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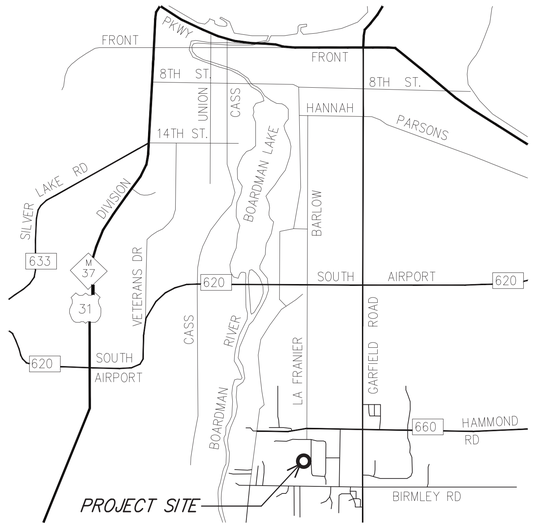
INDEMNIFICATION

TO THE FULLEST EXTENT PERMITTED BY LAW AND TO THE EXTENT CLAIMS, DAMAGES, LOSSES OR EXPENSES ARE NOT COVERED BY PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE PURCHASED BY CONTRACTORS, ALL CONTRACTORS SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER, ARCHITECT, ARCHITECT'S CONSULTANTS, AND AGENTS AND EMPLOYEES OF ANY OF THEM FROM AND AGAINST CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING BUT NOT LIMITED TO ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM PERFORMANCE OF THE WORK, PROVIDED THAT SUCH CLAIM, DAMAGE, LOSS OR EXPENSE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE OR DEATH, OR TO INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK ITSELF), BUT ONLY TO THE EXTENT CAUSED BY THE NEGLIGENT ACTS OR OMISSIONS OF CONTRACTORS, SUBCONTRACTORS, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE, REGARDLESS OF WHETHER OR NOT SUCH CLAIM, DAMAGE, LOSS OR EXPENSE IS CAUSED IN PART BY A PARTY INDEMNIFIABLE HEREUNDER. SUCH OBLIGATION SHALL NOT BE CONSTRUED TO NEGATE, ABRIDGE, OR REDUCE OTHER RIGHTS OR OBLIGATIONS OF INDEMNITY WHICH WOULD OTHERWISE EXIST AS TO A PARTY OR PERSON DESCRIBED IN THIS PARAGRAPH. IN CLAIMS AGAINST ANY PERSON OR ENTITY INDEMNIFIED UNDER THIS PARAGRAPH BY AN EMPLOYEE OF A CONTRACTOR, A SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE, THIS INDEMNIFICATION OBLIGATION SHALL NOT BE LIMITED BY A LIMITATION ON AMOUNT OR TYPE OF DAMAGES, COMPENSATION OR BENEFITS PAYABLE BY OR FOR A CONTRACTOR OR A SUBCONTRACTOR UNDER WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS OR OTHER EMPLOYEE BENEFIT ACTS.

COORDINATION

CONTRACTORS, SUBCONTRACTORS, AND MATERIALS SUPPLIERS SHALL CAREFULLY EXAMINE AND STUDY ALL CONTRACT DOCUMENTS AND EXISTING CONDITIONS, AND COORDINATE THEIR RESPECTIVE PORTIONS OF THE WORK WITH THOSE OF ALL OTHER TRADES. WHERE INFORMATION PRESENTED IN ANY PART OF THE CONSTRUCTION DOCUMENTS APPEARS TO BE IN ERROR OR CONTRADICTS THAT PRESENTED ELSEWHERE, NOTIFY THE ARCHITECT IN WRITING AND REQUEST CLARIFICATION PRIOR TO BIDDING, PROCUREMENT, FABRICATION, AND INSTALLATION OF THE WORK. FAILURE TO NOTIFY THE ARCHITECT OF ANY APPARENT CONFLICT OR ERROR SHALL NOT RELIEVE ANY CONTRACTOR, SUBCONTRACTOR, OR MATERIAL SUPPLIER OF THE RESPONSIBILITY TO COORDINATE ITS WORK WITH ALL ASPECTS OF THE CONSTRUCTION DOCUMENTS AND THE WORK OF ALL TRADES AND SPECIALTIES.



AREA MAP
(NO SCALE)

GARFIELD TOWNSHIP, MICHIGAN

CONSTRUCTION DOCUMENTS DRAWING SET

ARCHITECT:

STRUCTURAL ENGINEER:

MECH/ELEC ENGINEER:

SITE/CIVIL ENGINEER:

AIR SEALING NOTES

1. Seal air-tight all joints, perimeters, and penetrations in floor, wall, ceiling, and roof assemblies (including both interior and exterior assemblies) where such assemblies are either thermally insulated or acoustically insulated.

PROJECT SUMMARY

This project consists of a new, one story, 3,392 SF, professional office building and its associated site development. The project includes open work spaces, enclosed offices, conference room, break room, storage, and related support functions.

DESIGN LOADS SUMMARY

1. Soil Bearing Capacity: 2,000 PSF (assumed for foundation design) (Contractor to verify actual site bearing conditions by field testing)
2. Building Risk Category (t1604.5): II (Standard Hazard Facilities)
3. Interior Floor Design Live Load (t1607.1): 100 PSF
4. Interior Floor Design Concentrated Load (t1607.1): 2,000 LBS
5. Attic Design Live Load (without storage): 10 PSF
6. Snow Exposure Factor, C_e (ASCE 7, t7-2): 1.0 ("Partially Exposed")
7. Snow Importance Factor, I_s (ASCE 7, t1.5-2): 1.0
8. Roof Thermal Factor, C_t (ASCE 7, t7-3): 1.1
9. Ground Snow Load, p_g (1608.2): 60 PSF
10. Roof Slope Factor, C_s (ASCE 7, f7-2): 1.0
11. Roof Live Load: Governed by Design Snow Load
12. Flat Roof Design Snow Load, p_f (ASCE 7, 7.3): 47 PSF
13. Sloped Roof Design Snow Load, p_s (ASCE 7, 7.4): 47 PSF
14. Drift Surcharge Loads, p_d and Width of Drifts, w: Per ASCE 7
15. Ultimate Wind Speed (3-second gust), V_{ult} (fig. 1609.3): 115 MPH
16. Nominal Design Wind Speed, V_{asd} (t1609.3.1): 89 MPH
17. Site Wind Exposure Category (1609.4.3): C
18. Wind Internal Net Pressure Coefficient, C_{net} (t1609.6.2): 1.28
19. Wind Gust Effect Factor, G (ASCE 7, 26.9.1): 0.85
20. Wind Directionality Factor, K_d (ASCE 7, t26-6): 0.85
21. Design Wind Pressure for Exterior Components and Cladding, P_{net} (1609.6.3): 26 PSF
22. Seismic Importance Factor, I_e (ASCE 7, 11.5.1): 1.0
23. Seismic Design Category (ASCE 7, 11.6): A
24. Seismic Force-Resisting System (ASCE 7, t12.201): Light-frame wood walls sheathed with wood structural panels
25. Analysis Procedure (ASCE 7, 11.7, 12.6, 12.14): Simplified Design Procedure
26. Maximum Roof Snow Load Deflection: l/240
27. Maximum Ceiling Live Load Deflection: l/240
28. Maximum Exterior Wall Wind Load Lateral Deflection: l/360
29. Maximum Exterior Wall Wind Load Lateral Deflection (Masonry & Masonry Veneer): l/600

DEFERRED SUBMITTALS (107.3.4.1)

1. Engineered Metal-Plate-Connected Wood Trusses

OWNER-PROVIDED TESTING

1. Soil Bearing Capacity
2. Fill Soils Placement and Compaction
3. Concrete Strength, Slump, and Air Content

BUILDING CODE SUMMARY

GENERAL BUILDING CODE SUMMARY

1. Applicable Building Code: "2015 Michigan Building Code." (Admincode R 408.30401), including, as applicable:
   - 1.1. "2015 Michigan Energy Code"
   - 1.2. "2017 National Electrical Code (NEC)"
   - 1.3. "2015 Michigan Mechanical Code"
   - 1.4. "2015 Michigan Plumbing Code"
3. Building Code Jurisdiction: Garfield Township, Michigan.
4. Building Use Group: B – Business (Ch 3).
5. Building Use Group: Mixed (Ch 3).
   - B Business/Services
   - S-1 Moderate-Hazard Storage
6. Use Separation: Nonseparated (508.3).
7. Building Construction Type: VB, Combustible/Unprotected (602).
8. Building Area: 3,392 SF (503, 506).
9. Building Height: 1 story, 18 FT (503, 504).
10. Area Frontage Increase Factor: 175% (506.3.3).
    - Building Open Perimeter: 100% (506.3.1).
    - Open Perimeter Width: 30 FT (506.3.2).
11. Automatic Fire Suppression: None (903).
12. Fire Alarm System: None (907).
13. Number of Exits Required: 1 (t1006.2.1, t1006.3.2(2)).
14. Maximum Exit Access Travel Distance: 200 FT (t1017.2).
15. Maximum Common Path of Egress Travel: 100 FT (t1006.2.1).
16. Occupant Load (egress calculation) (t1004.1.2): 31 persons.
    - B Use Areas: 29 persons (2,870/100 SF gross).
    - S-1 Use Areas: 2 persons (390/300 SF gross).
17. Accessibility: All new construction and circulation to new construction to comply with applicable barrier-free accessibility code requirements (ch 11).
18. Accessible Means of Egress: 2 (1009).
    Exit access, and accessible routes (1009.2).
19. Toilet Facilities (2902, MPC):
    Unisex WC/Lav: 2
20. Drinking Fountains: 1 (2902, MPC).
21. Utility/Mop Sinks: 1 (2902, MPC).
22. Key Access Box: 1 (per fire department, IFC 506).
23. Fire Extinguishers: Minimum 3A per NFPA 10 (906).
    1 extinguisher required, centrally-located.
24. Maximum Travel Distance from Any Point in the Building to the Nearest Fire Extinguisher: 75 Ft. (t906.3(1)).

ELEMENT FIRE RATINGS AND COMBUSTIBILITY SUMMARY

1. Exterior Walls: Combustible/Unprotected (based on Separation Distance > 10 Ft, t602).
2. Exterior Openings: Combustible/Unprotected (based on Separation Distance > 10 Ft, t705.8).
3. Mixed Use Separation Enclosures: None (508.3.3).
4. Exit Discharge Enclosures: Combustible/Unprotected (1028).
5. Exit Access Enclosures: Combustible/Unprotected (serving </= 30 occupants, t1020.1).
6. Structural Frame (including columns, beams, girders, and trusses): Combustible/Unprotected (t601).
7. Other Non-Load-Bearing Partitions: Combustible/Unprotected (t601).
8. Roof Construction (including supporting beams and joists): Combustible/Unprotected (t601).
9. Fire Blocking: Per Building Code at concealed spaces in combustible construction (718.2).
10. Attic Draft Stopping: at 3,000 SF intervals in combustible construction (718.4) (see exception for sprinklered buildings).
11. Interior Finish Combustibility Requirements:
    Wall/Ceiling, Exit Access Corridors: Class B (t803.11).
    Wall/Ceiling, Rooms and Spaces: Class C (t803.11).
    Floors, Exit Access Corridors: Class II (804.4).
    Floors, Other Areas: CPSC 16 CFR 1630 (DOC FF-1, pill test) or ASTM D2859 (804.4).
12. Minimum Required Roof Covering Classification: Class C (t1505.1).

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SITE/CIVIL ENGINEER:

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STRUCTURAL ENGINEER:

APEX ENGINEERING & MANAGEMENT, INC.
3409 VETERANS DRIVE
TRAVERSE CITY, MI 49684
(231) 275-2600

MECHANICAL, ELECTRICAL, PLUMBING ENGINEER:

nealis ENGINEERING
830 Cottageview Dr., Suite 102
Traverse City, MI 49684
P 231.933.0510 F 231.933.3215
W www.nealisengineering.com

ARCHITECTURE TECHNOLOGY

ARCHITECT: ARCHITECTURE TECHNOLOGY, P.C.
1304 BUSINESS PARK DRIVE
TRAVERSE CITY, MI 49686
(231) 933-4489

OWNER: JS PROPS OZ LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MICHIGAN 49685

PROJECT: OFFICE BUILDING
1419 INDUSTRY DRIVE
TRAVERSE CITY, MI 49696

SHEET CONTENTS: TITLE SHEET

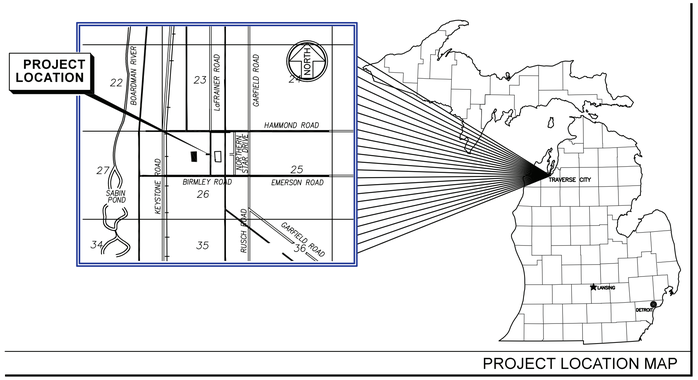
NEALIS_PLAN

ISSUED:	REV:	REV:	REV:	REV:	REV:
01-29-21					

NEW OFFICE BUILDING

HAMMOND INDUSTRIAL CENTRE, GARFIELD TOWNSHIP, MICHIGAN

AI

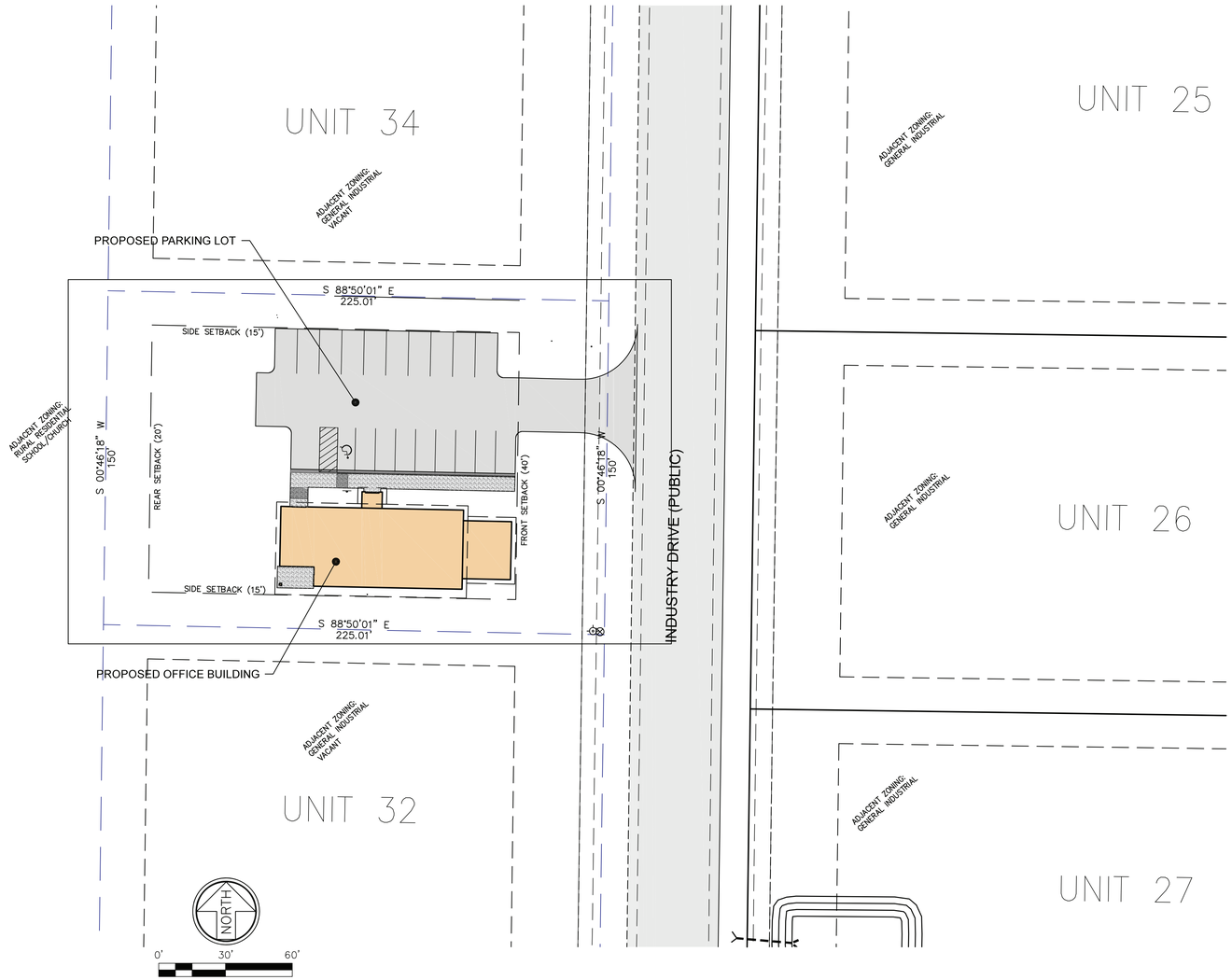


PROJECT LOCATION MAP

PROPOSED OFFICE BUILDING

UNIT 33, HAMMOND INDUSTRIAL CENTRE

GARFIELD TOWNSHIP
GRAND TRAVERSE COUNTY, MICHIGAN



GENERAL SITE NOTES
ALL CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE CURRENT APPLICABLE LOCAL, COUNTY, STATE OR FEDERAL SPECIFICATIONS AND DETAILS.

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE FURNISHING AND USE OF SAFEGUARDS, SAFETY DEVICES AND PROTECTION EQUIPMENT. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK.

ANY CHANGES IN PLANS OR SPECIFICATIONS MUST BE REVIEWED BY THE PROJECT ENGINEER, ARCHITECT AND/OR THE OWNER.

THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. LOCATIONS ARE BASED ON PREVIOUS CONSTRUCTION PLANS, DATED AS-BUILTS AND UTILITY FLAGGING AS DISCOVERED IN THE FIELD. NO GUARANTEE IS MADE THAT ALL UTILITIES AND STRUCTURES ARE SHOWN.

REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

SOIL EROSION CONTROL
SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO THE COMMENCEMENET OF ANY EARTHWORK.

THE SOIL EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM CONTROLS TO BE USED ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES TO PROTECT THE DISTURBED AREAS AND ADJACENT PROPERTIES FROM ACCELERATED EROSION AND SEDIMENTATION RESULTING FROM PROJECT CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED NECESSARY, THEY SHALL BE PLACED NO LATER THAN 24 HOURS FROM THE TIME OF NOTIFICATION TO THE GENERAL CONTRACTOR. IF NOT INSTALLED, ALL ON SITE CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES HAVE BEEN INSTALLED AND APPROVED.

ALL DISTURBED AREAS SHALL BE TOPSOILED WITH A MINIMUM OF 4" OF TOPSOIL, SEEDED AND MULCHED.

THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING GROUND COVER ON AREAS DISTURBED BY CONSTRUCTION AND SHALL REPAIR ALL WASHOUTS AND EROSION DURING THE GUARANTEE PERIOD OF ONE (1) YEAR AFTER GROUND COVER IS ESTABLISHED, AT NO ADDITIONAL COST TO THE OWNER.

ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC RIGHT-OF-WAY OR PRIVATE ROADS SHALL BE REMOVED AT THE END OF EACH WORKING DAY.

ALL EROSION/SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN WORKING ORDER AT ALL TIMES.

ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.

DEMOLITION
ALL DEMOLITION SHALL BE IN ACCORDANCE WITH STATE AND FEDERAL CODES.

SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO: PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION, PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND, IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. THE CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION.

UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES BY THE CONTRACTOR. WHERE UTILITIES ARE TO BE REINSTALLED OR RELOCATED, COORDINATE THESE ACTIVITIES WITH DEMOLITION WORK.

ALL DEMOLITION MATERIAL SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE PERMITTED. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

EXCAVATED AREAS, HOLES, OPEN BASEMENTS, AND OTHER HAZARDOUS OPENINGS SHALL BE FILLED WITH CLEAN GRANULAR MATERIAL MEETING MDOT CLASS II REQUIREMENTS. BACKFILL SHALL BE PLACED IN 8"-10" LIFTS LOOSE MEASURE AND COMPACTED TO 95% MAX. DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR (ASTM D 1557).

AT THE COMPLETION OF THE DEMOLITION OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN A CLEAN CONDITION WITH ANY PROTECTIVE DEVICES AND BARRIERS REMOVED. ALL EXPOSED AREAS SHALL BE SUITABLY TOPSOILED, SEEDED AND MULCHED. ALL REPLACED OR REPAIRED ITEMS TO BE DONE TO EQUAL OR BETTER CONDITIONS.

SITE REMEDIATION
REFER TO SOILS TEST RESULTS ON SHEET C702 AMD SAND SUB-BASE INFORMATION ON SHEET C500.

EARTHWORK
CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ANY EARTHWORK CALCULATIONS NECESSARY. ENGINEER WILL WORK WITH THE CONTRACTOR TO AMEND GRADES AS DEEMED NECESSARY, WHERE POSSIBLE.

EXCESS TOPSOIL SHALL BE REMOVED FROM SITE.

ALL FILLED AREAS SHALL BE COMPACTED AND MOISTURE CONDITIONED. ALL BASE MATERIAL SHALL BE COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT.

PARKING LOT GRADING IN BARRIER FREE AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION. ALL BARRIER FREE ROUTES SHALL NOT EXCEED A 2% CROSS SLOPE AND 5.0% GRADE ALONG THE ROUTE UNLESS A CURB RAMP IS INDICATED.

CONTRACTOR SHALL REFER TO BUILDING PLANS FOR FOUNDATION EXCAVATION.

GRAVEL PLACEMENT MUST COMPLY WITH THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

GRADES AROUND THE BUILDING PAD SHALL BE SLOPED AWAY FROM THE STRUCTURE.

SANITARY SEWER SERVICE
A NEW SANITARY SEWER SERVICE IS PROPOSED ALONG WITH AN INSPECTION MANHOLE.

WATER SERVICE
A NEW 1" WATER SERVICE IS PROPOSED.

CONCRETE FLAT WORK
ALL CONCRETE SHALL BE A MINIMUM OF 4,000 PSI OR AS PRESCRIBED IN THE ARCHITECTURAL PLANS.

SITE LIGHTING
BUILDING MOUNTED LIGHTING SHALL BE IN ACCORDANCE WITH THE TOWNSHIP LIGHTING ORDINANCE AND REVIEWED BY ZONING ADMINISTRATOR PRIOR TO INSTALLATION.

LIGHTING CONTRACTOR SHALL SECURE APPROVAL FROM MUNICIPALITY PRIOR TO SELECTING AND INSTALLING LIGHT FIXTURES.

ALL SITE LIGHTING SHALL BE DARK SKY TYPE AND LIGHT RAYS CUT OFF AT THE PROPERTY LINES AND MEET ALL PRESCRIBED REQUIREMENTS OF THE ORDINANCE.

NOTES

APPLICANT/OWNER:
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685
CONTACT: JASON VANBROCKLIN

SITE INFORMATION:
INDUSTRY DRIVE

PARCEL ID: 05-134-033-00

USE
CURRENT ZONING: I-G GENERAL INDUSTRIAL
CURRENT USE: VACANT
PROPOSED USE: OFFICE

SETBACKS REQUIRED:
FRONT SETBACK: 40 FEET
SIDE SETBACK: 15 FEET
REAR SETBACK: 20 FEET

SITE INFORMATION

LAND USE
GARFIELD TOWNSHIP

ENTRANCE
GRAND TRAVERSE COUNTY ROAD COMMISSION

STORMWATER MANAGMENT PERMIT
GARFIELD TOWNSHIP

SOIL EROSION CONTROL
GRAND TRAVERSE COUNTY

PERMITS REQUIRED

UNIT 33, HAMMOND INDUSTRIAL CENTRE

SURVEY INFORMATION

PARKING REQUIREMENTS:
PROPOSED USE: OFFICE
REQ'D PARKING: 1 SPACE PER 200 SFSHIFT
TOTAL BLDG SF: 3,400 SF
NUMBER OF PARKING SPACES REQUIRED: 17

NUMBER OF PARKING SPACES PROVIDED: 18 PLUS 1 B/F SPACE

PARKING CALCULATIONS

SHEET INDEX

SHEET	SHEET TITLE
C100	GENERAL INFORMATION
C101	SITE PLAN
C102	GRADING PLAN
C103	UTILITY PLAN
C500	DETAILS
C701	ZONING COMPLIANCE
C702	SESC AND STORMWATER MANAGEMENT

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p.o. box 5342 | traverse city, mi 49696 | 231-218-1201
www.jozwiakconsulting.com

PLAN DATE:
12-22-2020 CONCEPT PLAN REVIEW
1-21-2021 95% REVIEW SET
1-22-2021 SITE WORK BID SET

PROJECT: PROPOSED OFFICE BUILDING

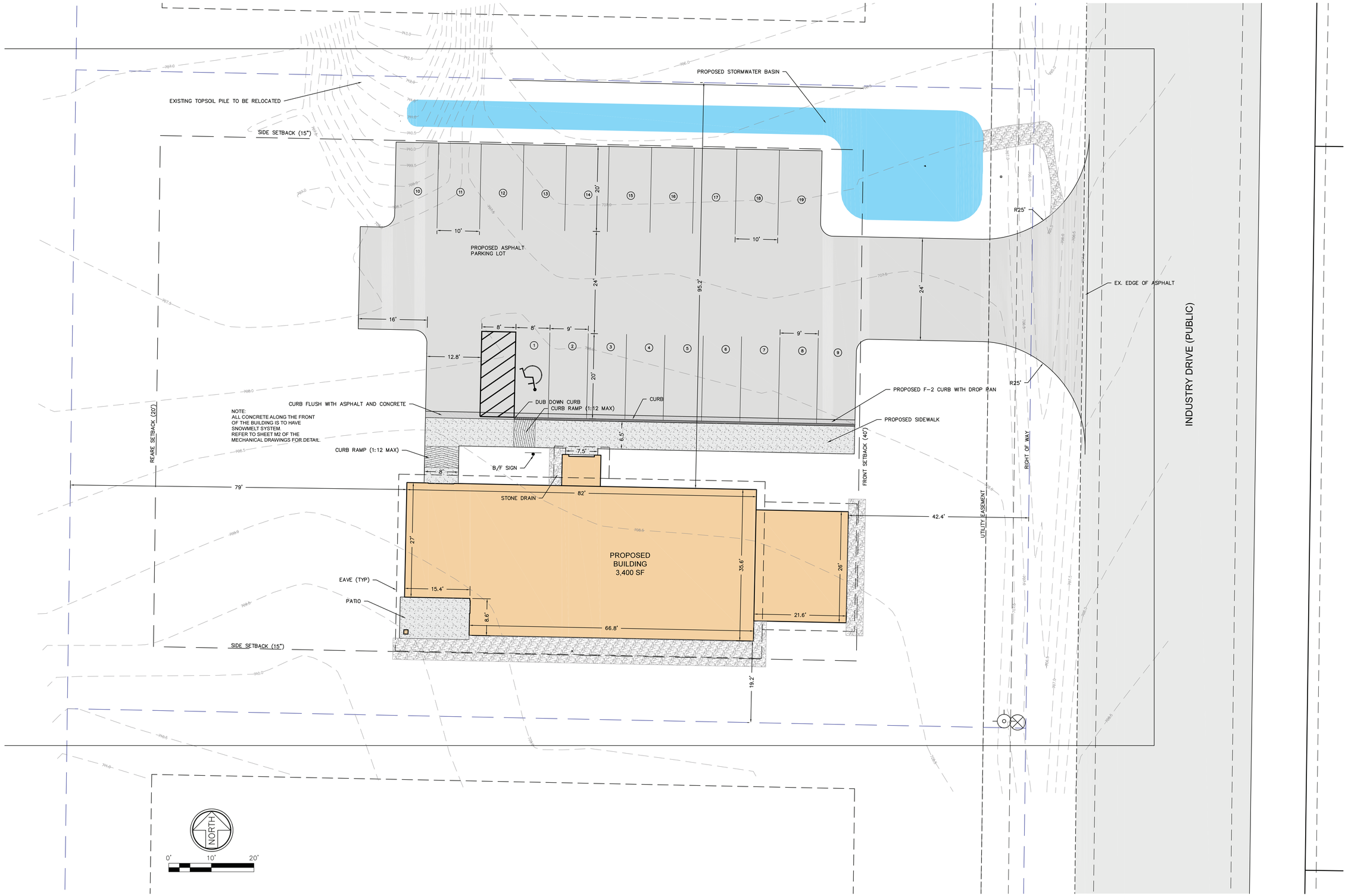
LOCATION: UNIT 33, HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

CLIENT: JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT NO.: 2020-126

GENERAL INFORMATION

C100



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PLAN DATE:
12-22-2020 CONCEPT PLAN REVIEW
1-21-2021 90% REVIEW SET
1-22-2021 SITE WORK BID SET

LOCATION:
UNIT 33, HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

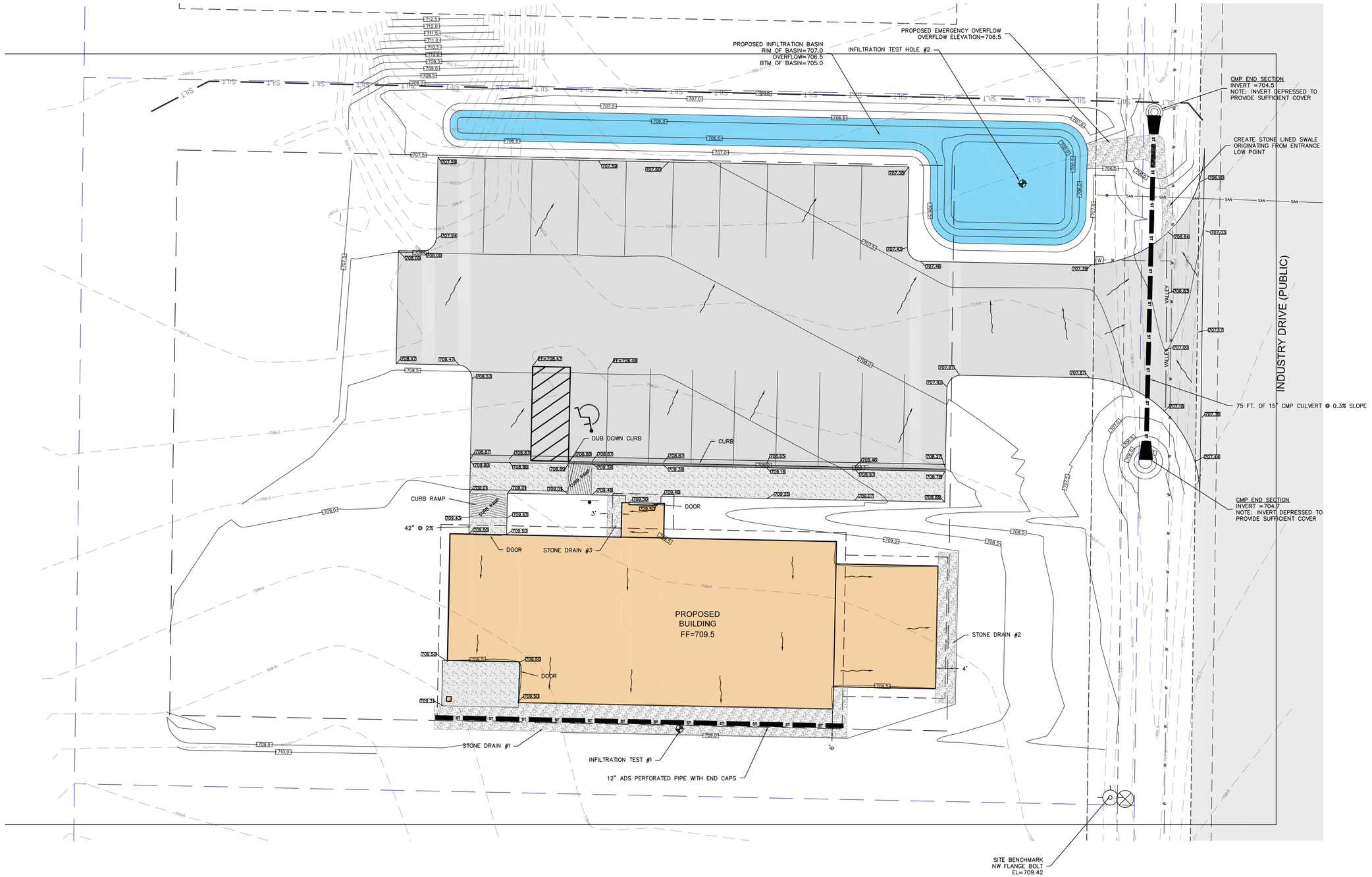
PROJECT:
PROPOSED OFFICE BUILDING

CLIENT:
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT NO.:
2020-126

SITE PLAN

C101



NOTE:
SAND SUB-BASE IS REQUIRED FOR THIS PROJECT.

SEE SHEET C500 FOR LIMITS OF SAND IMPORT

NORTH
0' 10' 20'

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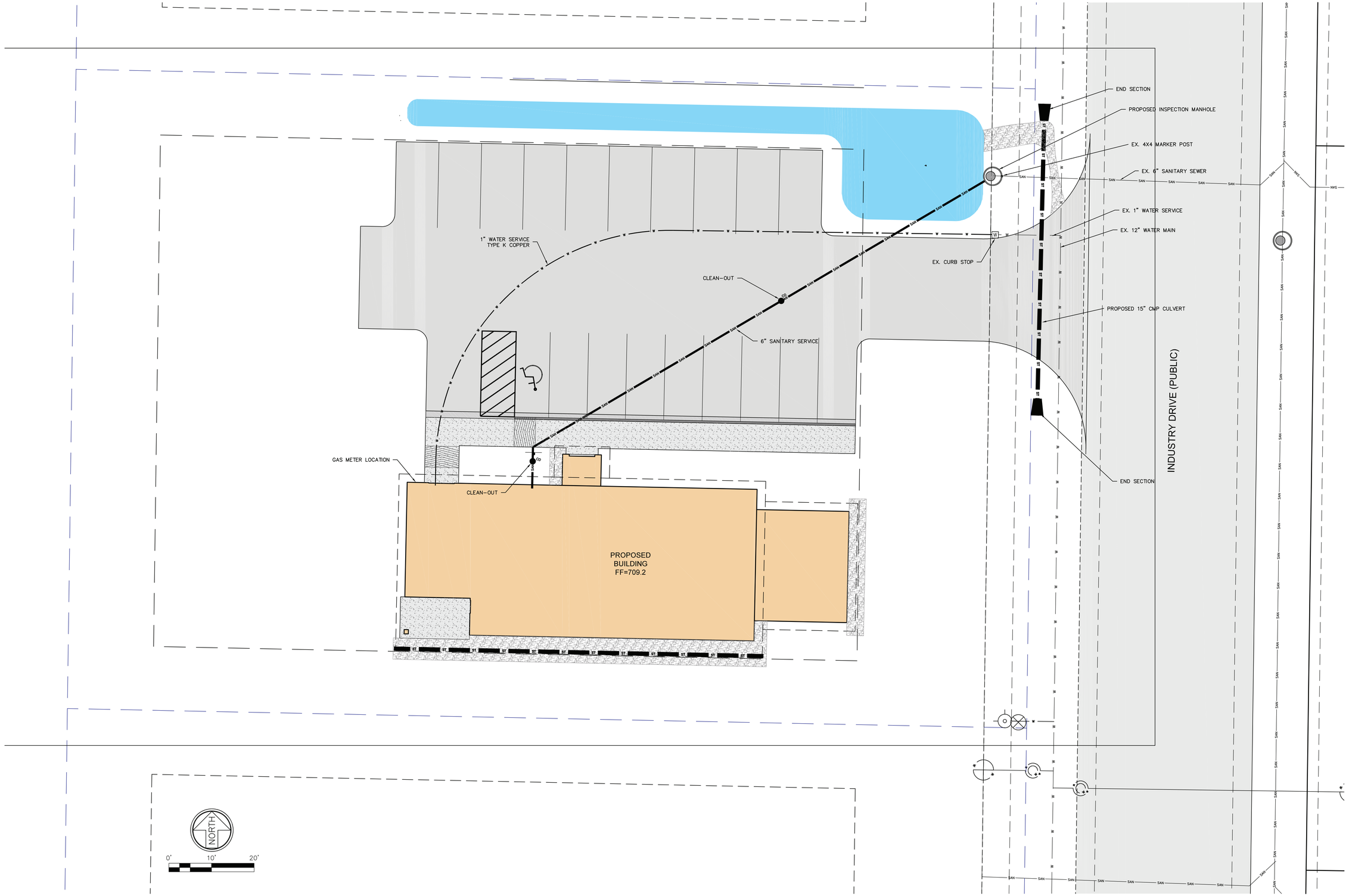
2020-126

GRADING PLAN

C102



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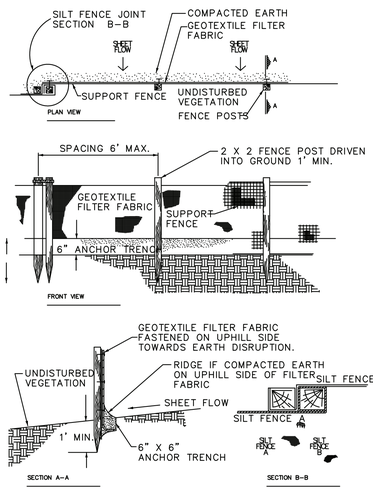
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT:
PROPOSED OFFICE BUILDING

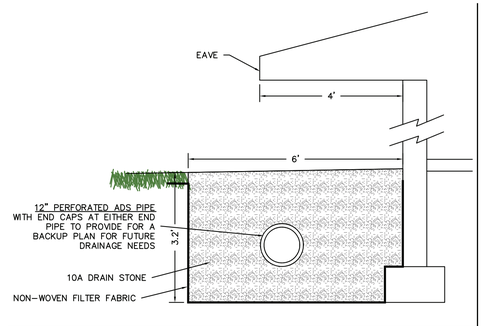
PROJECT NO.:
2020-126

UTILITY PLAN

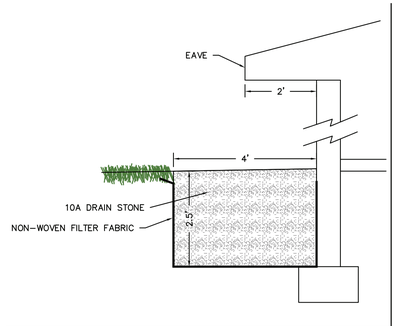
C103



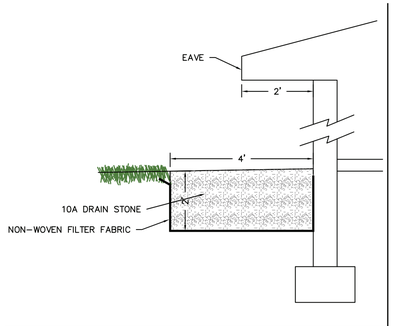
SILT FENCE DETAIL



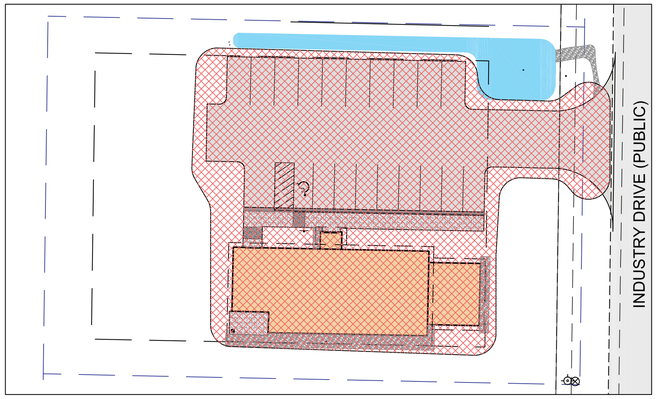
STONE DRAIN #1 DETAIL



STONE DRAIN #2 DETAIL



STONE DRAIN #3 DETAIL



SAND SUB–BASE NOTES:
CONTRACTOR SHALL IMPORT 12" OF SAND OVER THE ENTIRE SURFACE OF THE SHADED AREA SHOWN.

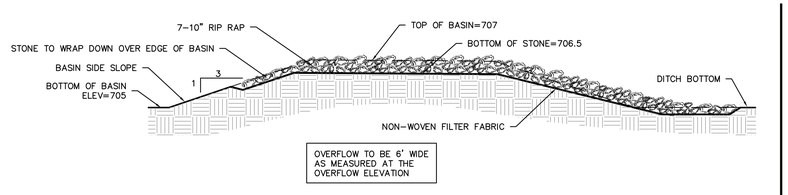
THIS INCLUDES UNDER FOOTINGS, BUILDING SLAB, ALL CONCRETE AND ASPHALT.

SAND SUB–BASE SHALL CONSIST OF CLEAN, GRANULAR MATERIAL MEETING MDOT CLASS II SPECIFICATION.

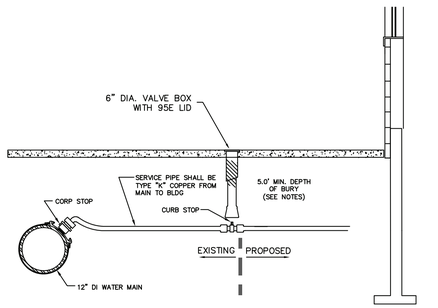
CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTING TO A MINIMUM OF 95% MDD.

OWNER WILL CONTRACT DIRECTLY WITH THE TESTING FIRM THAT WILL EVALUATE MATERIAL AND VERIFY DEPTH AND DENSITY.
S REMOVED. ALL EXPOSED AREAS SHALL BE SUITABLY TOPSOILED, SEEDED AND MULCHED. ALL REPLACED OR REPAIRED ITEMS TO BE DONE TO EQUAL OR BETTER CONDITIONS.

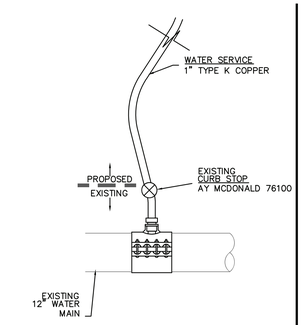
IMPORTED SAND SUB–BASE MATERIAL



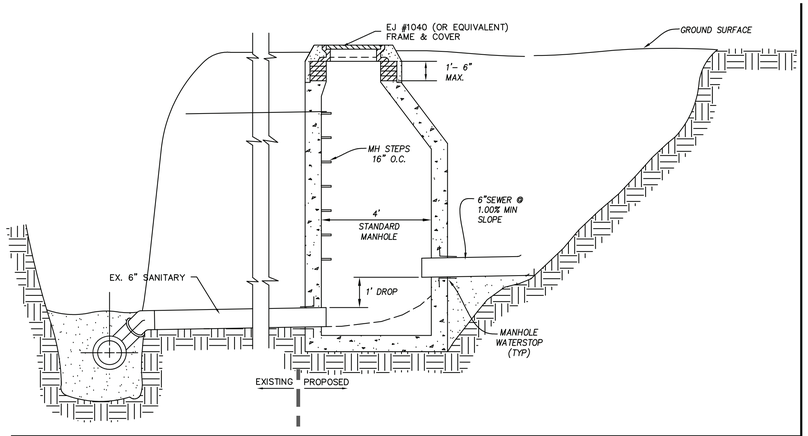
EMERGENCY OVERFLOW DETAIL



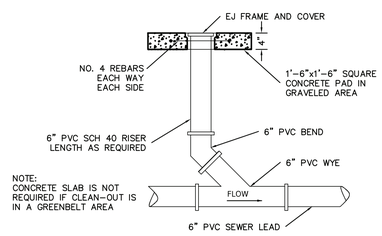
1" DOMESTIC SERVICE CONNECTION DETAIL



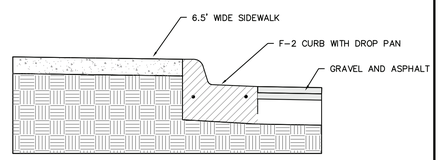
WATER SERVICE DETAIL



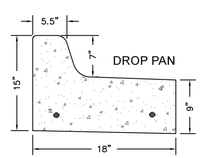
COMMERCIAL INSPECTION MANHOLE DETAIL



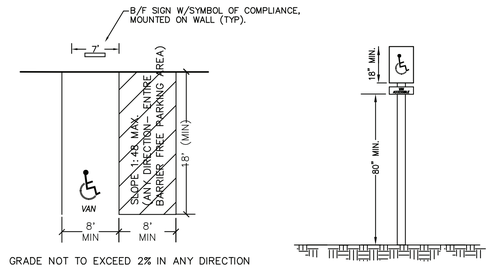
CLEAN-OUT DETAIL



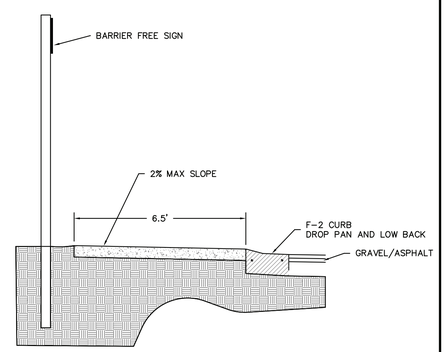
CURB AND SIDEWALK DETAIL



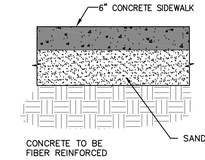
F-2 CURB (MODIFIED)



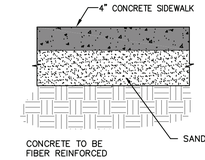
GRADE NOT TO EXCEED 2% IN ANY DIRECTION



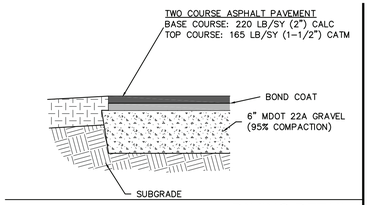
BARRIER FREE PARKING AND SIDEWALK DETAIL



CONCRETE APRON DETAIL



CONCRETE SIDEWALK DETAIL



PAVING DETAIL

jozwiak consulting
p.o. box 5342 | traverse city, mi 49696 | 231.218.1201
www.jozwiakconsulting.com

PLAN DATE:
12–22–2020 CONCEPT PLAN REVIEW
1–21–2021 95% REVIEW SET
1–22–2021 SITE WORK BID SET

LOCATION:
UNIT 33, HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

CLIENT:
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT:
PROPOSED OFFICE BUILDING

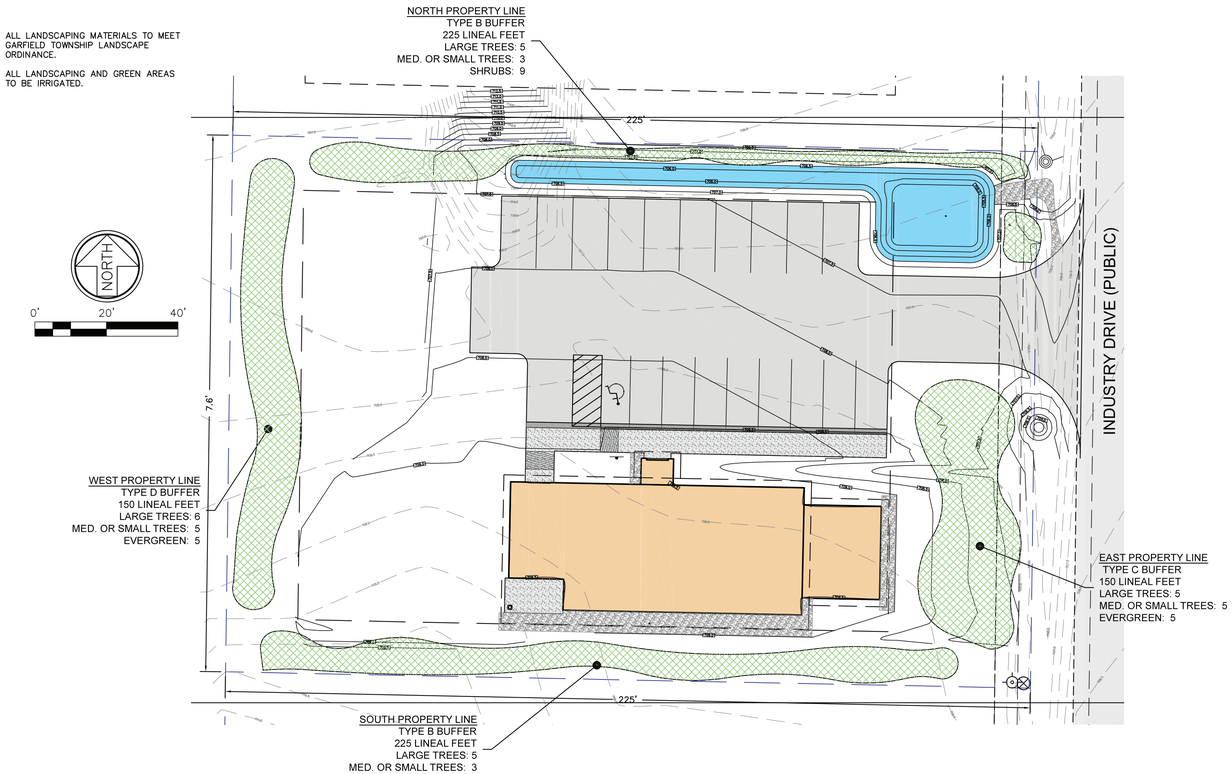
PROJECT NO.:
2020-126

DETAILS

C500

ALL LANDSCAPING MATERIALS TO MEET GARFIELD TOWNSHIP LANDSCAPE ORDINANCE.

ALL LANDSCAPING AND GREEN AREAS TO BE IRRIGATED.



F. Plant Material Requirements

(1) Plant materials. Prohibited, permitted, and recommended species shall be based on the current publication of the Grand Traverse Regional Invasive Species Network's *Recommended Planting Guidelines for Garfield Township* (the "ISN Planting Guidelines"). All plant material shall be hardy to the Grand Traverse area, be free of disease and insects, and conform to the American Standard for Nursery Stock of the American Nurserymen.

(2) Mixture of Species. The landscape plan shall not contain more than twenty five (25) percent of any single plant species, per feature. Species shall be planted in a staggered pattern so as to eliminate widely visible loss resulting from a species-specific disease event. At least seventy (70) percent of new plantings shall be native.

(3) No artificial plant materials shall be used to satisfy the requirements of this section.

(4) Plant materials required by this section shall comply with the minimum size requirements of Table 530.F at the time of installation.

Table 530.F
Minimum Greenspace Planting Specifications

Landscape Feature	Minimum Plant Sizes
Canopy Trees	2 inch caliper
Evergreens and Conifers	6 feet in height; no caliper requirement
Flowering Trees	1-1/2 inch caliper for single-trunk trees; 6 feet in height for multi-trunk trees
Shrubs	5-gallon

J. Required Vegetation

All areas not covered by buildings, parking areas, driveways, walkways, pedestrian plazas or other pedestrian-oriented impervious surfaces or water surfaces shall be replanted with ground cover at a minimum. Ground cover may include:

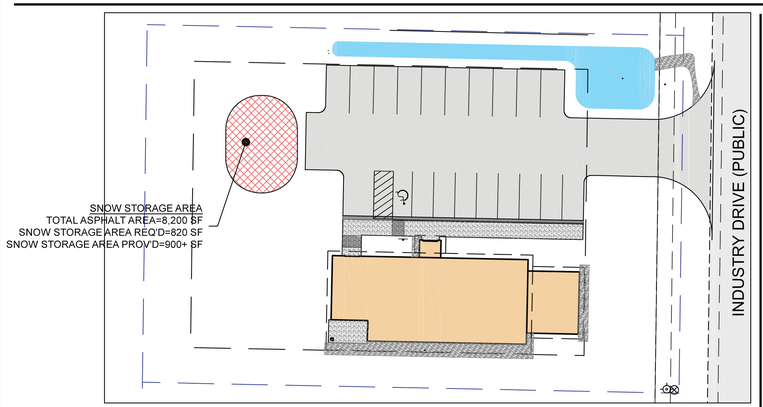
(1) Maintained lawn area;

(2) Native wildflowers, vines, grasses, rushes, sedges, or ferns as identified within the ISN Planting Guidelines; or

(3) Woodchips or rock provided that this type of material does not exceed twenty percent (20%) of the total of any individual landscaped area.

Yard	Adjacent Use	Buffer Type	Property Line Dimension	Large Trees		Med/small Trees		Evergreen		Shrubs	
Front	Local Road	C	150	3 per 100 ft	5	3 per 100 ft	5	3 per 100 ft	5	N/A	
Rear	Institutional	D	150	4 per 100 ft	6	3 per 100 ft	5	3 per 100 ft	5	N/A	
Side	Industrial	B	225	2 per 100 ft	5	1 per 100 ft	3	per 100 ft	0	4 per 100 ft	9
Side	Industrial	B	225	2 per 100 ft	5	1 per 100 ft	3	per 100 ft	0	4 per 100 ft	9
				Totals	21		16		10		18

LANDSCAPE COMPLIANCE PLAN



SNOW STORAGE PLAN

PROPOSED LIGHTING WILL BE BUILDING MOUNTED

ALL LIGHTING TO BE COMPLIANT WITH ZONING ORDINANCE AND SHALL BE DARK SKY TYPE. NO DIRECT LIGHT SHALL EXTEND BEYOND THE PROPERTY LINES.

SHIELDS SHALL BE INSTALLED AS NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THE ZONING ORDINANCE.

LIGHTING

NO FREE STANDING SIGNS ARE PROPOSED.

BUILDING MOUNTED SIGN WILL BE PERMITTED SEPARATELY BY SIGN CONTRACTOR

SIGNAGE

PROJECT SCHEDULE:

SITE PREP: APRIL, 2021

FOUNDATIONS: MAY, 2021

CONSTRUCTION: MAY, 2021 THROUGH DECEMBER 2021

COMPLETIONS/OCCUPANCY: JANUARY, 2022

PROJECT SCHEDULE

MINIMAL TRASH IS ANTICIPATED FOR THIS BUSINESS AND AS A RESULT, NO DUMPSTER PAD IS PROPOSED.

TRASH TOTES WILL BE STORED IN MECHANICAL/STORAGE ROOM AND BROUGHT OUT ON GARBAGE DAY.

TRASH MANAGEMENT

jozwiak consulting
p.o. box 5342 | traverse city, mi 49696 | 231-218-1201
www.jozwiakconsulting.com

PLAN DATE:
12-22-2020 CONCEPT PLAN REVIEW
1-21-2021 95% REVIEW SET
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LOCATION:
UNIT 33, HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

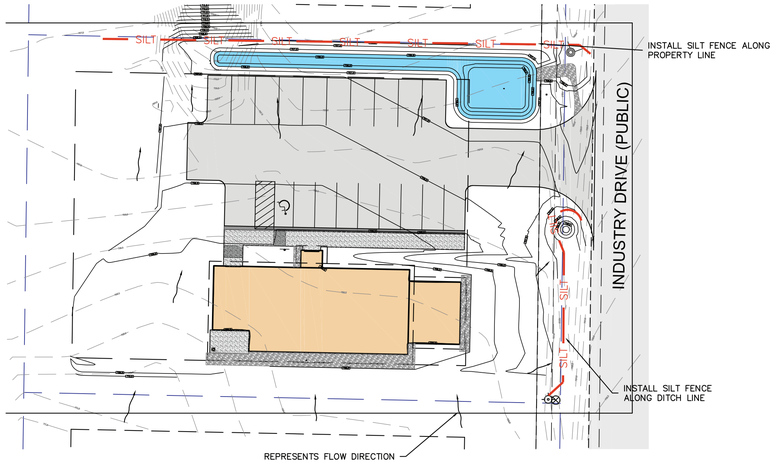
PROJECT
PROPOSED OFFICE BUILDING

CLIENT:
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT NO.:
2020-126

ZONING COMPLIANCE INFORMATION

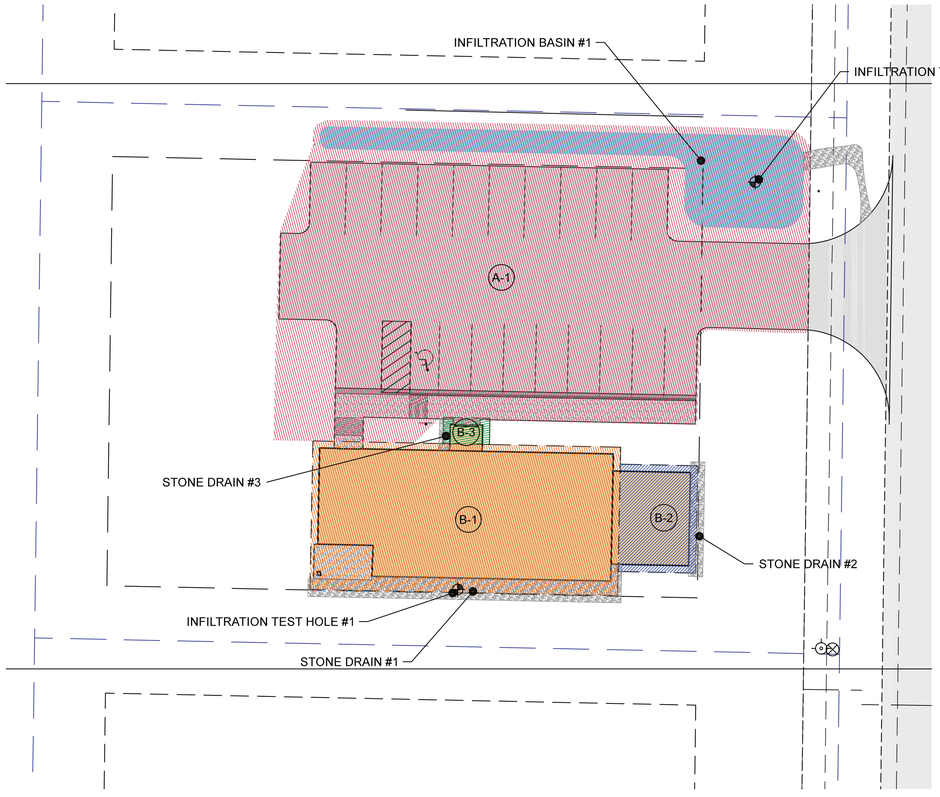
C701



TOTAL DISTURBANCE AREA = 30,200 SF

DISTANCE TO NEAREST WATER BODY =PROJECT IS 3,700 FEET EAST OF THE BOARDMAN RIVER

SOIL EROSION AND SEDIMENT CONTROL PLAN AND INFORMATION



INFILTRATION BASIN TEST HOLE AND INFILTRATION RESULTS

Location: Hammond Industrial, Lot 33 (Project G21-009)

Test Hole Number: 2 (middle of retention basin, northeast)

Test By: SC/MS

Date of Test: 12/30/2020

Depth to Bottom of Hole: 7' Diameter of Hole: 4"

Note: Infiltration test was conducted with a 4" PVC pipe with several inches of well sand. Test completed at 8 ft.

Depth (ft)	Soil Texture:
0' – 0.3'	4 inches topsoil
0.3' – 3'	Poorly graded SAND; mostly medium to fine sand; brown; moist
3' – 4'	Silty SAND; mostly fine sand, some silt; brown; moist
4' – 7'	Lean CLAY; mottled brown to brown; moist with silt seam, grades with sand, grades gray brown

Borehole saturated 1 hour prior to performing test. Minimum Infiltration Rate for last 30 minutes: 57.60 in/hr; however, **these results are anomalous based on observed soil conditions.** The actual infiltration rate of the system will depend on factors such as sedimentation of the basin, soil saturation, and other factors. The infiltration test is an empirical test applying relatively high head over a small area. The infiltration rate decreases with a decrease in head. The maximum infiltration rate should be limited by the designer's judgement or local restrictions.

STONE DRAIN TEST HOLE AND INFILTRATION RESULTS

Test Hole Number: 1 (middle of stone drain south of proposed building)

Test By: SC/MS

Date of Test: 12/30/2020

Depth to Bottom of Hole: 3' Diameter of Hole: 4"

Note: Infiltration test was conducted with a 4" PVC pipe with several inches of well sand. Test completed at 3 ft, soil profile evaluated with offset hand auger boring.

Depth (ft)	Soil Texture
0' – 1'	12 inches topsoil
1' - 2'	Silty SAND; light brown; moist
2' – 6'	Lean CLAY; trace to little coarse to fine sand; brown; moist

Borehole saturated 1 hour prior to performing test. Minimum Infiltration Rate for last 30 minutes: 2.5 in/hr. The actual infiltration rate of the system will depend on factors such as sedimentation of the basin, soil saturation, and other factors. The infiltration test is an empirical test applying relatively high head over a small area. The infiltration rate decreases with a decrease in head. The maximum infiltration rate should be limited by the designer's judgement or local restrictions.

INFILTRATION BASIN #1

A-1

Area (sf)	CN	Description
7,437	98	Asphalt
740	98	Sidewalk
1,500	98	Infiltration basin
2,000	61	>75% Grass cover, Good, HSG B
11,677	92	Weighted Average
2,000		17.13% Pervious Area
9,677		82.87% Impervious Area

Inflow Area = 11,677 sf, 82.87% Impervious, Inflow Depth > 3.02" for 25-Year event
Inflow = 1.04 cfs @ 12.23 hrs, Volume= 2,936 cf
Outflow = 0.17 cfs @ 12.74 hrs, Volume= 2,935 cf, Atten= 83%, Lag= 30.9 min
Discarded = 0.17 cfs @ 12.74 hrs, Volume= 2,935 cf
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 706.50' @ 12.74 hrs Surf.Area= 1,493 sf Storage= 1,346 cf

Plug-Flow detention time= 81.3 min calculated for 2,925 cf (100% of inflow)
Center-of-Mass det. time= 80.8 min (847.3 - 766.5)

Volume	Invert	Avail.Storage	Storage Description
#1	705.00'	2,218 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
705.00	409	0	0
706.00	1,032	721	721
707.00	1,963	1,498	2,218

Device	Routing	Invert	Outlet Devices
#1	Discarded	705.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	706.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.17 cfs @ 12.74 hrs HW=706.50' (Free Discharge)
1–1=Exfiltration (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=705.00' (Free Discharge)
2–2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

STONE DRAIN #1

B-1

Area (sf)	CN	Description
3,600	98	Roof 1
3,600		100.00% Impervious Area

Inflow Area = 3,600 sf, 100.00% Impervious, Inflow Depth > 3.77" for 25-Year event
Inflow = 0.26 cfs @ 12.22 hrs, Volume= 1,132 cf
Outflow = 0.02 cfs @ 10.85 hrs, Volume= 861 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.02 cfs @ 10.85 hrs, Volume= 861 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 708.92' @ 13.76 hrs Surf.Area= 532 sf Storage= 653 cf

Plug-Flow detention time= 270.1 min calculated for 860 cf (76% of inflow)
Center-of-Mass det. time= 208.0 min (964.2 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	706.00'	649 cf	**6.04'W x 88.00'L x 3.21'H Field A** 1,706 cf Overall - 84 cf Embedded = 1,622 cf x 40.0% Voids
#2A	707.00'	65 cf	**ADS N-12 12"** x 4 Inside #1 Inside= 12.2"W x 12.2"H => 0.81 sf x 20.00'L = 16.2 cf Outside= 14.5"W x 14.5"H => 1.05 sf x 20.00'L = 20.9 cf
		714 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	706.00'	**1.250 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.02 cfs @ 10.85 hrs HW=706.03' (Free Discharge)
1–1=Exfiltration (Exfiltration Controls 0.02 cfs)

STONE DRAIN #2

B-2

Area (sf)	CN	Description
650	98	Roof 2
650		100.00% Impervious Area

Inflow Area = 650 sf, 100.00% Impervious, Inflow Depth > 3.77" for 25-Year event
Inflow = 0.06 cfs @ 12.22 hrs, Volume= 204 cf
Outflow = 0.00 cfs @ 11.00 hrs, Volume= 200 cf, Atten= 94%, Lag= 0.0 min
Discarded = 0.00 cfs @ 11.00 hrs, Volume= 200 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 708.61' @ 13.61 hrs Surf.Area= 128 sf Storage= 108 cf

Plug-Flow detention time= 239.3 min calculated for 200 cf (98% of inflow)
Center-of-Mass det. time= 225.7 min (981.9 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1	706.50'	128 cf	**4.00'W x 32.00'L x 2.50'H Prismatoid** 320 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	706.50'	**1.250 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 11.00 hrs HW=706.53' (Free Discharge)
1–1=Exfiltration (Exfiltration Controls 0.00 cfs)

STONE DRAIN #3

B-3

Area (sf)	CN	Description
95	98	Roof 2
95		100.00% Impervious Area

Inflow Area = 95 sf, 100.00% Impervious, Inflow Depth > 3.77" for 25-Year event
Inflow = 0.01 cfs @ 12.22 hrs, Volume= 30 cf
Outflow = 0.00 cfs @ 11.30 hrs, Volume= 30 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.00 cfs @ 11.30 hrs, Volume= 30 cf

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 708.38' @ 13.33 hrs Surf.Area= 26 sf Storage= 14 cf

Plug-Flow detention time= 146.1 min calculated for 30 cf (100% of inflow)
Center-of-Mass det. time= 145.9 min (902.1 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	20 cf	**3.00'W x 8.50'L x 2.00'H Prismatoid** 51 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	707.00'	**1.250 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 11.30 hrs HW=707.02' (Free Discharge)
1–1=Exfiltration (Exfiltration Controls 0.00 cfs)

STORMWATER MANAGEMENT PLAN

jozwiak consulting
p.o. box 5342 | traverse city, mi 49696 | 231-218-1201
www.jozwiakconsulting.com

PLAN DATE:
12--22--2020 CONCEPT PLAN REVIEW
1--21--2021 95% REVIEW SET
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LOCATION:
UNIT 33, HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

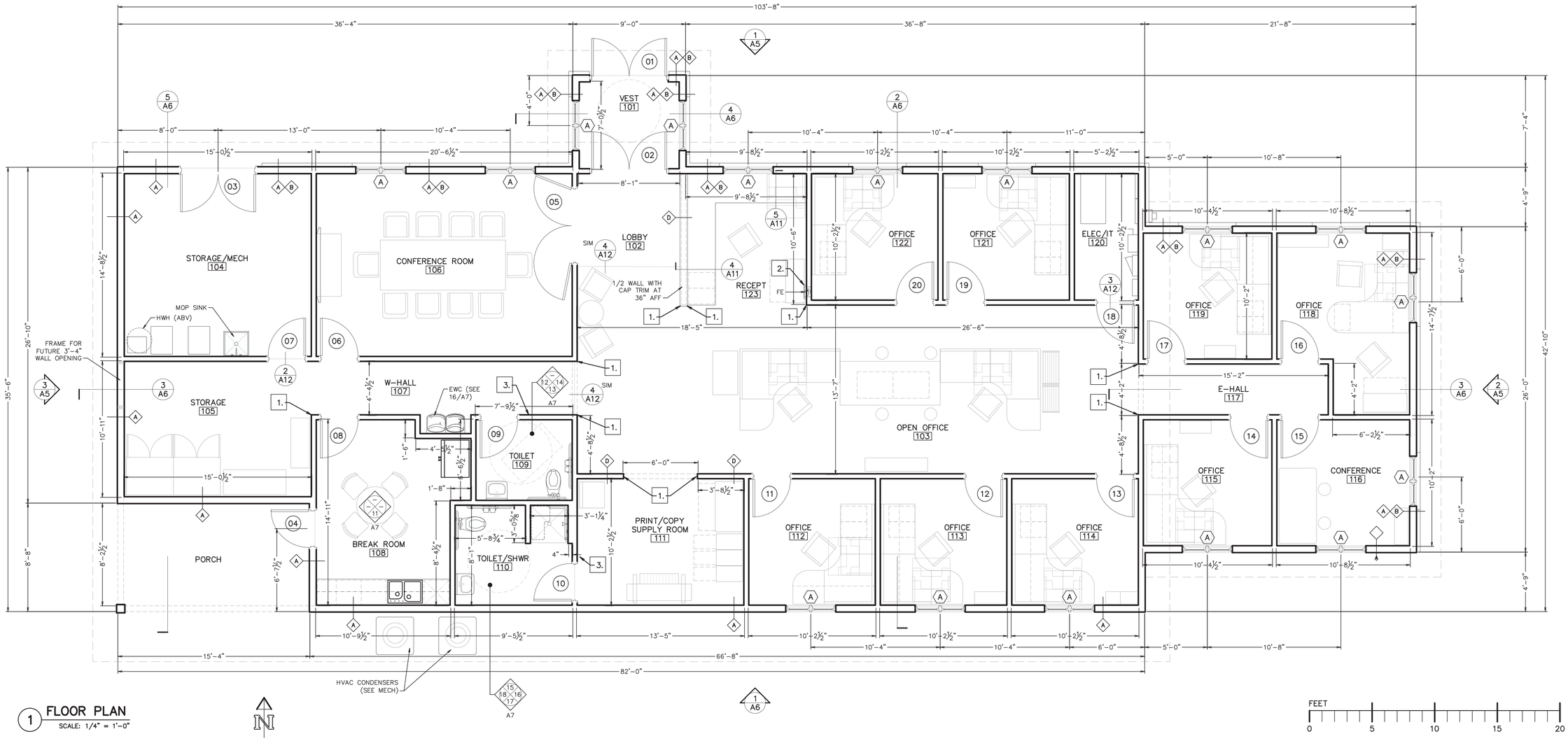
PROJECT:
PROPOSED OFFICE BUILDING

CLIENT:
JS PROPS OZ, LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MI 49685

PROJECT NO.:
2020-126

SESC AND STORMWATER MANAGEMENT PLAN

C702



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

FEET
0 5 10 15 20

ROOM FINISH SCHEDULE

RM#	ROOM NAME	FLOOR		BASE		N WALL		E WALL		S WALL		W WALL		CEILING			FIRE RATING	NOTES
		MAT'L	FIN	MAT'L	FIN	MAT'L	FIN	MAT'L	FIN	MAT'L	FIN	MAT'L	FIN	MAT'L	FIN	HEIGHT		
101	VESTIBULE	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	GYP	23	10'-0"	NONE	PAINTED WD TRIM (FIN #22)
102	LOBBY	LVT/CPT	7/3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC/GYP	61,23	VARIES	NONE	PAINTED DOORS & FRAMES (FIN #22); CORNER GUARDS
103	OPEN OFFICE	CPT	3	VCB	11	GYP	25	GYP	25	GYP	27	GYP	25	SAC	61	10'-1"	NONE	PAINTED DOORS & FRAMES (FIN #22); CORNER GUARDS
104	STORAGE / MECHANICAL ROOM	CONC	2	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	GYP	23	12'-0"	NONE	PAINTED DOORS & FRAMES (FIN #22)
105	STORAGE ROOM	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC/GYP	61,23	VARIES	NONE	CORNER GUARD
106	CONFERENCE ROOM	LVT	7	VCB	11	GYP	25	GYP	25	GYP	27	GYP	25	SAC/GYP	61,23	VARIES	NONE	PAINTED DOORS & FRAMES (FIN #22); WALL-MTD TV
107	WEST HALLWAY	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC/GYP	61,23	9'-6"	NONE	PAINTED DOORS & FRAMES (FIN #22); CORNER GUARDS
108	BREAK ROOM	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOORS & FRAMES (FIN #22); PLAM CASEWORK (FIN #51/53)
109	TOILET	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC/GYP	61,23	8'-0"	NONE	PAINTED DOOR & FRAME (FIN #22);
110	TOILET / SHOWER	LVT	7	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC	61	8'-0"	NONE	PAINTED DOOR & FRAME (FIN #22);
111	PRINT / COPY & SUPPLY ROOM	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); CORNER GUARDS
112	OFFICE	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
113	OFFICE	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	27	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
114	OFFICE	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	27	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
115	OFFICE	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	27	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
116	CONFERENCE ROOM	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
117	EAST HALLWAY	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOORS & FRAMES (FIN #22); CORNER GUARDS
118	OFFICE	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
119	OFFICE	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
120	ELECTRICAL / INFO TECH ROOM	CONC	2	VCB	11	GYP	25	GYP	25	GYP	25	GYP	25	GYP	23	12'-0"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED PLYWD AT ELECT PANELS
121	OFFICE	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
122	OFFICE	CPT	3	VCB	11	GYP	25	GYP	25	GYP	25	GYP	27	SAC	61	9'-6"	NONE	PAINTED DOOR & FRAME (FIN #22); PAINTED WD TRIM (FIN #22)
123	RECEPTION	CPT	3	VCB	11	GYP	25	GYP	27	GYP	25	GYP	25	SAC/GYP	61,23	VARIES	NONE	PAINTED WD TRIM (FIN #22); PLAM CASEWORK (FIN #53)

INTERIOR FINISHES LEGEND

DESIG	TYPE	DESCRIPTION
0	VARIES	UNFINISHED SUBSTRATE
2	CONC SEALER	CONCRETE SEALER FOR EXPOSED SLAB-ON-GRADE FLOORS
3	CARPET	COMMERCIAL NYLON CARPET: MANNINGTON COMMERCIAL: "RELAY, EXCHANGE 2," COLOR: 13143 "HAPTICS"
7	LVT	LUXURY VINYL TILE: TO MARKET, "URBAN 20, CLASSICS," COLOR: TM 7505, "CLASSIC GREY"
11	VCB	4" X 1/8" GAGE (TYPE TV) VINYL COVE BASE: COLOR SELECTED BY THE OWNER
21	PAINT (HM FRMS)	INTERIOR LATEX SEMI-GLOSS PAINT:
22	PAINT (DRS/TRIM)	INTERIOR LATEX SEMI-GLOSS PAINT:
23	PAINT (CEILINGS)	INTERIOR LATEX FLAT PAINT: COLOR: CEILING WHITE
25	PAINT (WALLS)	INTERIOR LATEX EGG-SHELL PAINT:
27	PAINT (ACCENT)	INTERIOR LATEX EGG-SHELL PAINT:
51	PLAM (FACES)	PLASTIC LAMINATE: PIONITE SW813 "ICE WHITE" SUEDE
53	PLAM (TOPS)	PLASTIC LAMINATE: PIONITE AG130-SM "COOKIES & CREAM"
61	ACT	ACOUSTIC CLG TILE: USG, "ASTRO CLIMAPLUS," #8225, WHITE, 2'X2' TILE GRID: DONN, "CENTRICITEE," 2'X2', WHITE MTL CLG GRID

FLOOR PLAN KEY NOTE LEGEND

1. PROVIDE FULL-WALL-HEIGHT VINYL CORNER GUARD, PER DETAIL 6/A12.
2. PROVIDE FIRE EXTINGUISHER CABINET, PER DETAIL 11/A11, AND PORTABLE FIRE EXTINGUISHER.
3. PROVIDE BARRIER-FREE TOILET ROM SIGNAGE PER DETAILS 17/A7 & 15/A11.

FLOOR PLAN NOTES

1. FLOOR PLAN INTERIOR DIMENSIONS ARE TAKEN TO FACE OF STUD, UNLESS INDICATED OTHERWISE.
2. PROVIDE ALL OPENINGS IN FLOORS, CEILINGS, & WALLS REQUIRED FOR PASSAGE OF MECHANICAL AND ELECTRICAL DUCTS, PIPES, WIRES, CONDUITS, AND EQUIPMENT.
3. PROVIDE PAINTED 3/4" FRT PLYWOOD FROM THE FLOOR TO 8 FEET AFF ON ALL WALLS OF ELECTRICAL/IT ROOM.
4. CONSTRUCT INTERIOR WALLS CONTINUOUS AND TIGHT TO THE UNDERSIDE OF THE GYPSUM BOARD LID ABOVE UNLESS SPECIFICALLY INDICATED OTHERWISE.
5. FIRESTOP ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT CEILING, FLOOR, AND ROOF LEVELS.
6. COORDINATE ARCHITECTURAL DETAILS AND ACCESSORIES LOCATIONS WITH MECHANICAL, ELECTRICAL, AND PLUMBING FIXTURES (NOT NECESSARILY SHOWN IN ARCHITECTURAL DRAWINGS).
7. PROVIDE BLOCKING IN WALLS AS REQUIRED FOR SECURE ATTACHMENT OF ALL ACCESSORIES ATTACHED THERETO. COORDINATE LOCATIONS AND MOUNTING ELEVATIONS OF ALL WALL-MOUNTED ACCESSORIES WITH THE OWNER AT THE TIME WALLS ARE FRAMED AND PRIOR TO APPLICATION OF GYPSUM BOARD.
8. NOT ALL EQUIPMENT, FURNISHINGS, ARTWORK, AND ACCESSORY ITEMS ARE SHOWN IN DRAWINGS.

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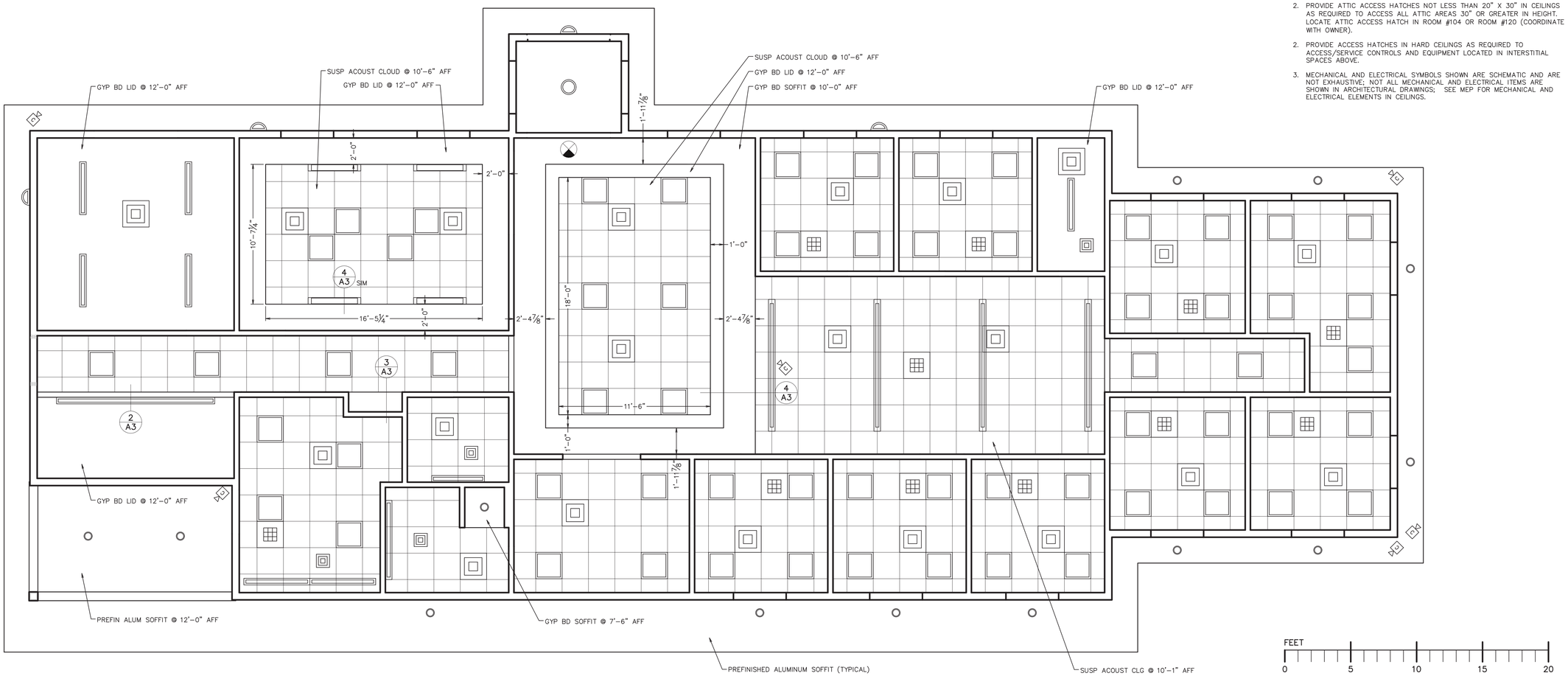
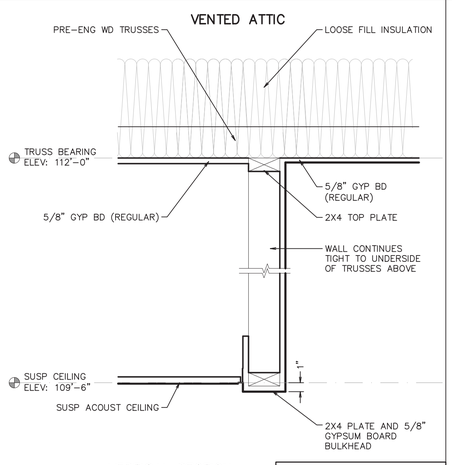
REFLECTED CEILING NOTES

1. SEE ROOM FINISH SCHEDULE FOR CEILING HEIGHTS.
2. PROVIDE ATTIC ACCESS HATCHES NOT LESS THAN 20" X 30" IN CEILINGS AS REQUIRED TO ACCESS ALL ATTIC AREAS 30" OR GREATER IN HEIGHT. LOCATE ATTIC ACCESS HATCH IN ROOM #104 OR ROOM #120 (COORDINATE WITH OWNER).
2. PROVIDE ACCESS HATCHES IN HARD CEILINGS AS REQUIRED TO ACCESS/SERVICE CONTROLS AND EQUIPMENT LOCATED IN INTERSTITIAL SPACES ABOVE.
3. MECHANICAL AND ELECTRICAL SYMBOLS SHOWN ARE SCHEMATIC AND ARE NOT EXHAUSTIVE; NOT ALL MECHANICAL AND ELECTRICAL ITEMS ARE SHOWN IN ARCHITECTURAL DRAWINGS; SEE MEP FOR MECHANICAL AND ELECTRICAL ELEMENTS IN CEILINGS.



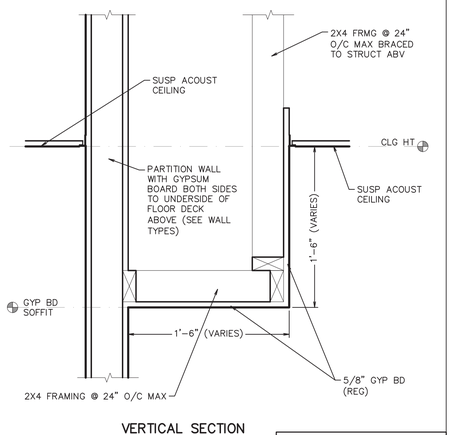
1 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

N



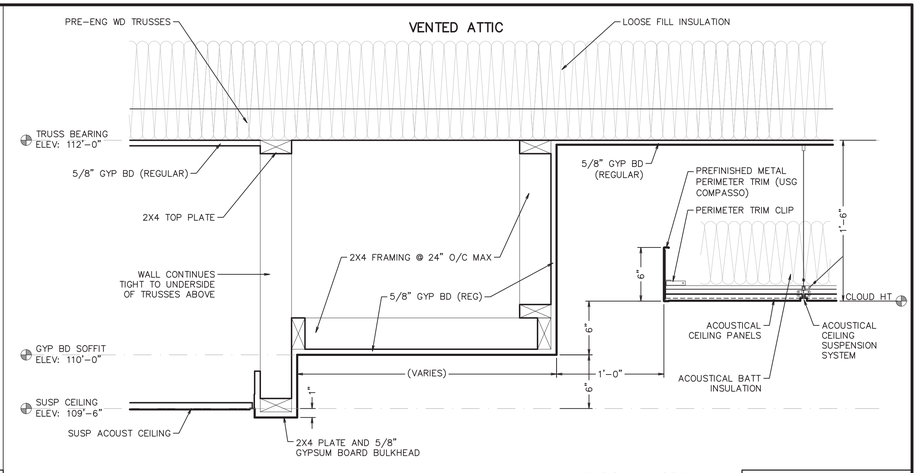
2 CEILING DETAIL
SCALE: 1-1/2" = 1'-0"

DETAIL AT GYPSUM BOARD BULKHEAD



3 CEILING DETAIL
SCALE: 1-1/2" = 1'-0"

DETAIL AT SUSPENDED ACOUSTICAL CEILING AT GYPSUM BOARD SOFFIT AND BULKHEAD



4 CEILING DETAIL
SCALE: 1-1/2" = 1'-0"

DETAIL AT GYPSUM BOARD BULKHEAD

REFLECTED CEILING PLAN SYMBOLS LEGEND

	LIGHT FIXTURES (REFER TO ELECTRICAL DRAWINGS)
	LIGHTED, DIRECTIONAL EXIT SIGN WITH INTEGRAL EMERGENCY EGRESS ILLUMINATION (SEE 5/A12)
	CEILING RECESSED SUPPLY AIR DIFFUSER
	CEILING RECESSED RETURN AIR GRILLE
	CEILING RECESSED EXHAUST FAN
	SECURITY CAMERA
	2' X 2' SUSPENDED ACOUSTICAL CEILING (SAC) (095100) SEE DETAIL 11/A12

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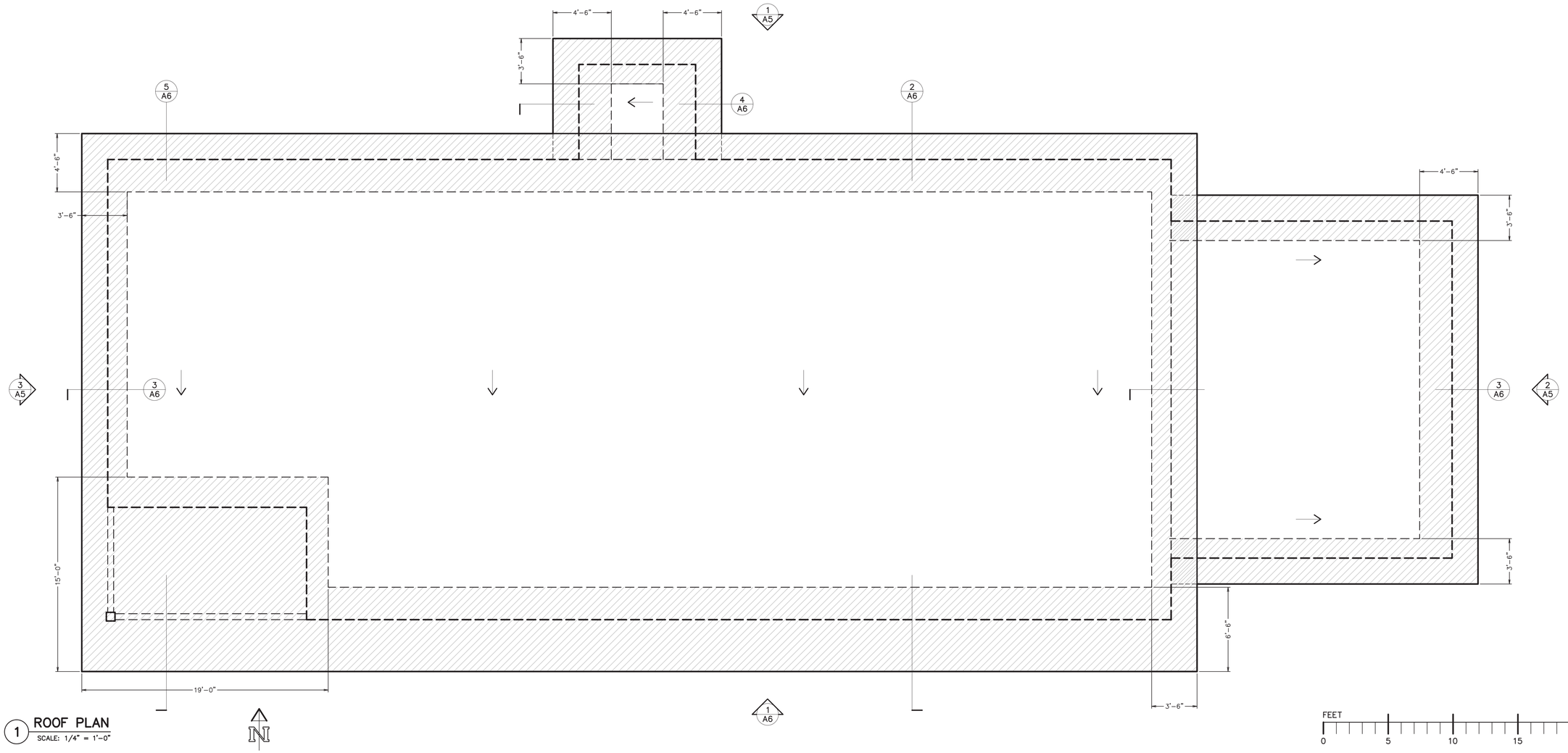
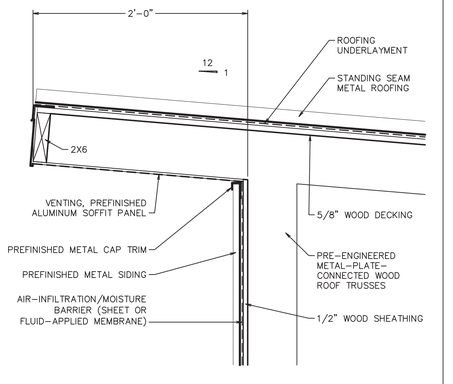


1 ROOF PLAN
SCALE: 1/4" = 1'-0"

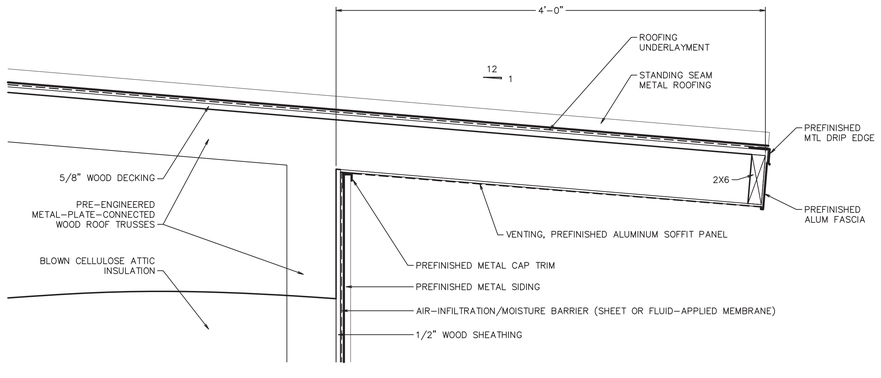
FEET
0 5 10 15 20



VERTICAL SECTION

2 ROOF EAVE DETAIL
SCALE: 1-1/2" = 1'-0"

TYPICAL DETAIL AT HIGH ROOF EAVE



VERTICAL SECTION

3 ROOF EAVE DETAIL
SCALE: 1-1/2" = 1'-0"

TYPICAL DETAIL AT LOW ROOF EAVE

ROOF PLAN NOTES

1. ROOFING STANDARD: NRCA "ROOFING AND WATERPROOFING MANUAL"
2. SHEET METAL ROOFING, FLASHING, AND ROOFING ACCESSORY STANDARD: SMACNA "ARCHITECTURAL SHEET METAL MANUAL"
3. ARROW SYMBOLS DENOTE DIRECTION OF WATER FLOW.
4. HATCHING DENOTES AREAS REQUIRING WATERPROOF BARRIER MEMBRANE UNDER ROOFING. EXTEND WATERPROOF BARRIER MEMBRANE MINIMUM 24" BACK (TOWARD INTERIOR) FROM THE INSIDE OF THE EXTERIOR WALL LINE AT EAVES AND MINIMUM 24" ON EACH SIDE OF ALL VALLEY LINES. PROVIDE A CONTINUOUS, 12" WIDE STRIP OF WATERPROOF BARRIER MEMBRANE AT ALL RAKE LINES. PROVIDE A CONTINUOUS 30" WIDE STRIP OF WATERPROOF BARRIER MEMBRANE WHERE SLOPED ROOFS MEET ADJACENT VERTICAL WALLS, PARAPETS, CHIMNEYS, AND SIMILAR CHANGES IN PLANE.
5. PROVIDE CLASS C ROOF COVERING MINIMUM.
6. SEE MEP DRAWINGS FOR MEP ROOF PENETRATIONS AND EQUIPMENT (NOT NECESSARILY SHOWN ON ARCHITECTURAL ROOF PLAN).

ROOF PLAN SYMBOLS LEGEND

↑	ARROW DENOTING DIRECTION OF WATER FLOW
	WATERPROOF BARRIER MEMBRANE AT EAVES, VALLEYS, AND WHERE SLOPED ROOF SURFACES INTERSECT VERTICAL WALLS
	LOW-SLOPE STANDING SEAM METAL ROOFING (TYPICAL, ALL ROOF AREAS)

ATTIC VENTILATION REQUIREMENTS

ENTRANCE VESTIBULE ROOF ATTIC AREA: 66 SF
MINIMUM TOTAL NET FREE VENT AREA REQ'D: 32 SI
(AT 1/300 RATIO)

MIN NET FREE AREA OF LOW SOFFIT VENT REQ'D: 16 SI
MIN NET FREE ARE OF HIGH SOFFIT VENT REQ'D: 16 SI

MAIN ROOF ATTIC AREA: 2,960 SF
MINIMUM TOTAL NET FREE VENT AREA REQ'D: 1,420 SI
(AT 1/300 RATIO)

MIN NET FREE AREA OF LOW SOFFIT VENT REQ'D: 710 SI
MIN NET FREE ARE OF HIGH SOFFIT VENT REQ'D: 710 SI

LOW SIDE EAVE AND HIGH SIDE EAVE VENT NET FREE AREA TO BE BALANCED TO WITHIN 20% OF EACH OTHER, WITH HIGH SIDE EAVE VENT AREA NOT LESS THAN THAT OF LOW SIDE EAVE VENT AREA.

VERIFY COMPLIANCE WITH MINIMUM ATTIC VENTILATION REQUIREMENTS PER ACTUAL VENT PRODUCTS USED.

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ROOF PLAN

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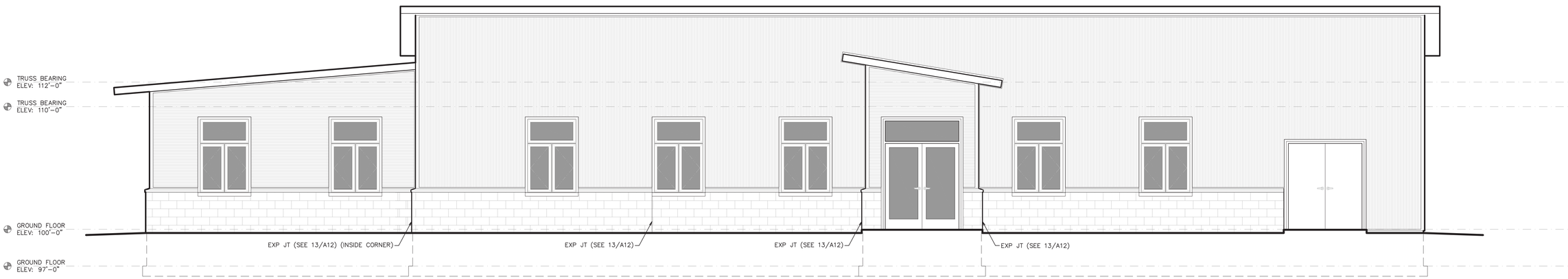
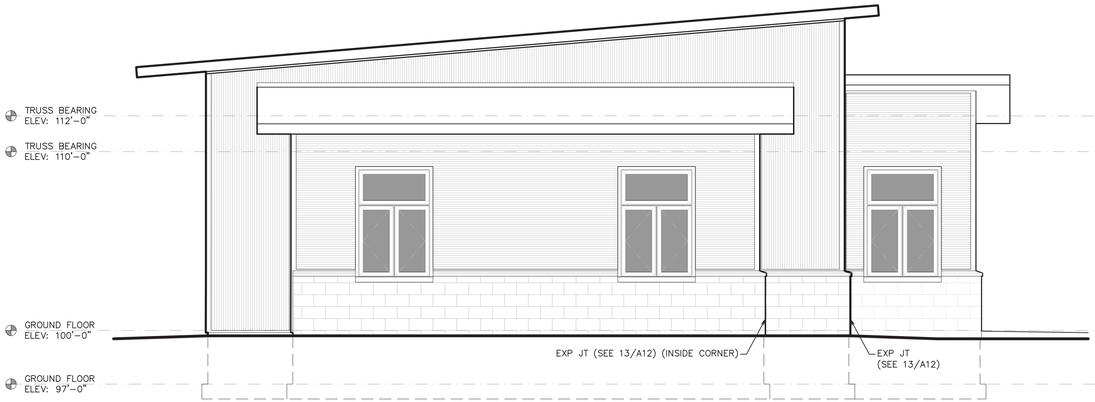


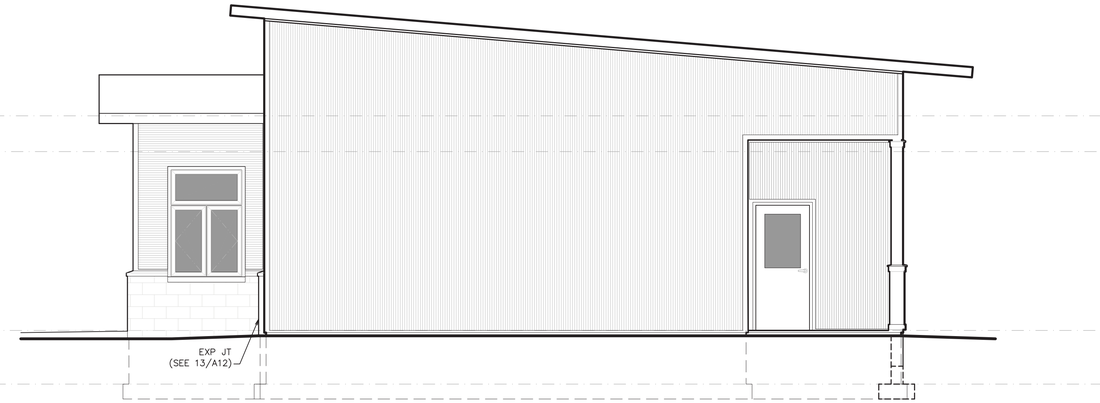
1 NORTH EXTERIOR ELEVATION

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



2 EAST EXTERIOR ELEVATION

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



3 WEST EXTERIOR ELEVATION

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

NOT USED

SUMMARY OF EXTERIOR FINISHES

ROOFING:	STANDING SEAM METAL ROOFING (GALVANIZED)
FASCIA:	PREFINISHED ALUMINUM TRIM SHEET (WHITE)
SOFFIT:	PREFINISHED ALUMINUM VENTING SOFFIT SHEET (WHITE)
SIDING:	CORRUGATED GALVALUME SIDING (DARK GRAY)
WINDOWS:	PREFINISHED FIBERGLASS (WHITE)
ENTRANCES:	PREFINISHED ALUMINUM (WHITE)
CORNER/CASING TRIM:	PREFINISHED ALUMINUM TRIM SHEET (WHITE)
MASONRY WAINSCOT:	SPLIT-FACE CMU VENEER (WHITE)
FOUNDATION WALLS:	CAST-IN-PLACE CONCRETE (NATURAL)

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EXTERIOR ELEVATIONS

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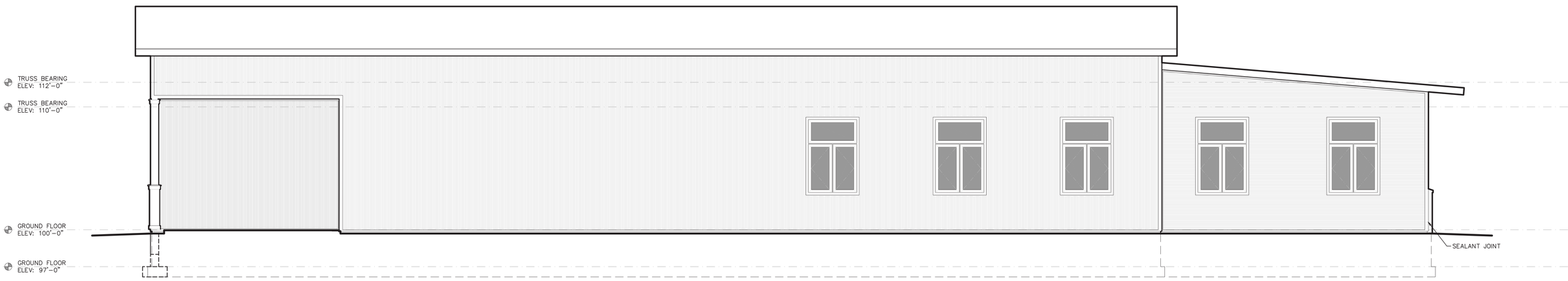
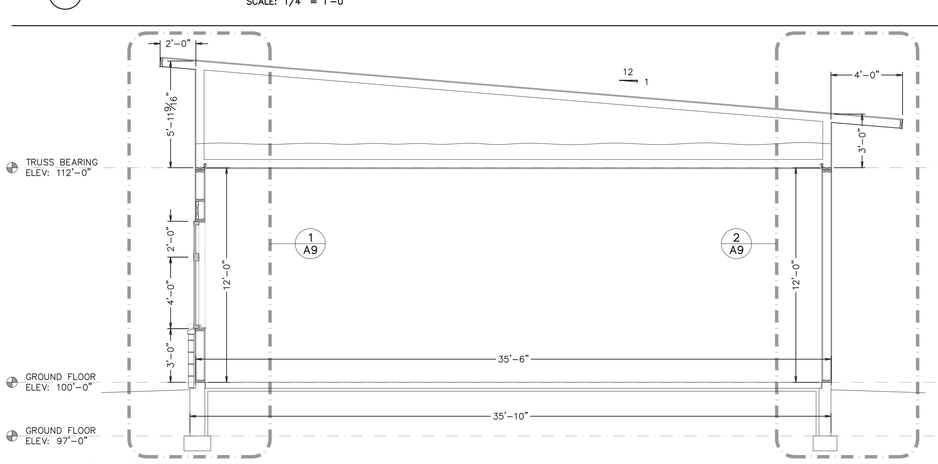
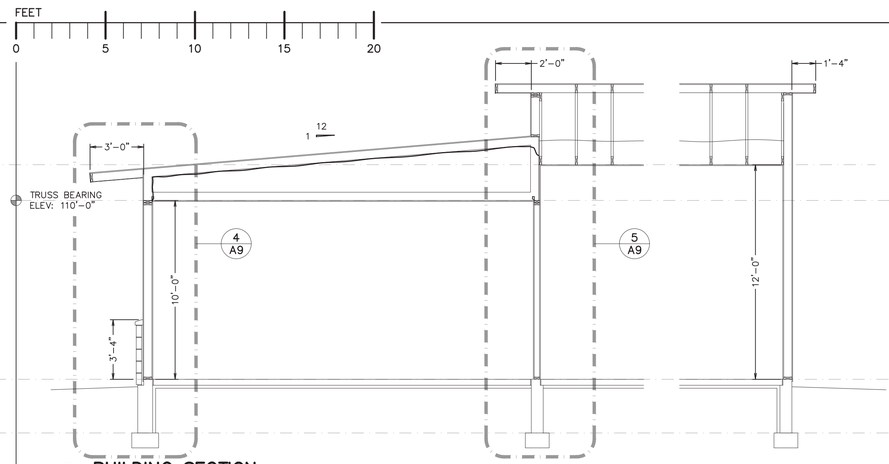


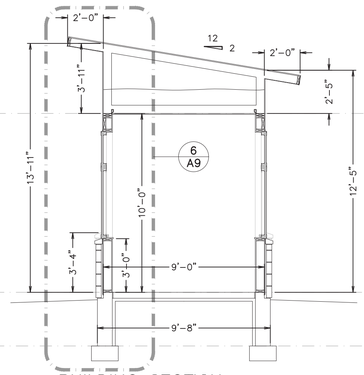
1 SOUTH EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



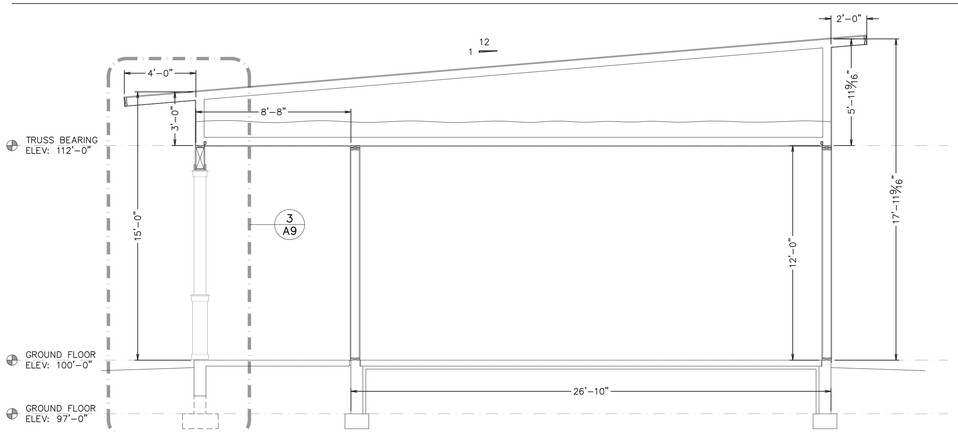
2 BUILDING SECTION
SCALE: 1/4" = 1'-0"



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



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



5 BUILDING SECTION
SCALE: 1/4" = 1'-0"

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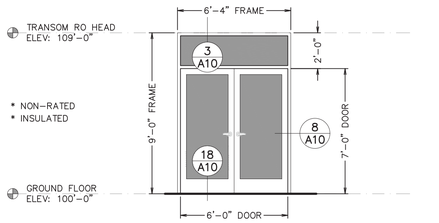
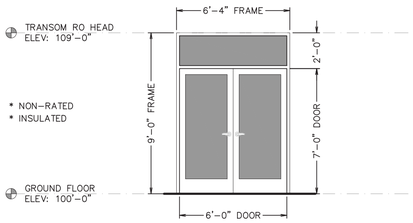


FULL-LIGHT ALUMINUM ENTRANCE IN ALUMINUM FRAME WITH FIXED TRANSOM ABOVE
DOOR STILE WIDTH: MEDIUM
BEVELED EDGE RATHER THAN RADIUS ON DOORS
FRAME: ALUMINUM STOREFRONT DOOR AND TRANSOM FRAMING
DOOR AND FRAME FINISH: CLEAR ANODIZED ALUMINUM
BARRIER-FREE THRESHOLD
GLASS (SHADED): CLEAR, TEMPERED, INSULATING SAFETY GLASS

ELEVATION

1 DOOR 01 — SCALE: 1/4" = 1'-0"

ALUMINUM EXTERIOR DOOR IN ALUMINUM FRAME

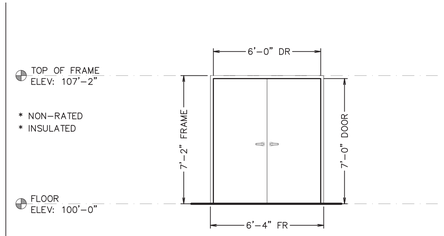


FULL-LIGHT ALUMINUM ENTRANCE IN ALUMINUM FRAME WITH FIXED TRANSOM ABOVE
DOOR STILE WIDTH: MEDIUM
FRAME: ALUMINUM STOREFRONT DOOR AND TRANSOM FRAMING
DOOR AND FRAME FINISH: CLEAR ANODIZED ALUMINUM
BARRIER-FREE THRESHOLD
GLASS (SHADED): CLEAR, TEMPERED SAFETY GLASS

ELEVATION

2 DOOR 02 — SCALE: 1/4" = 1'-0"

ALUMINUM VESTIBULE DOOR IN ALUMINUM FRAME

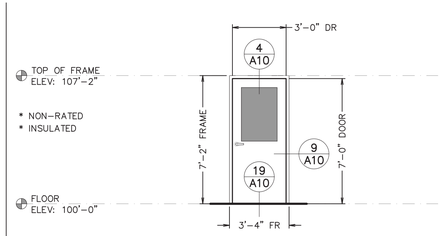


FLUSH, INSULATED HM EXTERIOR DOUBLE DOOR IN INSULATED GALVANIZED HM FRAME
DOOR PERFORMANCE: LEVEL 2, MODEL 1
DOOR FINISH: PAINTED
FRAME FINISH: PAINTED
BARRIER-FREE THRESHOLD

ELEVATION

3 DOOR 03 — SCALE: 1/4" = 1'-0"

INSULATED HOLLOW METAL EXTERIOR DOOR

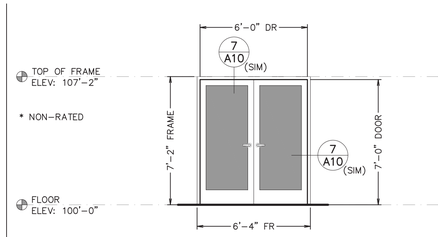


FLUSH, INSULATED HALF-LITE HM EXTERIOR DOOR IN INSULATED GALVANIZED HM FRAME
DOOR PERFORMANCE: LEVEL 2, MODEL 1
DOOR FINISH: PAINTED
FRAME FINISH: PAINTED
BARRIER-FREE THRESHOLD
GLASS (SHADED): CLEAR, TEMPERED, INSULATING SAFETY GLASS

ELEVATION

4 DOOR 04 — SCALE: 1/4" = 1'-0"

INSULATED HALF-LITE HOLLOW METAL EXTERIOR DOOR

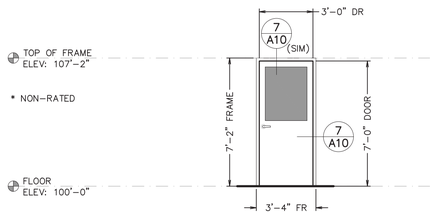


FLUSH, WOOD VENEER, SOLID-CORE, FULL-LITE DOUBLE DOOR IN HOLLOW METAL FRAME
FRAME: 16 GA HOLLOW METAL
DOOR FINISH: PAINTED
FRAME FINISH: PAINTED
GLASS (SHADED): CLEAR, TEMPERED SAFETY GLASS

ELEVATION

5 DOOR 05 — SCALE: 1/4" = 1'-0"

INTERIOR WOOD DOUBLE DOORS IN HOLLOW METAL FRAME

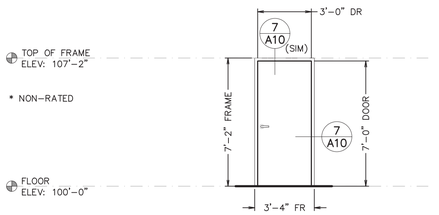


FLUSH, WOOD VENEER, SOLID-CORE, HALF-LITE DOOR IN HOLLOW METAL FRAME
FRAME: 16 GA HOLLOW METAL
DOOR FINISH: PAINTED
FRAME FINISH: PAINTED
GLASS (SHADED): CLEAR, TEMPERED SAFETY GLASS

ELEVATION

6 DOORS 06, 08, 11-17, 19, 20 — SCALE: 1/4" = 1'-0"

INTERIOR, HALF-LITE WOOD DOOR IN HOLLOW METAL FRAME



FLUSH, WOOD VENEER, SOLID-CORE, FLUSH DOOR IN HOLLOW METAL FRAME
FRAME: 16 GA HOLLOW METAL
DOOR FINISH: PAINTED
FRAME FINISH: PAINTED

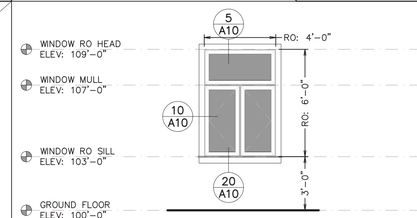
ELEVATION

7 DOORS 07, 09, 10, 18 — SCALE: 1/4" = 1'-0"

INTERIOR, FLUSH WOOD DOOR IN HOLLOW METAL FRAME

NOT USED

NOT USED



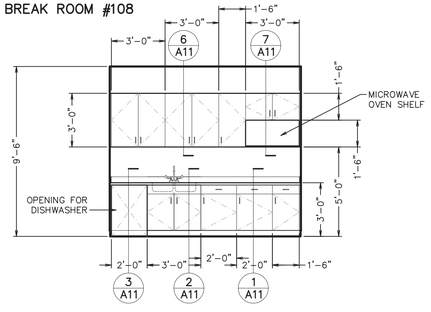
ELEVATION FROM INTERIOR

MULLED CASEMENT, FIBERGLASS WINDOW UNITS: KOLBE FORGENT, (2) MC2040
WITH FIXED TRANSOM ABOVE: KOLBE FORGENT, MCPT4020
EXTERIOR: PREFINISHED WHITE
INTERIOR: PREFINISHED WHITE (VERIFY FINISHES WITH OWNER)
GLAZING: CLEAR INSUL, LOW-E
HARDWARE: MFR'S STANDARD HARDWARE W/ MFR'S STANDARD MESH SCREEN

10 WINDOW TYPE - A — SCALE: 1/4" = 1'-0"

EXTERIOR FIBERGLASS WINDOWS

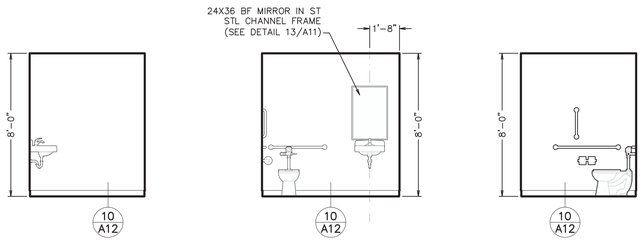
BREAK ROOM #108



11 INTERIOR ELEVATION — SCALE: 1/4" = 1'-0"

TOILET ROOM #109

SEE ALSO BARRIER-FREE STANDARD DETAILS, SHEET A8



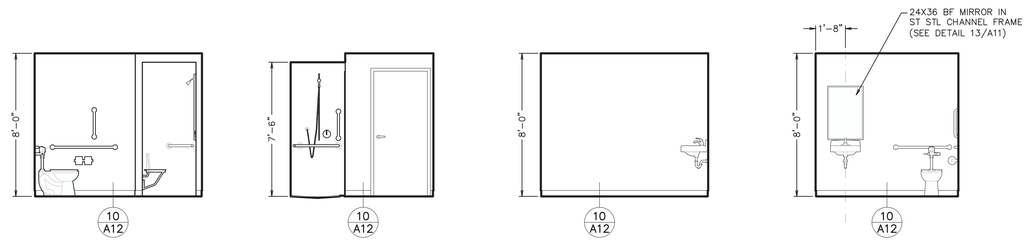
12 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

13 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

14 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

TOILET/SHOWER ROOM #110

SEE ALSO BARRIER-FREE STANDARD DETAILS, SHEET A8



15 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

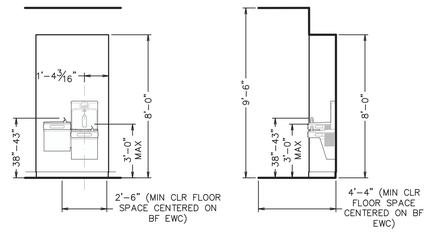
15 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

16 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

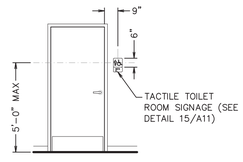
15 INTERIOR ELEV — SCALE: 1/4" = 1'-0"

WEST HALLWAY #107

SEE ALSO DETAIL 3/A8.



16 INTERIOR ELEVATIONS — SCALE: 1/4" = 1'-0"



BARRIER-FREE SIGNAGE DETAIL
AT TOILET ROOM DOORS (TYPICAL)

17 INTERIOR ELEVATION — SCALE: 1/4" = 1'-0"

NOT USED

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3075 LAKE MEADOWS CIRCLE
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PROJECT:
OFFICE BUILDING
1419 INDUSTRY DRIVE
TRAVERSE CITY, MI 49696

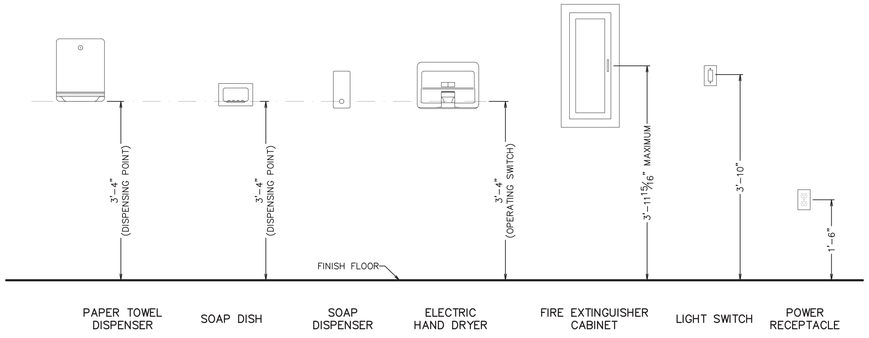
SHEET CONTENTS:
DOOR/WINDOW TYPES
INTERIOR ELEVATIONS

NEALIS_PLAN

ISSUED:	
01-29-21	
REV.	
REV.	
REV.	
REV.	
REV.	

A7

NOTE: MOUNTING HEIGHTS SHOWN ARE PREFERRED DIMENSIONS. SEE ALSO REACH RANGE REQUIREMENTS INDICATED IN OTHER ACCESSIBILITY DETAILS AND APPLICABLE CODES.



ELEVATION DETAILS

1 BARRIER–FREE CONTROLS, & DISPENSER MOUNTING HEIGHTS

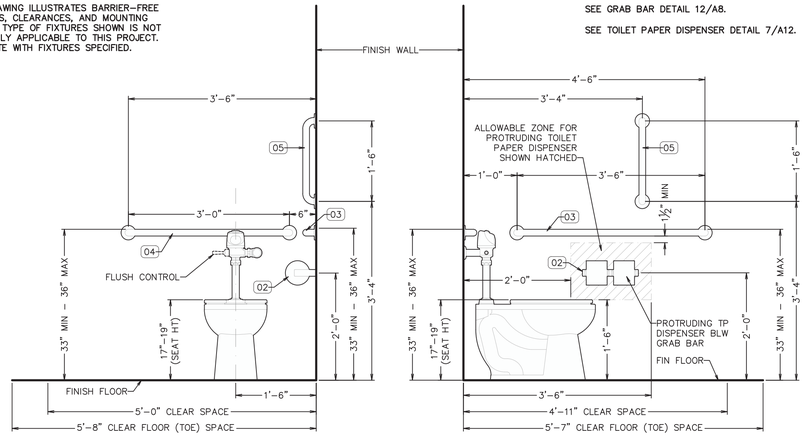
SCALE: 3/4" = 1'-0"

ELEVATION DETAILS INDICATING STANDARD BARRIER–FREE MOUNTING DIMENSIONS AT COMMON CONTROLS, DISPENSERS AND RECEPTACLES

NOTE: DRAWING ILLUSTRATES BARRIER–FREE DIMENSIONS, CLEARANCES, AND MOUNTING HEIGHTS. TYPE OF FIXTURES SHOWN IS NOT NECESSARILY APPLICABLE TO THIS PROJECT. COORDINATE WITH FIXTURES SPECIFIED.

SEE GRAB BAR DETAIL 12/A8.

SEE TOILET PAPER DISPENSER DETAIL 7/A12.

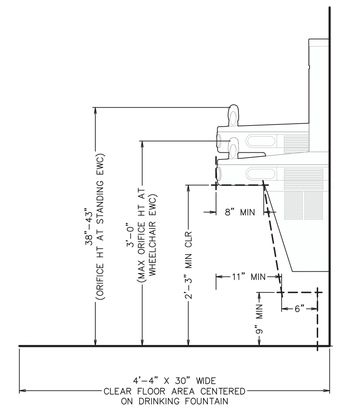


ELEVATION DETAILS

2 BARRIER–FREE WATER CLOSET CLEARANCES AND MOUNTING HEIGHTS

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

ELEVATION DETAILS INDICATING STANDARD BARRIER–FREE MOUNTING DIMENSIONS AT ACCESSIBLE WATER CLOSETS



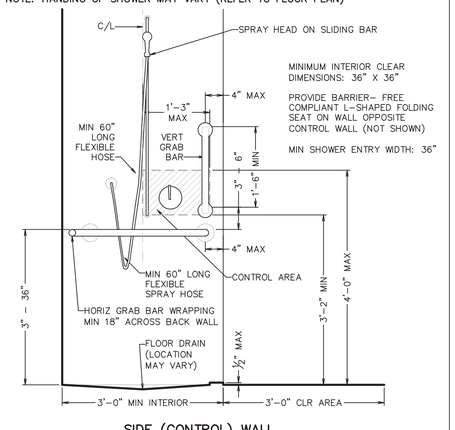
SIDE ELEVATION

3 EWC CLEARANCES

SCALE: 1" = 1'-0"

REQUIRED KNEE AND TOE CLEARANCES AT BARRIER FREE ELECTRIC WATER COOLER (EWC)

NOTE: HANDING OF SHOWER MAY VARY (REFER TO FLOOR PLAN)



SIDE (CONTROL) WALL

ELEVATION DETAIL

4 BF TRANSFER SHOWER

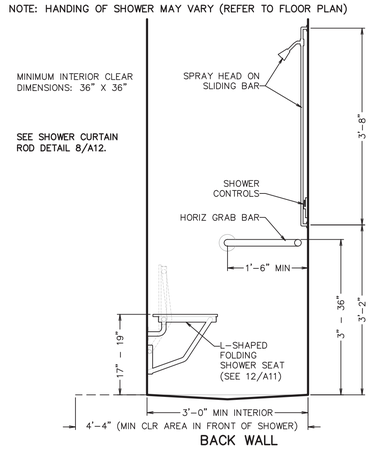
SCALE: 3/4" = 1'-0"

ELEVATION DETAILS INDICATING STANDARD BARRIER–FREE SHOWER DIMENSIONS AT TRANSFER–TYPE SHOWER

NOTE: HANDING OF SHOWER MAY VARY (REFER TO FLOOR PLAN)

MINIMUM INTERIOR CLEAR DIMENSIONS: 36" X 36"

SEE SHOWER CURTAIN ROD DETAIL 8/A12.



BACK WALL

ELEVATION DETAIL

5 BF TRANSFER SHOWER

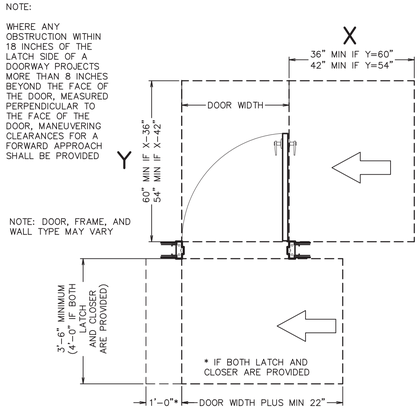
SCALE: 3/4" = 1'-0"

ELEVATION DETAILS INDICATING STANDARD BARRIER–FREE SHOWER DIMENSIONS AT TRANSFER–TYPE SHOWER

NOTE:

WHERE ANY OBSTRUCTION WITHIN 18 INCHES OF THE LATCH SIDE OF A DOORWAY PROJECTS MORE THAN 8 INCHES BEYOND THE FACE OF THE DOOR, MEASURED PERPENDICULAR TO THE FACE OF THE DOOR, MANEUVERING CLEARANCES FOR A FORWARD APPROACH SHALL BE PROVIDED

NOTE: DOOR, FRAME, AND WALL TYPE MAY VARY

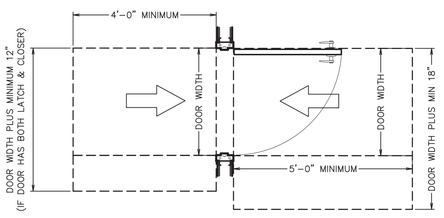


HORIZONTAL SECTION

6 DOOR APPROACH

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

PLAN DETAIL ILLUSTRATING REQUIRED MANEUVERING SPACE FOR ACCESSIBLE DOORS (PULL SIDE, HINGE APPROACH)



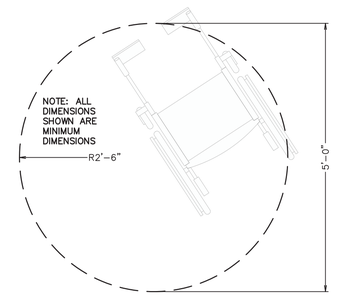
NOTE: DOOR, FRAME, AND WALL TYPE MAY VARY

HORIZONTAL SECTION

7 DOOR APPROACH

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

PLAN DETAIL ILLUSTRATING REQUIRED MANEUVERING SPACE FOR ACCESSIBLE DOORS (PUSH SIDE, FORWARD APPROACH)

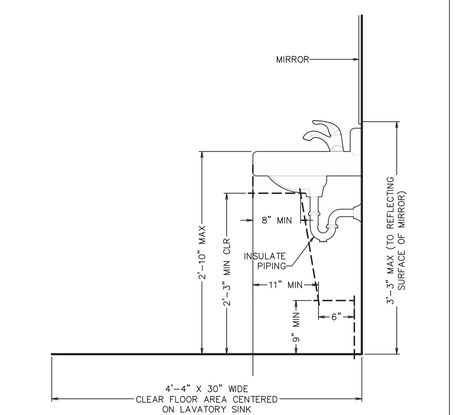


PLAN DETAIL

8 TURNING SPACE

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

PLAN DETAIL AT REQUIRED ACCESSIBLE TURNING SPACE (CIRCULAR OPTION)

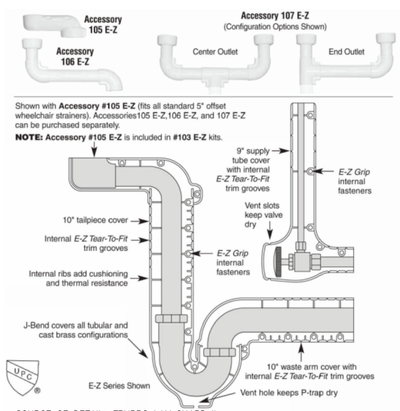


SIDE ELEVATION

9 LAV CLEARANCES

SCALE: 1" = 1'-0"

REQUIRED KNEE AND TOE CLEARANCES AT BARRIER FREE WALL–MOUNTED LAVATORY SINK



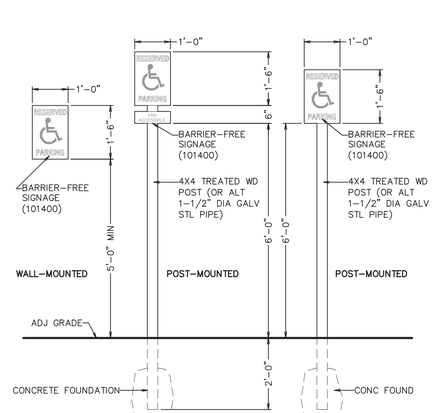
SOURCE OF DETAIL: TRUBRO LAV GUARD II

VERTICAL SECTIONS

10 BF LAV GUARDS

NO SCALE

DETAIL AT EXAMPLE BARRIER–FREE LAVATORY GUARDS

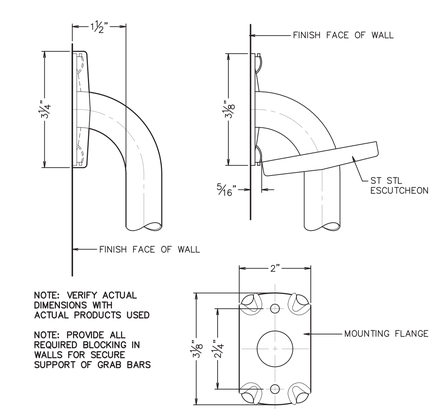


ELEVATION DETAILS

11 BF PARKING SIGNAGE

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

ELEVATION DETAIL AT BARRIER–FREE PARKING SPACES



HORIZONTAL SECTION

12 GRAB BAR DETAIL

SCALE: 6" = 1'-0"

TYPICAL MOUNTING DETAILS AT STAINLESS STEEL GRAB BARS

ACCESSIBILITY NOTES

1. COMPLY WITH ALL APPLICABLE BUILDING CODE REQUIREMENTS FOR BARRIER–FREE ACCESSIBILITY, INCLUDING ICC A117.1, AS REFERENCED IN THE BUILDING CODE, AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
2. ACCESSIBLE ROUTES SHALL CONSIST OF WALKING SURFACES WITH A SLOPE NOT GREATER THAN 1:20, DOORS AND DOORWAYS, RAMPS, AND CURB RAMPS EXCLUDING THE FLARED SIDES.
3. FLOOR SURFACES SHALL BE STABLE, FIRM, AND SLIP–RESISTANT. OPENINGS IN FLOOR SURFACES SHALL BE OF A SIZE AND SHAPE THAT DOES NOT PERMIT THE PASSAGE OF A 1/2 INCH DIAMETER SPHERE.
4. THE RUNNING SLOPE OF A WALKING SURFACE THAT IS NOT A RAMP SHALL NOT BE STEEPER THAN 1:20, THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2%).
5. CHANGES IN FLOOR LEVEL SHALL COMPLY WITH THE FOLLOWING:
   - 5.1. CHANGES IN LEVEL OF 1/4 INCH MAXIMUM IN HEIGHT SHALL BE PERMITTED TO BE VERTICAL.
   - 5.2. CHANGES IN LEVEL GREATER THAN 1/4 INCH IN HEIGHT AND NOT MORE THAN 1/2 INCH MAXIMUM IN HEIGHT SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2.
   - 5.3. CHANGES IN LEVEL GREATER THAN 1/2 INCH IN HEIGHT SHALL BE SLOPED NOT STEEPER THAN 1:48 AT LANDINGS AND MANEUVERING SPACES, SLOPED NOT STEEPER THAN 1:20 AT OTHER AREAS, OR RAMPED NOT STEEPER THAN 1:12. WHERE FLOOR LEVELS ARE RAMPED, COMPLY WITH ALL CODE REQUIREMENTS FOR RAMPS.
6. PROVIDE ACCESSIBLE LANDINGS, TURNING SPACES, MANEUVERING SPACES, AND CLEAR SPACES IN ACCORDANCE WITH THE REQUIREMENTS OF ICC A117.1, AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
   - 6.1. MAXIMUM FLOOR SLOPE PERMITTED: 1:48 (2%).
7. PROVIDE SOLID BLOCKING CONCEALED IN FRAME WALLS FOR SECURELY ANCHORING FIXTURES AND ACCESSORIES TO WALLS.

   MOUNT FIXTURES AND ACCESSORIES TO WITHSTAND A MINIMUM FORCE OF 250 POUNDS IN ANY DIRECTION, WITHOUT ROTATION, DEFORMATION, OR FAILURE OF ATTACHMENT.
8. INSTALL BARRIER–FREE FIXTURES AND ACCESSORY UNITS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
9. INSTALL FIXTURES AND ACCESSORY UNITS LEVEL, PLUMB, TRUE TO LINE, AND IN ACCORDANCE WITH BARRIER–FREE ACCESSIBILITY GUIDELINES.
10. PROVIDE (FURNISH AND INSTALL) THE FOLLOWING ACCESSIBILITY SIGNS:
    - 10.1. ALL BARRIER–FREE IDENTIFICATION AND DIRECTIONAL SIGNAGE REQUIRED BY CODE
    - 10.2. ALL REQUIRED BARRIER–FREE TOILET ROOM SIGNAGE
    - 10.3. EXTERIOR SIGNAGE IDENTIFYING BARRIER–FREE PARKING SPACES
11. WHERE BARRIER–FREE REQUIREMENTS ARE FOUND TO BE CONFLICTING OR OTHERWISE IN DOUBT, CONTACT THE ARCHITECT FOR CLARIFICATION.

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TRAVERSE CITY, MI 49696

SHEET CONTENTS:
BARRIER-FREE DESIGN STANDARDS

NEALIS_PLAN

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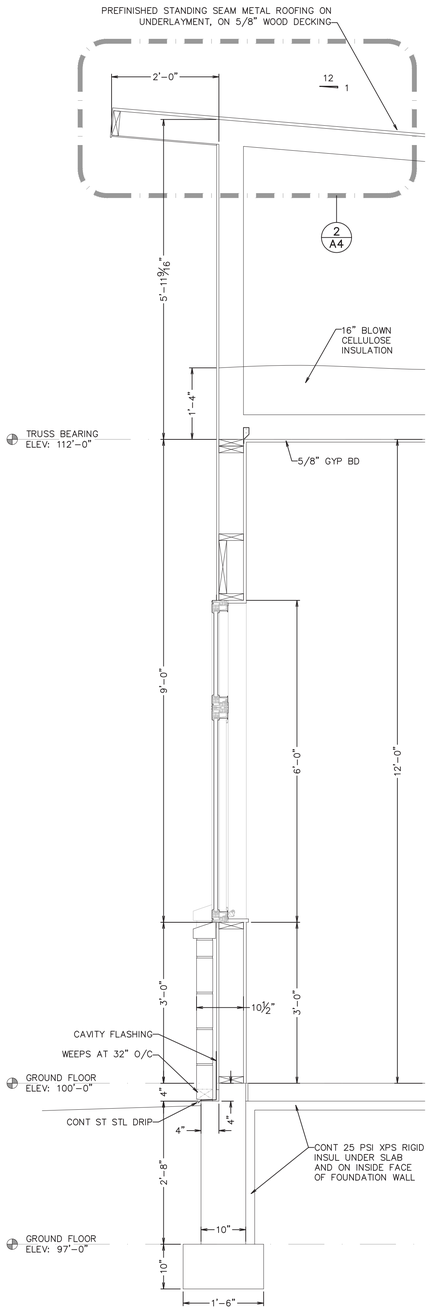
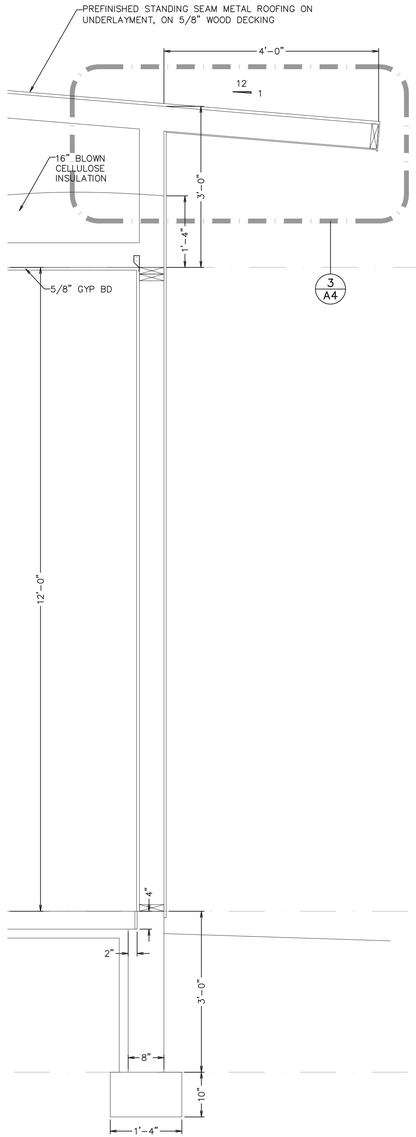
REV					
REV					
REV					
REV					
REV					

A8



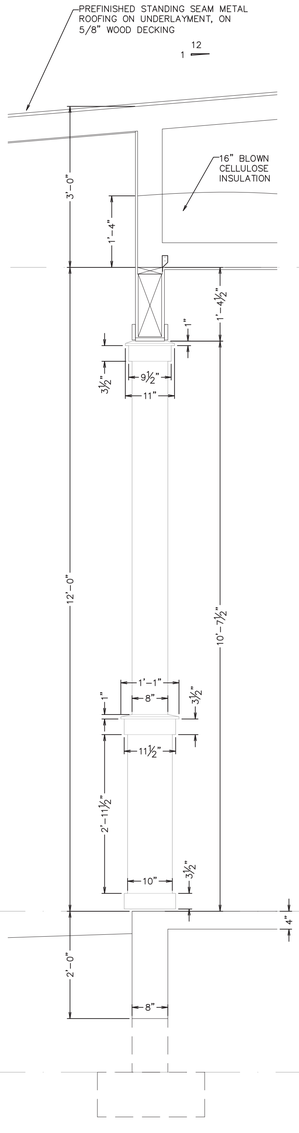
VERTICAL SECTION

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



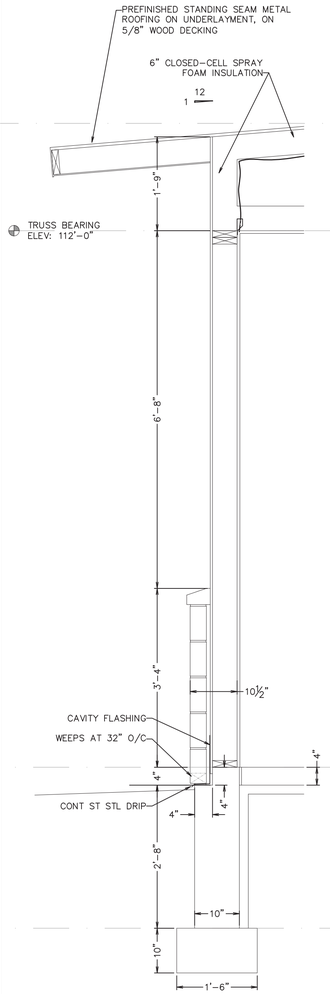
VERTICAL SECTION

2 **WALL SECTION**
SCALE: 3/4" = 1'-0"



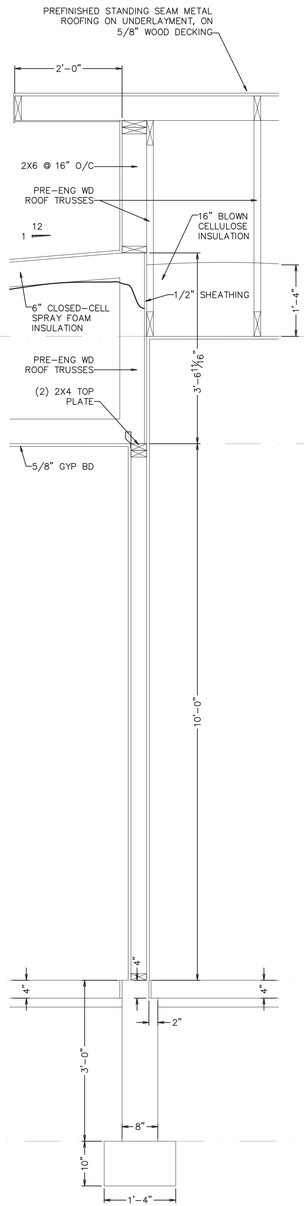
VERTICAL SECTION

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



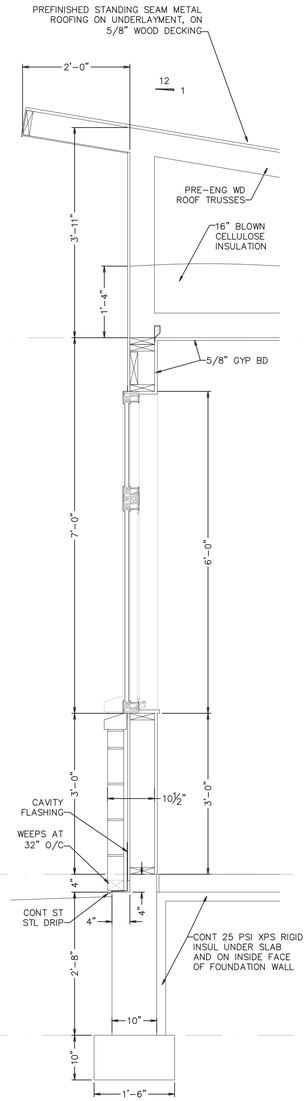
VERTICAL SECTION

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



VERTICAL SECTION

5 **WALL SECTION**
SCALE: 3/4" = 1'-0"



VERTICAL SECTION

6 **WALL SECTION**
SCALE: 3/4" = 1'-0"

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SHEET CONTENTS:
WALL SECTIONS

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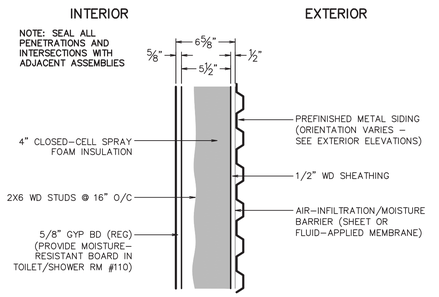
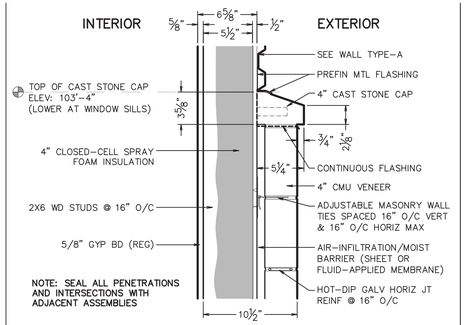


VERTICAL SECTION

1 WALL TYPE – A

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

WOOD FRAME AND SIDING EXTERIOR WALL

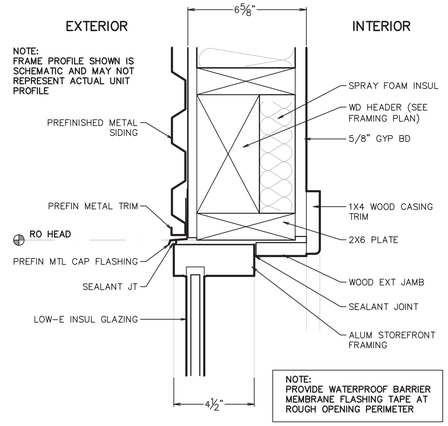


VERTICAL SECTION

2 WALL TYPE – B

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

WOOD FRAME AND SIDING EXTERIOR WALL WITH MASONRY VENEER WAINSCOT



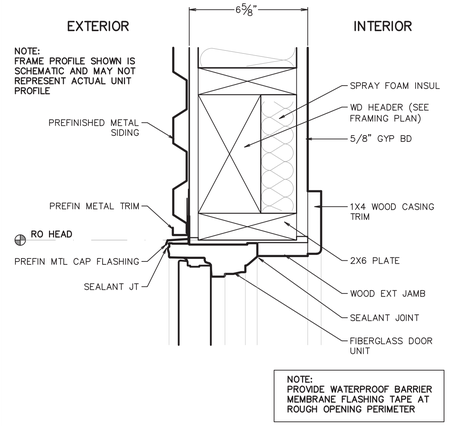
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

VERTICAL SECTION

3 WINDOW FRAME DETAIL

SCALE: 3" = 1'-0"

HEAD DETAIL AT STOREFRONT TRANSOM IN EXTERIOR WOOD FRAMED WALL



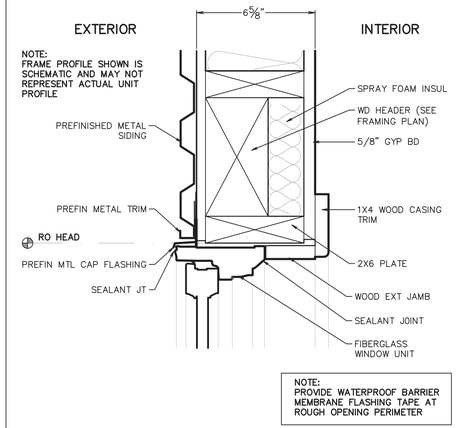
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

VERTICAL SECTION

4 DOOR FRAME DETAIL

SCALE: 3" = 1'-0"

HEAD DETAIL AT FIBERGLASS DOOR UNIT IN EXTERIOR WOOD FRAMED WALL



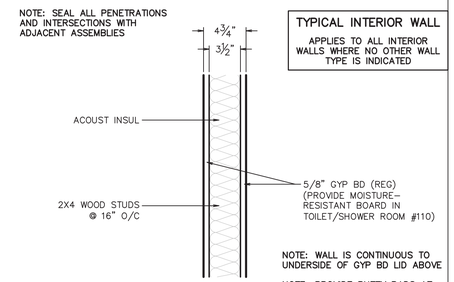
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

VERTICAL SECTION

5 WINDOW FRAME DETAIL

SCALE: 3" = 1'-0"

HEAD DETAIL AT FIBERGLASS WINDOW UNIT IN EXTERIOR WOOD FRAMED WALL



TYPICAL INTERIOR WALL

APPLIES TO ALL INTERIOR WALLS WHERE NO OTHER WALL TYPE IS INDICATED

NOTE: WALL IS CONTINUOUS TO UNDERSIDE OF GYP BD LID ABOVE

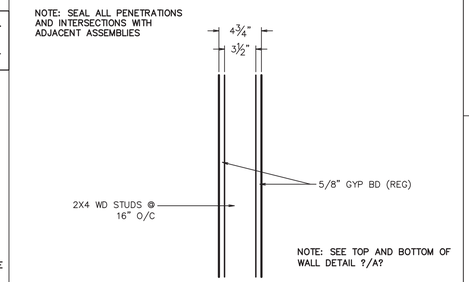
NOTE: PROVIDE PUTTY PADS AT ALL ELECTRICAL BOXES

VERTICAL SECTION

6 WALL TYPE – C

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

WOOD FRAME INTERIOR WALL W/ ACOUSTICAL INSULATION



NOTE: SEE TOP AND BOTTOM OF WALL DETAIL ?/A?

VERTICAL SECTION

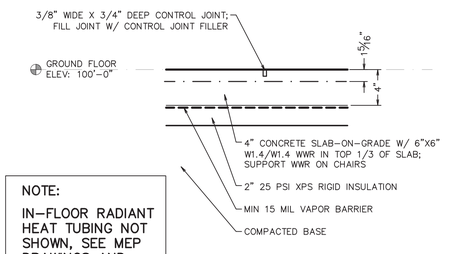
7 WALL TYPE – D

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

TYPICAL WOOD FRAME INTERIOR WALL

NOT USED

NOT USED



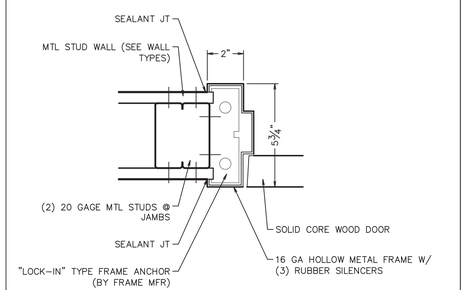
NOTE:
IN-FLOOR RADIANT HEAT TUBING NOT SHOWN, SEE MEP DRAWINGS AND SPECIFICATIONS

VERTICAL SECTION

16 FLOOR SLAB DETAIL

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

DETAIL AT TYPICAL CONCRETE SLAB-ON-GRADE WITH CONTROL JOINTS

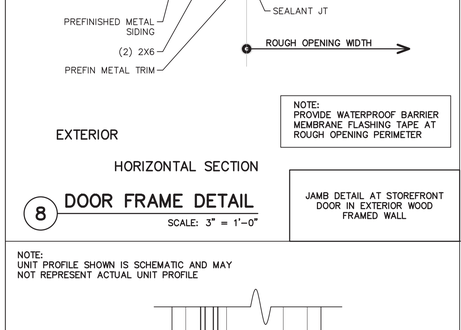


VERTICAL/HORIZONTAL SECTION

17 DOOR FRAME DETAIL

SCALE: 3" = 1'-0"

JAMB DETAIL AT HOLLOW METAL DOOR FRAME IN INTERIOR METAL FRAMED WALL (HEAD DETAIL SIMILAR)



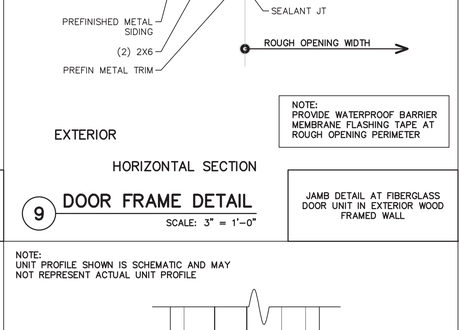
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

HORIZONTAL SECTION

8 DOOR FRAME DETAIL

SCALE: 3" = 1'-0"

JAMB DETAIL AT STOREFRONT DOOR IN EXTERIOR WOOD FRAMED WALL



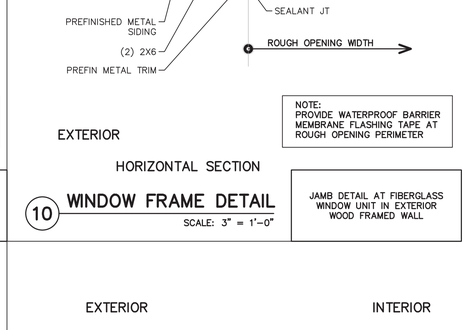
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

HORIZONTAL SECTION

9 DOOR FRAME DETAIL

SCALE: 3" = 1'-0"

JAMB DETAIL AT FIBERGLASS DOOR UNIT IN EXTERIOR WOOD FRAMED WALL



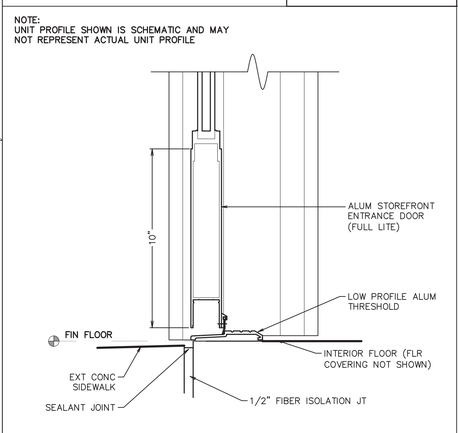
NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT ROUGH OPENING PERIMETER

HORIZONTAL SECTION

10 WINDOW FRAME DETAIL

SCALE: 3" = 1'-0"

JAMB DETAIL AT FIBERGLASS WINDOW UNIT IN EXTERIOR WOOD FRAMED WALL

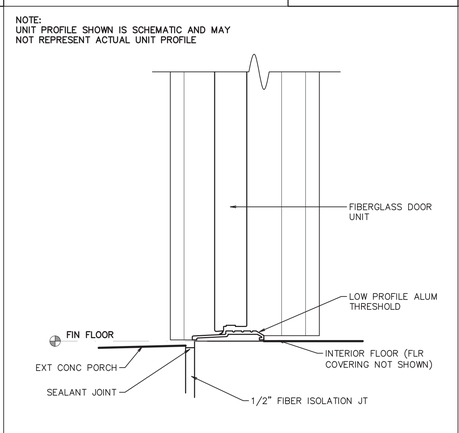


VERTICAL SECTION

18 THRESHOLD DETAIL

SCALE: 3" = 1'-0"

TYPICAL SILL AT EXTERIOR DOORS

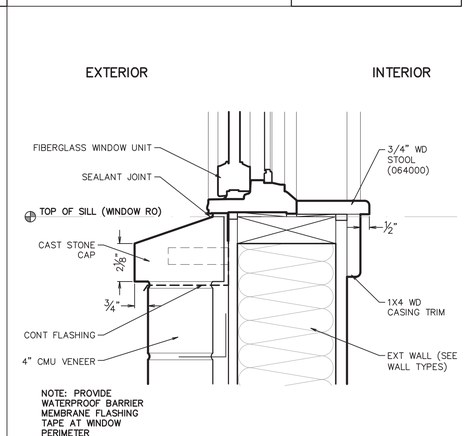


VERTICAL SECTION

19 THRESHOLD DETAIL

SCALE: 3" = 1'-0"

TYPICAL SILL AT EXTERIOR DOORS



NOTE: PROVIDE WATERPROOF BARRIER MEMBRANE FLASHING TAPE AT WINDOW PERIMETER

VERTICAL SECTION

20 WINDOW DETAIL

SCALE: 3" = 1'-0"

SILL DETAIL AT CLAD WOOD WINDOW UNIT IN EXTERIOR WOOD FRAMED WALL

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TRAVERSE CITY, MI 49696

SHEET CONTENTS:
WALL TYPES
CONST. DETAILS

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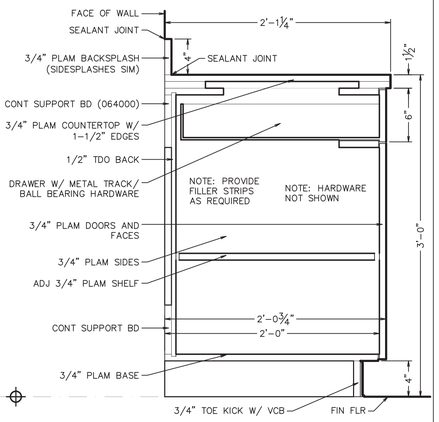
ISSUED:	01-29-21				
REV.	REV.	REV.	REV.	REV.	REV.

A10

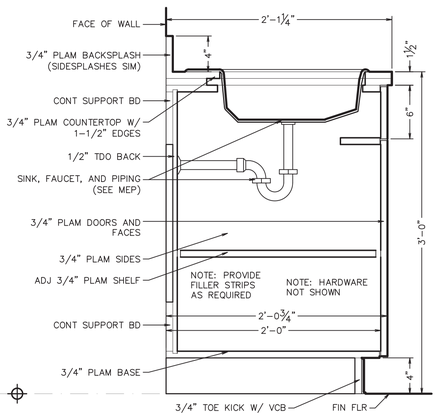


VERTICAL SECTION

1 BASE CABINET DETAIL

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

DETAIL AT STANDARD FLUSH OVERLAY PLASTIC LAMINATE BASE CABINET

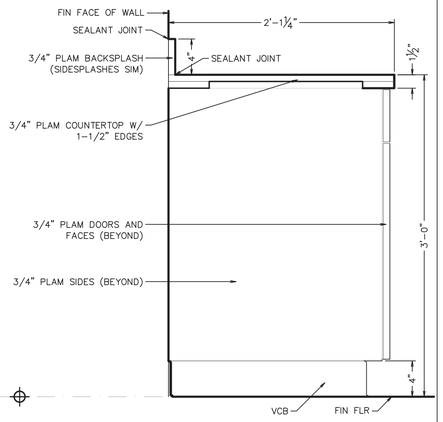


VERTICAL SECTION

2 SINK BASE DETAIL

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

DETAIL AT STANDARD FLUSH OVERLAY PLASTIC LAMINATE SINK BASE CABINET

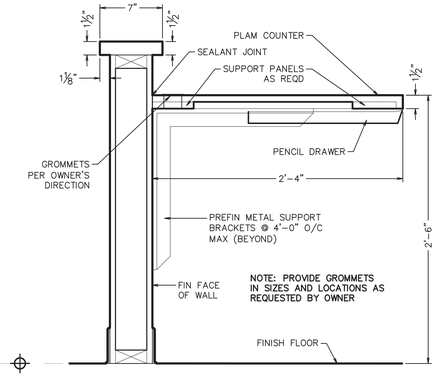


VERTICAL SECTION

3 BASE CABINET DETAIL

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

DETAIL AT PLASTIC LAMINATE COUNTER WITH OPEN BASE

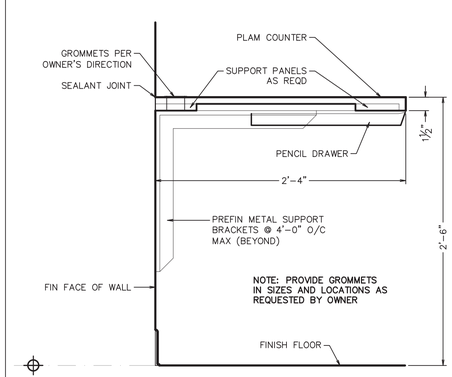


VERTICAL SECTION

4 WK COUNTER DETAIL

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

DETAIL AT PLASTIC LAMINATE WORK SURFACE

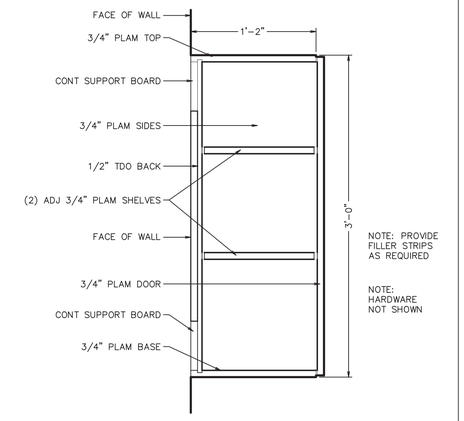


VERTICAL SECTION

5 WK COUNTER DETAIL

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

DETAIL AT PLASTIC LAMINATE WORK SURFACE

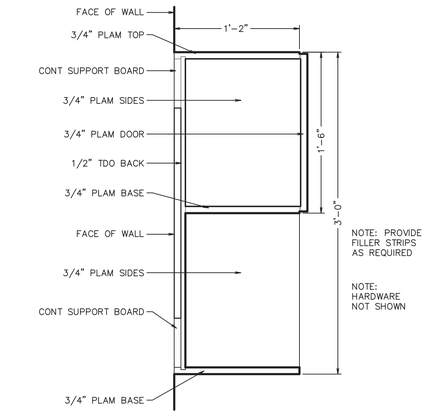


VERTICAL SECTION

6 WALL CABINET DETAIL

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

FLUSH OVERLAY PLASTIC LAMINATE WALL CABINET



VERTICAL SECTION

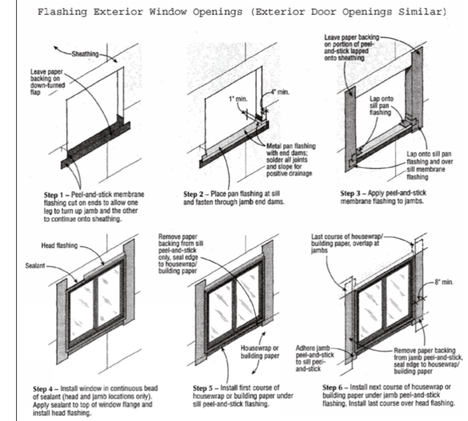
7 WALL CABINET DETAIL

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

FLUSH OVERLAY PLASTIC LAMINATE WALL CABINET

NOT USED

NOT USED

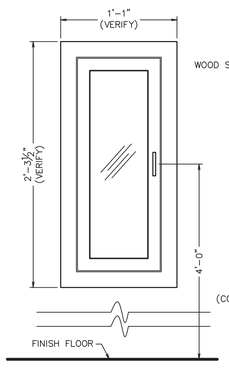


AXONOMETRICS

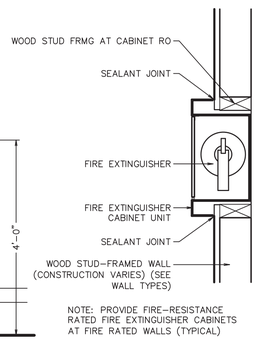
10 FLASHING DETAILS

NO SCALE

TYPICAL FLASHING DETAILS AND INSTALLATION NOTES FOR WINDOW AND DOOR OPENINGS IN EXTERIOR WALLS



ELEVATION



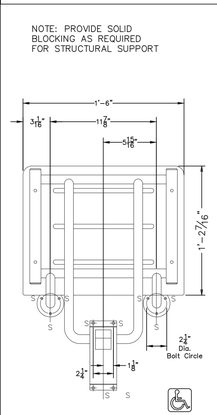
HORIZONTAL SECTION

NOTE: PROVIDE FIRE-RESISTANCE RATED FIRE EXTINGUISHER CABINETS AT FIRE RATED WALLS (TYPICAL)

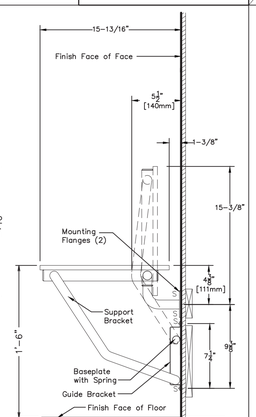
11 FE CABINET DETAILS

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

DETAILS AT TYPICAL FIRE EXTINGUISHER CABINET (ELEVATION AND PLAN SECTION)



ELEVATION

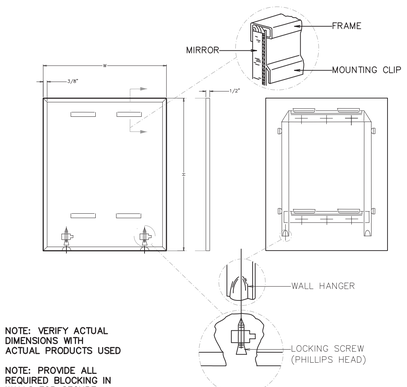


VERTICAL SECTION

12 FOLDING SEAT

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

DETAIL AT FOLDING BARRIER-FREE SEAT



NOTE: VERIFY ACTUAL DIMENSIONS WITH ACTUAL PRODUCTS USED

NOTE: PROVIDE ALL REQUIRED BLOCKING IN WALLS FOR SECURE SUPPORT OF MIRRORS

BACK OF MIRROR ELEVATION

13 LAVATORY MIRROR

NO SCALE

DETAIL AT MIRROR IN STAINLESS STEEL FRAME

NOT USED

NOTE: PROVIDE SIGNAGE COMPLYING WITH ICC/ANSI A117.1 AND THE BUILDING CODE

ELEVATION

15 UNISEX BF TOILET ROOM SIGN

NO SCALE

EXAMPLE BARRIER-FREE UNISEX TOILET ROOM SIGN: VERIFY DESIGN, SIZE, AND LOCATIONS REQUIRED WITH AUTHORITIES HAVING JURISDICTION

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TRAVERSE CITY, MICHIGAN 49685

PROJECT:
OFFICE BUILDING
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TRAVERSE CITY, MI 49696

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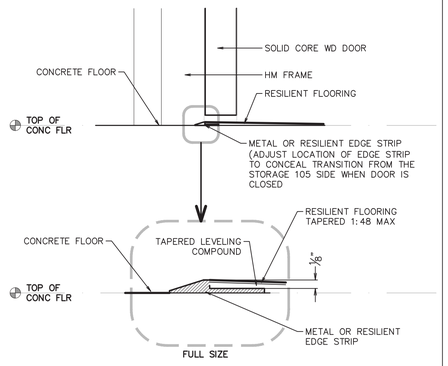
REV					
REV					
REV					
REV					
REV					

A11

NOT USED

STOR/MECH 104 SIDE — STORAGE 105 SIDE



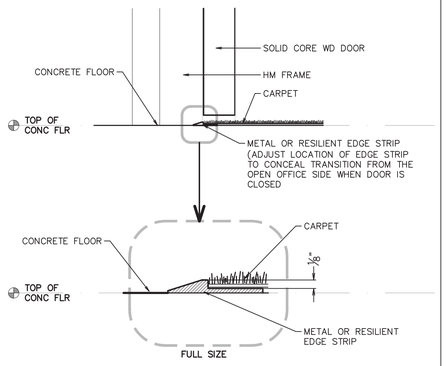
VERTICAL SECTION

2 THRESHOLD DETAIL

SCALE: 3" = 1'-0"

TRANSITION STRIP DETAIL AT INTERIOR DOOR THRESHOLD: CONCRETE TO RESILIENT FLOORING

UTILITY ROOM SIDE — OFFICE AREA SIDE

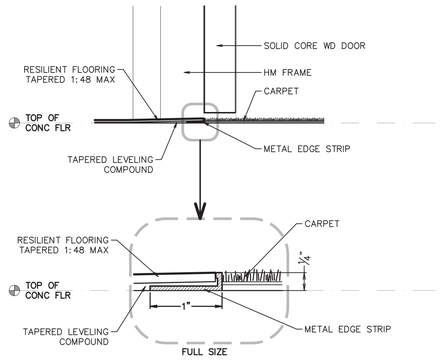


VERTICAL SECTION

3 THRESHOLD DETAIL

SCALE: 3" = 1'-0"

TRANSITION STRIP DETAIL AT INTERIOR DOOR THRESHOLD: CONCRETE TO CARPET FLOORING



VERTICAL SECTION

4 THRESHOLD DETAIL

SCALE: 3" = 1'-0"

TRANSITION STRIP DETAIL AT THRESHOLD: RESILIENT TO CARPET FLOORING

PROVIDE ELECTRICALLY-POWERED, SELF-LUMINOUS, AND PHOTOLUMINESCENT INTERNALLY ILLUMINATED EXIT SIGNS, LISTED AND LABELED IN ACCORDANCE WITH UL 924, AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE BUILDING CODE.

EXIT SIGNS SHALL BE ILLUMINATED AT ALL TIMES.

EVERY EXIT SIGN AND DIRECTIONAL EXIT SIGN SHALL HAVE PLAINLY LEGIBLE LETTERS NOT LESS THAN 6 INCHES HIGH WITH THE PRINCIPAL STROKES OF THE LETTERS NOT LESS THAN 0.75 INCH WIDE. THE WORD 'EXIT' SHALL HAVE LETTERS HAVING A WIDTH NOT LESS THAN 2 INCHES WIDE, EXCEPT THE LETTER '1,' AND THE MINIMUM SPACING BETWEEN LETTERS SHALL NOT BE LESS THAN 0.375 INCH. SIGNS LARGER THAN THE MINIMUM REQUIREMENT SHALL HAVE LETTER WIDTHS, STROKES AND SPACING IN PROPORTION TO THEIR HEIGHT.

NOTE: PROVIDE SIGNAGE COMPLYING WITH ICC/ANSI A117.1 AND THE BUILDING CODE

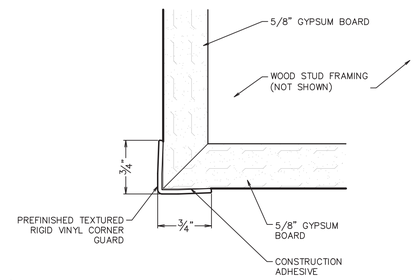
ELEVATION

5 EXIT SIGN DETAIL

NO SCALE

EXAMPLE EXIT SIGN: VERIFY DESIGN, SIZE, AND LOCATIONS REQUIRED WITH AUTHORITIES HAVING JURISDICTION (101400)

(NOTE: PROVIDE CONTINUOUS UNITS FROM TOP OF WALL BASE TO CEILING ABOVE)



(NOTE: PROVIDE UNITS IN FINISHES MATCHING ADJACENT WALL COLORS)

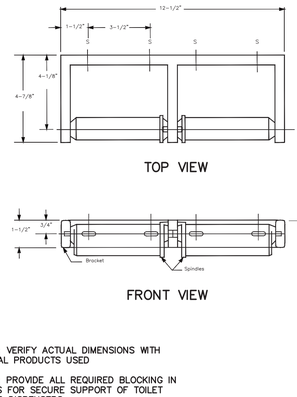
DL COUCH P3TEC CORNER GUARD

HORIZONTAL SECTION

6 WALL CORNER DETAIL

FULL-SIZE

DETAIL AT TYPICAL WALL CORNER GUARD



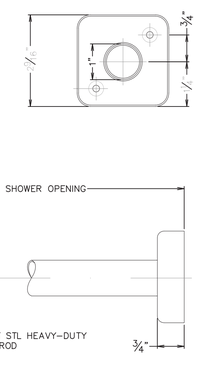
NOTE: VERIFY ACTUAL DIMENSIONS WITH ACTUAL PRODUCTS USED

NOTE: PROVIDE ALL REQUIRED BLOCKING IN WALLS FOR SECURE SUPPORT OF TOILET PAPER DISPENSERS

7 TOILET PAPER DISP

SCALE: 3" = 1'-0"

DETAIL AT SURFACE WALL-MOUNTED TOILET PAPER DISPENSER

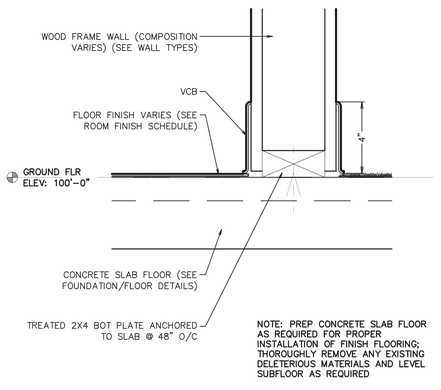


8 SHWR CURTAIN ROD

SCALE: 6" = 1'-0"

TYPICAL DETAIL FOR STAINLESS SHOWER CURTAIN

NOT USED



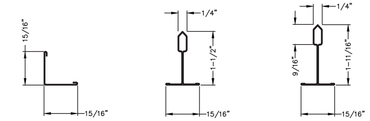
NOTE: PREP CONCRETE SLAB FLOOR AS REQUIRED FOR PROPER INSTALLATION OF FINISH FLOORING; THOROUGHLY REMOVE ANY EXISTING DELETERIOUS MATERIALS AND LEVEL SUBFLOOR AS REQUIRED

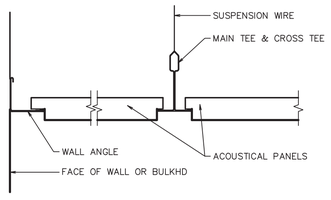
VERTICAL SECTION

10 FLOOR DETAIL

SCALE: 3" = 1'-0"

VINYL COVE BASE (VCB) DETAIL AT WOOD FRAMED WALL ON CONCRETE SLAB-ON-GRADE





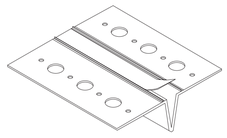
VERTICAL SECTION

11 SUSP ACOUST CLG

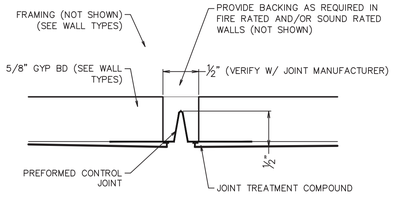
SCALE: 6" = 1'-0"

TYPICAL SUSPENDED ACOUSTICAL CEILING DETAILS

PROVIDE CONTROL JOINTS WHERE WALL OR CEILING EXPANSES OF GYPSUM BOARD EXCEED 30 FEET IN ANY DIRECTION, AND WHERE WINGS OF "L-," "U-," OR "T-" SHAPED GYPSUM BOARD AREAS ARE JOINED



3-D VIEW

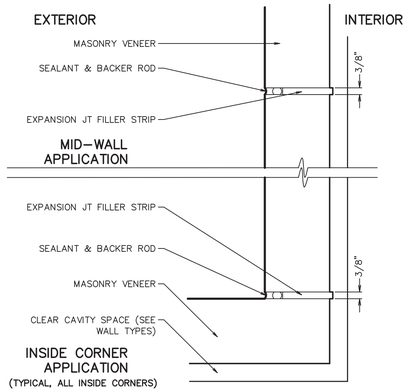


HORIZONTAL/VERTICAL SECTION

12 CONTROL JOINT

FULL SIZE

DETAIL AT TYPICAL CONTROL JOINT IN GYPSUM BOARD WALLS AND CEILINGS

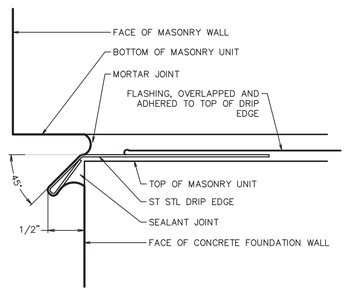


HORIZONTAL SECTION

13 EXP JT (EJ) DETAILS

SCALE: 3" = 1'-0"

TYPICAL EXPANSION JOINTS IN 4" EXTERIOR MASONRY WYTHES (SEE LOCATIONS SHOWN IN EXTERIOR BUILDING ELEVATIONS)

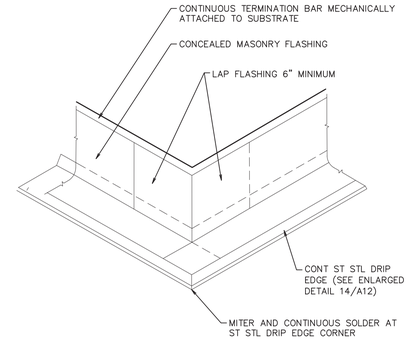


VERTICAL SECTION

14 DRIP EDGE DETAIL

FULL SIZE

SECTION DETAIL AT TYPICAL FLASHING/DRIP EDGE CONDITION IN MASONRY WALL CONSTRUCTION (SEE WALL TYPES AND DETAILS FOR SPECIFIC WALL DESIGN INDICATED)



AXONOMETRIC VIEW

15 DRIP EDGE DETAIL

NO SCALE

AXONOMETRIC DETAIL AT TYPICAL FLASHING/DRIP EDGE CONDITION AT OUTSIDE EXTERIOR BUILDING CORNERS

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3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MICHIGAN 49685

PROJECT:
OFFICE BUILDING
1419 INDUSTRY DRIVE
TRAVERSE CITY, MI 49696

SHEET CONTENTS:
CONSTRUCTION DETAILS

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GENERAL REQUIREMENTS

1. THE ARCHITECT AND ENGINEERS WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, CONTROLS, TECHNIQUES, SEQUENCES, PROCEDURES, NOR WILL IT BE RESPONSIBLE, NOR HAVE ANY OBLIGATION WHATSOEVER, FOR CONSTRUCTION SAFETY, THE OBLIGATION FOR CONSTRUCTION SAFETY BEING SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL COMMUNICATE ALL CHANGES TO THE DESIGN MADE DURING THE CONSTRUCTION PERIOD TO THE OWNER; THE CONTRACTOR AND OWNER SHALL ALSO CONTACT THE ARCHITECT IMMEDIATELY IF ANY APPARENT DIFFERING CONDITIONS, ERRORS, OMISSIONS, OR AMBIGUITIES IN THE ARCHITECT'S INSTRUMENTS OF SERVICE ARE DISCOVERED.
3. THE CONTRACTOR SHALL COMPLY WITH ALL CODES, ORDINANCES, AND LAWS APPLICABLE TO THE PROJECT AND LOCALITY.
4. THE CONTRACTOR SHALL MAINTAIN INSURANCES AS REQUIRED BY LAW AND AS ACCEPTABLE TO THE OWNER COVERING THE CONTRACTOR'S GENERAL LIABILITY, WORKERS COMPENSATION, AND PROPERTY INSURANCE. SUBMIT INSURANCE CERTIFICATES TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO START OF WORK.
5. VERIFY THAT BUILDER'S RISK INSURANCE HAS BEEN OBTAINED BY EITHER THE OWNER OR THE CONTRACTOR.
6. KEEP THE OWNER INFORMED OF PROGRESS DURING THE WORK.
7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE WORK. TAKE RESPONSIBILITY FOR ALL REQUIRED PERMITS AND INSPECTIONS, INCLUDING FINAL OCCUPANCY PERMITS. PROVIDE A COPY OF ALL BUILDING PERMIT PLAN REVIEW DOCUMENTATION TO THE ARCHITECT AND TO THE OWNER, FOR THE ARCHITECT'S AND THE OWNER'S PROJECT RECORDS.
8. THE CONTRACTOR SHALL SUPERVISE, COORDINATE, AND DIRECT THE WORK OF ALL TRADES, SCHEDULING AND SEQUENCING ALL ASPECTS OF THE WORK ACCORDING TO A CONSTRUCTION SCHEDULE REVIEWED AND APPROVED BY THE OWNER.
9. THE CONTRACTOR SHALL PROVIDE COMPLETE TRASH REMOVAL FROM THE SITE. DO NOT BURN DEBRIS ON SITE. KEEP THE PROJECT SITE CLEAN AND WELL-ORGANIZED.
10. THE CONTRACTOR SHALL PROVIDE SITE AND BUILDING SECURITY ADEQUATE TO PROTECT THE CONSTRUCTION AND STORED TOOLS, MATERIALS, AND EQUIPMENT FROM THEFT AND VANDALISM.
11. THE CONTRACTOR SHALL STORE MATERIALS AND EQUIPMENT ON THE SITE IN A PROTECTED MANNER, AS ACCEPTABLE TO THE OWNER.
12. REPAIR ANY AND ALL DAMAGES CAUSED BY DEMOLITION OR CONSTRUCTION OPERATIONS, INCLUDING DAMAGES CAUSED TO THE OWNER'S PROPERTIES AND DAMAGES CAUSED TO ADJACENT PROPERTIES OR RIGHTS-OF-WAY.
13. COOPERATE FULLY WITH SEPARATE CONTRACTORS HIRED INDEPENDENTLY BY THE OWNER.
14. IF THE OWNER REQUESTS CHANGES TO THE WORK WHICH INVOLVE CHANGES TO THE CONTRACT SUM OR TIME, THE CONTRACTOR SHALL SUBMIT TO THE OWNER A WRITTEN RESPONSE DESCRIBING THE CHANGE IN THE WORK, ITS RESULTANT COST (OR CREDIT) TO THE OWNER, AND A PROPOSED ADJUSTMENT IN THE TIME REQUIRED FOR COMPLETION OF THE WORK. DO NOT PROCEED WITH CHANGES TO THE WORK INVOLVING ADJUSTMENT TO THE CONTRACT SUM OR TIME WITHOUT FIRST OBTAINING THE OWNER'S WRITTEN APPROVAL OF SUCH CHANGE IN THE FORM OF A CHANGE ORDER.
15. SUBMIT A DETAILED CONSTRUCTION SCHEDULE TO THE OWNER FOR REVIEW AND APPROVAL.
16. SUBMIT A SCHEDULE OF VALUES TO THE OWNER, CONSISTING OF A BREAKDOWN OF THE CONTRACT SUM IN SUFFICIENT DETAIL TO FACILITATE CONTINUOUS EVALUATION OF THE CONTRACTORS PROGRESS RELATIVE TO APPLICATIONS FOR PAYMENT.
17. SUBMIT APPLICATIONS FOR PAYMENT TO THE OWNER ON A MONTHLY BASIS. DO NOT APPLY FOR PAYMENT FOR WORK ITEMS NOT YET COMPLETED AND MATERIALS NOT YET PURCHASED AND SECURELY STORED AT THE PROJECT SITE AT THE TIME THAT THE APPLICATION IS SUBMITTED
18. COORDINATE ALL CONSTRUCTION OPERATIONS TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK.
    - 18.1. SUPERVISE AND COORDINATE THE WORK OF ALL TRADES.
    - 18.2. PROVIDE COPIES OF THE CONTRACT DOCUMENTS TO ALL SUBCONTRACTORS AND SUPPLIERS.
    - 18.3. SCHEDULE CONSTRUCTION OPERATIONS AND SEQUENCES TO PROPERLY INTEGRATE AND COORDINATE ALL ELEMENTS OF THE WORK.
    - 18.4. TAKE FULL RESPONSIBILITY FOR ALL CONSTRUCTION MEANS, METHODS, SEQUENCES, AND OPERATIONS.
    - 18.5. TAKE FULL RESPONSIBILITY FOR CONSTRUCTION SAFETY ON THE JOBSITE.
19. COORDINATE THE PREPARATION, REVIEW, AND PROCESSING OF ALL SUBMITTALS REQUIRED FOR THE PROJECT. THOROUGHLY REVIEW AND STAMP ALL SUBMITTALS PRIOR TO TRANSMITTING THEM TO THE OWNER. SUBMIT SUBMITTALS IN ELECTRONIC (PDF) FORMAT TO THE OWNER FOR REVIEW AND ACTION.
    - 19.1. WHERE SAMPLE SUBMITTALS ARE REQUESTED, DELIVER PHYSICAL SAMPLES IN TRIPLICATE TO THE ARCHITECT FOR REVIEW AND ACTION.
    - 19.2. REVIEW OF SUBMITTALS IS FOR THE LIMITED PURPOSE OF CHECKING GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS.
    - 19.3. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOBSITE. RECEIPT AND REVIEW OF SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS WHICH MAY RESULT FROM THE SUBMITTED DATA.
    - 19.4. ALLOW AT LEAST 10 BUSINESS DAYS FOR REVIEW OF SUBMITTALS.
    - 19.5. RESUBMIT SUBMITTALS AS INDICATED IN REVIEW ACTION.
20. PROVIDE SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
    - 20.1. CONCRETE MIX DESIGNS
    - 20.2. STRUCTURAL STEEL FRAMING AND FABRICATIONS
    - 20.3. WINDOWS AND DOORS
21. PROVIDE SEALED SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
    - 21.1. PRE-ENGINEERED, METAL PLATE CONNECTED WOOD TRUSSES
22. PROVIDE FINISH SAMPLES FOR THE FOLLOWING ITEMS:
    - 22.1. EXTERIOR FINISHES
    - 22.2. FLOOR COVERINGS
    - 22.3. WALL BASE
    - 22.4. PAINT FINISHES
    - 22.5. SUSPENDED ACOUSTICAL CEILING FINISHES
23. PROVIDE TEST RESULTS FOR THE FOLLOWING ITEMS:
    - 23.1. SOILS COMPACTION AND BEARING STRENGTH TESTING
    - 23.2. CONCRETE STRENGTH TESTING
24. PROVIDE ALL TEMPORARY BARRIERS, ENCLOSURES, FACILITIES AND CONTROLS REQUIRED DURING THE CONSTRUCTION PERIOD, INCLUDING ALL TEMPORARY UTILITIES, POWER, HEAT, VENTILATION, SHELTERS, SECURITY, FIRE PROTECTION, AND STORAGE.
25. PROVIDE ALL TEMPORARY BRACING AND SHORING REQUIRED DURING THE CONSTRUCTION PERIOD.
26. WHERE REFERENCE STANDARDS ARE SPECIFIED, FOLLOW THE LATEST VERSIONS OF THE REFERENCED DOCUMENTS, EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE GIVEN BY LOCAL CODES OR BY AUTHORITIES HAVING JURISDICTION.
27. VERIFY ALL SITE AND BUILDING LOCATIONS AND DIMENSIONS PRIOR TO EXECUTION OF DEMOLITION OR CONSTRUCTION WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT, INCLUDING THE ESTABLISHMENT OF BENCHMARKS AND SITE LAYOUT, AS APPLICABLE.
28. NOTIFY THE ARCHITECT OF DISCREPANCIES, CONFLICTS, VARIATIONS, AND ERRORS IN THE CONTRACT DOCUMENTS OR THE WORK-IN-PLACE PRIOR TO INSTALLATION OF PRODUCTS AND MATERIALS SO THAT CORRECTIONS AND/OR ADJUSTMENTS CAN BE MADE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. THE CONTRACTOR'S COMMENCEMENT OF WORK ACTIVITIES CONSTITUTES ACCEPTANCE OF SUBSTRATES, SURFACES, EXISTING CONDITIONS, AND DESIGN INTENT.

CONCRETE NOTES

1. FOLLOW ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."
2. ISOLATION JOINTS: 1/2" THICK (UNLESS INDICATED OTHERWISE) ASPHALT-SATURATED CELLULOSIC FIBER BOARD STRIPS COMPLYING WITH ASTM D1751.
3. REINFORCING STEEL: ASTM A615, GRADE 60.
4. WELDED WIRE REINFORCEMENT (WWR): ASTM A185, 6" x 6" W2.9 X W2.9, Fy 65 KSI.
5. FLY ASH: ASTM C618, CLASS C.
6. MINIMUM CONCRETE STRENGTH FOR FOOTINGS: 3,500 PSI (AT 28 DAYS).
7. MINIMUM CONCRETE STRENGTH FOR FOUNDATION WALLS: 4,000 PSI (AT 28 DAYS).
8. MINIMUM CONCRETE STRENGTH FOR SLABS ON GRADE: 3,500 PSI (AT 28 DAYS).
9. DO NOT USE CONCRETE ADMIXTURES CONTAINING CHLORIDE IONS.
10. CONTROL JOINT SPACING IN CONCRETE SLABS ON GRADE: 20 FT O/C E/W MAXIMUM.

MASONRY NOTES

1. COMPLY WITH ACI 530/ASCE 5/TMS 402, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES."
2. COMPLY WITH ACI 530.1/ASCE 6/TMS 602, "SPECIFICATIONS FOR MASONRY STRUCTURES."
3. MINIMUM NET AREA COMPRESSIVE STRENGTH REQUIRED OF CMU AND MORTAR SYSTEM: 1,500 PSI.
4. CMU: ASTM C90, Fc = 1,900 PSI MINIMUM.
5. FLY ASH: ASTM C618, CLASS C.
6. MORTAR FOR BELOW-GRADE MASONRY: ASTM C270, TYPE S.
7. MORTAR FOR MASONRY VENEER (ABOVE GRADE): ASTM C270, TYPE N.
8. GROUT: ASTM C476, MINIMUM 2,000 PSI AT 28 DAYS.
9. PROVIDE EXPANSION JOINTS AND CONTROL JOINTS AS INDICATED.

CAST STONE NOTES

1. CAST STONE STANDARD: ASTM C1364.
2. CEMENT: ASTM C150, PORTLAND CEMENT, AS REQUIRED TO ACHIEVE CHARACTERISTICS INDICATED.
3. INTEGRAL COLOR: LIGHT-FAST PIGMENTS MEETING ASTM C979.
4. MINIMUM COMPRESSIVE STRENGTH: 6,500 PSI AT 28 DAYS.
5. MAXIMUM AVERAGE COLD WATER ABSORPTION: 6 PERCENT BY DRY WEIGHT.
6. MAXIMUM AVERAGE BOILING WATER ABSORPTION: 10 PERCENT BY DRY WEIGHT.
7. MINIMUM REINFORCEMENT: 0.25 PERCENT OF CROSS SECTIONAL AREA IN INDIVIDUAL PIECES LARGER THAN 12 INCHES IN ANY DIMENSION.
8. PROVIDE UNITS WITH INTEGRAL WATER REPELLENT USING PRODUCTS ACHIEVING "E" RATED (EXCELLENT) PERFORMANCE WHEN TESTED IN ACCORDANCE WITH ASTM E514, 72 HOUR TEST DURATION, WITH ZERO PERCENT DAMPNESS ON INTERIOR WALL FACE.
9. PRODUCTION METHOD: VIBRATORY DRY TAMP (VDT).
10. SURFACE TEXTURE: SMOOTH, POLISHED, MATTE FINISH.
11. CURING AND SEALING COMPOUNDS: CLEAR, PENETRATING, LIQUID-APPLIED, WATER-BASED SILICONE MATERIALS CONTAINING SILICONATES, AS PROVEN TO YIELD EXCELLENT RESULTS IN THE MANUFACTURER'S PAST EXPERIENCE.
12. COLOR: AS SELECTED BY THE OWNER.

DOOR & WINDOW NOTES

1. STEEL DOORS AND FRAMES: FOLLOW STEEL DOOR INSTITUTE (SDI) PUBLISHED STANDARDS.
2. HOLLOW METAL DOOR FRAMES: ANSI A250.8, 16 GAGE. FOLLOW STEEL DOOR INSTITUTE (SDI) PUBLISHED STANDARDS.
   STEELCRAFT DW16-SERIES EASY-SET DRYWALL FRAMES
   STEELCRAFT F16-SERIES WELDED FRAMES (FOR FRAMES WIDER THAN 3 FEET)
3. WOOD DOOR STANDARD: AMERICAN WOODWORK INSTITUTE (AWI), AWS (ARCHITECTURAL WOODWORK STANDARDS).
   GRAHAM MODEL GPD (PREMIUM DOOR)
4. PROVIDE WOOD DOORS WITH VERTICAL EDGES IN WOOD FINISHED TO MATCH FACES.
5. DOORS FOR OPAQUE FINISH: ECONOMY GRADE.
6. WOOD DOOR WARRANTY PERIOD: LIFETIME ON WORKMANSHIP AND MATERIALS.
7. PROVIDE ALL BLOCKING AND REINFORCEMENTS IN DOORS AND FRAMES AS REQUIRED FOR SECURE ATTACHMENT OF HARDWARE, DURABILITY, AND PROPER FUNCTION OF OPENINGS.
8. WINDOWS: FOLLOW WDMA 101/I.S. 2/NAFS "VOLUNTARY PERFORMANCE SPECIFICATION FOR WINDOWS, SKYLIGHTS AND GLASS DOORS."
9. DOOR HARDWARE STANDARDS: FOLLOW BHMA A156 SERIES DOCUMENTS, AS APPLICABLE, MINIMUM GRADE 2.
10. PROVIDE BARRIER-FREE DOOR HARDWARE, WITH LEVER-TYPE HANDLES, ON ALL LATCHING DOORS.
11. PROVIDE BARRIER-FREE THRESHOLDS ON ALL NEW EXTERIOR DOORS.
12. MAXIMUM OPENING FORCE (EXCLUSIVE OF FIRE DOORS) AT ALL INTERIOR HINGED, SLIDING, AND FOLDING DOORS: 5.0 POUNDS.
13. DOOR SURFACES WITHIN 10 INCHES OF THE FLOOR, MEASURED VERTICALLY, SHALL BE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR.
14. DOORS AND SIDELIGHTS ADJACENT TO DOORS CONTAINING ONE OR MORE GLAZED PANELS THAT PERMIT VIEWING THROUGH THE PANELS SHALL HAVE THE BOTTOM OF AT LEAST ONE PANEL ON EITHER THE DOOR OR AN ADJACENT SIDELIGHT 43 INCHES MAXIMUM ABOVE THE FLOOR.
15. DOOR CLOSER WARRANTY PERIOD: 10 YEARS MINIMUM.
16. PROVIDE CODE-REQUIRED LEVEL SURFACES ON BOTH SIDES OF ALL NEW DOORS WITH SLOPES NOT STEEPER THAN 1:48 (2%)
17. PROVIDE FULLY TEMPERED SAFETY GLASS WHERE INDICATED AND WHERE REQUIRED BY BUILDING CODE.
18. INSTALL EXTERIOR DOORS AND WINDOWS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WITH ASTM E2112.

WOOD CONSTRUCTION NOTES

1. FOLLOW AF&PA, "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."
2. FOLLOW TPI AND WTCA PUBLISHED STANDARDS FOR DESIGN AND ERECTION OF PRE-ENGINEERED WOOD TRUSSES.
3. FRAMING LUMBER: DRESSED (S4S), SEASONED (S-DRY OR KD), SOFTWOOD SPECIES, MINIMUM NO. 2.
4. STRUCTURAL SHEATHING/DECKING: APA RATED MANUFACTURED PLYWOOD PANELS MEETING APA PRP-108 AND VOLUNTARY PRODUCT STANDARD PS-1.
5. PRESERVATIVE TREATED WOOD: ACQ, TYPES B AND D, OR CBA-A AND CA-B.
6. PRE-ENGINEERED WOOD BEAMS & COLUMNS: PARALLEL STRAND LUMBER (PSL) WITH MINIMUM FIBER BENDING STRESS CAPACITY OF 2,900 PSI, AND MINIMUM MODULUS OF ELASTICITY OF 2,000,000 PSI. (SEE FRAMING MEMBER LEGEND)
7. PRE-ENGINEERED WOOD JOISTS AND HEADERS: LAMINATED VENEER LUMBER (LVL) WITH MINIMUM FIBER BENDING STRESS CAPACITY OF 2,600 PSI, MINIMUM SHEAR STRESS CAPACITY OF 285 PSI, AND MINIMUM MODULUS OF ELASTICITY OF 1,900,000 PSI. (SEE FRAMING MEMBER LEGEND)
8. PRE-ENGINEERED WOOD HEADERS: LAMINATED STRAND LUMBER (LSL) WITH MINIMUM FIBER BENDING STRESS CAPACITY OF 1,700 PSI, AND MINIMUM MODULUS OF ELASTICITY OF 1,300,000 PSI. (SEE FRAMING MEMBER LEGEND)
9. DESIGN RESPONSIBILITY FOR PRE-ENGINEERED WOOD TRUSSES LIES WITH THE TRUSS MANUFACTURER. PROVIDE SEALED TRUSS SHOP DRAWINGS TO THE BUILDING CODE OFFICIAL AS A DEFERRED SUBMITTAL AND TO THE ARCHITECT FOR THE ARCHITECT'S FILE.
10. PRE-ENGINEERED WOOD TRUSS DESIGN TO INCLUDE ALL BRACING (TEMPORARY AND PERMANENT) REQUIRED FOR STABILITY OF THE OVERALL TRUSSED (ROOF OR FLOOR) STRUCTURE.
11. PROVIDE ONE SIMPSON H2.5A METAL HURRICANE ANCHOR AT EACH BEARING POINT OF EACH ROOF TRUSS AND RAFTER.
12. EXCEPT WHERE INDICATED OTHERWISE, PROVIDE INTERIOR WALL FRAMING CONTINUOUS FROM THE TOP OF THE SUBFLOOR BELOW TO THE BOTTOM OF THE GYPSUM BOARD LID ABOVE.
13. PROVIDE ALL FIRE BLOCKING AND DRAFT STOPPING REQUIRED BY THE BUILDING CODE.
14. PROVIDE 2-STUD EXTERIOR WALL CORNERS (EXCEPT WHERE INDICATED OTHERWISE FOR STRUCTURAL REASONS) WITH FULLY INSULATED CAVITIES.

CASEWORK NOTES

1. PLASTIC LAMINATE CASEWORK STANDARD: "CUSTOM GRADE" PER AMERICAN WOODWORK INSTITUTE (AWI), AWS (ARCHITECTURAL WOODWORK STANDARDS).
2. PROVIDE CASEWORK AND FINISH CARPENTRY MEETING "CLASS II" (B) PER ASTM E84.
3. PARTICLEBOARD: ANSI A208.1; AWI P-200; GRADE M-2, "MEDIUM DENSITY."
4. PLASTIC LAMINATE (PLAM) STANDARD : NEMA LD 3, HIGH-PRESSURE DECORATIVE LAMINATE.

   GRADE FOR HORIZONTAL SURFACES: HGS
   GRADE FOR VERTICAL SURFACES: VGS
   EDGES, JOINTS, AND CORNERS: MATCH EXISTING DETAILS

5. WORK STATION AND COUNTERTOP SUPPORT BRACKETS: PREFINISHED STEEL SUPPORT BRACKETS WITH PRE-DRILLED, 1-1/2" WIDE VERTICAL AND HORIZONTAL MOUNTING FLANGES.

   APPROVED PRODUCT: A&M HARDWARE, "STANDARD WORK STATION AND COUNTERTOP BRACKET."

6. CABINET HARDWARE STANDARD: BHMA A156.9.
7. CABINET HINGES FOR FULL OVERLAY DOORS: CONCEALED, SELF-CLOSING (EUROPEAN TYPE) HINGES MEETING BHMA A156.9, B01602.

   APPROVED PRODUCT: GRASS, 3800 SERIES, BRIGHT CHROME FINISH.

8. USE MANUFACTURED, WHITE EPOXY FINISHED STEEL, INTEGRATED DRAWER BOX SIDES AND SLIDES. COORDINATE LENGTH, HEIGHT, AND DEPTH WITH INDIVIDUAL CABINET CONFIGURATIONS.

   APPROVED PRODUCT: GRASS, ZARGEN SERIES.
   APPROVED PRODUCT: BLUM, METABOX SERIES.

9. WIRE DOOR/DRAWER PULLS: BACK-MOUNTED, NOMINAL 5" LONG X 1" DEEP, SOLID FORMED METAL PULLS WITH SATIN CHROMIUM PLATING, FINISH US26D.

   APPROVED PRODUCT: BELWITH, METROPOLIS PA0221-PN.

10. INSTALL ALL CASEWORK IN ACCORDANCE WITH AWI AWS (ARCHITECTURAL WOODWORK STANDARDS).
11. PROVIDE GROMMETS IN WORK SURFACES AS REQUESTED BY THE OWNER.

THERMAL & MOISTURE PROTECTION NOTES

1. DO NOT USE ANY INTERIOR THERMAL AND MOISTURE PROTECTION MATERIALS (INCLUDING SEALANTS AND ADHESIVES) CONTAINING AROMATIC SOLVENTS, FIBROUS TALC, FORMALDEHYDE, HALOGENATED SOLVENTS, MERCURY, LEAD, CADMIUM, CHROMIUM, ASBESTOS, OR OTHER HAZARDOUS SUBSTANCES.
2. ROOFING STANDARD: NRCA "ROOFING AND WATERPROOFING MANUAL"
3. WATERPROOF BARRIER MEMBRANE: RUBBERIZED ASPHALT AND POLYETHYLENE SELF-ADHERING SHEET MEMBRANE CONFORMING TO ASTM D1970, COLD-APPLIED MEMBRANE COMPOSED OF A HIGH DENSITY, CROSS LAMINATED POLYETHYLENE FILM COATED ON ONE SIDE WITH A LAYER OF RUBBERIZED ASPHALT ADHESIVE.
   - 3.1. MINIMUM THICKNESS: 40 MILS (TESTED PER ASTM D3767, METHOD A).
4. SHEET METAL ROOFING, FLASHING, AND ROOFING ACCESSORY STANDARD: SMACNA "ARCHITECTURAL SHEET METAL MANUAL."
5. STANDING SEAM METAL ROOFING (FOR SLOPED ROOFING APPLICATIONS): FIRESTONE UNA-CLAD UC-3 (FACTORY FORMED DOUBLE-LOCK ARCHITECTURAL STANDING SEAM METAL ROOF PANELS), OR APPROVED EQUAL.
   - 5.1. PANEL MATERIAL: MINIMUM 24 GAGE (0.64 MM) GALVALUME STEEL
   - 5.2. PANEL WIDTH: 16 INCHES
   - 5.3. SEAM HEIGHT: 1-1/2 INCHES
   - 5.4. PANEL FINISH: KYNAR 500 / HYLAR 5000 (COLOR MATCHING EXISTING FASCIA)
6. WATERPROOFING: MATERIALS MEETING ASTM C836.
7. DAMPPROOFING: MATERIALS MEETING ASTM D4479.
8. BUILDING PAPER: MATERIALS MEETING ASTM D226.
9. BUILDING WRAP: MATERIALS MEETING ASTM E1677.
10. MEPS & XEPS RIGID INSULATION: MATERIALS MEETING ASTM C578, TYPE IV.
11. POLYISOCYANURATE RIGID INSULATION: ASTM C1289, FOIL-FACED.
12. UNFACED BATT INSULATION: MATERIALS MEETING ASTM C665, TYPE-I.
13. ACOUSTICAL BATT INSULATION: MATERIALS MEETING ASTM C665, TYPE-I, MINERAL FIBER MANUFACTURED FROM SLAG.
14. LOOSE-FILL CELLULOSE INSULATION: MATERIALS MEETING ASTM C739.
15. SPRAY-APPLIED CELLULOSE INSULATION: MATERIALS MEETING ASTM C1149.
16. SPRAY-APPLIED, SEMI-FLEXIBLE CELLULAR PLASTIC FOAM INSULATION: SELF-SUPPORTING, HYDROPHOBIC, MEDIUM-DENSITY, AIR-AND-MOISTURE-IMPERMEABLE, CLOSED-CELL POLYURETHANE FOAM INSULATION FOR USE IN FRAMED WALL AND CEILING CAVITIES.
17. UNDER-CONCRETE-SLAB VAPOR BARRIER MINIMUM 10 MIL THICK POLYETHYLENE SHEETING.
18. FLASH AND SEAL ALL PENETRATIONS IN EXTERIOR WALLS AND ROOFS TO PREVENT WATER AND AIR INTRUSION INTO THE BUILDING.
19. INTERIOR LATEX JOINT SEALANT: ASTM C834, TYPE P, GRADE NF, LOW-VOC.

    APPROVED PRODUCT: PECORA CORP., "AC-20 +SILICONE."

20. INTERIOR ACOUSTICAL JOINT SEALANT: NON-SAG, PAINTABLE, NON-STAINING, LOW-VOC LATEX SEALANT PER ASTM C834, TESTED PER ASTM E90.

    APPROVED PRODUCT: PECORA CORP., "AC-20 FTR."

21. INTERIOR JOINT SEALER FOR PLUMBING FIXTURES, CERAMIC TILE, COUNTERTOPS, AND ADJOINING MATERIALS: SINGLE-COMPONENT, NEUTRAL-CURING, MILDEW-RESISTANT SILICONE SEALANT, PER ASTM C920, TYPE S, GRADE NS, CLASS 25, LOW-VOC.

    APPROVED PRODUCT: PECORA CORP., "898."

22. SEAL ALL JOINTS IN EXTERIOR SHEATHING ON INSULATED WALLS, USING SONNEBORN NP1 POLYURETHANE SEALANT OR EQUAL. SIMILARLY, SEAL ALL PENETRATIONS IN EXTERIOR ENVELOPE SUCH AS THOSE MADE FOR PASSAGE OF PIPING OR CONDUIT.
23. SEAL ALL EDGES OF BUILDING WRAP AIR INFILTRATION BARRIER WITH SEALING TAPE APPROVED BY THE BUILDING WRAP MANUFACTURER.
24. SEAL ALL EDGES OF RIGID INSULATION BOARDS WITH SEALING TAPE AND/OR SPRAY-APPLIED FOAM ADHESIVE/SEALANT APPROVED BY THE BUILDING RIGID INSULATION BOARD MANUFACTURER.
25. PROVIDE COMPLETE INSULATION OF EXTERIOR ENVELOPE AND ATTIC SPACES, WHETHER SPECIFICALLY INDICATED IN DRAWINGS OR NOT. PROVIDE ALL INSULATION ACCESSORIES, ADHESIVES, SEALANTS, FASTENERS, ETC., REQUIRED FOR A COMPLETE INSTALLATION.
26. SEAL AND INSULATE ALL OPENINGS AND PENETRATIONS BETWEEN CONDITIONED SPACES AND NON-CONDITIONED SPACES TO PREVENT THERMAL TRANSFER AND THE MOVEMENT OF AIR BETWEEN THEM.
27. SEAL AIR-TIGHT ALL JOINTS, PERIMETERS, AND IN FLOOR, WALL, CEILING, AND ROOF ASSEMBLIES (INCLUDING BOTH INTERIOR AND EXTERIOR ASSEMBLIES) WHERE SUCH ASSEMBLIES ARE EITHER THERMALLY INSULATED OR ACOUSTICALLY INSULATED.
28. MAXIMUM ALLOWABLE AIR INFILTRATION THROUGH INSULATED EXTERIOR ENVELOPE ASSEMBLIES: 0.02 L/SEC*M^2, PER ASHRAE 90.1-2007.

FINISHES NOTES

1. DO NOT USE ANY INTERIOR FINISH MATERIALS (INCLUDING SEALANTS AND ADHESIVES) CONTAINING AROMATIC SOLVENTS, FIBROUS TALC, FORMALDEHYDE, HALOGENATED SOLVENTS, MERCURY, LEAD, CADMIUM, CHROMIUM, ASBESTOS, OR OTHER HAZARDOUS SUBSTANCES.
2. STANDARD AND FIRE RATED GYPSUM BOARD: MATERIALS MEETING ASTM C1396, INSTALLATION PER ASTM C840 AND GA 216.
3. GYPSUM BOARD FINISHING IN EXPOSED AREAS: LEVEL 4 PER GA 214.
4. EXCEPT WHERE OTHERWISE INDICATED, PROVIDE GYPSUM BOARD WALLS CONTINUOUS FROM THE TOP OF THE FLOOR BELOW TO THE UNDER SIDE OF THE GYPSUM BOARD LID ABOVE.
5. PROVIDE ALL FIRE BLOCKING AND DRAFT STOPPING REQUIRED BY THE BUILDING CODE.
6. PREPARE SUBSTRATES TO RECEIVE RESILIENT INSTALLATION, INCLUDING REMOVAL OF DELETERIOUS EXISTING MATERIALS, CLEANING, AND APPLICATION OF CEMENTITIOUS (NOT GYPSUM-BASED) LEVELING AND PATCHING COMPOUNDS.
7. VINYL COVE BASE: 4" TALL BY 1/8" GAGE HOMOGENEOUS VINYL COVE BASE PER ASTM F1861, STYLE "B."

   USE LOW-VOC ADHESIVE AS RECOMMENDED BY THE BASE MANUFACTURER.

8. CARPET: MINIMUM 20 OUNCE, BROADLOOM COMMERCIAL CARPET.
9. CARPET WARRANTY PERIOD: LIFETIME OF CARPET.
10. CARPET INSTALLATION: FOLLOW CRI 104, "STANDARD FOR INSTALLATION OF COMMERCIAL CARPET" AND THE CARPET MANUFACTURER'S INSTRUCTIONS.
11. PREPARE SUBSTRATES TO RECEIVE CARPET INSTALLATION, INCLUDING REMOVAL OF DELETERIOUS EXISTING MATERIALS, CLEANING, AND APPLICATION OF CEMENTITIOUS (NOT GYPSUM-BASED) LEVELING AND PATCHING COMPOUNDS.
12. SUSPENDED ACOUSTICAL CEILING MATERIALS MEETING CLASS-A, PER ASTM E84.
13. SUSPENDED ACOUSTICAL PANEL CEILING PANEL MATERIALS: ASTM E1264, TYPE III, FORM-1, PATTERN C-E.

    TILE EDGE: REVEAL/TEGULAR
    MINIMUM NOISE REDUCTION COEFFICIENT (NRC): 0.75
    MINIMUM ARTICULATION CLASS (AC): 180
    MINIMUM CEILING ATTENUATION CLASS (CAC): 35
    MINIMUM LIGHT REFLECTANCE: 0.86
    MINIMUM PANEL THICKNESS: 7/8"

14. SUSPENDED ACOUSTICAL CEILING PANEL WARRANTY PERIOD: 10/15 YEARS MINIMUM.
15. SUSPENDED ACOUSTICAL CEILING GRID MATERIALS: ASTM C635.

    GRID TYPE: "INTERMEDIATE DUTY"
    FLANGE WIDTH: 15/16"

    STEEL SUPPORT CHANNELS AND HANGERS AS REQUIRED TO SUIT APPLICATION AND CEILING SYSTEM FLATNESS REQUIREMENTS SPECIFIED

    PROVIDE SUSPENSION MATERIALS, ANCHORS, CLIPS, PERIMETER MOLDINGS, TRIMS, AND ALL ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.

16. SUSPENDED ACOUSTICAL CEILING GRID WARRANTY PERIOD: 10 YEARS MINIMUM.
17. HANGER WIRE: MINIMUM 12 GAGE GALVANIZED CARBON STEEL PER ASTM A641, SOFT TEMPER, CLASS-1, WITH MINIMUM YIELD STRESS OF 3 TIMES DESIGN LOAD.
18. SUSPENDED ACOUSTICAL CEILINGS INSTALLATION: CISCA "CEILING SYSTEMS INSTALLATION HANDBOOK" AND THE CEILING TILE/GRID MANUFACTURERS INSTRUCTIONS.

    MAXIMUM DEFLECTION: 1/360 OF SPAN.
    MAXIMUM VARIATION FROM FLAT AND LEVEL: 1/8 INCH IN 10 FEET.

19. EXTRA MATERIALS: UPON COMPLETION OF INSTALLATION, PROVIDE THE OWNER WITH ONE BUNDLE OF EACH TYPE OF ACOUSTICAL CEILING PANEL INSTALLED AS EXTRA STOCK FOR FUTURE USE IN CEILING REPAIR AND MAINTENANCE.
20. PAINT MATERIALS: USE ONLY LOW VOC PAINTS COMPLYING WITH GREEN SEAL GS-11 "PAINTS."
21. PREPARE SURFACES TO RECEIVE PAINTS, INCLUDING SCRAPING, FILLING, SANDING, CLEANING, AND APPLICATION OF PRIMERS.
22. APPLY PAINTS IN STRICT ACCORDANCE WITH THE PAINT MANUFACTURERS INSTRUCTIONS, INCLUDING ADHERENCE TO RECOMMENDED ENVIRONMENTAL CONDITIONS FOR APPLICATION OF PAINTS AND PROTECTION OF FINISHED WORK.
23. APPLY PAINTS IN MULTIPLE COATS, AS RECOMMENDED BY THE PAINT MANUFACTURER AND AS REQUIRED FOR COMPLETE AND THOROUGH COVERAGE OF SURFACES WITH NO BLEED-THROUGH OF UNDERLYING MATERIALS AND FINISHES.
24. ALL FINISH PRODUCTS, MATERIALS AND COLORS ARE TO BE SELECTED AND APPROVED BY THE OWNER.

DOOR HARDWARE SETS

Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. AD - Adams Rite
5. SA - Sargent
6. RF - Rixson
7. NO - Norton
8. OT – By Others

Hardware Schedule

Set: 1.0

Doors: 01

1 Continuous Hinge	CFM-SLF-HD1 PT		PE
1 Continuous Hinge	CFM-SLF-HD1		PE
2 Flush Bolt	555	US26D	RO
1 Mortise Deadlatch	4900	628	AD
1 Mort. Cylinder	41 x 13-0512	US26D	SA
2 Push Pull	RM251 Mtg-Type 12XHD Mtg-Type 11XHD	US32D	RO
2 Surface Closer	351 CPS	EN	SA
1 Electric Strike	7100	626	AD
1 Electric Power Transfer	CEPT-10	690	SU
1 Threshold	279x224AFGV MSES25SS		PE
1 Weatherseal	Integral to door and frame assembly		OT
2 Sweep	279x224AFGV MSES25SS		PE
1 Power Supply	By Security Contractor		OT
1 Card Reader	By Security Contractor		OT

Notes: During OPEN hours, doors are unlocked Electric strike is energized (unocked) and opening will function as manual push/pull. During CLOSED hours doors are locked. Entry at this time by Card Reader or key in cylinder.

Provide sign "DOORS TO REMAIN UNLOCKED DURING BUSINESS HOURS".

Set: 2.0

Doors: 02

2 Continuous Hinge	CFM-SLF-HD1		PE
2 Push Pull	RM251 Mtg-Type 12XHD Mtg-Type 11XHD	US32D	RO
2 Closer	351 CPS	EN	SA
1 Weatherseal	Integral to door and frame assembly		OT

Set: 3.0

Doors: 03

2 Continuous Hinge	CFM-SLF-HD1		PE
2 Flush Bolt	555	US26D	RO
1 Storeroom Lock	28-10G04 LL	US26D	SA
2 Surface Closer	351-O (RA)	689	SA
1 Threshold	279x224AFGV MSES25SS		PE
1 Perimeter Seal	S88D		PE
1 Meeting Edge Astragal	303AV (Set)		PE
2 Sweep	279x224AFGV MSES25SS		PE
1 Latch Protector	325	US32D	RO
2 Wall Stop	406	US32D	RO

Set: 4.0

Doors: 04

1 Continuous Hinge	CFM-HD1		PE
1 Storeroom Lock	28-10G04 LL	US26D	SA
1 Closer	351 CPS	689	SA
1 Kick Plate	K1050 10" high 4BE CSK	US32D	RO
1 Threshold	279x224AFGV MSES25SS		PE
1 Weatherstrip	2891APK TKSP8		PE
1 Sweep	279x224AFGV MSES25SS		PE
1 Latch Protector	325	US32D	RO

Set: 5.0

Doors: 05

[illegible] Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Flush Bolt	2905 (top only)	US26D	RO
1 Passage Set	28 7U15 LL	US26D	SA
1 Double Lever Pull	7U94 LL	US26D	SA
2 Wall Stop	400	US32D	RO
1 Perimeter Seal	S88D		PE
1 Astragal	S773C		PE

Set: 6.0

Doors: 06, 08, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Passage Set	28 7U15 LL	US26D	SA
1 Wall Stop	406	US26D	RO

Set: 7.0

Doors: 09, 10

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Mortise Privacy	V21 8265 LNL	US26D	SA
1 Closer	1431 O	EN	SA
1 Kick Plate	K1050 10" high 4BE CSK	US32D	RO
1 Wall Stop	406	US32D	RO
1 Perimeter Seal	S88D		PE

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ARCHITECTURE AT TECHNOLOGY

ARCHITECT:
ARCHITECTURE TECHNOLOGY, P.C.
1304 BUSINESS PARK DRIVE
TRAVERSE CITY, MI 49686
(231) 933-4489

OWNER:
JS PROPS OZ LLC
3075 LAKE MEADOWS CIRCLE
TRAVERSE CITY, MICHIGAN 49685

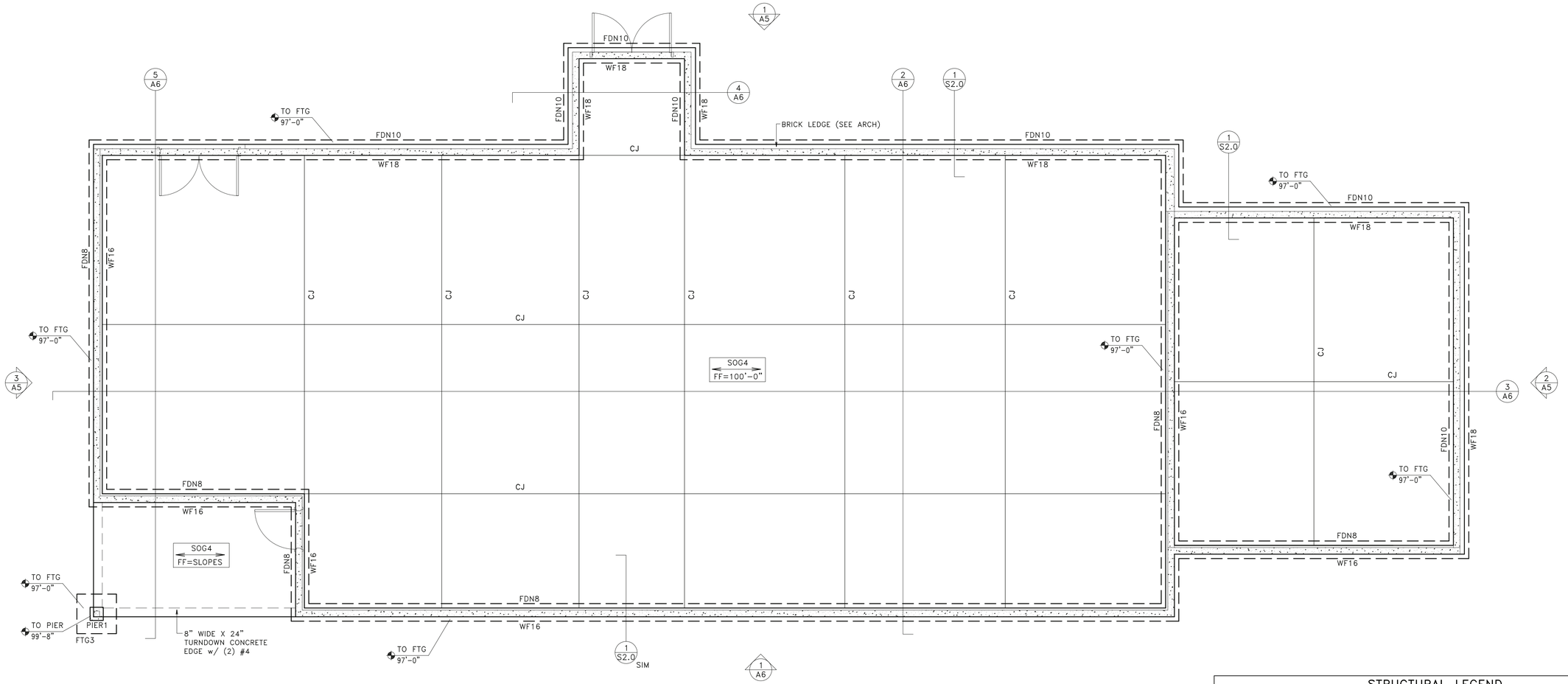
PROJECT:
OFFICE BUILDING
1419 INDUSTRY DRIVE
TRAVERSE CITY, MI 49696

SHEET CONTENTS:
CONSTRUCTION NOTES

NEALIS_PLAN

ISSUED: 01-29-21
REV: REV: REV: REV: REV:

A13



FOUNDATION PLAN

1/4" = 1'-0"

STRUCTURAL LEGEND			
MARK	SIZE/MATERIAL	SPACING	NOTES
WF16	10"X16" CONC FTG w/(2)-#5	N/A	
WF18	10"X18" CONC FTG w/(2)-#5	N/A	
FDN8	8" CONC FDN WALL w/#5@24" O.C. DOWELS HOOKED INTO FTG	N/A	(4)-#4 EQ SPACED HORIZ (12" MAX) – VERIFY BRICK LEDGE ON ARCH SECTIONS
FDN10	10" CONC FDN WALL w/#5@24" O.C. DOWELS HOOKED INTO FTG	N/A	(4)-#4 EQ SPACED HORIZ (12" MAX) – VERIFY BRICK LEDGE ON ARCH SECTIONS
FTG3	12"X3'X3' CONC FTG w/(4)-#5 EACH DIR	N/A	
PIER1	12"X12" CONC PIER w/(4)-#5 DOWEL w/#3@12" TIES		
SOG4	4" CONC SLAB ON GRADE ON 6" COMP SAND FILL	N/A	6X6-W2.9XW2.9 WWF TOP THIRD OF SLAB
T1	PRE-ENG TRUSSES w/ 5/8" SHEATHING & CLIPS	24"	TEMPORARY & PERMANENT TRUSS BRACING SHALL BE COORDINATED AND DESIGNED BY A LICENSED ENGINEER REGISTERED IN MICHIGAN
STUD1	2X6 STUD WALL (HF #1)	16"	½" EXT SHEATHING
STUD2	2X4 STUD WALL (HF #1)	16"	½" GYP BD BOTH SIDES
OUTR1	2X6 OUTRIGGER	24"	INSTALL w/ JOIST HANGER TO TRUSS & ON TOP OF SLOPING WALL
HDR1	(2) 2X12 HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR2	3½"X11⅞" LVL HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR3	5¼"X11⅞" LVL HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR4	5¼"X14" LVL HEADER (TRTD)		5¼" SQ PSL POST EACH END

FEET
0 10 20 30 40

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Traverse City, MI 49685
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DRAWING HISTORY

NO	DATE	DESCRIPTION
**	1/22/21	REVIEW SET
	1/29/21	FOR CONSTRUCTION

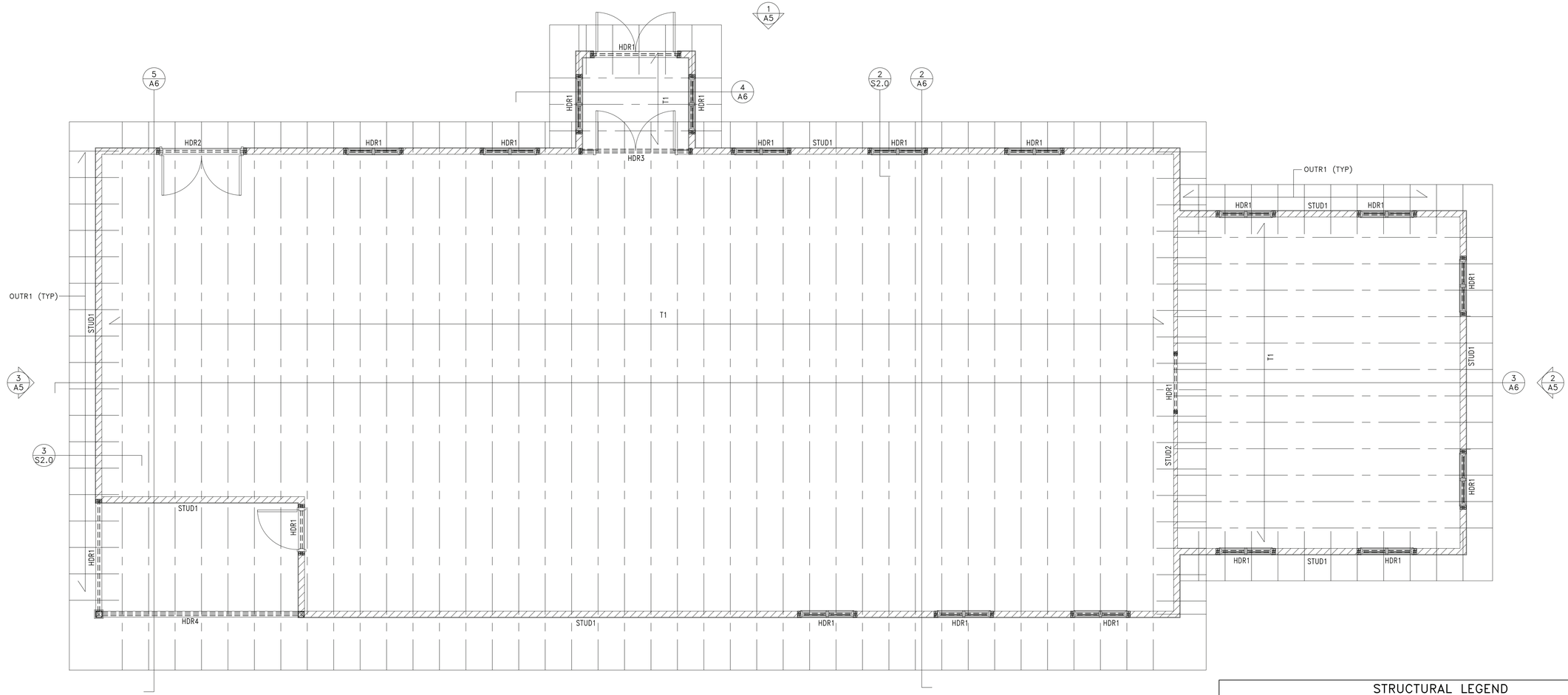
FOUNDATION PLAN

OFFICE BUILDING
HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

SHEET INFO
DESIGN: SJS
DRAWN: SJS
APPROVED: SJS
ORIG CREATED: 1/11/21

APEX NO.
20-556-111

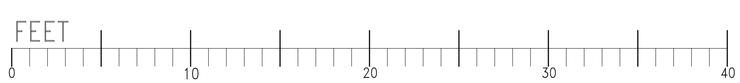
SHEET NO.
S1.0



ROOF FRAMING PLAN

1/4" = 1'-0"

STRUCTURAL LEGEND			
MARK	SIZE/MATERIAL	SPACING	NOTES
WF16	10"X16" CONC FTG w/(2)-#5	N/A	
WF18	10"X18" CONC FTG w/(2)-#5	N/A	
FDN8	8" CONC FDN WALL w/#5@24" O.C. DOWELS HOOKED INTO FTG	N/A	(4)-#4 EQ SPACED HORIZ (12" MAX) - VERIFY BRICK LEDGE ON ARCH SECTIONS
FDN10	10" CONC FDN WALL w/#5@24" O.C. DOWELS HOOKED INTO FTG	N/A	(4)-#4 EQ SPACED HORIZ (12" MAX) - VERIFY BRICK LEDGE ON ARCH SECTIONS
FTG3	12"X3'X3' CONC FTG w/(4)-#5 EACH DIR	N/A	
PIER1	12"X12" CONC PIER w/(4)-#5 DOWEL w/#3@12" TIES		
SOG4	4" CONC SLAB ON GRADE ON 6" COMP SAND FILL	N/A	6X6-W2.9XW2.9 WWF TOP THIRD OF SLAB
T1	PRE-ENG TRUSSES w/ 5/8" SHEATHING & CLIPS	24"	TEMPORARY & PERMANENT TRUSS BRACING SHALL BE COORDINATED AND DESIGNED BY A LICENSED ENGINEER REGISTERED IN MICHIGAN
STUD1	2X6 STUD WALL (HF #1)	16"	1/2" EXT SHEATHING
STUD2	2X4 STUD WALL (HF #1)	16"	1/2" GYP BD BOTH SIDES
OUTR1	2X6 OUTRIGGER	24"	INSTALL w/ JOIST HANGER TO TRUSS & ON TOP OF SLOPING WALL
HDR1	(2) 2X12 HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR2	3 1/2"X11 7/8" LVL HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR3	5 1/4"X11 7/8" LVL HEADER		(2) 2X6 (OR 4) BUILT-UP TRIMMER STUD EACH END
HDR4	5 1/4"X14" LVL HEADER (TRTD)		5 1/4" SQ PSL POST EACH END



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ROOF FRAMING PLAN

OFFICE BUILDING
HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

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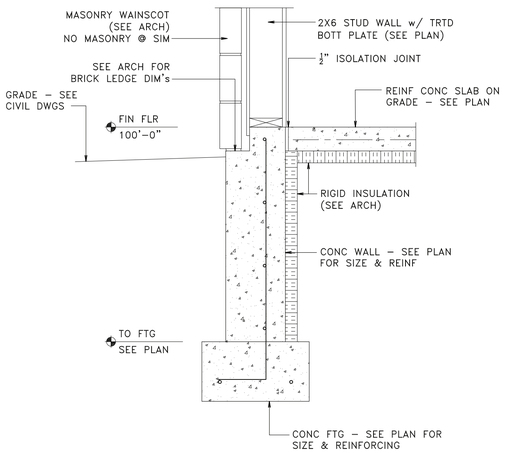
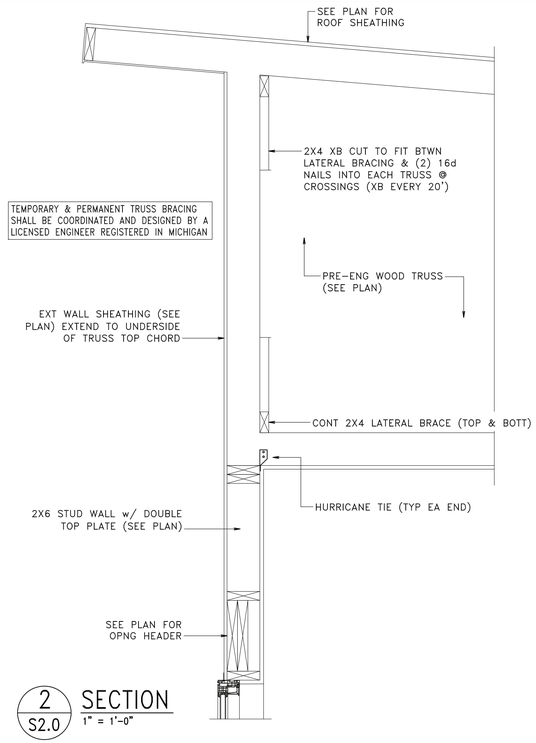
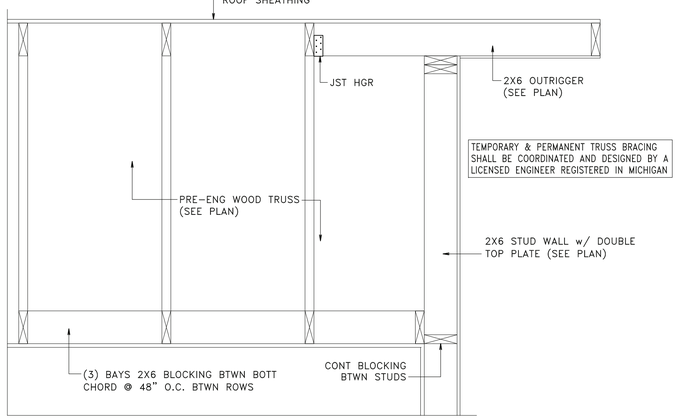


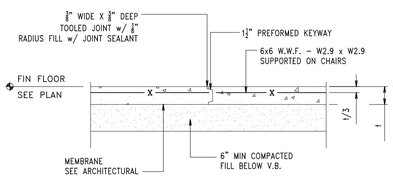
1 S2.0 SECTION
1" = 1'-0"



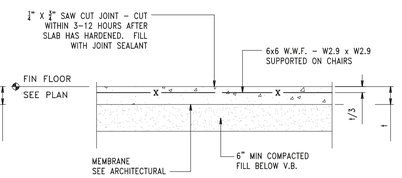
2 S2.0 SECTION
1" = 1'-0"



3 S2.0 SECTION
1" = 1'-0"



TYP CONSTRUCTION JOINT (CSJ)
NO SCALE



TYP CONTROL JOINT (CJ)
NO SCALE

NOTE:
CONTRACTOR TO DETERMINE THE NEED
OF CSJ'S. THEY SHALL REPLACE CJ
AS INDICATED ON THE PLAN.

ABBREVIATION LIST

@	AT	EX	EXISTING	PERP	PERPINDICULAR
ABV	ABOVE	EXP	EXPANSION	PC	PRE CAST
AFF	ABOVE FINISHED FLOOR	EXT	EXTERIOR	PL	PLATE
ALT	ALTERNATE	FD	FLOOR DRAIN	PLF	POUNDS PER LINEAL FT
ALUM	ALUMINUM	FIN FLR	FINISHED FLOOR	PSF	POUNDS PER SQUARE FT
ANCH	ANCHOR	FLD	FIELD	PT	PRESSURE TREATED
APPROX	APPROXIMATE	FLR	FLOOR	RAD	RADIUS
ARCH	ARCHITECT(URAL)	FND	FOUNDATION	RD	ROOF DECK
BM	BEAM	FTG	FOOTING	REF	REFERENCE
BOTT	BOTTOM	FV	FIELD VERIFY	REINF	REINFORCE(D)(MENT)
BOS	BOTTOM OF STEEL	GALV	GALVANIZED	REQD	REQUIRED
BLDG	BUILDING	GA	GAUGE	REQMT	REQUIREMENT(S)
BLKG	BLOCKING	GC	GENERAL CONTRACTOR	RO	ROUGH OPENING
BRG	BEARING	HD	HEADED	RTU	ROOF TOP UNIT
BTWN	BETWEEN	H&V	HORIZONTAL & VERTICAL	SHT	SHEET
BSMT	BASEMENT	HSS	HOLLOW STRUCTURAL SECTION	SIM	SIMILAR
CIP	CAST IN PLACE	HORIZ	HORIZONTAL	SOG	SLAB ON GRADE
CLG	CEILING	HP	HIGH POINT	SCHD	SCHEDULE
CLR	CLEAR	HT	HEIGHT	SP	SPACES
COL	COLUMN	HWS	HEADED WELDED STUD	SPEC	SPECIFICATION
CONN	CONNECTION	IF	INSIDE FACE	STD	STANDARD
CONC	CONCRETE	JST	JOIST	SS	STAINLESS STEEL
CONT	CONTINUOUS	JT	JOINT	THKD	THICKENED
CONST	CONSTRUCTION	K	KIP(1000 POUNDS)	THRD	THREADED
COORD	COORDINATE	LB	POUND	TRTD	TREATED
CJ	CONTROL JOINT	LG	LONG	TYP	TYPICAL
℄	CENTERLINE	LLH	LONG LEG HORIZONTAL	TOS	TOP OF STEEL
CMU	CONCRETE MASONRY UNIT	LLV	LONG LEG VERTICAL	T/W	TOP OF WALL
CTR	CENTER	LT GA	LIGHT GAUGE METAL	T/BM	TOP OF BEAM
DB	DIAGONAL BRACE	MIN	MINIMUM	T&B	TOP & BOTTOM
DIAG	DIAGONAL	MO	MASONRY OPENING	T&G	TONGUE & GROOVE
DIA	DIAMETER	MP	MASONRY PIER	UNO	UNLESS NOTED OTHERWISE
DIM	DIMENSION	MAX	MAXIMUM	UNREINF	UNREINFORCED
DIST	DISTRIBUTE(D)	NA	NEUTRAL AXIS	VERT	VERTICAL
DN	DOWN	NTS	NOT TO SCALE	VIF	VERIFY IN FIELD
DO	DITTO(SAME AS ADJACENT)	N	NORTH	VSC	VERTICAL SLIDE CLIP
DS	DOWNSPOUT	NOM	NOMINAL	WD	WOOD
DWG	DRAWING	N-S	NORTH-SOUTH	w/	WITH
EA	EACH	OC	ON CENTER	WF	WIDE FLANGE STEEL BEAM
EMBED	EMBEDMENT(ED)	O-O	OUT-TO-OUT	W8X18	WIDE FLANGE STEEL BEAM
EB	EXPANSION BOLT	OF	OUTSIDE FACE	WP	WORK POINT
ELEV	ELEVATION	OH	OVERHEAD	WWF	WELDED WIRE FABRIC
EJ	EXPANION JOINT	OPNG	OPENING	WHL	WHEEL
EQ	EQUAL	OPP	OPPOSITE	XB	CROSS BRACE
EQUIP	EQUIPMENT	OPP HD	OPPOSITE HAND		
E-W	EAST-WEST	PAR	PARALLEL		

STRUCTURAL GENERAL NOTES

1. SCALING OF THE DRAWINGS SHALL NOT BE ALLOWED. USE ONLY DIMENSIONS INDICATED ON THESE DRAWINGS OR ARCHITECTURAL DRAWINGS. IF DISCREPANCIES EXIST, CONTACT ARCHITECT OR ENGINEER.
2. CONSTRUCTION SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL CODE REQUIREMENTS.
3. BUILDING CODE – 2015 MICHIGAN BUILDING CODE

DESIGN LOADS:

DESIGN ROOF DEAD LOAD

ROOFING/DECKING/FRAMING	10 PSF
MECH/ELECT/CEILINGS @ BOTTOM CHORD	7 PSF
TOTAL	17 PSF

DESIGN LIVE LOADS

GROUND SNOW	60 PSF, Ce=1.0, I=1.0, Ct=1.1
ROOF SNOW	46 PSF (NOT INCL DRIFT OR UNBALANCED)
FLOORS (MAIN LEVEL)	200 PSF
WIND	
BASIC WIND SPEED	115 MPH
DIRECTIONALITY FACTOR	0.85
INTERNAL PRESSURE COEFFICIENT	+/-0.18
WIND EXPOSURE	"C"
SEISMIC DESIGN CATEGORY	"A"

SPECIAL INSPECTIONS

1. REFERENCE ARCHITECTURAL DRAWINGS.

SUBMITTALS

1. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED AND APPROVED PRIOR TO ORDERING MATERIAL. ENGINEER REVIEW IS LIMITED TO GENERAL CONFORMANCE WITH DESIGN DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONAL INFORMATION, QUANTITIES, DEVIATION FROM THE DESIGN DRAWINGS AND CONSTRUCTION MEANS AND METHODS.
2. SHOP DRAWINGS AND SUBMITTALS SHALL BE ORIGINAL DOCUMENTS AND NOT REPRODUCTIONS OF ARCHITECTURAL OR ENGINEERING DOCUMENTS.
3. SEE ARCHITECTURAL DRAWINGS & SPECIFICATIONS FOR SHOP DRAWINGS AND SUBMITTALS REQUIRED.

CONCRETE

1. THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING, FABRICATION AND CONSTRUCTION OF ALL REINFORCED CONCRETE:
   A. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)
   B. SPECIFICATION FOR STRUCTURAL CONCRETE (ACI 301)
   C. FIELD REFERENCE MANUAL (SP-15)
2. ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A 28 DAY COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:

COLUMNS, BEAMS & PIERS	4000 psi
WALLS, SLABS & TOPPING SLABS	4000 psi
FOOTINGS	3500 psi

   *ALL EXTERIOR EXPOSED CONCRETE SHALL BE AIR-ENTRAINED 4-8% BY VOLUME
3. ALL DEFORMED BARS SHALL BE ASTM A615 GRADE 60.
4. ALL WELDED WIRE FABRIC SHALL MEET ASTM A185, FLAT SHEETS ONLY WITH A MINIMUM END AND SIDE LAP OF 6". PULLING UP OF WWF WILL NOT BE ALLOWED. SUPPORT ON CHAIRS OR CONCRETE BLOCKS.
5. ALL ANCHOR BOLTS SHALL BE ASTM A307 OR ASTM A36, UNO.
6. SPLICES IN DEFORMED BARS SHALL BE CLASS B WITH APPLICABLE INCREASES FOR BAR SPACING, COVER, TOP BAR EFFECT ETC., PER ACI 318.
7. PROVIDE BENT CORNER BARS IN ALL WALLS AND FOOTINGS OF THE SAME SIZE AND NUMBER AS THE CONTINUOUS REINFORCEMENT. SEE TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS FOR WALLS.
8. CONTROL AND CONSTRUCTION JOINT LOCATIONS ARE SHOWN ON PLANS. CONTRACTOR MAY DEVIATE FROM SUGGESTED JOINT LOCATIONS ONLY WITH PRIOR APPROVAL FROM THE ENGINEER.
9. CONTROL JOINTS IN SLAB SHALL BE CUT 4 TO 12 HOURS AFTER SLAB HARDENS.
10. ALL JOINTS IN CONCRETE SLAB ARE TO BE FILLED WITH A SEMI-RIGID EPOXY JOINT FILLER SUCH AS MM-80 BY METZGER AND McGUIRE.
11. ALL EXPOSED CONCRETE EDGES ABOVE GRADE SHALL HAVE 3/4" x 3/4" CHAMFERED EDGES UNLESS NOTED OTHERWISE. ALL EXPOSED WALLS SHALL BE GIVEN A FINISH, PER ARCHITECTURAL.
12. BEFORE PLACING CONCRETE SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PIPE SLEEVES, EMBEDDED ITEMS, OPENINGS, EQUIPMENT PADS, ELECTRICAL CONDUITS, RECESSES, DRAINS, ETC. ALL OPENINGS FOR PIPE, CONDUITS, RECESSES, DRAINS, ETC. SHALL BE SLEEVED. MINIMUM SLEEVE SPACING SHALL BE 3 SLEEVE DIAMETERS. CORE DRILLING SHALL NOT BE PERFORMED WITHOUT CONSENT FROM THE ENGINEER.
13. ALL WALLS SHALL BE PROPERLY BRACED UNTIL BACKFILLING IS COMPLETE AND CONCRETE HAS REACHED ITS DESIGN STRENGTH UNLESS NOTED OTHERWISE. SEE PLANS FOR MORE DETAILS.
14. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM 3" CONCRETE.
15. PROVIDE DOWELS FROM FOOTINGS INTO WALLS OR PIERS AS INDICATED ON DETAILS. AT THE CONTRACTORS OPTION, LAP VERTICAL WALL/PIER REINFORCING PER MINIMUM REQUIREMENTS OR EXTEND DOWELS FULL HEIGHT OF WALL/PIER.
16. WATER MAY NOT BE ADDED TO CONCRETE MIX ON SITE UNLESS WATER IS WITHHELD AT BATCH PLANT. IF WATER IS WITHHELD AT THE BATCH PLANT, IT SHALL BE REFLECTED ON THE LOAD TICKET. THE TOTAL AMOUNT OF WATER IN THE MIX SHALL NOT EXCEED THE APPROVED MIX DESIGN.
17. USE NON-SHRINK, NON-METALLIC GROUT UNDER ALL BASE PLATES, BEARING PLATES AND SETTING PLATES.

FOUNDATION/BACKFILL

1. COLUMN FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 2500 PSF. ALL WALL FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING CAPACITY OF 2500 PSF. FOOTINGS SHALL BEAR ON NATURAL, UNDISTURBED SOIL OR COMPACTED FILL PROPERLY PLACE UPON THESE NATURAL SOILS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THE ALLOWABLE SOI PRESSURE IS ATTAINED. IF THE ALLOWABLE SOIL PRESSURE CANNOT BE ATTAINED FOR ANY REASON, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE ARCHITECT/ENGINEER.
2. WHERE ENGINEERED BACKFILL IS REQUIRED, IT SHALL BE A CLEAN, UNIFORMLY GRADED, GRANULAR MATERIAL, FREE OF FROZEN CHUNKS, ORGANICS, DEBRIS, OR OTHER DELETERIOUS MATERIAL. ALL BACKFILL SHALL BE PLACED IN 8"-12" LOOSE LIFTS AND COMPACTED TO A DRY DENSITY OF 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). THIS MAY BE DECREASED TO 90% IN THOSE AREAS TO BE LANDSCAPED AND NOT SUPPORTING STRUCTURE OR PAVEMENT.
3. CONTRACTOR SHALL BE AWARE OF AND VERIFY THE LOCATION OF ANY AND ALL UNDERGROUND UTILITIES, TANKS, EXISTING FOOTINGS, ETC. DUE CARE SHALL BE EXERCISED DURING EXCAVATION SUCH THAT EXISTING ITEMS ARE NOT DAMAGED.
4. WHERE FOUNDATION AND RETAINING WALLS REQUIRE FILL PLACED ON EACH SIDE, THE FILL SHALL BE PLACED AND COMPACTED SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
5. WALLS THAT RETAIN EARTH SHALL BE TEMPORARILY BRACED AGAINST BACKFILLING PRESSURES UNTIL PERMANENT FLOOR TIE-INS ARE CONSTRUCTED AND WALLS HAVE REACHED THEIR DESIGN CAPACITIES.
6. FOUNDATION CONTRACTOR SHALL VERIFY LOCATION OF ALL MECHANICAL LINES PRIOR TO CASTING FOUNDATIONS AND PROVIDE SLEEVES, LOWER FOUNDATIONS OR CAST PROTECTION AROUND LINES AS REQUIRED.
7. BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 42 INCHES BELOW FINAL GRADE, UNLESS NOTED OTHERWISE.

TIMBER

1. THE FOLLOWING CODES GOVERN THE DESIGN, DETAILING AND CONSTRUCTION OF ALL TIMBER.
   A. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND SUPPLEMENTS (NDS-LATEST EDITION)
   B. TIMBER CONSTRUCTION MANUAL, LATEST EDITION.
2. COMPLY WITH THE RECOMMENDATIONS AND PRACTICES OF THE FOLLOWING ORGANIZATIONS FOR THE INSTALLATION OF ALL WOOD FRAMING:
   A. AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
   B. AMERICAN WOOD COUNCIL (AWC)
   C. TRUSS PLATE INSTITUTE (TPI)
   D. ENGINEERED WOOD ASSOCIATION (APA)
   E. AMERICAN WOOD-PRESERVERS ASSOCIATION (AWPA)
   F. AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)
   G. COMPOSITE PANEL ASSOCIATION (CPA)
   H. WOOD TRUSS COUNCIL OF AMERICA (WTCA)
   I. WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)
   J. ENGINEERED WOOD PRODUCTS ASSOCIATION (EWPA)
3. DIMENSIONAL FRAMING MATERIAL SHALL BEAR THE GRADE MARK OF AN ALSC APPROVED AGENCY AND SHALL HAVE MET THE FOLLOWING MINIMUM REQUIREMENTS:

SPECIES AND GRADE	ALLOWABLE STRESSES
HEM-FIR NO.2 OR BTR	E 1,300,000 PSI
SPF NO. 2 OR BTR	Fb 850 PSI
SOUTHERN PINE NO. 2 OR BTR	Fc 1100 PSI
	Fc(p)405 PSI
	Fv 70 PSI
	Ft 500 PSI

4. ALL NAILS FOR FASTENING STRUCTURAL LUMBER SHALL BE COMMON NAILS. ALL NAILING SHALL BE PEI SPECIFIED CODE.
5. ALL FRAMING SHALL BE ERECTED TRUE LEVEL AND/OR PLUMB. MEMBERS SHALL BE SECURELY NAILED OR BOLTED IN PLACE TO ENSURE RIGIDITY. ALL FRAMING MEMBERS SHALL BE OF FULL LENGTH WITHOUT PIECES ADDED OR SPLICING. FURRING, BLOCKING, NAILERS, ETC., SHALL BE SECURELY ANCHORED IN PLACE.
6. WHERE NOTED ON DETAILS, CONTRACTOR SHALL PROVIDE CONNECTORS FOR WOOD CONSTRUCTION AS MANUFACTURED BY "SIMPSON – STRONG TIE CONNECTORS", OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY TYPE INDICATED ON DRAWINGS, ANY SUBSTITUTION SHALL BE APPROVED BY THE ENGINEER. WHERE A TYPE IS NOT INDICATED, OR TO BE PROVIDED BY THE TRUSS MANUFACTURER, THE CONTRACTOR SHALL SUBMIT A PROPOSED CONNECTOR FOR APPROVAL.
7. PSL/LVL/LSL ON PLAN INDICATES THE LOCATION OF ENGINEERED LUMBER AS MANUFACTURED BY "TRUSS JOIST MACMILLAN", OR AN APPROVED EQUIVALENT. MEMBER SHALL MEET THE FOLLOWING ALLOWABLE STRESS VALUES REGARDLESS OF MANUFACTURER:

ITEM	PSL	LVL	LSL
E	2,000,000 PSI	1,900,000 PSI	1,700,000 PSI
G	125,000 PSI	118,750 PSI	106,250 PSI
Fb	2900 PSI	2600 PSI	2600 PSI
Fc(perp)	750 PSI	750 PSI	880 PSI
Fc(par)	2900 PSI	2510 PSI	2380 PSI
Fv	290 PSI	285 PSI	400 PSI

8. WHERE 2 OR MORE UNITS OF STANDARD LUMBER ARE TO BE USED AS A HEADER, EACH PLY SHALL BE NAILED TOGETHER WITH 2 ROWS OF 16d NAILS, 12" O.C. U.N.O. WHERE 2 OR MORE UNITS OF STANDARD LUMBER ARE TO BE USED AS A BUILT UP COLUMN, EACH PLY SHALL BE NAILED OR BOLTED TOGETHER PER THE PROVISIONS IN NDS-LATEST, "BUILT UP COLUMNS".
9. PROVIDE JOIST HANGERS FOR ALL BEAMS AND JOISTS THAT FRAME INTO THE SIDE OF GIRDERS. CONTRACTOR SHALL PROPOSE HANGER MANUFACTURER AND MODEL TO ENGINEER FOR APPROVAL.
10. ALL WOOD PROVIDED SHALL BE SEASONED WITH A MAXIMUM MOISTURE CONTENT OF 19% AT THE TIME OF DRESSING.
11. ROOF, FLOOR, AND WALL SHEATHING SHALL BE PLACED ON JOISTS OR STUDS WITH FACE GRAIN PERPENDICULAR TO JOISTS AND STUDS AND HAVE END JOINTS STAGGERED. FASTEN SHEATHING TO SUPPORTS WITH 8d NAILS 6" O.C. AT PANEL EDGES, AND 12" O.C. AT INTERIOR SUPPORTS. SHEATHING SHALL BE PLYWOOD OR ORIENTED STRAND BOARD (OSB) AND SHALL BE RATED AS INDICATED ON THE PLANS AND DETAILS.
12. ALL WOOD EXPOSED OR IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED WITH ALKALINE COPPER QUATERNARY (ACQ) AND HAVE A MINIMUM PRESERVATIVE RETENTION LEVEL OF 0.25LB/CF NOT IN CONTACT WITH GROUND. WOOD IN CONTACT WITH SOIL SHALL HAVE A RETENTION LEVEL OF 0.6LB/CF. SUCH WOOD SHALL BE TREATED IN ACCORDANCE WITH AWPA. ALL FASTENERS USED FOR TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL.

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DRAWING HISTORY

NO	DATE	DESCRIPTION
**	1/22/21	REVIEW SET
	1/29/21	FOR CONSTRUCTION

GENERAL NOTES
DETAILS

OFFICE BUILDING
HAMMOND INDUSTRIAL CENTRE
GARFIELD TOWNSHIP, MI

SHEET INFO
DESIGN: SJS
DRAWN: SJS
APPROVED: SJS
ORIG CREATED: 1/11/21

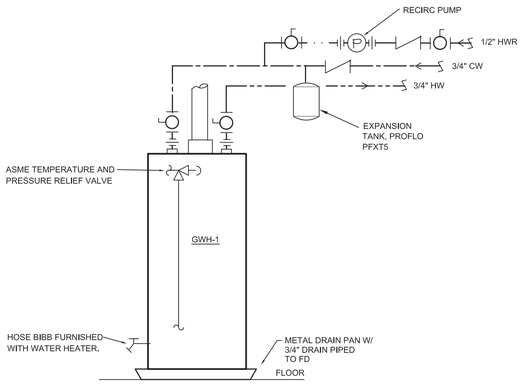
APEX NO.
20-566-111

SHEET NO.
S2.0

PLUMBING FIXTURE SCHEDULE

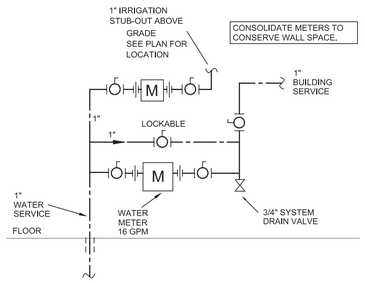
TAG	DESCRIPTION	MANUFACTURER	MODEL	ROUGH-IN SIZE (INCHES)				TRIM	REMARKS
				CW	HW	WASTE	VENT		
WC-1	FL MTD, ELONGATED W.C. TANK 1.6 GPf, ADA	AMERICAN STANDARD	2018.214	1/2"	-	3"	2"	SEAT: BEMIS #2155SSCT, SELF-SUSTAINING	CHROME STOP 1/4 TURN, SUPPLY
L-1	WALL HUNG LAV, LUCERNE, ADA	AMERICAN STANDARD	355.012	1/2"	1/2"	1-1/2"	1-1/2"	FAUCET: AMERICAN STANDARD 2175.506, BRUSHED NICKEL, SINGLE LEVER FAUCET W/ FIXED STRAINER ; ①	CHROME STOP 1/4 TURN, SUPPLY; ESCUTCHEON, INSUL SUPPLIES & TRAP PER ADA, CARRIER ZURN Z1231D
S-1	2-COMP SINK, SINGLE HOLE	ELKAY	ECTSR33229TBG	1/2"	1/2'	2"	-	FAUCET: DELTA 19810-SS-DST, STAINLESS STEEL, SINGLE LEVER W/ FIXED STRAINER ; ④	CHROME STOP 1/4 TURN, SUPPLY
SH-1	36" x 36" GELCOAT SHOWER COMPARTMENT, FLOOR FLANGE ON LOWER THRESHOLD; ADA	OASIS	SHFW-3837	1/2"		2"	-	DELTA MULTICHOICE UNIVERSAL ROUGH VALVE BODY - R10000	③ ; SHALL INCLUDE HORIZ. INTERIOR CORNER BAR ACROSS CONTROL WALL AND CONT. ALONG BACK WALL, SINGLE VERT. BAR AT ENTRY. FOLDING SEAT, SHOWER CURTAIN ROD
GWH-1	40 GAL. GAS WATER HEATER 40 MBH	LOCHIVNAR	GSN040	3/4"	3/4"	-	3"	120 V., 1-PH, 41 GPH @ 90°F RISE, T&P RELIEF VALVE	PROVIDE CONCENTRIC VENT, CONDENSATE NEUTRALIZATION KIT, INCLUDE IN BASE-BID; ELIMINATE IN ALT. #M2
WH-1	30 GAL. INDIRECT SQUIRE	LOCHIVNAR	SIT-030	1"	1"	-	-	-	ALT. #M2 - H50SWHPWM 24x24 WALL MOUNT STAND
RP-1	RECIRC. PUMP W/ FLANGE CONNECTION	BELL & GOSSETT	NBF-8S/LW	1/2"	1/2"	-	-	BRONZE CONSTRUCTION	115 V, 60 Hz, 1-PH, 39 WATTS ; PROVIDE AQUASTAT W/ TIMER
FD-1	3" FLOOR DRAIN	ZURN	Z5083NH	-	-	3"	-	②	-
SS-1	SERVICE SINK	PROFLO	PFMB2424	3/4"	3/4"	3"	-	FAUCET: ZURN Z843M1RC W/ VACUUM BREAKER, W/ MOP BRACKET	-
EWC-1	ELECTRIC WATER COOLER, BI-LEVEL	MURDOCK	A172.8-UG-BF	1/2"	-	1-1/2"	1-1/2"	ELECTRONIC SENSOR NO TOUCH BOTTLE FILL, COLOR LIGHT GRAY W/ FILTER	CAPACITY: 8.0 GPH ELECTRICAL: 12/60/1, 4.4 FLA, 335 WATTS
HB-1	HOSE BIB	WOODFORD	19	3/4"	-	-	-	VACUUM BREAKER REMOVABLE TEE HANDLE	FURNISH TEE TO OWNER
VB-1	ICE MAKER VALVE BOX	GUY GRAY	W9700	1/2"	-	-	-	1/4" TURN BALL VALVES	INCLUDE BACKFLOW PREVENTER

① - PROVIDE MIXING VALVE TO MEET ADA REQUIREMENTS. EQUAL TO WATTS USG-B, MOUNT UNDER LAV.
② - FLOOR DRAIN TRAP SEALER WITH RUBBER DIAPHRAGM ASSE 1072 LISTED, EQUAL TO PRESSURE SEAL.
③ - SHOWERS TO HAVE PRESSURE BALANCED THERMOSTATIC MIXING VALVES.
④ - FOOD DISPOSER EQUAL TO IN-SINK-ERATOR BADGER 5, 1/2 HP, 115V-1 PH.



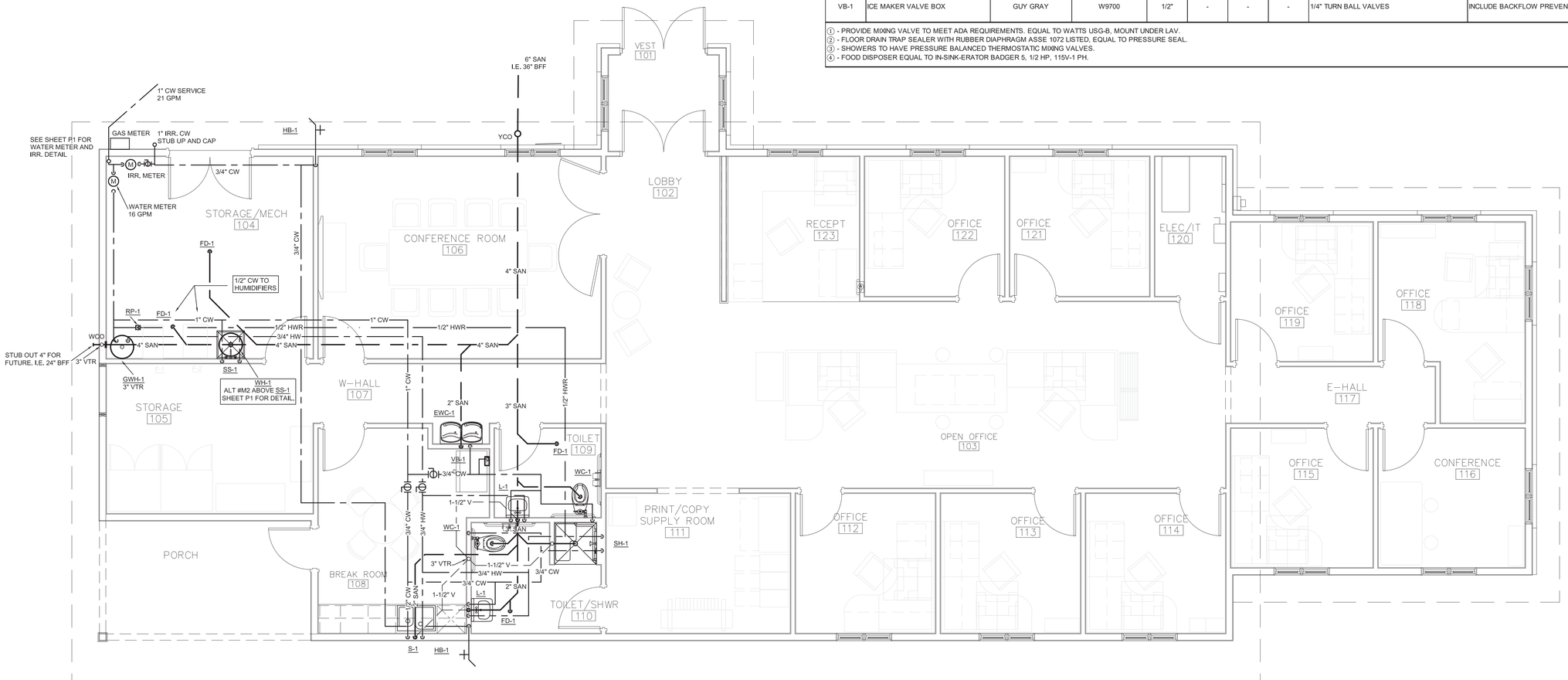
GAS WATER HEATER DETAIL

Scale: None



WATER METER DETAIL

Scale: None



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

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PROJECT TITLE:
NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

SHEET TITLE:
PLUMBING FLOOR PLAN
DETAILS & SCHEDULE

ENGR. PROJ.# 20078

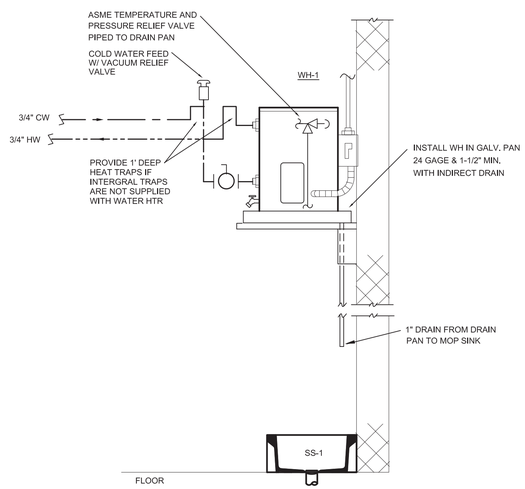
DRAWN BY: ET
CHECKED BY: GLN

DATE: 01.29.2021 Bidding & Construction

SHEET NUMBER
P1

PLUMBING SPECIFICATIONS

SECTION	
22 00 00 BASIC PLUMBING REQUIREMENTS	1. ALL WORK TO BE DONE AND MATERIALS FURNISHED COMPLYING WITH APPLICABLE LAWS AND REGULATIONS, INCLUDING THE STATE OF MICHIGAN MECHANICAL, PLUMBING AND FIRE SAFETY CODES. OBTAIN AND PAY FOR REQUIRED PERMITS AND FEES. 2. ALL MATERIALS USED SHALL BE NEW AND UNDAMAGED. 3. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION INDUSTRY STANDARDS AND WORKMANSHIP. 4. FURNISH SHOP DRAWINGS TO ARCH/ENGINEER FOR APPROVAL PRIOR TO PLACING DELIVERY ORDERS. PROVIDE SHOP DRAWINGS OF ALL MANUFACTURED EQUIPMENT AND MATERIALS EXCEPT PIPE, PIPE FITTINGS AND GALVANIZED DUCTWORK. 5. FURNISH ACCESS DOORS (RATED OR NON-RATED AS REQUIRED) WHERE VALVES OR EQUIPMENT ARE CONCEALED BEHIND A NON-ACCESSIBLE CEILING OR WALL. FURNISH ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION. 6. FURNISH STEEL PIPE SLEEVES WHERE PIPES PENETRATE RATED WALLS. PROVIDE FIRESTOPPING MATERIALS AND SYSTEM TO MAINTAIN THE REQUIRED RATING OF THE WALL PENETRATED. PROVIDE SHOP DRAWINGS SHOWING LISTING AND RATING OF FIRESTOPPING MATERIALS. 7. ALL MANUFACTURED EQUIPMENT, ACCESSORIES AND MATERIALS SHALL BE USED AS INTENDED BY THE MANUFACTURER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS. 8. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL OPENINGS AND REQUIRED LINTELS NEEDED FOR THE GENERAL CONTRACTOR, FOR THE INSTALLATION OF MECHANICAL EQUIPMENT. 9. SAWCUTS, LINTELS, HEADERS, AND STRUCTURAL MODIFICATIONS TO THE BUILDING STRUCTURE NEEDED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT SHALL BE APPROVED BY THE GENERAL CONTRACTOR, BEFORE INSTALLATION. 10. IN GENERAL, OPENINGS AND REQUIRED LINTELS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILS AND TEMPLATES OF ALL OPENINGS NECESSARY FOR MECHANICAL EQUIPMENT INSTALLATION INCLUDING: HOUSING, ACCESS DOORS, INSPECTION DOORS, AND PASSAGEWAYS FOR MECHANICAL EQUIPMENT. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SEALING CRACKS AND FINISHING ROUGH EDGES LEFT FOLLOWING MECHANICAL INSTALLATION. 11. APPROVAL EQUALS: PLUMBING ITEMS MANUFACTURED BY A COMPANY OTHER THAN THAT WHICH WAS SPECIFIED IN THE SCHEDULE MAY BE SUBSTITUTED BY APPROVED SHOP DRAWINGS CONTINGENT UPON MEETING THE DESIGN, APPEARANCE, AND FUNCTIONAL STANDARDS ESTABLISHED BY THE ORIGINALLY SPECIFIED ITEM(S). THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS, CLEARANCES, ASSEMBLY, FIT, ETC. OF THE APPROVED EQUAL (S), AND THEIR AFFECT ON OTHER EQUIPMENT FIT AND OPERATION. THE CONTRACTOR IS LIABLE FOR ANY ADDED COSTS TO HIMSELF OR OTHERS CAUSED BY THE APPROVED EQUALS.
22 07 19 PLUMBING INSULATION	1. INSULATE ABOVE FLOOR HOT & COLD WATER PIPING WITH ELECTROMETRIC PLASTIC PREFORMED PIPE INSULATION WITHOUT JACKETING. ALL INSULATING MATERIALS TO HAVE FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPMENT RATING OF 50 OR LESS AS TESTED BY ANSI/ASTM E 84 (NFPA 233) METHOD. INSULATE ALL PIPING 1/2" TO 1-1/4" WITH 1/2" INSULATION. INSULATE ALL PIPING 1-1/2" AND LARGER WITH 1" THICK INSULATION. JOINTS IN INSULATION SHALL BE GLUED, NOT TAPED. WHERE EXISTING INSULATED PIPES ARE CONNECTED TO, REPAIR EXISTING INSULATION WITH NEW INSULATION OF THE SAME THICKNESS AS EXISTING.
22 10 00 WATER DISTRIBUTION SYSTEM	1. ABOVE GRADE: WATER PIPING SHALL BE TYPE CROSS-LINKED POLYETHYLENE TUBING CSA B137.5, ASTM F876, ASTM F877, NSF-14 WITH BRASS CRIMP OR COMPRESSION FITTINGS, BRASS ELBOWS AND COPPER TYPE 'L' VALVED MAINFOLD. CSA B137.5, ASTM F1807. 2. BELOW GRADE: WATER PIPING SHALL BE TYPE CROSS-LINKED POLYETHYLENE TUBING ASTM F876, ASTM F877, NSF-14 WITH BRASS CRIMP OR COMPRESSION FITTINGS CSA B137.5, ASTM F1807. 3. THOROUGHLY FLUSH AND CLEAN ALL NEW AND EXISTING WATER PIPING SYSTEMS. TEST ALL PIPING SYSTEMS PER REGULATIONS IN ITEM NO.1 OR AT 225 PSI FOR A MINIMUM OF 2 HOURS WITH NO PRESSURE DROP INDICATED PRIOR TO INSULATING. 4. STERILIZE ALL DOMESTIC WATER PIPING PER REQUIREMENTS OF LOCAL HEALTH DEPARTMENT.
22 10 05 VALVES	1. BALL VALVES SHALL BE CLASS 125 FOR WATER AND 200 FOR C.A. WITH ENDS AND MATERIALS TO MATCH PIPING SYSTEMS. 2. BALL VALVES 2" AND SMALLER SHALL HAVE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE AND BALANCING STOPS, ENDS TO MATCH PIPING SYSTEM.
22 10 05 SUPPORTS & ANCHORS	1. FURNISH PIPE HANGERS, WHERE REQUIRED, FIRMLY SUPPORTED FROM BUILDING STEEL, WOOD OR MASONRY STRUCTURE. SUPPORT CROSS-LINKED POLYETHYLENE TUBING SYSTEMS SECURELY WHILE ALLOWING FOR PIPE AND BUILDING EXPANSION AND CONTRACTION. PROVIDE PLASTIC INSULATING AND SUSPENSION CLAMPS, MAXIMUM SPACING SHALL BE 32" FOR HORIZONTAL AND 4' FOR VERTICAL PIPING. FURNISH PLUMBING EQUIPMENT SUPPORTS AS DETAILED OR AS REQUIRED TO SAFELY AND PERMANENTLY CARRY THE WEIGHT.
22 10 00 DRAINAGE & VENT SYSTEMS	1. WITHIN BUILDING, SCHEDULE 40 PVC, DWV TYPE PIPE AND SOLVENT WELDED PIPE FITTINGS, SCHEDULE 30 PVC PIPE MAY BE USED FOR VENT PIPING WHERE PERMITTED BY CODE. HORIZONTAL PIPE SHALL BE SUPPORTED BY ADJUSTABLE RING HANGERS EQUAL TO ITT-GRINNEL FIG. 97. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR OR ATTIC LEVEL BY RISER CLAMPS EQUAL TO ITT-GRINNEL FIG. 261. 2. OUTSIDE OF BUILDING, PIPING MAY BE ONE OF THE FOLLOWING: PVC - MEETING ANSI/ASTM D3033, TYPE PSP OR D3034, TYPE PSM; ABS, MEETING ANSI/ASTM D2751. MANHOLES SHALL BE PRECAST MEETING ANSI/ASTM C478. MANHOLES SHALL BE C1 WITH "SANITARY" CAST INTO SOLID 20" DIAMETER LID. BOTTOM OF MANHOLES SHALL HAVE HAND FORMED CONCRETE FLOW CHANNELS. PIPE AND MANHOLES SHALL BE SET TO GRADES INDICATED AND SLOPES SHALL BE ACCURATELY CHECKED AND MAINTAINED. BACKFILL, COMPACT AND RE-SEED ALL TRENCHING. 3. WITHIN PLENUM SPACE, CAST IRON NO HUB SERVICE WEIGHT. JOINTS: NEOPRENE GASKETS AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES. HORIZONTAL PIPE SHALL BE SUPPORTED BY ADJUSTABLE RING HANGERS EQUAL TO ITT-GRINNEL FIG. 97. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR OR ATTIC LEVEL BY RISER CLAMPS EQUAL TO ITT-GRINNEL FIG. 261.
22 40 00 PLUMBING FIXTURES	1. PLUMBING FIXTURES SHALL BE INSTALLED WHERE SHOWN ON THE ARCHITECTURAL DRAWINGS. INSTALL FIXTURES LEVEL AND PLUMB. FURNISH TRAPS WHERE REQUIRED. FIXTURES SHALL BE EASILY REMOVABLE FOR SERVICE AND CLEANING. 2. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO FIXTURES WITH STOP VALVES, CHROME PLATED 17 GAUGE BRASS TRAPS WITH CHROME PLATED ESCUTCHEONS. 3. SEAL ALL FIXTURES TO WALL AND FLOOR USING SILICONE SEALANT. MATCH SEALANT COLOR TO FIXTURE COLOR. 4. FIXTURES DESIGNED BARRIER FREE SHALL BE INSTALLED IN COMPLIANCE WITH AMERICAN'S WITH DISABILITIES ACT.



ALT. #M2 WATER HEATER DETAIL

Scale: None

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NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

PROJECT TITLE:

SHEET TITLE:
PLUMBING SCHEDULES & DETAILS

ENGR. PROJ.#
20078

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DATE:
01.29.2021
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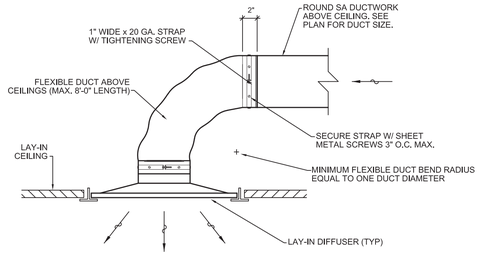
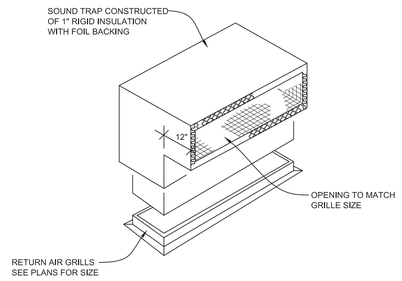


FLEXIBLE DUCT/DIFFUSER CONNECTION DETAIL

scale: none



SOUND TRAP DETAIL AT RG-1

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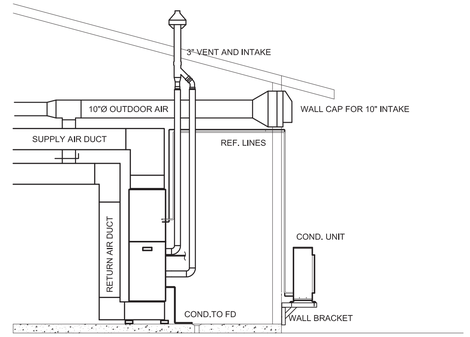

FURNACE DETAIL

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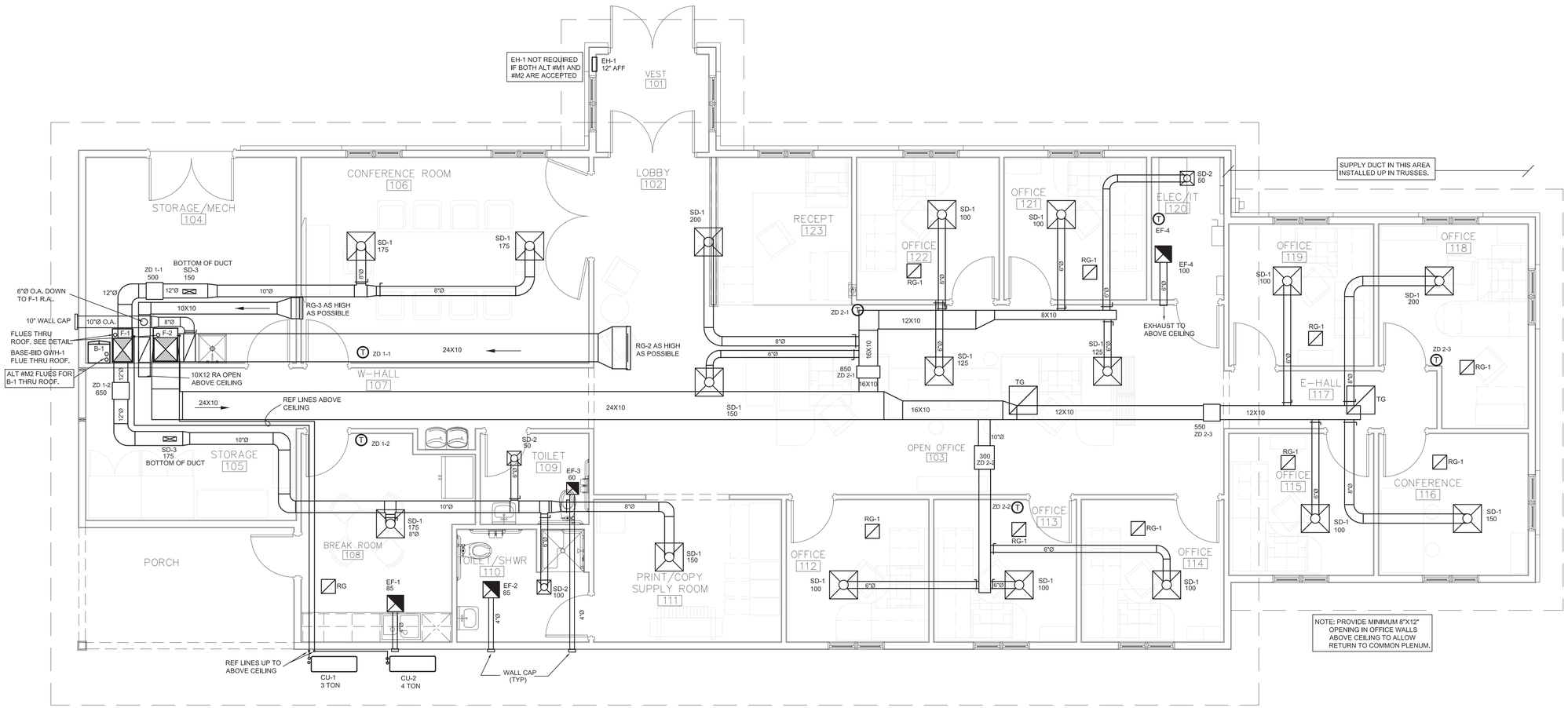

1 MECHANICAL FLOOR PLAN

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

N

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PROJECT TITLE:
NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

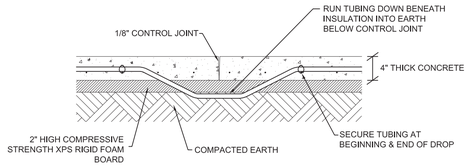
SHEET TITLE:
MECHANICAL FLOOR PLAN

ENGR. PROJ.# 20078

DRAWN BY: ET
CHECKED BY: GLN

DATE: 01.29.2021 Bidding & Construction

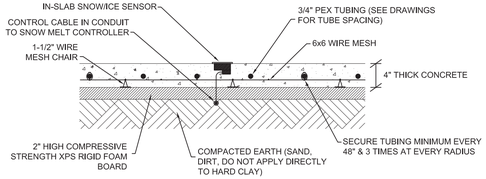
SHEET NUMBER
M1



NOTES:
1. SLEEVING OF TUBING THROUGH CONTROL JOINT IS ALSO ACCEPTABLE.
2. SURFACE TOP-CUT ONLY CONCRETE EXPANSION JOINTS DO NOT REQUIRE TUBING CONTROL JOINT AS SHOWN HERE.

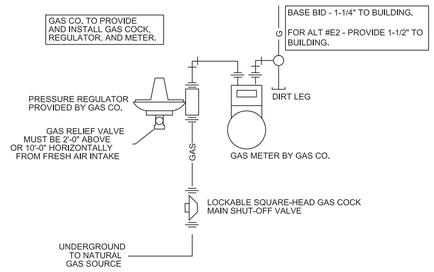
ALT. #M1 - SNOW MELT TUBING CONTROL JOINT DETAIL

NO SCALE



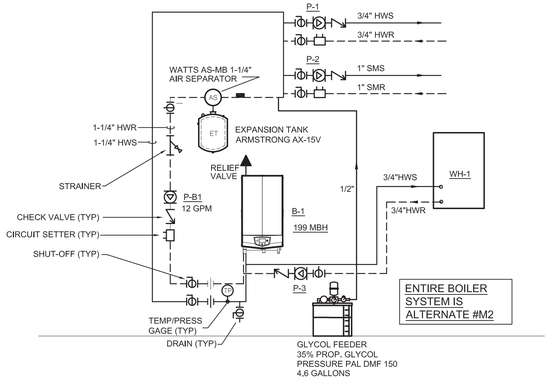
ALT #M1 - SNOW MELT TUBING INSTALLED IN CONCRETE DETAIL

NO SCALE



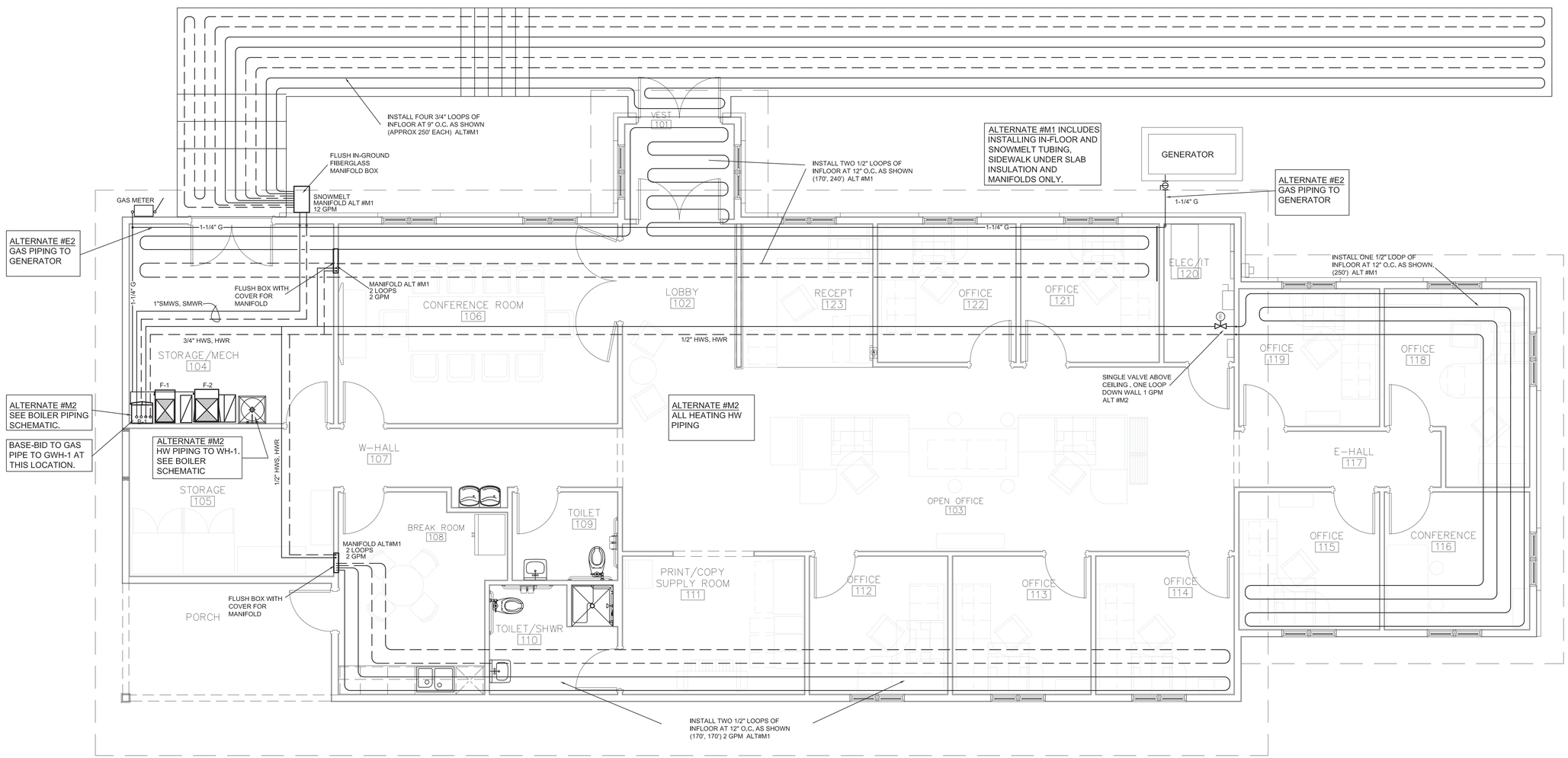
NATURAL GAS METER DETAIL

NOT TO SCALE



ALT. #M2 BOILER SYSTEM - PIPING DETAIL

NO SCALE



1 MECHANICAL PIPING FLOOR PLAN

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

N

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NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

PROJECT TITLE:

SHEET TITLE:
MECHANICAL
HOT WATER HEATING

ENGR. PROJ.# 20078

DRAWN BY: ET
CHECKED BY: GLN

DATE: 01.29.2021
Bidding & Construction

SHEET NUMBER
M2

MECHANICAL SPECIFICATIONS

SECTION	
23 00 00 BASIC MECHANICAL REQUIREMENTS	1. ALL WORK TO BE DONE AND MATERIALS FURNISHED COMPLYING WITH APPLICABLE LAWS AND REGULATIONS, INCLUDING THE 2015 MICHIGAN MECHANICAL CODE (M.M.C.), ASHRAE 90,1-2013 "ENERGY STANDARDS FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS", ASHRAE 62,1-2013 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY", 2015 INTERNATIONAL PLUMBING CODE (M.P.C.), CURRENTLY ENFORCED MICHIGAN BUILDING CODE (M.B.C.), AND LOCAL, STATE, AND FEDERAL FIRE SAFETY CODES (NFPA). 2. ALL MATERIALS USED SHALL BE NEW AND UNDAMAGED. 3. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION INDUSTRY STANDARDS AND WORKMANSHIP. 4. LABEL PIPING AND EQUIPMENT USING PROFESSIONAL MARKERS PER ASME A13,1-1996: 4.1. PROVIDE PROFESSIONAL PIPE STICKERS ON ALL NEW PIPING 1" AND GREATER IDENTIFYING TYPE AND DIRECTION OF FLOW. 4.2. PROVIDE PROFESSIONAL ENGRAVED PLASTIC EQUIPMENT NAMEPLATES FOR ALL HVAC EQUIPMENT IDENTIFYING EQUIPMENT TAG AND NUMBER, SEE PLANS FOR EQUIPMENT TAG NUMBERS (FOR EXAMPLE, B-1, P-1, AHU-1, ... ETC.) 5. FURNISH ALL ACCESS DOORS (RATED OR NON-RATED AS REQUIRED) WHERE VALVES OR EQUIPMENT ARE CONCEALED BEHIND A NON-ACCESSIBLE CEILING OR WALL. FURNISH ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION. 6. FURNISH STEEL SLEEVES WHERE PIPES PENETRATE RATED WALLS. PROVIDE FIRESTOPPING MATERIALS AND SYSTEM TO MAINTAIN THE REQUIRED RATING OF THE WALL PENETRATED. PROVIDE SHOP DRAWINGS SHOWING LISTING AND RATING OF FIRESTOPPING MATERIALS. 7. THE CONTRACTOR SHALL ARRANGE TO MEET AND INSTRUCT THE OWNER IN THE USE AND MAINTENANCE OF SYSTEMS AND EQUIPMENT. THIS INSTRUCTION SHALL BE FOR A MINIMUM OF (4) HOURS, AN ADDITIONAL (2) HOURS OF INSTRUCTION FOR THE OWNER WILL BE GIVEN IN THE OPERATION OF THE TEMPERATURE CONTROLS BY THE INSTALLER OF THE TEMPERATURE CONTROLS. 8. ALL MANUFACTURED EQUIPMENT, ACCESSORIES AND MATERIALS SHALL BE USED AS INTENDED BY THE MANUFACTURER, IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS. 9. THE CONTRACTOR SHALL PROVIDE, IN ADDITION TO ANY OTHER WARRANTIES SPECIFIED, A ONE (1) YEAR FULL LABOR AND MATERIAL WARRANTY ON ALL WORKMANSHIP, MATERIAL AND EQUIPMENT FURNISHED FOR THIS PROJECT. 10. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL OPENINGS AND REQUIRED LINTELS NEEDED FOR THE GENERAL CONTRACTOR FOR THE INSTALLATION OF MECHANICAL EQUIPMENT. 11. SAWCUTS, LINTELS, HEADERS, AND STRUCTURAL MODIFICATIONS TO THE BUILDING STRUCTURE NEEDED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT SHALL BE APPROVED BY THE GENERAL CONTRACTOR, BEFORE INSTALLATION. 12. IN GENERAL, OPENINGS AND REQUIRED LINTELS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILS AND TEMPLATES OF ALL OPENINGS NECESSARY FOR MECHANICAL EQUIPMENT INSTALLATION INCLUDING: HOUSING, ACCESS DOORS, INSPECTION DOORS, AND PASSAGEWAYS FOR MECHANICAL EQUIPMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SEALING CRACKS AND FINISHING ROUGH EDGES LEFT FOLLOWING MECHANICAL INSTALLATION. 13. THE USE OF THE MECHANICAL EQUIPMENT FOR HEATING, COOLING, OR DRYING DURING CONSTRUCTION IS PROHIBITED, UNLESS APPROVED BY WRITTEN DOCUMENTATION BY THE OWNER. 14. APPROVED EQUALS: MECHANICAL EQUIPMENT MANUFACTURED BY A COMPANY OTHER THAN THAT WHICH WAS SPECIFIED IN THE SCHEDULE MAY BE SUBSTITUTED BY APPROVED SHOP DRAWINGS CONTINENT UPON MEETING THE DESIGN, APPEARANCE, AND FUNCTIONAL STANDARDS ESTABLISHED BY THE ORIGINALLY SPECIFIED ITEM(S). THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS, CLEARANCES, ASSEMBLY, FIT, ETC. OF THE APPROVED EQUAL(S) AND THEIR AFFECT ON OTHER EQUIPMENT FIT AND OPERATION. THE MECH. CONTRACTOR IS LIABLE FOR ANY ADDED COSTS TO HIMSELF OR OTHERS CAUSED BY THE APPROVED EQUALS. 15. SUBMITTALS 15.1. FURNISH SHOP DRAWINGS TO ARCH/ENGINEER FOR APPROVAL PRIOR TO PLACING DELIVERY ORDERS. PROVIDE SHOP DRAWINGS OF ALL MANUFACTURED EQUIPMENT AND MATERIALS EXCEPT PIPE, PIPE FITTINGS, AND GALVANIZED DUCTWORK. 15.2. AT SUBSTANTIAL COMPLETION OF CONSTRUCTION, FURNISH AS-BUILT PLANS TO ARCH/ENGINEER FOR APPROVAL, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. APPROVED AS-BUILT PLANS SHALL BE PROVIDED TO THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE, AS A MINIMUM, THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES. 15.3. AN OPERATING MANUAL AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS.
23 05 29 HANGERS AND SUPPORTS OF HVAC PIPING AND EQUIPMENT	1. FURNISH PIPE AND DUCT HANGERS, WHERE REQUIRED, FIRMLY SUPPORTED FROM THE BUILDING CONSTRUCTION, IN AN APPROVED MANNER. 2. SUPPORT PIPING SYSTEMS SECURELY WHILE ALLOWING FOR PIPE AND BUILDING EXPANSION AND CONTRACTION. 2.1. USE ADJUSTABLE CLEVIS HANGERS OR ADJUSTABLE STEEL BAND HANGERS. 2.2. MAXIMUM HORIZONTAL SPACING FOR HYDRONIC PIPING SHALL BE IN ACCORDANCE WITH THE MMC - SECTION 305: 2.2.1. COPPER TUBING: 1-1/4" AND SMALLER - 6'-0". 1-1/2" AND LARGER - 10'-0". COPPER PIPE: 12'-0". 2.2.2. PVC PIPE: 4'-0". 2.2.3. PEX TUBING: 2'-8". 2.2.4. STEEL PIPE: 12'-0". STEEL TUBING: 8'-0". 2.2. MAXIMUM HORIZONTAL SPACING FOR GAS PIPING SHALL BE IN ACCORDANCE WITH THE IFGC - SECTION 415: 3. SUPPORT DUCTWORK WITH APPROVED DUCT HANGERS AT INTERVALS NOT EXCEEDING 10'-0" OR BY OTHER APPROVED DUCT SUPPORT SYSTEMS DESIGNED IN ACCORDANCE WITH THE MBC. 4. FLEXIBLE AND OTHER FACTORY-MADE DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. 5. FURNISH MECHANICAL EQUIPMENT SUPPORTS AS DETAILED OR AS REQUIRED TO SAFELY AND PERMANENTLY CARRY THE WEIGHT OF THE EQUIPMENT.
23 05 93 TESTING, ADJUSTING, AND BALANCING	1. THE MECHANICAL CONTRACTOR SHALL SUBCONTRACT A TEST AND BALANCE CONTRACTOR TO BALANCE THE SYSTEMS DESCRIBED BELOW. 2. THE BALANCING SHALL BE COMPLETED BY AN INDEPENDENT TEST AND BALANCE CONTRACTOR WHO IS NOT AN EMPLOYEE OF THE MECHANICAL CONTRACTOR. 3. PER COMPLIANCE WITH ASHRAE 90,1-2013, THE BALANCER SHALL SUBMIT AN AIR BALANCE REPORT TO THE ENGINEER AND STATE OR COUNTY INSPECTOR. 4. THE BALANCE REPORT SHALL SHOW PROOF THAT THE SYSTEM HAS BEEN BALANCED TO +/- 10% OF THE DESIGNED FLOW RATE. IT IS THE MECHANICAL CONTRACTOR AND TEST AND BALANCER'S DUTY TO PROVIDE ACCURATE DATA, SO AREAS OF INCORRECT FLOW MAY BE DISCLOSED TO THE ENGINEER, INSPECTOR, AND OWNER. 5. ALL AIRSIDE SYSTEMS, COMPONENTS, ETC. INCLUDING SUPPLY, RETURN, OUTDOOR, AND EXHAUST AIR SYSTEMS SHALL BE BALANCED. THE BALANCER SHALL PROVIDE SHEAVES AND BELTS AS NEEDED TO PROPERLY BALANCE EQUIPMENT TO +/- 10% OF THE DESIGNED AIRFLOWS. ALL DIFFUSERS, REGISTERS, GRILLES, AND LOUVERS SHALL BE INDIVIDUALLY BALANCED AND LISTED IN THE BALANCE REPORT. ALL AIRSIDE EQUIPMENT, SUPPLY, RETURN, AND OUTDOOR AIR FLOWRATES SHALL BE LISTED IN THE BALANCE REPORT. 6. ALL WATERSIDE SYSTEM PUMPS AND VALVES SHALL BE BALANCED, INCLUDING HOT WATER HEATING AND SNOWMELT. 7. ALL PUMP AND/OR VALVE WATER FLOW RATES, EQUIPMENT COIL FLOW RATES, AND HEATING COMPONENT FLOW RATES SHALL BE INDIVIDUALLY MEASURED, BALANCED, AND LISTED IN THE BALANCE REPORT. 8. ALL HVAC MOTOR DATA INCLUDING FREQUENCY (RPM), AMP DRAW, HORSEPOWER, EXTERNAL STATIC PRESSURE, HEAD PRESSURE, ETC., SHALL BE INCLUDED IN THE BALANCE REPORT.
23 07 19 INSULATION	1. INSULATE ABOVE FLOOR WATER PIPING WITH FIBERGLASS PREFORMED PIPE INSULATION WITH FACTORY APPLIED PAPER BACKED ALUMINUM FOIL VAPOR BARRIER MATERIAL. WHERE PIPES ARE EXPOSED AND LESS THAN 8' ABOVE FLOOR, PROVIDE HEAVY DUTY METAL JACKETING OVER INSULATION. 2. INSULATE ALL DOMESTIC AND HYDRONIC PIPING PER ASHRAE 90,1-2013: 2.1. DOMESTIC HOT AND COLD WATER: <1-1/2" PIPING = 1/2" INS.; 1-1/2" PIPING AND LARGER = 1" INS. 2.2. HEATING HOT WATER < 140°F: <1-1/2" PIPNIG = 1/2" INS.; 1-1/2" AND LARGER PIPING = 1" INS. 2.3. HEATING HOT WATER > 140°F < 200°F; < 4" PIPING = 1" INS.; 4" AND LARGER PIPING = 1-1/2" INS. 3. PROVIDE PROTECTIVE UNDERSINK PIPE AND P-TRAP COVERS FOR ALL ADA SINKS, TRUEBRO LAV GUARD 2 OR EQUAL, INSTALL PER MANFACTURER INSTALLATION INSTRUCTIONS. 4. ADD WHITE, PVC JACKET TO ALL EXPOSED DOMESTIC, HEATING, AND SANITARY PIPING (1-1/2" INSULATION WITH ALL SERVICE JACKET FOR SANITARY), EXPOSED LOCATIONS INCLUDE ALL OCCUPIED SPACES EXCEPT MECHANICAL ROOMS. 5. SUPPLY, RETURN AND EXHAUST DUCTWORK IS NOT TO BE INSULATED. INSULATE OUTDOOR INTAKE AIR DUCT WITH VINYL WRAPPED SLEEVE PER ASHRAE STANDARDS. 6. ALL INSULATION MATERIALS TO HAVE A FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPMENT RATING OF 50 OR LESS AS TESTED BYASTM E-84, UL-723, NFPA 90A-90-B.

SECTION	
23 09 00 INSTRUMENTATION AND CONTROL FOR HVAC	1. THE MECHANICAL CONTRACTOR OR CONTRACTED TEMPERATURE CONTROL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY THERMOSTATS, CONTROL RELAYS, SENSORS, CONTROL WIRING, DAMPERS, ACTUATORS, ETC., REQUIRED TO PROVIDE A FULLY OPERATIONAL HVAC SYSTEM. 2. THE THERMOSTAT SHALL BE DIGITAL-ELECTRONIC, WITH BACKLIT LCD DISPLAY, 7-DAY PROGRAMMABLE, WITH PROGRAMMABLE OCCUPIED AND UNOCCUPIED "CONTINUOUS FAN" AND "AUTO FAN" FUNCTIONALITY, 2-STAGE HEAT, 2-STAGE COOLING. 3. THE FURNACE(S) AND CONDENSING UNIT(S) SHALL ALL UTILIZE THERMOSTAT CONTROL SYSTEM FURNISHED AS PART OF THE UNIT(S), OR SPECIFIED TO BE PROVIDED AS OPTIONS OR ACCESSORIES BY THE MANUFACTURER OF THE UNIT(S). ALL WIRING WILL BE DONE IN ACCORDANCE WITH APPROVED SHOP DRAWINGS FURNISHED BY THE MANUFACTURER. 4. THE THERMOSTATS SHALL COORDINATE THE OPERATION OF THE ZONE CONTROL SYSTEMS AS WELL AS THE FURNACES. 5. THE CONTROL SYSTEM SHALL BE ACCESABLE VIA A WEB BROWSER OR USER APP.
23 11 00 FACILITY FUEL PIPING	1. GAS PIPING SHALL COMPLY WITH THE CURRENTLY ENFORCED VERSION OF THE INTERNATIONAL FUEL GAS CODE (I.F.G.C.). 2. GAS SERVICE: THE CONTRACTOR SHALL ARRANGE WITH THE GAS UTILITY CO. TO PROVIDE GAS SERVICE AND METER TO THE INDICATED LOCATION WITH SHUT-OFF VALVE AT METER. THE CONTRACTOR SHALL CONSULT WITH THE UTILITY COMPANY AS TO THE EXTENT OF ITS WORK. COSTS FEES AND PERMITS: THE CONTRACTOR SHALL OBTAIN THE REQUIRED PERMITS AND PAY ALL COSTS ASSOCIATED WITH THE SERVICE. 3. ABOVE GROUND GAS PIPING SHALL BE SCHEDULE 40, BLACK IRON WITH MALLEABLE IRON THREADED FITTINGS, SUPPORT PIPING WITH ADJUSTABLE BAND TYPE PIPE HANGERS, EQUAL TO ITT-GRINNEL FIG. 97. INSTALL DRIP LEG WITH UNION AND VALVE AT CONNECTION TO EACH PIECE OF EQUIPMENT. PROVIDE VALVE ON DISCHARGE OF METER. GAS SHUT-OFF VALVES SHALL BE 150 PSI, NON-SHOCK WOG, BRONZE BODY, STRAIGHT CONFIGURATION, AND/OR SHALL COMPLY WITH I.F,G,C TABLE 409,1,1 AND SHALL MEET ANSI Z21,15, CSA REQUIREMENT 3-88, ASME B16,44, ASME B16,33. 4. BELOW GROUND GAS PIPING SHALL BE BI-MODAL MDPE POLYETHYLENE TUBING; NFPA54, TYPE ii, GRADE 3, PE 2406 (OR 2708), ASTM D2513 AND ASTM D1248 WITH RECOMMENDED STRESS RATING OF1250 PSI AT 73,4°F AND 800 PSI AT 140°F.
23 20 00 HVAC PIPING AND PUMPS	1. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL PUMP(S), PUMPS SHALL BE THE TYPE LISTED ON THE PUMP SCHEDULE. THEY SHALL COMPLY WITH HYDRAULIC INSTITUTE'S STANDARDS FOR CENTRIFUGAL, ROTARY, AND RECIPROCATING PUMPS" FOR PUMP DESIGN, MANUFACTURE, TESTING, AND INSTALLATION; UL 778 "STANDARDS FOR MOTOR OPERATED WATER PUMPS"; NEMA MG 1 "STANDARDS FOR MOTORS AND GENERATORS"; AN NFPA 70 "NATIONAL ELECTRIC CODE"; AND INCLUDE LISTING AND LABELING. 2. INSTALL, ALIGN, AND PIPE PUMP(S) TO MANUFACTURER'S SPECIFICATIONS. INSTALL PUMP(S) IN A SERVICEABLE AREA. SUPPORT PUMP(S) SEPARATELY FROM PIPING. INSTALL SUCTION AND DISCHARGE PIPE SIZES EQUAL TO OR GREATER THAN THE DIAMETER OF THE PUMP CONNECTIONS. 3. APPROVED EQUALS: TACO, BELL AND GOSSETT, GRUNDFOS.
23 23 00 REFRIGERANT PIPING	1. INSTALL REFRIGERATION PIPING AND REFRIGERATION SPECIALTIES IN ACCORDANCE WITH ANSI/ASME SEC 9. 2. PIPING SHALL BE TYPE "L (ACR)" COPPER TUBING, ASTM B280, HARD DRAWN. 3. FITTINGS SHALL BE WROUGHT COPPER SOLDER JOINT FITTINGS, ANSI/ASME B16.22. 4. JOINTS SHALL BE SIL-PHOS JOINTS. 5. THE CONTRACTOR SHALL PRESSURE TEST THE PIPING, LEAVING A HOLDING CHARGE OF DRY NITROGEN IN THE LINES FOR A 24 HOUR PERIOD. IF THERE IS NO DROP IN PRESSURE AFTER 24 HOURS, EVACUATE THE SYSTEM FOR 24 HOURS UNTIL A VACUUM OF 500 MICRONS OR LESS IS ACHIEVED AND HELD FOR 2 HOURS. 6. MANUFACTURER LINE-SETS MAY ALSO BE USED FOR THE PIPING.
23 31 00 HVAC DUCTS AND ACCESSORIES	1. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN COMPLIANCE WITH 2015 M.M.C. CHAPTER 6, AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS. ALL DUCTWORK SHALL BE SEALED AND INSULATED IN ACCORDANCE WITH ASHRAE 90,1-2013. 2. ROUND FLEX DUCT SHALL BE USED FOR DIFFUSER-GRILLE CONNECTIONS ABOVE LAY-IN CEILINGS. FLEX DUCT MAY BE USED IN OTHER AREAS WHERE THE DUCT AND GRILLE ARE PERMANENTLY AND REASONABLY ACCESSIBLE. MAXIMUM FLEX DUCT LENGTH IS 6'-0". PERFORMANCE OF FLEXIBLE DUCT SHALL MEET OR EXCEED THE RIGID DUCTWORK. 3. UNLESS OTHERWISE NOTED ON PLANS, ALL SUPPLY AND RETURN DUCTWORK LOCATED WITHIN TEN (10) FEET OF THE EQUIPMENT FAN SHALL BE LINED WITH 1/2" ACOUSTICAL DUCT LINER. DUCT DIMENSIONS SHOWN ON MECHANICAL PLANS ARE INTERIOR DIMENSIONS. 4. ALL DUCT LINER SHALL HAVE A FLAME SPREAD AND SMOKE DEVELOPMENT 25 OR LESS AND 50 OR LESS WHEN TESTED BY ASTM E-84 (NFPA 255) METHOD. 5. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING VOLUME DAMPERS, TURNING VANES, ACCESS DOORS, VIBRATION ISOLATORS, ETC. THE ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
23 51 00 BREECHING, CHIMNEYS, AND STACKS	1. ATMOSPHERIC VENT STACKS SHALL BE TYPE B DOUBLE WALL GAS VENTS WITH U.L. LABEL AND MEETI NFPA 211 "STANDARDS FOR CHIMNEYS, FIREPLACES, VENTS, AND SOLID FUEL BURNING APPLIANCES" AS MANUFACTURED BY AMERICAN METAL PRODUCTS, HART & COOLEY, METAL-FAB INC., AND SELKIRK. 2. VENTS AND COMBUSTION AIR PIPES FOR CLOSED COMBUSTION EQUIPMENT AND HIGH EFFICIENCY EQUIPMENT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LISTING OF THE EQUIPMENT.
23 52 00 HEATING BOILERS	1. THE MECH. CONTRACTOR SHALL FURNISH BOILERS, AND INSTALL BOILER(S) TO MANUFACTURER'S SPECIFICATIONS AND SHALL INCLUDE ALL ASSOCIATED EQUIPMENT INCLUDING: HYDRONIC PIPING, PUMPS, VENT STACKS, TEMPERATURE CONTROLS, AND WATER TREATMENT. 2. THE BOILER SHALL COMPLY WITH: "NATIONAL ELECTRIC CODE" FOR COMPONENTS AND INSTALLATION, AND SHALL BE "LISTED AND LABELED" AS DEFINED BY THE "NATIONAL ELECTRIC CODE" ARTICLE 100, THE LISTING AND LABELING AGENCY QUALIFICATIONS SHALL BE A "NATIONALLY RECOGNIZED TESTING LABORATORY" (NRTL) AS DESCRIBED IN OSHA REGULATION 1910.7. THE BOILER SHALL MEET ASME BOILER AND PRESSURE CODE SECTION IV "HEATING BOILERS" AND SHALL BE AGA COMPLIANT. 3. THE BOILER SHALL BE EQUIPPED WITH PUMP RELAY , TEMPERATURE AND PRESSURE GAGES, HIGH LIMIT TEMPERATURE CONTROL WITH MANUAL RESET, ASME CERTIFIED 50 PSI PRESSURE RELIEF VALVE, AND ALL NECESSARY ACCESSORIES FOR CSD-1 COMPLIANCE. 4. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL NECESSARY FEES FOR BOILER PERMIT AND INSPECTIONS AND INITIAL CSD-1 INSPECTIONS. 5. THE MECHANICAL CONTRACTOR SHALL FLUSH AND CLEAN BOILER(S) ACCORDING TO MANUFACTURER'S INSTRUCTIONS, AND SHALL CLEAN BOILER EXTERIOR AND REPAIR ANY SCRATCHES INCURRED DURING SHIPPING AND INSTALLATION. 6. THE MECHANICAL CONTRACTOR SHALL PROVIDE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PROVIDE START-UP SERVICE, AND SHALL PROVIDE UP TO EIGHT (8) HOURS OF OWNER'S TRAINING.
23 54 00 FURNACES AND CONDENSING UNITS	1. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL FURNACE(S) AND CONDENSING UNIT(S) AS SHOWN AND SCHEDULED. THE UNIT(S) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, AND SHALL PERFORM AT THE CONDITIONS SCHEDULED. 2. THE FURNACE SHALL INCLUDE: 2.1. NATURAL GAS BURNER WITH ELECTRICAL IGNITION, INJECTION-TYPE BURNER, 3-PASS HEAT EXCHANGER, SEALED COMBUSTION, DIRECT-VENT. 2.2. BURNER CAPACITY AND AFUE EFFICIENCY AS LISTED ON THE FURNACE SCHEDULE. 2.3. BLOWER CAPACITY (CFM), AND SINGLE, TWO-STAGE OR VARIABLE SPEED BLOWER AS SCHEDULED. 2.4. THE MECHANICAL CONTRACTOR SHALL PROVIDE TWO (2) SETS OF FILTERS FOR EACH FURNACE AND SHALL BE RESPONSIBLE FOR CHANGING FILTERS WITHIN TWO (2) WEEKS OF START-UP. 3. THE CONDENSING UNIT SHALL INCLUDE: 3.1. COOLING CAPACITY AND RATED COOLING TONS AS LISTED ON THE CONDENSING UNIT SCHEDULE. 3.2. R-410A (PURON) REFRIGERANT. 3.3. MINIMUM 13 SEER (SEASONAL ENERGY EFFICIENCY RATING). 3.4. INSULATED REFRIGERANT LINESETS. 4. MOUNT FURNACE ON 12" MINIMUM HEIGHT RETURN AIR PLENUM WITH FILTER ACCESS TO UTILIZE BOTTOM RETURN AIR INLET. 5. SEAL ALL LINESET WALL PENETRATIONS WITH CLOSED-CELL, FOAM INSULATION AND NON-HARDENING CAULK. 6. PROVIDE A WALL BRACKET FOR CONDENSING UNIT INSTALLATION. 7. IF THE CONDENSING UNIT IS INSTALLED DURING THE HEATING SEASON, THE CONTRACTOR SHALL PROVIDE A REFRIGERANT CHARGE THE FOLLOWING COOLING SEASON.

BOILER SCHEDULE

TAG	LOCATION AND SERVICE	MFG.AND MODEL	INPUT (MBH)	OUTPUT (MBH)	GAS CONN.	INLET WATER CONN.	OUTLET WATER CONN.	COMB. AIR SIZE	VENT SIZE	WEIGHT (LBS)	CONTROLS	REMARKS
B-1	MECH, ROOM 104 SNOWMELT, IN-FLOOR, AND DOMESTIC	LOCHINVAR KHB199N	199	183	1/2"	1-1/4"	1-1/4"	3"	3"	199	LOCHINVAR SMART SYSTEM	FURNISH PUMP WITH BOILER. PUMP SHALL BE 12 GPM AT 12 FT HD TO PROVIDE 30° F DELTA T. INCLUDE ALL CSD-1 CONTROLS REQ'D. ALTERNATE #M2

PUMP SCHEDULE

TAG	LOCATION AND SERVICE	MODEL AND TYPE	FLOW (GPM)	HEAD (FT H_2O)	ELECTRICAL			REMARKS
					VOLTS-PH.	WATTS	RPM	
P-1	MECHANICAL ROOM INFLOOR PUMP	ARMSTRONG ASTRO 250SS	5	15'	120-1Ø	117	–	3-SPEED ALTERNATE #M2
P-2	MECHANICAL ROOM SNOWMELT PUMP	ARMSTRONG ASTRO 280SS	12	20'	120-1Ø	218	–	3-SPEED ALTERNATE #M2
P-3	MECHANICAL ROOM WH-1 HOT WATER PUMP	ARMSTRONG ASTRO 250SS	6	15'	120-1Ø	117	–	3-SPEED ALTERNATE #M2

GAS FURNACE SCHEDULE

TAG	DUTY/ LOCATION	MFG. AND MODEL #	FURNACE CONFIG.	TOTAL AIRFLOW (CFM)	O.A. (CFM)	TOTAL E.S.P (IN, H2O)	HIGH FIRE CAPACITY				AFUE	VENTING		ELECTRICAL			FUEL TYPE	REMARKS
							INPUT (MBH)	OUTPUT (MBH)	EAT (°F)	LAT (°F)	%	SIZE	TYPE	VOLT/ PHASE	MFS	MCA		
F-1	WEST OFFICE	GOODMAN GMVM970603	UPFLOW	1150	150	0.50"	60	58.8	60	107	97	3"	PVC	115/1Ø	15	8.8	NG	PROVIDE 4" FILTER RACK, NEEDLE POINT IONIZATION AND HONEYWELL HE360 HUMIDIFIER
F-2	EAST OFFICE	GOODMAN GMVM970804	UPFLOW	1700	200	0.50"	80	78.4	60	103	97	3"	PVC	115/1Ø	15	11.6	NG	PROVIDE 4" FILTER RACK, NEEDLE POINT IONIZATION AND HONEYWELL HE360 HUMIDIFIER

CONDENSING UNIT SCHEDULE

TAG	LOCATION	MATCHING FURNACE	MFG. AND MODEL #	REFRIGERANT TYPE	COOLING CAPACITY (MBH)	EDB °F	EWB °F	REFRIGERANT		ELECTRICAL			SEER	REMARKS
								SUCTION	LIQUID	VOLT/PHASE	M.C.A.	MAX. FUSE		
CU-1	OUTDOORS	F-1	DAIKIN FIT DX17VSS361AA	R-410A (PURON)	36,0	80	67	7/8"	3/8"	208-230/1Ø	22,7	25	17	PROVIDE WALL MOUNT RACK
CU-2	OUTDOORS	F-2	DAIKIN FIT DX17VSS481AA	R-410A (PURON)	48,0	80	67	1 1/8"	3/8"	208-230/1Ø	34	35	17	PROVIDE WALL MOUNT RACK

EXHAUST FAN SCHEDULE

TAG	LOCATION AND SERVICE	MANUFACTURER AND MODEL	AIRFLOW (CFM)	E.S.P. (IN W,G,)	NOISE DATA (SONES)	ELECTRICAL DATA		CONTROL DATA	REMARKS
						VOLTAGE	WATTS		
EF-1	BREAK ROOM EXHAUST	DELTA BREEZ ITG100	85	0.25"	2.0	120/60/1Ø	21	WALL SWITCH	FURNISH WITH BACKDRAFT DAMPER
EF-2	TOILET 110 EXHAUST	DELTA BREEZ ITG100	85	0.25"	2.0	120/60/1Ø	21	LIGHT SWITCH	LIGHT SWITCH W/ TIMED-OFF DELAY FURNISH WITH BACKDRAFT DAMPER
EF-3	TOILET 109 EXHAUST	DELTA BREEZ ITG80	60	0.25"	0.7	120/60/1Ø	11	LIGHT SWITCH	LIGHT SWITCH W/ TIMED-OFF DELAY FURNISH WITH BACKDRAFT DAMPER
EF-4	ELECT/IT 120 EXHAUST	DELTA BREEZ ITG100	100	0.10"	1.6	120/60/1Ø	19	REVERSE-ACTING THERMOSTAT	REVERSE ACTING THERMOSTAT FOR COOLING EXHAUST TO ABOVE CEILING TO PLENUM

ELECTRIC HEATER SCHEDULE

TAG	LOCATION	MANUFACTURER AND MODEL	AIRFLOW (CFM)	DIMENSIONS (INCHES)			ELECTRICAL DATA				CONTROL DATA	REMARKS
				W	H	D	VOLTAGE/PHASE	WATTS	F.L.A.	M.F.S.		
EH-1	ENTRY VESTIBULE	BERKO WALL HEATER, MODEL SRA 1012 DSAF	65	10.675	12.125	4	120/1Ø	1000		15	REMOTE LINE VOLTAGE THERMOSTAT	INCLUDE RECESSED WALL BOX NOT REQUIRED IF ALT #M1 AND ALT #M2 IS ACCEPTED.

DIFFUSER AND GRILLE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER AND MODEL	SIZE (INCHES)	VOLUME DAMPER (TYPE, LOCATION)	MATERIAL	COLOR AND FINISH	REMARKS
SD-1	SUPPLY AIR DIFFUSER 4-WAY THROW, PLAQUE STYLE LAY-IN FRAME	TITUS OMNI	24x24 NECK SIZE ON PLANS	EXTERNAL	STEEL	#26 WHITE	
SD-2	SUPPLY AIR DIFFUSER 4-WAY THROW, PLAQUE STYLE LAY-IN FRAME	TITUS OMNI	12X12 NECK SIZE ON PLANS	EXTERNAL	STEEL	#26 WHITE	
SD-3	SUPPLY AIR REGISTER SPIRAL DUCT MOUNT INCLUDE RADIUS END CAPS 3/4" SPACING, DOUBLE DEFLECTION	TITUS S300FL	14X4	ASD-AIR SCOOP	ALUMINUM	ANODIZED	
RG-1	RETURN AIR GRILLE AEROBLADE STYLE 30° FIXED BLADES, 1/2" SPACING SURFACE MOUNT FRAME	TITUS 25RL	12x12	NONE	STEEL	#26 WHITE	SOUND TRAP ON TOP OF RETURN GRILLE. SEE DETAIL
RG-2	RETURN AIR GRILLE AEROBLADE STYLE 30° FIXED BLADES, 1/2" SPACING SURFACE MOUNT FRAME	TITUS 25RL	36X10	NONE	STEEL	#26 WHITE	
RG-3	RETURN AIR GRILLE AEROBLADE STYLE 30° FIXED BLADES, 1/2" SPACING SURFACE MOUNT FRAME	TITUS 25RL	18X10	NONE	STEEL	#26 WHITE	
TG	TRANSFER AIR GRILLE AEROBLADE STYLE 30° FIXED BLADES, 1/2" SPACING LAY-IN FRAME	TITUS 25RL	24X24	NONE	STEEL	#26 WHITE	

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PROJECT TITLE:
NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

SHEET TITLE:
MECHANICAL SCHEDULES AND DETAILS

ENGR. PROJ.# 20078

DRAWN BY: ET
CHECKED BY: GLN

DATE: 01.29.2021
Bidding & Construction

SHEET NUMBER
M3

1 ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"

N

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PROJECT TITLE:
NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

SHEET TITLE:
ELECTRIAL
SITE PLAN

ENGR. PROJ.#
20078

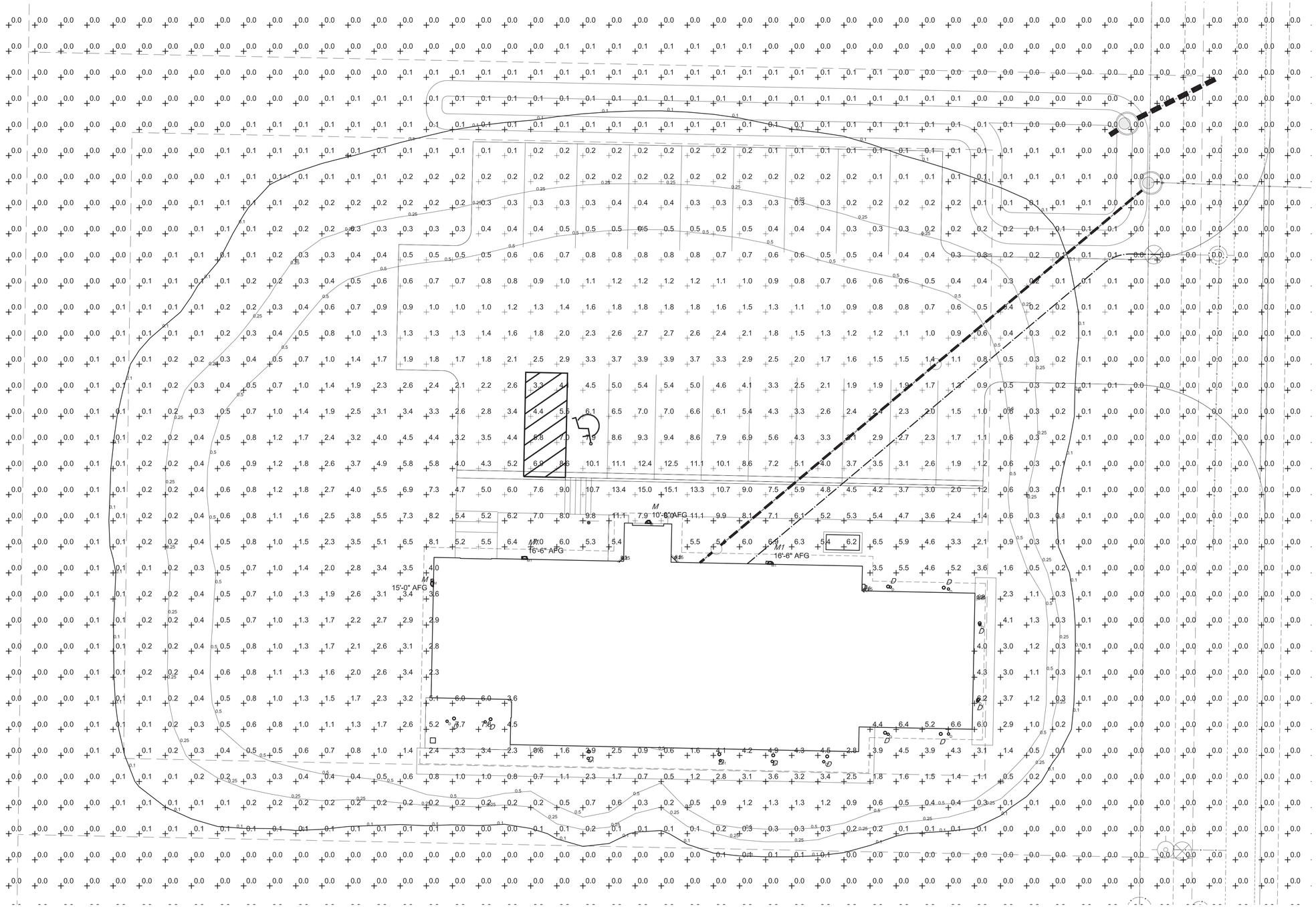
DRAWN BY:
JAV
CHECKED BY:
JAV

DATE:
01.29.2021
Bidding & Construction

SE1

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	LLF	BF	Manufacturer & Catalog Number	Pole Height	Fixture Mounting Ht.	LED Color Temp.
○	12	Type D	SINGLE	0.850	1.000	COOPER LIGHTING - PORTFOLIO HC415D010-HM412835-41MDW-RMB22	n/a	varies - recessed can	3500K
⌓	2	Type M	SINGLE	0.850	1.000	COOPER LIGHTING - McGRAW-EDISON GWC-AF-01-LED-E1-SL4	n/a	10'-0" or 15'-0"	3500K
⌓	2	Type M1	SINGLE	0.850	1.000	COOPER LIGHTING - McGRAW-EDISON GWC-AF-02-LED-E1-SL4-1200	n/a	16'-6"	3500K

Lighting Calculation Summary					
Project: WOLVERINE POWER - REED CITY SERVICE CENTER					
Label	Avg	Max	Min	Avg/Min	Max/Min
Site	0.8 fc	15.1 fc	0.00 fc	n/a	n/a
Sidewalk & Parking	2.6 fc	15.1 fc	0.1 fc	26.0	151.0



1 SITE LIGHTING CALCULATIONS
SCALE: 1" = 10'-0"

N

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NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

PROJECT TITLE:

SHEET TITLE:
SITE LIGHTING CALCULATIONS

ENGR. PROJ.# 20078

DRAWN BY: JAV
CHECKED BY: JAV

DATE: 01.29.2021
Bidding & Construction

SLC

ABBREVIATIONS

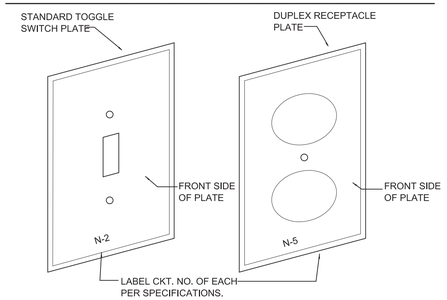
1-21	PANEL 1, CIRCUIT 21	KW	KILOWATTS
A	AMPERES	L	LIGHTING SYSTEM DEVICE
AC	ABOVE COUNTER	MC	MECHANICAL CONTRACTOR
AFF	ABOVE FINISH FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISH GRADE	MDP	MAIN DISTRIBUTION PANEL
BC	BELOW COUNTER	MLO	MAIN LUG ONLY
C	CONDUIT	MM	MULTIMEDIA OUTLETS (HI & LOW RECEPT. & LOW VOLT. OUTLETS)
C/B, CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
DF	DRINK'G FOUNTAIN/H20 COOLER	NTS	NOT TO SCALE
DWG	DRAWING	P	PUMP
E	EXISTING TO REMAIN	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	PS	PRIMARY SWITCH
EF	EXHAUST FAN	PT	PRIMARY TRANSFORMER
EGC	EQUIPMENT GROUNDING CONDUCTOR	PVC	POLYVINYL CHLORIDE
EH	ELECTRIC HEATER	Q	QUAD-PLEX (DOUBLE DUPLEX)
EMT	ELECTRICAL METALLIC TUBING	RGS	RIGID GALVANIZED STEEL
ERV	ENERGY RECOVERY VENTILATOR	S	SOUND SYSTEM DEVICE
E-R	EXISTING TO BE RELOCATED	TR	TAMPER RESISTANT
ETR	EXISTING TO REMAIN	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
EWC	ELECTRIC WATER COOLER	UGRD	UNDERGROUND
EWH	ELECTRIC WATER HEATER	UON	UNLESS OTHERWISE NOTED
G	GROUND	V	VOLT
GEC	GROUNDING ELECTRODE CONDUCTOR	VFD	VARIABLE FREQUENCY DRIVE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	W	WIRE
GTD	GENERATOR TRANSFER DEVICE	WG	WIREGUARD
HOR	HORIZONTAL	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILS	XFMR	TRANSFORMER
KVA	KILOVOLT-AMPERES		

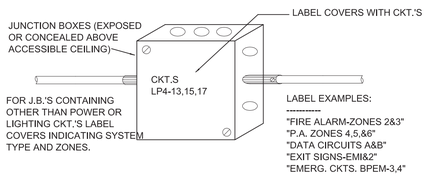
WIRE SIZE REQUIREMENTS

NOTE:
BASED ON A MAXIMUM OF 3.6-VOLT DROP (3%) ON 120V CIRCUITS.
WIRES FOR RUNS OVER 100'-0" SHALL BE DETERMINED ON THIS
A MAXIMUM OF A 3% DROP ALLOWED.

BRANCH CIRCUIT AMPS	LENGTH OF RUN - FROM PANEL TO FIRST CONNECTION - FEET								
AMPS	50'	60'	70'	80'	90'	100'	110'	120'	130'
15	#12	#12	#12	#10	#10	#10	#10	#10	#8
20	#12	#10	#10	#10	#10	#8	#8	#8	#8
30	#10	#10	#8	#8	#8	#6	#6	#6	#6

ELECTRICAL IDENTIFICATION





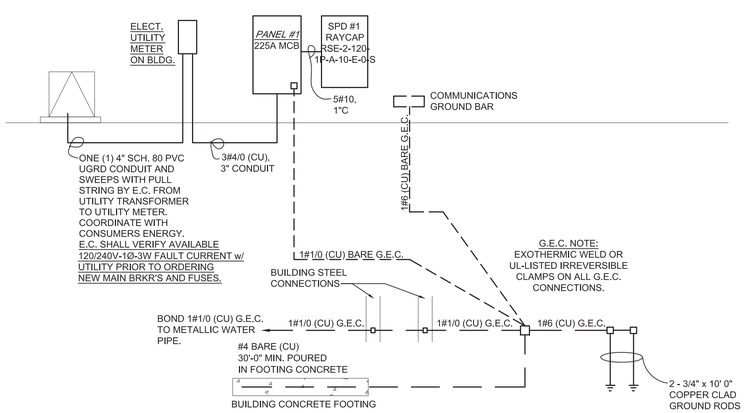
ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	NOTES
S	SINGLE POLE SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_3	THREE-WAY SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_{VD}	PASSIVE INFRARED VACANCY SENSOR 0-10V DIMMER (GREENGATE #OSW-P-010-X)	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED PROGRAM SWITCH AS A VACANCY SENSOR (MANUAL ON/AUTO OFF)
S_T	ELECTRONIC PROGRAMMABLE TIMER SWITCH (GREENGATE #TSW-MV-W)	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_S	PASSIVE INFRARED OCCUPANCY SENSOR (GREENGATE #OSW-P-0801-120-X)	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED PROGRAM SWITCH AS A OCCUPANCY SENSOR (AUTO ON/AUTO OFF)
S_V	PASSIVE INFRARED OCCUPANCY SENSOR (GREENGATE #OSW-P-0801-120-X)	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED PROGRAM SWITCH AS A VACANCY SENSOR (MANUAL ON/AUTO OFF)
S_{WS*}	120V WIRELESS DIGITAL-NETWORK SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UON. SEE WIRELESS LTG. CONTROLS DETAIL ON SHEET E2 FOR MORE DETAILS.
S_{AT}	ELECTRONIC PROGRAMMABLE ASTRONOMICAL SWITCH (LEVITON #VPT24-1PZ)	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UON
(WS)(OS)	OCCUPANCY SENSOR, TYPE X	SEE DETAILS ON SHEET E2 FOR TYPES
SP	120V-20A SWITCHPACK RELAY LIGHTING CONTROL (GREENGATE #SP20-MV)	MOUNTED IN JUNCTION BOX ABOVE ACCESSIBLE CEILING. CONNECT TO OCCUPANCY/VACANCY SENSORS AND ACCESSORIES AS INDICATED
	DESIGNATES WIRELESS DIGITAL NETWORK FIXTURE/DEVICE	SEE LIGHT FIXTURE SCHEDULE FOR TYPES AND WIRELESS LIGHTING CONTROLS DETAILS FOR MORE INFORMATION.
WAC-x	DIGITAL NETWORK WIRELESS AREA CONTROLLER (GREENGATE #WAC-120)	MOUNT POWER SUPPLY 6" BELOW CEILING. SEE DETAIL ON SHEET E2 FOR TYPES AND WIRING DIAGRAM
WD / X	DIGITAL NETWORK RELAY WITH 0-10V DIMMING	SEE DETAIL ON SHEET E2 FOR TYPE
X	2'x2' FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
X	1'x4' FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
X	ROUND FIXTURE, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
X	EXIT SIGN, TYPE X	SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
	DUPLEX OUTLET - 20 AMP	MOUNT @ 16" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	DUPLEX OUTLET - 20 AMP - GROUND FAULT	MOUNT @ 16" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
DF	DUPLEX OUTLET - 20 AMP - GROUND FAULT - DEAD FRONT	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
WP	WR GFCI DUPLEX OUTLET WITH WEATHER PROOF IN-USE COVER	MOUNT @ 24" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	30A OR 50A -125/250V 3-POLE, 4-WIRE GROUNDING OUTLET	MOUNT @ 16" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
FB	FLUSH-FLOOR BOX	WIREMOLD #RFB4-(2)RFB-GFI-FPBTCxx WITH TWO (2) DUPLEX RECEPTACLES, AND ONE (1) 1"C STUBBED TO NEAREST ACCESSIBLE CEILING. xx DENOTES STANDARD FINISH AS SELECTED BY THE ARCHITECT. ALL CONDUIT STUBS ARE TO HAVE PULL STRINGS INSTALLED IN THEM. PROVIDE ON-GRADE FLOOR BOX OPTION. DIV. 27 CONTRACTOR TO PROVIDE AND INSTALL AND TERMINATE THE QUANTITY OF CAT6 CABLES NOTED ACCORDING TO DIV. 27 SPECS AT EACH OUTLET AND RUN BACK TO ELECTRICAL/IT #120, U.O.N.
FB P	FLUSH-FLOOR BOX - POWER ONLY	ARLINGTON #FLBC4500 & #FLBC4560DNL WITH ONE (1) DUPLEX RECEPTACLE, AND ONE (1) 1"C STUBBED TO NEAREST ACCESSIBLE CEILING. ALL CONDUIT STUBS ARE TO HAVE PULL STRINGS INSTALLED IN THEM.
EM	EMERGENCY SHUNT TRIP PUSH-BUTTON INCLUDES: - GUARDED ENCLOSURE (YELLOW COVER) WITH RED TURN-TO RELEASE MUSHROOM, AND EMERGENCY STOP LEGEND PLATE.	CONNECT TO BOILER CONTROL PANELS - COORDINATE WITH M.C. SIMILAR TO SQUARE D #KYG1Y2. WIRE IN PARALLEL WITH EACH OF THE BOILER CONTROL PANELS.
J	JUNCTION BOX	
	OVERHEAD ELECTRICAL CONDUIT, SIZED AS SHOWN	
	UNDERGROUND ELECTRICAL CONDUIT, SIZED AS SHOWN	
	OVERHEAD TELEPHONE CONDUIT, SIZED AS SHOWN	OHT
	UNDERGROUND TELEPHONE CONDUIT, SIZED AS SHOWN	UGT

SYMBOL	DESCRIPTION	NOTES
	SINGLE-PHASE SPECIAL PURPOSE OUTLET, AS NOTED	REFER TO SHOP DRAWINGS FOR CONNECTION REQUIREMENTS
	SINGLE-PHASE MOTOR, AS SPECIFIED	
	SINGLE-PHASE FUSED OR NON-FUSED DISCONNECT	
	SINGLE-PHASE MANUAL STARTER OR COMB. DISC./STARTER	
S_M	MOTOR TOGGLE SWITCH WITH THERMAL OVERLOAD AND LOCKOUT	SQUARE D #CLASS 2510 FGJ5P (SINGLE POLE)
	1Ø BRANCH CIRCUIT PANELS (120/208V-3Ø-4W)	REFER TO SPECIFICATIONS AND RISER DIAGRAM.
	2"Ø (U.O.N.) SLEEVE WITH BUSHINGS ABOVE THE CEILING FOR LOW VOLTATE WIRING (DATA, TELEPHONE, COAX, NURSE CALL, SECURITY, ETC.).	COORDINATE ALL LOCATIONS WITH THE OWNER AND/OR DIV. 27 & 28 CONTRACTOR(S). INSTALL HILTI FIRESTOP SPEED SLEEVES WHEN PASSING THROUGH FIREWALLS.
	TELEPHONE BACKBOARD	4'x8' PAINTED, FIRE RATED PLYWOOD BACKBOARD
	LOW VOLTAGE OUTLET	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 18" AFF DIV. 27 CONTRACTOR TO PROVIDE AND INSTALL AND TERMINATE THE QUANTITY OF PLENUM RATED CAT6 CABLES NOTED ACCORDING TO DIV. 27 SPECS AT EACH OUTLET AND RUN BACK TO ELECT./IT #120, U.O.N.
W	WIRELESS ACCESS POINT OUTLET	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 18" AFF DIV. 27 CONTRACTOR TO PROVIDE AND INSTALL AND TERMINATE ONE (1) PLENUM RATED CAT6 CABLE ACCORDING TO DIV. 27 SPECIFICATIONS AT EACH OUTLET AND RUN BACK TO ELECTRICAL/IT #120, U.O.N.
TV	TELEVISION OUTLET	E.C. TO PROVIDE AND INSTALL TWO (2) SINGLE-GANG BOXES @ 72" AFF OR AN ARLINGTON #TVBU810 COMBINED BOX; ONE (1) FOR ONE (1) RECEPTACLE AND ONE (1) WITH A 1" CONDUIT STUBBED ABOVE THE NEAREST ACCESSIBLE (LAY-IN CEILING) AND ONE (1) 1-1/4" CONDUIT STUBBED DOWN TO ONE (1) SINGLE-GANG BOX AT 16" AFF DIRECTLY BELOW 'TV' OUTLET. DIV. 27 CONTRACTOR TO PROVIDE AND INSTALL AND TERMINATE ONE (1) PLENUM RATED CAT6 CABLE ACCORDING TO DIV. 27 SPECS AT EACH OUTLET AND RUN BACK TO ELECTRICAL/IT #120, U.O.N.
R	SECURITY SYSTEM CARD READER OUTLET	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 44" AFF WITH 3/4" 3/4" CONDUIT STUBBED TO LOCATION AS SHOWN ON ELECTRICAL/ SECURITY DETAIL ON SHEET E1. WITH PLENUM RATED CABLE; (1) WINDY CITY #4461230
ES	SECURITY SYSTEM ELECTRIC STRIKE	E.C. TO PROVIDE AND INSTALL 3/4" EMT CONDUIT STUB AND PULL STRING FROM DOOR FRAME TO LOCATION AS SHOWN ON ELECTRICAL/ SECURITY DETAIL ON SHEET E1.
DC	SECURITY SYSTEM DOOR CONTACT	E.C. TO PROVIDE AND INSTALL 3/4" EMT CONDUIT STUB AND PULL STRING FROM DOOR FRAME TO LOCATION AS SHOWN ON ELECTRICAL/ SECURITY DETAIL ON SHEET E1. WITH PLENUM RATED CABLE; (1) WINDY CITY #444380
C	SECURITY SYSTEM CAMERA OUTLET	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX IN THE CEILING WITH WITH ONE (1) 1" CONDUIT STUBBED ABOVE THE NEAREST ACCESSIBLE (LAY-IN) CEILING, U.O.N. DIV. 27 CONTRACTOR TO PROVIDE AND INSTALL AND TERMINATE ONE (1) PLENUM RATED CAT6 CABLE ACCORDING TO DIV. 27 SPECS AT EACH OUTLET AND RUN BACK TO ELECTRICAL/IT #120, U.O.N.
F	SECURITY SYSTEM FLOOD DETECTOR	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 12" AFF WITH PLENUM RATED CABLE; (1) WINDY CITY #444380
KP	SECURITY SYSTEM KEY PAD	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 44" AFF WITH 3/4" CONDUIT STUBBED TO NEAREST ACCESSIBLE CEILING WITH PLENUM RATED CABLE; (1) WINDY CITY #444380
LT	SECURITY SYSTEM LOW TEMPERATURE ALARM	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX @ 12" AFF WITH PLENUM RATED CABLE; (1) WINDY CITY #444380
MD	SECURITY SYSTEM MOTION DETECTOR	E.C. TO PROVIDE AND INSTALL SINGLE-GANG BOX IN THE CEILING WITH PLENUM RATED CABLE; (1) WINDY CITY #444380

ELECTRICAL RISER DIAGRAM - BASE BID

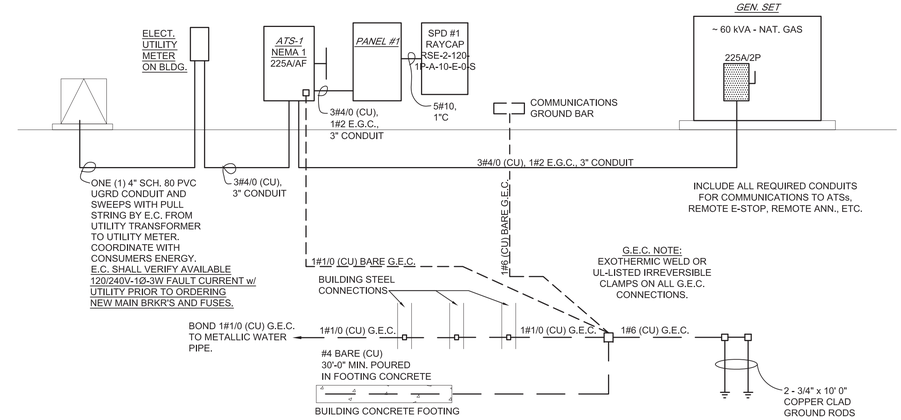
NOT TO SCALE



LOAD CALCULATIONS	VA		AMPS	NOTES
PANEL #1	39,893.1		166.2	
TOTAL LOAD	39,893.1		166.2	

ELECTRICAL RISER DIAGRAM - ALTERNATE #E1 & #E2

NOT TO SCALE



LOAD CALCULATIONS	VA		AMPS	NOTES
PANEL #1	39,893.1		166.2	
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ENGR. PROJ.#
20078

DRAWN BY:
JAV
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JAV

DATE:
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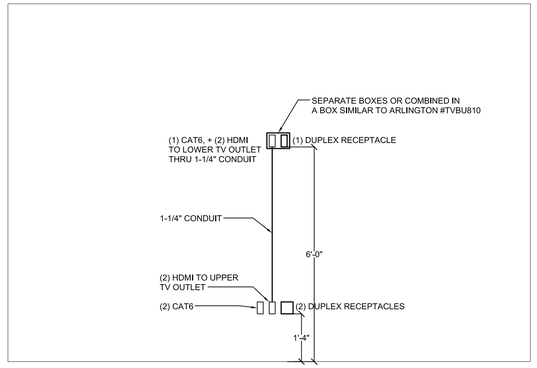
Bildding & Construction

SHEET NUMBER
E0

CONFERENCE ROOM #106 - TELEVISION WALL ELEVATION

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



PANEL #1

225A MCB, 120/240V-1PH.-3W (MLO FOR ALT. E2)
SQ.D NQ - SURFACE MNTD.

CIR.	CB/P	DESCRIPTION	LOAD	P	LOAD	DESCRIPTION	CB/P	CIR.
1	20/1	LIGHTS	1350	A	1080	RECEPTACLES - 101,106	20/1	2
3	20/1	LIGHTS	1506	B	1260	RECEPTACLES - 102,106,107	20/1	4
5	20/1	LIGHTS - EXTERIOR	496	A	900	RECEPTACLES - 104,107	20/1	6
7	20/1	RECEPTACLES ABOVE CLOUDS	360	B	1045	RECEPTACLES - 105,107 (EWC),108,EXT	20/1	8
9	20/1	BUILDING SIGN	1000	A	1200	RECEPTACLES - 108 REFRIG.	20/1	10
11	20/1	GENERATOR BATTERY CHARGER - ALT. E2	1000	B	1000	RECEPTACLES - 108 MICROWAVE	20/1	12
13	20/1	GENERATOR BLOCK HEATER - ALT. E2	1500	A	1000	RECEPTACLES - 108 DW & DISP	20/1	14
15	20/1	SPARE	---	B	540	RECEPTACLES - 108	20/1	16
17	20/1	SPARE	---	A	360	RECEPTACLES - 108	20/1	18
19	20/1	SPARE	---	B	540	RECEPTACLES - 109,110,LOBBY	20/1	20
21	20/1	SPARE	---	A	800	RECEPTACLES - 111 COPIER	20/1	22
23	20/1	EH-1	1000	B	800	RECEPTACLES - 111 PLOTTER	20/1	24
25	20/1	SNOW MELT & INFLOOR PUMPS (ALT. #M2)	452	A	900	RECEPTACLES - 112	20/1	26
27	20/1	GWH-1 & RP-1 (ALT. #M2 - B-1, PB-1)	1000	B	1080	RECEPTACLES - 113,103	20/1	28
29	20/1	F-1	809.6	A	1080	RECEPTACLES - 114,103	20/1	30
31	20/1	F-2	1067	B	1080	RECEPTACLES - 115,103	20/1	32
33	25/2	CU-1	4177	A	1080	RECEPTACLES - 116,117	20/1	34
35				B	1080	RECEPTACLES - 118	20/1	36
37	35/2	CU-2	6256	A	1080	RECEPTACLES - 119,117	20/1	38
39				B	360	RECEPTACLES - 120	20/1	40
41	30/2	SPD	---	A	360	RECEPTACLES - 120	20/1	42
43				B	1080	RECEPTACLES - 121	20/1	44
45	--	SPACE	---	A	1080	RECEPTACLES - 122	20/1	46
47	--	SPACE	---	B	1080	RECEPTACLES - 123	20/1	48
49	--	SPACE	---	A	360	RECEPTACLES - 103	20/1	50
51	--	SPACE	---	B	360	RECEPTACLES - 103	20/1	52
53	--	SPACE	---	A	900	RECEPTACLES - EXTERIOR	20/1	54

LIGHTS	5889	VA		
RECEPTS. (Using NEC 220.44)	16742.5	VA	TOTAL CALCULATED LOAD:	
MOTORS	12761.6	VA	39.9	kVA
MISC	4500	VA	166.2	A

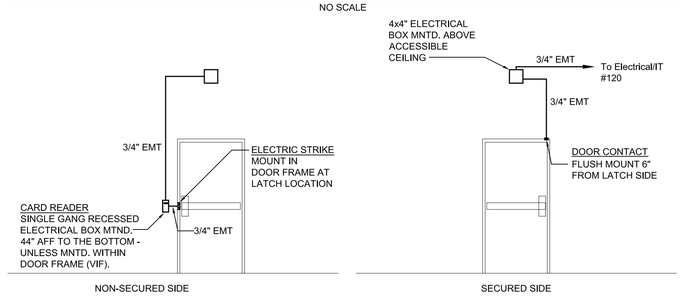
NOTES:

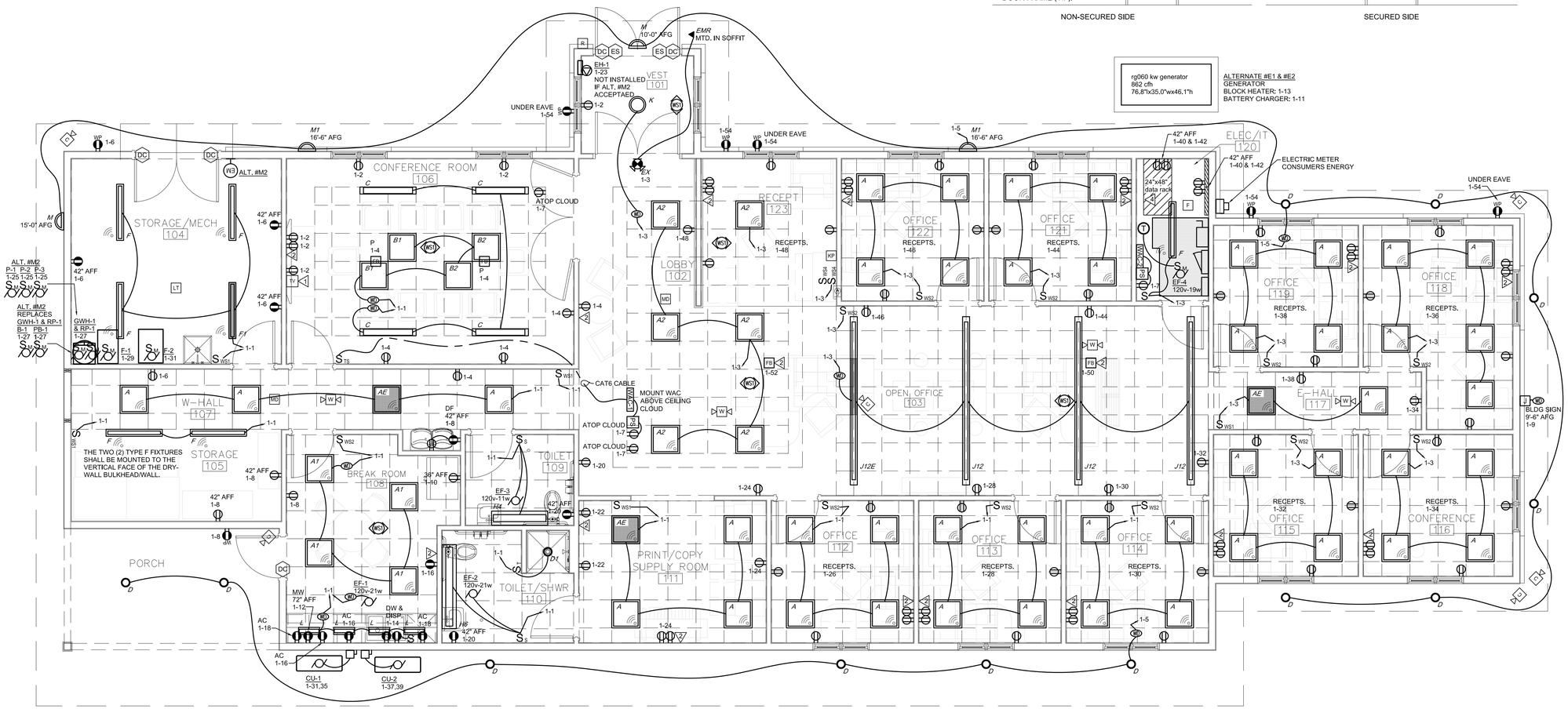
1. CAUTION !!!!!!!!
   E.C. SHALL VERIFY ALL ROUGH-IN ELEVATIONS, LOCATIONS AND/OR HEIGHTS OF ALL LIGHT FIXTURES, RECEPTACLE OUTLETS, T.V., COMPUTER, CLOCK OUTLETS, ETC. WITH ARCHITECT/ENGINEER. FAILURE TO DO SO WILL REQUIRE E.C. TO RELOCATE RESPECTIVE ITEMS AT THE E.C.'S EXPENSE.

   COMMUNICATION OUTLET LOCATIONS SHALL BE COORDINATED WITH OWNER AND OWNER FURNITURE PLAN.
2. THE LIGHTS THAT ARE SHADED REPRESENT LIGHTS THAT HAVE AN INTEGRAL EMERGENCY BATTERY AND SHALL HAVE A DIRECT (HOT) CONNECTION TO THE EMERGENCY BATTERY.
3. CONNECT ALL EXIT SIGNS AHEAD OF THE LOCAL AREA LIGHTING'S CONTROL DEVICE (i.e., HAVING A DIRECT (HOT) CONNECTION TO THE BATTERY).
4. FEEDS TO NEW POWER, LIGHTING, LOW VOLTAGE AND FIRE ALARM DEVICES SHALL BE ATTEMPTED IN EVERY WAY TO BE INSTALLED FLUSH-MOUNT (RECESSED BEHIND THE WALL/CEILING SURFACE).
5. COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF LIGHT FIXTURES WITH THE INTERIOR ELEVATIONS AND REFLECTED CEILING PLANS.
6. ALL PENDANT MOUNTED FIXTURES SHALL BE SECURELY HUNG FROM BUILDING STRUCTURE.
7. PROVIDE KEVLAR PULL STRINGS IN ALL SPARE CONDUITS.
8. E.C. SHALL COORDINATE FEEDER ROUTING WITH PLUMBING, MECHANICAL AND LOW VOLTAGE CONTRACTORS.
9. ANY NEW CONDUIT PENETRATIONS THROUGH WALLS SHALL BE APPROPRIATELY FIRE-STOPPED, SMOKE-STOPPED OR CAULKED WHEN PENETRATION SIZE EXCEEDS CONDUIT SIZE OR AS WORK SCOPES NOTE.
10. E.C. SHALL COORDINATE PROPER PLACEMENT OF OCCUPANCY SENSORS MOUNTED IN THE CEILING WITH THE MANUFACTURERS REPRESENTATIVE.
11. COORDINATE LOCATION OF SLEEVES ABOVE THE CEILING FOR DATA, TELEPHONE/ PAGING, TELEVISION, SECURITY, AND CLOCK SYSTEMS WITH THE OWNER.
12. COORDINATE CONDUIT SLEEVES WITHIN THE WALLS FOR DATA, TELEPHONE/ PAGING, TELEVISION, SECURITY, AND CLOCK SYSTEMS WITH THE OWNER.
13. WHERE CEILING 'CLOUDS' EXIST, UTILIZE THE 'CLOUD' TO HIDE 'WD's AND OTHER EQUIPMENT, WHILE STILL PROVIDING ACCESSIBILITY.

ELECTRICAL/SECURITY SYSTEM DETAILS

NO SCALE





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

N

1995 - CELEBRATING 25 YEARS - 2020
1995 - CELEBRATING 25 YEARS - 2020
830 Cottagegrove Dr., Suite 102
Traverse City, MI 49684
P 231.933.0510 F 231.933.3215
W www.nealisengineering.com
nealis ENGINEERING

PROJECT TITLE:
NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

SHEET TITLE:
ELECTRIAL FLOOR PLAN

ENGR. PROJ.# 20078

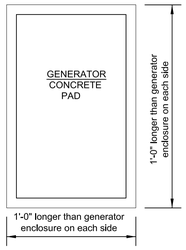
DRAWN BY: JAV
CHECKED BY: JAV

DATE: 01.29.2021
Bidding & Construction

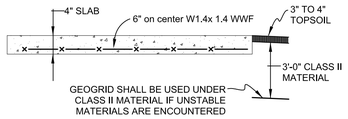
E1

ALTERNATE #E2
GENERATOR CONCRETE PAD DETAILS

NOT TO SCALE



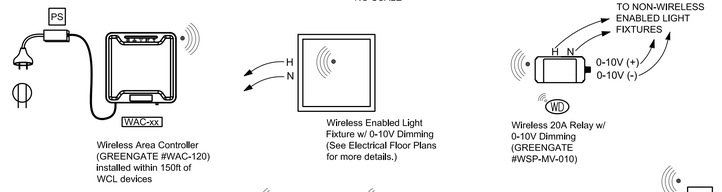
PLAN VIEW



SECTION VIEW

WIRELESS AREA CONTROLLER (WAC) DETAIL

NO SCALE



NOTE:
WIRELESS AREA CONTROLLER (WAC) AND ASSOCIATED WIRELESS CONTROLS SHALL BE PROGRAMMED BY THE E.C. TO THE OWNER'S SPECIFICATIONS. E.C. SHALL TRAIN THE OWNER HOW TO PROGRAM/ADJUST THE CONTROL SETTINGS.

LIGHTING CONTROL SCHEDULE

Location(s)	Room Name	Energy Code Area classification	ASHRAE 2013 9.4.1.1(a-i)								
			Local control	Manual on	Partial Auto-On	Bi-Level Lighting	Daylight Side Lighting	Daylight Top Lighting	Partial Auto-Off	Full Auto-off	Scheduled Off
#101, #102	Vestibule, Lobby	Lobby	X	--	X	X	N/A	N/A	--	X	--
#103, #112, #113, #114, #115, #118, #119, #121, #122, #123	Office	Office	X	X	--	X	N/A	N/A	--	X	--
#104, #120	Mechanical, Electrical/IT	Electrical/Mechanical	X	--	--	--	N/A	N/A	--	--	--
#105	Storage	Storage	X	X	--	X	N/A	N/A	--	X	--
#106, #117	Conference Room	Conference/Meeting	X	--	X	X	N/A	N/A	--	X	--
#107, #117	Hallway	Corridor	X	--	--	--	N/A	N/A	--	X	--
#108	Break Room	Lounge/Break Room	X	--	X	X	N/A	N/A	--	X	--
#109, #110	Toilet	Restroom	--	--	--	--	N/A	N/A	--	X	--
#111	Print, Copy, Supply	Copy/Print Room	X	X	--	X	N/A	N/A	--	X	--

LIGHT FIXTURE SCHEDULE

Type	*Mount*	*Description*	*Lumen*	*Temp*	*CRI*	*Watts*	*Volt*	*Dim*	*Manufacturer*	*Catalog #*	*Notes*
A	Recessed/Grid	2x2 LED Troffer with WaveLinx Integrated Sensor	3,900	3500K	90	34.5	120-277V	0-10V	Metalux	22CZ2-39-SQR-UNV-L935-CD1-WAA-U	
AE	Recessed/Grid	2x2 LED Troffer with WaveLinx Integrated Sensor	3,900	3500K	90	34.5	120-277V	0-10V	Metalux	22CZ2-39-SQR-UNV-EL14W-L935-CD1-WAA-U	Same as type A except with integral 14W emergency battery
A1	Recessed/Grid	2x2 LED Troffer with WaveLinx Integrated Sensor	3,560	3500K	90	31	120-277V	0-10V	Metalux	22FPX-32-UNV-L835-CD1-WAA-U	
A2	Recessed/Grid	2x2 LED Troffer with Perceive Lens	5,000	3500K	90	41.9	120-277V	0-10V	Metalux	22PD-50-PB1-L935-CD1-WAA-U	
B1	Recessed/Grid	2x2 LED Troffer with Reversible Drop Lens	2,500	3500K	80	20.6	120-277V	0-10V	Metalux	22ID-25-CFR2-L835-MU	
B2	Recessed/Grid	2x2 LED Troffer with Reversible Drop Lens	2,500	3500K	80	20.6	120-277V	0-10V	Metalux	22ID-25-CFD2-L835-MU	
C	Recessed/Grid	2'x4' LED Troffer with Asymmetric Troffer	1,360	3500K	80	13	120-277V	0-10V	Metalux	4RCG-4-34D-A-L835-U	
D	Recessed/Ceiling	Architectural LED Downlight with Adjustable Lumens	1,000	3500K	80	10	120-277V	0-10V	Portfolio	HC415D010-HM412835-41MDW-RMB22	
D1	Recessed/Ceiling	Architectural LED Wet Location Showerlight	600	3500K	90	8	120-277V	N/A	Halo	H245ICAT-RL4069S1EWHR	
EX	Wall/Ceiling	Single-sided LED Exit Sign with Green Lettering	N/A	N/A	N/A	3	120-277V	N/A	Isolite	RLP-G-U-WH-MTEB	
EM	Surface/Wall	Twin Emergency Lighting Remote Heads	N/A	N/A	N/A	1	120-277V	N/A	Isolite	MVI-WH-2	Connect to nearest EX fixture
F	Surface/Ceiling	4' linear LED fixtures with Wavelinx Integrated Sensor	4,400	3500K	80	39.7	120-277V	0-10V	Metalux	4SWLED-44HL-LW-UNV-CD1-WAA-U	
FE	Surface/Ceiling	4' linear LED fixtures with Wavelinx Integrated Sensor	4,400	3500K	80	39.7	120-277V	0-10V	Metalux	4SWLED-44HL-LW-UNV-EL14W-CD1-WAA-U	Same as type F except with integral 14W emergency battery
H4	Recessed/Grid	4' Perimeter WallWash Troffer	2,800	3500K	90	30	120-277V	0-10V	Liteline	LEDP-6I4-WH-35-30-120-277V	
H6	Recessed/Grid	6' Perimeter WallWash Troffer	4,000	3500K	90	40	120-277V	0-10V	Liteline	LEDP-6I6-WH-35-40-120-277V	
J12	Recessed/Grid	1.5"x12' Linear Architectural LED	7,200	3500K	90	73.2	120-277V	0-10V	Axis Lighting	STSLR-SO-600-90-35-12-W-UNV-MD-1-SB15	
J12E	Recessed/Grid	1.5"x12' Linear Architectural LED with EM Battery	7,200	3500K	90	73.2	120-277V	0-10V	Axis Lighting	STSLR-SO-600-90-35-12-W-UNV-MD-1-SB15-B1	Same as type J12 except with remote 14W emergency battery
K	Surface/Ceiling	14" square LED surface with Adjustable Lumens & CCT	2,054	3500K	90	27	120-277V	0-10V	Halo	SMD14S209SWHE	
L	Surface/Ceiling	18" linear LED undercabinet with USB and Splice Box	440	3500K	90	8	120-277V	0-10V	Halo	HU30-BSC-18-P-HU109-HU102	
M	Surface/Wall	Architectural LED wall pack	7,178	3500K	70	59	120-277V	0-10V	McGraw-Edison	GWC-SA1C-7035-U-SL4-GM	Install with a shallow depth surface mounted box, with finish to match the siding, and provide additional support (backing) due to exterior siding being ribbed. The final location of the fixtures shall be coordinated with the ribs of the siding
M1	Surface/Wall	Architectural LED wall pack	15,387	3500K	70	129	120-277V	0-10V	McGraw-Edison	GWC-SA2D-7035-U-SL4-GM	Install with a shallow depth surface mounted box, with finish to match the siding, and provide additional support (backing) due to exterior siding being ribbed. The final location of the fixtures shall be coordinated with the ribs of the siding

SECTION
260000
BASIC ELECTRICAL REQUIREMENTS

ELECTRICAL SPECIFICATIONS

1. PRIOR TO SUBMITTING A PROPOSAL, BIDDER SHALL HAVE VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT.
2. ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ENFORCEABLE EDITION OF THE N.E.C., LOCAL AND STATE CODES, ORDINANCES, REGULATIONS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND ADA GUIDELINES WITH THE LOCAL CODE AUTHORITIES HAVING JURISDICTION.
3. ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.
4. THE CONTRACTOR SHALL EMPLOY QUALIFIED AND EXPERIENCED WORKMEN FOR THIS WORK.
5. ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH THE UTILITY TRANSFORMERS' DATA. FAULT CURRENT WAS NOT AVAILABLE AT THE TIME OF DESIGN. FOR THE PURPOSES OF BIDDING, ASSUME ALL SWITCHGEAR TO BE 42,000 A.I.C. RATED AND COORDINATE ALL DOWNSTREAM EQUIPMENT WITH THE FINDINGS.
6. E.C. SHALL COORDINATE WITH THE ELECTRIC UTILITY AND THE OWNER TO COMPLETE DOCUMENTATION TO OBTAIN ALL AVAILABLE ENERGY INCENTIVE CREDITS FOR THE OWNER.
7. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER HIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER. SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AT NO EXPENSE TO THE OWNER.
8. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) HOURS OF TRAINING AS NECESSARY TO THE OWNER ON THE LIGHTING CONTROLS, AND ALL OTHER ELECTRICAL EQUIPMENT AND/OR DEVICES.
9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OPERATING AND MAINTENANCE INSTRUCTION MANUALS, CERTIFICATES OF INSPECTION, TEST REPORTS, SPARE PARTS, AND RECORD DRAWINGS (AS-BUILTS) TO THE OWNER PRIOR TO CLOSEOUT. FINAL PAYMENT WILL ONLY BE MADE AFTER THE FINAL PUNCH LIST COMPLETION AND RECEIPT OF THE ABOVE CLOSEOUT DOCUMENTATION.
10. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER BUILDING TRADES. IF ANY DISCREPANCIES OCCUR, CONSULT WITH THE ARCHITECT, ENGINEER AND/OR OWNER BEFORE CONTINUING.
11. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
12. THE ELECTRICAL CONTRACTOR SHALL PERIODICALLY REMOVE FROM THE SITE ALL DEBRIS AND RUBBISH ACCUMULATING AS A RESULT OF THE ELECTRICAL INSTALLATION. UPON COMPLETION OF THE PROJECT, HE SHALL DISPOSE OF ALL DEBRIS AND RUBBISH AND SHALL LEAVE ALL AREAS CLEAN. THE INTERIORS OF ALL CABINETS, PULL BOXES, AND EQUIPMENT ENCLOSURES SHALL BE FREE OF ANY DEBRIS.
13. DRAWINGS ARE DIAGRAMMATIC ONLY. FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND MOUNTING LOCATIONS. NOTIFY ENGINEER IF ANY DISCREPANCIES ARE FOUND THAT AFFECT THE WORK TO BE PERFORMED, PRIOR TO PROCEEDING.
14. ELECTRICAL JOINTS WILL BE PERMITTED ONLY IN JUNCTION AND OUTLET BOXES. ALL JOINTS SHALL BE FIRMLY BONDED TOGETHER AND TAPED OR SHALL BE MADE WITH MECHANICAL CONNECTORS.
15. WITHIN THIRTY (30) DAYS AFTER THE ELECTRICAL CONTRACTOR HAS BEEN NOTIFIED TO PROCEED WITH THE WORK, HE SHALL SUBMIT TO THE ENGINEER EIGHT (8) HARD COPIES OR ONE (1) ELECTRONIC COPY OF EACH OF THE FOLLOWING DRAWINGS AND DATA SHEETS FOR REVIEW. ALL EQUIPMENT FOR WHICH SHOP DRAWINGS ARE BEING SUBMITTED SHALL NOT BE ORDERED UNTIL APPROVED DRAWINGS HAVE BEEN RETURNED. SUCH SUBMITTALS SHALL INCLUDE:
    - ELECTRICAL PANEL, CIRCUIT BREAKERS, DISCONNECTS, MOTOR STARTERS, ETC.
    - LIGHT FIXTURES AND CONTROLS, INCLUDING SENSOR SWITCHES, WIRELESS LIGHTING CONTROLS, EMERGENCY INVERTERS, ETC.
    - WIRING DEVICES INCLUDING RECEPTACLES, SWITCHES
16. ELECTRICAL MATERIALS SHALL BE NEW, AND BEAR THE "UL" LABEL OR LISTING.
17. BRANCH CIRCUIT WIRE SHALL BE COPPER, RATED 75°C, MINIMUM SIZE #12 AWG, AND BE:
    (A) TYPE "NM", "NMC", "NMS", OR
    (B) TYPE 'MC', 'AC' CABLE (6 FT. MAXIMUM UNLESS OTHERWISE NOTED OR APPROVED BY THE ARCHITECT/ENGINEER/OWNER) WHERE INSTALLED IN CONCEALED LOCATIONS, OR
    (C) TYPE "THHN", "THWN OR "THWN-2" AND INSTALLED IN CONDUIT (EMT, FOR INDOOR USE; SCHEDULE 40 PVC OR SCHEDULE 80 PVC, WHERE SUBJECT TO DAMAGE, FOR INDOOR WET LOCATIONS, AND SCHEDULE 40 PVC OR RMC FOR OUTDOOR USE, MINIMUM SIZE 1/2", OR
    (D) UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.

    FEEDERS AND SECONDARY SERVICE CONDUCTORS SHALL BE STRANDED COPPER WITH 600 VOLT INSULATION, RATED 90°C, AND BE:
    (A) TYPE "THHN", "THWN" OR "THWN-2" AND BE INSTALLED IN EMT OR PVC CONDUIT, MINIMUM SIZE 1/2"
    (B) UNLESS OTHERWISE NOTED OR REQUIRED BY CODE

    INTERIOR MOTOR CONNECTIONS SHALL BE TYPE "MC" OR "AC" CABLE OR LIQUID TITE FLEXIBLE CONDUIT (BOTH WITH A 6FT. MAXIMUM LENGTH).
    ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE DELIVERED TO PROJECT IN UNBROKEN AND UNDAMAGED CARTONS AND/OR REELS.
    ALL NEW BRANCH WIRING SHALL BE COLOR CODED BY THE FOLLOWING VOLTAGE SYSTEMS AND LABELED AT THEIR SOURCE PER 2017 NEC SECTION #210.5:
    120/240V-1Ø-3W SYSTEM:
    ØA - BLACK
    ØB - RED
    NEUTRAL - WHITE
    E.G.C. - GREEN
18. ALL CONDUIT AND JUNCTION BOXES SHALL BE APPROPRIATELY MARKED WITH THE CIRCUITS THEY CONTAIN AND A DESIGNATION THAT IT IS CONTAINING ELECTRICAL CONDUCTORS.
19. UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC, UNLESS OTHERWISE REQUIRED BY CODE.
20. FUSES SHALL BE "UL" LISTED, DUAL-ELEMENT AS MANUFACTURED BY BUSSMAN CO., OR APPROVED EQUAL (200,000 AIC).
21. SWITCHES SHALL BE RATED 20A, 120/277V, COMMERCIAL SPECIFICATION DECORATOR STYLE GRADE, SINGLE, DOUBLE-POLE, THREE-WAY, ETC. AS INDICATED, AND EQUAL TO HUBBELL, GE, LEVITON, COOPER, ARROW-HART OR P&S. SWITCHES SHALL BE WHITE IN COLOR.
22. RECEPTACLES SHALL BE RATED 20A, 125AMP, COMMERCIAL GRADE DECORATOR STYLE GROUNDED TYPE (NEMA 5-20R), EQUAL TO HUBBELL, GE, LEVITON, COOPER, ARROW-HART OR P&S. RECEPTACLES SHALL BE WHITE IN COLOR AND INSTALLED WITH THE GROUND PRONG 'UP'.
23. PLATES FOR SWITCHES AND RECEPTACLES SHALL BE NYLON/THERMOPLASTIC AND BE WHITE IN COLOR TO MATCH THE DEVICE.
24. THE AUTOMATIC OCCUPANCY SENSORS SHALL BE FIELD ORIENTATED TO MAXIMIZE SENSING COVERAGE. E.C. SHALL ADJUST AUTOMATIC OFF DELAY SETTINGS PER THE OWNERS SPECIFICATIONS. E.C. SHALL TRAIN THE OWNER ON HOW TO ADJUST THE DELAY SETTINGS. OCCUPANCY SENSORS SHALL BE AS SPECIFIED BY EATON CONTROLS
25. INTEGRAL EMERGENCY BATTERIES AND REMOTE EMERGENCY MINI-INVERTERS SHALL PROVIDE A MINIMUM OF 90 MINUTES OF RUN-TIME FOR LAMPS AS SHOWN. BY SURE-LITES, LVS, IOTA, MYERS, OR SIMILAR.
26. ALL LIGHT FIXTURES HAVE BEEN SELECTED BY THE OWNER, THE ARCHITECT, AND THE ENGINEER FOR THE BASIS OF DESIGN AND APPEARANCE. ALTERNATE FIXTURE MANUFACTURERS MUST SUBMIT FIXTURE APPROVAL SUBMITTAL A MINIMUM OF 10 DAYS PRIOR TO THE BID DUE DATE FOR THE ENGINEER TO REVIEW.
27. LIGHTING IN MECHANICAL ROOMS IS DIAGRAMMATIC INDICATING TYPE, QUANTITY AND GENERAL CIRCUIT OF FIXTURES. MODIFY LOCATIONS AND MOUNT TO SUIT CONDITIONS, ALLOWING CLEARANCE FOR EQUIPMENT, PIPING AND DUCTWORK.
28. PROJECT HAS BEEN DESIGNED TO COMPLY WITH AUTOMATIC LIGHTING SHUTOFF REQUIREMENTS OF THE CURRENTLY ADOPTED MI ENERGY CODE (REFERENCING ASHRAE 90.1-2013). ASHRAE LIGHTING COMPLIANCE DOCUMENTATION CAN BE PROVIDED BY THE ENGINEER UPON REQUEST.
29. DISCONNECT SWITCHES SHALL BE RATED 250V, OR 600V, FUSED OR NON-FUSED AS NOTED, HEAVY-DUTY, NEMA-1, FOR INDOOR USE, AND NEMA-3R FOR OUTDOOR USE BY SQUARE D OR SIMILAR.
30. SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS AND PILOT LIGHT, SURFACE OR FLUSH MOUNTED AS NOTED BY SQUARE D CLASS 2510 OR SIMILAR.
31. PANELBOARDS SHALL BE RATED 120/240V-1Ø-3W, AS NOTED WITH PLUG-IN/BOLT-ON TYPE BRANCH CIRCUIT BREAKERS RATED A MINIMUM OF 42,000 A.I.C. UTILITY FAULT CURRENT WAS NOT AVAILABLE AT THE TIME THESE DRAWINGS WERE PREPARED; CONTRACTOR IS CONFIRM AND VERIFY THE UTILITY FAULT CURRENT, AND ADJUST ACCORDINGLY. SEE SPECIFICATION NOTE #5. PANELBOARDS SHALL BE SIMILAR TO SQUARE D, TYPE NQ SERIES.
32. FIRE CAULKING REQUIRED WHERE ANY PENETRATIONS ARE MADE THROUGH FIRE RATED WALLS, BY, E.C.
33. PROVIDE AN UPDATED, ACCURATE AND TYPED PANEL SCHEDULE FOR ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THE WORK IN THIS PROJECT. DOCUMENT ALL CHANGES ON FINAL AS-BUILT DRAWINGS AS REQUIRED. VERIFY ALL EXISTING LOADS AND WIRING - NOTIFY THE ARCHITECT/ENGINEER IF EXISTING CONDITIONS ARE FOUND THAT VIOLATE INSTALLATION OR SAFETY CODES.
34. ALL NEW EQUIPMENT (DISCONNECTS, VARIABLE FREQUENCY DRIVES (VFD), ETC.) IDENTIFICATION SHALL BE IDENTIFIED AND LABELED.
35. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE BOX AND RACEWAY SYSTEM FOR THE LOW-VOLTAGE CABLING SYSTEMS (TELEPHONE, DATA, ETC.) THAT ARE TO BE PROVIDED AND INSTALLED BY THE OWNER. THESE DRAWINGS ARE DIAGRAMMATICAL AND THE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN THE FIELD.
36. ALTERNATE #E1: PROVIDE AND INSTALL THE CONDUIT(S) WITH PULL STRINGS AND CAPS TO ACCOMMODATE THE INSTALLATION OF THE OPTIONAL STANDBY GENERATOR AND SERVICE ASSOCIATED WIRING AS SHOWN ON THE PLANS. GENERATOR; GENERAC MODEL RG06020ANAX, 862 FT3/HR NATURAL GAS @ 100% RATED LOAD, 60 KW, 120/240V, 1 PHASE, 3 WIRE WITH ONE (1) 225A/2P CIRCUIT BREAKER. PROVIDE 2 YEAR WARRANTY.

    PROVIDE WITH ONE (1) 225 AMP (80% RATED) UL MAIN CIRCUIT BREAKER, 12V, 30 AMP BATTERY ALTERNATOR AND BATTERY CHARGER, GROUP 26, 525 CCA BATTERY, PAINTED ALUMINUM SOUND ATTENUATED WEATHERPROOF ENCLOSURE, FUEL SHUT OFF SOLENOID, ENCLOSED CRITICAL GRADE MUFFLER, REMOTE ANNUNCIATOR, AND REMOTE EMERGENCY STOP BREAK GLASS.

    INSTALL GENERATOR AND ALL ACCESSORIES AND FLUID PER INSTALLATION INSTRUCTIONS. LOCATE GENERATOR PER SITE PLAN.

    TRANSFER SWITCHES SHALL BE: GENERAC #ATV3FDC20225WSU, 2 POLE, 3 WIRE, 225 AMP, SERVICE ENTRANCE RATED, WITH STANDARD EXERCISER IN A NEMA 1 ENCLOSURE, ADJUSTABLE LOGIC CONTROLS. LOCATE IN ELEC./IT ROOM #120 AS SHOWN ON THE PLANS. PROVIDE A QUANTITY OF 1 WITH A 2 YEAR WARRANTY.
37. PART NUMBERS FOR LOW VOLTAGE EQUIPMENT SHALL BE EQUAL OR BETTER THAN THE FOLLOWING:
    A. COMMSCOPE CAT6 PLENUM RATED CABLING - CS34P BLU
    B. COMMSCOPE CAT6 JACKS - ORANGE - UNJ600-OR (760237782)
    C. COMMSCOPE DATA FACEPLATES - WHITE - M12L-262 (108168469), M14L-262 (108168543) OR ADDITIONAL PORT QUANTITIES AS REQUIRED
    D. COMMSCOPE 24-PORT CAT6 PATCH PANEL - UNP-6-DM-1U-24 (760180042) - PROVIDE QUANTITY AS REQUIRED FOR ALL CONNECTIONS (MIN. OF 2)
    E. PANDUIT 2-POST RACK - R2P
    F. PANDUIT VERTICAL WIRE MANAGEMENT - PEV6 OR PE2VD06

    INCLUDE ALL REQUIRED J-HOOKS, CABLE TESTING AND CERTIFICATION, AND LABELING OF ALL CABLE ENDS, FACEPLATES, AND PATCH PANELS FOR A COMPLETE AND FUNCTIONAL SYSTEM.

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830 Cottageview Dr., Suite 102
Traverse City, MI 49684
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nealis ENGINEERING

NEW OFFICE BUILDING FOR:
JS PROPS OZ LLC
TRAVERSE CITY, MI

PROJECT TITLE:

SHEET TITLE: ELECTRICAL SCHEDULES & DETAILS

ENGR. PROJ.# 20078

DRAWN BY: JAV
CHECKED BY: JAV

DATE: 01.29.2021 Bidding & Construction

SHEET NUMBER
E2

SECURITY LAYOUT

SCALE: 7/32" = 1'-0"

VIDEO SYSTEM		WIRE PART #	WIRE DESC.	FOOTAGE
	CAMERA			
	PANORAMIC/MULTI-LENS CAMERA			
NVR	NETWORK VIDEO RECORDER			
AVR	ARCHIVER			
SW	NETWORK SWITCH			
	ACCESS CONTROL (PACS)			
ACP	ACCESS CONTROL PANEL			
K	KEYPAD ONLY			
KCR	KEYPAD/CARD READER			
CR	CARD READER			
DCM	DOOR CONTACT/POSITION SWITCH			
REX	REQUEST-TO-EXIT PIR			
ES	ELECTRONIC STRIKE			
	INTRUSION/ALARM SYSTEM			
BAP	BURGLAR ALARM PANEL			
KP	KEYPAD			
DCM	DOOR CONACT/POSITION SWITCH			
M	MOTION DETECTOR - 360			
HA	HOLD-UP BUTTON			
GB	GLASSBREAK DETECTOR			
F	FLOOD SENSOR			
LT	LOW TEMP ALARM			
	DATA/PHONE SYSTEM			
	DUAL CAT6 DATA DROP			
	SINGLE CAT6 ACCESS POINT (WAP)			
TV	TELEVISION			

BILL OF MATERIALS

DATA	
PART #	DESCRIPTION
CS34P	CAT6 PLENUM WIRE
760237782	CAT6 JACKS ORANGE
108168469	FACE PLATES WHITE 2-PORT
760180042	CAT6 PATCH PANEL 24-PORT
R2P	2-POST RACK
PEV6	VERT. WIRE MANAGEMENT

SECURITY EQUIPMENT
CAMERA MODELS (CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY MOUNTS, ACCESSORIES AND ADAPTERS)
OUTDOOR: AXIS M2026-LE MK II OR EQUIVALENT
INDOOR PANORAMIC: AXIS M3068-P OR EQUIVALENT

VMS/NVR
SPECTRUM IPVMS OR EQUIVALENT

ALARM SYSTEM
CONTROL PANEL: DMP XT-50N
KEYPAD: 7872
MOTION DETECTOR: OPTEX FX-360 OR EQUIVALENT
DOOR CONTACTS: TANE SD-80 OR EQUIVALENT
LOW-TEMPERATURE ALARM" HONEYWELL TS300 OR EQUIVALENT

ACCESS CONTROL
DOOR CONTROLLER: KANTECH KT-1
CARD READER: KANTECH KT-SG-MT MULTI-TECHNOLOGY READER
CREDENTIALS: IOSMART TAG/FOB (QTY 25)

CABLING

ALARM AND ACCESS CONTROL CABLING
EACH ACCESS CONTROL DOOR: WINDY CITY WIRE OR EQUIVALENT PART #: 4461230
EACH MOTION DETECTOR: WINDY CITY WIRE OR EQUIVALENT PART #: 444380
EACH DOOR CONTRACT: WINDY CITY WIRE OR EQUIVALENT PART #: 444380
EACH ALARM KEYPAD: WINDY CITY WIRE OR EQUIVALENT PART #: 444380
EACH LOW TEMP SENSOR: WINDY CITY WIRE OR EQUIVALENT PART #: 444380

EACH CAMERA REQUIRES
CAMERA (1) CAT6 CS34P PLENUM WIRE

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REVISIONS

REV	DESCRIPTION	DATE	DRAWN	CHECKED
B	ISSUED FOR BIDDING AND CONSTRUCTION	01/29/21	EASTLING	BYRNES
A	ISSUED FOR INTERNAL REVIEW	12/03/20	EASTLING	BYRNES

TKS Security
(888) 595-1115 - phone
(888) 502-1651 - fax
www.gotks.com
MI Alarm License# 3601206063
MI Fire Alarm License # 5103347
MI BFS Certification # A-1158

JENISON LOCATION
7050 12th Ave
Jenison, MI 49428

TRAVERSE CITY LOCATION
2397 Traversefield Dr #200
Traverse City, MI 49686

CUSTOMER INFORMATION
NEALIS ENGINEERING
830 COTTAGEVIEW DR SUITE 102
TRAVERSE CITY, MI 49684
231-933-0510

DRAWING TITLE
TRAVERSE CITY OFFICE
SECURITY LAYOUT
1ST FLOOR

ISSUE
BIDDING AND CONSTRUCTION

SCALE:	DATE:	DRAWING BY:	CHECKED BY
7/32" = 1'-0"	01/29/21	EASTLING	BYRNES

CURRENT DRAWING NO. 20TKS021-SC1
SHT NO. 001