NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

Angus Young
Balance in Creativity
Architecture
Engineering
Interior Design
555 South River Street Janesville, WI 53548-4783
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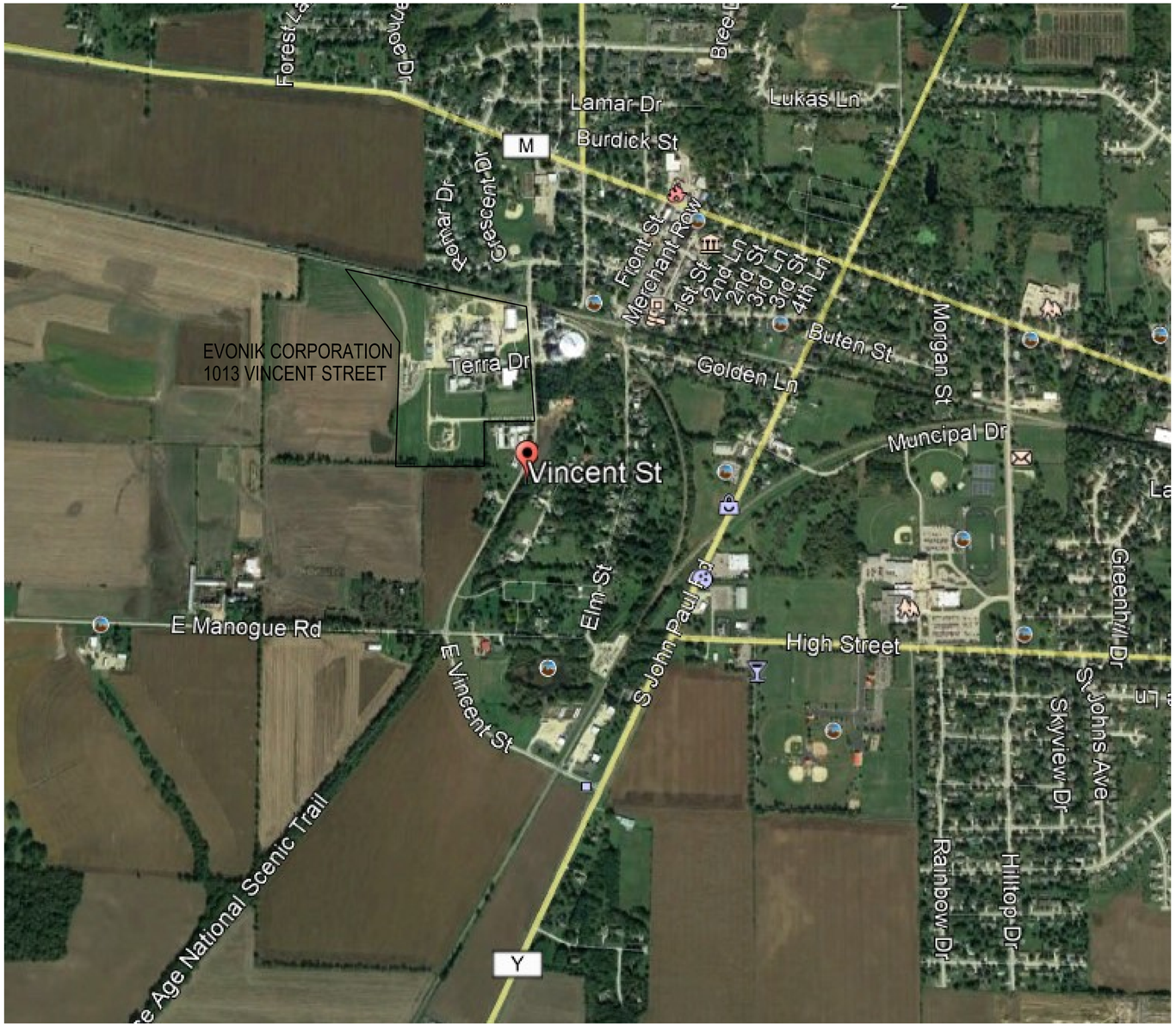
www.angusyoung.com



PROJECT DESCRIPTION

THIS BUILDING DESIGN FALLS WELL BELOW THE 50,000 CF REVIEW REQUIREMENT. BUT BECAUSE IT IS A PART OF A LARGE CHEMICAL PRODUCTION CAMPUS. WE AND OUR CLIENT CAUSOUSLY BELIEVE IT MAY BE CONSIDERED AT AN H-2 FACILITY. WE ARE SUBMITTING THE BUILDING FOR REVIEW AND FULL COMPLIANCE OF CURRENT CODE REQUIREMENTS. THE GOAL IS TO PROVIDE CONDITIONS THAT ARE SAFE AS CAN BE CONSIDERED FOR THE STAFF AND COMMUNITY.

THE PURPOSE OF THIS BUILDING IS TO STORE CHEMICALS TO BE USED IN THE ADJACENT BUILING 1015, WHICH IS A RESEARCH AND DEVELOPMENT LABORATORY FOR PRODUCTS PRODUCED ON SITE. THE INTENT OF THE BUILDING IS TO STORE CHEMICALS. HOWEVER, AT TIMES, CONTAINERS MAY BE OPENED TO RETRIEVE A SMALL AMOUNT OF CHEMICAL TO TRANSFER TO THE LABORATORY. WE ARE ALSO PROVIDING COMPRESSED AIR SUPPORT TO THE CAMPUS.

THE LIST OF POTENTIAL CHEMICALS STORED IN THIS BUILDING FALL WITHIN CLASS IIA, IIB AND ALL POTENTIAL SUB CLASSES. EVONIK CHEMICAL COMPANY EMPLOYEES HAVE INDICATED THAT THERE MAY BE OVER THREE HUNDRED DIFFERENT CHEMICALS MAY BE STORED IN THIS BUILDING IN SMALL QUANTITIES. ALL CHEMICALS IN THE BUILDING SHALL BE LIMITED TO THOSE ALLOWED IN A H-2 STORAGE FACILITY. THE LARGEST CONTAINER IN THE BUILDING SHALL BE A 5 GALLON CONTAINER. FLAMMABLE CHEMICALS SHALL BE STORED IN FLAMMABLE CONTAINMENT CABINETS. THE BUILDING WILL CONTAIN FLAMMABLE, CORROSIVE AND TOXIC MATERIALS.

WE HAVE CLASSIFIED THE BUILDING AS AN H-2 HAZARDOUS BUILDING BECAUSE THIS PROVIDES EVONIK THE GREATEST FLEXABILITY TO STORE AND DISTRIBUTE (OPENING OF CONTAINERS WITHIN THE BUILDING) THE LARGE VARIETY OF CHEMICALS IN A SAFE ENVIRONMENT.

OUR INTENTION IN THIS DESIGN IS TO PROVIDE ALL CODE RELATED REUIREMENTS FOR A H-2 FACILITY FOLLOWING IBC 2015, NFPA 30-2015, IFC 2018 AND OSHA 340 GUIDLINES.

THE INCORPORATION OF THE ONE-HOUR FIRE SEPARATED MECHANICAL / COMPRESSOR ROOM TO SUPPORT OTHER OPERATIONS ON THE CAMPUS. PROVIDE US AN OPPORTUNITY TO SEPARATE COME EQUIPMENT, CONTROLS AND EMERGENCY SYSTEMS FOR THE STORAGE AREA IN A NON CLASS I - DIV 2 SPACE.

WE HAVE PROVIDED A TABLE OF CALCULATIONS ON SHEET A101 ILLUSTRATING THE CONTAINMENT REQUIREMENTS AND PROVISIONS IN THE EVENT OF A SPILL AND FIRE SUPPRESSION ACTIVATION.

FIRE AND HAZARDOUS SPILL NOTIFICATION SYSTEMS ARE INDICATED ON ELECTRICAL DRAWINGS E101, E301.

MECHANICAL VENTILATION EXCEEDING REQUIREMENTS ARE INDICATED ON M101.

REGULATORY DATA

PROJECT ADDRESS
1013 VINCENT STREET
MILTON, WISCONSIN

BUILDING CODE
BUILDING CODE = IBC 2015; IFC 2018; NFPA 30 2015

USE AND OCCUPANCY CLASSIFICATION
OCCUPANCY: H-2 AND F-1
NON-SEPARATED USE

GENERAL BUILDING HEIGHT AND AREA

MAXIMUM ALLOWABLE AREA:		7,500 SF
ACTUAL BUILDING AREA:		
H-2 = 1,485 SF: F-1 = 390SF; TOTAL		1,872 SF
MAXIMUM STORIES = 1	ACTUAL = 1	
MAXIMUM HEIGHT = 50 FT	ACTUAL = 14 FT	

TYPE OF CONSTRUCTION
TYPE OF CONSTRUCTION: TYPE VA (METAL STUD PROTECTED)

FIRE SUPPRESSION
COMPLETE NFPA 13 WITH ALARM AND PULL STATIONS

SHEET INDEX

GENERAL
G001 COVER SHEET

CIVIL
C100 OVERALL SITE PLAN
C101 ENLARGED SITE LAYOUT PLAN
C102 ENLARGED UTILITY PLAN

ARCHITECTURAL
A101 FLOOR PLAN, EQUIPMENT PLAN, BUILDING ELEVATIONS, BUILDING SECTIONS; CONTAINMENT CALCULATIONS
A701 WALL SECTIONS AND DETAILS

STRUCTURAL
S001 STRUCTURAL NOTES
S101 FOUNDATION AND SLAB PLAN, FRAMING PLAN AND NOTES

PLUMBING
P101 PLUMBING PLAN, DEATILS AND SCHEDULES

MECHANICAL
M101 MECHANICAL SYSTEMS, NOTES AND SCHEDULES

ELECTRICAL
E101 POWER AND SYSTEMS PLAN, LIGHTING PLAN AND NOTES
E301 ONE LINE DIAGRAM AND SCHEDULES

24	20	16	12	08	04
23	19	15	11	07	03
22	18	14	10	06	02
21	17	13	09	05	01

TITLE BLOCK

DETAILS IN THIS SET ARE PLACED ON THE SHEETS AND NUMBERED WITH RESPECT TO THE GRID ABOVE. CONSEQUENTLY, DETAILS ON A GIVEN SHEET MAY OR MAY NOT BE NUMBERED CONSECUTIVELY.

Date
Date
Date
REGISTRATION STAMP AND SIGNATURE

PROJECT NUMBER	REVIEWED BY
68080	JGS
APPROVED BY	DRAWN BY
JJS	JLH

ISSUANCES		REVISIONS
PLAN REVIEW	01/10/2020	
CONSTRUCTION	01/10/2020	
1/20/2020		3:29:42 PM

G001

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SCALE:
PLOTTED BY: jeffh
ORIGINAL SIZE = 24" x 36"
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NORTH OVERALL SITE PLAN

SCALE: 1"=50'-0"

SCALE: 1"=50'-0"
PLOTTED BY: jdh
ORIGINAL SIZE = 24" x 36"
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REVISIONS

ISSUANCES	
PRELIMINARY BUDGETING	10/15/2019
OWNER PLAN REVIEW	01/09/2020
BID SET	01/20/2020
CONSTRUCTION/PLAN REVIEW	01/21/2020

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PROJECT NUMBER 68080
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REVIEWED BY ...
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OVERALL SITE PLAN AND NOTES

C100

ORIGINAL SIZE = 24" x 36"
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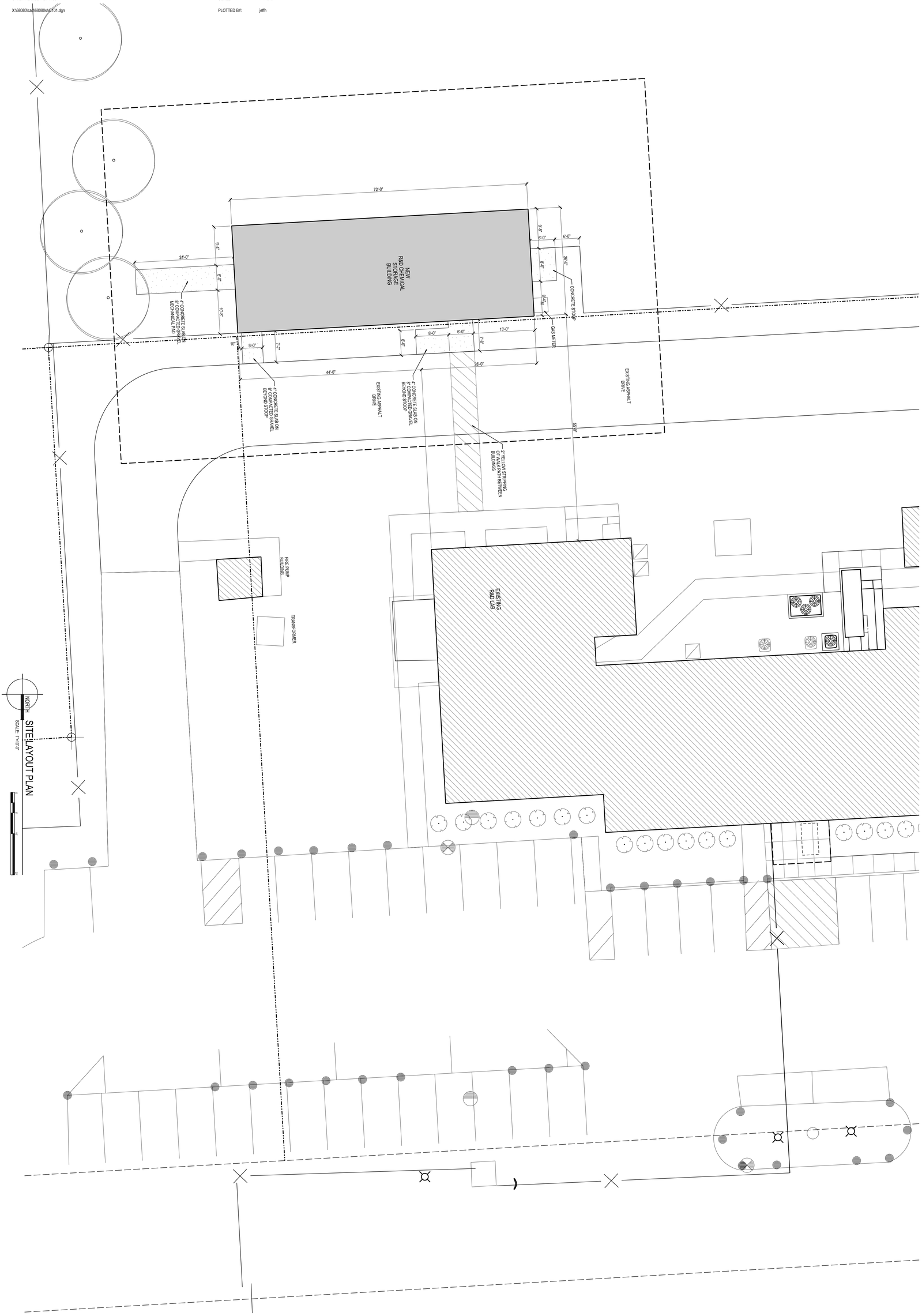
SCALE: 1"=10'-0"
PLOTTED BY: jeffh



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C101

ENLARGED SITE PLAN AT NEW BUILDING

PROJECT NUMBER	68080
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REVIEWED BY	–
DRAWN BY	JLH
	1/20/2020 3:29:45 PM

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ORIGINAL SIZE = 24" x 36"
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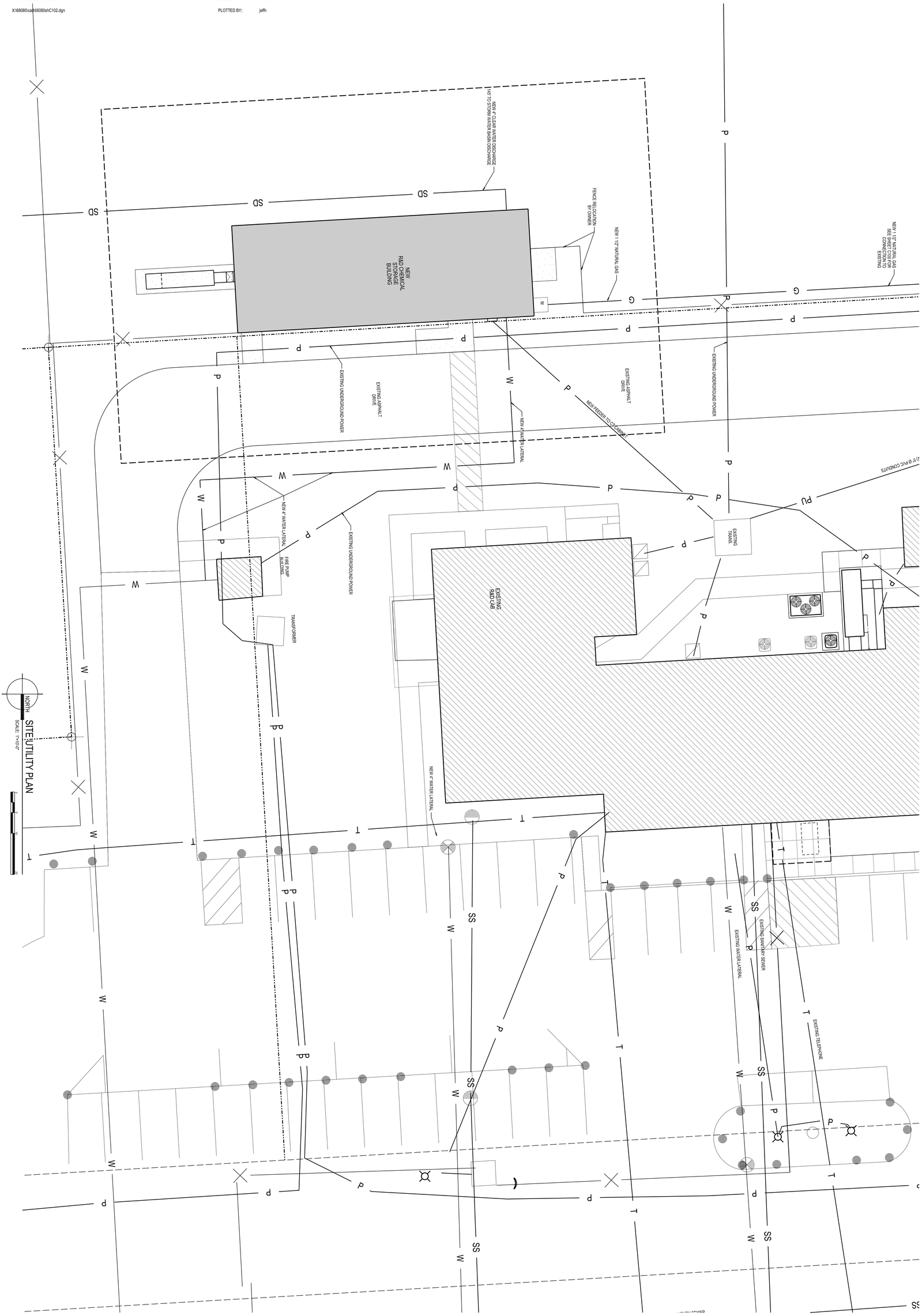
SCALE: 1"=10'-0"
PLOTTED BY: jeffh



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C102

ENLARGED SITE PLAN AT NEW BUILDING

PROJECT NUMBER	68080
APPROVED BY	–
REVIEWED BY	–
DRAWN BY	JLH
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NEW CHEMICAL STORAGE FACILITY

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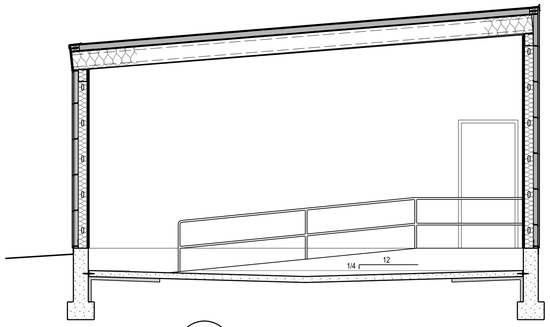
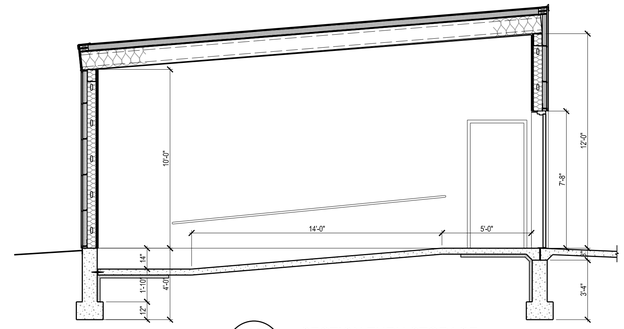
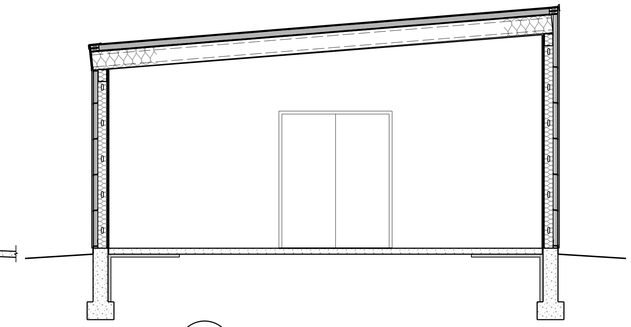


18 A101 SECTION THRU STORAGE
SCALE: 1/4" = 1'-0"



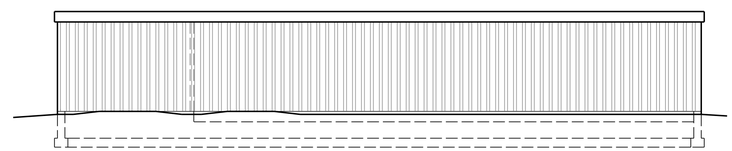
10 A101 SECTION THRU STORAGE
SCALE: 1/4" = 1'-0"



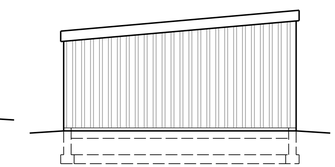
04 A101 SECTION THRU COMPRESSOR RM
SCALE: 1/4" = 1'-0"

REQUIRED CONTAINMENT CALCULATIONS

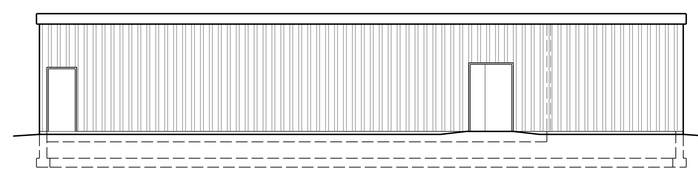
Calculation of Storage Volume Required				Quantity	Units
Area of Room	56.25 ft X	24.33 ft =		1,368.56	sf
Fire Suppression Density				0.40	gal/sf/min
Duration of Fire Suppression				20.00	min
Volume of Fire Suppression Storage				10,948.50	gal
Add largest container size				5.00	gal
Total Required Storage Volume (gallons)				10,953.50	gal
Conversion to Cubic Feet Volume				7.48	gal/CF
Total Required Storage Volume (cubic feet)				1,464.27	CF
Area of Recessed Floor (Storage area)				1,278.75	sf
Minimum Required suppression of floor				1.15	ft
Provided Volume of Storage					
Floor Area				1,278.75	sf
Depth of Recess	14 Inch /	12 in/ft =		1.17	ft
Volume from Floor Slope (l*w*d/2 + w*l*d/3)				180.49	CF
Total Storage Volume Provided				1,672.37	CF



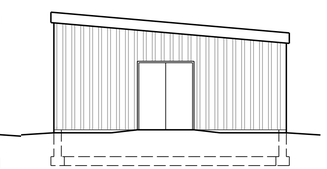
07 A101 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



03 A101 EAST ELEVATION
SCALE: 1/8" = 1'-0"



06 A101 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

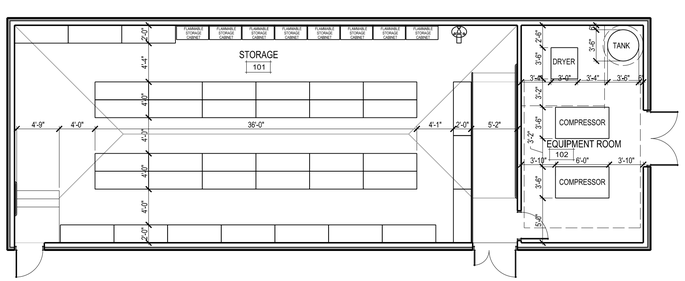


02 A101 WEST ELEVATION
SCALE: 1/8" = 1'-0"

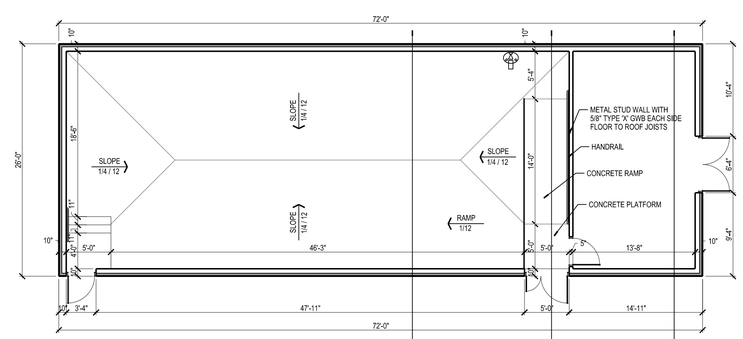
SHELVING UNITS, FLAMMABLE STORAGE CABINETS, TWO COMPRESSORS, DRYER, AND TANK SHALL BE PROVIDED BY EVONIK; SET IN PLACE BY THE GENERAL CONTRACTOR.

ELECTRICAL POWER TO AND CONNECTS OF THE COMPRESSORS AND DRYER BY ELECTRICAL CONTRACTOR.

PIPING AND CONTROLS FOR COMPRESSORS, TANK AND DRYER SHALL BE BY OTHERS.



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



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

SCALE: 1/8"=1'-0"
PLOTTED BY: jeffh
ORIGINAL SIZE = 24" x 36"
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REVISIONS

ISSUANCES	
PRELIMINARY BUDGETING	10/15/2019
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PROJECT NUMBER 68080
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REVIEWED BY ...
DRAWN BY JLH
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FLOOR PLANS AND NOTES

A101

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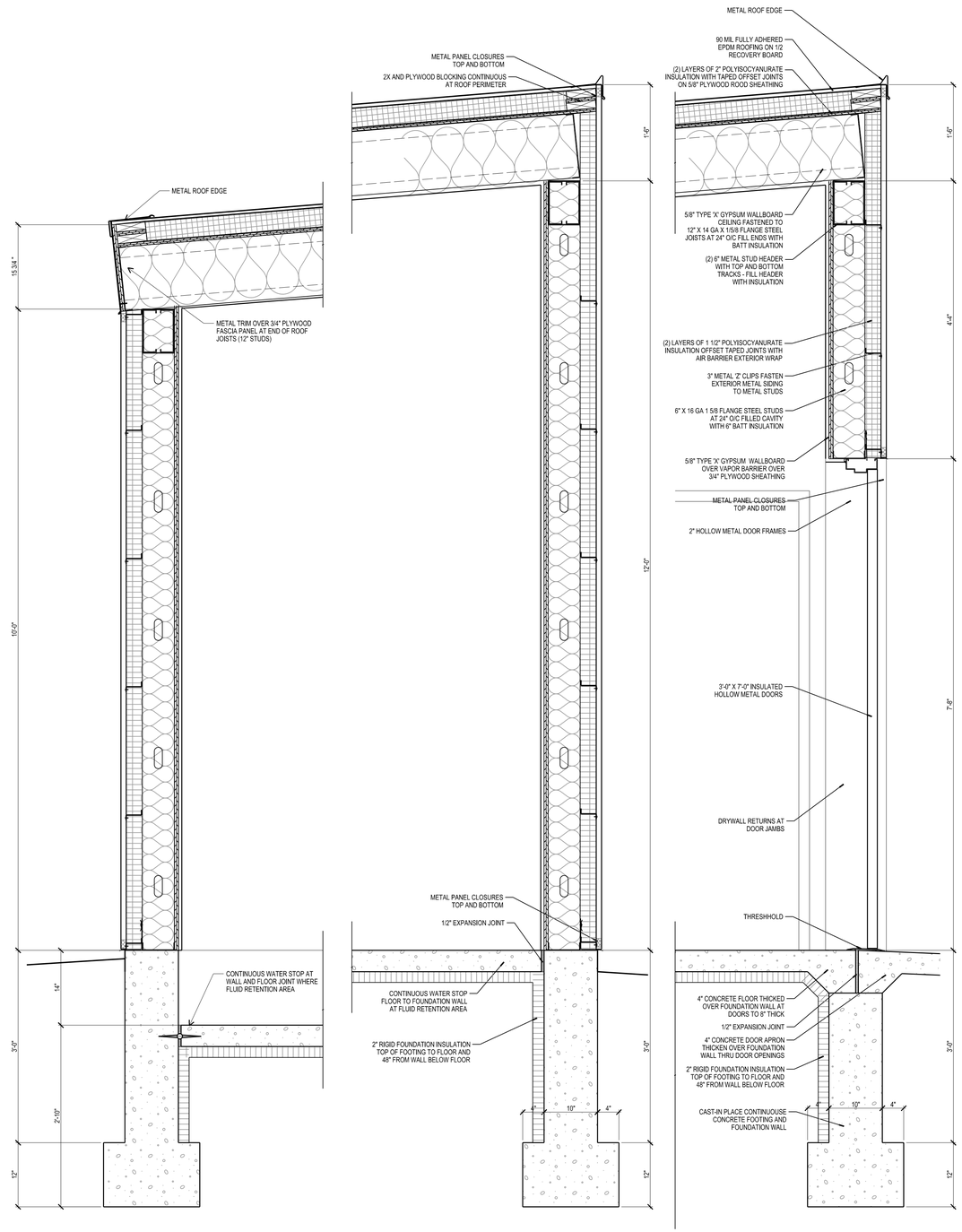

09 / A701 WALL SECTION
SCALE: 1" = 1'-0"

05 / A701 WALL SECTION
SCALE: 1" = 1'-0"

01 / A701 WALL SECTION
SCALE: 1" = 1'-0"

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NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

PROJECT NUMBER 65060
APPROVED BY ...
REVIEWED BY ...
DRAWN BY JLH
1/20/2020 3:29:47 PM

WALL SECTIONS AND DETAILS

A701

SCALE: 1/8"=1'-0"
PLOTTED BY: jdfh

ORIGINAL SIZE = 24" x 36"
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STRUCTURAL GENERAL NOTES

GENERAL

- DESIGN DRAWINGS SHOW THE INTENT OF REQUIRED CONSTRUCTION AND SPECIFIC CONSTRUCTION AS NEEDED TO FACILITATE CLEAR DETAILING. FOR SPECIFIC CONDITIONS NOT SHOWN, THE CONTRACTOR SHALL PROVIDE DETAILS OF CONSTRUCTION SIMILAR TO THOSE SHOWN.
- THE FOLLOWING NOTES APPLY TO THE PLANS AND/OR SPECIFICATIONS UNLESS NOTED OTHERWISE. IN THE CASE OF CONFLICT WITH PLANS AND/OR SPECIFICATIONS, THE MORE RESTRICTIVE REQUIREMENT SHALL APPLY.
- CONTRACTOR SHALL BECOME FAMILIAR WITH EACH DRAWING AND DETAIL CONTAINED IN THE DRAWING SET AND REPORT ANY ERRORS, OMISSIONS, DISCREPANCIES, OR DETAILS NOT REFERENCED FOR INSTRUCTIONS FROM THE DESIGN PROFESSIONAL.
- VERIFY AND COORDINATE EXISTING CONDITIONS, DIMENSIONS, AND CONSTRUCTION IN PROGRESS WITH THE SHOP DRAWINGS FOR THE VARIOUS MATERIALS AND BUILDING COMPONENTS PRIOR TO SUBMITTAL, ORDERING ANY MATERIAL, OR COMMENCEMENT OF ANY WORK. ALL DIMENSIONAL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL.
- VERIFY AND COORDINATE WITH ALL CONTRACTORS THE SIZE AND LOCATION OF ALL ARCHITECTURAL AND MECHANICAL APPURTENANCES AND OPENINGS.
- CONSTRUCTION PRACTICE, MEANS AND METHODS, AND JOBSITE SAFETY SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, STRUCTURAL, AND OTHER DISCIPLINE DRAWINGS TO COORDINATE ALL MISCELLANEOUS WORK PROVIDED FOR OTHER DISCIPLINES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL DIVISION OF MATERIALS AND LABOR FOR THE WORK.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES AS THEY PERTAIN TO THIS PROJECT.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, SUPPORTS, SHORING, ETC. UNTIL PERMANENT BRACING AND SUPPORT SYSTEMS ARE IN PLACE AND FUNCTIONAL. THE DESIGN, ADEQUACY, AND SAFETY OF TEMPORARY BRACING, SUPPORTS, SHORING, ETC., SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- STRUCTURAL FRAMING AND CONNECTIONS HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING CONSTRUCTION. INVESTIGATION OF THE FRAMING AND CONNECTIONS FOR ADEQUACY DURING CONSTRUCTION SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL REROUTE EXISTING MECHANICAL, ELECTRICAL, AND PLUMBING WORK NOT OTHERWISE INDICATED TO FACILITATE NEW CONSTRUCTION AND SHALL SUBMIT PLANS FOR APPROVAL INDICATING EXISTING AND REROUTED LOCATIONS.
- SUBSTITUTIONS FOR PROPRIETARY STRUCTURAL PRODUCTS DESIGNATED ON THE DRAWINGS SHALL BE APPROVED BY THE DESIGN PROFESSIONAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NECESSARY INFORMATION USED TO DETERMINE ADEQUACY OF PROPOSED SUBSTITUTIONS INCLUDING STRUCTURAL CALCULATIONS IF NECESSARY.

SUBMITTAL REVIEW

- SUBMITTALS ARE ALL ITEMS REQUESTED TO BE SUBMITTED FOR REVIEW AND INCLUDE STRUCTURAL CALCULATIONS AND SHOP DRAWINGS. SHOP DRAWINGS INCLUDE BOTH ERECTION AND PRODUCTION DRAWINGS.
- SUBMITTALS SHALL BE PROVIDED FOR REVIEW AND MARKED "FOR APPROVAL".
- PRIOR TO SUBMITTAL TO THE DESIGN PROFESSIONAL, THE CONTRACTOR SHALL:
  1) REVIEW EACH SUBMISSION FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS;
  2) REVIEW EACH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCENDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR;
  3) IDENTIFY ANY VARIATIONS FROM THE CONTRACT DOCUMENTS,
  4) APPROVE AND STAMP COMPLIANT SUBMISSIONS THUS. NON COMPLIANT SUBMITTALS SHALL BE REVISED UNTIL COMPLIANT.
- ALLOW TEN (10) WORKING DAYS FROM THE DATE OF SUBMISSION FOR THE DESIGN PROFESSIONAL'S SUBMITTAL REVIEW. ALLOW MORE FOR LARGE SUBMITTALS.
- SUBMITTALS SHALL BE REVIEWED AND MARKED "PROCESSED" OR "APPROVED" BY ALL REVIEWING PARTIES PRIOR TO THE START OF FABRICATION.
- REVIEW BY THE DESIGN PROFESSIONAL IS TO CONFIRM THAT THE DETAILED WORK (WHEN COMPLETE) CONFORMS TO THE DESIGN INTENT AND IS ABLE TO PERFORM AS AN INTEGRAL PART OF THE COMPLETED BUILDING SYSTEM SHOWN ON THE CONTRACT DOCUMENTS. A COMPLETED REVIEW BY THE DESIGN PROFESSIONAL IS NOT AN APPROVAL OF CHANGES SHOWN IN THE SUBMITTAL, HAS NOT CHECKED DIMENSIONS SHOWN IN THE SUBMITTAL, AND DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITIES FOR CORRECTNESS OF THE DETAILS, ERRORS, AND CONFORMANCE WITH THE CONTRACT.
- FINAL STRUCTURAL DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE PROVIDED FOR RECORD PURPOSES AND MARKED "FOR CONSTRUCTION" PRIOR TO INSTALLATION.
- CONSTRUCTION ELEMENTS DESIGNATED AS STRUCTURAL COMPONENTS ARE DESIGNED BY PARTIES OTHER THAN THE DESIGN PROFESSIONAL OF RECORD AND HAVE THE ADDITIONAL REQUIREMENTS OF SUBMITTAL TO AUTHORITIES HAVING JURISDICTION. SUBMIT STRUCTURAL COMPONENT FINAL STRUCTURAL DESIGN CALCULATIONS, SHOP DRAWINGS, AND THE REQUIRED SUBMITTAL FEE TO THE DESIGN PROFESSIONAL FOR REVIEW, SIGNATURE, AND SUBMITTAL TO THE AUTHORITY HAVING JURISDICTION.
- STRUCTURAL COMPONENT SUBMITTALS TO THE AUTHORITY HAVING JURISDICTION ARE REQUIRED TO BE COMPLETED PRIOR TO INSTALLATION OR FINES COULD BE IMPOSED BY THE AUTHORITY HAVING JURISDICTION. ALL FINES WILL BE BACKCHARGED TO THE CONTRACTOR.
- STRUCTURAL COMPONENT DESIGNS SHALL MATCH THE GEOMETRY SHOWN ON THE DESIGN DRAWINGS TO MAINTAIN THE OVERALL STRUCTURAL DESIGN CONCEPT AND ASSUMPTIONS USED IN THE DESIGN OF CONNECTING PORTIONS OF THE BUILDING. ANY AND ALL DEVIATIONS SHALL BE APPROVED IN WRITING BY THE DESIGN PROFESSIONAL OF RECORD PRIOR TO IMPLEMENTATION. ADDITIONAL COSTS TO EITHER THE DESIGN PROFESSIONAL OF RECORD OR OTHER CONTRACTORS FOR UNAPPROVED CHANGES SHALL BE THE RESPONSIBILITY OF THE COMPONENT SUPPLIER.

EARTHWORK

- CONTACT PROPER AUTHORITIES TO LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
- A LICENSED GEOTECHNICAL ENGINEER ACCEPTABLE TO THE OWNER SHALL BE RETAINED BY THE CONTRACTOR TO INSPECT, TEST, APPROVE, DOCUMENT, AND REPORT ALL BEARING CONDITIONS AND COMPACTED FILL INSTALLATIONS PRIOR TO CONCRETE PLACEMENT. FOUNDATION CONSTRUCTION MAY BE ADJUSTED BY THE DESIGN PROFESSIONAL IF REQUIRED BY THE GEOTECHNICAL ENGINEER. CONSULT THE DESIGN PROFESSIONAL BEFORE PROCEEDING.
- CONTRACTOR SHALL COORDINATE AND SCHEDULE WHEN THE GEOTECHNICAL ENGINEER IS TO BE ON SITE. NO FOOTINGS OR FOUNDATIONS SHALL BE PLACED WITHOUT PRIOR APPROVAL FROM THE GEOTECHINCAL ENGINEER.
- IF EXCAVATION INDICATES A SOIL BEARING CAPACITY LESS THAN DESIGN CAPACITY AT FOOTING DEPTH, CONSULT THE DESIGN PROFESSIONAL BEFORE PROCEEDING.
- FOOTINGS SHALL BE CAST ON UNDISTURBED SOIL, COMPACTED FILL, OR CONTROLLED LOW STRENGTH MATERIAL (CLSM).
- COMPACT ALL SUBGRADE BELOW FOOTINGS PRIOR TO CONCRETE PLACEMENT.
- HOLES, TRENCHES, OR DISTURBANCES IN THE SOIL SHALL NOT BE ALLOWED WITHIN THE VOLUME DESCRIBED BY 45 DEGREE LINES SLOPING FROM THE BOTTOM EDGE OF THE FOOTING. IF SUCH ARE REQUIRED, CONSULT THE DESIGN PROFESSIONAL BEFORE PROCEEDING.
- DO NOT PLACE UNDERGROUND UTILITES OR PIPES BELOW FOOTINGS WITHOUT CONSULTING THE DESIGN PROFESSIONAL BEFORE PROCEEDING.
- TOPSOIL OR UNACCEPTABLE SOIL BELOW SLABS ON GRADE SHALL BE REMOVED.
- COMPACT ALL SUBGRADE MATERIAL PRIOR TO PLACMENT OF ANY FILL. REMOVE LOOSE MATERIAL AND DEBRIS THAT CANNOT BE ADEQUATELY COMPACTED.
- BACKFILL AGAINST ANY WALLS OR CONSTRUCTION SHALL NOT BE PLACED UNLESS THE WALLS ARE ADEQUATELY BRACED TO WITHSTAND THE LOADS IMPOSED DUE TO THE BACKFILLING OPERATION.

CONCRETE

- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR THE CONCRETE.
- CONCRETE WORK SHALL CONFORM TO THE ACI MANUAL OF STANDARD PRACTICE INCLUDING BUT NOT LIMITED TO ACI 301("SPECIFICATIONS FOR STRUCTURAL CONCRETE") ACI 305("HOT WEATHER CONCRETING"), AND ACI 306("COLD WEATHER CONCRETING"). CONCRETE DETAILING SHALL CONFORM TO ACI SP-66("ACI DETAILING MANUAL").
- A CERTIFIED TESTING AGENCY ACCEPTABLE TO THE OWNER SHALL BE RETAINED BY THE CONTRACTOR TO INSPECT, TEST, APPROVE, DOCUMENT, AND REPORT ON ALL CONCRETE PROPERTIES.
- CONTRACTOR SHALL NOTIFY DESIGN PROFESSIONAL, BUILDING INSPECTOR, AND TESTING AGENCY AT LEAST 24 HOURS PRIOR TO PLACING CONCRETE.
- SLABS ON GRADE SHALL BE CAST ALLOWING A SUFFICIENT NUMBER OF JOINTS TO ADEQUATELY CONTROL SHRINKAGE CRACKING. GENERALLY, JOINTS SHALL OCCUR ON COLUMN CENTERLINES. JOINTS SHALL BE SPACED IN SUCH A WAY THAT THE LENGTH TO WIDTH RATIO OF UN-JOINTED SLAB PORTION SHALL NEVER BE GREATER THAN 2. SPACING SHOULD BE APPROXIMATELY 2.5 x SLAB THICKNESS (CONVERTED TO FEET) WITH A MAXIMUM MAXIMUM SPACING BETWEEN JOINTS OF 15'-0".
- SLABS ON GRADE SHALL HAVE THE FOLLOWING FINISH UNLESS NOTED OTHERWISE:
  - EXTERIOR SLABS - BROOM FINISH
  - INTERIOR SLABS - TROWEL FINISH
  - SLABS TO RECEIVE BONDED TOPPINGS - SCRATCH FINISH
  - SLABS TO RECEIVE TILE BY THIN OR THICK SET METHOD - FINE BROOM FINISH
- SLABS ON GRADE SHALL HAVE A 10 MIL VAPOR RETARDER BELOW SLAB UNLESS NOTED OTHERWISE
- SLOPE SLAB ON GRADE 1/4" PER FOOT TO DRAINS UNLESS NOTED OTHERWISE.
- SAW-CUTTING SHALL BE DONE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT THE AGGREGATE FROM BEING DISLODGED BY THE SAW AND SHALL BE COMPLETED BEFORE SHRINKAGE STRESSES BECOME SUFFICIENT TO PRODUCE CRACKING, WITHIN 16 HOURS MAXIMUM OF THE INITIAL CASTING OPERATION.
- ALLOW AT LEAST 24 HOURS BEFORE POURING ADJACENT WALL SECTIONS BETWEEN CONSTRUCTION JOINTS.
- MAX LENGTH OF POUR TO BE 50 FEET UNLESS CRACK INDUCERS ARE USED.
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN POSITION BY SUITABLE ACCESSORIES PRIOR TO CONCRETE PLACEMENT EXCEPT AS NOTED OR SPECIFIED.
- BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 4'-0" BELOW FINISHED GRADE UNLESS NOTED OTHERWISE
- FOOTINGS SHALL BE CENTERED BELOW WALLS, PIERS, AND COLUMNS ABOVE UNLESS NOTED OTHERWISE .
- SLOPE EXTERIOR STOOPS 1/4" PER FOOT AWAY FROM BUILDING.
- TOP OF FOUNDATION WALL SHALL BE DROPPED 8" AT DOOR THRESHOLDS FOR FLOOR SLAB CAP. WIDTH OF CAP SHALL BE EQUAL TO WIDTH OF ROUGH OPENING.
- WHERE REINFORCING IS CALLED FOR IN PORTIONS OF THE BUILDING, IT SHALL BE DUPLICATED IN SIMILAR PORTIONS OF THE BUILDING.
- DOWELS INTO FOUNDATION SHALL BE SAME NUMBER AND SIZE AS WALL/PIER/COLUMN VERTICAL REINFORCING.
- BARS SPLICES SHALL BE LAPPED WITH CLASS B SPLICE LENGTHS UNLESS NOTED OTHERWISE. LAP WELDED WIRE REINFORCEMENT 6 INCHES.
- HORIZONTAL REINFORCING IN CONCRETE WALLS SHALL BE CONTINUOUS
- VERTICAL REINFORCING IN CONCRETE WALLS SHALL END 2" FROM THE TOP OF THE WALL
- PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT WALL CORNERS. BARS SHALL BE 40 BAR DIAMETERS IN LENGTH EACH WAY.
- PROVIDE INTERSECTION BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT WALL INTERSECTIONS. BARS SHALL BE 40 BAR DIAMETERS IN LENGTH WITH STANDARD HOOKS EACH WAY AT INTERSECTING WALL.
- DO NOT CUT OR PLACE HOLES IN CONCRETE SLABS, BEAMS, COLUMNS, OR WALLS WITHOUT PRIOR APPROVAL OF THE DESIGN PROFESSIONAL.
- WALL OR SLAB PENETRATIONS SHALL HAVE (2) #4 BARS DIAGONALLY AT CORNERS OF OPENINGS CENTERED IN SLAB: EXTEND 1'-0" BEYOND THE EDGE OF THE PENETRATION IN EACH DIRECTION.
- SLABS SHALL HAVE #4 BARS DIAGONALLY AT INSIDE CORNERS OF WALLS, PIERS, AND FOUNDATION DROPS FOR SLAB CAPS UNLESS A CONTROL JOINT IS PROVIDED AT THE CORNER.
- PIPES AND CONDUITS EMBEDDED IN OR PASSING THROUGH STRUCTURAL MEMBERS MUST BE APPROVED BY THE DESIGN PROFESSIONAL. PIPE AND CONDUIT EMBEDDED IN CONCRETE SHALL NOT BE LARGER IN OUTSIDE DIAMETER AT ITS WIDEST POINT OR FITTING THAN 2 INCHES OR 1/3 OF THE THICKNESS OF THE SLAB, BEAM, OR WALL; AND SHALL BE LOCATED AND PLACED AS SUCH:
  1. NOT CLOSER THAN THREE DIAMETERS ON CENTER.
  2. CONCRETE COVER IS NOT LESS THAN 2 INCHES.
  3. NO REINFORCING SHALL BE DISPLACED.
- COORDINATE AND VERIFY SIZE AND LOCATION OF ALL OPENINGS, SLEEVES, CHASES, CONDUITS, DEPRESSED AREAS, FLOOR FINISHES, FILLS, ANCHORS, STONE AND MASONRY INSERTS, HANGERS, CURBS, AND OTHER MISCELLANEOUS ITEMS BEFORE PLACING CONCRETE.
- CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.
- A MINIMUM OF 4 CONCRETE CYLINDERS SHALL BE TAKEN FOR EACH CONCRETE PORTION TESTED.

CONCRETE REINFORCMENT

- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR THE CONCRETE REINFORCEMENT.

LIGHTGAGE METAL FRAMING

- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR THE LIGHTGAGE METAL FRAMING.
- LIGHTGAGE METAL FRAMING ELEMENTS ARE STRUCTURAL COMPONENTS AND HAVE THE ADDITIONAL REQUIREMENTS REQUIRED AS SUCH.
- SPLICES IN AXIALLY LOADED STUDS ARE NOT PERMITTED.
- STUDS, TRACK AND ACCESSORIES SHALL BE GALVANIZED.
- LIGHT GAGE FRAMING MEMBERS SHOWN ON PLANS AND DETAILS ARE SCHEMATIC AND ARE SHOWN FOR INTENT ONLY.
- PLUMB, ALIGN, AND SECURELY ATTACH STUD FLANGES OR WEBS TO LOWER TRACK.
- ATTACH BRIDGING TO STUDS PRIOR TO APPLICATION OF VERTICAL LOADS.
- STUDS NOT VERTICALLY SUPPORTING LOADS SHALL TRANSFER LATERAL LOADS TO STRUCTURE BY MEANS OF SLIDE CLIPS TO ALLOW FOR VERTICAL MOVEMENT OF PRIMARY STRUCTURAL MEMBERS.
- FOR 18 GAUGE AND THINNER FRAMING, CONNECTIONS SHALL BE MADE USING SELF-DRILLING, SELF-TAPPING SCREWS. FOR THICKER SECTION, WELDED OR BOLTED CONNECTIONS MAY ALSO BE USED.
- CONTRACTOR SHALL SUBMIT THE MANUFACTURERS CATALOG FOR LIGHTGAGE METAL FRAMING USED VERIFYING MEMBER PROPERTIES.

WOOD FRAMING

- ALL STRUCTURAL FRAMING LUMBER, PLYWOOD, AND FABRICATED WOOD PRODUCTS SHALL HAVE A MOISTURE CONTENT NOT EXCEEDING 19% AT THE TIME OF INSTALLATION. JOBSITE STORAGE OF ALL WOOD PRODUCTS SHALL PROTECT WOOD MATERIALS FROM DAMAGE DUE TO THE ELEMENTS. NO WARPED OR WEATHER DAMAGED LUMBER, ENGINEERED WOOD, OR WOOD TRUSSES SHALL BE USED.
- FASTENERS SHALL BE PLACED ACCORDING TO BUILDING CODE FASTENING SCHEDULES UNLESS NOTED ON PLAN.
- SHEATHING AND GYPSUM SHALL BE SCREWED, ADHESIVES SHALL NOT BE USED IN PLACE OF SCREWS.
- FASTEN ROOF SHEATHING PER A.P.A. FASTENER RECOMMENDATIONS FOR SPECIFIED LOADING AND THE FOLLOWING MINIMUM SPACINGS:
  A) #10 FLAT-HEAD SELF DRILLING TAPPING SCREWS AT 6" ON CENTER AT ALL SUPPORTED EDGES
  B) #10 FLAT-HEAD SELF DRILLING TAPPING SCREWS AT 12" ON CENTER AT INTERMEDIATE SUPPORTS
- FASTEN WALL SHEATHING PER A.P.A. FASTENER RECOMMENDATIONS FOR SPECIFIED LOADING AND THE FOLLOWING MINIMUM SPACINGS:
  A) #10 FLAT-HEAD SELF DRILLING TAPPING SCREWS AT 6" ON CENTER AT ALL SUPPORTED EDGES
  B) #10 FLAT-HEAD SELF DRILLING TAPPING SCREWS AT 12" ON CENTER AT INTERMEDIATE SUPPORTS
- CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL SHEAR WALL ANCHORS.

MISCELLANEOUS

- PROVISIONS SHALL BE TAKEN TO ASSURE NON-STRUCTURAL COMPONENTS ARE NOT DISTORTED OR DAMAGED BY DEFLECTION OF THE STRUCTURE. INCLUDE DEFLECTION TRACK AT ALL INTERIOR NON-LOAD BEARING STUD WALLS.
- POWDER-ACTUATED FASTENERS SHALL FOLLOW ANSI A10.3 SPECIFICATIONS
- ADHESIVE ANCHORS SHALL BE SIMPSON STRONG TIE ACRYLIC-TIE ADHESIVE UNLESS NOTED OTHERWISE OR APPROVED BY THE DESIGN PROFESSIONAL.
- EXPANSION ANCHORS SHALL BE SIMPSON STRONG TIE STRONG-BOLT UNLESS NOTED OTHERWISE OR APPROVED BY THE DESIGN PROFESSIONAL.
- SLEEVE ANCHORS SHALL BE SIMPSON STRONG TIE SLEEVE-ALL UNLESS NOTED OTHERWISE OR APPROVED BY THE DESIGN PROFESSIONAL.

STRUCTURAL DESIGN SPECIFICATIONS

- THE DESIGN PROFESSIONAL WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS ARISING FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS ARISING FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE DESIGN PROFESSIONAL'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE ALLEGED.
- DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS APPLICABLE TO WORK AND PROJECT LOCATION
- BUILDING ANALYSIS AND DESIGN WERE AND SHALL BE BASED ON THE STATE OF WISCONSIN BUILDING CODE AS AMENDED TO DATE.
- EDITION AND DATE OF REFERENCED STANDARDS SHALL BE AS LISTED IN THE BUILDING CODE.
- DESIGN LOADS:

DEAD

ROOFING =	9	PSF
CEILING =	3	PSF
MISCELLANEOUS =	5	PSF

ROOF LIVE

TRIBUTARY AREA:	<= 200	20	PSF
	200-600	INTERPOLATE	
	=> 600	12	PSF

ROOF SNOW

SNOW EXPOSURE FACTOR (C_e) =	1.0	
THERMAL FACTOR (C_t) =	1.0	
SNOW IMPORTANCE FACTOR (I_s) =	1.00	
GROUND SNOW LOAD (P_g) =	30	PSF
FLAT ROOF SNOW LOAD (P_f) =	21	PSF
ROOF SLOPE FACTOR (C_s) =	1.0	
SLOPED ROOF SNOW LOAD (P_s) =	21	PSF

WIND NOMINAL (ASD) LOADS

ULTIMATE DESIGN WIND SPEED (V_{ult}) =	115	MPH
NOMINAL DESIGN WIND SPEED (V_{asd}) =	90	MPH
WIND IMPORTANCE FACTOR (I_W) =	1.00	
NORTH-SOUTH WIND EXPOSURE CATEGORY =	C	
EAST-WEST WIND EXPOSURE CATEGORY =	C	
BUILDING CATEGORY:	PARTIALLY ENCLOSED	
INTERNAL PRESSURE COEFFICIENTS:	+0.55 / -0.55	

COMPONENTS AND CLADDING LOADS:
NOTE - REFER TO ASCE 7 FOR ZONE DIAGRAMS
ZONE WIDTH (A) = 3 FT
NOTE - INTERPOLATE FOR TRIBUTARY AREAS NOT SHOWN

ROOFS:

TRIBUTARY AREA LESS THAN:	10	SQ FT
ZONE 1 =	12.7	PSF
	-23.2	PSF
ZONE 2 =	12.7	PSF
	-35.2	PSF
ZONE 3 =	12.7	PSF
	-50.1	PSF
TRIBUTARY AREA GREATER THAN:	100	SQ FT
ZONE 1 =	11.2	PSF
	-21.7	PSF
ZONE 2 =	11.2	PSF
	-24.7	PSF
ZONE 3 =	11.2	PSF
	-24.7	PSF

WINDWARD WALLS:

TRIBUTARY AREA LESS THAN:	10	SQ FT
ZONE 4 =	23.2	PSF
	-24.7	PSF
ZONE 5 =	23.2	PSF
	-29.2	PSF
TRIBUTARY AREA GREATER THAN:	500	SQ FT
ZONE 4 =	18.7	PSF
	-20.2	PSF
ZONE 5 =	18.7	PSF
	-20.2	PSF

LEEWARD AND SIDE WALLS:

TRIBUTARY AREA LESS THAN:	10	SQ FT
ZONE 4 =	23.2	PSF
	-24.7	PSF
ZONE 5 =	23.2	PSF
	-29.2	PSF
TRIBUTARY AREA GREATER THAN:	500	SQ FT
ZONE 4 =	18.7	PSF
	-20.2	PSF
ZONE 5 =	18.7	PSF
	-20.2	PSF

EARTHQUAKE

SEISMIC IMPORTANCE FACTOR, I_E =	1.00	
SEISMIC USE GROUP =	1	
SHORT PERIOD MAPPED SPECTRAL RESPONSE (S_S) =	0.097	g
1 SECOND PERIOD MAPPED SPECTRAL RESPONSE (S_D) =	0.050	g
SITE CLASS =	D	
SHORT PERIOD DESIGN SPECTRAL RESPONSE (S_{DS}) =	0.103	g
1 SECOND PERIOD DESIGN SPECTRAL RESPONSE (S_{D1}) =	0.080	g
SEISMIC DESIGN CATEGORY =	B	
NORTH-SOUTH DESIGN BASE SHEAR =	0.61	K
EAST-WEST DESIGN BASE SHEAR =	0.61	K
NORTH-SOUTH SEISMIC RESPONSE COEFFICIENT (C_S) =	0.017	
EAST-WEST SEISMIC RESPONSE COEFFICIENT (C_S) =	0.017	
NORTH-SOUTH RESPONSE MODIFICATION FACTOR (R) =	6	
EAST-WEST RESPONSE MODIFICATION FACTOR (R) =	6	
ANALYSIS PROCEDURE =	ELF	

BASIC SEISMIC FORCE RESISTING SYSTEM
NORTH-SOUTH:
SYSTEM: BEARING WALL
TYPE: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTENCE
EAST-WEST:
SYSTEM: BEARING WALL
TYPE: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTENCE

- THE LATERAL SUPPORT SYSTEM INCORPORATES A ROOF DIAPHRAGM.
- DEFLECTION DUE TO WIND LOADS SHALL BE CALCULATED BASED ON 0.7 TIMES THE COMPONENTS AND CLADDING LOADS.
- STRUCTURAL COMPONENT DESIGN NOTES:
  - DRIFTING AND SLIDING SNOW SHALL BE CONSIDERED IF REQUIRED
  - WORST CASE LOADING COMBINATIONS SHALL BE USED
  - UNBALANCED LOADING SHALL BE CONSIDERED
- STRUCTURAL COMPONENTS SHALL BE DESIGNED INCLUDING THE WEIGHT OF ALL SPRINKLER MAINS WHEN FILLED.
- FOOTINGS WERE DESIGNED USING A NET SOIL BEARING CAPACITY OF 2000 PSF .
- THE DESIGN SOIL BEARING CAPACITY WAS BASED ON PRESUMPTIVE VALUES AND SHALL BE CONFIRMED BEFORE OR DURING CONSTRUCTION.
- DESIGN, FABRICATION, AND ERECTION OF COLD FORMED STEEL MEMBERS SHALL BE IN ACCORDANCE WITH THE AISI DESIGN SPECIFICATIONS AND MANUAL OF STANDARD PRACTICE.
- DESIGN, FABRICATION, AND ERECTION OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318("BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE").
- MINIMUM 28 DAY CONCRETE CYLINDER STRENGTH SHALL BE:

FOOTINGS	3000	PSI
FOUNDATION WALLS	4000	PSI
SLABS ON GRADE	4000	PSI

- EXTERIOR EXPOSED CONCRETE SHALL BE AIR ENTRAINED.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
- STEEL STUD GAUGES, FRAMING, AND CONNECTIONS SHALL BE DESIGNED BY THE SUPPLIER. STEEL SHALL BE 50 KSI UNLESS NOTED OTHERWISE.
- DESIGN, FABRICATION, AND ERECTION OF ALL WOOD FRAMING SHALL BE IN ACCORDANCE WITH THE N.F.P.A. DESIGN SPECIFICATIONS AND MANUAL OF STANDARD PRACTICE.
- DESIGN, FABRICATION, AND ERECTION OF ALL WOOD STRUCTURAL SHEATHING PANELS SHALL BE IN ACCORDANCE WITH THE APA-ENGINEERED WOOD ASSOCIATION'S PLYWOOD DESIGN SPECIFICATION.
- ROOF SHEATHING SHALL BE APA RATED SHEATHING EXTERIOR, 19/32" THICKNESS WITH A MINIMUM SPAN RATING OF 40/20 UNLESS NOTED OTHERWISE.
- WALL SHEATHING SHALL BE APA RATED SHEATHING EXPOSURE 1, 15/32" THICKNESS WITH A MINIMUM SPAN RATING OF 32/16 UNLESS NOTED OTHERWISE.

Due to electronic distribution, this drawing may not be printed to the scale indicated on the drawings. Do NOT use scale to determine dimensions or sizes.

ISSUANCES	
PRELIMINARY BUDGETING	10/15/2019
OWNER PLAN REVIEW	01/09/2020
BID SET	01/20/2020
CONSTRUCTION/PLAN REVIEW	01/21/2020

REVISIONS

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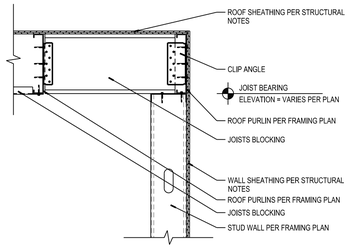
APPROVED BY ---
REVIEWED BY ---
DRAWN BY GMS
1/20/2020 3:29:48 PM

STRUCTURAL NOTES

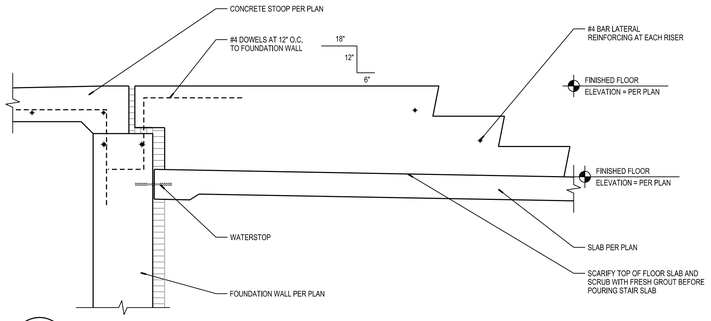
S001

ORIGINAL SIZE = 24" x 36"
X:\68080\cad\68080sn\S001.dgn
SCALE: 1/8"=1'-0"
PLOTTED BY: jeffh



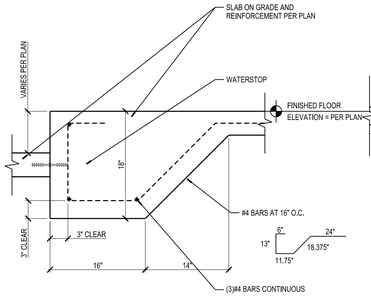
24 / S101 ROOF PURLIN SUPPORT AT END WALL

SCALE: 1"=1'-0"



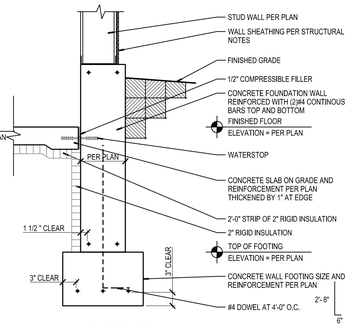
16 / S101 CONCRETE STAIR SECTION

SCALE: 1" = 1'-0"



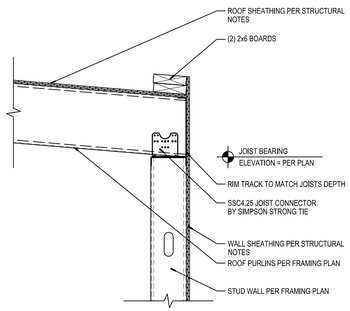
08 / S101 THICKENED SLAB

SCALE: 1"=1'-0"



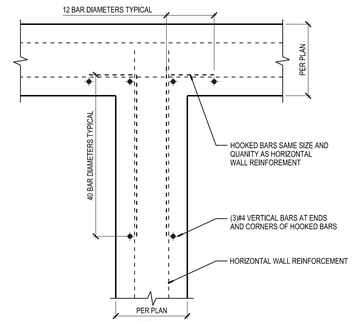
04 / S101 EXTERIOR FOUNDATION WALL AND FOOTING

SCALE: 3/4"=1'-0"



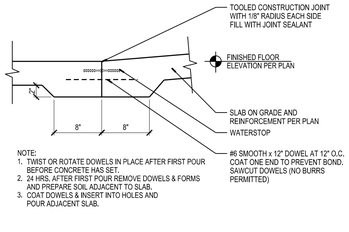
23 / S101 ROOF PURLIN SUPPORT

SCALE: 1"=1'-0"



15 / S101 CONCRETE FOUNDATION INTERSECTION PLAN

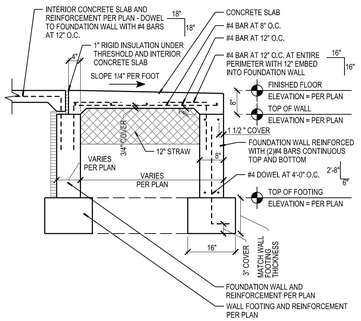
SCALE: 1"=1'-0"



NOTE:
1. TWIST OR ROTATE DOWELS IN PLACE AFTER FIRST POUR BEFORE CONCRETE HAS SET.
2. 24 HRS. AFTER FIRST POUR REMOVE DOWELS & FORMS AND PREPARE SOIL ADJACENT TO SLAB.
3. COAT DOWELS & INSERT INTO HOLES AND POUR ADJACENT SLAB.

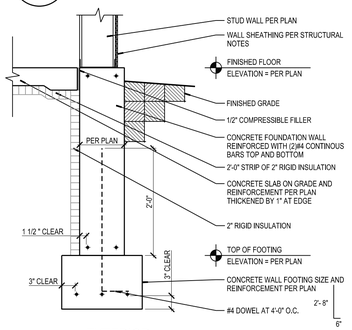
11 / S101 CONSTRUCTION JOINT AT RAMP

SCALE: 1"=1'-0"



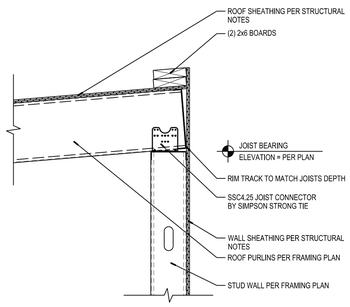
07 / S101 CONCRETE STOOP

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



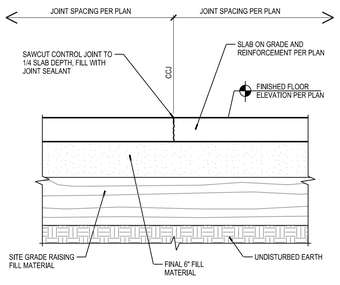
03 / S101 EXTERIOR FOUNDATION WALL AND FOOTING

SCALE: 3/4"=1'-0"



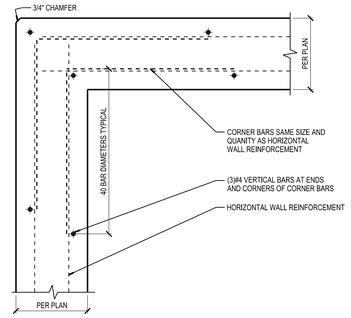
22 / S101 ROOF PURLIN SUPPORT

SCALE: 1"=1'-0"



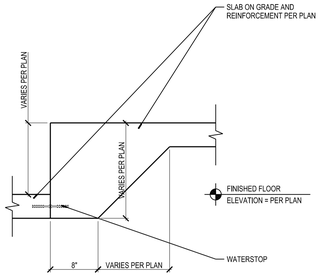
18 / S101 CRACK CONTROL JOINT (CCJ) IN CONCRETE SLAB ON GRADE

SCALE: 1"=1'-0"



14 / S101 CONCRETE FOUNDATION CORNER PLAN

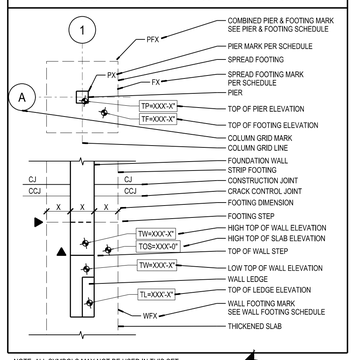
SCALE: 1"=1'-0"



10 / S101 THICKENED SLAB

SCALE: 1"=1'-0"

FOUNDATION SYMBOL LEGEND



NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.

FOUNDATION AND SLAB PLAN NOTES

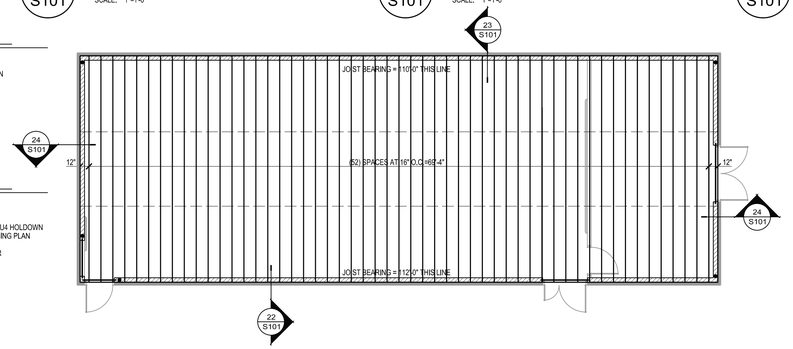
1. TYPICAL FLOOR = 4" SLAB ON GRADE REINFORCED WITH NOVOMESH 950 REINFORCEMENT (5 LBS/ CUBIC YARD OF CONCRETE) UNLESS NOTED OTHERWISE
2. FINISHED FLOOR ELEVATION = 100'-0" UNLESS NOTED OTHERWISE
3. TOP OF FOUNDATION WALL ELEVATION = 100'-0" UNLESS NOTED OTHERWISE
4. FOUNDATION WALLS SHALL BE 10" THICK UNLESS NOTED OTHERWISE
5. TOP OF EXTERIOR FOOTING ELEVATION = 3'-6" BELOW FINISHED FLOOR UNLESS NOTED OTHERWISE
6. WALL FOOTINGS SHALL BE 1'-6" x 1'-0" x CONTINUOUS STRIPS REINFORCED WITH (3)#4 BARS UNLESS NOTED OTHERWISE
7. FOUNDATION WALLS SHALL BE INSULATED WITH 2" RIGID INSULATION AGAINST INTERIOR FACE OF WALL UNLESS NOTED OTHERWISE
8. SLAB JOINTS SHALL BE CRACK CONTROL JOINTS UNLESS NOTED OTHERWISE
9. DOUBLE DASHED LINE IN SLAB DENOTES THICKENED SLAB

STEEL ROOF FRAMING NOTES

1. STEEL JOISTS SHALL BE 12" x 1.5/8" FLANGE x 14 GA, STEEL JOISTS
2. STEEL JOISTS BEARING ELEVATION SHALL BE PER PLAN UNLESS NOTED OTHERWISE
3. JOIST BRIDGING SHALL BE AS RECOMMENDED BY THE JOIST MANUFACTURER AND AS SHOWN UNLESS NOTED OTHERWISE
4. SHADED WALLS INDICATE BEARING WALLS

STEEL STUD WALL NOTES

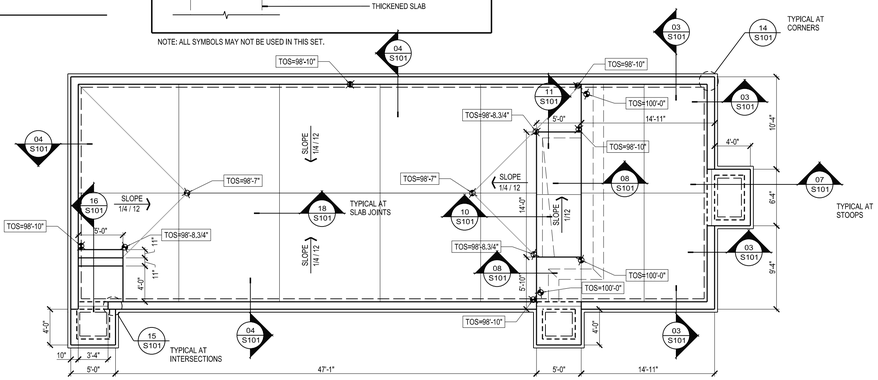
1. ANCHOR WALL BOTTOM TRACK AT 2'-8" O.C.
2. DOUBLE STUD BOTH SIDES OF ALL WINDOWS, DOORS, AND WALL PENETRATIONS TO ROOF BEARING HEIGHT UNLESS NOTED OTHERWISE.
3. DOUBLE STUD AT THE CORNERS OF ALL EXTERIOR BEARING WALLS AND ANCHOR WITH S/HDU4 HOLDOWN AND 5/8" DIA. x 6" TITEN HD ANCHOR. HOLDOWN PLACEMENTS ARE MARKED ● ON THE FRAMING PLAN
4. STEEL STUD SHALL BE 6" x 1.5/8" FLANGE x 18 GA, STEEL STUDS AT 16" O.C.
5. ALL LINTELS SHALL BE (2) 6" x 1.5/8" FLANGE x 18 GA, STEEL STUDS DOUBLE MEMBER HEADER



NORTH

ROOF FRAMING PLAN

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



NORTH

FOUNDATION AND SLAB PLAN

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

SCALE: 1/8"=1'-0"
PLOTTED BY: jwith

ORIGINAL SIZE = 24" x 36"
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REVISIONS

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CONSTRUCTION/PLAN REVIEW	01/21/2020

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NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

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FOUNDATION AND SLAB PLAN
ROOF FRAMING PLAN
STRUCTURAL DETAILS

S101

GAS-FIRED UNIT HEATER SCHEDULE

TAG	LOCATION	INPUT MBH	OUTPUT MBH	CFM	MOTOR HP	VOLTAGE @ 60 HZ	FLUE SIZE INCHES	WEIGHT (LBS.)	MANUFACTURER & MODEL NUMBER
GFUH-1	102 EQUIPMENT / STORAGE	60	48	1,160	1/12	120/1	4	80	MODINE HDS60AS0111

GRILLE, REGISTER & DIFFUSER SCHEDULE

TAG	DESCRIPTION	NECK	MANUFACTURER & MODEL NUMBER
S-1	30" x 30" NECK 3-WAY DISCHARGE DIFFUSER, HORIZONTAL AND VERTICAL BLADES	SEE DRAWING	ABSOLUTAIRE
E-1	27" x 8" STEEL BLADE, 35 DEGREE DEFLECTION EXHAUST GRILL	-	TITUS MODEL 350RL
E-2	24" x 14" STEEL BLADE, 35 DEGREE DEFLECTION EXHAUST GRILL	-	TITUS MODEL 350RL

LOUVER SCHEDULE

TAG	EQUIPMENT SERVED	SIZE W" X H" X D"	TYPE	CONSTRUCTION	MANUFACTURER & MODEL NUMBER
L-1	EF-1	48" x 18" x 6"	STATIONARY	EXTRUDED ALUMINUM	RUSKIN ELF6350DMP
L-2	OSA FOR EQUIPMENT / STORAGE ROOM	48" x 36" x 6"	STATIONARY	EXTRUDED ALUMINUM	RUSKIN ELF6350DMP

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	SYSTEM	CFM	SP	RPM	MOTOR H.P.	VOLTAGE @ 60HZ.	DRIVE	FAN TYPE	MANUFACTURER & MODEL NUMBER	CONTROLS
EF-1	101 STORAGE	EXHAUST	1400	0.7	1561	1/2	460/3	BELT	CENTRIFUGAL	GREENHECK TCB-1-13	CONTROL PANEL - CONTINUOUS
EF-2	102 EQUIPMENT / STORAGE	EXHAUST	4,900	0.375	1486	3/4	460/3	DIRECT	CENTRIFUGAL	GREENHECK SBE-3H24	REFERSE ACTING T-STAT

NOTE: 1. FACTORY MOUNTED DISCONNECT SHALL BE PROVIDED AT ALL EXHAUST FANS.
2. PROVIDE BACKDRAFT DAMPER AT ALL EXHAUST FANS.
3. EF-1 SHALL HAVE A SPARK PROOF MOTOR.

MAKE UP AIR SCHEDULE

TAG		MAU-1
MANUFACTURER		GREENHECK
MODEL NUMBER		MSX-P122-H22-MF
WEIGHT (lbs.)		1,768
AIRFLOW (CFM)		4,900
RPM		998
EXTERNAL STATIC PRESSURE		0.75
MOTOR HP		2
MAXIMUM TEMPERATURE RISE (DEGREES FAHRENHEIT)		90
KW		140
MCA		180
MOP		200
ELECTRICAL CHARACTERISTICS	VOLTS	460
	PHASE	3
	HERTZ	60

NOTE: CONTROLS CONTRACTOR SHALL PROVIDE VFD FOR MAU-1. VFD FOR MAU-1 SHALL BE CONTROLLED THROUGH SPACE PRESSURIZATION CONTROLS.

GENERAL NOTES

1. PROVIDE OWNER WITH OPERATION AND MAINTENANCE MANUALS, TESTING AND BALANCING REPORTS UPON JOB COMPLETION. THE AGENCY RESPONSIBLE FOR BALANCING OF THE VENTILATION SYSTEM SHALL DOCUMENT IN WRITING THE AMOUNT OF OUTDOOR AIR BEING PROVIDED AND DISTRIBUTED AND SHALL RETAIN A COPY OF THE DOCUMENT ON SITE, AND SHALL BE MADE AVAILABLE TO THE STATE DEPT. OF SAFETY UPON REQUEST.
2. RECTANGULAR DUCTWORK SHALL BE CONSTRUCTED TO MEET ALL FUNCTIONAL CRITERIA DEFINED IN SECTION VII OF THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE", LATEST EDITION, AND COMPLY WITH ALL LOCAL, STATE AND FEDERAL CODE REQUIREMENTS.
3. ALL DUCTWORK TO MEET OPERATING PRESSURE CRITERIA OF 2" W.G. MAXIMUM PRESSURE.
4. DUCTWORK SHALL BE SEALED EPR SMACNA "CLASS A OR B" REQUIREMENTS.
5. ALL EQUIPMENT TO COMPLY WITH APPLICABLE ASTM/UL/NFPA/ANSI STANDARDS.
6. CONTRACTOR TO COORDINATE WITH ALL TRADES.
7. PROVIDE NEW NATURAL GAS PIPING TO GAS FIRED UNIT HEATER. REGULATE GAS PRESSURE TO MANUFACTURES RECOMMENDED PRESSURE. PIPING SHALL BE SCHEDULE 40 BLACK STEEL ASTM A53 WITH 150 POUND MALLEABLE IRON SCREWED OR 150 POUND WELDED FITTINGS.
8. INSTALL THERMOSTATS/SENSORS NEXT TO AND AT SAME HEIGHT AS LIGHT SWITCHES, UNLESS OTHERWISE NOTED.

HAZARDOUS AREA CONTROL NOTES

1. MAU-1 SHALL BE PROVIDED WITH FACTORY CONTROL PACKAGE TO PROVIDE THE CONTROL SEQUENCES OUTLINED BELOW. MC / CONTROLS CONTRACTOR SHALL INSTALL FIELD MOUNTED EQUIPMENT AND WIRING AS NECESSARY TO REMOTE PANEL.
2. THE EXHAUST FAN SHALL BE CONTROLLED FROM A REMOTE CONTROL PANEL LOCATED ON THE SOUTH / WEST WALL OF THE 102 EQUIPMENT / STORAGE. LOCATE PANEL ADJACENT TO THE DOORWAY. AN EMERGENCY STOP SHALL BE LOCATED AT THE VENTILATION CONTROL PANEL ALONG WITH A SIGN INDICATING EMERGENCY STOP. EMERGENCY STOP SHALL TERMINATE THE OPERATION OF MAU-1 AND EXHAUST FAN (EF-1).
3. CONTROL SEQUENCE:

   A. OPERATION MODE: THE MAKEUP AIR UNIT AND EXISTING EXHAUST FAN, EF-1 SHALL RUN CONTINUOUSLY UNLESS EMERGENCY SHUT OFF IS ENGAGED.

      1. THE MAU SUPPLY FAN SHALL MAINTAIN A NEGATIVE 0.05 IN (ADJUSTABLE) STATIC PRESSURE IN ROOM 101 AND OPERATE WITH A MINIMUM FLOW RATE OF 4,900 CFM. SUPPLY FAN OF MAU AND EF-1 SHALL PROVE OPERATION AND ALARM IF NON-OPERATIONAL.

      2. EXHAUST FAN EF-1 SHALL BE PROVIDED WITH A REMOTE START/STOP LOCATED AT THE VCP.

      3. UPON EMERGENCY SHUT DOWN THE SUPPLY AIR FAN SHALL STOP AND OUTSIDE AIR DAMPER SHALL CLOSE.

      4. HEATING MODE SHALL BE ENGAGED WHEN SPACE TEMPERATURES FALL BELOW 65 DEG. F (ADJ.). IN HEATING MODE THE ELECTRIC COIL ADJUST MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE OF 85 DEG. F (ADJ.).
4. THE MECHANICAL CONTRACTOR SHALL CONFORM WITH ALL CODE REQUIREMENTS OUTLINED IN THE NATIONAL ELECTRIC CODE 511 - HAZARDOUS AREAS FOR ELECTRICITY AND THE 2015 INTERNATIONAL MECHANICAL CODE.

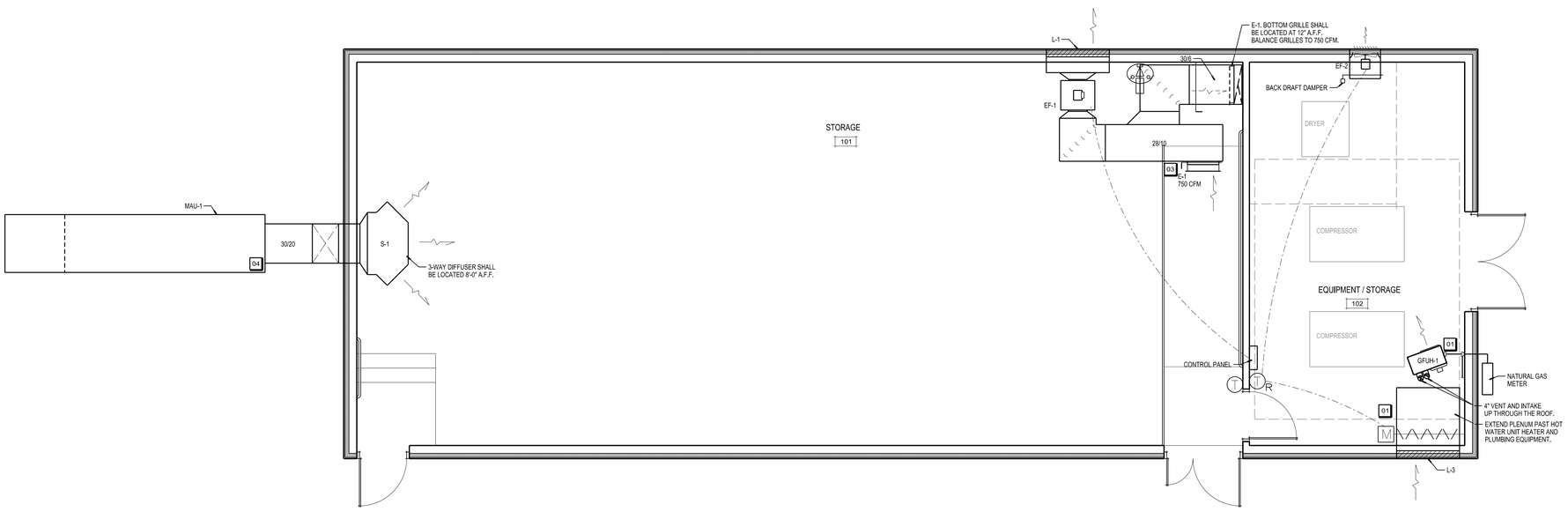
KEYNOTES

01 PROVIDE PRESSURE REGULATOR TO NATURAL GAS ROUTED TO HOT WATER HEATER. AND GAS FIRED UNIT HEATER. PRESSURE SHALL BE REGULATED TO MEET MANUFACTURERS REQUIREMENTS.

02 PROVIDE 10' SEPARATION FROM OSA INTAKE AND FLUE VENT.

03 EXHAUST INTAKE SHALL BE LOCATED NEAR THE UNDERSIDE OF THE STRUCTURE.

04 THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GC TO PROVIDE A 4" CONCRETE PAD AT MAU-1. CONCRETE PAD SHALL EXTEND 6" PAST ALL SIDES OF THE EQUIPMENT.



NORTH

MECHANICAL PLAN

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

SCALE: 1/8"=1'-0"
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NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

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MECHANICAL PLAN, SCHEDULES, DETAILS, AND NOTES

M101

PLUMBING SYMBOL LEGEND

M	METER
	ROOF DRAIN (ABOVE)
	BALL VALVE
	GATE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	NEEDLE VALVE
	CONTROL VALVE
	SOLENOID VALVE
	BACKFLOW PREVENTER
	REDUCED PRESSURE BACKFLOW PREVENTER W/AIRGAP
	RELIEF VALVE
	BALANCE VALVE
	TRIPLE DUTY VALVE
	BALL VALVE/PLUG VALVE
	WATER SERVICE VALVE
	CIRCUIT SETTER, GAS REGULATOR
	THRUST BLOCKING
	FLEXIBLE CONNECTOR
	THERMAL EXPANSION TANK
	HOSE BIBB
	FILTER-REGULATOR OILER AIR SET
	PRESSURE GAGE
	THERMOMETER
	CIRCULATION PUMP
	FLOOR DRAIN
	FLOOR CLEANOUT
	CLEANOUT, WALL CLEANOUT
	UNION CONNECTION
	FLANGED CONNECTION
	SANITARY RISE & CONNECTION
	HOT WATER DROP & CONNECTION
	COLD WATER DROP & CONNECTION
	WATER HAMMER ARRESTER (WHA-X) WHERE X= PDI DESIGNATION
	PIPE DROPS
	PIPE RISES
	VENT THROUGH ROOF
	POINT OF CONNECTION TO EXISTING, FIELD VERIFY
	BACKWATER VALVE

NOTE: ALL SYMBOLS MAY NOT BE USED IN THIS SET.

PLUMBING ABBREVIATION LEGEND

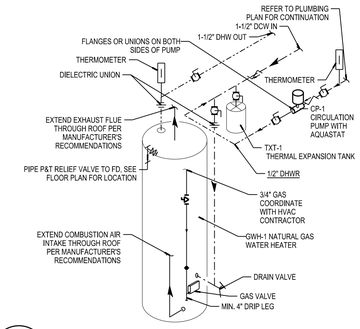
AAV	AUTOMATIC AIR VALVE	MFG	MANUFACTURER, MANUFACTURED
AFF	ABOVE FINISHED FLOOR	NPW	NON-PORTABLE WATER
BFF	BELOW FINISHED FLOOR	OC	ON CENTER
BHP	BRAKE HORSEPOWER	PC	PLUMBING CONTRACTOR
BOP	BOTTOM OF PIPE	PRES	PRESSURE
CA	COMPRESSED AIR	PD	PRESSURE DROP
CO	CLEANOUT	PERF	PERFORATED
COMP	COMPRESSOR	POC	POINT OF CONNECTION
CONN	CONNECTION	PSI	POUNDS PER SQUARE INCH GAGE
COP	COEFFICIENT OF PERFORMANCE	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
COTG	CLEANOUT TO GRADE	PSIG	POUNDS PER SQUARE INCH GAGE
CWW	CLEAR WATER WASTE	RC	ROOFING CONTRACTOR
D	DIAMETER	RD	ROOF DRAIN
DIA	DIAMETER	RET	RETURN
DCW	DOMESTIC COLD WATER CITY	SAN	SANITARY SEWER
DCWS	DOMESTIC COLD WATER SOFT	SF	SQUARE FEET
DET	DETAIL	SFU	WATER SUPPLY FIXTURE UNIT
DFU	DRAINAGE FIXTURE UNIT	SOV	SHUT-OFF VALVE
DHW	DOMESTIC HOT WATER	SP	STANDPIPE
DHWR	DOMESTIC HOT WATER RETURN	ST	STORM SEWER
DTW	DOMESTIC TEMPERED WATER	STM	STEAM
EC	ELECTRICAL CONTRACTOR	SUP	SUPPLY
ELEV	ELEVATION	TC	TEMPERATURE CONTROLS CONTRACTOR
EWT	ENTERING WATER TEMPERATURE	TDH	TOTAL DYNAMIC HEAD
EXG	EXISTING	TFA	TO FLOOR ABOVE
FCO	FLOOR CLEANOUT	TFB	TO FLOOR BELOW
FD	FLOOR DRAIN	THRU	THROUGH
FFA	FROM FLOOR ABOVE	TMV	THERMOSTATIC MIXING VALVE
FFB	FROM FLOOR BELOW	TSTAT	THERMOSTAT
FLA	FULL LOAD AMPS	TYP	TYPICAL
FPC	FIRE PROTECTION CONTRACTOR	T&P	TEMPERATURE AND PRESSURE
G	GAS	T/C	TIME CLOCK
GA	GAGE	UF	UNDERFLOOR
GC	GENERAL CONTRACTOR	UG	UNDERGROUND
GI	GREASE INTERCEPTOR	V	SANITARY VENT
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
GYP	GYPSUM WALL BOARD	VTW	VENT THROUGH WALL
HP	HORSEPOWER	W	WASTE SEWER
IE	INVERT ELEVATION	WC	WATER COLUMN PRESSURE
IW	INDIRECT WASTE	WCO	WALL CLEANOUT
IW	INDUSTRIAL WASTE	WG	WATER GAGE PRESSURE
LWT	LEAVING WATER TEMP.	WHA	WATER HAMMER ARRESTER
MAV	MANUAL AIR VENT	W/	WITH
MBH	THOUSANO BTU PER HOUR	W/O	WITHOUT
MC	MECHANICAL CONTRACTOR		

NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN THIS SET.

PLUMBING LINE LEGEND

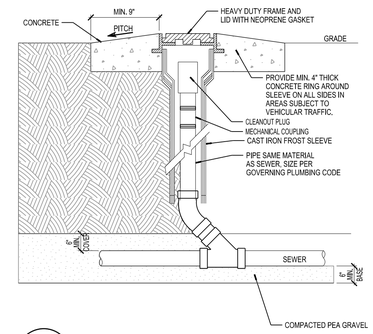
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	DOMESTIC TEMPERED WATER SUPPLY
	DOMESTIC TEMPERED WATER RETURN
	SANITARY SEWER
	SANITARY SEWER (UNDERGROUND OR UNDERFLOOR)
V	SANITARY VENT
	STORM DRAIN
	STORM DRAIN (UNDERGROUND OR UNDERFLOOR)
A	COMPRESSED AIR
	PIPE TO BE DEMOLISHED
	PIPE TO BE ABANDONED IN PLACE

NOTE: ALL LINES MAY NOT BE USED IN THIS SET.



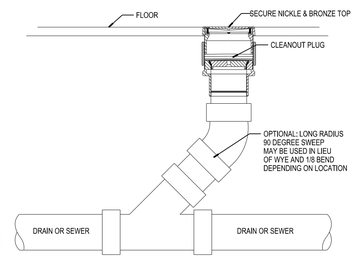
08 P101 WATER HEATER ISOMETRIC

NOTES:
1. CONTRACTOR SHALL INSTALL WATER HEATER PER MANUFACTURER'S RECOMMENDATIONS. SCHEMATIC IS GENERAL IN NATURE AND MAY OR MAY NOT REFLECT ACTUAL INSTALLATION REQUIREMENTS.
2. REFER TO PLUMBING CONSTRUCTION PLANS FOR PIPE SIZING.
3. ELECTRICAL CONTRACTOR SHALL INSTALL AQUA STAT TO CONTROL CP-1 TO MAINTAIN MINIMUM OF 110° FAHRENHEIT.



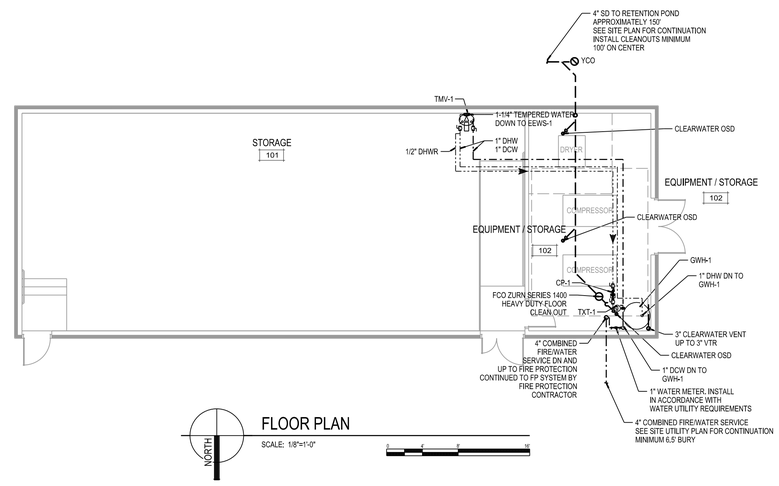
07 P101 YARD CLEANOUT

SCALE: NONE



03 P101 FLOOR CLEANOUT

SCALE: NONE



FLOOR PLAN

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

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NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

PROJECT NUMBER 6080

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REVIEWED BY	...
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PLUMBING PLANS, DETAILS, LEGENDS SCHEDULES AND NOTES

P101

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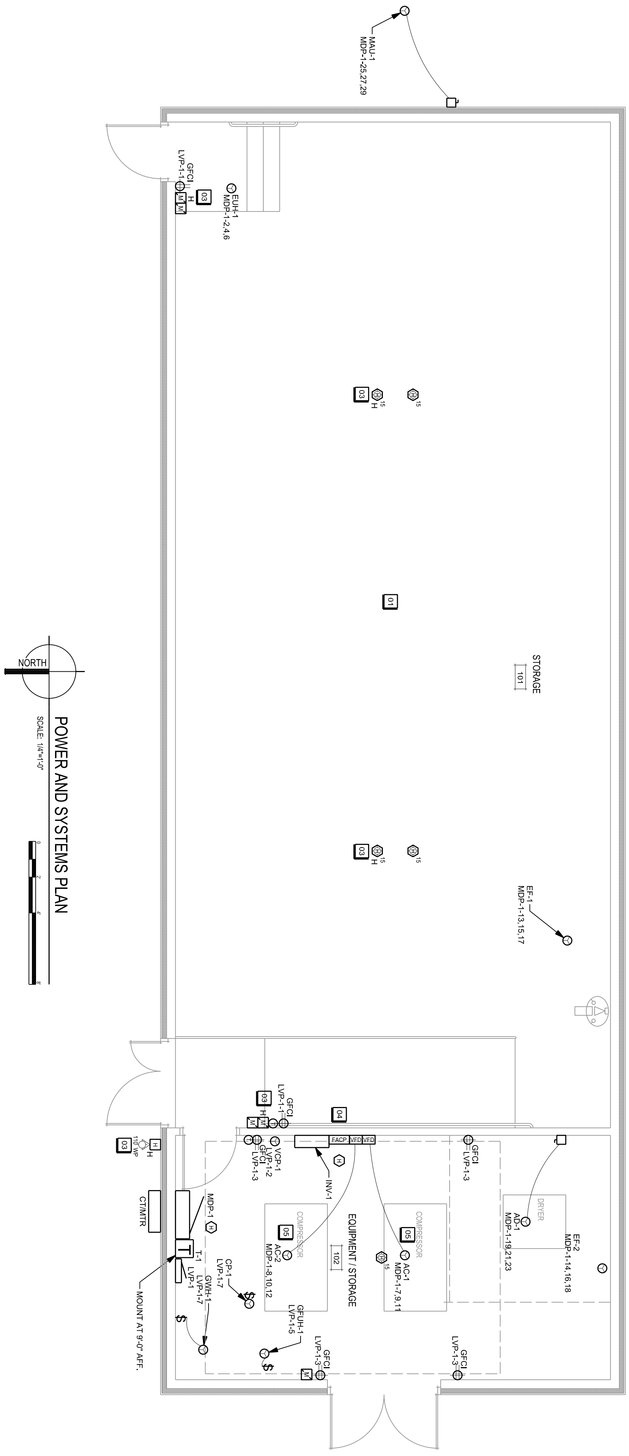
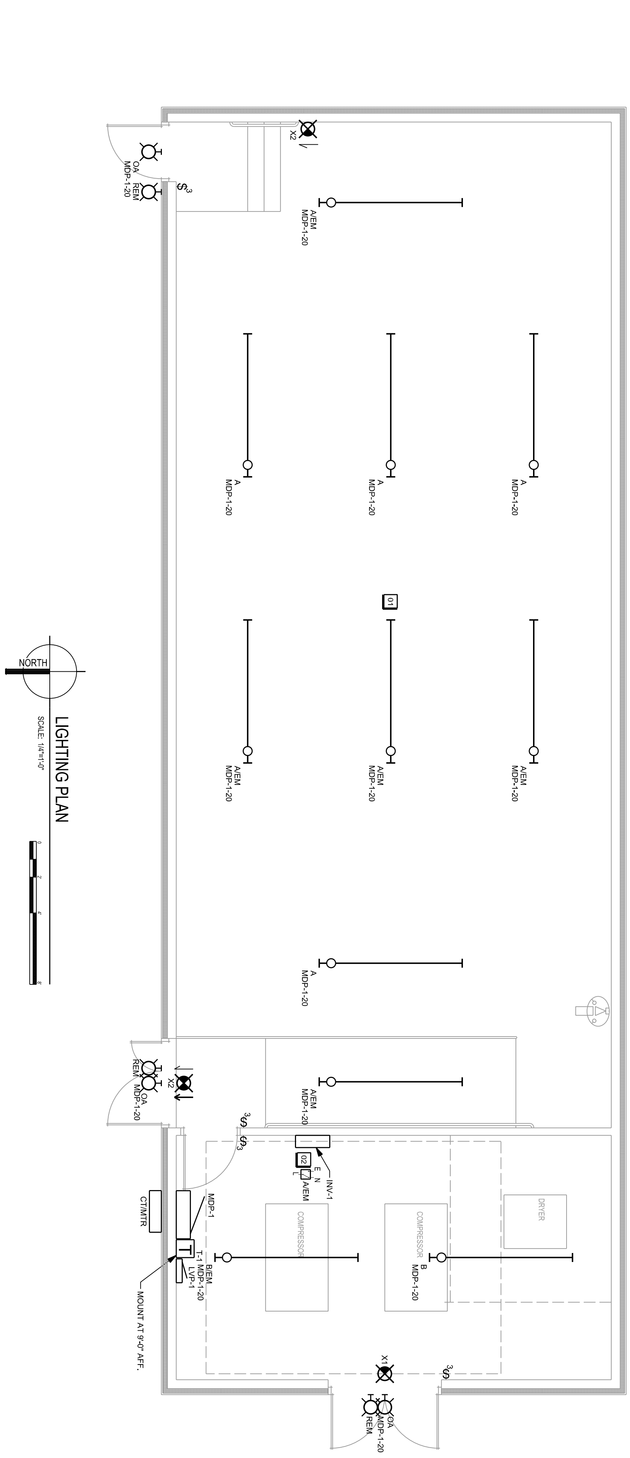
SCALE: 1/8"=1'-0"

PLOTTED BY: jeffh





GENERAL NOTES

1. ALL LIGHT FIXTURES, DEVICES, AND INSTALLATIONS IN STORAGE 101 ARE TO BE RATED FOR CLASS I, DIVISION II.
2. VERIFY AIC RATING OF EXISTING UTILITY TRANSFORMER. PROVIDE FANSE/BARDIS RATED FOR EXISTING AIC RATING.
3. ALL PENETRATIONS ARE TO BE SEALED WITH EQUIVALENT FIRE RATING AS WALL.
4. FIRE ALARM SYSTEM IS TO MATCH EXISTING FIRE ALARM MANUFACTURER LOCATED IN BUILDING 1015.
5. EC IS TO PROVIDE MONITOR MODULES FOR ALL FLOW, TAMPER, AND PRESSURE SWITCHES REQUIRED BY FIRE PROTECTION SYSTEM COORDINATE WITH SPRINKLER SUPPLIER.

KEYNOTES

01 ALL LIGHT FIXTURES, DEVICES, AND INSTALLATIONS IN THIS SPACE ARE TO BE RATED FOR CLASS I, DIVISION II.

02 TYPE A EMH LIGHT FIXTURES ARE TO BE CONTROLLED VIA SWITCH UNDER NORMAL POWER CONDITIONS. LIFE SAFETY LIGHTING POWER VIA MINI-INVERTERS. INV-1 TO BE EQUAL TO HAZMAT SERVICES ARE TO BE INTERLOCKED WITH FIRE ALARM SYSTEM. WHEN A HAZMAT MANUAL PULL STATION IS INITIATED, THE FIRE ALARM CONTROL PANEL IS TO ACTIVATE THE

03 INTERLOCK FIRE ALARM CONTROL PANEL TO BUILDING 1015 FIRE ALARM CONTROL PANEL LOCATED OUTSIDE OF CONTROL ROOM. PROVIDE 1" PVC CONDUIT ROUTED UNDERGROUND TO BUILDING 1015. PROVIDE 1" PVC CONDUIT ROUTED UNDERGROUND TO BUILDING 1015. ROUTE CONDUIT UP THROUGH ACCESSIBLE CEILING SPACE AND TO FIRE ALARM CONTROL PANEL.

04 INTERLOCK COMPRESSOR ALARM TO TRANE MPS8 SYSTEM LOCATED IN ELECTRICAL ROOM OF BUILDING 1015. PROVIDE 1" PVC CONDUIT ROUTED UNDERGROUND TO BUILDING 1015 THROUGH ACCESSIBLE CEILING SPACE AND TO TRANE MPS8. COORDINATE LOCATION WITH OWNER.

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ELECTRICAL PLAN

E101

NEW CHEMICAL STORAGE FACILITY

EVONIK CORPORATION

MILTON, WISCONSIN

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NEW RECEPTACLE SCHEDULE

CALLOUT	SYMBOL	NEMA	VOLTS	FEATURES	NOTE 1	NOTE 2	NOTE 3
RAISED GFCI DUPLEX	GFCI	5-20R	120V 1P 2W	GND	MOUNT @ 44" TO BOTTOM UNLESS NOTED OTHERWISE		

NEW COMMUNICATIONS SCHEDULE

CALLOUT	SYMBOL	NOTE 1	NOTE 2	NOTE 3
THERMOSTAT - ROUGH IN	T	MOUNT SINGLE GANG BOX AT 44" TO BOTTOM FOR THERMOSTAT AND STUB 1/2" CONDUIT TO ACCESSIBLE CEILING SPACE.	WIRING AND DEVICE PROVIDED AND INSTALLED BY CONTROLS CONTRACTOR.	COORDINATE WITH MECHANICAL CONTRACTOR.

*ALL FREE AIR CABLE TO BE PLENUM RATED.

NEW FIRE ALARM DEVICE SCHEDULE

CALLOUT	SYMBOL	NOTE 1	NOTE 2	NOTE 3
CEILING HORN/STROBE	15 W	NUMBER SHOWN INDICATES CANDELA RATING.	CABLING PER MANUFACTURER'S REQUIREMENTS.	
CEILING HORN/STROBE - HAZMAT	15 W H	NUMBER SHOWN INDICATES CANDELA RATING.	CABLING PER MANUFACTURER'S REQUIREMENTS.	DEVICE TO BLUE AND INTERLOCKED WITH FIRE ALARM SYSTEM.
CONTROL PANEL	FACP	MOUNT AT 60" TO TOP UNLESS NOTED OTHERWISE	INTERLOCK WITH BUILDING MANAGEMENT SYSTEM	PROVIDE TWO (2) CAT 6a CABLES TO MAIN PHONE LINE
HEAT DETECTOR	H	PROVIDE HEAT DETECTOR WITHIN 5'-0" FROM FIRE ALARM CONTROL PANEL.	CABLING PER MANUFACTURER'S REQUIREMENTS.	
MANUAL PULL STATION	M	MOUNT AT 44" AFF TO BOTTOM UNLESS NOTED OTHERWISE	CABLING PER MANUFACTURER'S REQUIREMENTS.	
MANUAL PULL STATION - HAZMAT	M H	MOUNT AT 44" AFF TO BOTTOM UNLESS NOTED OTHERWISE	CABLING PER MANUFACTURER'S REQUIREMENTS.	DEVICE TO BLUE AND INTERLOCKED WITH FIRE ALARM SYSTEM.
WEATHERPROOF HORN/STROBE HAZMAT	80 W F H	MOUNT AT 80" AFF TO BOTTOM UNLESS NOTED OTHERWISE.	NUMBER SHOWN INDICATES CANDELA RATING.	CABLING PER MANUFACTURER'S REQUIREMENTS. DEVICE TO BLUE AND INTERLOCKED WITH FIRE ALARM SYSTEM.

*ALL FREE AIR CABLE TO BE PLENUM RATED.

NEW SWITCH SCHEDULE

CALLOUT	SYMBOL	NOTE 1	NOTE 2	NOTE 3
3 WAY SWITCH	$ 3	MOUNT AT 44" TO BOTTOM UNLESS NOTED OTHERWISE		
EMERGENCY SHUNT RELAY	E N L	UL 924 RELAY MOUNTED ON FIXTURE OR JUNCTION BOX NEAR FIXTURE(S) TO BE CONTROLLED	CONNECT DESIGNATED FIXTURE(S) THROUGH SHUNT RELAY TO SWITCH TO EMERGENCY SOURE UPON FAILURE OF UNSWITCHED NORMAL SOURCE	ACCEPTABLE MODELS: WATTSTOPPER ELCU-200, BODINE, SENSORSWITCH nPP16 ER AND GREENGATE CEPC

NEW LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST / DRIVER	MOUNTING	MODEL	INPUT WATTS	VOLTS	NOTE 1	NOTE 2	NOTE 3
A		(1) LED, 5000K	8' LINEAR	LED DRIVER	CEILING	G&G HLX8-SO-50K OR EQUAL	50	277V 1P 2W	MOUNT ON CEILING	RATED FOR CLASS I, DIVISION II LOCATIONS.	
A/EM		(1) LED, 5000K	8' LINEAR	LED DRIVER	CEILING	G&G HLX8-SO-50K OR EQUAL	50	277V 1P 2W	MOUNT ON CEILING	RATED FOR CLASS I, DIVISION II LOCATIONS.	SEE KEYNOTE 02 ON E101 FOR BATTERY BACKUP INFORMATION.
B		(1) LED, 5000K	8' STRIP	LED DRIVER	CHAIN HUNG	LSI SDL8 LED 80L FL UNV DIM1 50 80CRI OR EQUAL	50	277V 1P 2W	MOUNT AT 8'-0" AFF.		
B/EM		(1) LED, 5000K	8' STRIP	LED DRIVER	CHAIN HUNG	LSI SDL8 LED 80L FL UNV DIM1 50 80CRI EM10 OR EQUAL	50	277V 1P 2W	MOUNT AT 8'-0" AFF.	PROVIDE WITH BATTERY BACKUP	
OA		(1) LED, 5000K	WALL PACK	LED DRIVER	WALL	LSI WPSLS 1L 50 PM208-277 OR EQUAL	12	277V 1P 2W	MOUNT AT 8'-0" TO BOTTOM AFG.	PROVIDE WITH UNIT PHOTOCELL.	COORDINATE FINISH WITH OWNER.
REM		(1) LED	REMOTE EMERGENCY LIGHT	LED DRIVER	WALL	LSI PRLED-WI OR EQUAL	3,6	277V 1P 2W	MOUNT AT 8'-0" TO BOTTOM AFG.	FEED FROM TYPE X1.	
X1		(1) LED	EXIT SIGN	BATTERY	SURFACE	LSI EX-R-U-WB-WH-R12 OR EQUAL	6	277V 1P 2W	MOUNT AT 9'-0" TO BOTTOM AFF.	FEED FROM UNSWITCHED LIGHTING CIRCUIT.	FEED TYPE REM FIXTURES.
X2		(1) LED	C1D2 EXIT SIGN	BATTERY	SURFACE	CHLORIDE CEX-N-1-R-WPM OR EQUAL	2,5	277V 1P 2W	MOUNT AT 9'-0" TO BOTTOM AFF.	FEED FROM UNSWITCHED LIGHTING CIRCUIT.	

EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	LOCATION	VOLTS	AMPS	KVA	HP	CIRCUIT	NOTE 1	NOTE 2	NOTE 3	DISCONNECT
AC-1	VFD	AIR COMPRESSOR	EQUIPMENT STORAGE 102	480V 3P 3W	61	50.71		MDP-1-7,9,11	PROVIDE AND INSTALL VFD AT UNIT.			VFD
AC-2	VFD	AIR COMPRESSOR	EQUIPMENT STORAGE 102	480V 3P 3W	61	50.71		MDP-1-8,10,12	PROVIDE AND INSTALL VFD AT UNIT.			VFD
AD-1		AIR DRYER	EQUIPMENT STORAGE 102	480V 3P 3W	2.95	2.45		MDP-1-19,21,23	PROVIDE NON-FUSIBLE DISCONNECT AT UNIT.			NON-FUSED

HVAC EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	LOCATION	VOLTS	AMPS	KVA	HP	CIRCUIT	NOTE 1	NOTE 2	NOTE 3	DISCONNECT
EF-1		EXHAUST FAN	STORAGE 101	480V 3P 3W	1.1	0.91	1/2 HP	MDP-1-13,15,17	PROVIDE CONNECTION TO UNIT DISCONNECT.			HARDWIRED CONNECTION
EF-2		EXHAUST FAN	EQUIPMENT STORAGE 102	480V 3P 3W	1.6	1.33	3/4 HP	MDP-1-14,16,18	PROVIDE CONNECTION TO UNIT DISCONNECT.			HARDWIRED CONNECTION
EUH-1		ELECTRIC UNIT HEATER	STORAGE 101	480V 3P 3W	42.1	35		MDP-1-2,4,6	PROVIDE CONNECTION TO UNIT DISCONNECT.			HARDWIRED CONNECTION
GFUH-1	$	GAS FIRED UNIT HEATER	EQUIPMENT STORAGE 102	120V 1P 2W	0.83	0.1	F HP	LVP-1-5	PROVIDE TOGGLE SWITCH DISCONNECT AT UNIT.			TOGGLE SWITCH
MAU-1		MAKE-UP AIR UNIT	SITE	480V 3P 3W	168.39	140		MDP-1-25,27,29	INSTALL VFD PROVIDED BY CONTROL CONTRACTOR.			NON-FUSED
VCP-1		VENTILATION CONTROL PANEL	EQUIPMENT STORAGE 102	120V 1P 2W	0.83	0.1	F HP	LVP-1-2	PROVIDE CONNECTION TO UNIT.			HARDWIRED CONNECTION

PLUMBING EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	LOCATION	VOLTS	AMPS	KVA	HP	CIRCUIT	NOTE 1	NOTE 2	NOTE 3	DISCONNECT
CP-1	$	CIRCULATION PUMP	EQUIPMENT STORAGE 102	120V 1P 2W	0.83	0.1	F HP	LVP-1-7	PROVIDE MOTOR RATED TOGGLE SWITCH DISCONNECT AT UNIT.			TOGGLE SWITCH
GWH-1	$	GAS FIRED WATER HEATER	EQUIPMENT STORAGE 102	120V 1P 2W	0.83	0.1	F HP	LVP-1-7	PROVIDE MOTOR RATED TOGGLE SWITCH DISCONNECT AT UNIT.			TOGGLE SWITCH

MDP-1

ROOM | VOLTS 480Y/277V 3P 4W | AIC 22,000
MOUNTING SURFACE | BUS AMPS 600 | MAIN BKR 600
FED FROM CT/MTR | NEUTRAL 100% | LUGS STANDARD
NOTE

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	50/3	1.48	XFMR T-1	a	2	60/3	35	EUH-1
3	|			b	4	|		
5	|			c	6	|		
7	100/3	50.7	AC-1	a	8	100/3	50.7	AC-2
9	|			b	10	|		
11	|			c	12	|		
13	20/3	0.915	EF-1	a	14	20/3	1.33	EF-2
15	|			b	16	|		
17	|			c	18	|		
19	20/3	2.45	AD-1	a	20	20/1	0.586	LIGHTING
21	|			b	22	20/1	0.25	UPS INV-1
23	|			c	24	-/1	0	SPACE
25	200/3	140	MAU-1	a	26	-/1	0	SPACE
27	|			b	28	-/1	0	SPACE
29	|			c	30	-/1	0	SPACE
31	-/1	0	SPACE	a	32	-/1	0	SPACE
33	-/1	0	SPACE	b	34	-/1	0	SPACE
35	-/1	0	SPACE	c	36	-/1	0	SPACE
37	-/1	0	SPACE	a	38	-/1	0	SPACE
39	-/1	0	SPACE	b	40	-/1	0	SPACE
41	-/1	0	SPACE	c	42	-/1	0	SPACE

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	0.836	1.05	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	140	175	(125%)	HEATING	0	0	(100%)
OTHER MOTORS	142	142	(100%)	NONCONTINUOUS	0	0	(100%)
RECEPTACLES	1.08	1.08	(50%>10)	KITCHEN EQUIP	0	0	(N/A)
				NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	283	319	
				BALANCED THREE PHASE AMPS		383	

PHASE BALANCE PERCENT: PHASE A 100% PHASE B 100% PHASE C 99.6%

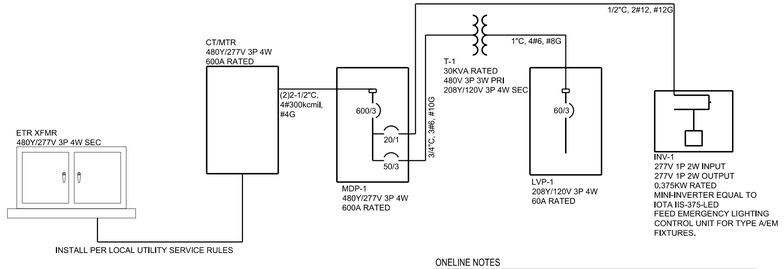
LVP-1

ROOM | VOLTS 208Y/120V 3P 4W | AIC 22,000
MOUNTING SURFACE | BUS AMPS 60 | MAIN BKR 60
FED FROM T-1 | NEUTRAL 100% | LUGS STANDARD
NOTE

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.36	RECEPTACLE	a	2	20/1	0.1	VCP-1
3	20/1	0.72	RECEPTACLE	b	4	-/1	0	SPACE
5	20/1	0.1	GFUH-1	c	6	-/1	0	SPACE
7	20/1	0.2	CP-1, GWH-1	a	8	-/1	0	SPACE
9	-/1	0	SPACE	b	10	-/1	0	SPACE
11	-/1	0	SPACE	c	12	-/1	0	SPACE

	CONN. KVA	CALC. KVA			CONN. KVA	CALC. KVA	
LIGHTING	0	0	(125%)	CONTINUOUS	0	0	(125%)
LARGEST MOTOR	0.1	0.125	(125%)	HEATING	0	0	(100%)
OTHER MOTORS	0.3	0.3	(100%)	NONCONTINUOUS	0	0	(100%)
RECEPTACLES	1.08	1.08	(50%>10)	KITCHEN EQUIP	0	0	(N/A)
				NONCOIN/DIVERSE	0	0	(N/A)
				TOTAL KVA	1.48	1.51	
				BALANCED THREE PHASE AMPS		4.18	

PHASE BALANCE PERCENT: PHASE A 134% PHASE B 146% PHASE C 20.3%



ONELINE DIAGRAM
SCALE: NONE

ONELINE NOTES

1. VERIFY AIC RATING OF EXISTING UTILITY TRANSFORMER. PROVIDE PANELBOARDS RATED FOR EXISTING AIC RATING.

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REVISIONS

ISSUANCES

PRELIMINARY BUDGETING	10/15/2019
OWNER PLAN REVIEW	01/09/2020
BID SET	01/20/2020
CONSTRUCTION/PLAN REVIEW	01/21/2020

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NEW CHEMICAL STORAGE FACILITY
EVONIK CORPORATION
MILTON, WISCONSIN

PROJECT NUMBER 60600
APPROVED BY ...
REVIEWED BY ...
DRAWN BY CTK
1/20/2020 3:29:56 PM

ELECTRICAL SCHEDULES, PANELBOARD SCHEDULES, & ONELINE DIAGRAM

E301

SCALE: 1/8"=1'-0"
PLOTTED BY: jeffh
ORIGINAL SIZE = 24" x 36"
X:\60600\cad\60600dwg\E301.dgn