AJ'S BAR AND GRILL
GLENWOOD, MN



General Project Notes

1. CODE COMPLIANCE: THE GENERAL CONTRACTOR, ALL SUBCONTRACTORS AND SUPPLIERS PERFORMING WORK OR SUPPLYING MATERIALS FOR CONSTRUCTION SHALL ENSURE THAT SUCH WORK AND MATERIAL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES AS ADOPTED AND OTHER APPLICABLE STANDARDS INCLUDING THE AMERICANS WITH DISABILITIES ACT.

2. PERMITS: THE GENERAL CONTRACTOR AND ANY SUBCONTRACTORS WITH WORK REQUIRING PERMITS SHALL OBTAIN AND POST AS REQUIRED BY THE CODE ENFORCEMENT AUTHORITY ALL SUCH PERMITS.
2.1 TEMPORARY PERMITS: THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY SPECIAL PERMITS THAT MAY BE REQUIRED TO CLOSE STREETS, WORK IN PUBLIC OR PRIVATE RIGHTS OF WAY OR OTHERWISE WORK ON PROPERTY NOT UNDER THE DIRECT CONTROL OF THE OWNER OR THEIR AGENTS.
2.2 INSPECTIONS: SCHEDULE AND CONDUCT ALL REQUIRED INSPECTIONS AND APPROVALS, PROVIDE ALL DOCUMENTATION REQUIRED TO OBTAIN A FINAL CERTIFICATE OF OCCUPANCY.

3. VERIFICATION OF CONDITIONS: FIELD VERIFY EXISTING SITE CONDITIONS, DIMENSIONS, ELEVATIONS, UTILITIES AND BECOME FULLY INFORMED AS TO THE SCOPE OF WORK, REPORT ANY DISCREPANCIES CONFLICTING WITH THE WORK TO THE ARCHITECT.
3.1 ADJACENT PROPERTIES: PROTECT ADJACENT PRIVATE PROPERTIES PUBLIC RIGHT-OF-WAY FROM DAMAGE DURING CONSTRUCTION AND ENSURE USE OF SUCH PROPERTY IS NOT ADVERSELY AFFECTED BY THE CONSTRUCTION PROJECT. ANY CONSTRUCTION WORK TO DISRUPT ADJACENT PROPERTIES THAN THE GENERAL CONTRACTOR SHALL SCHEDULE SUCH WORK WITH THE PROPERTY OWNER.
3.2 LIFE SAFETY SYSTEMS: ALL EXISTING LIFE SAFETY PROVISIONS SHALL BE MAINTAINED DURING CONSTRUCTION.
3.3 EROSION CONTROL: ANY SITE WORK SHALL MAKE USE OF APPROPRIATE EROSION CONTROL THAT IS COMPLIANT WITH STATE AND LOCAL REQUIREMENTS.
3.4 UTILITY COORDINATION: COORDINATE WORK AND UTILITY CONNECTIONS WITH LOCAL UTILITY PROVIDERS.
3.5 CLEANUP: MAINTAIN A CLEAN AND SAFE CONSTRUCTION SITE. ALL CONSTRUCTION WASTE SHALL BE REMOVED FROM THE WORK AREA IN A TIMELY MANNER. THE CONSTRUCTION AREA SHALL BE SWEPT ON A REGULAR BASIS TO MITIGATE DUST AND TRASH.

4. DRAWINGS AND SPECIFICATIONS: THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO GUIDE AND DIRECT THE WORK NECESSARY FOR COMPLETION OF THE BUILDING OR BUILDING IMPROVEMENTS DESCRIBED HEREIN. THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE TO PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE CONSTRUCTION PROJECT.
4.1 SCALING DRAWINGS: DO NOT SCALE ANY DRAWINGS, UNLESS INDICATED OTHERWISE ALL DIMENSIONS ARE TO THE FACE OF WALLS AND CENTERLINE OF STRUCTURAL GRIDS.
RELATIONSHIP BETWEEN DRAWINGS AND SPECIFICATIONS
4.2 IDENTIFY DISCREPANCIES: NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOUND IN THE DRAWINGS AND SPECIFICATIONS.
4.3 SHOP DRAWINGS: SUBMIT SHOP DRAWINGS, SAMPLES AND PRODUCT DATA TO THE ARCHITECT FOR REVIEW AND APPROVAL OF MATERIALS, FINISHES AND SYSTEMS.
4.4 SUBSTITUTIONS: MATERIAL OR EQUIPMENT SUBSTITUTIONS ARE NOT ALLOWED UNLESS APPROVED BY THE ARCHITECT.

5. MEANS AND METHODS: THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS, METHODS, SEQUENCE OF CONSTRUCTION AND COORDINATION OF WORK; INCLUDING ANY INSTALLATION OF FIXTURES, FURNISHINGS AND EQUIPMENT BY OWNER'S VENDORS. SUBMIT PROPOSED CONSTRUCTION SCHEDULE AND ALL REVISIONS TO THE ARCHITECT AND OWNER.

6. AS-BUILT DRAWINGS: MAINTAIN UP-TO-DATE CONSTRUCTION DRAWINGS ON THE JOB SITE AT ALL TIMES, SUBMIT TWO (2) SETS OF MARKED-UP RECORD DRAWINGS TO THE ARCHITECT UPON COMPLETION OF THE WORK AND OCCUPANCY OF THE PROJECT.

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Project Team

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AJ'S BAR AND GRILL
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CIVIL ENGINEER

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Sauk Rapids, MN

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MBN ENGINEERING
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Code Information

2020 Minnesota State Building Code
2020 MN ADA STANDARDS
Department of Health

Occupancy Type (*Section 303*)

Group A-2 - Restaurant

Construction Type (*Section 602.5*)

Type V, B (Non-rated) Construction in which the structural elements, exterior and interior walls are of any materials permitted by the code.

Building Height & Area (*Table 503*)

Based on above referenced occupancy type and construction type.

	ALLOWABLE	ACTUAL
Height (Stories / Feet):	1 / 40'	> 40"
Area (Group M):	6,000 sf	5,188 sf

Incidental Uses (*Section 509*)
No incidental use areas are present within building as defined in Table 509 that require separation.

Fire Resistive Requirements (*Table 601*)

		Hrs
Structural Frame		0
Bearing Walls	Exterior	0
	Interior	0
Non-bearing Walls	Exterior	*Table 602*
	Interior	0
Floor Construction		0
Roof Construction		0

Exterior Walls (*Table 602*)
Where exterior wall fire separation distance to the property line is less than 10', but more than 5' 1-Hour rated construction is required. If Less than 5' 2-Hour rated construction is required. *All sides of building are more than 10' offset from property line. No rated construction required*

Allowable Area of Openings (*Section 704.8/Table 704.8*)
The maximum area of openings allowed in rated exterior construction is determined as a percentage of total wall area (table 704.8). When an exterior wall is within 3' of property line no openings are allowed, from 3' to 5' only protected openings are allowed and from 5' to 10' both protected and unprotected openings are allowed. *No exterior walls require rated construction, therefore no limitations are imposed on openings.*

Automatic Sprinkler System *(Chapter 9)*

NFPA 13 sprinkler system as required for the entire project.

Occupant Load *(Chapter 10)*

The Occupant Load is determined by first sub-dividing the plan layout into different 'Function Types' (*per Table 1004.1.1*) then dividing each by the assigned SF/Occupant to obtain the Total Occupant Load for exiting. The Function Areas assigned in the table below are graphically represented in the Code Plan on this sheet.

TABLE 1004.1

	Criteria	Area	Load
Fixed Seating Interior	Seat Count	N/A	159
Cooler	300 gross	84 sf	1
Kitchen	200 gross	697 sf	3
Accessory (Back house)	300 gross	280 sf	1
Office	150	53	1
	Total		165

Building Exits

Egress Width (*Section 1005*)
Sprinkled buildings require 0.2" of egress width per occupant. *Egress width required, 33"* for occupant load of 165 persons. *Egress minimums apply 36" min.*

Exit Doors (*Section 1015, Table 1015.1*)
Occupant load greater than 49 requires 2 exit. 3 exit provided.

Exit Access Travel Distance (*Section 1016, Table 1016.1*)
In sprinkled buildings the maximum travel distance from any point in the building to an exit is limited to 250'. *Maximum distance present 64'-6.*

Plumbing Fixtures *(Chapter 29)*

As required for toilet room fixture calculations the total occupancy load for the building (*per Table 2902.3, IBC*).

	CRITERIA	REQUIRED	PROVIDED
(165 Total Occupants)			
Water Closets	1 / 75 male	1.1	1 (2 urinals)
Water Closets	1/75 female	1.1	3
Lavatories	1 / 200	1	2 each sex
Urinal		0	2
OTHER FIXTURES			
Drinking Fountain		1	0*
Service Sink		1	1

* Water is provided through a dispenser in the fountain drink system at no charge.

Fire Protection (IFC)

Portable Fire Extinguishers (*Section 906*)
Portable Fire Extinguishers shall be installed in accordance with NFPA 10 and meet the minimum coverage and travel distance requirements:

General: 4-A:80BC, 11,250sf Coverage / 75' Travel Distance
Kitchen: Type 'K', within 30' of Hood

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AJ'S BAR
GLENWOOD, MN

COVER SHEET

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
APPRAISAL	9/9/2026
OWNER MEETING	9/23/2026
BIDDING	10/1/2026

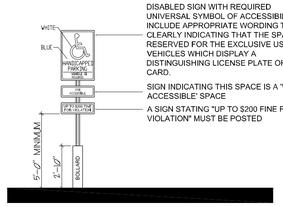
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Paul Ringdahl
10/1/2026 — DATE
PAUL P. RINGDAHL — REG. NO.

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CHECKED BY:	PDR
DATE:	10/2/2026

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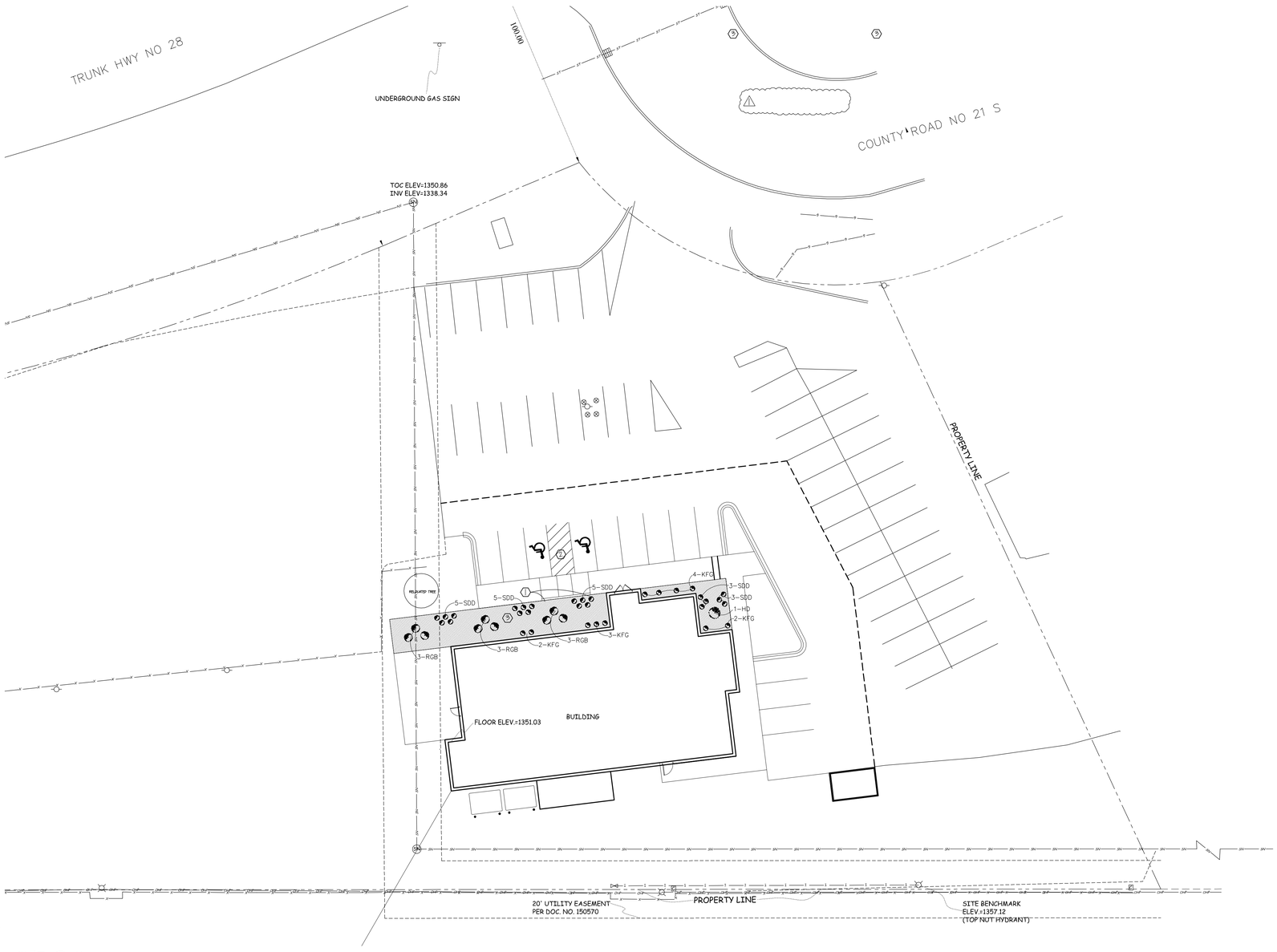
DISABLED SIGN WITH REQUIRED UNIVERSAL SYMBOL OF ACCESSIBILITY, INCLUDE APPROPRIATE WORDING TO CLEARLY INDICATING THAT THE SPACE IS RESERVED FOR THE EXCLUSIVE USE OF VEHICLES WHICH DISPLAY A DISTINGUISHING LICENSE PLATE OR CARD.

SIGN INDICATING THIS SPACE IS A "VAN ACCESSIBLE" SPACE

A SIGN STATING "UP TO $200 FINE FOR VIOLATION" MUST BE POSTED

2 / C1.0 HANDICAPPED PARKING SIGN

N.T.S.



1 / C1.0 SITE PLAN

1" = 20'-0"

KEY NOTES

1. HANDICAPPED PARKING SIGN AT HEAD OF STALL ON MOVABLE BOLLARD
2. ACCESS AISLE WITH "NO PARKING" PAINTED ON STALL
3. RELOCATED FLAG POLE.
4.

GENERAL NOTES

1. FIELD VERIFY ALL EXISTING UTILITY LOCATIONS.
2. FILL AND PATCH TO MATCH UNLESS NOTED OTHERWISE AT ALL NEW SERVICE TRENCHING.
3. SITE INFORMATION OBTAINED FROM SURVEY BY STOECKEL-JAHNER SURVEYING.
4. CONSTRUCTION LIMITS ARE AREAS WITHIN PROPERTY LINES.
5. ACTUAL FIELD DIMENSIONS AND CONDITIONS MAY VARY FROM THESE SHOWN. VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT DISCREPANCIES TO ARCHITECT PRIOR TO CONSTRUCTION.
6. DO NOT SCALE DRAWINGS.
7. REFER TO MECHANICAL, ELECTRICAL AND CIVIL FOR ADDITIONAL INFORMATION.
8. REMOVE EXISTING FOUNDATIONS, DEBRIS, TREES, LANDSCAPING, ETC. AS REQUIRED BY CONSTRUCTION.
9. STABILIZE SOIL AND TAKE APPROPRIATE MEASURES TO PREVENT EROSION.
10. ALL DISTURBED SOIL AREAS TO BE LANDSCAPED (INCLUDING BOULEVARD SPACE).
11. REFER TO SECTION 02700, MECHANICAL AND ELECTRICAL FOR SITE UTILITY REQUIREMENTS. CUT, CAP AND RELOCATE EXISTING UTILITIES AS REQUIRED.

PLANTING NOTES

1. ALL PLANT MATERIALS SHALL BE OBTAINED FROM A REPUTABLE NURSURY, AND PLANTED BY REPUTABLE LANDSCAPE COMPANY. ALL PLANT MATERIALS SHALL HAVE A ONE YEAR REPLACEMENT WARRANTY.
2. PROVIDE WATERING POCKETS AROUND EACH TREE TOPPED WITH 4" MIN. MULCH MATERIAL.
3. ALL TREES SHALL HAVE A MINIMUM OF TWO SUPPORT STAKES.
4. ALL DISTURBED AREAS SHALL BE SODDED, MULCHED AND FERTILIZED. APPROPRIATE EROSION CONTROL MEASURES SHALL BE USED. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
5. ROCK MULCH SHALL BE < 1-1/2" WASHED GRAVEL AND PLACED IN THE INDICATED PLANTING AREAS TO A DEPTH OF 4" MIN. WOOD MULCH TO BE CYPRESS AND PLACED TO A DEPTH OF 4" MIN.
6. SEE THIS SHEET FOR PLANTING DETAILS.
7. ALL PLANT MATERIALS, TREES, ETC. TO BE SUITABLE FOR PROJECT LOCATION CLIMATE.
8. VERIFY EXTENT OF IRRIGATION SYSTEMS AT ALL SODDED/LANDSCAPE AREAS (ALTERNATE BID)
9. PROVIDE IRRIGATION SYSTEM AT ENTIRE SITE – SEE SPEC SECTION 32 80 00 (ALTERNATE BID)
10. PROVIDE 4" DEEP CYPRESS MULCH OVER LANDSCAPE CLOTH AND EDGING AT ALL PLANTINGS EXCEPT WHERE ROCK MULCH IS NOTED.

PLANTING SCHEDULE

KEY	QTY	COMMON NAME	BOTANICAL	SIZE	CLASSIFICATION
HD	1	IVORY HALO DOGWOOD	CORNUS ALBA 'BAILHALO'	#2 CONT.	SHRUB
SDD	21	STELLA D'ORA DAYLILY	HEMEROCALLIS 'STELLA DE ORO'		SHRUB
RGB	9	ROSY GLOW BARBERRY	BERBERIS THUNBERGII 'ROSY GLOW'	#2 CONT.	SHRUB
KFG	11	KARL FOERSTER GRASS	CALAMAGROSTIS X ACUTIFLORA	#1 CONT.	SHRUB
		METAL EDGER			
		RIVER ROCK		1"-4"	

KEY

DENOTES SHRUB

DENOTES LANDSCAPE ROCK

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AJ'S BAR
GLENWOOD, MN

ARCHITECTURAL SITE PLAN

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/25/2016
OWNER MEETING	7/28/2016
EQUIPMENT LABELS	8/1/2016
APPRAISAL	9/9/2016
OWNER MEETING	9/23/2016
BIDDING	10/2/2026

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DATE:	10/2/2026

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C1.0

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AJ'S BAR

GLENWOOD, MINNESOTA

CIVIL CONSTRUCTION DRAWINGS



VICINITY MAP

NTS

LEGEND

EXISTING LINE WORK

- INDICATES EXISTING MAJOR CONTOURS
- INDICATES EXISTING MINOR CONTOURS
- ST — INDICATES STORM SEWER LINE
- SN — INDICATES SANITARY SEWER LINE
- I — INDICATES UNDERGROUND WATER
- G — INDICATES UNDERGROUND GAS
- E — INDICATES UNDERGROUND ELECTRIC
- T — INDICATES UNDERGROUND TELEPHONE
- C — INDICATES UNDERGROUND CABLE
- X — INDICATES FENCE LINE
- ST — INDICATES STORM MANHOLE
- SN — INDICATES SANITARY MANHOLE
- INDICATES CATCH BASIN
- INDICATES WATER VALVE
- INDICATES HYDRANT
- INDICATES ELECTRIC PEDESTAL
- INDICATES TELEPHONE PEDESTAL
- INDICATES CABLE PEDESTAL
- INDICATES SIGN
- INDICATES POST/TILE INTAKE
- INDICATES ELECTRIC BOX
- INDICATES ELECTRIC BOX
- INDICATES LIGHT/POWER POLE
- C — INDICATES SEPTIC CLEANOUT
- S — INDICATES SEPTIC MANHOLE

PROPOSED LINE WORK

- 1000 — INDICATES PROPOSED CONTOUR LINE
- INDICATES SANITARY SERVICE LINE
- INDICATES SANITARY SEWER LINE
- INDICATES DRAINTILE LINE
- INDICATES STORM SEWER LINE
- INDICATES WATER MAIN LINE
- INDICATES WATER SERVICE LINE
- INDICATES SILT FENCE LINE
- ELEV — INDICATES SPOT ELEVATION
- INDICATES STORM CATCH BASIN
- INDICATES STORM SEWER CATCH BASIN
- INDICATES FLARED END SECTION
- INDICATES SANITARY/STORM CLEANOUT
- INDICATES SANITARY/STORM MANHOLE
- INDICATES NYLOPLAST CATCH BASIN
- INDICATES NYLOPLAST CLEANOUT
- INDICATES NYLOPLAST MANHOLE
- INDICATES OUTLET STRUCTURE
- INDICATES RAIN GUARDIAN STRUCTURE
- INDICATES CURB STOP & BOX
- INDICATES GATE VALVE
- INDICATES HYDRANT
- INDICATES FLOW ARROW
- INDICATES SCOUR STOP PAD
- INDICATES FILTER LOG

PROPOSED HATCHING

- INDICATES PROPOSED CONCRETE PAVEMENT, APRONS, VALLEY GUTTER, & SIDEWALK
- INDICATES PROPOSED BITUMINOUS PAVEMENT
- INDICATES PROPOSED GRAVEL SURFACING
- INDICATES TEMPORARY ROCK CONSTRUCTION ENTRANCE
- INDICATES RIP RAP OVERLAYING TYPE 4 GEOTEXTILE FABRIC
- INDICATES EROSION CONTROL BLANKET

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COVER SHEET

CIVIL SHEET INDEX

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C7 - SWPPP - STANDARD NOTES & DETAILS
C8 - SWPPP - PLAN VIEW
C9 - UTILITY PLAN

SCHULTZ ENGINEERING & SITE DESIGN
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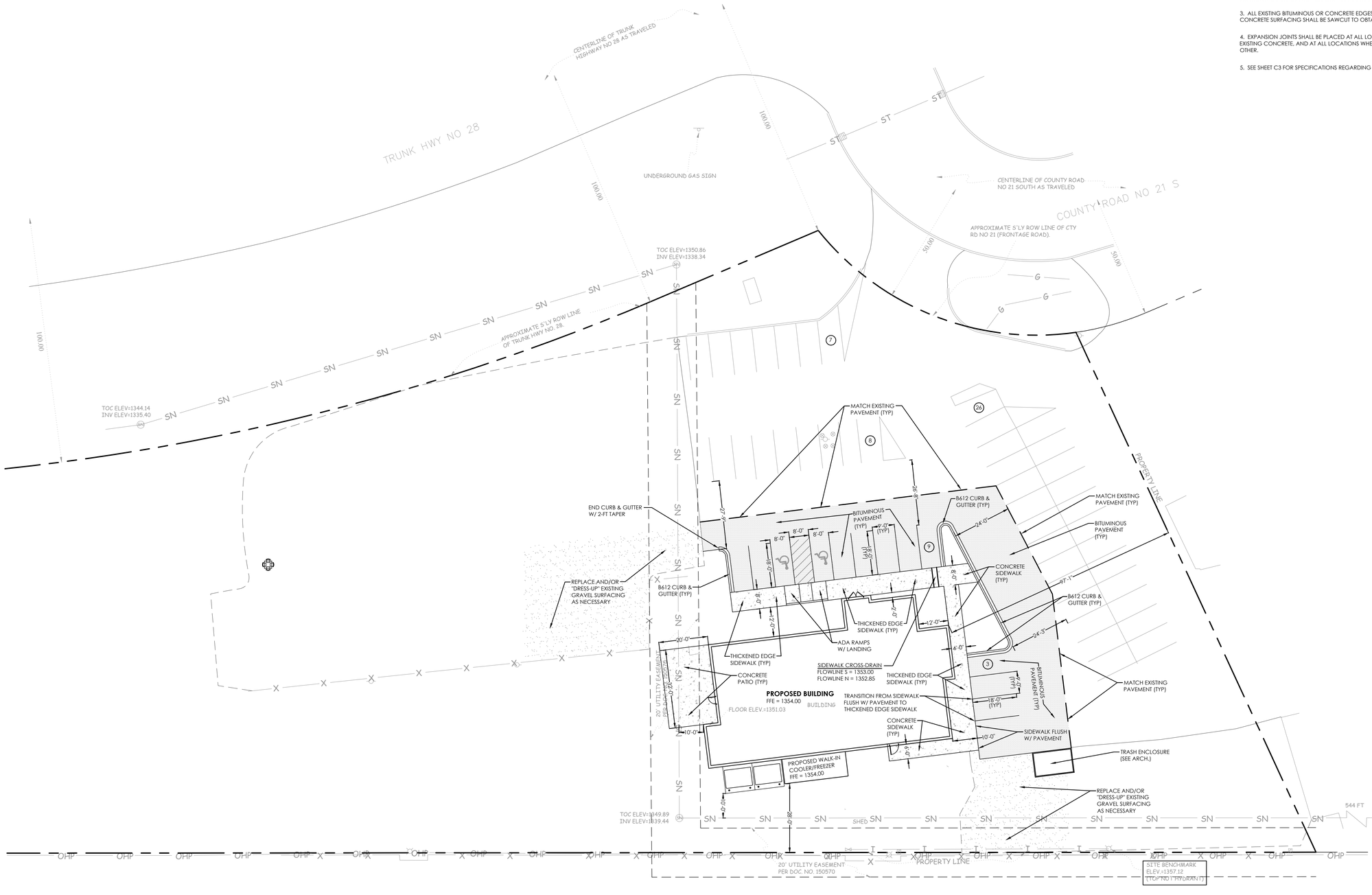
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CHECKED BY:	BJS
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C1

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PAVING & HARDSCAPE NOTES:

1. SUBGRADES SHALL BE SCARIFIED AND COMPACTED AS NECESSARY TO ATTAIN THE REQUIRED COMPACTION INDICATED IN THE GENERAL NOTES (SHEET C3). TEST ROLLING OF THE SUBGRADE SHALL BE OBSERVED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN. LOCATIONS EXHIBITING EXCESSIVE RUTTING (PER MNDOT SPEC. 2111) SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER PRIOR TO THE PLACEMENT OF AGGREGATE BASE. COMPACTION TESTING IN UTILITY TRENCHES SHALL BE PERFORMED BY AN INDEPENDENT TESTING FIRM.

2. AGGREGATE BASE AND SURFACE COURSES SHALL BE ROLLED AND COMPACTED. TEST ROLLING OF THE AGGREGATE BASE AND/OR SURFACING SHALL BE OBSERVED BY A SOILS ENGINEER TO VERIFY STABILITY. MAXIMUM ALLOWED DEFLECTION DURING TEST ROLLING OF AGGREGATE BASE OR SURFACE COURSES SHALL BE 1/2".

3. ALL EXISTING BITUMINOUS OR CONCRETE EDGES, WHICH WILL ABUT NEW BITUMINOUS OR CONCRETE SURFACING SHALL BE SAWCUT TO OBTAIN A VERTICAL EDGE.

4. EXPANSION JOINTS SHALL BE PLACED AT ALL LOCATIONS WHERE NEW CONCRETE ABUTS EXISTING CONCRETE, AND AT ALL LOCATIONS WHERE SEPARATE CONCRETE POURS ABUT EACH OTHER.

5. SEE SHEET C3 FOR SPECIFICATIONS REGARDING THE CONSTRUCTION OF HARDSCAPES

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AJ'S BAR
GLENWOOD, MN

CIVIL SITE PLAN

SCALE: 1" = 20'
0 20 40

CIVIL SHEET INDEX

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ISSUE FOR:	ISSUE DATE:
FOUNDATION PERMIT	09-02-26

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DATE	REG. NO.
09/02/26	43129

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SCHULTZ ENGINEERING PROJECT NO.:	26038
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DATE:	09/02/26

DRAWING NO.

C2

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STANDARDS AND REFERENCES

Materials and construction methods specified in the plans reference the Minnesota Department of Transportation (MNDOT) Standard Specifications for Construction. The Contractor shall review current specification sections, applicable to this plan set, from the MNDOT Standard Specifications for Construction, which can be found on MNDOT's website or via an obtained hard copy of the specifications:

MNDOT: https://www.dot.state.mn.us/pre-letting/spec/

Materials and construction methods specified in the plans, and related to site utilities, also reference the Minnesota Plumbing Code (within private sites) and the City Engineers Association of Minnesota (CEAM) Standard Specifications (within public right-of-way). The Contractor shall review current specification sections, applicable to this plan set, from the MN Plumbing Code and the CEAM Standard Specifications, which can be found on the associated websites or via obtained hard copies of the specifications:

MN Plumbing Code: https://www.dli.mn.gov/business/plumbing-contractors/2020-minnesota-plumbing-code

CEAM: https://www.ceam.org/?SEC=CEFF15C3-795B-4D3E-B660-F129069993D1

It is mandatory that the Contractor be knowledgable of the applicable standard specification sections indicated above during construction. No additional compensation will be paid to the Contractor for additional work due to unfamiliarity with the applicable specification sections.

Contractor shall refer to the geotechnical report, if any, for additional requirements and recommendations.

EARTHWORK NOTES

PROTECTION

1. The Contractor shall maintain all benchmarks, monuments, and other reference points. If any are disturbed or destroyed, they shall be replaced at the Contractor's expense.
2. The Contractor shall contact the Engineer immediately if any unknown functioning underground utilities are discovered during the course of the project, which may interfere with construction. The Contractor shall wait for instructions before proceeding.
3. The Contractor shall be responsible for any damage to functioning underground or overhead utility lines. Damaged utilities shall be repaired immediately and service restored at no additional cost to the Owner.
4. The Contractor shall provide barricades, shoring and other safety measures, as required by OSHA.
5. The Contractor shall protect all adjacent existing facilities from damage, including but not limited to, settlement due to excavations, erosion, etc. The Contractor shall be responsible for the repair of such damages.

PROJECT CONDITIONS

1. The Contractor shall become familiar with the project site, and compare actual conditions in the field with those shown on the project drawings. The Contractor shall contact the Engineer immediately if any inconsistencies are found between the existing conditions and the project drawings.
2. The Contractor shall field verify locations and elevations of existing underground utilities at proposed utility connections, proposed utility crossings, and at locations where these existing underground utilities will be affected by construction. The Contractor shall complete the field verification of these existing underground utility locations and elevations as early in the project schedule as practical.
3. No additional compensation will be allowed due to unusual conditions which could have reasonably been determined or anticipated by examination of the project site and project drawings.

PLAN GRADES

1. Elevations shown on the project drawings are finished grade elevations, unless noted otherwise. Elevations not specifically indicated shall be determined by interpolation of uniform slope between spot elevations and/or contours, or between such points and existing elevations. Adequate slope shall be constructed to provide positive drainage away from structures.
2. If inconsistencies exist on the plans between contours and spot elevations, the spot elevations shall govern.

TOPSOIL

1. Adequate imported and/or stockpiled salvageable topsoil shall be utilized for this project, such that the topsoil thicknesses specified in the plan specifications and details are provided.
2. Topsoil shall be free of clay lumps, roots, brush, large stones, and debris, and shall have a minimum organic content of 5 percent.
3. Remove topsoil to its entire depth from areas, which are to be disturbed by new construction work. Existing vegetated areas, which are not in the proposed construction area(s) shall remain in place. The Contractor shall field verify topsoil depths between any soil borings, and remove to greater depths than indicated in the soils report if such conditions are encountered. Salvaged topsoil shall be maintained in stockpiles with adequate erosion & sediment control provided.
4. Stockpiled topsoil shall only be used for finish grading of new vegetated areas. Excess topsoil shall be removed from the site by the Contractor.
5. Protect all existing vegetated areas, plantings, and other landscaping to remain in place. Any damaged areas shall be replaced at the Contractor's expense.

UNFORESEEN OBSTACLES

1. The Engineer shall be contacted immediately if any unforeseen major obstacles are encountered during excavation, such as abandoned wells, abandoned or functioning utilities, subsurface streams or rock, etc., which would add significant expense to the Contractor.
2. The Contractor shall still be responsible for completing all work required for this project where encountered conditions may be reasonably determined from a soils/geotechnical report and review of the project site and contract documents.

DEWATERING

1. Surface drainage shall be provided during construction in a manner so as not to create a nuisance to adjacent areas.
2. All excavations shall be free of water during construction within the excavations. Dewatering shall be accomplished by pumping or trenching, and shall be conducted regardless of the cause, source, or nature of the water.
3. Berms, cofferdams, piling, etc. shall be provided as necessary to protect excavations.
4. Excavations shall be sloped to drain, and necessary pumps, hoses and other equipment shall be provided to keep excavation free of water.
5. All dewatering operations shall be provided with erosion & sediment control as per the project SWPPP.
6. All temporary equipment used for dewatering shall be removed from the site when no longer necessary.

FILLING AND GRADING

1. Rough grading of all areas within the construction limits, including adjacent transition areas shall be reasonably smooth and compacted. The rough graded subgrade surface generally shall not be more than 6 inches above or below the established subgrade elevations. All ditches, swales, and gutters shall be graded to drain adequately. The subgrade shall be evenly sloped to provide drainage away from building walls in all directions at a minimum slope of 1%. The Contractor shall provide rounded transitions at top and bottom of banks and other breaks in grade.
2. Fill and backfill materials shall be inorganic soils, free of roots, rocks, boulders, and debris.
3. Bedding material or granular backfill larger than 2" in its largest dimension shall not be allowed within 2 feet of new underground pipes. Material larger than 3" in its largest dimension shall not be allowed within 1 foot of subgrade elevation.
4. Imported compacted fill material shall have a maximum of 12 percent passing the #200 sieve, by weight. The proposed imported fill material shall be tested by an independent testing lab for suitability as compacted fill for this project. The Contractor shall pay for the testing services and provide a copy of the test results to the Engineer.
5. The Contractor shall fill and grade as necessary to bring surfaces to required elevations, and provide all materials necessary, whether obtained on or off the project site.
6. The Contractor shall place compacted material in uniform horizontal lifts not exceeding 8" in depth for clay soils, and 12" in depth for sandy soils, and compact as required to achieve specified density.
7. Compaction shall be obtained with the use of vibratory rollers or rammers. During compaction, fill material shall contain moisture content, as necessary, for the required compaction as indicated by an independent testing laboratory. The moisture shall be uniform throughout each lift. If the material is too dry, water shall be added with approved equipment and methods, which will not wash out fine material. If the material is too wet, it shall be dried by harrowing, disking, blading, or other approved methods recommended by the independent testing laboratory.
8. Areas designated for pavement in excavated (cut) areas shall be scarified to a depth of 1 foot. The Contractor shall bring the subgrade material to optimum moisture content as indicated by the independent testing laboratory, and compact the subgrade to the specified density listed below for soils underneath pavements.
9. The Contractor shall not place fill material when either the fill material, or the material on which it is to be placed, is frozen. Any soft or yielding areas appearing in the fill resulting from frost, rain, or any other reason whatsoever shall be scarified, removed, recompacted and/or otherwise rectified to the satisfaction of the Engineer before any new fill is placed.

COMPACTION TESTS

1. Utility Trench Backfill: The Contractor's independent soils technician and approved testing laboratory shall perform in-place density and moisture tests at random depths in trench backfill at 100 foot intervals, or fraction thereof. Compaction of trench backfill shall be a minimum of 95% of the maximum dry density (as determined by the independent testing laboratory) in vegetated areas, and at depths greater than 3 feet below areas designated for pavement. Compaction of trench backfill at depths within 3 feet of paved surfaces shall be a minimum of 100% of the maximum dry density.
2. Compacted Fill Under Pavements: Compaction tests shall not be required beneath new pavements. Adequate compaction of materials under pavements shall be determined by test rolling the subgrade, and checking for excessive rutting. Test rolling shall be performed as per MNDOT Spec. 2111.
3. Areas exhibiting a failed compaction test or excessive rutting from test rolling shall be re-compacted and re-tested to the satisfaction of the Engineer.
4. Copies of all compaction testing and test roll observation reports shall be provided to the Engineer.
5. Optimum moisture-density relationship will be determined by testing laboratory in accordance with ASTM D698 and maximum density determination made by Method D of ASTM D698 unless otherwise noted in these specifications.

SUBGRADE PREPARATION

1. Finished subgrade elevations shall be as follows:
   a. Bituminous pavement: 9" below finished grade.
   b. Concrete pavement/apron: 12" below finished grade.
   c. Concrete sidewalk: 8" below finished grade (plus thickened edge).
   d. Pervious pavers: 12" below finished grade.
   e. Lawn areas: 4" below finished grade.
   f. Planting areas: See Landscaping Plans/Details
2. The tolerance for areas to be paved shall not exceed 0.15 feet above or below plan subgrade.
3. The Contractor shall protect newly graded areas from erosion. Settlement or washing that occurs prior to acceptance of the Work shall be repaired and grades re-established.

DISPOSAL OF EXCESS WASTE MATERIALS

1. The Contractor shall remove excess excavated material, debris, and waste materials from the Owner's property and legally dispose of it in accordance with all federal, state, and local governing codes.

SPREADING TOPSOIL AND FINISH GRADING

1. Scarify subgrade to a depth of 3" prior to placing topsoil. Spread topsoil evenly over complete subgrade as follows:
   a. Vegetated Areas on Private Property: Spread 4-inch lightly compacted layer of topsoil.
   b. Vegetated Areas within Public Right-of-Way: Per requirements of governing authority.
   c. Planting Areas: See Landscape Plan/Details
2. Finish grade accurately within 0.15 feet of the finished grades shown on the project drawings, less the thickness of any sod where it is to be installed. Slope all grades away from buildings to provide positive drainage.
3. Prepare topsoil suitable to receive seed and/or sod. Grading of areas designated for topsoil shall be reasonably smooth and even, and in accordance with MNDOT Spec. 2574.3A3. All debris and stones exceeding 3" in diameter shall be removed from the soil surface of these areas prior to seeding. Areas compacted by vehicles or storage of materials shall be plowed, disked and harrowed to match texture of other finish graded areas.
4. Grass seed shall be in accordance with MnDOT Spec. 3876, seed mix No. 25-131, applied at the rate of 220 pounds per acre or as indicated on the landscape plans. At a minimum for the purposes of erosion control, mulch shall be applied and disanchored to all seeded areas and shall meet the requirements of MnDOT Spec. 3882, Type 3 or as otherwise indicated by the Engineer.

UTILITY NOTES

STANDARD SPECIFICATIONS

1. The following standard specifications shall apply to this project:
   a. Minnesota Plumbing Code (MPC) - MN Rules Chapter 4714 (MN Dept. of Labor and Industry-MNDoLI)
   b. City Engineers Association of Minnesota (CEAM) Standard Specifications
   c. American Society for Testing Materials (ASTM)
   d. American National Standards Institute (ANSI)
   e. American Water Works Association (AWWA)
   f. Minnesota Department of Transportation "Standard Specifications for Construction" (MNDOT)
2. The Contractor shall comply with all local and State ordinances and codes
3. Certifications of all utility materials, as well as shop drawings, shall be submitted to the Engineer for review

POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS - SANITARY

1. If located more than 10-ft from buildings and more than 10-ft from a water utility crossing, polyvinyl chloride pipe and fittings shall consist of SDR 26 or SDR 35 pipe, unless noted otherwise, and meet the requirements of:
   a. Within Private Sites: ASTM D3034 as well as Table 701.2 and Section 715.1 of the MPC
   b. Within Public Right-of-Way or Public Easements: ASTM D3034 and Section 2621.2A5 of the CEAM Standard Specifications
2. All pipe and fittings shall be SDR 35 for depths of up to 20 feet, and SDR 26 for depths exceeding 20'.
2. PVC sanitary sewer pipe and fittings within 10-ft of a building, or within 10-ft of a water pipe crossing and crossing above the water pipe or below the water pipe with a separation of 12-inches or less, or when specified on the plans, shall consist of Schedule 40 PVC, and meet the requirements of ASTM D1785 and ASTM D2665, and Section 2621.2A5 of the CEAM Standard Specifications
4. Pipe joints shall meet the requirements of:
   a. Within Private Sites: Sections 705 and 715.2 of the MPC
   b. Within Public Right-of-Way or Public Easements: Section 2621.3A3 of the CEAM Standard Specifications.

DUCTILE IRON (DIP) PIPE AND FITTINGS - WATER

1. Ductile iron pipe and fittings shall meet the requirements of:
   a. Within Private Sites: AWWA C151 as well as Table 604.1 of the MPC
   b. Within Public Right-of-Way: AWWA C151 and Section 2611.2A1 of the CEAM Standard Specifications
2. Pipe joints shall meet the requirements of:
   a. Within Private Sites: Section 605.4 of the MPC. Stainless steel fasteners shall be prohibited.
   b. Within Public Right-of-Way: Section 2611.3B of the CEAM Standard Specifications. Stainless steel fasteners shall be prohibited.
3. 6" pipe shall be Class 52. 8" and larger pipe shall be Class 50.

POLYVINYL CHLORIDE (C900 PVC) PIPE AND FITTINGS - WATER

1. Polyvinyl chloride pressure pipe and fittings shall meet the requirements of:
   a. Within Private Sites: AWWA C900 as well as Table 604.1 of the MPC
   b. Within Public Right-of-Way: AWWA C900 and Section 2611.2A3 of the CEAM Standard Specifications
2. Pipe joints shall meet the requirements of:
   a. Within Private Sites: Section 605.12 of the MPC
   b. Within Public Right-of-Way: Section 2611.3B of the CEAM Standard Specifications.

GATE VALVES - WATER

1. Gate valves shall meet the requirements of:
   a. Within Private Sites: Section 606 of the MPC
   b. Within Public Right-of-Way: Sections 2611.2C and 2611.3D of the CEAM Standard Specifications

HYDRANTS - WATER

1. Hydrants shall meet the requirements of Sections 2611.2B and 2611.3D of the CEAM Standard Specifications
2. Hydrants shall be Waterous WB67, or approved equal

BLOCKING AND ANCHORING - WATER

1. Water main and/or service blocking and anchoring shall meet the requirements of Section 2611.3A4 of the CEAM Standard Specifications
2. Contractor shall provide thrust reaction blocking consisting of concrete with a minimum 28 day compressive strength of 2000 psi.
3. Place between undisturbed ground and the fitting to be anchored. Place thrust blocking so that the pipe and fitting joints are accessible for repair.
4. Mega-Lug joint restraint may be used in lieu of thrust block if allowed by local utility.

WATER SERVICE PIPE AND CURB STOPS

1. Copper tubing for water services shall meet the requirements of:
   a. Within Private Sites: ASTM B88 as well as Table 604.1 of the MPC
   b. Within Public Right-of-Way: ASTM B88 and Section 2611.2D of the CEAM Standard Specifications
2. HDPE pressure pipe for water services shall meet the requirements of:
   a. Within Private Sites: Table 604.1 of the MPC
   b. Within Public Right-of-Way: Section 2611.2D of the CEAM Standard Specifications
3. Joints and connections shall meet the requirements of:
   a. Within Private Sites: Section 605 of the MPC
   b. Within Public Right-of-Way: Section 2611.2D of the CEAM Standard Specifications.
4. Curb stops for water services shall meet the requirements of Section 2611.2D of the CEAM Standard Specifications

MANHOLES AND CATCH BASINS - SANITARY AND STORM

1. Unless otherwise noted, manhole and catch basin structures shall consist of precast concrete, and meet the requirements of:
   a. Within Private Sites: Section 719.6 of the MPC. *Per MN Plumbing Code requirements, Contractor or Owner shall obtain approval from the local administrative authority as an alternate material prior to installation, as allowed by Section 301.3 of the MCP.*
   b. Within Public Right-of-Way: Sections 2621.2C and 2621.3D of the CEAM Standard Specifications
2. Catch basins shall be provided with the following castings:
   a. Along curbline:
      i. 27" Structure: Neenah R-3075-L
      ii. 48" (or larger) Structure: Neenah R-3067-L
   b. Isolated (in paved area): Neenah R-2553
   c. Isolated (in vegetated area): Neenah R-2560-EA w/ type "C" grate
3. Manholes shall be provided with the following castings:
   a. Sanitary: Neenah R-1733 w/ concealed pick hole
   b. Storm: Neenah R-1733 lettered "STORM", center pick hole

INSTALLATION

1. Unless otherwise noted, installation of all water and sewer pipe, fittings, and appurtenances shall be as per:
   a. Within Private Sites: Minnesota Plumbing Code
   b. Within Public Right-of-Way: CEAM Standard Specifications.

TESTING REQUIREMENTS

1. Water and sewer pipe, fittings, and appurtenances shall be inspected and tested as per:
   a. Within Private Sites: Minnesota Plumbing Code
   b. Within Public Right-of-Way: CEAM Standard Specifications.

BITUMINOUS PAVEMENT NOTES

STANDARDS

1. Minnesota Standard Specifications for Highway Construction, most recent edition.

GRANULAR BASE AND SURFACE COURSES

1. Compacted thickness of finished base course: 6"
2. Process material for aggregate base shall meet the requirements of MNDOT Spec. 3138, Class 5.
3. The subgrade shall be tested and observed to the satisfaction of the Engineer prior to placement of aggregate base material. Install base material as required to accommodate new plan grades.
4. Wet base material to approximate optimum moisture content either prior to delivery to job site or as soon as practical after being placed on subgrade.
5. Place in layers not exceeding 4" thickness (loose).
6. Compact with pneumatic or vibrating steel drum rollers.
7. After base course has been graded and compacted, thoroughly wet and slush roll with roller until all aggregates are thoroughly embedded.
8. Allow base course to cure for a minimum of 72 hours prior to bituminous course application.

BITUMINOUS BASE AND SURFACE COURSES

1. Mix Designation Numbers for the bituminous mixtures on this project are per MNDOT Spec. 2360.1B
2. Pavement smoothness requirements will be waived for this project.
3. Density for the bituminous mixture on this project will be the ordinary compaction method (MNDOT 2360.3D2).
4. Bituminous Base course shall conform to MnDOT 2360, Mixture Designation SPNWB330B and shall be 1½ inches thick after compaction. Bituminous Surface course shall conform to MnDOT 2360, Mixture Designation SPWEA340B and shall be 1½ inches thick after compaction.
5. Place no asphaltic mixture when the atmospheric temperature is below 45 degrees and falling, nor should pavement be placed under wet conditions.
6. Mixing
   a. Paving mixture: Uniform mixture of course aggregate, fine aggregate, mineral filler and asphaltic material.
   b. Grading and mixing: Conform to applicable sections of the Minnesota Standard Specifications for Highway Construction, Section 2360.

CONSTRUCTION METHODS

1. Properly clean base course and deliver hot mix asphaltic concrete in clean tight vehicles with covers if necessary
2. Lay to a smooth surface without segregation of material and attain compaction as early as possible. Commence rolling while the material is hot, (minimum spread temperature 250 degrees F.) as soon as it will support the roller without undue displacement or hairline cracking and continue until a minimum of 96% of maximum has been attained, no further compression can be attained and all roller marks are eliminated.
3. The completed surface: Smooth, free of pockets that will retain water and shall not vary more than 1/16" per foot nor more than 1/4" under a 16' straight edge. Entire surface must drain. No flat areas are permitted.
4. Perform all Work in accordance with the applicable requirements of the Minnesota Standard Specifications for Highway Construction.

FIELD QUALITY CONTROL

1. Aggregate Material Testing:
   a. Granular base and/or surface courses shall be test rolled and observed by the Contractor's independent soils technician as per MNDOT 2211.3D2b (Quality Compaction Method). Once the base course has been tested to the satisfaction of the Engineer, pavement may be placed.
   b. One mechanical gradation analysis (ASTM D-422) per 500 cubic yards of base or fraction thereof.
2. Bituminous Testing:
   a. Test temperature of first truck.
   b. Ordinary compaction (MNDOT 2360.3D2)

CONCRETE PAVEMENT, CURB & GUTTER, AND SIDEWALK

STANDARDS

1. ACI 318, ACI 315, CRSI, ACI 301, latest adoptions.
2. Minnesota Standard Specifications for Construction, most recent edition

GRANULAR BASE COURSE MATERIAL

1. Compacted thickness of finished base: 6" - Concrete Pavement/Aprons
   4" - Concrete Sidewalk
2. Base material shall consist of MNDOT 3149.2B Select Granular Material.

AGGREGATES

1. Coarse: MnDOT Spec. 3137.
2. Fine: MnDOT Spec. 3126.

AIR ENTRAINING ADMIXTURES

1. ASTM C260.
2. Provide entrainment of 4 - 7 percent by volume.

OTHER ADMIXTURES

1. MnDOT Spec. 3113.
2. Calcium Chloride or materials containing chlorides or nitrates shall not be allowed.

WATER

1. Clean, fresh and potable, MnDOT Spec. 3906.

PORTLAND CEMENT

1. ASTM C150, Type I plus an approved air entraining agent, or Type IA air-entraining Portland cement.
2. MnDOT Spec. 3101.

PROPORTIONING AND DESIGN OF CONCRETE MIXES

1. Concrete Classifications & Mix Designs
   a. Curb and gutter, slip-formed concrete: MNDOT Spec. 2461, Mix Design 3F32
   b. Sidewalk, aprons, incidental concrete, manual curb & gutter: MNDOT Spec. 2461, Mix Design 3F52
   c. Concrete pavements: MNDOT Spec. 2461, Mix Design 3F52
   d. Repair concrete, fast strength concrete: MNDOT Spec. 2461, Mix Design 3HE52
2. Concrete Specifications:
   a. Mix Design 3F32: Slump = 3½" to 5", 28-Day Compressive Strength = 4500 psi, % Air Entrainment = 5-8%
   b. Mix Design 3F52: Slump = 2" to 5", 28-Day Compressive Strength = 4500 psi, % Air Entrainment = 5-8%
   c. Mix Design 3HE52: Slump = 2" to 5", 28-Day Compressive Strength = 4500 psi, % Air Entrainment = 5-8%
   d. Temperatures of all concrete during placement shall be 50-deg F to 90-deg F

CONCRETE PLACEMENT

1. Place concrete as soon as possible after mixing. Place before initial set has occurred, and in no event after it has contained its water content for more than one hour.
2. Avoid overworking concrete or allowing concrete to fall unrestricted for excessive vertical distances, and other situations which can cause segregation of the aggregates.
3. Concrete pavements shall be placed in accordance with applicable portions of MnDOT 2301.
4. Sidewalks shall be placed in accordance with MnDOT 2521.
5. Curb and gutter shall be placed in accordance with MnDOT 2531.

PROTECTION

1. Provide adequate protection against rain, sleet and snow before and during placement and finishing of concrete.
2. Protect concrete from premature drying. Provide temporary covering as required. Keep concrete continuously moist for 7 days.
3. Treat concrete with membrane curing compound in accordance with MnDOT 2531.3G.

COLD WEATHER CONCRETE

1. Do not place concrete when the atmospheric temperature is below 40 degrees F., or when the concrete is likely to be subjected to freezing temperatures within 24 hours after it has been deposited, unless adequate temporary heating is provided.
2. Maintain concrete temperature of 40 to 90 degrees F. for 3 days. Protect from freezing for the following 5 days.
3. No frozen materials may be used in the concrete. Chemicals may not be used to prevent freezing unless approved by the Engineer.
4. Perform all cold weather Concrete placement in accordance with ACI 306.

HOT WEATHER CONCRETE

1. Do not place concrete when the atmospheric temperature is above 100 degrees F.
2. Maintain concrete temperature of 40 to 90 degrees F. for 3 days. Protect from temperatures over 90 degrees for the following 5 days.
3. Thoroughly wet dry porous surfaces before placing concrete.
4. Water reducing admixtures with retarding properties are required for all concrete placed when the temperature exceeds 80 degrees F.
5. Perform all hot weather concrete placement in accordance with ACI 305.

FINISHING

1) Provide a broomed finish on exterior sidewalks and ramps unless noted otherwise.

QUALITY CONTROL

1. The Contractor shall hire an independent testing firm to provide the following tests:

a. The independent testing technician shall perform random field testing of the fresh concrete including slump, air content, and temperature. (ASTM C143, C173, C231 and C138). One series of the aforementioned tests shall be performed on the first load of concrete. Random testing of slump, air content, and temperature shall be completed on several of the remaining concrete loads to ensure that the associated range requirements are being met for the overall concrete placement.

b. The independent testing technician shall cast a set of four compression test cylinders for the first load of concrete as well as 1 set for every 100 cubic yards, or fraction thereof, of concrete thereafter. Compression tests shall be performed on one test cylinder at 7 days and two test cylinders at 28 days. The fourth test cylinder shall be retained in the event of failing compression tests on the 28-day test cylinders.

PAINTED LINES

1. Special marking paint compound especially for striping bituminous and/or concrete paving in one coat.
2. Manufacturers: Pratt & Lambert, Inc.; Sherwin Williams Co. or DuPont Co.
3. Colors: Use white paint for concrete and bituminous pavements.
4. All surfaces to be painted must be thoroughly clean and dry.
5. Lay out painted lines with chalk on pavement in accordance with Project Drawings.
6. Accurately apply paint to the chalk marks, using striping machines - 4" wide stripes.
7. Apply paint in strict accordance with the manufacturer's directions.
8. Protect all paint from damage by traffic until dry.
9. Apply handicap logo at handicap stall.

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AJ'S BAR
GLENWOOD, MN

STANDARD DETAILS

CIVIL SHEET INDEX

C1 - COVER SHEET
C2 - CIVIL SITE PLAN
C3 - STANDARD NOTES & SPECIFICATIONS
C4 - STANDARD DETAILS
C5 - DEMOLITION & REMOVALS PLAN
C6 - GRADING PLAN
C7 - SWPPP - STANDARD NOTES & DETAILS
C8 - SWPPP - PLAN VIEW
C9 - UTILITY PLAN

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ISSUE FOR:	ISSUE DATE:
FOUNDATION PERMIT	09-02-26

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

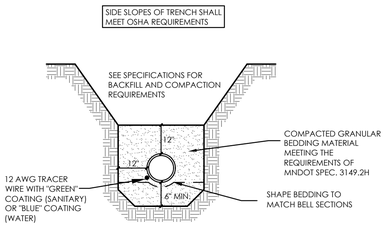
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DATE	REG. NO.

RINGDAHL ARCHITECTS COMMISSION NO.:	2634
SCHULTZ ENGINEERING PROJECT NO.:	26038
DRAWN BY:	BJS
CHECKED BY:	BJS
DATE:	09/02/26

DRAWING NO.

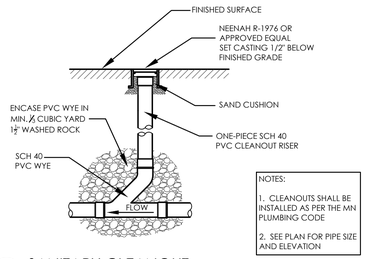
C3

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1 PIPE BEDDING DETAIL

NTS

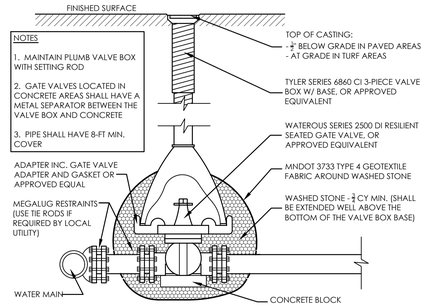


NOTES:

1. CLEANOUTS SHALL BE INSTALLED AS PER THE MN PLUMBING CODE
2. SEE PLAN FOR PIPE SIZE AND ELEVATION

2 SANITARY CLEANOUT

NTS

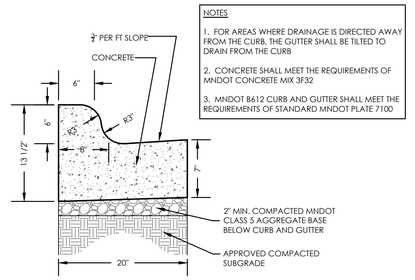


NOTES

1. MAINTAIN PLUMB VALVE BOX WITH SETTING ROD
2. GATE VALVES LOCATED IN CONCRETE AREAS SHALL HAVE A METAL SEPARATOR BETWEEN THE VALVE BOX AND CONCRETE
3. PIPE SHALL HAVE 8-FT MIN. COVER

3 GATE VALVE & BOX

NTS

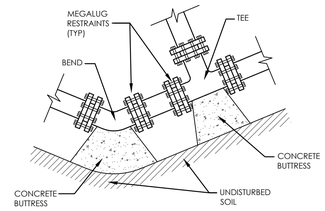


NOTES

1. FOR AREAS WHERE DRAINAGE IS DIRECTED AWAY FROM THE CURB, THE GUTTER SHALL BE TILTED TO DRAIN FROM THE CURB
2. CONCRETE SHALL MEET THE REQUIREMENTS OF MNDOT CONCRETE MIX 3F32
3. MNDOT B612 CURB AND GUTTER SHALL MEET THE REQUIREMENTS OF STANDARD MNDOT PLATE 7100

4 CURB & GUTTER (MNDOT B612)

NTS



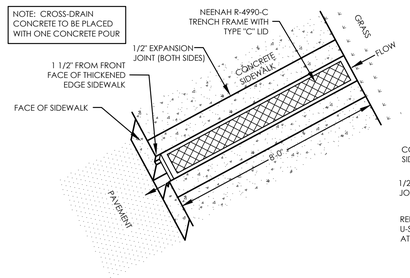
MINIMUM CONCRETE BUTTRESS SURFACE AREA (SF)				
PIPE SIZE	TEE OR PLUG	90° BEND	45° BEND	22½° BEND
6"	2.9	3.1	1.6	0.8
8"	3.7	5.3	2.9	1.4
10"	5.7	8.1	4.4	2.2
12"	8.1	13.4	6.6	3.2
16"	15.1	21.4	11.6	5.9
20"	23.2	30.2	18.1	9.3
24"	33.6	48.5	26.1	13.3

NOTES

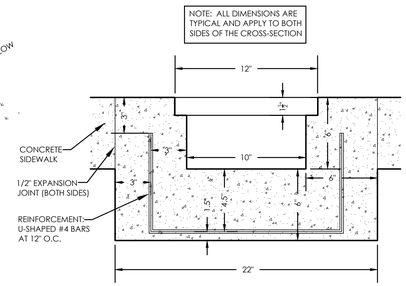
1. PLACE A PLASTIC COVERING OVER FITTINGS PRIOR TO POURING CONCRETE BUTTRESSES
2. CONCRETE BUTTRESSES SHALL BE POURED AGAINST FIRM, UNDISTURBED SOILS, AND SHALL BE FORMED SO THAT JOINTS WILL BE KEPT FREE OF CONCRETE AND REMAIN ACCESSIBLE FOR REPAIRS
3. ALL FITTINGS (EXCEPT CROSSES) SHALL BE PROVIDED WITH CONCRETE BUTTRESS THRUST BLOCKING
4. CONCRETE MIX SHALL MEET THE REQUIREMENTS OF MNDOT CONCRETE MIX 3Y43
5. USE TIE RODS IN LIEU OF MEGALUGS, IF REQUIRED BY LOCAL UTILITY.
6. MEGALUG RESTRAINTS SHALL BE PROVIDED AT ALL JOINTS WITHIN 20 FT OF ALL FITTINGS (EXCEPT CROSSES)

5 THRUST BLOCKING

NTS



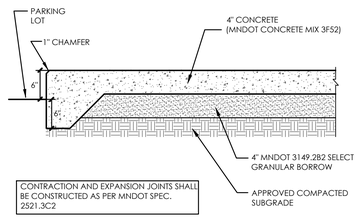
PLAN VIEW



PROFILE VIEW

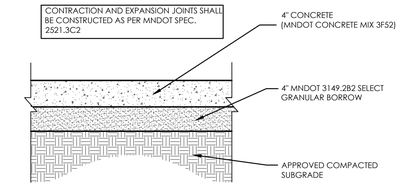
6 SIDEWALK CROSS-DRAIN

NTS



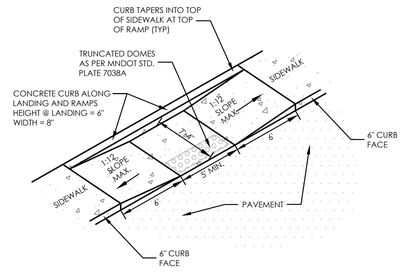
7 THICKENED EDGE SIDEWALK SECTION

NTS



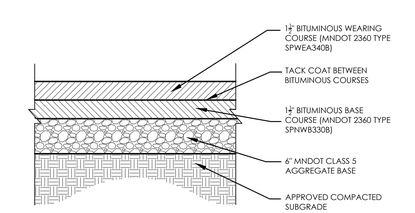
8 CONCRETE SIDEWALK/PATIO SECTION

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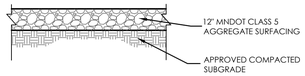
9 PEDESTRIAN ADA RAMPS W/ LANDING

NTS



10 BITUMINOUS PAVEMENT SECTION

NTS



11 GRAVEL SURFACING

NTS

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AJ'S BAR
GLENWOOD, MN

STANDARD DETAILS

CIVIL SHEET INDEX

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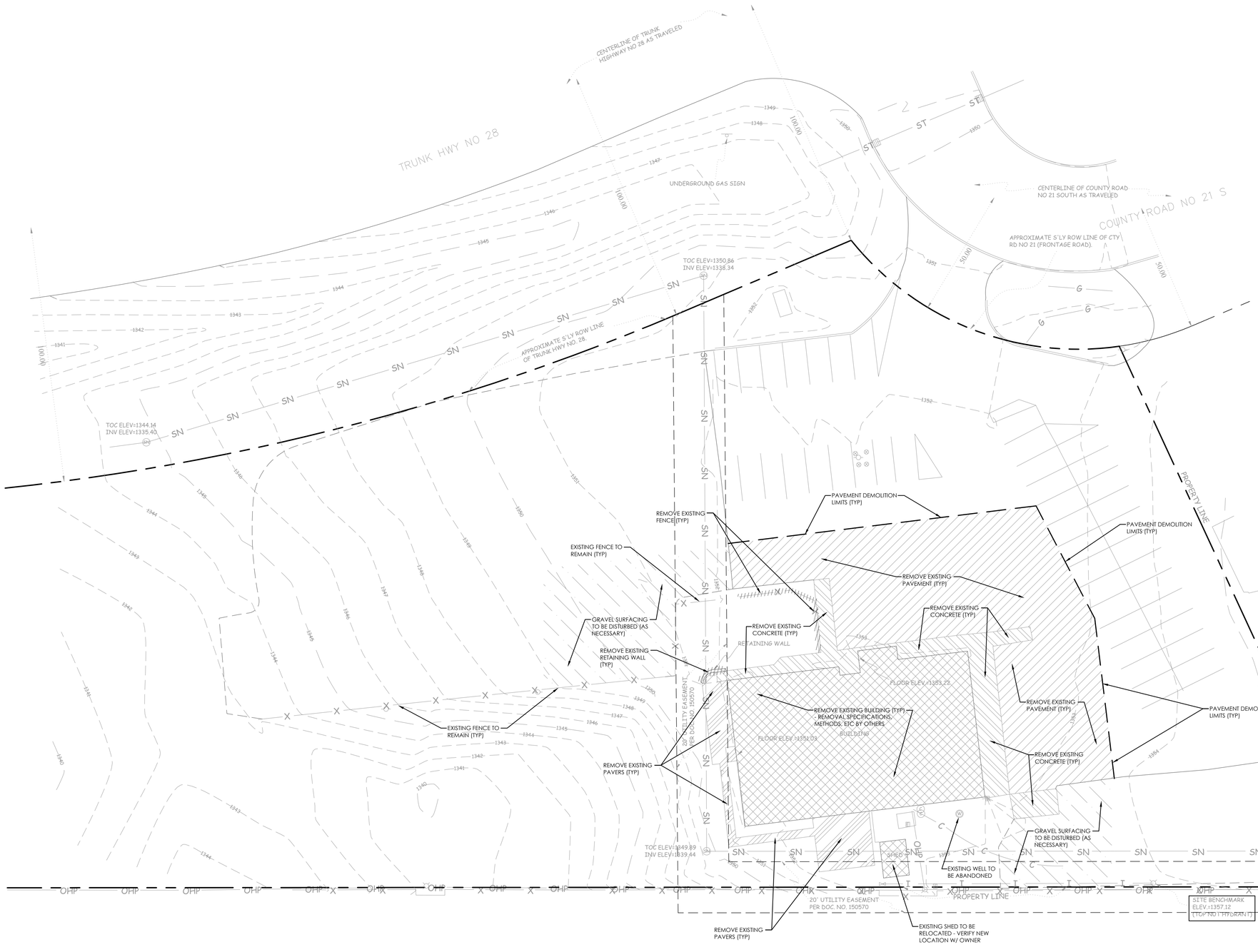
09/02/26 — DATE
43129 — REG. NO.

RINGDAHL ARCHITECTS COMMISSION NO.:	2634
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DEMOLITION AND REMOVAL NOTES:

1. DURING ALL DEMOLITION OPERATIONS THE CONTRACTOR SHALL BE CAREFUL SO AS TO NOT DAMAGE EXISTING BUILDINGS, PAVEMENT/HARDSCAPES, OR UTILITIES (IE: MANHOLES, GATE VALVE, ETC.) DESIGNATED TO REMAIN. THE CONTRACTOR SHALL COORDINATE DEMOLITION AND REMOVAL OPERATIONS WITH THE OWNER, AND SHALL CONTACT GOPHER STATE ONE CALL (800) 252-1166 FOR A UTILITY LOCATE. ANY BUILDINGS, PAVEMENT/ HARDSCAPE, OR UTILITIES, DESIGNATED TO REMAIN, THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

2. ALL BITUMINOUS AND CONCRETE MATERIAL DESIGNATED FOR DEMOLITION SHALL BE REMOVED AND DISPOSED OF OFF-SITE PER FEDERAL, STATE AND LOCAL REQUIREMENTS.

3. EXISTING PAVEMENT AND/OR SIDEWALK AT DEMOLITION LIMITS SHALL BE SAWCUT WITH AN APPROPRIATE SAW TO OBTAIN A STRAIGHT VERTICAL EDGE.

4. EXISTING VEGETATED AREAS, NOT DESIGNATED FOR DISTURBANCE, WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RE-GRADED, SEEDED, AND MULCHED. THE MULCH SHALL BE DISANCHORED.

5. TREES LOCATED IN THE PROPOSED CONSTRUCTION AREA SHALL BE REMOVED. VERIFY EXTENT OF TREE REMOVAL WITH OWNER.

6. COORDINATE ALL NECESSARY RELOCATION AND/OR ADJUSTMENTS OF EXISTING NON-SEWER AND NON-WATER UTILITIES (GAS, ELECTRIC, COMMUNICATIONS, ETC.) WITH LOCAL UTILITY.

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING GRAVEL SURFACING TO BE DISTURBED (AS NECESSARY)
- EXISTING PAVERS TO BE REMOVED
- EXISTING FENCE OR RETAINING WALL TO BE REMOVED
- EXISTING BUILDING TO BE REMOVED - REMOVAL SPECIFICATIONS, METHODS, ETC BY OTHERS, OR EXISTING SHED TO BE RELOCATED

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DEMOLITION & REMOVALS PLAN

SCALE: 1" = 20'
0 20 40

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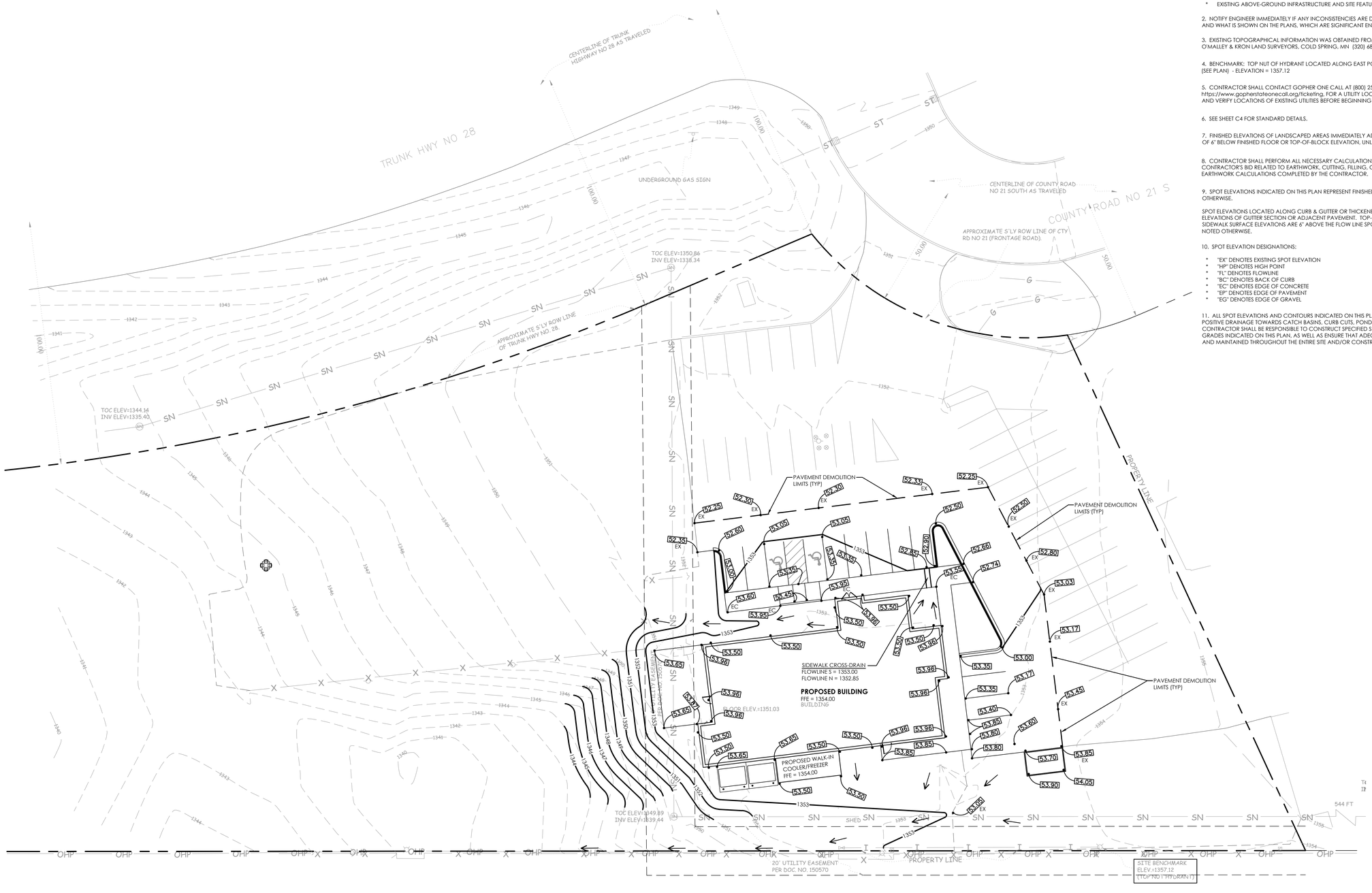
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GRADING NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
   - LOCATIONS, DEPTHS, SIZES, AND MATERIAL TYPES OF EXISTING SANITARY, WATER, AND STORM SEWER UTILITIES, INCLUDING EXISTING STUBS
   - RIM AND INVERT ELEVATIONS OF EXISTING SANITARY AND STORM SEWER UTILITIES, INCLUDING EXISTING STUBS
   - LOCATIONS AND DEPTHS OF EXISTING NON-SEWER AND NON-WATER UTILITIES (IE: GAS, ELECTRIC, COMMUNICATIONS, ETC.)
   - EXISTING ABOVE-GROUND INFRASTRUCTURE AND SITE FEATURES
2. NOTIFY ENGINEER IMMEDIATELY IF ANY INCONSISTENCIES ARE DISCOVERED BETWEEN ACTUAL SITE CONDITIONS AND WHAT IS SHOWN ON THE PLANS, WHICH ARE SIGNIFICANT ENOUGH TO ALTER THE INTENT OF THE DRAWINGS.
3. EXISTING TOPOGRAPHICAL INFORMATION WAS OBTAINED FROM A TOPOGRAPHICAL SURVEY COMPLETED BY O'MALLEY & KRON LAND SURVEYORS, COLD SPRING, MN (320) 685-5905
4. BENCHMARK: TOP NUT OF HYDRANT LOCATED ALONG EAST PORTION OF SOUTH PROPERTY LINE (SEE PLAN) - ELEVATION = 1357.12
5. CONTRACTOR SHALL CONTACT GOPHER ONE CALL AT (800) 252-1166, OR https://www.gopherstateonecall.org/ticketing, FOR A UTILITY LOCATE PRIOR TO THE START OF CONSTRUCTION AND VERIFY LOCATIONS OF EXISTING UTILITIES BEFORE BEGINNING WORK.
6. SEE SHEET C4 FOR STANDARD DETAILS.
7. FINISHED ELEVATIONS OF LANDSCAPED AREAS IMMEDIATELY ADJACENT TO BUILDINGS SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR OR TOP-OF-BLOCK ELEVATION, UNLESS NOTED OTHERWISE ON THE PLAN.
8. CONTRACTOR SHALL PERFORM ALL NECESSARY CALCULATIONS TO VERIFY EARTHWORK QUANTITIES. CONTRACTOR'S BID RELATED TO EARTHWORK, CUTTING, FILLING, GRADING , ETC. SHALL BE BASED ON EARTHWORK CALCULATIONS COMPLETED BY THE CONTRACTOR.
9. SPOT ELEVATIONS INDICATED ON THIS PLAN REPRESENT FINISHED SURFACE ELEVATIONS, UNLESS NOTED OTHERWISE.

   SPOT ELEVATIONS LOCATED ALONG CURB & GUTTER OR THICKENED EDGE SIDEWALK REPRESENT FLOWLINE ELEVATIONS OF GUTTER SECTION OR ADJACENT PAVEMENT. TOP-OF-CURB OR TOP-OF-THICKENED EDGE SIDEWALK SURFACE ELEVATIONS ARE 6" ABOVE THE FLOW LINE SPOT ELEVATION SHOWN ON THE PLANS, UNLESS NOTED OTHERWISE.
10. SPOT ELEVATION DESIGNATIONS:
    - "EX" DENOTES EXISTING SPOT ELEVATION
    - "HP" DENOTES HIGH POINT
    - "FL" DENOTES FLOWLINE
    - "BC" DENOTES BACK OF CURB
    - "EC" DENOTES EDGE OF CONCRETE
    - "EP" DENOTES EDGE OF PAVEMENT
    - "EG" DENOTES EDGE OF GRAVEL
11. ALL SPOT ELEVATIONS AND CONTOURS INDICATED ON THIS PLAN ARE INTENDED TO PROVIDE ADEQUATE POSITIVE DRAINAGE TOWARDS CATCH BASINS, CURB CUTS, PONDS, BASINS AND/OR OTHER OUTLETS. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT SPECIFIED SURFACE INFRASTRUCTURE TO ELEVATIONS AND GRADES INDICATED ON THIS PLAN, AS WELL AS ENSURE THAT ADEQUATE POSITIVE DRAINAGE IS CONSTRUCTED AND MAINTAINED THROUGHOUT THE ENTIRE SITE AND/OR CONSTRUCTION AREA.

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GRADING PLAN

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0 20 40

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C6

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PROJECT INFORMATION

Project Description

This project will consist of the reconstruction of an existing restaurant building, which had incurred damage related to a fire. The proposed square footage of the new building will be approximately 5,450-SF. Parking lot and sidewalk areas necessary for tying the newly constructed building into surrounding grades will be included as well.

Disturbed Area & Impervious Surface Tabulation
(within proposed construction area)

Anticipated Disturbed Area	0.7 acres
Existing Impervious Area	0.46 acres
Proposed Impervious Area	0.43 acres
Net Impervious Area Decrease	-0.03 acres

Permanent Site Drainage

Site drainage will be routed off site in a manner consistent with existing drainage patterns.

SEDIMENT AND OTHER POLLUTANTS

This SWPPP has been designed mainly to provide erosion and sediment control of naturally occurring soils at this site (ie: sands, loams, and clays). Although this SWPPP does address pollution prevention of other man-made materials, it is assumed that these materials will consist of debris from existing structures and pavements to be demolished, or debris and chemicals (ie: fuels, new paints, etc.) resulting from new construction.

There are no known solid wastes or hazardous materials buried below grade at this site. If such wastes or hazard materials are discovered during construction, the SWPPP Coordinator (described below) will be responsible for notifying the Engineer. This SWPPP will then be revised to address the presence and disposal of these additional pollutants

EROSION PREVENTION AND SEDIMENT CONTROL BMPS

Standards and References

Materials and construction methods of all BMPs included in this SWPPP shall be as per the Minnesota Department of Transportation (MNDOT) Standard Specifications for Construction, latest edition. The Contractor and SWPPP Coordinator shall obtain a current copy of MNDOT's Standard Specifications for Construction and familiarize themselves with the specification sections applicable to this SWPPP, as there are several BMPs that specifically reference these sections.

The Contractor and SWPPP Coordinator shall be expected to be familiar with the applicable MNDOT specification sections during construction. No additional compensation will be paid to the Contractor for additional work due to unfamiliarity with these specification sections.

Undisturbed Areas

If shown on the plan, the Contractor shall delineate areas that are not to be disturbed on the site. This may be done with flags, stakes, signs, silt fence, etc., and shall be completed prior to the start of any grading operations. Regardless of the delineation method the Contractor chooses to use, the Contractor must communicate to his/her personnel and subcontractors that these areas are not to be disturbed and construction equipment (including trucks and personal vehicles) shall not be allowed in these areas.

The Contractor shall minimize compaction and preserve topsoil as much as possible at the site. In pervious ("green") areas that are not essential to the construction of the project, the Contractor shall avoid construction traffic and maintain the existing condition of these areas.

Temporary and Permanent Stabilization

All exposed soil areas (including stockpiles) shall be provided with temporary or permanent cover within 14 days of construction activity temporarily or permanently ceasing in that portion of the site. Temporary or permanent drainage ditches or swales, which drain off-site or to a surface water, and are within 200 lineal feet of the property line or surface water shall be provided with temporary or permanent cover within 24 hours of construction. Placement of temporary or permanent cover shall be initiated immediately upon suspension or completion of excavation operations.

Temporary Cover:

If the Contractor chooses to halt grading operations in a portion of the site (or the whole site) for a period exceeding 14 days, and grading operations (rough or finish grading) in the affected areas has not yet been completed, temporary cover shall be placed. Affected areas consisting of drainage ditches or swales connected to, and within, 200 lineal feet of a property line or surface water shall be provided with temporary cover within 24 hours of connection. Depending on the Contractor's schedule, the temporary cover shall consist of one of the following BMPs:

1). Discanchored Mulch

a). Discanchored mulch may be used in an area of the site (or the whole site) if the Contractor is halting grading operations for a period that is relatively short, but exceeds 14 days.

b). The mulch shall be Type 3 per MNDOT Spec. 3882

c). An adequate quantity of mulch shall be evenly distributed to achieve 90% coverage of the exposed soils.

d). Mulch shall be placed as per MNDOT 2575.3F.

e). All mulch shall be disc anchored as per MNDOT 2575.3G. Prior to the placement and discanchoring of the mulch, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B1.

f). Any areas that are exposed as a result of wind action after the initial mulch placement shall be covered with additional mulch to maintain 90% coverage.

2). Temporary Seeding with Mulch

a). Temporary seeding with mulch may be used in areas of the site (or the whole site) if the Contractor is halting grading operations for a period that is relatively long. Although mulch still needs to be applied as described above, once the temporary seeding/turf is established, the mulch will no longer need to be maintained. The temporary seeding/turf will require very little maintenance.

b). Prior to the sowing of temporary seed, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B1.

c). Contractor shall utilize Seed Mixes 100, 110, or 130 per MNDOT Spec. 3876 for temporary seeding.

d). Temporary seeding shall be sown per MNDOT Spec. 2575.3D.

e). Once temporary seeding has been sown, mulch shall be placed over the area as described above.

Permanent Cover:

Upon completion of finish grading and/or placement of topsoil, initiation of the placement of permanent cover shall begin immediately over all exposed areas. This includes areas designated for impervious surfacing (ie: buildings, pavements/gravel bases, sidewalks, etc.). Where the construction schedule will not allow for the placement of the permanent impervious surfacing within 14 days of the completion of finish grading, temporary cover shall be provided in these areas, as described above, until the permanent impervious surfacing can be constructed. Affected areas consisting of drainage ditches or swales connected to, and within, 200 lineal feet of a property line or surface water, shall be provided with permanent cover within 24 hours of connection.

Areas designated for permanent turf establishment shall be provided with one or more of the following BMPs (see plan):

1). Permanent Seeding with Mulch

a). Unless otherwise noted on the plans, all areas designated for turf establishment shall be provided with permanent seeding.

b). In addition to the plan included as part of this SWPPP, the Contractor shall verify if a Landscaping Plan has been included in the plans by the Architect. If a Landscape Architect has specified higher quality permanent cover (ie: sod, hydroseeding, etc.), the Contractor shall provide this permanent cover in lieu of the permanent seeding specified in this SWPPP.

c). Prior to the sowing of permanent seed, the soils shall be loosened and the area smooth-rough graded per MNDOT 2575.3B1.

d). Contractor shall utilize Seed Mix 260 per MNDOT Spec. 3876 for permanent seeding.

e). Permanent seeding shall be sown per MNDOT Spec. 2575.3D.

f). Once permanent seeding has been sown, mulch shall be placed over the area as described above (under Temporary Cover), unless noted otherwise.

2). Erosion Control Blanket

a). Erosion control blanket shall be placed in areas as shown on the plan included in this SWPPP. These areas shall still be provided with permanent seeding, as described above, beneath the erosion control blanket.

b). Erosion control blanket shall meet the requirements indicated in MNDOT Spec. 3885. See plan for category(s) of erosion control blanket.

c). Erosion control blanket shall be installed as per MNDOT Spec. 2575.3J2.

d). Erosion control blanket specified in drainage ditches and swales connected to, and within 200 lineal feet, of a property line or surface water shall be installed within 24 hours of the completion of finish grading (including permanent seeding).

3). Riprap

a). Riprap shall be placed in areas as shown on the plan included in this SWPPP.

b). All riprap shall be underlain with Type 4 geotextile fabric. The fabric shall meet the requirements of MNDOT Spec. 3733 and shall be installed as per MNDOT Spec. 2511.3B2.

c). Riprap materials shall meet the requirements of MNDOT Spec. 3601, and shall be Class 3, unless noted otherwise on the plans.

d). Riprap shall be considered "Random Riprap" and shall be placed as per MNDOT Spec. 2511.

e). Although it is permitted for the riprap to be placed with machinery, it will be necessary for the Contractor to hand place some of the riprap in order to provide a dense, well-keyed layer of stones with the least practical quantity of void space.

f). The minimum thickness of the riprap shall be 18 inches, unless otherwise noted on the plans.

g). Riprap designated at the end of pipe outlets shall be placed within 24 hours of installation of the pipe outlet end section.

h). Riprap specified in drainage ditches and swales connected to, and within 200 lineal feet, of a property line or surface water shall be installed within 24 hours of the completion of finish grading.

Sediment Control

The following sediment control BMPs shall be implemented as part of this project:

1. Silt Fence

a. Silt fence shall be installed at the locations shown on the plan included in this SWPPP.

b. Silt fence shall be machine sliced and materials shall meet the requirements of MNDOT Spec. 3886.

c. Silt fence shall be installed as per MNDOT Spec. 2573.3B2.

d. Silt fence shall be installed prior to any upgradient grading operations, and shall remain in place and maintained adequately until up-gradient areas achieve Final Stabilization (see below).

e. Silt fence shall be repaired or replaced if damaged during, or after, rain events, or if accumulated sediment on the upstream side of the fence reaches 1/2 the height of the fence. Repair or replacement of silt fence shall be completed within 24 hours of discovery.

f. Portions of silt fence may be removed to accommodate short-term activities, such as vehicle passage. Short-term activities shall be completed as quickly as possible, and new silt fence installed immediately after completion of the short-term activity. If rainfall is imminent or forecasted in the near future, new silt fence shall be installed regardless of if the short term activity has been completed or not. The Contractor is advised to schedule short term activities during dry weather as much as practicable. No additional compensation will be paid due to additional silt fence associated with short-term activities.

Temporary soil stockpiles shall be placed on the site in areas up-gradient from silt fence. Where the Contractor chooses to place temporary soil stockpiles outside designated silt fenced areas, the stockpiles shall be surrounded by additional silt fence. The Contractor shall locate stockpiles outside of natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems unless there is a bypass in place for the stormwater. Under no circumstances shall temporary soil stockpiles be placed over surface waters, curb and gutter, catch basins, culvert inlets or outlets, or ditches.

2. Catch Basin Protection

a. WIMCO Road Drain protection devices, as manufactured by WIMCO, shall be used for catch basin protection on this project. WIMCO can be contacted at (952)-233-3055, and their web page is www.roaddrain.com.

b. "Road Drain Top Slab" devices shall be installed at all catch basin locations immediately after placement of the catch basin structures. "Road Drain Top Slab" devices shall remain in place and be adequately maintained until permanent surfacing is constructed (ie: curb and gutter, pavements, and/or gravel surfacing). In areas designated for turf establishment, "Road Drain Top Slab" devices shall remain in place until Final Stabilization of all upgradient areas is established.

c. Upon construction of the permanent surfacing, the "Road Drain Top Slab" devices shall be replaced with the WIMCO product specified on the plans. The WIMCO devices shall remain in place until Final Stabilization of all upgradient areas has been established.

d. The Contractor shall install and maintain the catch basin protection devices as per the manufacturer's instructions and specifications.

e. The Contractor may remove catch basin protection for a particular inlet if a specific safety concern (e. g. street flooding/freezing) is identified by the Contractor or the jurisdictional authority.

3. Culvert Inlet Protection

a. Culvert inlet protection shall be provided at all culvert inlet locations immediately after construction of the culvert. See plan included in this SWPPP for culvert inlet locations.

b. Culvert inlet protection shall consist of the SedJacket, as manufactured by SedCatch Environmental Products. SedCatch Environmental Products can be contacted at (937)-435-5075, and their web page is https://sedcatch.com/collections/sedjacket.

c. The culvert inlet protection shall remain in place and adequately maintained until Final Stabilization of all up-gradient areas has been established.

d. Culvert inlet protection shall be repaired or replaced if damaged during, or after, rain events, or if accumulated sediment reaches 1/2 of the height of the SedJacket device fabric. Repair or replacement of culvert inlet protection shall be completed within 24 hours of discovery.

e. The Contractor may remove culvert inlet protection for a particular inlet if a specific safety concern (e. g. street flooding/freezing) is identified by the Contractor or the jurisdictional authority.

4. Temporary Rock Construction Entrance

a. Temporary rock construction entrances shall be installed at the locations shown on the plan included in this SWPPP. See detail for temporary rock entrance design.

b. If the Contractor chooses to access the site from locations other than where temporary rock entrances are specified on the plans, additional temporary rock entrances shall be placed at these locations, as well.

c. Temporary rock entrance shall be constructed prior to the start of grading operations, and shall remain in place and be adequately maintained until Final Stabilization has been achieved.

d. Temporary rock entrances shall be maintained in such a manner that the entrances prevent sediment tracking onto adjacent streets. If a temporary rock entrance is found to be ineffective, it shall be replaced or improved within 24 hours of discovery.

e. The Contractor has the option to place Type 4 geotextile fabric beneath the temporary rock entrance. The fabric may extend the life of the entrance as it will reduce rock "sinking" into the underlying soils. If the Contractor chooses to use fabric, it should meet the requirements of MNDOT Spec. 3733 and shall be installed as per MNDOT Spec. 2511.3B2.

f. If sediment tracking from the site is discovered on adjacent streets, the sediment shall be removed with a street sweeper or other approved method within 24 hours of discovery. This shall be done throughout construction of the project. This sediment may be returned and graded over exposed areas of the site, or disposed of off site per MPCA requirements.

The City may order street sweeping to be performed at the Contractor's or Owner's expense if City staff find that construction activities are resulting in sediment or debris being tracked onto City streets.

5. Filter Logs

a. Filter logs shall be installed at the locations shown on the plan included in this SWPPP.

b. Filter logs shall consist of Type Wood Fiber biorolls and meet the requirements of MNDOT Spec. 3897.

c. Filter logs shall be installed as per MNDOT Spec. 2573.3F.

d. Filter logs shall be installed immediately after placement of erosion control blanket.

e. Filter logs shall remain in place for the life of the project, and shall be allowed to degrade naturally.

Dewatering

If dewatering of sandy subsoils is required for this project, the pump discharge shall be treated prior to discharge off-site or into a surface water. Treatment of discharge shall be achieved with the use of a "Dandy Dewatering Bag" (or approved equivalent), as manufactured by Dandy Products,Inc. Dandy Products, Inc. can be contacted at (877) 307-0141, and their web page is www.dandyproducts.com. The "Dandy Dewatering Bag" shall be installed, utilized, and maintained per the manufacturer's instructions and specifications.

Once dewatering water has been treated, it may be discharged off-site or to a surface water. The discharge shall be visually checked to ensure that it is relatively clean and not visibly different from any receiving waters. If discharge is noticeably "dirty", the Engineer shall be contacted as additional treatment methods may be necessary.

Adequate erosion control shall be provided at the point of discharge if it is located in an area with exposed soils or established turf. This erosion control may consist of temporarily placed rip rap, or other approved energy dissipation measures. The type of erosion control measure shall be at the Contractor's discretion, depending on the location of the dewatering discharge and the unique site characteristics. The erosion control measures shall be effective and shall be maintained adequately such that no erosion occurs at the point of discharge.

POLLUTION PREVENTION MANAGEMENT

Solid waste accumulated during construction, including collected sediment, construction materials, floating debris, construction debris, paper, plastics, and other solid wastes shall be disposed of in accordance with MPCA disposal requirements:

1). Building products that have the potential to leach pollutants shall be maintained under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by a similarly effective means designed to minimize contact with storm water.

2). Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials shall be maintained under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by similarly effective means designed to minimize contact with stormwater.

3). Hazardous materials, toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) shall be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas shall be provided to prevent vandalism. Storage and disposal of hazardous waste or hazardous materials shall be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.

4). Solid waste shall be stored, collected and disposed of properly in compliance with Minn. R. ch. 7035.

5). Portable toilets shall be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. ch. 7041.

The Contractor shall take steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. The Contractor shall conduct fueling in a contained area unless infeasible. The Contractor shall ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. The Contractor shall report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.

If the Contractor washes the exterior of vehicles or equipment on the project site, washing shall be limited to a defined area of the site. Runoff from the washing area shall be contained in a sediment basin or other similarly effective controls and waste from the washing activity shall be properly disposed of. The Contractor shall properly use and store soaps, detergents, or solvents. No engine degreasing shall be allowed on site.

The Contractor shall provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. The liquid and solid washout wastes shall not contact the ground, and the containment shall be designed so that it does not result in runoff from the washout operations or areas. Liquid and solid wastes shall be disposed of properly and in compliance with MPCA rules. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

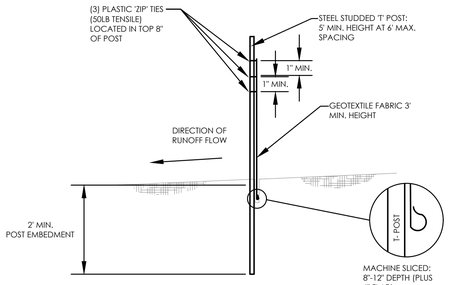
FINAL STABILIZATION

Final Stabilization shall be considered established once the following requirements have been achieved:

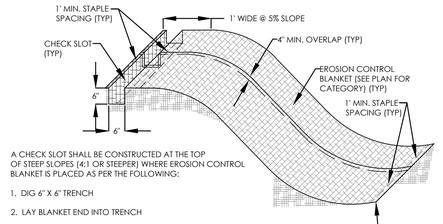
1). All soil disturbing activities at the site have been completed and all soils are stabilized by a uniform perennial vegetative cover with a density of 70 percent of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.

2). The permanent storm water management system is constructed, and is operating as designed. Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems and ditches are stabilized with permanent cover.

3). All temporary synthetic and structural erosion prevention and sediment control BMPs have been removed from the project site. BMPs designed to decompose on site may be left in place.



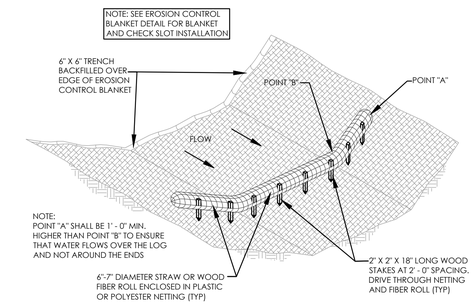
1 SILT FENCE - MACHINE SLICED
NTS



A CHECK SLOT SHALL BE CONSTRUCTED AT THE TOP OF STEEP SLOPES (4:1 OR STEEPER) WHERE EROSION CONTROL BLANKET IS PLACED AS PER THE FOLLOWING:

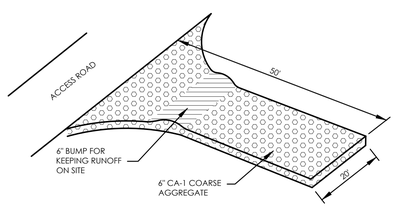
1. DIG 6" X 6" TRENCH
2. LAY BLANKET END INTO TRENCH
3. STAPLE BLANKET IN BOTTOM OF TRENCH EVERY 1 FT
4. BACKFILL TRENCH WITH SOIL AND COMPACT
5. IF SLOPE LENGTH IS GREATER THAN 100 FT DIG A CHECK SLOT 1/3 FROM THE BOTTOM OF THE SLOPE AND STAPLE THE BLANKET IN AS IN THE TOP TRENCH.
6. PROVIDE STAPLES IN STRICT CONFORMANCE W. BLANKET MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.

2 EROSION CONTROL BLANKET
NTS



NOTE:
POINT "A" SHALL BE 1' - 0" MIN. HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE LOG AND NOT AROUND THE ENDS

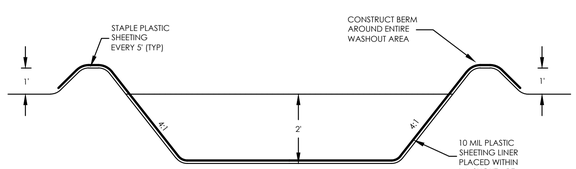
3 FILTER LOG
NTS



NOTE: PLACING FILTER FABRIC UNDER THE ROCK ENTRANCE MAY REDUCE THE AMOUNT OF MAINTENANCE IT WOULD REQUIRE.

1. THE ROCK ENTRANCE SHALL BE CONSTRUCTED PRIOR TO THE START OF GRADING OPERATIONS.
2. THE ENTRANCE SHALL BE GRADED SUCH THAT POSITIVE DRAINAGE DURING CONSTRUCTION IS PROVIDED.
3. THE ENTRANCE SHALL BE MAINTAINED IN SUCH A CONDITION SUCH THAT IT PREVENTS MUD TRACKING OFF SITE. ADDITIONAL ROCK OR REPLACEMENT OF THE ENTRANCE MAY BE REQUIRED PERIODICALLY IF MUD STARTS TO TRACK OFF SITE.
4. THE ROCK ENTRANCE MAY BE REMOVED JUST PRIOR TO THE PLACEMENT OF AGGREGATE BASE.

4 TEMPORARY ROCK CONSTRUCTION ENTRANCE
NTS



1. BOTTOM OF CONCRETE WASHOUT AREA SHALL BE 10'X10'
2. CONTRACTOR SHALL REMOVE WASH LIQUID FROM CONCRETE WASHOUT AREA AND DISPOSE OF PER MPCA REQUIREMENTS WHEN WASHOUT AREA BECOMES HALF FULL.
3. CONTRACTOR SHALL SELECT THE MOST OPTIMAL LOCATION FOR THE CONCRETE WASHOUT

5 CONCRETE WASHOUT
NTS

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AJ'S BAR
GLENWOOD, MN

SWPPP - STANDARD NOTES & DETAILS

CIVIL SHEET INDEX

C1 - COVER SHEET
C2 - CIVIL SITE PLAN
C3 - STANDARD NOTES & SPECIFICATIONS
C4 - STANDARD DETAILS
C5 - DEMOLITION & REMOVALS PLAN
C6 - GRADING PLAN
C7 - SWPPP - STANDARD NOTES & DETAILS
C8 - SWPPP - PLAN VIEW
C9 - UTILITY PLAN

SCHULTZ ENGINEERING & SITE DESIGN
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schultzeng@live.com
www.schultzengdesign.com

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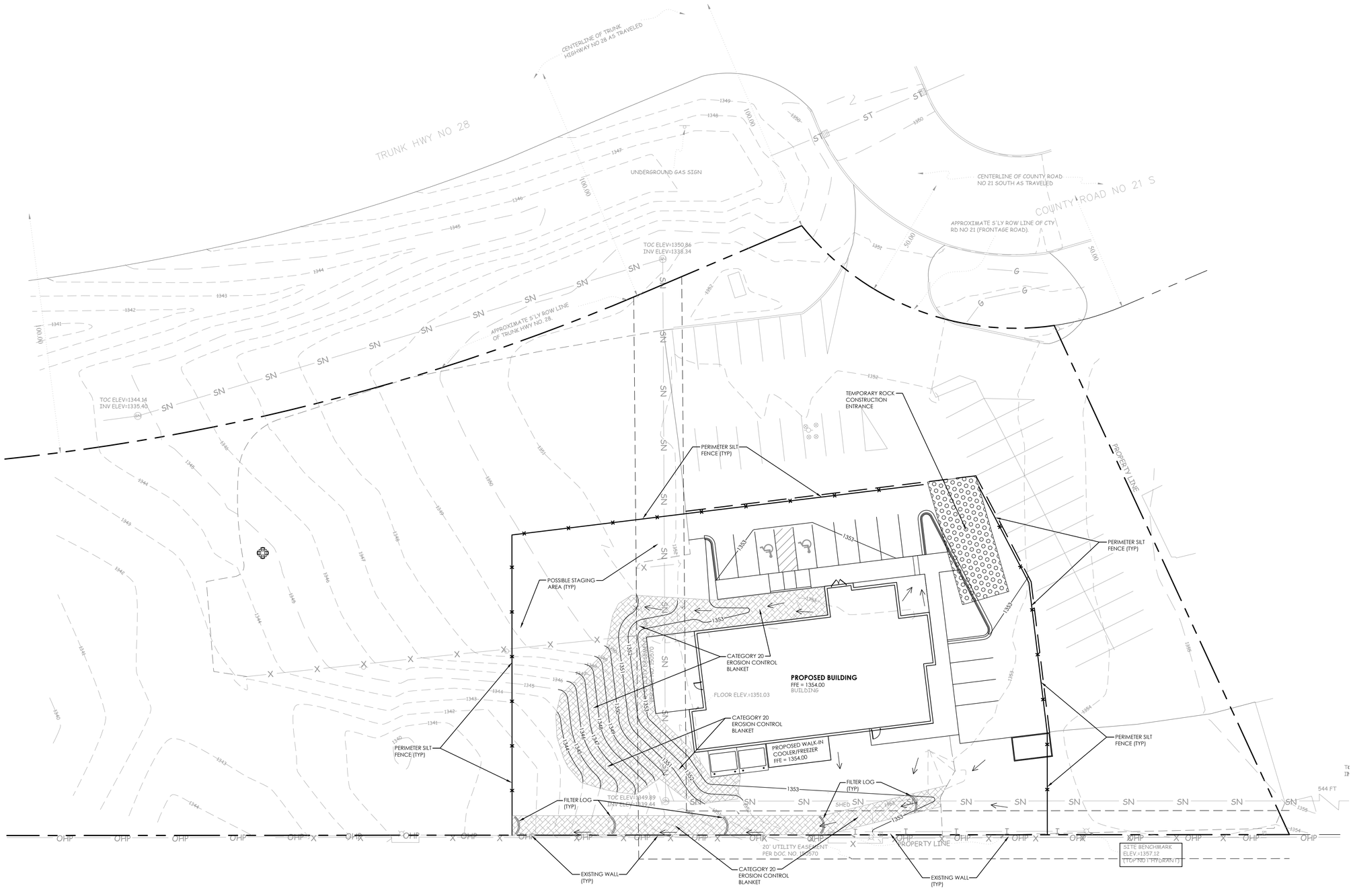
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DATE	REG. NO.

RINGDAHL ARCHITECTS COMMISSION NO.:	2634
SCHULTZ ENGINEERING PROJECT NO.:	26038
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GLENWOOD, MN

SWPPP - PLAN VIEW

N

SCALE: 1" = 20'

0 20 40

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UTILITY NOTES:

1. WATER MAIN AND ANY WATER SERVICE LINES SHALL BE PLACED AT A MINIMUM DEPTH OF 8 FEET BELOW FINISHED GRADE.

2. IF CONFLICTS ARE DISCOVERED WHERE WATER MAIN AND/OR WATER SERVICES CROSS EXISTING OR PROPOSED SANITARY SEWER, SERVICE LINES, OR STORM SEWER, THE WATER MAIN AND/OR WATER SERVICES SHALL BE RAISED OR LOWERED APPROPRIATELY WHILE STILL MAINTAINING A MINIMUM DEPTH OF 8 FEET BELOW FINISHED GRADE.

3. INSULATION SHALL BE PLACED AT ALL LOCATIONS WHERE STORM SEWER CROSSES SANITARY SEWER, WATER MAIN, OR ASSOCIATED SERVICES. INSULATION SHALL CONSIST OF AN 8-FT X 8-FT SQUARE OF 3"-THICK RIGID INSULATION. INSULATION SHALL BE PLACED BETWEEN THE STORM SEWER AND PIPE CROSSING WITH THE EDGES OF THE INSULATION PARALLEL TO THE PIPING AS MUCH AS POSSIBLE.

4. INSTALL SANITARY SEWER SERVICE LINE CLEANOUTS AS REQUIRED BY THE MINNESOTA PLUMBING CODE.

4. INSTALL TRACER WIRE ALONG PROPOSED UNDERGROUND UTILITY PIPE AS PER MINNESOTA RURAL WATER ASSOCIATION STANDARDS AND SPECIFICATIONS.

https://www.mnwa.com/wp-content/uploads/2022/06/TracerWireSpecGuideFinalweb11.pdf

5. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.

6. PRIOR TO CONSTRUCTION OF SANITARY SEWER, AND ORDERING ASSOCIATED MATERIALS, THE CONTRACTOR'S PLUMBING DESIGNER SHALL PROVIDE THE ENGINEER WITH THE TOTAL DRAINAGE FIXTURE UNITS (DFUs) FOR THE INTERIOR PLUMBING TO VERIFY THE CORRECT SIZING AND SLOPE OF THE SANITARY SEWER SERVICE

OWNER AND/OR CONTRACTOR SHALL SUBMIT FOR STATE PLUMBING REVIEW, AND OBTAIN AN APPROVED PLUMBING REVIEW REPORT FROM MNDLI, PRIOR TO THE INSTALLATION OF ANY SANITARY SEWER OR WATER UTILITIES.

CONSTRUCTION OF SANITARY SEWER OR WATER UTILITIES SHALL NOT COMMENCE UNTIL AFTER THE APPROVED PLUMBING REVIEW REPORT HAS BEEN OBTAINED, AND ANY AND ALL PERTINENT COMMENTS HAVE BEEN ADDRESSED ON THE PLANS AND IN THE PROJECT SPECIFICATIONS.
CONTRACTOR IS ADVISED TO ORDER UTILITY MATERIALS AFTER APPROVED PLUMBING REVIEW REPORT HAS BEEN OBTAINED FROM MNDLI

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GLENWOOD, MN

UTILITY PLAN

SCALE: 1" = 20'
0 20 40

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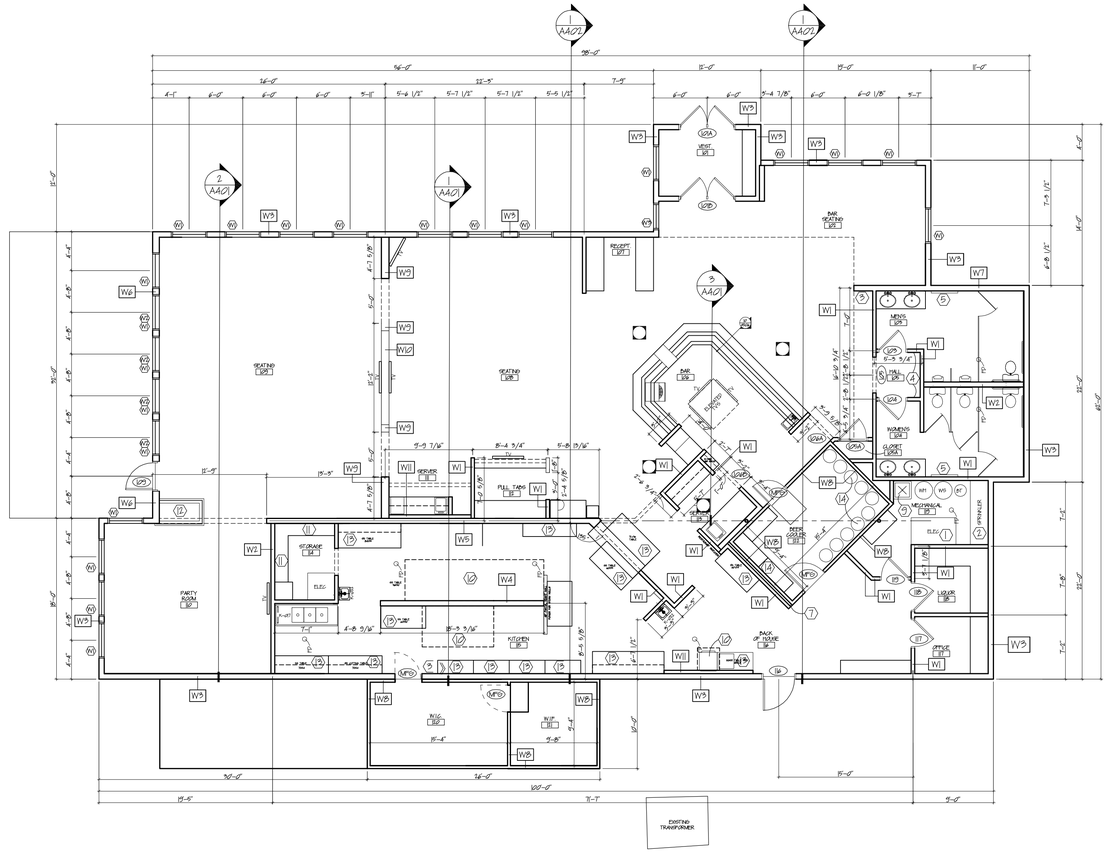
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1 A101 FLOOR PLAN

1/8" = 1'-0"

DOOR/WINDOW SCHEDULE

NO.	SIZE	DOOR TYPE	FRAME TYPE	HDWE.	REMARKS
101A	6'-0" x7'-0"	AL	AL	4	12" TRANSOM WINDOW
101B	6'-0" x7'-0"	AL	AL	5	12" TRANSOM WINDOW
102	3'-0" x7'-0"	KD	WD	1	
104	3'-0" x7'-0"	KD	WD	1	
106A	3'-0" x7'-0"	KD	WD	3	
109	3'-0" x7'-0"	AL	AL	4	
116	3'-0" x7'-0"	HM	HM	2	
117	3'-0" x7'-0"	KD	WD	3	
118	3'-0" x7'-0"	KD	WD	3	
119	3'-0" x7'-0"	KD	WD	3	
MF01	3'-0" STANDARD COOLER DOOR				
MF02	3'-0" COOLER DOOR - FULL GLASS REACH-IN DOOR				
W1	4'-0" x4'-0" WITH 12" TRANSOM WINDOW				
W2	4'-0" x2'-6" WITH 12" TRANSOM WINDOW				
W3	3'-0" x4'-0" WITH 12" TRANSOM WINDOW				

DOOR TYPES:
WD = PINE WOOD DOOR
AL = ALUMINUM EXTRA DARK BRONZE

DOOR FRAME TYPES:
HM = ROLLING METAL
AL = ALUMINUM

HARDWARE NOTES:
1. BHMA HARDWARE LOCATIONS
2. PHI INSTALLATION INSTRUCTIONS
3. VERIFY KEYING W/O WITH OWNER
4. HARDWARE FINISH TO BE #19 SATIN NICKEL
5. PROVIDE SCHLAGE LATITUDE LEVER AT ALL DOORS

GROUP 1 (PASSAGE)
EACH DOOR SHALL HAVE:
A. BUTTS AS REQUIRED
B. 1 1/2" PULL
C. 1 1/2" PUSH PLATE
D. OVERHEAD STOP

GROUP 2 (ENTRANCE)
EACH DOOR SHALL HAVE:
A. BUTTS AS REQUIRED
B. 1 KEYED LOCKSET SCHLAGE LEVER
C. OVERHEAD CLOSER
D. RAIN DRIP
E. WEATHERSTRIP
F. DOOR SWEEP BRUSH

GROUP 3 (ENTRANCE)
EACH DOOR SHALL HAVE:
A. BUTTS AS REQUIRED
B. 1 KEYED LOCKSET SCHLAGE LEVER
C. OVERHEAD STOP

GROUP 4 (ALUMINUM ENTRANCE)
CONTINUOS HINGE TOD IVE
PANIC HARDWARE
INTERCHANGEABLE CORE SCHALGE
90 DEGREE OFFSET PULL B130 10" ME
ON STOP 1205 GLY
SURFACE CLOSER
RAIN DRIP 141
WEATHERSTRIP
DOOR SWEEP BRUSH 8121
THRESHOLD AS REQUIRED (1/2")
REMOVABLE MULLION (KEYED)

GROUP 5 (ALUMINUM ENTRANCE)
CONTINUOS HINGE TOD IVE
PANIC HARDWARE
90 DEGREE OFFSET PULL B130 10" ME
ON STOP 1205 GLY
SURFACE CLOSER
THRESHOLD AS REQUIRED (1/2")
REMOVABLE MULLION (KEYED)

KEY NOTES

1. ELECTRICAL PANELS - SEE ELECTRICAL (PROVIDE 1/2" CDX PLYWOOD WALL FINISH PAINTED BATTLESHIP GREY)
2. SPRINKLER RISER - SEE MECHANICAL
3. FIRE EXTINGUISHER IN CABINET.
4. ADA SIGNAGE AT 60" AFF. AT LATCH SIDE OF DOOR
5. BABY CHANGING STATION
6. ASI GLOBAL PARTITION - SOLID PLASTIC (HPDE) COLOR FROM FULL COLOR RANGE
7. 2" GAP BETWEEN COOLER BOX AND FRAMING
8. CASEWORK BY OWNER
9. MOP SINK - PROVIDE FRP PANELS TO 48" AFF. AT ADJACENT WALLS
10. EXHAUST HOOD - SEE MECHANICAL
11. NSF SHELVING BY OWNER
12. GAS FIREPLACE SEE DETAILS
13. STAINLESS STEEL TABLE BY OWNER - COORDINATE AS REQUIRED
14. BEER KEGS ANDD SHELVING BY OWNER

PLAN NOTES

1. VERIFY CONDITIONS & DIMENSIONS AND REPORT DISCREPANCIES TO ARCHITECT FOR RESOLUTION PRIOR TO COMMENCING WORK.
2. REFER TO STRUCTURAL, MECHANICAL & ELECTRICAL FOR ADDITIONAL NOTES & INFORMATION.
3. SEAL ALL MECHANICAL, ELECTRICAL PENETRATIONS OF WALL/CEILING/FLOOR CONSTRUCTION.
4. DIMENSIONS TO FACE OF SHEATHING, FACE OF CONCRETE BLOCK, OR CENTERLINE OF STUD WALL.
5. PROVIDE 6" STUD WALLS @ ELECTRICAL PANELS AND PLUMBING WALLS (WHERE REQUIRED).

WALL TYPES

W1	5/8" GYPSUM, 2x4" WOOD STUDS, 5/8" GYPSUM
W2	5/8" GYPSUM, 2x6 STUDS, 5/8" GYPSUM
W3	LP SMARTSIDE SIDING/STONE VENEER, WIRE MESH/SCRATCH COAT (AS NOTED), 1" ZIP SHEATHING (WRB), 2x6 STUDS, R-21 BATT INSULATION, 6 MIL POLY V.B., 5/8" GYPSUM (UNO)
W4	STAINLESS STEEL LINER, 5/8" GYPSUM, 6" STEEL STUDS, 5/8" GYPSUM, STAINLESS STEEL LINER
W5	5/8" GYPSUM, 15/32" OSB (SHEAR WALL) 2x6 STUDS, 5/8" GYPSUM
W6	LP SMARTSIDE SIDING/STONE VENEER, WIRE MESH/SCRATCH COAT, 1" ZIP SHEATHING (WRB), 2x8 STUDS, R-21 BATT INSULATION, 6 MIL POLY V.B., 5/8" GYPSUM (UNO)
W7	STONE VENEER, WIRE MESH/SCRATCH COAT, 1" ZIP SHEATHING (WRB), 2x8 STUDS, R-21 BATT INSULATION, 6 MIL POLY V.B., 5/8" GYPSUM (UNO)
W8	4" INSULATED COOLER PANEL BY MFG
W9	2x8 STUDS FURRING/WOOD TRIM
W10	2x6 STUDS FURRING/WOOD TRIM
W11	2x4 STUDS, 5/8" GYPSUM (FURRING WALL)

NOTE: PROVIDE BATT INSULATION AT ALL INTERIOR WALLS FOR SOUND CONTROL (FILL CAVITY)

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AJ'S BAR
GLENWOOD, MN

MAIN LVL
FLOOR PLAN

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/25/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
APPRAISAL	9/9/2026
OWNER MEETING	9/23/2026
BIDDING	10/2/2026

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10/2/2026
DATE

FOR
REG NO

COMMISSION NO:	2634
DRAWN BY:	DLT
CHECKED BY:	PDR
DATE:	10/2/2026

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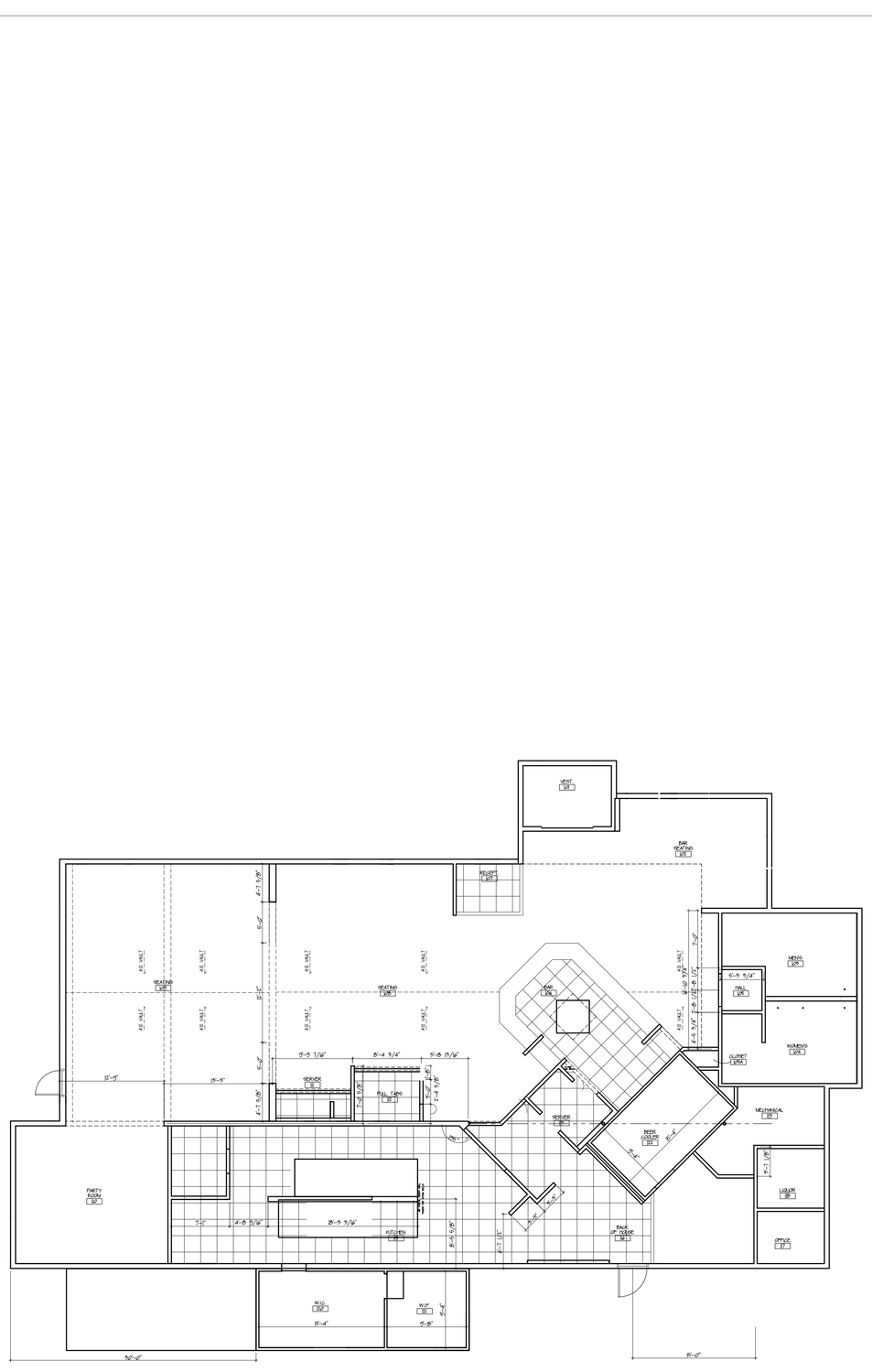
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INTERIOR FINISH SCHEDULE

TAG	ITEM	MANUFACTURER	MODEL	COMMENTS
ACT-1	ACOUSTICAL CEILING TILE	USG INTERIORS	FROST – 64 SHADOWLINE EDGE (SLE)	1x1 CEILING TILE COLOR 1/2 FINISHMENT GRID DOWN – IN/OIL GRD WHITE
ACT-2	ACOUSTICAL CEILING TILE	USG INTERIORS	MARS HEALTHCARE 75/95	1x1 CEILING TILE GRD WHITE FINE TEXTURED GRID DOWN ALONG ORD FLAT WHITE LOCATION KITCHEN AND ALL BACK OF HOUSE AREAS
ACT-3	ACOUSTICAL CEILING TILE	USG INTERIORS	MARS HEALTHCARE 75/95	1x1 CEILING TILE GRD WHITE FINE TEXTURED GRID DOWN – RE-MARK GRD WHITE LOCATION CUSTOMER FACING AREA ARE SERVING AREAS
PLAT	QUARRY TILE	DALTILE	RED FLASH ASHE	COLORS SAME TO MATCH
PBP	FIBERGLASS REINFORCED PANELS	KEMLITE	#86 WHITE SMOOTH FINISH	4'X8' SF. S
GYP	PAINTED GYPSUM	--	--	LEVEL 4 FINISH
CON	SEALED CONCRETE	--	--	
WAN	5/8" V-GROOVE PINE	--	--	STAINED FINISH (NOT CLEAR)
PORCELAIN	9x24 PORCELAIN TILE	DALTILE	9x24 RESILIENCE MATTE VISUAL TAMBRA GREY	GREY EPOXY GROUT
STONE	NATURAL STONE VENEERS	GET REAL STONE	SOUTHERN ECLIPSE (NOTE LAYOUTS GREY SLATE)	KAREEN ANTHEM (CHARCOAL GROUT)
SS WALL	STAINLESS STEEL LINER			
VB	VINYL BASE	JOHNSONITE	4" COVED BASE	
WB	WOOD BASE		4" FINE BASE WITH FINE BASE RAISE	STAINED FINISH (NOT CLEAR)
CARPET	WALK OFF CARPET TILE	MOHAWK	STEP IN TILE II	SAGA TIPTOP
LVT	LUXURY VINYL TILE	KARNDEAN	24TH OLDTOWN KNOLL NATURAL	
TILE	SUBWAY TILE	DALTILE	3x6 SEMCO RESTRUCTURESCOL	GREY EPOXY GROUT

ROOM FINISH SCHEDULE

ROOM #	ROOM NAME	FLOOR FINISH	BASE FINISH	NORTH WALL	SOUTH WALL	EAST WALL	WEST WALL	CEILING FINISH	CEILING HEIGHT	COMMENTS
101	VESTIBULE	CARPET	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	GYP	11'-0"	
102	BAR SEATING	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	GYP	10'-4 1/2"	
103	MENS	PORCELAIN	PORCELAIN	PORCELAIN/GYP	PORCELAIN/GYP	PORCELAIN/GYP	PORCELAIN/GYP	GYP	10'-4 1/2"	SOFFITTER LOWER BARE
104	WOMENS	PORCELAIN	PORCELAIN	PORCELAIN/GYP	PORCELAIN/GYP	PORCELAIN/GYP	PORCELAIN/GYP	GYP	10'-4 1/2"	
105	HALL	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	GYP	10'-4 1/2"	
106A	CLOSET	LVP	WB	GYP	GYP	GYP	GYP	GYP	10'-4 1/2"	
106	BAR	LVP	WB	PBP	PBP	PBP	PBP	ACT-3	8'-0"	SEE PLAN FOR RUN HEAD HEIGHTS
107	RECEPTIONIST	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	ACT-1	9'-4"	SEE PLAN FOR RUN HEAD HEIGHTS
108	SEATING	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	ACT-1	VARIES	
109	SEATING	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	GYP	VARIES	5 ROWS OF WOOD BEAMS
110	PARTY ROOM	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	GYP	10'-4 1/2"	
111	SERVERY	LVP	WB	GYP	TILE/GYP	WAN/GYP	WAN/GYP	ACT-1	9'-4"	
112	PULL TABS	LVP	WB	WAN/GYP	WAN/GYP	WAN/GYP	WAN/GYP	ACT-1	9'-4"	
113	SERVERY	LVP	WB	GYP	GYP	GYP	GYP	ACT-1	8'-0"	
114	STORAGE	PLR	VB	PBP	PBP	PBP	PBP	ACT-1	8'-0"	
115	KITCHEN	PLR	VB	PBP	PBP	PBP	PBP	ACT-1	8'-0"	96 WALL FINISH AT HOOD ISLAND WALL (ALL SIDES)
116	BACK OF HOUSE	PLR	VB	PBP	PBP	PBP	PBP	ACT-1/GYP	8'-0"/10'-4 1/2"	
117	OFFICE	CON	VB	GYP	GYP	GYP	GYP	GYP	10'-4 1/2"	
118	LIQUOR	CON	VB	GYP	GYP	GYP	GYP	GYP	10'-4 1/2"	
119	MECHANICAL	PLR	VB	PBP	PBP	PBP	PBP	ACT-2	8'-0"	
150	WALK-IN-COOLER	CON	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	8'-0"	
151	WALK-IN-FREEZER	CON	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	8'-0"	
152	BEER COOLER	CON	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	COOLER PANEL	8'-0"	



1 A102 REFLECTED CEILING PLAN

1/8" = 1'-0"

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REFLECTED CEILING/FINISH PLAN

ISSUE FOR:	ISSUE DATE:
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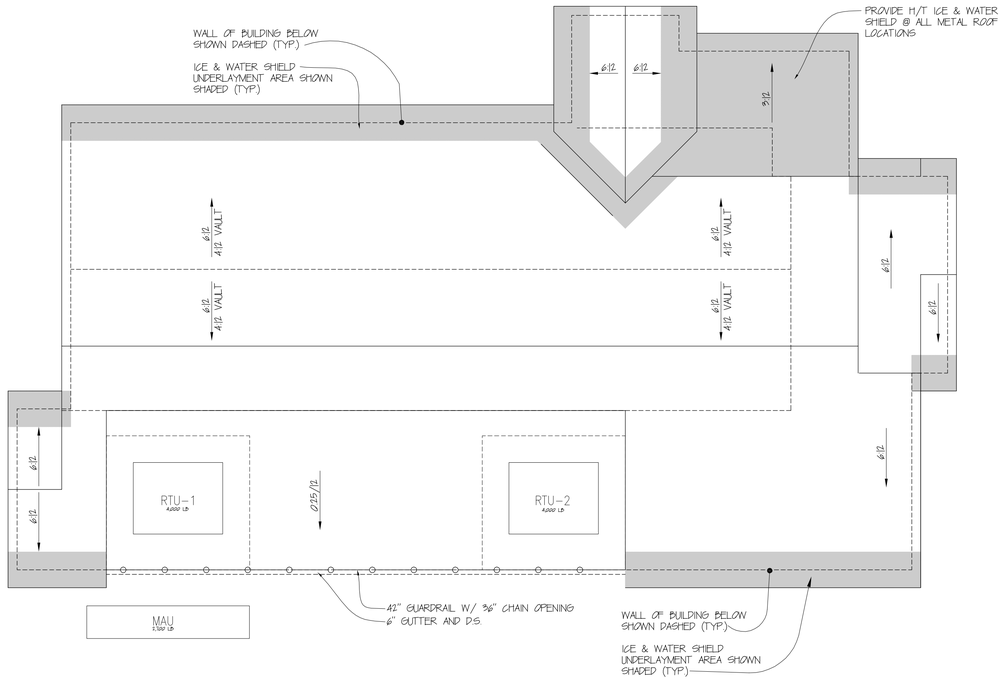
PDR — REG NO

COMMISSION NO:	2634
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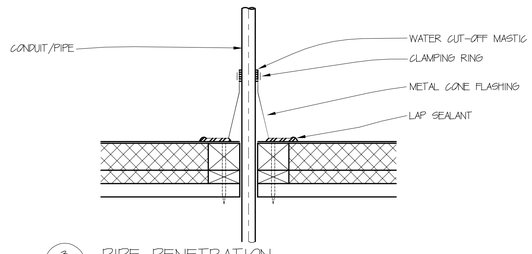
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A102

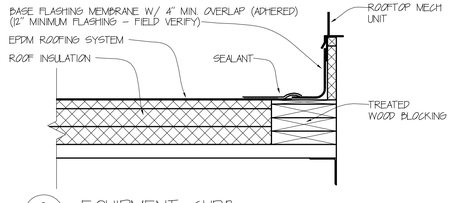
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1 A103 ROOF PLAN
1/8" = 1'-0"



3 A103 PIPE PENETRATION
1 1/2" = 1'-0"



2 A103 EQUIPMENT CURB
1 1/2" = 1'-0"

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ROOF PLAN

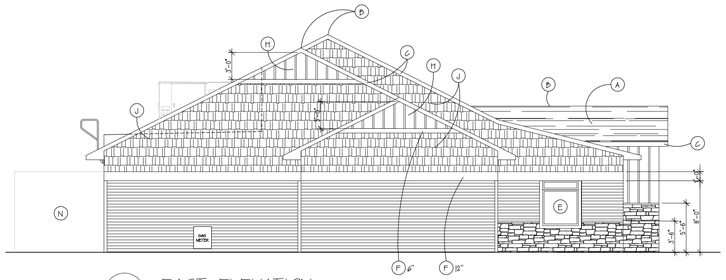
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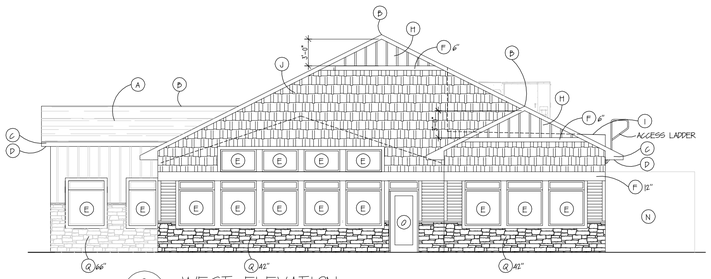
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A103

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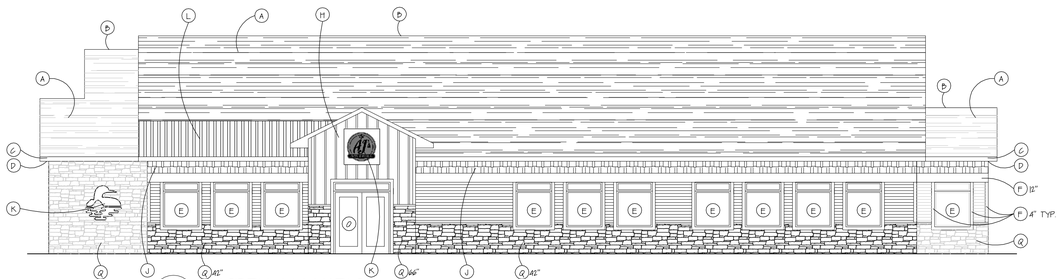
4 A2.1 EAST ELEVATION

1/8" = 1'-0"



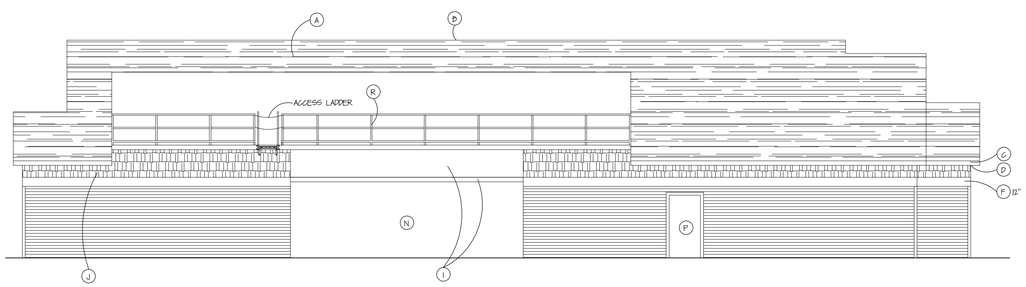
3 A2.1 WEST ELEVATION

1/8" = 1'-0"



2 A2.1 NORTH ELEVATION

1/8" = 1'-0"



1 A2.1 SOUTH ELEVATION

1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE			
SYMBOL	BASE MATERIAL	FINISH	REMARKS
A	ASPHALT SHINGLES	PREFINISHED	LANDMARK BLACK
B	RIDGE VENT	MATCH SHINGLES	AS REQD BY CODE
C	FASCIA TRIM	PREFINISHED	COLOR BY ARCHITECT
D	METAL SOFFIT W/ CONT. METAL VENT	PREFINISHED	MATCH FASCIA
E	ALUM WINDOWS	PREFINISHED	BLACK
F	L.P. TRIMBOARD	PREFINISHED SMOOTH	COLOR BY ARCHITECT
G	PREFINISHED HORIZONTAL SIDING	PREFINISHED	MAJESTY ASH
H	L.P. SMARTSIDE BD & BATTEN	PREFINISHED SMOOTH	PELICAN
I	EPDM MEMBRANE	PREFINISHED SMOOTH	COLOR BY ARCHITECT
J	L.P. SHAKES	PREFINISHED SMOOTH	COLOR BY ARCHITECT
K	CUSTOM SIGN - BY OWNER		
L	STANDING SEAM ROOFING	PREFINISHED	COLOR BY ARCHITECT
M	EXTERIOR LIGHT	PREFINISHED	COLOR BY ARCHITECT
N	ALUMINUM COOLER PANEL	PREFINISHED	COLOR BY ARCHITECT
O	ALUMINUM ENTRANCE	PREFINISHED	COLOR BY ARCHITECT
P	HOLLOW METAL DOOR	PREFINISHED	COLOR BY ARCHITECT
Q	STONE VENEER	PREFINISHED	COLOR BY ARCHITECT
R	EQUIPMENT GUARDRAIL	PREFINISHED	COLOR BY ARCHITECT

NOTES:

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EXTERIOR ELEVATIONS

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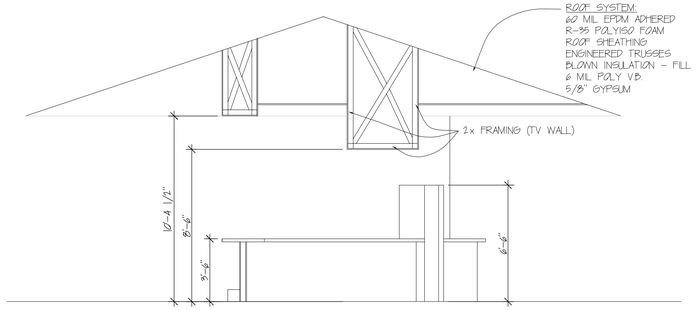
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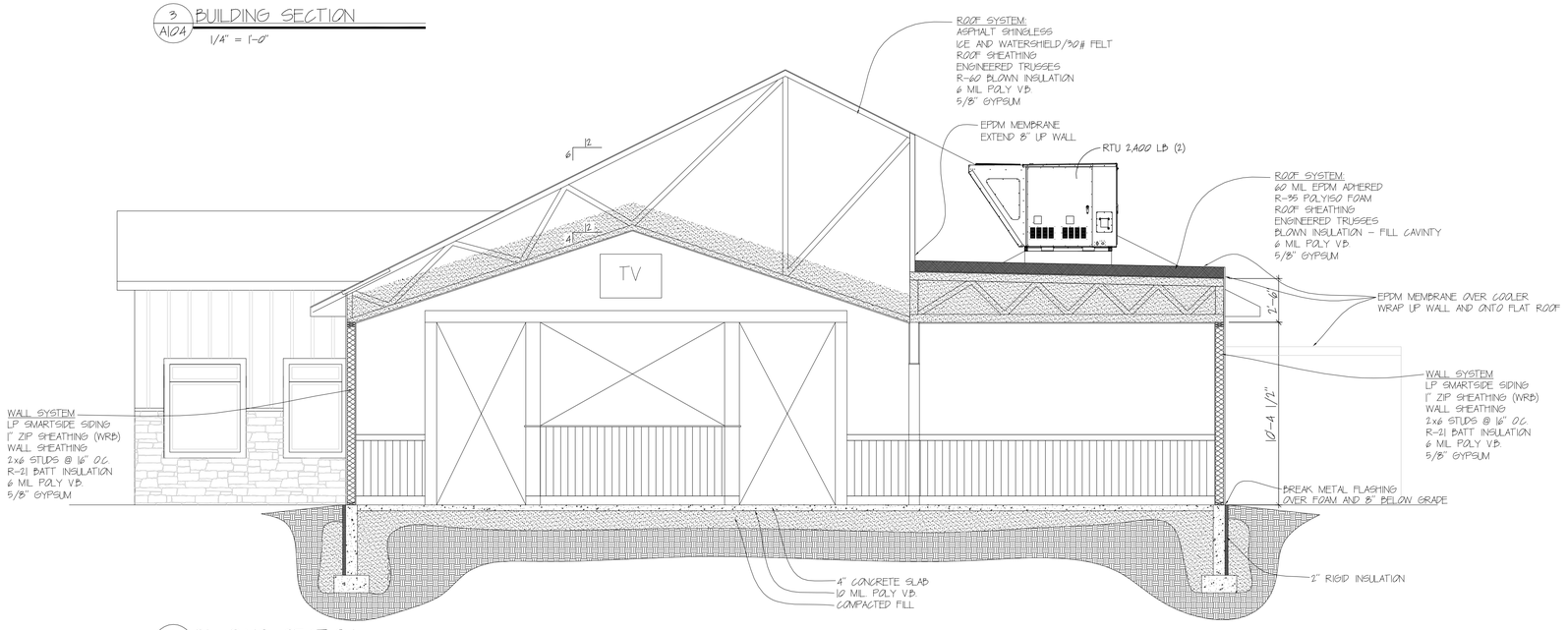
A2.1

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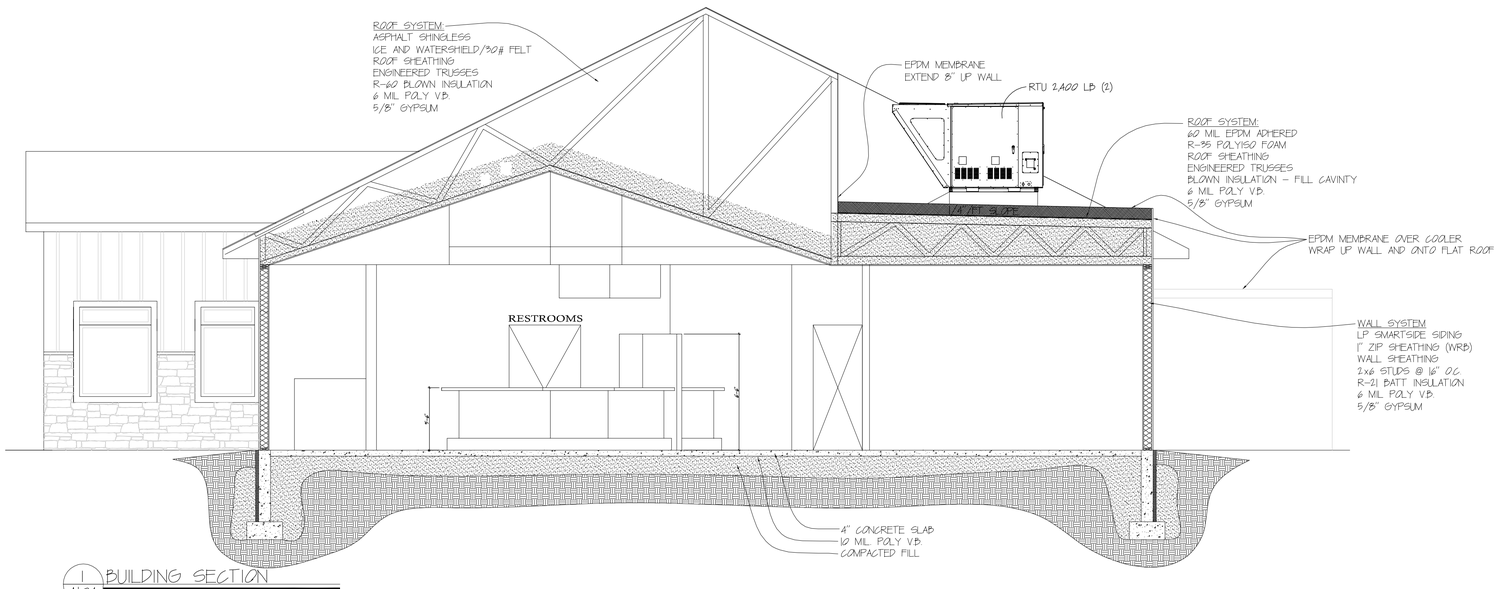
3 A104 BUILDING SECTION

1/4" = 1'-0"



2 A104 BUILDING SECTION

1/4" = 1'-0"



1 A104 BUILDING SECTION

1/4" = 1'-0"

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SECTIONS

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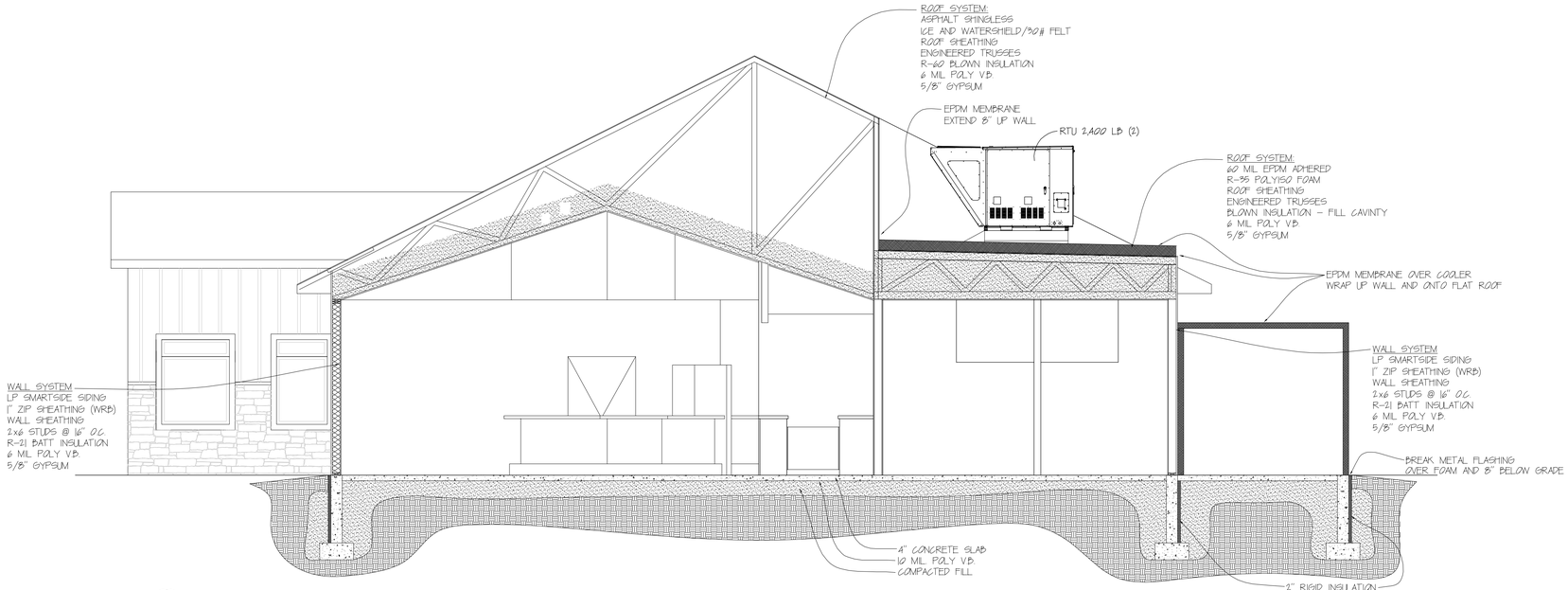
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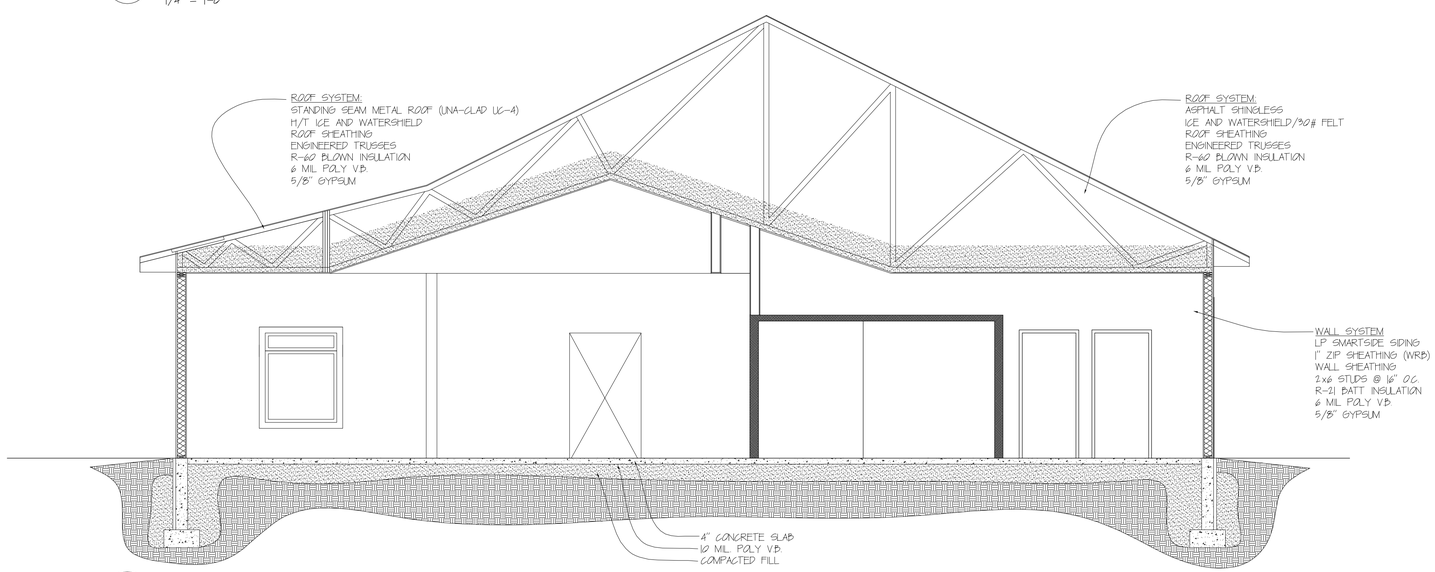
A401

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2 A402 BUILDING SECTION

1/4" = 1'-0"



1 A402 BUILDING SECTION

1/4" = 1'-0"

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7 AA03 PULL TABS
N.T.S.



8 AA03 NORTH EAST VIEW
N.T.S.



9 AA03 NORTH WEST VIEW
N.T.S.



4 AA03 ENTRANCE VIEW
N.T.S.



5 AA03 ENTRY VIEW
N.T.S.



6 AA03 LAKE VIEW
N.T.S.



1 AA03 BAR SEATING
N.T.S.



2 AA03 BAR VIEW
N.T.S.



3 AA03 DINING ROOM
N.T.S.

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INTERIOR RENDERINGS

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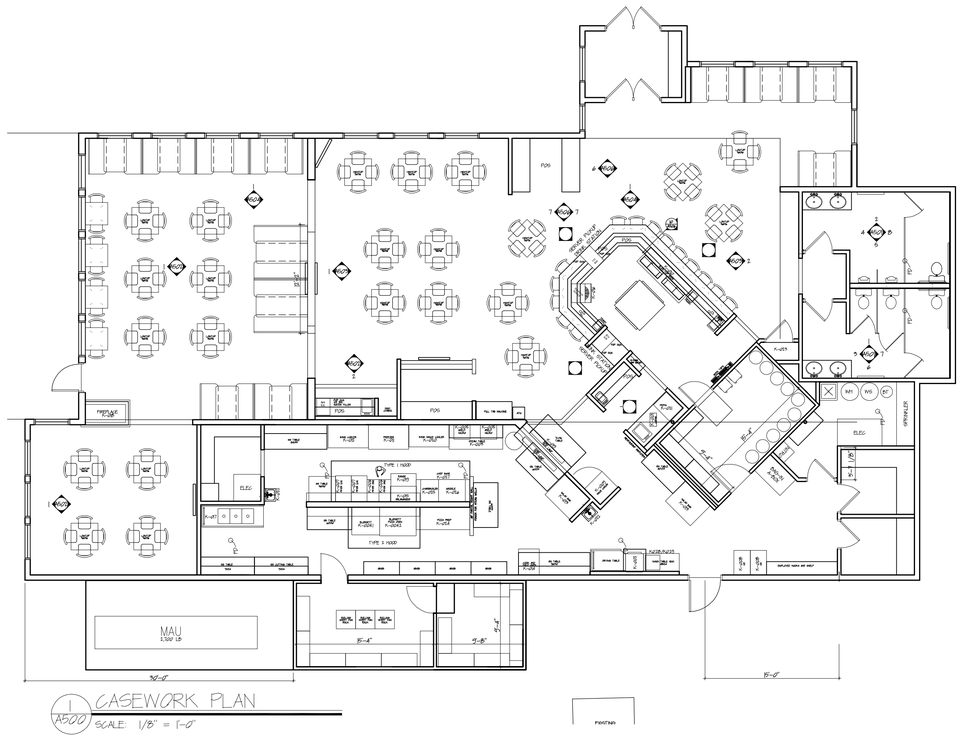
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A403

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1 A500 CASEWORK PLAN
SCALE: 1/8" = 1'-0"

CASEWORK PLAN

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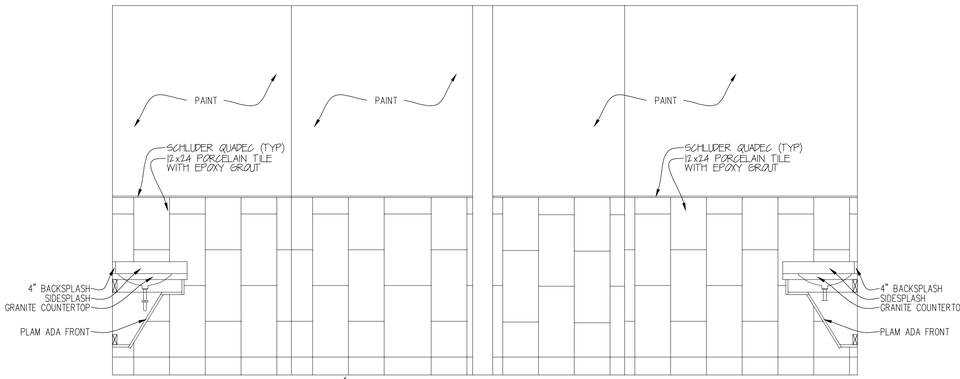
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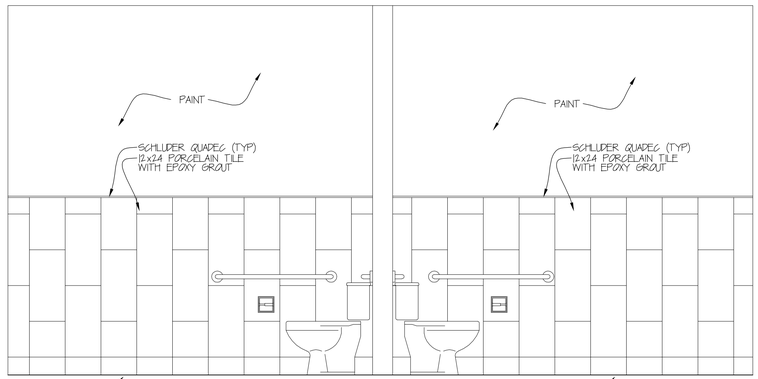
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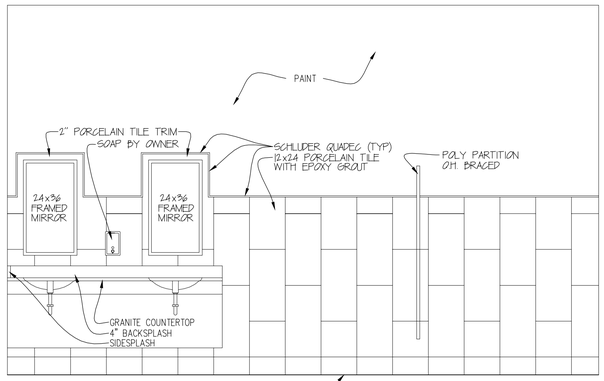
3 A501 WOMENS RESTROOM
SCALE: 1/2" = 1'-0"

4 A501 MENS RESTROOM
SCALE: 1/2" = 1'-0"

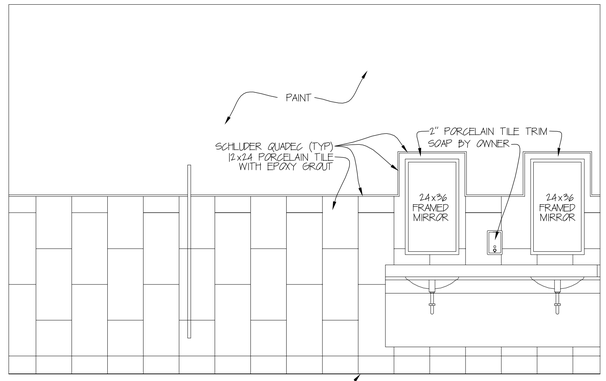


7 A501 MENS RESTROOM
SCALE: 1/2" = 1'-0"

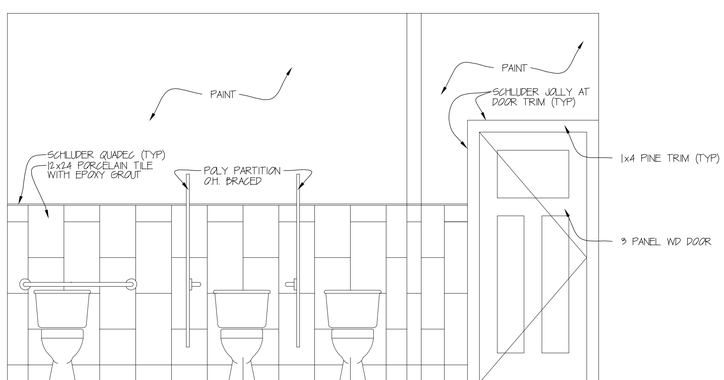
8 A501 WOMENS RESTROOM
SCALE: 1/2" = 1'-0"



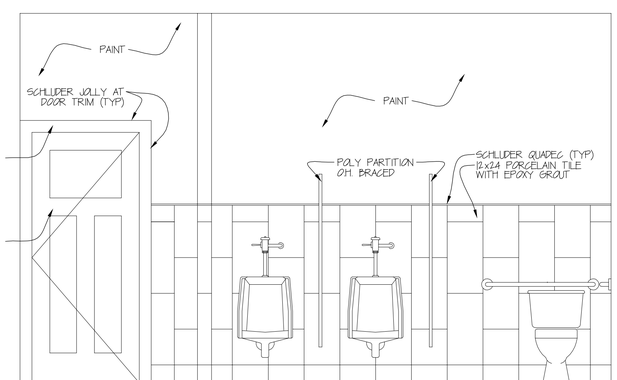
2 A501 MENS RESTROOM
SCALE: 1/2" = 1'-0"



6 A501 WOMENS RESTROOM
SCALE: 1/2" = 1'-0"



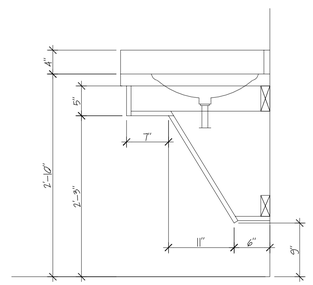
1 A501 WOMENS RESTROOM
SCALE: 1/2" = 1'-0"



5 A501 MENS RESTROOM
SCALE: 1/2" = 1'-0"



10 A501 CORNER TRIM
SCALE: N.T.S. (SCHLUTER QUADEC WALL)



9 A501 VANITY SECTION
SCALE: 1" = 1'-0"

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DETAILS

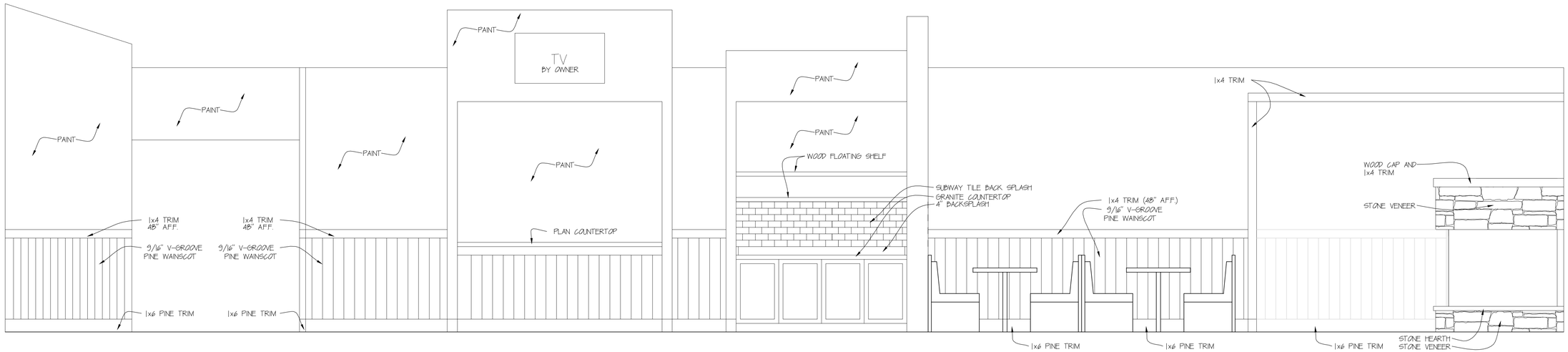
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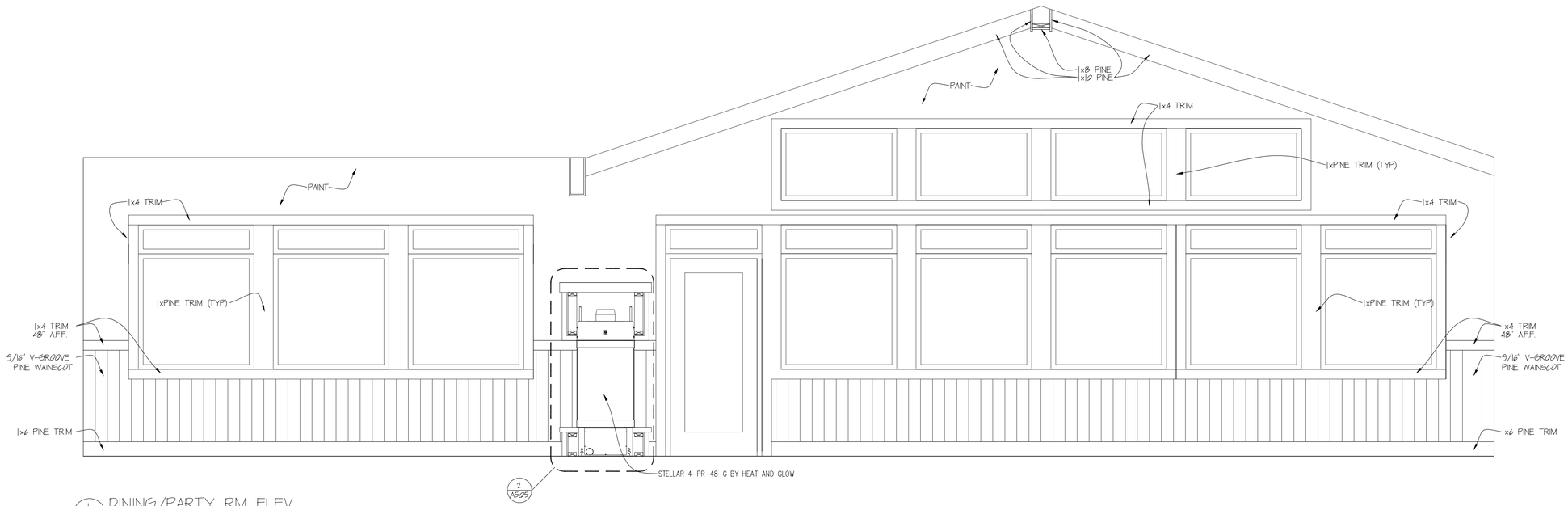
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2 A502 SEATING AREAS
SCALE: 1/2" = 1'-0"



1 A502 DINING/PARTY RM ELEV.
SCALE: 1/2" = 1'-0"

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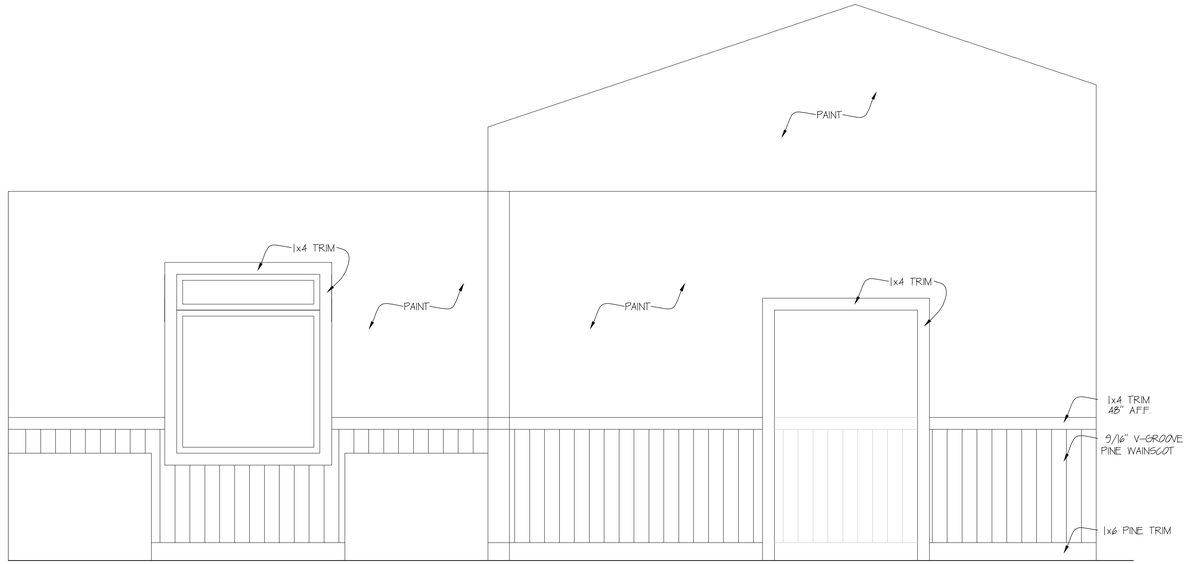
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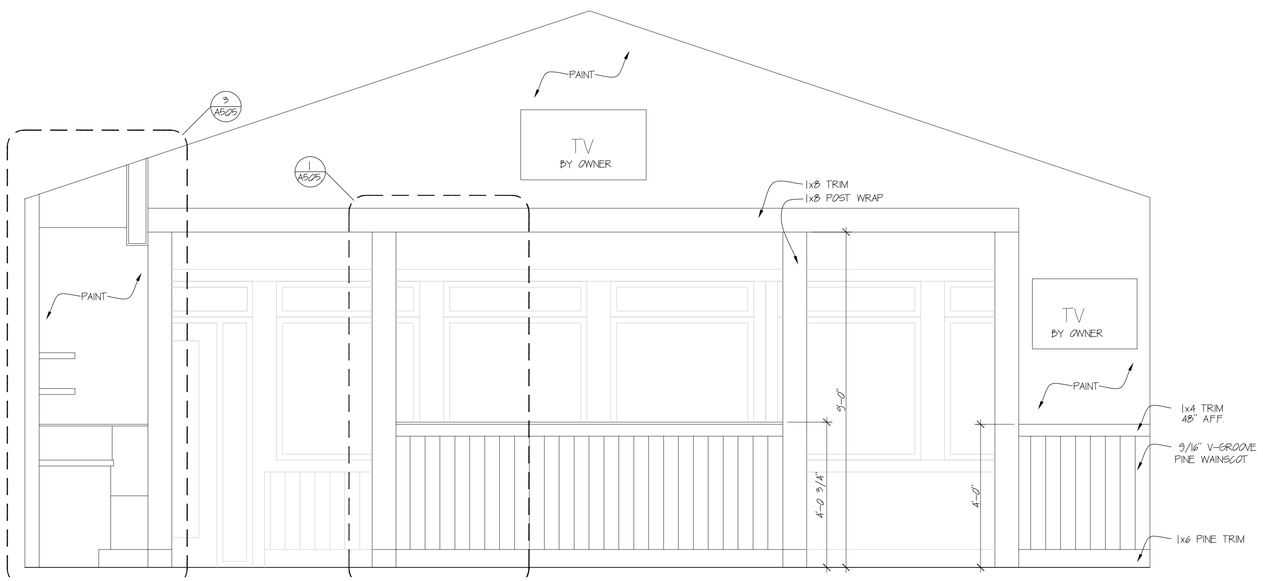
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2 / A503 BAR SEATING

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



1 / A503 KNEE WALL/COLUMN

SCALE: 1" = 1'-0"

RINGDAHL Architects, inc

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ph. (320) 763-9368
fax (320) 762-9063

AJ'S BAR
GLENWOOD, MN

DETAILS

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
APPRAISAL	9/9/2026
OWNER MEETING	9/23/2026
BIDDING	10/1/2026

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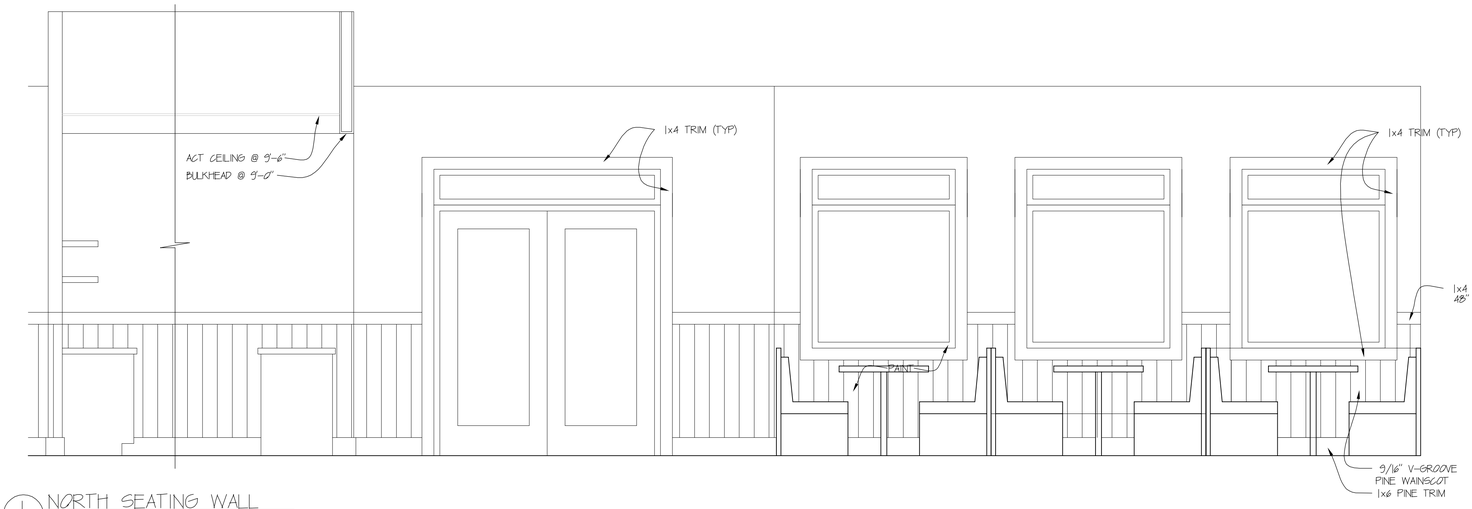
10/1/2026 DATE — 18801 REG NO.

COMMISSION NO:	2634
DRAWN BY:	DLT
CHECKED BY:	PDR
DATE:	10/2/2026

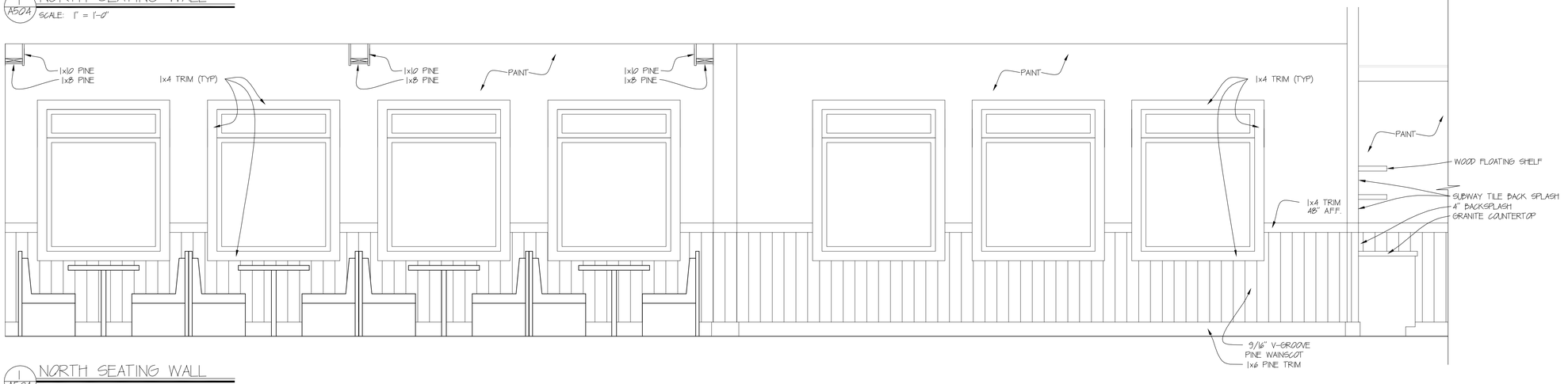
DRAWING NO.

A503

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1 A504 NORTH SEATING WALL
SCALE: 1" = 1'-0"



1 A504 NORTH SEATING WALL
SCALE: 1" = 1'-0"

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BIDDING	10/2/2026

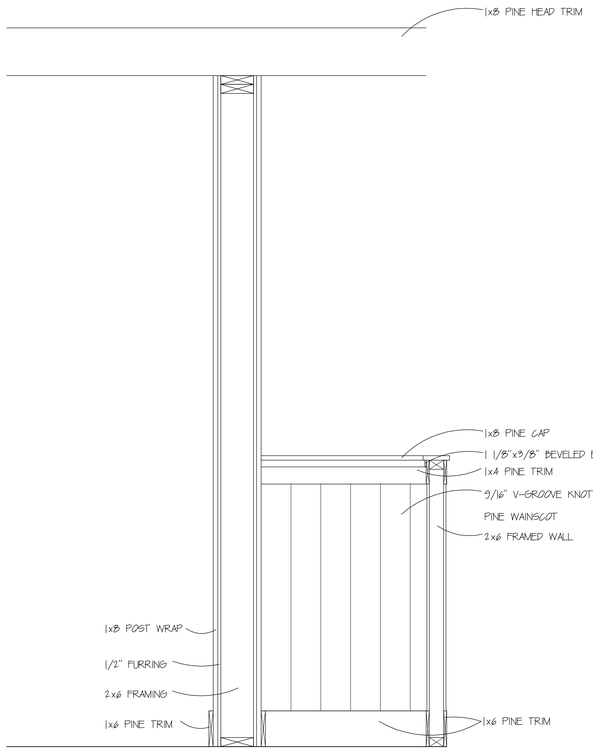
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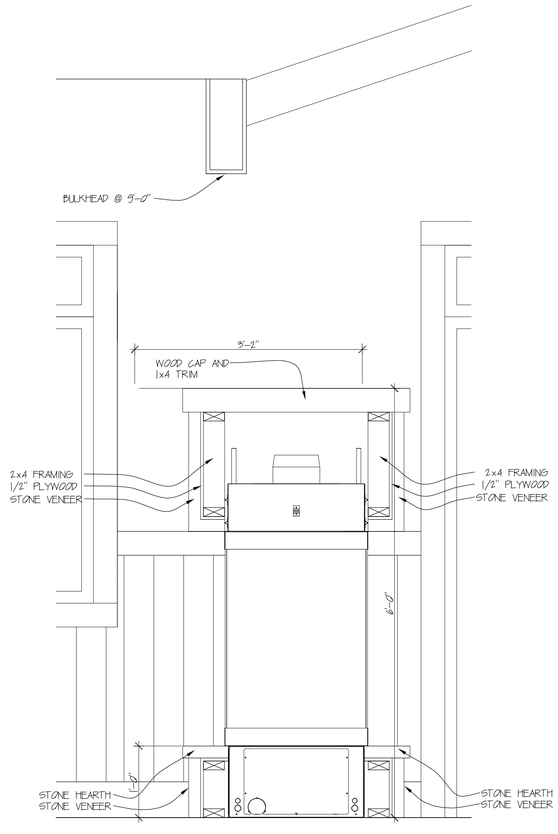
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DRAWN BY:	DLT
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DATE:	10/2/2026

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A504

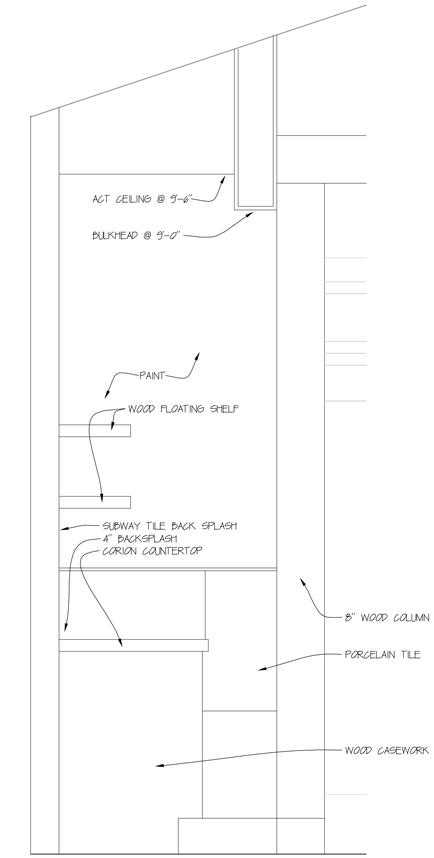
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1 A505 KNEE WALL/COLUMN
SCALE: 1" = 1'-0"



2 A505 FIREPLACE
SCALE: 1" = 1'-0"



3 A505 SERVER STATION
SCALE: 1" = 1'-0"

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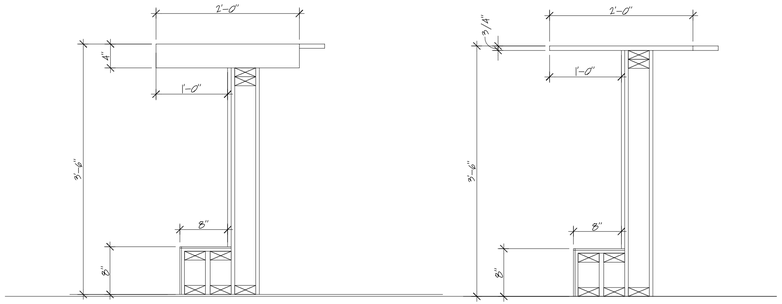
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DATE:	10/2/2026

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A505

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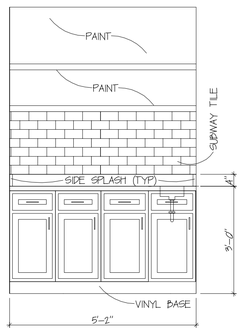


WOOD BAR TOP

CORION BAR TOP

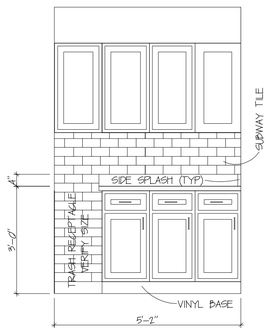
10 / A506 BAR SECTIONS

SCALE: 1" = 1'-0"



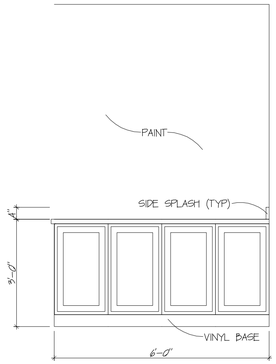
4 / A506 SERVER ELEVATION

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



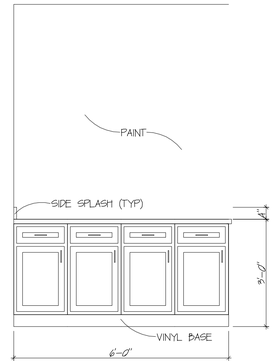
5 / A506 SERVER ELEVATION

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



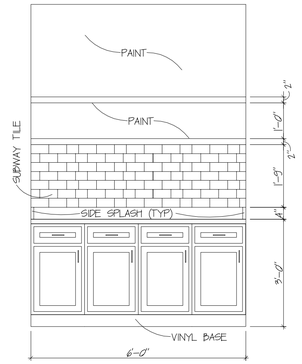
6 / A506 RECEPTION ELEVATION

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



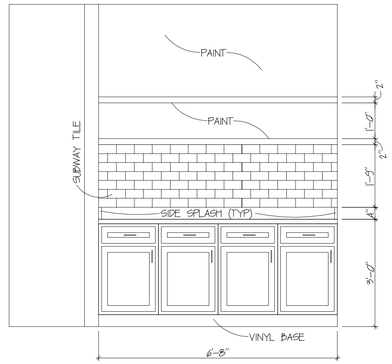
7 / A506 RECEPTION ELEVATION

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



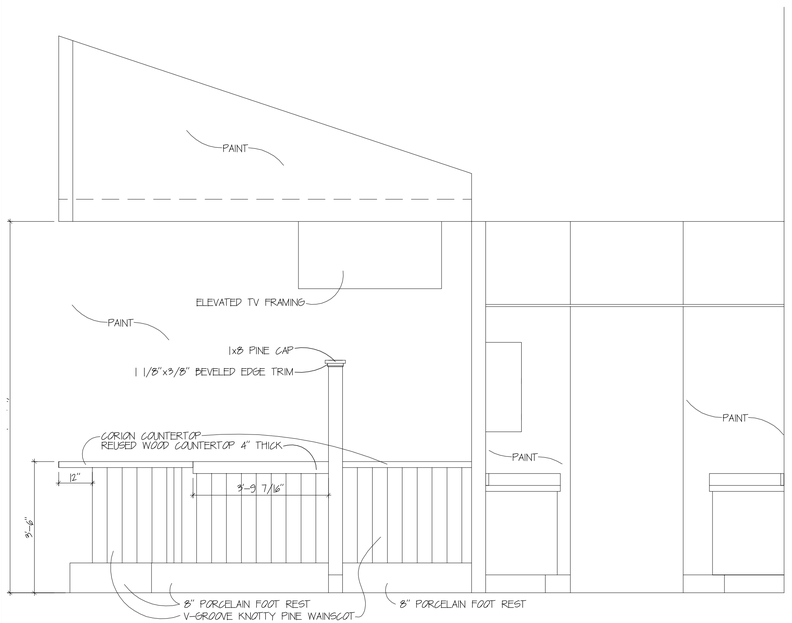
8 / A506 SERVER ELEVATION

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



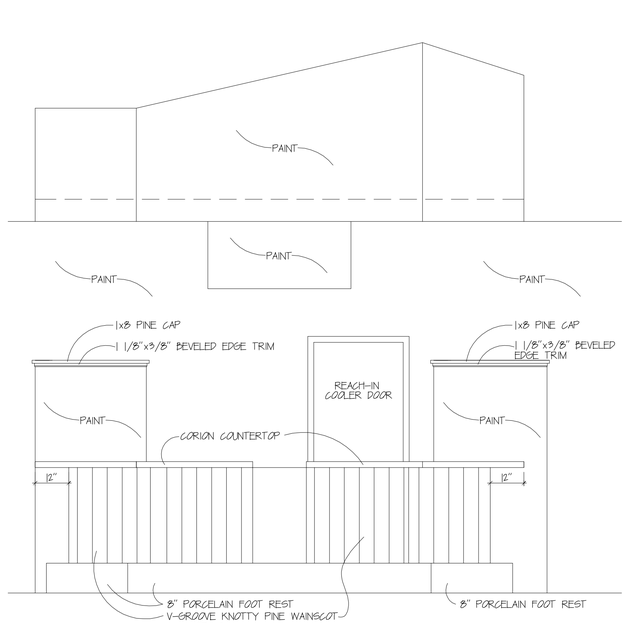
9 / A506 SERVER ELEVATION

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



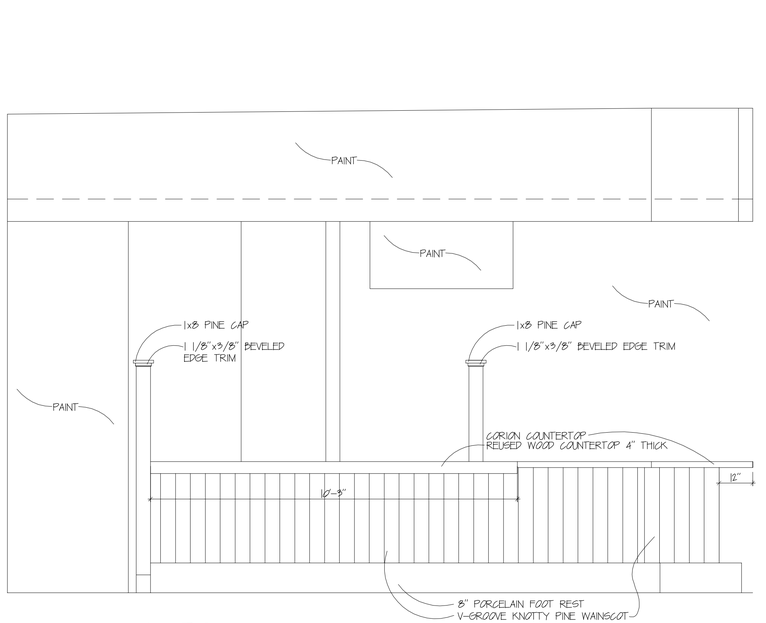
1 / A506 BAR ELEVATION

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



2 / A506 BAR ELEVATION

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



3 / A506 BAR ELEVATION

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

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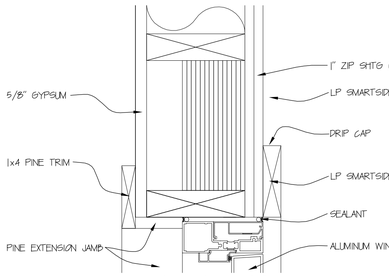
6871 — REG NO.

COMMISSION NO:	2634
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DATE:	10/20/2026

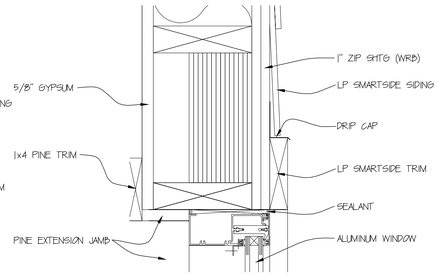
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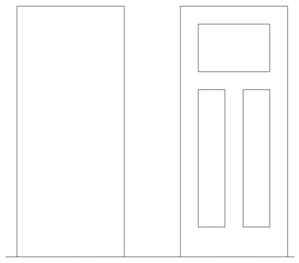
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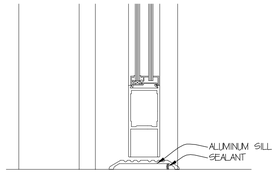
4 A501 ALUMINUM DOOR HEAD
SCALE: 3" = 1'-0"



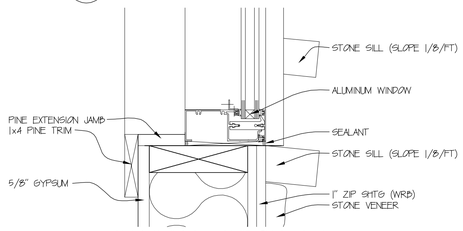
6 A501 ALUMINUM WINDOW HEAD
SCALE: 3" = 1'-0"



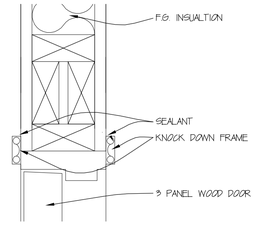
2 A501 DOOR TYPES
SCALE: 1/2" = 1'-0"



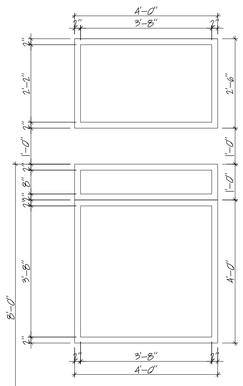
3 A501 ALUMINUM DOOR SILL
SCALE: 3" = 1'-0"



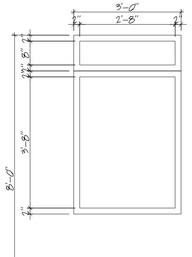
5 A501 ALUMINUM WINDOW SILL
SCALE: 3" = 1'-0"



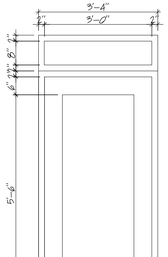
7 A501 WOOD DOOR HEAD
SCALE: 3" = 1'-0"



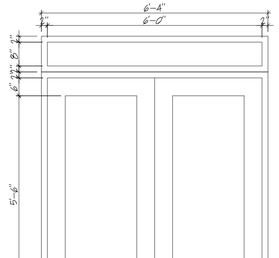
WINDOW TYPE W1/W2
SCALE: 1/2" = 1'-0"



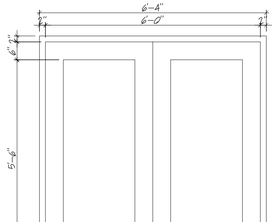
WINDOW TYPE W3
SCALE: 1/2" = 1'-0"



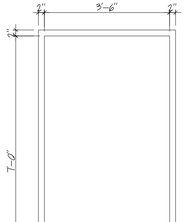
ALUMINUM DOOR 109
SCALE: 1/2" = 1'-0"



ALUMINUM DOOR 101A
SCALE: 1/2" = 1'-0"



ALUMINUM DOOR 101B
SCALE: 1/2" = 1'-0"



HM DOOR 116
SCALE: 1/2" = 1'-0"

1 A501 WDW & DR ELEVATIONS
SCALE: 1/2" = 1'-0"

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10/1/2026 DATE

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DATE:	10/2/2026

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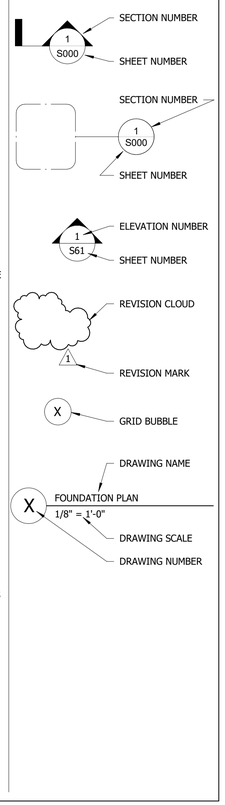
STRUCTURAL DRAWING INDEX

SHEET NUMBER	SHEET NAME
S000	TITLE SHEET
S100	GENERAL NOTES
S110	SCHEDULES AND NOTES
S200	SLAB ON GRADE/FOUNDATION PLAN
S210	ROOF FRAMING PLAN
S301	FRAMING DETAILS - WOOD
S302	FRAMING DETAILS - WOOD
S303	SHEAR WALL AND SHEATHING DETAILS

DRAWINGS SYMBOLS

- EXISTING
- CONCRETE
- FACE BRICK
- CONCRETE BLOCK
- DIMENSIONAL LUMBER
- WOOD BLOCKING
- EARTH
- COMPACT FILL
- LAMINATED VENEER LUMBER (LVL)
- STEEL
- WELDED WIRE FABRIC
- FOOTING STEP
- JOIST BOT CHORD EXTENSION
- JOIST BOLTED CONNECTION PER OSHA REQUIREMENTS
- BEAM OR COL SPLICE LOCATION
- BEAM MOMENT CONNECTION
- ELEVATION OR WORK POINT
- SNOW DRIFT SURCHARGE LOAD
- TOP OF SLAB ELEVATION CHANGE (SLOPED)
- TOP OR BOTTOM OF SLAB ELEVATION CHANGE (STEPPED)
- BEAM CONTINOUS OVER SUPPORT

- CCx — CONCRETE COLUMN SEE SCHEDULE
- CLx — CONCRETE LINTEL SEE SCHEDULE
- CFx — CONTINOUS CONCRETE FOOTING SEE SCHEDULE
- CPx — CONCRETE PIER SEE SCHEDULE
- CWx — CIP CONCRETE WALL SEE SCHEDULE
- Fx — CIP PAD FOOTING SEE SCHEDULE
- MCx — CMU COLUMN SEE SCHEDULE
- LCx — LIGHT-GAGE COLUMN SEE SCHEDULE
- MJx — CMU JAMB SEE SCHEDULE
- MLx — CMU LINTEL SEE SCHEDULE
- MPx — CMU PIER SEE SCHEDULE
- MWx — CMU WALL SEE SCHEDULE
- RFx — ROUND CONCRETE FOOTING SEE SCHEDULE
- LBx / Bx — LIGHT-GAGE OR WOOD BEAM SEE SCHEDULE
- LHx / Hx — LIGHT-GAGE OR WOOD HEADER SEE SCHEDULE
- LWx / WWx — LIGHT-GAGE OR WOOD WALL SEE SCHEDULE
- WCx — WOOD COLUMN SEE SCHEDULE
- 1 — KEYNOTE SEE SCHEDULE
- LATERAL SHEAR LOAD
- SHEAR WALL HOLD DOWNS
- ℄ — CENTERLINE
- ARCH/ELEC/MECH PENETRATION
- LOW END OF BRACE
- LOCATION OF BRACED FRAME
- HIGH END OF BRACE



ABBREVIATIONS

A	
AB	ANCHOR BOLT
ADD'L	ADDITIONAL
ALT	ALTERNATE
ANCH	ANCHOR
ARCH	ARCHITECT(URAL)
B	
BB	BOND BEAM
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BRKT	BRACKET
BTWN	BETWEEN
C	
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE
CONC	CONCRETE
COND	CONDITION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CTR	CENTER
CTR'D	CENTERED
D	
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DEFL	DEFLECTION
DF	DOUGLAS-FIR
DIA	DIAMETER
DIAG	DIAGNOL
DIM	DIMENSION
DL	DEAD LOAD
DTL	DETAIL
DWG(S)	DRAWING(S)
DWL(S)	DOWELS
E	
E	EAST
(E)	EXISTING
EA	EACH
EF	EACH FACE
EL	EARTHQUAKE LOAD
EW	EACH WAY
EJ	EXPANSION JOINT
ELEC	ELECTRIC
EL OR ELEV	ELEVATION
EMBED	EMBEDMENT
EOR	ENGINEER OF RECORD
EQ	EQUAL
EXP	EXPANSION
EXT	EXTEND OR EXTERIOR
F	
FAB	FABRICATE(OR)
FD	FLOOR DRAIN
FLG	FLANGE
FLR	FLOOR
FNDN	FOUNDATION
FT	FEET
FTG	FOOTING
FV	FIELD VERIFY
G	
GA	GAGE OR GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GL	GLUE LAMINATED WOOD
H	
HORIZ	HORIZONTAL
HF	HEM-FIR
HK	HOOK
HL	HYDROSTATIC LOAD
HS	HEADED STUD(S)
HSS	HOLLOW STRUCTURAL SHAPE
I	
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
J	
JBE	JOIST BEARING ELEVATION
JST	JOIST
JT	JOINT
K	
K OR KIP(S)	KIP = 1,000 LB
KO	KNOCK-OUT
KLF	KIPS PER LINEAL FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	
LG	LIGHT GUAGE STEEL
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSL	LAMINATED STRAND LUMBER
LSV	LONG SIDE VERTICAL
LVL	LAMINATED VENEER LUMBER
LW	LIGHT-WEIGHT
M	
M	MOMENT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECH, ELECT & PLUMBING
MEZZ	MEZZANINE
MFG	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
N	
N	NORTH
NF	NEAR FACE
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
P	
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEMB	PRE-ENGINEERED METAL BUILDING
PERIM	PERIMETER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POST-TENSION
PW	PRECAST WALL
Q	
QTY	QUANTITY
R	
RAD	RADIUS
RD	ROOF DRAIN
REINF	REINFORCE(D), (ING)
REQ'D	REQUIRED
REV	REVERSE
RL	RAIN LOAD
RLL	ROOF LIVE LOAD
S	
S	SOUTH
SCHED	SCHEDULE
SD	SEE DETAIL
SEC	SECTION
SHT	SHEET
SIM	SIMILAR
SIPs	STRUCTURAL INSULATED PANELS
SL	SNOW LOAD
SOG	SLAB-ON-GRADE
SPA	SPACE(S)
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
STAGG	STAGGER
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUPPORT	SUPPORT
SP	SOUTHERN PINE
SPF	SPRUCE PINE-FIR
T	
T/	TOP OF ELEMENT
T&B	TOP AND BOTTOM
TBE	TOP OF BEAM ELEVATION
TDE	TOP OF DECK ELEVATION
TEMP	TEMPORARY
TFE	TOP OF FOOTING ELEVATION
THRU	THROUGH
TOS	TOP OF STEEL
TPC	TOP OF PILE CAP ELEVATION
TPE	TOP OF PIER ELEVATION
TSE	TOP OF SLAB ELEVATION
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL
U	
UN	UNLESS NOTED
UNO	UNLESS NOTED OTHERWISE
V	
V	SHEAR
VER	VERIFY
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	
W	WEST
W/	WITH
W/O	WITHOUT
WL	WIND LOAD
WP	WORK POINT
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE REINFORCEMENT

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

PRINTED NAME: JOE A NICHOLSON

DATE: 09/04/2026 LICENSE #: 44104

AJ'S GLENWOOD

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PROJECT NO.:	00526011

NO.	DATE	DESCRIPTION

TITLE SHEET

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GENERAL NOTES

I. DESIGN DATA

A. BUILDING CODE

1. INTERNATIONAL BUILDING CODE (IBC) 2018 - AS AMENDED BY THE STATE OF MINNESOTA.

B. DESIGN LOADS/DESIGN CRITERIA

1. DEFLECTION CRITERIA SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   A. DEFLECTION LIMITS INDICATED IN TABLE 1604.3 OF THE IBC.
2. WIND LOAD:
   A. BASIC WIND SPEED (3-SECOND GUST)
      a. V_{ULT} = 110 MPH. RISK CATEGORY II
      b. EXPOSURE C
      c. INTERNAL PRESSURE COEFFICIENT, GC_{PI} = +/-0.18
3. ROOF LOADS:
   A. LIVE LOAD (RLL): 20 PSF*
   B. MECHANICAL ROOF LIVE LOAD: 25 PSF
   C. DESIGN DEAD LOAD: 15 PSF (SHINGLED)
4. ROOF SNOW LOADS:
   A. GROUND SNOW LOAD, P_g: 50 PSF
   B. FLAT ROOF SNOW LOAD, P_f: 38.5 PSF**
   C. SNOW EXPOSURE FACTOR, C_e: 1.0
   D. SNOW LOAD IMPORTANCE FACTOR, I_s: 1.0
   E. THERMAL FACTOR, C_t: 1.1

   * REDUCED PER IBC SECTION 1607.11

   ** PLUS SNOW ACCUMULATION AS REQUIRED BY IBC CHAPTER 16, SECTION 1608.

A. GENERAL CONSTRUCTION NOTES:

1. IN ALL CASES WHERE A CONFLICT MAY OCCUR, SUCH AS BETWEEN REQUIREMENTS IN THE SPECIFICATION AND REQUIREMENTS ON THE DRAWINGS, THE STRUCTURAL ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY IN WRITING AND THE STRUCTURAL ENGINEER OF RECORD SHALL INTERPRET THE INTENT OF THE CONTRACT DRAWING.
2. IN NO CASE, SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOBSITE AND TO CROSS CHECK ALL DETAILS AND DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH RELATED REQUIREMENTS ON THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER OF RECORD ANY DISCREPANCIES PRIOR TO COMMENCING WORK.
4. VERIFY SIZE AND LOCATIONS OF ALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. STRUCTURAL DRAWINGS DO NOT NECESSARILY SHOW ALL OPENINGS. PLACE OPENINGS IN FLOOR AND ROOF NOT SHOWN ON STRUCTURAL DRAWINGS BETWEEN STRUCTURAL MEMBERS. NOTIFY ENGINEER OF RECORD OPENINGS LARGER THAT 12" IN ANY DIMENSION ARE ADDED.

B. TEMPORARY BRACING:

1. THIS STRUCTURE IS A NON-SELF SUPPORTING STEEL FRAME THAT REQUIRES INTERACTION WITH SLAB, STEEL DECK AND MASONRY OR CONCRETE WALLS TO PROVIDE THE REQUIRED LATERAL STABILITY. PROVIDE REQUIRED TEMPORARY BRACING FOR STRUCTURAL STEEL UNTIL PERMANENT BRACING, SLABS, STEEL DECK AND WALLS ARE IN PLACE.
2. THE DESIGN OF STUD WALL FRAMING IS FOR COMPLETED, SHEATHED CONDITION. INCLUDING PROPER FASTENING, THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF TEMPORARY BRACING. IF THE CONTRACTOR ELECTS TO PLACE WALL SHEATHING OR FLOOR TOPPING ON ANY LEVELS ABOVE STUD FRAMING THAT DO NOT YET HAVE SHEATHING, ONE OF THE FOLLOWING ARE REQUIRED PRIOR TO SUCH PLACEMENT:
   A. PROVIDE BLOCKING THAT MATCHES THE SIZE AND SPECIES OF STUDS AT MID-HEIGHT OF ALL LOAD-BEARING STUD WALLS AT THE BOTTOM THREE LEVELS IN FIVE LEVEL WOOD STRUCTURES AND AT THE BOTTOM TWO LEVELES IN FOUR LEVEL WOOD STRUCTURES, EXCEPT THAT WALLS WITH DOUBLED OR TRIPPLED STUDS FASTENED WITH 10d NAILS AT 8" OC STAGGERED EACH FACE DO NOT REQUIRE BLOCKING. BLOCKING REQUIRED BY THE SHEAR WALL SCHEDULE IS NOT ELIMINATED BY THE ABOVE NAILING OPTION.
   B. RETAIN A SPECIALTY STRUCTURAL ENGINEER TO EVALUATE THE ADEQUACY OF TEMPORARY UNBRACED STUD WALL CONDITIONS, DESIGN RELATED BRACING FOR THE CONDITIONS, AND SUBMIT CERTIFIED DRAWINGS FOR RECORD ONLY.
3. PROVIDE TEMPORARY BRACING FOR ALL WALLS (CONCRETE, MASONRY, COLD FORMED STEEL OR WOOD) UNTIL THEY ARE OF ADEQUATE DESIGN STRENGTH AND ARE PROPERLY ANCHORED IN FINAL FORM.

C. REFERENCE STANDARDS – REFER TO IBC CHAPTER 35 FOR ALL REFERENCE STANDARDS.

II. SITE WORK

A. ASSUMED GEOTECHNICAL PROPERTIES

1. FOUNDATIONS ARE DESIGNED BASED ON THE ASSUMED DESIGN INFORMATION OUTLINED IN THIS SECTION. THE CONTRACTOR/OWNER SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER, LICENSED IN THE STATE OF THE PROJECT, TO VISIT THE SITE AND CERTIFY IN WRITING THAT THE FOLLOWING ASSUMED INFORMATION IS CORRECT.
2. ASSUMED DESIGN NET SOIL BEARING CAPACITY IS AS FOLLOWS:
   A. SPREAD FOOTINGS: 1,500 PSF
   B. STRIP FOOTINGS: 1,500 PSF
3. MINIMUM DEPTH FROM EXTERIOR GRADE TO BOTTOM OF BUILDING PERIMETER FOOTINGS SHALL BE 42".
4. FOUNDATIONS SHALL NOT BE CAST ON FROZEN SOILS. IF IT IS ANTICIPATED THAT THE SOILS BELOW THE FOUNDATIONS MAY FREEZE, CONTRACTOR SHALL SUBMIT A FROST PROTECTION PLAN IN WRITING TO ENGINEER OF RECORD.
5. THE GEOTECHNICAL ENGINEER SHALL VERIFY THAT THE FOOTING ELEVATIONS SHOWN THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF LOCATIONS THAT DO NOT SATISFY THOSE REQUIREMENTS. IN THOSE CASES, THE GRADE MAY BE ELEVATED WITH COMPACTED MATERIAL APPROVED BY GEOTECHNICAL ENGINEER OR THE FOOTING DEPTH MAY BE INCREASED WITH PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.

B. **BACKFILLING**

1. BACKFILL AND MATERIALS BEHIND FOUNDATION AND RETAINING WALLS SHALL BE AS OUTLINED IN THE GEOTECHNICAL REPORT.
2. DO NOT BACKFILL OR COMPACT EARTH AGAINST WALLS RETAINING EARTH UNTIL SUPPORTING SLABS HAVE REACHED 75% OF THEIR DESIGN STRENGTH OR ADEQUATE BRACING IS IN PLACE. PROVIDE BRACING DRAWINGS DESIGNED AND CERTIFIED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED FOR RECORD ONLY.
3. BACKFILL EVENLY ON BOTH SIDES OF FOUNDATION WALLS TO PREVENT OVERTURNING OR LATERAL WALL MOVEMENT.

III. CONCRETE

A. CONCRETE MATERIAL PROPERTIES

1. CONCRETE PROPERTIES:

	STRENGTH (f'c @ 28 DAYS)		MAX W/C RATIO
FOOTINGS	3,000	PSI	
PIERS, GRADE BEAMS & FOUNDATION WALLS	4,000	PSI	
INTERIOR SLAB ON GRADE	4,000	PSI	
EXTERIOR CONCRETE (SLAB ON GRADE, PIERS, SITE WALLS, AND RETAINING WALLS)	5,000	PSI	.40

2. CYLINDER TESTING SHALL BE COMPLETED PER ACI-318, SECTION 26.12. TESTING REPORTS SHALL BE PROVIDED TO THE OWNER AND ENGINEER OF RECORD AT A MINIMUM. PREFERRED DELIVERY METHOD IS VIA E-MAIL.
3. ALL EXTERIOR CONCRETE, PERMANENTLY EXPOSED TO WEATHER (DOES NOT APPLY TO BURIED FOUNDATIONS), SHALL BE AIR ENTRAINED TO GIVE THE CONCRETE AN AIR CONTENT OF 6% +/- 1.5% BY VOLUME. NATURALLY OCCURRING AIR CONTENT SHALL NOT EXCEED 3% FOR NON-AIR ENTRAINED MIXES.
4. CONCRETE MIX DESIGNS & SUPPORTIVE DATA MUST BE SUBMITTED FOR APPROVAL PER ACI 318 SECTION 26.4.3.1(B), AND ACI-301, SECTION 1.5.

B. REINFORCING MATERIAL PROPERTIES

1. REINFORCING PROPERTIES:

	f_y (KSI)	ASTM
ALL BARS, UNO	60	A615
TIES & STIRRUPS	60	A615
WELDED WIRE FABRIC (SMOOTH)	65	A185
WELDABLE REBAR	60	A706/AWSD1.4.

2. DETAIL, FABRICATE, AND PLACE REINFORCING IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE", LATEST ADDITION AND ACI 117.
3. EPOXY COATED REINFORCING REQUIRED WHERE REINFORCED CONCRETE IS EXPOSED TO MOISTURE AND CHLORIDES, SUCH AS DE-ICING SALTS. WHERE EPOXY COATED REINFORCING IS REQUIRED, ALL CHAIRS, SLAB BOLSTERS, SUPPORT BARS, AND SPACERS SHALL BE PLASTIC OR EPOXY COATED.
4. EPOXY COATING FOR REINFORCING SHALL CONFORM TO ASTM A775 AND ACI 301 SECTION 3.2. REPAIR COATING DAMAGE IN ACCORDANCE WITH ASTM D3963 AND PATCHING MATERIAL MANUFACTURER'S RECOMMENDATIONS.

C. CAST IN PLACE CONCRETE

1. ALL CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 19 AND ACI 318. PERFORM
2. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE "CRSI - MANUAL OF STANDARD PRACTICE" AND ACI 117. SUBMIT SHOP DRAWINGS FOLLOWING THE RECOMMENDED PRACTICES OF ACI 315 INDICATING REINFORCING SIZE, LENGTH, LOCATION, SHAPE AND SPACING OF BARS.
3. PROVIDE STANDARD HOOKS WHERE HOOK LENGTHS ARE NOT SPECIFIED.
4. PER ACI 26.6.2.2(A) and 26.10.2(B), ALL REINFORCEMENT SHALL BE PLACED AND SUPPORTED PRIOR TO PLACING CONCRETE. "WET STICKING" OF REBAR, INCLUDING DOWELS IS PROHIBITED.
5. SLEEVES EMBEDDED IN SLABS AND WALLS SHALL BE LOCATED CLEAR BETWEEN REINFORCING BARS AND SHALL MAINTAIN CLEAR SPACING EQUAL TO THE DIAMETER OF THE LARGEST SLEEVE IN ANY DIRECTION. SLEEVE GROUPS THAT DO NOT COMPLY WITH THE ABOVE REQUIREMENTS SHALL BE CONSIDERED AS AN OPENING AND REINFORCED PER NOTE #5 BELOW.
6. UNLESS NOTED OTHERWISE ON THE DRAWINGS: PROVIDE EXTRA REINFORCING ON ALL SIDES OF ALL MISCELLANEOUS WALL AND SLAB OPENINGS EQUAL TO ONE HALF THE INTERRUPTED REINFORCING BARS EACH SIDE BUT NOT LESS THAN 2 - #5 FOR EACH LAYER OF REINFORCEMENT. EXTEND BARS CLASS 'B' LAP LENGTH BUT NOT LESS THAN 2 FEET BEYOND EDGE OF OPENINGS. PROVIDE 2 - #4x4'-0" DIAGONAL BARS AT EACH CORNER FOR EACH LAYER OF REINFORCEMENT.
7. PROVIDE A ¾" CHAMFER ON ALL EXPOSED CORNERS OF CONCRETE.
8. PROVIDE ISOLATION JOINTS AROUND COLUMNS AT SLAB ON GRADE AREAS.
9. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR CONCRETE FINISH REQUIREMENTS.
10. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	CONCRETE COVER (IN)
CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH	3
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 THRU #18 BARS	2
#5 & SMALLER BARS	1 ½
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
SLABS & WALLS:	
#14 & #18 BARS	1 ½
#11 AND SMALLER BARS	¾
BEAMS & COLUMNS:	
PRIMARY REINFORCEMENT, STIRRUPS, & TIES	1 ½

VII. WOOD / TIMBER CONSTRUCTION

A. ROUGH CARPENTRY

1. STRUCTURAL LUMBER SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 23 & THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION.
2. THIS STRUCTURE IS A NON-SELF-SUPPORTING WOOD FRAME REQUIRING INTERACTION WITH OTHER ELEMENTS TO PROVIDE THE REQUIRED STABILITY. THE FRAMER SHALL PROVIDE TEMPORARY BRACING UNTIL FINAL STABILITY IS PROVIDED.
3. ALL DIMENSION LUMBER SHALL BE GRADE STAMPED.
4. ALL MEMBER SIZES SHOWN ON THE DRAWINGS ARE NOMINAL DIMENSIONS. DRESSED SIZES PUBLISHED IN AMERICAN SOFTWOOD LUMBER STANDARDS PS 20 SHALL BE ACCEPTED AS MINIMUM NET SIZES CONFORMING TO SUCH NOMINAL SIZES.
5. ALL BEAMS & JOISTS NOT BEARING ON SUPPORTING MEMBERS SHALL BE FRAMED WITH PREFABRICATED METAL JOIST HANGERS OF REQUIRED CAPACITY. ALL PREFABRICATED METAL HARDWARE IS BY SIMPSON STRONG-TIE COMPANY OR APPROVED EQUAL. AND SHALL BE DESIGNED AND PROVIDED BY THE WOOD MATERIAL SUPPLIER.
6. WOOD JOISTS SHALL BEAR ON THE FULL WIDTH OF SUPPORTING MEMBERS UNO.
7. LAG SCREWS ARE TO BE INSTALLED IN PRE-DRILLED HOLES.
8. BOLTED CONNECTIONS ARE TO BE INSTALLED THRU PRE-DRILLED HOLES NO LARGER THAN 1/16" LARGER THAN THE BOLT DIAMETER. BOLTS ARE TO BE STANDARD HEX FULL DIAMETER BOLTS COMPLYING WITH THE SAE J429 WITH A FASTENER YIELD STRENGTH OF 45,000 PSI. STANDARD WASHERS ARE TO BE USED UNDER ALL NUTS AND BOLT HEADS.
9. FASTENERS AND CONNECTIONS USED IN PRESERVATIVE TREATED AND FIRE-RETARDANT WOOD SHALL BE HOT DIPPED GALVANIZED (ASTM A153 CLASS D).
10. NAILING SHALL BE IN ACCORDANCE WITH WOOD FASTENING SCHEDULE ON SHEET S110 OR AS SHOWN ON THE DRAWINGS. SPACE NAILS TO AVOID SPLITTING. ALL NAILS ARE COMMON UNO.
11. ALL HEADERS AND BEAMS SHALL HAVE KING AND JACK STUDS AT BEARING SUPPORTS AS SHOWN ON THE DRAWINGS.
12. ENGINEERED UPLIFT CONNECTIONS SHALL BE PROVIDED AT ALL ROOF MEMBER CONNECTIONS TO WALL TOP PLATES.
13. SLEEPERS AND SILLS BEARING ON CONCRETE OR MASONRY AND PERMANENT COLUMNS SUPPORTED BY FOOTINGS IN CONTACT WITH EARTH SHALL BE PRESERVATIVE TREATED.
14. WHERE PENNY WEIGHTS ARE INDICATED ON THE DRAWINGS, THE NAILS SHALL COMPLY WITH THE MINIMUM DIAMETERS INDICATED BELOW:

PENNY WEIGHT	MIN. SHANK DIAMETER (IN)	MIN. LENGTH (IN)
8D	0.131	2 1/2
10D	0.148	3
16D	0.162	3 1/2

15. NAILS AND STAPLES USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL CONFORM TO ASTM F 1667 AND SHALL HAVE THE FOLLOWING MINIMUM BENDING YIELD STRENGTHS:

SHANK DIAMETER (IN)	BENDING YIELD STRENGTH
0.178" – 0.254"	80 KSI
0.143" – 0.177"	90 KSI
0.099" – 0.142" (16D & SMALLER)	100 KSI

16. LUMBER USED SHALL BE KILN DRIED TO A MOISTURE CONTENT NOT EXCEEDING 19% COMPLYING WITH THE FOLLOWING MINIMUM DESIGN PARAMETERS UNLESS NOTED OTHERWISE (ALTERNATIVE MATERIAL WITH BETTER DESIGN VALUES MAY BE USED WITH PRIOR APPROVAL).
17. PROVIDE ALLOWANCE IN STUDS AND SHEATHING AS REQUIRED FOR PLUMBING PIPES, ETC. DUE TO OVERALL WOOD SHRINKAGE ABOVE EACH LEVEL AS FOLLOWS:
    1ST LEVEL ABOVE PLANK/SLAB: UP TO 1/8"
    2ND LEVEL ABOVE PLANK/SLAB: UP TO ½"
    3RD LEVEL ABOVE PLANK/SLAB: UP TO 7/8"
    4TH LEVEL ABOVE PLANK/SLAB: UP TO 1 ¼"
    5TH LEVEL ABOVE PLANK/SLAB: UP TO 1 5/8"

DIMENSIONAL LUMBER			MINIMUM DESIGN PROPERTIES				
COMPONENT	WOOD SPECIES	GRADE	E	F_b	F_v	$F_{C-||}$	F_{C-PERP}
BEARING WALL STUDS	SPRUCE-PINE-FIR (SPF)	NO. 1 / NO. 2	1,400,000 PSI	875 PSI	135 PSI	1,150 PSI	425 PSI
TOP PLATES & SOLE PLATE ON WOOD BASE	SPRUCE-PINE-FIR (SPF)	NO. 1 / NO. 2	1,400,000 PSI	875 PSI	135 PSI	1,150 PSI	425 PSI
BEAMS / HEADERS	HEM-FIR (HF)	NO. 2	1,300,000 PSI	850 PSI	170 PSI	1,300 PSI	405 PSI
POSTS (5x5 AND LARGER)	SOUTHERN PINE (SP/SYP)	NO. 1	PER SPIB GRADING RULES AND AWC NDS				
SOLE PLATE IN CONTACT WITH CONCRETE, MASONRY, STEEL, & SOIL	SOUTHERN PINE (SP/SYP)	NO. 2	PER SPIB GRADING RULES AND AWC NDS				

B. ENGINEERED WOOD PRODUCTS

1. ENGINEERED WOOD SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE W/ IBC CHAPTER 23 & THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION.
2. ENGINEERED WOOD SUPPLIER SHALL PROVIDE ALL HANGERS, HARDWARE AND ACCESSORIES REQUIRED FOR INSTALLATION.

ENGINEERED LUMBER		MINIMUM DESIGN PROPERTIES				
COMPONENT	WOOD SPECIES	E	F_b	F_v	$F_{C-||}$	F_{C-PERP}
BEAMS / HEADERS	LVL	2,000,000 PSI	2,600 PSI	285 PSI	2,510 PSI	750 PSI
RIM BOARD	LSL (LVL ALTERNATE)	1,300,000 PSI	1,700 PSI	425 PSI	1,835 PSI	710 PSI
POSTS / COLUMNS	PSL	1,800,000 PSI	2,400 PSI	190 PSI	2,500 PSI	425 PSI
TALL WALL STUDS	LSL	1,500,000 PSI	2,250 PSI	505 PSI	2,105 PSI	860 PSI

B. OPEN WEB WOOD TRUSSES

1. THE DESIGN AND FABRICATION OF ALL TRUSSES SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATIONS FOR STRESS GRADE LUMBER AND ITS FASTENINGS BY NATIONAL FOREST PRODUCTS ASSOCIATION AND NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION BY THE TRUSS PLATE INSTITUTE.
2. WOOD TRUSS SUPPLIER SHALL DESIGN AND SUPPLY ALL MATERIAL, CONNECTORS, AND ACCESSORIES REQUIRED FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO HANGERS, WALL CONNECTIONS, BLOCKING, WEB STIFFENERS, AND RIM BOARDS TO PROVIDE A COMPLETE INSTALLATION.
3. WOOD TRUSS SUPPLIER SHALL PRODUCE A TRUSS SUBMITTAL PACKAGE INCLUDING THE INFORMATION REQUIRED BY IBC SECTION 2303.4.
4. TRUSS SUBMITTAL PACKAGE SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF THE PROJECT.
5. PROVIDE STANDARD CAMBER FOR DEAD LOAD AT ALL ROOF AND FLOOR TRUSSES.
6. NOTCHES SHALL NOT BE CUT IN WOOD JOISTS.
7. WOOD TRUSS SUPPLIER SHALL ACCOUNT FOR THE DEAD LOADS ASSOCIATED WITH FIXED ROOFTOP EQUIPMENT. PLACEMENT OF MECHANICAL UNITS & HANGERS SUPPORTED BY ROOF TRUSSES IS SUBJECT TO THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

C. WOOD STRUCTURAL SHEATHING

1. GENERAL
   A. PLYWOOD SHEATHING SHALL CONFORM TO IBC SECTION 2303.1.4 AND SHALL BE GRADE STAMPED BY APA. PROVIDED THE THICKNESS AND GRADE SHOWN ON THE DRAWINGS.
   B. NAIL SIZE AND PATTERN SHALL BE AS INDICATED ON THE DRAWINGS.
   C. PLYWOOD SHALL HAVE A MINIMUM OF 4 PLIES.
   D. ORIENTED STRAND BOARD (OSB) IS AN ACCEPTABLE ALTERNATE WITH PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
2. FLOOR AND ROOF SHEATHING – HORIZONTAL USE
   A. PANEL FLOOR SHEATHING SHALL BE APA EXPOSURE 1, TONGUE AND GROOVE PLYWOOD AND AS INDICATED IN THE FRAMING PLAN NOTES.
   B. PANEL ROOF SHEATHING SHALL BE APA EXPOSURE 1, FLAT PLYWOOD AND AS INDICATED IN THE FRAMING PLAN NOTES.
   C. SHEATHING SHALL BE ORIENTED WITH THE STRONG AXIS PERPENDICULAR TO SUPPORTS.
   D. ALL WOOD PANELS SHALL BE CONTINUOUS OVER A MINIMUM OF TWO SPANS WITH A MINIMUM PANEL WIDTH NOT LESS THAN 2'-0" UNLESS ALL PANEL EDGES ARE BLOCKED.
   E. FASTENERS SHALL NOT BE LOCATED CLOSER THAN 3/8" FROM PANEL EDGES.
3. WALL SHEATHING/SHEAR WALL PANELS – VERTICAL USE
   A. SEE THE DRAWINGS FOR SHEAR WALL SHEATHING THICKNESS, TYPE AND GRADE.
   B. REFER TO ARCHITECTURAL DRAWINGS FOR NON-SHEAR WALL SHEATHING TYPE.
   C. SEE THE DRAWINGS FOR SPECIFIC SHEAR WALL FASTENING REQUIREMENTS.
   D. SHEATHING NAILING SHALL BE IN ACCORDANCE WITH WOOD FASTENING SCHEDULE ON SHEET ___. SEE WOOD SHEAR WALL SCHEDULE ON SHEET ____ FOR ADDITIONAL INFORMATION. SPACE NAILS TO AVOID SPLITTING. ALL NAILS ARE COMMON UNO.
   E. WALL SHEATHING MAY BE ORIENTED EITHER HORIZONTALLY OR VERTICALLY. SEE SHEAR WALL SCHEDULE FOR MIN BLOCKING REQUIREMENTS.

D. GYPSUM WALLBOARD SHEATHING

1. TYPICAL GYPSUM WALL BOARD SHALL BE A MINIMUM OF 5/8" THICK UNO ON DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR TYPE.
2. STUD FRAME BACKUP FOR GYP BOARD SHEATHING SHALL BE A MAXIMUM OF 16" OC
3. SEE IBC SECTION 2306.4.5.1 FOR MINIMUM REQUIREMENTS ON APPLICATION OF GYPSUM WALL BOARD TO WOOD FRAMING.
4. UNO ON DRAWINGS, PROVIDE A MINIMUM OF No. 6 TYPE S OR W DRYWALL SCREWS, CONFORMING TO ASTM C1002, 1 ¼" LONG WITH THE HEAD FLUSH WITH THE SURFACE OF THE SHEATHING. FASTENING SHEATHING TO SUPPORTS USING SCREWS AT 12" OC IN THE FIELD AND AT 8" OC AT THE EDGES.
5. GYPSUM WALL BOARD SHALL NOT BE USED FOR SHEAR WALL SHEATHING IN SEISMIC DESIGN CATEGORIES E OR F.

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

PRINTED NAME: JOE A NICHOLSON

DATE: 09/04/2026 LICENSE #: 44104

AJ'S GLENWOOD

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PROJECT NO.:	00526011

NO.	DATE	DESCRIPTION

GENERAL NOTES

DRAWING NO.

S100

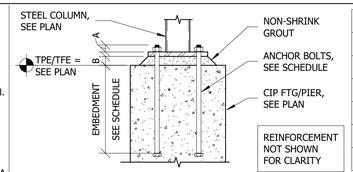
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STEEL COLUMN SCHEDULE

MARK	COLUMN	BASE PLATE	BASE PLATE TYPE	ANCHOR RODS	EMBEDMENT	COMMENTS
SC4	4"Ø STD PIPE	3/4" x 10" x 0' - 10"	'A'	(4) 3/4"Ø	9"	

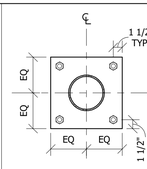
STEEL COLUMN SCHEDULE NOTES:

1. SEE GENERAL NOTES ON SHEET S100 FOR ADDITIONAL MATERIAL REQUIREMENTS.
2. ANCHOR ROD EMBEDMENT DOES NOT INCLUDE PROJECTION.
3. PROVIDE HEAVY HEX NUTS INTO AT BASE OF ANCHORS RODS IN CONCRETE, TACK WELD NUT TO ROD.
4. UPSET THREADS AFTER COLUMN IS LEVELED AND IN FINAL POSITION.
5. PROVIDE FLAT WASHER BETWEEN ANCHOR ROD AND BASE PLATE.
6. PROVIDE 5/16" OVERSIZED HOLE IN BASE PLATE FOR ANCHOR ROD PLACEMENT.
7. PROVIDE PROTECTIVE ASPHALTIC COATING OR EQUAL AROUND STRUCTURAL STEEL BELOW GRADE.
8. GROUTING UNDER COLUMN BASE PLATES SHALL BE ACCOMPLISHED WITH NONMETALLIC, SHRINK RESISTING GROUT, ASTM C1103 WITH A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN ACCORDANCE WITH ACI 351.1.



ANCHOR BOLT EMBEDMENT

A. ROD	A	B
1/2"Ø	1 1/2"	1 1/2"
5/8"Ø	2"	1 1/2"
3/4"Ø	2 1/4"	1 1/2"
1"Ø	3"	2"
1 1/4"Ø	3 3/4"	2 1/2"
1 1/2"Ø	4 1/2"	3"



TYPE 'A'

WOOD FASTENING SCHEDULE

	CONNECTION DESCRIPTION	LOCATION	FASTENING
FLOOR AND ROOF FRAMING	BLOCKING BETWEEN JOISTS OR RAFTER TO TOP PLATE OR OTHER FRAMING BELOW	TOE NAIL EACH END	(3) 0.131"Ø x 2 1/2" NAILS (3) 0.131"Ø x 3" NAILS (3) 0.128"Ø x 3" NAILS
	BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT WALL TOP PLATE, TO RAFTER OR TRUSS	TOE NAIL EACH END; OR	(2) 0.131"Ø x 2 1/2" NAILS (2) 0.131"Ø x 3" NAILS
		END NAIL	(2) 0.162"Ø x 3 1/2" NAILS (3) 0.131"Ø x 3" NAILS
	ROOF RAFTER TO 2x RIDGE BEAM OR JACK RAFTER TO HIP	TOE NAIL EACH END; OR	(3) 0.148"Ø x 3" NAILS (4) 0.135"Ø x 3 1/2" NAILS (4) 0.131"Ø x 3" NAILS (4) 0.128"Ø x 3" NAILS
		END NAIL	(2) 0.162"Ø x 3 1/2" NAILS (3) 0.131"Ø x 3" NAILS (3) 0.128"Ø x 3" NAILS
	JOIST TO SILL, TOP PLATE OR GIRDER	TOE NAIL THROUGH EACH SIDE	(3) 0.131"Ø x 2 1/2" NAILS (3) 0.131"Ø x 3" NAILS (3) 0.128"Ø x 3" NAILS
	RIM JOIST, BAND JOIST OR BLOCKING TO TOP PLATE SILL OR OTHER FRAMING BELOW	TOE NAIL	0.131"Ø x 2 1/2" NAILS @6" OC 0.131"Ø x 3" NAILS @6" OC 0.128"Ø x 3" NAILS @6" OC
	JOIST TO BAND JOIST OR RIM JOIST	END NAIL	(3) 0.162"Ø x 3 1/2" NAILS (4) 0.131"Ø x 3" NAILS (4) 0.128"Ø x 3" NAILS
	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	FACE NAIL EACH JOIST OR RAFTER	(3) 0.162"Ø x 3 1/2" NAILS (4) 0.131"Ø x 3" NAILS (4) 0.128"Ø x 3" NAILS
	BRIDGING OR BLOCKING TO JOIST RAFTER OR TRUSS	TOE NAIL EACH END	(2) 0.131"Ø x 2 1/2" NAILS (2) 0.131"Ø x 3" NAILS (2) 0.128"Ø x 3" NAILS

	CONNECTION DESCRIPTION		LOCATION	FASTENING
WALL FRAMING	MULTI-PLY STUDS (POSTS, JAMBS AND WALL STUDS)		FACE NAIL EACH PLY	0.162"Ø x 3 1/2" NAILS @24" OC 0.131"Ø x 3" NAILS @16" OC 0.128"Ø x 3" NAILS @16" OC
	ABUTTING STUDS AT CORNERS AND INTERSECTING WALLS		FACE NAIL	0.162"Ø x 3 1/2" NAILS @24" OC 0.131"Ø x 3" NAILS @16" OC 0.128"Ø x 3" NAILS @16" OC
	CONTINUOUS HEADER TO STUD		TOE NAIL	(4) 0.131"Ø x 2 1/2" NAILS (4) 0.128"Ø x 3" NAILS
	TOP PLATE TO TOP PLATE (DOUBLE TOP PLATE)		FACE NAIL	0.162"Ø x 3" NAILS @16" OC 0.131"Ø x 3" NAILS @12" OC 0.128"Ø x 3" NAILS @12" OC
	TOP PLATE TO TOP PLATE AT END JOINT (LAP SPLICE)		FACE NAIL EA SPLICE END, 24" MIN LAP	(8) 0.162"Ø x 3 1/2" NAILS (12) 0.131"Ø x 3" NAILS (12) 0.128"Ø x 3" NAILS
	TOP PLATE OVERLAP AT CORNERS AND INTERSECTIONS		FACE NAIL	(2) 0.162"Ø x 3 1/2" NAILS (3) 0.131"Ø x 3" NAILS (3) 0.128"Ø x 3" NAILS
	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING		FACE NAIL	0.162"Ø x 3 1/2" NAILS @16" OC 0.131"Ø x 3" NAILS @12" OC 0.135"Ø x 3 1/2" NAILS @12" OC
	TOP OR BOTTOM PLATE TO STUD		END NAIL; OR	(2) 0.162"Ø x 3 1/2" NAILS (3) 0.131"Ø x 3" NAILS (3) 0.128"Ø x 3" NAILS
			TOE NAIL	(4) 0.131"Ø x 2 1/2" NAILS (4) 0.131"Ø x 3" NAILS (4) 0.128"Ø x 3" NAILS
	DOUBLE TOP PLATE TO WALL STUD AT WALLS DIRECTLY SUPPORTING ROOF FRAMING		TOE NAIL OR SCREW STUD TO PLATES	(4) 0.131"Ø x 2 1/2" NAILS (4) 0.131"Ø x 3" NAILS (4) 0.128"Ø x 3" NAILS (1) 0.152"Ø x 6" SDWC SCREW
WALL SHEATHING	WOOD STRUCTURAL PANEL WALL SHEATHING TO FRAMING	1/2" AND LESS	6" OC AT EDGE AND 12" OC AT FIELD	0.113"Ø x 2" NAILS 0.113"Ø x 2 3/8" NAILS
		19/32"-3/4"		0.113"Ø x 2" NAILS 0.131"Ø x 2 1/2" NAILS 0.113"Ø x 2 3/8" NAILS
	GYPSUM WALL SHEATHING TO STRUCTURAL FRAMING		8" OC AT EDGE AND 12" OC AT FIELD	NO 6 x 1 1/4" TYPE S OR W/ DRYWALL SCREWS

UNLESS NOTED OTHERWISE:
1. SCHEDULE BASED ON IBC TABLE 2304.10.1 REQUIREMENTS FOR STRUCTURAL FRAMING CONNECTIONS.
2. SCHEDULE PROVIDES MINIMUM REQUIREMENTS. SEE NOTES AND DETAILS FOR ADDITIONAL STRUCTURAL REQUIREMENTS.
3. STRUCTURAL WALLS REQUIRE SHEATHING ON ONE FACE, MINIMUM. SEE STRUCTURAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL WALL TYPES AND SHEATHING AND FASTENING REQUIREMENTS NOT LISTED ON STRUCTURAL DRAWINGS.
5. ALL FASTENING OPTIONS ARE LISTED. CONTRACTOR MAY SELECT WHICH OPTIONS TO USE ON THIS PROJECT.

LAP SPLICE SCHEDULE (UNCOATED GRADE 60 BARS IN CONCRETE)

CLASS 'A' TENSION LAP SPLICE

BAR SIZE	CONCRETE COMPRESSIVE STRENGTH, f'_c (PSI)							
	3,000	3,500	4,000	5,000	6,000	7,000	8,000	10,000
#3	1'-5"	1'-4"	1'-3"	1'-1"	1'-0"	0'-11"	0'-11"	0'-9"
#4	1'-10"	1'-9"	1'-7"	1'-5"	1'-4"	1'-3"	1'-2"	1'-0"
#5	2'-4"	2'-2"	2'-0"	1'-10"	1'-8"	1'-7"	1'-5"	1'-3"
#6	2'-9"	2'-7"	2'-5"	2'-2"	2'-0"	1'-10"	1'-9"	1'-6"
#7	4'-1"	3'-9"	3'-6"	3'-2"	2'-11"	2'-8"	2'-6"	2'-3"
#8	4'-7"	4'-3"	4'-0"	3'-7"	3'-3"	3'-0"	2'-10"	2'-6"
#9	5'-2"	4'-10"	4'-6"	4'-1"	3'-8"	3'-5"	3'-3"	2'-10"
#10	5'-9"	5'-4"	5'-0"	4'-6"	4'-1"	3'-9"	3'-7"	3'-2"
#11	6'-4"	5'-11"	5'-6"	5'-0"	4'-6"	4'-2"	3'-11"	3'-6"

CLASS 'B' TENSION LAP SPLICE

BAR SIZE	CONCRETE COMPRESSIVE STRENGTH, f'_c (PSI)							
	3,000	3,500	4,000	5,000	6,000	7,000	8,000	10,000
#3	1'-10"	1'-8"	1'-7"	1'-5"	1'-4"	1'-3"	1'-2"	1'-0"
#4	2'-5"	2'-3"	2'-1"	1'-11"	1'-9"	1'-7"	1'-6"	1'-4"
#5	3'-0"	2'-10"	2'-7"	2'-4"	2'-2"	2'-0"	1'-10"	1'-8"
#6	3'-7"	3'-4"	3'-1"	2'-10"	2'-7"	2'-5"	2'-3"	2'-0"
#7	5'-3"	4'-10"	4'-7"	4'-1"	3'-9"	3'-5"	3'-3"	2'-11"
#8	6'-0"	5'-7"	5'-3"	4'-8"	4'-3"	3'-11"	3'-9"	3'-3"
#9	6'-9"	6'-3"	5'-11"	5'-3"	4'-10"	4'-5"	4'-2"	3'-8"
#10	7'-6"	6'-11"	6'-6"	5'-10"	5'-4"	4'-11"	4'-8"	4'-1"
#11	8'-3"	7'-8"	7'-2"	6'-5"	5'-10"	5'-5"	5'-1"	4'-6"

CIP CONCRETE LAP SPLICE SCHEDULE NOTES:

1. THESE TABLES ARE BASED ON THE FOLLOWING ASSUMPTIONS:
   A. UNCOATED GRADE 60 REBAR IN GROUTED CONCRETE
   B. CLEAR SPACING OF BARS ≥ d_b
   C. CLEAR COVER ≥ d_b
   D. STIRRUPS OR TIES PROVIDED THROUGHOUT DEVELOPMENT LENGTH MINIMUM ≥ OR
      a. CLEAR SPACE OF BARS ≥ 2*d_b
      b. CLEAR COVER ≥ d_b
2. FOR OTHER CASES, MULTIPLY LENGTHS SHOWN BY 1.5
3. TOP BAR SPLICES:
   A. TOP BARS ARE SUCH THAT 12" OR MORE OF FRESH CONCRETE IS CAST BELOW THE SPLICE OR DEVELOPMENT LENGTH
   B. MULTIPLY LENGTHS SHOWN BY 1.3
4. FOR LIGHTWEIGHT CONCRETE, MULTIPLY LENGTHS SHOWN BY 1.3
5. FOR HIGHER GRADE STEEL, MULTIPLY LENGTHS SHOWN BY A RATIO OF HIGHER F_Y (KSI) OVER 1,160 (KSI). ALL OTHER FACTORS LISTED STILL APPLY.
6. FOR COMPRESSION LAP SPLICE, USE GREATER OF:
   A. (0.0009*F_Y - 24)*d_b
   B. 0.0005*F_Y*d_b
7. ABBREVIATED TERMS:
   A. d_b = BAR DIAMETER
   B. F_Y = YIELD STRENGTH OF REBAR
8. ALL REBAR LAP SPLICES SHALL BE 'CLASS B' UNLESS NOTED OTHERWISE ON PLAN.

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DATE: 09/04/2026 LICENSE #: 44104

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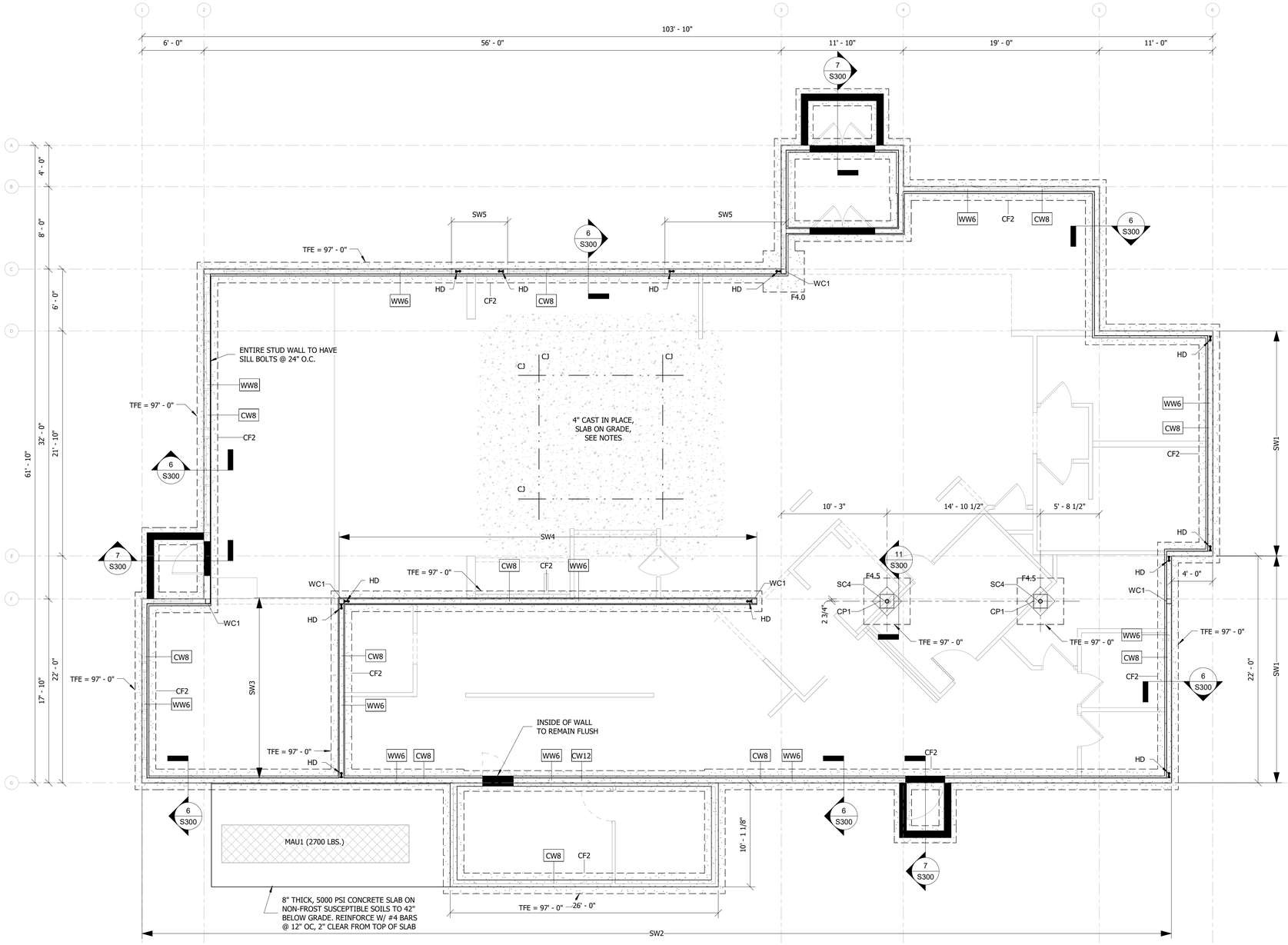
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SCHEDULES AND NOTES

DRAWING NO.

S110

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2 FOUNDATION / SLAB ON GRADE PLAN
3/16" = 1'-0"

FOUNDATION PLAN NOTES:
UNLESS NOTED OTHERWISE:
1. SEE SHEET S000 FOR ABBREVIATIONS AND SYMBOLS.
2. SEE SHEET S100 FOR GENERAL NOTES.
3. SEE PLAN FOR TOP OF FOOTING ELEVATIONS.
4. TOP OF FOOTING ELEVATIONS UNO:
   A. EXTERIOR FOOTINGS: 97'-0"
   B. INTERIOR FOOTINGS: 99'-0"
5. 'F#' ON PLAN DENOTES SPREAD FOOTING TYPE. SEE SCHEDULE ON SHEETS200 FOR ADDITIONAL INFORMATION. SPREAD FOOTINGS SHALL BE CENTERED ON COLUMNS AND WALL INTERSECTIONS UNLESS NOTED OTHERWISE ON PLAN.
6. 'CF#' ON PLAN DENOTES CONTINUOUS STRIP FOOTING. SEE SCHEDULE ON SHEETS200 FOR ADDITIONAL INFORMATION. STRIP FOOTINGS SHALL BE CENTERED ON FOUNDATION WALLS UNLESS NOTED OTHERWISE ON PLAN.
7. 'CP#' ON PLAN DENOTES CONCRETE PIER. SEE SCHEDULE ON SHEET S200 FOR ADDITIONAL INFORMATION.
8. 'CW#' ON PLAN DENOTES CAST-IN-PLACE (CIP) WALL TYPE. SEE SCHEDULE ON SHEET S200 FOR ADDITIONAL INFORMATION.
9. 'SC#' ON PLAN DENOTES STEEL COLUMN. SEE SCHEDULE ON SHEET S110 FOR ADDITIONAL INFORMATION.
10. S---------S ON PLAN DENOTES FOOTING STEP. SEE 5/S300 FOR ADDITIONAL INFORMATION.
11. FOOTINGS FOR WALLS NOT NOTED SHALL BE 12" THICK WITH A MINIMUM PROJECTION OF 4" EACH SIDE. REINFORCE WITH (2) #5 CONTINUOUS. ADD (1) #5 CONT FOR EACH 6" WIDTH OVER 24".
12. SEE ARCHITECTURAL PLANS FOR ALL OPENING LOCATIONS, DIMENSIONS, STOOPS, AND INTERIOR PARTITIONS.
13. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF STRUCTURAL AND NON-STRUCTURAL ASSEMBLIES.
14. SEE DETAIL 3/S300 FOR TYPICAL CONCRETE COVER OVER UTILITY PIPE. COORDINATE PIPE LOCATIONS AND ELEVATIONS WITH CIVIL AND MECHANICAL DRAWINGS.
15. SEE DETAIL 4/S300 FOR OPENINGS IN CIP CONCRETE WALLS WITH A MAXIMUM CLEAR SPAN OF 4'-0". COORDINATE OPENING LOCATIONS AND ELEVATIONS WITH ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.
16. ▬▬ ON PLAN DENOTES TOP OF FOUNDATION WALL RECESS. COORDINATE SIZE AND LOCATION WITH ARCHITECTURAL DRAWINGS.
17. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND DIMENSIONS.

SLAB ON GRADE PLAN NOTES:
UNLESS NOTED OTHERWISE:
1. TOP OF INTERIOR SLAB ELEVATION = 100' - 0" (CIVIL ELEVATION 1354.00). SEE ARCHITECTURAL DRAWINGS FOR SLAB SLOPES, STEPS, RAMPS, AND ELEVATIONS.
2. INTERIOR SLAB-ON-GRADE SHALL BE 4" THICK W/ SYNTHETIC MICRO FIBER REINFORCING (MIN 1.5 LB/CY) ON A MINIMUM 10-MIL VAPOR BARRIER COMPLYING W/ ASTM E1745, CLASS A (MAXIMUM 0.04 PERM).
   SEE GEOTECHNICAL REPORT FOR ADDTIONAL INFORMATION.
3. SLAB CONTROL JOINTS:
   A. MAXIMUM SPACING = 10' - 0"
   B. MAXIMUM PANEL ASPECT RATIO = 1.5 (LONG SIDE / SHORT SIDE)
   C. VERIFY JOINT LOCATIONS WITH ARCH
   D. SEE DETAIL 1/S300 FOR ADDTIONAL INFORMATION.
4. SEE ARCHITECTURAL PLANS FOR ALL OPENING LOCATIONS, DIMENSIONS, STOOPS, AND INTERIOR PARTITIONS.
5. SEE DETAILS 10/S300 FOR TYPICAL COLUMN ISOLATION JOINT.
6. ▬ ON PLAN DENOTES SHEAR WALL HOLD DOWNS. SEE SCHEDULE ON SHEET S303 FOR ADDITIONAL INFORMATION.
7. ◄SWx► ON PLAN DENOTES SHEAR WALL LOCATIONS, SEE SCHEDULE ON SHEET S303 FOR ADDITIONAL INFORMATION.

CIP STRIP FOOTING SCHEDULE

MARK	FOOTING SIZE	CONTINUOUS REINFORCEMENT	TRANSVERSE REINFORCEMENT	COMMENTS
CF1	1' - 8" x 12"	(2) - #4	--	
CF2	2' - 0" x 12"	(2) - #5	--	

CONTINUOUS FOOTING SCHEDULE NOTES UNO ON PLAN:
1. SEE GENERAL NOTES ON SHEET S100FOR ADDITIONAL REQUIREMENTS.
2. CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS.
3. SEE SCHEDULE ON SHEET S110 FOR REBAR LAP SPLICES FOR COATED AND UNCOATED REBAR.
4. ALL REINFORCING IN BOTTOM OF FOOTING.

CIP PAD FOOTING SCHEDULE

MARK	FOOTING SIZE	BOTTOM REINFORCEMENT	TOP REINFORCEMENT	COMMENTS
F3.5	3'-6" x 3'-6" x 1'-0"	(5) - #4 EACH WAY	N/A	
F4.0	4'-0" x 4'-0" x 1'-0"	(6) - #4 EACH WAY	N/A	

SPREAD FOOTING SCHEDULE NOTES UNO ON PLAN:
1. SEE GENERAL NOTES ON SHEET S100FOR ADDITIONAL REQUIREMENTS.
2. SPREAD FOOTINGS SHALL BE CENTERED UNDER COLUMNS.
3. SEE SCHEDULE ON SHEET S110 FOR REBAR LAP SPLICES FOR COATED AND UNCOATED REBAR.

CIP CONCRETE WALL SCHEDULE

MARK	WALL THICKNESS	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	REINFORCEMENT LOCATION	COMMENTS
CW8	8"	#4 BARS @ 18" OC	#4 BARS @ 12" OC	CENTER	
CW12	12"	#4 BARS @ 18" OC	#4 BARS @ 16" OC	EA FACE	

CIP CONCRETE WALL SCHEDULE NOTES UNO ON PLAN:
1. SEE GENERAL NOTES ON SHEET S100 FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE MARK CW8 WHERE CIP CONCRETE WALL MARK IS NOT SHOWN. CONFIRM WITH ENGINEER PRIOR TO PLACEMENT.
3. EXTEND VERTICAL REINFORCING FROM FOOTINGS TO 2" CLEAR TOP OF WALL OR TO BEAM BEARING.
4. WALL REINFORCING IS CONTINUOUS THROUGH COLUMNS, PIERS, AND LINTELS.
5. SEE DETAIL 2/S300 FOR CONTROL JOINT REQUIREMENTS IN CIP WALLS.
6. SEE FOUNDATION AND WALL DETAILS IN 9/S300 FOR DETAILING AT JOINTS, CORNERS, AND INTERSECTIONS.
7. VERTICAL REINFORCING IS PRIMARY. WHEN INDICATED AS INSIDE FACE ABOVE, PLACE VERTICAL REINFORCING CLOSEST TO INSIDE (INTERIOR FACE OF WALL AND HORIZONTAL REINFORCING BEHIND THAT). WHERE CENTERED IS INDICATED ABOVE, CENTER THE VERTICAL REINFORCING AND PLACE HORIZONTAL REINFORCING ON EITHER SIDE OF THE VERTICAL BARS.
8. SEE SCHEDULES ON SHEET S110 FOR REBAR LAP SPLICES FOR COATED AND UNCOATED REBAR.
9. REFER TO ARCHITECTURAL DRAWINGS FOR VENEER SHELF ELEVATIONS AT FOUNDATION WALL.
10. PROVIDE STANDARD 90-DEGREE HOOK DOWELS BETWEEN FOUNDATIONS AND WALLS EQUAL TO THE SIZE AND SPACING OF THE VERTICAL REINFORCING. PLACE HOOKED END OF DOWEL 3" FROM BOTTOM OF FOOTING AND PROJECT CLASS 'A' LAP ABOVE TOP OF FOOTING.
11. SLEEVES EMBEDDED IN WALLS SHALL BE LOCATED CLEAR BETWEEN REINFORCING BARS AND SHALL MAINTAIN CLEAR SPACING EQUAL TO THE DIAMETER OF THE LARGEST SLEEVE IN ANY DIRECTION. SLEEVE GROUPS THAT DO NOT COMPLY WITH THE ABOVE REQUIREMENTS SHALL BE CONSIDERED AS AN OPENING AND REINFORCED PER NOTE #12 BELOW.
12. PROVIDE EXTRA REINFORCING ON ALL SIDES OF ALL MISCELLANEOUS WALL OPENINGS EQUAL TO ONE HALF THE INTERRUPTED REINFORCING BARS EACH SIDE BUT NOT LESS THAN (2) #5 FOR EACH LAYER OF REINFORCEMENT. EXTEND BARS CLASS 'B' LAP LENGTH BUT NOT LESS THAN 2 FEET BEYOND EDGE OF OPENINGS. PROVIDE (2) #4 x 48" DIAGONAL BARS AT EACH CORNER FOR EACH LAYER OF REINFORCEMENT.

CIP CONCRETE PIER SCHEDULE

MARK	SIZE	VERTICAL REINFORCEMENT	TIE REINFORCEMENT	TOP OF PIER	TYPE	COMMENTS
CP1	16X16	(4)-#6	#3 @ 12"OC	99'-4"	'A'	

CIP CONCRETE PIER SCHEDULE NOTES UNO ON PLAN:
1. SEE GENERAL NOTES ON SHEET S100FOR ADDITIONAL REQUIREMENTS.
2. PIERS SHALL BE LOCATED AT COLUMN CENTERLINE ON PLAN AND DETAILS.
3. PROVIDE CP1 PIER WHERE CIP CONCRETE PIER MARK ARE NOT INDICATED ON PLAN. CONFIRM WITH SEOR PRIOR TO PLACEMENT.
4. POUR CIP CONCRETE PIERS INTEGRALLY WITH CIP CONCRETE WALLS.
5. PROVIDE STANDARD 90° HOOK DOWELS BETWEEN FOUNDATIONS AND CIP COLUMNS EQUAL TO THE SIZE AND SPACING OF THE VERTICAL REINFORCING. PLACE HOOKED END OF DOWEL 3" FROM BOTTOM OF FOOTING AND PROJECT CLASS 'A' LAP ABOVE TOP OF FOOTING.
6. EXTEND VERTICAL BARS TO 2" CLEAR TOP OF PIER.
7. SEE SCHEDULES ON SHEET S110 FOR REBAR LAP SPLICES FOR COATED AND UNCOATED REBAR. PROVIDE CLASS 'B' TENSION LAP SPLICE.
8. ALL PIERS SHALL HAVE (3) ADDTIONAL TIES IN TOP 5" PORTION OF PIERS PER ACI 10.7.6.1.6.
9. PROVIDE CROSSTIES AS SHOWN WITH 90° HOOK ONE END AND 135° HOOK OTHER END. SIZE TO MATCH TIES. ALTERNATE TIE CONFIGURATIONS MEETING ACI 318 SECTION 25.7.2.3 ARE ACCEPTABLE.
10. PROVIDE FIRST TIE MAXIMUM OF 1/2 TIE SPACING ABOVE TOP OF FOOTING.
11. REFER TO DRAWINGS FOR TOP OF PIER ELEVATIONS.



TYPE 'A'

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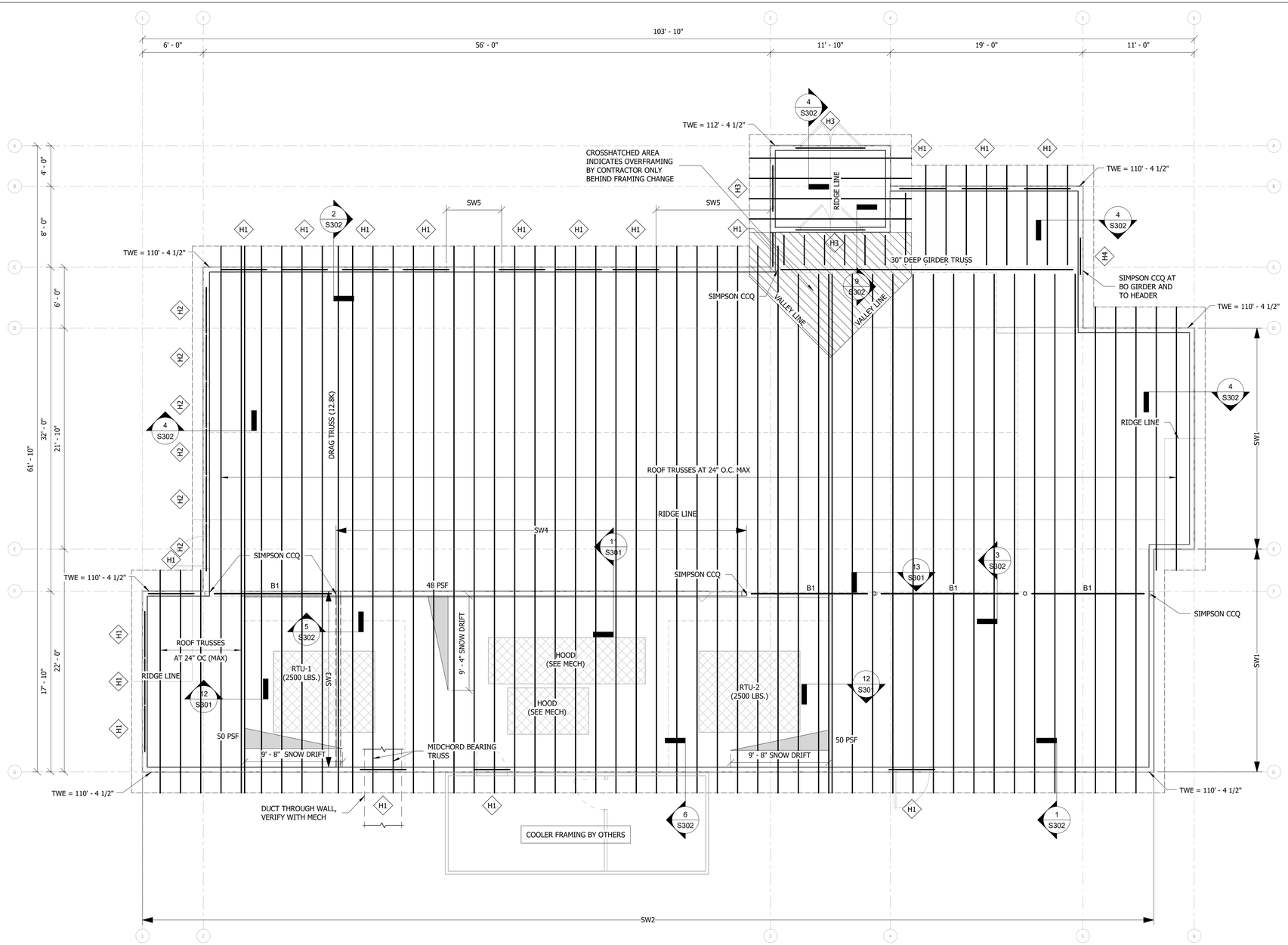
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SLAB ON GRADE/FOUNDATION PLAN

DRAWING NO.

S200

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1 ROOF FRAMING PLAN
3/16" = 1'-0"

ROOF PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR ROOF PITCHES AND ELEVATIONS.
2. REFER TO SHEET S301 FOR TYPICAL FRAMING DETAILS.
3. THE CONTRACTOR SHALL COORDINATE BETWEEN THE TRUSS MANUFACTURER AND MECHANICAL DRAWINGS/CONTRACTOR TO ENSURE THAT PROPRIETARY ELEMENTS ARE DESIGNED TO RESIST SUSPENDED LOADS FROM THEIR EQUIPMENT. THE WEIGHT OF SUSPENDED MECHANICAL LOADS HAS NOT BEEN ACCOUNTED FOR IN THE JOIST DESIGN INDICATED ON PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR ROOF TRUSS BEARING ELEVATION, DIMENSION, AND TRUSS PROFILE.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL OPENING DIMENSIONS AND LOCATIONS.
6. TRUSS BRACING BY TRUSS SUPPLIER.
7. WOOD ROOF TRUSS NOTES:
   a. ROOF TRUSSES ARE PITCHED TOP CHORD OPEN WEB TRUSSES AT 24" OC MAX. SPACING MAY BE REDUCED BY TRUSS SUPPLIER.
   b. SEE ARCH FOR PITCHED BOTTOM CHORD LOCATIONS.
   c. SEE SHEET S100 FOR LOADS.
   d. ROOF TRUSSES SHALL BE DESIGNED FOR A MAXIMUM LL DEFLECTION = SPAN/360 AND A MAXIMUM TL DEFLECTION = SPAN/240.
8. TRUSS SUPPLIER SHALL PROVIDE HURRICANE TIES TO TOP PLATE AT ALL ROOF FRAMING MEMBERS.
9. ROOF SHEATHING:
   A. AT ROOF TRUSS FRAMING: 19/32" PLYWOOD SHEATHING. SEE DETAIL 4/S303 OR 5/S303 FOR FLOOR SHEATHING FASTENING.
10. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND DIMENSIONS.

WOOD COLUMN SCHEDULE

MARK	SIZE	POST BASE	POST CAP	COMMENTS
WC1	6X6	ABU66	CCQ	

WOOD COLUMN SCHEDULE NOTES UNO ON PLAN:

1. SEE GENERAL NOTES ON SHEET S100 FOR ADDITIONAL INFORMATION.
2. SEE 3/S301 FOR BUILT-UP COLUMN NAILING SCHEDULE.

WOOD BEAM SCHEDULE

MARK	BEAM SIZE	CONNECTION	COMMENTS
B1	(3) 1.75X16 LVL		

WOOD BEAM SCHEDULE NOTES UNO ON PLAN:

1. 'B1' IN SCHEDULE DENOTES BEAMS.
2. SEE SCHEDULE ON SHEET 301 FOR BUILT-UP BEAM FASTENING SCHEDULE.
3. SEE 3/S301 FOR BUILT-UP COLUMN NAILING SCHEDULE.
4. SEE 3/S302 FOR STRAPPING REQUIREMENTS AT WOOD BEAMS SUPPORTING ROOF FRAMING.
5. SEE WOOD FRAMING SPECIES AND GRADE SCHEDULE ON SHEET S100 FOR ADDITIONAL INFORMATION.
6. SIZES AND QUANTITIES PROVIDED ARE MINIMUM ALLOWED. STRONGER MEMBERS MAY BE SUBSTITUTED PROVIDED THE PERFORMANCE OF THE ALTERNATE MEMBER EXCEEDS THE MEMBER SHOWN HERE. ALTERNATE DESIGNS MUST BE SUBMITTED TO AND APPOROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION.
7. DIMENSIONAL LUMBER IS NOT ALLOWED BETWEEN SCL BEAMS AND SCL POSTS CONNECTIONS.

WOOD HEADER SCHEDULE

MARK	HEADER SIZE	JACK STUDS	KING STUDS	COMMENTS
H1	(2) 2 x 10	(1) 2x	(1) 2x6	
H2	(2) 2 x 10	(1) 2x	(1) 2x8	
H3	(2) 2 x 10	(1) 2x	(2) 2x6	
H4	(3) 1.75X14 LVL	(3) 2x	(2) 2x6	

WOOD HEADER SCHEDULE NOTES UNO ON PLAN:

1. 'H1' IN SCHEDULE DENOTES DROPPED HEADERS INSTALLED OVER WINDOWS, DOORS, AND MECH OPENINGS.
2. SEE SCHEDULE ON SHEET S100 FOR BUILT-UP HEADER FASTENING SCHEDULE.
3. SEE 3/S301 FOR BUILT-UP COLUMN NAILING SCHEDULE.
4. 2x JACK / POST & KING STUDS SHALL MATCH WALL THICKNESS.
5. SEE WOOD FRAMING SPECIES AND GRADE SCHEDULE ON SHEET S100 FOR ADDITIONAL INFORMATION.
6. SIZES AND QUANTITIES PROVIDED ARE MINIMUM ALLOWED. STRONGER MEMBERS MAY BE SUBSTITUTED PROVIDED THE PERFORMANCE OF THE ALTERNATE MEMBER EXCEEDS THE MEMBER SHOWN HERE. ALTERNATE DESIGNS MUST BE SUBMITTED TO AND APPOROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION.
7. IF PLANS INDICATED THE PRESENCE OF A SCL COLUMN, COLUMN TAKES PRECEDENCE OF OVER JACK STUDS.
8. DIMENSIONAL LUMBER IS NOT ALLOWED BETWEEN SCL HEADERS AND SCL POSTS CONNECTIONS.
9. SEE DETAIL 8/S301 FOR HEADER IN TYPICAL WOOD FRAMED WALL.

WOOD WALL SCHEDULE

MARK	STUD SIZE	STUD SPACING	BOTTOM PLATE	TOP PLATE	COMMENTS
WW6	2 x 6	16" OC	(1) 2 x 6 PT	(2) 2 x 6	
WW8	2 x 8	16" OC	(1) 2 x 8 PT	(2) 2 x 8	

WOOD WALL SCHEDULE NOTES UNO ON PLAN:

1. SEE ARCH DRAWINGS FOR INTERIOR AND EXTERIOR SHEATHING UNLESS SPECIFIED IN SHEAR WALL SCHEDULE ON SHEET S303 .
2. SEE WOOD FRAMING SPECIES AND GRADE SCHEDULE ON SHEET S100FOR ADDTIONAL INFORMATION.
3. SEE DETAIL 2/S301 FOR TYPICAL WALL INTERSECTION DETAILS.
4. SEE DETAIL 3/S301 FOR BUILT-UP COLUMN NAILING.
5. SEE DETAIL 1/S301 FOR TYPICAL SOLE PLATE ANCHORAGE ON PLANS, SCHEDULES AND DETAILS.
6. SEE WOOD SHEAR WALL SCHEDULE FOR WALLS THAT REQUIRE BLOCKING.
7. WHERE WALL STUDS ARE SPACED AT 24" OC, FLOOR AND ROOF TRUSSES MUST BEAR DIRECTLY ABOVE STUDS BELOW TOP PLATE. ADD ADDITIONAL STUDS IF REQUIREMENT IS NOT MET.
8. SEE ARCH DRAWINGS FOR ALL NON-BEARING AND PARTITION WALL FRAMING NOT SHOWN ON STRUCTURAL DRAWINGS.
9. SEE DETAIL 8/S301 FOR TYPICAL WOOD WALL FRAMING.

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PRINTED NAME: JOE A NICHOLSON

DATE: 09/04/2026 LICENSE #: 44104

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PROJECT NO.:	00526011

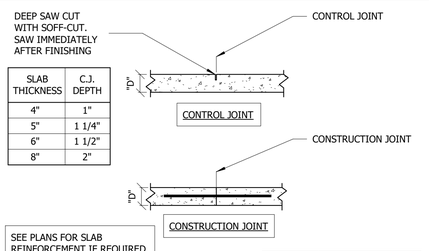
NO.	DATE	DESCRIPTION

ROOF FRAMING PLAN

DRAWING NO.

S210

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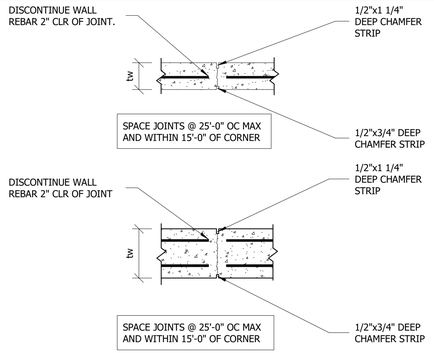
SLAB THICKNESS	C.J. DEPTH
4"	1"
5"	1 1/4"
6"	1 1/2"
8"	2"

SEE PLANS FOR SLAB REINFORCEMENT IF REQUIRED

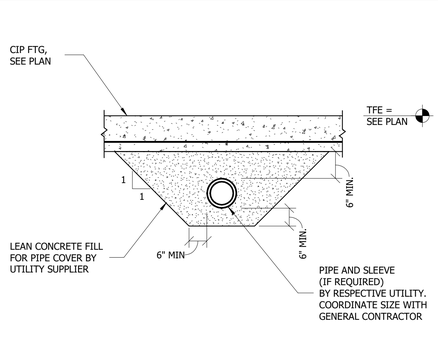
SMOOTH DOWELS NOTES:
1. CENTER DOWELS IN SLAB THICKNESS
2. SEE SMOOTH DOWEL TABLE FOR SIZE, LENGTH AND SPACING REQUIREMENTS
3. ALL DOWELS SHALL BE SAW CUT NOT SHEARED AND CENTERED IN SLAB THICKNESS

SLAB THICKNESS	SMOOTH DOWEL SIZE	LENGTH	SPC'G
4"	1/2"Ø	2'-0"	16" OC
5"	3/4"Ø	2'-0"	12" OC
6"	3/4"Ø	2'-0"	12" OC
8"	1"Ø	2'-0"	12" OC

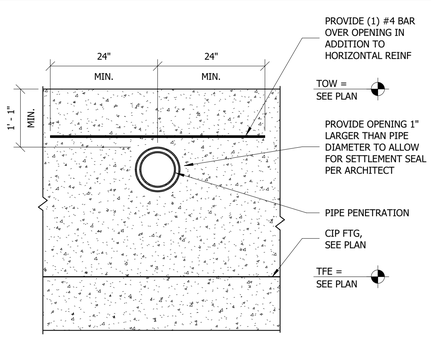
1 CONTROL JOINT/CONSTRUCTION JOINT
NO SCALE



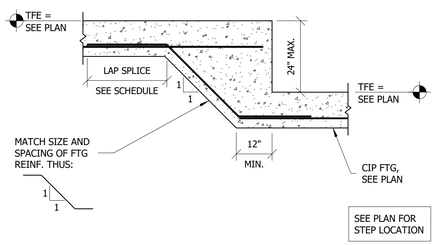
2 CIP WALL CONTROL JOINT
NO SCALE



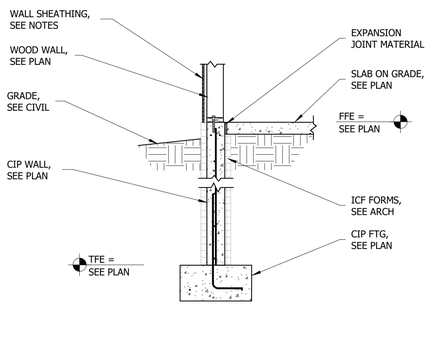
3 CONCRETE COVER FOR UTILITY PIPE
NO SCALE



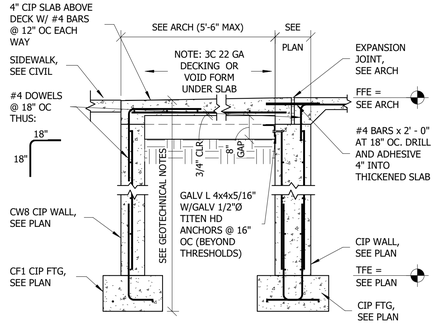
4 SECTION @ PIPE PENETRATION
NO SCALE



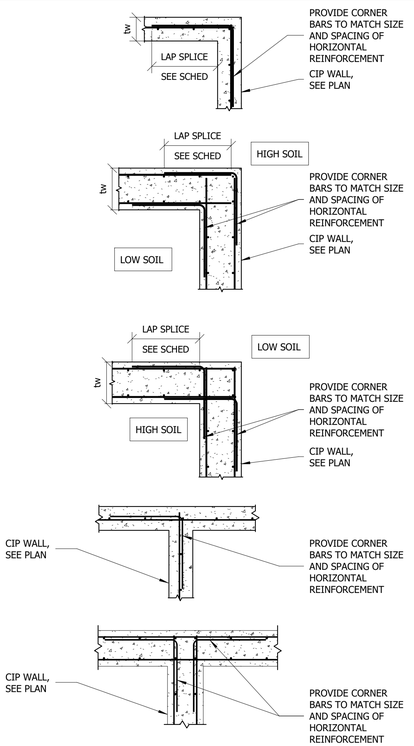
5 TYPICAL STEPPED FTG
NO SCALE



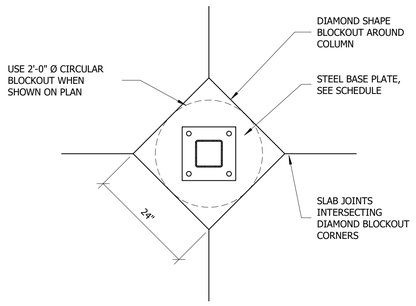
6 CIP FOUNDATION WOOD WALL (ZIP)
1/2" = 1'-0"



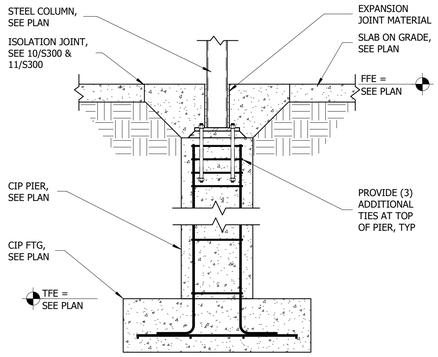
7 CIP STOOP DETAIL
NO SCALE



9 CIP WALL CORNER REINFORCEMENT
NO SCALE



10 ISOLATION JOINT INTERIOR
3/4" = 1'-0"



11 CIP PIER W/ STEEL COLUMN
3/4" = 1'-0"

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FOUNDATION DETAILS - CIP

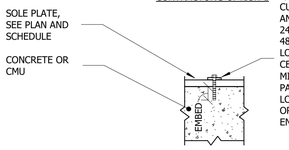
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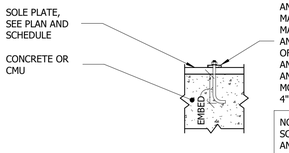
CONTRACTOR'S OPTION 1

1/2"Ø SCREW ANCHOR W/ STD CUT WASHERS (MIN 3 GAx3"x3") AND 6" EMBEDMENT. SPACE @ 24" OC MAX AT EXT WALLS AND 48" OC MAX AT INT WALLS. LOCATE ANCHOR WITHIN CENTER THIRD OF SOLE PLATE. MIN (2) ANCHORS PER WALL PANEL AND AN ANCHOR LOCATED NOT MORE THAN 12" OR LESS THAN 4" FROM EACH END OF PANEL.



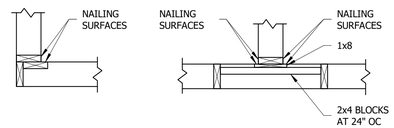
CONTRACTOR'S OPTION 2

1/2"Ø 'J' BOLT ANCHOR W/ STD CUT WASHERS (MIN 3 GAx3"x3") AND 7" EMBED. SPACE AT 32" OC MAX AT EXT WALLS AND 48" OC MAX AT INT WALLS. LOCATE ANCHOR WITHIN CENTER THIRD OF SOLE PLATE. MIN (2) ANCHORS PER WALL PANEL AND AN ANCHOR LOCATED NOT MORE THAN 12" OR LESS THAN 4" FROM EACH END OF PANEL.

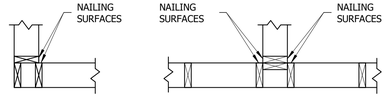


NOTE: SEE SHEAR WALL SCHEDULE FOR SOLE PLATE ANCHORAGE AT SHEAR WALL LOCATIONS

1 TYPICAL SOLE PLATE ANCHORAGE
NO SCALE

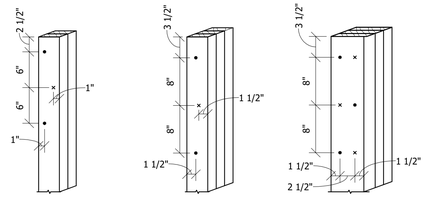


ALTERNATE WALL INTERSECTION DETAILS



PRIMARY WALL INTERSECTION DETAILS

2 TYPICAL WALL INTERSECTIONS
NO SCALE



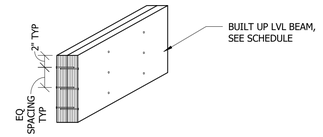
TWO 2x4 LAMINATIONS:
ONE ROW OF STAGGERED 10d COMMON WIRE NAILS (0.148"Ø x 3" LONG)

THREE 2x4 LAMINATIONS:
ONE ROW OF STAGGERED 30d COMMON WIRE NAILS (0.207"Ø x 4 1/2" LONG)

THREE 2x6 LAMINATIONS:
TWO ROW OF 30d COMMON WIRE NAILS (0.207"Ø x 4 1/2" LONG)

'X' = NAILED FROM BACKSIDE OF COLUMN

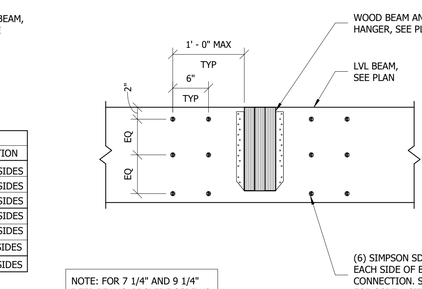
3 BUILT-UP COLUMN NAILING
NO SCALE



PLY WIDTH	NUMBER OF PLIES	FASTENER				
		TYPE[1]	MIN LENGTH	# OF ROWS	SPACING	LOCATION
1 3/4"	2	10d[2]	3"	4	12" OC	BOTH SIDES
		16d[2]	3 1/2"	3	12" OC	BOTH SIDES
		SCREWS[3]	3 3/8"	2	16" OC	BOTH SIDES
	3	10d[2]	3"	4	6" OC	BOTH SIDES
		16d[2]	3 1/2"	5	12" OC	BOTH SIDES
		SCREWS[3]	5"	3	16" OC	BOTH SIDES
	4	SCREWS[3]	6 3/4"	3	16" OC	BOTH SIDES

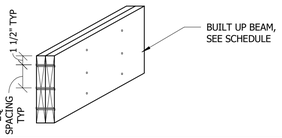
NOTES:
1. WHERE FRAMING IS HANGERED TO BEAM, USE SCREW FASTENER OPTION ONLY. CONTRACTOR'S OPTION ON FASTENER AT ALL OTHER CONDITIONS.
2. NAIL DIAMETER IS TO MATCH COMMON NAIL OF SIZE NOTED IN TABLE.
3. SCREWS ARE TO BE SIMPSON SDW SCREWS OR APPROVED EQUAL.

4 BUILT UP LVL BEAM FASTENING SCHEDULE
NO SCALE



NOTE: FOR 7 1/4" AND 9 1/4" DEEP BEAMS, PROVIDE SCREWS IN STAGGERED ROWS EACH DIRECTION, SEE 6/S301

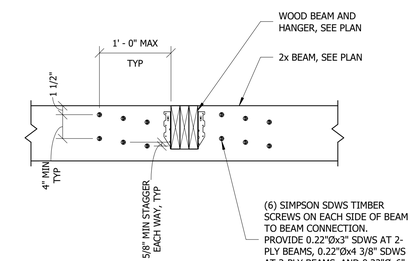
5 BUILT UP LVL BEAM TO BEAM
NO SCALE



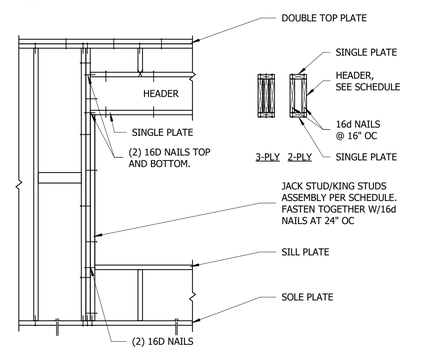
PLY WIDTH	NUMBER OF PLIES	FASTENER				
		TYPE[1]	MIN LENGTH	# OF ROWS	SPACING	LOCATION
1 1/2"	2	10d[2]	3"	4	12" OC	BOTH SIDES
		16d[2]	3"	3	8" OC	BOTH SIDES
		SCREWS[3]	3"	2	16" OC	BOTH SIDES
	3	10d[2]	3"	4	6" OC	BOTH SIDES
		16d[2]	3 1/2"	5	8" OC	BOTH SIDES
		SCREWS[3]	4 3/8"	3	16" OC	BOTH SIDES
	4	SCREWS[3]	6"	2	16" OC	BOTH SIDES

NOTES:
1. CONTRACTOR'S OPTION ON FASTENER.
2. NAIL DIAMETER IS TO MATCH COMMON NAIL OF SIZE NOTED IN TABLE.
3. SCREWS ARE TO BE SIMPSON SDW SCREWS OR APPROVED EQUAL.

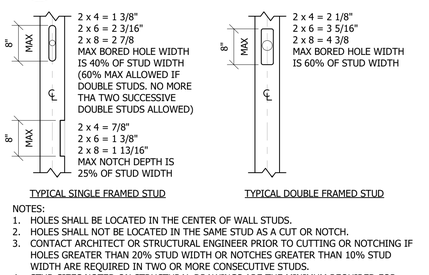
6 BUILT UP WOOD BEAM FASTENING
NO SCALE



7 BUILT UP WOOD BEAM TO BEAM
NO SCALE

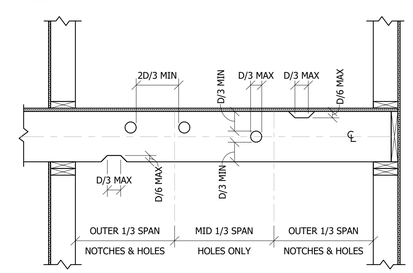


8 TYPICAL SINGLE STORY WOOD FRAMED WALL
NO SCALE



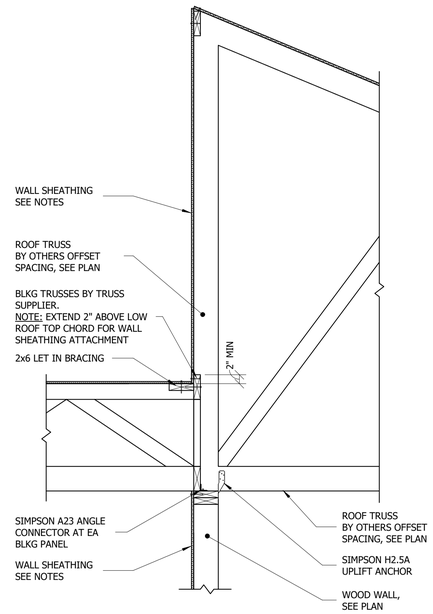
NOTES:
1. HOLES SHALL BE LOCATED IN THE CENTER OF WALL STUDS.
2. HOLES SHALL NOT BE LOCATED IN THE SAME STUD AS A CUT OR NOTCH.
3. CONTACT ARCHITECT OR STRUCTURAL ENGINEER PRIOR TO CUTTING OR NOTCHING IF HOLES GREATER THAN 20% STUD WIDTH OR NOTCHES GREATER THAN 10% STUD WIDTH ARE REQUIRED IN TWO OR MORE CONSECUTIVE STUDS.
4. STUD SIZES NOTED ON STRUCTURAL DRAWINGS ARE THE MINIMUM REQUIRED FOR STRUCTURE. COORDINATE WITH MEP TO IDENTIFY STRUCTURAL WALL LOCATIONS WHERE STUD PENETRATIONS EXCEED THE ALLOWABLE HOLE OR NOTCH SIZES SHOWN. INCREASE STUD SIZE TO MEET ALLOWABLE HOLE OR NOTCH REQUIREMENTS. COORDINATE REVISED STUD SIZES WITH ARCHITECT AND STRUCTURAL ENGINEER.
5. PROVIDE GAP ABOVE CONDUIT PIPE FOR DIFFERENTIAL MOVEMENT. SEE GENERAL STRUCTURAL NOTES FOR ANTICIPATED WOOD SHRINKAGE. COORDINATE WITH MEP FOR ANTICIPATE MOVEMENT OF CONDUIT/PIPE AND REQUIRED GAP BELOW.

9 HOLES AND NOTCHES IN WOOD STUDS
NO SCALE

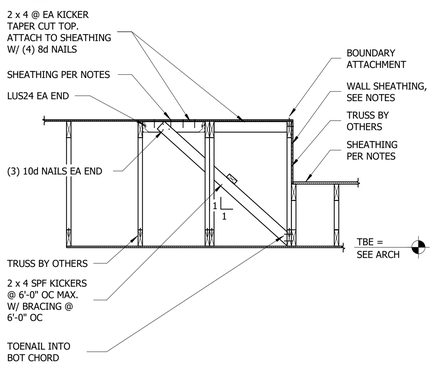


NOTES:
1. HOLES CAN BE LOCATED IN ALL SPANS OF JOIST.
2. NOTCHES SHALL NOT BE LOCATED IN MID 1/3 SPAN OF JOIST.
3. NOTCHES SHALL HAVE ANGLED CUTS, NO SQUARE CORNERS.
4. DEPTH OF JOISTS MAY VARY, SEE FRAMING PLAN.
5. CONTACT ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO CUTTING OR NOTCHING JOISTS TO VERIFY SIZE AND LOCATION.

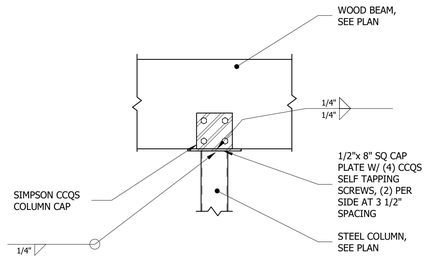
10 HOLES AND NOTCHES IN WOOD JOISTS
NO SCALE



11 ROOF FLAT TRUSS BEARING AT GABLE
NO SCALE



12 FLAT TRUSS LAP AT WOOD WALL
NO SCALE



13 WOOD BEAM BRG AT STEEL COLUMN
NO SCALE

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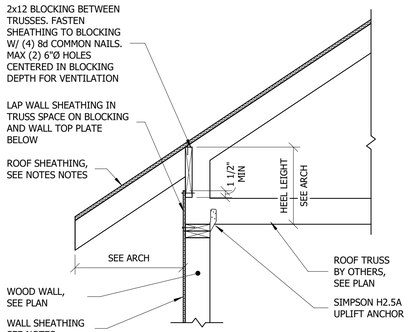
NO.	DATE	DESCRIPTION

FRAMING DETAILS - WOOD

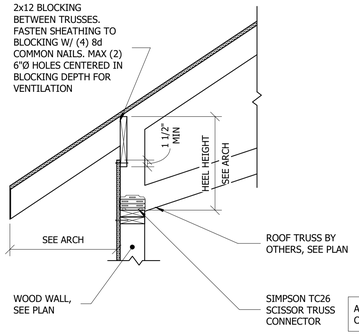
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S301

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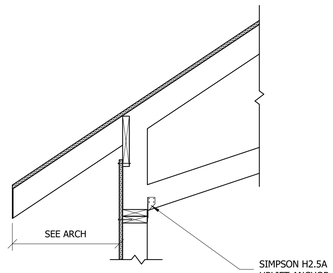


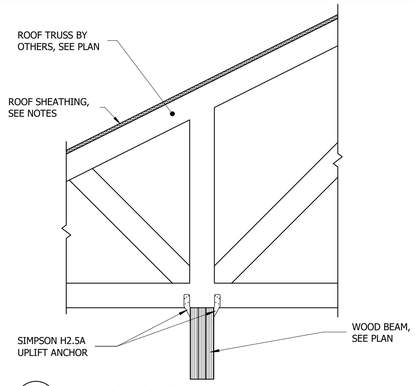
1 TRUSS BEARING WITH BLOCKING
3/4" = 1'-0"



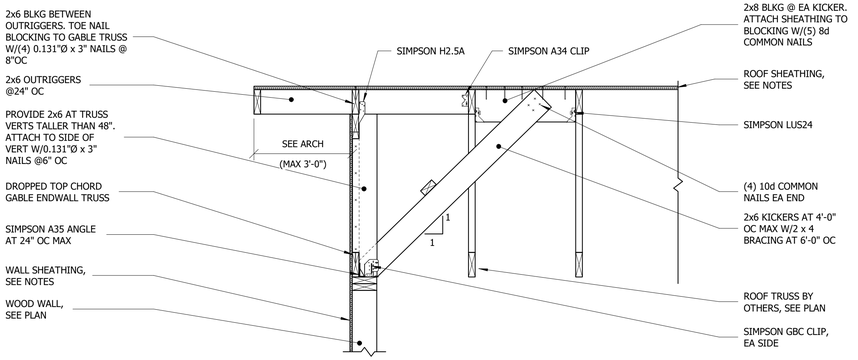
ALTERNATE BETWEEN THESE CONNECTIONS EVERY TRUSS

2 SCISSOR TRUSS BEARING ENERGY HEEL
3/4" = 1'-0"

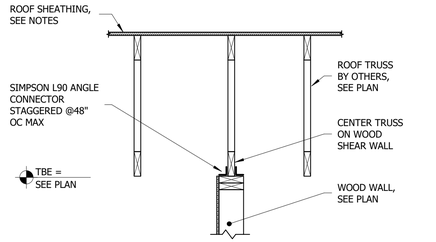




3 TRUSS BEARING
3/4" = 1'-0"

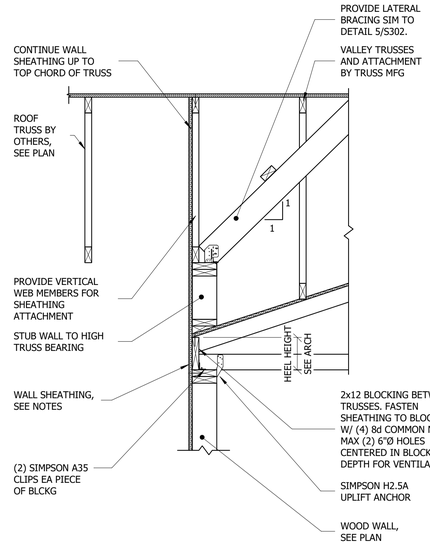


4 DETAIL AT OUTRIGGERS (GBC)
3/4" = 1'-0"

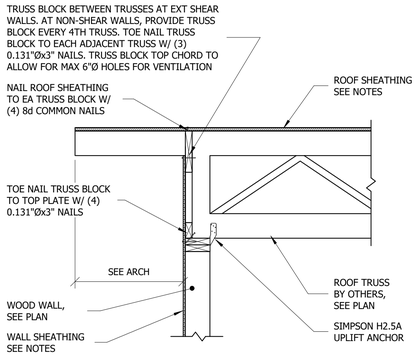


TRUSS SUPPLIER TO DESIGN TRUSSES ABOVE SHEAR WALLS FOR 8K SERVICE LEVEL WIND AXIAL LOAD TO BE TRANSFERRED UNIFORMLY FROM TOP CHORD TO BOTTOM CHORD THROUGH TRUSS WEBS. SEE DETAILS FOR ADDITIONAL INFORMATION. PROVIDE BRIDGING AS REQUIRED TO MEET THIS CRITERIA.

5 ROOF TRUSS PARALLEL TO SHEAR WALL
3/4" = 1'-0"

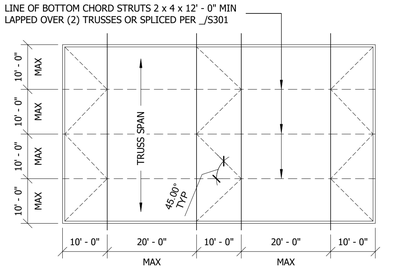


9 TRUSS BEARING
3/4" = 1'-0"



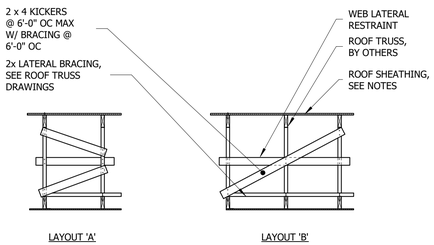
6 FLAT TRUSS BEARING WITH BLOCKING
3/4" = 1'-0"

GENERAL TRUSS BRACING NOTES:
ALL BRACING TO BE MINIMUM 2 x 4 AND NAILED TO EACH TRUSS IT CROSSES WITH A MINIMUM OF (2) 0.131"Ø x 3" NAILS.



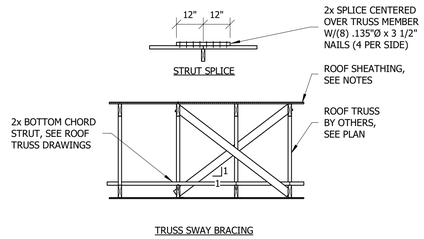
1. WHERE TRUSS FRAMING CHANGES DIRECTION, EXTEND STRUTS TO BOTTOM CHORD OF PERPENDICULAR TRUSSES. THESE TRUSSES ARE CONSIDERED A BRACING LOCATION.
2. BOTTOM CHORD BRACING MAY BE OMITTED FROM PERMANENT TRUSS BRACING WHERE CEILING IS ATTACHED DIRECTLY TO BOTTOM CHORD OF TRUSSES.

7 BTM CHORD CLB
NO SCALE



1. DIAGONALS REQUIRED AT WEB MEMBER LATERAL RESISTRAINT. LOCATIONS BY TRUSS SUPPLIER, SEE TRUSS DESIGN DRAWINGS.
2. LOCATE DIAGONAL WEB MEMBER PLANE BRACING AT ENDS OF BUILDING AND AT 20' - 0" CLEAR SPACING MAX.
3. INSTALL DIAGONAL WEB MEMBER PLANE BRACING AT AN ANGLE LESS THAN OR EQUAL TO 45° AND POSITION SO THAT IT CROSSES THE WEB IN CLOSE PROXIMITY TO THE WEB MEMBER LATERAL RESTRAINT. EITHER LAYOUT 'A' OR 'B' IS ACCEPTABLE.
4. FASTEN DIAGONALS AS CLOSE AS POSSIBLE TO TOP AND BOTTOM CORDS AND EACH WEB IT CROSSES.

8 CLB ROOF TRUSS SECTION
NO SCALE



1. SWAY BRACING AT TRUSS MID-SPAN, LOCATE AT ENDS OF BUILDING AND AT 40' - 0" OC MAX ALONG RIDGE. PROVIDE 2x MATERIAL AT SPLICE LOCATION AS NOTED IN DETAIL ABOVE.
2. SWAY BRACING TO BE PLACED AT APPROXIMATE 45° ANGLES.
3. PROVIDE MID-SPAN VERTICAL BRACE FOR 2 x 4 SWAY BRACE EXCEEDING 10' - 0"
4. SWAY BRACING MAY BE OMITTED IF WEB MEMBER PLANE BRACING IS PROVIDED AT RIDGE OR BOTH SIDES OF RIDGE

DESIGN TREE
engineering + land surveying
Corporate Office:
120 17th Ave W Alexandria, MN 56308
888-216-1916

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PRINTED NAME: JOE A NICHOLSON

DATE: 09/04/2026 LICENSE #: 44104

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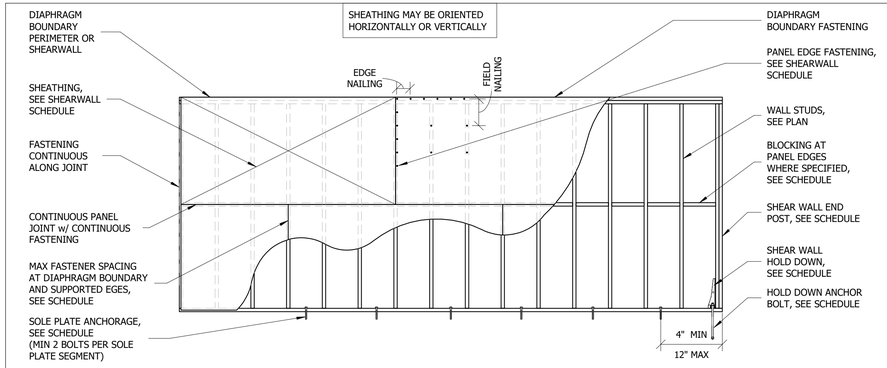
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FRAMING DETAILS - WOOD

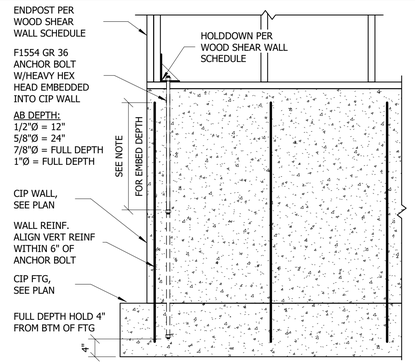
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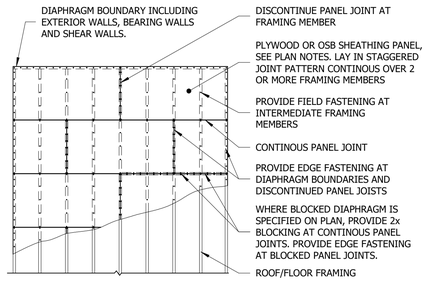
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1 SEGMENTED SHEAR WALL
NO SCALE

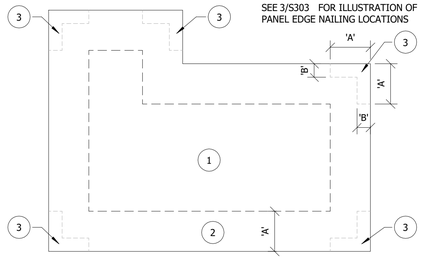


2 END OF WALL HOLDDOWN ANCHOR
NO SCALE



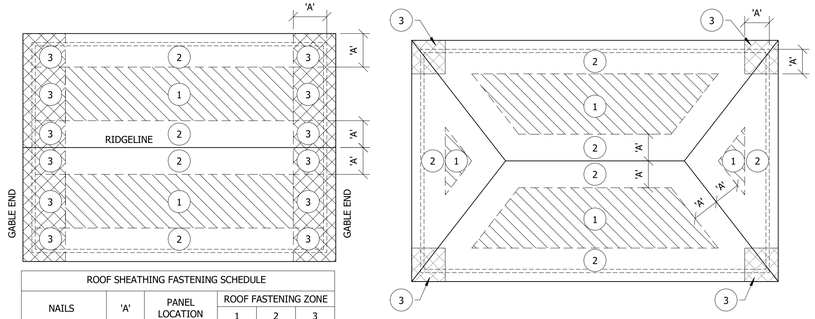
FLOOR/ROOF SHEATHING FASTENING SCHEDULE		
PANEL LOCATION	TYPICAL FLOOR	TYPICAL ROOF
EDGE	0.131"x2 1/2" NAILS @ 6"OC	SEE 4/S303
FIELD	0.131"x2 1/2" NAILS @ 12"OC	

3 FLOOR/ROOF SHEATHING FASTENING DIAGRAM
NO SCALE



ROOF SHEATHING FASTENING SCHEDULE						
NAILS	'A'	'B'	PANEL LOCATION	ROOF FASTENING ZONE		
				1	2	3
8d COMMON (0.131"Øx2 1/2")	10'-6"	3'-6"	PANEL EDGES	6"OC	6"OC	4"OC
			PANEL FIELD	12"OC	6"OC	6"OC

4 FLAT ROOF SHEATHING FASTENING
NO SCALE



ROOF SHEATHING FASTENING SCHEDULE					
NAILS	'A'	PANEL LOCATION	ROOF FASTENING ZONE		
			1	2	3
8d COMMON (0.131"Øx2 1/2")	6'-4"	PANEL EDGES	6"OC	6"OC	4"OC
		PANEL FIELD	12"OC	6"OC	6"OC

5 PITCHED ROOF SHEATHING FASTENING
NO SCALE

WOOD SHEAR WALL SCHEDULE

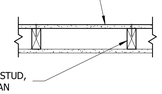
MARK	LEVEL	ANCHOR POSTS & ANCHORAGE					SHEATHING				COMMENTS
		END POST SIZE	HOLD DOWN OR STRAP	FASTENERS			TYPE	FASTENING		IS WALL BLOCKED?	
				ANCHOR BOLT	STRAP NAILING (END ZONE/TOTAL)	SOLE PLATE ANCHORAGE		EDGE	FIELD		
SW1	1	3 1/2" x 3 1/2" PSL	HDUE3-SDS3.5 HD	5/8"	N /A	1/2" AT 48" OC	'Z1'	0.131Ø NAILS @ 4" OC	0.131Ø NAILS @ 12" OC	YES	
SW2	1	3 1/2" x 3 1/2" PSL	NONE		N /A	1/2" AT 48" OC	'Z1'	0.131Ø NAILS @ 4" OC	0.131Ø NAILS @ 12" OC	YES	
SW3	1	(3) 2X	HDUE9-SDS3.5 HD	7/8"	N /A	1/2 AT 24" OC	'S4'	8d NAILS @ 4" OC	8d NAILS @ 12" OC	YES	
SW4	1	(2) 2X	HDUE3-SDS3.5 HD	5/8"	N /A	1/2 AT 24" OC	'S3'	8d NAILS @ 8" OC	8d NAILS @ 12" OC	YES	
SW5	1	(2) 2X	HDUE3-SDS3.5 HD	5/8"	N /A	1/2" AT 48" OC	'Z1'	0.131Ø NAILS @ 3" OC	0.131Ø NAILS @ 12" OC	YES	

WOOD SHEAR WALL SCHEDULE NOTES:

1. 'SW' IN SCHEDULE DENOTES SEGMENTED SHEAR WALL.
2. 'PSW' IN SCHEDULE DENOTES PERFORATED SHEAR WALL.
3. SHEAR WALL ANCHOR BOLTS SHALL BE F1554-Gr36 THREADED ROD IF REQUIRED, UNO.
4. WALL SHEATHING FASTENING SHALL MEET THE FOLLOWING REQUIREMENTS:
   - A. SINGLE LAYER GYPSUM BOARD SHEATHING:
     - a. NO. 6 TYPE S OR W DRYWALL SCREWS, 1 1/4" LONG MIN.
   - B. TWO LAYER GYPSUM BOARD SHEATHING:
     - a. BASE PLY:
       - 6d COOLER NAILS (0.092" DIA. x 1 7/8" LONG, 1/4" HEAD)
       - WALLBOARD NAIL (0.0915" DIA. x 1 7/8" LONG, 19/64" HEAD)
       - 0.120" NAIL x 1 3/4" LONG WITH MIN. 3/8" HEAD
     - b. FACE PLY:
       - 8d COOLER NAILS (0.113" DIA. x 2 3/8" LONG, 0.281" HEAD)
       - WALLBOARD NAIL (0.113" DIA. x 2 3/8" LONG, 3/8" HEAD)
       - 0.120" NAIL x 2 3/8" LONG WITH MIN. 3/8" HEAD
   - C. PLYWOOD/OSB SHEATHING AS SPECIFIED IN TABLE ABOVE.
5. IF BLOCKING IS REQUIRED, PROVIDE 2x BLOCKING AT ALL PANEL EDGES.
6. HOLD DOWNS OR STRAPS (IF REQUIRED) ARE LOCATED AT THE ANCHOR POST LOCATIONS AT EACH END OF SHEAR WALL.
7. IN CASE OF DOUBLE WALL FRAMING, SOLE PLATE AND HOLD ANCHORAGE REQUIREMENTS ARE PER WALL.
8. AT VENT OPENINGS WITHIN SHEAR WALLS LESS THAN 8" IN DIAMETER, PROVIDE SOLID BLOCKING AROUND ALL SIDES OF VENT. FASTEN SHEATHING TO BLOCKING USING EDGE NAILING PATTERN SHOWN IN SHEAR WALL SCHEDULE. FOR OPENINGS GREATER THAN 8" IN DIAMETER, NOTIFY ENGINEER OF CONDITION IN WRITING FOR FUTHER INSTRUCTION PRIOR TO PROCEEDING WITH WORK.
9. SHEAR WALL SHEATHING ASSEMBLY TYPE NOTES:
   - A. NOT ALL CONDITIONS PRESENTED BELOW WILL BE USED. REFER TO SHEAR WALL SCHEDULE FOR SPECIFIC TYPES REQUIRED.
   - B. SHEAR WALL SHEATHING AND FASTENING TO TAKE PRECEDENCE OVER ARCHITECTURAL REQUIREMENTS.
   - C. CONDITIONS PRESENTED ARE NOT INTENDED TO CAPTURE ALL POSSIBLE VARIATIONS OF FINISH MATERIALS AND LAYERS OF EXCESS GYP. BOARD USED FOR FIRE RATING. LAYERS IN EXCESS OF THAT SHOWN IN SCHEDULE ARE NOT TO BE USED FOR SHEAR WALL STRENGTH AND CAN USE NOMINAL FASTENING.

SHEAR WALL SHEATHING ASSEMBLY TYPES

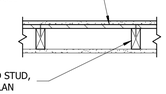
DESIGNATED SHEAR WALL SHEATHING:
(1) LAYERS OF 5/8" GYP. BOARD ONE SIDE, FASTEN PER SCHEDULE



NOTES:
1. SEE ARCH FOR WALL ASSEMBLY AND ATTACH PER GENERAL NOTES

S3 TYPE 'S3'

DESIGNATED SHEAR WALL SHEATHING:
(1) LAYER OF 15/32" OSB ONE SIDE, FASTEN PER SCHEDULE



NOTES:
1. SEE ARCH FOR WALL ASSEMBLY AND ATTACH PER GENERAL NOTES

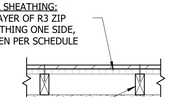
S4 TYPE 'S4'

WOOD SHEAR WALL SCHEDULE NOTES:

1. ZIP SHEATHING SHEAR WALL NOTES, SEE ARCH FOR WALL TYPES.
2. WALL SHEATHING FASTENING SHALL MEET THE FOLLOWING REQUIREMENTS:
   - A. SINGLE LAYER R3 ZIP SHEATHING:
     - a. 0.131"Ø SHANK NAILS, MIN 1 1/2" PENETRATION INTO WALL FRAMING.
3. HOLD DOWNS OR STRAPS (IF REQUIRED) ARE LOCATED AT THE ANCHOR POST LOCATIONS AT EACH END OF SHEAR WALL.
4. AT VENT OPENINGS WITHIN SHEAR WALLS LESS THAN 8" IN DIAMETER, PROVIDE SOLID BLOCKING AROUND ALL SIDES OF VENT. FASTEN SHEATHING TO BLOCKING USING EDGE NAILING PATTERN SHOWN IN SHEAR WALL SCHEDULE. FOR OPENINGS GREATER THAN 8" IN DIAMETER, NOTIFY ENGINEER OF CONDITION IN WRITING FOR FUTHER INSTRUCTION PRIOR TO PROCEEDING WITH WORK.
5. SHEAR WALL SHEATHING ASSEMBLY TYPE NOTES:
   - A. NOT ALL CONDITIONS PRESENTED BELOW WILL BE USED. REFER TO SHEAR WALL SCHEDULE FOR SPECIFIC TYPES REQUIRED.
   - B. SHEAR WALL SHEATHING AND FASTENING TO TAKE PRECEDENCE OVER ARCHITECTURAL REQUIREMENTS.
   - C. CONDITIONS PRESENTED ARE NOT INTENDED TO CAPTURE ALL POSSIBLE VARIATIONS OF FINISH MATERIALS AND LAYERS OF EXCESS GYP. BOARD USED FOR FIRE RATING. LAYERS IN EXCESS OF THAT SHOWN IN SCHEDULE ARE NOT TO BE USED FOR SHEAR WALL STRENGTH AND CAN USE NOMINAL FASTENING.

SHEAR WALL ZIP SHEATHING ASSEMBLY

DESIGNATED SHEAR WALL SHEATHING:
(1) LAYER OF R3 ZIP SHEATHING ONE SIDE, FASTEN PER SCHEDULE



NOTES:
1. SEE ARCH FOR WALL ASSEMBLY AND ATTACH PER GENERAL NOTES

Z1 TYPE 'Z1'

DESIGN TREE
engineering + land surveying
Corporate Office:
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888-216-1916

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DATE: 09/04/2026 LICENSE #: 44104

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PROJECT NO.:	00526011

NO.	DATE	DESCRIPTION

SHEAR WALL AND SHEATHING DETAILS

DRAWING NO.

S303

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PLUMBING SYMBOLS & ABBREVIATIONS LEGEND

PLUMBING ABBREVIATIONS	
ATC	AUTOMATIC TEMPERATURE CONTROLS
BAS	BUILDING AUTOMATION SYSTEM
CONT.	CONTINUATION
CO	CLEAN OUT
CW	COLD WATER
D	DRAIN
EC	ELECTRICAL CONTRACTOR
HW	HOT WATER
IMT	ICE MACHINE TRIM
MC	MECHANICAL CONTRACTOR
MER	MECHANICAL EQUIPMENT ROOM
NOM	NOMINAL
RHW	RECIRCULATING HOT WATER
SAN	SANITARY
TMV	THERMOSTATIC MIXING VALVE
V	VENT PIPE
VTR	VENT THROUGH ROOF
W	WASTE
WCO	WALL CLEAN OUT
WMT	WASHING MACHINE TRIM
XST	EXISTING

EQUIPMENT TAGS	
DF-1	DRINKING FOUNTAIN
EW-1	EYE WASH
EWC-1	ELECTRIC WATER COOLER
FD-1	FLOOR DRAIN
HB-1	HOSE BIBB
L-1	LAVATORY
LT-1	LAUNDRY TUB
MV-1	MIXING VALVE
MB-1	MOP BASIN
P-1	PUMP
RCP-1	RE-CIRCULATOR PUMP
S-1	SINK
SH-1	SHOWER
TS-1	TUB/SHOWER
U-1	URINAL
WC-1	WATER CLOSET
WH-1	WATER HEATER
WHY-1	WALL HYDRANT

PIPING SYSTEMS		
SYMBOL		DESCRIPTION
– – – –AV– – – –		ACID VENT
——— AW ———		ACID WASTE
– – – – CRV – – – –		CHEMICAL RESISTANT VENT
——— CRW ———		CHEMICAL RESISTANT WASTE
——— A ———		COMPRESSED AIR
——— D ———		CONDENSATE DRAIN
——— • ———		DOMESTIC COLD WATER
——— •• ———		DOMESTIC HOT WATER
——— ••• ———		DOMESTIC RECIRCULATING HOT WATER
——— SW ———		DOMESTIC SOFT WATER
——— T ———		DOMESTIC TEMPERED WATER
——— G ———		NATURAL GAS
——— LP ———		PROPANE
——— N ———		NITROGEN
——— N_2O ———		NITROUS OXIDE
——— OSW ———		OIL/SAND WASTE
——— OX ———		OXYGEN
——— SAN ———		SANITARY WASTE
——— ST ———		STORM DRAIN
– – – – – – – –		VENT

PIPING SYMBOLS	
SYMBOL	DESCRIPTION
	ANGLE RELIEF VALVE
	AUTOMATIC FLOW CONTROL VALVE
	BACK FLOW PREVENTER
	BALL VALVE
	BALL VALVE VENTURI
	BUTTERFLY VALVE
	CAPPED PIPE
	CHECK VALVE, FLOW DIRECTION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	EMERGENCY GAS SHUT-OFF
	FLEXIBLE PIPE CONNECTION
	FLOW MEASURING DEVICE
FS	FLOW SWITCH
	GAS PRESSURE REGULATOR
	GATE VALVE
	GLOBE VALVE
	HOSE BIBB OR WALL HYDRANT
H	HUMIDISTAT
	PIPE ANCHOR
	PIPE CONNECTION - BOTTOM
	PIPE CONNECTION - TOP
	PIPE DOWN
	PIPE GUIDE
	PIPE UP
P	PRESSURE GAUGE
	PRESSURE REDUCING VALVE
PT	PRESSURE TRANSMITTER
	PUMP
	RETURN AIR OR EXHAUST AIR INLET
	SENSOR WELL
S	SOLENOID VALVE
	STEAM TRAP
	STRAINER
	SUPPLY AIR OUTLET
	TEMPERATURE-PRESSURE TEST FITTING
T	TEMPERATURE TRANSMITTER
T	THERMOSTAT
	UNION

PIPING SYMBOLS CONTINUED	
SYMBOL	DESCRIPTION
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
	PUMP
	SENSOR WELL
S	SOLENOID VALVE
T	TEMPERATURE TRANSMITTER
T	THERMOMETER
	UNION
	CONNECT NEW TO EXISTING
1	KEY NOTE
1	DEMOLITION NOTE
1	REVISION NOTE

HVAC SYMBOLS & ABBREVIATIONS LEGEND

HVAC ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AD	ACCESS DOOR
ATC	AUTOMATIC TEMPERATURE CONTROLS
BAS	BUILDING AUTOMATION SYSTEM
CFM	CUBIC FEET PER MINUTE
CONT.	CONTINUATION
D	DRAIN
Db	DRY BULB TEMPERATURE
dB	DECIBELS
Dp	DEWPOINT TEMPERATURE
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECG	EGG CRATE GRILLE
EG	ETHYLENE GLYCOL
EWT	ENTERING WATER TEMPERATURE
EXIST.	EXISTING
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HP	HORSEPOWER
HW	HOT WATER
HX	HEAT EXCHANGER
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MC	MECHANICAL CONTRACTOR
MER	MECHANICAL EQUIPMENT ROOM
MAT	MIXED AIR TEMPERATURE
NOM.	NOMINAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PD	PRESSURE DROP
PG	PROPYLENE GLYCOL
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RA	RETURN AIR
REG	REGISTER
RD	ROOF DRAIN
SA	SUPPLY AIR
SP	STATIC PRESSURE
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
V	VENT PIPE
Wb	WET BULB
XST	EXISTING

EQUIPMENT TAGS	
AFM-1	AIRFLOW MEASURING STATION
AHU-1	AIR HANDLING UNIT
B-1	BOILER
CC-1	COOLING COIL
CH-1	CHILLER
CU-1	CONDENSING UNIT
CUH-1	CABINET UNIT HEATER
EF-1	EXHAUST FAN
ET-1	EXPANSION TANK
FD-1	FIRE DAMPER
FT-1	FIN TUBE RADIATION
FSD	FIRE SMOKE DAMPER
HC-1	HEATING COIL
HP-1	HEAT PUMP
HX-1	HEAT EXCHANGER
LVR-1	LOUVER
MAU-1	MAKEUP-AIR UNIT
MOD-1	MOTOR OPERATED DAMPER
P-1	PUMP
RAF-1	RETURN AIR FAN
RTU-1	ROOFTOP UNIT
SAF-1	SUPPLY AIR FAN
SD-1	SMOKE DAMPER
UH-1	UNIT HEATER
V-1-	VARIABLE AIR VOLUME TERMINAL UNIT

PIPING SYSTEMS		
SYMBOL		DESCRIPTION
– – –CHWR– – –		CHILLED WATER RETURN
——— CHWS ———		CHILLED WATER SUPPLY
– – – CWR – – –		CONDENSER WATER RETURN
——— CWS ———		CONDENSER WATER SUPPLY
– – – – D – – – –		CONDENSATE DRAIN
——— FG ———		FIRM NATURAL GAS
– – – FOR – – –		FUEL OIL RETURN
——— FOS ———		FUEL OIL SUPPLY
——— FOV ———		FUEL OIL VENT
– – –GCWR– – –		GLYCOL CHILLED WATER RETURN
——— GCWS ———		GLYCOL CHILLED WATER SUPPLY
– – –GHWR– – –		GLYCOL HOT WATER RETURN
——— GHWS ———		GLYCOL HOT WATER SUPPLY
– – – HPR – – –		HEAT PUMP RETURN
——— HPS ———		HEAT PUMP SUPPLY
——— HGB ———		HOT GAS BYPASS
– – – HWR – – –		HOT WATER RETURN
——— HWS ———		HOT WATER SUPPLY
——— IG ———		INTERRUPTIBLE NATURAL GAS
– – – LFR – – –		LOOP FIELD RETURN
——— LFS ———		LOOP FIELD SUPPLY
– – – STC – – –		STEAM CONDENSATE
——— STM ———		STEAM
——— G ———		NATURAL GAS
——— LP ———		PROPANE
– – – – PC – – – –		PUMPED CONDENSATE
——— RL ———		REFRIGERANT LIQUID
——— RS ———		REFRIGERANT SUCTION

PIPING SYMBOLS	
SYMBOL	DESCRIPTION
	ANGLE RELIEF VALVE
	ARROW INDICATES DIRECTION OF FLOW
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	AUTOMATIC FLOW CONTROL VALVE
	BACK FLOW PREVENTER
	BALL VALVE
	BALL VALVE VENTURI
	BUTTERFLY VALVE
	CAPPED PIPE
	CHECK VALVE, FLOW DIRECTION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	FLEXIBLE PIPE CONNECTION
	FLOW MEASURING DEVICE
FS	FLOW SWITCH
	GAS PRESSURE REGULATOR
	GATE VALVE
	GLOBE VALVE
	HOSE BIBB OR WALL HYDRANT
H	HUMIDISTAT
	PIPE ANCHOR
	PIPE CONNECTION - BOTTOM
	PIPE CONNECTION - TOP
	PIPE DOWN
	PIPE GUIDE
	PIPE UP
P	PRESSURE GAUGE
	PRESSURE REDUCING VALVE
PT	PRESSURE TRANSMITTER
	PUMP
	RETURN AIR OR EXHAUST AIR INLET
	SENSOR WELL
S	SOLENOID VALVE
	STEAM TRAP
	STRAINER
	SUPPLY AIR OUTLET
	TEMPERATURE-PRESSURE TEST FITTING
T	TEMPERATURE TRANSMITTER
T	THERMOMETER
T	THERMOSTAT
	UNION
S-1 150	AIR INLET/OUTLET REFERENCE SYMBOL WITH TYPE AND AIRFLOW SHOWN (TYPE S-1; 150 CFM). REFER TO SCHEDULE, (E=EXHAUST, R=RETURN, S=SUPPLY, T=TRANSFER, XST=EXISTING)
	CONNECT NEW TO EXISTING
1	KEY NOTE
1	DEMOLITION NOTE
1	REVISION NOTE

DUCTWORK SYSTEMS/SYMBOLS	
SYMBOL	DESCRIPTION
UP DOWN	POSITIVE PRESSURE DUCT
UP DOWN	NEGATIVE PRESSURE DUCT
POS. NEG.	DUCT UP THROUGH ROOF OR FLOOR ABOVE
18x10	RECTANGULAR DUCT, ACOUSTICALLY LINED (INSIDE DIMENSIONS INDICATED)
18x10	RECTANGULAR DUCT, FIRST DIMENSION IS SIDE SHOWN
18"Ø	ROUND DUCT, DIAMETER SHOWN
	ROUND DUCT DOWN
	ROUND DUCT UP
	SIDEWALL AIR INLET OR OUTLET
	RADIUSED ELBOW
	MITERED ELBOW
	MITERED ELBOW WITH TURNING VANES
AD	DUCT ACCESS DOOR
SLOPE ELEV	SLOPING RISE OR DROP IN DUCTWORK
	FLEXIBLE DUCT CONNECTION
	BACKDRAFT DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	FIRE DAMPER
M	MOTOR OPERATED DAMPER
	SMOKE DAMPER
	MANUAL VOLUME DAMPER
	AIRFLOW MEASURING STATION
	RADIATION DAMPER
8"Ø 8"Ø	SQUARE NECK CEILING DIFFUSER w/ HIGH EFFICIENCY TAKE OFF AND FLEXIBLE DUCT FROM MAIN WITH SIZE INDICATED
8"Ø 8"Ø	ROUND NECK CEILING DIFFUSER w/ HIGH EFFICIENCY TAKE OFF AND FLEXIBLE DUCT FROM MAIN WITH SIZE INDICATED
8"Ø 8"Ø	RETURN AIR GRILLE w/ HIGH EFFICIENCY TAKE OFF AND FLEXIBLE DUCT FROM MAIN WITH SIZE INDICATED
8x8 8x8	RETURN AIR GRILLE w/ HIGH EFFICIENCY TAKE OFF AND RIGID DUCT FROM MAIN WITH SIZE INDICATED
HC-1	DUCT MOUNTED HEATING COIL
14"Ø UGD	UNDERGROUND DUCT

WATER HEATER SCHEDULE

WATER HEATER ID	FUEL SOURCE	HEATER SIZE (MBH)	TANK CAPACITY (GAL)	RECOVERY 90° F RISE (GPH)	VOLTAGE/ PHASE	MANUFACTURER & MODEL	NOTES
WH-1	NG	199	100	288	120/1	A.O. SMITH BTH	1,2,3

1) DISCONNECT BY DIVISION 26.
2) PROVIDE RELIEF VALVE ON THE WATER HEATER.
3) PROVIDE WATTS MODEL PLT-12 EXPANSION TANK FOR WATER HEATER.

AIR INLET/OUTLET SCHEDULE

AIR INLET/OUTLET ID	TYPE	NECK SIZE (INCH)	MODULE SIZE (INCH)	NC	MOUNTING	OBD	MANUFACTURER & MODEL	NOTES
S-1	SCD	6" DIA	24"x24"	<20	LAY-IN	N	PRICE SCDA	1
S-2	SCD	8" DIA	24"x24"	<20	LAY-IN	N	PRICE SCDA	1
S-3	SCD	10" DIA	24"x24"	<20	LAY-IN	N	PRICE SCDA	1
S-4	SCD	12" DIA	24"x24"	<20	LAY-IN	N	PRICE SCDA	1
S-5	GR	6"x6"	7-3/4"x7-3/4"	<20	SURFACE	Y	PRICE 520	1
S-6	GR	8"x8"	9-3/4"x9-3/4"	<20	SURFACE	Y	PRICE 520	1
S-7	ECG	22"x22"	24"x24"	<20	LAY-IN	N	PRICE 80	1
S-8	ECG	10"x22"	12"x24"	<20	LAY-IN	N	PRICE 80	1
R-1	GR	32"x30"	33-3/4"x31-3/4"	<20	SURFACE	Y	PRICE 530L	1

1) PROVIDE STANDARD WHITE FINISH.

SCD SQUARE CONE DIFFUSER
GR GRILLE
ECG EGG CRATE GRILLE
OBD OPPOSED BLADE DAMPER

FAN SCHEDULE

FAN ID	TYPE	CFM	ESP (INCH)	HP	VOLTAGE/ PHASE	DRIVE	SONES	ECM	MANUFACTURER & MODEL	NOTES
EF-1	CEF	225	0.5	40W	120/1	DIRECT	4.5	Y	GREENHECK SP-A390-VG	3
EF-2	CEF	225	0.5	40W	120/1	DIRECT	4.5	Y	GREENHECK SP-A390-VG	3
EF-3	CEF	75	0.5	77W	120/1	DIRECT	3	N	GREENHECK SP-B110	3
EF-4	UB	3500	1.5	2	208/3	DIRECT	22	Y	GREENHECK CUE-160-VG	4
EF-5	UB	1750	1	1	208/3	DIRECT	11.5	Y	GREENHECK CUE-140-VG	4
EF-6	UB	400	1.5	1/4	208/3	DIRECT	10	N	GREENHECK CUE-099-A	1,2

1) PROVIDE GRAVITY BACKDRAFT DAMPER.
2) PROVIDE 24" HIGH PREFABRICATED INSULATED CURB, GREENHECK MODEL GPI. INSULATION TO BE MINIMUM R10 INSULATION.
3) PLUG TYPE DISCONNECT, GRAVITY BACKDRAFT DAMPER, CUSTOM COLOR WALL CAP, & WHITE ALUMINUM GRILLE.
4) PROVIDE REMOVABLE BACKDRAFT DAMPER, GREASE CUP, HEAT BAFFLE, HINGED CURB CAP, INSULATED ROOF CURB, AND CURB EXTENSION.

UB-UPBLAST
CEF-CEILING EXHAUST FAN

PUMP SCHEDULE

PUMP ID	TYPE	PURPOSE	GPM	HEAD (FT)	RPM	HP	VOLTAGE/ PHASE	VFD	MANUFACTURER & MODEL	NOTES
RCP-1	IL	HW RECIRC	2	10	-	60 W	120/1	N	ECOCIRC 20-18	1,2,3

1) SELECTIONS BASED ON BELL & GOSSETT CATALOGS.
2) DISCONNECT SWITCH BY DIVISION 26.
3) STAINLESS STEEL PUMP WITH FLANGES. RUN AT CONSTANT PRESSURE.

IL INLINE

EXHAUST HOOD SCHEDULE

HOOD ID	TYPE	OVERALL SIZE (LxW)	ACTIVE HOOD SECTION LENGTH	ACTIVE HOOD SECTION WIDTH	ACTIVE HOOD SECTION HEIGHT	EXHAUST DATA EXHAUST CFM	EXHAUST DATA ESP (INCH)	EXHAUST DATA DUCT SIZE	EXHAUST DATA QTY.	SUPPLY DATA SUPPLY CFM	SUPPLY DATA ESP (INCH)	MANUFACTURER & MODEL	NOTES
EH-1	1	198x72	186	54	24	3500	0.50	17x9	2	2790	0.01	GREENHECK GHEW	1,2,3,4,6,7
EH-2	2	117x68	105	54	24	1750	0.30	14x12	1	1400	0.01	GREENHECK GO	1,2,3,4,6
EH-3	2	32x36	32	36	24	400	0.30	6x6	1	NA	NA	GREENHECK GD1	1

1) OVERALL SIZE INCLUDES HOOD AND ALL ACCESSORY CABINETS.
2) PROVIDE FRONT SUPPLY PLENUM GREENHECK MODEL ASP.
3) PROVIDE COMPLETE w/ ANSUL R-102 CHEMICAL FIRE SUPPRESSION SYSTEM FOR ENTIRE HOOD.
4) PROVIDE STAINLESS STEEL WALL PANEL TO EXTEND 18" ON BOTH SIDES OF HOOD. PROVIDE STAINLESS STEEL PANELS FOR ADJACENT WALLS WITHIN 24" OF HOOD.
5) PROVIDE WALL MOUNTED ANSUL CABINET SEPARATE FROM EXHAUST HOOD, SEE PLANS FOR LOCATION.
6) PROVIDE WITH TEMPERATURE SENSOR IN EXHAUST NECK OF HOOD.
7) MOUNT BOTTOM OF UNIT 78" ABOVE FINISHED FLOOR.

WATER SOFTENER SCHEDULE

WATER HEATER ID	FLOW RATE (GPM)	PRESS. DROP (PSI)	RESIN TANK DIAMETER/ HEIGHT (IN)	RESIN TANK RESIN CAPACITY (CUBIC FOOT)	RESIN TANK QUANTITY	BRINE TANK DIAMETER/ HEIGHT (IN)	BRINE TANK SALT CAPACITY (LBS)	BRINE TANK QUANTITY	CAPACITY (GRAINS/REGENERATION AT 13 LBS/FT^3 RESIN)	MANUFACTURER & MODEL	NOTES
WS-1	29	7	14 X 78	3	1	24 X 50	650	1	90,000	WATER CONTROL CORP LF-90-MR	1

1) DISCONNECT BY DIVISION 26.

MAKEUP AIR UNIT SCHEDULE

UNIT ID	SUPPLY FAN SECTION CFM	ESP (INCH)	HP	DRIVE	HEATING FUEL	EAT	LAT	INPUT MBH	OUTPUT MBH	COOLING EAT (DB/WB)	COOLING LAT (DB/WB)	COOLING SENSIBLE (MBH)	COOLING TOTAL (MBH)	ELECTRICAL VOLTAGE/ PHASE	ELECTRICAL MCA	ELECTRICAL MOCP	MIN SCCR	SONES	WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
MAU-1	4950	0.75	3	DIRECT	NG	-30	70	581	534	91/75	68/68	110	127	208/3	59.6	70	2018	19.8	2700	GREENHECK DGX	1,2,3,4,5,6,7

1) PROVIDE WITH SPRING VIBRATION ISOLATORS.
2) PROVIDE FACTORY MOUNTED MOTORIZED INTAKE DAMPER.
3) PROVIDE ACCESS PANELS TO ACCESS ALL SECTIONS OF MAU.
4) PROVIDE FACTORY WIRED AND INSTALLED VFD.
5) PROVIDE INTERGRAL DISCONNECT SWITCH.
6) PROVIDE A SWITCH IN THE DRAIN PAN TO STOP THE UNIT AND PREVENT OVERFLOW.
7) PROVIDE WITH WELDED STEEL STAND.

D DIRECT DRIVE
NG NATURAL GAS

PACKAGED ROOFTOP UNIT SCHEDULE

ROOFTOP UNIT ID	DISCHARGE ORIENTATION	OA CFM	SUPPLY FAN SECTION CFM	ESP (INCH)	HP	DRIVE	VFD	EXHAUST FAN SECTION CFM	ESP (INCH)	HP	DRIVE	VFD	HEATING FUEL	INPUT MBH	OUTPUT MBH	STAGES	COOLING COIL EAT	LAT	AMB °F	EAT (DB/WB)	LAT (DB/WB)	SENSIBLE MBH	TOTAL MBH	EER	ELECTRICAL VOLTAGE/ PHASE	MCA	MOCP	MIN SCCR	FILTER TYPE	WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
RTU-1	VERTICAL	1300	5000	0.75	5	BELT	Y	3900	0.3	2	BELT	Y	NG	240	194	2	50	86	95	80/67	61/57	117	168	12	208/3	77.4	90	4520	MERV 8	2500	JCI KJ	1,2,3,4,5,6,7,8,9,10,11,12,13,14
RTU-2	VERTICAL	900	5000	0.75	5	BELT	Y	3900	0.3	2	BELT	Y	NG	240	194	2	50	86	95	79/65	59/55	117	168	12	208/3	77.4	90	6820	MERV 8	2500	JCI KJ	1,2,3,4,5,6,7,8,9,10,11,12,13,14

1) PROVIDE FIELD WIRED 115V CONVENIENCE OUTLET AND PHASE MONITORS w/ BROWN OUT PROTECTION.
2) PROVIDE UNIT MOUNTED DISCONNECT SWITCH, SINGLE POWER POINT CONNECTION FOR UNIT.
3) PROVIDE EXTERNAL ECONOMIZER WITH POWER RELIEF FAN. SHALL BE POWERED BY RTU.
4) CONTRACTOR TO PROVIDE BACKDRAFT DAMPER WITH LINKED DAMPER BLADES. FIELD MOUNTED IF REQUIRED.
5) DESIGN MAX FACE VELOCITY AT 500 FPM AND MAX OUTLET VELOCITY AT 2000 FPM.
6) PROVIDE LUGS THAT ARE RATED FOR BOTH COPPER AND ALUMINUM CONDUCTORS.
7) PROVIDE 24 INCH TALL, INSULATED ROOF CURB. PROVIDE WITH MINIMUM R10 INSULATION.
8) PROVIDE HOT GAS REHEAT WITH DISCHARGE AIR TEMPERATURE OF 70 DEGREES.
9) PROVIDE FACTORY INSTALLED APR VALVE OR MODULATING COMPRESSORS FOR COOLING CAPACITY MODULATION.
10) PROVIDE A SWITCH IN THE DRAIN PAN TO STOP THE UNIT AND PREVENT OVERFLOW.
11) PROVIDE WITH REFRIGERANT DETECTION SYSTEM AND INTEGRAL CONTROLS TO DILUTE AND DISPERSE REFRIGERANT UPON LEAK DETECTION.
12) PROVIDE WITH INTEGRAL RETURN AIR DUCT SMOKE DETECTOR WITH CONTROLS TO AUTOMATICALLY SHUT DOWN UNIT UPON SMOKE DETECTION.
13) PROVIDE WITH CO2 SENSOR AND INTEGRAL DEMAND CONTROL VENTILATION SEQUENCES.
14) PROVIDE WITH INTEGRAL TEMPERATURE CONTROLS CAPABLE OF ALL FAN OPERATION, HEATING, COOLING, AND DEMAND CONTROL FUNCTIONS.

B BELT DRIVE
D DIRECT DRIVE
E ELECTRIC
TA THROW AWAY

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GLENWOOD, MN

MECHANICAL SCHEDULES, LEGEND, AND ABBREVIATIONS

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

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

SIGNATURE:

PRINTED NAME: JEREMY MAGELKY

DATE: 10/02/2026 REGISTRATION NO.: 47307

COMMISSION NO.:
DRAWN BY: MP
CHECKED BY: JM
DATE:

DRAWING NO.

M001

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DIVISION 21/22/23 MECHANICAL SPECIFICATIONS

MECHANICAL GENERAL REQUIREMENTS

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE STATE OF WINNESOTA PLUMBING CODE, CURRENT INTERNATIONAL FUEL & GAS CODE, CURRENT MECHANICAL CODE, CURRENT INTERNATIONAL ENERGY CONSERVATION CODE, ANY LOCAL AMENDMENTS, AND CURRENT RADON MITIGATION STANDARDS.
2. CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM FINAL COMPLETION. ANY DEFECTS THAT APPEARS OR CAUSE ISSUES SHALL BE REPAIRED AT NO ADDITIONAL COST (THIS INCLUDES MATERIAL AND LABOR).
3. MECHANICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHOULD NOT BE SCALED TO OBTAIN DIMENSIONS OR SIZE. CONSULT THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND TAKE FIELD MEASUREMENTS.
4. ALL SUBMITTALS TO BE REVIEWED, APPROVED, AND STAMPED BY SUBMITTING CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER. SUBMITTALS NOT REVIEWED BY SUBMITTING CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER WILL BE RETURNED MARKED 'NOT REVIEWED'.
5. FURNISHED EQUIPMENT SHALL MEET OR EXCEED THE BASIS-OF-DESIGN UNIT IN TERMS OF CONSTRUCTION QUALITY, MATERIALS, CONTROLS, PERFORMANCE, AND ALL OTHER APPLICABLE CHARACTERISTICS. EQUIPMENT THAT MEETS THE MINIMUM PERFORMANCE REQUIREMENTS OF THE SCHEDULE BUT FAILS TO MEET THE BASIS-OF-DESIGN QUALITY AND CONSTRUCTION STANDARDS WILL NOT BE APPROVED.
6. PROVIDE A COMPLETE SYSTEM INCLUDING ALL DUCTS, FITTINGS, OFFSETS, VALVES, STOPS, TRAPS, TAILPIECES, ETC. MAKE ALL FINAL CONNECTIONS TO EQUIPMENT AND FIXTURES.
7. PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY STACKS.
8. COORDINATE INSTALLATION OF ALL PIPING, DUCTWORK, AND EQUIPMENT WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR TO MAINTAIN ALL EQUIPMENT CLEARANCES AS REQUIRED BY CODE AND MANUFACTURER RECOMMENDATIONS.
9. PROVIDE ALL CUTTING, PATCHING, AND CORE DRILLING AS REQUIRED FOR THE SYSTEM INSTALLATION. COORDINATE LOCATION OF ALL PENETRATIONS WITH ARCHITECT PRIOR TO CUTTING/DRILLING. PROVIDE SLEEVES WHERE REQUIRED. COORDINATE WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
10. PROVIDE FIRESTOPPING AT PENETRATIONS OF RATED WALLS AND FLOORS. REFER TO THE ARCHITECTS DRAWING FOR LOCATIONS OF RATED WALLS AND FLOORS.
11. ALL DOMESTIC WATER, SANITARY, AND FIRE SPRINKLER PIPING SHALL BE ROUTED IN A MANNER TO PREVENT PIPE FREEZING. IF CONTRACTOR HAS CONCERNS OR QUESTIONS, CONTACT DESIGN TEAM PRIOR TO INSTALLATION.

SECTION 21 1000 - FIRE SPRINKLER SYSTEMS

1. PROVIDE FIRE SPRINKLER SYSTEM FOR ENTIRE BUILDING. ALL WORK SHALL BE IN ACCORDANCE WITH NFPA 13.
2. DESIGN SYSTEM UNDER DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER OR NICET CERTIFIED EXPERIENCED IN DESIGN OF THIS TYPE OF WORK AND LICENSED IN THE STATE OF WORK.
3. SUBMIT HYDRAULIC CALCULATIONS, DETAILED PIPE LAYOUT, HANGERS AND SUPPORTS, SPRINKLERS, COMPONENTS, AND ACCESSORIES TO AUTHORITY HAVING JURISDICTION FOR APPROVAL. SUBMIT PROOF OF APPROVAL TO OWNER/ARCHITECT.
4. SPRINKLER HEAD TYPE:
   A. SUSPENDED AND GYPSUM AREA TYPE: CHROME FINISH RECESSED PENDANT WITH MATCHING ESCUTCHEON PLATE. GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC HAZARD.
   B. EXPOSED AREA TYPE: BRASS UPRIGHT. GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC HAZARD.
   C. SIDEWALL TYPE: CHROME FINISH RECESSED HORIZONTAL SIDEWALL WITH MATCHING ESCUTCHEON PLATE. GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC HAZARD.
   D. COMBUSTIBLE CONCEALED JOIST AND ATTIC SPACE TYPE: BRASS RATED FOR USE IN TRUSS/JOIST SPACE. GLASS BULB TYPE TEMPERATURE RATED FOR SPECIFIC HAZARD.
5. PROVIDE CHECK TYPE WET PIPE SPRINKLER ALARM VALVE WITH AUTOMATICALLY ACTUATE WATER MOTOR ALARM AND ELECTRIC ALARM WITH PRESSURE RETARD CHAMBER AND VARIABLE PRESSURE TRIM WITH TEST AND DRAIN VALVE.
6. PROVIDE CHECK TYPE DRY PIPE SPRINKLER ALARM VALVE WITH AUTOMATICALLY ACTUATE WATER MOTOR ALARM AND ELECTRIC ALARM WITH ACCELERATOR AND TEST AND DRAIN VALVE. PROVIDE WITH AIR COMPRESSOR. CONTRACTOR TO CONFIRM AIR COMPRESSOR ELECTRICAL REQUIREMENTS WITH ELECTRICIAN PRIOR TO ORDERING.
7. PROVIDE TWO WAY SIAMESE FIRE DEPARTMENT CONNECTION. COORDINATE HOSE CONNECTION TYPE WITH LOCAL FIRE DEPARTMENT.
8. ALL PIPING SHALL BE STEEL SCHEDULE 7,10,30,40. BRANCH PIPING 3" AND SMALLER CAN BE THREADABLE THINWALL GALVANIZED PIPE. FITTING SHALL BE STEEL BUTTWELDED, CAST IRON FLANGED OR THREADED OR MECHANICAL GROOVED COUPLINGS. ALL PIPING FOR DRY SPRINKLER SYSTEM MUST BE GALVANIZED STEEL PIPE.
9. PROVIDE STAINLESS STEEL DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH TWO OS&Y GATE VALVES IN ACCORDANCE WITH LOCAL CODE OFFICIAL.
10. PROVIDE DRAIN VALVES AT LOW POINTS OF PIPING AND APPARATUS.
11. INSTALL NAIL PLATES ON ALL WOOD MEMBERS WHEN THE PIPE IS WITHIN PENETRATION DISTANCE OF NAILS AND SCREWS.
12. HYDROSTATICALLY TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 13 REQUIREMENTS.

SECTION 22 1000 - PLUMBING

1. DRAIN, WASTE, AND VENT PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS.
2. WATER PIPING (BELOW GRADE) SHALL BE TYPE K HARD DRAWN COPPER TUBING WITH NO JOINTS BELOW THE FLOOR OR DUCTILE IRON PIPE.
3. WATER PIPING (ABOVE GRADE) SHALL BE TYPE L COPPER WITH CAST COPPER ALLOY OR WROUGHT COPPER AND BRONZE FITTINGS AND SN95 SOLDERED JOINTS, OR VIEGA PROPRESS TYPE W COPPER IS APPROVED ON 2" AND LARGER PIPES. LABEL PIPING WITH STENCIL AND PAINT.
4. THERMOSTATIC RECIRCULATION VALVES: LINE SIZED STAINLESS STEEL SPRING OPERATED THERMOSTATICALLY ACTUATED CONTROLLED RECIRC VALVE FOR DOMESTIC HOT WATER PIPING WITH UNIONS AND ISOLATION VALVES. THERM-OMEGA-TECH, B&G TEMP SETTER OR EQUIVALENT.
5. ALL HOT AND COLD WATER PIPING (ABOVE GRADE) SHALL BE INSULATED WITH FIBERGLASS INSULATION AND WHITE KRAFT PAPER VAPOR BARRIER JACKET.
6. ALL HOT AND COLD WATER PIPING (BELOW GRADE) SHALL BE INSULATED WITH FLEXIBLE ELASTOMERIC CELLULAR FOAM INSULATION.
7. BALL VALVES SHALL BE CLASS 150, 400 PSI CWP. NIBCO, CONBRACO, OR WILMAUKEE VALVES.
8. GAS PIPING (BELOW GRADE) SHALL BE HDPE PIPING LABELED FOR GAS SERVICE WITH FUSION WELDED SOCKET FITTINGS.
9. GAS PIPING (ABOVE GRADE) SHALL BE SCHEDULE 40 BLACK STEEL. PIPING 2" AND SMALLER CAN BE THREADED OR WELDED FITTINGS. PIPING 2-1/2" AND LARGER SHALL BE WELDED FITTINGS. PROVIDE GAS MAIN SHUT-OFF VALVE BEFORE THE FIRST BRANCH LINE. SHUT-OFF VALVE SHALL BE INSTALLED INSIDE THE BUILDING AT 5 FEET OR LESS ABOVE THE FLOOR. ALL GAS REGULATORS SHALL BE INSTALLED NO MORE THAN 5 EQUIVALENT FEET FROM EQUIPMENT CONNECTION. ALL GAS PIPING AFTER PRESSURE REGULATOR TO BE EQUIPMENT CONNECTION SIZE.
10. ALL EQUIPMENT DRAINS AND OVERFLOWS SHALL BE TYPE L COPPER WITH SOLDERED JOINTS AND 1" FIBERGLASS INSULATION OR SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS.
11. ICE MAKER BOX: PLASTIC REINFORCED ROUGH-IN BOX WITH 1/4 TURN VALVE, SLIP IN FINISHING COVER. PROVIDE FIRE-RATED BOX WHEN LOCATED IN RATED WALLS.
12. FLOOR DRAINS (FD-1): ZURN Z415B OR EQUIVALENT, CAST IRON BODY, ADJUSTABLE COLLAR WITH POLISHED NICKEL BRONZE STRAINER.
13. FLOOR SINK (FS-1): PLASTIC ODDITIES OR EQUIVALENT, ROUND PLASTIC DRAIN WITH PLASTIC HALF GRATE OVER 12" DIAMETER TOP, 5.5" DEEP SUMP AND REMOVABLE ALUMINUM DOME OR BEEHIVE STRAINER.
14. FLOOR SINK (FS-2): ZURN Z1980 OR APPROVED EQUIVALENT, CAST IRON BODY WITH BOTTOM OUTLET, 8" DIAMETER TOP WITH HALF GRATE. THE INTERIOR, TOP, AND GRATE SHALL HAVE A WHITE ACID RESISTANT PORCELAIN ENAMEL COATING. PROVIDE A REMOVABLE ALUMINUM DOME STRAINER.
15. WALL CLEANOUTS (WCO): CAST IRON BODY WITH STAINLESS STEEL COVERS.
16. FLOOR CLEANOUT (CO): ADJUSTABLE WITH CAST IRON BODY AND ROUND POLISHED NICKEL BRONZE COVER. PROVIDE HEAVY DUTY COVER IN VEHICLE TRAFFIC AREAS.
17. WALL HYDRANT (WHY-1): ZURN Z1321-C BRASS CONSTRUCTION, ANTI-SIPHON, AUTOMATIC DRAINING, NON-FREEZE WALL HYDRANT. PROVIDE INTEGRAL BACKFLOW PREVENTER AND STAINLESS STEEL FACE WITH OPERATING KEY.
18. PLUMBING FIXTURES:
   A. WATER CLOSET (WC-1): KOHLER K3979, ADA COMPLIANT, VITREOUS CHINA, 1.6 GPF, FLOOR MOUNTED, ELONGATED BOWL, CLOSE-COUPLED CLOSET COMBINATION, WITH LEVER FLUSHING VALVE. MOUNTING HEIGHT 16-1/2" FROM FINISHED FLOOR TO RIM. PROVIDE RIGHT OR LEFT TRIP LEVER TO WIDE SIDE OF THE ROOM, SEE PLAN FOR ORIENTATION. PROVIDE WHITE PLASTIC SEAT WITH OPEN FRONT AND COVER.
   B. URINAL (U-1): AMERICAN STANDARD 6590.001, ADA COMPLIANT, VITREOUS CHINA, WALL HUNG WASHOUT URINAL WITH INTEGRAL TRAP & 3/4" TOP SPUD. REFER TO ARCHITECTS PLANS FOR MOUNTING HEIGHT. PROVIDE A CAST IRON AND STEEL CARRIER FOR THE WATER CLOSET. PROVIDE SLOAN 186 ROYAL, 1.0 GPF CHROME PLATED MANUALLY OPERATED FLUSH VALVE.
   C. LAVATORY (L-1): 20-1/8" OVAL COUNTERTOP MOUNTED, VITREOUS CHINA LAVATORY WITH 4" CENTER FAUCET HOLES, KOHLER BRYANT. FAUCET IS DELTA LINEAX 1.2 GPM CENTERSET FAUCET WITH POP-UP DRAIN ASSEMBLY, MATTE BLACK, THERMOSTATIC MIXING VALVE. PROVIDE WASTE WITH PERFORATED OPEN STRAINER, PVC P-TRAP WITH CLEAN-OUT ARM WITH ESCUTCHEON AND TRUEBRO LAV GUARDS FOR WASTE AND SUPPLIES. PROVIDE BRASSCRAFT MODEL KT SERIES STOP VALVES.
   D. SINK (S-1): SINGLE COMPARTMENT TYPE 304, 18 GAUGE STAINLESS STEEL SINK, REGENCY 17"x15" WALL MOUNTED HAND SINK WITH GOOSENECK FAUCET AND WRIST BLADES. PROVIDE BASKET STRAINER & PVC P-TRAP WITH SLIP NUTS. PROVIDE FLEXIBLE TUBE SUPPLIES WITH BALL VALVE TYPE STOP VALVES.
   E. SINK (S-2): SINGLE COMPARTMENT TYPE 304, 18 GAUGE STAINLESS STEEL SINK, JUST SL-1815-A-GR. SINGLE HANDLE 8" LONG SWING SPOUT FAUCET, DELTA 100LF-WF. PROVIDE BASKET STRAINER & PVC P-TRAP WITH SLIP NUTS. PROVIDE FLEXIBLE TUBE SUPPLIES WITH BALL VALVE TYPE STOP VALVES.
   F. SINK (S-3): TRIPLE COMPARTMENT TYPE 304, 18 GAUGE STAINLESS STEEL SINK, FC-3-1620-18L. SINGLE HANDLE 12" LONG SWING SPOUT FAUCET. PROVIDE BASKET STRAINER, CHROME PLATED 17 GAGE P-TRAP WITH CLEAN-OUT ARM WITH ESCUTCHEON AND TRUEBRO LAV GUARDS FOR WASTE AND SUPPLIES. PROVIDE BRASSCRAFT MODEL KT SERIES STOP VALVES.
   G. SINK (S-4): SINGLE COMPARTMENT SINK WITH DRAIN BOARD. GSW USA MODEL SH24241L 51" SINK WITH 24" COMPARTMENT AND DRAIN BOARD. FAUCET SHALL BE WATERLOO 1.15 GPM DECK-MOUNTED PRE-RINSE WITH SINGLE BASE, 35" HEIGHT AND 44" SPRAYER. PROVIDE BASKET STRAINER & PVC P-TRAP WITH SLIP NUTS. PROVIDE FLEXIBLE TUBE SUPPLIES WITH BALL VALVE TYPE STOP VALVES.
   H. SINK (S-5): SINGLE COMPARTMENT TYPE 304, 18 GAUGE STAINLESS STEEL SINK, JUST SL-1815-A-GR. SINGLE HANDLE 8" LONG SWING SPOUT FAUCET, DELTA 100LF-WF. PROVIDE BASKET STRAINER & PVC P-TRAP WITH SLIP NUTS. PROVIDE FLEXIBLE TUBE SUPPLIES WITH BALL VALVE TYPE STOP VALVES. PROVIDE WITH SINK-MOUNTED PEDESTAL GLASS FILLER, T&S BRASS MODEL 5GF-16P.
   I. MOP BASIN (MB-1): MUSTEE 63M, 1 PIECE, WHITE, MOLDED CONSTRUCTION MOP BASIN WITH INTEGRAL CENTER DRAIN. FAUCET MODEL CHICAGO 445-897SRXKCCP CHROME PLATED, BRASS CONSTRUCTION WALL MOUNTED SERVICE FAUCET, WITH VACUUM BREAKER SPOUT, 3/4" HOSE END, PAIL HOOK, INTEGRAL STOPS, TOP REINFORCING BAR AND MOUNTING BRACKET. PROVIDE HOSE AND HOSE HOLDER, MOP HANGER, BUMPER GUARDS AND WALL GUARDS.
   J. PLUMBING FIXTURE EQUIVALENT MANUFACTURERS:
      a. WATER CLOSET & URINAL- ZURN, KOHLER, VITRA, AMERICAN STANDARD, SLOAN
      b. FLUSH VALVE - COYNE & DELANY, ZURN, SLOAN, AMERICAN STANDARD
      c. LAVATORY - ELKAY, KOLHER, ZURN, AMERICAN STANDARD, SLOAN
      d. FAUCET - AMERICAN STANDARD, CHICAGO, T&S BRASS, DELTA, ZURN, SYMMONS, KOHLER
      e. SINK - ELKAY, JUST, KOHLER, AMERICAN STANDARD, FRANKE, KINDRED
      f. SERVICE SINK- ELKAY, FIAT, ZURN, JUST, MUSTEE, PROFLO
   K. CONTRACTOR SHALL REFER TO ARCHITECTS PLANS AND ELEVATIONS FOR ALL MOUNTING LOCATIONS AND HEIGHTS OF FIXTURES. ANY DISCREPANCIES OR QUESTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION OF FIXTURES.

SECTION 23 1000 - HEATING, VENTILATING, AND AIR CONDITIONING

1. DUCTWORK SHALL BE HOT-DIPPED GALVANIZED G60 STEEL, FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCEMENT, AND SEALING FOR OPERATING PRESSURES.
2. JOINT SEALANTS: NON-HARDENING, WATER RESISTANT, WILDEW AND MOLD RESISTANT. PROVIDE HEAVY MASTIC OR LIQUID USED ALONE OR WITH TAPE, SUITABLE FOR JOINT CONFIGURATION AND COMPATIBLE WITH SUBSTRATES, AND RECOMMENDED BY MANUFACTURER FOR PRESSURE CLASS OF DUCTS. SEALANTS SHALL HAVE FLAME SPREAD OF ZERO, SMOKE DEVELOPED OF ZERO, WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
3. GREASE EXHAUST DUCTWORK SHALL BE CONSTRUCTED 20 GAUGE "ZERO CLEARANCE" STAINLESS STEEL. THE OUTER CASING SHALL BE CONSTRUCTED OF ALUMINIZED CARBON OR STAINLESS STEEL. INSULATION SHALL BE 3" CERAMIC FIBER. METAL-FAB, INC MODEL "3G" OR APPROVED EQUAL. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS AND NFPA 96. PROVIDE CLEANOUTS AS REQUIRED PER CODE. PITCH HORIZONTAL DUCT MINIMUM OF 1/4" PER FOOT.
4. DUCT INSULATION R-VALUES LISTED ARE MINIMUM VALUES. THE REQUIREMENT IS FOR INSTALLED R-VALUE ASSUMING 25% COMPRESSION OF THE INSULATION. PCF IS AN ABBREVIATION FOR POUNDS PER CUBIC FOOT.
   A. EXHAUST DUCTS WITHIN 10 FT OF EXTERIOR OPENINGS OR LOCATED IN UNCONDITIONED SPACES: 2 INCHES THICK, 1.50 PCF, FLEXIBLE FIBERGLASS WITH VAPOR BARRIER JACKET.
   B. OUTSIDE AIR INTAKE, MIXED AIR, AND RELIEF DUCTS: 2 INCHES THICK, 1.50 PCF, FLEXIBLE FIBERGLASS WITH VAPOR BARRIER JACKET (R-5).
   C. COMBUSTION AIR DUCTS UNLESS PVC: 2 INCHES THICK, 1.50 PCF, FLEXIBLE FIBERGLASS WITH VAPOR BARRIER JACKET (R-5).
   D. SUPPLY DUCTS: 2 INCHES THICK, 0.75 PCF, FLEXIBLE FIBERGLASS WITH VAPOR BARRIER JACKET (R-5).
   E. SUPPLY & RETURN DUCTS LOCATED IN ATTIC SPACE SHALL BE R-12.
   F. SUPPLY & RETURN DUCTS EXPOSED TO OUTDOORS SHALL BE R-12 WITH VENTURE TAPE 1577CW OR EQUIVALENT LAMINATE JACKET.
   G. INSULATED FLEXIBLE DUCTS SHALL BE R-5 IN CEILING SPACE & R-12 IN ATTIC SPACE.
   H. LEAK TEST EXTERIOR DUCTWORK TO A MINIMUM C.L. OF 6 AT 2 IN W.G. TO AVOID DETACHMENT OF VENTURECLAD PRODUCT.
5. OUTSIDE AIR DAMPERS SHALL BE LOW LEAKAGE THERMALLY INSULATED DAMPER WITH THERMALLY BROKEN FRAME, GREENHECK MODEL ICD-45 OR APPROVED EQUAL. OUTSIDE AIR DAMPERS FOR DUCTWORK 8"Ø AND SMALLER SHALL BE GREENHECK MODEL VCDR-53 OR APPROVED EQUAL DAMPER WITH BLADE SEAL.
6. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT WITH THE CORRECT NUMBER OF STAGES OF HEATING AND COOLING FOR THE EQUIPMENT IT SERVES. THERMOSTAT SHALL BE HONEYWELL VISIONPRO TH8000 SERIES OR APPROVED EQUAL. PROVIDE ALL POWER TO CONTROLS, TRANSFORMERS, RELAYS, VALVES, DAMPERS, ACTUATORS, WIRING, AND DEVICES FOR THE HVAC CONTROLS SYSTEM.
7. PROVIDE ALL POWER, TRANSFORMERS, RELAYS, CONTROL WIRING, CONDUIT AND ALL OTHER ELECTRICAL COMPONENTS AS REQUIRED TO CONTROL THE MECHANICAL EQUIPMENT. PROVIDE ALL WIRING IN CONDUIT.
8. PROVIDE TESTING, ADJUSTING AND BALANCING ON ALL MECHANICAL AND PLUMBING EQUIPMENT INDICATED ON DRAWINGS. CONTRACTOR SHALL BE NEBB OR AABC CERTIFIED. SUBMIT REPORTS ON NEBB OR AABC FORMS. ADJUST SYSTEM TO +/-10% OF DESIGN.

APPROVED MANUFACTURERS

AIR INLET/OUTLET	CARNES, PRICE, TITUS, NAILOR, POTTORFF, TUTTLE & BAILEY
FANS	GREENHECK, COOK, TWIN CITY FAN
LOUVERS	GREENHECK, RUSKIN, NAILOR, POTTORFF
MAKE-UP AIR UNIT	GREENHECK, TITAN, RUPP, CAPTIVAIRE, GREASEMASTER, ABSOLUTE AIR
PUMPS & SPECIALTIES	BELL & GOSSETT, TACO, GRUNDFOS, ARMSTRONG
ROOFTOP UNITS	AAON, DAIKIN, YORK/JCI, LENNOX, ARMSTRONG, CARRIER, TRANE
WATER HEATERS	A.O.SMITH, LOCHINVAR, RUUD, BRADFORD WHITE, STATE

PIPE INSULATION SCHEDULE

PIPE TYPE	INSULATION TYPE	PIPE SIZE	INSULATION THICKNESS
DOMESTIC HOT WATER	GLASS FIBER	1-1/4" AND LESS	1"
		1"-1/2 TO 3"	1-1/2"
		4" AND LARGER	1-1/2"
DOMESTIC RECIRCULATING HOT WATER	GLASS FIBER	1-1/4" AND LESS	1"
		1-1/2" TO 3"	1-1/2"
		4" AND LARGER	1-1/2"
DOMESTIC COLD WATER	GLASS FIBER	1-1/4" AND LESS	1"
		1-1/2" TO 3"	1-1/2"
		4" AND LARGER	1-1/2"
CONDENSATE DRAINS	GLASS FIBER OR FLEXIBLE ELASTOMERIC	ALL SIZES	1"
PLUMBING VENTS WITHIN 10' OF THE EXTERIOR	GLASS FIBER	ALL SIZES	1"

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MECHANICAL SPECIFICATIONS

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

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SIGNATURE:

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DATE: 10/02/2026 REGISTRATION NO.: 47397

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CHECKED BY:	JM
DATE:	

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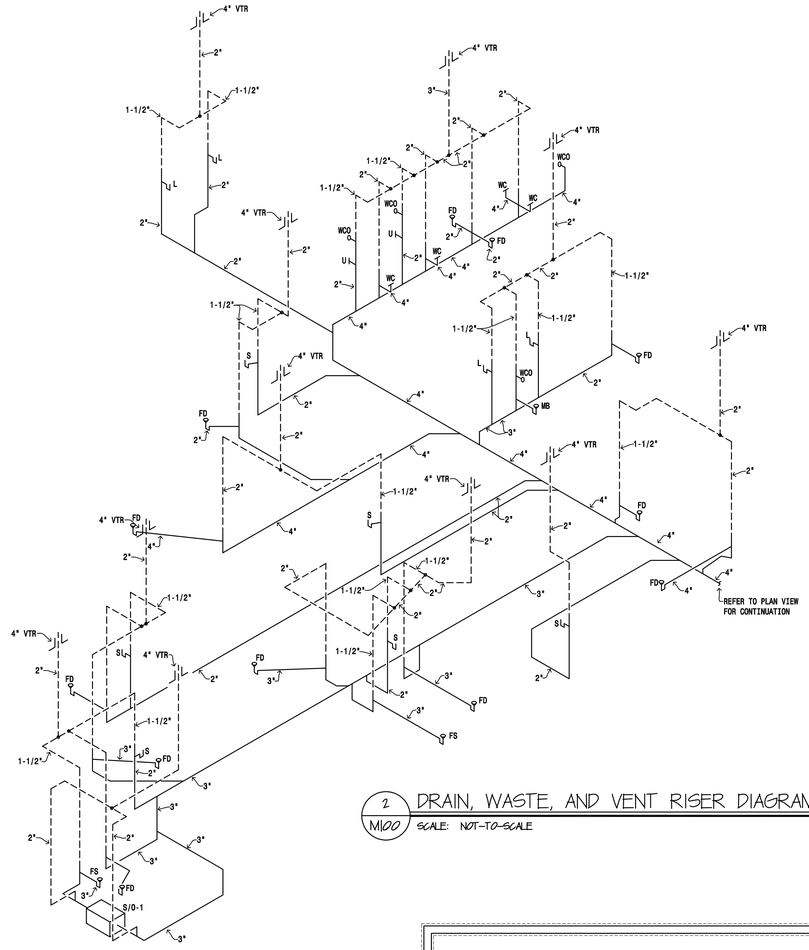
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PLUMBING ROUGH-IN CONNECTION SCHEDULE				
FIXTURE	WASTE	VENT	CW	HW
FD	2"	1-1/2"		
L	2"	1-1/2"	1/2"	1/2"
MB	3"	1-1/2"	1/2"	1/2"
S	2"	1-1/2"	1/2"	1/2"
U	2"	1-1/2"	3/4"	-
WC	4"	2"	1/2"	-

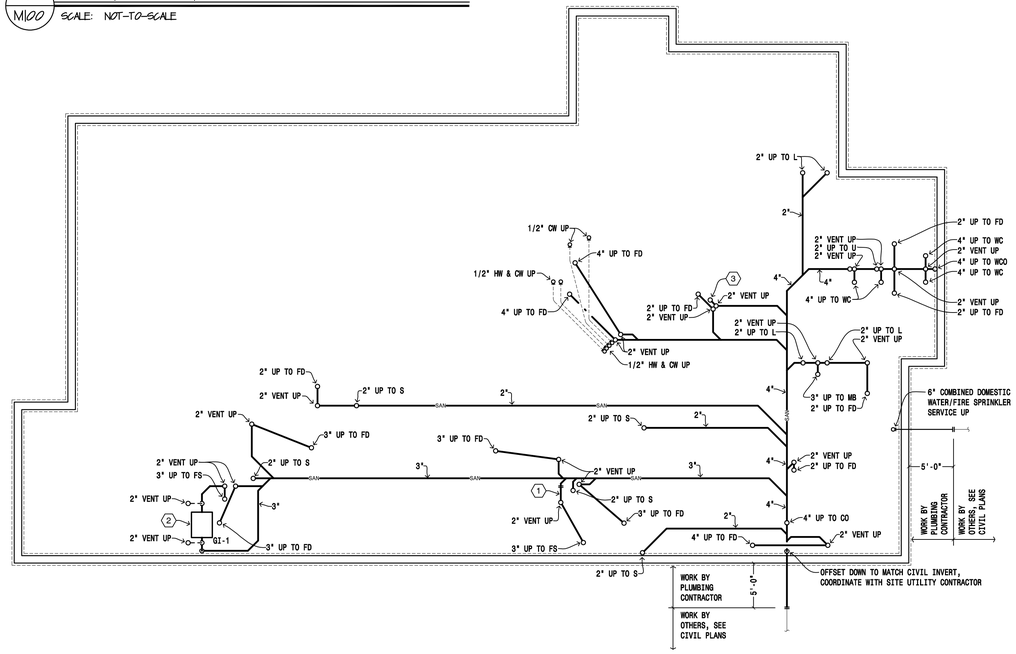
PLAN NOTES:

1. PROVIDE CAST IRON PIPING FOR FIRST 10'-0" DOWNSTREAM OF FLOOR SINK.
2. PROVIDE GREASE INTERCEPTOR, SCHIER GB3-C OR APPROVED EQUAL. INSTALL INTERCEPTOR PER MANUFACTURER'S RECOMMENDATIONS.
3. 2" WASTE ARM TO BAR SINK.



2 / M100 DRAIN, WASTE, AND VENT RISER DIAGRAM

SCALE: NOT-TO-SCALE



N

1 / M100 FOUNDATION PLAN – UNDERGROUND PLUMBING

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

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FOUNDATION PLAN UNDERGROUND PLUMBING

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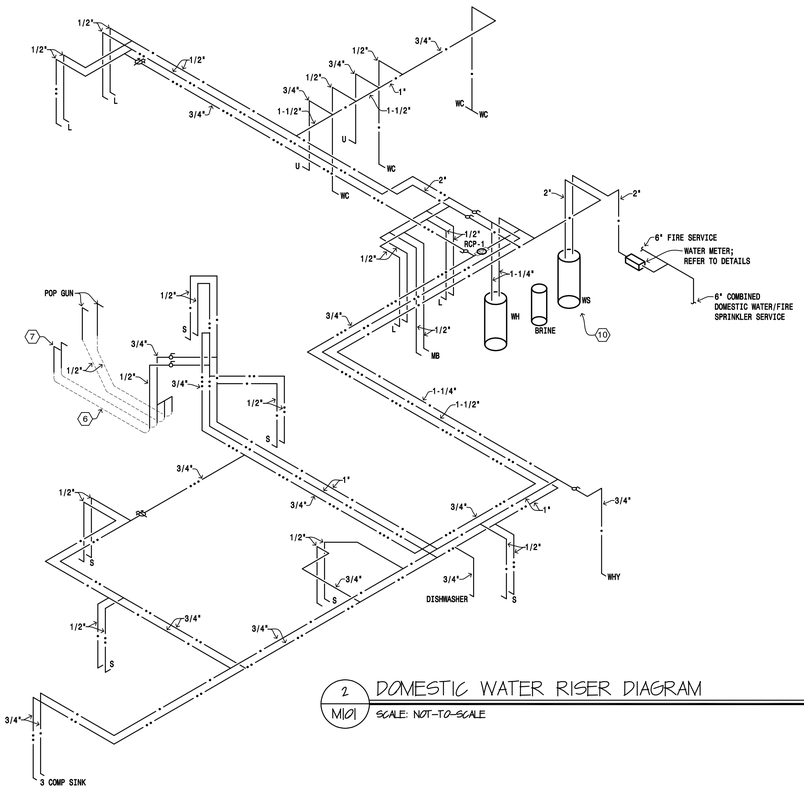
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PLUMBING ROUGH-IN CONNECTION SCHEDULE				
FIXTURE	WASTE	VENT	CW	HW
FD	2"	1-1/2"	-	-
L	2"	1-1/2"	1/2"	1/2"
MB	2"	1-1/2"	1/2"	1/2"
S	2"	1-1/2"	1/2"	1/2"
U	2"	1-1/2"	3/4"	-
WC	4"	2"	1/2"	-

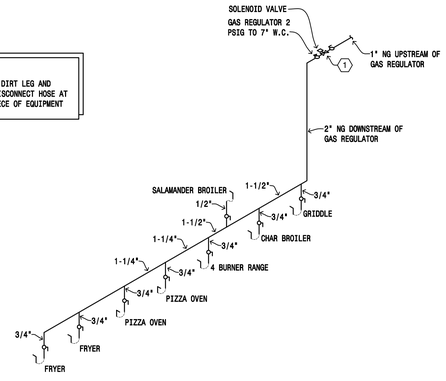
PLAN NOTES:

1. SOLENOID EMERGENCY GAS SHUT-OFF VALVE IN THE CEILING FOR KITCHEN EQUIPMENT. PLUMBER SHALL PROVIDE VALVE THAT WORKS WITH THE CONTROLS IN THE FIRE SUPPRESSION SYSTEM IN THE HOOD. VALVE SHALL REQUIRE MANUAL RESET AFTER POWER LOSS OR SUPPRESSION EVEN. INSTALL VALVES IN ACCESSIBLE LOCATIONS.
2. REFER TO 4/M101 FOR CONTINUATION OF COOK LINE NATURAL GAS FEED.
3. DISHWASHER SHALL BE FURNISHED BY OWNER, INSTALLED BY PLUMBING CONTRACTOR. PROVIDE DRAIN TEMPERING VALVE ON DISHWASHER OUTLET.
4. PROVIDE ACCESS PANEL FOR VALVE, COORDINATE WITH ARCHITECT AND GENERAL CONTRACTOR.
5. 1/2" HOT WATER AND 3/4" COLD WATER DOWN.
6. 1/2" HOT WATER AND 1/2" COLD WATER ROUTED UNDERGROUND TO GLASS WASHER. PIPING SHALL BE PEX WITH ARMAFLEX INSULATION.
7. PROVIDE BOOSTER HEATER FOR GLASS WASHER. COORDINATE WITH FOOD EQUIPMENT PROVIDER AND GLASS WASHER MANUFACTURER.
8. ROUTE DRAIN FROM GLASS WASHER TO FLOOR DRAIN.
9. 1/2" NATURAL GAS FROM ROOF. REFER TO M202 FOR CONTINUATION.
10. REFER TO 1/M401 FOR WATER SOFTENER DETAIL.
11. ROUTE CONDENSATE LINE FROM COOLERS TO FS-2 AS REQUIRED. COORDINATE WITH REFRIGERATION EQUIPMENT SUPPLIER FOR SIZING.
12. PLUMBING VENT THRU ROOF. REFER TO 2/M100 FOR SIZING.
13. PROVIDE MAIN GAS SHUTOFF VALVE INSIDE THE BUILDING 5 FEET ABOVE FINISHED FLOOR (SHOWN IN HORIZONTAL FOR CLARITY). PROVIDE READY ACCESS AND SHUTOFF VALVE SHALL HAVE A PERMANENTLY ATTACHED HANDLE.
14. ROUTE 1/2" COLD WATER TO POP GUN.
15. BRANCH 1/2" COLD WATER LINES TO EACH POP GUN AT THIS LOCATION.

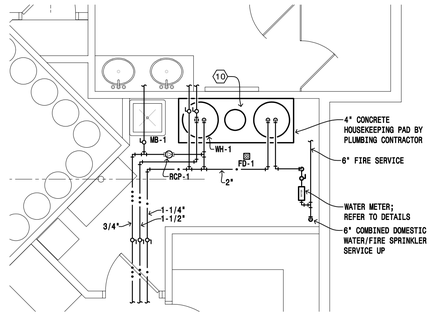


2 M101 DOMESTIC WATER RISER DIAGRAM
SCALE: NOT-TO-SCALE

NOTE:
PROVIDE DIRT LEG AND QUICK DISCONNECT HOSE AT EACH PIECE OF EQUIPMENT

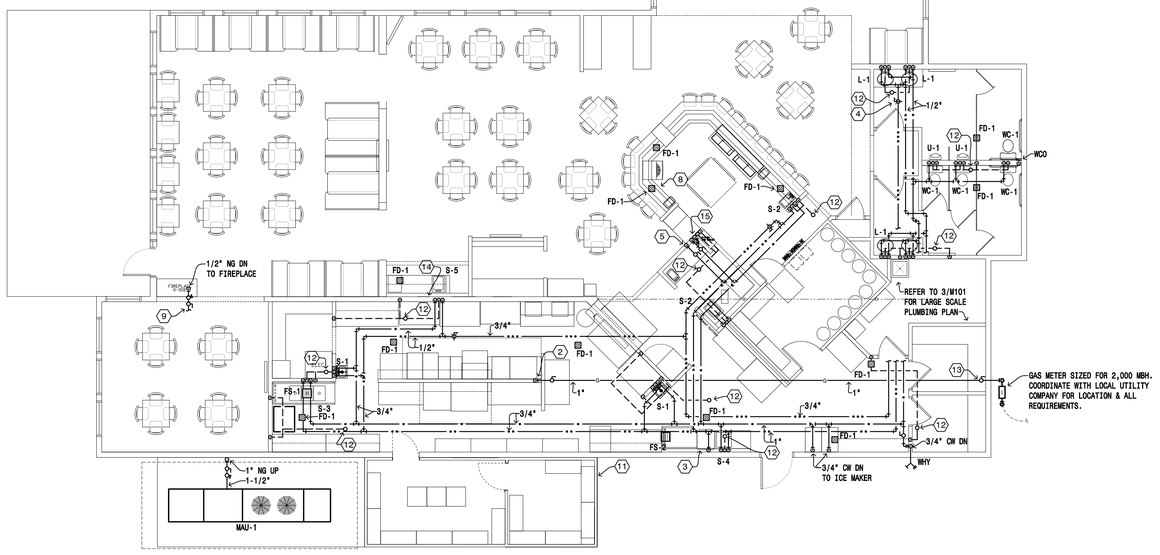


4 M101 KITCHEN EQUIPMENT GAS RISER DIAGRAM
SCALE: NOT-TO-SCALE



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3 M101 LARGE SCALE MECH ROOM PLAN – PLUMBING
SCALE: 1/4" = 1'-0"



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1 M101 MAIN FLOOR PLAN – PLUMBING
SCALE: 1/8" = 1'-0"

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MAIN FLOOR PLAN - PLUMBING

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TEMPERATURE CONTROLS NOTES:

MECHANICAL CONTRACTOR TO PROVIDE ALL WIRING, RELAYS, DAMPERS, ACTUATORS, TRANSFORMERS, AND ALL OTHER MISCELLANEOUS CONTROL COMPONENTS REQUIRED FOR A COMPLETE SYSTEM TO PERFORM ALL INDICATED FUNCTIONS.

EXHAUST FAN CONTROL:

EF-1,2: FAN TO BE CONTROLLED VIA OCCUPANCY SENSOR AND TIED TO LIGHTS. ALL WIRING BY ELECTRICAL CONTRACTOR.

EF-3: PROVIDE SEPARATE SWITCH TO CONTROL FAN, ALL WIRING BY MECHANICAL CONTRACTOR.

EF-4,5: PROVIDE TOGGLE SWITCH TO OPERATE EXHAUST FAN. INTERLOCK EXHAUST FAN OPERATION WITH ASSOCIATED MAKE UP AIR UNIT.

EF-6: INTERLOCK EXHAUST FAN OPERATION WITH DISHWASHER. WHEN DISHWASHER IS PROVEN RUNNING THE EXHAUST FAN SHALL OPERATE. PROVIDE WITH MANUAL OVERRIDE TOGGLE SWITCH.

ROOFTOP UNITS:
UNITS TO BE FURNISHED WITH INTEGRAL CONTROLS TO CONTROL ALL UNIT FUNCTIONS/SETTINGS INCLUDING FAN OPERATION, HEATING, COOLING, DEHUMIDIFICATION, AND ECONOMIZER MODES.

UNIT TO BE OCCUPIED OR UNOCCUPIED AS SET AT USER INTERFACE.

IN OCCUPIED MODE, SUPPLY FAN TO BE ON AND OUTSIDE AIR DAMPER SHALL OPEN TO SCHEDULED OUTSIDE AIR VALUE. MODULATE PACKAGED HEATING AND COOLING TO MAINTAIN SPACE AT TEMPERATURE SETPOINT.

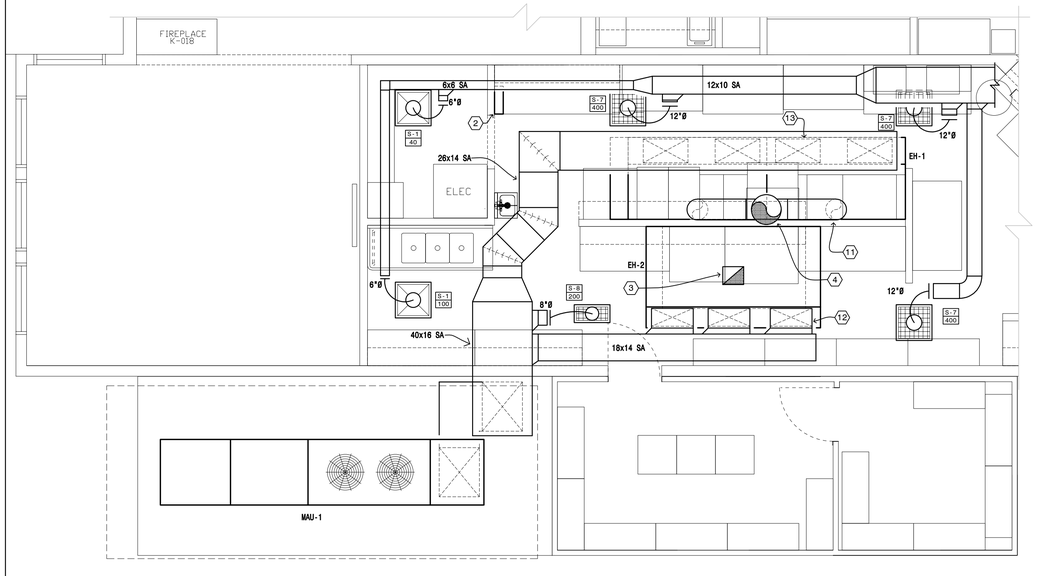
IN UNOCCUPIED MODE, CYCLE SUPPLY FAN, HEATING, AND COOLING TO MAINTAIN SPACE AT SETPOINT.

EACH UNIT SHALL BE CONTROLLED VIA THERMOSTAT AND HUMIDISTAT LOCATED IN BACK OF HOUSE. EACH SPACE SHALL HAVE REMOTE TEMPERATURE & HUMIDITY SENSORS AS SHOWN ON PLANS. COORDINATE FINAL LOCATION OF ALL COMPONENTS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.

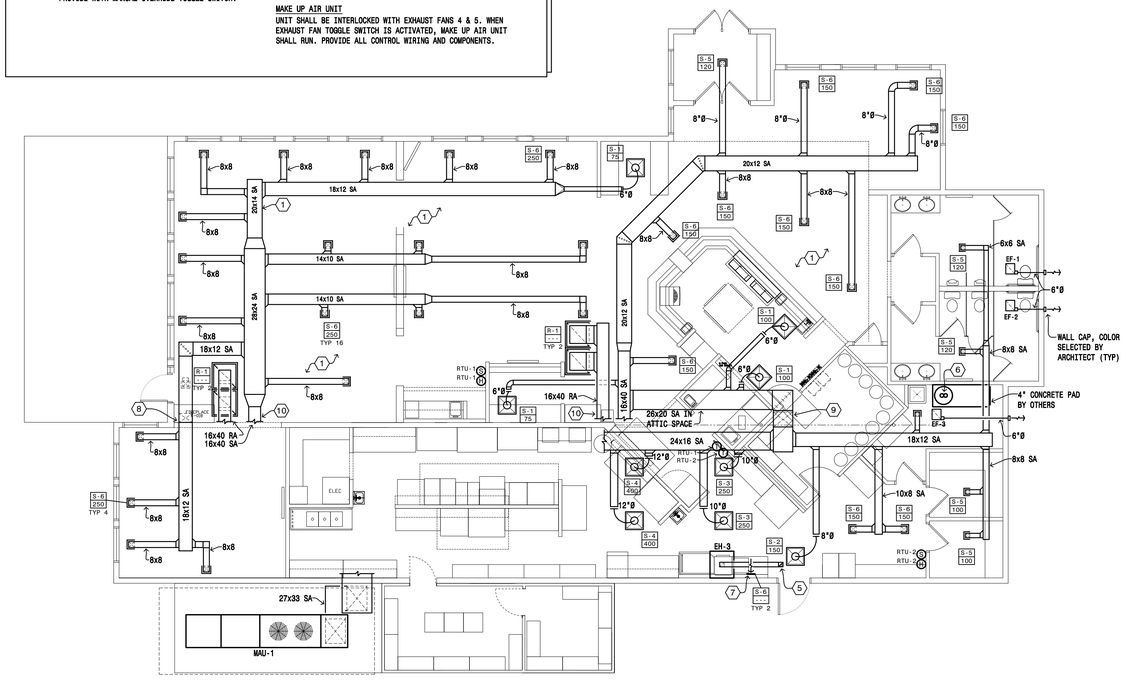
MAKE UP AIR UNIT
UNIT SHALL BE INTERLOCKED WITH EXHAUST FANS 4 & 5. WHEN EXHAUST FAN TOGGLE SWITCH IS ACTIVATED, MAKE UP AIR UNIT SHALL RUN. PROVIDE ALL CONTROL WIRING AND COMPONENTS.

PLAN NOTES:

1. ALL DUCTWORK LOCATED IN MAIN DINING AREA SHALL MATCH CEILING PITCH.
2. MAKE-UP AIR UNIT CONTROL PANEL PROVIDED BY MECHANICAL CONTRACTOR (TYPICAL). MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL WIRING FROM MAKE-UP AIR UNIT CONTROL PANEL TO ASSOCIATED MAKE-UP AIR UNIT, KITCHEN EXHAUST HOODS, EXHAUST FANS, AND HOOD ANSUL SYSTEM. COORDINATE EXACT LOCATION WITH OWNER.
3. 14x12 EXHAUST UP TO EF-5 LOCATED ON ROOF.
4. 20"Ø EXHAUST UP TO EF-4 LOCATED ON ROOF.
5. 6x6 EXHAUST AIR UP TO EF-6 LOCATED ON ROOF.
6. PROVIDE WATER HEATER VENTING. SIZE PER MANUFACTURERS RECOMMENDATIONS.
7. INSTALL TWO GRILLES IN SAME STUD CAVITY AS WATER PIPING. ONE GRILLE SHALL BE 12" BELOW CEILING, ONE GRILLE SHALL BE 18" ABOVE FINISHED FLOOR. COORDINATE LOCATION WITH PLUMBING CONTRACTOR. WALL CAVITY SHALL BE INSULATED TO PREVENT PIPES FROM FREEZING.
8. OFFSET 18x12 SUPPLY AIR DOWN INTO CEILING SPACE ABOVE PARTY ROOM.
9. OFFSET 26x20 SUPPLY AIR FROM ATTIC SPACE DOWN INTO CEILING SPACE ABOVE KITCHEN.
10. REFER TO M202 FOR CONTINUATION.
11. 14"Ø EXHAUST DOWN TO HOOD (TYPICAL 2).
12. 28x12 SUPPLY AIR DOWN TO HOOD (TYPICAL 3).
13. 30x16 SUPPLY AIR DOWN TO HOOD (TYPICAL 4).



N — 2 / M201 — LARGE SCALE KITCHEN PLAN – VENTILATION
SCALE: 1/4" = 1'-0"



N — 1 / M201 — MAIN FLOOR PLAN – VENTILATION
SCALE: 1/8" = 1'-0"

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MAIN FLOOR PLAN - VENTILATION

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

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SIGNATURE:

PRINTED NAME: JEREMY MACELAY

DATE: 10/02/2026 REGISTRATION NO.: 47397

COMMISSION NO.:
DRAWN BY: MP
CHECKED BY: JM
DATE:

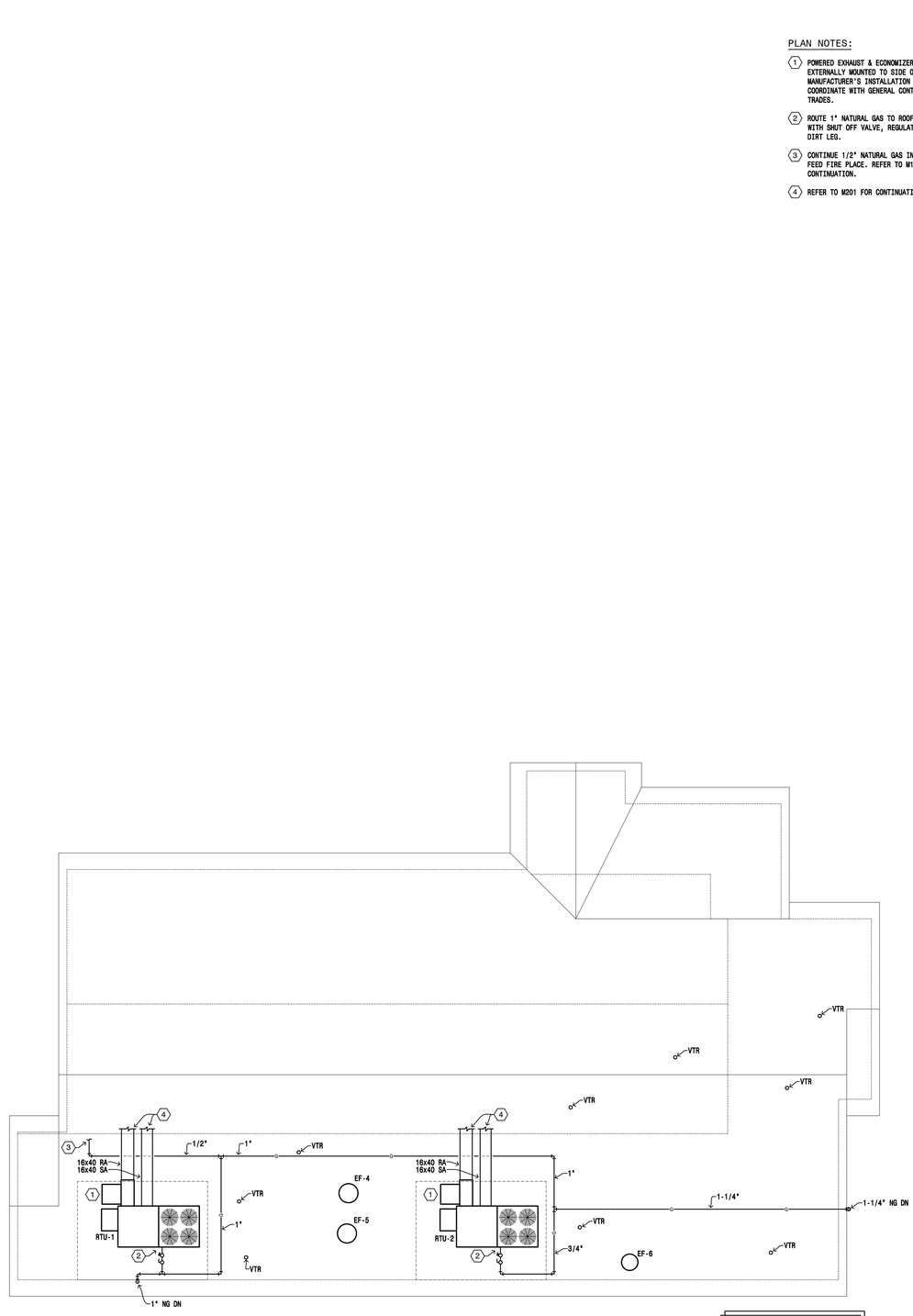
DRAWING NO.
M201

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PLAN NOTES:

1. POWERED EXHAUST & ECONOMIZER SHALL BE EXTERNALLY MOUNTED TO SIDE OF UNIT. REFER TO MANUFACTURER'S INSTALLATION GUIDELINES. COORDINATE WITH GENERAL CONTRACTOR & ALL OTHER TRADES.
2. ROUTE 1" NATURAL GAS TO ROOFTOP UNIT. PROVIDE WITH SHUT OFF VALVE, REGULATOR, UNIONS, AND DIRT LEG.
3. CONTINUE 1/2" NATURAL GAS INTO BUILDING TO FEED FIRE PLACE. REFER TO M101 FOR CONTINUATION.
4. REFER TO M201 FOR CONTINUATION.

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NOTE:
MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN RTU INTAKES AND ALL EXHAUST FANS & PLUMBING VENTS

N

1 / M202 ROOF PLAN – MECHANICAL
SCALE: 1/8" = 1'-0"

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ROOF PLAN
- MECHANICAL

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M202

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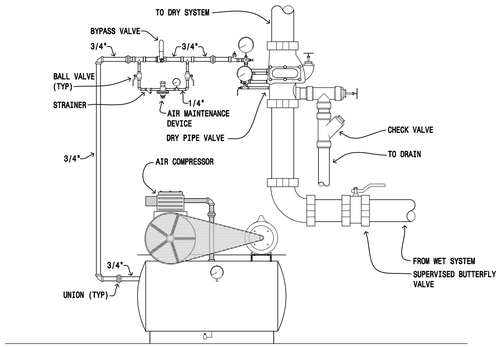
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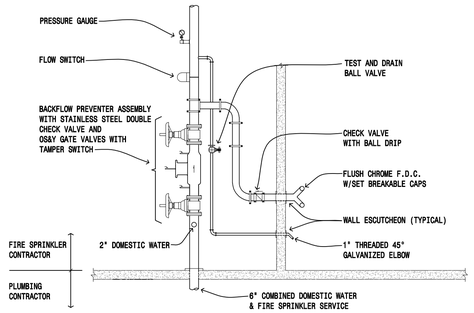
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FIRE SPRINKLER NOTES:

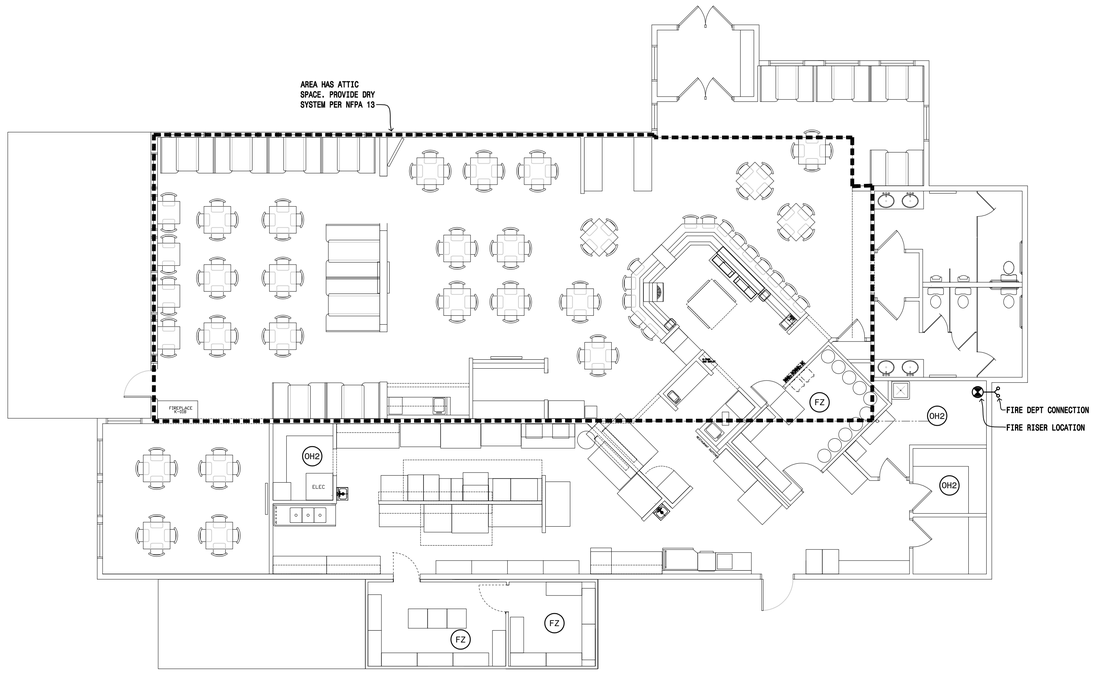
1. THE ENTIRE BUILDING SHALL BE PROVIDED WITH A FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13.
2. ALL AREAS SHALL BE DESIGNED TO LIGHT HAZARD PARAMETERS UNLESS NOTED OTHERWISE BELOW OR ON PLANS.
3. ALL AREAS WITH THIS SYMBOL: (OH1) SHALL BE DESIGNED TO ORDINARY HAZARD GROUP 1 PARAMETERS AS PER NFPA-13.
4. ALL AREAS WITH THIS SYMBOL: (OH2) SHALL BE DESIGNED TO ORDINARY HAZARD GROUP 2 PARAMETERS AS PER NFPA-13.
5. ALL AREAS WITH THIS SYMBOL: (FZ) ARE SUBJECT TO FREEZING & SHALL BE DESIGNED TO LIGHT HAZARD PARAMETERS AS PER NFPA-13. PROVIDE WITH FREEZE PROOF HEADS.
6. THIS BUILDING IS MADE OF COMBUSTIBLE CONSTRUCTION WITH WOOD JOISTS. PROVIDE SPRINKLER COVERAGE ABOVE CEILING IN JOISTS AND BELOW IN ACCORDANCE WITH NFPA 13.
7. CENTER FIRE SPRINKLER HEADS IN TWO DIRECTIONS IN LAY IN CEILING TILE.
8. PROVIDE SPRINKLER COVERAGE UNDER DUCTWORK OR ANY OTHER OBSTRUCTIONS OVER FOUR FEET IN WIDTH.
9. ARCHITECTURAL BACKGROUNDS ON THESE DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL BACKGROUNDS WITH ARCHITECTURAL SHEETS AND SITE VISITS.
10. COORDINATE PIPING LOCATIONS WITH ALL OTHER TRADES.



3 / M301 DRY PIPE VALVE DETAIL
SCALE: NOT-TO-SCALE



2 / M301 FIRE SPRINKLER RISER DETAIL
SCALE: NOT-TO-SCALE



1 / M301 MAIN FLOOR PLAN – FIRE SPRINKLER
SCALE: 1/8" = 1'-0"

MAIN FLOOR PLAN - FIRE SPRINKLER

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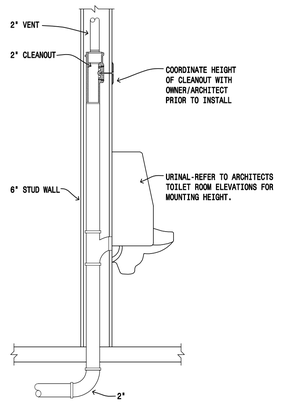
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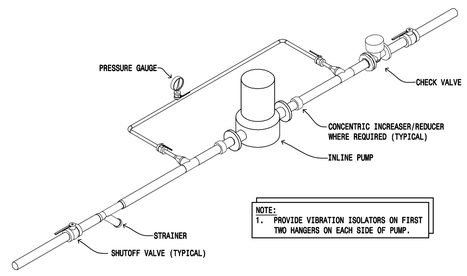
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12 MA01 URINAL DETAIL

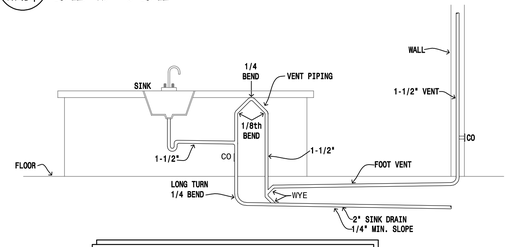
SCALE: NOT-TO-SCALE



NOTE:
1. PROVIDE VIBRATION ISOLATORS ON FIRST TWO HANGERS ON EACH SIDE OF PUMP.

11 MA01 INLINE PUMP DETAIL

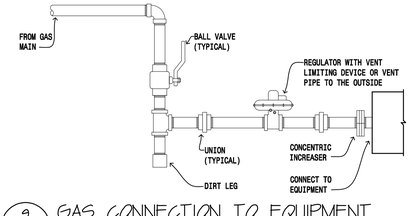
SCALE: NOT-TO-SCALE



NOTES:
1. NO OTHER FIXTURE DRAIN MAY BE CONNECTED TO THE 2" DRAIN LINE UPSTREAM OF THE POINT WHERE THE ISLAND SINK RETURNED VENT CONNECTS TO THE HORIZONTAL WASTE LINE.
2. FIXTURE DRAINS FROM OTHER FIXTURES MAY CONNECT DOWNSTREAM FROM THE RETURNED VENT TIE-IN TO THE 2" SINK DRAIN.
3. HORIZONTAL PORTION OF FOOT VENT IS LESS THAN 20 FEET IN LENGTH.

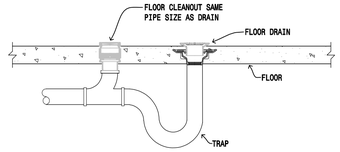
10 MA01 SPECIAL VENTING FOR ISLAND FIXTURES

SCALE: NOT-TO-SCALE



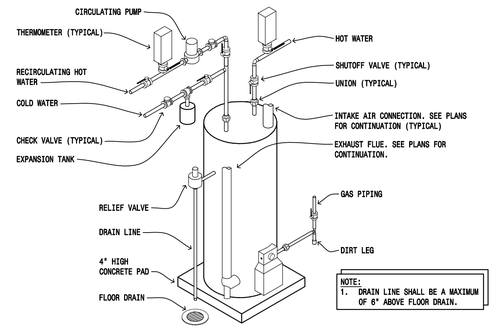
9 MA01 GAS CONNECTION TO EQUIPMENT

SCALE: NOT-TO-SCALE



8 MA01 FLOOR DRAIN DETAIL

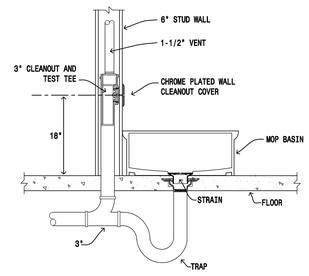
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NOTE:
1. DRAIN LINE SHALL BE A MAXIMUM OF 6" ABOVE FLOOR DRAIN.

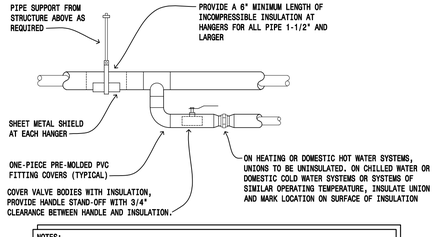
7 MA01 GAS FIRED WATER HEATER DETAIL

SCALE: NOT-TO-SCALE



6 MA01 MOP BASIN DETAIL

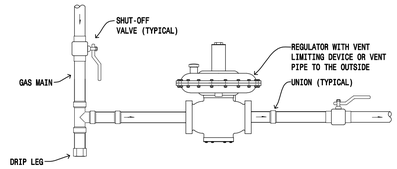
SCALE: NOT-TO-SCALE



NOTES:
1. PROVIDE TEMPORARY BLOCKING BETWEEN BOTTOM OF PIPE AND HANGER TO ALLOW SPACE FOR INSULATION. BLOCKING TO BE REMOVED UPON INSTALLATION OF INSULATION. IN LIEU OF THIS, THE CONTRACTOR MAY INSTALL A SECTION OF APPROPRIATE INSULATION AT THE HANGER PRIOR TO FINAL INSULATION OF THE COMPLETE SYSTEM. THE HANGER MUST BE PROPERLY SEPARATED FROM THE PIPING WHEN THE SYSTEM IS COMPLETE.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING INSULATION AND PIPE SUPPORTS.
3. SEAL AND TAPE ALL JOINTS AS INDICATED IN SPECIFICATIONS.

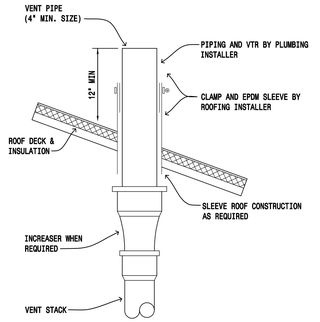
5 MA01 PIPING INSULATION DETAIL

SCALE: NOT-TO-SCALE



4 MA01 GAS REGULATOR DETAIL

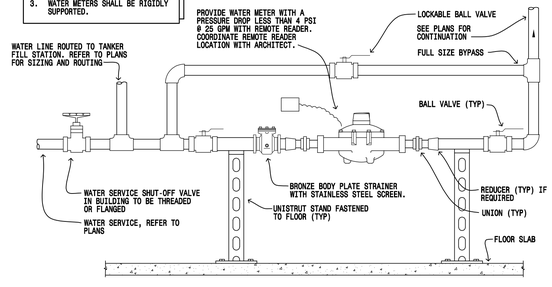
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3 MA01 PLUMBING VENT DETAIL

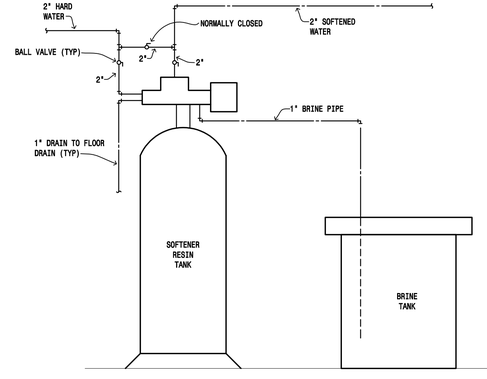
SCALE: NOT-TO-SCALE

NOTES:
1. PIPING ARRANGEMENT SHOWN IN SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. PROVIDE SUPPORT ASSEMBLY FROM WALL BRACKET OR FLOOR STAND.
2. PLUMBING CONTRACTOR IS REQUIRED TO CONTACT LOCAL WATER DEPARTMENT FOR WATER METER, PIPING, AND VALVE REQUIREMENTS.
3. WATER METERS SHALL BE RIGIDLY SUPPORTED.



2 MA01 WATER METER DETAIL

SCALE: NOT-TO-SCALE



1 MA01 WATER SOFTENING SYSTEM DETAIL

SCALE: NOT-TO-SCALE

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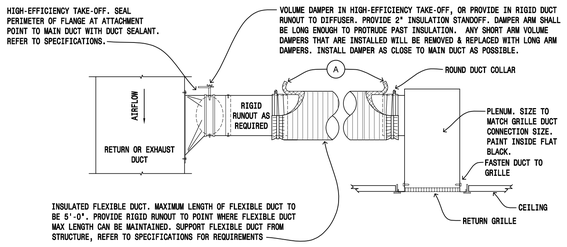
M401

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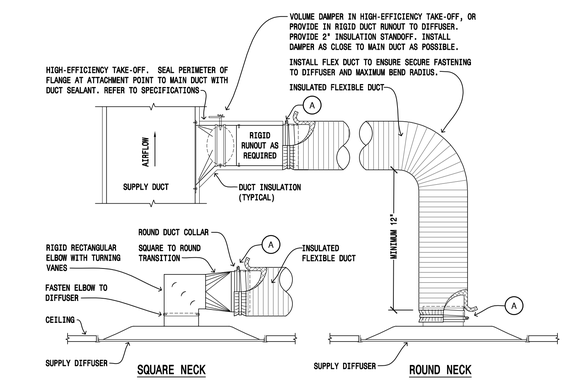
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GENERAL NOTES:
1. DUCT TAPES SHALL BE LISTED AND LABELED IN ACCORDANCE WITH STANDARD UL 181B AND MARKED "181B-FX"
2. HIGH EFFICIENCY TAKE-OFF AND RUNOUT MAY BE ROUND OR RECTANGULAR PROFILE, SEE PLANS FOR SIZE. PROVIDE SQUARE TO ROUND TRANSITION WHERE RECTANGULAR RUNOUT DUCTS ARE INDICATED.
3. MAXIMUM LENGTH OF FLEXIBLE DUCT TO BE 8'-0". PROVIDE RIGID RUNOUT TO POINT WHERE FLEXIBLE DUCT MAX LENGTH CAN BE MAINTAINED. SUPPORT FLEXIBLE DUCT FROM STRUCTURE, REFER TO SPECIFICATIONS FOR REQUIREMENTS.
4. REFER TO SPECIFICATIONS FOR DUCT SYSTEMS TO BE INSULATED. OMIT INSULATION WHERE NOT REQUIRED.

KEY NOTES:
(A) PEEL BACK OUTER INSULATION OF FLEX DUCT AND SECURE INNER CORE TO RIGID DUCT OR DUCT COLLAR WITH 2 FULL WRAPS OF TAPE AND METAL SCREW BAND CLAMP OVER TAPE. PULL INSULATION AND JACKET BACK INTO POSITION AND SEAL ENDS WITH 2 FULL WRAPS OF TAPE AND METAL OR NONMETALLIC BAND CLAMP.

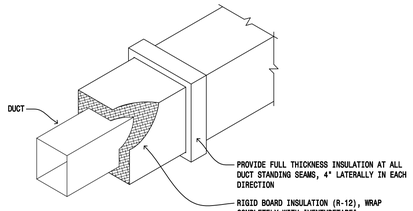
8 M402 DUCTED RETURN OR EXHAUST GRILLE DETAIL
SCALE: NOT-TO-SCALE



GENERAL NOTES:
1. DUCT TAPES SHALL BE LISTED AND LABELED IN ACCORDANCE WITH STANDARD UL 181B AND MARKED "181B-FX"
2. HIGH EFFICIENCY TAKE-OFF AND RUNOUT MAY BE ROUND OR RECTANGULAR PROFILE, SEE PLANS FOR SIZE. PROVIDE SQUARE TO ROUND TRANSITION WHERE RECTANGULAR RUNOUT DUCTS ARE INDICATED.
3. MAXIMUM LENGTH OF FLEXIBLE DUCT TO BE 5'-0". PROVIDE RIGID RUNOUT TO POINT WHERE FLEXIBLE DUCT MAX LENGTH CAN BE MAINTAINED. SUPPORT FLEXIBLE DUCT FROM STRUCTURE, REFER TO SPECIFICATIONS FOR REQUIREMENTS

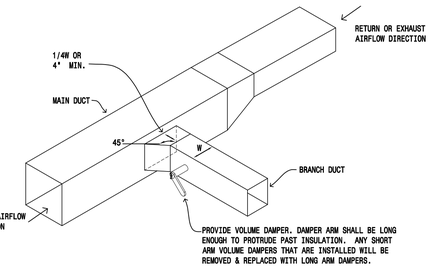
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7 M402 DIFFUSER INSTALLATION DETAIL
SCALE: NOT-TO-SCALE

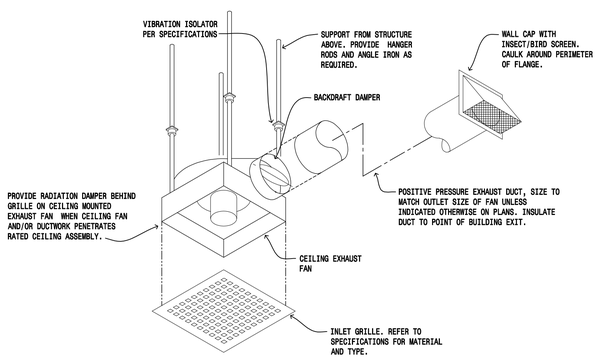


NOTES:
1. PROVIDE UV-RESISTANT RUBBER ROOF DUCT SUPPORT SYSTEM (MIFAB DUCT SUPPORT OR EQUIVALENT) SUPPORT ENTIRE WIDTH OF DUCT. PROVIDE SUPPORTS EVERY 5' ON CENTER.

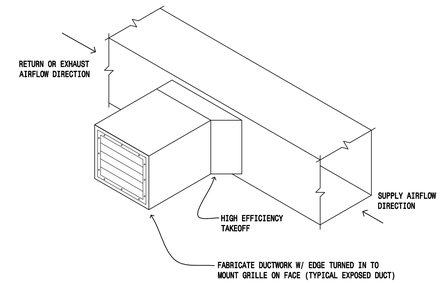
6 M402 EXTERIOR DUCT DETAIL
SCALE: NOT-TO-SCALE



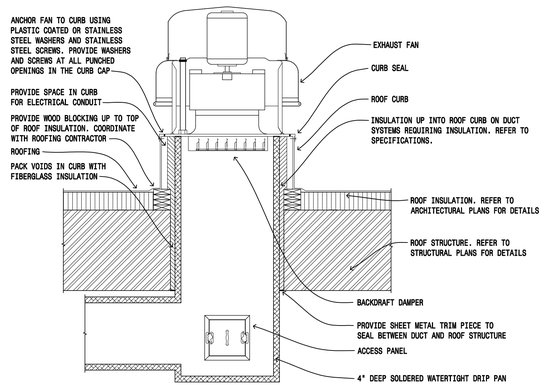
5 M402 BRANCH DUCTWORK DETAIL
SCALE: NOT-TO-SCALE



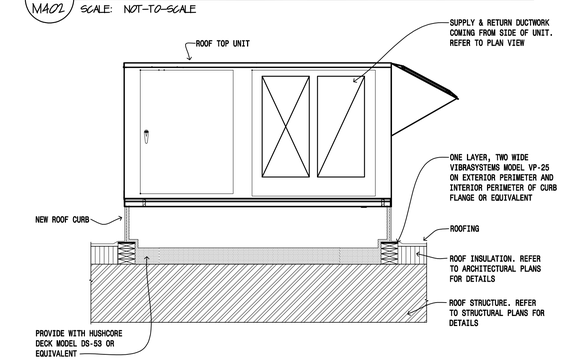
4 M402 CEILING EXHAUST FAN DETAIL
SCALE: NOT-TO-SCALE



3 M402 EXPOSED GRILLE MOUNTING DETAIL
SCALE: NOT-TO-SCALE



2 M402 POWER ROOF VENTILATOR INSTALLATION DETAIL
SCALE: NOT-TO-SCALE



1 M402 ROOF CURB INSTALLATION DETAIL
SCALE: NOT-TO-SCALE

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ELECTRICAL SYMBOLS LEGEND

LIGHTING

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
A, a	CEILING SURFACE MOUNTED LIGHT FIXTURE, CAPITAL LETTER INDICATES FIXTURE TYPE, SMALL LETTER INDICATES SWITCHING.	
	RECESSED CEILING MOUNTED LIGHT FIXTURE	
	WALL MOUNTED LIGHT FIXTURE, SURFACE OR, RECESSED MOUNTED	
	CEILING EXIT SIGN, SHADED SIDE INDICATES LIGHTED FACE, ARROWS INSTALLED AS SHOWN	
	WALL EXIT SIGN	6 INCHES ABOVE DOOR FRAME TO BOTTOM
	SUSPENDED LIGHT FIXTURE	
	SURFACE LIGHT FIXTURE	
	RECESSED LIGHT FIXTURE	
	FIXTURE CONNECTED TO EMERGENCY LIFE SAFETY POWER WHEN SHADED	
	FIXTURE CONNECTED TO CRITICAL POWER WHEN DASHED.	7 FOOT 6 INCHES
	EMERGENCY BATTERY LIGHT	7 FOOT 6 INCHES
	EMERGENCY REMOTE LAMP	
	PARKING LOT/AREA LIGHT FIXTURE	
	PARKING LOT POST TOP LIGHT FIXTURE	9 FOOT
PC	PHOTO CELL	
M	CEILING MOUNTED MOTION SENSOR SWITCH	48 INCHES
MM	WALL MOUNTED MOTION SENSOR SWITCH	
MPP	MOTION SENSOR SWITCH POWER PACK	
C2	CONTACTOR (NUMBER INDICATES NUMBER OF POLES)	
RC	ROOM CONTROLLER	48 INCHES
$	SINGLE POLE (HORSEPOWER RATED WHEN USED AS MOTOR DISCONNECT)	48 INCHES
$2	DOUBLE POLE	48 INCHES
$3	3-WAY	48 INCHES
$M	OCCUPANCY SENSOR SWITCH	48 INCHES
$K	KEY OPERATED	48 INCHES
$P	WITH PILOT LIGHT (CAN BE USED WITH OTHER SWITCH TYPES)	48 INCHES
$MC	MOMENTARY CONTACT	48 INCHES
	DIMMER (600 WATT UNLESS OTHERWISE NOTED)	48 INCHES
$L	LIGHTING INTENSITY SELECTOR PANEL	48 INCHES
$LV	LOW VOLTAGE SWITCH	
	TRACK LIGHTING	48 INCHES
$VS	VACANCY SENSOR SWITCH	

POWER

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
	DUPLEX RECEPTACLE ("C" INDICATES EMERGENCY CRITICAL BRANCH POWER)	18 INCHES
	DOUBLE DUPLEX RECEPTACLE ("C" INDICATES EMERGENCY CRITICAL BRANCH POWER)	18 INCHES
A	TYPE 14-30 RECEPTACLE	18 INCHES
B	TYPE 14-50 RECEPTACLE	6 INCHES
G	GFCI TYPE RECEPTACLE	18 INCHES
	MULTI-OUTLET ASSEMBLY - M.O.A., PROVIDE DEVICES AS SHOWN ON PLANS	18 INCHES
	DUPLEX RECEPTACLE, HALF SWITCHED	18 INCHES
R	FLOOR OUTLET, 'R' INDICATES RECESSED, 'F' INDICATES FLUSH, 'S' INDICATES SURFACE MOUNT	
TS	TIME SWITCH	
T	DRY TYPE TRANSFORMER	
PB	PUSH BUTTON	
HC	POWER DOOR HANDICAP PUSH PAD	42 INCHES
EB	EMERGENCY BOILER SHUTDOWN PUSH BUTTON	48 INCHES
TE	THERMOSTAT - PROVIDE BY DIVISION 16	48 INCHES
T	THERMOSTAT - FURNISHED BY DIVISION 15, INSTALLED BY DIVISION 16	48 INCHES
TM	THERMAL SWITCH (MOTOR OVERLOAD TYPE)	48 INCHES
	POWER POLE	
1	MOTOR (NUMBER REFERS TO MOTOR AND EQUIPMENT SCHEDULE SEE SCHEDULE FOR WIRING AND CONTROLLER REQUIREMENTS)	
	LIGHTING AND APPLIANCE PANELBOARD	
	RECESSED LIGHTING AND APPLIANCE PANELBOARD	
	SWITCHBOARD OR MOTOR CONTROL CENTER AS NOTED	
	SPECIAL EQUIPMENT CABINET AS NOTED	
	ENCLOSED MOLDED CASE CIRCUIT BREAKER	
VJ	VARIABLE FREQUENCY CONTROLLER WITH CONTROLLER	
	NON-FUSED DISCONNECT	
F	FUSED DISCONNECT	
	MAGNETIC STARTER	
	COMBINATION STARTER-DISCONNECT	
	TWIST LOCK OUTLET	

SYSTEMS

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
S	CEILING MOUNTED RECESSED SPEAKER	
S	CEILING SURFACE MOUNTED SPEAKER	
S	WALL MOUNTED SPEAKER	90 INCHES
C	CLOCK	90 INCHES TO BOTTOM
CS	CLOCK/SPEAKER UNIT	90 INCHES TO BOTTOM
M	MICROPHONE OUTLET	18 INCHES
MF	MICROPHONE FLOOR OUTLET	
V	VOLUME CONTROL	48 INCHES
AMP	AMPLIFIER CABINET	
A	AUXILIARY INPUT OUTLET	18 INCHES
2	COMPUTER OUTLET (NUMBER INDICATES QUANTITY OF CABLES AND JACKS, NO NUMBER INDICATES ONE)	18 INCHES
2 2	COMBINATION COMPUTER/TELEPHONE OUTLET IN SINGLE GANG OPENING (NUMBER INDICATES QUANTITY OF CABLES AND JACKS,NO NUMBER INDICATES ONE)	18 INCHES
W	TELEPHONE OUTLET ("W" INDICATES WALL MOUNTED AT 48 INCHES)	18 INCHES
	COMPUTER/TELEPHONE OUTLET, PROVIDE ROUGH-IN AND CONDUIT ONLY	18 INCHES
TV	TELEVISION OUTLET	
	REQUEST TO EXIT DEVICE	
R	DOOR POSITION SWITCH, RECESSED	18 INCHES
S	DOOR POSITION SWITCH, SURFACE MOUNT	3 INCHES ABOVE DOOR FRAME
	DOOR POSITION SWITCH	
CR	CARD READER	
EL	ELECTRIC LATCH BY DIV 08, CONNECTIONS BY DIV 26	
ES	ELECTRIC STRIKE BY DIV 08, CONNECTIONS BY DIV 26	48 INCHES
	SURVEILLANCE CAMERA	
AR	AREA OF REFUGE STATION	
B	CEILING MOUNTED BUZZER	
RT	CEILING MOUNTED RTLS DEVICE	
N	CEILING MOUNTED NURSE CALL DOME LIGHT	
NE	NURSE CALL EMERGENCY PULL CORD	48 INCHES
NCB	NURSE CALL CODE BLUE	48 INCHES
ND	NURSE CALL DUTY STATION	48 INCHES
NSA	NURSE CALL STAFF ASSIST	48 INCHES
NP	NURSE CALL PATIENT STATION	48 INCHES
NM	NURSE CALL MASTER STATION	48 INCHES
NS	NURSE CALL STAFF STATION	48 INCHES
	PATIENT/DEVICE TRACKING	
NMP	NURSE CALL MASTER PANEL	

FIRE ALARM

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
	MANUAL STATION	48 INCHES
H	FIXED TEMPERATURE DETECTOR	
D	DUCT PHOTOELECTRIC DETECTOR	
S	PHOTOELECTRIC DETECTOR ('S' INDICATES SLEEPING ROOM WITH AUX. CONTACT, 'G' INDICATES WITH GUARD,'E' INDICATES FOR ELEVATOR RECALL)	
C	COMBINATION FIRE/SMOKE DAMPER OR SMOKE DAMPER BY DIVISION 16	
H	HORN WITH STROBE	BOTTOM OF LENS 80 INCHES
S	SPEAKER HORN WITH STROBE	BOTTOM OF LENS 80 INCHES
C	CHIME WITH STROBE	BOTTOM OF LENS 80 INCHES
	STROBE LIGHT	BOTTOM OF LENS 80 INCHES
B	LOCKDOWN ALERT SPEAKER WITH BLUE STROBE	BOTTOM OF LENS 80 INCHES
DM	FIRE ALARM MODULE/RELAY	
DH	MAGNETIC DOOR HOLD OPEN	
DI	INTEGRAL MAGNETIC DOOR CLOSER (PROVIDED BY DIVISION 8)	
SS	SUPERVISORY SWITCH (NUMBER INDICATES NUMBER OF DEVICES AT THIS LOCATION	
PS	PRESSURE SWITCH	
FS	FLOW SWITCH	
FACP	FIRE ALARM CONTROL PANEL	
ANN	FIRE ALARM ANNUNCIATOR	

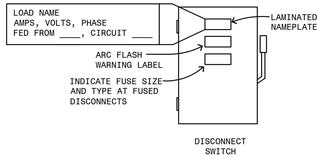
MISC/ABBREVATIONS

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
J	CEILING-MOUNTED JUNCTION BOX	
J	WALL JUNCTION BOX	18 INCHES
	DASHED LINES INDICATE EXISTING FIXTURES, DEVICES, OR EQUIPMENT	
	HASH MARKS INDICATE ITEM NOTED TO BE REMOVED	
	CONDUIT CONCEALED IN WALL OR CEILING, QUANTITY OF CONDUCTORS NOT SHOWN, PROVIDE AS REQUIRED FOR DEVICE/CIRCUIT NUMBERS SHOWN.	
	CONDUIT CONCEALED IN FLOOR	
UGE	UNDERGROUND CONDUIT AT 24 INCHES MINIMUM	
L1-2,4,6 #10	HOME RUN TO PANELBOARD, QUANTITY OF CONDUCTORS REQUIRED NOT INDICATED, PROVIDE QUANTITY AS REQUIRED FOR CIRCUIT NUMBERS SHOWN, SWITCHING ARRANGEMENT, OR NUMBER OF HOME RUNS SHOWN. '#10' INDICATES WIRE SIZE, NO NUMBERS INDICATES #12, 3/4 INCH CONDUIT MINIMUM.	
	SURFACE CONDUIT OR SURFACE RACEWAY	
1	NOTE IDENTIFICATION	
	WIRE BASKET TYPE CABLE TRAY	
	COMMUNICATIONS CABLE SUPPORT HANGER	
A	AMPERE	
AC	ABOVE COUNTER	
AFF	ABOVE FINISHED FLOOR	
AHU	AIR HANDLING UNIT	
BC	BELOW COUNTER	
C	CONDUIT	
CUH	CABINET UNIT HEATER	
EF	EXHAUST FAN	
EWC	ELECTRIC WATER COOLER	
FA	FIRE ALARM	
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	
GR	GROUND	
PH	PHASE	
TV	TELEVISION	
W	WIRE	
WAP	WIRELESS ACCESS POINT	
WP	WEATHERPROOF	
EC	ELECTRICAL CONTRACTOR	

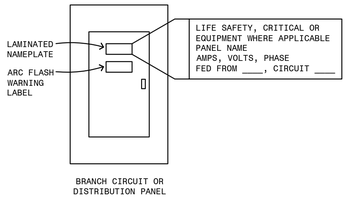
NOTES:
1. THIS IS A COMPREHENSIVE SYMBOL SCHEDULE. NOT ALL SYMBOLS ARE APPLICABLE TO THESE DRAWINGS.
2. MOUNTING HEIGHT IS TO THE CENTER OF DEVICE UNLESS OTHERWISE INDICATED.
3. FOR DEVICES SHOWN AS 48 INCHES MOUNTING HEIGHT, WHEN INSTALLED IN MASONRY BLOCK WALLS, MOUNTING AT 48 INCHES TO THE TOP OF THE OUTLET BOX IS ACCEPTABLE.

DETAIL NOTES:

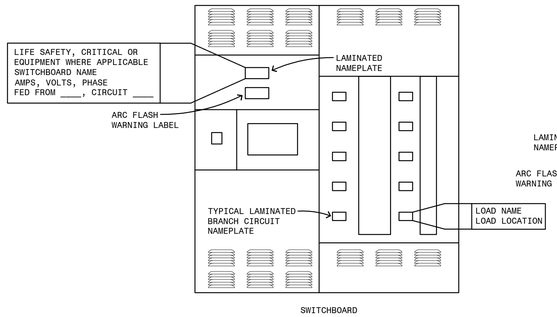
1. SEE ELECTRICAL IDENTIFICATION SPECIFICATIONS FOR ADDITIONAL LABELING REQUIREMENTS
2. STAINLESS STEEL SCREWS TO BE USED AT EXTERIOR LOCATIONS.
3. ALL LABELS TO BE BLACK LETTERS ON WHITE BACKGROUND FOR NORMAL POWER, WHITE LETTERS ON RED BACKGROUND FOR EMERGENCY POWER.
4. PROVIDE ARC FLASH LABELS PER SPECIFICATIONS.
5. DEVICES MOUNTED IN CEILING WITH ATTIC ABOVE TO BE IC RATED PER CODE.



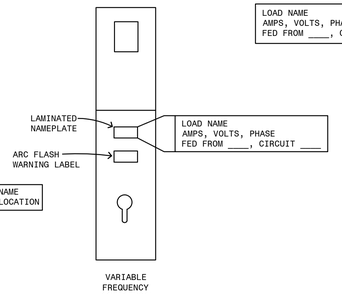
DISCONNECT SWITCH



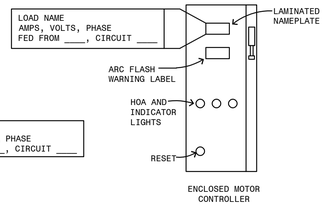
BRANCH CIRCUIT OR DISTRIBUTION PANEL



SWITCHBOARD



VARIABLE FREQUENCY DRIVE WITH DISONNECT



ENCLOSED MOTOR CONTROLLER

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

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SIGNATURE:

PRINTED NAME: MICHAEL A. BERGER

DATE: 10/02/2026 REGISTRATION NO.: 40294

COMMISSION NO.: MBN# 26-185
DRAWN BY: DUSTON HOFFNER
CHECKED BY: MICHAEL A. BERGER
DATE: 10/02/2026

DRAWING NO.
E001

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AJ'S BAR
GLENWOOD, MN

GENERAL NOTES:

1. ALL SITE CONDUITS SHALL BE 24 INCHES BELOW GRADE MINIMUM.
2. COORDINATE LOCATION AND ROUTING OF SITE CONDUITS WITH OTHER SITE UTILITIES.
3. ALL EXTERIOR LIGHTING TO BE 120V UNLESS STATED OTHERWISE.
4. ALL WIRING SHALL BE SIZED AS REQUIRED TO LIMIT VOLTAGE DROP TO NO MORE THAN 3 PERCENT FROM PANEL TO LAST DEVICE ON CIRCUIT.
5. COORDINATE ALL ELECTRICAL UTILITY POWER REQUIREMENTS WITH LOCAL PUBLIC SERVICE.
6. SITE LIGHT POLES AND LIGHTED SIGNAGE ON/OFF CONTROL (TIME OF DAY) BY FRESCO FCS HEAD END SYSTEM. SEE SHEET E101. PROVIDE RELAY FOR CONTROL BY FRESCO SYSTEM.
7. FOR PLAN NOTE #10 VERIFY ON SITE ONE QUAZITE BOX CAN BE USED INSTEAD OF 2.



PLAN NOTES:

1. APPROXIMATE LOCATION OF ELECTRICAL PANEL L1.
2. EXISTING LIGHT POLE TO BE RECONNECTED TO NEW PANEL L1. EXTEND 1" CONDUIT AND EXTEND FEEDERS (#10 CONDUCTORS) TO NEW PANEL L1. PROVIDE SPLICE KIT AND SLICE WIRES. CONNECT TO 20A 120V CIRCUIT #42 IN PANEL L1. SEE GENERAL NOTE #7 FOR CONTROL INFORMATION.
3. EXISTING SIGNAGE TO BE RECONNECTED TO NEW PANEL L1. EXTEND 1" CONDUIT AND EXTEND FEEDERS (#10 CONDUCTORS) TO NEW PANEL L1. PROVIDE SPLICE KIT AND SLICE WIRES. CONNECT TO 20A 120V CIRCUIT #42 IN PANEL L1. SEE GENERAL NOTE #7 FOR CONTROL INFORMATION.
4. EXISTING UTILITY TRANSFORMER LOCATION.
5. APPROXIMATE LOCATION OF DATA RACK IN NEW BUILDING. COORDINATE LOCATION WITH OWNER. SEE SHEET E301.
6. PROVIDE PULL BOX 24" X 18" X 24" EQUAL TO QUAZITE PG SERIES, SOLID WALL, OPEN BOTTOM. PROVIDE EXTRA HEAVY DUTY COVER WITH 2 BOLTS, LABELED 'LOW VOLTAGE', SEE DETAIL 2. STUB UP 2-3" CONDUITS FROM DATA RACK INTO PULL BOX.
7. PROVIDE 2-3" CONDUITS FROM IT RACK TO PULL BOX (NOTE 6 ABOVE) AT PROPERTY LINE FOR TELECOMMUNICATIONS SERVICE ENTRANCE. COORDINATE FINAL LOCATION OF TELEPHONE, DATA, AND CATV UTILITY WITH TELECOMMUNICATIONS SERVICE PROVIDER.
8. PROVIDE FLAG POLE LIGHT FIXTURE MOUNTED ON FLAG POLE. SEE GENERAL NOTE #7 FOR ON/OFF CONTROL. VERIFY LOCATION OF FLAG POLE WITH OWNER. CIRCUIT TO PANEL L1 CIRCUIT #42.
9. EXISTING UNDERGROUND CONDUIT AND WIRING TO REMAIN.
10. PROVIDE PULL BOX 24" X 18" X 24" EQUAL TO QUAZITE PG SERIES, SOLID WALL, OPEN BOTTOM. PROVIDE EXTRA HEAVY DUTY COVER WITH 2 BOLTS, LABELED 'ELECTRICAL', SEE DETAIL 2. BOX USED TO SPLICE EXISTING LIGHTING WIRING TO NEW.
11. PROVIDE CT CABINET. SEE RISER DIAGRAM SHEET E201.

N

1 / E002 SITE PLAN – ELECTRICAL
SCALE: 1/16" = 1'-0"

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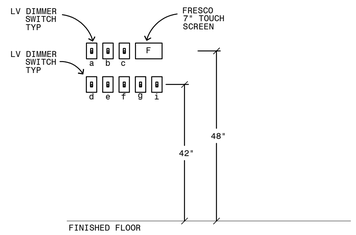
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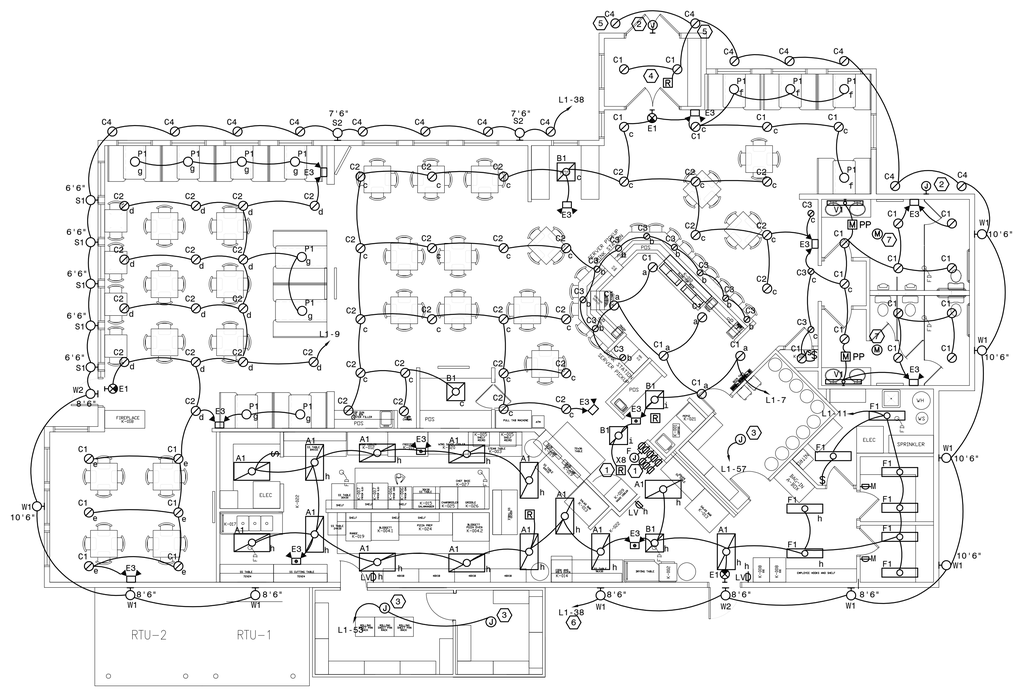
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NOTE:
1. WHERE DEVICES ARE SHOWN IN THE SAME GENERAL AREA ON THE PLANS, ALIGN DEVICES VERTICALLY WHEN POSSIBLE.

2 E101 SWITCH CONTROL DETAIL

NOT TO SCALE



MAIN FLOOR PLAN - LIGHTING

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

GENERAL NOTES:

1. LABEL ALL SWITCH COVER PLATES WITH CIRCUIT # AND PANEL NAME.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS AND LOCATIONS OF WALL MOUNTED DEVICES. CLOSE COORDINATION WITH THE MECHANICAL CONTRACTOR IS REQUIRED TO INSTALL MANY OF THE REQUIRED DEVICES.
3. SEE POWER PLAN FOR PANEL LOCATIONS.
4. LIGHT FIXTURES WITH "nL" ARE USED FOR EGRESS LIGHTING AND ARE ON ALL THE TIME. DO NOT CONNECT TO NEW CONTROLS OR PROVIDE SENSORS IN FIXTURE UNLESS STATED OTHERWISE.
5. LOW VOLTAGE CABLE TO BE IN CONDUIT IN OPEN CEILING AREAS.
6. COORDINATE C4, W1, W2, S1, AND S2 FIXTURE HEIGHT/LOCATION ON SITE WITH OWNER/ARCHITECT. THESE FIXTURES TO BE CONNECTED TO FRESCO (OR EQUAL) CONTROLS FOR ON/OFF. PROVIDE RELAYS.
7. C4 FIXTURES TO BE RECESSED IN SOFFIT.

PLAN NOTES:

1. PROVIDE 8 LV DIMMER SWITCHES AND DIMMING RELAYS TO CONTROL LIGHTING IN BAR/RESTAURANT AREA. AT THE J-BOX "F" PROVIDE FRESCO FCS ARCHITECTURAL LIGHTING CONTROL 7" TOUCH SCREEN (OR APPROVED EQUAL) FOR TIME OF DAY CONTROL. PROVIDE PROGRAMMING OF THIS DEVICE AND DEMONSTRATE WITH OWNER. SET TIMES WITH OWNER FOR ON/OFF CONTROL. SEE DETAIL #2 ON THIS SHEET FOR INDIVIDUAL SWITCH CONTROL.
2. PROVIDE 120V 20A ELECTRICAL CONNECTION TO SIGNAGE. COORDINATE WITH OWNER. SEE ARCHITECTURAL ELEVATIONS FOR LOCATION. PROVIDE POWER PACK AND CONNECT TO FRESCO TOUCH SCREEN FOR ON/OFF CONTROL. PROVIDE 20A CIRCUIT FROM PANEL L1 CIRCUIT #40.
3. CONNECT COOLER LIGHTING AND CONTROLS TO LIGHTING CIRCUIT AS SHOWN.
4. CONNECT VESTIBULE FIXTURES TO FRESCO CONTROL SYSTEM FOR TIME OF DAY ON/OFF CONTROL.
5. PROVIDE FIXTURE WITH REMOTE EM 20 WATT BATTERY PACK FOR EGRESS LIGHTING. BATTERY TO NOT TURN ON FIXTURE WHEN FRESCO CONTROLS TURN OFF FIXTURE FOR TIME OF DAY CONTROL. PROVIDE RELAY AND DEVICES.
6. CONNECT EXTERIOR FIXTURES TO FRESCO CONTROL SYSTEM FOR TIME OF DAY ON/OFF CONTROL. BATTERY TO NOT TURN ON W2 FIXTURES WHEN FRESCO CONTROLS TURN OFF FIXTURE FOR TIME OF DAY CONTROL. PROVIDE RELAYS AND DEVICES.
7. MOTION SENSOR TO CONTROL EXHAUST FAN IN ROOM ALONG WITH LIGHTS. COORDINATE WITH MECHANICAL.

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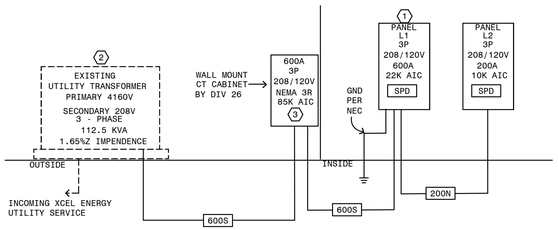
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GENERAL RISER NOTES:

1. GROUND ALL AS PER NEC ELECTRICAL CODE.
2. PROVIDE DEDUCT ALTERNATE #1 TO PROVIDE ALUMINUM FEEDERS IN PLACE OF COPPER FEEDERS TO NEW PANEL BOARDS. ALUMINUM FEEDERS TO MATCH AMPACITY OF REPLACED COPPER FEEDERS. PROVIDE ASSOCIATED CONDUIT SIZE FOR ALUMINUM FEEDERS.
3. PROVIDE ARC FLASH PPE LABELS ON PANELS. SEE SPECIFICATIONS FOR REQUIREMENTS.
4. DIV 26 MEANS PROVIDED BY ELECTRICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR TO CARRY ALL UTILITY COSTS PERMANENT AND TEMPORARY POWER

RISER PLAN NOTES:

1. PANEL TO BE SERVICE ENTRANCE RATED.
2. COORDINATE WITH POWER COMPANY IF EXISTING TRANSFORMER IS TO REMAIN OR BE REPLACED WITH NEW. IF REPLACED WITH NEW PROVIDE NEW PAD PER XCEL ENERGY SPECIFICATIONS.
3. PROVIDE METERING PROVITIONS IN CT CABINET AND INSTALL METER PROVIDED BY UTILITY COMPANY.



COPPER FEEDER SCHEDULE

FEEDER NUMBER	AMPERE RATING	PHASE CONDUCTORS PER CONDUIT		NEUTRAL CONDUCTOR SIZE		GROUND CONDUCTOR SIZE	CONDUIT SIZE	NUMBER OF PARALLEL SETS	REMARKS
		QUANTITY	SIZE	QUANTITY	SIZE				
600S	600	3	350 KCM	1	350 KCM		3"	2	
200N	200	3	3/0 AWG	1	3/0 AWG	4 AWG	2"	1	

2 E201 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

MOTOR AND EQUIPMENT SCHEDULE

MOTOR NO	DESCRIPTION OF MOTOR OR EQUIPMENT	LOCATION (ROOM NO)	LOAD IN HORSEPOWER (HP) OR FULL LOAD AMPS (FLA)	VOLTAGE, PHASE	PANEL AND CIRCUIT NUMBER OR MCC NUMBER	CONDUCTOR SIZE AND QUANTITY	GROUND CONDUCTOR SIZE	SCCR RATING	CONDUIT SIZE	CONTROLLER								DISCONNECT				CONTROL OR AUXILIARY DEVICE (SEE NOTES)							
										MAGNETIC STARTER/DISCONNECT	STARTER SIZE	VARIABLE FREQUENCY DRIVE	MANUAL MOTOR CONTROLLER	MOTION SENSOR	PILOT TOGGLE SWITCH	CONTROLLER BY (DIV. NO.)	CONTROLLER LOCATION (ROOM NO.)	DISCONNECT SIZE	FUSIBLE / NON FUSIBLE	NEMA RATING	DISCONNECT BY (DIV. NO.)	VFD	DEFINITE PURPOSE RELAY	TIME SWITCH	THERMOSTAT	AQUASTAT	FLOAT SWITCH	FIRE ALARM CONTROL RELAY	FIRE ALARM DUCT DETECTORS (SUPPLY AND RETURN)	INTERLOCK WITH
1	RTU-1	ROOF	78 MCA	208, 3	L1-2,4,6	3 #3	#8	4521	1-1/4"			X				23	UNIT	100A	NF	3R	23	3						4	4	
2	RTU-2	ROOF	78 MCA	208, 3	L1-8,10,12	3 #3	#8	6820	1-1/4"			X				23	UNIT	100A	NF	3R	23	3						4	4	
3	MAU-1	OUTSIDE	60 MCA	208, 3	L1-14,16,18	3 #4	#8	2018	1"			X				23	UNIT	100A	NF	3R	23	3								
4	EF-1	BATHROOM	40W	120, 1	LIGHT CKT	2 #12	#12		1/2"					X		26	ROOM	20A	NF	1	23									
5	EF-2	BATHROOM	40W	120, 1	LIGHT CKT	2 #12	#12		1/2"					X		26	ROOM	20A	NF	1	23									
6	EF-3	MECH	77W	120, 1	L1-62	2 #12	#12		1/2"							23	UNIT	20A	NF	1	23									
7	EF-4	KITCHEN	2 HP	208, 3	L2-14,16,18	3 #12	#12		1/2"							23	UNIT	30A	NF	1	26									
8	WH-1	MECH	10A	120, 1	L1-64	2 #12	#12		1/2"							23	UNIT	20A	NF	1	26									
9	RCP-1	MECH	60 W	120, 1	L1-66	2 #12	#12		1/2"							23	UNIT	20A	NF	1	26									
10	EF-5	KITCHEN	1 HP	208, 3	L2-8,10,12	3 #12	#12		1/2"							23	UNIT	30A	NF	1	26									
11	EF-6	KITCHEN	1/4 HP	208, 3	L2-2,4,6	3 #12	#12		1/2"							23	UNIT	30A	NF	1	26									
12																														
13																														
14																														
15																														

DIV 23 BY MECHCANICAL, DIV 26 BY ELECTRICAL

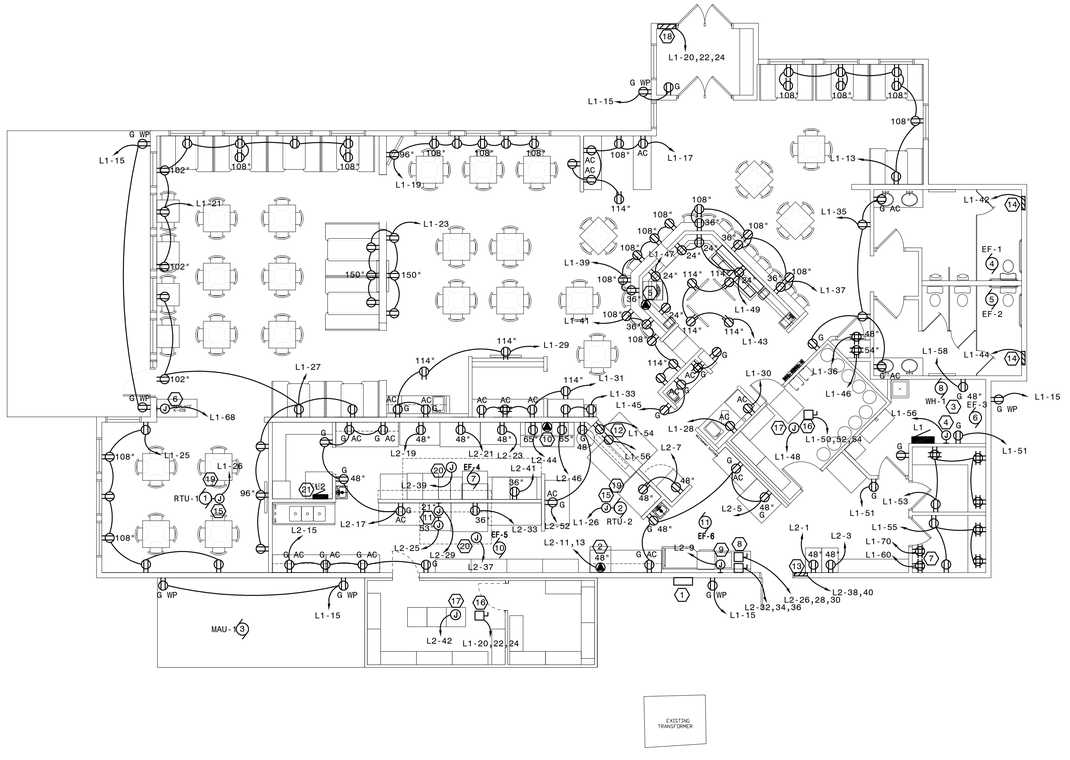
NOTES FOR AUXILIARY CONTROL DEVICE
1. ELECTRICAL CONTRACTOR TO FURNISH, SET, AND WIRE AUXILIARY CONTROL DEVICE
2. ELECTRICAL CONTRACTOR TO SET, AND WIRE AUXILIARY CONTROL DEVICE FURNISHED BY OTHERS
3. ELECTRICAL CONTRACTOR TO WIRE AUXILIARY CONTROL DEVICE FURNISHED AND SET BY OTHERS
4. CONNECT DUCT DETECTOR IN SUPPLY AND RETURN DUCTS TO FA SYSTEM. DUCT DETECTOR BY MECHANICAL

GENERAL NOTES:

1. RECEPTACLES TO BE TAMPERPROOF AS PER NEC 406.12.
2. COORDINATE ALL UNDERGROUND CONDUIT WORK.
3. LABEL ALL RECEPTACLES COVER PLATES WITH CIRCUIT # AND PANEL NAME.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS AND LOCATIONS OF WALL MOUNTED DEVICES. CLOSE COORDINATION WITH THE MECHANICAL CONTRACTOR IS REQUIRED TO INSTALL MANY OF THE DEVICES.
5. MC CABLE ONLY ALLOWED ON 120V 20A OR LESS SINGLE POLE CIRCUITS. NOT ALLOWED FOR HOME RUNS OR OPEN CEILINGS.
6. PROVIDE ARC FLASH PPE LABELS ON PANELS, DISCONNECTS, AND SWITCHBOARDS AS PER NEC CODE.
7. VERIFY ALL EQUIPMENTS LOCATIONS PRIOR TO INSTALLATION.
8. VERIFY MOTOR LOCATIONS WITH MECHANICAL.
9. FOR EXTERIOR WEATHER PROOF RECEPTACLES PROVIDE GRAY WEATHER PROOF COVER MODEL TAYMAC MX4280Z OR EQUAL. EXTERIOR RECEPTACLES TO BE RECESSED IN WALL.
10. VERIFY EXACT ELECTRICAL CONNECTIONS AND DEVICES FOR KITCHEN EQUIPMENT WITH OWNER AND EQUIPMENT ON SITE.

PLAN NOTES:

1. 600A 208V/3P SERVICE CT CABINET NEMA 3R.
2. PROVIDE NEMA 6-20R RECEPTACLE FOR 208V/1P 20A HOLD OVEN.
3. PROVIDE DEDICATED 120V 20A RECEPTACLE FOR WATER SOFTENER. COORDINATE WITH MECHANICAL.
4. PROVIDE 120V 20A CIRCUIT FOR FIRE ALARM PANEL.
5. PROVIDE NEMA 6-15R RECEPTACLE FOR 208V/1P 20A WASHER. CIRCUIT TO PANEL L1-32,34.
6. PROVIDE 120V 20A CIRCUIT FOR GAS FIRE PLACE. PROVIDE ON/OFF SWITCH, COORDINATE LOCATION WITH OWNER.
7. DEDICATED 120V 20A RECEPTACLE FOR WALL MOUNT DATA RACK AND TELCOM DEMARC. COORDINATE LOCATION ON SITE.
8. PROVIDE 30A, 208V/3 PHASE DISCONNECT WITH 30A FUSING FOR DISHWASHER EQUIPMENT AND A 30A, 208V/3 PHASE DISCONNECT WITH 30A FUSING FOR BOOSTER HEATER. DISCONNECTS TO BE STAINLESS, NEMA 4X RATING. COORDINATE EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS FOR DISHWASHER WITH EQUIPMENT PROVIDED. CONNECT DISCONNECTS TO DISHWASHER. PROVIDE 1" CONDUIT WITH 4#10 AND #10 GROUND FROM EACH DISCONNECT TO PANEL L2.
9. PROVIDE 120V 20A CONNECTION TO DISHWASHER FOR FAN, HOOD, RINSE AGENT, AND BOOSTER CONTROLS. COORDINATE ON SITE WITH DISHWASHER EQUIPMENT. PROVIDE NEMA 4X DEVICES.
10. PROVIDE NEMA 6-30R RECEPTACLE FOR STEAM TABLE. PROVIDE 3/4"CONDUIT WITH 2#10 AND #10 GROUND. CIRCUIT TO PANEL L2-48,50.
11. PROVIDE 120V 20A CONNECTION TO CONVECTION OVEN.
12. PROVIDE 120V 20A RECEPTACLES FOR HEAT LAMP. COORDINATE LOCATION OF RECEPTACLE WITH OWNER/EQUIPMENT.
13. PROVIDE RECESSED ELECTRIC UNIT HEATER IN WALL. PROVIDE 208V SINGLE PHASE 3000 WATT HEATER. PROVIDE 20A 2P CIRCUIT FOR HEATER FROM PANEL STATED. PROVIDE #12 CONDUCTORS. PROVIDE INTEGRAL THERMOSTAT FOR CONTROL FOR EACH. PROVIDE MARLEY #FRC4024F OR EQUAL. VERIFY EXACT LOCATION AND COLOR (WHITE) WITH ARCHITECT.
14. PROVIDE RECESSED ELECTRIC UNIT HEATER IN ROOM. PROVIDE 120V 1500 WATT HEATER. PROVIDE 20A 120V CIRCUIT FOR HEATER. PROVIDE INTEGRAL THERMOSTAT FOR CONTROL. PROVIDE WHITE IN COLOR. PROVIDE BERKO #SRA1512DSAF OR EQUAL.
15. PROVIDE 120V 20A CONNECTION TO GFCI RECEPTACLE PROVIDED WITH RTU UNIT. WIRE RECEPTACLE.
16. PROVIDE 30A 208V 3 PHASE NEMA 3R DISCONNECT FOR COOLER ELECTRICAL CONNECTION. FUSE DISCONNECT AT 20A. PROVIDE 20A WIRING. VERIFY COOLER ELECTRICAL REQUIREMENTS WITH INSTALLER.
17. PROVIDE 120V 20A CIRCUIT FOR EVAPORATOR FAN FOR COOLER. VERIFY COOLER ELECTRICAL REQUIREMENTS WITH INSTALLER.
18. PROVIDE RECESSED ELECTRIC UNIT HEATER IN WALL. PROVIDE 208V 3 PHASE 4800 WATT HEATER. PROVIDE 20A 3P CIRCUIT FOR HEATER FROM PANEL STATED. PROVIDE #12 CONDUCTORS. PROVIDE INTEGRAL THERMOSTAT FOR CONTROL FOR EACH. PROVIDE MARLEY #FRC4820SF OR EQUAL. VERIFY EXACT LOCATION AND COLOR (WHITE) WITH ARCHITECT.
19. MOTOR LOCATED ON ROOF AT THIS LOCATION. COORDINATE WITH MECHANICAL.
20. PROVIDE 120V 20A ELECTRICAL CONNECTION TO HOOD DUCT SENSOR, LITES, FIRE SURPESSION SYSTEM, AND TO HOOD AND ACCESSORIES. VERIFY WITH VENDOR/MECHANICAL. PROVIDE DISCONNECT MEANS.
21. VERIFY WITH OWNER IF THEY WANT THIS PANEL TO BE RECESSED IN WALL OR SURFACE MOUNT.



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1 E201 MAIN FLOOR PLAN - POWER
SCALE: 1/8" = 1'-0"

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AJ'S BAR
GLENWOOD, MN

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

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

SIGNATURE:

PRINTED NAME: MICHAEL A. BERGER

DATE: 10/02/2026 REGISTRATION NO.: 40294

COMMISSION NO: MBN# 26-185
DRAWN BY: DUSTON HOFFNER
CHECKED BY: MICHAEL A. BERGER
DATE: 10/02/2026

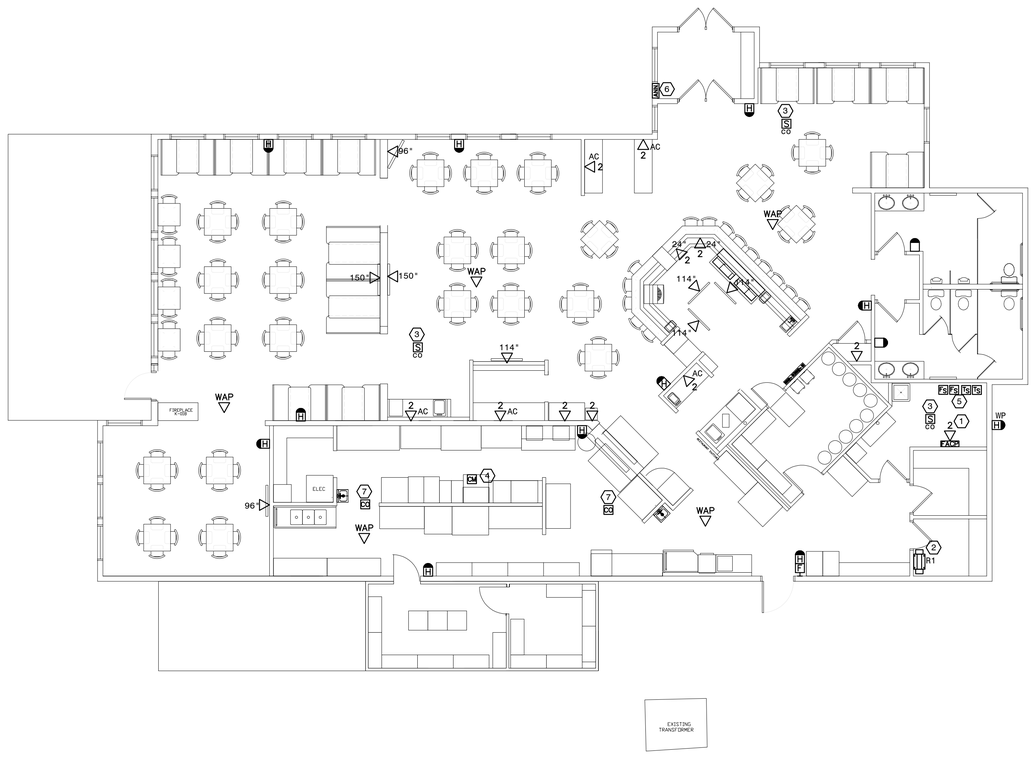
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GLENWOOD, MN



N

I
E301
MAIN FLOOR PLAN - SYSTEMS
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS AND LOCATIONS OF WALL MOUNTED DEVICES. CLOSE COORDINATION WITH THE MECHANICAL CONTRACTOR IS REQUIRED TO INSTALL MANY OF THE REQUIRED DEVICES.
2. PROVIDE A SINGLE GANG BOX WITH A 3/4" INCH CONDUIT STUBBED TO ACCESSIBLE HALLWAY CEILING SPACE FOR VOICE/DATA CABLING AND DEVICE. MOUNT BOX AT 18 INCHES TO CENTER OF BOX (UNLESS NOTED OTHERWISE). ELECTRICAL CONTRACTOR TO PROVIDE CABLEING AND DEVICES. SEE DETAIL #2 ON SHEET E501 FOR ADDITIONAL INFORMATION.
3. LOW VOLTAGE CABLE TO BE IN CONDUIT IN OPEN CEILING AND OPEN STRUCTURE AREAS.
4. PROVIDE J-HOOKS ON 3' CENTER FOR LOW VOLTAGE CABLING IN ACT CEILINGS.
5. ROUTE ALL CABLE IN CONDUIT IN EXPOSED CEILING SPACES.
6. ROUTE CABLING IN ATTIC SPACE IN VAULTED CEILING AREAS.

PLAN NOTES:

1. PROVIDE DATA CONNECTION FOR FIRE ALARM PANEL.
2. WALL MOUNTED DATA RACK AND TELCOM DEMARC LOCATION. SEE DETAIL 1/E501. COORDINATE WITH OWNER.
3. PROVIDE COMBINATION SMOKE DETECTOR AND CARBON DIOXIDE DETECTOR AND CONNECT TO NEW FIRE ALARM PANEL.
4. PROVIDE ADDRESSABLE MONITOR MODULE, CONDUIT, AND FIRE ALARM WIRING TO HAVE HOOD FIRE SUPPRESSION INTERFACE WITH BUILDING FIRE ALARM SYSTEM. COORDINATE WITH OWNER. UPON ACTIVATION OF HOOD FIRE SUPPRESSION SYSTEM, ELECTRICAL POWER TO EQUIPMENT TO BE SHUT OFF VIA SHUNT TRIP CIRCUIT BREAKER IN L2 PANEL. PROVIDE CONDUIT AND WIRING AS REQUIRED.
5. PROVIDE FIRE ALARM FLOW AND TAMPER CONNECTIONS AND DEVICES FOR FIRE SPRINKLER SYSTEM. COORDINATE WITH MECHANICAL. CONNECT TO FIRE ALARM PANEL.
6. PROVIDE RECESSED FIRE ALARM ANNUCIATOR PANEL.
7. PROVIDE CARBON DIOXIDE DETECTOR AND CONNECT TO NEW FIRE ALARM PANEL.

ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
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CHECKED BY: MICHAEL A. BERGER
DATE: 10/02/2026

DRAWING NO.
E301

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LUMINAIRE SCHEDULE

TYPE	MANUFACTURERS	CATALOG INFORMATION	FIXTURE DESCRIPTION	LED DATA TYPE	DRIVER DATA TYPE	INPUT WATTS	VOLTAGE	MOUNTING	REMARKS
A1	METALUX LITHONIA OR EQUAL	EPANL	2' X 4' RECESSED LED FLAT PANEL, WHITE FROST LENS WITH SMOOTH PATTERN. 3500K COLOR TEMPERATURE, 3500 LUMENS.	3500K LED 5000 LUMENS	0-10V DIMMING DRIVER	42	MVOLT	RECESSED	
B1	METALUX LITHONIA OR EQUAL	EPANL	2' X 2' RECESSED LED FLAT PANEL, WHITE FROST LENS WITH SMOOTH PATTERN. 3500K COLOR TEMPERATURE, 3500 LUMENS.	3500K LED 3500 LUMENS	0-10V DIMMING DRIVER	30	MVOLT	RECESSED	
C1	HALO LITHONIA OR EQUAL	HC6 SERIES	6 INCH LED DOWN LIGHT, SEMI-SPECULAR REFLECTOR, MEDIUM DISTRIBUTION, WHITE TRIM. WET LOCATION VAPOR TIGHT. LUMEN SELECTABLE 1000, 1500, 2000. COLOR TEMP SELECTABLE. IC RATED.	3500K LED 2000 LUMENS	0-10V DIMMING DRIVER	21	MVOLT	RECESSED	ARCHITECT TO VERIFY FINISH/TRIM.
C2	HALO LITHONIA OR EQUAL	HC6 SERIES	6 INCH LED DOWN LIGHT, SEMI-SPECULAR REFLECTOR, MEDIUM DISTRIBUTION, WHITE TRIM. WET LOCATION. LUMEN SELECTABLE 1000, 1500, 2000. COLOR TEMP SELECTABLE. SET TO LUMENS ANC COLOR TEMP STATED. IC RATED.	3500K LED 2000 LUMENS	0-10V DIMMING DRIVER	21	MVOLT	RECESSED	ARCHITECT TO VERIFY FINISH/TRIM. PROVIDE HSA SLOPED CEILING ADAPTER IN VAULTED CEILINGS
C3	HALO LITHONIA OR EQUAL	HC4 SERIES	4 INCH LED DOWN LIGHT, SEMI-SPECULAR REFLECTOR, MEDIUM DISTRIBUTION, WHITE TRIM. WET LOCATION. LUMEN SELECTABLE 750, 1000, 1500. COLOR TEMP SELECTABLE. SET TO LUMENS AND COLOR TEMP STATED. IC RATED.	3500K LED 1500 LUMENS	0-10V DIMMING DRIVER	18	MVOLT	RECESSED	ARCHITECT TO VERIFY FINISH/TRIM.
C4	HALO LITHONIA OR EQUAL	HC6 SERIES	6 INCH LED DOWN LIGHT, SEMI-SPECULAR REFLECTOR, MEDIUM DISTRIBUTION, WHITE TRIM. WET LOCATION VAPOR TIGHT EXTERIOR RATED. LUMEN SELECTABLE 1000, 1500, 2000. COLOR TEMP SELECTABLE. SET TO LUMENS AND COLOR TEMP STATED. IC RATED.	3500K LED 2000 LUMENS	0-10V DIMMING DRIVER	21	MVOLT	RECESSED	ARCHITECT TO VERIFY FINISH/TRIM.
E1	SURE-LITES LITHONIA OR EQUAL	CX SERIES LQM	SINGLE FACE EXIT LIGHT, DIE CAST ALUMINUM HOUSING, WHITE BODY AND RED LETTERS. NICKLE CADMIUM BATTERY. SELF DIAGNOSTICS	RED	LED	1.5	MVOLT	UNIVERSAL	
E2	SURE-LITES LITHONIA OR EQUAL	CX SERIES LQM	DUAL FACE EXIT LIGHT, DIE CAST ALUMINUM HOUSING, WHITE BODY AND RED LETTERS. NICKLE CADMIUM BATTERY. SELF DIAGNOSTICS	RED	LED	1.5	MVOLT	UNIVERSAL	
E3	SURE-LITES OR EQUAL	SEL SERIES	LED EMERGENCY LIGHT, POLYCARBONATE HOUSING, WHITE BODY, NICKLE CADMIUM BATTERY. 50 FOOT SPREAD, TWO HEADS. SELF DIAGNOSTICS		LED	4	MVOLT	UNIVERSAL	VERIFY FINISH WITH ARCHITECT
E4	SURE-LITES OR EQUAL	LPXC SERIES	SINGLE FACE EXIT LIGHT COMBO UNIT, POLYCARBONATE HOUSING, WHITE BODY, NICKLE CADMIUM BATTERY. 50 FOOT SPREAD, TWO HEADS. SELF DIAGNOSTICS	RED	LED	3	MVOLT	UNIVERSAL	
E5	MULE OR EQUAL TELESIS	TSR-HO TEBL	HIGH OUTPUT LED EMERGENCY LIGHT, POLYCARBONATE HOUSING, WHITE BODY, NICKLE CADMIUM BATTERY. 50 FOOT SPREAD, TWO HEADS. SELF DIAGNOSTICS		LED	6	MVOLT	UNIVERSAL	
F1	METALUX LITHONIA OR EQUAL	SNLED SERIES	4 FOOT LINEAR LED, ALUMINUM RAILS AND END CAPS, FULL FROST ROUND LENS, WHITE FINISH. WALL/SURFACE OR CABLE MOUNT.	3500K LED 6000 LUMENS	0-10V DIMMING DRIVER	55	MVOLT	UNIVERSAL	PROVIDE CABLE MOUNT WHERE REQUIRED
P1	WAC LIGHTING OR EQUAL	CLOAK	PD-58506-35-BK. CABLE MOUNT MONO POINT PENDANT. BLACK FINISH. TUBULAR. AN OPAQUE TUBE SURROUNDS AN ACRYLIC SHADE, DIRECTING ILLUMINATION IN A DOWNWARD DESIGN.	3500K LED 1200 LUMENS 900 DELIVERED	0-10V DIMMING DRIVER	15	MVOLT	PENDANT	VERIFY CABLE LENGTH WITH OWNER
S1	WAC LIGHTING OR EQUAL	PISTON	WS-W32514-27-BK. EXTERIOR WALL SCONE BLACK FINISH. PROVIDE RELAY AND CONNECT ALL TO FRESCO SYSTEM CONTROLS. COLOR TEMP SELECTABLE	3500K LED 1000 LUMENS	0-10V DIMMING DRIVER	16	MVOLT	WALL	
S2	FERGUSON HOME OR APP EQUAL	VIS COMFORT	FERGUSON HOME VISUAL COMFORT BARN LIGHT 8837401EN3-12. 15" LED BARN LIGHT. PROVIDE RELAY AND CONNECT ALL TO FRESCO SYSTEM CONTROLS. PROVIDE LED LAMP	3500K LED 800 LUMENS	0-10V DIMMING DRIVER	16	MVOLT	WALL	ARCHITECT TO VERIFY EQUALS
V1	MODERN FORMS OR EQUAL	VOGUE LED	RECTANGULAR VANITY LIGHT, MATTE SILVER FINISH, STANDARD ACRYLIC LENS, 48" WIDE.	3500K LED 1200 LUMENS	NON-DIMMING DRIVER	38	MVOLT	WALL	FIXTURES TO BE MOUNTED ABOVE MIRROR
W1	COOPER LITHONIA OR EQUAL	IST SERIES	TRAPEZOID EXTERIOR WALL FICTURE, DIE-CAST ALUMINUM HOUSING, TYPE 4 DISTRIBUTION, BLACK FINISH. PROVIDE ACCESSORIES FOR FRESCO (OR EQUAL) ON/OFF CONTROL. FIXTURE TO BE CONNECTED TO FRESCO OR EQUAL SYSTEM.	4000K LED 8000 LUMENS	0-10V DIMMING DRIVER	70	MVOLT	UNIVERSAL	COORDINATE MOUNTING HEIGHT WITH ARCHITECT
W2	COOPER LITHONIA OR EQUAL	IST SERIES	TRAPEZOID EXTERIOR WALL FICTURE, DIE-CAST ALUMINUM HOUSING, TYPE 4 DISTRIBUTION, BLACK FINISH. PROVIDE EMERGENCY BATTERY FOR 90 MINUTES BACKUP POWER. PROVIDE ACCESSORIES FOR FRESCO (OR EQUAL) ON/OFF CONTROL. FIXTURE TO BE CONNECTED TO FRESCO OR EQUAL SYSTEM.	4000K LED 8000 LUMENS	0-10V DIMMING DRIVER	70	MVOLT	UNIVERSAL	COORDINATE MOUNTING HEIGHT WITH ARCHITECT
AA1	POLE LED OR EQUAL	EXTENDED	LED FLAG POLE LIGHT MOUNTED ON POLE. COORDIANTE WITH FLAG POLE PRIOR TO ORDERING	4000K LED 3250 LUMENS	0-10V DIMMING DRIVER	38	MVOLT	POLE	FIXTURE TO BE FRESCO SYSTEM FOR ON/OFF CONTROL

OCCUPANCY SENSOR AND LIGHTHING CONTROL SCHEDULE

TYPE/SYMBOL	MANUFACTURER	MODEL #	DESCRIPTION
$V	ACUITY	WSX SA	PIR WALLBOX VACANCY SENSOR
DM	ACUITY	WSX PDT D	PROVIDE 0-10V VACANCY SENSOR WITH DIMMING
DLV	ACUITY	nPODMA D	PROVIDE 0-10V DIMMER SWITCH
$OS	ACUITY	WSX	PIR WALLBOX OCCUPANCY SENSOR
DM	ACUITY	SPODMRA D	PROVIDE 0-10V DIMMER SWITCH
$LV	ACUITY	nPODM	LOW VOLTAGE CONTROL SWITCH
TF	ACUITY	FRESCO	TOUCH SCREEN DIGITAL TIME CLOCK
MPP	ACUITY	MP20	POWER PACK 120/277V
R	ACUITY	nPP16 D EFP	DLM ROOM CONTROLLER. SEE DRAWINGS FOR # OF RELAYS/SWITCHES
M	ACUITY	nCM PDT 10	DUAL TECH CEILING MOUNT SENSOR

PROVIDE MANUFACTURE AS STATED. NLIGHT, COOPER, LEVITON, LUTRON, WATTSTOPPER AND APPROVED EQUALS ARE ALLOWED.
PROVIDE POWER PACKS, ROOM CONTROLLERS, ETC... AS REQUIRED.
PROVIDE WHITE DEVICES UNLESS SPECIFICATIONS STATE OTHERWISE. MANUFACTURER TO VERIFY COVERAGE IS MET.
PROVIDE CORRECT SETTINGS (OCCUPANCY/VACANCY) ON DEVICES TO MEET ENERGY CODE.
ALL DEVICES TO BE DIGITAL
PROVIDE STEM/PENDANT MOUNT OF CEILING MOUNT SENSORS IN OPEN CEILING AREAS.
SENSOR TO BE SAME HEIGHT AS FIXTURE. VERIFY HEIGHT WITH ARCHITECT.
CONNECT RELAYS AND POWER PACKS AS REQUIRED TO ASSOCIATED FIXTURES 120V 20A CIRCUIT.
CONTROLS FOR BATHROOMS AND HALLWAYS TO BE AUTO ON AND MANUAL/AUTO OFF. PROVIDE MANUAL/DTC ON AND MANUAL/AUTO/DTC OFF FOR REST OF SPACES PER ENERGY CODE.

PANELBOARD LOAD SCHEDULE

PANEL: L1 — MAIN: MCB 600A — ENCLOSURE: NEMA 1 — LOCATION: MECH ROOM
RATING: 600 AMP — VOLTS: 208Y/120, 3 PH., 4W. — AIC RATING: 22,000 — MOUNTING: SURFACE — FED FROM: UTILITY

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	LOAD IN VOLT-AMPERES HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	200				5256	15000	1500	L2	A	RTU-1			10680			90		2
3				1200	4256	11000	1500		B				10680					4
5		3	200	1400	5756	12600			C				10680				3	6
7	20	1	1600					LIGHTING	A	RTU-2			10680			90		8
9	20	1	704					LIGHTING	B				10680					10
11	20	1	1440					LIGHTING	C				10680				3	12
13	20	1		1600				RECEPTS	A	MAU-1			7200			70		14
15	20	1		1600				EXT RECPTS	B				7200					16
17	20	1		1200				RECEPTS	C				7200				3	18
19	20	1		1200				RECEPTS	A	ELEC HEAT	1600					20		20
21	20	1		1600				RECEPTS	B		1600							22
23	20	1		1200				RECEPTS	C		1600						3	24
25	20	1		1200				RECEPTS	A	RTU RECPT				400		20	1	26
27	20	1		1400				RECEPTS	B	COFFEE				1600		20*	1	28
29	20	1		800				RECEPTS	C	PEPSI				1600		20*	1	30
31	20	1		1000				RECEPTS	A	WASHER				1600		20*		32
33	20	1		1000				RECEPTS	B					1600			2	34
35	20	1		1000				RECEPTS	C	DATA RECPT				400		20	1	36
37	20*	1		1200				RECEPTS	A	EXT LIGHTS					1000	20	1	38
39	20*	1		1000				RECEPTS	B	SIGNAGE					800	20	1	40
41	20*	1		1000				RECEPTS	C	ELEC HEAT	1500					20	1	42
43	20*	1		800				RECEPTS	A	ELEC HEAT	1500					20	1	44
45	20	1		800				RECEPTS	B	DATA RECPT				400		20	1	46
47	20*	1		600				RECEPTS	C	COOLER EVAP			1000			20	1	48
49	20*	1		400				RECEPTS	A	COOLER			1920			20		50
51	20	1		800				RECEPTS	B				1920					52
53	20	1		1400				RECEPTS	C				1920				3	54
55	20	1		1400				RECEPTS	A	FA PANEL			1000			20	1	56
57	20	1	200					COOLER LITES	B	WATER SOFTENER			1000			20	1	58
59	20	1						SPARE	C	DATA RECPT			400			20	1	60
61	20	1						SPARE	A	EF-3			17			20	1	62
63	20	1						SPARE	B	WH-1			1200			20	1	64
65	20*	1						SPARE	C	RCP-1			60			20	1	66
67	20*	1						SPARE	A	FIRE PLACE			1000			20*	1	68
69	20*	1						SPARE	B	DATA RECPT				400		20	1	70
71	20*	1						SPARE	C	SPARE						20	1	72

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	2600	1704	1640	5944	1.00	5944
RECEPTACLES	10800	13400	10600	34800	0.50	17400
MOTORS & EQUIP	37753	36936	37696	112385	0.90	101147
KITCHEN EQUIP.	15000	11000	12600	38600	0.65	25090
HEAT / AC	4600	3100	3100	10800	0.90	9720
LARGEST MOTOR				32040	0.25	8010
TOTAL AMPS:	464			TOTAL VA:		167,311

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI
2. PROVIDE INTERNAL SPD
3. MAIN BREAKER TO BE LSI
4. SERVICE ENTRANCE RATED.

PANELBOARD LOAD SCHEDULE

PANEL: L2 — MAIN: MLO 200A — ENCLOSURE: NEMA 1 — LOCATION: KITCHEN
RATING: 200 AMP — VOLTS: 208Y/120, 3 PH., 4W. — AIC RATING: 10,000 — MOUNTING: SURFACE — FED FROM: L1

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	LOAD IN VOLT-AMPERES HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20*	1				1200		ICE MACH	A	EF-6			300			20		2
3	20*	1				1200		ICE MACH	B				300					4
5	20	1		600				RECPTS	C				300				3	6
7	20*	1				600		COOLER	A	EF-5			600			20		8
9	20*	1				600		WASH	B				600					10
11	20*					1500		HOLD OVEN	C				600				3	12
13		2				1500			A	EF-4			936			20		14
15	20	1		800				RECPTS	B				936					16
17	20	1		800				RECPTS	C				936				3	18
19	20*	1				1000		COOLER	A	COOLER			1920			20		20
21	20*	1				1000		COOLER	B				1920					22
23	20*	1				1000		COOLER	C				1920				3	24
25	20	1				1000		OVEN	A	DISHWASHER		2800				30*		26
27	20#	1						SHUNT FOR OVEN	B			2800						28
29	20	1				1000		OVEN	C			2800					3	30
31	20#	1						SHUNT FOR OVEN	A	DISHWASHER		2800				30*		32
33	20	1				1000		PIZZA OVEN	B			2800						34
35	20#	1						SHUNT FOR OVEN	C			2800					3	36
37	20	1			500			ANSYL SYS	A	ELEC HEAT	1500					20		38
39	20	1			500			ANSYL SYS	B		1500						2	40
41	20	1				1000		GRIDDLE	C	EVAPORATOR			1000			20	1	42
43	20#	1						SHUNT FOR GRID	A	MICROWAVE		1600				20*	1	44
45	20	1						SPARE	B	MICROWAVE		1600				20*	1	46
47	20#	1						SHUNT FOR SPARE	C	STEAM TABLE		2500				30*		48
49	20	1						SPARE	A			2500					2	50
51	20#	1						SHUNT FOR SPARE	B	RECEPTS				400		20	1	52
53	20	1	200					COOLER LIGHTS	C	HEAT LAMP			1000			20*	1	54
55	20	1						SPARE	A	HEAT LAMP			1000			20*	1	56
57	20	1						SPARE	B	SPARE						20*	1	58
59	20	1						SPARE	C	SPARE						20*	1	60
61	20	1						SPARE	A	SPARE						20*	1	62
63	20	1						SPARE	B	SPARE						20*	1	64
65	20	1						SPARE	C	SPARE						20*	1	66
67	20	1						SPARE	A	SPARE						20*	1	68
69	20*	1						SPARE	B	SPARE						20*	1	70
71	20*	1						SPARE	C	SPARE						20*	1	72

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	200	200	1.00	200
RECEPTACLES	0	1200	1400	2600	0.50	1300
MOTORS & EQUIP	5256	4256	5756	15268	0.90	13741
KITCHEN EQUIP.	15000	11000	12600	38600	0.65	25090
HEAT / AC	1500	1500	0	3000	0.90	2700
LARGEST MOTOR				6000	0.25	1500
TOTAL AMPS:	124			TOTAL VA:		44,531

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI
2. PROVIDE INTERNAL SPD
3. BREAKERS NOTED WITH # TO BE SHUNT TRIP.
4. PROVIDE 20A SELF TEST BLANK GFCI FOR EACH SHUNT TIP BREAKER DEVICE NEXT TO PANEL AND LABEL.

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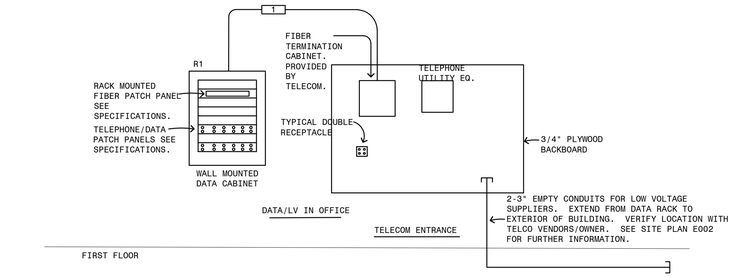
ISSUE FOR:	ISSUE DATE:
OWNER MEETING	7/23/2026
OWNER MEETING	7/28/2026
EQUIPMENT LABELS	8/11/2026
BIDDING	10/02/2026

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE:
PRINTED NAME: MICHAEL A. BERGER
DATE: 10/02/2026 REGISTRATION NO.: 40294

COMMISSION NO.: MBN# 26-185
DRAWN BY: DUSTON HOFFNER
CHECKED BY: MICHAEL A. BERGER
DATE: 10/02/2026

DRAWING NO.
E401

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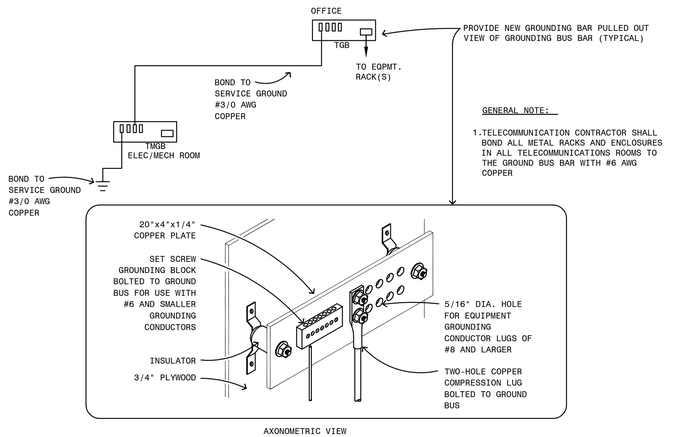


NOTES:

1. THE EXACT LAYOUT OF PATCH PANELS AND WIRE MANAGEMENT ON RACKS TO BE COORDINATED WITH THE OWNER PRIOR TO INSTALLATION.
2. ALL LABELING TO BE PER THE OWNER NUMBERING STANDARDS. THE NUMBERING AND LABELING OF JACKS AND PATCH PANELS SHALL BE COORDINATED WITH AN IT REPRESENTATIVE PRIOR TO BEGINNING ANY TERMINATION OF CABLING.
3. ORGANIZE THE CABLING FOR DATA ONTO SEPARATE PATCH PANELS. COLOR CODE JACKS PER SPECIFICATION.
4. HORIZONTAL AND VERTICAL RACK CABLE MANAGEMENT PROVIDED ELECTRICAL CONTRACTOR.
5. PROVIDE 6 FOOT PATCH CORDS AT HEAD END EQUIPMENT ONLY.
6. SWITCHES AND UPS PROVIDED BY OWNER.
7. COORDINATE AND VERIFY ALL EQUIPMENT PROVIDED BY OWNER/ARCHITECT PRIOR TO BACKBONE CABLING ROUGH-IN.
8. ELECTRICAL CONTRACTOR TO PROVIDE CABLING AND TERMINATION OF CABLING
9. COORDINATE AND VERIFY CATV DEMARCATION HEADEND EQUIPMENT REQUIREMENTS WITH ARCHITECT/OWNER.
10. ELECTRICAL CONTRACTOR TO GROUND RACK PER CODE.
11. CABLING TO BE CAT 6 PLENUM RATED CABLE
12. COORDINATE LOCATION OF DEVICES IN ROOM WITH OWNER PRIOR TO INSTALLATION.
13. WALL MOUNTED RACK BY ELECTRICAL CONTRACTOR.
14. COORDINATE LOCATION OF RACK AND TELECOMMUNICATIONS PROVIDER DEMARK WITH OWNER PRIOR TO INSTALLATION.

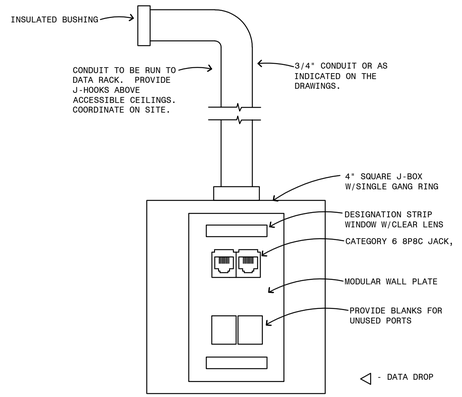
1 E501 TELECOMMUNICATIONS RISER DIAGRAM

NOT TO SCALE



5 E501 TYPICAL GROUNDING DETAIL

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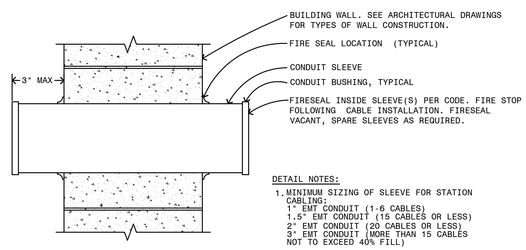


GENERAL NOTES:

1. NUMBERS ADJACENT TO DATA OUTLETS INDICATE THE NUMBER OF JACKS, NO NUMBER INDICATES (1).
2. 'WAP' INDICATES A WIRELESS ACCESS POINT JACK. EQUIPMENT FURNISHED AND INSTALLED BY THE OWNER. PROVIDE 20 FOOT SERVICE LOOP COILED IN CEILING AT ACCESS POINT LOCATIONS. PROVIDE 2 DATA CABLES/JACKS AT EACH LOCATION.
3. SEE SPECIFICATION SECTION FOR FURTHER INFORMATION.
4. COORDINATE ALL LABELING OF JACKS WITH OWNER PRIOR TO INSTALLATION.
5. ALL CABLE TO BE PLENUM RATED CAT 6 CABLE.

2 E501 TYPICAL DATA JACK DETAIL

NOT TO SCALE

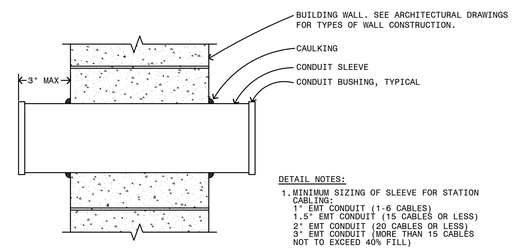


DETAIL NOTES:

1. MINIMUM SIZING OF SLEEVE FOR STATION CABLING:
   1" EMT CONDUIT (1-6 CABLES)
   1.5" EMT CONDUIT (15 CABLES OR LESS)
   2" EMT CONDUIT (20 CABLES OR LESS)
   3" EMT CONDUIT (MORE THAN 15 CABLES NOT TO EXCEED 40% FILL)
2. WHERE SLEEVE IS PART OF BACKBONE CABLE PATH, SIZE SHALL BE AS SUCH TO RESULT IN MAXIMUM OF 40% FILL (CABLE AREA/SLEEVE AREA).

3 E501 FIRE RATED WALL PENETRATIONS DETAIL

NOT TO SCALE



DETAIL NOTES:

1. MINIMUM SIZING OF SLEEVE FOR STATION CABLING:
   1" EMT CONDUIT (1-6 CABLES)
   1.5" EMT CONDUIT (15 CABLES OR LESS)
   2" EMT CONDUIT (20 CABLES OR LESS)
   3" EMT CONDUIT (MORE THAN 15 CABLES NOT TO EXCEED 40% FILL)
2. WHERE SLEEVE IS PART OF BACKBONE CABLE PATH, SIZE SHALL BE AS SUCH TO RESULT IN MAXIMUM OF 40% FILL (CABLE AREA/SLEEVE AREA).

4 E501 NON-RATED WALL PENETRATIONS DETAIL

NOT TO SCALE

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SIGNATURE:

PRINTED NAME: MICHAEL A. BERGER

DATE: 10/02/2026 REGISTRATION NO.: 40294

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DRAWN BY: DUSTON HOFFNER
CHECKED BY: MICHAEL A. BERGER
DATE: 10/02/2026

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PART 1 - GENERAL

1. GENERAL CONDITIONS

A. THE GENERAL, SPECIAL, AND OTHER CONDITIONS OF THE ARCHITECTURAL, MECHANICAL AND VENDOR DOCUMENTS SHALL BE CONSIDERED AN INTEGRAL PART OF THESE ELECTRICAL SPECIFICATIONS.

B. REFERENCE TO THE 'CONTRACTOR' IN THIS SPECIFICATION SHALL MEAN 'ELECTRICAL CONTRACTOR (EC)', UNLESS NOTED OTHERWISE. ALL WORK SPECIFIED HEREIN IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.

2. SCOPE OF WORK

A. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND OTHER ITEMS NECESSARY FOR, OR INCIDENTAL TO, INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM AS REQUIRED FOR THIS PROJECT.

B. ALSO INCLUDE ALL OTHER WORK AND MISCELLANEOUS EQUIPMENT NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED, THAT ARE REQUIRED FOR A FULLY FUNCTIONAL AND TESTED SYSTEM.

3. DRAWINGS AND DOCUMENTS

A. THE DRAWINGS AND SPECIFICATIONS FORM A COMPLETE SET OF PLANS FOR THE ELECTRICAL WORK FOR THIS PROJECT. WHAT IS REQUIRED BY EITHER SHALL BE AS BINDING AS IF REQUIRED BY BOTH. IN THE EVENT THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT,THE GREATER REQUIREMENT OR COST SHALL BE INCLUDED IN BID, OR IF TIME ALLOWS, A CLARIFICATION WILL BE ISSUED.

B. BIDDERS SHALL EXAMINE AND INCLUDE ALL OTHER TRADE AND EQUIPMENT VENDOR DRAWINGS AND SPECIFICATIONS TO AVOID OMISSIONS, DUPLICATIONS, AND TO INSURE COMPLETE INSTALLATION OF ALL WORK FOR ELECTRICAL.

C. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATION ONLY. PLACEMENT OF ELECTRICAL EQUIPMENT AND DEVICES SHALL NOT INTERFERE WITH LOCATIONS OR CLEARANCES OF OTHER TRADES' MATERIALS OR EQUIPMENT. COORDINATE THE PLACEMENT OF ELECTRICAL DEVICES WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS.

D. THE DIRECT ROUTING OF CONDUITS AND WIRING IN NOT ASSUMED. EXACT REQUIREMENTS SHALL BE GOVERNED BY THE CONDITIONS OF THE PROJECT SITE. EXTRA LENGTHS OF WIRING OR THE ADDITION OF PULL OR JUNCTION BOXES, ETC., NECESSITATED BY SUCH CONDITIONS, SHALL BE INCLUDED IN THE BID.

4. CODES, INSPECTIONS AND FEES

A. THE COMPLETED ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, REGULATIONS, AND STANDARDS INCLUDING INTERPRETATIONS BY APPROPRIATE AUTHORITIES HAVING JURISDICTION. WHERE THE DRAWINGS AND SPECIFICATIONS CALL FOR WORKMANSHIP OR MATERIALS IN EXCESS OF CODE OR REGULATORY REQUIREMENTS, THE DRAWINGS AND SPECIFICATIONS SHALL GOVERN.

B. THE WORK SPECIFIED HEREIN SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED REPRESENTATIVES OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION, AND THE ENGINEER. THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS TO HAVE THE ELECTRICAL WORK INSPECTED BY APPROPRIATE INSPECTOR(S) AND SHALL PROVIDE TWO (2) COPIES OF FINAL SIGNED 'CERTIFICATE OF INSPECTOR' TO THE OWNER.

C. OBTAIN AND PAY FOR ALL LICENSES, PERMITS, FEES AND CHARGES FOR ALL WORK INSTALLED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO PAY ALL FEES AND CHARGES LEVIED BY THE ELECTRICAL UTILITY COMPANY FOR CONNECTION TO ELECTRICAL SERVICES.

5. JOB SITE SAFETY

A. THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

B. NO ACT, DRAWING REVIEW OR CONSTRUCTION REVIEW BY THE OWNER, THE ENGINEERS OR THEIR CONSULTANTS, IS INTENDED TO INCLUDED REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

6. SITE CONDITIONS

A. EXAM THE SITE AND BE FAMILIAR WITH ALL EXISTING BUILDING CONDITIONS AND LIMITATIONS PRIOR TO SUBMITTING BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS, OR IF INFORMATION IS VISIBLE OR READILY ATTAINABLE, FOR ANY LIMITATION OR MISUNDERSTANDING OF EXISTING CONDITIONS.

B. ANY DISCREPANCIES FROM THESE DOCUMENTS SHOULD BE REPORTED TO THE ARCHITECT/ENGINEER PRIOR TO BID.

7. WORKMANSHIP AND CONTRACTOR QUALIFICATIONS

A. INSTALL ELECTRICAL EQUIPMENT AND MATERIALS IN A NEAT AND WORKMANLIKE MANNER BY PERSONS EXPERIENCED AND SKILLED IN THE TRADE. ONLY THE BEST QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION WILL BE CAUSE FOR REJECTION OF WORK. ALL EXPOSED CONDUITWORK IN THE ELECTRICAL SYSTEM SHALL BE SQUARE AND TRUE WITH BUILDING LINES AND SURFACES.

B. CONTRACTOR SHALL BE LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

8. COORDINATION OF WORK

A. GIVE CAREFUL CONSIDERATION TO THE WORK OF THE GENERAL, MECHANICAL AND ALL OTHER CONTRACTORS/SUBCONTRACTORS ON THE PROJECT. ORGANIZE AND PHASE THE ELECTRICAL WORK SO THAT IT WILL NOT INTERFERE WITH THE WORK OF OTHER TRADES.

B. DRAWINGS AND SPECIFICATIONS FOR OTHER TRADES AND GENERAL CONSTRUCTION DRAWINGS SHALL BE CONSULTED FOR COORDINATION INFORMATION, DETAILS, DIMENSIONS, ETC. COORDINATE ALL SHAFTS, CHASES, FURRED SPACES, SUSPENDED CEILING, LOCATIONS OF EQUIPMENT, ETC.

C. THE LOCATION OF ALL OUTLETS, WIRING, AND EQUIPMENT SHALL BE VERIFIED. THE ELECTRICAL REQUIREMENTS OF ANY EQUIPMENT SHALL BE VERIFIED WITH ACTUAL EQUIPMENT OR APPROVED SHOP DRAWINGS PRIOR TO ANY ROUGH-IN WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES.

D. DIMENSIONS GIVEN ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. DIMENSIONS, WHETHER CALCULATED OR SCALED, SHALL BE VERIFIED IN THE FIELD.

E. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. COORDINATE WITH OTHER TRADES TO AVOID REWORK DUE TO FIELD CONDITIONS. CHANGES OR ADDITIONS, SUBJECT TO ADDITIONAL COMPENSION, WHICH ARE MADE WITHOUT WRITTEN AUTHORIZATION AND AN AGREED PRICE, SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.

F. COORDINATE ROUTING OF ALL CONDUIT AND WIRE CONCEALED IN WALLS, SOFFITS OR CEILINGS PROVIDED BY THE GENERAL CONTRACTOR. FIELD COORDINATE ALL WORK TO CONCEAL INSTALLATIONS NOT COORDINATED OR SPECIFICALLY APPROVED BY THE ARCHITECT AND ENGINEER.

G. VERIFY ITEMS SUCH AS DOOR SWINGS, WINDOW LOCATIONS, CASEWORK, ETC., BEFORE INSTALLING ANY ELECTRICAL EQUIPMENT OR DEVICES.

H. MAKE MINOR ADJUSTMENTS TO WORK WHERE REQUESTED BY THE OWNER OR THE OWNER'S REPRESENTATIVE WHEN ADJUSTMENTS ARE NECESSARY OF PROPER OPERATION AND WITHIN THE INTENT OF THE CONTRACTOR.

9. MATERIALS AND EQUIPMENT

A. UNLESS OTHERWISE SPECIFIED, ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND MANUFACTURED BY APPROVED OR LISTED MANUFACTURERS. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF ALL GOVERNING CODES.

B. ALL MATERIAL AND EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITERS LABORATORIES, INC. (UL), AS CONFORMING TO ITS STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THAT TYPE OF MATERIAL OR EQUIPMENT.

C. WHERE EQUIPMENT SUPPLIED BY THE CONTRACTOR HAS CHARACTERISTICS OTHER THAT AS SPECIFIED HEREIN, THE CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, REMOVE AND REPLACE THE ELECTRICAL WORK NECESSITATED BY THE SUBSTITUTED PRODUCT.

10. TEMPORARY INSTALLATIONS

A. COMPLY WITH THE OWNER AND GENERAL CONTRACTOR REQUIREMENTS. ALL WORK TO BE IN CONFORMANCE WITH N.E.C. ARTICLE 590, TEMPORARY INSTALLATIONS.

B. ELECTRICAL POWER SYSTEM: PROVIDE AN ELECTRICAL DISTRIBUTION SYSTEM OF SUFFICIENT SIZE, CAPACITY, AND POWER CHARACTERISTICS REQUIRED FOR ALL CONSTRUCTION OPERATIONS.

C. PROVIDE NEW TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR THE PROJECT. UTILIZE EXISTING BUILDING DISTRIBUTION IF AVAILABLE, AND SUPPLEMENT AS REQUIRED FOR THE PROJECT CONDITIONS. FOR NEW SERVICE CONSTRUCTION, COORDINATE WITH THE UTILITY TO PROVIDE TEMPORARY SERVICE FOR THE DURATION OF CONSTRUCTION SO AS NOT TO INTERFERE WITH NEW SERVICE CONSTRUCTION. PAY FOR ALL UTILITY CHARGES ASSOCIATED WITH THE TEMPORARY SERVICE INCLUDING ENERGY BILLS.

D. LIGHTING: PROVIDE TEMPORARY LIGHTING WITH LOCAL SWITCHING THROUGHOUT ALL AREAS OF CONSTRUCTION. PROVIDE ADEQUATE ILLUMINATION FOR CONSTRUCTION OPERATIONS, OBSERVATIONS, INSPECTIONS, AND TRAFFIC CONDITIONS.

E. REMOVE ALL TEMPORARY INSTALLATION ELECTRICAL EQUIPMENT AT THE END OF THE PROJECT. PATCH AND SEAL SLEEVE OPENINGS.

12. CUTTING AND PATCHING

A. PERFORM ALL CORE DRILLING, CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE ELECTRICAL WORK FOR THIS PROJECT. NO STRUCTURAL MEMBERS SHALL BE DISTURBED WITHOUT OBTAINING WRITTEN PERMISSION OF THE ENGINEER.

B. ANY SURFACE WHICH IS DISTURBED IN ANY WAY BY THE CONTRACTOR SHALL BE REPAIRED AND REFINISHED TO PROVIDE A SURFACE EQUAL IN STRENGTH, DURABILITY, AND APPEARANCE TO THE ORIGINAL SURFACE.

C. WHERE IT IS NECESSARY TO DRILL OR CUT CONCRETE SURFACES, THE EDGES SHALL BE SHARPLY DEFINED. HOLES SHALL BE MADE WITH A ROTARY DRILL. CUTS SHALL BE MADE WITH A CONCRETE SAW UNLESS SOME OTHER METHOD OF MAKING SPECIFIC CUTS IS APPROVED BY THE ENGINEER.

D. PENETRATIONS THROUGH SMOKE, FIRE, HAZARDOUS AREA, OR OTHER RATED SEPARATIONS SHALL BE FIRE SEALED TO PRESERVE THE RATINGS OF THE SEPARATIONS.

E. ALL CUTTING, DRILLING, PATCHING, REPAIRING, AND REFINISHING SHALL BE DONE BY PERSONS SKILLED IN APPROPRIATE TRADES.

F. CLEAN AWAY ALL RUBBISH AND LITTER GENERATED DURING ELECTRICAL INSTALLATION.

13. SHOP DRAWINGS AND SUBMITTALS

A. SUBMIT SHOP DRAWINGS FOR ALL NEW ITEMS OF ELECTRICAL EQUIPMENT. SUBMIT ELECTRONIC PDF VERSIONS OF THE SHOP DRAWINGS FOR REVIEW. ALL SHOP DRAWING SUBMITTALS SHALL ALLOW FOR A MINIMUM OF 14 WORKING DAYS FOR ENGINEER REVIEW.

B. SHOP DRAWINGS SHALL BE DETAILED, DIMENSIONED MANUFACTURERS' DRAWINGS. EACH SET OF DOCUMENTS SHALL LIST THE PROJECT NAME AND ADDRESS, AND THE CONTRACTOR'S NAME, ADDRESS, AND TELEPHONE NUMBER. AN INDEX PAGE SHALL LIST INDIVIDUALLY ALL THE ITEMS IN THE SUBMITTAL WITH REFERENCES TO TYPE DESIGNATIONS OR OTHER IDENTIFIERS NOTED ON DRAWINGS.

C. ASSURE THAT SHOP DRAWINGS ARE COMPLETE BEFORE SUBMITTAL. SUBMITTAL TO THE ENGINEER SHALL BE VIA THE GENERAL CONTRACTOR AND, WHERE REQUIRED, THE ARCHITECT. SHOP DRAWINGS NOT SIGNED BY BOTH THE CONTRACTOR AND THE GENERAL CONTRACTOR SHALL BE RETURNED.

D. HIGHLIGHT ANY INFORMATION OR OPTIONS BEING PROVIDED. SHOP DRAWINGS NOT INDICATING WHAT IS BEING PROVIDED WILL BE RETURNED.

E. PROVIDE A LIST FOR ANY ITEM SUBMITTED IN THE SHOP DRAWINGS WHICH IS A SUBSTITUTION FOR SPECIFIED PRODUCTS. IF THE CONTRACTOR USES MATERIALS OTHER THAN THOSE SPECIFIED AND FAILS TO CALL ATTENTION TO THE DIFFERENCES BETWEEN THESE MATERIALS AND THOSE SPECIFIED,THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT, AT NO ADDITIONAL COST TO THE OWNER, OF ANY SUCH MATERIALS DETERMINED BY THE ENGINEER TO BE UNACCEPTABLE.

F. THE APPROVAL STAMP/LETTER ON THE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OR THE SUPPLIER OF RESPONSIBILITY FOR FULL CONTRACT COMPLIANCE.

G. LIGHTING CONTROL SYSTEM SUBMITTAL - PROVIDE FLOOR PLAN DRAWINGS WHICH INDICATE LOCATIONS, ORIENTATION AND COVERAGE OF EACH SENSOR, GROUPS, ZONES, SCENES, AND OTHER SPECIFIC DESIGN SYMBOLS AND DESIGNATIONS AS REQUIRED TO DEFINE INSTALLATION, LOCATION AND CONFIGURATION OF ALL CONTROL DEVICES.

H. FIRE ALARM SUBMITTAL - PROVIDE FLOOR PLAN DRAWINGS WHICH INDICATE THE LOCATION OF ALL COMPONENTS, CIRCUITS AND RACEWAYS. FLOOR PLANS SHOULD ALSO INDICATE CIRCUIT LAYOUTS, NUMBER, SIZE AND TYPE OF RACEWAY AND CONDUCTORS, CONDUIT FILL CALCULATIONS, SPARE CAPACITY CALCULATIONS, AND NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP CALCULATIONS.

14. MAINTENANCE MANUAL AND RECORD DRAWINGS

A. FURNISH THE OWNER WITH TWO (2) PRINTED COPIES AND TWO (2) DIGITAL DATA DVD'S OF A MANUAL COVERING THE OPERATION AND THE MAINTENANCE OF ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT. THE MANUAL SHALL BE IN A 3-RING, LOOSE LEAF, HEAVY DUTY BINDER AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL. EACH MANUAL SHALL CONTAIN THE FOLLOWING:

- COMPLETE MANUFACTURER CATALOG DATA, MANUFACTURER'S LITERATURE, WIRING DIAGRAMS, DETAIL OPERATING INSTRUCTIONS, AND A COMPLETE LISTING OF SUPPLIERS AND DISTRIBUTORS WHERE REPLACEMENT PARTS AND MAINTENANCE SERVICES ARE AVAILABLE FOR ALL EQUIPMENT.
- PHYSICAL DESCRIPTION AND INSTALLATION INSTRUCTIONS AND USER'S MANUAL AND OPERATING INSTRUCTIONS.
- REPLACEMENT PARTS LIST.
- INSPECTION CERTIFICATES, SIGNED BY THE APPROPRIATE INSPECTOR, SHALL BE FURNISHED IN THE MAINTENANCE MANUAL.
- MANUFACTURER'S WARRANTY.
- SPECIFIED TEST REPORTS.
- DATA DVD WITH INDEXED PDF DOCUMENTS OF ALL MANUAL CONTENT OF ITEMS ABOVE.

B. MARKUP A SET OF CONSTRUCTION DOCUMENTS AS WORK PROGRESSES,TO SHOW ACTUAL CIRCUIT ROUTING AND DIMENSIONED INFORMATION, SIZES, TYPES, ETC., EQUIPMENT LOCATION CHANGES, AND ANY OTHER CHANGES OR DEVIATIONS BETWEEN PROJECT WORK, AS BUILT, AND THE CONTRACT DOCUMENTS. MARKINGS SHALL BE NEAT, LEGIBLE, AND PERMANENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR TRANSFER ALL APPLICABLE MARKINGS TO SECOND SET OF DOCUMENTS AND PROVIDE BOTH SETS OF RECORD DOCUMENTS TO THE OWNER.

15. CLEAN-UP

A. RID THE PREMISES OF SCRAP MATERIALS, TRASH AND DEBRIS BOTH DURING CONSTRUCTION AND COMPLETION OF PROJECT. LEAVE THE BUILDING AND SURROUNDING AREA IN A CLEAN AND ORDERLY CONDITION.

16. ACCEPTANCE DEMONSTRATION AND TRAINING

A. PERFORM SYSTEM START-UP, TESTING AND PROGRAMMING PRIOR TO OWNER'S TRAINING. DO NOT SCHEDULE DEMONSTRATIONS UNTIL SYSTEMS ARE COMPLETELY READY TO TURN OVER TO THE OWNER AS FINAL.

B. DEMONSTRATE TO THE OWNER THE OPERATION OF THE ELECTRICAL INSTALLATIONS, INCLUDING ANY AND ALL SPECIAL ITEMS INSTALLED BY HIM OR INSTALLED UNDER HIS SUPERVISION. THE TIMING OF THE DEMONSTRATION WILL BE DETERMINED BY THE OWNER UPON COMPLETION OF THE WORK. PROPERLY SET AUTOMATIC TIME SWITCHES TO PERFORM SWITCHING OPERATIONS IN ACCORDANCE WITH SCHEDULES PROVIDED BY THE OWNER'S REPRESENTATIVE, AND DEMONSTRATE (USING THE MANUFACTURER'S OPERATING INSTRUCTIONS) HOW TO OVERRIDE, TEST AND PROGRAM LIGHTING SYSTEMS.

17. REBATE PROGRAMS

A. PROVIDE THE OWNER WITH ALL REBATE FORMS, FILLED OUT WITH APPLICABLE PROJECT INFORMATION, FOR UTILITY OR PRODUCT REBATE PROGRAMS TO WHICH THE OWNER IS ELIGIBLE.

18. GUARANTEES AND WARRANTIES

A. FURNISH THE OWNER WITH A WRITTEN GUARANTEE FOR THE PERIOD OF ONE (1) YEAR AGAINST THE FAILURE OF ANY PART OF THE ELECTRICAL SYSTEM INSTALLED UNDER THE SPECIFICATIONS DUE TO FAULTY MATERIAL OR WORKMANSHIP, WITHOUT ANY CHARGES, TO THE OWNER. GUARANTEE PERIOD TO START UPON SUBSTANTIAL COMPLETION OR AS SPECIFIED UNDER GENERAL AND SPECIAL CONDITIONS.

B. ASSURE THAT ANY EXTENDED WARRANTIES TO WHICH THE OWNER IS ELIGIBLE, ARE PASSED ON TO THE OWNER.

PART 2 - PRODUCTS

1. GENERAL - MATERIALS

A. ALL MATERIALS MUST BE NEW AND BEAR UNDERWRITER'S LABORATORIES (UL) LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OR A GOVERNMENTAL AGENCY. MATERIAL NOT IN ACCORDANCE WITH THESE SPECIFICATIONS MAY BE REJECTED EITHER BEFORE OR AFTER INSTALLATION.

2. GENERAL - INSTALLATION

A. ELECTRICAL SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. GOVERN EXACT ROUTING OF CABLE AND WIRING AND THE LOCATIONS OF OUTLETS BY STRUCTURE AND EQUIPMENT SERVED. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS.

B. CONSULT ALL OTHER DRAWINGS, VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS WITH OWNER BEFORE SUBMITTING BID.

C. ALL HOME RUNS TO PANELBOARDS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THROUGH THE ROUTES WERE COMPLETELY INDICATED. TERMINATE HOMERUNS OF SIGNAL, ALARM AND COMMUNICATIONS SYSTEMS IN A SIMILAR MANNER.

D. AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF OWNER AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING THE STRUCTURE IN NECESSARY AND PERMITTED.

E. FURNISH AND INSTALL ALL NECESSARY HARDWARE, HANGERS, BLOCKING, BRACKETS, BRACING, RUNNERS, ETC., REQUIRED FOR EQUIPMENT SPECIFIED UNDER THIS SECTION.

F. PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES.

3. CONDUIT AND CABLES

A. ELECTRICAL CONDUCTORS SHALL BE BUILDING WIRE, EXCEPT WHERE OTHER TYPE OF WIRE OR CABLE IS SPECIFICALLY INDICATED.

B. BUILDING WIRE CONDUCTORS SHALL BE SOFT-DRAWN ANNEALED COPPER, HAVING A CONDUCTIVITY OF NOT LESS THAT 98% PURE COPPER. CONDUCTOR SIZES ARE AMERICAN WIRE GAUGE (AWG) OR CIRCULAR MILS (KCMIL) AS FOLLOWS:

- #12 AWG SOLID COPPER.
- #10 AWG AND LARGER SHALL BE STRANDED COPPER.
- BRANCH CIRCUITS TO BE COLOR CODED, COLOR IMPREGNATED WIRE.

C. INSULATION TYPE: XHHW, XHHW-2, THHW, OR THWN-2, COLOR CODED, COLOR IMPREGNATED WIRE.

D. TYPE MC OR NM CABLES ARE ALLOWED. TYPE MC CABLES OR NM CABLES WITH GREEN GROUND CONDUCTORS ALLOWED WHERE PERMITTED BY LOCAL ELECTRICAL CODE. SEE DRAWINGS FOR ADDITIONAL NOTES.

E. ELECTRICAL CONDUIT INSTALLATIONS MUST BE SUPPORTED PER THE N.E.C. AND NOT EXCEED 10 FEET BETWEEN SUPPORTS. ELECTRICAL CONDUIT

F. INSTALLATIONS MUST BE A MINIMUM OF 1/2 INCH EMT.

G. AC, CORE CLAD OR ROMEX CABLES ARE ALLOWED. TYPE MC CABLES WITH GREEN GROUND CONDUCTOR ALLOWED ONLY WHERE NOTED IN SECTION 7 - RACEWAYS AND BOXES.

H. LIGHT FIXTURES SHALL NOT BE USED AS RACEWAY UNLESS LISTED AND MARKED AS RACEWAY IN ACCORDANCE WITH N.E.C. ARTICLE 410.64.

I. ELECTRICAL CONDUIT INSTALLATIONS MUST BE SUPPORTED PER THE N.E.C. AND NOT EXCEED 10 FEET BETWEEN SUPPORTS. ELECTRICAL CONDUIT INSTALLATIONS MUST BE A MINIMUM OF 1/2 INCH EMT.

J. PROVIDE #12 BRANCH CIRCUIT CONDUCTORS FOR ALL 120 VOLT, 20 AMP CIRCUITS LESS THAN 75 FEET (100 FEET FOR 277 VOLT CIRCUITS), PROVIDE #10 BRANCH CIRCUIT CONDUCTORS FOR ALL 120 VOLT, 20 AMP CIRCUITS OVER 75 FEET (100 FEET FOR 277 VOLT CIRCUITS).

K. WHERE MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A SINGLE RACEWAY (E.G. COMBINING MULTI-CIRCUIT HOMERUNS), CONDUCTOR AMPACITY SHALL BE DE-RATED AS REQUIRED BY THE N.E.C.

L. PROVIDE DEDICATED NEUTRAL CIRCUITS FOR ALL 120 VOLT BRANCH CIRCUITS.

M. MEGGER AND RECORD INSULATION RESISTANCE OF ALL 600 VOLT INSULATED CONDUCTORS SIZE #4/0 AND LARGER USING 500 VOLT MEGGER FOR ONE MINUTE. MAKE TESTS WITH CIRCUITS ISOLATED FROM SOURCE AND LOAD.

N. ALL MC, NM OR SER CABLES TO BE SUPPORTED PER THE NEC WITH STRAPS LISTED FOR THAT PURPOSE.

O. MC CABLE ONLY ALLOWED ON 120V 20A OR LESS SINGLE POLE CIRCUITS IN NON EXPOSED AREAS AS PER CODE. ALLOWED ONLY IN CONCEALED WALLS AND CEILINGS. VERIFY WITH LOCAL AHJ.

4. LOW VOLTAGE CONDUCTORS AND CABLES

A. COAXIAL CABLE FOR CATV, MATV AND DBS:

- RG-6: 16 AWG, SOLID, COPPER-COVERED STEEL CONDUCTOR; GAS-INJECTED, FOAM-PE INSULATION. DOUBLE SHIELDED WITH 100 PERCENT ALUMINUM-FOIL SHILED AND 60 PERCENT ALUMINUM BRAID. PLENUM RATED, TYPE CMP. USE WHERE THE COAXIAL CABLE WILL BE TAPPED OR SPLIT.

A. ALL LOW VOLTAGE CABLES INSTALLED IN METAL BOX AND RACEWAY SYSTEM TO AN ACCESSIBLE CEILING.

B. MINIMUM CONDUIT SIZE IS 1/2 INCH WITH LARGER SIZES NOTED ON PLAN. INSTALL PLASTIC BUSHING ON CONDUIT ENDS.

C. GROUP AND BUNDLE LOW VOLTAGE CABLES AND PROVIDE SUPPORT INDEPENDENT OF CEILING SUPPORTS. UTILIZE D RINGS, J-HOOKS OR APPROVED NYLON STRAPS TO HOLD CABLES AND PROVIDE SUPPORTS INDEPENDENT OF THE CEILING SUPPORTS.

5. GROUNDING AND BONDING

A. CIRCUITS, METAL RACEWAY SYSTEMS, AND ALL OTHER PERMANENTLY INSTALLED ELECTRICAL EQUIPMENT SHALL BE SOLIDLY GROUNDED IN ACCORDANCE WITH THE N.E.C. TO FORM A CONTINUOUS, PERMANENT AND EFFECTIVE GROUNDING SYSTEM.

B. GROUNDING CONDUCTOR CONNECTIONS SHALL BE MADE WITH SOLDERLESS PRESSURE TYPE FITTINGS. WHERE WELDED CONNECTIONS ARE PRACTICAL, CONNECTIONS MAY BE MADE BY THE USE OF SUITABLE WELDING PROCESS. ALL CONNECTIONS SHALL BE MADE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

C. TO MAINTAIN UNINTERRUPTED ELECTRICAL CONTINUITY, FLEXIBLE RACEWAY SECTIONS MUST HAVE CONDUCTANCE EQUAL TO THAT OF THE SYSTEM'S INFLEXIBLE RACEWAY. RACEWAY FITTINGS LISTED MUST BE SUCH AS TO ENSURE EXISTENCE OF A PERMANENT BOND. GROUNDING BUSHINGS SHALL BE PROVIDED ON GROUND CONDUITS TO CONTROL CENTER GROUND. ALL NEW EQUIPMENT SHALL BE GROUNDED TO THE EXISTING GROUNDING SYSTEM (WHERE APPLICABLE).

D. INCLUDE A SEPARATE BARE GROUND CONDUCTOR IN ALL FLEXIBLE METAL CABLE OF THE SAME SIZE AS PHASE CONDUCTOR.

E. ISOLATED GROUND CONDUCTORS: GREEN COLORED INSULATION WITH CONTINUOUS YELLOW STRIPE.

F. BONDING INTERIOR METAL DUCTS: BOND METAL AND AIR DUCTS TO EQUIPMENT GROUNDING CONDUCTORS OF ASSOCIATED FANS, BLOWERS, ELECTRICAL HEATERS, AND AIR CLEANERS. INSTALL TINNED BONDING JUMPING TO BOND ACROSS FLEXIBLE DUCT CONNECTIONS TO ACHIEVE CONTINUITY.

G. GROUND RODS TO BE 10' X 3/4" COPPER CLAD STEEL. GROUND RODS AT EXTERIOR AREA LIGHTS TO BE 8' X 5/8" COPPER CLAD STEEL.

H. THE BUILDING AND ELECTRICAL SYSTEMS SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE N.E.C., IEGC AND BEST PRACTICES.

I. ELECTRICAL SERVICE AND SEPARATELY DERIVED ALTERNATING CURRENT SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C., ARTICLE 250.

J. ALL FEEDER AND BRANCH CIRCUITS SHALL HAVE A GREEN COPPER GROUND CONDUCTOR RUN WITH THE PHASE AND NEUTRAL CONDUCTORS.

K. PROVIDE CODE REQUIRED #6 OR LARGER GROUND CONDUCTOR AND 12 INCH GROUND BUS AT TELECOMMUNICATIONS DEMARCATION LOCATION.

6. CONDUIT HANGARS AND SUPPORT

A. FOR INDIVIDUAL CONDUIT RUNS NOT DIRECTLY FASTENED TO THE STRUCTURE, USE THREADED ROD AND HANGERS MANUFACTURED BY CADDY, UNISTRUT OR POWERSTRUT.

B. GALVANIZED STEEL SLOTTED CHANNEL SUPPORT SYSTEMS WITH FITTINGS AND SUPPORTS BY THE SAME MANUFACTURER.

C. CONDUIT AND CABLE SUPPORT DEVICES TO BE STEEL WITH HANGERS AND SUPPORTS SUITABLE FOR RACEWAY OR CABLE TO BE SUPPORTED.

D. STEEL SLOTTED SUPPORT SYSTEMS WITH MANUFACTURER'S GALVANIZED STEEL COATING.

E. FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES TO BE BOLTED STRUCTURAL STEEL OR STEEL SLOTTED SYSTEMS CALCULATED BY A REGISTERED STRUCTURAL ENGINEER.

F. CONCRETE BASES INSTALLED BY THE ELECTRICAL CONTRACTOR. BASE TO BE NOMINALLY 3000 PSI CONCRETE WITH DIMENSIONS NOTED ON THE DRAWINGS. INSTALL FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.

7. RACEWAYS AND OUTLET BOXES

A. PROVIDE RACEWAYS, FITTINGS, CONNECTORS AND ACCESSORIES FOR A COMPLETE RACEWAY SYSTEM. RACEWAYS INCLUDE:

- RIGID STEEL: HOT-DIPPED GALVANIZED.
- INTERMEDIATE METAL CONDUIT (IMC): HOT-DIPPED GALVANIZED.
- ELECTRICAL METALLIC TUBING (EMT): ELECTRO-GALVANIZED.
- WIREWAYS: ENAMEL FINISH, HINGED TYPE.
- FLEXIBLE METALLIC CONDUIT: FOR FINAL CONNECTION IN DRY LOCATIONS LESS THE 6 FOOT LENGTHS.
- LIQUID TIGHT FLEXIBLE METAL CONDUIT: FOR FINAL CONNECTION IN DAMP OR WET LOCATIONS LESS THAN 6 FOOT LENGTHS.

B. PROVIDE FITTINGS AND ACCESSORIES APPROVED FOR THE PURPOSE EQUAL IN ALL RESPECTS TO THE CONDUIT OR RACEWAY. EMT CONNECTORS AND COUPLINGS SHALL BE SET STEEL SETSCREW TYPE INDOORS AND STEEL COMPRESSION TYPE IN DAMP OR WET LOCATIONS AND OUTDOORS.

C. OUTLET BOXES: 4" SQUARE X 1 1/2" DEEP (OR LARGER) GALVANIZED SHEET STEEL KO-TYPE WITH PLASTER RING AND COVER FOR GENERAL INTERIOR USE. CAST METAL TYPE FS OR FD WITH MATCHING SCREW COVERS FOR EXTERIOR AND EXPOSED INTERIOR LOCATIONS (GASKETED IN DAMP OR WET LOCATIONS). PLASTIC OR FIBERGLASS NAIL ON BOXES ALLOWED WHERE NM CABLES ARE USED.

D. JUNCTION BOXES SHALL BE SAME AS OUTLET BOXES UP TO 42 CU. IN. USE CODE-GAUGE STEEL IN LARGER SIZES WITH SURFACES OR FLUSH-TYPE SCREW-MOUNTED TRIM COVERS. BOXES AND COVERS PAINTED WITH INHIBITOR-PRIMED PAINT INSIDE AND OUT.

E. PULL BOXES SHALL BE SAME AS JUNCTION BOXES UNLESS INDICATED OTHERWISE ON THE DRAWINGS, WITH COVERS.

F. TELEPHONE OUTLET BOXES SHALL BE THE TYPE AND SIZE REQUIRED BY THE SERVING TELEPHONE COMPANY BUT NOT SMALL THAN 4 11/6" SQUARE X 2 1/2" DEEP WITH SINGLE-GANG RING. OTHER CONFIGURATIONS AS SHOWN ON

E. FRACTIONAL HP STARTERS QUICK MAKE QUICK BREAK SINGLE POLE SWITCHES FOR INTEGRALLY PROTECTED MOTORS.

F. MULTI POLE HORSE POWER RATED SWITCHES OR ENCLOSED CIRCUIT BREAKERS IN FLUSH NEMA 1 ENCLOSURES WHERE MOTORS ARE LOCATED IN FINISHED SPACES.

G. ALL DEVICES NEMA RATED FOR THE ENVIRONMENT THEY ARE LOCATED.

H. THE CONTRACTOR SHALL OBTAIN EXACT INFORMATION PERTAINING TO LOCATION, ELECTRICAL CHARACTERISTICS, AND WIRING FOR EQUIPMENT FURNISHED BY OTHERS FROM THE CONTRACTOR FURNISHING THE EQUIPMENT. THIS INFORMATION SHALL BE VERIFIED BY EXAMINING NAMEPLATES AND MANUFACTURER'S WIRING DIAGRAMS. ANY DISCREPANCY BETWEEN THE EQUIPMENT AND THE PROVISIONS MADE BY THESES SPECIFICATIONS SHALL BE REPORTED. EQUIPMENT DAMAGED AS A RESULT OF THE CONTRACTOR'S FAILURE TO OBSERVE MANUFACTURER'S REQUIREMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR. THE THERMAL PROTECTION ELEMENTS IN MANUAL STARTERS SHALL BE RECHECKED WITH NAME PLATE DATA AT THE SITE BEFORE OPERATION OF THE EQUIPMENT. WHERE NECESSARY, THE THERMAL PROTECTION ELEMENTS SHALL BE CHANGED TO PROPERLY PROTECT THE EQUIPMENT.

I. FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL MOTORS NOT INTEGRALLY EQUIPPED WITH THERMAL PROTECTION.

J. THE CONTRACTOR SHALL FURNISH AND INSTALL FINAL ELECTRICAL CONNECTIONS TO ALL MOTORS AND ELECTRICALLY POWERED EQUIPMENT INDICATED ON THE PLANS OR EQUIPMENT SCHEDULE.

K. FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF AND ADJACENT TO EACH MAGNETIC MOTOR STARTER OR APPLIANCE UNLESS THE MOTOR APPLIANCE IS LOCATED ADJACENT AND WITHIN SIGHT OF THE SERVING PANELBOARD, CIRCUIT BREAKER OR SWITCH. VERIFY ALL EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION.

L. PROVIDE A FUSED DISCONNECT SWITCH ON ANY TRANSFORMER SECONDARY WHERE SECONDARY CONDUCTORS EXCEED 25 FEET FROM TERMINAL TO SECONDARY OVERCURRENT DEVICE.

M. THE CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCHES HAVING THE NUMBER OF POLES AND AMPERE RATINGS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN EQUIPMENT SCHEDULES.

15. SURGE PROTECTION DEVICES (SPDS)

A. SERVICE ENTRANCE: MODULAR DESIGN WITH PEAK SINGLE IMPULSE SURGE CURRENT RATING OF 240KA PER MODE/480KA. TYPE 2 SURGE SUPPRESSION (SPD) AT THE MAIN ELECTRICAL SERVICE SHOWN ON THE DRAWINGS.

B. PANELBOARD SUPPRESSORS: NON-MODULAR DESIGN WITH PEAK SINGLE IMPULSE SURGE CURRENT RATING OF 120KA PER MODE/240KA. TYPE 2 SURGE SUPPRESSION (SPD) AT PANELBOARDS OR SEPARATELY DERIVED SYSTEMS SHOWN ON THE DRAWINGS.

C. TYPE 3 SURGE SUPPRESSION (SPD) AT POINT OF USE: DUPLEX RECEPTACLE INTEGRAL TO WIRING DEVICE.

D. INSTALL IN ACCORDANCE WITH N.E.C. ARTICLE 285.

E. INSTALL AN OCPD OR DISCONNECT AS REQUIRED TO COMPLY WITH UL LISTING OF THE SPD.

F. INSTALL SPDS WITH CONDUCTORS BETWEEN SUPPRESSORS AND POINTS OF ATTACHMENT AS SHORT AND STRAIGHT AS POSSIBLE, AND ADJUST CIRCUIT BREAKER POSITIONS TO ACHIEVE SHORTEST AND STRAIGHTEST LEADS. DO NOT SPLICE AND EXTEND SPD LEADS UNLESS SPECIFICALLY PERMITTED BY MANUFACTURER. DO NOT EXCEED MANUFACTURER'S RECOMMENDED LENGTH. DO NOT BOND NEUTRAL AND GROUND.

G. USE CRIMPED CONNECTORS AND SPLICES ONLY. WIRE NUTS ARE UNACCEPTABLE.

16. WIRING DEVICES

A. WIRING DEVICES SHALL BE INSTALLED IN METAL DEVICE BOXES.

B. SWITCHES AND RECEPTACLES SHALL BE HUBBELL, BRYANT, LEVITON, PASS & SEYMOUR, OR APPROVED EQUAL SUBJECT TO APPROVAL BY THE ARCHITECT. COLOR SHALL BE WHITE FOR NORMAL POWER AND RED FOR EMERGENCY POWER. SPECIAL COLOR DEVICE OUTLETS AND MATCHING COVERPLATE AS NOTED ON THE PLANS.

C. SWITCHES SHALL BE HEAVY DUTY GRADE, AC QUIET TYPE, 20-AMP, 120/277 VOLT, WITH SILVER ALLOY CONTACTS, EQUAL TO HUBBELL #5362.

D. GENERAL PURPOSE DUPLEX RECEPTACLES SHALL BE HEAVY DUTY GRADE NEMA 5-20R, 125 VOLT, 3 WIRE GROUNDING TYPE DEVICES WITH BRASS ONE PIECE GROUND STRAP; THIRD POLE GROUNDING TO THE OUTLET BOX. RESIDENTIAL GRADE RECEPTACLES ARE ALLOWED IN APARTMENT UNITS. 15A RATED RECEPTACLE ON A 15A CIRCUIT IS ALLOWED IF THE CIRCUIT CAN HANDLE MAXIMUM LOAD WITHOUT OVERLOADING OR TRIPPING THE BREAKER.

E. GROUND FAULT CIRCUIT INTERRUPT (GFI) DUPLEX RECEPTACLES SHALL BE HEAVY DUTY GRADE, 20 AMP DEVICES WIRED SO THAT EACH UNIT IS SELF-CONTAINED. GFI RECEPTACLE SHALL NOT BE CONNECTED TO FEED THROUGH UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

F. RECEPTACLES IN DAMP OR WET LOCATIONS TO HAVE N.E.C. WEATHER RESISTANT RATING.

G. TAMPER RESISTANT RATING IN AREAS REQUIRED BY N.E.C.

H. AFCI RECEPTACLES WHERE REQUIRED BY N.E.C.

I. COVER PLATES TO BE NYLON. SPECIAL COLOR PLASTIC COVER PLATES TO MATCH STYLE LINE TYPE RECEPTACLES AS NOTED ON THE PLANS WITH MATCHING COLORS.

J. WEATHERPROOF DUPLEX RECEPTACLES SHALL BE GFCI PROTECTED WITH 'WHILE-IN-USE' WEATHERPROOF COVERPLATES.

K. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL PLATES FOR ALL FLUSH MOUNTED WIRING DEVICES AND ALL FLUSH MOUNTED SPECIAL SYSTEM OUTLETS. SECTIONAL WALL PLATES SHALL NOT BE USED. BLANK PLATES SHALL BE INSTALLED OVER ALL OUTLETS PROVIDE FOR FUTURE USE. WALL PLATES SHALL BE SECURED WITH MATCHING SCREWS. ENGRAVED WALL PLATES SHALL HAVE BACK FILL.

L. THE CONTRACTOR SHALL FURNISH AND INSTALL OUTLETS FOR AND MAKE FINAL ELECTRICAL CONNECTIONS TO ALL ELECTRICALLY POWERED EQUIPMENT INDICATED ON THE PLANS OR EQUIPMENT SCHEDULES.

17. LIGHTING CONTROL SYSTEM

A. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED.

B. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE ALL REQUIRED CONDUIT, WIRING, CONNECTORS, HARDWARE, COMPONENTS, ACCESSORIES, ETC. AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.

C. APPROVED MANUFACTURER'S (N-LIGHT BASE OF DESIGN)

- WAVELINX
- SENSOR SWITCH INC
- WATTSTOPPER
- LEVITON
- SOURCE LIMITATIONS: FURNISH PRODUCTS PRODUCED BY A SINGLE MANUFACTURER AND OBTAINED FROM A SINGLE SUPPLIER.

D. ALL OCCUPANCY SENSORS:

- DESCRIPTION: FACTORY ASSEMBLED COMMERCIAL SPECIFICATION GRADE DEVICES FOR INDOOR USE CAPABLE OF SENSING BOTH MAJOR MOTION, SUCH AS WALKING, AND MINOR MOTION, SUCH AS SMALL DESKTOP-LEVEL MOVEMENTS, ACCORDING TO PUBLISHED COVERAGE AREAS, FOR AUTOMATIC CONTROL OF LOAD INDICATED.
- SENSOR TECHNOLOGY: PASSIVE INFRARED (PIR) - DESIGNED TO DETECT OCCUPANCY BY SENSING MOVEMENT OF THERMAL ENERGY BETWEEN ZONES. ULTRASONIC - DESIGNED TO DETECT OCCUPANCY BY SENSING FREQUENCY SHIFTS IN EMITTED AND REFLECTED INAUDIBLE SOUND WAVES.
- PROVIDE LED TO VISUALLY INDICATE MOTION DETECTION.
- OPERATION: UNLESS NOTED OTHERWISE, OCCUPANCY SENSOR TO TURN LOAD ON WHEN OCCUPANT PRESENCE IS DETECTED AND TO TURN LOAD OFF WHEN NO OCCUPANT PRESENCE IS DETECTED DURING AN ADJUSTABLE TURN-OFF DELAY TIME INTERVAL.
- PASSIVE INFRARED LENS FIELD OF VIEW: FIELD CUSTOMIZABLE BY ADDITION OF FACTORY MASKING MATERIAL, ADJUSTMENT OF INTEGRAL BLINDERS, OR SIMILAR MEANS TO BLOCK MOTION DETECTION IN SELECTED AREAS.
- TURN-OFF DELAY: ADJUSTABLE
- SENSITIVITY: FIELD ADJUSTABLE
- INTEGRAL PHOTOCELL: FOR FIELD SELECTABLE AND ADJUSTABLE INHIBITION OF AUTOMATIC TURN-ON OF LOAD WHEN AMBIENT LIGHTING IS ABOVE THE SELECTED LEVEL.
- COMPATIBILITY (NON-DIMMING SENSORS): SUITABLE FOR CONTROLLING INCANDESCENT LIGHTING, LOW-VOLTAGE LIGHTING WITH ELECTRONIC AND MAGNETIC TRANSFORMERS.
- LOAD RATING FOR LINE VOLTAGE OCCUPANCY SENSORS: AS REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS.
- ISOLATED RELAY FOR LOW VOLTAGE OCCUPANCY SENSORS: SPDT DRY CONTRACTS, RATINGS AS REQUIRED FOR INTERFACE WITH SYSTEM INDICATED.

E. WALL OCCUPANCY SENSORS:

- DESCRIPTION: OCCUPANCY SENSORS DESIGNED FOR INSTALLATION IN STANDARD WALL BOX AT STANDARD WALL SWITCH MOUNTING HEIGHT WITH A FIELD OF VIEW OF 180 DEGREES, INTEGRATED MANUAL CONTROL CAPABILITY, AND NO LEAKAGE CURRENT TO LOAD IN OFF MODE.
- UNLESS OTHERWISE INDICATED OR REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS, PROVIDE LINE VOLTAGE UNITS WITH SELF-CONTAINED RELAY.
- WHERE INDICATED, PROVIDE TWO-CIRCUIT UNITS FOR CONTROL OF TWO SEPARATE LIGHTING LOADS, WITH SEPARATE MANUAL CONTROLS AND SEPARATELY PROGRAMMABLE OPERATION FOR EACH LOAD.
- OCCUPANCY SENSOR TO BE FIELD SELECTABLE AS EITHER MANUAL-ON/AUTOMATIC-OFF OR AUTOMATIC ON/OFF.
- MANUAL-OFF OVERRIDE CONTROL: WHEN USED TO TURN OFF LOAD WHILE IN AUTOMATIC-ON MODE, UNIT TO REVERT BACK TO AUTOMATIC MODE AFTER NO OCCUPANT PRESENCE IS DETECTED DURING THE DELAYED-OFF TIME INTERVAL.
- DEVICE FINISH: MATCH FINISHES SPECIFIED IN WIRING DEVICES SECTION, UNLESS NOTED OTHERWISE.
- PROVIDE VANDAL RESISTANT LENSES FOR PASSIVE INFRARED (PIR) WALL SWITCH OCCUPANCY SENSORS.
- PASSIVE INFRARED (PIR) WALL SWITCH OCCUPANCY SENSORS: CAPABLE OF DETECTING MOTION WITHIN AN AREA OF 900 SQUARE FEET.

F. CEILING MOUNTED OCCUPANCY SENSORS:

- DESCRIPTION: LOW PROFILE OCCUPANCY SENSORS DESIGNED FOR CEILING INSTALLATION.
- UNLESS OTHERWISE INDICATED OR REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS, PROVIDE LOW VOLTAGE UNITS, FOR USE WITH SEPARATE COMPATIBLE ACCESSORY POWER PACKS.
- PROVIDE FIELD SELECTABLE SETTING FOR DISABLING LED MOTION DETECTOR VISUAL INDICATOR.
- OCCUPANCY SENSOR TO BE FIELD SELECTABLE AS EITHER MANUAL-ON/AUTOMATIC-OFF OR AUTOMATIC ON/OFF.
- FINISH: WHITE UNLESS OTHERWISE INDICATED.
- ULTRASONIC CEILING MOUNTED OCCUPANCY SENSORS: CAPABLE OF DETECTING MOTION WITHIN AN AREA OF 500 SQUARE FEET AT A MOUNTING HEIGHT OF 9 FEET, WITH A FIELD OF VIEW OF 360 DEGREES.

G. DUAL TECHNOLOGY WALL DIMMER VACANCY SENSORS:

- PRODUCTS: WATTSTOPPER - DW-311 SERIES. ACUITY BRANDS, SENSOR SWITCH - WSX PDT SERIES.
- DESCRIPTION: WALL MOUNTED 0-10V DIMMING DUAL TECHNOLOGY VACANCY SENSOR.
- CAPABLE OF DETECTING MOTION WITHIN AN AREA OF 525 SQUARE FEET.
- UNLESS OTHERWISE INDICATED OR REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS, PROVIDE LINE VOLTAGE UNITS WITH SELF-CONTAINED RELAY.
- FINISHES: MATCH FINISHED SPECIFIED FOR WIRING DEVICES UNLESS NOTED OTHERWISE.

H. ROOM CONTROLLERS

- DESCRIPTION: DIGITAL CONTROLLERS FOR LIGHTING ZONES, FIXTURES AND/OR PLUG LOADS AUTOMATICALLY BIND ROOM LOADS TO THE CONNECTED CONTROL DEVICES IN THE SPACE WITHOUT COMMISSIONING OR THE USE OF ANY TOOLS. PROVIDE CONTROLLERS TO MATCH THE ROOM LIGHTING AND PLUG LOAD CONTROL REQUIREMENTS. CONTROLLERS ARE SIMPLE TO INSTALL, AND DO NOT HAVE DIP SWITCHES/POTENTIOMETERS, OR REQUIRE SPECIAL CONFIGURATION FOR STANDARD PLUG N' GO APPLICATIONS. CONTROL UNITS INCLUDE THE FEATURES LISTED BELOW.
- AUTOMATIC ROOM CONFIGURATION TO THE MOST ENERGY-EFFICIENT SEQUENCE OF OPERATION BASED UPON THE DEVICES IN THE ROOM.
- SIMPLE REPLACEMENT USING THE DEFAULT AUTOMATIC CONFIGURATION CAPABILITIES, A ROOM CONTROLLER MAY BE REPLACED WITH AN ON-THE-SHELF DEVICE.
- MULTIPLE ROOM CONTROLLERS CONNECTED TOGETHER IN A LOCAL NETWORK MIST AUTOMATICALLY ARBITRATE WITH EACH OTHER, WITHOUT REQUIRING ANY CONFIGURATION OR SETUP, SO THAT INDIVIDUAL LOAD NUMBERS ARE ASSIGNED STARTING WITH LOAD 1 TO A MAXIMUM OF 64, ASSIGNED BASED ON EACH CONTROLLER'S DEVICE ID'S FROM HIGHEST TO LOWEST.
- DEVICE STATUS LEDS TO INDICATE: DATA TRANSMISSION, DEVICE HAS POWER, STATUS FOR EACH LOAD, AND CONFIGURATION STATUS.
- QUICK INSTALLATION FEATURES INCLUDING: STANDARD JUNCTION BOX MOUNTING, QUICK LOW VOLTAGE CONNECTIONS USING STANDARD RJ-45 PATCH CABLE.
- BASED ON INDIVIDUAL CONFIGURATION, EACH LOAD SHALL BE CAPABLE OF THE FOLLOWING BEHAVIOR ON POWER UP FOLLOWING LOSS OF NORMAL POWER: TURN ON TO 100 PERCENT, TURN OFF, TURN ON TO LAST LEVEL.
- EACH LOAD TO BE CONFIGURABLE TO OPERATE IN THE FOLLOWING SEQUENCES BASED ON OCCUPANCY: AUTO-ON/AUTO-OFF (FOLLOW ON AND OFF), MANUAL-ON/AUTO-OFF (FOLLOW OFF ONLY).
- BACNET OBJECT INFORMATION SHALL BE AVAILABLE FOR THE FOLLOWING OBJECTS: LOAD STATUS, SCHEDULE STATE, NORMAL OR AFTER-HOURS, DEMAND RESPONSE ENABLE AND DISABLE, ROOM OCCUPANCY STATUS, TOTAL ROOM LIGHTING AND PLUG LOAD WATTS, ELECTRICAL CURRENT, TOTAL WATTS PER CONTROLLER, TOTAL ROOM WATTS/SQ FT., FORCE ON/OFF ALL LOADS.
- UL 2043 PLENUM RATED
- MANUAL OVERRIDE AND LED INDICATION FOR EACH LOAD
- ZERO CROSS CIRCUITRY FOR EACH LOAD
- ALL DIGITAL PARAMETER DATA PROGRAMMED INTO AN INDIVIDUAL ROOM CONTROLLER OR PLUG LOAD CONTROLLER SHALL BE RETAINED IN NON-VOLATILE FLASH MEMORY WITHIN THE CONTROLLER ITSELF. MEMORY SHALL HAVE AN EXPECTED LIFE OF NO LESS THE 10 YEARS.

I. ON/OFF/0-10V DIMMING ROOM CONTROLLERS SHALL INCLUDE:

- DUAL VOLTAGE (120/277 VAC, 60 Hz) CAPABLE OF 347 VAC, 60 Hz. 120/277 VOLT MODELS RATED FOR 20A TOTAL LOAD; 347 VOLT MODELS RATED FOR 15A TOTAL LOAD.
- BUILT IN REAL TIME CURRENT MONITORING.
- ONE, TWO OR THREE RELAY CONFIGURATIONS.
- FOUR RJ-45 LOCAL NETWORK PORTS. PROVIDE INTEGRAL STRAIN RELIEF.
- ONE DIMMING OUTPUT PER RELAY. 0-10V DIMMING - WHERE INDICATED, ONE 0-10 VOLT ANALOG OUTPUT PER RELAY FOR CONTROL OF COMPATIBLE BALLASTS AND LED DRIVERS. THE 0-10 VOLT OUTPUT SHALL AUTOMATICALLY OPEN UPON LOSS OF POWER TO THE ROOM CONTROLLER TO ASSURE FULL LIGHT OUTPUT FROM THE CONTROLLED LIGHTING.
- PROVIDE (2) EXTRA.

J. POWER PACKS FOR LOW VOLTAGE OCCUPANCY SENSORS:

- DESCRIPTION: PLENUM RATED, SELF-CONTAINED LOW VOLTAGE CLASS 2 TRANSFORMER AND RELAY COMPATIBLE WITH SPECIFIED LOW VOLTAGE OCCUPANCY SENSORS FOR SWITCHING OF LINE VOLTAGE LOADS.
- PROVIDE QUANTITY AND CONFIGURATION OF POWER AND SLAVE PACKS WITH ALL ASSOCIATED WIRING AND ACCESSORIES AS REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS.
- INPUT SUPPLY VOLTAGE: DUAL RATED FOR 120/277 VAC.
- LOAD RATING: AS REQUIRED TO CONTROL THE LOAD INDICATED ON THE DRAWINGS.

K. ENGAGE MANUFACTURER'S REPRESENTATIVE TO SELECT DEVICES, QUANTITIES, LOCATIONS, AND INTERCONNECTING CABLING TO ACHIEVE THE CONTROL SEQUENCE SPECIFIED IN THE LIGHTING CONTROL SCHEDULE.

L. COORDINATE LOCATION OF OUTLET BOXES AS REQUIRED FOR INSTALLATION OF LIGHTING CONTROL DEVICES PROVIDED UNDER THIS SECTION.

- MOUNTING HEIGHTS: UNLESS INDICATED OTHERWISE AS FOLLOWS: WALL SWITCH OCCUPANCY SENSORS - 48 INCHES ABOVE FINISHED FLOOR.
- ORIENT OUTLET BOXES FOR VERTICAL INSTALLATION OF LIGHTING CONTROL DEVICES UNLESS OTHERWISE INDICATED.
- LOCATE WALL SWITCH OCCUPANCY SENSORS ON STRIKE SIDE OF DOOR WITH EDGE OF WALL PLATE 3 INCHES FROM EDGE OF DOOR FRAME. WHERE LOCATIONS ARE INDICATED OTHERWISE, NOTIFY ARCHITECT TO OBTAIN DIRECTION PRIOR TO PROCEEDING WITH WORK.

M. WIRING:

- COMPLY WITH NECA 1.
- WIRING METHOD - INSTALL CABLES IN RACEWAYS EXCEPT WHERE INSTALLED IN ACCESSIBLE CEILINGS. CONCEAL RACEWAY AND CABLES EXCEPT IN UNFINISHED SPACES. SUPPORT CABLES AT INTERVALS NOT EXCEEDING 30 FEET.
- ROUTE ALL LOW VOLTAGE CABLES SEPARATE FROM LINE-VOLTAGE CONDUCTORS.
- CONDUCTOR/CABLE COORDINATION: VERIFY AND COORDINATE QUANTITY AND CONFIGURATION OF LINE VOLTAGE CONDUCTORS AND/OR LOW VOLTAGE CABLES NEEDED TO INTERCONNECT DIMMING CONTROL DEVICES WITH ASSOCIATED LIGHTING FIXTURES. CONTROL METHOD SHALL MATCH. NOTE THAT DIMMING METHODS MAY REQUIRE DIFFERENT CONDUCTOR/CABLE CONFIGURATIONS BE USED FOR DIFFERENT FIXTURES.
- UNLESS OTHERWISE INDICATED, CONNECT LIGHTING CONTROL DEVICE GROUNDING TERMINAL OR CONDUCTOR TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR AND TO OUTLET BOX WITH BONDING JUMPER.

N. WALL DEVICES:

- PROVIDE JUNCTION BOX IN WALL WITH CONDUIT STUBBED UP ABOVE NEAREST ACCESSIBLE CEILING SPACE.
- WHERE CABLING IS ROUTED IN INACCESSIBLE LOCATION (ABOVE HARD CEILINGS, WITHIN FLOORS, WITHIN WALLS), PROVIDE CONDUIT ROUTED FROM DEVICE TO NEAREST ACCESSIBLE CEILING SPACE.

O. SENSORS:

- SELECT, INSTALL, AND AIM SENSORS TO ACHIEVE NOT LESS THAN 90 PERCENT COVERAGE OF INSTALLED AREAS. DO NOT EXCEED COVERAGE LIMITED SPECIFIED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ADJUST LOCATION OF SENSORS TO MINIMIZE ACTIVATION OF INTERIOR ROOMS FROM ADJACENT CORRIDOR ACTIVITY PER MANUFACTURER'S DIRECTION.
- ARRANGE CONTROL ZONES PER PLANS AND DETAILS. INDIVIDUAL ROOMS (DEFINED BY FULL HEIGHT WALL PARTITIONS OF DOORS) SHALL BE CONTROLLED INDEPENDENT OF ADJACENT ROMS. MULTIPLE OCCUPANCY SENSORS IN THE SAME ROOM OR ZONE SHALL CONTROL ALL LIGHTING FIXTURES ASSOCIATED WITH THAT ROOM OR ZONE. ROOMS OR ZONES SHOWN WITH MULTIPLE BRANCH CIRCUITS SHALL BE PROVIDED WITH MULTIPLE CONTROL DEVICES TO ACCOMMODATE CONTROL SEQUENCES.
- LOCATION ADJUSTMENTS - LOCATIONS INDICATED ARE DIAGRAMMATIC AND ONLY INTENDED TO INDICATE WHICH ROOMS OR AREAS REQUIRE DEVICES. PROVIDE QUANTITY AND LOCATIONS AS REQUIRED FOR COMPLETE COVERAGE OF RESPECTIVE ROOM OR AREA BASED ON MANUFACTURER'S RECOMMENDATIONS FOR INSTALLED DEVICES.
- LOCATE ULTRASONIC OCCUPANCY SENSORS A MINIMUM OF 4 FEET FROM AIR SUPPLY DUCTS OF OTHER SOURCES OF HEAVY AIR FLOW AND AS PER MANUFACTURER'S RECOMMENDATIONS, IN ORDER TO MINIMIZE FALSE TRIGGERS.
- UNLESS OTHERWISE INDICATED, INSTALL POWER PACKS FOR LIGHTING CONTROL DEVICES ABOVE ACCESSIBLE CEILING OR ABOVE ACCESS PANEL IN INACCESSIBLE CEILING NEAR THE SENSOR LOCATION.

P. EMERGENCY LIGHTING INTERFACE:

- INSTALL EMERGENCY RELAY ON LIFE SAFETY LIGHTING CIRCUITS INDICATED WITH AUTOMATIC CONTROLS. RELAY SHALL BYPASS AUTOMATIC CONTROLS AND ILLUMINATE LIFE SAFETY LIGHTING CIRCUIT UPON LOSS OF ADJACENT NORMAL BRANCH LIGHTING CIRCUIT SOURCE VOLTAGE. LOCATE IN ASSOCIATED SOURCE ELECTRICAL ROOM WITHIN NEMA 1 ENCLOSURE.

Q. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM START-UP SERVICE.

- COMPLETE INSTALLATION AND START-UP CHECKS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- TEST EACH BUS CONTROLLER USING A PORTABLE PC.
- ACTIVATE LIGHT FIXTURES AND VERIFY THAT ALL FIXTURES ARE OPERATING AT 100 PERCENT.
- CONFIRM CORRECT COMMUNICATIONS WIRING, INITIATE COMMUNICATIONS BETWEEN DEVICES AND CONTROLLER/GATEWAY, AND PROGRAM THE LIGHTING CONTROL SYSTEM ACCORDING TO APPROVED CONFIGURATION SCHEDULES, TIME-OF-DAY SCHEDULES, AND INPUT OVERRIDE ASSIGNMENTS.
- CORRECT MALFUNCTIONING UNITS ON-SITE, WHERE POSSIBLE, AND RETEST TO DEMONSTRATE COMPLIANCE, OTHERWISE, REPLACE WITH NEW UNITS AND RETEST.
- LIGHTING CONTROLS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.
- PREPARE TEST AND INSPECTION REPORTS, INCLUDING A CERTIFIED REPORT THAT IDENTIFIES BUS CONTROLLERS INCLUDED AND DESCRIBES QUERY RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKE, AND OBSERVATIONS MADE AFTER REDIAL ACTION.

R. TEST AND INSPECTION REPORT:

- PERFORM TESTS/INSPECTIONS AND SUBMIT REPORT PRIOR TO ENGINEER'S FINAL PUNCH INSPECTION.
- REPORT SHALL CONSIST OF ANY DEVELOPED TEST RESULT DATA AND SHALL, AT A MINIMUM, INCLUDE A COPY OF TEST REQUIREMENTS NOTED ABOVE TO ILLUSTRATE CONTRACTOR ACKNOWLEDGEMENT OF TESTS AND INSPECTIONS.
- CONTRACTOR SHALL INDICATE SUCCESSFUL COMPLETION BY INITIALING INDIVIDUAL TEST AND INSPECTION REQUIREMENTS LISTED ABOVE ON THE COPY. INITIALING INDICATES THAT TESTS AND INSPECTIONS WERE PERFORMED FOR SPECIFIED WORK WITH A SUCCESSFUL OUTCOME. WORK NOT FOUND TO BE IN COMPLIANCE WAS CORRECTED AND RETESTED/RE-INSPECTED SUCCESSFULLY OR HAS BE SPECIFICALLY CLARIFIED AND NOTED ABOVE BY THE CONTRACTOR.
- UPON COMPLETION OF INITIAL PROGRAMMING, ENGAGE ENGINEER, ARCHITECT, AND OWNER WHILE ON SITE TO CONFIRM TIME AND SCENE CONTROLS/ADJUSTMENTS PRIOR TO FINAL PROGRAMMING. PROVIDE TWO WEEKS NOTICE. TIME MAY BE REQUIRED OUTSIDE OF NORMAL BUSINESS HOURS TO CONFIRM LIGHTING FOR THOSE HOURS OF OPERATION.

S. DEMONSTRATION:

- TRAINING: TRAIN PERSONNEL ON OPERATION, ADJUSTMENT, PROGRAMMING AND MAINTENANCE OF LIGHTING CONTROL DEVICES. USE OPERATION AND MAINTENANCE AS TRAINING REFERENCE SUPPLEMENTED WITH ADDITIONAL TRAINING MATERIALS AS REQUIRED.

18. LIGHTING

A. PROVIDE PRODUCTS THAT COMPLY WITH REQUIREMENTS OF NFPA 70 AND NFPA 101.

B. PROVIDE PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND INDICATED.

C. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE ALL REQUIRED CONDUIT, BOXES, WIRING, CONNECTORS, HARDWARE, SUPPORTS, TRIMS, ACCESSORIES, ETC., AS NECESSARY FOR A COMPLETE OPERATING SYSTEM.

D. PROVIDE PRODUCTS SUITABLE TO WITHSTAND NORMAL HANDLING, INSTALLATION, AND SERVICE WITHOUT ANY DAMAGE, DISTORTION, CORROSION, FADING, DISCOLORING, ETC.

E. PHOTOMETRIC MEASUREMENTS INDICATED ON THE PRODUCT DATA SHALL BE PROVIDED IN ACCORDANCE WITH IESNA LM-79-08 APPROVED METHOD: ELECTRICAL AND PHOTOMETRIC MEASUREMENTS OF SOLID-STATE LIGHTING PROJECTS AND SHALL MEET THE REQUIREMENTS SPECIFIED AND/OR INDICATED ON THE DRAWINGS.

F. LUMEN DATA INDICATED ON THE PRODUCT DATA SHEETS SHALL BE GENERATED IN ACCORDANCE WITH IESNA LM-80-08 APPROVED METHOD FOR MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES AND SHALL MEET THE REQUIREMENTS SPECIFIED AND/OR INDICATED ON THE DRAWINGS.

G. LUMEN DEPRECIATION SHALL BE IDENTIFIED IN TERMS OF IES TM-21-11. UNLESS NOTED OTHERWISE, LUMINAIRES SHALL PROVIDE A MINIMUM L70 RATING AT THE DRIVE CURRENT PROVIDED PRODUCT SHALL INDICATE SUCH.

H. LED COLOR TEMPERATURES: CRI>85, 2700K AS NOTED +/- 145K.

I. LED COLOR TEMPERATURES: CRI>85, 4000K AS NOTED +/- 275K.

J. LUMEN OUTPUT SPECIFIED SHALL BE LUMENS DELIVERED FROM THE LUMINAIRE AT THE COLOR TEMPERATURE SPECIFIED. LED LUMINAIRES SHALL DELIVER A MINIMUM OF 60 LUMENS PER WATT. LED'S SHALL BE 'BIN NO.1' QUALITY.

K. THE LED LIGHT SOURCE SHALL BE FULLY DIMMABLE WITH USE OF CAMPATIBLE DIMMER SWITCH DESIGNATED FOR LOW VOLTAGE LOADS.

L. DRIVERS SHALL BE SOLID STATE AND ACCEPT 120 THROUGH 277 VAC AT 60 Hz INPUT.

M. LUMINAIRES SHALL HAVE INTEGRAL THERMAL PROTECTION.

N. LED ARRAYS SHALL BE SEALED, HIGH PERFORMANCE, LONG LIFE TYPE, MINIMUM 70% RATED OUTPUT AT 50,000 HOURS.

O. INDOOR LUMINAIRES SHALL HAVE A MINIMUM CRI OF 85.

P. LUMINAIRES SHALL NOT DRAW POWER IN THE OFF STATE. LUMINAIRES WITH INTEGRAL OCCUPANCY, MOTION, PHOTO-CONTROLS, OR INDIVIDUALLY ADDRESSABLE LUMINAIRES WITH EXTERNAL CONTROL AND INTELLIGENCE ARE EXEMPT FROM THIS REQUIREMENT. THE POWER DRAW FOR SUCH LUMINAIRES SHALL NOT EXCEED 0.5 WATTS WHEN IN THE OFF STATE.

Q. LED PACKAGE(S)/MODULE(S)/ARRAY(S) USED IN QUALIFIED LUMINAIRES SHALL DELIVER A MINIMUM 70% OF INITIAL LUMENS, FOR A MINIMUM OF 50,000 HOURS.

R. LUMINAIRES SHALL BE FULLY ACCESSIBLE FROM BELOW CEILING PLANE FOR CHANGING DRIVERS, POWER SUPPLIES AND ARRAYS.

S. SET LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALL COMPLYING WITH NFPA 70 FOR FIXTURE SUPPORTS.

T. SUSPENDED LIGHTING FIXTURE SUPPORT

- PENDANTS AND RODS - WHERE LONGER THAN 48 INCHES, BRACE TO LIMIT SWINGING.
- STEM-MOUNTED, SINGLE-UNIT FIXTURES - SUSPENDED WITH TWIN-STEM HANGERS.
- CONTINUOUS ROWS - USE TUBING OR STEM FOR WIRING AT ONE POINT AND TUBING OR ROD FOR SUSPENSION FOR EACH UNIT LENGTH OF FIXTURE CHASSIS, INCLUDE ONE AT EACH END. ALTERNATE - FLEXIBLE CORD CONNECTION FOR SINGLE CIRCUIT.

U. ADJUST AND AIM LIGHTING FIXTURES AT INTENDED SURFACES. PROVIDE ADDITIONAL ADJUSTMENTS FOR OWNER PRIOR TO FINAL TURNOVER OR AT SUBSTANTIAL COMPLETION.

V. LIGHTING FIXTURES MOUNTED IN CONTINUOUS ROWS MAY BE NED FED WITH ONLY THE CIRCUITS FEEDING THE ROW (PASSING THROUGH OF OTHER CIRCUITS NOT ALLOWED) WITH EACH ROW FED FROM INDIVIDUAL JUNCTION BOXES AT THE END FEED POINT.

W. LIGHTING FIXTURES MUST HAVE INDIVIDUAL FEEDS TO EACH FIXTURE. 'DAISY-CHAINING' OF FIXTURES NOT ALLOWED. THE LIGHTING FIXTURE WHIPS MUST BE 6 FEET LONG OR LESS.

19. STRUCTURED CABLING

A. INSTALLER QUALIFICATIONS: COMPANY MUST HAVE 3 YEARS EXPERIENCE IN THE INSTALLATION AND TESTING OF THE TYPE OF SYSTEM SPECIFIED.

B. COMPANY MUST EMPLOY A BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER.

C. DATA ROOM: PROVIDE 3/4 INCH GRAY PAINTED, FIRE RATED, PLYWOOD ON ALL WALLS FOR EQUIPMENT MOUNTING.

D. CABLING AND EQUIPMENT: EQUAL TO PANDUIT AND GENERAL CABLE CATEGORY 6, PLENUM RATED CABLE. PROVIDE A COMPLETE P