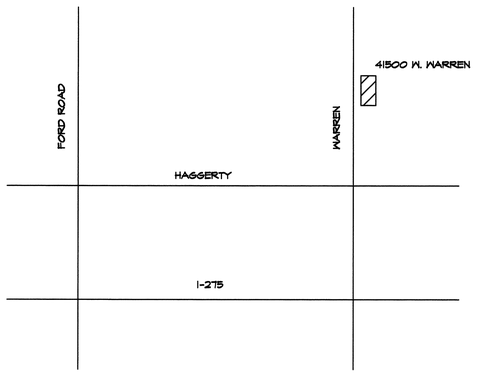
FIRE STATION No. 2
SLOPED ROOF SYSTEM
CITY OF CANTON



LOCATION MAP
SCALE:NONE

NORTH

INDEX OF DRAWINGS	
SHEET NO.	SHEET TITLE
G-1	COVER SHEET
A-1	ELEVATIONS
A-2	ELEVATIONS
A-3	ROOF PLAN, DETAILS
A-4	EXISTING ROOF PLAN
A-5	MECHANICAL PLAN

I. Trussels

Dynamic Consultants, Inc.
Building and Site Design

44808 Gregory Lane
Plymouth, MI 48170-3920
Tel: (734) 207-1963 Fax: (734) 207-5491

Project
FIRE STATION NO.2
SLOPED ROOF SYSTEM

41500 W. WARREN
CANTON, MI

Owner
CHARTER TOWNSHIP
OF CANTON

1150 CANTON CENTER
CANTON, MI 48188-1699

Sheet
COVER SHEET

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OWNER REVIEW	2/3/99

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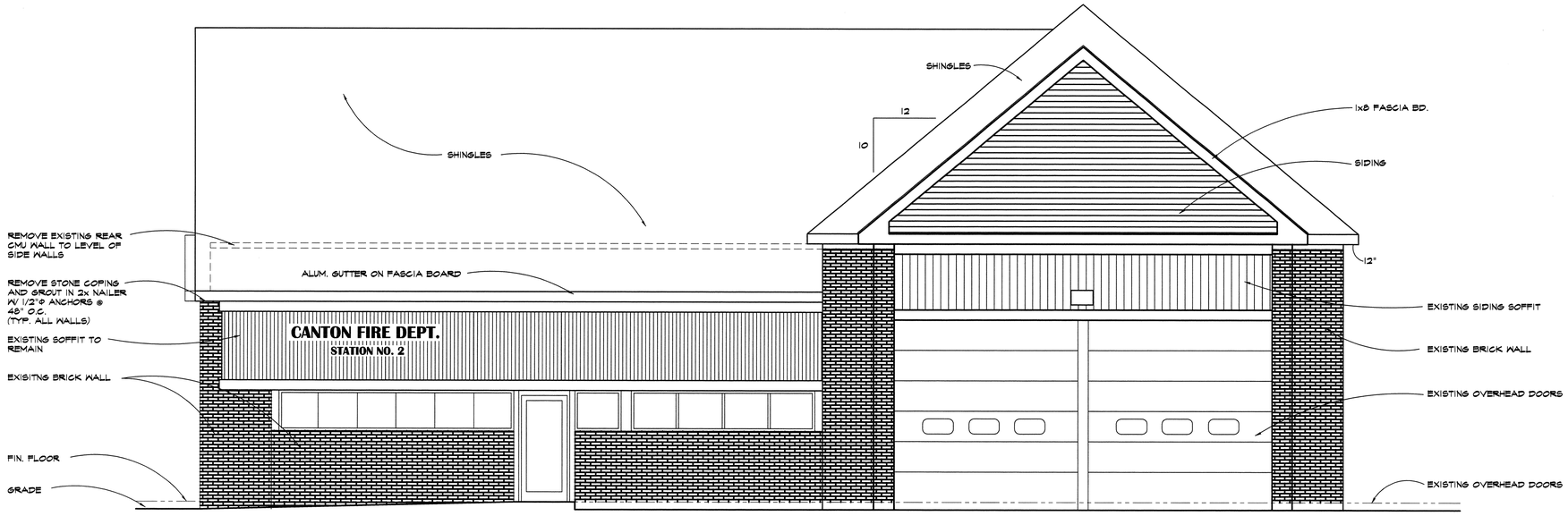
Checked By: A. MABROUK
Date:
Scale: NONE
Project No.: 1098014
Sheet No.: G-1



SOUTH ELEVATION

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

WEST ELEVATION

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

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ELEVATIONS

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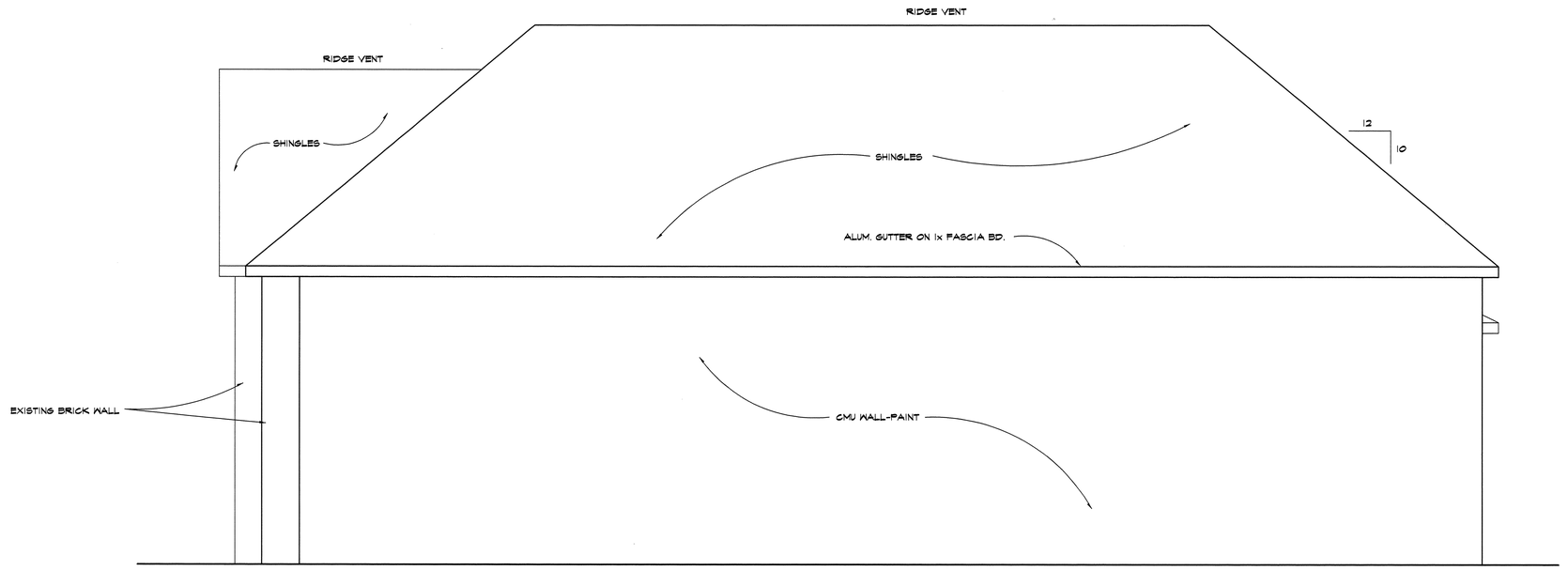
Date:

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

Project No.: 1098014

Sheet No.: A-1



EAST ELEVATION

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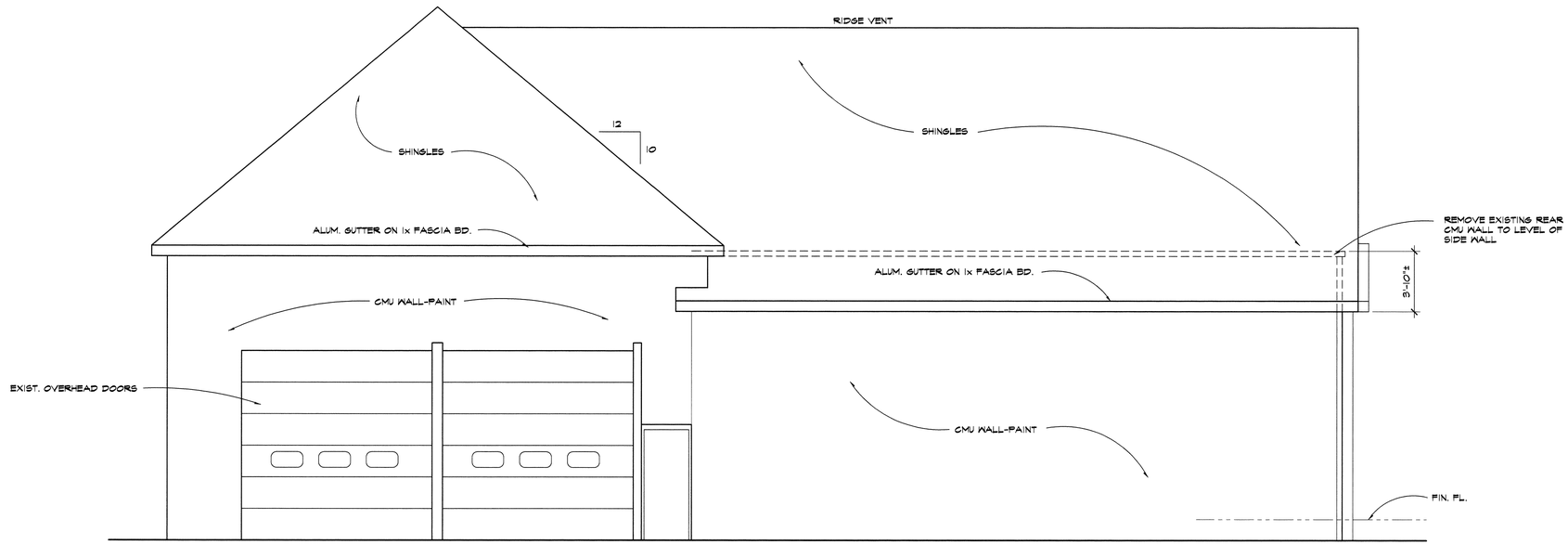

NORTH ELEVATION

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

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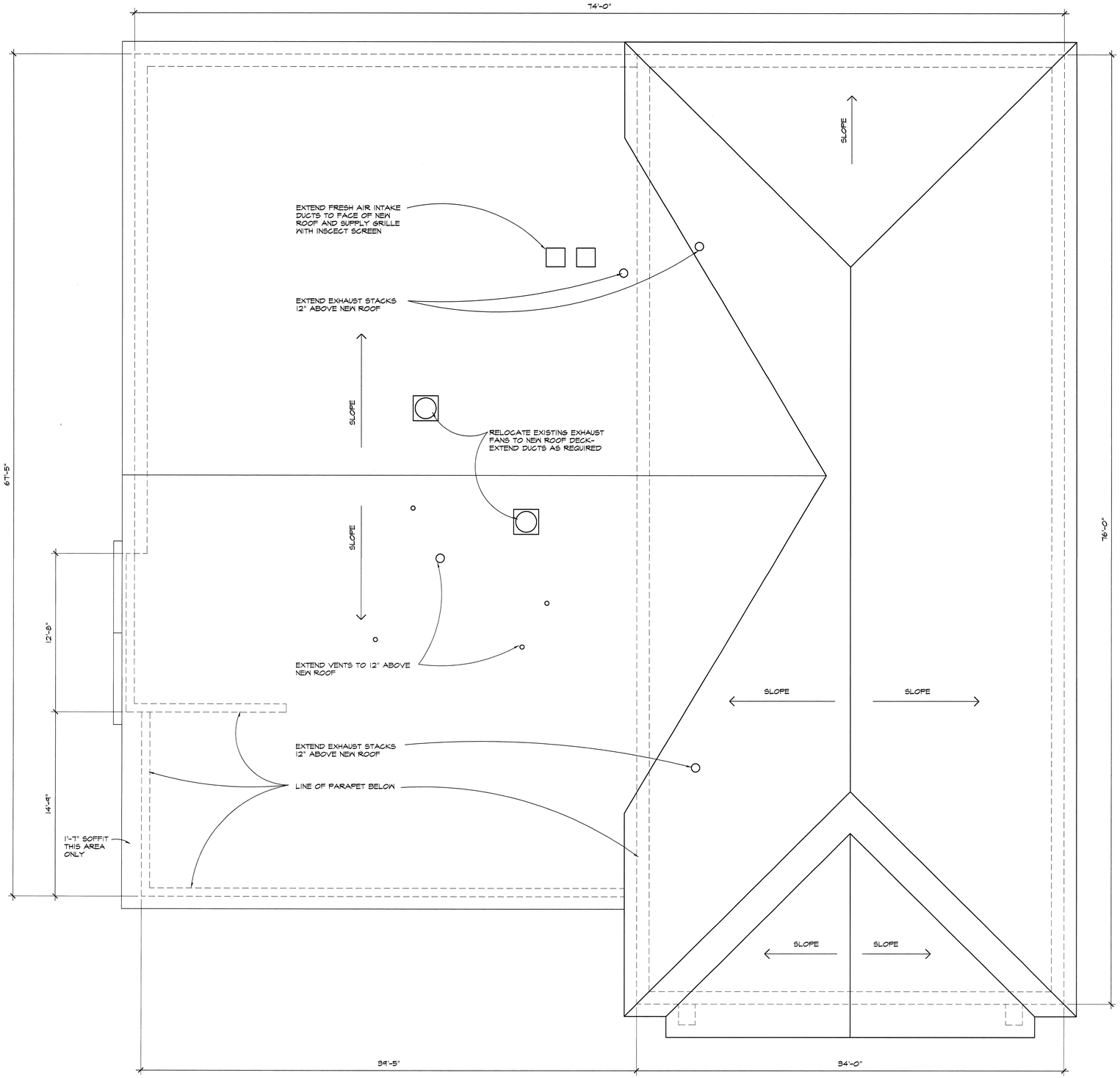
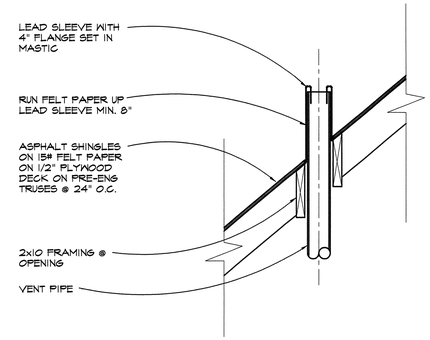
Sheet No.: A-2



NORTH

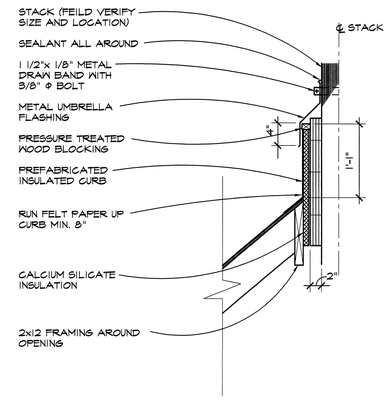
ROOF PLAN

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



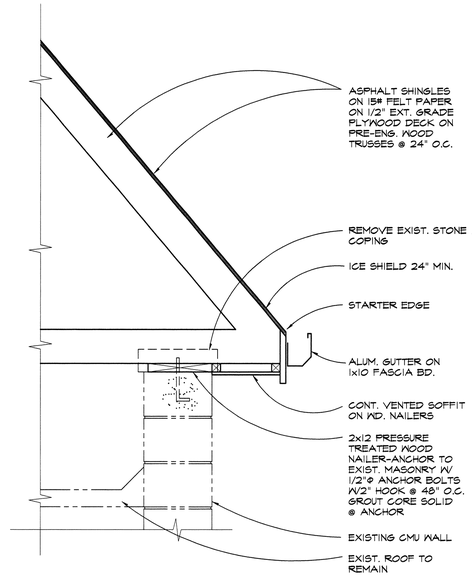
VENT THRU ROOF

SCALE:1"=1'-0"



HEAT STACK THRU ROOF

SCALE:1"=1'-0"



TYPICAL PARAPET DETAIL

SCALE:1"=1'-0"

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ROOF PLAN DETAILS

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Scale: NOTED

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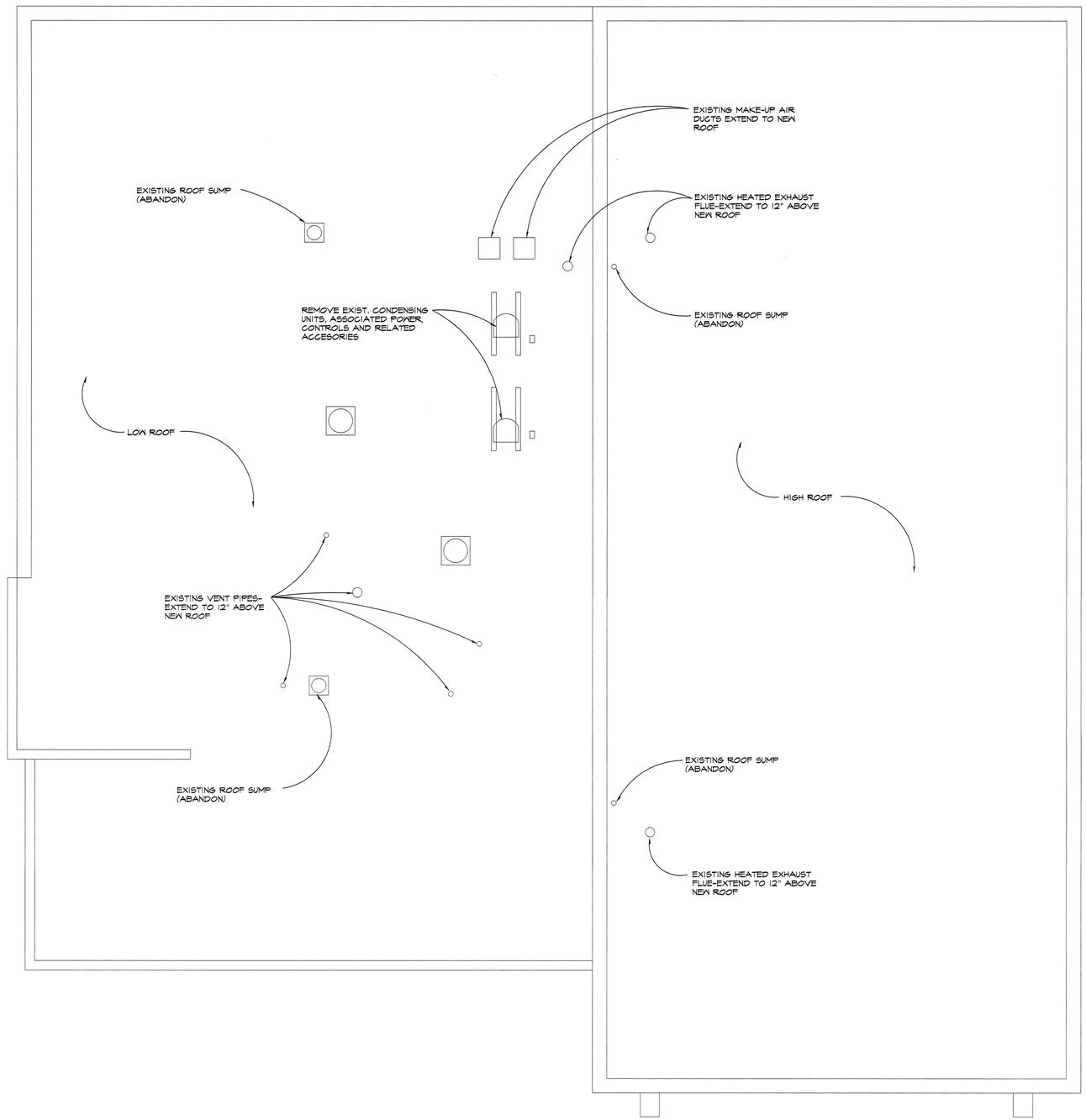
Sheet No.: A-3



NORTH

EXISTING ROOF PLAN

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

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EXISTING ROOF PLAN

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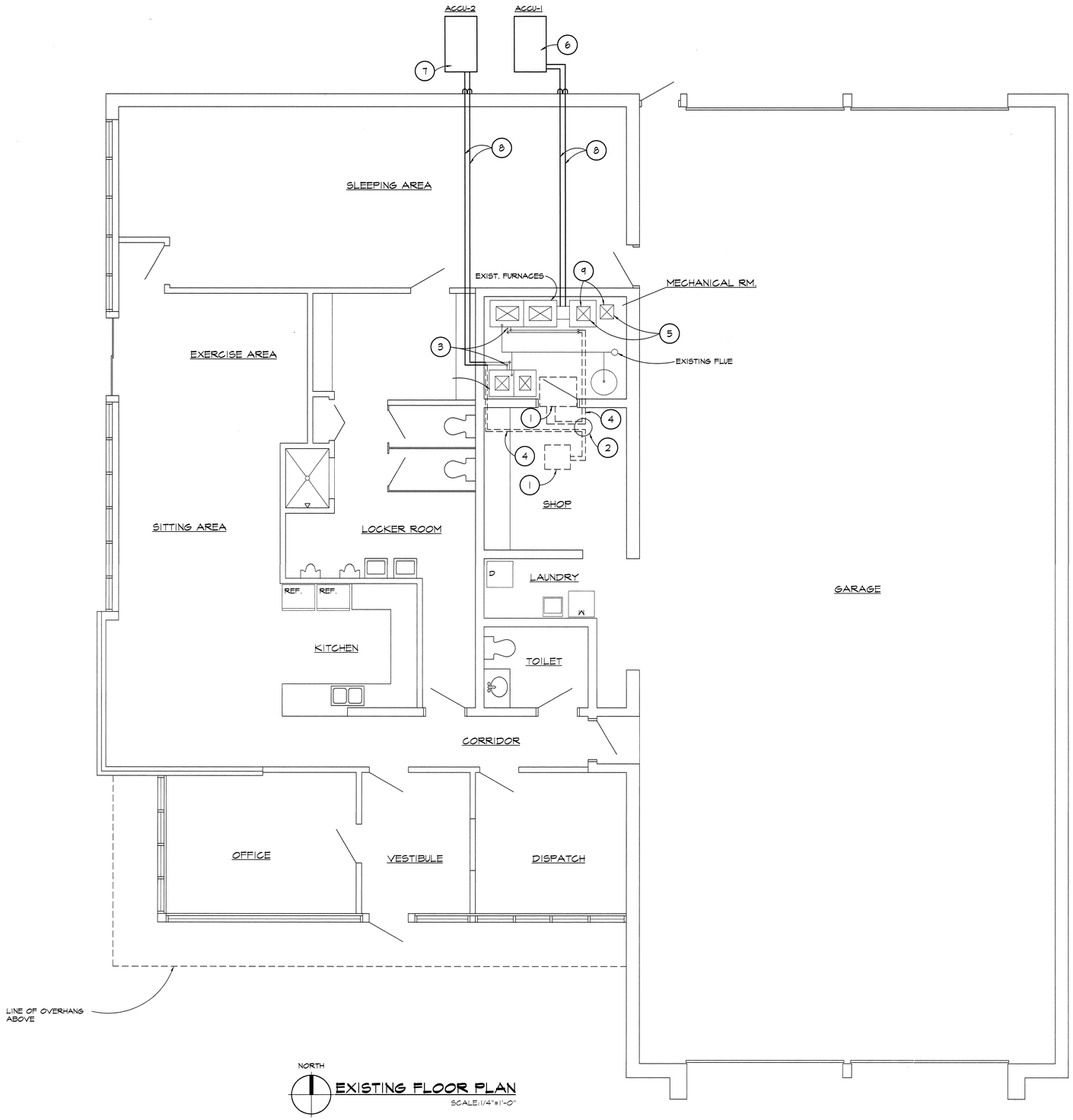
Sheet No.: A-4



NORTH

EXISTING FLOOR PLAN

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

DEMOLITION NOTES

1. DISCONNECT AND DISPOSE OF EXISTING ROOF MOUNTED AIR COOLED CONDENSING UNITS WITH ASSOCIATED POWER, CONTROLS AND OTHER RELATED ACCESSORIES. FIELD VERIFY ALL SYSTEM COMPONENTS PRIOR TO DEMOLITION.
2. DEMOLISH EXISTING ROOF CAP FOR REFRIGERANT PIPING.
3. DISCONNECT AND DISPOSE OF REFRIGERANT PIPING CONNECTING TO EVAPORATOR COIL AT FURNACES. DRAIN SYSTEM PRIOR TO DEMOLITION. PREPARE COIL FOR NEW PIPING HOOK-UP.
4. DEMOLISH EXISTING REFRIGERANT PIPING, FIELD VERIFY EXACT ROUTING.
5. DEMOLISH EXISTING GOOSENECK DUCT ABOVE ROOF. PREPARE EXISTING DUCT FOR NEW CONNECTION.

NEW MECHANICAL NOTES

6. PROVIDE NEW AIR COOLER CONDENSING UNIT (ACCU-1) OF CAPACITY 5 TON LENNOX MODER #HS29-060 TO REPLACE EXISTING LENNOX MODEL #HS10-653. PROVIDE NEW CONCRETE PAD TO SET UNIT ON. ALSO PROVIDE NEW REFRIGERANT PIPING AND CONNECT TO THE CORRESPONDING EXISTING EVAPORATOR COIL. PROVIDE NEW DISCONNECT SWITCH. CONTRACTOR TO VERIFY FIELD CONDITIONS AND EXACT SYSTEM COMPONENTS PRIOR TO ORDERING ANY MATERIALS.
7. PROVIDE NEW AIR COOLED CONDENSING UNIT (ACCU-2) OF CAPACITY 2 TON LENNOX MODEL #HS29-024 TO REPLACE EXISTING LENNOX MODER #HS9-261. PROVIDE NEW CONCRETE PAD TO SET UNIT ON. ALSO PROVIDE NEW REFRIGERANT PIPING AND CONNECT TO THE CORRESPONDING EXISTING EVAPORATOR COIL. PROVIDE NEW DISCONNECT SWITCH. CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND EXACT SYSTEM COMPONENTS PRIOR TO ORDERING ANY MATERIALS.
8. SIZE AND ROUTE NEW REFRIGERANT PIPING PER MANUFACTURER WRITTEN INSTRUCTIONS.
9. EXTEND EXISTING DUCTWORK APPROXIMATELY 12" ABOVE NEW ROOF. PROVIDE NEW GOOSENECK CONNECTION TO MATCH EXISTING ONE. SEAL TIGHT AROUND NEW ROOF PENETRATION.

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MECHANICAL PLAN

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Date:

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Project No.: 10980I4

Sheet No.: A-5

ROUGH CARPENTRY

GENERAL NOTES
A. ROUGH WOOD FRAMING TO BE ACCORDING TO NATIONAL LUMBER MANUFACTURERS ASSOCIATION RECOMMENDED FRACTICE FOR WOOD FRAMING. STORE ALL LUMBER OFF THE GROUND AND PROTECT FROM THE ELEMENTS.

B. IDENTIFY ALL FRAMING LUMBER AND PLYWOOD AS TO GRADES WITH APPROPRIATE AGENCIES STAMP, AND STORE ALL GRADES SEPARATELY FROM OTHER GRADES.

C. USE EXTREME CARE IN THE OFF-LOADING OF LUMBER TO PREVENT DAMAGE, SPLITTING AND BREAKING OF MATERIALS.

PRE-ENGINEERED TRUSSES
A. TRUSS DESIGN, INSTALLATION AND BRACING PER T.P.I., NFOPA, AND TRUSS MANUFACTURERS SHOP DRAWINGS AND/OR REQUIREMENTS. TRUSS SUPPLIER TO PROVIDE DOCUMENTATION OF DESIGN, IN-PLANT INSPECTION DURING FABRICATION, LAYOUT AND ERECTION TO MUNICIPALITY PRIOR TO ERECTION OF TRUSSES. DOCUMENTATION SHALL BE SEALED BY AN ENGINEER LICENSED IN THE STATE OF MICHIGAN. VERIFY TRUSS FRAMING WITH TRUSS MANUFACTURER'S DESIGN LAYOUT. SHOULD GIRDERS BEAR OVER A HEADER WHERE NOT SHOWN, NOTIFY THE ARCHITECT FOR EVALUATION OF HEADER SIZE.

B. 4" NOMINAL BEARING EACH END.

C. 24" O.C. SPACING WITH A LIVE LOAD

D. DEFLECTION LIMITED TO L/240 MAXIMUM.

E. LUMBER PROPERTIES AS FOLLOWS:
2X4: FB=2000 PSI FT=1100 PSI FC=2000 PSI
E=1.8X10
2X6: FB=1750 PSI FT=950 PSI FC=1900 PSI
E=1.8X10

F. TRUSSES TO BE DESIGNED FOR ANY SPECIAL LOADING AND SNOW DRIFTING NEAR PARAPET OR SLIDE OFF FROM HIGHER ROOFS.

G. CONNECTOR PLATES
ALL CONNECTOR PLATES SHALL BE A MINIMUM THICKNESS OF 0.0356" AND SHALL BE MANUFACTURED FROM STEEL MEETING THE REQUIREMENTS OF ASTM A653 GRADE 33 OR A HIGHER GRADE WHEN REQUIRED BY TRUSS DESIGN, AND SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A653, COATING DESIGNATION 660 (IN HIGHLY CORROSIVE ENVIRONMENTS, SPECIAL APPLIED COATINGS MAY BE REQUIRED.)

H. BRACING AND ANCHORAGE
ALL TRUSSES MUST BE SECURELY BRACED AND ANCHORED BOTH DURING ERECTION AND PERMANENT INSTALLATION IN ACCORDANCE WITH COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES (HIB-91) AS PUBLISHED BY THE TRUSS PLATE INSTITUTE. ERECTION BRACING SHALL HOLD TRUSSES STRAIGHT AND PLUMB AND IN SAFE CONDITION UNTIL DECKING AND PERMANENT TRUSS BRACING HAS BEEN FASTENED FORMING A STRUCTURALLY SOUND FRAMING SYSTEM. ALL ERECTION AND PERMANENT BRACING SHALL BE INSTALLED AND ALL TRUSSES PERMANENTLY FASTENED BEFORE APPLICATION OF ANY LOADS.

I. DESIGN LIVE LOADS
NOTE: COORDINATED DEAD LOAD CRITERIA (I.E., ROOF SPECIALTIES) WITH OWNER/GENERAL CONTRACTOR.

ROOF TRUSS: TOP CHORD 50PSI
BOTTOM CHORD 20PSI

J. SUBMIT SHOP DRAWINGS TO OWNER'S REPRESENTATIVE FOR REVIEW.

FASTENING MATERIALS
A. GENERAL
USE FASTENING MATERIALS OF TYPES APPROPRIATE FOR THE CONDITIONS ENCOUNTERED, INCLUDING WOOD TO WOOD, WOOD TO MASONRY OR CONCRETE, AND WOOD TO METAL. USE CARRIAGE BOLTS FOR SECURING BLOCKING, NAILERS AND FRAMING. BOLD HOLES IN STEEL WORK WILL BE PROVIDED AT 24 INCHES ON CENTER, UNLESS NOTED OTHERWISE. WHERE HOLES ARE NOT PROVIDED IN STRUCTURAL FRAMING, THREADED STUD BOLTS AND NUTS, OR PONDER ACTUATED FASTENERS, SHALL BE USED FOR SECURING WOOD TO STRUCTURAL FRAMING.

B. NAILS AND STAPLES
GALVANIZED CARBON STEEL, PER FED. SPEC. FF-N-105B

C. SCREWS
GALVANIZED CARBON STEEL PER FED. SPEC. FF-S-107C AND NATURAL BRIGHT FINISH CARBON STEEL PER FED. SPEC. FF-S-111C

D. BOLTS, WASHERS, EXPANSION SHIELDS, AND NUTS
ZINC,COATED CARBON STEEL, PER FED. SPEC. FF-B-561C, FF-B-575C, FF-N-92A, FF-B-588C AND FF-N-836D

E. BAR OR STRAP ANCHORS
ASTM A36 CARBON STEEL, 1/8" THICK UNLESS OTHERWISE NOTED; HOT DIPPED GALVANIZED WITH 2.0 OUNCE ZINC COATING PER SQUARE FOOT OF SURFACE, PER ASTM A 123.

F. PONDER ACTUATED FASTENERS
DRIVE PIN TYPE, THREADED, OF LENGTH TO PENETRATE THE STEEL MEMBER AND DEPTH OF WOOD MEMBER, AND A WASHER OF SUFFICIENT DIAMETER TO SECURE THE WOOD MEMBER. FASTENERS AND LOW-VELOCITY PONDER-ACTUATED TOOLS BY SAME MANUFACTURER.
1. HILTI, INC.
2. RAMSET, INC.

G. THREADED STUDS
THREADED STUDS FOR SECURING WOOD NAILERS OR OTHER ITEMS AS NOTED, COMPLETE WITH NUT AND WASHER.
1. ERICO PRODUCTS, INC. "BLUE ARC SHEAR CONNECTOR STUDS"
2. KSM "SHEAR CONNECTORS"
3. NELSON "FLUXED SHEAR CONNECTOR STUDS"
4. TRU-FIT PRODUCTS CORP. "TRU-WELD TYPE CA"

WOOD TREATMENTS

PRESERVATIVE TREATMENT

USE PRESERVATIVE PRESSURE TREATED WOOD NAILERS, BLOCKING, ROUGH BUCKS, FURRING, GROUNDS AND OTHER ROUGH LUMBER ITEMS THAT COME IN CONTACT WITH CONCRETE, MASONRY OR METAL AND THAT ARE INACCESSIBLE IN THE FINISHED WORK. PRESERVATIVE PRESSURE TREATMENT SHALL BE IN ACCORDANCE WITH AWPA STANDARDS P5, C6, C2 AND C4 AND AWPB STANDARDS, QCIP AND LP-2. EACH PIECE SHALL BE STAMPED WITH INDELIBLE INK WITH AWPB LP-2 QUALITY MARK. PERFORM ALL MILLING ALONG THE GRAIN OF THE WOOD PRIOR TO PRESERVATIVE PRESSURE TREATMENT. USE:
1. CONTINENTAL WOOD PRESERVERS, INC. "CCA-A"
2. HICKSON CORPORATION "WOLMAN-CCA"
3. HOOVER TREATED WOOD PRODUCTS "DIXIE CCA"
4. OSMOSE WOOD PRESERVING COMPANY "OSMOSE CCA"

PREPARATION

A. PROVIDE ROUGH HARDWARE REQUIRED TO COMPLETE THIS WORK, INCLUDING ATTACHMENTS OF WOOD TO WOOD, WOOD TO MASONRY OR CONCRETE AND WOOD TO METAL. COUNTER BORE HOLES FOR NUTS AND HEADS OF FASTENERS, AND COUNTERSINK ALL SCREWS SO AS TO BE FLUSH. DRILL HOLES IN LUMBER FOR FASTENERS. FURNISH ROUGH HARDWARE ITEMS, LOOSE, THAT ARE SCHEDULED TO BE PRESET IN MASONRY OR CONCRETE, TO EXPEDITE THE INSTALLATION OF SUCH WORK.

B. IN PRESSURE TREATED WOOD, DRILL UNDERSIZE HOLES FOR SCREWS AND NAILS TO PREVENT SPLITTING OF WOOD MEMBER.

C. FOR BACK-PAINTED MEMBERS, AFTER ANY SUCH MEMBERS ARE CUT IN THE FIELD, APPLY A BRUSH COAT OF THE SAME MATERIAL USED IN THE SHOP, TO RESEAL THE SURFACE.

D. WHEN PRESERVATIVE PRESSURE TREATED LUMBER IS CUT ACROSS THE GRAIN IN THE FIELD, APPLY A PRESERVATIVE TO CUT END IN ACCORDANCE WITH AWPA STANDARD M4 SECTION 1.5.

NAILERS, BLOCKING, FRAMING AND ROUGH BUCKS

A. PROVIDE NAILERS, BLOCKING FRAMING, ROUGH BUCKS, SHEATHING AND OTHER ROUGH LUMBER AS NECESSARY FOR A COMPLETE INSTALLATION.

B. ANCHOR WOOD MEMBERS TO CONCRETE, MASONRY, OR STEEL AS SHOWN, OR REQUIRED, COMPLETE WITH THE FASTENERS SPECIFIED. IF POWDER-ACTUATED FASTENERS ARE PERMITTED BY THE OWNER COMPLY WITH SAFETY REQUIREMENT OF OSHA AND FASTENER MANUFACTURER. WHERE SIZE AND SPACING ARE NOT SHOWN OR NOTED, SECURE MEMBERS WITH 1/2" DIAMETER BOLTS OR THREADED STUDS, NOT LESS THAN TWO FOR EACH INDIVIDUAL PIECE, AND AT NOT MORE THAN 24 INCHES ON CENTER, MAXIMUM, FOR CONTINUOUS MEMBERS. PROVIDE WASHERS UNDER ALL BOLT HEADS AND NUTS. PROVIDE NAILERS AND BLOCKING IN LONG LENGTHS TO MINIMIZE JOINTS. WHEN JOINTS ARE NECESSARY, JOIN PIECES WITHOUT PROJECTING EDGES.

WOOD DECK
ALL WOOD SHEATHING SHALL BE APA APPROVED, EXPOSURE 1 PLYWOOD COMPLYING WITH DOC PS1, OR ORIENTED STRAND BOARD (OSB) COMPLYING WITH APA PRP 108 OR DOC PS 2, AND SHALL BE FASTENED IN ACCORDANCE WITH THE LATEST APA RECOMMENDATIONS AND CODE REQUIREMENTS FOR THE SPECIFIC ITEM BEING INSTALLED. (MOST STRINGENT)

SHINGLES
GENERAL
1. SECTION INCLUDES SHINGLES AND FLASHING WITH ASSOCIATED ACCESSORIES FOR COMPLETE SYSTEM.
2. PRODUCT DATA FOR THE PRODUCTS SPECIFIED, CONSISTING OF MANUFACTURER'S SPECIFICATION, TECHNICAL DATA, AND INSTALLATION INSTRUCTIONS, TO BE SUBMITTED TO OWNER'S REPRESENTATIVE. INCLUDE DIMENSIONS OF INDIVIDUAL COMPONENTS, PROFILES, TEXTURE, AND COLORS.

ASPHALT SHINGLES
1. MATCH COLORS, TEXTURES, AND PATTERNS INDICATED BY REFERENCING MANUFACTURER'S STANDARD DESIGNATIONS FOR THESE CHARACTERISTICS.
2. SQUARE-TAB, FIBERGLASS STRIP SHINGLES: MINERAL-SURFACED, SELF-SEALING, 3-TAB, FIBER-GLASS-BASED, STRIP SHINGLES, COMPLYING WITH ASTM D 3018, TYPE I, AND MEETING THE FOLLOWING REQUIREMENTS:
A. PHYSICAL REQUIREMENTS: MEET THE PHYSICAL REQUIREMENTS OF ASTM D 3462.
B. WIND RESISTANCE: PASSES THE TEST REQUIREMENTS OF ASTM D 3161.
C. FIRE-TEST-RESPONSE CLASSIFICATION: CLASS A.
D. WARRANTY PERIOD: 20 YEARS.

C. HIP AND RIDGE SHINGLES: JOB-FABRICATED OR FACTORY-PRECUT UNITS TO MATCH SHINGLES.

SHEET METAL MATERIALS

A. FURNISH GALVANIZED-STEEL SHEETS: ASTM A 526, G 90 HOT-DIP GALVANIZED STEEL WITH COATING DESIGNATION ACCORDING TO ASTM A 525, MILL PHOSPHATIZED WHERE INDICATED FOR PAINTING; 0.0217" THICK, UNLESS OTHERWISE INDICATED.

B. METAL DRIP EDGE: BRAKE-FORMED GALVANIZED-STEEL SHEET METAL WITH AT LEAST A 2" ROOF DECK FLANGE AND A 1-1/2" FASCIA FLANGE WITH A 3/8" DRIP AT LOWER EDGE. FURNISH IN LENGTHS OF 8 OR 10 FEET.

C. METAL FLASHING: GALVANIZED-STEEL SHEETS JOB-CUT TO SIZES AND CONFIGURATIONS REQUIRED.

D. OPEN-VALLEY FLASHING: GALVANIZED-STEEL SHEETS, PRE FORMED, INVERTED "V" PROFILE CENTER OF VALLEY AND EXTENDING AT LEAST 9" IN EACH DIRECTION FROM CENTERLINE OF VALLEY.

E. VENT PIPE FLASHING: LEAD CONFORMING TO ASTM B 749, TYPE L51121, AT LEAST 1/16" THICK, UNLESS OTHERWISE INDICATED.

UNDERLAYMENT

A. FELT UNDERLAYMENT: ASTM D 226 OR ASTM D 4869, TYPE I.

B. WATERPROOF UNDERLAYMENT: MINIMUM 40 MIL THICK, SELF-ADHERING, POLYMER-MODIFIED, BITUMINOUS SHEET MEMBRANE, COMPLYING WITH ASTM D 1970.

RIDGE VENT

HIGH-DENSITY POLYPROPYLENE, NONWOVEN MODIFIED POLYESTER, OR OTHER UV-STABILIZED PLASTIC

MISCELLANEOUS MATERIALS

A. NAILS: ALUMINUM OR HOT-DIP GALVANIZED STEEL CONVENTIONAL ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE 3/4" INTO SOLID DECKING OR AT LEAST 1/8" THROUGH PLYWOOD SHEATHING.

B. ROLL ROOFING LAP CEMENT: ASTM D 3019, TYPE III

EXAMINATION AND PREPARATION

A. EXAMINE SUBSTRATE FOR COMPLIANCE WITH REQUIREMENTS FOR CONDITIONS AFFECTING PERFORMANCE OF ASPHALT SHINGLES. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

B. CLEAN SUBSTRATES OF PROJECTIONS AND COVER KNOTHOLES OR OTHER MINOR VOIDS IN SUBSTRATE WITH SHEET METAL FLASHING.

C. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER ADJOINING WORK TO ENSURE PROPER SEQUENCING.

INSTALLATION

A. INSTALLATION: COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS BUT NOT LESS THAN THOSE RECOMMENDED BY ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL" OR "THE NRCA STEEP ROOFING MANUAL."

B. WATERPROOF UNDERLAYMENT: APPLY WATERPROOF UNDERLAYMENT AT EAVES. COVER DECK FROM EAVES TO AT LEAST 24 INCHES INSIDE EXTERIOR WALL LINE.
1. IN ADDITION TO EAVES, APPLY WATERPROOF UNDERLAYMENT IN PLACE OF FELT UNDERLAYMENT AT VALLEYS.

C. VALLEYS: COMPLY WITH ARMA AND NRCA RECOMMENDATIONS.
1. CLOSED VALLEYS

D. FLASHING: INSTALL METAL FLASHING AND TRIM ACCORDING TO DETAILS AND RECOMMENDATIONS OF THE "ASPHALT ROOFING" SECTION OF "THE NRCA STEEP ROOFING MANUAL" AND ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL."

E. SHINGLES: INSTALL SHINGLES, BEGINNING AT ROOF'S LOWER EDGE, WITH A STARTER STRIP. FASTEN SHINGLES IN THE DESIRED WEATHER EXPOSURE PATTERN WITH NUMBER OF FASTENERS PER SHINGLE AS RECOMMENDED BY MANUFACTURER. CUT AND FIT SHINGLE AT VALLEYS, RIDGES, AND EDGES TO PROVIDE MAXIMUM WEATHER PROTECTION. PROVIDE SAME WEATHER EXPOSURE AT RIDGES AS SPECIFIED FOR ROOF. PATTERN SELECTED: 1/2 SHINGLE SPACING OFFSET AT SUCCEEDING COURSES.

F. RIDGE VENTS: INSTALL RIDGE VENTS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

G. REPLACE DAMAGED MATERIALS INSTALLED UNDER THIS SECTION WITH NEW MATERIALS THAT MEET SPECIFIED REQUIREMENTS.

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Project

FIRE STATION NO.2
SLOPED ROOF SYSTEM

41500 W. WARREN
CANTON, MI

Owner

CHARTER TOWNSHIP OF CANTON

1150 CANTON CENTER
CANTON, MI 48188-1699

Sheet

SPECIFICATIONS

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Issues / Revisions

OWNER REVIEW	2/3/99

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Checked By: A. MABROUK
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