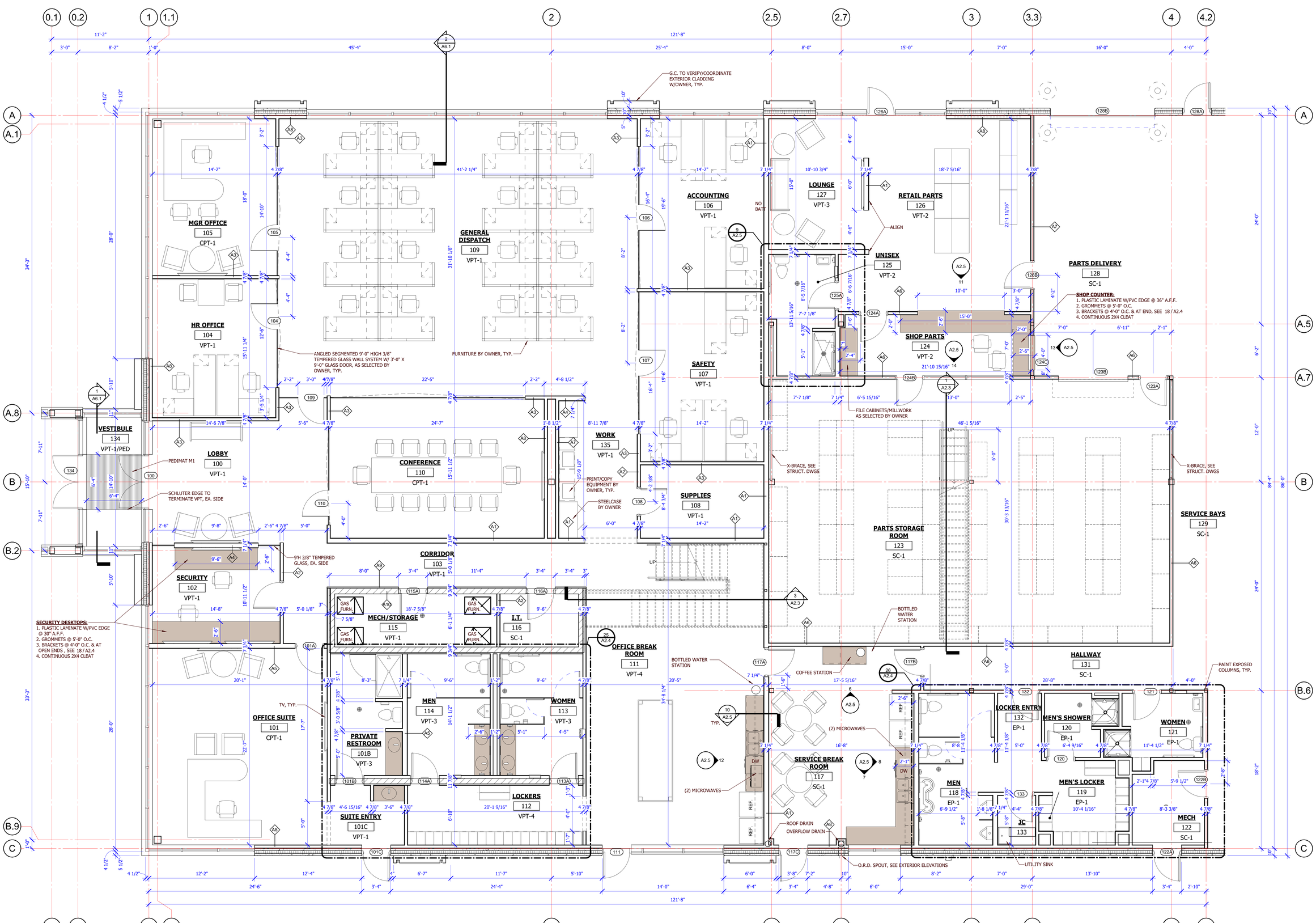
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FLOOR PLAN

A2.1

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1 OFFICE AREA PLAN

1/4" = 1'-0"

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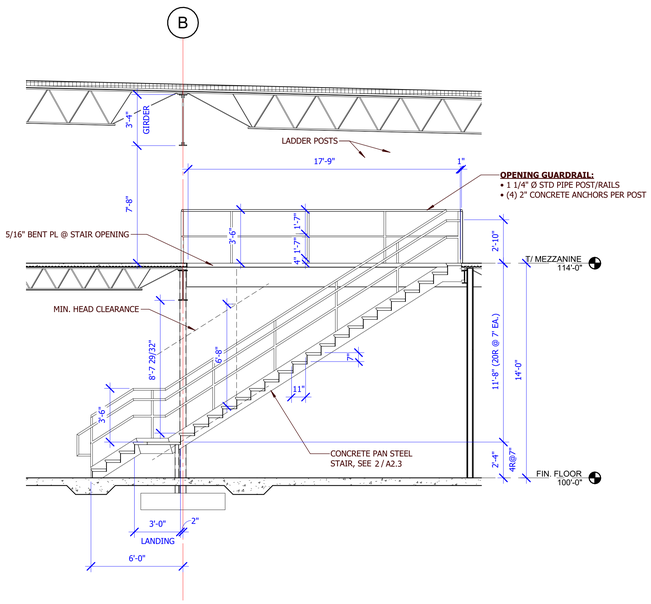
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OFFICE AREA PLAN

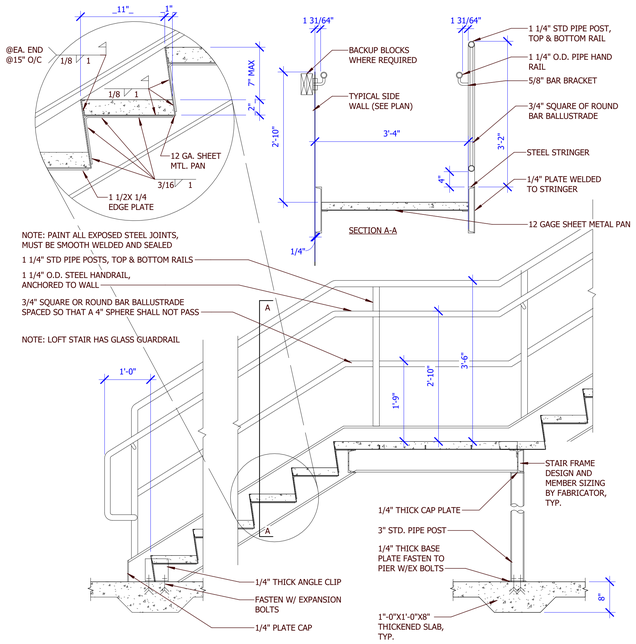
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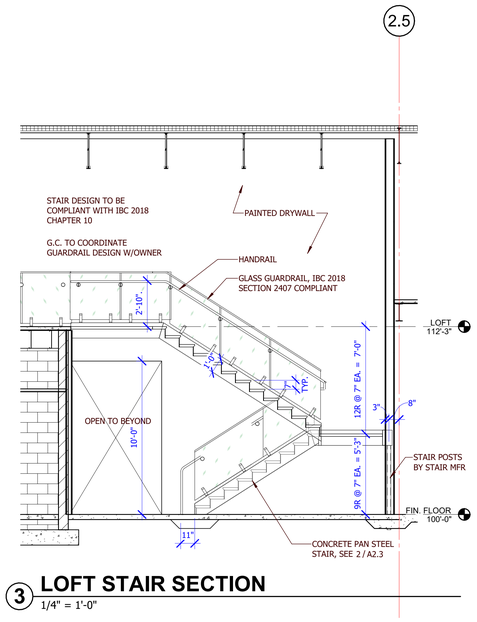
1 MEZZANINE STAIR SECTION

1/4" = 1'-0"



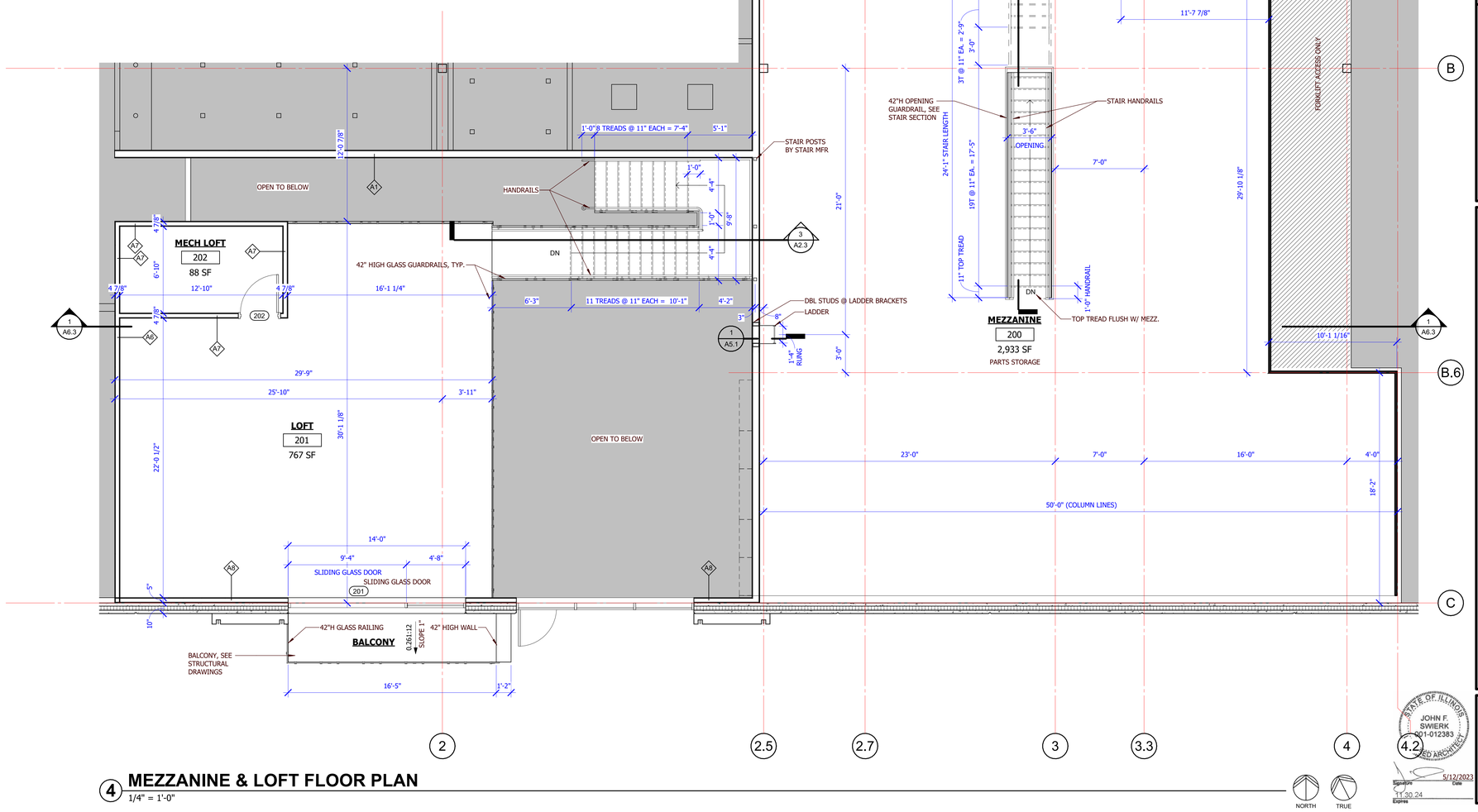
2 CONCRETE PAN STEEL STAIR DETAILS

3/4" = 1'-0"



3 LOFT STAIR SECTION

1/4" = 1'-0"



4 MEZZANINE & LOFT FLOOR PLAN

1/4" = 1'-0"

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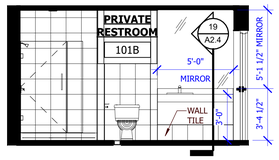
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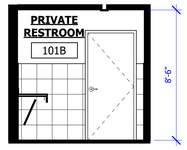
MEZZANINE, LOFT, & STAIR PLANS

A2.3

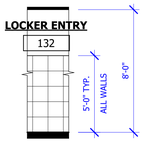
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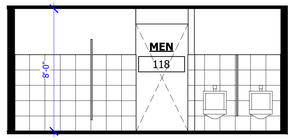
1 PRIV. RR 101B EAST
1/4" = 1'-0"



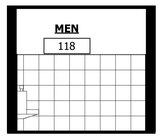
2 PRIV. RR 101B SOUTH
1/4" = 1'-0"



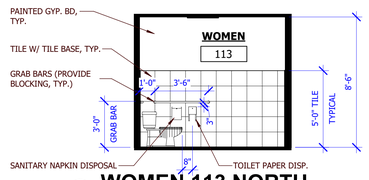
3 LOCKER ENT. 121
1/4" = 1'-0"



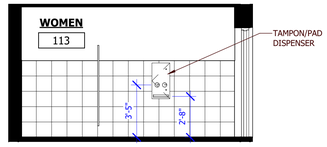
4 MEN 118 EAST
1/4" = 1'-0"



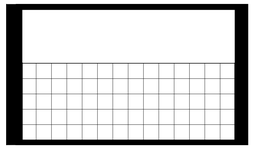
5 MEN 118 SOUTH
1/4" = 1'-0"



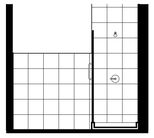
6 WOMEN 113 NORTH
1/4" = 1'-0"



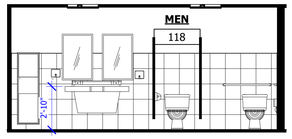
7 WOMEN 113 EAST
1/4" = 1'-0"



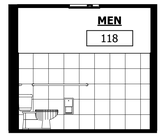
8 PRIV. RR 101B WEST
1/4" = 1'-0"



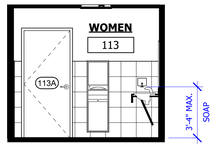
9 PRIV. RR 101B NORTH
1/4" = 1'-0"



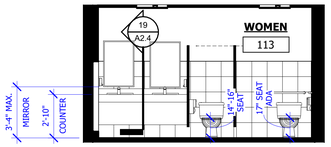
10 MEN 118 WEST
1/4" = 1'-0"



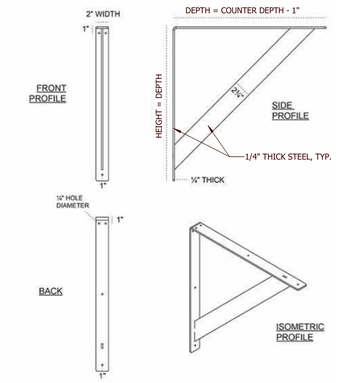
11 MEN 118 NORTH
1/4" = 1'-0"



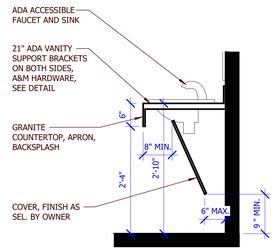
12 WOMEN 113 SOUTH
1/4" = 1'-0"



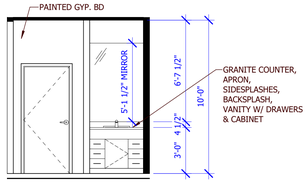
13 WOMEN 113 WEST
1/4" = 1'-0"



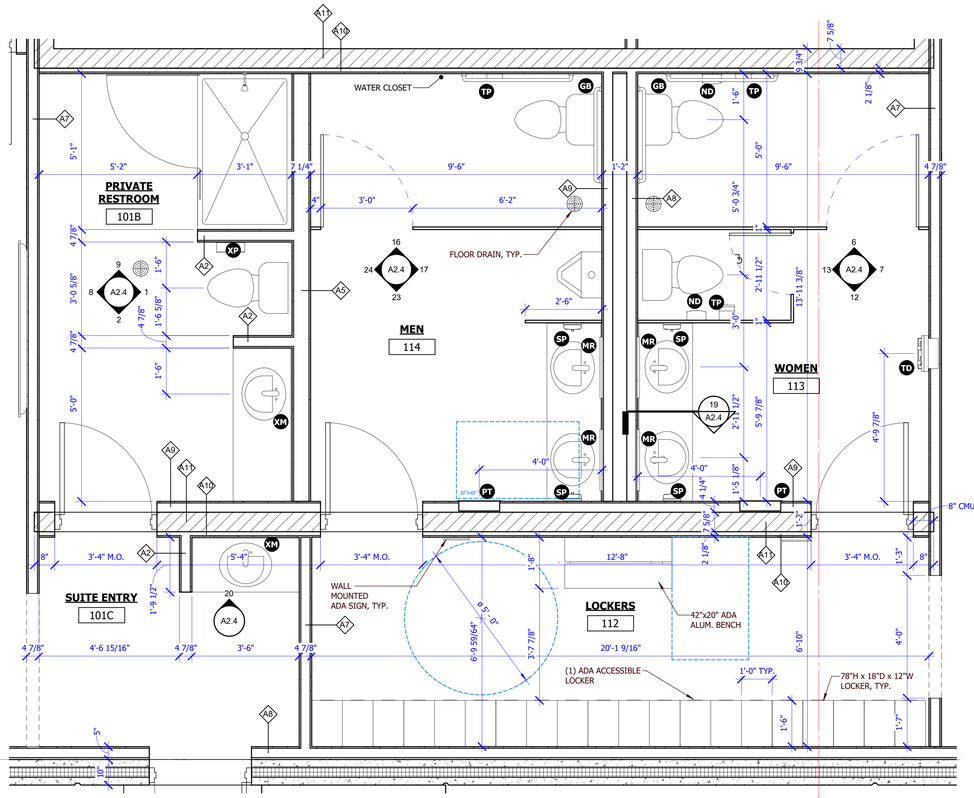
18 COUNTERTOP BRACKET DETAIL
12" = 1'-0"



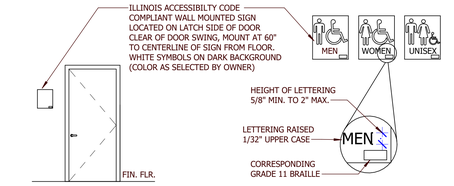
19 LAV SECTION
3/4" = 1'-0"



20 PRIVATE SUITE ENTRY
1/4" = 1'-0"



25 OFFICE RESTROOM PLAN
1/2" = 1'-0"



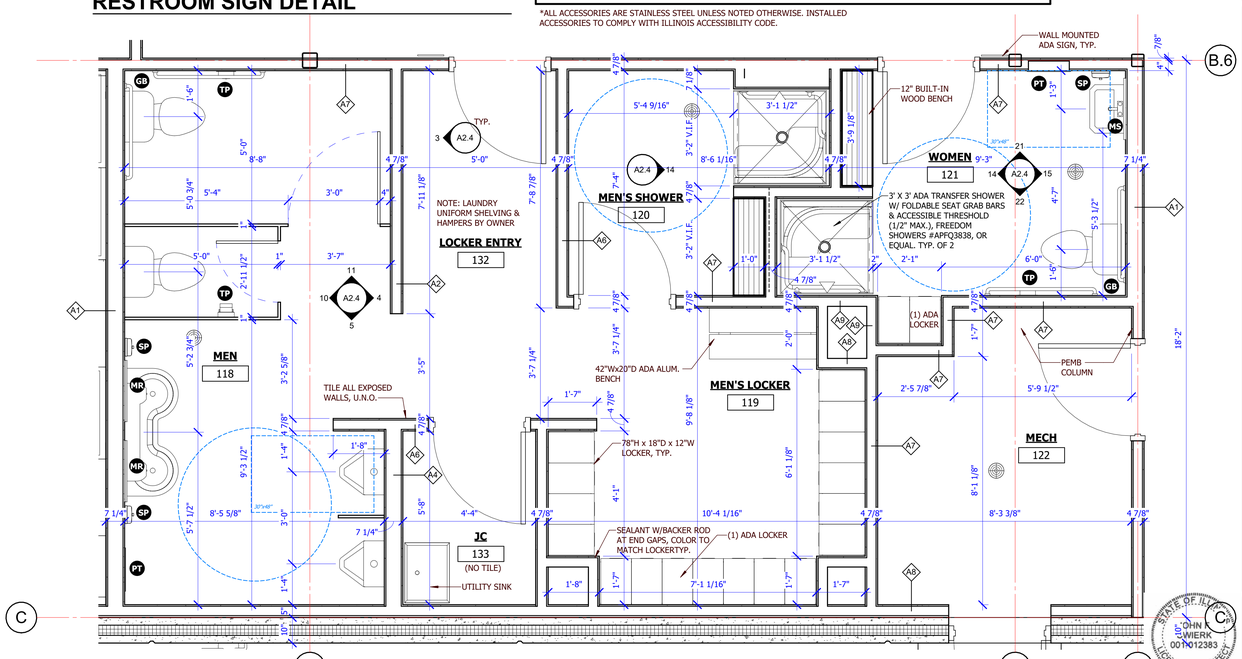
RESTROOM SIGN DETAIL

TOILET ACCESSORIES LEGEND*

- PT — TOWEL DISPENSER W/WASTE RECEPTACLE (BOBRICK B-3940 RECESSED)
- TP — TOILET PAPER DISPENSER (WALLS: BOBRICK B-4388 RECESSED) (PARTITIONS: BOBRICK B-2888 SURFACE MOUNT)
- XP — TOILET PAPER DISPENSER (BOBRICK B-540 SURFACE MOUNT)
- ND — SANITARY NAPKIN DISPOSAL (BOBRICK B-270 SURFACE MOUNT)
- SP — SOAP DISPENSER (BOBRICK B-4112 SURFACE MOUNT)
- TD — TAMPON-PAD DISPENSER SEMI-RECESSED (BOBRICK B-370634 25 CENTS)
- MR — MIRROR 24X36 (BOBRICK B-2908)
- MS — MIRROR W/ SHELF 24X36 (BOBRICK B-292 2436)
- XM — CUSTOM MIRROR 1/4" SAFETY GLASS, FULL WIDTH AND HEIGHT, SEE INT. ELEVATIONS
- GB — 3-PC GRAB BARS W/ CONCEALED FASTENERS (BOBRICK B-5806 X 18", 36", & 42")

*ALL ACCESSORIES ARE STAINLESS STEEL UNLESS NOTED OTHERWISE. INSTALLED ACCESSORIES TO COMPLY WITH ILLINOIS ACCESSIBILITY CODE.

RESTROOM NOTES:
1. FINISHES ARE TYPICAL, U.N.O.
2. MOUNTING HEIGHTS ARE TYPICAL FOR ALL FIXTURES/ACCESSORIES, U.N.O
3. COLORS SELECTED BY OWNER, U.N.O.
4. INSTALL BACKER BOARDS AND BLOCKING AS REQUIRED FOR FIXTURES, GRAB BARS, AND SHOWERS, TYP.



26 SERVICE RESTROOM PLAN
1/2" = 1'-0"

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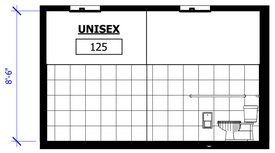
PROJECT NO.	122148
PROJECT MGR.	TPL

TOILET PLANS AND ELEVATIONS

A2.4

STATE OF ILLINOIS — JOHN WIERK — 001012383 — LICENSED ARCHITECT — 5/12/2023 — 11.30.24

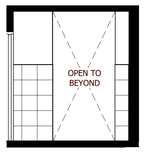
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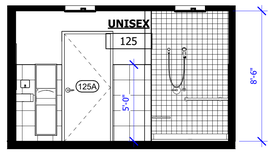
1 UNISEX WEST
1/4" = 1'-0"



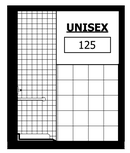
2 UNISEX NORTH
1/4" = 1'-0"



3 UNISEX SOUTH WING WALL
1/4" = 1'-0"

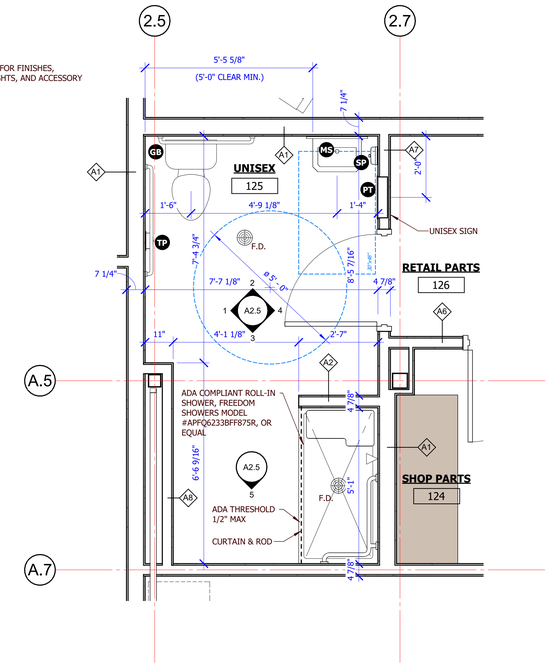


4 UNISEX EAST
1/4" = 1'-0"



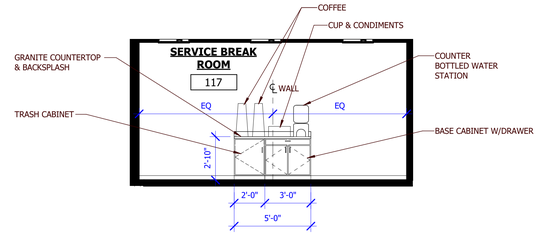
5 UNISEX SOUTH
1/4" = 1'-0"

NOTE:
SEE SHEET A2.4 FOR FINISHES, MOUNTING HEIGHTS, AND ACCESSORY SCHEDULE

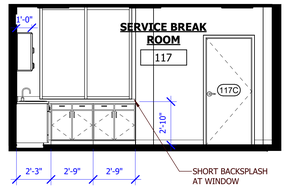


9 UNISEX RESTROOM PLAN
1/2" = 1'-0"

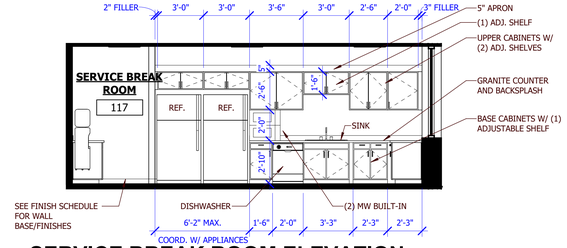
NORTH TRUE



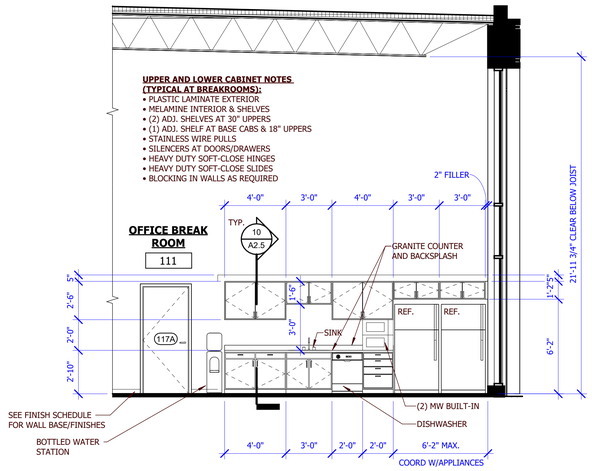
6 SERVICE BREAK ROOM NORTH
1/4" = 1'-0"



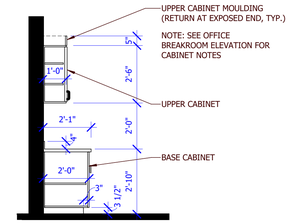
7 SERVICE BREAK ROOM SOUTH
1/4" = 1'-0"



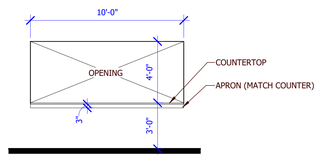
8 SERVICE BREAK ROOM ELEVATION
1/4" = 1'-0"



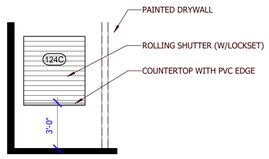
12 OFFICE BREAK ROOM ELEVATION
1/4" = 1'-0"



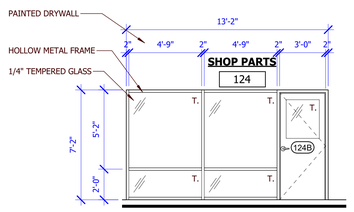
10 TYPICAL CABINET SECTION
3/8" = 1'-0"



11 RETAIL PARTS OPENING
1/4" = 1'-0"



13 SHOP PARTS SHUTTER
1/4" = 1'-0"



14 SHOP PARTS WINDOW
1/4" = 1'-0"

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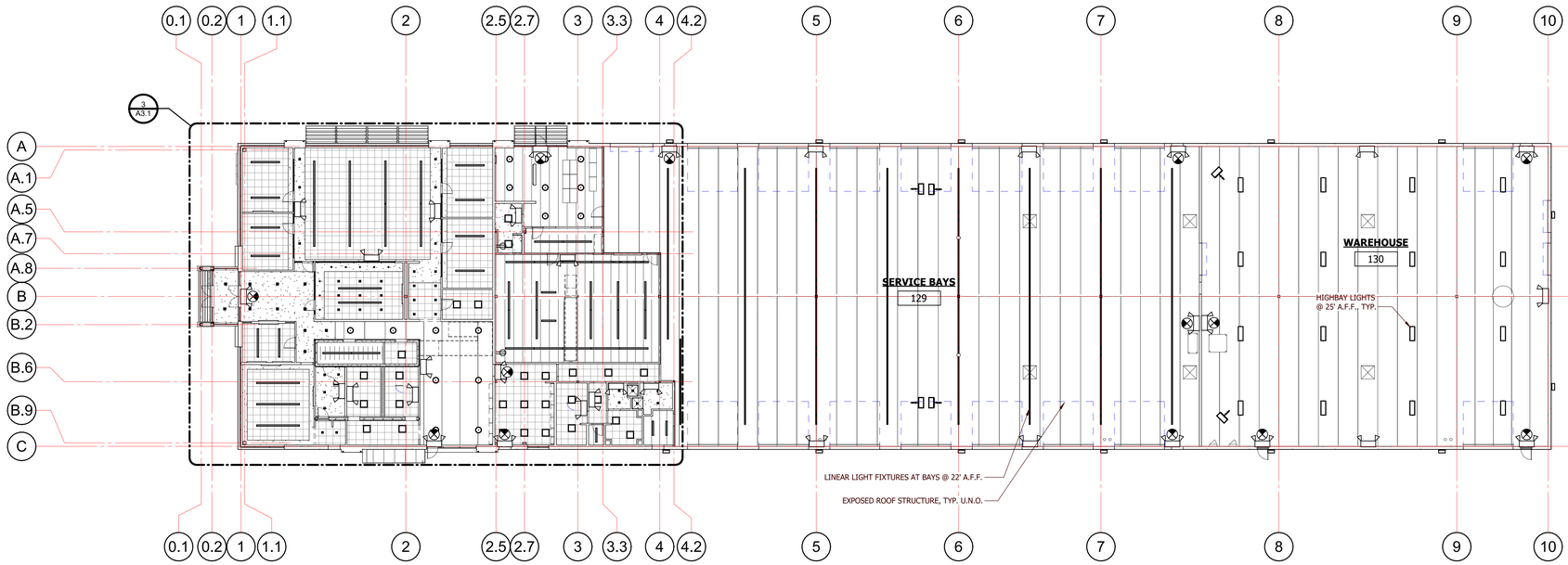
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ENLARGED PLANS AND ELEVATIONS	
A2.5	

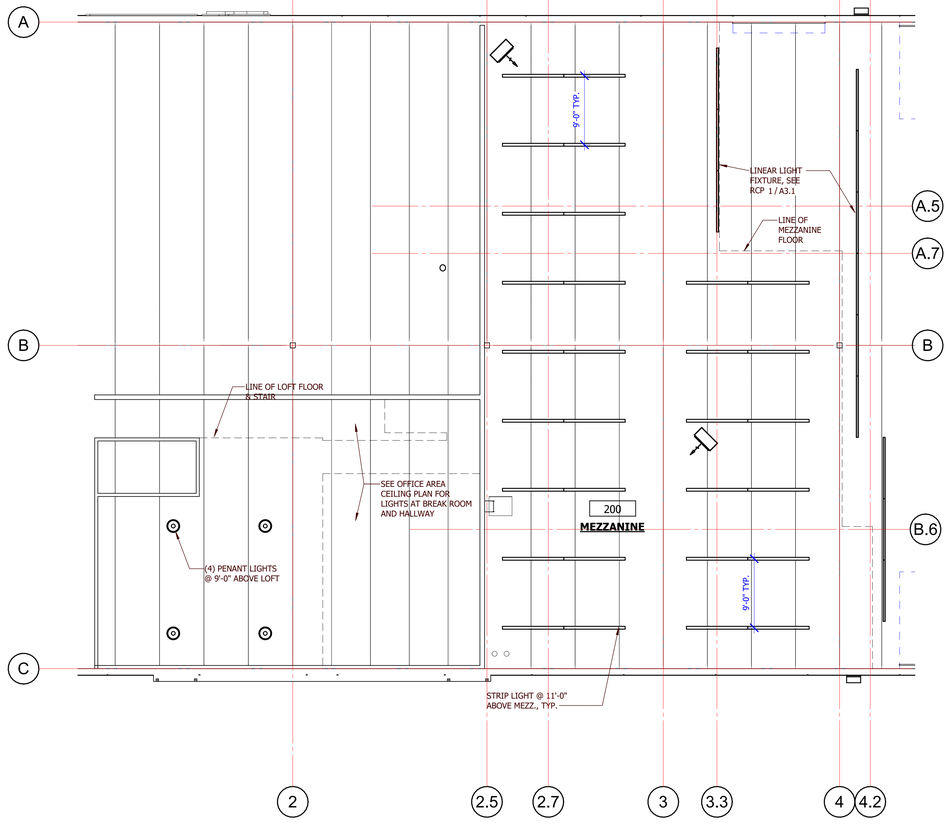
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NOTES:
- SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURES, LIGHT FIXTURE SELECTION IS BY OWNER, GC TO VERIFY SELECTION W/OWNER.
- SEE FINISH SCHEDULE FOR CEILING FINISHES.

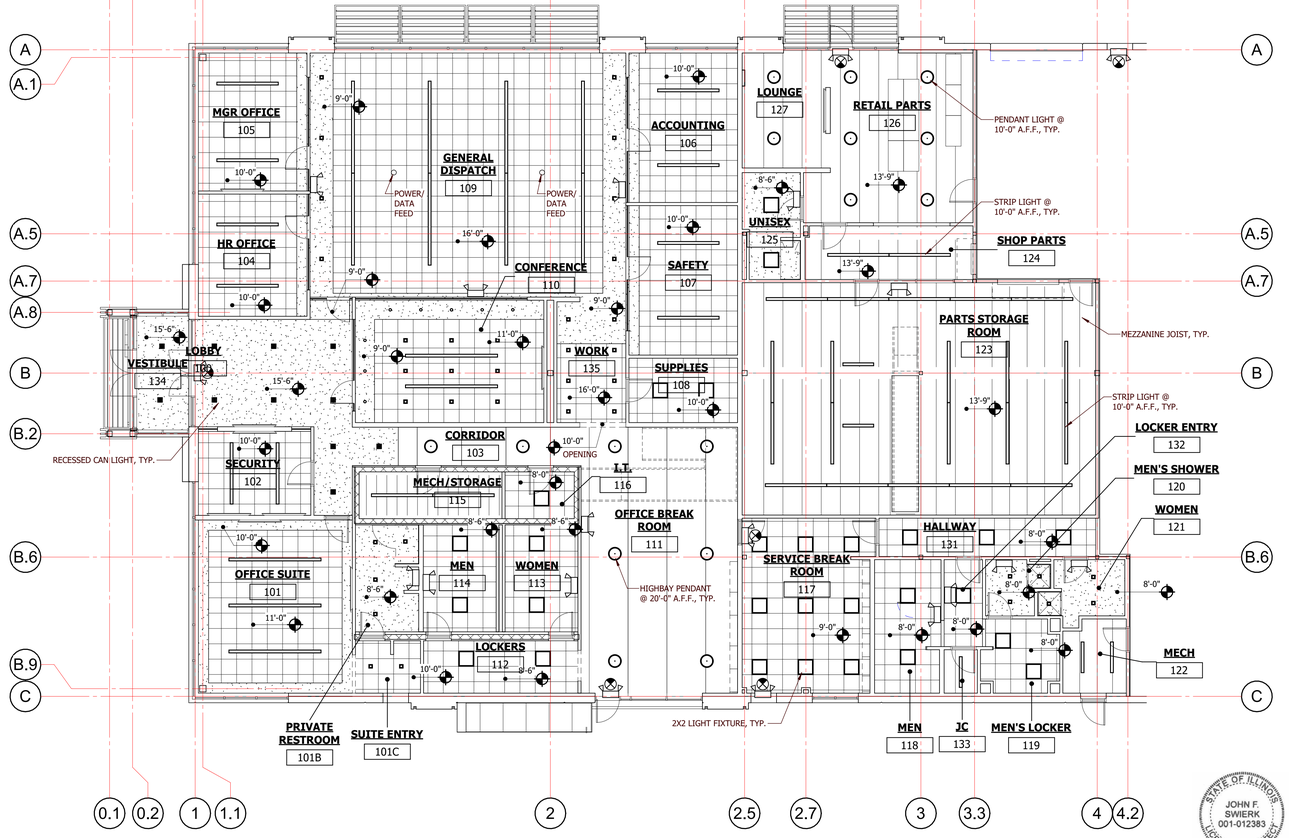


1 REFLECTED CEILING PLAN
1/16" = 1'-0"

NORTH TRUE NORTH



2 MEZZANINE CEILING PLAN
1/8" = 1'-0"



3 OFFICE AREA CEILING PLAN
1/8" = 1'-0"

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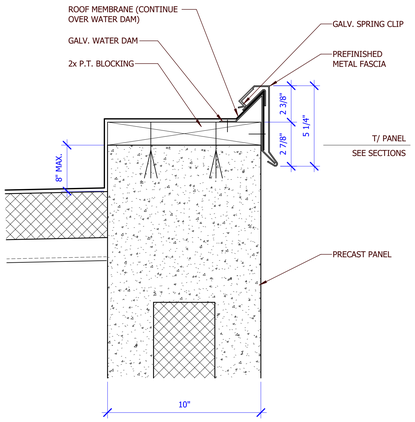
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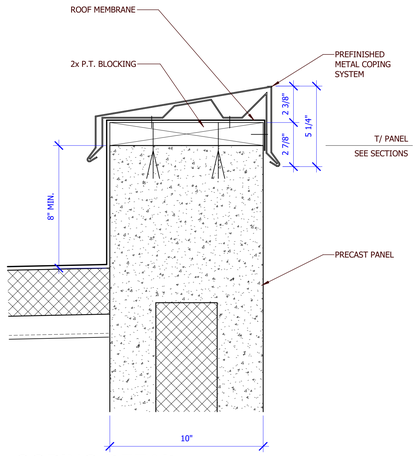
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PROJECT MGR.	TPL
REFLECTED CEILING PLAN	

A3.1

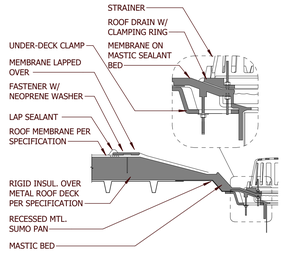
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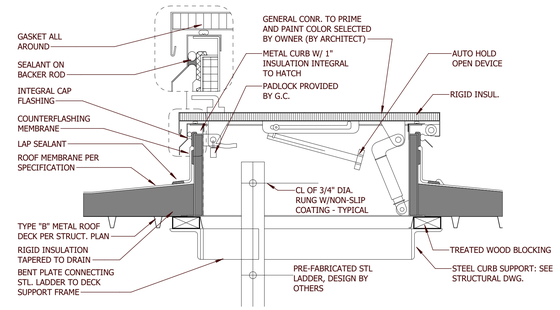
1 ROOF EDGE DETAIL
3" = 1'-0"



2 COPING DETAIL
3" = 1'-0"

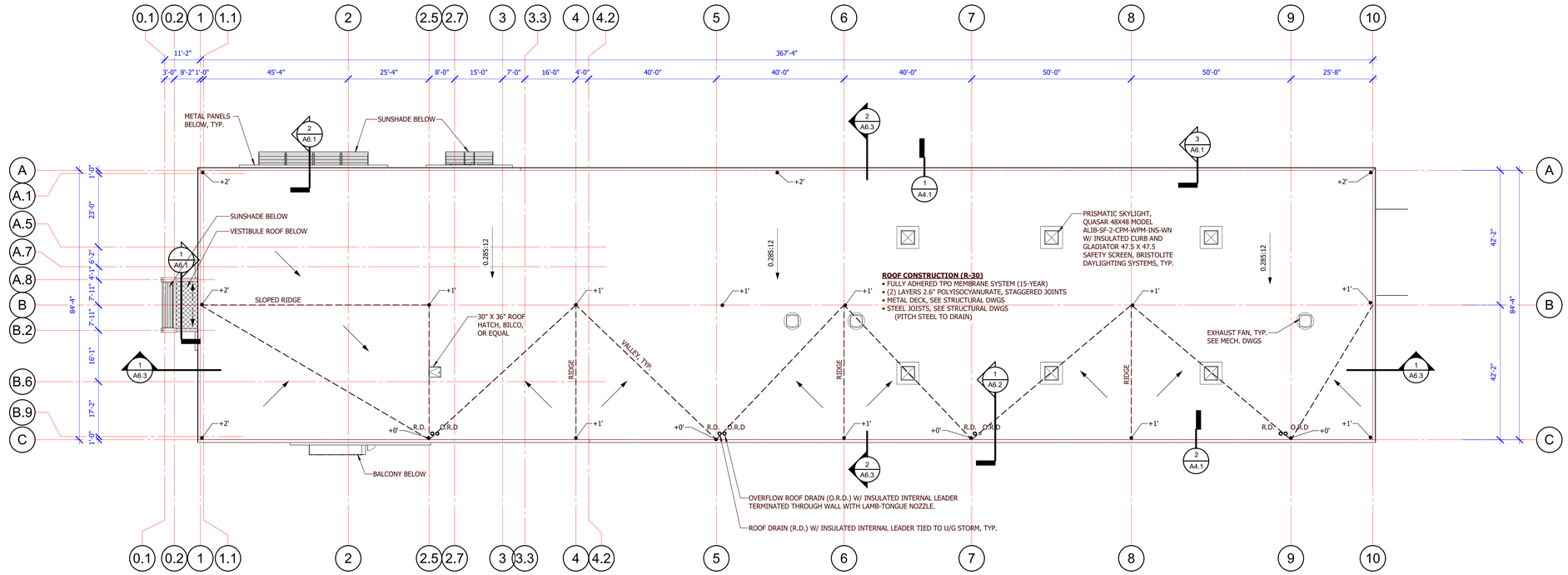


3 ROOF DRAIN DETAIL
1 1/2" = 1'-0"



4 ROOF HATCH FLASHING DETAIL
1 1/2" = 1'-0"

ROOF DRAIN CALCULATION
2018 IBC (REF. IPC)
3.25" PER HOUR
10,500 SF PER DRAIN
1/12 FT X 10,500 SF = 875 CU FT (FOR 1")
875 CU FT X 3.25" = 2844 CU FT PER HOUR = 48 CU FT PER MIN
48 CU FT X 7.48 GAL PER CU FT = 360 GPM
8" ROOF DRAIN REQUIRED



5 ROOF PLAN
1/16" = 1'-0"

NORTH TRUE

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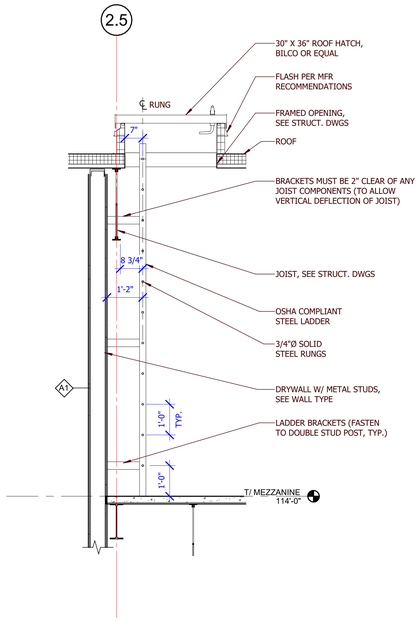
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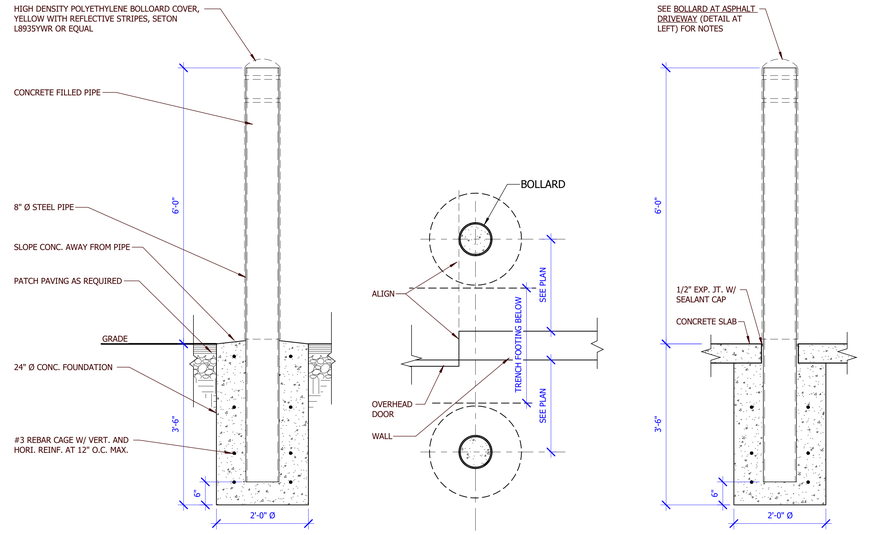
ROOF PLAN

A4.1

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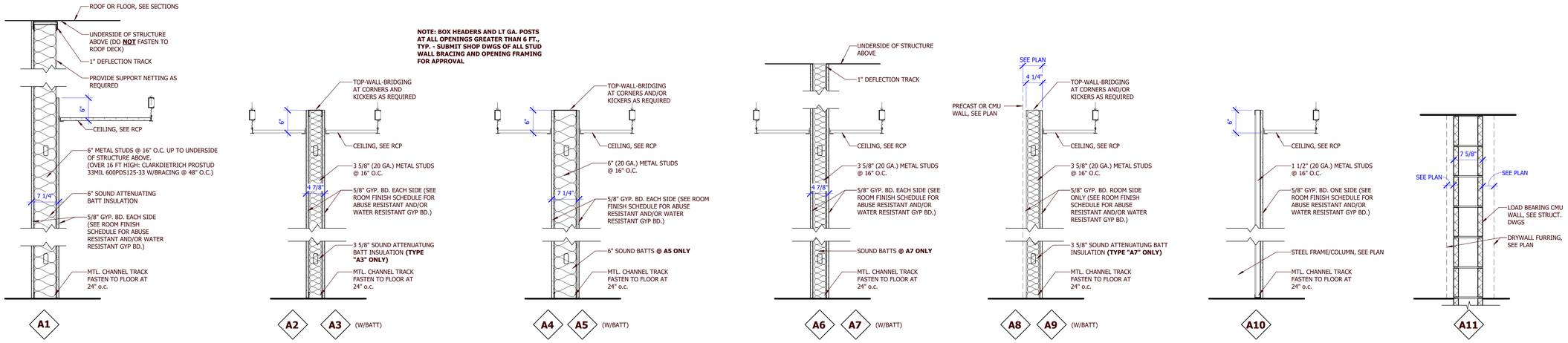


1 LADDER SECTION
1/2" = 1'-0"

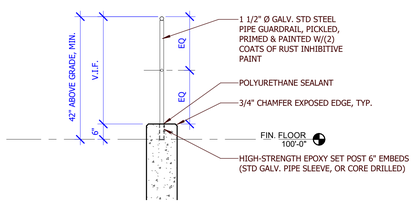


BOLLARD AT ASPHALT DRIVEWAY | **PLAN VIEW AT O.H. DOOR** | **BOLLARD AT CONCRETE SLAB**

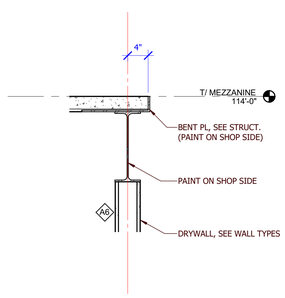
2 BOLLARD DETAILS
3/4" = 1'-0"



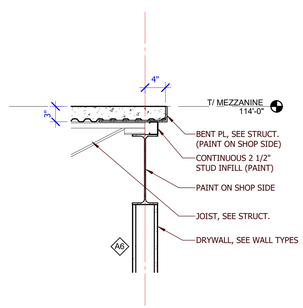
3 WALL TYPES
1" = 1'-0"



4 RAMP GUARDRAIL DETAIL
1/2" = 1'-0"



5 MEZZ. EDGE DETAIL
1" = 1'-0"



6 MEZZ EDGE JOIST INFILL DETAIL
1" = 1'-0"

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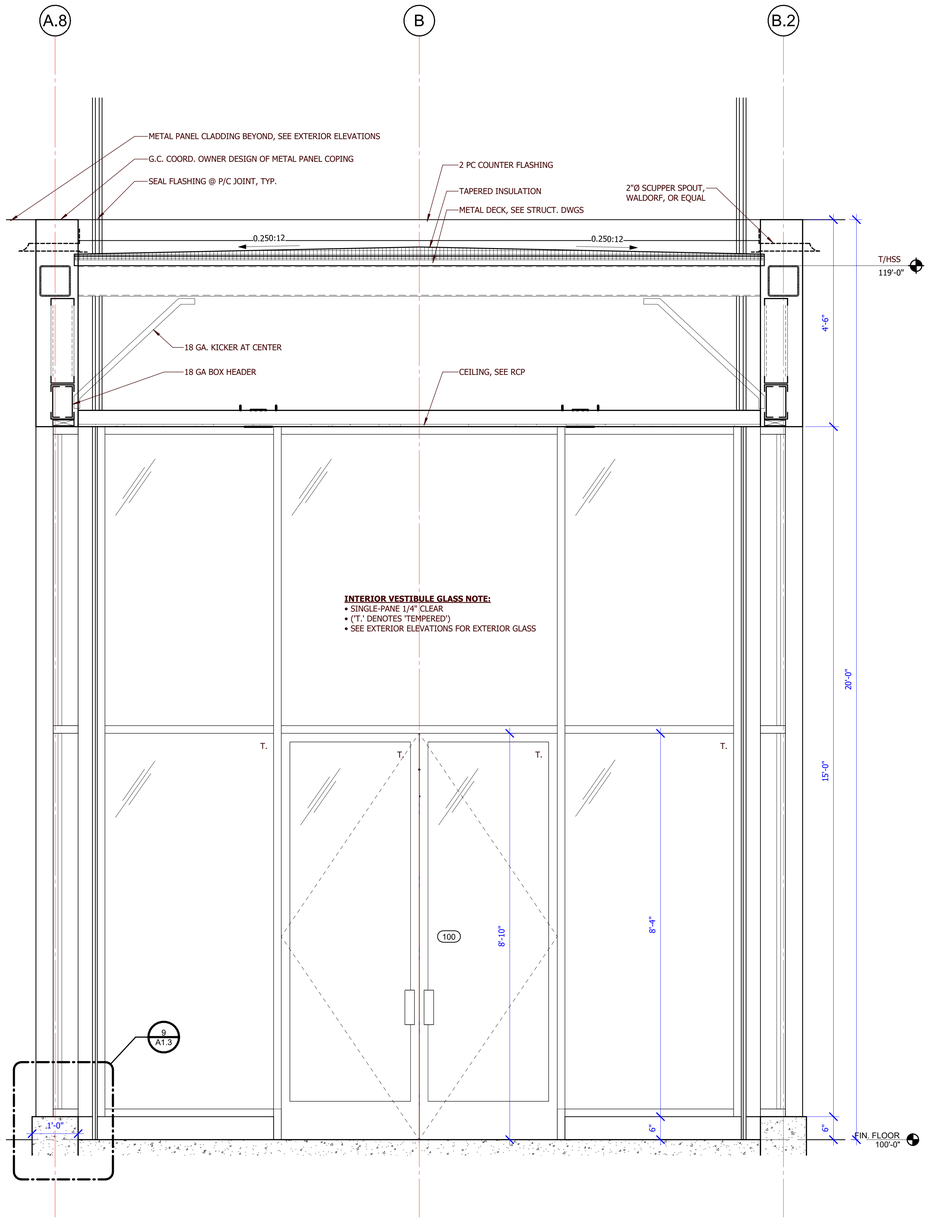
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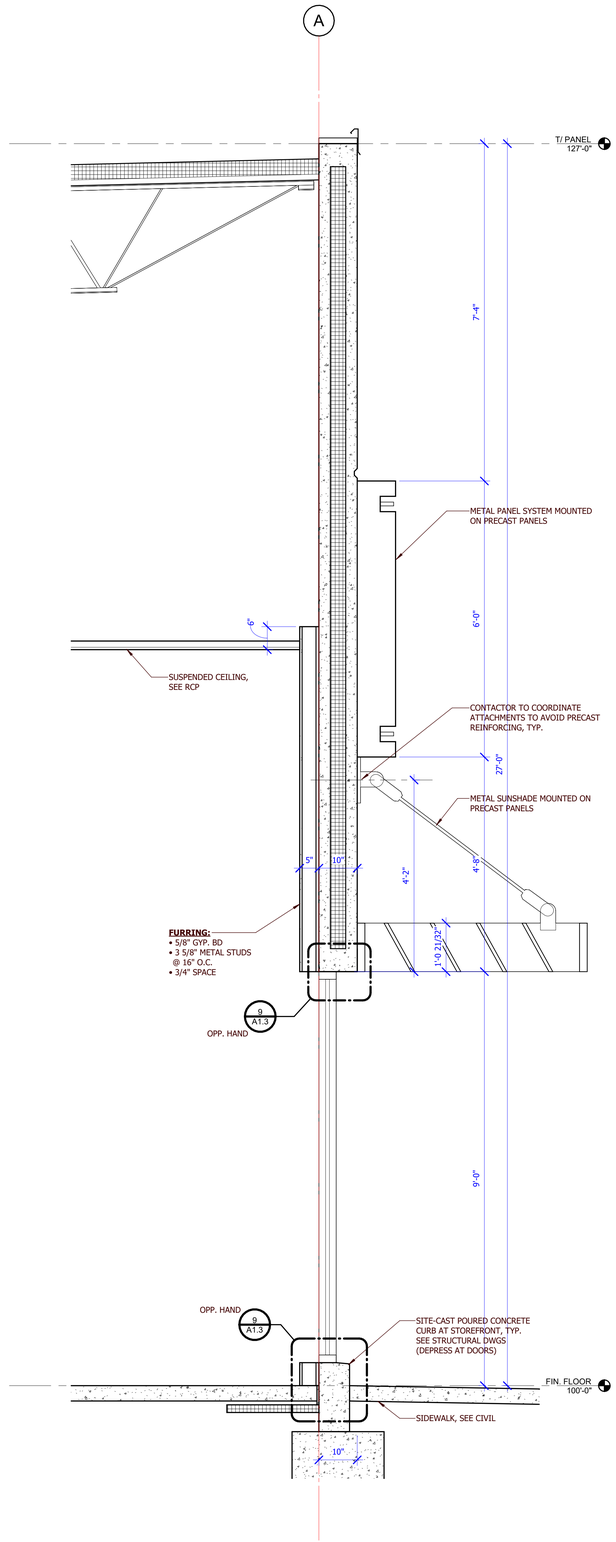
WALL TYPES, LADDER, AND BOLLARD DETAILS

A5.1

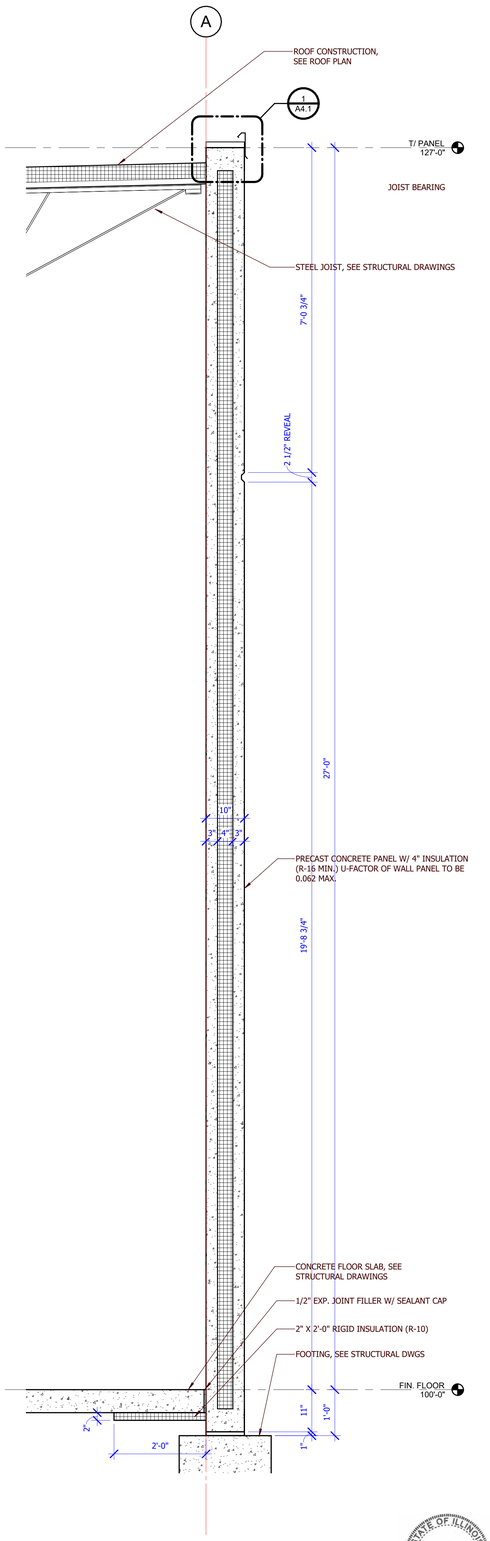
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1 VESTIBULE SECTION
3/4" = 1'-0"



2 STOREFRONT WALL SECTION
3/4" = 1'-0"



3 TYPICAL WALL SECTION
3/4" = 1'-0"

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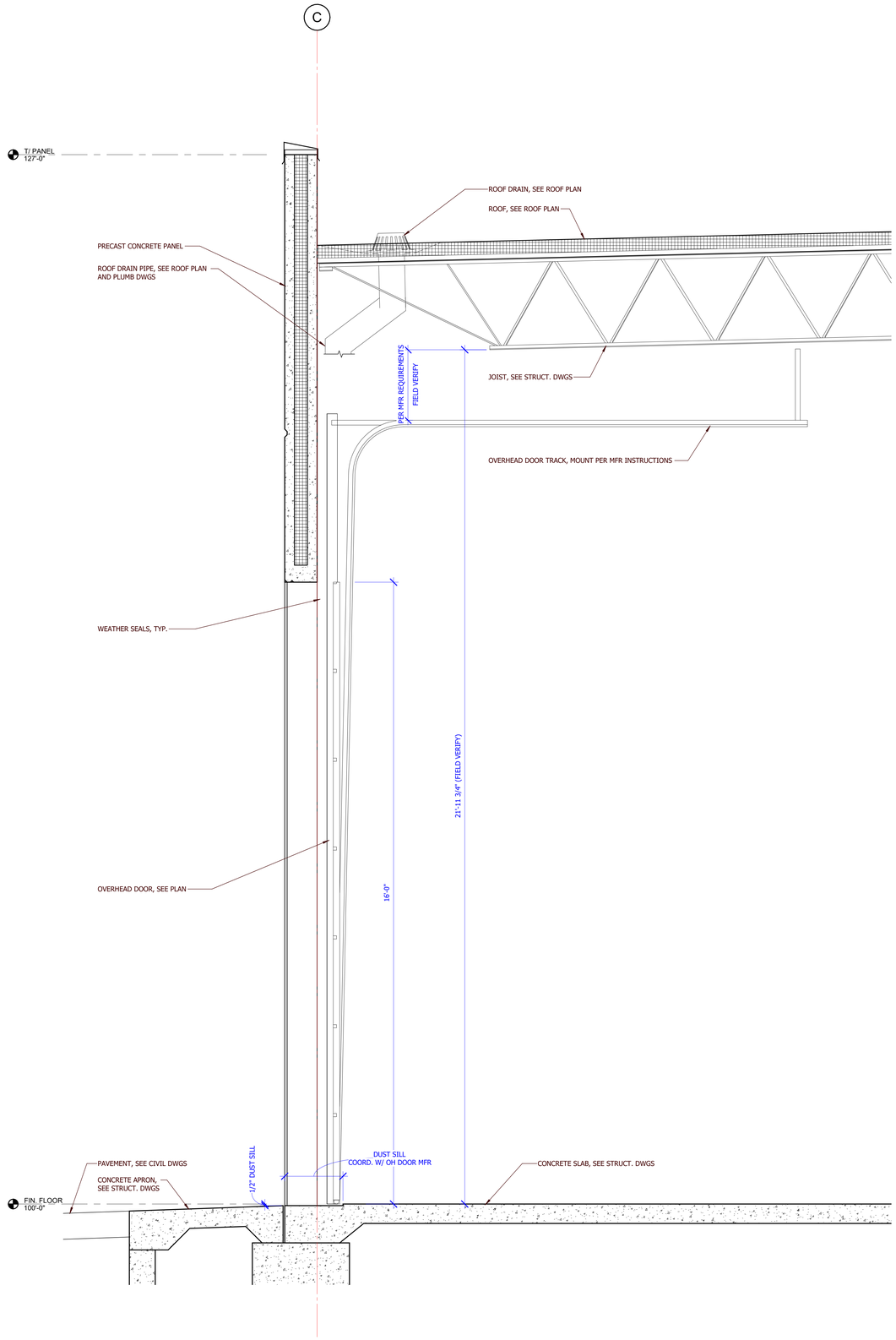
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WALL SECTIONS

A6.1

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1 WALL SECTION @ OVERHEAD DOOR

3/4" = 1'-0"

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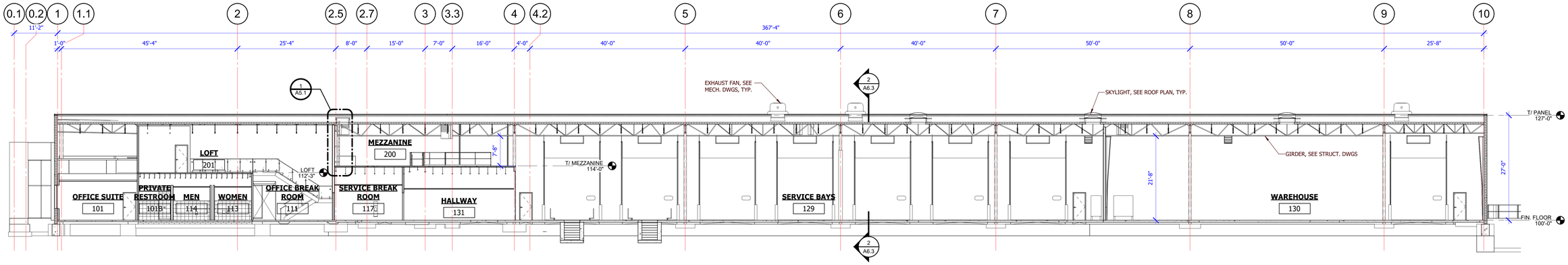
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WALL SECTIONS	
A6.2	

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1 BUILDING SECTION 1

3/32" = 1'-0"

2 BUILDING SECTION 2

3/32" = 1'-0"

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BUILDING SECTIONS	
A6.3	

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DOOR NOTES

1. PROVIDE DETECTABLE WARNING (KNURLED HARDWARE) AT ALL DOORS TO HAZARDOUS AREAS INCLUDING BUT NOT LIMITED TO JANITOR CLOSET, MECHANICAL & ELECTRICAL ROOMS, IN ACCORDANCE WITH ANSI.

2. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER DEVICES SHALL BE AT A MIN. HEIGHT OF 34" AND A MAX. OF 48" ABOVE FINISHED FLOOR. THE OPERATING DEVICE SHALL BE CAPABLE OF OPERATION WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

3. PER IBC 2018 1010.1.3: THE FORCE FOR PUSHING OR PULLING OPEN INTERIOR SWINGING DOORS, OTHER THAN FIRE DOORS, SHALL NOT EXCEED 5 POUNDS (22 N). FOR OTHER SWINGING DOORS, AS WELL AS SLIDING AND FOLDING DOORS, THE DOOR LATCH SHALL RELEASE WHEN SUBJECTED TO A 15-POUND (67 N) FORCE. THE DOOR SHALL BE SET IN MOTION WHEN SUBJECTED TO A 30-POUND (133 N) FORCE. THE DOOR SHALL SWING TO A FULL-OPEN POSITION WHEN SUBJECTED TO A 15-POUND (67 N) FORCE.

4. GLAZING IN DOORS SHALL BE TEMPERED.

5. ALL EXTERIOR HOLLOW METAL DOORS AND FRAMES ARE TO BE GALVANIZED.

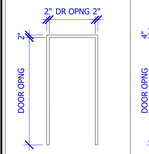
6. ALL DOORS ARE TO HAVE REMOVABLE CYLINDERS IN ORDER TO BE KEYED TO OWNER'S EXISTING MASTER KEY SET.

7. ALL DOORS TO HAVE 10" VERTICAL SMOOTH SURFACE AT BOTTOM ON PUSH SIDE PER ANSI 117.1 404.2.9

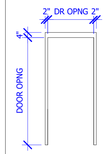
8. PROVIDE GLASS SAFETY STICKERS OR OTHER SUCH PATTERNS ON FRAMELESS GLASS TO MAKE GLASS VISIBLE AS RECOMMEDED BY THE FRAMELESS GLASS MFR.

FRAME TYPES

NOTE: SEE DOOR SCHEDULE FOR OVERALL DOOR DIMENSIONS



F1



F2

DOOR SCHEDULE

		DOOR					FRAME								ELECTRIC STRIKE		
3D	QTY	TYPE	WIDTH	HEIGHT	THICKNESS	MAT'L.	TYPE	JAMB	HEAD	SILL	MAT'L.	FUNCTION	FROM ROOM	TO ROOM	HDW. SET	READER INSIDE	READER OUTSIDE	REMARKS
100	1	C	6'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	INT	LOBBY	VESTIBULE	11	No	No	
101A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S1	HM	INT	LOBBY	OFFICE SUITE	6	No	Yes	
101B	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S1	HM	INT	SUITE ENTRY	PRIVATE RESTROOM	4	No	No	
101C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		SUITE ENTRY	5	No	Yes	U-FACTOR 0.400
102	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	LOBBY	SECURITY	6	No	Yes	
104	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	GENERAL DISPATCH	HR OFFICE	PER MFR	No	No	NO LOCK
105	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	MGR OFFICE	GENERAL DISPATCH	PER MFR	No	Yes	LOCKSET (OFFICE FUNCTION)
106	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	ACCOUNTING	GENERAL DISPATCH	PER MFR	No	No	NO LOCK
107	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	SAFETY	GENERAL DISPATCH	PER MFR	No	No	NO LOCK
108	1	C	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	WORK	SUPPLIES	6	No	Yes	
109	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	GENERAL DISPATCH	LOBBY	PER MFR	No	No	NO LOCK
110	1	A	3'-0"	9'-0"	3/8"	GLASS	PER MFR	-	-	S5	PER MFR	INT	CONFERENCE	LOBBY	PER MFR	No	No	NO LOCK
111	1	C	3'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR		OFFICE BREAK ROOM	5	No	Yes	U-FACTOR 0.400
113A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S4	HM	INT	LOCKERS	WOMEN	2	No	No	
114A	1	A	3'-0"	7'-0"	1 3/4"	SC	F1	A	B	S4	HM	INT	LOCKERS	MEN	2	No	No	
115A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	CORRIDOR	MECH/STORAGE	6	No	No	
116A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	CORRIDOR	I.T.	6	No	No	
117A	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	SERVICE BREAK ROOM	OFFICE BREAK ROOM	3	Yes	Yes	
117B	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	HALLWAY	SERVICE BREAK ROOM	2	No	No	
117C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		SERVICE BREAK ROOM	5	No	Yes	U-FACTOR 0.400
120	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	MEN'S SHOWER	MEN'S LOCKER	4	No	No	
121	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	WOMEN	HALLWAY	4	No	No	
122A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	-	-	S3	HM	EXTERIOR		MECH	7	No	No	U-FACTOR 0.400
122B	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	SERVICE BAYS	MECH	6	No	Yes	
123A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	PARTS STORAGE ROOM	PARTS DELIVERY	6	No	No	
123B	1	D	8'-0"	8'-0"	2"	PER MFR	PER MFR	J	K	---	PER MFR	INT	PARTS STORAGE ROOM	PARTS DELIVERY	PER MFR	No	No	ROLLING SHUTTER W/LOCKSET
124A	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	SHOP PARTS	RETAIL PARTS	8	No	No	
124B	1	E	3'-0"	7'-0"	1 3/4"	HM	SEE ELEV	A	B	S5	HM	INT	SHOP PARTS	PARTS STORAGE ROOM	6	No	No	
124C	1	D	4'-0"	4'-6"	2"	PER MFR	PER MFR	J	K	---	PER MFR	INT	PARTS DELIVERY	SHOP PARTS	PER MFR	No	No	ROLLING SHUTTER COUNTERTOP W/LOCKSET
125A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	RETAIL PARTS	UNISEX	2	No	No	
126A	1	C	3'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR	RETAIL PARTS		1	No	Yes	U-FACTOR 0380, SGHC 0.38
126B	1	E	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S1	HM	INT	PARTS DELIVERY	RETAIL PARTS	9	No	No	
128A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		SERVICE BAYS	5	No	Yes	U-FACTOR 0.400
128B	1	B	12'-0"	12'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	PARTS DELIVERY		PER MFR	No	No	U-FACTOR 0.102
129A	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129B	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129C	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129D	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129E	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129F	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129G	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129H	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	SERVICE BAYS		5	No	Yes	U-FACTOR 0.400
129J	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		SERVICE BAYS	5	No	Yes	U-FACTOR 0.400
129K	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129L	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129M	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129N	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129P	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129R	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
129S	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	SERVICE BAYS		PER MFR	No	No	U-FACTOR 0.102
130A	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S1	HM	INT	SERVICE BAYS	WAREHOUSE	5	No	No	
130B	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	INT	WAREHOUSE	SERVICE BAYS	PER MFR	No	No	
130C	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	WAREHOUSE		5	No	Yes	U-FACTOR 0.400
130D	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	U-FACTOR 0.102
130E	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR	WAREHOUSE		5	No	Yes	U-FACTOR 0.400
130F	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	DOCK, U-FACTOR 0.102
130G	1	B	9'-0"	10'-0"	2"	PER MFR	PER MFR	E	F	---	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	DOCK, U-FACTOR 0.102
130H	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	C	D	S3	HM	EXTERIOR		WAREHOUSE	5	No	Yes	U-FACTOR 0.400
130J	1	B	14'-0"	16'-0"	2"	PER MFR	PER MFR	E	F	S2	PER MFR	EXTERIOR	WAREHOUSE		PER MFR	No	No	U-FACTOR 0.102
132	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOCKER ENTRY	HALLWAY	2	No	No	
133	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOCKER ENTRY	JC	6	No	No	
134	1	C	6'-0"	8'-10"	1 3/4"	ALUM	PER MFR	-	-	S3	ALUM	EXTERIOR	VESTIBULE		10	No	Yes	U-FACTOR 0380, SGHC 0.38 (PAIR DOORS)
201	1	C	9'-1"	8'-10"		ALUM	PER MFR	-	-	S4	ALUM	EXTERIOR		LOFT	12	No	No	BALCONY SLIDING GLASS DOOR
202	1	A	3'-0"	7'-0"	1 3/4"	HM	F1	A	B	S5	HM	INT	LOFT	MECH LOFT	6	No	No	

HARDWARE SCHEDULE*

HDW SET 1 (EGRESS)

1 CONTINUOUS HINGE
1 PANIC BAR / PULL HANDLE / KEYED OUT
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ SWEEP

HDW SET 2

3 BUTT HINGES
1 PUSH PLATE/PULL HANDLE
1 WALL BUMPER
3 SILENCERS
1 KICKPLATE
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN

HDW SET 3

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 WALL BUMPER
3 SILENCERS

HDW SET 4

3 BUTT HINGES
1 LEVER LOCKSET - PRIVACY FUNCTION
1 WALL BUMPER
3 SILENCERS

HDW SET 5 (EGRESS)

3 BUTT HINGES
1 DEADLATCH PUSH PADDLE / PULL HANDLE / KEYED OUT
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ SWEEP

HDW SET 6

3 BUTT HINGES
1 LEVER LOCKSET - STOREROOM FUNCTION
1 WALL BUMPER
3 SILENCERS

NOTE: OFFICES WITH ELECTRIC STRIKES USE STOREROOM FUNCTION LEVERS.

HDW SET 7

3 BUTT HINGES
1 LEVER LOCKSET - STOREROOM FUNCTION
1 WALL BUMPER
3 SILENCERS
1 SET WEATHERSTRIPPING
1 CLOSER - SURFACE MOUNTED
1 THRESHOLD W/ SWEEP

HDW SET 8

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 DEADBOLT W/THUMBTURN
1 FLOOR STOP
3 SILENCERS

HDW SET 9

3 BUTT HINGES
1 LEVER LOCKSET - OFFICE FUNCTION
1 WALL BUMPER
3 SILENCERS
1 CLOSER - SURFACE MOUNTED W/ HOLD OPEN

HDW SET 10 (EGRESS) FOR PAIR OF DOORS

2 CONTINUOUS HINGES
2 PANIC BARS / PULL HANDLES / KEYED OUT
2 SET WEATHERSTRIPPING
2 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ 2 SWEEPS

HDW SET 11 (EGRESS) FOR PAIR OF DOORS

2 CONTINUOUS HINGES
2 PUSH BARS / PULL HANDLES
2 SET WEATHERSTRIPPING
2 CLOSER - SURFACE MOUNTED W/ HOLD OPEN
1 THRESHOLD W/ 2 SWEEPS

HDW SET 12 (SLIDING GLASS DOOR AT BALCONY)

1 LOCKSET
2 SLIDER HANDLES
1 SET WEATHERSTRIPPING

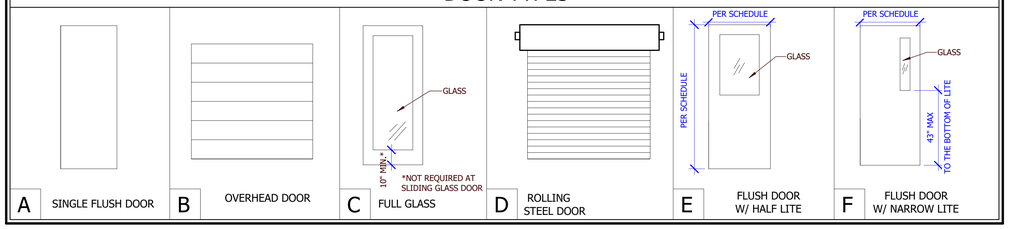
1 THRESHOLD

MANUFACTURER & FINISHES

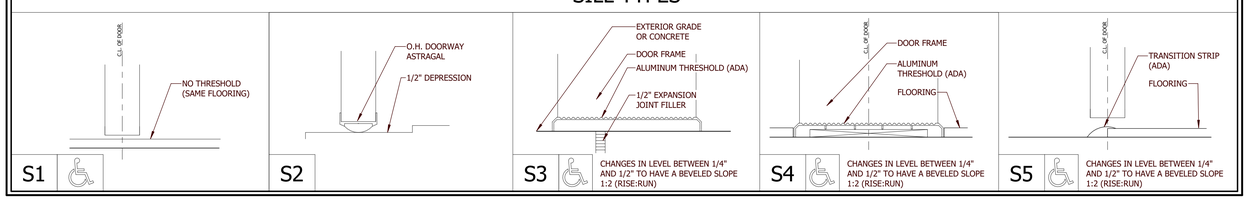
ITEM	MFR.	MODEL	FINISH
BUTTS	STANLEY	BALL BEARING 5 KNUCKLE	626 or 605 VERIFY W/ OWNER
LOCKSET	SCHLAGE	D-SERIES W/ RHODES LEVER	626 or 605 VERIFY W/ OWNER
DEADBOLT	SCHLAGE		626 or 605 VERIFY W/ OWNER
PADDLE	ADAMS RITE		626 or 605 VERIFY W/ OWNER
CLOSER	LCN	SURFACE MOUNTED	626 or 605 VERIFY W/ OWNER
THRESHOLD	REESE	VARIES	ALUMINUM
BUMPER	HAGER	232W	SATIN
H.M. FRAME	---	16ga. WELDED (GALV., A60)	PAINTED
H.M. DOOR	---	18ga. FACES (GALV., A60)	PAINTED

*NOTE: SEE DOOR SCHEDULE FOR ELECTRIC STRIKES

DOOR TYPES



SILL TYPES



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JOHN F. SWIERK
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LICENSED ARCHITECT

Signature 5/12/2023 Date
11.30.24 Expires

PROJECT NO.	122148
PROJECT MGR.	TPL

DOOR SCHEDULE

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ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR		WALL		CEILING		HEIGHT A.F.F.	REMARKS
		FINISH	WALL BASE	MATERIAL	FINISH	MATERIAL	FINISH		
100	LOBBY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	15'-6"	
101	OFFICE SUITE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	10'-0" & 11'-0"	
101B	PRIVATE RESTROOM	VPT-3	CTB-1	MR-GYP*/CEM*	CT-2 / P-1	MR-GYP*	P-2	8'-6"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING), CEMENT BOARD TILE BACKER: 5/8" PermaBase Cement Board TILE BACKER AT SHOWER WALLS
101C	SUITE ENTRY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
102	SECURITY	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
103	CORRIDOR	VPT-1	VB-1	GYP	P-1	GYP/EXP	P-2/P-4	15'-6" & ROOF	
104	HR OFFICE	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
105	MGR OFFICE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
106	ACCOUNTING	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
107	SAFETY	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 10'-0"	
108	SUPPLIES	VPT-1	VB-1	GYP	P-1	ACT-1	ACT-1	10'-0"	
109	GENERAL DISPATCH	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 16'-0"	
110	CONFERENCE	CPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT-1/P-2	9'-0" & 11'-0"	
111	OFFICE BREAK ROOM	VPT-4	VB-1	GYP	P-1	EXP	P-4	ROOF	
112	LOCKERS	VPT-4	VB-1	GYP	P-1	ACT-1	ACT-1	8'-6"	
113	WOMEN	VPT-3	CTB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-6"	
114	MEN	VPT-3	CTB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-6"	
115	MECH/STORAGE	VPT-1	VB-1	GYP/CMU	P-1	EXP	EXP	12'-0"	
116	I.T.	SC-1	VB-1	GYP/CMU	P-1	ACT-1	ACT-1	8'-0"	
117	SERVICE BREAK ROOM	SC-1	VB-1	GYP	P-1	ACT-1	ACT-1	9'-0"	
118	MEN	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
119	MEN'S LOCKER	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
120	MEN'S SHOWER	EP-1	EB-1	MR-GYP*	CT-2 / P-1	MR-GYP*	P-2	8'-0"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
121	WOMEN	EP-1	EB-1	MR-GYP*	CT-2 / P-1	MR-GYP*	P-2	8'-0"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
122	MECH	SC-1	VB-1	GYP	P-1	EXP	EXP	13'-9"	
123	PARTS STORAGE ROOM	SC-1	VB-1	GYP	P-1	EXP	EXP	13'-9"	
124	SHOP PARTS	VPT-2	VB-1	GYP	P-1	EXP	P-3	13'-9"	CEILING NOTE: PAINT EXPOSED STEEL STRUCTURE, DECK, MECHANICAL DUCTWORK, AND CONDUITS
125	UNISEX	VPT-2	VB-1	MR-GYP*	P-1	MR-GYP*	P-2	8'-6"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
126	RETAIL PARTS	VPT-2	VB-1	GYP	P-1	EXP	P-3	13'-9"	CEILING NOTE: PAINT EXPOSED STEEL STRUCTURE, DECK, MECHANICAL DUCTWORK, AND CONDUITS
127	LOUNGE	VPT-3	VB-1	GYP	P-1	EXP	P-3	13'-9"	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS & CEILING)
128	PARTS DELIVERY	SC-1	VB-1	EXP / AR-GYP†	EXP / P-1	EXP	EXP	ROOF	†ABUSE RESISTANT GYP TO 8'-0" A.F.F.: 5/8" Gold Bond eXP Interior Extreme AR Gyp (REGULAR 5/8" GYP ABOVE)
129	SERVICE BAYS	SC-1	VB-1	EXP / AR-GYP†	EXP / P-1	EXP	EXP	ROOF	†ABUSE RESISTANT GYP TO 8'-0" A.F.F.: 5/8" Gold Bond eXP Interior Extreme AR Gyp (REGULAR 5/8" GYP ABOVE)
130	WAREHOUSE	SC-1	NONE	EXP	EXP	EXP	EXP	ROOF	
131	HALLWAY	SC-1	VB-1	GYP	P-1	ACT-1	ACT-1	8'-0"	
132	LOCKER ENTRY	EP-1	EB-1	GYP	CT-2 / P-1	ACT-1	ACT-1	8'-0"	
133	JC	SC-1	VB-1	GYP	FRP/P-1	EXP	EXP	ROOF	*MOLD RESISTANT GYP: 5/8" Gold Bond XP Fire-Shield OR EQUAL (WALLS) & 4' FRP WAINSCOT
134	VESTIBULE	VPT-1/PED	VB-1	GYP	P-1	GYP	P-2	15'-6"	WALLS MOSTLY STOREFRONT, STOREFRONT SECTION DETAIL FOR DRYWALL
135	WORK	VPT-1	VB-1	GYP	P-1	ACT-1/GYP	ACT/P-2	9'-0" & 16'-0"	
200	MEZZANINE	SC-1	NONE	EXP / GYP	EXP / P-1	EXP	EXP	ROOF	
201	LOFT	VPT-1	VB-1	GYP	P-1	EXP	P-4	ROOF	
202	MECH LOFT	SC-1	VB-1	GYP	P-1	EXP	EXP	ROOF	

ROOM FINISH NOTES

1. ALL FINISHES ARE TO HAVE 25 MAX. FLAME SPREAD RATING & 50 MAX. SMOKE DEVELOPED RATING.

2. FINISHED AND COLORS AS SELECTED BY OWNER, G.C. TO GET APPROVAL FROM OWNER ON ALL FINISHES AND COLORS PRIOR TO CONSTRUCTION.

3. ALL FLOORING SHALL BE OF A STABLE, FIRM AND SLIP-RESISTANT MATERIAL - C.O.F. GREATER THAN .6. CHANGES IN LEVEL NO GREATER THAN 1/4" AND SLOPE OF NO MORE THEN 1:20

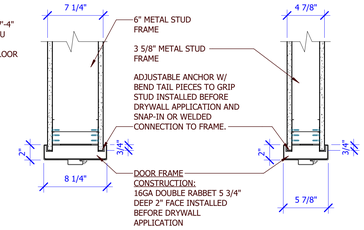
4. SEE INTERIOR ELEVATIONS FOR MISC. ITEMS SUCH AS BATHROOM MIRRORS, WALL FINISHES, AND ACCESSORIES.

ROOM FINISH LEGEND

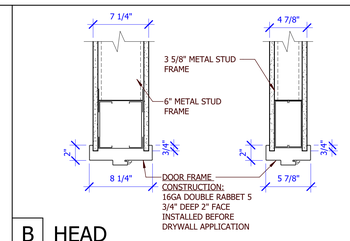
MARK	DESCRIPTION	MANUFACTURER	COLOR/STYLE
FLOORING			
CT-1	CERAMIC OR PORCELAIN TILE	DALTILE OR EQUAL	SEL. BY OWNER
EP-1	EPOXY (ANTI-SLIP)	FLOROCK - FLOROQUARTZ TL	SEL. BY OWNER
SC-1	SEALED CONCRETE FLOOR		SEL. BY OWNER
VPT-1	VINYL PLANK TILE	ARMSTRONG	SEL. BY OWNER
VPT-2	VINYL PLANK TILE	ARMSTRONG	SEL. BY OWNER
BASE			
CTB-1	TILE BASE 4" HIGH w/COVE	DALTILE	SEL. BY OWNER
EB-1	EPOXY COVE BASE 6" HIGH INTEGRAL W/FLOOR	FLOROCK - FLOROQUARTZ	SEL. BY OWNER
VB-1	VINYL BASE 4" HIGH w/COVE	ARMSTRONG	SEL. BY OWNER
WALLS			
CT-2	CERAMIC OR PORCELAIN WALL TILE	DALTILE	SEL. BY OWNER
EXP	EXPOSED CONSTRUCTION	---	---
P-1	PAINTED GWB (LATEX EGGSHELL/SATIN FINISH)	SHERWIN WILLIAMS	WHITE - SW 7005
CEILINGS			
ACT-1	2 X 2 ACOUSTICAL TILE (9/16" TEGULAR)	ARMSTRONG	WHITE
EXP	EXPOSED CONSTRUCTION	---	---
P-2	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	WHITE - SW 7005
P-3	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	SEL. BY OWNER
P-4	PAINTED GWB CEILING (LATEX FLAT FINISH)	SHERWIN WILLIAMS	SEL. BY OWNER

DOOR DETAILS

JAMB ANCHOR QUANTITY:
3 PER JAMB FOR HEIGHT UP TO 7'-4" AND 4 PER JAMB FROM 7'-5" THRU 9'-0". ONE ADDITIONAL JAMB ANCHOR NEAR FLOOR OR ONE FLOOR ANCHOR WHEN NOT GROUTED.

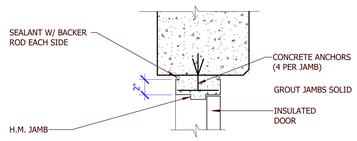


A JAMB

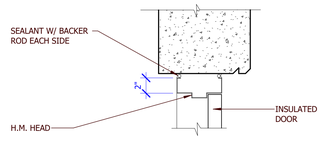


FRAME APPLICATION:
- METAL STUD FRAME. SEE PARTITION SCHEDULE FOR WALL COMPOSITION
- IF BEARING WALL, SEE FRAMING PLAN FOR HEADER DETAILS

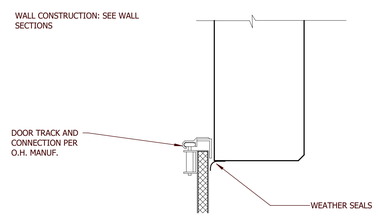
B HEAD



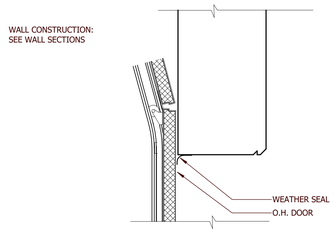
C JAMB



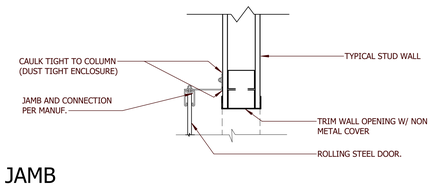
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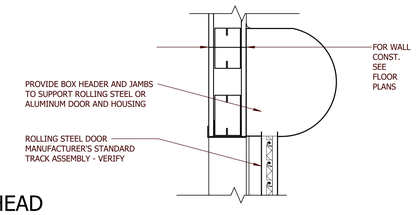
E JAMB



F HEAD



J JAMB



K HEAD

NOTE: SEE DOOR SCHEDULE FOR HEAD AND JAMB DESIGNATIONS

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5/12/2023
Signature Date

11.30.24
Expires

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PROJECT MGR.	TPL

DOOR DETAILS & ROOM FINISH SCHEDULE

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SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. ADMINISTRATION OF CONTRACT: PROVIDE ADMINISTRATIVE REQUIREMENTS FOR THE PROPER COORDINATION AND COMPLETION OF WORK INCLUDING THE FOLLOWING:
1. SUPERVISORY PERSONNEL.
2. PRECONSTRUCTION CONFERENCE.
3. PROJECT MEETINGS, MINIMUM OF TWO PER MONTH; PREPARE AND DISTRIBUTE MINUTES.

B. REPORTS: SUBMIT DAILY AND SPECIAL REPORTS.

C. WORK SCHEDULE: SUBMIT PROGRESS SCHEDULE, UPDATED MONTHLY.

D. SUBMITTAL SCHEDULE: PREPARE SUBMITTAL SCHEDULE; COORDINATE WITH PROGRESS SCHEDULE.

E. SCHEDULE OF VALUES: SUBMIT SCHEDULE OF VALUES.

F. SCHEDULE OF TESTS: SUBMIT SCHEDULE OF REQUIRED TESTS INCLUDING PAYMENT AND RESPONSIBILITY.

G. PERFORM SURVEYS: LAY OUT THE WORK AND VERIFYING LOCATIONS DURING CONSTRUCTION. PERFORM FINAL SITE SURVEY.

H. EMERGENCY CONTACTS: SUBMIT AND POST A LIST OF EMERGENCY TELEPHONE NUMBERS AND ADDRESS FOR INDIVIDUALS TO BE CONTACTED IN CASE OF EMERGENCY.

I. RECORD DOCUMENTS: SUBMIT RECORD DRAWINGS AND SPECIFICATIONS; TO BE MAINTAINED AND ANNOTATED BY CONTRACTOR AS WORK PROGRESSES.

1.2 SUBMITTALS

A. TYPES OF SUBMITTALS: PDF FORMAT PREFERRED OVER PHYSICAL COPIES. PROVIDE TYPES OF SUBMITTALS LISTED IN INDIVIDUAL SECTIONS AND NUMBER OF COPIES REQUIRED BELOW IF PDF IS NOT POSSIBLE
1. SHOP DRAWINGS, REVIEWED AND ANNOTATED BY THE CONTRACTOR - 4 COPIES.
2. PRODUCT DATA - 4 COPIES
3. SAMPLES - 2, PLUS EXTRA SAMPLES AS REQUIRED TO INDICATE RANGE OF COLOR, FINISH, AND TEXTURE TO BE EXPECTED.
4. INSPECTION AND TEST REPORTS - 4 COPIES.
5. WARRANTIES - 4 COPIES.
6. SURVEY DATA - 4 COPIES.
7. CLOSEOUT SUBMITTALS - 4 COPIES.
8. PROJECT PHOTOGRAPHS - 12 DIGITAL IMAGES EACH MONTH.

B. SUBMITTAL PROCEDURES: COMPLY WITH PROJECT FORMAT FOR SUBMITTALS. COMPLY WITH SUBMITTAL PROCEDURES ESTABLISHED BY ARCHITECT INCLUDING ARCHITECT'S SUBMITTAL AND SHOP DRAWING STAMP. PROVIDE REQUIRED RESUBMITTALS IF ORIGINAL SUBMITTALS ARE NOT APPROVED. PROVIDE DISTRIBUTION OF APPROVED COPIES INCLUDING MODIFICATIONS AFTER SUBMITTALS HAVE BEEN APPROVED.

C. SAMPLES AND SHOP DRAWINGS: SAMPLES AND SHOP DRAWINGS SHALL BE PREPARED SPECIFICALLY FOR THIS PROJECT. SHOP DRAWINGS SHALL INCLUDE DIMENSIONS AND DETAILS, INCLUDING ADJACENT CONSTRUCTION AND RELATED WORK. NOTE SPECIAL COORDINATION REQUIRED. NOTE ANY DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS.

D. WARRANTIES: PROVIDE WARRANTIES AS SPECIFIED; WARRANTIES SHALL NOT LIMIT LENGTH OF TIME FOR REMEDY OF DAMAGES OWNER MAY HAVE BY LEGAL STATUTE. CONTRACTOR, SUPPLIER OR INSTALLER RESPONSIBLE FOR PERFORMANCE OF WARRANTY SHALL SIGN WARRANTIES.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. QUALITY MONITORING: MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP, TO PRODUCE WORK OF SPECIFIED QUALITY. PERFORM QUALITY CONTROL PROCEDURES AND INSPECTIONS DURING INSTALLATION.

B. STANDARDS: COMPLY WITH SPECIFIED STANDARDS AS MINIMUM QUALITY FOR THE WORK EXCEPT WHERE MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.

C. TOLERANCES: MONITOR FABRICATION AND INSTALLATION TOLERANCE CONTROL OF PRODUCTS TO PRODUCE ACCEPTABLE WORK. DO NOT PERMIT TOLERANCES TO ACCUMULATE. COMPLY WITH MANUFACTURERS' TOLERANCES.

D. REFERENCE STANDARDS: FOR PRODUCTS OR WORKMANSHIP SPECIFIED BY ASSOCIATION, TRADE, OR OTHER CONSENSUS STANDARDS, COMPLY WITH REQUIREMENTS OF THE STANDARD, EXCEPT WHEN MORE RIGID REQUIREMENTS ARE SPECIFIED OR ARE REQUIRED BY APPLICABLE CODES.

E. MANUFACTURER'S FIELD SERVICES: WHEN SPECIFIED IN INDIVIDUAL SPECIFICATION SECTIONS, REQUIRE MATERIAL OR PRODUCT SUPPLIERS OR MANUFACTURERS TO PROVIDE QUALIFIED STAFF PERSONNEL TO PERFORM THE FOLLOWING AS APPLICABLE, AND TO INITIATE INSTRUCTIONS WHEN NECESSARY.
1. OBSERVE SITE CONDITIONS.
2. CONDITIONS OF SURFACES AND INSTALLATION.
3. QUALITY OF WORKMANSHIP.
4. START-UP OF EQUIPMENT.
5. TEST, ADJUST AND BALANCE OF EQUIPMENT.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY OF REFERENCE STANDARDS

A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES UNDER ALL AUTHORITIES HAVING JURISDICTION.

B. 29 CFR 1910 - OCCUPATIONAL SAFETY AND HEALTH STANDARDS.

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. TEMPORARY SERVICES: PROVIDE TEMPORARY SERVICES AND UTILITIES, INCLUDING PAYMENT OF UTILITY COSTS INCLUDING THE FOLLOWING.
1. WATER (POTABLE AND NON-POTABLE).
2. LIGHTING AND POWER.
3. METERING.
4. TELEPHONE.
5. TOILET FACILITIES.
6. MATERIALS STORAGE.

B. CONSTRUCTION FACILITIES: PROVIDE CONSTRUCTION FACILITIES, INCLUDING PAYMENT OF UTILITY COSTS INCLUDING THE FOLLOWING.
1. CONSTRUCTION EQUIPMENT.
2. DEWATERING AND PUMPING.
3. ENCLOSURES.
4. HEATING.
5. LIGHTING.
6. ELEVATOR.
7. ACCESS.
8. ROADS.

C. SECURITY AND PROTECTION: PROVIDE SECURITY AND PROTECTION REQUIREMENTS INCLUDING THE FOLLOWING.
1. FIRE EXTINGUISHERS.
2. SITE ENCLOSURE FENCE, BARRICADES, WARNING SIGNS, AND LIGHTS.
3. BUILDING ENCLOSURE AND LOCK-UP.
4. TEMPORARY JOBSITE PROTECTION.
5. ENVIRONMENTAL PROTECTION.
6. PEST CONTROL DURING AND AFTER THE END OF CONSTRUCTION.
7. SNOW AND ICE REMOVAL IF APPLICABLE.

D. PERSONNEL SUPPORT: PROVIDE PERSONNEL SUPPORT FACILITIES INCLUDING THE FOLLOWING.
1. SANITARY FACILITIES.
2. DRINKING WATER.
3. PROJECT IDENTIFICATION SIGN.
4. CLEANING.

PART 2 PRODUCTS

2.1 TEMPORARY JOBSITE PROTECTION

A. TEMPORARY JOBSITE PROTECTION OF THE FOLLOWING TYPES:
1. MANUFACTURER: REFER TO SURFACE SHIELDS INC. ARMORLON, DIVISION OF REEF INDUSTRIES, INC.
2. HARD SURFACE PROTECTION.
3. DUST CONTAINMENT.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. PRODUCT DATA, OR SAMPLES CONTAINING SUBSTITUTIONS IS NOT AN APPROVAL OF A SUBSTITUTION UNLESS AN ITEM IS CLEARLY PRESENTED AS A SUBSTITUTION AT THE TIME OF SUBMITTAL.

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. SUBSTANTIAL COMPLETION: THE FOLLOWING ARE PREREQUISITES TO SUBSTANTIAL COMPLETION. PROVIDE THE FOLLOWING.
1. PUNCH LIST PREPARED BY CONTRACTOR AND SUBCONTRACTORS AS APPLICABLE.
2. SUPPORTING DOCUMENTATION.
3. WARRANTIES.
4. CERTIFICATIONS.
5. OCCUPANCY PERMIT.
6. START-UP AND TESTING OF BUILDING SYSTEMS.
7. CHANGE OVER OF LOCKS.
8. METER READINGS.
9. COMMISSIONING DOCUMENTATION.

B. FINAL ACCEPTANCE: PROVIDE THE FOLLOWING PREREQUISITES TO FINAL ACCEPTANCE.
1. FINAL PAYMENT REQUEST WITH SUPPORTING AFFIDAVITS.
2. COMPLETED PUNCH LIST.

C. AS-BUILT DRAWINGS: PROVIDE A MARKED-UP SET OF DRAWINGS INCLUDING CHANGES, WHICH OCCURRED DURING CONSTRUCTION.

D. PROJECT CLOSEOUT: PROVIDE THE FOLLOWING DURING PROJECT CLOSEOUT.
1. SUBMISSION OF RECORD DOCUMENTS.
2. SUBMISSION OF MAINTENANCE MANUALS.
3. TRAINING AND TURNOVER TO OWNER'S PERSONNEL.
4. FINAL CLEANING AND TOUCH-UP.
5. REMOVAL OF TEMPORARY FACILITIES.

PART 2 EXECUTION

2.1 CUTTING AND PATCHING

A. CUTTING AND PATCHING: PROVIDE CUTTING AND PATCHING WORK TO PROPERLY COMPLETE THE WORK OF THE PROJECT, COMPLYING WITH PROJECT REQUIREMENTS FOR:
1. STRUCTURAL WORK.
2. MECHANICAL/ELECTRICAL SYSTEMS.
3. VISUAL REQUIREMENTS, INCLUDING DETAILING AND TOLERANCES.
4. OPERATIONAL AND SAFETY LIMITATIONS.
5. FIRE RESISTANCE RATINGS.
6. INSPECTION, PREPARATION, AND PERFORMANCE.
7. CLEANING.

B. MEANS AND METHODS: DO NOT CUT AND PATCH IN A MANNER THAT WOULD RESULT IN A FAILURE OF THE WORK TO PERFORM AS INTENDED, DECREASE ENERGY PERFORMANCE, INCREASE MAINTENANCE, DECREASE OPERATIONAL LIFE, OR DECREASE SAFETY PERFORMANCE.

C. INSPECTION: INSPECT CONDITIONS PRIOR TO WORK TO IDENTIFY SCOPE AND TYPE OF WORK REQUIRED. PROTECT ADJACENT WORK. NOTIFY OWNER OF WORK REQUIRING INTERRUPTION TO BUILDING SERVICES OR OWNER'S OPERATIONS.

D. PERFORMANCE OF OPERATIONS: PERFORM WORK WITH WORKMEN SKILLED IN THE TRADES INVOLVED. PREPARE SAMPLE AREA OF EACH TYPE OF WORK FOR APPROVAL.

E. CUTTING: USE CUTTING TOOLS, NOT CHOPPING TOOLS. MAKE NEAT HOLES. MINIMIZE DAMAGE TO ADJACENT WORK. INSPECT FOR CONCEALED UTILITIES AND STRUCTURE BEFORE CUTTING.

F. PATCHING: MAKE PATCHES, SEAMS, AND JOINTS DURABLE AND INCONSPICUOUS. COMPLY WITH TOLERANCES FOR NEW WORK.

G. CLEANING: CLEAN WORK AREA AND AREAS AFFECTED BY CUTTING AND PATCHING OPERATIONS.

END OF SECTION

SECTION 02 30 00
SUBSURFACE INVESTIGATION

PART 1 GENERAL

1.1 SUMMARY

A. GEOTECHNICAL REPORT: A COPY OF THE GEOTECHNICAL REPORT AND BORING LOGS ARE AVAILABLE FROM THE ARCHITECT AND OWNER.

B. INFORMATION NOT GUARANTEED: INFORMATION ON THE DRAWINGS AND IN THE PROJECT MANUAL RELATING TO SUBSURFACE CONDITIONS AND EXISTING UTILITIES AND STRUCTURES IS FROM INFORMATION AVAILABLE FROM SOURCES AVAILABLE TO THE OWNER'S ENGINEERING CONSULTANTS. SUCH INFORMATION IS FURNISHED ONLY FOR THE INFORMATION AND CONVENIENCE OF THE CONTRACTOR, AND THE ACCURACY OR COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE-CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE CAST-IN-PLACE CONCRETE, REINFORCING AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. MIX DESIGN: SUBMIT FOR APPROVAL MIX DESIGN PROPOSED FOR USE.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TESTING: EMPLOY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO OWNER TO DESIGN CONCRETE MIXES AND TO PERFORM MATERIAL EVALUATION TESTS. PROVIDE 7 AND 28 DAY CYLINDER TESTS. COMPLY WITH ASTM C 143, C 173, C 31 AND C 39.

C. STANDARDS:
1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
2. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AND CRSI MANUAL OF STANDARD PRACTICE.

D. FLOOR FLATNESS AND LEVELNESS TOLERANCES:
1. SUBFLOORS UNDER MATERIALS SUCH AS CONCRETE TOPPINGS, CERAMIC TILE, AND SAND BED TERRAZZO: ACI 302.1R AND ASTM E 1155, FLOOR FLATNESS (FF) OF 15, FLOOR LEVELNESS (FL) OF 13.
2. SUBFLOORS UNDER MATERIALS SUCH AS VINYL TILE, EPOXY TOPPINGS, PAINT, AND CARPET: ACI 302.1R AND ASTM E 1155, FLOOR FLATNESS (FF) OF 20, FLOOR LEVELNESS (FL) OF 17.

PART 2 PRODUCTS

2.1 MATERIALS

A. CAST-IN-PLACE CONCRETE:
1. MANUFACTURERS: CONCRETE CURING, SEALING AND HARDENING: ASHFORD FORMULA, BY CURECRETE ;SE LOGIX INDUSTRIES ;RETROPLATE CONCRETE POLISHING SYSTEM .
2. APPLICATION: FOUNDATIONS AND FOOTINGS.
3. APPLICATION: EXTERIOR SITE CONCRETE AND PADS.
4. FINISH FOR VERTICAL SURFACES EXPOSED TO VIEW: SMOOTH RUBBED FINISH.
5. MECHANICALLY APPLIED FINISH FOR VERTICAL SURFACES EXPOSED TO VIEW: BUSHHAMMER FINISH.
6. FINISH FOR VERTICAL SURFACES NOT EXPOSED TO VIEW: AS-CAST FORM FINISH.
7. FINISH FOR HORIZONTAL SURFACES TO RECEIVE CONCRETE OR MORTAR SETTING BED: SCRATCH FINISH.
8. FINISH FOR SURFACES TO BE EXPOSED TO VIEW OR COVERED WITH RESILIENT FLOORING, CARPET TILE OR OTHER THIN FINISH SYSTEM: TROWEL FINISH.
9. FINISH FOR EXTERIOR CONCRETE PLATFORMS, STEPS, RAMPS AND SLOPED WALLS: NON-SLIP BROOM FINISH.
10. CAST-IN-PLACE CONCRETE REINFORCING AND ACCESSORIES:
a. CONCRETE DESIGN MIXES: ASTM C 94, 28 DAY COMPRESSIVE STRENGTH SUITABLE FOR PROJECT REQUIREMENTS AND SITE CONDITIONS.
b. FORMWORK: PLYWOOD OR METAL PANEL FORMWORK SUFFICIENT FOR STRUCTURAL AND VISUAL REQUIREMENTS.
c. REINFORCING BARS: ASTM A 767, CLASS II, GALVANIZED.
d. STEEL WIRE: ASTM A 82.
e. STEEL WIRE FABRIC: ASTM A 497, WELDED, DEFORMED.
f. CONCRETE MATERIALS: ASTM C 150, TYPE I, PORTLAND CEMENT; POTABLE WATER.
g. CONCRETE ADMIXTURES: CONTAINING LESS THAN 0.1 PERCENT CHLORIDE IONS.
h. REGLETS: GALVANIZED SHEET STEEL REGLETS, MINIMUM 26 GAUGE (.018 INCH).
i. WATERSTOPS: RUBBER, PVC OR SELF EXPANDING BUTYL/BENTONITE WATERSTOPS.
j. VAPOR RETARDER: ASTM D 4397 POLYETHYLENE SHEET, 10 MILS.
k. LIQUID MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS A.
l. UNDERLAYMENT COMPOUND: FREE-FLOWING, SELF-LEVELING CEMENT-BASED COMPOUND.
m. BONDING COMPOUND: POLYVINYL ACETATE OR ACRYLIC BASE.
n. EPOXY ADHESIVE: ASTM C 881, TWO-COMPONENT MATERIAL.

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH ASTM C 94. DO NOT CHANGE MIX DESIGN WITHOUT APPROVAL. CALCIUM CHLORIDE ADMIXTURES ARE NOT PERMITTED.

B. CHAMFER EXPOSED EDGES/CORNERS TO PROVIDE STRAIGHT LINES.

C. TOLERANCE: PLUS 1/8" IN 10' FOR GRADE, ALIGNMENT, AND STRAIGHTNESS.

D. CONSTRUCTION JOINTS: USE KEYWAYS, CONTINUE REINFORCEMENT THROUGH JOINT.

E. EXPANSION JOINTS: FOR EXTERIOR WORK LOCATE 30' O.C. AT APPROVED LOCATIONS. PROVIDE SMOOTH DOWELS ACROSS JOINT WHICH PERMIT 1" HORIZONTAL MOVEMENT AND NO VERTICAL SHEAR MOVEMENT.

F. ISOLATION JOINTS: PROVIDE BETWEEN SLABS AND VERTICAL ELEMENTS SUCH AS COLUMNS AND STRUCTURAL WALLS.

G. CONTROL JOINTS: PROVIDE SAWN OR TOOLED JOINTS OR REMOVEABLE INSERT STRIPS; DEPTH EQUAL TO 1/4 SLAB THICKNESS. SPACING AS REQUIRED AND APPROVED.

H. WALL FINISHES: AS-CAST AND PATCHED FOR CONCEALED WORK; RUBBED SMOOTH, FILLED AND CEMENT PASTE COATED FOR EXPOSED WORK.

I. SLAB FINISHES: OBTAIN SAMPLE APPROVAL BEFORE BEGINNING WORK.
1. SCRATCH: FOR SURFACES TO RECEIVE MORTAR SETTING BEDS OR CEMENTITIOUS FLOORING MATERIALS.
2. TROWEL: HARD, SMOOTH, UNIFORM SURFACE FOR AREAS TO RECEIVE RESILIENT FLOORING, CARPET, OR OTHER THIN FINISH MATERIAL.
3. BROOM: AFTER TROWEL FINISHING, ROUGHEN SURFACE BY FINE BROOMING PERPENDICULAR TO TRAFFIC DIRECTION FOR EXPOSED EXTERIOR WALKS, STEPS AND RAMPS.
4. NON-SLIP AGGREGATE: AFTER TROWEL FINISHING, UNIFORMLY TROWEL 25-LBS./100 S. F. OF DAMP NON-SLIP AGGREGATE INTO SURFACE. CURE, THEN RUB LIGHTLY TO EXPOSE AGGREGATE. USE FOR INTERIOR EXPOSED CONCRETE STAIRS AND RAMPS.
5. EXPOSED AGGREGATE: USE CHEMICAL RETARDER OR TAMP AGGREGATE INTO WET CONCRETE AND EXPOSE BY BRUSHING WITH WATER. USE WHERE INDICATED.
6. HARDENER FINISH: FOR EXPOSED INTERIOR CONCRETE FLOORS. FOLLOW MANUFACTURER'S DIRECTIONS.

J. CURE AND PROTECT WORK. REPORT DEFECTIVE WORK IN WRITING.

END OF SECTION

SECTION 03 35 00
CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE FINISHING MATERIALS AND OPERATIONS FOR CAST-IN-PLACE CONCRETE..

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. CAST-IN-PLACE CONCRETE:
1. MANUFACTURERS: CONCRETE CURING, SEALING AND HARDENING: ASHFORD FORMULA, BY CURECRETE ;CONCRETE SEALERS USA ;RETROPLATE CONCRETE POLISHING SYSTEM .
2. APPLICATION: SLABS ON GRADE.
3. APPLICATION: EXTERIOR SITE CONCRETE AND PADS.
4. SEALED CONCRETE MATERIALS: CONCRETE HARDENER/DENSIFIER.

PART 3 EXECUTION

3.1 INSTALLATION

A. SLAB FINISHES: OBTAIN SAMPLE APPROVAL BEFORE BEGINNING WORK.
1. SEALED CONCRETE: NATURAL FINISH, SLIGHT DARKENING ACCEPTABLE.

B. PROTECT WORK WITH SUITABLE COVERING FOR THE DURATION OF THE CONSTRUCTION PERIOD. REPORT DEFECTIVE WORK IN WRITING.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE UNIT MASONRY CONSTRUCTION.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

1.3 QUALITY ASSURANCE

A. TESTING: INDEPENDENT TESTING LABORATORY.

B. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. CONCRETE MASONRY UNITS:
1. APPLICATION: CONCRETE MASONRY PER DRAWINGS.
2. BOND PATTERN: RUNNING BOND.
3. STRUCTURAL DRAWINGS SUPERSEDE THIS SECTION. REFER TO STRUCTURAL DRAWINGS FOR LOAD-BEARING WALLS.

B. MORTAR AND GROUT FOR BRICK AND CONCRETE MASONRY UNIT ASSEMBLIES:
1. MANUFACTURERS: SOLOMON COLORS
2. MORTAR MIX: ASTM C 270, TYPE S, FOR REINFORCED MASONRY, MASONRY BELOW GRADE AND MASONRY IN CONTACT WITH EARTH AND ASTM C 270, TYPE N, FOR ABOVE-GRADE LOADBEARING AND NONLOADBEARING WALLS AND PARAPET WALLS AND FOR INTERIOR LOADBEARING AND NONLOADBEARING PARTITIONS.
3. MORTAR MATERIALS: PORTLAND CEMENT, ASTM C 150, TYPE I OR II.
4. MORTAR MATERIALS: MASONRY CEMENT, ASTM C 91.
5. MORTAR MATERIALS: READY MIXED, ASTM C 207, TYPE S.
6. GROUT AGGREGATE: ASTM C 404.
7. HYDRATED LIME: ASTM C 207, TYPE S.

C. REINFORCING: WELDED WIRE WITH DEFORMED SIDE RODS.
1. STEEL WIRE: 9 GAUGE (.1875 INCH) GALVANIZED STEEL.
2. TYPE: LADDER OR TRUSS TYPE.

D. TIES AND ANCHORS:
1. MANUFACTURERS: TRUFAST WALLS .
2. BENT WIRE TIES: GALVANIZED STEEL.
3. RIGID ANCHORS: GALVANIZED STEEL STRAPS.
4. MASONRY TO STEEL FRAME: ANCHOR WITH CRIMPED WIRE ANCHOR SECTION FOR WELDING TO STEEL.
5. ADJUSTABLE MASONRY VENEER ANCHORS: SCREW-ATTACHED TWO-PIECE GALVANIZED TRIANGULAR OR RECTANGULAR WIRE TIE AND METAL ANCHOR.
6. SCREWS FOR STEEL STUDS: ASTM C 954 STAINLESS STEEL.
7. UNIT TYPE MASONRY INSERTS IN CONCRETE: MALLEABLE IRON.
8. DOVETAIL SLOTS: GALVANIZED SHEET METAL.
9. ANCHOR BOLTS: ASTM A 307, GRADE A, GALVANIZED.
10. POST-INSTALLED ANCHORS: CHEMICAL OR EXPANSION ANCHORS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALLATION OF MASONRY ASSEMBLIES:
1. COMPLY WITH PCA RECOMMENDED PRACTICES FOR LAYING CONCRETE BLOCK, BRICK INSTITUTE OF AMERICA BIA TECH NOTES, AND NCMA TEK BULLETINS.
2. COMPLY WITH COLD WEATHER AND WARM WEATHER PROTECTION PROCEDURES AS RECOMMENDED IN BIA TECH NOTES.
3. PROVIDE FIRE-RATED ASSEMBLIES COMPLYING WITH ASTM E 119.
4. SAWCUT UNITS WHEN REQUIRED. MAINTAIN UNIFORM JOINT WIDTH. PROVIDE FULL BED, HEAD AND CELLULAR JOINTS EXCEPT AT WEEPHOLES.
5. INSTALL LINTELS AND ACCESSORIES IN MASONRY CONSTRUCTION.
6. COORDINATE INSTALLATION OF FLASHINGS.
7. COMPLY WITH APPLICABLE CODES AND REGULATIONS FOR SPACING OF TIES AND HORIZONTAL REINFORCING.
8. PROVIDE EXPANSION AND CONTROL JOINTS IN ACCORDANCE WITH BIA AND NCMA RECOMMENDATIONS.
9. REMOVE AND REPLACE DAMAGED UNITS.
10. CLEAN BRICK USING BUCKET AND BRUSH METHOD, BIA TECH NOTE 20.
11. CLEAN CONCRETE MASONRY PER MANUFACTURER RECOMMENDATIONS.

END OF SECTION

SECTION 03 45 00
PRECAST ARCHITECTURAL CONCRETE

PART 4 GENERAL

4.1 SUMMARY

A. PROVIDE ARCHITECTURAL PRECAST CONCRETE.

4.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

4.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE; CRSI MANUAL OF STANDARD PRACTICE; PCI MNL 117, MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF ARCHITECTURAL PRECAST CONCRETE PRODUCTS.

C. TESTING: INDEPENDENT TESTING LABORATORY.

D. FABRICATION AND ERECTION TOLERANCE LIMITS: PCI MNL 117.

PART 5 PRODUCTS

5.1 MATERIALS

A. ARCHITECTURAL PRECAST CONCRETE:
1. MANUFACTURERS: ATMI OR DUKANE PRECAST OR EQUAL
2. APPLICATION: EXTERIOR WALL PANELS.
3. SURFACE FINISH: SMOOTH FINISH.
4. SURFACE FEATURES: REVEALS.
5. DESIGN MIX: 5000 PSI, 28 DAY COMPRESSIVE STRENGTH, 4 TO 6 PERCENT TOTAL AIR CONTENT.
6. FORMWORK: PLYWOOD OR METAL PANEL FORMWORK SUFFICIENT FOR STRUCTURAL AND VISUAL REQUIREMENTS.
7. COMPONENTS:
a. REINFORCING BARS: ASTM A 767, CLASS II, GALVANIZED.
b. STEEL WIRE: ASTM A 82.
c. STEEL WIRE FABRIC: ASTM A 497, WELDED, DEFORMED.
d. SUPPORTS FOR REINFORCEMENT FOR EXPOSED TO VIEW CONCRETE: CRSI CLASS 2, STAINLESS STEEL PROTECTED LEGS.
e. PRESTRESSING TENDONS: ASTM A 416, GRADE 250, 7-WIRE STRESS-RELIEVED STRAND.
f. FINE AGGREGATE FOR FACING MIXES: ASTM C 33.
g. COARSE AGGREGATE FOR FACING MIX: ASTM C 33.
h. PIGMENTS: NONFADING LIME RESISTANT PIGMENTS.
i. CONCRETE ADMIXTURES: CONTAINING LESS THAN 0.1 PERCENT CHLORIDE IONS.
j. STEEL PLATE: ASTM A 283, GRADE C.
k. STEEL SHAPES: ASTM A 36.
l. STAINLESS STEEL SHAPES: AISI TYPE 302/304.

B. ANCHOR BOLTS: ASTM A 307.
a. STEEL FINISH: ASTM A 153, GALVANIZING FOR EXPOSED STEEL; PRIMED FOR NON-EXPOSED STEEL.
b. NONMETALLIC SHRINKAGE-RESISTANT GROUT, ASTM C 1107.

PART 6 EXECUTION

6.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. TOLERANCE: 1/4" IN 20' FOR PLUMB AND LOCATION. 1/8" AT ADJACENT UNITS AND REGLETS.

C. RESTORE DAMAGED FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE STRUCTURAL STEEL ASSEMBLIES AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.

C. SUBMIT FOR APPROVAL TEST REPORTS.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: AISC, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AND APPLICABLE REGULATIONS.

C. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL: COMPLY WITH FABRICATION REQUIREMENTS, INCLUDING TOLERANCE LIMITS, AND INSTALLATION TOLERANCES OF AISC'S "CODE OF ST

E. CURE AND PROTECT SEALANTS AS DIRECTED BY MANUFACTURERS. REPLACE OR RESTORE DAMAGED SEALANTS. CLEAN ADJACENT SURFACES TO REMOVE SPILLAGE.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE STEEL DOORS AND FRAMES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: ANSI/SDI-100, RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES.

C. PERFORMANCE STANDARDS:
1. FIRE-RATED ASSEMBLIES: NFPA 80, AND ACCEPTABLE TESTING AGENCY LISTING.
2. THERMAL-RATED ASSEMBLIES AT EXTERIOR: ASTM C 236 OR ASTM C 976.
3. SOUND-RATED ASSEMBLIES AT MECHANICAL ROOMS: ASTM E 1408, AND ASTM E 413.

PART 2 PRODUCTS

2.1 MATERIALS

A. STEEL DOORS:
1. MANUFACTURERS: AMBICO LIMITED ;DOOR SYSTEMS ;GALAXY METAL PRODUCTS .
2. MATERIAL: MINIMUM 20 GAUGE STEEL SHEET.
3. THICKNESS: 1-3/4 INCHES.
4. FINISH: FACTORY PRIMED AND FIELD PAINTED.

B. INTERIOR STEEL FRAMES:
1. TYPE: 18 GA., WELDED.
2. FINISH: FACTORY PRIMED AND FIELD PAINTED.

C. EXTERIOR STEEL FRAMES:
1. TYPE: 16 GA., WELDED.
2. FINISH: FACTORY PRIMED AND FIELD PAINTED.

PART 3 EXECUTION

3.1 INSTALLATION

A. FABRICATE WORK TO BE RIGID, NEAT AND FREE FROM SEAMS, DEFECTS, DENTS, WARP, BUCKLE, AND EXPOSED FASTENERS. INSTALL DOORS AND FRAMES IN COMPLIANCE WITH SDI-100, NFPA 80, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

B. PROVIDE THERMALLY IMPROVED DOORS AS INDICATED (ASTM C 236) FOR ALL EXTERIOR DOORS AND ELSEWHERE AS NOTED.

C. PROVIDE ACOUSTICALLY IMPROVED DOORS WITH MINIMUM STC OF 33 (ASTM E 90 AND ASTM E 413) WHERE INDICATED.

D. HARDWARE: PREPARE DOORS AND FRAMES TO RECEIVE HARDWARE ON FINAL SCHEDULE. PROVIDE FOR 3 SILENCERS ON SINGLE DOORFRAMES; 2 ON DOUBLE DOORFRAMES.

E. SHOP FINISH: CLEAN, TREAT AND PRIME PAINT ALL WORK WITH RUST-INHIBITING PRIMER COMPARABLE WITH FINISH PAINT SPECIFIED IN DIVISION 9 SECTION. PROVIDE ASPHALT EMULSION SOUND DEADENING COATING ON CONCEALED FRAME INTERIORS.

F. TOUCH-UP DAMAGED COATINGS READY TO RECEIVE FINISH PAINTING.

END OF SECTION

SECTION 08 36 00
PANEL DOORS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE SECTIONAL OVERHEAD DOORS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. SECTIONAL OVERHEAD DOORS:
1. FRAME AND PANELS: GALVANIZED STEEL FRAME AND STEEL INSULATED PANELS.
2. PANEL PROFILE: FLAT.
3. TRACK TYPE: STANDARD TRACK.
4. OPERATION: ELECTRIC DOOR OPERATOR.
5. SERVICE: COMMERCIAL
6. STEEL FINISH: FACTORY FINISHED.
7. AUXILIARY MATERIALS:
a. ELECTRIC OPERATORS AND CONTROLS.
b. LIFTING HANDLES AND LOCKING BARS.
c. VISION PANELS.
d. PASS DOORS.
e. AUTOMATIC REVERSING CONTROL FOR BOTTOM BAR FOR ELECTRICALLY OPERATED DOORS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. INSTALL ASSEMBLIES COMPLETE WITH ALL HARDWARE, ANCHORS, INSERTS, SUPPORTS AND ACCESSORIES. RESTORE DAMAGED FINISHES AND TEST FOR PROPER OPERATION. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 08 41 13
ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE ENTRANCES AND STOREFRONT AT EXTERIOR AND INTERIOR.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

C. WARRANTY: SUBMIT MANUFACTURER'S STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS.
1. WARRANTY PERIOD: 5 YEARS.

D. OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURER'S OPERATION AND MAINTENANCE DATA, INCLUDING OPERATING INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. ALUMINUM ENTRANCES AND STOREFRONT:
1. STOREFRONT STYLE: ALUMINUM FRAMED.
a. EXTERIOR: THERMALLY BROKEN.
b. INTERIOR: NO THERMAL BREAKS.
2. GLASS AND GLAZING:
a. EXTERIOR: INSULATING GLAZING, TEMPERED WHERE REQUIRED BY CODE.
b. INTERIOR: SINGLE PANE, TEMPERED WHERE REQUIRED BY CODE.
3. GLAZING COLOR: CLEAR.
4. WIDTH AND REINFORCING AS REQUIRED FOR HEIGHTS OVER 10'-0".

PART 3 EXECUTION

3.1 INSTALLATION

A. TAKE FIELD MEASUREMENTS BEFORE FABRICATION WHERE POSSIBLE; DO NOT DELAY JOB PROGRESS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

C. ANCHOR SECURELY IN PLACE; INSTALL PLUMB, LEVEL AND IN TRUE ALIGNMENT. ISOLATE DISSIMILAR MATERIALS TO PREVENT CORROSION.

D. COORDINATE WITH GLASS AND GLAZING WORK; INSTALL HARDWARE AND ADJUST FOR SMOOTH, PROPER OPERATION.

E. CLEAN AND PROTECT COMPLETED SYSTEM; REPAIR DAMAGE.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE DOOR HARDWARE.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

C. SUBMIT FOR APPROVAL HARDWARE SCHEDULE PROPOSED FOR USE BASED ON OWNER'S REQUIREMENTS.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. HARDWARE FOR FIRE-RATED OPENINGS: NFPA 80, AND LOCAL REQUIREMENTS.

C. MATERIALS AND APPLICATION: ANSI A156 SERIES STANDARDS.

PART 2 PRODUCTS

2.1 MATERIALS

A. DOOR HARDWARE:
1. QUALITY LEVEL: HEAVY DUTY COMMERCIAL.
2. LOCKSETS AND LATCHSETS: MORTISE TYPE.
3. LOCK CYLINDERS: INTERCHANGEABLE.
4. KEYING: OWNER'S REQUIREMENTS.
5. CLOSERS, DOOR CONTROL, AND EXIT DEVICES: HIGH FREQUENCY.
6. HARDWARE FINISHES: SATIN CHROME FINISH ON EXPOSED SURFACES.
7. AUXILIARY MATERIALS:
a. DOOR TRIM UNITS: KICKPLATES, EDGE TRIM, VIEWERS, KNOCKERS, AND MAIL DROPS: AND RELATED TRIM.
b. STOPS AND OVERHEAD DOOR HOLDERS.
c. WEATHERSTRIPPING AND THRESHOLDS.
d. CARD-OPERATED OPENING DEVICES.
e. KNOX BOX FOR FIRE EMERGENCY KEYS.
8. COORDINATE WITH SECURITY CONTRACTOR FOR ELECTRIC STRIKES.

PART 3 EXECUTION

3.1 INSTALLATION

A. FOLLOW GUIDELINES OF DHI 'RECOMMENDED LOCATIONS FOR BUILDER'S HARDWARE AND HARDWARE MANUFACTURERS' INSTRUCTIONS.

B. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

C. ADJUST OPERATION, CLEAN AND PROTECT.

END OF SECTION

SECTION 09 21 16
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE GYPSUM BOARD ASSEMBLIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TOLERANCES: NOT MORE THAN 1/16-INCH DIFFERENCE IN TRUE PLANE AT JOINTS BETWEEN ADJACENT BOARDS BEFORE FINISHING. AFTER FINISHING, JOINTS SHALL BE NOT BE VISIBLE. NOT MORE THAN 1/8 INCH IN 10 FEET DEVIATION FROM TRUE PLANE, PLUMB, LEVEL AND PROPER RELATION TO ADJACENT SURFACES IN FINISHED WORK.

C. FIRE RESISTANCE FOR FIRE-RATED ASSEMBLIES: ASTM E 119.

D. MOCK-UPS: PROVIDE MOCK-UP AS REQUIRED TO DEMONSTRATE QUALITY OF WORKMANSHIP AND LEVEL OF FINISH.

E. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES.

PART 2 PRODUCTS

2.1 MATERIALS

A. GYPSUM BOARD:
1. APPLICATION: INTERIOR WALLS, PARTITIONS, AND CEILINGS WITH TAPE AND JOINT COMPOUND FINISH.
2. APPLICATION: ABUSE-RESISTANT BOARD AT AS INDICATED IN THE DRAWINGS
3. TYPE: BOARD FOR TAPE AND JOINT COMPOUND FINISH.
a. TYPE: REGULAR, MOISTURE-RESISTANT AND FIRE-RATED TYPES AS REQUIRED.
b. TYPICAL THICKNESS: 5/8 INCH.
4. TYPE: ABUSE-RESISTANT BOARD.
a. TYPICAL THICKNESS: 5/8 INCH.

B. MOLD RESISTANT GYPSUM BOARD:
1. APPLICATION: ROOMS WITH SHOWERS AT WALL AND CEILINGS.
2. MANUFACTURERS: NATIONAL GYPSUM
3. TYPE: XP FIRE SHIELD
a. TYPICAL THICKNESS: 5/8 INCH.

C. GLASS-MAT WATER-RESISTANT GYPSUM BACKING BOARD:
1. APPLICATION: TILE BACKER AT TILED SHOWERS.
2. MANUFACTURERS: NATIONAL GYPSUM
3. TYPE: PERMABASE CEMENT BOARD
a. TYPICAL THICKNESS: 5/8 INCH.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL GYPSUM BOARD FOR TAPE AND 3-COAT JOINT COMPOUND FINISH IN COMPLIANCE WITH ASTM C 840 AND GA 216, LEVEL 4 FINISH. INSTALL GYPSUM BOARD ASSEMBLIES TRUE, PLUMB, LEVEL AND IN PROPER RELATION TO ADJACENT SURFACES.

B. PROVIDE FIRE-RATED SYSTEMS WHERE INDICATED AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.

C. INSTALL BOARDS VERTICALLY. DO NOT ALLOW BUTT-TO-BUTT JOINTS AND JOINTS THAT DO NOT FALL OVER FRAMING MEMBERS.

D. WHERE NEW PARTITIONS MEET EXISTING CONSTRUCTION, REMOVE EXISTING CORNERBEADS TO PROVIDE A SMOOTH TRANSITION.

E. PROVIDE INSULATION FULL HEIGHT AND THICKNESS IN PARTITIONS AT CONFERENCE ROOMS, TOILET ROOMS, BETWEEN DIFFERENT OCCUPANCIES, AND WHERE REQUIRED.

F. PROVIDE ACOUSTICAL SEALANT AT BOTH FACES AT TOP AND BOTTOM RUNNER TRACKS, WALL PERIMETERS, OPENINGS, EXPANSION AND CONTROL JOINTS.

G. INSTALL TRIM IN STRICT COMPLIANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

H. REPAIR SURFACE DEFECTS. LEAVE READY FOR FINISH PAINTING OR WALL TREATMENT.

END OF SECTION

SECTION 09 22 16
NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE NON-STRUCTURAL METAL FRAMING FOR GYPSUM BOARD ASSEMBLIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TOLERANCES: NOT MORE THAN 1/8 INCH IN 10 FEET DEVIATION FROM TRUE PLANE, PLUMB, LEVEL AND PROPER RELATION TO ADJACENT SURFACES IN FINISHED WORK.

C. FIRE RESISTANCE FOR FIRE-RATED ASSEMBLIES: ASTM E 119.

D. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES.

PART 2 PRODUCTS

2.1 MATERIALS

A. STEEL FRAMING FOR WALLS AND PARTITIONS:
1. STUD THICKNESS: PER DRAWINGS.
2. FURRING CHANNEL THICKNESS: 20 GAUGE (.0329 INCH).

B. STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS:
1. ATTACHMENT: STANDARD.
2. STUD THICKNESS: 20 GAUGE (.0329 INCH).

PART 3 EXECUTION

3.1 INSTALLATION

A. PROVIDE FIRE-RATED SYSTEMS WHERE INDICATED AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.

B. WHERE NEW PARTITIONS MEET EXISTING CONSTRUCTION, REMOVE EXISTING CORNERBEADS TO PROVIDE A SMOOTH TRANSITION.

C. PROVIDE ACOUSTICAL SEALANT AT BOTH FACES AT TOP AND BOTTOM RUNNER TRACKS, WALL PERIMETERS, OPENINGS, EXPANSION AND CONTROL JOINTS.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TILE.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.
1. INCLUDE MANUFACTURERS FULL RANGE OF COLOR AND FINISH OPTIONS IF ADDITIONAL SELECTION IS REQUIRED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. TILE: ANSI A 137.1.

C. TILE SETTING MATERIALS: ANSI A 118 SERIES STANDARD SPECIFICATIONS.

D. TILE INSTALLATION: ANSI 108 SERIES STANDARD SPECIFICATIONS AND TILE COUNCIL OF AMERICA, HANDBOOK FOR CERAMIC TILE INSTALLATION.

PART 2 PRODUCTS

2.1 MATERIALS

A. TILE:
1. APPLICATION: INTERIOR WALL TILE OVER GYPSUM WALLBOARD.
2. APPLICATION: INTERIOR WALL TILE OVER TILE BACKER BOARD AT WET AREAS.

B. SETTING MATERIALS:
1. MANUFACTURERS: CUSTOM BUILDING PRODUCTS ;FUTURA TRANSITIONS ;LATICRETE INTERNATIONAL INC. ;MAPEI ;NORTH AMERICAN ADHESIVES PROFLEX® PRODUCTS, INC. SCHLUTER SYSTEMS LP ;SGM, INC. .
2. MORTAR SETTING BED.
a. LATEX ADDITIVE.
3. THIN-SET MORTAR.
4. GROUT.
5. WATERPROOFING MEMBRANE UNDER TILE.
a. ANSI A 118.10.
6. ELASTOMERIC SEALANTS.

PART 3 EXECUTION

3.1 INSTALLATION

A. COMPLY WITH TILE COUNCIL OF AMERICA AND ANSI STANDARD SPECIFICATIONS FOR INSTALLATION FOR SUBSTRATE AND INSTALLATION REQUIRED. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

B. INSTALL WATERPROOF MEMBRANE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

C. LAY TILE IN GRID PATTERN WITH ALIGNMENT GRIDS. LAYOUT TILE TO PROVIDE UNIFORM JOINT WIDTHS AND TO MINIMIZE CUTTING; DO NOT USE LESS THAN 1/2 TILE UNITS.

D. PROVIDE SEALANT JOINTS WHERE RECOMMENDED BY TCA AND APPROVED BY ARCHITECT.

E. GROUT AND CURE, CLEAN AND PROTECT.

END OF SECTION

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE ACOUSTICAL CEILINGS AND SUSPENSION SYSTEMS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

C. EXTRA STOCK: SUBMIT EXTRA STOCK EQUAL TO 2 PERCENT OF AMOUNT INSTALLED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. PERFORMANCE: FIRE, STRUCTURAL, AND SEISMIC PERFORMANCE MEETING REQUIREMENTS OF BUILDING CODE AND LOCAL AUTHORITIES. ACOUSTICAL PERFORMANCE BASED ON PROJECT REQUIREMENTS.

PART 2 PRODUCTS

2.1 MATERIALS

A. MINERAL FIBER ACOUSTICAL CEILINGS:
1. PANEL EDGE: PER DRAWINGS
2. GRID: EXPOSED GRID PER DRAWINGS.
3. SUSPENSION SYSTEM: INTERMEDIATE DUTY.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SUSPENSION SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, AND ASTM C 636. COORDINATE INSTALLATION WITH LOCATION OF MECHANICAL AND ELECTRICAL WORK TO ENSURE PROPER LOCATIONS AND ANCHORAGE.

B. LEVEL CEILING TO WITHIN 1/8 INCH IN 10 FEET IN BOTH DIRECTIONS. SCRIBE AND CUT PANELS TO FIT ACCURATELY. MEASURE AND LAYOUT TO AVOID LESS THAN HALF PANEL UNITS.

C. REMOVAL AND REINSTALLATION AT EXISTING CEILINGS: REMOVE AND STORE MATERIALS FOR REUSE WHEN ALLOWED. HANDLE WITH WHITE GLOVES AND AVOID DAMAGING CORNERS AND EDGES. CLEAN TILES AND GRID SYSTEM, WHICH HAVE BEEN REMOVED. PROVIDE ADDITIONAL MATERIALS TO COMPLETE THE WORK AND TO REPLACE DAMAGED EXISTING MATERIALS. NEW MATERIALS SHALL MATCH EXISTING MATERIALS AS APPROVED.

D. ADJUST, CLEAN, AND TOUCH-UP ALL SYSTEM COMPONENTS.

END OF SECTION

SECTION 09 91 00
PAINTING

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE PAINTING AND SURFACE PREPARATION.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.
1. INCLUDE MANUFACTURERS FULL RANGE OF COLOR AND FINISH OPTIONS IF ADDITIONAL SELECTION IS REQUIRED.

C. EXTRA STOCK: SUBMIT 2 UNOPENED GALLONS OF EACH PAINT AND COLOR USED IN THE PROJECT.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. REGULATIONS: COMPLIANCE WITH VOC AND ENVIRONMENTAL REGULATIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. PAINTING:
1. APPLICATION: INTERIOR UNFINISHED SURFACES.
2. PRIMARY COATING TYPE: LATEX BASED PAINTS.
3. PRIMARY PAINT SYSTEMS: PRIMER PLUS TWO FINISH COATS.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.

B. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.

C. AT EXISTING AREAS TO BE REPAINTED, REMOVE BLISTERED OR PEELING PAINT TO SOUND SUBSTRATES. REMOVE CHALK DEPOSITS AND MILDEW AND WASH ALL SURFACES WITH MILD DETERGENT. PERFORM RELATED MINOR PREPARATION INCLUDING CAULK AND GLAZING COMPOUNDS. SPOT PRIME BARE AREAS BEFORE PRIMING AND PAINTING AS SPECIFIED.

D. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION. CLEAN UP, TOUCH UP AND PROTECT WORK.

3.2 PAINT SCHEDULE

A. GYPSUM DRYWALL WALLS:
1. GLOSS:
a. FLAT
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

B. GYPSUM DRYWALL WALLS AND CEILINGS IN BATHROOMS, KITCHENS AND WET AREAS:
1. GLOSS:
a. SEMI
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

C. GYPSUM DRYWALL CEILINGS:
1. GLOSS:
a. FLAT
2. SYSTEM:
a. 1 COAT LATEX PRIMER
b. 2 COATS LATEX FINISH

D. FERROUS METALS:
1. GLOSS:
a. HIGH
2. SYSTEM:
a. 1 COAT RUST-INHIBITING PRIMER
b. 1 COAT LATEX ENAMEL
c. 2 COATS LATEX ENAMEL

E. GALVANIZED METAL:
1. GLOSS:
a. HIGH
2. SYSTEM:
a. 1 COAT GALVANIZED METAL PRIMER
b. 2 COATS ALKYD ENAMEL

END OF SECTION

SECTION 10 21 13
TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TOILET PARTITIONS AND SCREENS.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.

C. SAMPLES: SUBMIT TWO REPRESENTATIVE SAMPLES OF EACH MATERIAL SPECIFIED INDICATING VISUAL CHARACTERISTICS AND FINISH. INCLUDE RANGE SAMPLES IF VARIATION OF FINISH IS ANTICIPATED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. TOILET COMPARTMENTS:
1. COMPARTMENTS: FLOOR-ANCHORED.
2. SCREENS: WALL-HUNG.
3. MATERIAL: SOLID PHENOLIC.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. LIMIT OPENINGS BETWEEN PANELS, DOORS AND PILASTERS TO LESS THAN 1/2".

C. ADJUST HARDWARE, CLEAN, AND PROTECT WORK.

END OF SECTION

SECTION 10 28 13
TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE TOILET, BATH AND LAUNDRY ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PART 2 PRODUCTS

2.1 MATERIALS

A. TOILET AND BATH ACCESSORIES:
1. ACCESSORY: PAPER TOWEL DISPENSERS.
2. ACCESSORY: TOILET TISSUE DISPENSERS, DOUBLE ROLL.
3. ACCESSORY: COMBINATION TOWEL DISPENSER/WASTE RECEPTACLE UNITS.
4. ACCESSORY: GRAB BARS.
5. ACCESSORY: SANITARY NAPKIN DISPOSAL UNITS.
6. ACCESSORY: SOAP DISPENSERS, WALL MOUNTED.
7. FINISH: STAINLESS STEEL.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE. COORDINATE WITH WORK OF OTHER SECTIONS.

B. RESTORE DAMAGED FINISHES AND TEST FOR PROPER OPERATION. CLEAN AND PROTECT WORK FROM DAMAGE.

END OF SECTION

SECTION 10 44 00
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

A. PROVIDE FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. STANDARDS: UL AND FM LISTED PRODUCTS, NFPA 10.

C. REGULATIONS: ADAAG.

PART 2 PRODUCTS

2.1 MATERIALS

A. FIRE EXTINGUISHERS:
1. TYPE: MULTIPURPOSE DRY CHEMICAL TYPE.

B. CABINETS

GENERAL STRUCTURAL NOTES

DESIGN AND LOADING:

STRUCTURAL DESIGN OF THIS BUILDING IS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2018 EDITION.

DEAD LOADS USED IN DESIGN ARE AS FOLLOWS:

ROOF (MEMBRANE):	STONE BALLAST	-	0 PSF
MECH FASTEN)	MEMBRANE	-	1 PSF
	INSULATION	-	3 PSF
	METAL DECK	-	2 PSF
	BAR JOISTS	-	3 PSF
	MISC/MECH	-	6 PSF
			15 PSF
MEZZANINE	-	47	PSF
OFFICE LOFT	-	47	PSF

LIVE LOADS USED IN DESIGN ARE AS FOLLOWS:

GROUND SNOW	-	30	PSF
DESIGN ROOF LOAD	-	25	PSF
WIND	-	110	MPH (EXPOSURE B)
UPLIFT	-	40	PSF (@ EXPOSED CANOPY)
UPLIFT	-	18	PSF (NET @ MAIN ROOF)
STAIRS	-	100	PSF
STORAGE MEZZANINE	-	125	PSF
OFFICE LOFT	-	100	PSF

SEE ROOF PLAN FOR ADDITIONAL CONCENTRATED LOADS

ROOF DESIGN NOTE: THE STRUCTURAL DESIGN OF THE ROOF FRAMING SYSTEM IS BASED ON A CODE COMPLIANT PRIMARY AND SECONDARY (OVERFLOW) DRAINAGE SYSTEM THAT HAS BEEN DESIGNED AND FURNISHED BY OTHERS. AS SUCH, NO ADDITIONAL AND /OR EXCEPTIONAL PONDING LOADS, IN EXCESS OF THE ROOF LOADS NOTED ABOVE, WERE CONSIDERED.

SEISMIC DESIGN DATA :

SEISMIC IMPORTANCE FACTOR	I = 1.0
SEISMIC USE GROUP	= II
MAPPED SPECTRAL RESPONSE ACCL'NS	SS = 0.113
	S1 = 0.059
	SDS= 0.121
	Sd1 = 0.095
SITE CLASS	= D (VERIFY W/ SOIL ENGINEER)
SEISMIC DESIGN CATEGORY	SDC=B
SEISMIC RESPONSE COEFFICIENT	Cs = 0.0
RESPONSE MODIFICATION FACTOR	R = 3
SEISMIC BASE SHEAR	N-S, V = 85 K
	E-W, V = 55 K

EQUIVALENT LATERAL FORCE PROCEDURE.

FOUNDATIONS:

ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR COMPACTED FILL HAVING A MINIMUM ALLOWABLE BEARING CAPACITY OF 4000 P.S.F., AS RECOMMENDED BY MIDLAND STANDARDENGINEERING AND TESTING IN THEIR REPORT No. 22354, DATED SEPTEMBER 9, 2022.

ALL FOOTING ELEVATIONS SHOWN ON THE DRAWINGS PROVIDE MINIMUM DEPTHS FOR FROST PROTECTION. ANY LOCALIZED SOFT SOIL AND / OR FILL ZONES ENCOUNTERED AT THE BEARING LEVELS SHOULD BE FURTHER EXCAVATED TO ADEQUATE SUPPORT SOILS AND THE CAVITY BACKFILLED WITH LEAN CONCRETE, STONE OR APPROVED STRUCTURAL FILL OR THE FOOTING MAY BE POURED AT THE EXCAVATED DEPTH. THE CONTRACTORS BID SHALL PROVIDE FOR ALL WORK REQUIRED TO FOUND THE BUILDING AT THE BEARING ELEVATIONS NOTED IN THE REFERENCED SOILS REPORT. CONTRACTOR SHALL ALSO PROVIDE UNIT COSTS FOR ADDITIONAL WORK SHOULD THE ACTUAL BEARING LEVELS ENCOUNTERED BE FOUND TO BE BELOW THOSE NOTED IN THE SOILS REPORT. CONVERSELY, UNIT COSTS SHALL APPLY TO LESS WORK, SHOULD THE BEARING ELEVATIONS BE FOUND TO BE ABOVE THOSE NOTED IN THE SOILS REPORT. BEARING ELEVATIONS USED AS A BASIS FOR THE CONTRACTORS BID SHALL BE SPECIFIED IN THE BIDS.

ALL BEARING ELEVATIONS, EXCAVATIONS AND MATERIALS SHALL BE INSPECTED BY A QUALIFIED GEOTECH ENGINEER PRIOR TO PLACEMENT OF CONCRETE. THE GEOTECH ENGINEER SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.

FOOTINGS OR SLABS SHALL NOT BE PLACED INTO OR AGAINST SUBRADE CONTAINING FREE WATER, FROST OR ICE. ALL BEARING STRATA MUST BE PROTECTED FROM FREEZING. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUB-GRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUB-GRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

ALL EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 3'-6" BELOW FINISHED GRADE.

NO PIPING, PLUMBING, ETC. SHALL BE LOCATED BELOW THE FOOTINGS. IF PIPING DOES PASS BELOW, THE FOOTINGS SHALL BE STEPPED DOWN TO THE PIPING LEVEL. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE STEPPED FOOTING DEPTHS AND CONFIGURATIONS WITH THE FINAL MECHANICAL, PIPING, CIVIL, ETC. DRAWINGS. PROVIDE COMPRESSIBLE MATERIAL AROUND ALL PIPES PASSING THROUGH FOUNDATION WALLS AND FOOTINGS.

LATERAL SOIL PRESSURE USED IN THE DESIGN OF RETAINING WALLS (EQUIVALENT FLUID PRESSURE) = 40 PCF.

MODULUS OF SUBGRADE REACTION = 200 PCI (ASSUMED). FINAL SLAB LOADING AND/ OR RACK LAYOUT SHALL BE CHECKED WHEN ACTUAL MODULUS IS KNOWN. ARCHITECT/OWNER SHALL FURNISH MODULUS, LOADINGS, RACK LAYOUTS AND DETAILS, PROPOSED JOINTS, Etc. FOR ANALYSIS PRIOR TO CASTING THE FLOOR SLABS.

ALL COMPACTED FILL MATERIAL SHALL BE INSPECTED AND APPROVED BY THE PROJECT SOILS ENGINEER. DEPTHS OF LIFTS, COMPACTION DENSITIES, MOISTURE CONTENTS, ETC. SHALL BE AS SPECIFIED BY THE PROJECT SOILS ENGINEER, SEE THE REFERENCED SOIL REPORT FOR ADDITIONAL INFORMATION.

ALL SLAB-ON-GRADE AREAS SHALL BE PROOF ROLLED. ALL SOFT SPOTS ENCOUNTERED SHALL BE REMOVED AND REPLACED TO FINISHED GRADE WITH APPROVED FILL MATERIAL. INSPECTION, REVIEW AND COMPACTED FILL REQUIREMENTS SHALL BE BY THE PROJECT SOILS ENGINEER. CONSULT THE PROJECT SOILS ENGINEER FOR ADDITIONAL INFORMATION AND / OR REQUIREMENTS.
GENERAL CONTRACTOR SHALL COORDINATE FINAL STEP FOOTING LOCATIONS WITH THE PRECAST CONCRETE MANUFACTURER'S WALL PANEL LAYOUT, AS WELL AS THE FINAL GRADE ELEVATIONS ESTABLISHED (MAINTAIN A MINIMUM FROST COVER TO BOTTOM OF FOOTINGS OF 42 INCHES.

ALL LOCAL, STATE AND FEDERAL REGULATIONS AND PROCEDURES REGARDING SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY SHOULD THE SOILS CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON THE BORING LOGS.

CONCRETE AND REINFORCING:

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301), LATEST EDITIONS.

ALL NORMAL WEIGHT CONCRETE (145 P.C.F.) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

SPREAD FOOTINGS	-	3000	PSI
FOUNDATION WALLS	-	3000	PSI
SLABS-ON-GRADE	-	4000	PSI
NON-COMPOSITE DECK	-	4000	PSI

THE COMPRESSIVE STRENGTH OF ALL GROUT USED TO PROVIDE LEVEL BEARING OF COLUMN BASE PLATES SHALL MATCH THE COMPRESSIVE STRENGTH OF THE SUPPORTING CONCRETE SUBSTRUCTURE.

CALCIUM CHLORIDE AND/OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED IN ANY CONCRETE, INCLUDING THAT TO BE PLACED ON METAL DECKS AND/OR PRECAST CONCRETE DECKS.

ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE, SHALL BE AIR ENTRAINED 6%, WITH A TOLERANCE OF ±1.5%, AS DELIVERED, UNLESS THEY HAVE A SPECIFIED STRENGTH 5000 PSI OR GREATER.

FLY ASH, IF UTILIZED AND APPROVED, SHALL BE LIMITED TO 25% OF THE CEMENT CONTENT.

ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS DURING PLACING. IF VIBRATORS ARE USED, DO NOT OVER-VIBRATE OR TRANSPORT CONCRETE ALONG THE FORMS BY VIBRATING.

TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN CHAPTER 16 OF ACI-301 SPECIFICATION OR PER ARCHITECTURAL SPECIFICATIONS.

COLD WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-306. HOT WEATHER CONCRETING SHALL BE DONE IN ACCORDANCE WITH ACI-305.

REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM SPECIFICATION A-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 315 AND 315R. PROVIDE SHOP DRAWINGS FOR ALL FABRICATED ITEMS FOR REVIEW.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 315-80 AND 315R-80.

WELDING OF REINFORCING BARS WILL ONLY BE ALLOWED WHEN SHOWN ON THE STRUCTURAL DRAWINGS. IN NO INSTANCE SHALL WELDING BE DONE AT THE BEND OF A BAR, NOR SHALL THERE BE ANY TACK WELDING DONE BETWEEN CROSSING BARS. WHEN WELDING IS SHOWN, PROCEDURES SHALL BE IN ACCORDANCE WITH "RECOMMENDED PRACTICE FOR WELDING REINFORCEMENT STEEL, METAL INSERTS AND CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION", AWS D12.1.

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR THE REINFORCEMENT IN ALL CAST-IN-PLACE CONCRETE WORK:

FOOTINGS AND CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	-	3"
FORMED SURFACES PERMANENTLY EXPOSED TO EARTH OR WEATHER (#5 BARS OR SMALLER)	-	1 1/2"
(#6 BARS OR LARGER)	-	2"
FORMED SURFACES NOT EXPOSED TO WEATHER OR EARTH SLABS, WALLS, JOISTS	-	3/4"
BEAMS, COLUMNS	-	1 1/2"

SEE DETAILS FOR ADDITIONAL REQUIREMENTS.

THE MAXIMUM LENGTH OF WALL POURS SHALL BE 100 FEET. THE VERTICAL ENDS OF WALLS SHALL BE BULK-HEADED AND PROVIDED WITH KEYWAYS AND DOWELS TO ENGAGE SUCCEEDING CONCRETE POURS. AT EXPOSED WALLS, PROVIDE CONTROL JOINTS UNIFORMLY AT SPACINGS NOT TO EXCEED 20 FEET CENTERS.

PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.

REINFORCEMENT SHALL BE CONTINUOUS ACROSS JOINTS AND AROUND CORNERS OR SPLICE BARS SHALL BE PROVIDED IN ACCORDANCE WITH ACI STANDARDS 315 AND 315R. CORNER BARS SHALL BE PROVIDED AT ALL WALL CORNERS, EQUAL TO THE HORIZONTAL WALL REINFORCEMENT, HEATING OF THE REINFORCING BARS FOR BENDING WILL NOT BE PERMITTED.

WHERE DOWELED, DOWELS SHALL MATCH SIZE AND QUANTITY OF MAIN REINFORCING, UNLESS OTHERWISE NOTED.

LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318, LATEST EDITION, OR 40 DIAMETERS, WHICHEVER IS GREATER.

FOUNDATION WALLS AND GRADE BEAMS SHALL HAVE A MINIMUM OF TWO (2) - #5 BARS TOP AND BOTTOM CONTINUOUS, UNLESS OTHERWISE SHOWN OR NOTED.

PLACE TWO (2) - #5 BARS (EACH FACE) WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE, UNLESS OTHERWISE SHOWN OR NOTED.

CONTROL JOINTS FOR SLABS-ON-GRADE SHALL BE IN A RECTANGULAR PATTERN AND SHALL BE SPACED NOT MORE THAN THREE (3) TIMES THE SLAB THICKNESS (IN FEET) OR 16 FT. ON CENTER, WHICHEVER IS LESS, UNLESS NOTED OTHERWISE ON PLAN. ASPECT RATIO OF UNJOINTED SLABS SHALL BE AS CLOSE TO 1:1 AS POSSIBLE, REDUCE MAXIMUM SPACING, AS REQUIRED. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL, MECHANICAL, ETC.

VAPOR BARRIER, IF REQUIRED (SEE ARCHITECTURAL DRAWINGS) SHALL BE 6 MIL, MINIMUM, AND BE INSTALLED IN MAXIMUM SHEET SIZE AND A MINIMUM JOINTS, PROVIDE A MINIMUM OF 6" LAPS BETWEEN ADJACENT SHEETS. CARE SHALL BE EXERCISED TO PREVENT DAMAGE OR RUPTURE DURING CONSTRUCTION. LOCATION OF VAPOR BARRIER BELOW THE SLABS SHALL BE DETERMINED ON A CASE BY CASE BASIS; CONTRACTOR SHALL CONSULT ACI 302, APPLICABLE EDITION, FOR ADDITIONAL INFORMATION. SEE THE PROJECT SOILS REPORT FOR ADDITIONAL INFORMATION.

GENERAL CONTRACTOR SHALL CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK, AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR PROPER LOCATION BEFORE PLACING CONCRETE. PITCH CONCRETE SLABS AS REQUIRED TO ALL FLOOR DRAINS.

NO STRUCTURAL CONCRETE SHALL BE POURED UNTIL THE CONCRETE DESIGN MIXES, THE CONCRETE PLACEMENT PROCEDURE, THE LOCATION OF CONSTRUCTION JOINTS AND THE SETTING OF REINFORCING STEEL IS REVIEWED BY THE ENGINEER.

ALL ADHESIVE TYPE ANCHORS MUST BE INSTALLED BY QUALIFIED INSTALLERS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII). NO ADHESIVE TYPE ANCHORS CAN BE INSTALLED IN CONCRETE LESS THAT 21 DAYS OLD.

NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE WORK, UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION. THIS INCLUDES PUMPING THROUGH ALUMINUM PIPE.

ELECTRICAL CONDUIT MUST BE PLACED ABOVE THE BOTTOM REINFORCEMENT AND BELOW THE TOP REINFORCEMENT. ELECTRICAL CONDUIT EMBEDDED IN SLABS SHALL NOT BE LARGER THAN 1/3 OF THE SLAB THICKNESS AND SHALL NOT BE SPACED CLOSER THAN THREE CONDUIT DIAMETERS.

PRECAST CONCRETE PANELS:

THE PRECAST CONCRETE MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL PRECAST PANELS, INCLUDING REINFORCING, INSERTS AND CONNECTIONS TO THE STRUCTURE NOT SPECIFICALLY CALLED OUT ON THE DRAWINGS. PANELS 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 AND INSTALLATION OF ALL PANELS SHALL BE IN ACCORDANCE WITH A.C.I. 318 AND 301, LATEST EDITION.

WALL PANELS SHALL BE DESIGNED TO RESIST WIND LOADS IMPARTED BY THE ROOF DIAPHRAGM. ADDITIONAL CONSIDERATION MUST BE GIVEN TO PANEL SHRINKAGE, THERMAL BOWING, ECCENTRIC LOADING DUE TO BOWING AND/OR ERECTION, LATERAL EARTH PRESSURES, PROJECT SPECIFICATIONS AND TOLERANCES, ETC., WHEN DESIGNING THE PANELS.

THE PRECAST CONCRETE MANUFACTURER SHALL FOLLOW ALL DETAILS AS NOTED ON THE CONTRACT DOCUMENTS, UNLESS SPECIFIC WRITTEN REQUESTS FOR ALTERNATE DETAILS ARE SUBMITTED. THE GENERAL CONTRACTOR, IN CONJUNCTION WITH THE PRECAST CONCRETE CONTRACTOR, SHALL COORDINATE WITH THE STRUCTURAL STEEL AND OTHER AFFECTED TRADES TO ACCOMMODATE ALTERNATE DETAILS.

PROVIDE SLOTTED / SLIP CONNECTIONS AT ALL STEEL TO PRECAST PANEL DETAILS AT RE-ENTRANT CORNERS AND WHERE NOTED. PROVIDE FOR 1.5" HORIZONTAL MOVEMENT UNLESS OTHERWISE NOTED ON THE PLANS AND DETAILS.

PRECAST PANELS SHALL BE ERECTED AFTER CONCRETE FLOORS AND METAL ROOF DECKS ARE IN PLACE, UNLESS ADEQUATE TEMPORARY BRACING/SHORING IS UTILIZED.

ALL PRECAST PANEL CONNECTIONS TO THE STRUCTURAL FRAME SHALL MAKE ALLOWANCE FOR EXPANSION AND CONTRACTION OF THE PANELS.

NO PRE-STRESSING STRAND MAY BE CUT WITHOUT PRIOR APPROVAL OF THE MANUFACTURER.

PRECAST CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL ALL REQUIRED STEEL HEADERS AND/OR CONNECTIONS AT OVERHEAD DOOR OPENING LOCATIONS, UNLESS NOTED OTHERWISE, FOR ALL OPENINGS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.

SUBMIT THE SHOP DRAWINGS AND DESIGN CALCULATIONS STAMPED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS, RESPONSIBLE FOR THE DESIGN, FOR ALL CONNECTIONS AND MEMBERS FURNISHED BY THE PRECAST CONCRETE SUBCONTRACTOR. CERTIFICATION OF THE DOCUMENTS BY THE SUBCONTRACTOR IMPLIES ACCEPTANCE OF DESIGN RESPONSIBILITY.

THE BUILDING / STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED TO SUPPORT THE PRECAST PANELS AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES. ALL OF THE BRACING, AS DESIGNED AND FURNISHED BY THE PRECAST SUPPLIER MUST BE LEFT IN PLACE UNTIL THE STRUCTURE HAS BEEN ERECTED AND COMPLETED (INCLUDING: FRAMING, DECKING, CONNECTIONS, ETC.) THE GENERAL CONTRACTOR, AT HIS EXPENSE, SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND / OR REMOVED, PRIOR TO THE COMPLETION OF THE PROJECT.

ALL LOCAL, STATE AND FEDERAL REGULATIONS AND PROCEDURES REGARDING SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR.

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", 9TH EDITION AND THE AISC "CODE OF STANDARD PRACTICE", 2000 EDITION.

STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS (UNLESS OTHERWISE NOTED).

W SHAPES	ASTM A992
MISC PLATES AND SHAPES	ASTM A36
STRUCTURAL TUBING (HSS)	A-500 GRADE B
STRUCTURAL PIPE	A-53
ANCHOR RODS	F-1554 GR.36
STRUCTURAL BOLTS	A-325-N
EXPANSION ANCHORS	STUD TYPE, BY HILTI, OR EQUIV
ADHESIVE ANCHOR SYSTEM	AC-100 PLUS, BY POWER OR EQUIV - CONCRETE MUST BE CURED A MINIMUM OF 21 DAYS
	HILTI HY 150 MAX-SD & RE 500-SD-SD
PRECAST ANCHORS	WEDGEBOLTS, BY POWERS OR EQUIV

ALL BEAMS SHALL BE DETAILED AND INSTALLED WITH NATURAL CAMBER UP. ALL SHOP AND FIELD WELDING SHALL BE MADE IN ACCORDANCE WITH A.W.S. D1.1 "CODE FOR WELDING IN BUILDING CONSTRUCTION," AND SHALL BE MADE BY QUALIFIED "CERTIFIED" WELDERS. PROVIDE MINIMUM WELD SIZE PER AISC J2.1 AND J2.2.

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, UNLESS OTHERWISE NOTED. CONNECTIONS SHALL BE DESIGNED FOR 50% OF THE TOTAL ALLOWABLE UNIFORM LOAD (IN KIPS) DERIVED FROM THE AISC MANUAL'S TABLE OF "UNIFORM LOAD CONSTANTS" FOR NON-COMPOSITE BEAMS. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2).

MOMENT CONNECTIONS NOTED ON DRAWINGS SHALL BE DESIGNED TO DEVELOP FULL CAPACITY OF MEMBER SPECIFIED, UNLESS DESIGN MOMENTS AND SHEARS ARE NOTED ON THE DRAWINGS. AT THE STEEL SUBCONTRACTORS OPTION, BOLTED OR WELDED CONNECTIONS CAN BE UTILIZED, PROVIDED THAT THEY ARE ABLE TO RESIST THE ABOVE-MENTIONED LOADS. CONNECTIONS WILL BE REVIEWED FOR COMPLIANCE, SUBSTANTIATING DESIGNS / CALCULATIONS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS.

BRACING CONNECTIONS FOR BRACED FRAMES INDICATED ON THE DRAWINGS SHALL BE DESIGNED FOR THE MAXIMUM TOTAL LOADS (ASD) SHOWN ON THE BRACING DETAILS AND ELEVATIONS. CONNECTIONS SHALL BE REVIEWED FOR COMPLIANCE. SUBSTANTIATING DESIGNS / CALCULATIONS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS.

STEEL CONNECTIONS ARE TO BE DESIGNED BY THE STEEL SUBCONTRACTOR IN ACCORDANCE WITH AISC SPECIFICATIONS (16.3-9) AND AS APPROPRIATE FOR THE FABRICATOR'S STANDARD SHOP PRACTICES, UNLESS NOTED OTHERWISE. DESIGNS SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS AND STAMPED CALCULATIONS SUBMITTED. DRAWINGS AND CALCULATIONS MUST BE SUBMITTED CONCURRENTLY.

ALL BOLTED JOINTS ARE CONSIDERED SNUG TIGHT UNLESS NOTED OTHERWISE. ALL BOLTED JOINTS THAT ARE SLIP-CRITICAL JOINTS, INCLUDE BUT ARE NOT LIMITED TO: MOMENT RESISTING JOINTS, JOINTS UTILIZING A490 BOLTS, JOINTS UTILIZING A COMBINATION OF BOLTS AND WELDS. NO LESS THAN TWO BOLTS SHALL BE USED IN ALL CONNECTIONS.

ALL WELDING SHALL COMPLY WITH AWS D1.1 USING E70XX ELECTRODES. ALL WELDING TO BE DONE BY AWS PRE-QUALIFIED WELDERS, CERTIFIED FOR WELDS MADE. PROVIDE CONTINUOUS MINIMUM SIZED WELDS PER AISC REQUIREMENTS, UNLESS NOTED OTHERWISE.

THE MINIMUM SIZE OF FILLET WELDS SHALL BE AS SPECIFIED IN TABLE J2.4 IN THE AISC 'MANUAL OF STEEL CONSTRUCTION'.

ALL STRUTS, HANGERS, AND BRACES SHALL HAVE CONNECTIONS DESIGNED TO DEVELOP THE FULL ALLOWABLE TENSILE STRENGTH OF THE MEMBER UNLESS THE DESIGN FORCE IS INDICATED ON THE DRAWINGS, IN WHICH CASE THE CONNECTIONS SHALL BE DESIGNED FOR THE FORCE INDICATED.

ALL HSS COLUMNS SHALL HAVE CAP PLATES, WITH A MINIMUM PLATE THICKNESS OF 1/4", OR AS REQUIRED. SEE DETAILS FOR ADDITIONAL INFORMATION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISCELLANEOUS STEEL.

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 INCH.

ALL STEEL TO STEEL CONNECTIONS SHALL BE BOLTED OR WELDED.

ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF APPROVED SHOP PAINT, AS SPECIFIED IN THE ARCHITECTURAL SPECIFICATIONS.

THIS BUILDING'S FRAME IS A NON-SELF-SUPPORTING STEEL FRAME AS DEFINED IN THE AISC CODE OF STANDARD PRACTICE, SECTION 7.9.3 (NINTH EDITION). CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR THE FRAME UNTIL ALL THE DESIGN SUPPORTS (FLOORS AND/OR ROOF) ARE IN PLACE.

ALL BEAM SPLICES, NOT INDICATED ON THE CONTRACT DOCUMENTS, SHALL BE FULL 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.

OPENINGS 1'-4" AND OR LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.

UNLESS NOTED OTHERWISE ON THE PLANS, PROVIDE WT 4 X 5 UNDER ALL ROOF TOP MECHANICAL EQUIPMENT CURBS.

THE ASSEMBLY SHALL BE CONSIDERED UNRESTRAINED FOR THE PURPOSES OF FIRE-RESISTANCE.

THE STAIR DESIGN, CONNECTIONS, CONNECTION TO THE STRUCTURE AND SUPPORT OF THE INTERMEDIATE LANDINGS ARE BY THE STAIR CONTRACTOR. CONTRACTOR TO SUPPLY ALL APPLIED REACTIONS/ LOADS FOR A/E REVIEW, etc.

STAIR DESIGN CALCULATIONS, PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER SHALL BE SUBMITTED FOR REVIEW ALONG WITH THE NECESSARY SHOP DRAWINGS. SUBMITTALS WILL BE REVIEW FOR INFLUENCE AND/OR LOAD APPLICATION TO THE SUPPORTING STRUCTURE, ONLY.

SHOP DRAWINGS FOR ALL STRUCTURAL STEEL ITEMS SHALL BE SUBMITTED FOR TO THE PROFESSIONAL OF RECORD FOR REVIEW.

THE FABRICATOR SHALL SUBMIT FOR REVIEW, ENGINEERED AND CHECKED SHOP DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL. SHOP DDRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF AN ILLINOIS LICENSED STRUCTURAL ENGINEER.

COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS WHICH GOVERN SAFETY REQUIREMENTS FOR STEEL ERECTION. TEMPORARY BRACING AND SUPPORTS SHALL BE PROVIDED, AS REQUIRED, TO ADEQUATELY PROTECT ALL PERSONS AND PROPERTY AND TO ENSURE PROPER ALIGNMENT.

STORAGE OF FABRICATED STEEL AT THE JOB SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. STORED MATERIAL SHALL NOT EXCEED THE DESIGN LOADS OF THE EXISTING STRUCTURE, SO THAT MEMBERS WILL NOT BE DISTORTED, OR OTHERWISE DAMAGED. MATERIALS SHALL BE PROTECTED AGAINST CORROSION AND DETERIORATION.

STEEL JOISTS:

THE STEEL JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, MANUFACTURE AND INSTALLATION OF THEIR PRODUCT, 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 (STANDARD JOIST ONLY), OF THE STEEL JOIST INSTITUTE, LATEST EDITION.

THE STEEL JOIST GIRDER MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN, MANUFACTURE, AND INSTALLATION OF THEIR PRODUCT, INCLUDING ALL ACCESSORIES AND CONNECTIONS, NECESSARY FOR THE COMPLETE INSTALLATION. JOISTS GIRDERS 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 GIRDERS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, INCLUDING LOAD TABLES, OF THE STEEL JOIST INSTITUTE, LATEST EDITION.

WHERE CONCENTRATED OR NON-UNIFORM LOADS OCCUR, THE JOISTS MUST BE DESIGNED TO CARRY THE FULL COMBINATION OF UNIFORM AND NON-UNIFORM LOADS. THE NON-UNIFORM LOADS ARE SPECIFIED ON THE PLANS AND/OR LOADING DIAGRAMS SHOWN. THE JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE JOIST DESIGNS BASED ON THE GIVEN LOADINGS, ADDITIONALLY, THEY SHALL BE RESPONSIBLE FOR ANY INTERNAL FORCES THAT ARE THE RESULT OF SLOPES AND PITCHES. THE MANUFACTURER SHALL SUBMIT CALCULATIONS FOR ALL SPECIAL JOISTS, PREPARED UNDER THE SUPERVISION OF A LICENSED ENGINEER.

HANGING LOADS SHALL BE AVOIDED BETWEEN PANEL POINTS. IF HANGING LOADS DO OCCUR BETWEEN PANEL POINTS, SECONDARY FRAMING SHALL BE UTILIZED TO FRAME TO JOIST PANEL POINTS. NO LOADS SHALL BE SUPPORTED FROM BRIDGING LINES.

PIPE SUPPORT GUIDELINES (ACTUAL LAYOUTS AND LOADINGS MUST BE REVIEWED PRIOR TO INSTALLATION:

- CONCENTRATED LOADS (PIPING, ETC.): LOADS MUST BE POSITIONED WITHIN 4" OF JOIST PANEL POINT OR PROVIDE STIFFENER ANGLES AS SHOWN ON THE DRAWINGS.
- PIPING PERPENDICULAR TO JOISTS - FOR PIPING EXCEEDING 20 PLF,

STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, AND TESTS OF STRUCTURAL ELEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF IBC 2018.
2. THE FOLLOWING TABLES REPRESENT THE MINIMUM REQUIRED LEVEL OF TESTING AND INSPECTION PER IBC 2018, CHAPTER 17 AND SHALL BE USED IN CONJUCTION WITH THE APPLICABLE MATERIAL STANDARDS WHERE REFERENCED. WHERE THE LOCAL AUTHORITY HAVING JURSIDICTION REQUIRES A GREATER LEVEL OF INSPECTION THAN LISTED, THOSE REQUIREMENTS SHALL BE FOLLOWED.

STRUCTURAL OBSERVATIONS (IBC 1704.6)

OBSERVATIONS	*OBSERVATION REQUIREMENTS*	*APPLICABLE*
STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE	FOR SDC D OR HIGHER, WHERE ONE OF THE FOLLOWING CONDITIONS EXIST: 1. RISK CATEGORY III OR IV. 2. HEIGHT OF STRUCTURE IS GREATER THAN 75 FT. 3. SDC E, RISK CATEGORY I OR II, AND GREATER THAN 2 STORIES. 4. WHEN SO DESIGNATED BY THE SEOR. 5. WHEN SUCH OBSERVATION IS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL.	N
STRUCTURAL OBSERVATIONS FOR WIND REQUIREMENTS	FOR Vasd GREATER THAN 110 MPH, WHERE ONE OF THE FOLLOWING CONDITIONS EXIST: 1. RISK CATEGORY III OR IV. 2. HEIGHT OF STRUCTURE IS GREATER THAN 75 FT. 3. WHEN SO DESIGNATED BY THE SEOR. 4. WHEN SUCH OBSERVATION IS SPECIFICALLY REQUIRD BY THE BUILDING OFFICIAL.	N

STRUCTURAL STEEL WELDING: REFERENCED STANDARD AISC360-16	QC	QA
INSPECTION TASKS PRIOR TO WELDING		
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	P	O
WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	P	P
MANUFACTURER CERIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
WELDER IDENTIFICATION SYSTEM [a]	O	O
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) • JOINT PREPARATION • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) • BACKING TYPE AND FIT (IF APPLICABLE)	O	O
FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y-, AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) • JOINT PREPARATIONS • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	P	O
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
FIT-UP OF FILLET WELDS • DIMENSION (ALIGNMENT, GAPS AT ROOT) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	O	O
CHECK WELDING EQUIPMENT	O	-
[a] THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED SHALL BE THE LOW-STRESS TYPE.		
INSPECTION TASKS DURING WELDING		
CONTROL AND HANDLING OF WELDING CONSUMABLE • PACKAGING • EXPOSURE CONTROL	O	O
NO WELDING OVER CRACKED TACK WELDS	O	O
ENVIRONMENTAL CONDITIONS • WIND SPEED WITHIN LIMITS • PRECIPITATION AND TEMPERATURE	O	O
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE/FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.) • PROPER POSITION (F, V, H, OH)	O	O
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	O	O
PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P
INSPECTION TASKS AFTER WELDING		
WELDS CLEANED	O	O
SIZE, LENGTH AND LOCATION OF WELDS	P	P
WEDS MEET VISUAL ACCEPTANCE CRITERIA • CRACK PROHIBITION • WELD/BASE-METAL FUSION • CRATER CROSS SECTION • WELD PROFILES • WELD SIZE • UNDERCUT • POROSITY	P	P
ARC STRIKES	P	P

K-AREA [a]	P	P
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUIT-UP HEAVY SHAPES [b]	P	P
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P
REPAIR ACTIVITIES	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	P	P
* WHEN WELDING OF DOUBLERS PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3IN OF THE WELD.	VISUALLY	
** AFTER ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLE FOR CRACKS.		
NONDESTRUCTIVE TESTING OF CJP JOINTS	TYPE OF QA TEST	
BUILDING RISK CATEGORY iii OR iv • ALL CJP GROVE WELD JOINTS SUBJECT TO TRANSVERSELY APPLIED TENSION IN BUTT, T AND CORNER JOINTS IN MATERIALS 5/16" THICK OR GREATER	ULTRASONIC TEST	
BUILDING RISK CATEGORY ii • MIN 10% OF CJP GROVE WELD JOINTS SUBJECT TO TRANSVERSELY APPLIED TENSION IN BUTT, T AND CORNER JOINTS IN MATERIALS 5/16" THICK OR GREATER	ULTRASONIC TEST	

STRUCTURAL STEEL BOLTING: REFERENCED STANDARD AISC360-16	QC	QA
INSPECTION TASKS PRIOR TO BOLTING (PRETENSIONED AND SLIP-CRITICAL JOINTS)		
MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE	O	O
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPACIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O
INSPECTION TASKS DURING BOLTING (PRETENSIONED AND SLIP-CRITICAL JOINTS)		
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	O	O
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENER ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O
INSPECTION TASKS AFTER BOLTING		
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS.
OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH WELDED CONNECTION

SOILS AND FOUNDATIONS (IBC 1705.6, 1705.7, 1705.8, 1705.9)

ITEM	*INSPECTION TASK*	*REFERENCE*	*FREQUENCY*	*APPLICABLE*
EXCAVATIONS	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	GEOTECHNICAL REPORT	PERIODIC	Y
FILL PLACEMENT	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	GEOTECHNICAL REPORT	PERIODIC	Y
	VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	GEOTECHNICAL REPORT	CONTINUOUS	Y
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	GEOTECHNICAL REPORT	PERIODIC	Y
SHALLOW FOUNDATIONS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	GEOTECHNICAL REPORT	PERIODIC	Y

1705.3 CONCRETE CONSTRUCTION TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE	APPLICABLE TO THIS PROJECT Y/N
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	Y
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	- x	X X	SWS D1.4 ACI 318: 26.6.4	-	Y
3. INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	1908.4	Y
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.[b] a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORINETATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE NOT DEFINED IN 4.a	X	 X	 ACI 318: 17.8.2.4 ACI 318: 17.8.2	-	Y
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH 19, 26.4.3, 26.4.4	1908.1, 1904.2, 1908.2, 1908.3	Y
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 31: 26.5, 26.12	1908.10	Y
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8	Y
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.5.3-26.5.5	1908.9	Y
9. INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND b. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	- -	ACI 318: 26.10	-	N
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: 26.9	-	Y
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-	N
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 26.11.2(b)	-	Y

[a] WHERE APPLICABLE SEE SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE
[b] SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI318, OR OTHER QUALIFICATION PROCEDURES.

OPEN-WEB STEEL JOISTS AND JOIST GIRDERS	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
1. INSTALLATION OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS			
a. END CONNECTIONS - WELDING OR BOLTED	-	Y	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
b. BRIDGING - HORIZONTAL OR DIAGONAL	-	-	-
1. STANDARD BRIDGING	-	Y	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1	-	Y	-

SPECIAL INSPECTION GENERAL NOTES:

SPECIAL INSPECTORS (SI) SHALL BE RETAINED AND PAID BY CONTRACTOR.
THE SI SHALL BE FULLY QUALIFIED, APPROVED BY THE BUILDING OFFICIALS, REGISTERED BY APPLICABLE REGISTRATION BOARD IF REQUIRED AND ACCEPTABLE TO THE ARCHITECT.

THE DUTIES OF THE SI SHALL INCLUDE, BUT NOT LIMITED TO: VERIFICATION OF CONSTRUCTION QUALITY CONTROL TESTING, COMPLIANCE WITH CONSTRUCTION DOCUMENTS, BUILDING CODE REQUIREMENTS, AND LOCAL BUILDING DEPARTMENT REQUIREMENTS.

IT IS THE CONTRACTOR'S RESPONSIBLITY TO PROVIDE PROPER NOTIFICATION TO THE SI AND PROCEED WITH THE CONSTRUCITON ONLY AFTER THE SI'S REVIEW AND APPROVAL.

SI SHALL KEEP RECORD OF ALL INSPECTION AND TESTING. THE SI SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, ARCHITECT AND ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENSION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONAL PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUEMNTING THE REQUIRED SPECIAL INSPECTION SHALL BE SUBMITTED TO AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL. INTRIM REPORTS SHALL BE SUBMITTED PERIODICALLY WITH A MINIMUM FREQUENCY OF THE WEEKS.

OBSERVATIONS BY STRUCTURAL ENGINEER OF RECORD (SER) IS NOT REQUIRED. IF STRUCTURAL OBSERVATION IS REQUIRED BY THE BUILDING AUTHORITY, IT SHALL BE AS DIRECTED BY THE OWNER TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE.

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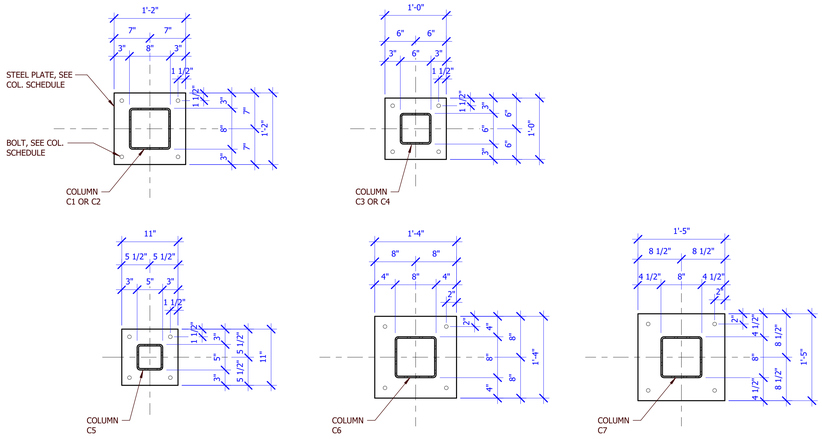
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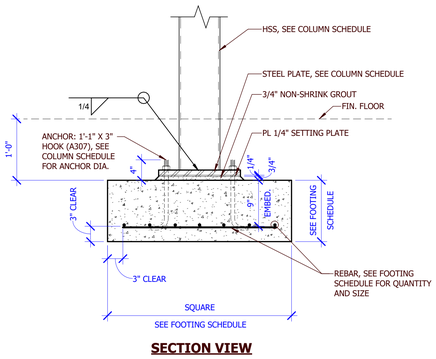
STRUCTURAL SPECIAL INSPECTIONS

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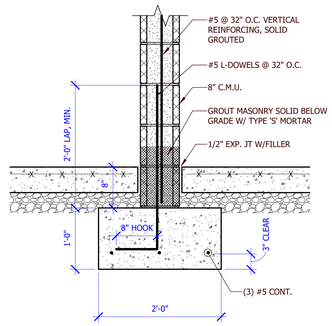


BASE PLATE PLAN VIEWS

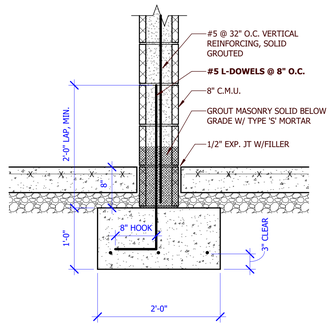


SECTION VIEW

1 COLUMN FOOTING DETAILS
1" = 1'-0"



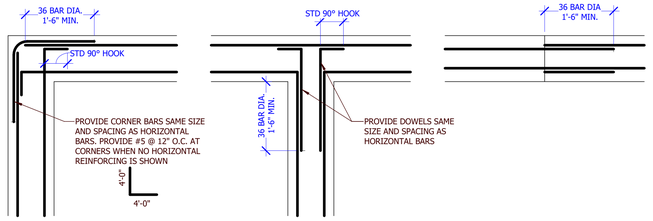
2 LOFT WALL FOUNDATION DETAIL
1" = 1'-0"



3 SW-1 SHEAR WALL FOUNDATION DETAIL
1" = 1'-0"

COLUMN SCHEDULE

ELEVATION	MARK	C1	C2	C3	C4	C5	C6	C7
ROOF / VESTIBULE / MEZZ / F.F.		HSS 8X8X1/4	HSS 8X8X5/16"	HSS 6X6X5/16"	HSS 6X6X1/4"	HSS 5X5X1/4"	HSS 8X8X3/8"	HSS 10X10X3/8"
		SEE PLAN						
BASE PLATE		PL 1" X 14" X 1'-2"	PL 1" X 14" X 1'-2"	PL 1" X 12" X 1'-0"	PL 1" X 12" X 1'-0"	PL 1" X 11" X 0'-11"	PL 1" X 16" X 1'-4"	PL 1" X 17" X 1'-5"
ANCHORS		(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 3/4" Ø F1554 GR 36	(4) 1" Ø F1554 GR 36	(4) 1" Ø F1554 GR 36
DETAIL		1 / S1.1	1 / S1.1	1 / S1.1	1 / S1.1	1 / S1.1	9 / S1.2	1 / S1.1
REMARKS								



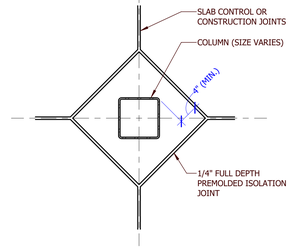
CORNER **INTERSECTION** **CONSTRUCTION JOINT**

4 CONCRETE WALL DETAILS
3/4" = 1'-0"

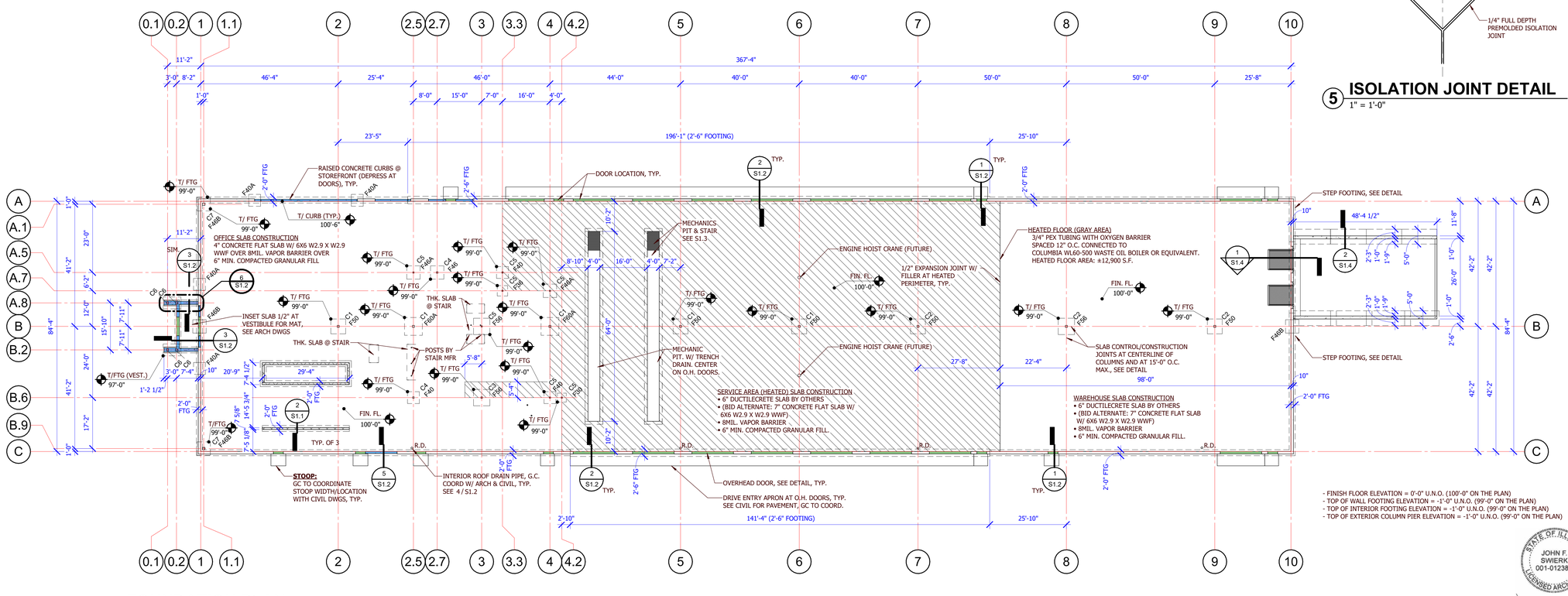
FOOTING SCHEDULE

MARK	SIZE	REINFORCEMENT	UNFACTORED DESIGN LOADS DOWN	UP	HORZ.	DETAIL	NOTES
F30	3'-0" x 3'-0" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F36	3'-6" x 3'-6" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F40	4'-0" x 4'-0" x 1'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F40A	4'-0" x 4'-0" x 3'-0"	(4) #5 BARS EACH WAY				1 / S1.1	
F46	4'-6" x 4'-6" x 1'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F46A	4'-6" x 4'-6" x 2'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F46B	4'-6" x 4'-6" x 3'-0"*	(5) #5 BARS EACH WAY				1 / S1.1	*MATCH DEPTH WITH TRENCH FOOTING
F50	5'-0" x 5'-0" x 1'-0"	(5) #5 BARS EACH WAY				1 / S1.1	
F56	5'-6" x 5'-6" x 1'-1"	(6) #5 BARS EACH WAY				1 / S1.1	
F60	6'-0" x 6'-0" x 1'-2"	(7) #5 BARS EACH WAY				1 / S1.1	
F60A	6'-0" x 6'-0" x 2'-0"	(7) #5 BARS EACH WAY				1 / S1.1	

NOTE: 4.000 PSF ALLOWABLE NET SOIL BEARING PRESSURE.



5 ISOLATION JOINT DETAIL
1" = 1'-0"



6 FOUNDATION PLAN
1/16" = 1'-0"

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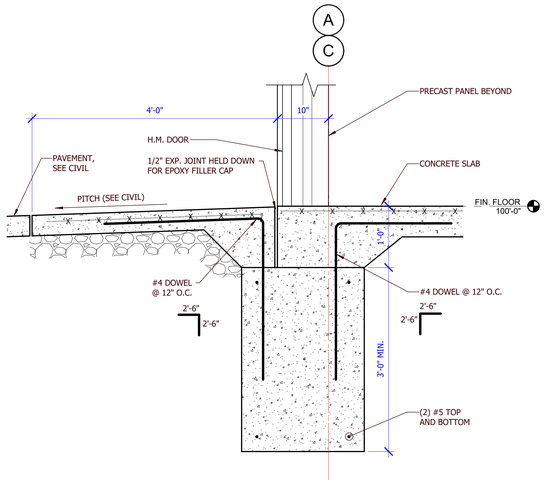
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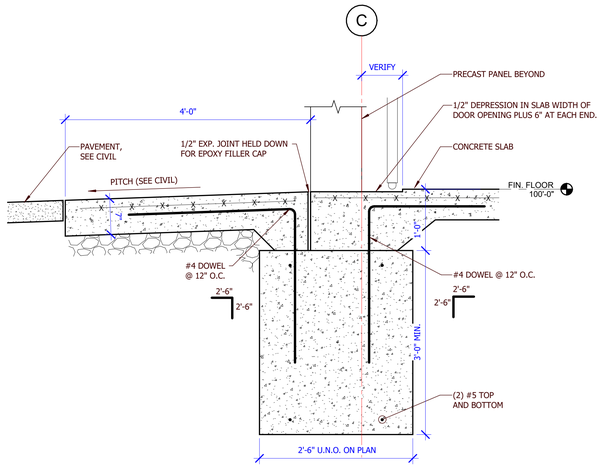
PROJECT NO.	122148
PROJECT MGR.	TPL
FOUNDATION PLAN & DETAILS	
	S1.1

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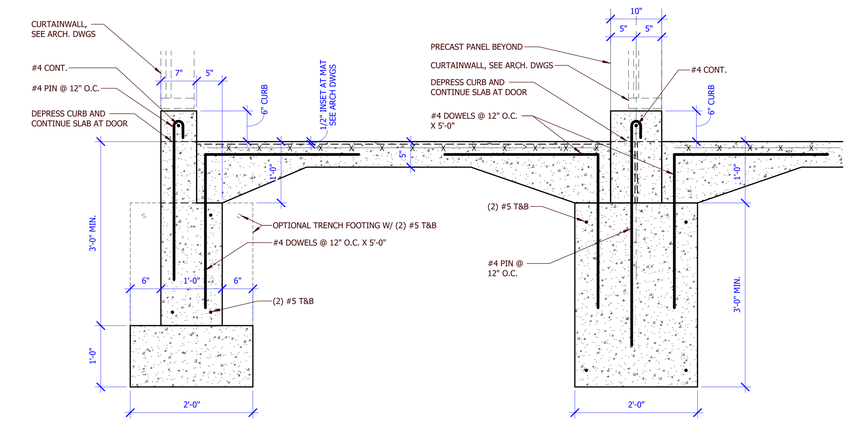
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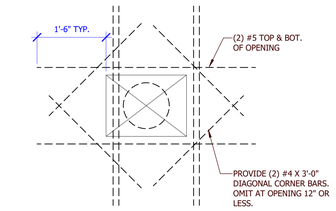
1 H.M. DOOR FOUNDATION SECTION
1" = 1'-0"



2 O.H. DOOR FOUNDATION SECTION
1" = 1'-0"



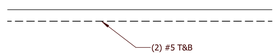
3 VESTIBULE FOUNDATION SECTION
1" = 1'-0"

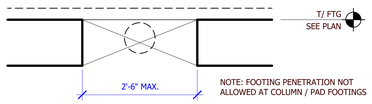


WALL/TRENCH FTG PENETRATION

CONTRACTOR NOTE: PROVIDE 2" MINIMUM RIGID INSULATION AROUND ALL PIPES PASSING THROUGH FOOTINGS/WALLS, TYP.

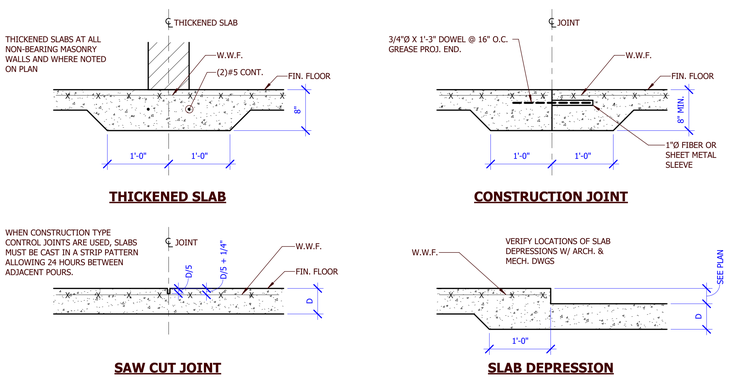
NOTE:
CONTRACTOR TO COORDINATE STEPPED FOOTING DEPTHS & LENGTHS AS REQUIRED WITH THE FINAL MECHANICAL, PLUMBING, & CIVIL DRAWINGS.
NO PIPING, PLUMBING, ETC., TO BE LOCATED BELOW THE BOTTOM / FOOTING ELEVATIONS (TYPICAL)



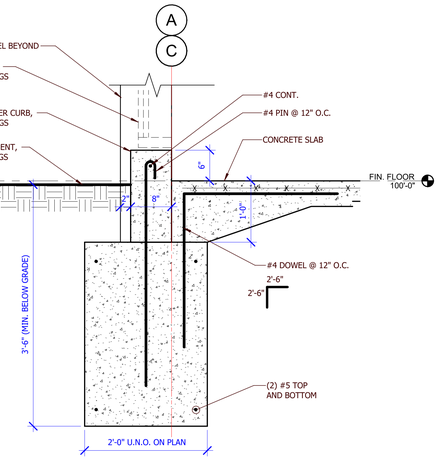


FOOTING PENETRATION

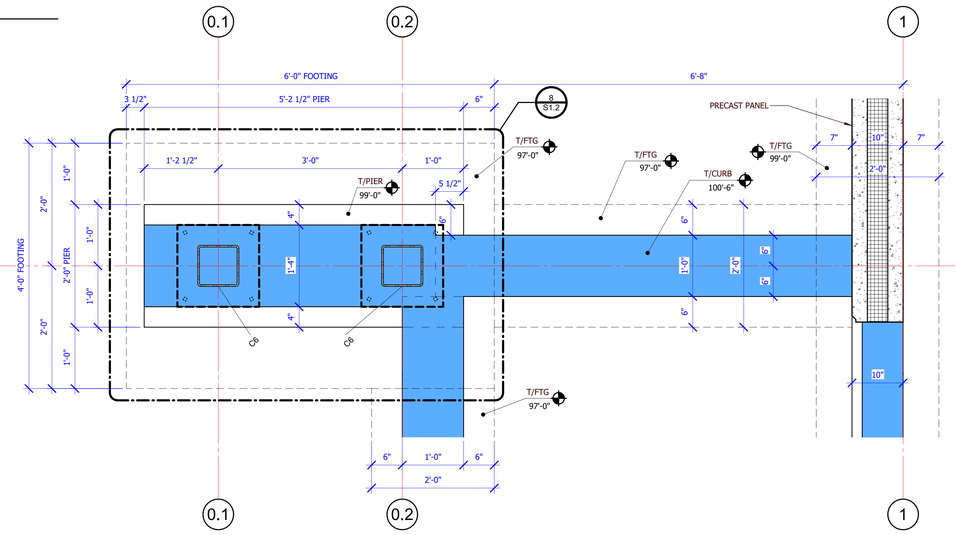
4 TYPICAL PENETRATION DETAILS
3/4" = 1'-0"



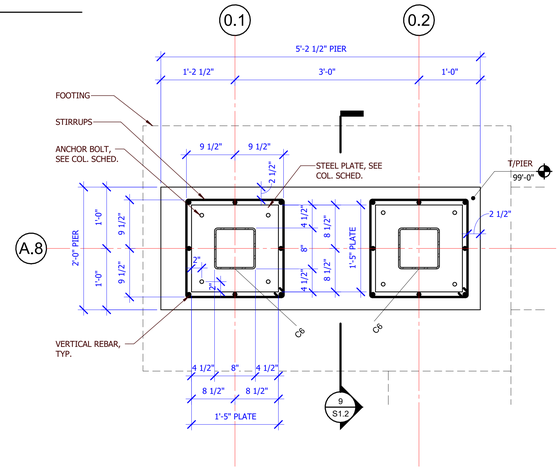
7 SLAB ON GRADE DETAILS



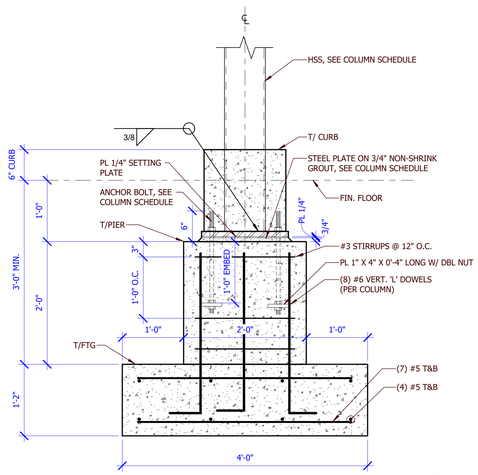
5 STOREFRONT CURB DETAIL
1" = 1'-0"



6 VESTIBULE FOUNDATION PLAN DETAIL
1" = 1'-0"



8 PIER P1 PLAN DETAIL
1" = 1'-0"



9 PIER P1 SECTION
1" = 1'-0"

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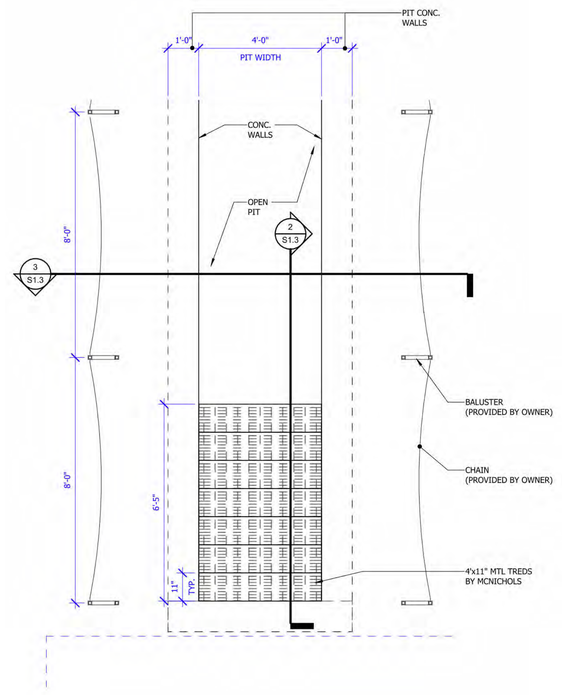
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FOUNDATION DETAILS	

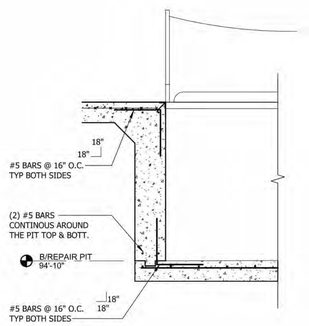
S1.2

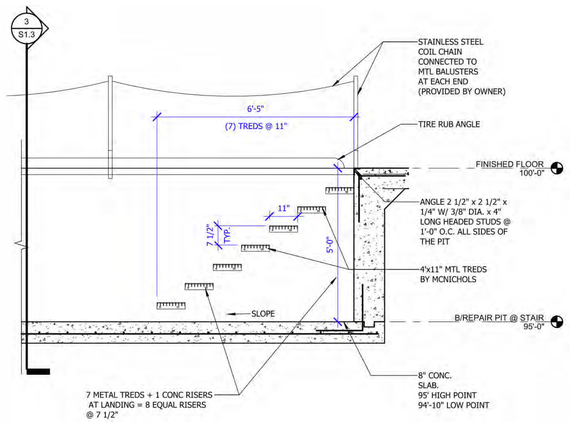
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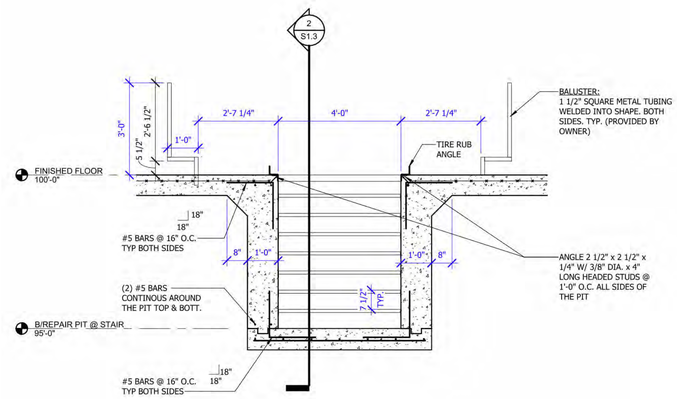
1 REPAIR PIT STAIR PLAN

12" = 1'-0"





2 REPAIR PIT STAIR SECTION



3 REPAIR PIT SECTION

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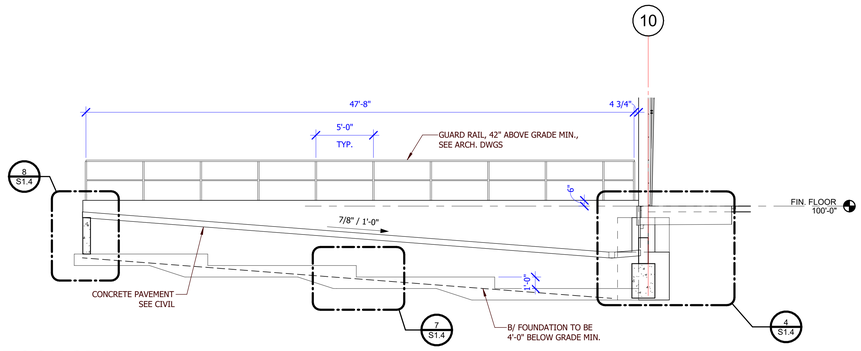
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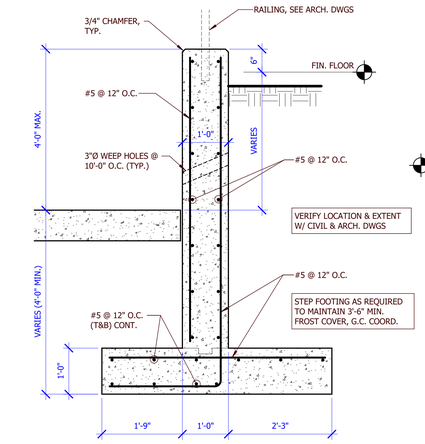
REPAIR PIT DETAILS

S1.3

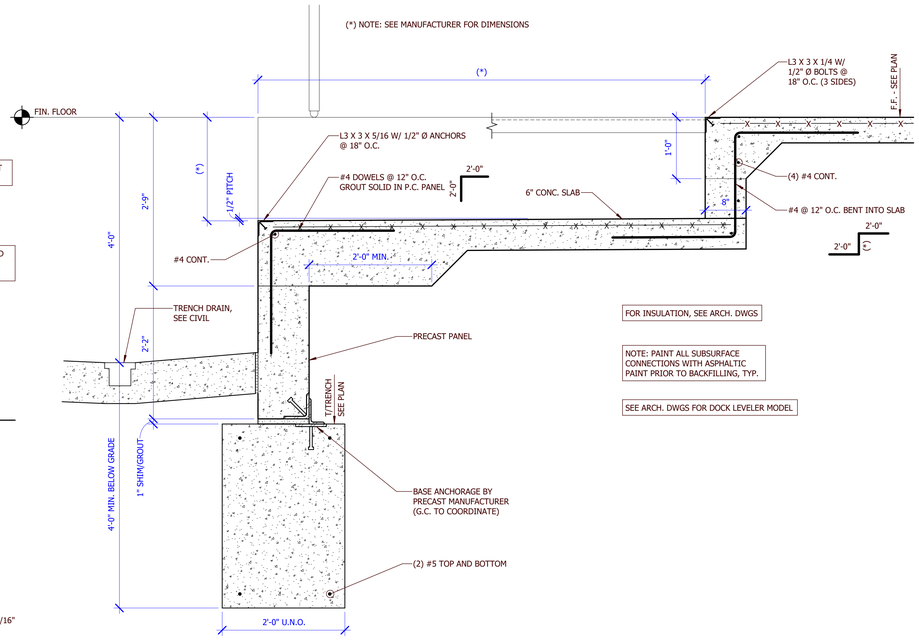
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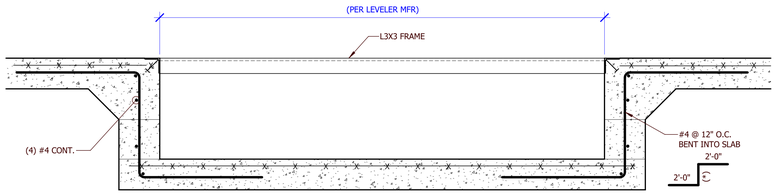
1 DOCK SECTION
3/16" = 1'-0"



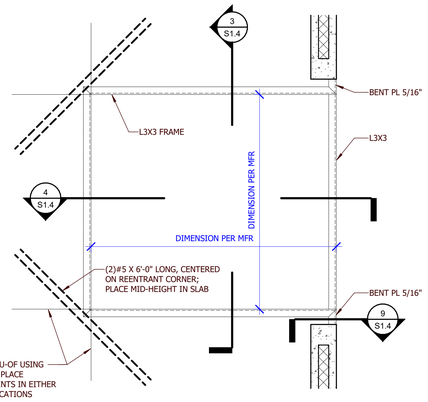
2 RAMP RETAINING WALL SECTION
3/4" = 1'-0"



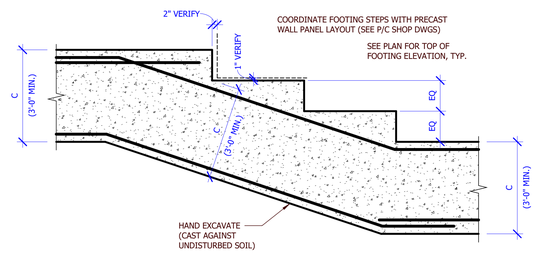
4 DOCK LEVELER SECTION
1" = 1'-0"



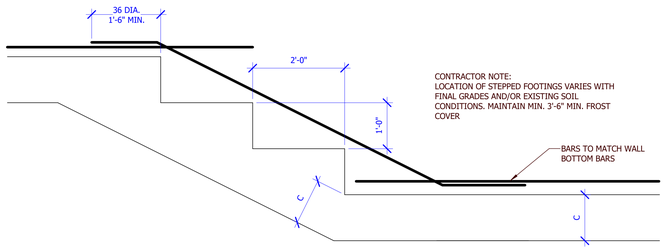
3 DOCK LEVELER PIT SECTION
1" = 1'-0"



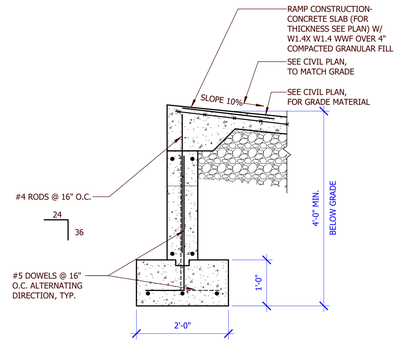
6 DOCK LEVELER PIT PLAN
1/2" = 1'-0"



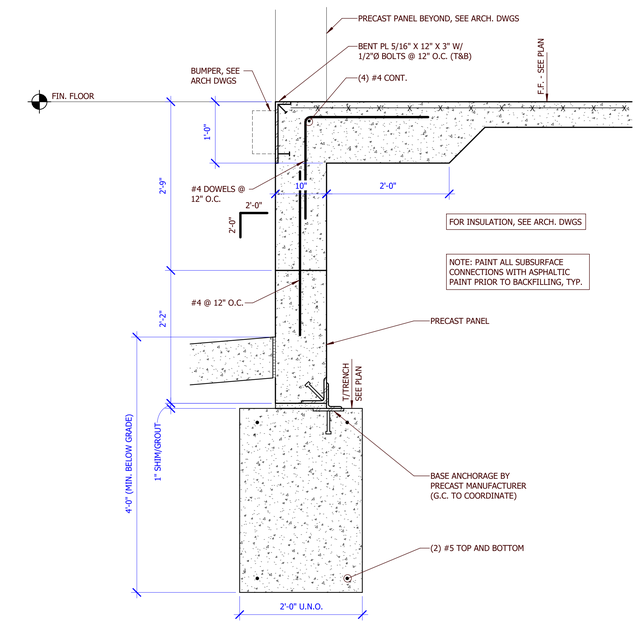
5 PRECAST WALL STEPPED FOOTING DETAIL
1/2" = 1'-0"



7 RAMP RETAINING WALL STEPPED FOOTING
3/4" = 1'-0"



8 FOUNDATION DETAIL @ RAMP
3/4" = 1'-0"



9 DOCK END SECTION DETAIL
1" = 1'-0"

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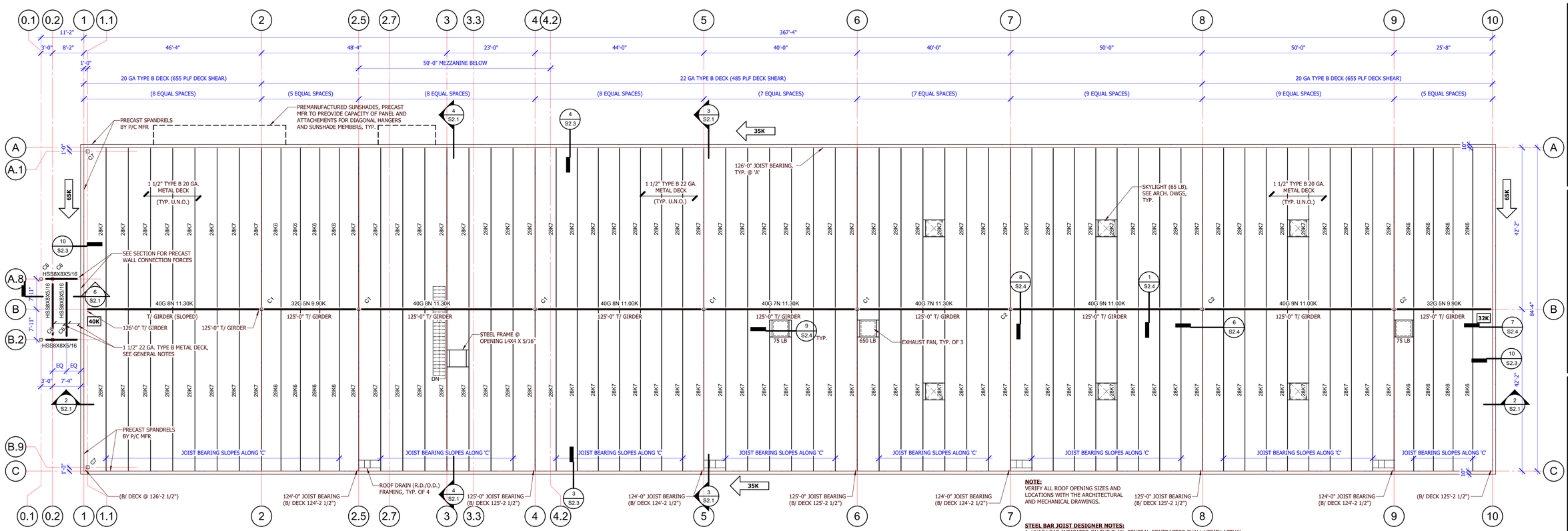
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DOCK, RAMP, AND STEPPED FOOTING DETAILS

S1.4

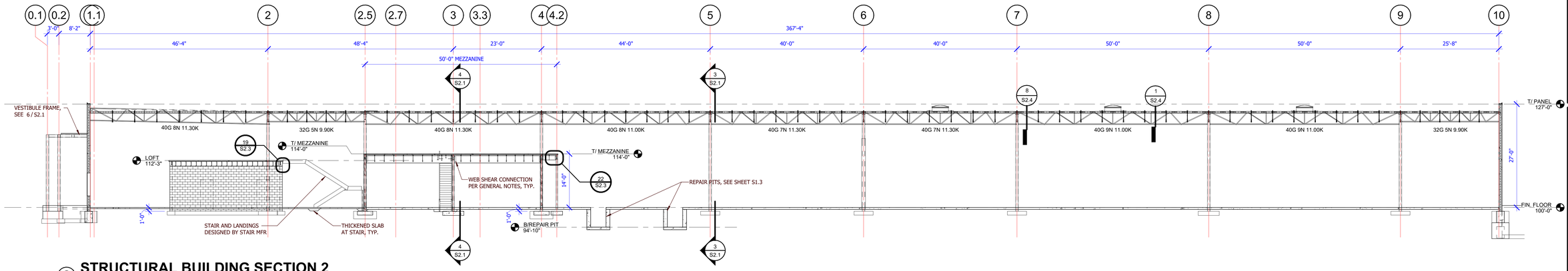
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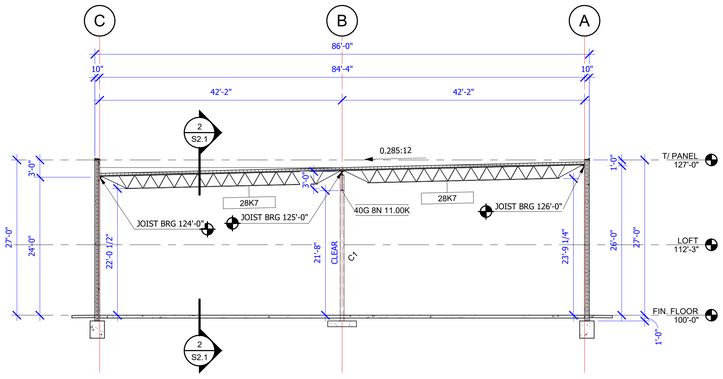
NOTE:
VERIFY ALL ROOF OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

STEEL BAR JOIST DESIGNER NOTES:
1. HVAC LOAD INDICATED ON THE PLAN. GENERAL CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS WITH THE MECHANICAL CONTRACTOR AND/OR DRAWINGS.
2. JOISTS MARKED SPECIAL (SP) SHALL BE DESIGNED TO SUPPORT ADDITIONAL CONCENTRATED LOADS, AT EACH CORNER OF THE UNIT, EQUAL TO 30% OF THE TOTAL UNIT LOAD NOTED ON THE PLAN. FOR JOIST REINFORCEMENT REQUIREMENTS SEE DETAILS

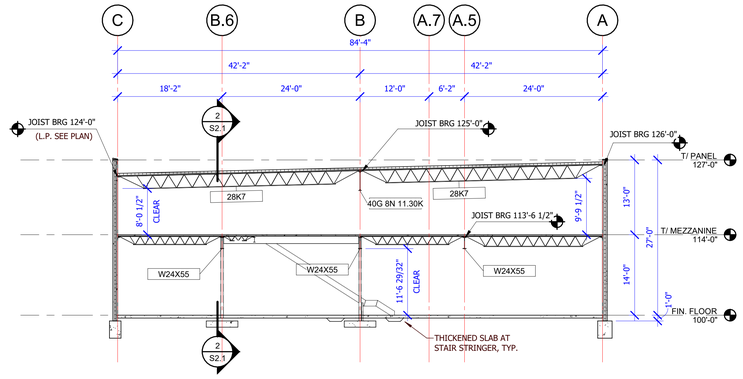
1 ROOF FRAMING PLAN
3/32" = 1'-0"



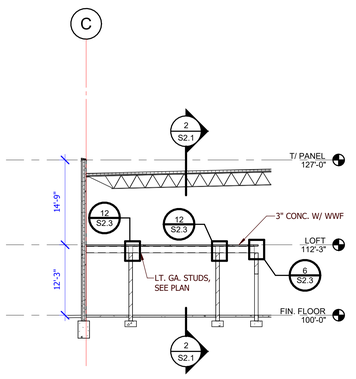
2 STRUCTURAL BUILDING SECTION 2
3/32" = 1'-0"



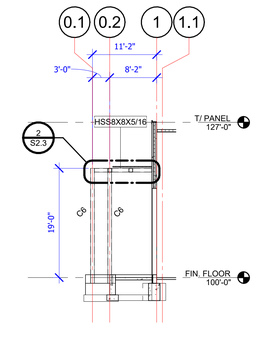
3 STRUCTURAL BUILDING SECTION 3
3/32" = 1'-0"



4 STRUCTURAL BUILDING SECTION 4
3/32" = 1'-0"



5 STRUCT. LOFT SECTION
3/32" = 1'-0"



6 STRUCT. VEST. SECT.
3/32" = 1'-0"

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ROOF FRAMING PLAN & SECTIONS

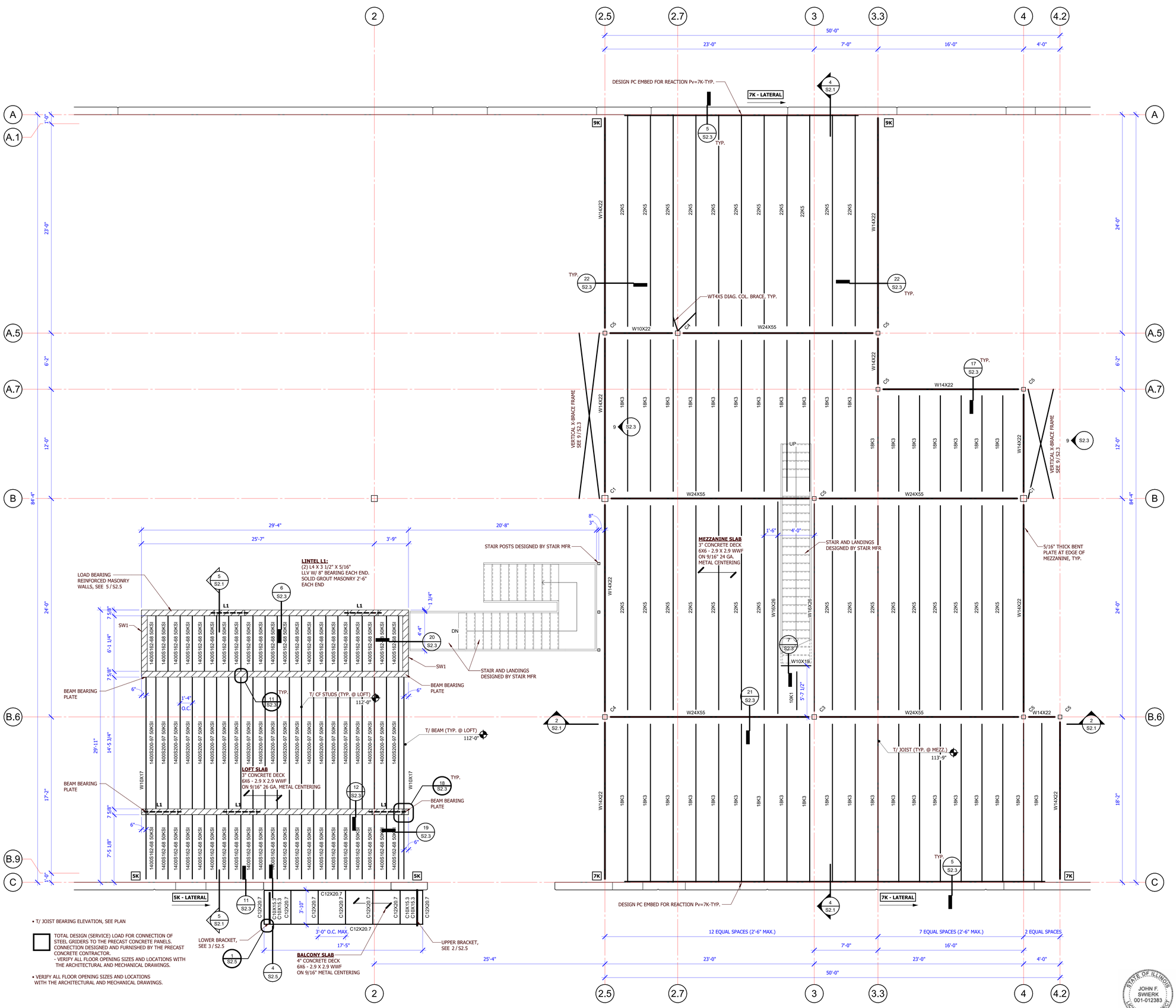
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1 MEZZANINE AND LOFT FRAMING PLAN

1/4" = 1'-0"



- T/ JOIST BEARING ELEVATION, SEE PLAN

TOTAL DESIGN (SERVICE) LOAD FOR CONNECTION OF STEEL GRIDERS TO THE PRECAST CONCRETE PANELS. CONNECTION DESIGNED AND FURNISHED BY THE PRECAST CONCRETE CONTRACTOR.
- VERIFY ALL FLOOR OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

- VERIFY ALL FLOOR OPENING SIZES AND LOCATIONS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.

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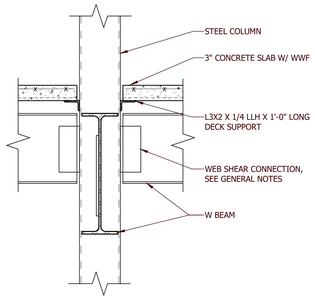
PROJECT NO.	122148
PROJECT MGR.	TPL

MEZZANINE & LOFT FRAMING PLAN

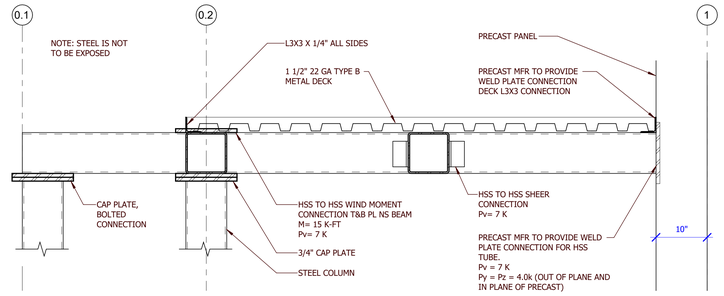
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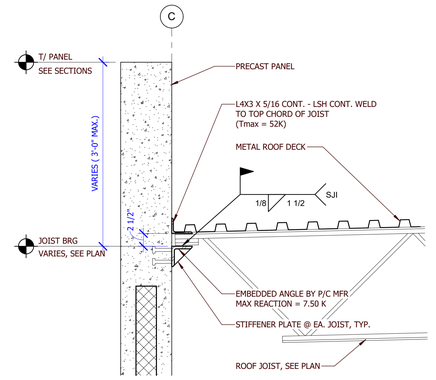
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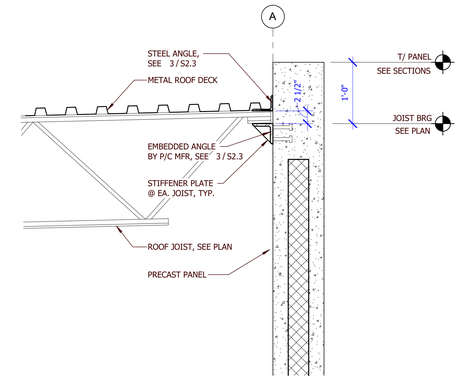
1 MEZZ. COLUMN CONNECTION DETAIL
1" = 1'-0"



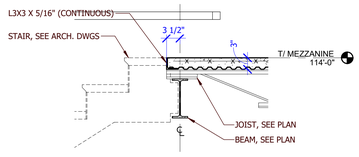
2 VESTIBULE ROOF CONNECTION DETAILS
1" = 1'-0"



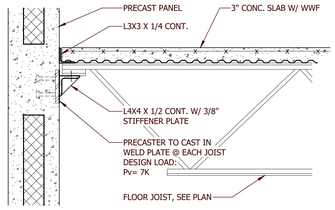
3 ROOF JOIST BEARING ALONG 'C'
1" = 1'-0"



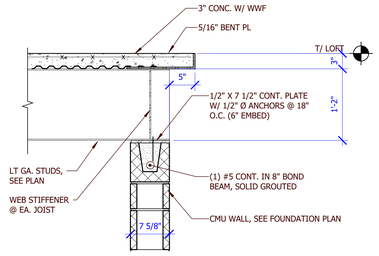
4 ROOF JOIST BEARING ALONG 'A'
1" = 1'-0"



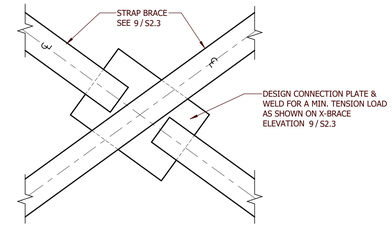
7 MEZZ. STAIR OPENING DETAIL
3/4" = 1'-0"



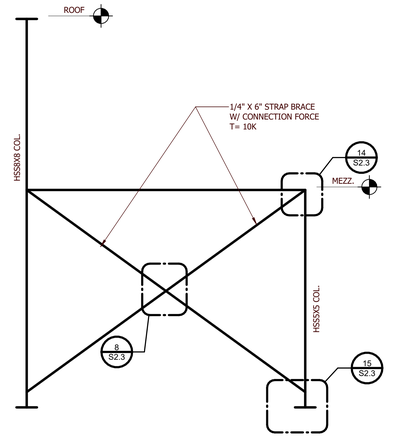
5 MEZZ. JOIST BRG DETAIL
1" = 1'-0"



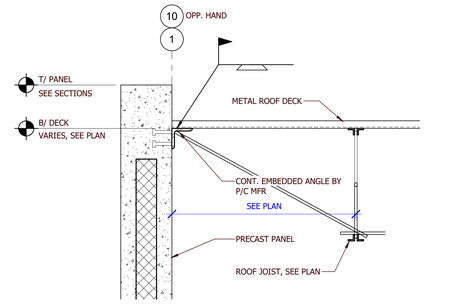
6 LOFT LT GA. BRG AT END
1" = 1'-0"



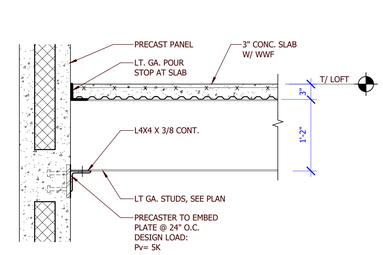
8 X-BRACE CENTER CONNECTION
1" = 1'-0"



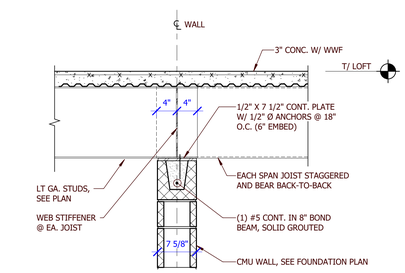
9 X-BRACE ELEVATION
1" = 1'-0"



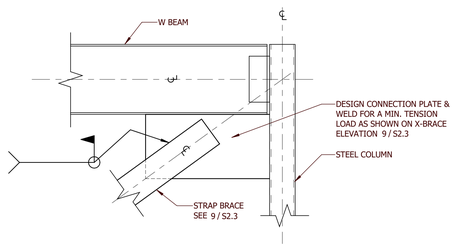
10 ROOF DECK BEARING ALONG '1' & '10'
1" = 1'-0"



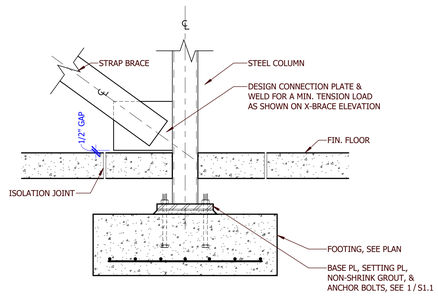
11 LOFT LT GA. BRG AT PANEL
1" = 1'-0"



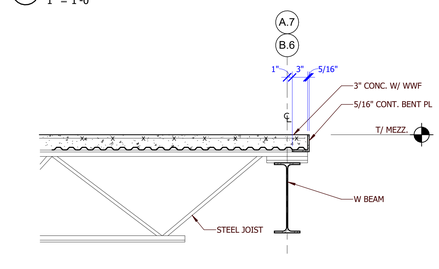
12 LOFT LT GA. BRG AT CMU
1" = 1'-0"



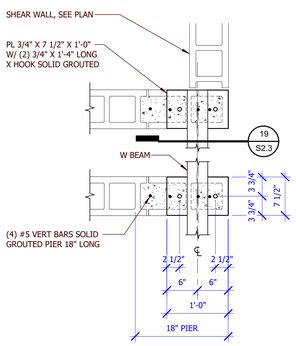
14 X-BRACE TOP CONNECTION
1" = 1'-0"



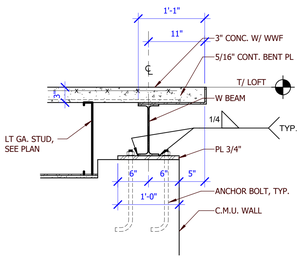
15 X-BRACE BOTTOM CONNECTION
1" = 1'-0"



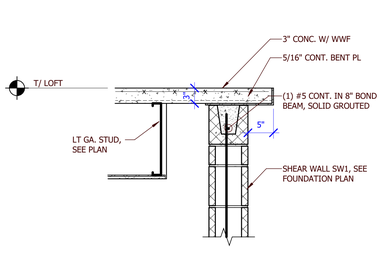
17 MEZZ. EDGE DETAIL A
1" = 1'-0"



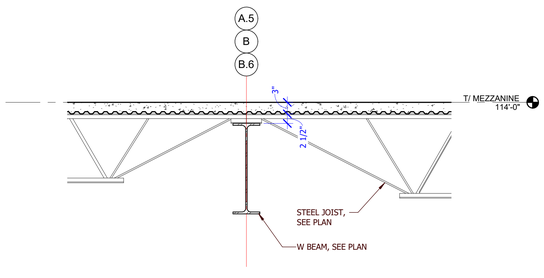
18 LOFT WF BRG AT PLAN DETAIL
1" = 1'-0"



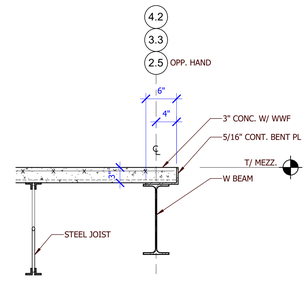
19 LOFT WF BRG SECTION
1" = 1'-0"



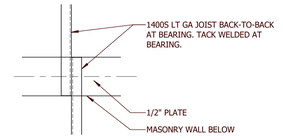
20 LOFT SHEAR WALL SECTION
1" = 1'-0"



21 MEZZANINE JOIST BEARING ON BEAM
3/4" = 1'-0"



22 MEZZ. EDGE DETAIL B
1" = 1'-0"



13 LT GA BEARING PLAN DETAIL
1" = 1'-0"

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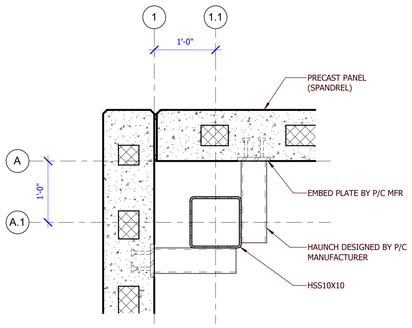
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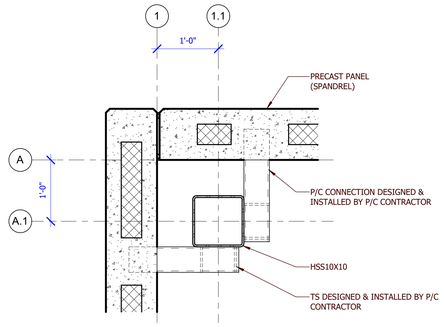
STRUCTURAL DETAILS

S2.3

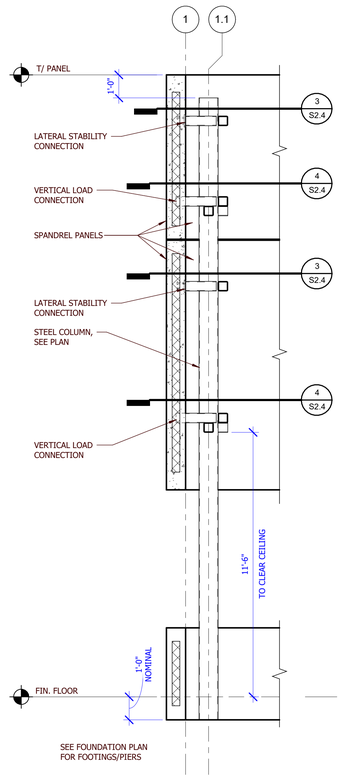
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3 LATERAL CONNECTION PLAN DETAIL
1" = 1'-0"

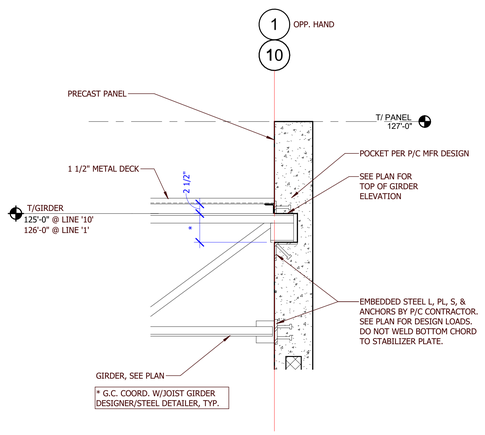


4 SUPPORT CONNECTION PLAN DETAIL
1" = 1'-0"

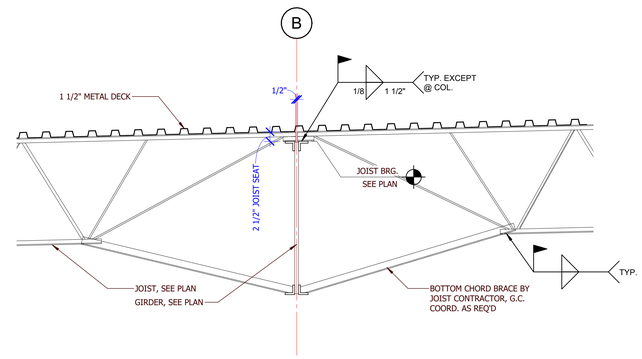


5 SPANDREL PANEL CONNECTIONS
3/8" = 1'-0"

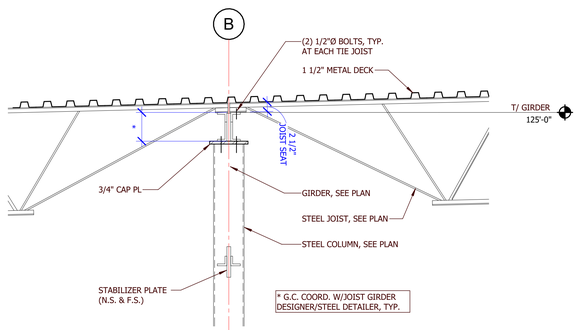
6 GIRDER CONNECTION TO COLUMN
3/4" = 1'-0"



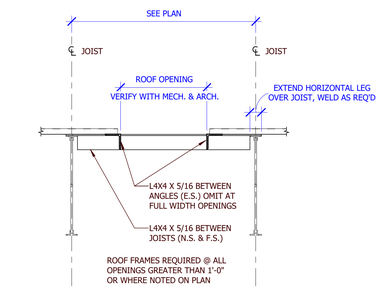
7 GIRDER BEARING AT PANEL
3/4" = 1'-0"



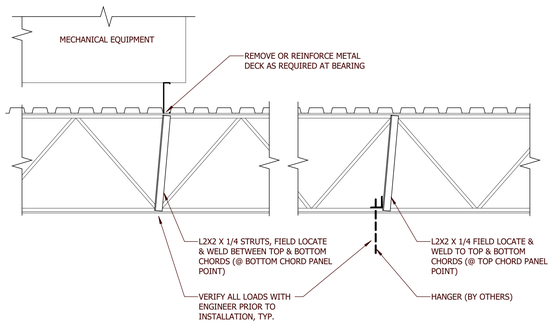
1 JOIST BEARING AT GIRDER
3/4" = 1'-0"



8 JOIST CONNECTION TO COLUMN
3/4" = 1'-0"



9 FRAMED OPENING DETAIL
3/4" = 1'-0"



10 JOIST REINFORCEMENT DETAILS
3/4" = 1'-0"

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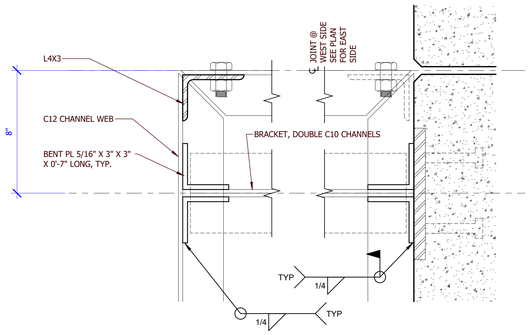
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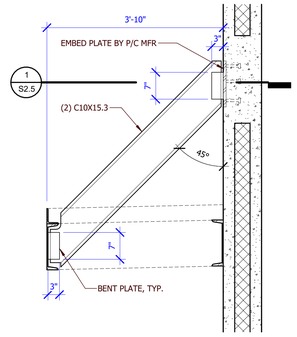
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STRUCTURAL DETAILS	

S2.4

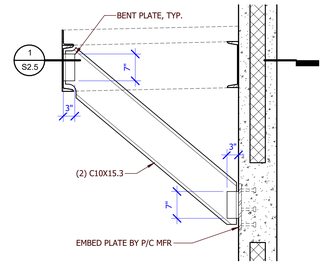
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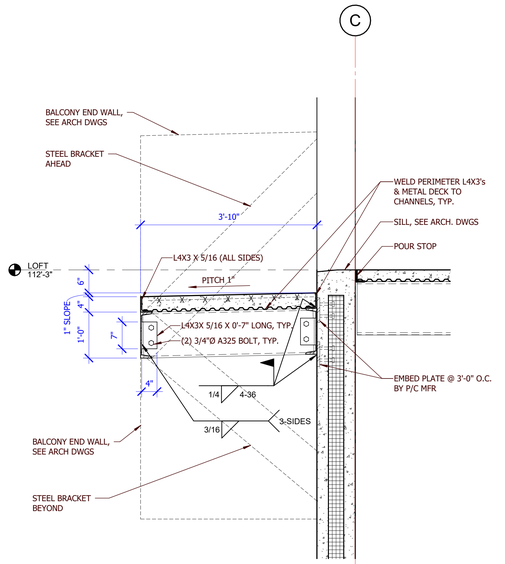
1 BALCONY CORNER PLAN DETAIL
3" = 1'-0"



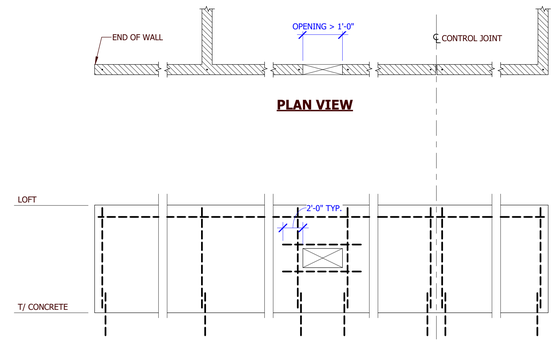
2 BALCONY UPPER BRACKET
3/4" = 1'-0"



3 BALCONY LOWER BRACKET
3/4" = 1'-0"



4 STRUCTURAL BALCONY SECTION
3/4" = 1'-0"



TYPICAL REINFORCED MASONRY NOTES

TYPICAL HORIZONTAL AND VERTICAL REINFORCING BARS SHALL BE AS NOTED ON THE PLAN SHEET. ADDITIONAL REINFORCING SHALL BE AS FOLLOWS:

1. (2) #5 VERTICAL REINFORCING BARS SHALL BE PROVIDED CONTINUOUSLY FROM SUPPORT TO SUPPORT (FINISHED FLOOR TO LOFT) AT:
   A. EACH END OF WALL
   B. EACH WALL INTERSECTION
   C. EACH SIDE OF MSY OPENING > 1'-0" IN WIDTH
   D. EACH SIDE OF MSY CONTROL OR EXPANSION JOINT
   E. EACH CORNER
2. (2) #5 HORIZONTAL REINFORCING BARS SHALL BE PROVIDED AT:
   A. TOP AND BOTTOM OF MASONRY OPENINGS
   B. FLOOR LEVELS, CONTINUOUS
   C. TOP OF MASONRY WALLS, CONTINUOUS
   D. BOTTOM OF MASONRY WALLS, CONTINUOUS
3. FOR LARGE OPENINGS, PROVIDE SAME NUMBER OF BARS, EACH SIDE OF OPENING AS THE NUMBER OF BARS INTERRUPTED BY OPENING.

5 MASONRY REINFORCING DETAIL
1/4" = 1'-0"

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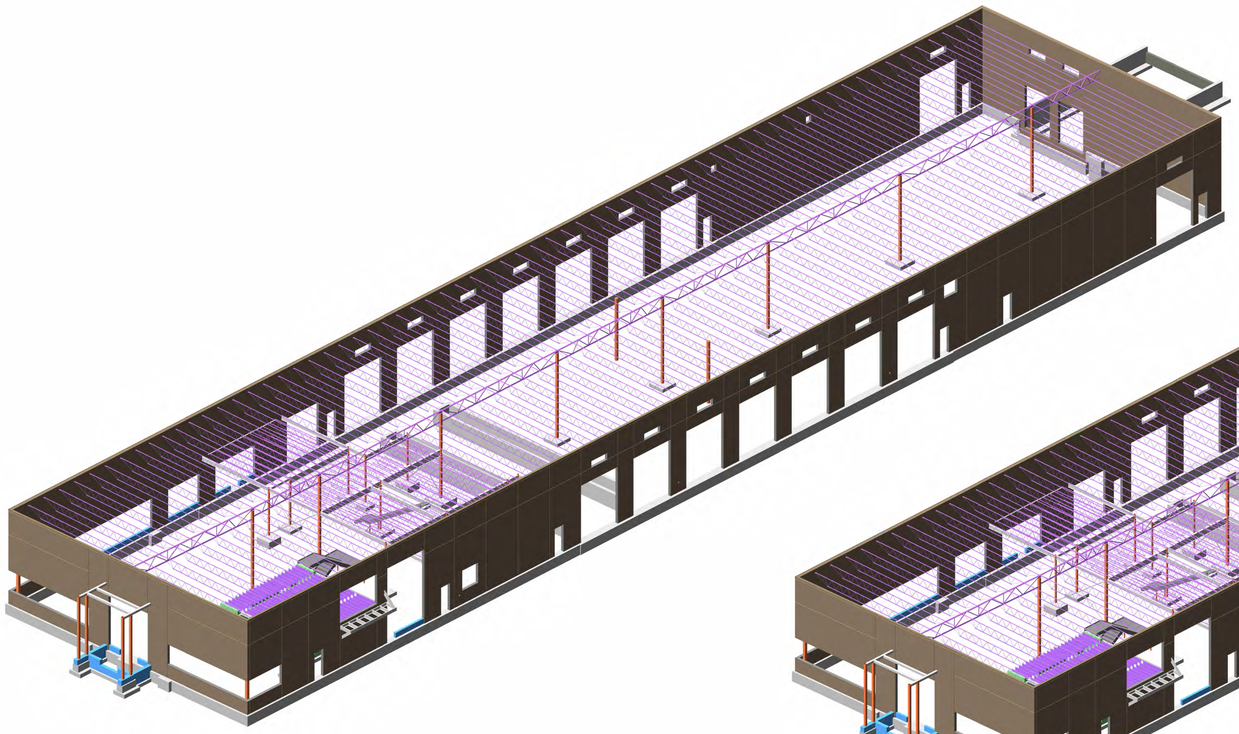
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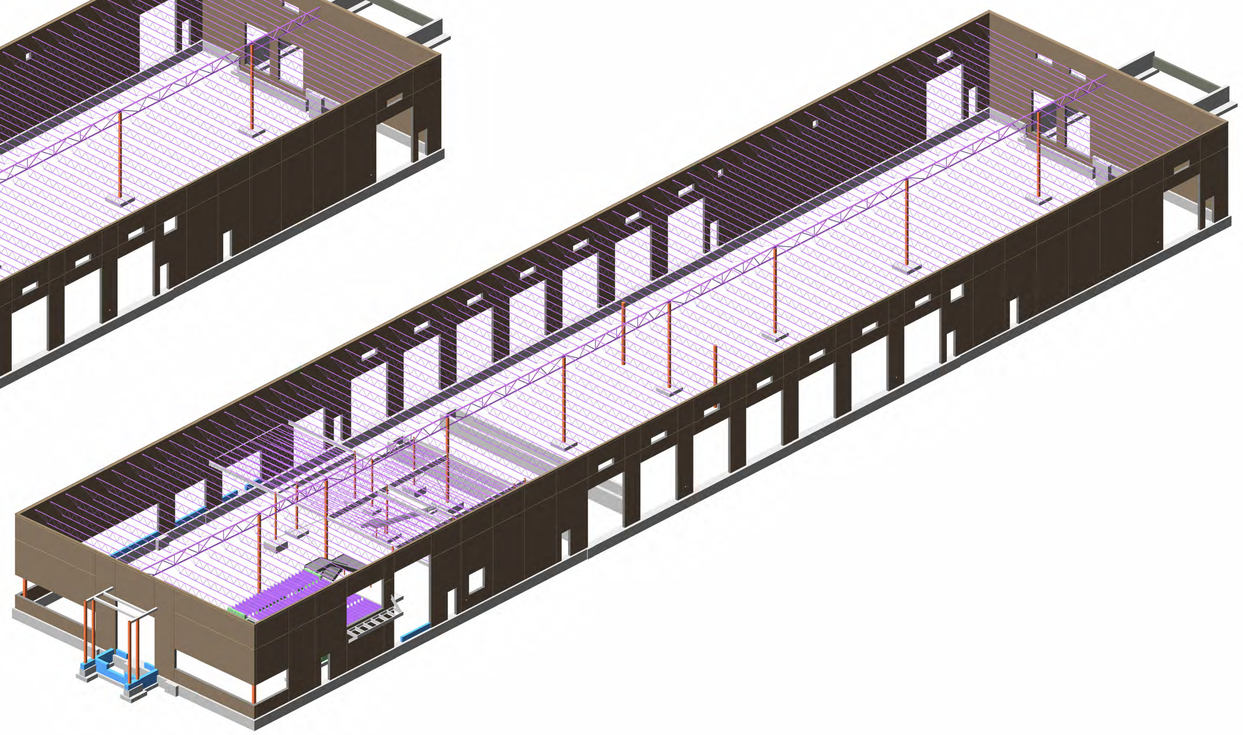
STRUCTURAL DETAILS

S2.5

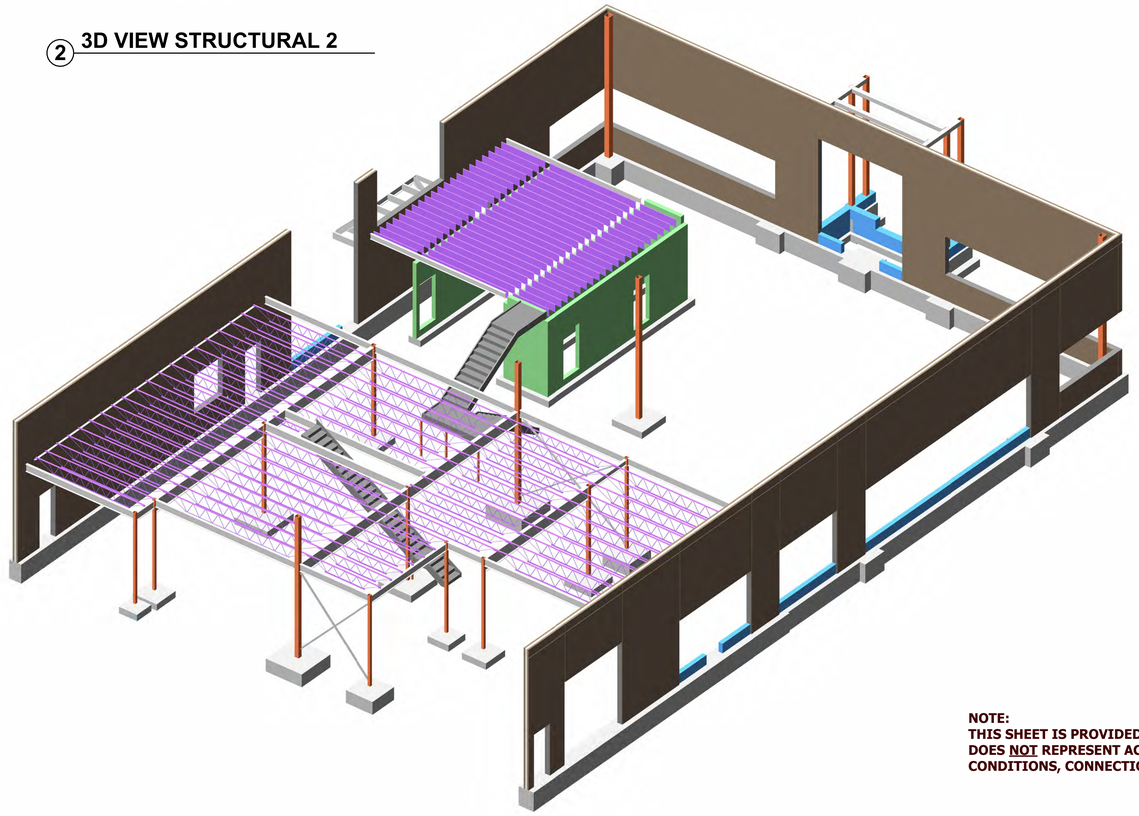
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1 3D VIEW STRUCTURAL 1



2 3D VIEW STRUCTURAL 2



3 3D VIEW STRUCTURAL 3 (CROPPED TO SHOW MEZZ & LOFT)

NOTE:
THIS SHEET IS PROVIDED FOR REFERENCE ONLY. IT DOES NOT REPRESENT ACTUAL BEARING CONDITIONS, CONNECTIONS, FOOTINGS, ETC.

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STRUCTURAL 3D VIEWS FOR REFERENCE ONLY

S3.1

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	COOLING (TONS)	COOLING STAGES	VOLTAGE PHASE	MCA MOCP	WEIGHT (LBS)	SEER	REFG	NOTES
	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
	2	1	208 1	14.5 20	225	17	R410A	1-THRU-10
	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
	4	1	208 1	27.8 40	300	17	R410A	1-THRU-10
	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10
	2	1	208 1	14.5 20	225	17	R410A	1-THRU-10
	4	1	208 1	27.8 40	300	17	R410A	1-THRU-10
	3	1	208 1	19.8 35	250	17	R410A	1-THRU-10

N PROVISION RATES		
OM NT TE M)	ROOM EXHAUST RATE (CFM)	NOTES
0	0	F-1
5	0	F-2
0	100	F-2, TEF-2
0	0	F-2
9	0	F-1
0	0	F-3
0	0	F-3
0	0	F-8
0	0	F-8
0	0	F-8
5	0	F-8
0	0	F-1
0	0	F-5
0	50	F-1, TEF-2
9	100	F-1, TEF-2
9	100	F-1, TEF-2
	0	
9	0	F-1
0	0	F-6
0	200	F-6, TEF-1
0	50	F-6, TEF-1
0	50	F-6, TEF-1
	0	
0	100	F-6, TEF-1
0	0	F-7
0	0	F-9
0	100	F-7, TEF-3
0	0	F-9
0	0	F-9
	0	
/650	9500/650	EF-2, EF-3, IV-2, IV-3
0	500	EF-1, IV-1
	0	
	0	
0	0	F-3
	0	
0	0	F-4
	0	

MECHANICAL SYMBOLS LIST

AFF	ABOVE FINISHED FLOOR
B	BOILER
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
E	EXHAUST AIR
EF	EXHAUST FAN
F	FURNACE
FD	FIRE DAMPER (TYPE-B)
— GAS —	GAS PIPING
HP	HORSEPOWER
NA	NOT APPLICABLE
NR	NOT REQUIRED
OAI	OUTDOOR AIR INTAKE
OBD	OPPOSED BLADE DAMPER
R	RETURN AIR
RD	ROUND
RFS	RADIANT FLOORING SYSTEM
S	SUPPLY AIR
UC	UNDERCUT (DOOR)
UH	UNIT HEATER
WC	WATER COLUMN
	SUPPLY OPENING
	RETURN/EXHAUST OPENING
	BALL VALVE
	BUTTERFLY VALVE
	UNION
	PUMP
	CIRCUIT SETTER
T	THERMOSTAT
	CONNECT TO EXISTING
	MANUAL VOLUME DAMPER
CO2	CO2 SENSOR

3. ROOFTOP UNITS/SPLIT SYSTEMS, 54 MBH AND GREATER (COOLING) SHALL HAVE ECONOMIZERS.
4. FAN SYSTEM MOTOR NAMEPLATE HORSEPOWER/BRAKEHORSEPOWER SHALL NOT EXCEED ALLOWABLE NAMEPLATE MOTOR HORSEPOWER/BRAKEHORSEPOWER.
5. LOAD CALCULATIONS BASED ON ASHRAE FUNDAMENTALS HANDBOOK.
6. THERMOSTATS SHALL HAVE 5 DEGREE DEAD BAND, 7-DAY/WEEK PROGRAMMABLE CLOCK, 2-HOUR TEMPORARY OVERRIDE, SET POINT OVERLAP RESTRICTION, 10 HOUR BACKUP AND SETBACK CAPABLE OF 55 DEGREE HEATING AND 85 DEGREE COOLING (EXCEPT CONTINUOUS OPERATING ZONES), AUTOMATIC START (OPTIMAL START, ADAPTIVE RECOVERY), OUTSIDE AIR 0% CLOSED DURING UNOCCUPIED OR WARM UP CONDITION.
7. DEMAND CONTROL VENTILATION SHALL BE PROVIDED FOR SPACES LARGER THAN 500 SQUARE FEET AND AVERAGE OCCUPANT LOAD OF 25 PEOPLE PER 1000 SQUARE FEET, FOR SYSTEMS WITH AIR-SIDE ECONOMIZERS, AUTOMATIC MODULATING OUTSIDE AIR DAMPERS, OR OUTSIDE AIRFLOW GREATER THAN 3000 CFM.
8. DUCTWORK INSULATION SHALL HAVE MINIMUM VALUE OF R-6 (CONDITIONED SPACES) AND R-12 FOR OUTSIDE BUILDING (UNCONDITIONED SPACES), EXCEPT SPACES WHERE TEMPERATURE DIFFERENCE DOES NOT EXCEED 15 DEGREES.
9. DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), EXCEPT LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS ON DUCTWORK OPERATING AT STATIC PRESSURE LESS THAN 2" WATER GAUGE.
10. AIR BALANCE SYSTEM AND PROVIDE AIR TEST AND BALANCE REPORT.
11. HVAC EQUIPMENT OPERATION AND MAINTENANCE MANUALS PROVIDED TO BUILDING OWNER.

GENERAL NOTES

1. WORK SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH 2018 INTERNATIONAL MECHANICAL CODE, HEALTH REGULATIONS, AND LOCAL ORDINANCES.
2. WORK INCLUDES PERMIT FEES, UTILITY TAP FEES, AND INSPECTION FEES AS REQUIRED.
3. COORDINATE LOCATION OF ROOFING EQUIPMENT (UNITS, DUCTS, PIPING, DRAINS, ETC) AND CONNECTION POINTS WITH GENERAL CONTRACTOR. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND INSTALLATION.
4. COORDINATE WITH OTHER TRADES LOCATIONS OF DUCTWORK, PIPING, AND EQUIPMENT TO REQUIRED CLEARANCES AND TO AVOID ANY INTERFERENCE.
5. COORDINATE INSTALLATION OF DUCTS WITH STRUCTURE.
6. WORK SHALL BE IN COMPLIANCE WITH LOCAL CODES AND ORDINANCES.
7. PROVIDE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS PRIOR TO INSTALLING, OR FABRICATING ANY DUCTWORK.
8. PROVIDE ADJUSTABLE VOLUME DAMPER AT EACH BRANCH DUCT AND EACH AIR DEVICE.
9. PROVIDE TURNING VANES AT EACH DUCTWORK ELBOW.
10. FLEXIBLE DUCTS SHALL NOT EXCEED 5'-0" IN LENGTH.
11. SHEET METAL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA AND INTERNATIONAL MECHANICAL CODE.

HVAC CONTROLS SEQUENCE OF OPERATIONS

PROVIDE COMPLETE ELECTRONIC CONTROL OF HEATING, VENTILATION, AND AIR CONDITION SYSTEMS, AS INDICATED ON SEQUENCE OF OPERATION, INCLUDING CONTROLLERS, SENSORS, INTERLOCKS, STRUCTURED CABLING (CABLING SHALL BE IN EMT CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS), CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION, FOR EQUIPMENT AS FOLLOWS.

F / CU (TYPICAL)
UNIT SHALL BE CONTINUOUSLY ENERGIZED AND INTERLOCK RESPECTIVE F, CU, OAI, RELIEF CONTROL DAMPERS. TEMPERATURE AND HUMIDITY SHALL BE CONTROLLED VIA WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH AUTOMATIC HEATING/COOLING CHANGEOVER. SYSTEM SHALL OPERATE HEATING AND COOLING STAGES. UNIT VENTILATION OUTSIDE AIR DAMPER SHALL BE AT MINIMUM-OPEN-POSITION DURING OCCUPIED TIMES AND CLOSED-POSITION DURING UNOCCUPIED TIMES. VERIFY OCCUPIED AND UNOCCUPIED SETPOINTS WITH USER.

TEF-1, TEF-2
UNIT SHALL BE ENERGIZED VIA INTERLOCK WITH TIME CLOCK TO OPERATE DURING OCCUPIED TIMES.

TEF-3
UNIT SHALL BE ENERGIZED VIA INTERLOCK WITH ROOM LIGHTING SWITCH TO OPERATE DURING OCCUPIED TIMES.

EF-1, EF-2, EF-3
UNITS SHALL BE ENERGIZED VIA INTERLOCK WITH EXHAUST FAN CONTROL PANEL FOR SIMULTANEOUS OPERATION WITH EXHAUST FAN AND INTAKE AIR LOUVER DAMPER. COORDINATE WITH MANUFACTURER SPECIFICATIONS.

CO+NO2 CONTROLS (CONTROLLER, SERVICE BAYS)
TOX-ALERT CO+NO2 MONITORING SYSTEM AND SENSORS. SENSOR LOCATIONS AND MONITOR SETPOINTS PROVIDED PER MANUFACTURER RECOMMENDATIONS. INTEGRATE SYSTEM WITH EF-2 OPERATIONS.

1.03 COMPLETELY OPERATIONAL HEATING, VENTILATING, AIR CONDITIONING AND EXHAUST SYSTEMS READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B FURNACES AND CONDENSING UNITS.
1.03C DUCTWORK AND AIR DEVICES.
1.03D EXHAUST FANS.
1.03E LOUVERS, VENTILATORS, AND DAMPERS.
1.03F THERMAL INSULATION AND DUCT LINING.
1.03G CONTROLS, SENSORS, CONTROL WIRING, AND INTERLOCKS.
1.03H GAS PIPING WITH CONNECTION TO EQUIPMENT REQUIRING NATURAL GAS.
1.03I BOILER, PUMPS, AND RELATED HYDRONIC EQUIPMENT.
1.03J HEATING WATER PIPING SYSTEM.

2.0 RELATED WORK BY OTHER TRADES

2.01 ELECTRIC POWER WIRING.
2.02 ELECTRIC TELECOMMUNICATION WIRING.

3.0 MECHANICAL INSTALLATION NOTES

3.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

3.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

3.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

3.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

3.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

3.06 CONFER WITH THE OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

3.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

3.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

3.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

3.10 GAS PIPING SHALL BE SCHEDULE 40 ASTM A53 TYPE B BLACK STEEL WITH METALLIC FITTINGS. PROVIDE GAS VALVE, UNION, AND DIRT LEG (AND REGULATOR AS REQUIRED) AT EACH CONNECTION. GAS PIPING IN CONCEALED LOCATIONS SHALL NOT HAVE REMOVABLE FITTINGS. PIPING LARGER THAN 4" OR EXCEEDING 5 PSI SHALL BE WELDED. TEST GAS PIPING AT 1-1/2 TIMES MAXIMUM PRESSURE, BUT NOT LESS THAN 3 PSIG, AND REPAIR LEAKS AS REQUIRED, AND RETEST. GAS PIPING SHALL BE PAINTED YELLOW COLOR AND MARKED "GAS" WITH BLACK COLOR.

3.11 REFRIGERATION PIPING SHALL BE DEHYDRATED AND CAPPED ACR COPPER WITH WROUGHT COPPER FITTINGS. JOINTS SHALL BE MADE WITH SILFOS, EXCEPT AT VALVES AND OTHER EQUIPMENT DAMAGED BY HIGH TEMPERATURES WHERE 95-5 SOLDER SHALL BE INSTALLED.

3.12 INTERNALLY INSULATE (LINE) SPIRAL SUPPLY AIR AND RETURN AIR DUCTS WITH FIBER GLASS ANTI-MICROBIAL DUCT LINER INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84. PLAN DIMENSIONS INDICATE CLEAR-INSIDE DIMENSIONS.

3.13 EXTERNALLY INSULATE (WRAP) SUPPLY, RETURN, AND OUTSIDE AIR INTAKE DUCTS. DUCTS INSIDE BUILDING SHALL HAVE EXTERNAL WRAP BLANKET TYPE FIBERGLASS INSULATION WITH FACTORY APPLIED FIBERGLASS REINFORCED ALUMINUM FOIL FACING AND THERMAL VALUE OF R-6 OR GREATER AT 75 DEG F (CONDITIONED SPACES). DUCTS OUTSIDE BUILDING SHALL HAVE EXTERIOR RIGID FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR-RETARDANT FACING, PROVIDING THERMAL VALUE R-12 OR GREATER AT 0 DEG F (UNCONDITIONED SPACES). INSULATION SHALL BE WRAPPED TIGHT WITH JOINTS ABUTTED AND SEALED AND BE SECURED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84.

3.14 DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS SET FORTH IN SMACNA MANUAL. DUCTS SHALL BE SEALED TO PRESSURE CLASS A, WITH MECHANICAL JOINTS AND ADHESIVE SEALANT. FIRE DAMPERS SHALL BE TYPE B UNLESS NOTED OTHERWISE ON DRAWINGS.

3.15 FLEXIBLE RUNOUTS SHALL NOT EXCEED 5'-0" AND SHALL BE INSULATED WITH VAPOR BARRIER. NO PVC SHALL BE PERMITTED.

3.16 PROVIDE MANUALLY OPERATED VOLUME CONTROL AND/OR SPLITTER DAMPERS IN DUCT BRANCHES FOR PROPER BALANCING OF AIR HANDLING SYSTEMS. DAMPERS ABOVE INACCESSIBLE CEILINGS SHALL HAVE EXTENDED ARMS OR REMOTE OPERATORS. DAMPERS SPECIFIED WITH AIR DEVICES SHALL NOT REPLACE DAMPERS IN BRANCH DUCTWORK.

3.17 LOUVERS SHALL BE RUSKIN ELF375DX WITH OPENING SIZES AS INDICATED ON DRAWINGS. PAINTED AND FINISH (KYNAR 500 OR HYLAR 5000) SHALL BE SELECTED BY ARCHITECT.

3.18 CONTROL DAMPERS SHALL BE RUSKIN CD356 GALVANIZED STEEL LOW LEAKAGE TYPE WITH OPENING SIZES AS INDICATED ON THE DRAWINGS. PROVIDE MANUAL OPERATORS OR MOTORIZED ACTUATORS AS INDICATED OR REQUIRED.

3.19 GAS VENTING FLUES FOR BOILERS, FURNACES, UNIT HEATERS, AND WATER HEATERS SHALL BE TYPE "B" GALVANIZED FOR STANDARD EFFICIENCY UNITS, SCHEDULE 40 PVC FOR HIGH EFFICIENCY UNITS, AND TYPE "B" STAINLESS STEEL FOR INSTANTANEOUS UNITS. TYPE "B" VENTS SHALL PENETRATE ROOF WITH TALL FLASHING CONE, STORM COLLAR, AND TERMINATION CAP. PVC VENTS SHALL PENETRATE ROOF/WALL WITH CONCENTRIC KITS. VERIFY MANUFACTURER RECOMMENDATIONS AND REQUIREMENTS FOR MATERIALS TYPE, FITTINGS TYPE, AND TERMINATIONS TYPE.

3.20 AIR DEVICES SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLANS. VERIFY LAYIN CEILING GRID TYPE WITH ARCHITECTURAL DRAWINGS.

3.21 IDENTIFY EACH EQUIPMENT UNIT WITH 4" HIGH X 3/4" THICK LETTERS WITH UNIT NUMBERS AS INDICATED ON DRAWINGS. PROVIDE 3/4" HIGH WHITE-FACED MICARTA WITH BLACK LETTERS AT EACH UNIT THERMOSTAT WITH UNIT NUMBERS AS INDICATED ON DRAWINGS.

3.22 ROOF CURBS AND ROOF EQUIPMENT SUPPORTS SHALL BE FULLY INSULATED AND INSTALLED WITH 18-GAUGE GALVANIZED STEEL SHELLS, SEALED NAILERS, AND COUNTERFLASHING.

3.23 OUTDOOR AIR INTAKE GRAVITY VENTILATORS SHALL BE LOREN COOK PR 16-GAUGE SPUN ALUMINUM, CORROSION RESISTANT FASTENERS, CONTINUOUSLY WELDED CONSTRUCTION, 1/2" MESH BIRDSCREEN, AND BOLTED SUPPORT FRAMING ONTO ROOF CURB.

3.24 PIPING SHALL PENETRATE ROOF THROUGH PORTAL CURB WITH INSULATED EPDM PORTAL WITH 3-1/2" PIPE PENETRATION SLEEVES AND EPDM BOOTS WITH ADJUSTABLE STAINLESS STEEL BANDS.

3.25 ACCESS PANELS SHALL BE INSTALLED WHERE REQUIRED FOR SERVICING DEVICES AND EQUIPMENT. COORDINATE EXACT SIZES, LOCATIONS, AND COLORS WITH ARCHITECT.

3.26 ELECTRONIC CONTROL OF HEATING, VENTILATION, AND AIR CONDITION SYSTEMS, AS INDICATED ON SEQUENCE OF OPERATION, INCLUDING CONTROLLERS, SENSORS, INTERLOCKS, STRUCTURED CABLING (CABLING SHALL BE IN EMT CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS), CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION. UNITS SHALL BE CONTINUOUSLY ENERGIZED AND INTERLOCK RESPECTIVE HVAC EQUIPMENT. VERIFY OCCUPIED AND UNOCCUPIED SETPOINTS WITH USER. UNIT VENTILATION OUTSIDE AIR DAMPER SHALL OPERATE DURING OCCUPIED TIMES. UNIT SHALL CLOSE OUTSIDE AIR DAMPER DURING UNOCCUPIED TIMES.

3.27 AIR TEST AND BALANCE REPORT FOR SUPPLY, RETURN, OUTDOOR AIR INTAKE, AND EXHAUST SYSTEMS TO QUANTITIES INDICATED, WITHIN 10% TOLERANCE. SUBMIT THREE (3) REPORTS FROM INDEPENDENT TESTING AGENCY STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

4.0 SUBMITTALS (DIGITAL PDF FILES):

4.01 DUCTWORK INSTALLATION DRAWINGS TO SCALE.
4.02 FURNACES AND CONDENSING UNITS.
4.03 DUCTWORK AND AIR DEVICES.
4.04 EXHAUST FANS.
4.05 LOUVERS, VENTILATORS, AND DAMPERS.
4.06 THERMAL INSULATION AND DUCT LINING.
4.07 CONTROLS, SENSORS, CONTROL WIRING, AND INTERLOCKS.
4.08 BOILERS, PUMPS, AND RELATED HYDRONIC EQUIPMENT.

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SCHEDULE

AREA (SQ. FT.)	HEATING CAPACITY (MBH)	TUBE SIZE (DIAMETER)	TUBE SPACING (ON-CENTER)	FINISHED FLOOR SURFACE	NOTES
3060	91.8	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
3082	92.5	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
2918	87.5	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
2994	89.8	3/4"	12"	FIELD VERIFY	1, 2, 3, 4
500	15	3/4"	12"	FIELD VERIFY	1, 2, 3, 4

E WITH 2" MINIMUM EXTRUDED EXPANDED POLYSTYRENE (EPS) INSULATION 3 MIL FILM

D SPACING PER MANUFACTURERS RECOMMENDATIONS.
ERMOSTAT.
CHITECTURAL DRAWINGS PRIOR TO INSTALLATION.

GAS OUTPUT (MBH)	THERMAL EFFICIENCY	TYPE	HP	VOLTAGE PHASE	WEIGHT (LBS)	BOTTOM OF UNIT AFF	NOTES
160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
160	80 %	GRAVITY VENTED	1/2	208/1	250	18'-0"	1, 2, 3
320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3
320	80 %	GRAVITY-VENTED	1	208 / 1	400	18'-0"	1, 2, 3

D FROM STRUCTURAL STEEL.
R, AND TERMINATION CAP. INSTALL PER MANUFACTURER RECOMMENDATIONS.

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	AREA SERVED	CFM	ESP (WC)	TYPE	WEIGHT (LBS)	NOTES
IL-1	RUSKIN	ELF375DX - 2'X2'	130 - WAREHOUSE	500	1/10"	STATIONARY	25	1,2,3,4
IL-2	RUSKIN	ELF375DX - 4'X6'	129 - SERVICE BAYS	9500	1/10"	STATIONARY	100	1,2,3,4
IL-3	RUSKIN	ELF375DX - 2'X2'	129 - SERVICE BAYS	650	1/10"	STATIONARY	25	1,2,3,4

NOTES:
1. PROVIDE STATIONARY LOUVERS WITH PITCH DRAINAGE.
2. PROVIDE WALL FLANGE.
3. PROVIDE ALUMINUM BIRDSCREEN.
4. PROVIDE ALUMINUM MOTORIZED DAMPER.

BOILER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	HTG IN (MBH)	TYPE	AFUE	VOLTAGE AMPS	NOTES
B-1	COLUMBIA	WL 60 - 500 (WASTE OIL)	500	10" B-VENT NATURAL VENT	80 %	120 V 15 A	1, 2, 3, 4

NOTES:
1. PROVIDE 250 GALLON STORAGE TANK.
2. PROVIDE AQUASTAT, CIRCULATION PUMP, ISOLATION VALVES, PRESSURE GAUGE, TEMPERATURE GAUGE, RELIEF VALVE, PURGE VENT, AIR PROVING SWITCH, AND OUTDOOR TEMPERATURE SENSOR.
3. CONTROLLER SHALL OPERATE DOMESTIC HOT WATER AND RADIANT FLOOR HEATING, WITH DOMESTIC HOT WATER PRIORITY.
4. PROVIDE 10 YEAR WARRANTY.

ELECTRIC HEATER SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	MOUNTING	MOUNTING HEIGHT (AFF)	HEAT (KW)	VOLTAGE PHASE	NOTES
EH-1	QMARK	MUH 0371	BRACKET WALL	VERIFY	3	277 1	1
EH-2	QMARK	MUH 0371	BRACKET WALL	VERIFY	3	277 1	1
EH-3	QMARK	CWH-1207 DSAF	RECESSED WALL	12"	2	277 1	1

NOTES:
1. PROVIDE THERMOSTAT, DISCONNECT, AND SURFACE WALL MOUNTING FRAME.
2. PROVIDE THERMOSTAT, DISCONNECT, AND RECESSED WALL MOUNTING FRAME.

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LICENSE EXPIRES: 2023 NOV. 30

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PROJECT MGR.
MECHANICAL SCHEDULES

M1.1

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MECHANICAL PLAN - OVERALL	**M2.0**

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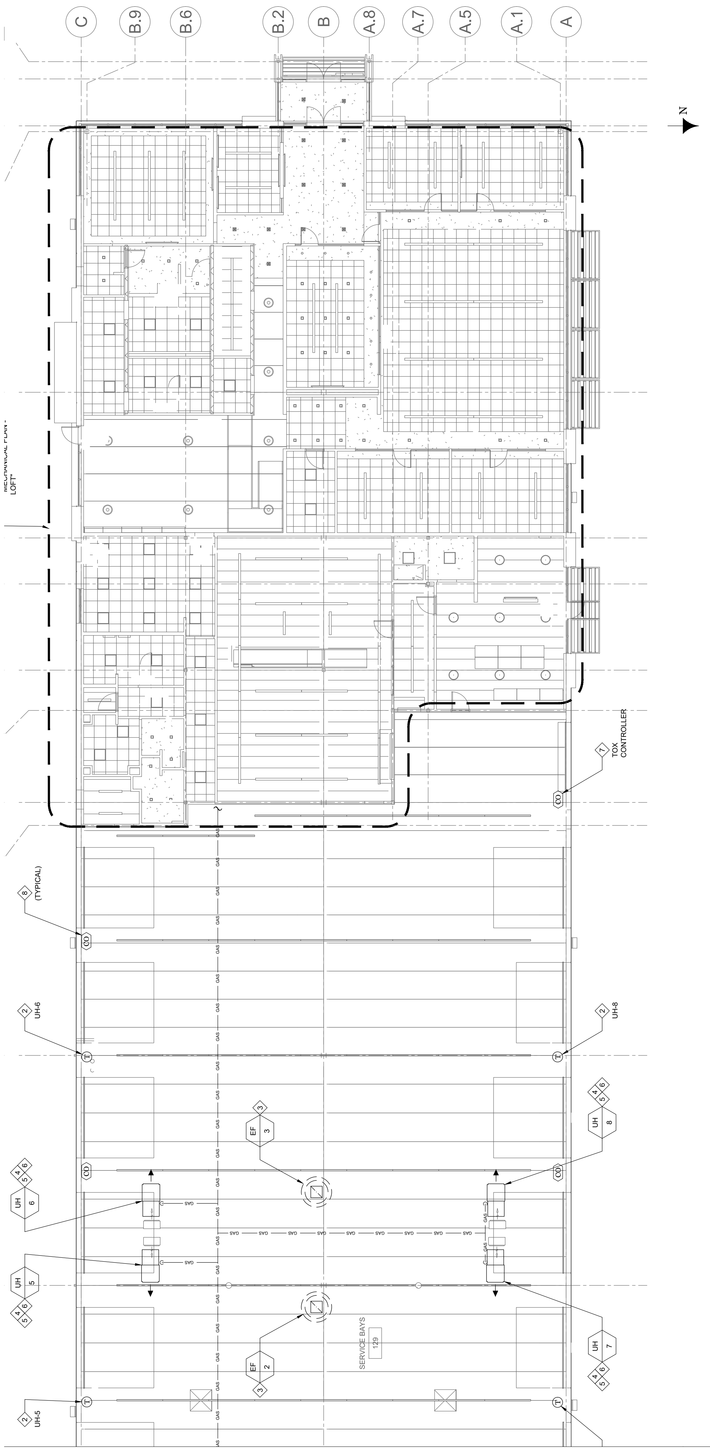
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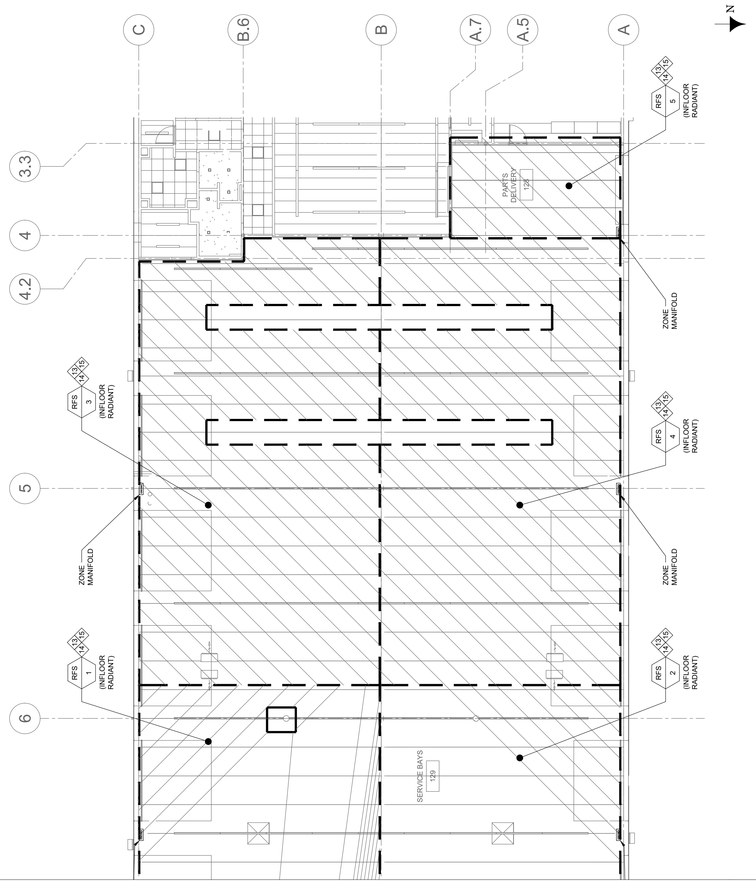
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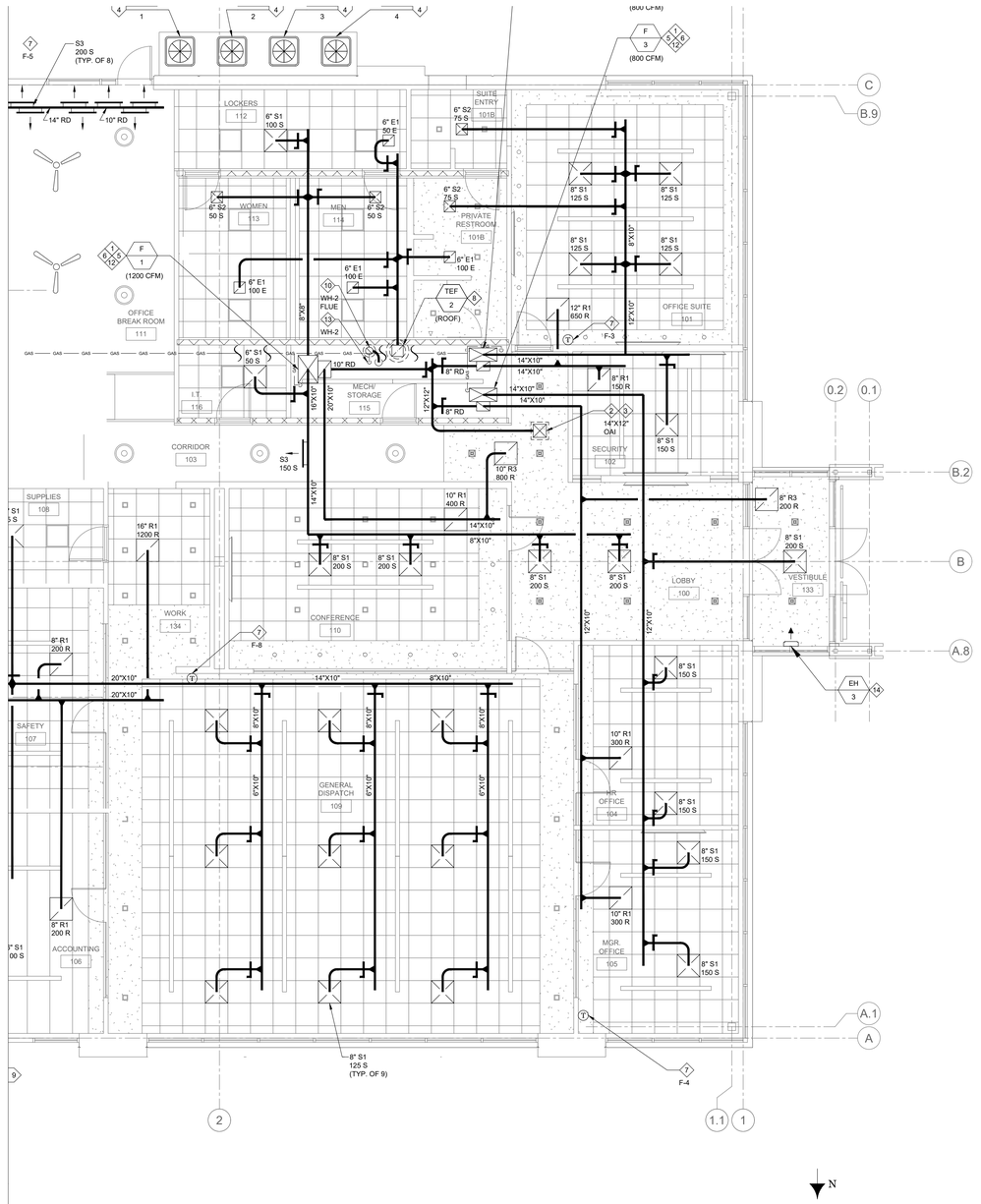
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CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.

2 VENTILATOR OAI (ROOF)
PROVIDE ROOF VENTILATOR FOR INTAKE AIR VENTILATION. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. PROVIDE DUCTWORK CONNECTIONS AS REQUIRED. INLET SHALL BE 12'-0" MINIMUM FROM ANY AIR OUTLET/FLUE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

3 OAI DUCT
PROVIDE DUCT FROM OUTSIDE AIR INTAKE WITH CONTROL DAMPER AND CONNECTION TO AIR HANDLING UNIT RETURN DUCT.

4 CU (GRADE)
PROVIDE CONDENSING UNIT AS SHOWN ON SCHEDULE. LOCATE UNIT ON GRADE WITH SUPPORT BASE AND COMPACTED GRAVEL FOR LEVEL AND PLUMB MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND CIVIL ENGINEERING DRAWINGS.

5 REFRIGERATION PIPING
PROVIDE REFRIGERATION PIPING AND CONTROL WIRING FROM AIR HANDLING UNIT TO CONDENSING UNIT. PROVIDE ROOF PORTAL, PENETRATION, INSULATION, AND WEATHERTIGHT SEAL. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, AND ARCHITECTURAL DRAWINGS.

6 F FLUE AND COMBUSTION
PROVIDE FLUE AND COMBUSTION PIPING FROM FURNACE UP THROUGH ROOF WITH CONCENTRIC KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, FLASHING, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.

7 THERMOSTAT
PROVIDE WALL MOUNTED ELECTRONIC PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT PER ADA REGULATIONS. COORDINATE LOCATIONS WITH OTHER ELEMENTS OF WALL. VERIFY LOCATION AND SETPOINTS WITH OWNER.

8 EF (ROOF)
PROVIDE ROOFTOP MOUNTED EXHAUST AIR FAN AS SHOWN ON SCHEDULE. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. INSTALL PER MANUFACTURERS RECOMMENDATIONS. OUTLET 12'-0" MINIMUM FROM ANY AIR INTAKE. FIELD VERIFY LOCATION PRIOR TO INSTALLATION. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

9 EF (CEILING)
PROVIDE CEILING EXHAUST FAN AS SHOWN ON SCHEDULE. PROVIDE WALL PENETRATION, DUCT, SLEEVE, FLASHING, INSULATION, AND WEATHERTIGHT SEAL. EXHAUST OUTLET SHALL BE 15'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.

10 WH FLUE AND COMBUSTION
PROVIDE FLUE AND COMBUSTION PIPING FROM WATER HEATER UP THROUGH ROOF WITH ROOF FLUE KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

11 GAS SERVICE
PROVIDE 2-1/2" GAS PIPING FROM GAS METER SERVICE. FIELD VERIFY LOCATION AND CONNECTIONS PRIOR TO INSTALLATION. WORK SHALL BE IN ACCORDANCE WITH FUEL GAS CODE. GAS PIPING SHALL BE ROUTED TO INTERIOR, WITHIN WALL CAVITY UP TO ACCESSIBLE CEILING AREA. PROVIDE PIPING, SUPPORTS, BRACING, PORTALS, INSULATION, CONNECTIONS, AND ANY WORK NECESSARY FOR COMPLETE INSTALLATION. COORDINATE WITH CIVIL ENGINEERING DRAWINGS AND OTHER TRADES. PRIOR TO ANY WORK, COORDINATE WITH GAS COMPANY, EXISTING CONDITIONS, AND OWNERSHIP. GAS COMPANY COSTS FOR RELOCATION WORK SHALL BE SUBMITTED IN WRITING FROM MECHANICAL CONTRACTOR TO OWNERSHIP.

12 F GAS WITH REGULATOR
PROVIDE 3/4" GAS PIPING AND CONNECTION TO F WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.

13 WH GAS WITH REGULATOR
PROVIDE 3/4" GAS PIPING AND CONNECTION TO UH WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.

14 EH
PROVIDE ELECTRIC HEATER AS SHOWN ON SCHEDULE. PROVIDE SUPPORT, BRACKETS, AND MOUNTING. VERIFY REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. VERIFY MOUNTING HEIGHT WITH OWNER. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.

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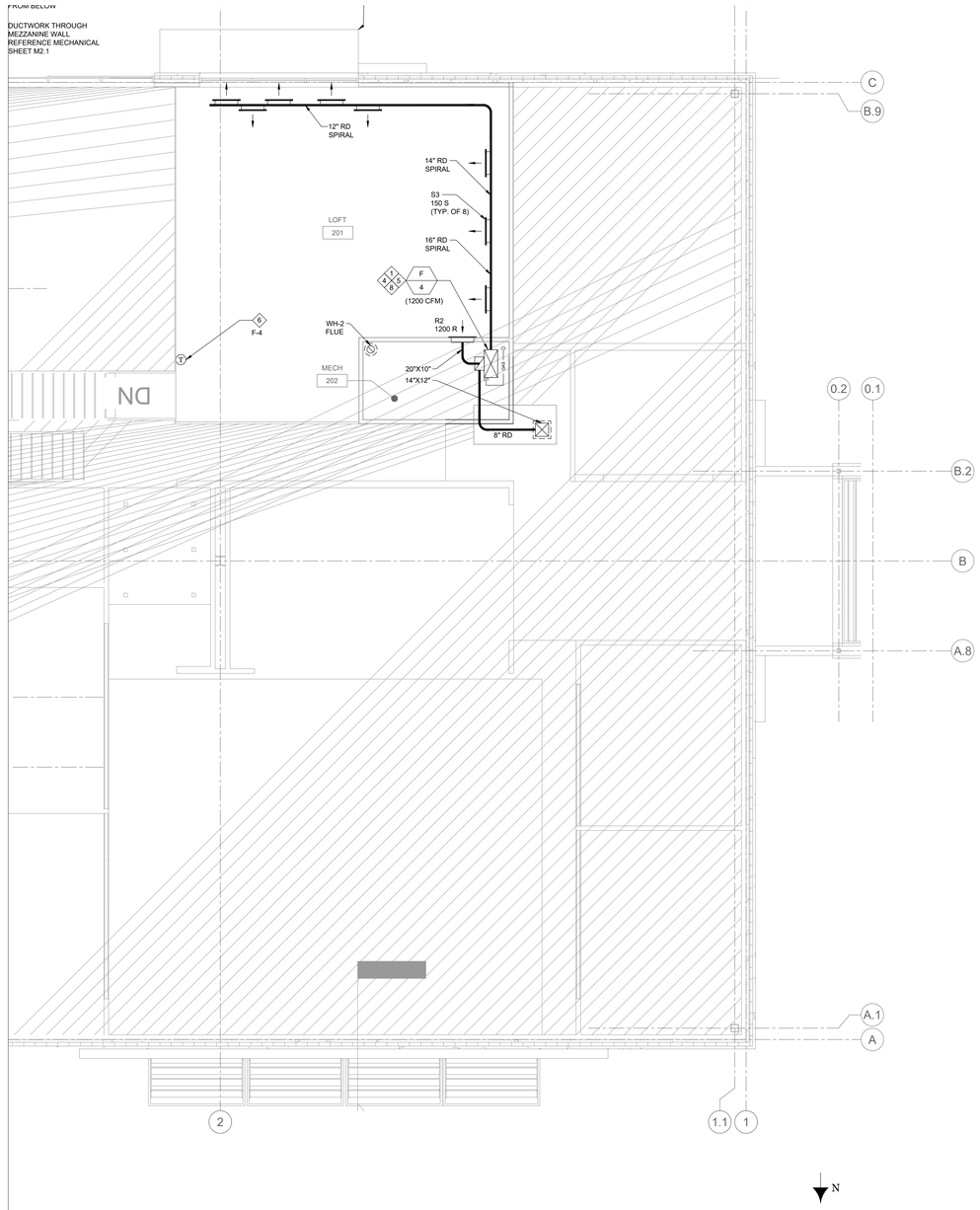
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PROJECT MGR.
MECHANICAL PLAN - OFFICE
M2.1

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CONDENSATE DRAIN PIPING TO ABOVE FLOOR DRAIN.

2 VENTILATOR OAI (ROOF)
PROVIDE ROOF VENTILATOR FOR INTAKE AIR VENTILATION. PROVIDE ROOF CURBING, FLASHING, SUPPORTS, AND MATCH ROOF SLOPE FOR LEVEL AND PLUMB MOUNTING. PROVIDE DUCTWORK CONNECTIONS AS REQUIRED. INLET SHALL BE 12'-0" MINIMUM FROM ANY AIR OUTLET/FLUE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

3 OAI DUCT
PROVIDE DUCT FROM OUTSIDE AIR INTAKE WITH CONTROL DAMPER AND CONNECTION TO AIR HANDLING UNIT RETURN DUCT.

4 REFRIGERATION PIPING
PROVIDE REFRIGERATION PIPING AND CONTROL WIRING FROM AIR HANDLING UNIT TO CONDENSING UNIT. PROVIDE ROOF PORTAL, PENETRATION, INSULATION, AND WEATHERTIGHT SEAL. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, AND ARCHITECTURAL DRAWINGS.

5 F FLUE AND COMBUSTION
PROVIDE FLUE AND COMBUSTION PIPING FROM FURNACE UP THROUGH ROOF WITH CONCENTRIC KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, FLASHING, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURE.

6 THERMOSTAT
PROVIDE WALL MOUNTED ELECTRONIC PROGRAMMABLE THERMOSTAT. MOUNT THERMOSTAT PER ADA REGULATIONS. COORDINATE LOCATIONS WITH OTHER ELEMENTS OF WALL. VERIFY LOCATION AND SETPOINTS WITH OWNER.

7 WH FLUE AND COMBUSTION
PROVIDE FLUE AND COMBUSTION PIPING FROM WATER HEATER UP THROUGH ROOF WITH ROOF FLUE KIT. PROVIDE VENTING, CONNECTIONS, ROOFING PENETRATION, SUPPORT, AND TERMINATION. OUTLET SHALL BE 12'-0" MINIMUM FROM ANY AIR INTAKE. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND ROOF STRUCTURE.

8 F GAS WITH REGULATOR
PROVIDE 3/4" GAS PIPING AND CONNECTION TO F WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.

9 WH GAS WITH REGULATOR
PROVIDE 3/4" GAS PIPING AND CONNECTION TO UH WITH VALVE, PRESSURE REGULATOR (2 PSI TO 6" WC), UNION, DIRT LEG, AND CONNECTION.

10 DUCT THROUGH FLOOR
PROVIDE DUCTWORK AS SIZED ON DRAWINGS THROUGH MEZZANINE FLOOR. PROVIDE FLOOR OPENING AND SUPPORT. COORDINATE WITH OTHER DESIGN DRAWINGS, OTHER TRADES, ARCHITECTURAL DRAWINGS, AND FLOOR STRUCTURE.

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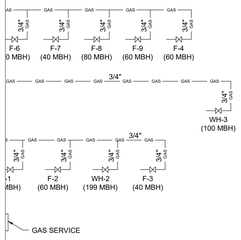
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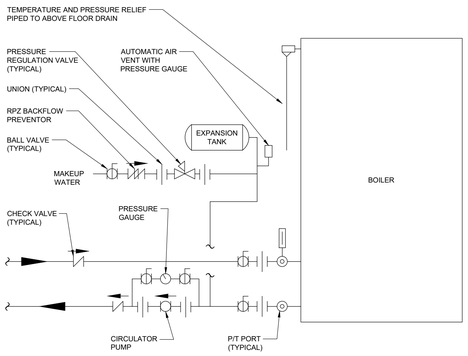
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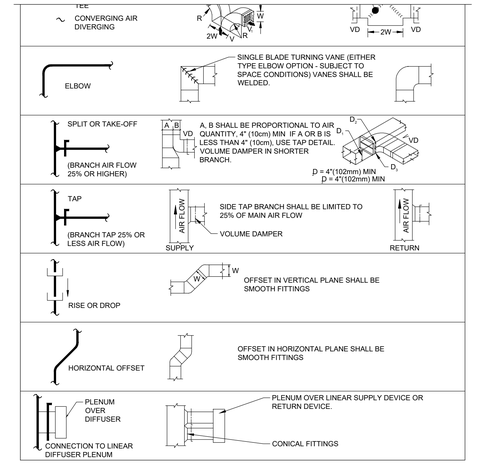


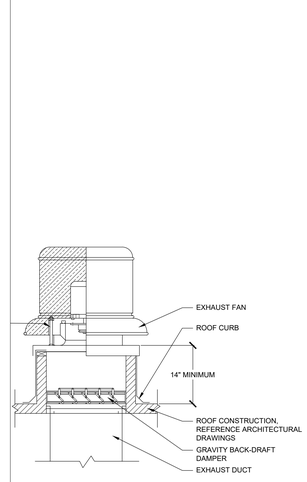
GENERAL NOTES:
1. REFERENCE MANUFACTURER RECOMMENDATIONS FOR INSTALLATION GUIDELINES, SUPPORT, SPACING, AND PRODUCT SPECIFICATIONS.

2. REFERENCE PLANS FOR FLOOR CONSTRUCTION AND EQUIPMENT LOCATIONS. PRIOR TO INSTALLATION FIELD VERIFY EXISTING CONDITIONS AND COORDINATE AS REQUIRED.

RADIANT FLOORING (HYDRONIC) SYSTEM DETAIL

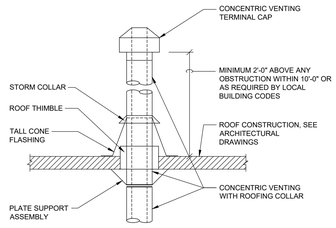
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ST FAN ROOF DETAIL

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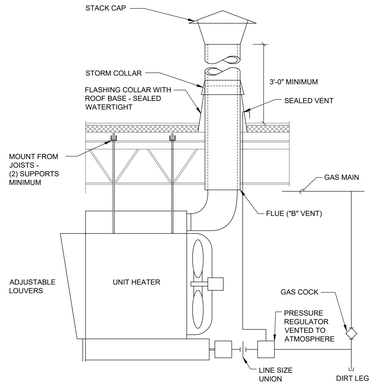


GENERAL NOTES:
1. CONCENTRIC FLUE AND COMBUSTION AIR VENTING UP THRU ROOF WITH ROOF SUPPORT ASSEMBLY.

2. TALL CONE FLASHING, STORM COLLAR, AND ROOFING THIMBLE. REFERENCE MANUFACTURER RECOMMENDATION FOR SIZING.

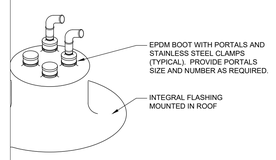
CONCENTRIC WATER HEATER VENT DETAIL

NOT TO SCALE



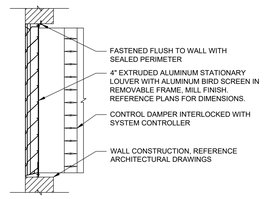
UNIT HEATER DETAIL

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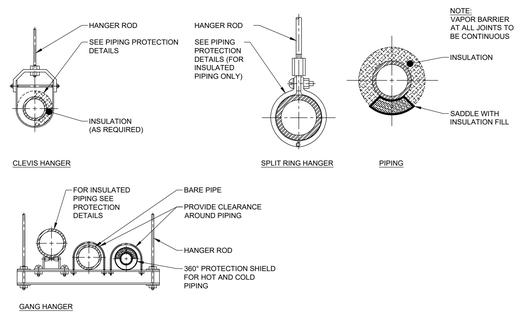
ENETRATION DETAIL

ALE



WALL LOUVER DETAIL

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PIPING SUPPORT AND INSULATION DETAIL

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CL	CURRENT LIMITING DEVICE - NOTE D
CR	CONVENIENCE RECEPTACLE
CU	CONDENSING UNIT
EF	EXHAUST FAN
F	FURNACE
G	GROUND (GREEN)
GFI	GROUND FAULT INTERRUPT
IG	ISOLATED GROUND (ORANGE)
L	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
OS	OCCUPANCY SENSOR - NOTE B
R	RECEPTACLE
SR	SPECIAL RECEPTACLE
UH	UNIT HEATER
WH	WATER HEATER
WP	WEATHER PROOF
J	JUNCTION BOX
OS	OCCUPANCY SENSOR - NOTE C
●	CONDUIT STUB UP FROM UNDER SLAB
	RECEPTACLE - SPECIAL AS CALLED OUT ON PLANS
	RECEPTACLE - DUPLEX
	RECEPTACLE - DEDICATED DUPLEX
	RECEPTACLE - DUPLEX AND USB
	RECEPTACLE - QUAD
▽	WALL MOUNTED DATA OUTLET - NOTE A
▼	WALL MOUNTED TELEPHONE OUTLET - NOTE A
▼	WALL MOUNTED DATA/TELEPHONE OUTLET - NOTE A
	MOTOR CONNECTION
	DISCONNECT - NON-FUSED, F = FUSED
	COMBINED MOTOR STARTER WITH DISC AND HOA, F = FUSED
	EXIT
	PUSH BUTTON FOR DOOR STRIKE
$	SINGLE-POLE SWITCH, D=DIMMABLE, OS=OCCUPANCY SENSOR, OS(D)=DIMMABLE OCCUPANCY SENSOR
$3/a	THREE-WAY SWITCH AND/OR SWITCH LEG a (LETTER)
	BRANCH PANELBOARD
AV	AUDIO/VISUAL ALARM
M	MANUAL (DOUBLE ACTION) STATION WITH CLEAR PLASTIC COVER
V	VISUAL ALARM

NOTE A: PROVIDE 4" BOX, 1-GANG COVER, AND (1) 3/4" CONDUIT FOR DATA AND (1) 3/4" CONDUIT FOR TELEPHONE OUTLET, AND TERMINATE 6" ABOVE ACCESSIBLE CEILING SPACE.

NOTE B: PROVIDE OCCUPANCY-VACANCY SENSOR (WALL MOUNTED) WITH INTEGRAL MANUAL OVERRIDE SWITCH AND 15 MINUTE OFF FOR UNOCCUPIED MODE.

NOTE C: PROVIDE OCCUPANCY-VACANY SENSOR (CEILING MOUNTED) AND WALL SWITCH, 15 MINUTE OFF FOR UNOCCUPIED MODE. PROVIDE POWER MODULE AND WALL MOUNTED MANUAL OVERRIDE SWITCH.

NOTE D: PROVIDE CURRENT LIMITING DEVICE FOR TRACK LIGHTING WITH POWER NOT TO EXCEED 30 WATTS/FT. LIMITING DEVICE SHALL MATCH TRACK LIGHTING MANUFACTURER.

CEILING FAN SCHEDULE

TAG	MANUFACTURER	MODEL NUMBER	AREA SERVED	FAN (WATTS)	VOLTAGE PHASE	WEIGHT (LBS)	NOTES
CF-1,2	TBD	56" DIAMETER	BREAK ROOM - 111	110 W	120 V 1 PH	35	1, 2, 3, 4

NOTES:

1. PROVIDE STABILIZATION SUPPORT TETHER AND ATTACHMENT HARDWARE.
2. PROVIDE ELECTRICAL CABLE WITH ATTACHMENT HARDWARE.
3. PROVIDE FAN SPEED CONTROLLER REMOTELY MOUNTED (BREAK ROOM WALL) TO SIMULTANEOUSLY CONTROL CEILING FANS.
4. VERIFY CEILING FAN DIRECTIONAL ORIENTATION WITH OWNER.

CONDUCTORS, ETC) AND CONNECTION POINTS WITH GENERAL CONTRACTOR.

4. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND PRIOR TO INSTALLATION.
5. COORDINATE WITH OTHER TRADES IN EQUIPMENT TO REQUIRED CLEARANCES AND TO AVOID ANY INTERFERENCE.
6. REFERENCE ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL EQUIPMENT INFORMATION.
7. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR FIRE ALARM SYSTEM.
8. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
9. BELOW GRADE CONDUIT OR EXTERIOR CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS) WITH COMPRESSION FITTINGS.
10. ABOVE GRADE INTERIOR CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT) OR INTERMEDIATE METALLIC CONDUIT (IMC).
11. CONDUCTORS SHALL BE INSTALLED IN METAL CONDUIT AND SHALL BE SOLID OR STRANDED COPPER.
12. LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT WHERE CONCEALED BEHIND WALLS, INACCESSIBLE BY FINISH MATERIALS, OR SUBJECT TO PHYSICAL DAMAGE.

ENERGY NOTES - ELECTRICAL

1. RECESSED LUMINARIES INSTALLED IN BUILDING THERMAL ENVELOPE SHALL BE INSULATION CONTACT RATED, LABELED FOR AIR LEAKAGE IN ACCORDANCE WITH ASTM E283, AND SEALED WITH GASKET OR CAULK BETWEEN HOUSING AND INTERIOR WALL OR CEILING COVERING. (C402.5.8)
2. TO REDUCE ENERGY USAGE LUMINAIRE LEVEL LIGHTING CONTROLS (LLLC) TO BE INDEPENDENTLY CAPABLE OF MONITORING OCCUPANT ACTIVITY, MONITORING AMBIENT LIGHT, AND BEING CONFIGURABLE BASED ON PARAMETERS INCLUDING BRIGHT AND DIM SETPOINTS, TIMEOUTS, DIMMING FADE RATES, SENSOR SENSITIVITY, AND ZONING CONFIGURATIONS. EXCEPTIONS FOR SECURITY, EMERGENCY, AND EXIT EGRESS LIGHTING. (C405.2)
3. LOW-VOLTAGE DRY-TYPE TRANSFORMER ENERGY EFFICIENCIES TO CONFORM WITH ASHRAE 90.1 REGULATIONS AND MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLE C405.6. (C405.6)
4. ELECTRIC MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.7(1) THROUGH C405.7(4) WHEN TESTED AND RATED IN ACCORDANCE WITH THE DOE 10 CFR 431. (C405.7)
5. LIGHTING CONTROL SYSTEMS TO BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTRUCTIONS. (C408.3)

1.03 COMPLETELY OPERATIONAL ELECTRICAL SYSTEMS READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B PANELS, BREAKERS, CONDUIT, WIRING, AND BRANCH CIRCUITS CONNECTING EACH FIXTURE, DEVICE AND EQUIPMENT.
1.03C MECHANICAL EQUIPMENT CONNECTIONS.
1.03D PLUMBING EQUIPMENT CONNECTIONS.
1.03E LIGHTING FIXTURES AND LAMPS.
1.03F FUSES, DISCONNECTS, STARTERS, DEVICES, PLATES, AND OTHER REQUIRED EQUIPMENT.
1.03G CONTACTORS, RELAYS, TIMECLOCKS, LIGHTING SENSORS, AND LIGHTING CONTROLS.
1.03H ELECTRIC HEATERS AND BASEBOARD.
1.03I EMPTY CONDUIT SYSTEM FOR TELEPHONE/DATA COMMUNICATIONS.
1.03J FIRE ALARM SYSTEM.

2.0 RELATED WORK BY OTHER TRADES

2.01 TEMPERATURE CONTROL AND INTERLOCK WIRING.
2.02 TELEPHONE AND DATA WIRING, DEVICES, AND TERMINATIONS.

3.0 RELATED WORK BY OTHERS

3.01 APPLIANCES.

4.0 ELECTRIC INSTALLATION NOTES

4.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

4.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

4.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

4.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

4.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

4.06 CONFER WITH OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

4.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

4.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

4.09 SIZE AND TYPE OF EQUIPMENT BRANCH OVERCURRENT PROTECTIVE DEVICE(S) SHALL BE AS RECOMMENDED BY EQUIPMENT MANUFACTURER. FIELD VERIFY EACH REQUIRED DEVICE PRIOR TO INSTALLATION.

4.10 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OF OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

4.11 WIRE SHALL HAVE 600 VOLT INSULATION, NOT LESS THAN #12 EXCEPT FOR CONTROLS, BE SOLID COPPER TYPE THHN OR THWN FOR #12 AND SMALLER, AND BE STRANDED COPPER TYPE THHN OR THWN FOR WIRE #10 AND LARGER.

4.12 CONDUIT IN GROUND FOR EXTERIOR FIXTURES AND EQUIPMENT MAY BE PVC (IF PERMITTED BY LOCAL AUTHORITIES). CONDUIT EXPOSED TO WEATHER, IN SLABS ON GRADE, AND WHERE REQUIRED BY CODE SHALL BE RIGID GALVANIZED STEEL WITH WATERPROOF FITTINGS AND APPROVED COMPOUND. CONDUIT ELSEWHERE SHALL BE EMT WITH COMPRESSION OR SET SCREW FITTINGS.

4.13 DEVICES AND PLATES IN FINISHED AREAS SHALL HAVE COLOR SELECTED BY ARCHITECT. DEVICES IN UNFINISHED AREAS SHALL BE WHITE WITH GALVANIZED PLATES.

4.14 DEVICES SHALL BE, UNLESS NOTED OTHERWISE ON DRAWINGS:
HUBBELL HBL-1221-OW (SINGLE POLE SWITCHES, HUBBELL HBL-1223-OW (THREE WAY SWITCHES), HUBBELL HBL-5362-W (RECEPTACLES 20A), HUBBELL HBL-GF-5362-W (GFI RECEPTACLES 20A), HUBBELL HBL-IG-5362 (ORANGE IG RECEPTACLES 20A), HUBBELL SERIES (WALL OCCUPANCY/VACANCY) HUBBELL SERIES (CEILING OCCUPANCY SENSOR) WITH HUBBELL RSD315W ROCKER SWITCHES.

4.15 DEVICES LOCATED OUTDOORS, KITCHENS, TOILETS, FOOD SERVICE AREAS, OR WITHIN 6' OF PLUMBING FIXTURES SHALL BE GROUND-FAULT INTERRUPT TYPE.

4.16 LIGHTING FIXTURES SHALL HAVE CONTROLS WITH OCCUPANCY SENSORS, VACANCY SENSORS, DAYLIGHTING SENSORS, TIMECLOCKS, PHOTOCELLS, AND MANUAL OVERRIDES, INCLUDING MODULES, CONTACTORS, RELAYS, DEVICES, INTERLOCKS, SWITCHES, PROGRAMMING, AND WIRING. IDENTIFY CONTROLS WITH TYPE-PRINTED LABELING.

4.17 MOUNTING HEIGHTS SHALL BE, UNLESS NOTED OTHERWISE ON DRAWINGS:
SWITCHES AT 4'-0" ABOVE FINISHED FLOOR (3'-6" ADA), RECEPTACLES AT 1'-6" ABOVE FINISHED FLOOR (INDOOR) INCLUDING COMMUNICATION RECEPTACLES, 2'-0" ABOVE FINISHED FLOOR (OUTDOOR), AND 4" ABOVE COUNTERTOP BACKSPLASH.

4.18 IDENTIFY DISCONNECTS, STARTERS, PANELS, SWITCHBOARDS, DIMMERS, AND SWITCHES WITH 3/4" HIGH WHITE-FACED MICARTA WITH 1/4" BLACK LETTERS. DIMMERS AND SWITCHES IN GROUPS OF 2 OR LESS DO NOT REQUIRE IDENTIFICATION.

4.19 STARTERS SHALL BE ELECTRICALLY OPERATED WITH OVERLOAD PROTECTION ON EACH PHASE LINE, HAND-OFF-AUTO OR START-STOP CONTROL, CONTROL TRANSFORMERS, AND RED PILOT. SWITCHES SHALL BE SQUARE D QMB GENERAL DUTY (240V) OR HEAVY DUTY (480V) WITH BUSSMAN DUAL ELEMENT FUSES AS REQUIRED. PROVIDE 2 SPARE SETS OF FUSES FOR EACH FUSE SIZED AT 100A OR LARGER.

4.20 DISTRIBUTION PANELS SHALL BE SQUARE D TYPE I-LINE. BRANCH PANELS AND CIRCUIT BREAKERS SHALL BE SQUARE D TYPE NQ/NQODINF. PANELS SHALL HAVE COPPER BUS WITH BOLT-ON TYPE BREAKERS. PROVIDE ACCURATE AND TYPE-PRINTED PANEL SCHEDULE FOR EACH PANEL.

4.21 ELECTRICAL EQUIPMENT SHALL HAVE MINIMUM OF 65,000 AMP INTERRUPTING CAPACITY UNLESS NOTED OTHERWISE ON DRAWINGS, OR EQUIPMENT MANUFACTURER SUPPLIES DETAILED MINIMUM AIC CALCULATIONS JUSTIFYING RATINGS OF EQUIPMENT PROVIDED.

4.22 TRANSFORMER SHALL BE OPEN-VENTILATE, DRY TYPE, CLASS H INSULATION, 115°C TEMPERATURE RISE. WINDINGS SHALL BE COPPER. PRIMARY AND SECONDARY VOLTAGES SHALL BE AS NOTED, PROVIDE ADJUSTMENTS FOR REQUIRED VOLTAGE.

4.23 BALANCE LOAD ACROSS PHASES FOR CIRCUITS. TEST EACH PHASE AND PROVIDE REPORT DOCUMENT OF CONDITIONS.

4.24 ELECTRICALLY SUPERVISED AUTOMATIC FIRE ALARM SYSTEM INCLUDING WIRING TO INDOOR BELL, OUTDOOR BELL, OUTDOOR VISUAL, WATER FLOW ALARM(S), TAMPER SWITCHES, AND LOCAL AUTHORITY CONNECTION(S). DUCT DETECTORS SHALL HAVE REMOTE INDICATION/TEST AND SHUT DOWN EACH ASSOCIATED MECHANICAL EQUIPMENT.

4.25 COMMUNICATION OUTLETS SHALL BE INSTALLED WITH 4" BOX AND SINGLE GANG COVER, AND 3/4" CONDUIT ROUTED INTO ACCESSIBLE SPACE.

4.26 EXTERIOR AND KITCHEN EQUIPMENT SHALL BE NEMA 3R AND WEATHERPROOF LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTIONS.

5.0 SUBMITTALS (DIGITAL PDF FILES):

5.01 LIGHTING FIXTURES.
5.02 CONTACTORS, RELAYS, TIMECLOCKS, LIGHTING SENSORS, AND LIGHTING CONTROLS.
5.03 ELECTRIC SERVICE EQUIPMENT.
5.04 PANELS AND BREAKERS.
5.05 DISCONNECT SWITCHES.
5.06 ELECTRIC HEATERS.
5.07 FIRE ALARM SYSTEM.

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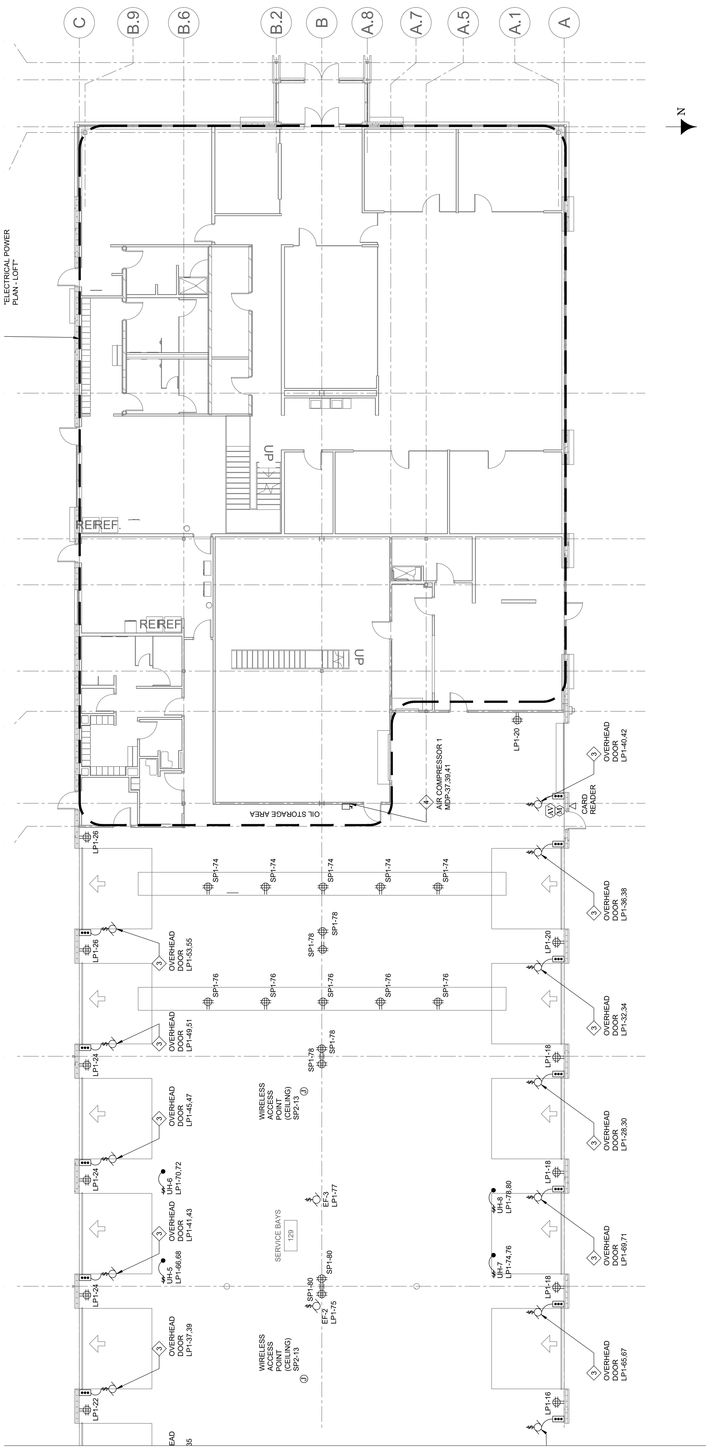
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POWER PLAN - OVERALL

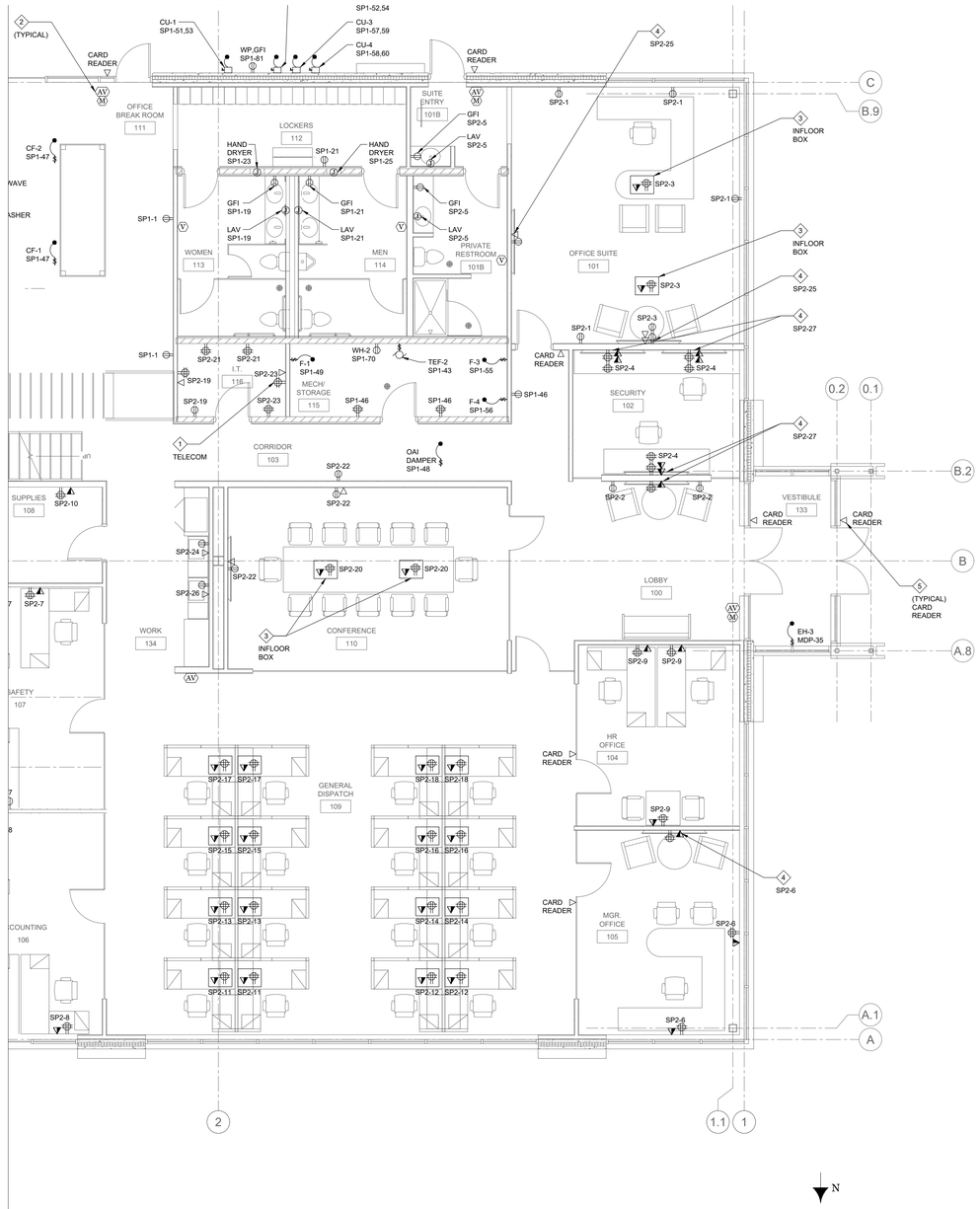
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2 FIRE ALARM
PROVIDE FIRE ALARM SYSTEM. PROVIDE EQUIPMENT MODULE, DEVICES, CONNECTIONS, AND TESTING FOR ALARM SYSTEM. TEST FIRE ALARM SYSTEM AND DEVICES AS REQUIRED FOR LOCAL AUTHORITIES APPROVAL.

3 INFLOOR FLOOR BOX
PROVIDE RECESSED FLOOR BOX (QUAD POWER RECEPTACLE AND DATA/PHONE JACK WITH ACTIVATION COVER PLATES) WITH BRASS COVER PLATES. VERIFY LOCATION AND TYPE WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. PROVIDE 1-1/4" TELECOM CONDUIT AND 3/4" POWER CONDUIT ROUTED UNDERSLAB TO ADJACENT WALL AND ROUTED UP TO OVERHEAD STRUCTURE.

4 TV-DISPLAY
PROVIDE WALL RECEPTACLE/DATA FOR TELEVISION EQUIPMENT. VERIFY LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

5 DOOR CARD READER
PROVIDE JUNCTION BOXES, CONDUITS, AND CONDUCTORS AS REQUIRED TO INSTALL CARD READER SYSTEM. VERIFY REQUIREMENTS WITH MANUFACTURER AND OWNER RECOMMENDATIONS.

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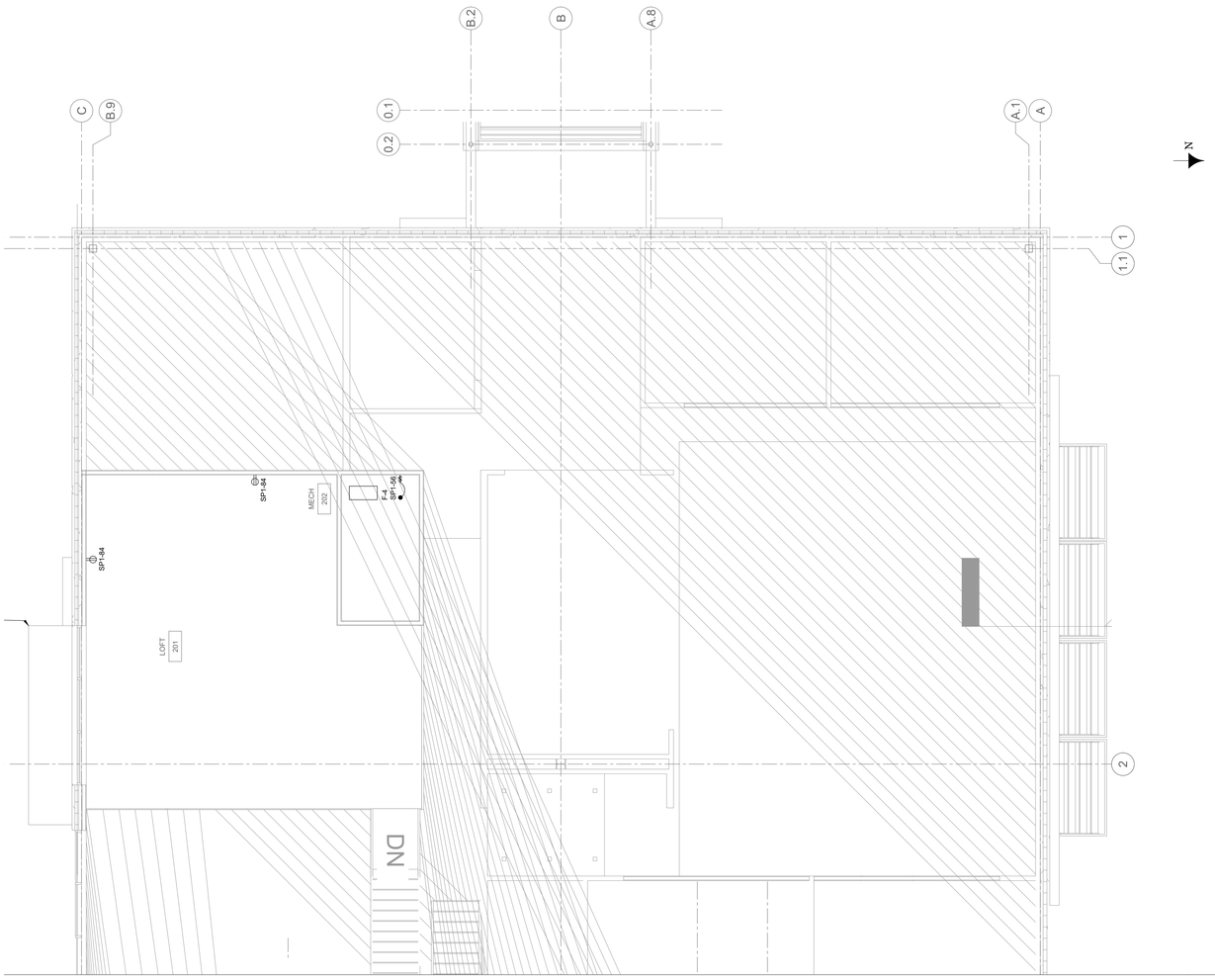
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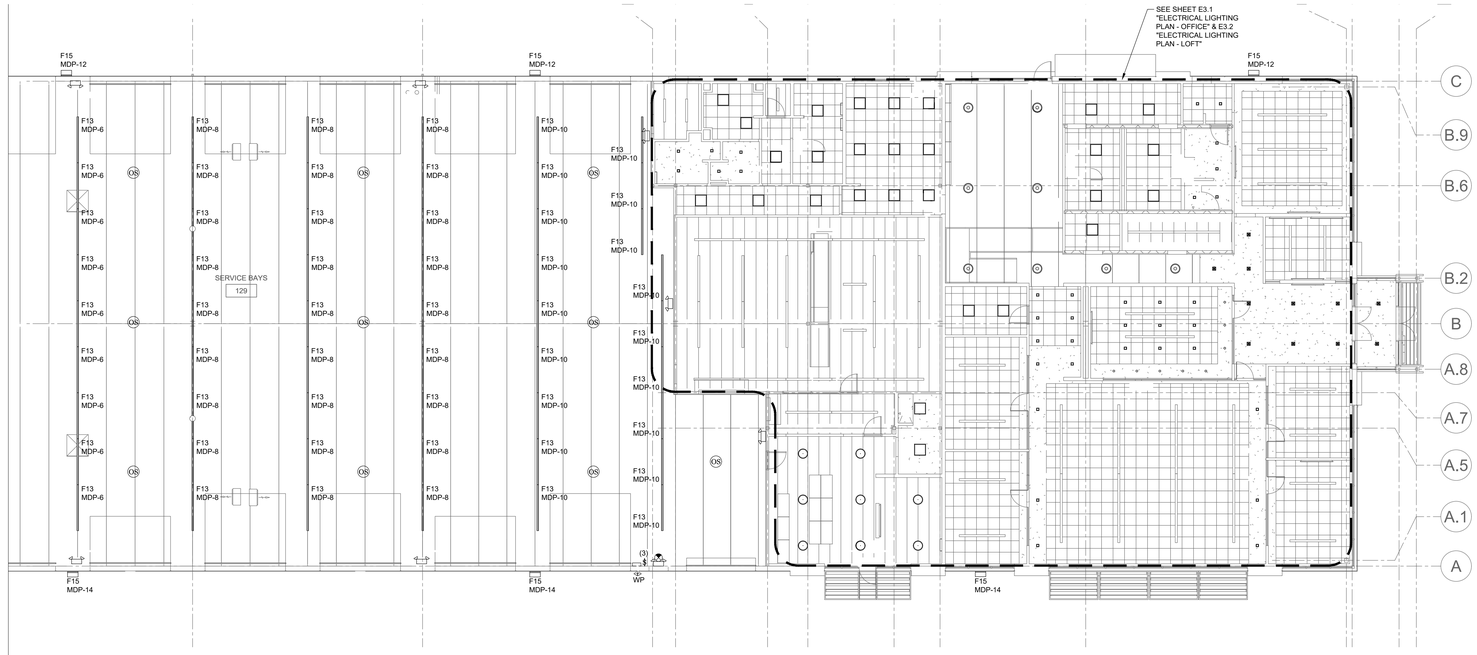
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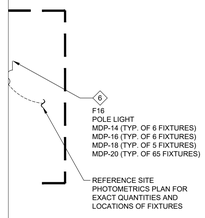
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Project Number 22004.01
Phone: 847.783.5900
Elmhurst, Illinois 60126
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RE SCHEDULE

MODEL NUMBER	TYPE	LUMENS	COLOR TEMPERATURE	LAMP	V/A'S	NOTES
SFP22-LED-FS-25W-3500K	2X2 LAYIN	3696	3500	LED	30	5, 6
AE3RRB-SW-50-80-35-SDL-10W	3" DOWNLIGHT	1233	3500	LED	15	5, 6
GEN06-4040-WWHXXX	6" DOWNLIGHT	4000	3500	LED	39	5, 6
AE2RRB-SW-15-80-35-SDL-7W	2" DOWNLIGHT	961	3500	LED	10	6
VIA2PDI-HLO-FH-WIO2-SW-80-350-350-35-4FT	LINEAR	750 / FT	3500	LED	30	6
AST-4-4L-SA-UNV-835/CH36	4' STRIP	4596	3500	LED	34	5, 6
AST-8-8L-SA-UNV-835/CH36	8' STRIP	9196	3500	LED	68	7
OPS-05L-5Q-35K8	PENDANT	5190	3500	LED	34	6
VIA2PDI-HLO-FH-WIO2-SW-80-500-350-35-4FT	LINEAR	750/ FT	3500	LED	30	6
V2PERD-HLO-LED-80-350-35-2FT	TAPE	330 / FT	3000	LED	15	6
-	4" DOWNLIGHT	1500	3500	LED	20	6
LLHV4-50U-WST-ED-U	HIGHBAY	45249	5000	LED	368	5, 6
MPS8-50XL-CW-EDU	8' STRIP	16831	5000	LED	133	5, 6
ECF-S-48L-1A-NW-G2-4	WALL PACK	22518	5000	LED	159	6
ECF-L-80L(64L)-1A-NW-G2-4-H1S(5W)	POLE LIGHT	30024	5000	LED	264	7
LE SERIES	EXIT	-	-	LED	3	1, SELF-POWERED
CU2HL SERIES	BATT	88	-	LED	5	2, 3
CC SERIES	EXIT/BATT	88	-	LED	3	1, 2, 3, SELF-POWERED
OCR SERIES (REMOTE DUAL HEADS)	BATT	88	-	LED	6	2, 3, 4

ND ARROWS AS REQUIRED. PROVIDE AT LEAST 90 MINUTES OF EMERGENCY POWER.
AST (2) LAMP HEADS. PROVIDE AT LEAST 90 MINUTES OF EMERGENCY POWER.
F OF ROOM SERVED AHEAD OF LOCAL CONTROL DEVICE UNLESS NOTED OTHERWISE.
RCE WITHIN INTERIOR (CONDITIONED) ACCESSIBLE SPACE AND CONNECTIONS AS REQUIRED.
REQUIRED BY NEC 410.36.
TECTURAL PLANS PRIOR TO INSTALLATION.
NS AND QUANTITIES WITH APPROVED SITE LIGHTING PHOTOMETRIC DRAWINGS. PROVIDE POLES, HEADS, AND BASE SUPPORT STRUCTURE.



WINGS FOR SITE PLAN AND UTILITIES.

TRICS DRAWINGS FOR SITE LIGHTING PLAN.

NGS FOR SIGN LOCATIONS.

N SPECIFICATIONS AND LOCATIONS.

LIGHTING CONTROLS SEQUENCE OF OPERATIONS

PROVIDE COMPLETE ELECTRONIC CONTROL OF LIGHTING FIXTURES, AS INDICATED ON SEQUENCE OF OPERATION AND LIGHTING PLANS, INCLUDING CONTROLLERS, POWER MODULES, RELAYS, DEVICES, SENSORS, CONDUCTORS (LINE-VOLTAGE SHALL BE IN CONDUIT), CABLING (CABLING SHALL BE IN CONDUIT WHERE WITHIN CONCEALED WALLS/CEILINGS). CONTROLS OPERATIONS MANUALS, AND TWO-HOUR MINIMUM TRAINING SESSION, FOR EQUIPMENT AS FOLLOWS.

128 PART DELIVERY, 129 SERVICE BAYS, 130 WAREHOUSE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

124 SHOP PARTS, 125 UNISEX RESTROOM, 126 RETAIL PARTS, 127 LOUNGE
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

123 PARTS ROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

120 SHOWER, 121 MECHANICAL, 122 WOMEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

119 LOCKERS
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

118 MEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

117 SERVICE BREAK ROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

115 MECHANICAL/JANITOR CLOSET, 116 I.T.
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

113 WOMEN'S RESTROOM, 114 MEN'S RESTROOM
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

112 LOCKERS
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

111 OFFICE BREAKROOM
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

110 CONFERENCE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

109 GENERAL DISPATCH
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

108 SUPPLIES
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

104 HR, 105 MGR. OFFICE, 106 ACCOUNTING, 107 SAFETY
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

103 CORRIDOR
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

102 SECURITY
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

101 OFFICE SUITE
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

101B PRIVATE RESTROOM, 101B SUITE ENTRY
LIGHTING CONTROLLED VIA WALL MOUNTED OCCUPANCY SENSOR WITH OVERRIDE MANUAL SWITCH.

100 LOBBY, 133 VESTIBULE, 134 WORK
LIGHTING CONTROLLED VIA CEILING MOUNTED OCCUPANCY SENSOR WITH WALL MOUNTED OVERRIDE MANUAL SWITCH.

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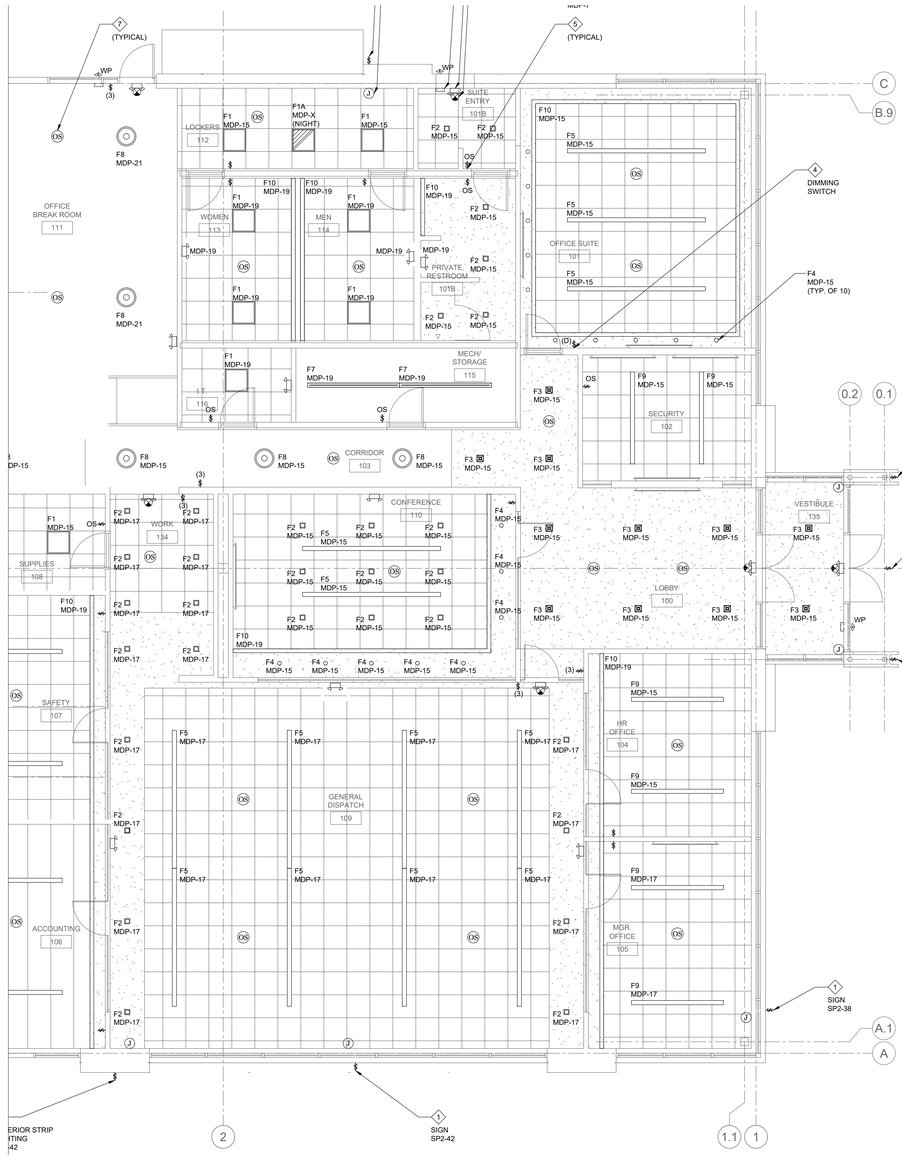
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PROJECT NO.
PROJECT MGR.
ELECTRICAL LIGHTING PLAN - OVERALL

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2 LIGHTING
REFERENCE ARCHITECTURAL REFLECTED CEILING PLAN FOR LIGHTING FIXTURE LOCATIONS.

3 SWITCHING
VERIFY SWITCHBANK LOCATION WITH OWNER PRIOR TO INSTALLATION. COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS.

4 DIMMING SWITCH
PROVIDE WALL-MOUNTED DIMMING SWITCH SERVING SWITCHING AS INDICATED.

5 OCCUPANCY SENSOR (WALL MOUNTED)
PROVIDE WALL MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES (WALL SWITCH WITH MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES). VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND WALL CONSTRUCTION.

6 OCCUPANCY SENSOR (WALL MOUNTED WITH SWITCH-LEG)
PROVIDE WALL MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES SWITCH-LEG AS SHOWN - MULTIPLE WALL SWITCHES, EACH WITH MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES. VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND WALL CONSTRUCTION.

7 OCCUPANCY SENSOR (CEILING MOUNTED)
PROVIDE CEILING MOUNTED OCCUPANCY SENSOR AND INTERLOCK WITH ROOM LIGHTING FIXTURES AND WALL MOUNTED SWITCH (WALL SWITCH FOR MANUAL MOMENTARY SWITCH OVERRIDE "ON/OFF/AUTO" MODES). VERIFY AREA COVERAGE WITH MANUFACTURER RECOMMENDATIONS AND CEILING/WALL CONSTRUCTION.

8 EXIT SIGNS
PROVIDE EXIT SIGNS AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO DEDICATED EMERGENCY EGRESS CIRCUIT BREAKER. PROVIDE LOCKING DEVICE ON CIRCUIT BREAKER.

9 EMERGENCY LIGHTING
PROVIDE EMERGENCY LIGHTING FIXTURE AND EMERGENCY BACKUP BATTERY PACK FOR 90 MINUTES (MINIMUM) WITH POWER CONNECTIONS TO LIGHTING OF AREA SERVED, AHEAD OF LOCAL SWITCHING.

10 EXTERIOR STRIP LIGHTING
PROVIDE SWITCHING, JUNCTION BOXES, CONDUITS, AND CONDUCTORS TO INSTALL EXTERIOR STRIP LIGHTING. REFERENCE ARCHITECTURAL SHEETS FOR FIXTURE LOCATIONS AND FURTHER INFORMATION. VERIFY REQUIREMENTS WITH OWNER, MANUFACTURER, AND EQUIPMENT SUBMITTAL PRIOR TO PURCHASE. COORDINATE TIME SETPOINTS WITH OWNER.

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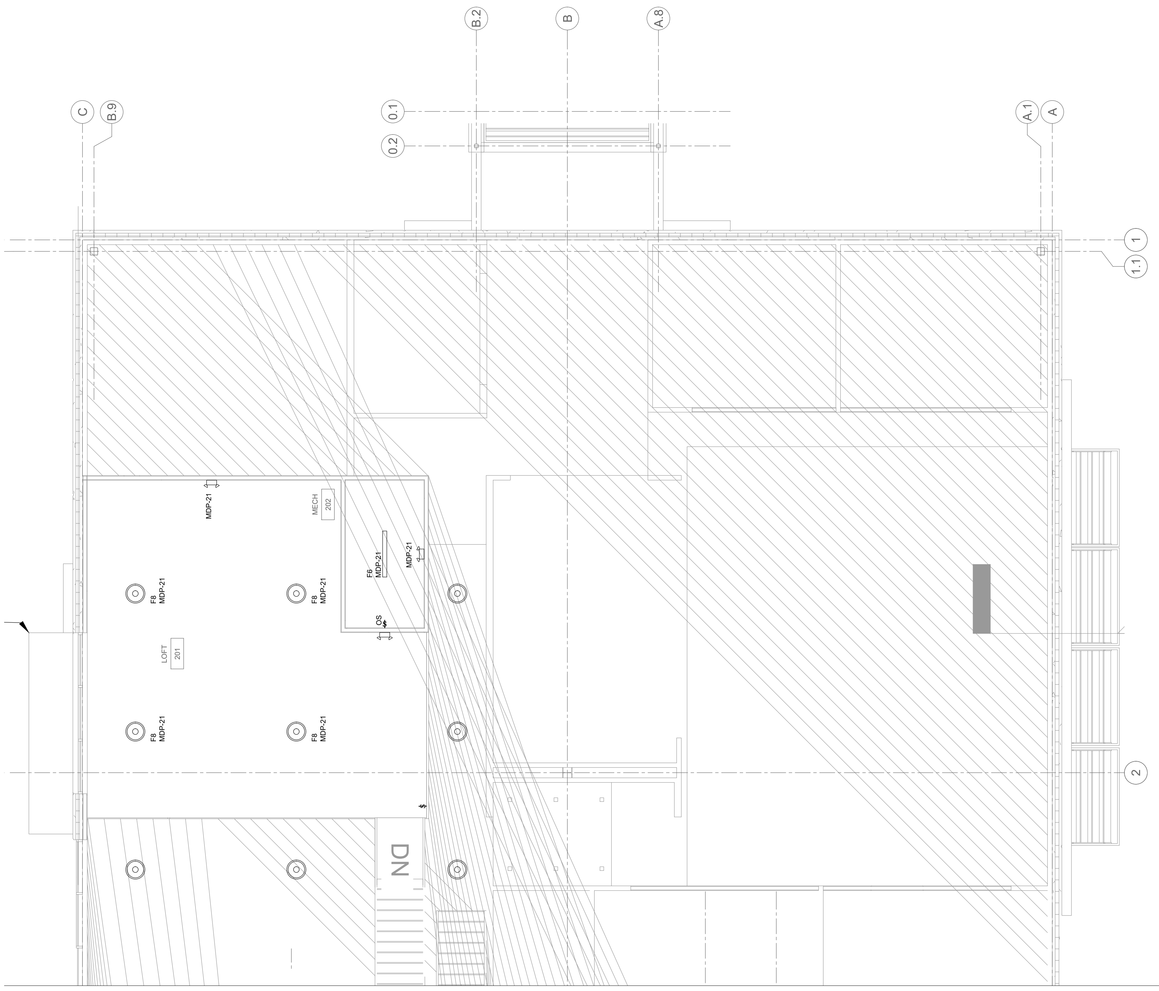
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ELECTRICAL
LIGHTING PLAN - LOFT

E3.2

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Project Number 2205A-01
Illinois Design Firm - #41-7863800
Illinois Website 6/2019
oxfordengineering.com

	1	76,886	3		1	2	20	1	720	130 WAREHOUSE RECEPT.
4#250 - 2-1/2" C					3	4	20	1	720	130 WAREHOUSE RECEPT.
				250	5	6	20	1	720	130 WAREHOUSE RECEPT.
	1	17,400	3		7	8	20	1	720	130 WAREHOUSE RECEPT.
4#3 - 1-1/4" C					9	10	20	1	720	130 WAREHOUSE RECEPT.
				100	11	12	20	1	720	130 WAREHOUSE RECEPT.
	6	2080	2		13	14	20	1	720	129 SERVICE BAYS RECEPT.
				20	15	16	20	1	720	129 SERVICE BAYS RECEPT.
	6	2080	2		17	18	20	1	720	129 SERVICE BAYS RECEPT.
				20	19	20	20	1	720	129 SERVICE BAYS RECEPT.
	6	2080	2		21	22	20	1	720	129 SERVICE BAYS RECEPT.
				20	23	24	20	1	720	129 SERVICE BAYS RECEPT.
	6	2080	2		25	26	20	1	720	129 SERVICE BAYS RECEPT.
				20	27	28		2	2080	O/H DOOR 6
	6	2080	2		29	30	20			
				20	31	32		2	2080	O/H DOOR 6
	6	2080	2		33	34	20			
				20	35	36		2	2080	O/H DOOR 6
	6	2080	2		37	38	20			
				20	39	40		2	2080	O/H DOOR 6
	6	2080	2		41	42	20			
				20	43	44	20	1	720	BOILER 5,6
	6	2080	2		45	46	20	1	600	BOILER PUMP 5,6
				20	47	48	20	1	-	SPARE
	6	2080	2		49	50		2	1080	UH-1 5,6
				20	51	52	20			
	6	2080	2		53	54		2	1080	UH-2 5,6
				20	55	56	20			
	6	2080	2		57	58		2	1080	UH-3 5,6
				20	59	60	20			
	6	2080	2		61	62		2	1080	UH-4 5,6
				20	63	64	20			
	6	2080	2		65	66		2	1893	UH-5 5,6
				20	67	68	20			
	6	2080	2		69	70		2	1893	UH-6 5,6
				20	71	72	20			
	5,6	114	1	20	73	74		2	1893	UH-7 5,6
3#10 - 3/4"C	5,6	1920	1	30	75	76	20			
	5,6	528	1	20	77	78		2	1893	UH-8 5,6
	-	-	1	20	79	80	20			
	6	800	1	20	81	82	20	1	-	SPARE
	6	800	1	20	83	84	20	1	300	IV DAMPERS 5,6

160,840 VA — BALANCED LOAD — 447 A

120/208 V 3 PH 4 W — MAIN — 600A MCB

25% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
IUS.
EVICE ON CIRCUIT BREAKER.
GROUND CONDUCTOR.
D NEUTRAL CONDUCTOR.
UIT BREAKER.
NTS WITH APPROVED EQUIPMENT SPECIFICATIONS.

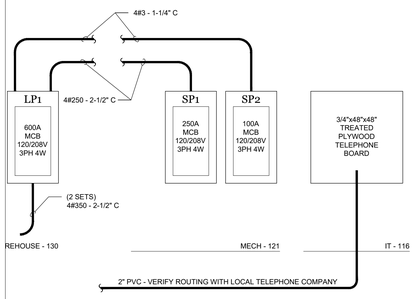
EDULE — TAG SP2

NOTES	VA	P	A	CCT	A	P	VA	LOAD	NOTES
-	900	1	20	1	2	20	1	360	100 LOBBY RECEPT. -
-	720	1	20	3	4	20	1	720	102 SECURITY RECEPT. -
-	600	1	20	5	6	20	1	720	105 MGR. OFFICE RECEPT. -
-	720	1	20	7	8	20	1	720	106 ACCOUNTING RECEPT. -
-	720	1	20	9	10	20	1	720	108 SUPPLIES RECEPT. -
-	720	1	20	11	12	20	1	720	109 DISPATCH RECEPT. -
-	720	1	20	13	14	20	1	720	109 DISPATCH RECEPT. -
-	720	1	20	15	16	20	1	720	109 DISPATCH RECEPT. -
-	720	1	20	17	18	20	1	720	109 DISPATCH RECEPT. -
-	360	1	20	19	20	20	1	720	110 CONFERENCE RECEPT. -
-	360	1	20	21	22	20	1	720	110 CONFERENCE RECEPT. -
-	360	1	20	23	24	20	1	400	COPIER 6
S. 6	360	1	20	25	26	20	1	400	COPIER 6
PTS. 6	360	1	20	27	28	20	1	-	SPARE -
-	-	1	20	29	30	20	1	-	SPARE -
-	-	1	20	31	32	20	1	-	SPARE -
-	-	1	20	33	34	20	1	-	SPARE -
-	-	1	20	35	36	20	1	-	SPARE -
-	-	1	20	37	38	20	1	200	EXTERIOR SIGN 6,7
-	-	1	20	39	40	20	1	200	EXTERIOR SIGN 6,7
-	-	1	20	41	42	20	1	300	EXTERIOR SIGN 6,7

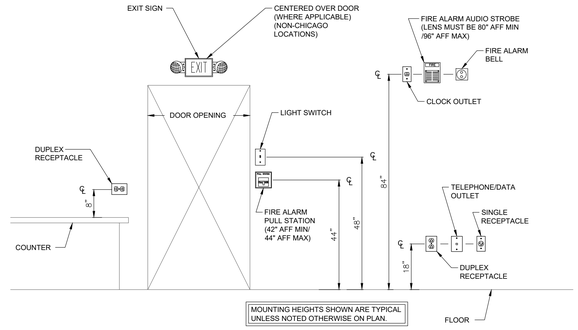
17,400 VA — BALANCED LOAD — 49 A

120/208 V 3 PH 4 W — MAIN — 100A MCB

25% OF LIGHTING + 100% OF HVAC + 50% OF REMAINDER.
IUS.
EVICE ON CIRCUIT BREAKER.
GROUND CONDUCTOR.
D NEUTRAL CONDUCTOR.
UIT BREAKER.
NTS WITH APPROVED EQUIPMENT SPECIFICATIONS.
IC PROGRAMMABLE ASTRONOMIC TIMECLOCK WITH NECESSARY CONTACTORS. VERIFY SETPOINTS WITH USER.

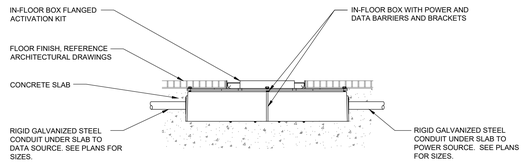


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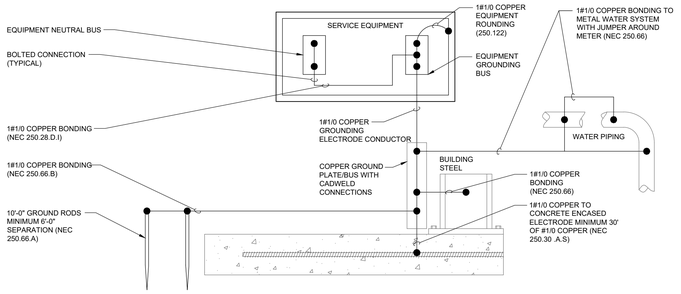
TYPICAL MOUNTING HEIGHT DETAIL

NOT TO SCALE



IN-FLOOR POWER/DATA BOX DETAIL

NOT TO SCALE



GENERAL NOTES:

1. PROVIDE GROUNDING IN ACCORDANCE WITH ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION.
2. PRIOR TO INSTALLATION, VERIFY REQUIREMENTS WITH LOCAL AUTHORITY INSPECTOR AND RECEIVE APPROVAL PRIOR TO INSTALLATION.

SERVICE GROUNDING DETAIL

NOT TO SCALE

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ELECTRICAL PANELS AND RISER

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CING VALVE

ED ABOVE, AS REQUIRED TO MAKE

WITHIN WALLS AND PLUMBING CHASES. EXPOSED PIPING ONLY PERMITTED WHERE NECESSARY TO CONNECT WITH EQUIPMENT OR FIXTURES.

5. REFERENCE ARCHITECTURAL DRAWINGS FOR EQUIPMENT AND FIXTURE LOCATIONS.

6. PROVIDE FINAL CONNECTIONS TO EQUIPMENT WITH SHUTOFF VALVES, PRESSURE REGULATORS, VACUUM BREAKERS, BACKFLOW PREVENTORS, UNIONS (INSTALL UNION BETWEEN APPLIANCE AND SHUTOFF), FLEXIBLE CONNECTORS, FILTERS, DIRT LEGS, TRAPS, WATER STOP VALVES, AS SPECIFIED, REQUIRED BY CODE, AND AS NECESSARY FOR COMPLETELY OPERATIONAL EQUIPMENT.

7. PROVIDE WASTE PIPING OR EXTEND INDIRECT WASTE PIPING TO ABOVE DRAINS WITH AIR GAP 2X PIPE DIAMETER.

ENERGY NOTES - PLUMBING

1. WATER HEATING EQUIPMENT MUST MEET MINIMUM PERFORMANCE REQUIRED IN TABLE C404.2 (C404.2).

2. HOT WATER PIPING SHALL BE INSULATED FROM HOT WATER HEATER TO THE HEATED WATER FIXTURE. INSULATION SHALL BE 1" THICK FIBERGLAS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET (C404.4).

3. HEATED WATER SUPPLY PIPING SHALL BE IN ACCORDANCE WITH SECTION 404.5.1 (LENGTH) OR C404.5.2 (VOLUME). THE FLOW RATE THROUGH 1/4-INCH PIPING SHALL BE NOT GREATER THAN 0.5 GPM. THE FLOW RATE THROUGH 5/16-INCH PIPING SHALL BE NOT GREATER THAN 1 GPM. THE FLOW RATE THROUGH 3/8-INCH PIPING SHALL BE NOT GREATER THAN 1.5 GPM. (C404.5)

4. HOT WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH CIRCULATION PUMP AND CONTROLS SHALL START CIRCULATION PUMP BASED ON DEMAND FOR HOT WATER WITHIN SPACE. CONTROLS SHALL AUTOMATICALLY TURN OFF PUMP WHEN AT DESIRED TEMPERATURE OR WHEN THERE IS NO DEMAND FOR HOT WATER AND SHALL BE LOCATED WITH READY ACCESS (C404.6).

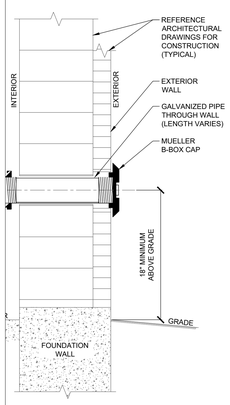
5. STORAGE TANK-TYPE WATER HEATERS AND HOT WATER STORAGE TANKS THAT HAVE VERTICAL WATER PIPES CONNECTING TO INLET AND OUTLET OF THE TANK SHALL BE PROVIDED WITH INTEGRAL HEAT TRAPS AT THOSE INLETS AND OUTLETS OR SHALL HAVE PIPE-CONFIGURED HEAT TRAPS IN THE PIPING CONNECTED TO THOSE INLETS AND OUTLETS. (C404.3)

PLUMBING FIXTURE UNITS

FIXTURE	QTY	WASTE		WATER	
		DFU	TOTAL	WSFU	TOTAL
BREAKROOM SINK	2	2	4	2	4
UTILITY SINK	1	3	3	3	3
WATER CLOSET (TANK)	8	4	32	3	24
URINAL	4	3	12	5	20
LAVATORY	9	2	18	2	18
FLOOR DRAIN	8	6	48	0	0
AREA DRAIN	6	6	36	0	0
SHOWER	4	3	12	3	12
REFRIGERATOR	4	0	0	0.5	2
HOSE BIBB	4	0	0	3	12
TOTAL			165		95

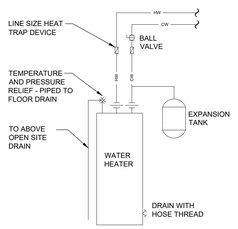
TOTAL WATER SUPPLY: 95 WSFU = 42.25 GPM.

STATE OF ILLINOIS PLUMBING CODE 890 APPENDIX A TABLE N, PROVIDE 1-1/2" WATER SERVICE PIPING AND 1-1/2" METER.



CIAL OR MULTI-FAMILY RESIDENTIAL WITH MULTIPLE

TAIL



WATER HEATER PIPING DIAGRAM

NOT TO SCALE

ZB-1400T (CERAMIC).
ZB-1400T (CEMENT).

DRAINS
Z-415B (ROUND STRAINER)
Z-541 (12" ROUND TRAFFIC DUTY),

HB (HOSE BIBB)
WOODFORD 65 (SEMI-RECESSED) FREEZE-PROOF, ANTI-SIPHON, AND AUTOMATIC DRAINING.

LAV-1 (LAVATORY, WALL MOUNTED) (ADA)
ZURN S340 20"X18" VITREOUS CHINA LAVATORY WITH 4" FAUCET HOLES.
ZURN Z6915-TMV AQUASENSE BATTERY POWERED FAUCET WITH THERMOSTATIC MIXING VALVE.
SET TEMPERATURE LIMIT STOP FOR 110 DEG F MAXIMUM.
STRAINER WASTE.
FLOOR MOUNTED CONCEALED ARM CARRIER WITH RECTANGULAR UPRIGHTS.
ZURN Z8946-3-NT INSULATOR KIT FOR WASTE AND WATER.

LAV-2 (LAVATORY, WALL MOUNTED) (ADA)
BRADLEY SS-2N EXPRESS LAVATORY SYSTEM.
SET TEMPERATURE LIMIT STOP FOR 110 DEG F MAXIMUM.
STANDARD SUPPORT FRAME MOUNTED TO WALL.

SK-1 (BREAKROOM SINK) (ADA)
AMERICAN STANDARD COLONY 3322 ADA DOUBLE-BOWL STAINLESS STEEL SINK
AMERICAN STANDARD STAINLESS STEEL STRAINERS.
AMERICAN STANDARD COLONY 4175.500 1-HANDLE FAUCET WITH CHROME FINISH.

SH-1 (SHOWER) (ADA)
SHOWER ENCLOSURE (SEE ARCHITECTURAL DRAWINGS).
ZURN Z7300-SS-HW-MT SINGLE HANDLE BALANCING MIXING VALVE, CHECK STOPS, AND TEMPERATURE LIMIT STOPS CHROME FAUCET WITH SHOWER HEAD, FLEXIBLE 60" HOSE, AND 24" SLIDE BAR, ELBOW, AND FLANGE.
SET TEMPERATURE LIMIT STOPS FOR 110 DEG F MAXIMUM.

SH-2 (SHOWER) (ADA)
SHOWER ENCLOSURE (SEE ARCHITECTURAL DRAWINGS).
ZURN Z7300-SS-HW-MT SINGLE HANDLE BALANCING MIXING VALVE, CHECK STOPS, AND TEMPERATURE LIMIT STOPS CHROME FAUCET WITH SHOWER HEAD, FLEXIBLE 60" HOSE, AND 24" SLIDE BAR, ELBOW, AND FLANGE.
SET TEMPERATURE LIMIT STOPS FOR 110 DEG F MAXIMUM.

UR (URINAL) (ADA)
ZURN Z5755-U WALL MOUNTED URINAL
ZURN ZTR6203-EWS-LL FLUSH VALVE (0.5 GALLON) WITH LONG-LIFE BATTERY.
FLOOR MOUNTED CARRIER WITH RECTANGULAR UPRIGHTS.
ADA MOUNT LIP AT 17" ABOVE FINISHED FLOOR.

US (UTILITY SINK)
ZURN MS2620-DF1 UTILITY SINK WITH STEEL LEGS AND DUAL HANDLE SWIVEL FAUCET.

WC-1 (WATER CLOSET, TANK/BOWL) PRESSURE ASSIST
ZURN Z5571 ELONGATED BOWL AND INSULATED TANK (1.1 GALLON).
ZURN 5955SS-AM MATCHING SOLID ANTIMICROBIAL PLASTIC OPEN FRONT SEAT, COVER, AND STAINLESS STEEL CHECK HINGE.

WC-2 (WATER CLOSET, TANK/BOWL) PRESSURE ASSIST (ADA)
ZURN Z5571 ELONGATED BOWL AND INSULATED TANK (1.1 GALLON).
ZURN 5955SS-AM MATCHING SOLID ANTIMICROBIAL PLASTIC OPEN FRONT SEAT, COVER, AND STAINLESS STEEL CHECK HINGE.
MOUNT SEAT AT 18" ABOVE FINISHED FLOOR.

WH-1 (WATER HEATER)
AO SMITH CYCLONE BTH-199 100 GALLON TANK HEATER 96% EFFICIENCY WITH 199 MBH INPUT PROVIDING 230 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP

WH-2 (WATER HEATER)
AO SMITH CYCLONE BTH-199 100 GALLON TANK HEATER 96% EFFICIENCY WITH 199 MBH INPUT PROVIDING 230 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP

WH-3 (WATER HEATER)
AO SMITH CYCLONE BTX-100 50 GALLON TANK HEATER 96% EFFICIENCY WITH 100 MBH INPUT PROVIDING 116 GALLON RECOVERY PER HOUR FOR 100 DEG F TEMPERATURE RISE.
AMTROL EXPANSION TANK WITH DIAPHRAGM BLADDER AND CHARGE VALVE TO MATCH WORKING PRESSURE.
ASME PRESSURE AND TEMPERATURE RELIEF VALVE AND DRAIN PAN WITH 18 GAUGE GALVANIZED STEEL, 2" DEEP
HOLD-RITE QUICKSTAND WALL BRACKET PLATFORM WITH MOUNTING SUPPORTS AND HARDWARE.

PLUMBING SYMBOLS LIST

CW	COLD WATER SUPPLY PIPING
HW	HOT WATER SUPPLY PIPING (140 DEG F)
HWR	HOT WATER RETURN PIPING
TW	TEMPERED WATER SUPPLY PIPING (110 DEG F)
	SANITARY WASTE PIPING
	SANITARY VENT PIPING
	LINE SIZE DIELECTRIC UNION
	LINE SIZE GATE VALVE
	LINE SIZE BALL VALVE
	LINE SIZE BALANCING VALVE
	LINE SIZE CHECK VALVE
	LINE SIZE PRESSURE REGULATOR
	LINE SIZE PRESSURE GAGE
AFF	ABOVE FINISHED FLOOR
AD	AREA DRAIN
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTOR
CO	FLOOR CLEANOUT
DDC	DUAL DETECTOR CHECK
FD	FLOOR DRAIN
HB	HOSE BIBB
IW	INDIRECT WASTE
LAV	LAVATORY
P	PRESSURE
RPZ	REDUCED PRESSURE ZONE
S	SINK
SH	SHOWER
SS	SERVICE SINK
T	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
VB	VACUUM BREAKER
V	VENT
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
	CONNECT TO EXISTING

1.03B WASTE AND VENT SANITARY PIPING SYSTEM AND CONNECTIONS TO FIXTURES/DEVICES.
1.03C HOT AND COLD WATER PIPING SYSTEM AND CONNECTIONS TO FIXTURES/DEVICES.
1.03D PLUMBING EQUIPMENT, FIXTURES, AND DEVICES.
1.03E THERMAL INSULATION.
1.03F INCOMING WATER SERVICES FOR DOMESTIC WITH REQUIRED METER, READER, AND BACKFLOW PROTECTION.
1.03G ROOF DRAINS AND STORM PIPING SYSTEM.
1.03H SETTLING BASIN.

2.0 RELATED WORK BY OTHER TRADES

2.01 ELECTRIC POWER WIRING.
2.02 GAS PIPING.

3.0 PLUMBING INSTALLATION NOTES

3.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

3.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

3.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

3.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

3.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

3.06 COORDINATE WITH OTHER TRADES FOR INSTALLATION OF WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

3.07 PROPOSAL SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

3.08 DRAWINGS SHALL BE FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED EQUIPMENT DRAWINGS ONLY.

3.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OR OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

3.10 PROVIDE ESCUTCHEON PLATES AT WALLS OF FINISHED AREAS.

3.11 FIXTURE AND EQUIPMENT CONNECTIONS SHALL BE MADE WITH CHROME PLATED SUPPLIES WITH STOPS. EXPOSED WASTE PIPING SHALL BE CHROME PLATED.

3.12 WHERE COPPER PIPE CONNECTS TO FERROUS PIPE USE ISOLATING UNIONS.

3.13 VENTS THRU ROOF AND ROOF DRAINS SHALL BE INSTALLED WITH 24" X 24" X 4LB LEAD FLASHING.

3.14 VENTS SHALL BE OFFSET WHERE REQUIRED SO THAT NO VENT THROUGH ROOF IS CLOSER THAN 15'-0" FROM ANY OUTSIDE AIR INTAKE. REFER TO APPROVED MECHANICAL DRAWINGS FOR EXACT OUTSIDE AIR INTAKE LOCATIONS.

3.15 WATER PIPING ABOVE GROUND SHALL BE TYPE L COPPER WITH LEAD-FREE JOINTS. WATER PIPING BELOW GROUND SHALL BE TYPE K COPPER TUBING WITHOUT JOINTS (NO JOINTS) OR CEMENT LINED DUCTILE IRON WITH PUSH JOINTS.

3.16 SUSPENDED WASTE AND VENT SANITARY PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED FITTINGS.

3.17 BURIED WASTE AND VENT SANITARY PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED FITTINGS.

3.18 EXTERIOR STORM AND SANITARY SEWER PIPING SHALL BE CODE APPROVED AND INSTALLED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION.

3.19 PVC PIPING SHALL NOT BE INSTALLED IN AREAS USED AS AIR PLENUMS. COORDINATE EXACT PLENUM LOCATIONS WITH MECHANICAL CONTRACTORS.

3.20 INSULATE HOT WATER AND COLD WATER EXCEPT INDIVIDUAL FIXTURE SUPPLIES. INSULATION SHALL BE 1" THICK FIBERGLASS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET. INSULATE EXPOSED WASTE, COLD, AND HOT WATER PIPING BELOW WHEELCHAIR LAVATORIES WITH ZURN INSULATION KITS. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM E84.

3.21 INSULATE STORM WATER DOWNSPOUT PIPING WITH 1" THICK FIBERGLASS SECTIONAL PIPE INSULATION WITH FLAME RETARDANT JACKET. INSULATION SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50, PER ASTM B-84.

3.22 ACCESS PANELS WHERE REQUIRED FOR SERVICING DEVICES OR EQUIPMENT LOCATED BEHIND INACCESSIBLE AREAS. COORDINATE EXACT SIZES AND LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

3.23 WATER PRESSURE ABOVE 80 PSI SHALL HAVE PRESSURE REDUCING VALVE ASSEMBLY, INCLUDING ISOLATION VALVE, PRESSURE REGULATOR VALVE, PRESSURE GAUGE, STRAINER, AND FITTINGS.

3.24 TEST AND REPORT FOR WATER, WASTE, AND VENT PIPING SYSTEMS. SUBMIT THREE (3) REPORTS STATING EACH SYSTEM COMPLIANCE AND APPROVAL AUTHORIZATION.

4.0 SUBMITTALS (DIGITAL PDF FILES):

4.01 PLUMBING FIXTURES.
4.02 PLUMBING EQUIPMENT.

FIRE PROTECTION SPECIFICATIONS

1.0 DESCRIPTION OF WORK

1.01 GENERAL CONDITIONS AND GENERAL NOTES INDICATED WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL GOVERN WHERE APPLICABLE.

1.02 WORK INDICATED ON DRAWINGS SHALL BE CONSIDERED NEW AND IN-CONTRACT UNLESS NOTED OTHERWISE.

1.03 COMPLETELY OPERATIONAL WET PIPE AUTOMATIC FIRE PROTECTION SYSTEM READY FOR USE AS ITEMIZED BUT NOT LIMITED TO AS FOLLOWS:

1.03A DEMOLITION, REMOVAL, AND ALTERATIONS OF EXISTING SYSTEMS AND EQUIPMENT AS REQUIRED THOUGH NOT SPECIFICALLY INDICATED ACCOMMODATING PROPOSED WORK.
1.03B FIRE PROTECTION RISER, VALVES, TAMPER SWITCHES, WATERFLOW ALARMS, INDOOR BELL, OUTDOOR BELL, FIRE DEPARTMENT CONNECTION, HOSE CONNECTIONS, HEADS, AND INTERCONNECTING PIPING.
FIRE PROTECTION INSTALLATION DRAWINGS.
1.03C HYDRAULIC CALCULATIONS.
1.03D SPARE PARTS (MINIMUM OF THREE (3) EACH) AND SPARE PARTS BOX.

2.0 RELATED WORK BY OTHER TRADES

2.01 INCOMING WATER SERVICE.
2.02 ELECTRIC POWER WIRING.

3.0 RELATED WORK BY OTHERS

3.01 APPLIANCES.

4.0 FIRE PROTECTION INSTALLATION NOTES

4.01 WORK SHALL BE PERFORMED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION, INCLUDING ADA GUIDELINES AND ENERGY COMPLIANCE.

4.02 WORK AND INSTALLATIONS SHALL BE PERFORMED IN FIRST-CLASS NEAT WORKMANLIKE MANNER. REMOVE DEBRIS ON REGULAR BASIS AND CLEAN EQUIPMENT DURING PROJECT COMPLETION.

4.03 APPLY, PROCURE, AND PAY FOR REQUIRED PERMITS AND INSPECTIONS.

4.04 FIELD VERIFY PROJECT CONSTRUCTION CONDITIONS AND PROJECT SITE CONDITIONS PRIOR TO SUBMITTING BID.

4.05 THIS TRADE SHALL DO ITS OWN CUTTING AND PATCHING, TRENCHING AND BACKFILLING. PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FILLED WITH FIRESTOP PRODUCT. SUBMIT FIRESTOP PRODUCT MATERIAL SPECIFICATIONS TO LOCAL AUTHORITIES HAVING JURISDICTION.

4.06 CONFER WITH THE OTHER TRADES IN COORDINATION OF THIS WORK FOR REQUIRED CLEARANCES, CHASES, RECESSES AND OPENINGS.

4.07 PROPOSAL PRICE SHALL INCLUDE SPECIFIED MATERIALS ONLY. SHOULD CONTRACTOR WISH TO SUBSTITUTE MATERIALS, EQUIPMENT OR MANUFACTURERS, IT SHALL BE DONE BY STATING EACH SUBSTITUTION AND ITS PRICE ADJUSTMENT.

4.08 DRAWINGS SHALL BE USED FOR BIDDING ONLY. ROUGH-IN AND FINAL CONNECTION SHALL BE MADE FROM APPROVED INSTALLATION AND EQUIPMENT DRAWINGS ONLY.

4.09 GUARANTEE WORK AND EQUIPMENT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE OR OCCUPANCY. ANY REPAIRS OR REPLACEMENT DURING THIS PERIOD SHALL BE MADE WITHOUT COST TO OWNER.

4.10 INSTALLATION SHALL BE MADE IN ACCORDANCE WITH REQUIREMENTS OF APPLICABLE NFPA/ICC STANDARDS AND LOCAL FIRE PREVENTION DEPARTMENT.

4.11 SUBMIT INSTALLATION DRAWINGS AND HYDRAULIC CALCULATIONS FOR WATER SERVICE AND LOCAL FIRE DEPARTMENT APPROVAL. DRAWINGS SHALL BEAR SIGNATURE AND SEAL OF STATE REGISTERED PROFESSIONAL ENGINEER.

4.12 FIRE PROTECTION HEADS SHALL BE BRASS UPRIGHT (IN UNFINISHED CEILING AREAS), CONCEALED PLATE (IN FINISHED CEILING AREAS), AND FREEZE PROOF (POTENTIAL FREEZING AREAS). MATCH CONCEALED COLOR PLATE WITH ARCHITECTURAL CEILING COLOR.

4.13 FIRE PROTECTION HEADS SHALL BE CENTERED IN CEILING GRID. ESCUTCHEON PLATES SHALL BE ADJUSTABLE TYPE AND MOUNTED TIGHT TO CEILING.

5.0 SUBMITTALS (DIGITAL PDF FILES):

5.01 FIRE PROTECTION INSTALLATION DRAWINGS.
5.02 HYDRAULIC CALCULATIONS.

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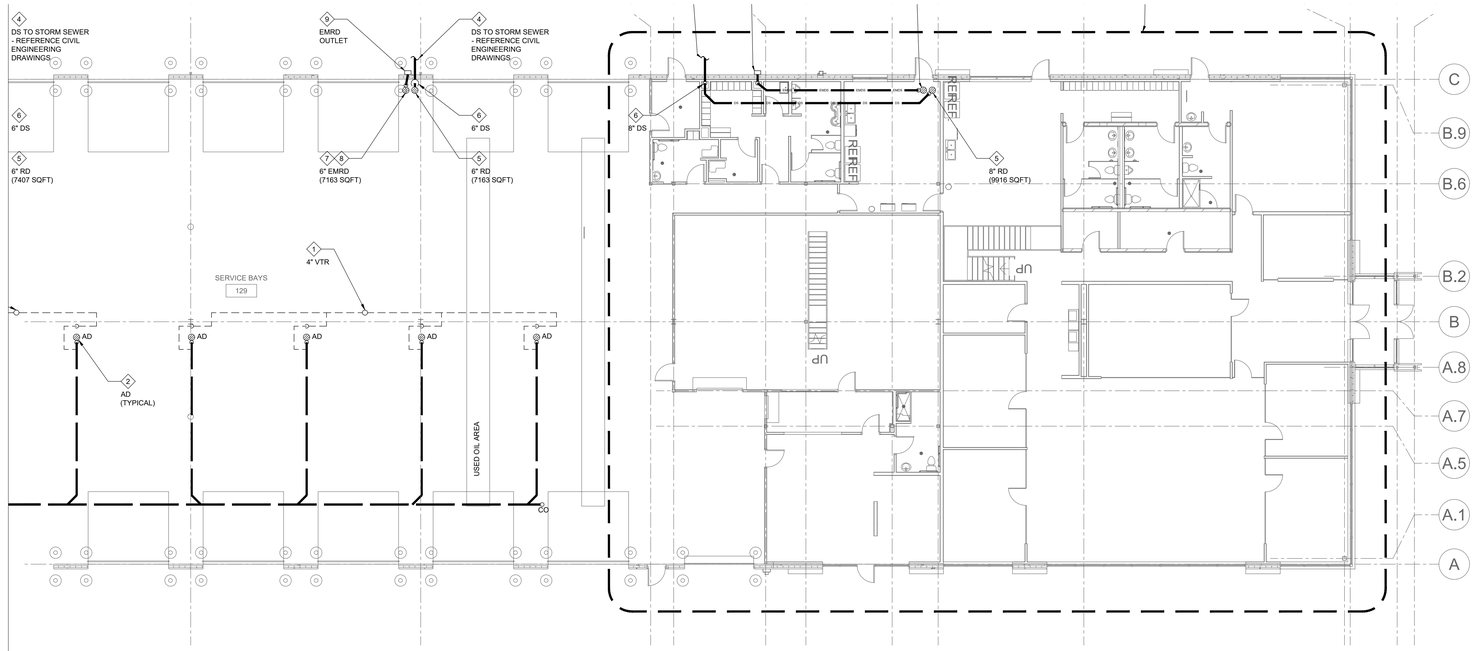
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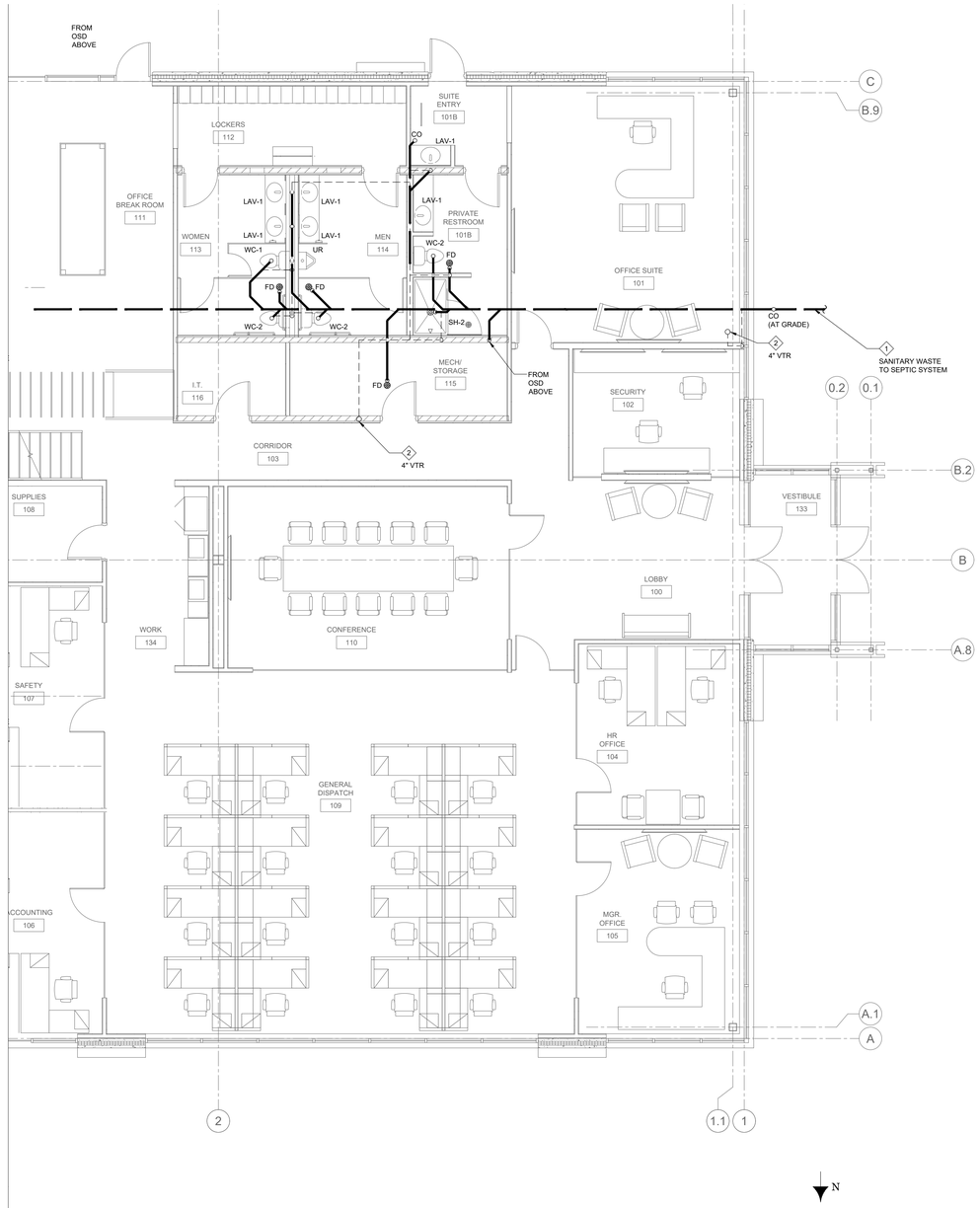
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TO INSTALLATION.

2 VENT THROUGH ROOF
PROVIDE VENT STACK UP THROUGH ROOF WITH EXTERIOR TERMINATION. PROVIDE PORTAL FLASHING, AND TERMINATE MINIMUM 18" ABOVE ROOF. TERMINATION SHALL BE MINIMUM 15'-0" FROM OUTSIDE AIR INTAKES.

3 FD
COORDINATE FLOOR DRAIN LOCATIONS WITH FURNITURE, FIXTURES, AND EQUIPMENT. FIELD VERIFY LOCATION WITH EXISTING CONDITIONS.

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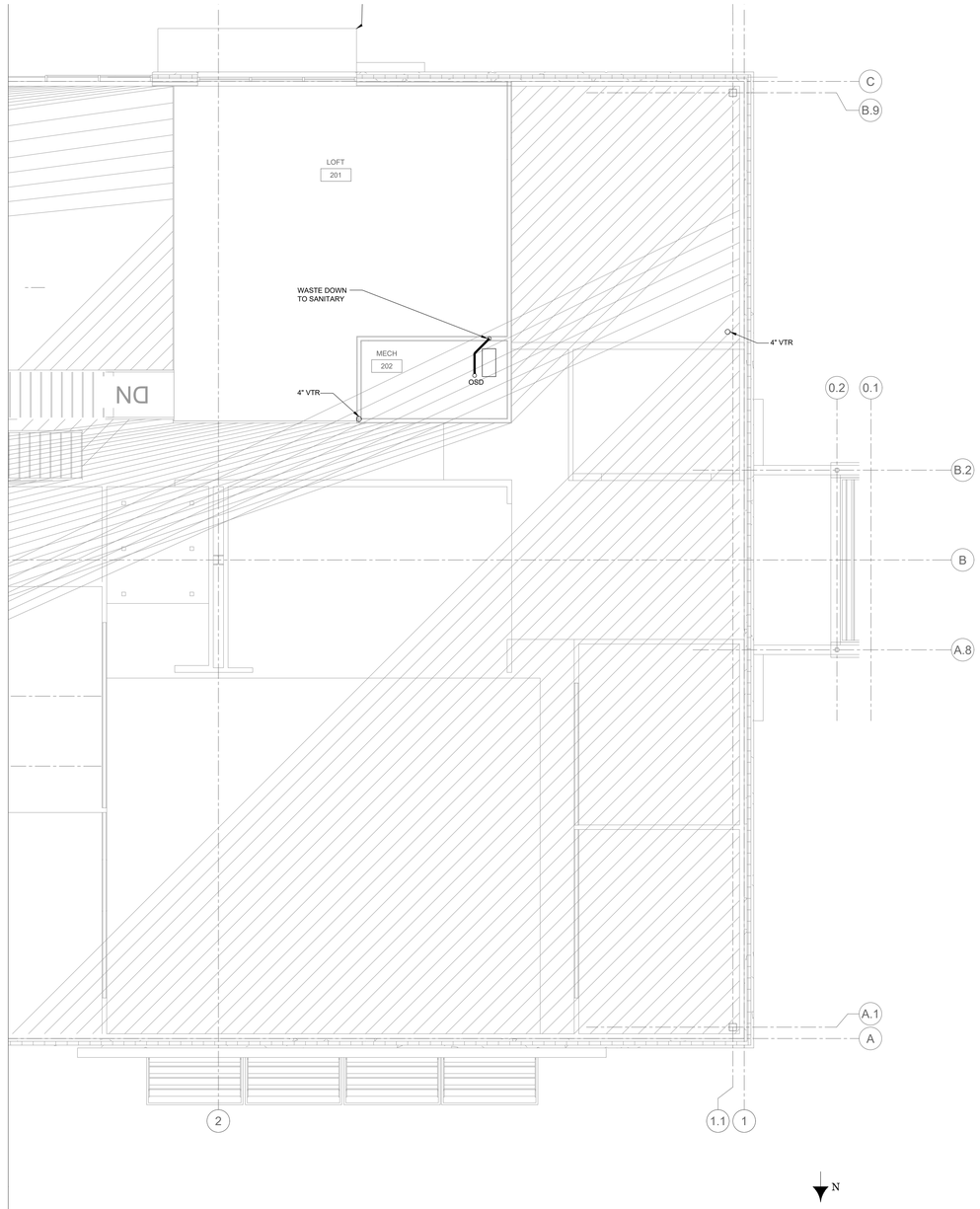
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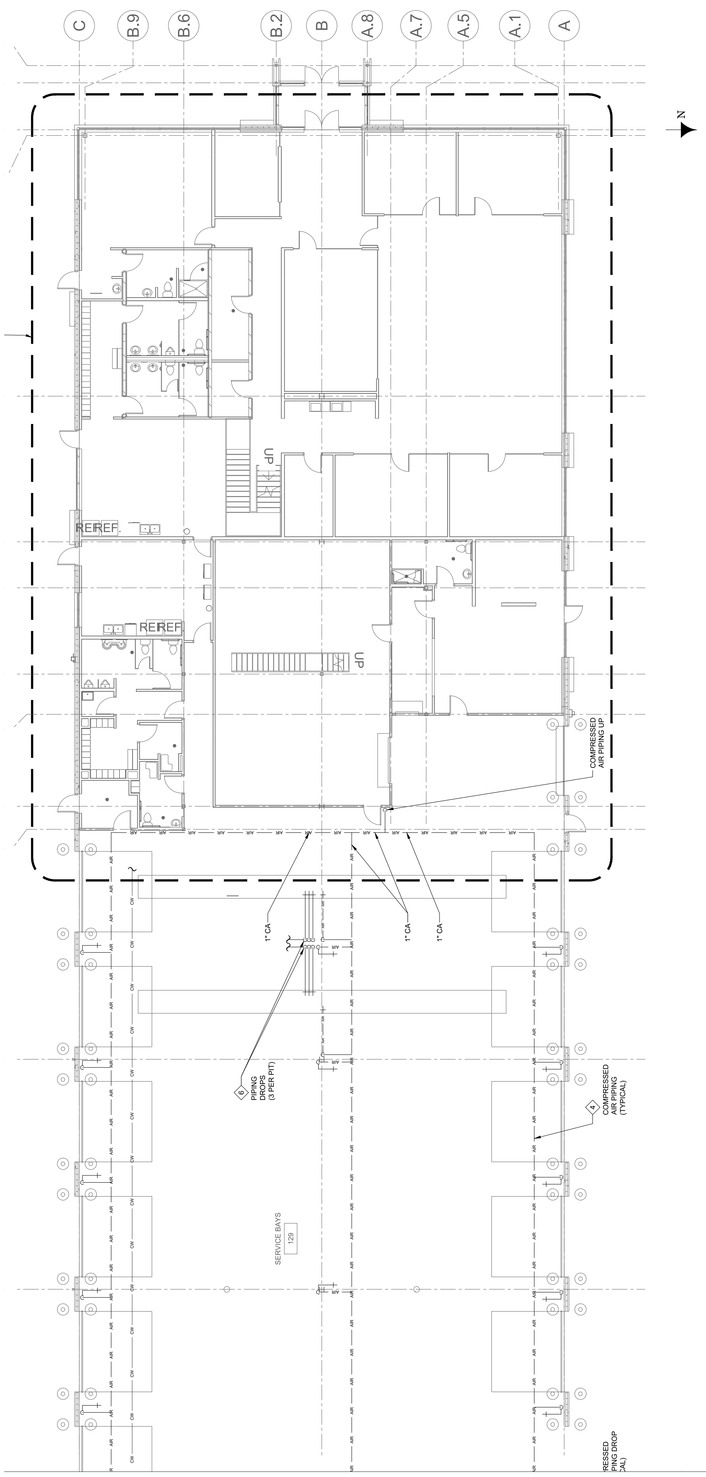
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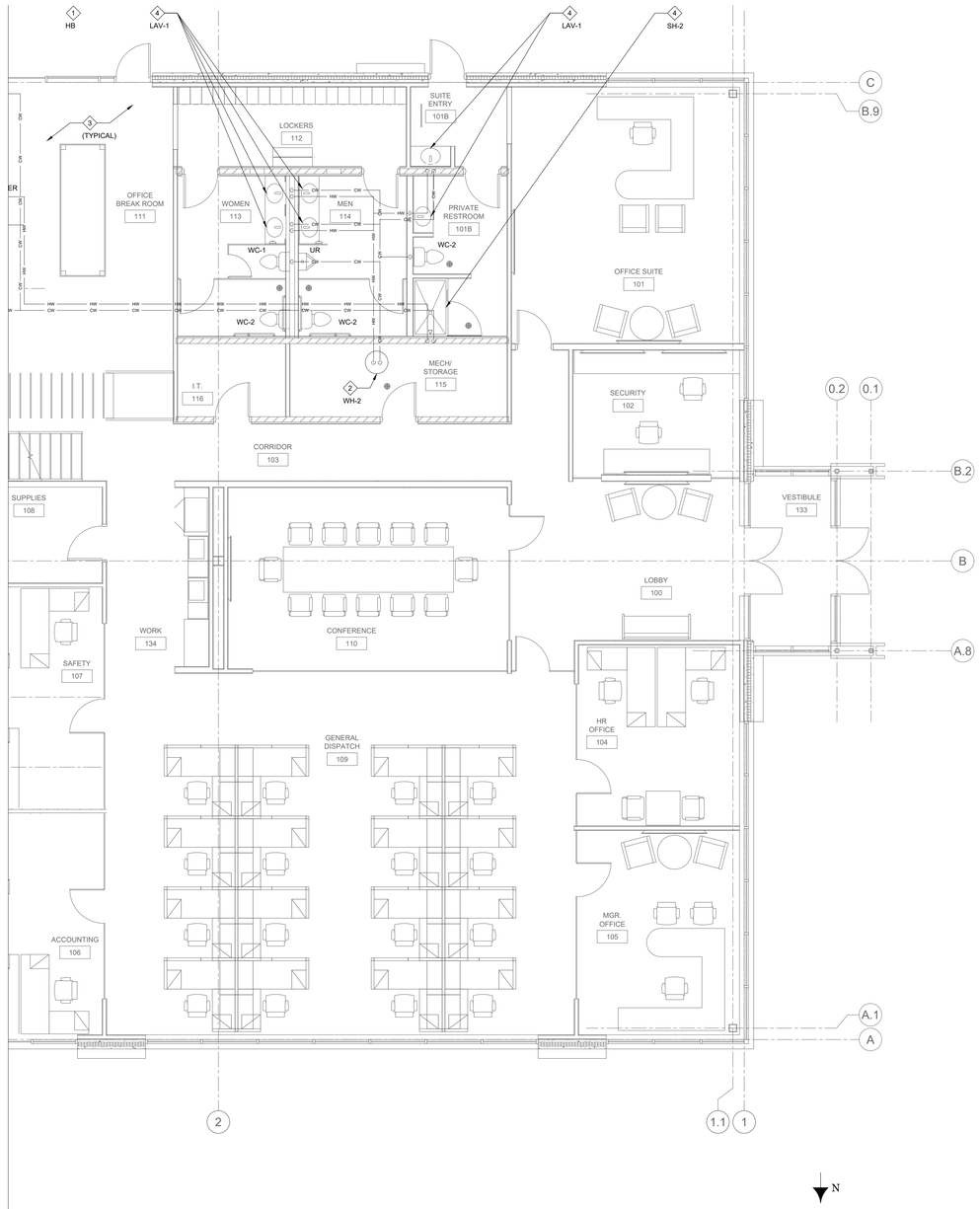
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2 WH
PROVIDE WATER HEATER AS SHOWN ON EQUIPMENT SCHEDULE - REFERENCE WATER HEATER DETAIL. PROVIDE EXPANSION TANK WITH PRESSURE TO MATCH WORKING PRESSURE.

3 STOP VALVES
PROVIDE WATER SUPPLY SHUTOFF VALVE FOR EACH FIXTURE, EQUIPMENT, AND APPLIANCE.

4 TMV
PROVIDE THERMOSTATIC MIXING VALVE SET TO 110 DEG F MAXIMUM AT EACH LAVATORY AND HAND SINK.

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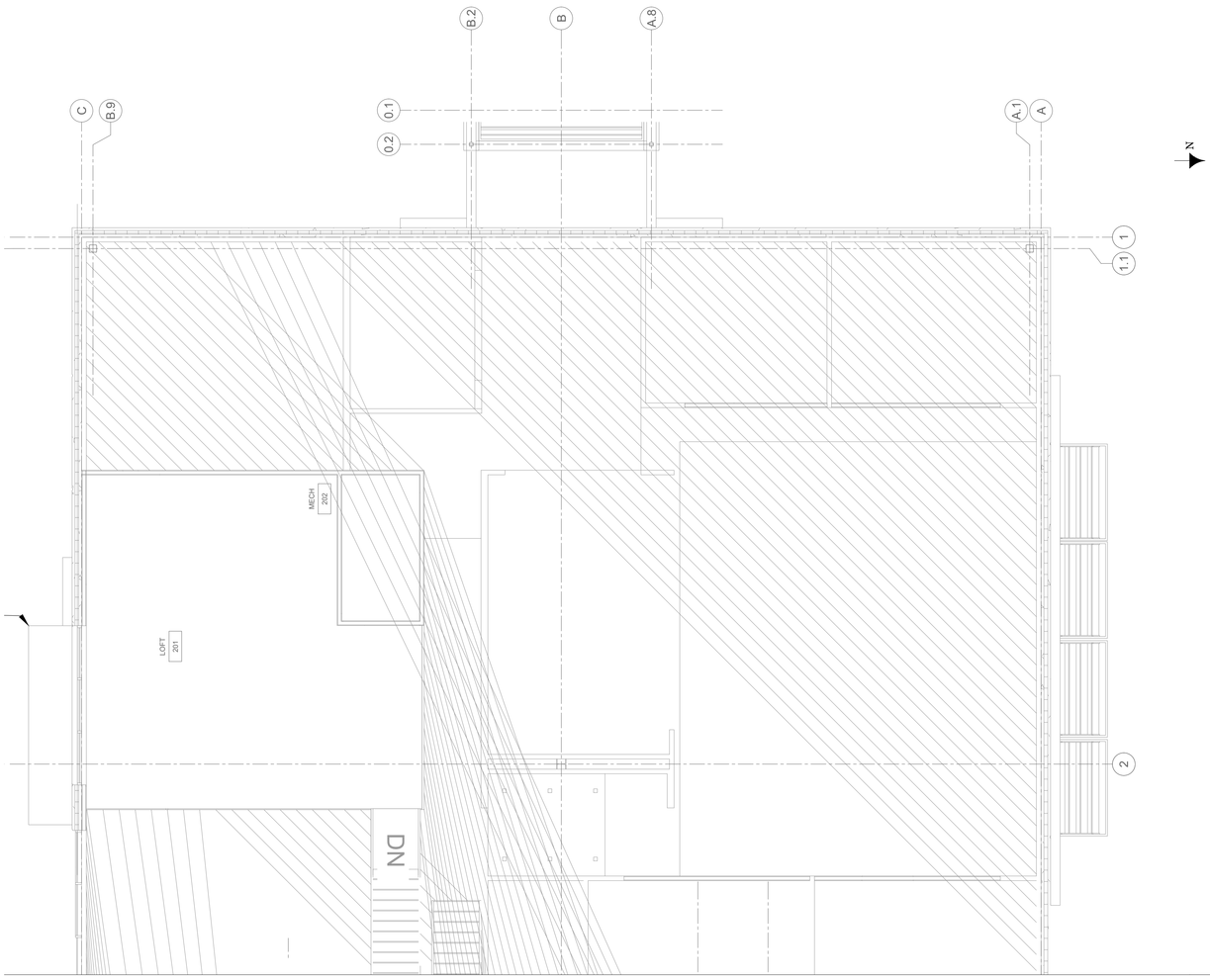
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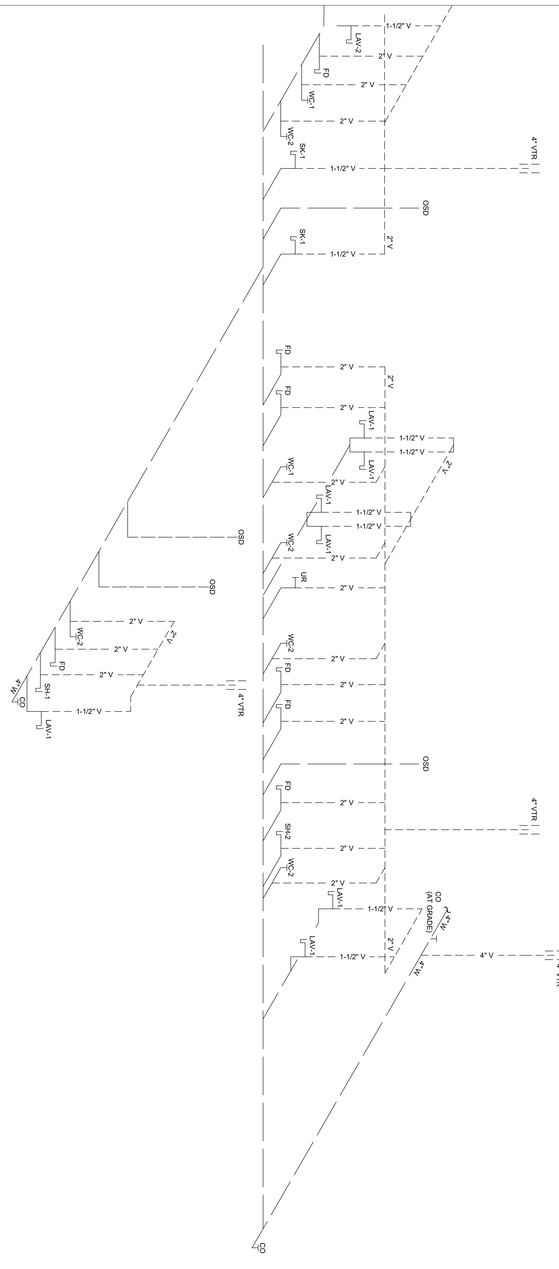
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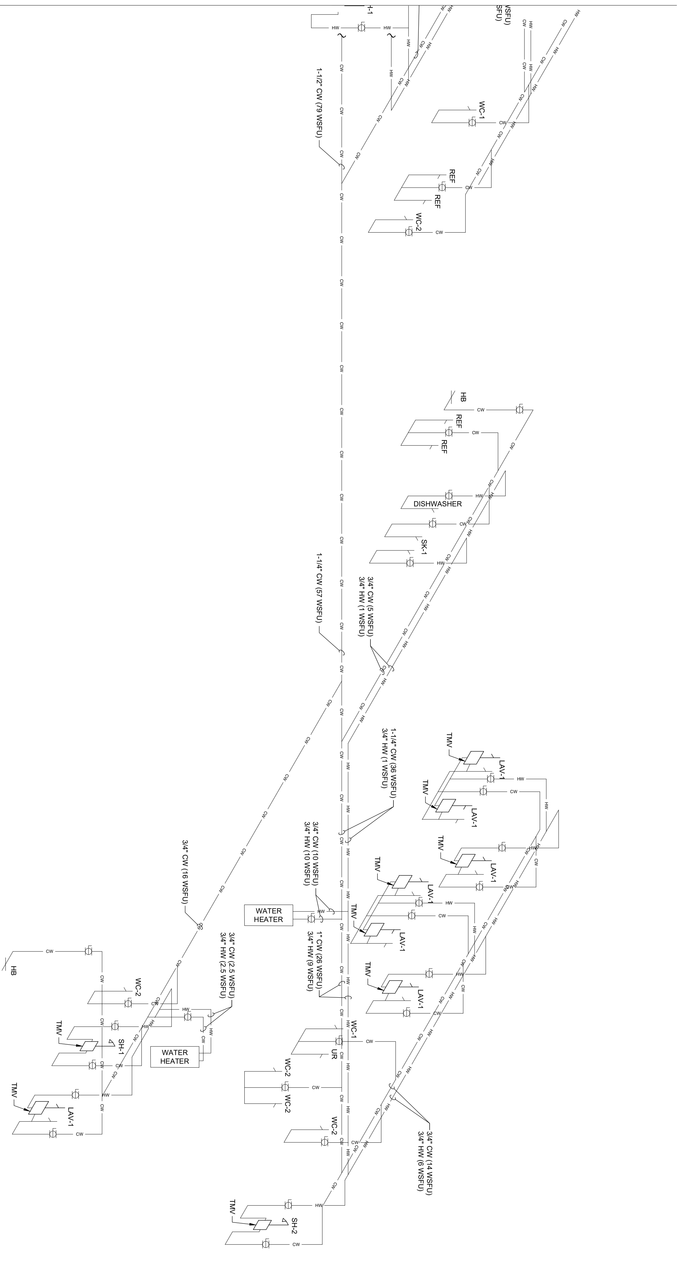
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