Request for Proposal

For Animal Control Building Addition

1/29/2026

County of Montcalm

Brenda A. Taeter
County Controller/Administrator
County Controller's Office
211 W. Main Street
P O Box 368
Stanton, MI 48888

The following proposal and specifications are to insure which materials, labor, and services are included to complete the project.

Location of Project

County of Montcalm Animal Control Building: 154 W. Quarterline Street, Stanton, MI 48888

Detailed Specifications to Include

- Liability insurance of $1,000,000.00
- Construction of a 30' x 50' addition to an existing pole barn building
- Addition to be added to east end of exiting building
- Contractor to build a turnkey package
- All new interior flooring will be 2-part Epoxy with paint chips (color TBD at later date)
- We have one set of floor plans for review, we will lend out for a 24 hour period on a first requested basis

Total Project Cost: $ _____

Submission Details

Submission Deadlines

All submissions responding to this request must be submitted on paper and mailed or delivered to our office, address stated below, no later than:

No later than 12:35pm on Friday, February 20, 2026
Public Opening of bids at 12:50pm on February 20th.

Please indicate on the outside of the envelope "Animal Control Addition RFP".

Submission Delivery Address

The delivery address for all submissions is:

Brenda A. Taeter
County Controller's Office
County of Montcalm
211 W Main Street
P O Box 368
Stanton, MI 48888

Submission Questions and Clarifications

You may contact the following persons if you have any questions or require clarification on any topics covered in this Request for Proposal no later than 10:00am on February 11, 2026:

Doug Gietzen
Director of Buildings & Grounds
County of Montcalm
Cell: 989-818-2047
Email: dgietzen@montcalm.us

Brenda A. Taeter
County Controller/Administrator
County of Montcalm
Voice: 989-831-7398
Email: btaeter@montcalm.us

There will be no mandatory walk through; however, if you would like to do a site visit, please contact Doug Gietzen at 989-818-2047 to schedule as needed.

Terms of Payment

- Payment for the project will be made upon completion of the project, unless specified otherwise in contract.

- Any additional work requiring additional cost must be submitted to the Director of Buildings & Grounds and approved in writing (or by signature) before work is performed; additional approved work will become part of the original contract and paid accordingly.

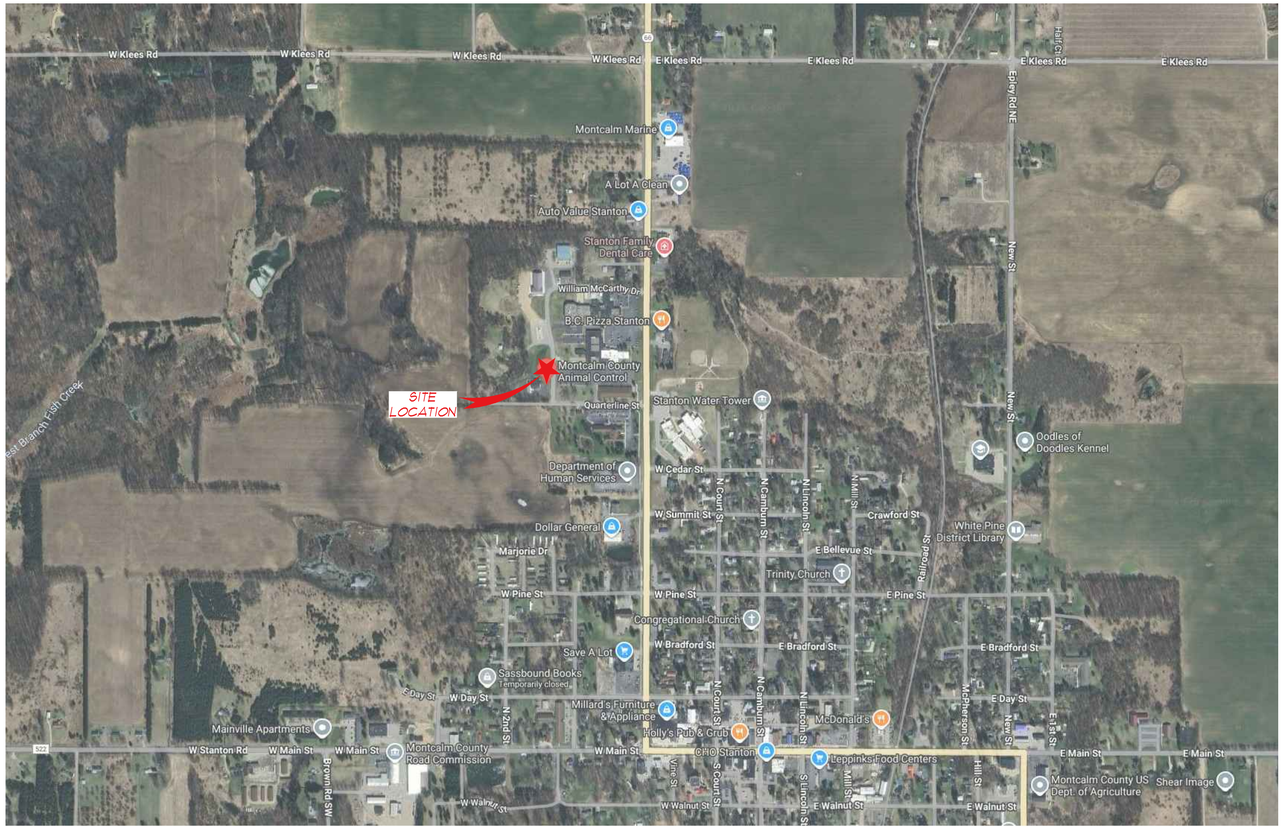
We appreciate your interest in this project.

Proposed 30' x 50' Addition to:

Montcalm County Animal Control

154 E. Quarterline Street

Stanton, MI 48888



LOCATION MAP
NOT TO SCALE
NORTH

INDEX OF DRAWINGS

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T	LOCATION MAP, CODE DATA, & SHEET INDEX
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S1.0	FOUNDATION PLAN & DETAILS
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A1.0	FLOOR PLANS & SCHEDULES
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A5.6	SPECIFICATIONS
ME1.0	CONCEPT PLUMBING & MECHANICAL PLANS & SPECIFICATIONS
ME2.0	CONCEPT ELECTRICAL LIGHTING & POWER PLANS & SPECIFICATIONS
	NOTE: ME1.0 & ME2.0 DESIGN BUILD BY OTHERS.

CODE DATA

CODE ENFORCED:	2021 MICHIGAN BUILDING CODE (MBC). 2021 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS (MRC). 2021 MICHIGAN PLUMBING CODE (MPC). 2021 MICHIGAN MECHANICAL CODE (MMC). 2023 MICHIGAN ELECTRICAL CODE (MEC)/ NATIONAL ELECTRIC CODE CONSTRUCTION (NEC).
PROJECT DESCRIPTION:	EXISTING BUSINESS, B USE GROUP (ANIMAL HOSPITAL / KENNEL) LEVEL 2 ALTERATION (MRC) DUE TO NEW DOOR AND OPENING IN EXISTING OFFICE 001 TO NEW RECEPTION 101, WITH AN ADDITION (MBC).
CONSTRUCTION TYPE: USE GROUP:	VB, COMBUSTIBLE, UNPROTECTED (MBC 602.5). BUSINESS GROUP, B (MBC 304).
ALLOWABLE HEIGHT: ACTUAL HEIGHT: ALLOWABLE S.F. (BASE): ACTUAL TOTAL S.F.	2 STORY, 40'-0" (MBC TABLES 504.3 & 504.4.). 1 STORY, +/- 19'-0" (GRADE TO RIDGE @ EXISTING). 9,000 S.F. (MBC TABLE 506.2). 4,485 S.F. PROPOSED (INSIDE FACE OF EXTERIOR WALL, MBC 202.). 3,055 S.F. EXISTING + 1,430 S.F. PROPOSED.
AUTOMATIC SPRINKLER SYSTEM:	NOT REQ'D (MBC 903.2.).
PORTABLE FIRE EXTINGUISHER:	(1) RECEPTION AREA. VERIFY WITH BUILDING OFFICIAL/ FIRE MARSHAL.
FIRE ALARM/DETECTION SYSTEM:	NOT REQ'D (MBC 907.2.2.).
OCCUPANT LOAD (TABLE 1004.5.):	TOILET ROOMS = 0 OCCUPANTS MECHANICAL/STORAGE ROOMS, 920 SF/300 GROSS = 2.79 OCCUPANTS BUSINESS AREA, 3,342 SF/150 GROSS = 22.28 OCCUPANTS TOTAL OCCUPANTS = 25.0 OCCUPANTS

EXIT ACCESS TRAVEL DIST. ALLOWED: 100'-0" (TABLE 1006.2.) w/ O.L. LESS THAN 30.
EXIT ACCESS TRAVEL DIST. PROVIDED: +/- 30'-0" FEET MAXIMUM (IN EX. KENNEL TO NEW FRONT DOOR).

BUILDING MEETS REQUIREMENTS FOR SINGLE EXIT, TWO (2) EXITS PROVIDED AS FOLLOWS:
- ONE (1) IN ADDITION (INTERVENING SPACE) and ONE (1) THRU EX. INTAKE (INTERVENING SPACE).

EGRESS ILLUMINATION/
EMERGENCY POWER SYSTEM: REQ'D, PER MBC 1008.

EXIT SIGNAGE: PROVIDED, BUT NOT REQ'D, PER MBC 1013.1, EXCEPTION 1 & 2.

ENERGY EFFICIENCY: ENERGY CODE: COMPLY WITH THE MICHIGAN ENERGY CODE (MBC 1301.1.).

2021 MICHIGAN ENERGY CODE - 2021 IECC and ASHREA 90.1-2019

CHAPTER 3 - GENERAL REQUIREMENTS:
CLIMATE ZONE: MONTCALM COUNTY - 5A (MEC C301.).
BLD'G. THERMAL INSUL.: PROVIDE CERTIFICATES FOR EA. TYPE, MANF. & R-VALUE (MEC C303.1.).
BLOWN-IN ROOF/CEILING INSUL.: INSULATION MARKERS EVERY 300 S.F. w/ R-VALUES (MEC C303.1.1.).

CHAPTER 4 - COMMERCIAL ENERGY EFFICIENCY:
COMPLIANCE: PRESCRIPTIVE (MEC C401(2.1) or ASHREA 90.1-2019 (MEC C401(2.2.).
METHOD: U-, C-, F-FACTOR METHOD (MEC C402.1(1.)).

TABLE C402.1.4 U-, C-, F-FACTOR METHOD - CLIMATE ZONE 5, ALL OTHER

ROOFS:
ATTIC & OTHER: U, TABLE VALUE = 0.021 — AS DESIGNED ASHREA U-VALUE = 0.020 (R49 INSUL.).

WALLS ABOVE GRADE:
WOOD FRAMED: U, TABLE VALUE = 0.051 — AS DESIGNED ASHREA U-VALUE = 0.051 (5½" WOOD FRAMED @ 16" OC. -R21 CAVITY INSUL + R10 HEADER INSULATION + R3 INSULATED SHEATHING.).

SLAB ON GRADE FLOORS:
UNHEATED: F, TABLE VALUE = 0.52 — AS DESIGNED ASHREA F-VALUE = 0.52 (R15 INSUL.).

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
T

PROJECT NUMBER:
25141

STRUCTURAL ABBREVIATION INDEX

AB	Anchor Bolt/Column Anchor Rod
A/E	Architect/Engineer
AESS	Architecturally Exposed Structural Steel
AFF	Above Finished Floor
ALT	Alternate
AP	Anchor Plate
ARCH	Architectural
B.O.	Bottom of
BB	Bond Beam
BFF	Below Finished Floor
BL	Brick Ledge
BM	Beam
BP	Bearing Plate
BRG	Bearing
BT	Bent
℄	Centerline
CANT	Cantilever
C/C	Center-to-Center
CBP	Column Base Plate
CJP	Complete Joint Penetration Weld
CJ	Construction Joint
CJ	Contraction Joint
CJ	Control Joint
CLR	Clear
CMU	Concrete Masonry Unit
COL	Column
CONC	Concrete
CONN	Connection, Connect
CONT	Continuous
COORD	Coordinate
DBE	Deck Bearing Elevation
DA	Deck Angle
DB	Deck Bar
DIA, Ø	Diameter
DP	Deck Plate
DWG	Drawing(s)
EA	Each
EF	Each Face
EL	Elevation
EQ	Equal
ES	Each Side
EW	Each Way
EX	Existing
EXP	Expansion
EXT	Exterior
FD	Floor Drain
FF	Finished Floor
FFE	Finished Floor Elevation
FDN	Foundation
FP	Foundation Pier
FS	Far Side
FTG, F	Footing
FV	Field Verify
GA	Gauge
GALV	Galvanized
GB	Grade Beam
GS	Grout Solid
GT	Girder Truss
HD	Hold Down Anchor
HORZ	Horizontal
HP	High Point
HS	Headed Stud
HT	Height
ID	Inside Diameter
IF	Inside Face
INT	Interior
JB	Joist Bearing Elevation
L	Lintel
LAT	Lateral
LD	Load
LF	Linear Foot
LG	Long
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LOC'N	Location
LP	Low Point
LT	Light
MAX	Maximum
MECH	Mechanical
MCJ	Masonry Control Joint
MIN	Minimum
NS	Near Side
NTS	Not To Scale
O/O	Out-to-Out
OC	On-Center
OD	Outside Diameter
OF	Outside Face
OFD	Overflow Drain
OH	Opposite Hand
P	Pier
PEMB	Pre-Engineered Metal Building
PERP	Perpendicular
ℙ	Plate
PT	Pressure Treated
R, RAD	Radius
RD	Roof Drain
RE:	Reference, Refer to
REINF	Reinforce
REQ'D	Required
RMW	Reinforced Masonry Wall
RTU	Roof Top Unit
RXN	Reaction
SC	Slip Critical
SF	Step Footing
SIM	Similar
SOG	Slab On Grade
SPCS	Spaces
SS	Stainless Steel
SST	Simpson Strong Tie Co. Steel
STL	Steel
T&B	Top and Bottom
TCX	Top Chord Extension
T.O.	Top of
TOB	Top of Beam
TOF	Top of Footing
TOL	Top of Ledge
TOM	Top of Masonry
TOS	Top of Steel
TOW	Top of Wall
TYP	Typical
UNO	Unless Noted Otherwise
VERT	Vertical
w/	With
w/o	Without
WF	Wall Footing
WP	Working Point
WWF	Welded Wire Fabric

GENERAL STRUCTURAL NOTES

1. All work shall be performed in accordance with the contract documents. In case of a conflict within the contract documents, the more stringent condition shall govern, unless directed otherwise by the engineer of record. Prior to implementation, any discrepancies shall be reported to the architect for clarification.
2. In the event that certain details of construction are not indicated or noted in the drawings, details for similar conditions that are indicated or noted shall be utilized, subject to the structural engineer's approval.
3. Openings and penetrations through structural elements, and items embedded in structural elements that are not indicated in the structural drawings shall be reviewed by the structural engineer prior to fabrication, erection and/or construction.
4. Materials or equipment shall not be placed on unfinished floors or roofs in excess of 20 psf nor on finished floors in excess of the design live loads which are indicated in the structural drawings. Impact loading shall be avoided.
5. The structure has been designed for the in-service loads only. The methods, procedures and sequences of construction are the responsibility of the contractor. Contractor shall take all necessary precautions to maintain and ensure the integrity of the structure at all stages of construction. Contractor shall immediately notify the structural engineer of any condition which, in his opinion, might endanger the stability of the structure or cause distress in the structure.
6. All existing conditions and all related dimensions indicated in the contract documents shall be field verified prior to fabrication, erection and/or construction. Any condition that differs from that indicated in the contract documents shall be submitted to the architect for review prior to fabrication, erection and/or construction.
7. Provide special inspection in accordance with chapter 17 of the International Building Code and with project specifications. In addition, the following categories of work shall require special inspection:
   - All post installed expansion or adhesive anchors.
   - Embeds.
   - All shop and field welding.
   - All bolted connections.
8. Post installed anchors shall be the specific product indicated. Where product substitutions are desired, they shall be submitted to engineer for review & approval a minimum of 2 weeks prior to planned installation. Adhesive anchors shall be installed using products that are approved by the supplier for all temperature considerations. Installation shall be in accordance with suppliers published installation instructions.

VERTICAL BARS AND HORIZONTAL BOTTOM BARS– UNCOATED

BAR SIZE	DEVELOPMENT LENGTH (ℓ_D)		LAP SPLICE LENGTH	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	15"	22"	19"	28"
#4	19"	29"	25"	37"
#5	24"	36"	31"	47"
#6	29"	43"	37"	56"
#7	42"	63"	54"	81"
#8	48"	72"	62"	93"
#9	54"	81"	70"	105"
#10	61"	91"	79"	118"
#11	67"	101"	87"	131"

HORIZONTAL TOP BARS– UNCOATED

BAR SIZE	DEVELOPMENT LENGTH (ℓ_D)		LAP SPLICE LENGTH	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	19"	28"	25"	37"
#4	25"	37"	33"	49"
#5	31"	47"	41"	61"
#6	37"	56"	49"	73"
#7	54"	81"	71"	106"
#8	62"	93"	81"	121"
#9	70"	105"	91"	136"
#10	79"	118"	102"	153"
#11	87"	131"	114"	170"

NOTES:
1. HORIZONTAL BOTTOM BARS ARE HORIZONTAL BARS SO PLACED THAT 12" OR LESS OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
2. HORIZONTAL TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
3. CASE 1: CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN d_b, CLEAR COVER NOT LESS THAN d_b, AND STIRRUPS OR TIES THROUGHOUT ℓ_d NOT LESS THAN THE CODE MINIMUM OR CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN $2d_b$ AND CLEAR COVER NOT LESS THAN d_b.
4. CASE 2: OTHER CASES.

CONCRETE MIX GUIDELINES

Footings and Foundations

f'c	3500 psi (Min)
Slump	4 inch ± 1 inch
Large Aggregate	1 inch

4" Slabs-on-grade – Interior

Water/Cement Ratio	0.45 (this must be held: Note 3)
Slump	3 inch ± 1 inch
Large Aggregate	1 inch
f'c	3500 psi (Minimum)
Fibrous Reinforcing	1–1/2 lb/yd

Exterior Concrete

f'c	4000 psi
Cementitious Material (Min)	564 lbs/yd
Slump	3 inch ± 1 inch
Large Aggregate	1 inch (Crushed Limestone)
Air	6% +or- 1%

1. In footings and foundation concrete 25% flyash or 30% ground blast furnace slag is acceptable. A minimum of 30% ground blast furnace slag is recommended for interior slabs.
2. Aggregates shall be clean uniformly graded from coarse to fine.
3. Water-reducing admixtures may be used to maintain water/cement ratio AND workability- note that this may affect finishing procedures.
4. Coordinate admixtures and curing measures to be compatible with flooring materials and adhesives.

CONCRETE SPECIFICATION NOTES

1. All concrete shall be done in accordance with ACI 117, 211, 301, 302, 304, 305, 306, 311, 315, 318 and 347 requirements, and as stated on contract documents.
2. Provide submittals for Product Data, Design Mixes, Steel Reinforcement Shop Drawings, Material Test Reports, and Material Certifications.
3. All exposed exterior concrete retaining and foundation walls shall be considered to have an Architecturally exposed class "A" finish, in accordance with ACI 347. Finish concrete walls as directed by Architect.
4. Testing of concrete shall be done for each 100 cu. yd. or fraction thereof, and shall include but is not limited to slump, air content concrete temperature, unit weight, and compressive strength. All testing shall follow ASTM standards.
5. Admixtures shall contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material. Do not use admixtures containing calcium chloride.
   a. Water-Reducing Admixture: ASTM C494, Type A
   b. High-Range, Water-Reducing Admixture: ASTM C494, Type F
   c. Water-Reducing and Accelerating Admixture: ASTM C494, Type E
   d. Water-Reducing and Retarding Admixture: ASTM C494, Type D
   e. Air-Entraining Admixture: ASTM C260
6. Repair and patch defective areas as directed by Architect.

GENERAL FOUNDATION AND CONCRETE NOTES

1. A registered geotechnical engineer shall be retained to confirm that the soils at the site are capable of the design soil bearing pressure. The contractor shall implement all requirements and recommendations of the geotechnical engineer.
2. Fill material shall be thoroughly compacted prior to placement of concrete. Fill under all slabs on grade shall be as recommended in the geotechnical report. If there is no geotechnical report, a minimum of 6" of well draining granular material shall be placed under all slabs on grade (UNO elsewhere in the construction documents).
3. Unless otherwise noted, a 10 mil, ASTM E 1745 Class A vapor retarder, with a permeability rate of 0.30 perms or lower, shall be placed under all slabs on grade after under floor work and compaction is complete. Seal all laps and penetrations. Turn up vapor barrier against wall at all slab edges.
4. All slabs on grade shall have contraction or construction joints at a maximum spacing of 24 times the slab thickness (spacing need not be less than 10'-0") each way, except as noted on the drawings. Maintain an aspect ratio of not more than 1.5. Coordinate joint locations with joints in flooring materials, such as tile, and with changes in floor finish material. Refer to details and specifications for additional information regarding slab joints.
5. Provide diagonal reinforcing (across each corner) of openings in foundation walls and slabs as follows: (1)-#4 x 44" for each 4" of concrete thickness.
6. Coordinate finish of all foundation work, including slabs on grade, with architectural and flooring supplier's requirements.
7. Lap all reinforcing as indicated in "Reinforcement Development and Lap Splice Lengths" schedule. Provide corner bars for all horizontal reinforcing. Provide dowels from footing equal in size and number to vertical wall or pier reinforcing (UNO).
8. Cover for reinforcing shall be in accordance with ACI-318.
9. All exposed edges of concrete piers, beams, and walls shall be chamfered ¾" x 45 degrees.
10. Provide beam pockets in foundation walls where needed. Fill pockets with concrete after beams are set.
11. Grade beams and walls that retain earth on both sides shall be backfilled on both sides simultaneously.
12. Do not backfill earth retaining walls until concrete has reached 75% of its required 28 day strength, and all bracing elements are in place (lower and upper floors).
13. Coordinate placement of column anchor rods with foundation reinforcing. All column anchor rods shall be installed using templates and setting drawings. No tilted or misplaced bolts will be accepted. Notify Architect/Engineer for approval of any corrective action. Tolerances for the installation of the anchor bolts shall be in accordance with AISC "Code of Standard Practice" guidelines.
14. Welded wire fabric shall conform to ASTM A185. Wire fabric reinforcement must lap one full mesh plus 2" at side and end laps, but not less than 6", and shall be wire tied together.
15. Anchors for embedded plates shall be as shown on the drawings. Headed studs shall conform to ASTM A108 with 60,000psi minimum tensile strength. Reinforcing bars to be welded to plates shall be ASTM A615 Grade 40 or ASTM A706 Grade 60.
16. Refer to "General Structural Notes" for information regarding special inspections and installation of post installed anchors.

NAILING SCHEDULE

ELEMENT	NAIL SIZE	NUMBER & LOCATION
STUD TO SOLE PLATE	16d	4 TOE NAIL OR 2 DIRECT NAIL
STUD TO CAP PLATE	16d	2 TOE NAIL OR 2 DIRECT NAIL
DOUBLE STUDS	10d	12" OC DIRECT
CORNER STUDS	16d	24" OC DIRECT
DOUBLE CAP PLATE	10d	16" OC DIRECT
HEADER TO TRIMMERS	16d	3 EACH END
TRUSS TO PLATE ANCHOR		
TYPICAL TRUSS		
24" SPACING	SST H10, UNO	1 EACH TRUSS BRG POINT
48" SPACING	SST LGT2, UNO	1 EACH TRUSS BRG POINT
GIRDER TRUSS	SST LGT, UNO	1 EACH TRUSS BRG POINT
ROOF SHEATHING	8d	6" OC DIRECT EDGES AND 12" OC INTERMEDIATE
WALL SHEATHING	8d	6" OC ALL EDGES AND 12" OC INTERMEDIATE (Refer to shearwall schedule for additional requirements)
FLOOR SHEATHING	8d	6" OC ALL EDGES AND 12" OC INTERMEDIATE

This schedule is a minimum nailing requirement.
See specifications, drawings, and MBC Table 2304.9.1 for possible higher requirements.

WOOD NOTES

1. Comply with National Design Specification (NDS), American Forest Products Association (AFPA), and American Institute of Wood Construction (AITC).
2. Bolt wall plates with 1/2" dia. anchor bolts at 40" o.c., unless otherwise noted.
3. When treated lumber is in contact with steel (bolts, nails, fasteners, hangers, etc.), steel shall be G-185 galvanized or stainless. Dimensional lumber bolted to steel beams and columns shall be untreated, or protective coatings equivalent to G-185 shall be applied to the steel.
4. Align studs above with studs below. Provide squash blocking within floor space to transfer loads.
5. At multiple ply framing members, provide at least one supporting stud per ply. Provide squash blocking within floor space to transfer loads.
6. At multiple ply studs, provide equal size and quantity of studs down to foundation below, including squash blocking within floor space.
7. All Material used in exterior stud walls and load bearing stud walls shall be #2 or better. Refer to "Engineering Data" for minimum wood strength requirements, UNO.
8. Unless noted otherwise, do not countersink bolts or fasteners into wood. Provide washers with bolts that are a minimum of 2 times the diameter of the bolt.
9. Unless noted otherwise, refer to International Building Code Table 2304.9.1 for minimum nailing requirements. All nails shall be common wire nails.

SHOP FABRICATED WOOD TRUSS NOTES

1. Metal plate connected wood trusses shall conform to the specifications of The Truss Plate Institute (TPI), American Forest Products Association (AFPA), and National Design Standard (NDS) specifications. All connector plates shall be galvanized. All material used in wood trusses shall be #2 or better.
2. Trusses and connections shall be designed to support the superimposed loads or forces indicated on the drawings with a maximum live load deflection of L/360 at roof trusses and L/480 at floor trusses. Total deflection shall be limited to L/240. Differential total load deflection between parallel, adjacent trusses shall be limited to 3/8".
3. The manufacturer shall engage a qualified engineer experienced in the design of wood truss structures and licensed in the State of MI, as required by the building code. The engineer shall closely follow the design intent of the truss roof structure as shown in the contract documents. Any layouts or details designed by the manufacturer's engineer that do not comply with the contract documents must be brought to the attention of the A/E prior to truss fabrication.
4. The manufacturer's engineer is responsible to design all connections between wood trusses. Connections to girder trusses shall be capable of transferring the reaction to all plies.
5. Truss bracing (temporary and permanent) shall comply with BCSI 1-03, the truss manufacturer engineer's requirements, and any additional requirements in the contract documents.
6. Temporary and permanent bracing for truss member slenderness and stability shall be designed, specified, and inspected by the manufacturer's engineer. Where fewer than three trusses with the same web layout occur, alternate methods of stabilizing web members such as T-bracing or L-bracing, in lieu of continuous lateral web braces, shall be specified by the manufacturer's engineer. Provide a signed and sealed letter of installation acceptance for truss bearing and bracing requirements.
7. Note BCSI 1-03 section B3 requirement of diagonal bracing where horizontal web bracing is shown. This is permanent diagonal bracing required to anchor the horizontal web braces. Diagonal bracing should occur every 20', and may be applied in sections between horizontals. It should be installed no more than 45 degrees from horizontal. At least one pair of diagonal braces should be provided for every "set" of trusses with identical web layouts.
8. Truss bottom chords shall be assumed to be braced continuously where sheathing is attached to bottom chord. If no sheathing is present, minimum bottom chord bracing shall be rows of continuous lateral bracing at 8'-0" on center and diagonal bracing at 20'-0" on center plus at ends. Minimum bottom chord bracing herein shall be verified to be sufficient for truss design by the truss manufacturer's engineer.
9. Truss shop drawings shall be submitted for review and shall include design criteria, truss design and deflection information, end reactions, all member sizes, and a plan layout referencing each component of the roof. Each sheet shall be signed and sealed by the manufacturer's engineer.
10. The metal plate connected wood truss manufacturer, the truss erector, and the contractor are to work together to assure the owner is provided a completed structure as is required by these contract documents and the requirements of the building code.
11. Permanent bracing for overall building stability is complete when roof sheathing, shear wall sheathing, and bearing wall sheathing is complete with fastening and anchorage. Provide temporary bracing until roof sheathing, shearwall sheathing, and bearing wall sheathing is complete.
12. Trusses shall not be field-modified or cut without the approval of the truss manufacturer's engineer.

ENGINEERING DATA

Design soil bearing pressure	1,500 psf (assumed)
Design stresses	
Concrete	
Footings and Foundations	f'c = 3500 psi
Grade slabs	f'c = 3500 psi
Exterior concrete (6% air)	f'c = 4000 psi
Reinforcing steel	Fy = 60000 psi
Steel	
W shapes	Fy = 50000 psi
Tube shapes (A500)	Fy = 46000 psi
All other shapes	Fy = 36000 psi
Structural bolts	ASTM A325
Anchor bolts/Column anchor rods	ASTM F 1554 – Grade 55
Welding electrode	E70XX
Masonry	
CMU	f'm = 1500 psi
Lumber	
Dimension lumber (SPF #2 or better)	Fb = 850 psi Fv = 135 psi Fc = 1150 psi
Dimension lumber (SYP S.S.)	Fb = 2400 psi Fv = 225 psi E = 1250 ksi
Engineered lumber (LVL)	Fb = 2600 psi Fv = 285 psi E = 1900 ksi
Engineered lumber (LSL)	Fb = 2600 psi Fv = 400 psi E = 1700 ksi
Engineered lumber (PSL)	Fb = 2900 psi Fv = 290 psi E = 2000 ksi
Structural design requirements	
Roof snow load	
Ground snow load (Pg)	35 psf
Flat roof snow load (Pf)	27 psf + drift or unbalanced
Snow exposure (Ce)	1.0
Snow load importance factor (I)	1.0
Thermal factor (Ct)	1.1
Wind Load	
Basic wind speed (3 sec)	90 mph
Wind importance factor (I)	1.0
Wind exposure	C
Internal pressure coeff (GCpi)	0.18
Components & cladding (varies) Wall design pressure	24 psf
Earthquake	
Seismic importance factor, Ie	1.0
Spectral response	Ss = 0.0.63 S1 = 0.033 SDs = 0.067 SD1 = 0.052
Site class	D (assumed)
Seismic design category	A
Basic seismic force resisting system: Light Framed Shear walls	R = 3.5
Seismic response coefficient Cs	0.041
Response Modification Factor R	as noted above
Analysis Procedure	"Equivalent lateral force"
Specific Design Loads	
Roof dead loads	
Asphalt Shingles	4
Insulation	2
Trusses	3
Ceiling	3
M/E/P	3
Misc	2
	17 psf Total
Roof truss design loads	
Bottom chord dead load	10 psf
Top chord dead load	10 psf
Top chord snow load:	
Balanced	47 psf balanced
Unbalanced (see Fig 7-5 of ASCE 7-05)	
Windward	15 psf
Leeward	36 psf from eave to 10' from ridge
Leeward ridge	63 psf for 10' of width measured from ridge.

Note: P.E. Truss manufacturer to confirm drifted, sliding & unbalanced snow loads.

Design codes	
General Building Code	Michigan Building Code (MBC) 2021
Concrete	ACI 318
Steel	AISC 360
Masonry	ACI 530/ TMS 402
Wood	NDS

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

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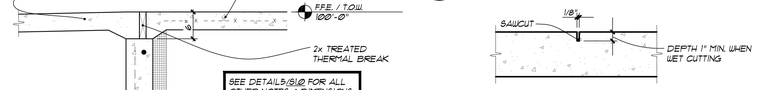
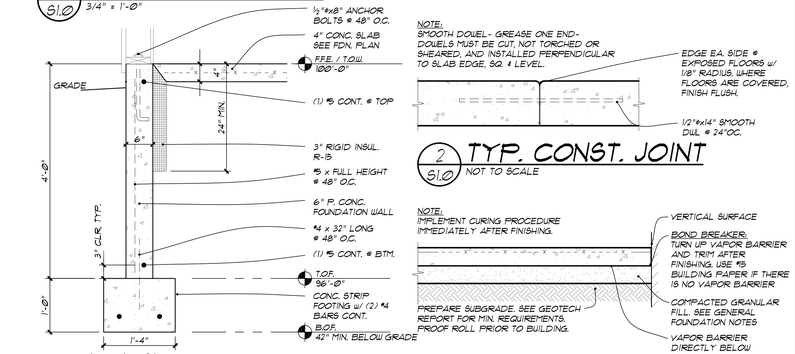
4 S1.0 **TURN DOWN EDGE**
3/4" = 1'-0"



3 S1.0 **TYP. CONTROL JT.**
NOT TO SCALE



2 S1.0 **TYP. CONST. JOINT**
NOT TO SCALE

1 S1.0 **TYP. SLAB DETAIL**
NOT TO SCALE

NOTE:
ALL CONCRETE SLABS TO BE 3,500 PSI, INTERIOR or 4000 PSI, EXTERIOR AS SCHEDULED OR INDICATED.

EXTERIOR 4" CONCRETE SLAB WITH 6x6 W1.4xW1.4 WF ON COMPACTED SAND FILL. SLOPE AWAY FROM BUILDING AT ¼" PER FOOT.

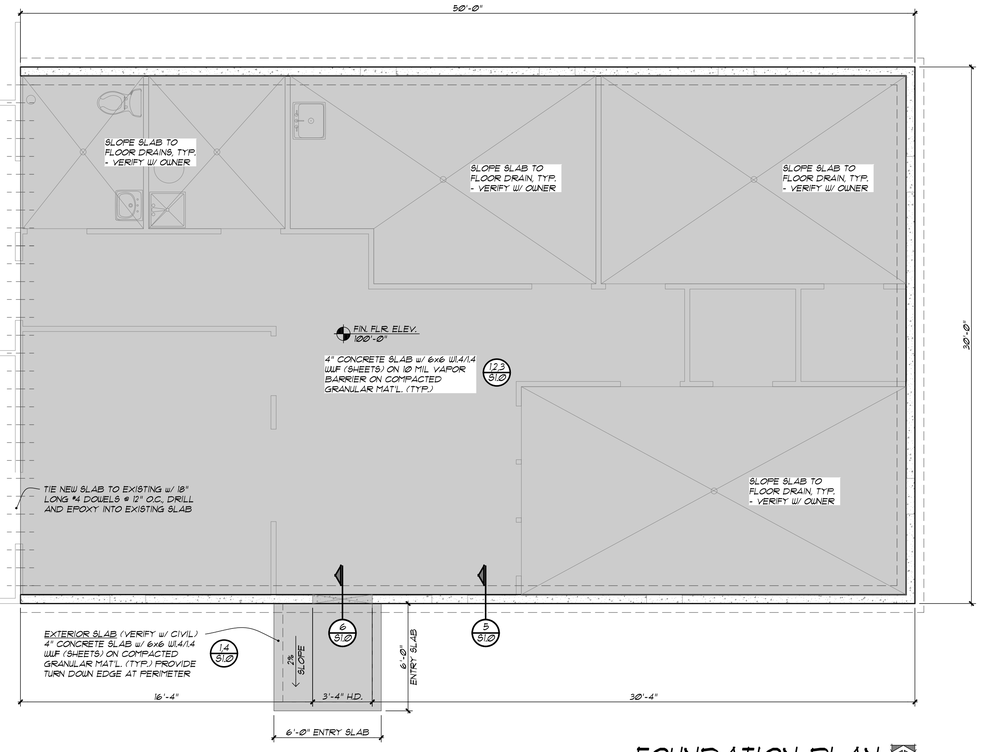
DOOR OPENING @ TYPICAL

6 S1.0 **FND. WALL DETAIL**
3/4" = 1'-0"

TYPICAL

5 S1.0 **FND. WALL DETAIL**
3/4" = 1'-0"

GENERAL FOUNDATION NOTES:
1. ALL DIMENSIONS REFERENCED SHALL BE TO THE EDGE OF SLAB, EDGE OF FOUNDATION WALL, ETC. VERIFY DIMENSIONS PRIOR TO THE START OF CONSTRUCTION.
2. REFER TO ARCHITECTURAL/ STRUCTURAL DRAWINGS FOR RECESSED OR SLOPED SLAB LOCATIONS. PROVIDE POSITIVE DRAINAGE.
3. SEE DETAILS 2 & 3/S1.0 FOR CONTROL/ CONSTRUCTION JOINT DETAILS IN CONCRETE SLABS (CJ). CONTROL & CONSTRUCTION JOINTS SHALL BE PLACED IN ACCORDANCE WITH ACI. AREAS SHALL BE NO LARGER THAN 8'x8'.



FOUNDATION PLAN
SCALE 1/4" = 1'-0"
NORTH

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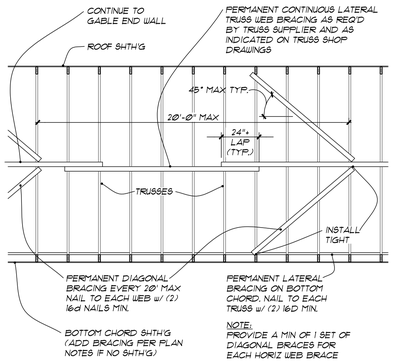
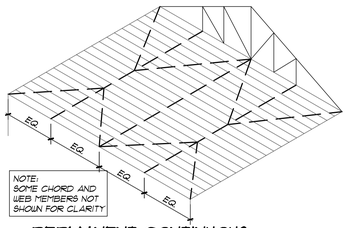


PERMANENT CONTINUOUS LATERAL TRUSS WEB

10 / S2.0 BRACING DETAIL

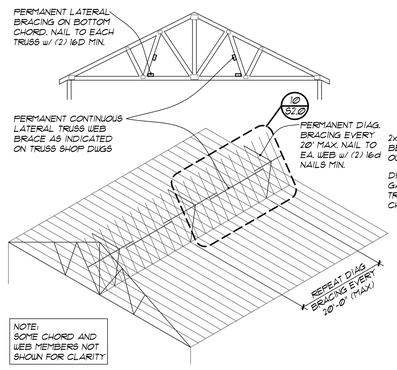
NOT TO SCALE (COMPLY WITH BCSI 1-03, B3)



PERMANENT CONTINUOUS LATERAL BOTTOM TRUSS CHORD

9 / S2.0 BRACING ISOMETRIC

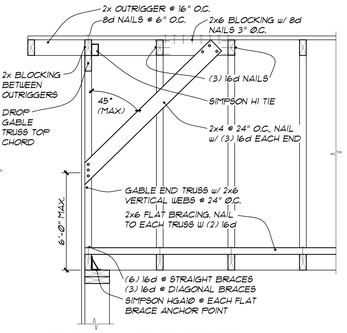
NOT TO SCALE (COMPLY WITH BCSI 1-03, B3)



PERMANENT CONTINUOUS LATERAL TRUSS WEB

8 / S2.0 BRACING ISOMETRIC

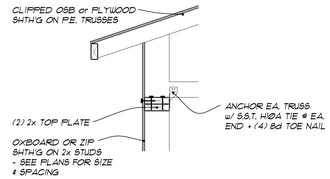
NOT TO SCALE (COMPLY WITH BCSI 1-03, B3)



TYPICAL GABLE END

7 / S2.0 WALL BRACING DETAIL

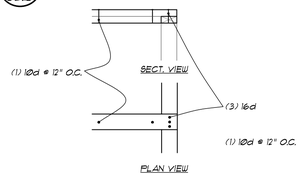
NOT TO SCALE



TYP. EXTERIOR BEARING WALL

6 / S2.0 ROOF FRAMING DETAIL

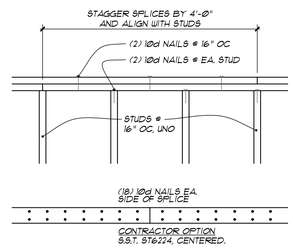
NOT TO SCALE



TYPICAL TOP PLATE LAPPING

5 / S2.0 WALL INTERSECTIONS

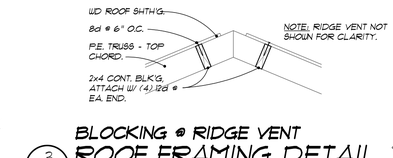
NOT TO SCALE



TYP. BEARING TOP PLATE

4 / S2.0 WALL DETAIL

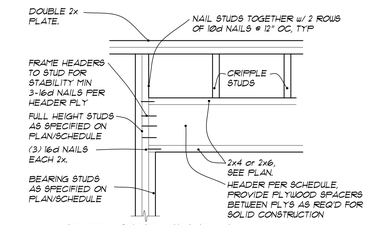
NOT TO SCALE



BLOCKING @ RIDGE VENT

3 / S2.0 ROOF FRAMING DETAIL

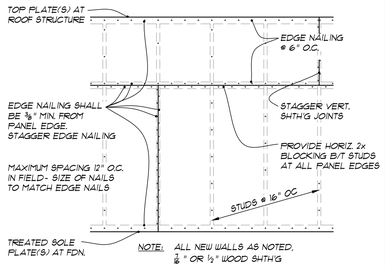
NOT TO SCALE



WOOD STUD (ELEV.)

2 / S2.0 TYP. HEADER BEARING

NOT TO SCALE



1 / S2.0 TYP. NAILING DETAIL

NOT TO SCALE

HEADER SCHEDULE	
MARK	SIZE
H1	(2) 2x8 + SPACER & R-10 INSULATION
H2	(2) 2x8 + SPACER & R-10 INSULATION

NOTE:
ALL INTERIOR HEADERS SHALL BE (2)2x4 + SPACER.

ADJUST/ VERIFY WALL BEARING HEIGHT TO COORDINATE NEW EXISTING ROOF PLANES.

FRAMING PLAN

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

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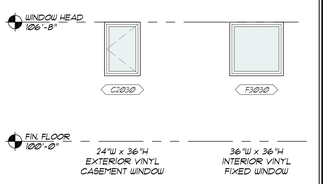
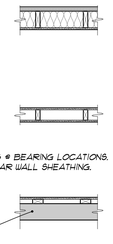
WINDOW LEGEND



NOTES:
1. INSTALL & FLASH PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

WALL TYPES LEGEND



NOTES:
1. USE MOISTURE RESISTANT GYPSUM BOARD IN ALL BATHROOMS AND AS INDICATED.
2. SEE ROOM FINISH SCHEDULE FOR WALL FINISHES.
3. VERIFY & COORDINATE WALL TYPES w/ OWNER PRIOR TO THE START OF CONSTRUCTION.

ROOM FINISH SCHEDULE

ROOMS		FLOOR	WALL			CEILING			
NO.	NAME	FIN.	BASE	MAT'L	FIN.	MAT'L	FIN.	HT.	REMARKS
@00	EXISTING LOBBY	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@01	EXISTING OFFICE	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@02	NEW BREAK ROOM	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@03	EXISTING TOILET	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@04	EXISTING MECHANICAL	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@05	EXISTING STORAGE	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@06	EXISTING KENNELS	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@07	EXISTING INTAKE / STORAGE	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
@08	EXISTING LAUNDRY / STORAGE	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	E.T.R.	
100	LOBBY	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
101	RECEPTION	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
102	HALL	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
103	B.F. TOILET	S. CONC.	4" VB	MR GYP	PAINT	ACT	FF	18'-6"	
104	MECH	S. CONC.	4" VB	MR GYP	PAINT	MR GYP	PAINT	19'-8"	
105	CLINIC	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
106	DOG MEET	S. CONC.	4" VB	WAINSCOT/GYP	FF/PAINT	ACT	FF	18'-6"	SEE NOTE 4 BELOW
107	STORAGE	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
108	CAT ROOM	S. CONC.	4" VB	WAINSCOT/GYP	FF/PAINT	ACT	FF	18'-6"	SEE NOTE 4 BELOW
109	STORAGE	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	
110	HALL	S. CONC.	4" VB	GYP	PAINT	ACT	FF	18'-6"	

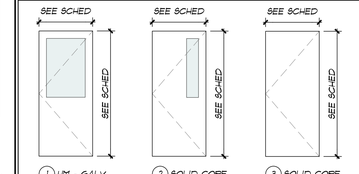
NOTES:
1. VERIFY & COORDINATE ALL FINISHES W/ OWNER PRIOR TO THE START OF CONSTRUCTION.
2. SEE INTERIOR ELEVATIONS & REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION.
3. ALL OWNER/ CONTRACTOR SELECTED PRODUCTS SHALL BE INSTALLED PER MANUFACTURERS INSTALLATION INSTRUCTIONS, RECOMMENDATIONS AND/OR REQUIREMENTS. INSTALLATION SHALL MEET OR EXCEED ALL APPLICABLE CODES AND INDUSTRY STANDARDS.
4. PROVIDE A 48" HIGH WAINSCOT w/ CAP.

LEGEND:
ACT ACOUSTICAL CEILING TILE.
FF FACTORY FINISH.
GYP GYPSUM DRYWALL.
MR GYP MOISTURE RESISTANT GYPSUM DRYWALL.
S CONC SEALED CONCRETE.
4" VB 4" VINYL BASE.
E.T.R. EXISTING TO REMAIN.

DOOR SCHEDULE

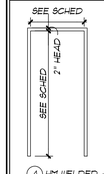
NO.	DOOR LOCATION	TYPE	W	H	GLAZING	FRAME	HDWR	REMARKS
@01	EXISTING OFFICE	2	3'-0"	6'-8"	¼" TEMPERED	B	1	
100	LOBBY	1	3'-0"	6'-8"	¼" TEMPERED	A	1	
101	RECEPTION	2	3'-0"	6'-8"	¼" TEMPERED	B	2	
103	B.F. TOILET	3	3'-0"	6'-8"	-	B	3	
104	MECH	3	3'-0"	6'-8"	-	B	4	
105	CLINIC	3	3'-0"	6'-8"	-	B	5	
106	DOG MEET	2	3'-0"	6'-8"	¼" TEMPERED	B	5	
107	STORAGE	3	3'-0"	6'-8"	-	B	5	
108	CAT ROOM	2	3'-0"	6'-8"	¼" TEMPERED	B	5	
109	STORAGE	3	3'-0"	6'-8"	-	B	5	

DOOR TYPES



NOTE: SEE SCHEDULE FOR GLAZING TYPE

DOOR FRAMES



HARDWARE SETS

General notes:
1. Contractor shall verify all existing field conditions and notify architect immediately if that which exists differs from that which is shown on drawings.
2. All work to comply with current Federal, State and Local codes, laws and ordinances. The requirements of ICC/ANSI A117.1 and the Americans with disabilities act (ADA) are to be fully satisfied. All work shall meet the most stringent requirements of both including, but not limited to clearances, limitations, accessories, etc.
3. These drawings are prepared in accordance with the limited services for which the architect was contracted. The architect makes no representation that the interpretation of these documents will result in complete compliance with the ADA.
4. All doors required to be labeled shall be set in labeled frames and identified with UL label and be provided with approved self-closing devices and positive latching hardware.
5. All designated exit doors shall be equipped with the required egress hardware.
6. Furnish hardware as scheduled without substitution, no alternates will be approved.
7. Furnish a keyed cylinder and two cut keys for each locking device specified; keyed to the Owners' Master Key System. Include key conference and key system schedule.
8. Furnish and provide all necessary reinforcements, brackets, fasteners, spacers and fillers to provide a complete functioning opening.
9. Provide complete shop drawings, submittals and cut sheets complying with DHI prescribed methods and vertical format double spaced hardware schedule.
10. Hardware Sets:

Hardware Set 1 - Entry Lock [Lock / Unlock]

3	ea.	Butt Hinge BB81 4 ½" x 4 ½" NRP	26D PBB
1	ea.	Entry Lockset SD 116 BSN	26D PDQ
1	ea.	Wall Stop 1407	32D Don Jo

Hardware Set 2 - Deadbolt x Push / Pull Set [Lock / Unlock] + Closer Stop

3	ea.	Butt Hinge BB51 4 ½" x 4 ½" NRP	32D PBB
1	ea.	Deadbolt KM 116	26D PDQ
1	ea.	Push / Pull 1157147 x 4 134 Mount at loose ends	32D PDQ
1	ea.	Closer 7101 BC SCS Stop (push side mount)	689 PDQ
1	ea.	Kickplate 90 10 x 2" LDW B4E	32D Don
1	ea.	Threshold S205A	AL Reese
1	ea.	Sweep 354C	AL Reese
1	set	Weatherstrip 855C	AL Reese
1	ea.	Rain Drip R201C	Al Reese

Hardware Set 3 - Privacy Set [Lock / Unlock] + Closer

3	ea.	Butt Hinge BB81 4 ½" x 4 ½" NRP	26D PBB
1	ea.	Privacy Set SD 176 BSN	26D PDQ
1	ea.	Closer 7101 BC RA Regular Arm (pull side mount)	689 PDQ
1	ea.	Kickplate 90 10 x 2" LDW B4E	32D Don Jo
1	ea.	Wall Stop 1407	32D Don Jo

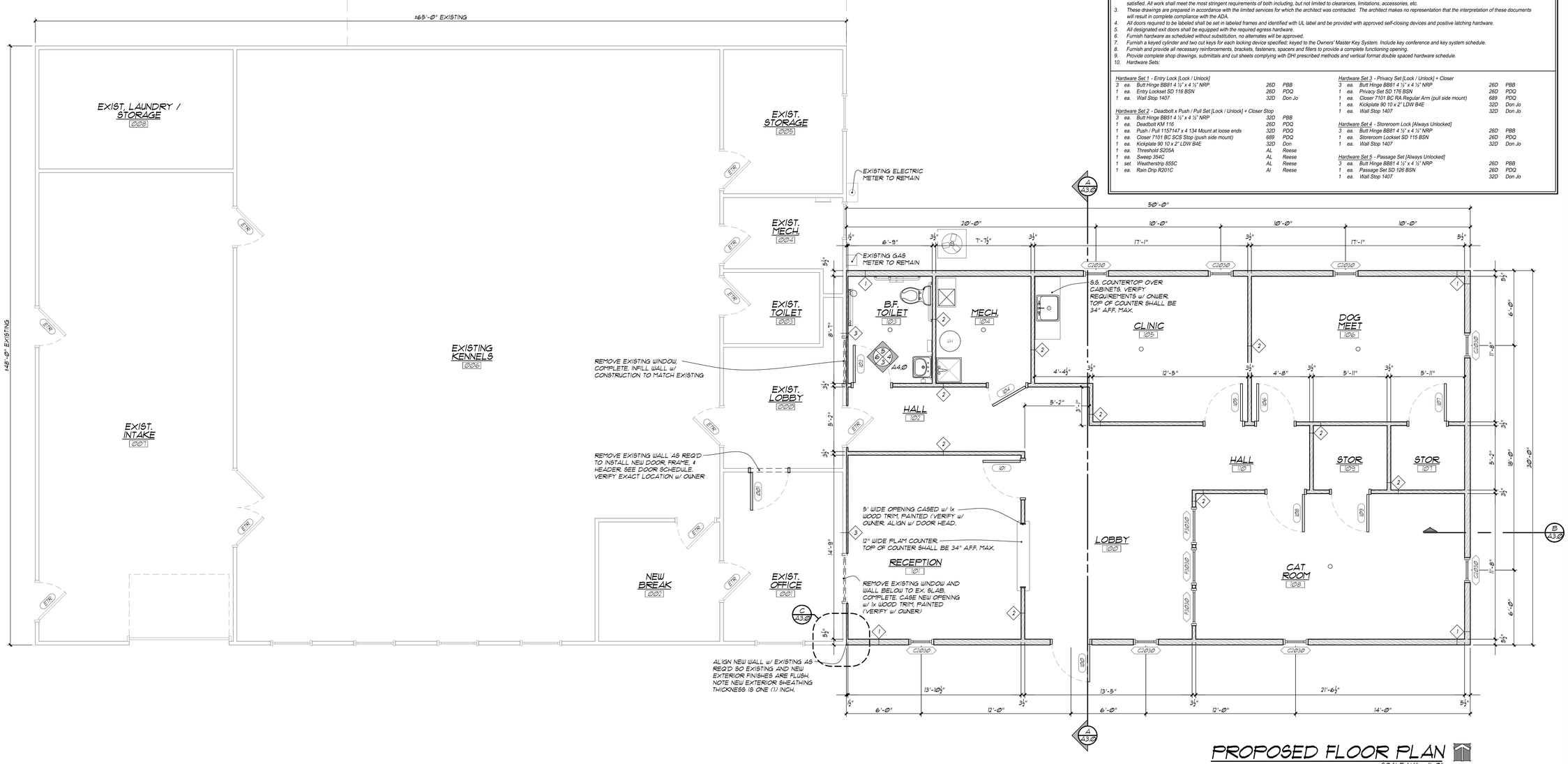
Hardware Set 4 - Storeroom Lock [Always Unlocked]

3	ea.	Butt Hinge BB81 4 ½" x 4 ½" NRP	26D PBB
1	ea.	Storeroom Lockset SD 115 BSN	26D PDQ
1	ea.	Wall Stop 1407	32D Don Jo

Hardware Set 5 - Passage Set [Always Unlocked]

3	ea.	Butt Hinge BB81 4 ½" x 4 ½" NRP	26D PBB
1	ea.	Passage Set SD 126 BSN	26D PDQ
1	ea.	Wall Stop 1407	32D Don Jo

EXISTING COVERED RUN



PROPOSED FLOOR PLAN

SCALE 1/4" = 1'-Ø"

NORTH

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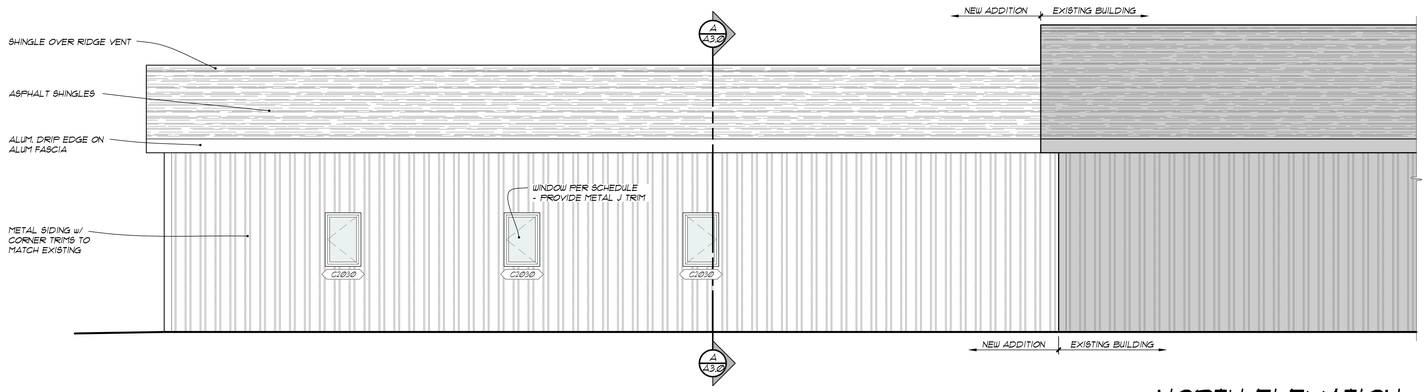
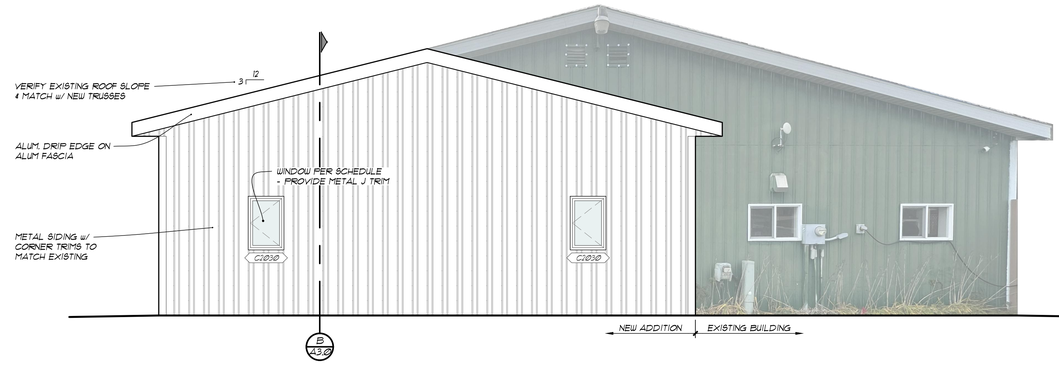


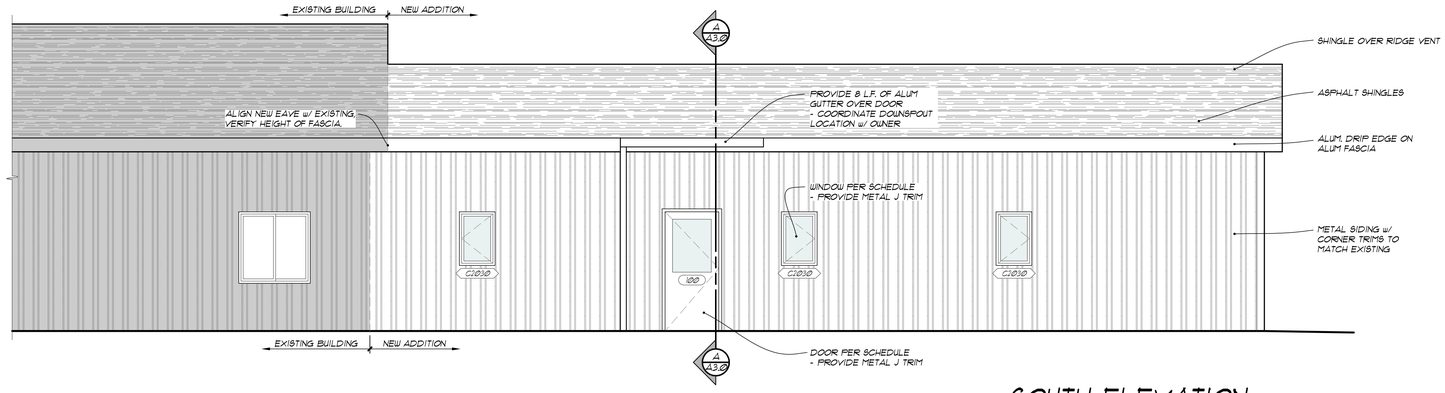
NORTH ELEVATION

1/4" = 1'-0"



EAST ELEVATION

1/4" = 1'-0"



SOUTH ELEVATION

1/4" = 1'-0"

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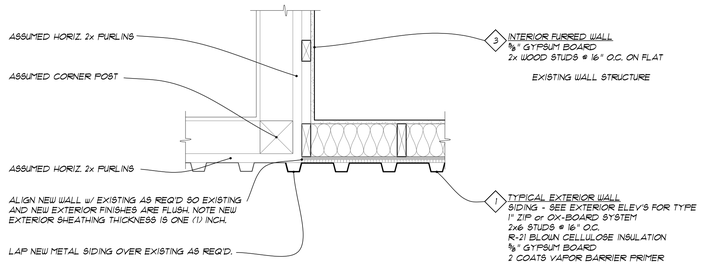
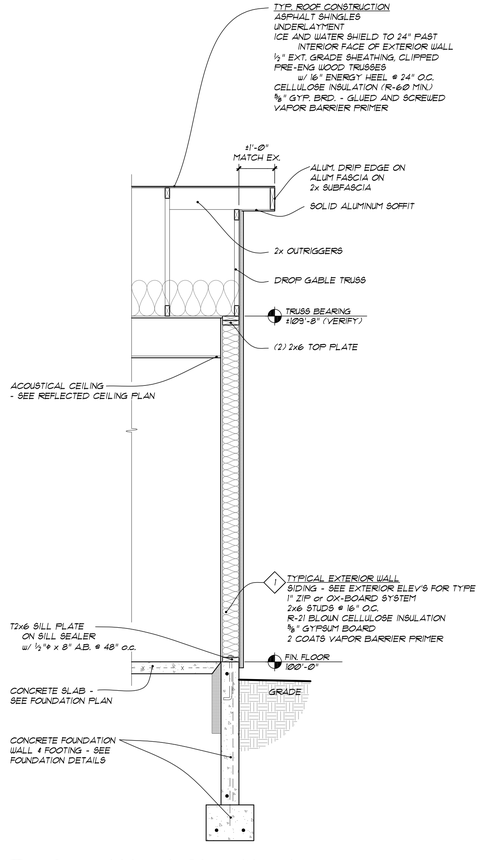
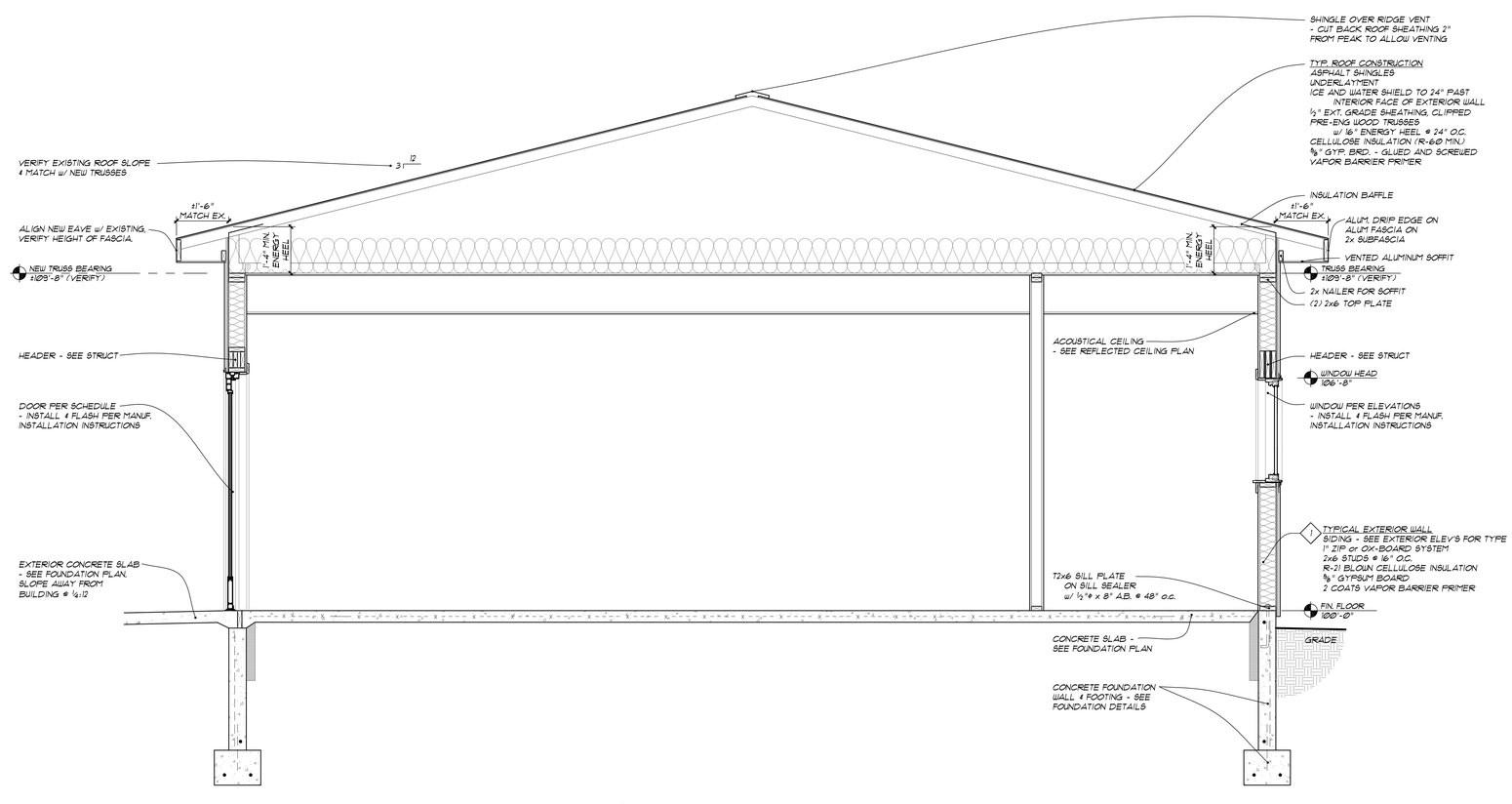


C A3.0 PLAN DETAIL
1" = 1'-0"



B A3.0 ADDITION SECTION
1/2" = 1'-0"



A A3.0 ADDITION SECTION
1/2" = 1'-0"

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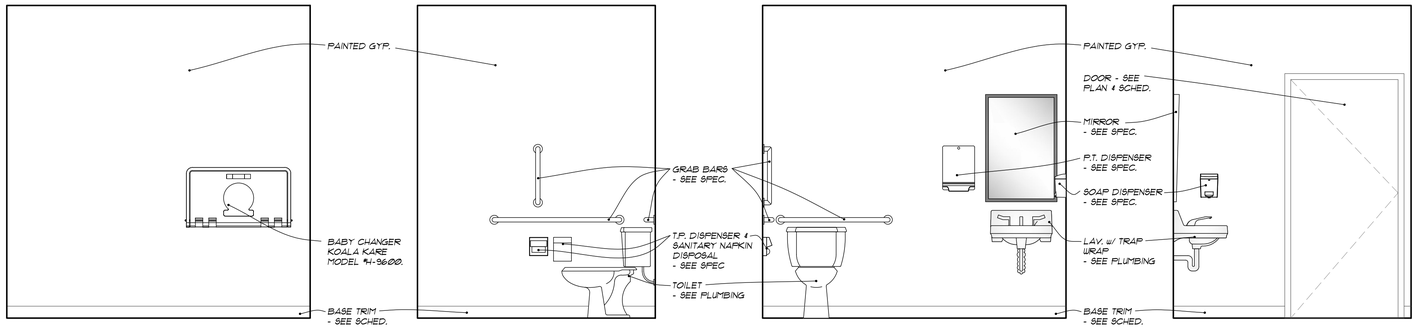
PROJECT NUMBER:
25141



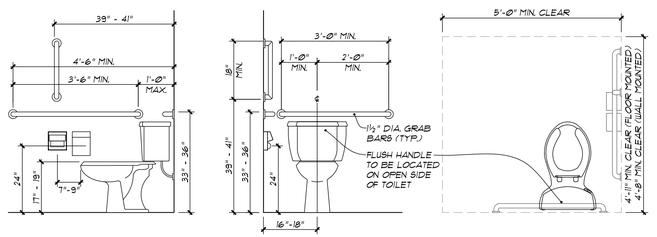
NOTES:
1. SEE DETAIL 2/A4.0 FOR ALL MOUNTING LOCATIONS & HEIGHTS ALL OF FIXTURES, GRAB BARS, & ACCESSORIES.
2. ALL ACCESSORIES BY OWNER SHALL BE SUPPLIED BY OWNER & INSTALLED BY CONTRACTOR. ACCESSORIES SHALL NOT EXCEED 4" IN DEPTH, SO NOT TO INTERFERE w/ REQUIRED BARRIER FREE FIXTURE APPROACHES.
3. PROVIDE SOLID BLOCKING FOR ATTACHMENT OF ALL FIXTURES, GRAB BARS, & ACCESSORIES.

6 A4.0 **B.F. TOILET** 1/2" = 1'-0"

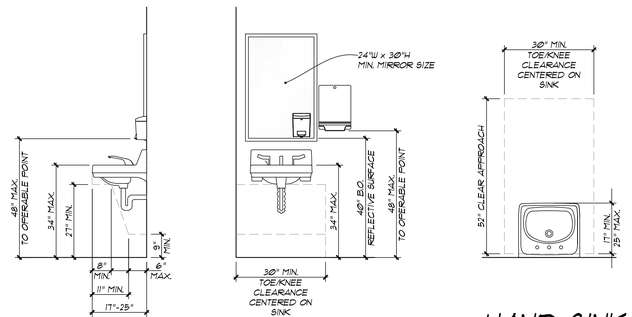
5 A4.0 **B.F. TOILET** 1/2" = 1'-0"

4 A4.0 **B.F. TOILET** 1/2" = 1'-0"

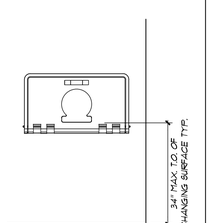
3 A4.0 **B.F. TOILET** 1/2" = 1'-0"



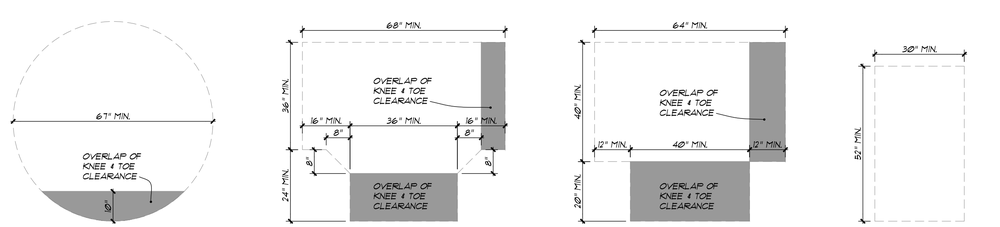
TOILET
SECTION 604



HAND SINK
SECTION 606

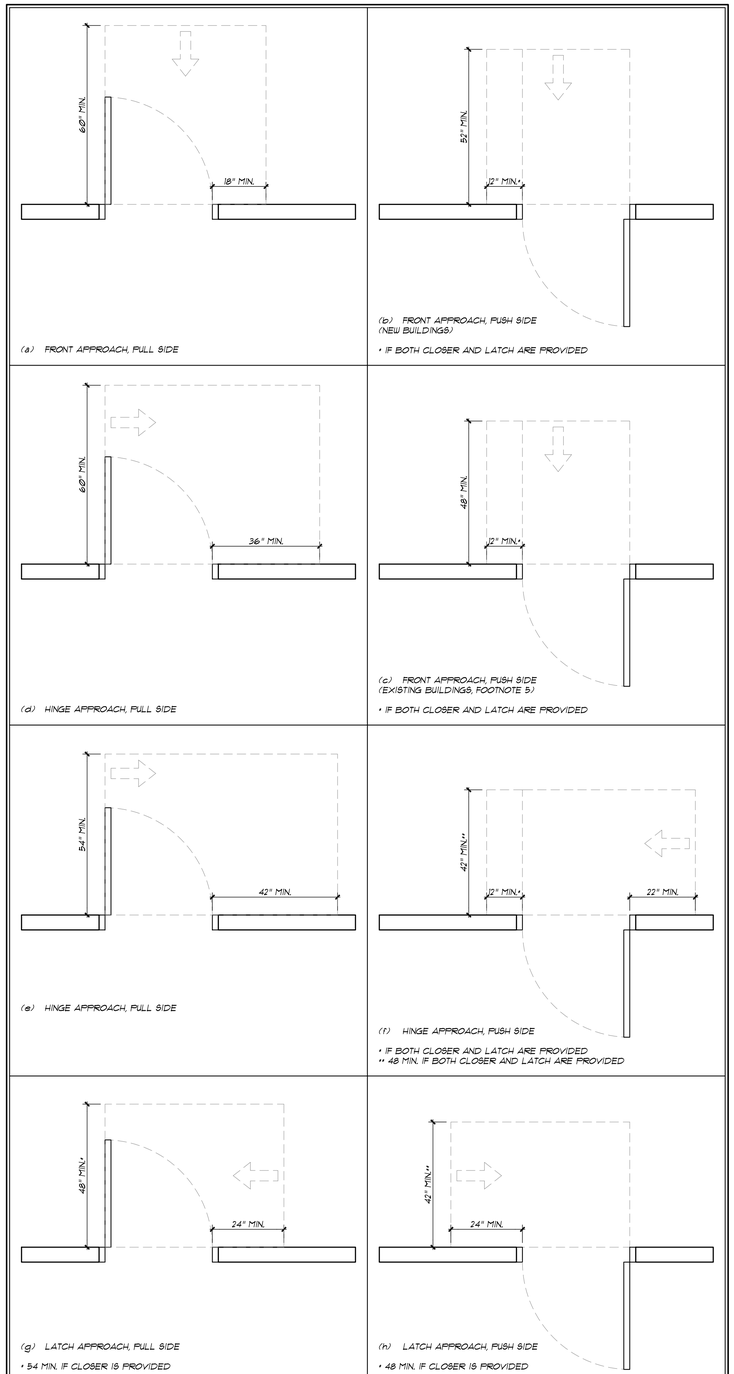


CHANGING TABLE
SECTION 606 . 3



TURNING & CLEAR FLOOR SPACES
SECTIONS 304 & 305

2 A4.0 **ACCESSIBLE FIXTURE CLEARANCES** 1/2" = 1'-0"
ANSI 117.1 2017



1 A4.0 **MANEUVERING CLEARANCE AT DOORS** 1/2" = 1'-0"
ANSI 117.1 2017/FIG. 404.2.3.2

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to: Montcalm County Animal Control

154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
A4.0

PROJECT NUMBER:
25141

MONTCALM ANIMAL CONTROL ADDITION

01 00 00 GENERAL REQUIREMENTS

GENERAL SPECIFICATIONS WERE CREATED BASED ON OWNER PROVIDED INFORMATION. THESE SPECIFICATIONS SHALL BE VERIFIED WITH THE OWNER DURING BIDDING AND/OR PRIOR TO THE START OF CONSTRUCTION. SPECIFICATIONS ARE GENERAL IN NATURE AND PROVIDE A BASELINE QUALITY LEVEL, THE OWNER WILL CONSIDER EQUAL PRODUCTS. BIDDER SHALL SUBMIT FOR OWNER APPROVAL DURING BIDDING.

GENERAL:
THIS PLAN IS THE SOLE PROPERTY OF THE DK DESIGN GROUP LLC. REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED. USE IS CONFERRED ON OWNER/BUILDER FOR SINGLE TIME CONSTRUCTION FROM THESE CONSTRUCTION DOCUMENTS.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE DRAWINGS, SPECIFICATIONS AND THE CURRENT BUILDING CODE.

CONTACT THE ARCHITECT IMMEDIATELY IF ANY DISCREPENCIES ARE DISCOVERED BETWEEN THE DRAWINGS AND OR SPECIFICATIONS.

TEMPORARY CONSTRUCTION SHORING:
THE DK DESIGN GROUP ASSUMES NO RESPONSIBILTY FOR THE DESIGN OR PROPER INSTALLATION OF TEMPORARY BUILDING BRACING AND SHORING OR THE MEANS AND METHODS OF CONSTRUCTION NECESSARY TO COMPLETE THIS PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND PROPER INSTALLATION OF BOTH TEMPORARY BRACING AND SHORING REQUIRED FOR A SAFE AND STRUCTURALLY SOUND PROJECT. THE STRUCTURAL COMPONENTS ARE NOT SELF-BRACING AND SHALL BE CONSIDERED UNSTABLE UNTIL THE COMPLETED STRUCTURE IS IN PLACE AS INDICATED BY THESE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES AND LIABILITY INCURRED DUE TO IMPROPER BRACING AND SHORING DURING CONSTRUCTION.

DIMENSIONS:
DO NOT SCALE DRAWINGS. (USE DIMENSIONS). FIELD VERIFY ALL EXISTING DIMENSIONS AND EXISTING CONDITIONS BEFORE CONSTRUCTION. ALL INTERIOR AND EXTERIOR DIMENSIONS ARE SHOWN TO THE ROUGH FRAMING. ADDITIONAL FINISHES AND SHEATHING ARE NOT INCLUDED IN THE DIMENSIONS.

02 00 00 SITE WORK (AT BUILDING FOOTPRINT)

GENERAL SITE WORK SCOPE SHALL BE VERIFIED WITH OWNER DURING BIDDING. THE BELOW SPECIFICATIONS RELATE TO THE CONSTRUCTION OF THE BUILDING ADDITION.

GENERAL:
PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED, OR SCHEDULED ON DRAWINGS AND OR HEREIN SPECIFIED INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.

SITE CONTRACTOR SHALL CONTACT MISS DIG SERVICE IN MICHIGAN CALL 811 OR 1-800-482-7171 OR PLACING AN ONLINE REQUEST, PRIOR TO THE START OF CONSTRUCTION. NO EXCAVATION SHALL TAKE PLACE UNLESS THE SITE HAS BEEN INVESTIGATED AND ALL UTILITIES IDENTIFIED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR VERIFYING THE DESIGNATED LOCATIONS WHICH ARE SHOWN ON THE DRAWINGS OR MARKED IN THE FIELD.

02 10 00 CLEARING AND GRUBBING:
IN GENERAL THE SITE CONTRACTOR SHALL REMOVE ALL TREES AND SHRUBS WITHIN THE BUILDING FOOTPRINT AND WALKWAY CONSTRUCTION AREA EXCEPT THOSE INDICATED TO REMAIN, SEE CIVIL DRAWINGS BY OTHERS. TREES SHALL BE PRESERVED WHOSE BRANCH STRUCTURE DOES NOT EXTEND BEYOND THE EDGE OF NEW SIDEWALK(S). GRADES ADJACENT TO TREES SHALL BE PROTECTED. GRADES SHALL NOT BE CHANGED MORE THAN SIX (6) INCHES WITHOUT SPECIAL PROTECTIVE MEASURES.

THOSE REMAINING SHALL BE PROTECTED DURING CONSTRUCTION PERIOD. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO SAME AND SHALL REPLACE ANY DAMAGED AT HIS OWN EXPENSE. THOSE TO BE REMOVED, SHALL BE COMPLETELY REMOVED INCLUDING STUMPS AND ROOTS. BURNING WILL NOT BE ALLOWED ON SITE. ALL ORGANIC MATERIALS SHALL BE REMOVED FROM THE CONSTRUCTION SITE.

02 11 00 DEMOLITION:
IN GENERAL REMOVE ALL FOOTINGS, FOUNDATIONS, WALKS, PAVING, CURBS, ETC., AND ALL ASSOCIATED STRUCTURES WITHIN THE BOUNDARIES OF THE BUILDING CONSTRUCTION, AS PER THE DRAWINGS AND AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION. CONTRACTOR SHALL PREPARE EXCAVATION SUCH THAT ALL NEW CONSTRUCTION IS PLACED ON UNDISTURBED SOIL.

DEMOLITION SHALL BE CONDUCTED TO INSURE MINIMUM INTERFERENCE.

SAW CUT ALL CONCRETE AND FLATWORK ON THE NEAREST EXISTING JOINT BEYOND AREA REQUIRED TO BE REMOVED AS SHOWN ON CIVIL DRAWINGS, BY OTHERS.

DURING DEMOLITION, ALL ADJACENT EXISTING CONCRETE PATHWAYS AND OTHER PAVED AREAS SHALL BE MAINTAINED AND BE BROOM CLEAN. WORK AREAS SHALL BE PERIODICALLY WET DOWN TO MINIMIZE AIRBORNE DUST.

02 30 00 EXCAVATION:
IN GENERAL EXCAVATE AND BACKFILL FOUNDATION STRUCTURE TO GRADES SHOWN. EXCAVATING SHALL INCLUDE REMOVAL, HAULING AND DISPOSAL OF ALL CLASSES OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED. REMOVE ALL OBSTRUCTIONS WITHIN THE LINES OF THE BUILDING CONSTRUCTION. WHERE NECESSARY PLACE ENGINEERED COMPACTED FILL.

THE BUILDING FOOTING BEARING CAPACITY IS AS SHOWN IN THE SOILS REPORT AND WITH-IN THE STRUCTURAL DRAWINGS. NO GUARANTEE IS MADE AS TO THE CONSISTENCY OF SOIL CONDITIONS ACROSS THE ENTIRETY OF THE CONSTRUCTION AREA.

PERFORM ALL EXCAVATING TO LEVELS REQUIRED FOR BOTTOM OF FOOTINGS, WALLS, UNDER FLOOR FILLS, SLABS, ETC. AND WITH SUFFICIENT SPACE TO PERMIT ACCURATE PLACING, INSPECTION, BRACING, ETC. EXCAVATIONS FOR FOOTINGS MAY BE ACCURATELY MADE TO THE LINES OF THE FOOTINGS, WHERE NATURE OF SOIL WILL PERMIT; OTHERWISE ALLOW FOR FORMS. PROVIDE AND MAINTAIN SHORING, BRACING, SHEET PILING AND OTHER TEMPORARY WORK AS REQUIRED TO CONTAIN BANKS OF EXCAVATIONS, OR TO SUPPORT BUILDING OR RETAINING WALLS DURING BACKFILL PLACEMENT OR COMPACTION. REMOVE WHEN NO LONGER REQUIRED, EXCEPT AS OTHERWISE APPROVED.

IN ORDER TO AVOID DAMAGING EXISTING UNDER GROUND SERVICES AND OTHER CONSTRUCTION, EXCAVATING IMMEDIATELY ADJOINING SUCH SERVICES AND CONSTRUCTION SHALL BE DONE BY HAND METHODS AS REQUIRED AND/ OR DIRECTED BY THE ARCHITECT. KEEP ALL EXCAVATIONS FREE FROM WATER, ARRANGE GRADING SO THAT SURFACE WATER DOES NOT RUN INTO EXCAVATED AREA. PROVIDE AND MAINTAIN FROST PROTECTION. FOOTINGS, FOUNDATIONS AND SLABS SHALL NOT BE PLACED ON FROSTED EARTH.

SCHEDULE FILLING AND BACKFILLING TO EXPEDITE CONSTRUCTION PROGRESS AND TO MAINTAIN POSITIVE SITE DRAINAGE. BACKFILL AFTER WALLS HAVE BEEN COMPLETED AND ATTAINED PROPER STRENGTH, AND THE WORK HAS BEEN INSPECTED AND APPROVED. BACKFILL BOTH SIDES OF WALL AT THE SAME TIME OR WHEN FIRST FLOOR DECK OR SLABS ARE IN PLACE. BACKFILL IN A MANNER TO PREVENT EXCESSIVE PRESSURE AGAINST, OR DAMAGE TO ADJACENT WORK.

BACKFILL OUTSIDE OF BUILDINGS SHALL BE GRANULAR MATERIAL. FILL OR BACKFILL SHALL NOT BE PLACED UNTIL ALL SUBSTANDARD MATERIALS HAVE BEEN REMOVED AND THE AREA IN QUESTIONS REVIEWED.

BACKFILLING:
IN GENERAL THE BACKFILL TRENCHES TO SPECIFIED CONTOURS AND ELEVATIONS WITH UNFROZEN MATERIALS. DO NOT BACKFILL OVER POROUS, WET, FROZEN OR SPONGY SUBGRADE SURFACES. PLACE BACKFILL MATERIAL WITHOUT DISTURBING OR DAMAGING THE PIPE. MAINTAIN ALIGNMENT AND SLOPE DURING PLACEMENT OF BACKFILL. DEFLECTED PIPES SHALL BE REMOVED AND RESET AT NO ADDITIONAL EXPENSE TO THE OWNER.

BACKFILL UNDER STRUCTURES, PARKING LOTS AND ROADWAYS: PLACE AND COMPACT MATERIALS IN CONTINUOUS LEVEL LAYERS NOT EXCEEDING 12 INCHES COMPACTED DEPTH. COMPACT TO 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557. MOISTURE CONDITION COMPACTED FILLS TO WITHIN 3 PERCENT OF OPTIMUM MOISTURE TO ACHIEVE THE REQUIRED LEVEL OF COMPACTION. DO NOT BACKFILL AGAINST UNSUPPORTED STRUCTURES. MAKE GRADE CHANGES GRADUAL. BLEND SLOPE INTO LEVEL AREAS. GRADE ALL SURFACES TO DRAIN.

TOLERANCES & FIELD QUALITY CONTROL:
IN GENERAL THE TOP SURFACE OF BACKFILLING - PLUS OR MINUS 3/4-INCH FROM REQUIRED ELEVATIONS. TESTS AND ANALYSIS OF FILL MATERIAL WILL BE PERFORMED IN ACCORDANCE WITH ASTM C117/C136 GRAIN SIZE ANALYSIS AND ASTM D1557 MODIFIED PROCTOR.

COMPACTION TESTING WILL BE PERFORMED AT THE OWNER'S EXPENSE IN ACCORDANCE WITH ASTM D2922 NUCLEAR DENSOMETER METHOD, AS OFTEN AS THE OWNER DEEMS APPROPRIATE. IF TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST AT NO COST TO OWNER. PROOF ROLL ALL COMPACTED SURFACES UNDER SLABS-ON-GRADE AND AREAS TO BE PAVED, IN THE PRESENCE OF THE OWNER.

PROVIDE WARNING TAPE/ DETECTABLE WARNING TAPE, 6" WIDE x 4 MILLS THICK CONTINUOUS AT UNDERGROUND UTILITIES INSCRIBED WITH DESCRIPTION OF UTILITY, COLORED TO COMPLY WITH LOCAL/ INDUSTRY STANDARD PRACTICE, SEE CIVIL ENGINEER'S DRAWINGS, BY OTHERS.

02 91 00 TERMITE CONTROL:
TREAT TOP & BOTH SIDES OF FOUNDATION WALLS, PIERS, COMPACTED SAND SUB-BASES UNDER ALL CONCRETE FLOORS AND SLABS, BOTH INTERIOR AND EXTERIOR SLABS, BOTH INTERIOR AND EXTERIOR.

CHEMICAL USED TO TREAT BUILDINGS SHALL BE TERMINIX (E.L. BRUCE COMPANY), C-100 (FEDERAL CHEMICAL COMPANY, INC.) OR EQUAL. CONTRACTOR MUST BE LICENSED BY MANUFACTURER OF CHEMICAL USED. CHEMICAL SHALL BE APPLIED IN STRICT COMPLIANCE WITH SPECIFICATIONS AND RECOMMENDATIONS OF MANUFACTURER.

MANUFACTURER OF CHEMICAL USED SHALL GUARANTEE PERFORMANCE OF TERMITE CONTROL CONTRACTOR AND SHALL ALSO BE PARTY TO CONTRACT GUARANTEEING BUILDINGS TO BE KEPT FREE OF TERMITES. GUARANTEE SHALL PROVIDE PAYMENT FOR LABOR AND MATERIALS TO REPLACE ANY AND ALL DAMAGE BY TERMITES TO BUILDINGS AND/OR CONTENTS THERE OF UP TO $300,000.00 FOR BUILDING DURING LIFE OF CONTRACT. GUARANTEE SHALL BE FIVE (5) YEARS. GUARANTEE SHALL BE UNDERWRITTEN BY RECOGNIZED INSURANCE COMPANY, SHALL BE NON-CANCELLABLE BY GUARANTORS AND SHALL BE RENEWABLE AT OWNERS OPTION AFTER FIVE (5) YEAR INITIAL GUARANTEE PERIOD.

TRENCHING & BACKFILLING
GENERAL:
IN GENERAL THE CONTRACTOR SHALL PROVIDE THE NAME AND/OR LOCATION OF THE SOURCE OF ALL IMPORTED MATERIALS AT LEAST 5 DAYS PRIOR TO THE START OF WORK. HE SHALL PROVIDE A 5 GALLON SAMPLE OF EACH TYPE OF MATERIAL, FROM EACH SOURCE, APPROPRIATELY IDENTIFIED AND LABELED. OWNER/ CIVIL ENGINEER SHALL HAVE THE RIGHT TO INSPECT EACH SOURCE OF MATERIAL, AT THE SOURCE.

CONTRACTOR SHALL PAY FOR ALL MATERIAL TESTING TO ESTABLISH CONFORMANCE WITH THE SPECIFICATIONS. SHOULD THE OWNER TEST MATERIAL BROUGHT ON-SITE BY THE CONTRACTOR TO CONFIRM CONFORMANCE WITH THE SPECIFICATIONS, IT SHALL BE AT THE OWNER'S EXPENSE, SO LONG AS THE MATERIAL MEETS THE CIVIL ENGINEER'S SPECIFICATIONS.

03 00 00 CONCRETE WORK

GENERAL NOTES:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTION FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS.

PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.
STANDARDS: PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS AND STANDARDS SHALL BE MINIMUM GUIDELINES; MORE STRINGENT BUILDING CODE REQUIREMENTS SHALL GOVERN.

ACI 301	"SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"
ACI 304	"RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
ACI 305	HOT WEATHER CONCRETING.
ACI 306	COLD WEATHER CONCRETING.
ACI 311	"RECOMMENDED PRACTICE FOR CONCRETE INSPECTION"
ACI 318	"BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
ACI 347	"GUIDE TO FORMWORK FOR CONCRETE"

03 00 10 CONCRETE WALKS – COORDINATE WITH OWNER:
PROVIDE CONCRETE WALKS AS SHOWN AND DETAILED WITHIN THE DRAWINGS. WALKS SHALL BE SLOPED 1/4" PER FOOT AWAY FROM BUILDINGS. EDGES SHALL BE TOOLED ROUND AT ALL JOINTS. SCORE WALKS WITH 1" DEEP JOINTS. CONTROL JOINTS SHALL BE AT 5'-0" O.C. AND EXPANSION/ ISOLATION JOINTS AT 25'-0" AND AT ALL BUILDINGS, WALLS, CURBS AND FIXED STRUCTURES.

03 10 00 CONCRETE FORMWORK:
FORMS FOR CONCRETE SHALL BE 3/4" WATERPROOF PLYWOOD OR STEEL INSTALLED AND BRACED PLUMB, LEVEL AND IN LINE WITH BUILDING DIMENSIONS. PROVIDE CHAMFER STRIPS ON ALL EXTERNAL CORNERS.

FORMWORK SHALL INCLUDE ALL SLOTS, CHASES, RECESSES, SLEEVES, NAILING BLOCKS, HANGERS AND OTHER BUILT-IN DEVICES REQUIRED. DEVICES USED BY OTHER TRADES SHALL BE FURNISHED TO THE CONCRETE CONTRACTOR FOR INSTALLATION.

PLACING OF CONDUIT:
ALL CONDUIT, PIPES, DUCTS AND DEVICES SHALL BE PLACED SO AS NOT TO WEAKEN THE CONSTRUCTION, CONFORMING TO ACI 503. CONCRETE COVERAGE OF ALL CONDUIT, ETC. SHALL BE NOT LESS THAN 2".

EXPANSION AND CONTRACTION JOINTS:
USE 3/8" ASPHALT IMPREGNATED VEGETABLE FIBER OR CLOSED CELL THERMO-SETTING PLASTIC NON-EXTRUDING. WIDTH TO BE 1/2" LESS THAN SLAB THICKNESS. LOCATE JOINTS PER ACI STANDARDS AT EXTERIOR SLABS.

CONTROL JOINTS:
DIVIDE CONCRETE SLABS AS SHOWN OR INTO NEARLY SQUARE AREAS WITH 1/8" WIDE BY 1" DEEP JOINTS BY TROWELING OR SAWING WITHIN 24 HOURS AFTER POURING.

03 20 00 CONCRETE REINFORCEMENT:
REINFORCING BARS SHALL CONFORM TO ASTM 615 OR ASTM 616, 60,000 PSI YIELD.
WELDED WIRE FABRIC SHALL CONFORM TO ASTM 82 OR ASTM 185.
GLASS FIBER REINFORCING SHALL BE 1/2 " COLLATED POLYPROPYLENE FIBERS AS MANUFACTURED BY W.R. GRACE & CO. DOSAGE RATES SHALL BE AS SPECIFIED BY THE MANUFACTURER. GLASS FIBER REINFORCING SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, FOLLOW ASTM C-94 FOR MIXING AND ACI 302 INSTALLATION PROCEDURES.

03 30 00 CAST IN PLACE CONCRETE (SLAB ON GRADE):
CONCRETE SHALL BE READY MIX TYPE IN ACCORDANCE WITH ASTM C175 SPECIFICATIONS. CONCRETE SHALL BE HANDLED AND INSPECTED IN ACCORDANCE WITH ALL APPROPRIATE CODES AND STANDARDS INCLUDING ACI 301, 304, 305, 306, 311, 318 & 347.

CONCRETE MATERIALS SHALL BE AS FOLLOWS:
CEMENT: PORTLAND CEMENT TYPE 1 OR 1A GRAY OR HIGH EARLY STRENGTH, MEETING ASTM C 150/ C 150M.
FLY-ASH: CLASS F or C, MEETING ASTM C 618.
SLAG CEMENT: GRADE 100 or 120, MEETING ASTM C 989/ C 989M.
WATER: SHALL BE CLEAN, FREE OF ACIDS, ALKALIES AND POTABLE, MEETING ASTM C 94/ C 94M.
AGGREGATE: SHALL CONFORM TO ALL REQUIREMENTS FOR HARDNESS, DURABILITY, PURITY, GRADATIONS, ETC., AS SET FORTH IN ASTM C33. SAND SHALL BE NATURAL SHARP, COARSE, WASHED, FREE FROM CLAY OR ORGANIC SUBSTANCES. GRAVEL AND STONE SHALL CONFORM TO ASTM C33-55-T. AGGREGATE FOR ALL EXPOSED EXTERIOR SHALL BE 6AA LIMESTONE. SEE CIVIL ENGINEERING SPECIFICATIONS.

AGGREGATE – LIGHTWEIGHT TOPPING THICKNESS SLABS (3" OR LESS, STAIR LANDINGS):
SHALL CONFORM TO ALL REQUIREMENTS FOR HARDNESS, DURABILITY, PURITY, GRADATIONS, ETC., AS SET FORTH IN ASTM C33. SAND SHALL BE NATURAL SHARP, COARSE, WASHED, FREE FROM CLAY OR ORGANIC SUBSTANCES. GRAVEL AND STONE SHALL CONFORM TO ASTM C33-57, AGGREGATE +/-1/2" to 5/8".

SAND: SHALL BE NATURAL SHARP, COARSE, WASHED, FREE FROM CLAY OR ORGANIC SUBSTANCES. GRAVEL AND STONE SHALL CONFORM TO ASTM C33-55-T.

LIQUID FLOOR TREATMENTS/ SEALERS:
VOC CONTENT: LIQUID FLOOR TREATMENTS SHALL HAVE A VOC CONTENT OF 200 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24). PENETRATING LIQUID FLOOR TREATMENT: CLEAR, CHEMICALLY REACTIVE, WATERBORNE SOLUTION OF INORGANIC SILICATE OR SILICONATE MATERIALS AND PROPRIETARY COMPONENTS; ODORLESS; THAT PENETRATES, HARDENS, AND DENSIFIES CONCRETE SURFACES.
PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
CHEMMASTERS; CHEMISIL PLUS.
DAYTON SUPERIOR CORPORATION; DAY-CHEM SURE HARD (J-17).
EUCLID CHEMICAL COMPANY (THE), AN RPM COMPANY; EUCO DIAMOND HARD.
L&M CONSTRUCTION CHEMICALS, INC.; SEAL HARD.

CURING MATERIALS:
EVAPORATION RETARDER: WATERBORNE, MONOMOLECULAR FILM FORMING, MANUFACTURED FOR APPLICATION TO FRESH CONCRETE.
PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
CHEMMASTERS; SPRAYFILM.
DAYTON SUPERIOR CORPORATION; SURE FILM (J-74).
EUCLID CHEMICAL COMPANY (THE), AN RPM COMPANY; EUCOBAR.
L&M CONSTRUCTION CHEMICALS, INC.; E-CON.
ABSORPTIVE COVER: AASHTO M 182, CLASS 2, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ./SQ. YD. (305 G/SQ. M) WHEN DRY.

MOISTURE-RETAINING COVER: ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET.

WATER: POTABLE.
CLEAR, WATERBORNE, MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B, DISSIPATING.
PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
CHEMMASTERS; SAFE-CURE CLEAR.
DAYTON SUPERIOR CORPORATION; DAY-CHEM REZ CURE (J-11-W).
EUCLID CHEMICAL COMPANY (THE), AN RPM COMPANY; KUREZ W VOX; TAMMSCURE WB 30C.
L&M CONSTRUCTION CHEMICALS, INC.; L&M CURE R.

ADMIXTURES:
AIR-ENTRAINING ADMIXTURE: ASTM C 260.
CHEMICAL ADMIXTURES: PROVIDE ADMIXTURES CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND THAT WILL NOT CONTRIBUTE WATER-SOLUBLE CHLORIDE IONS EXCEEDING THOSE PERMITTED IN HARDENED CONCRETE. DO NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.
WATER-REDUCING ADMIXTURE: ASTM C 494/C 494M, TYPE A.
WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE D.

CONCRETE WALK/ CURB JOINTS – COORDINATE WITH OWNER:
WHERE SHOWN AND AS REQUIRED BY ACI PROVIDE AND INSTALL ALL NECESSARY CONTROL AND EXPANSION JOINTS IN CONCRETE CURBS AND WALKS. UTILIZE PRE-MOLDED FILLER OF CLOSED CELL POLYETHYLENE RESILIENT FOAM COMPATIBLE WITH SEALANT AND FREE OF OIL IMPREGNATION, EQUAL TO SONOFLEX F BY SONNEBORN BUILDING PRODUCTS, DIVISION OF CHEMREX, INC. SEALANT SHALL BE ONE (1) COMPONENT, NON-PRIMING, SELF LEVELING POLYURETHANE EQUAL TO SONOLASTIC SL-1 BY SONNEBORN BUILDING PRODUCTS, DIVISION OF CHEMREX, INC.

CONCRETE NOTES:
1. ACI BUILDING CODE (308) +/- MANUAL OF STANDARD PRACTICE FOR DETAILING (315) FOR THE MIXING FABRICATION AND PLACEMENT OF CONCRETE, REINFORCING STEEL.
2. CONCRETE STRENGTH:
   FOOTINGS, WALLS F'C = 3000-3500 PSI (MIN.)
   FLOORS F'C = 3000-3500 PSI (MIN.)
   EXTERIOR F'C= 4,000 PSI (MIN.), COORDINATE/ SEE CIVIL DRAWINGS, SPECIFICATIONS.
3. REINFORCING BARS: ASTM A-615 GRADE 60
4. WELDED WIRE FABRIC: ASTM A-185, SEE STRUCTURAL FOR LOCATIONS.
   OR
   FIBER REINFORCEMENT: FIBRILLATED POLYPROPYLENE MICRO-FIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING w/ ASTM C 1116/C 1116M, TYPE III, ½" to 1-1/2" LONG. SEE STRUCTURAL FOR LOCATIONS.
5. SLAB ON GRADE REINFORCING: 4" SLABS - 6"x6" W1.4xW1.4 WWF, 5" SLABS - 6"x6" W2.1 x W2.1 WWF, 6" SLABS - 6"x6" W2.9 x W2.9 WWF, UNLESS NOTED OTHERWISE. LOCATE IN UPPER 1/3 OF SLAB. SEE STRUCTURAL FOR LOCATIONS.
6. FOOTINGS: SEE STRUCTURAL SHEETS AND GOSLING CZUBAK ENGINEERING SCIENCES, INC., SOILS REPORT FOR ADDITIONAL INFORMATION.
7. REMOVE ALL UNSUITABLE EARTH COMPLETE. SEE GOSLING CZUBAK ENGINEERING SCIENCES, INC., SOILS REPORT, BUT IN GENERAL, PLACE STRUCTURAL FILL IN 4" LOOSE LAYER THICKNESS. COMPACT TO AT LEAST 95% MAXIMUM DENSITY PER ASTM D1557. COMPACTING BY FLOODING IS NOT ALLOWED.
8. CENTER FOOTINGS UNDER WALLS, UNLESS NOTED OTHERWISE.
9. SEE STRUCTURAL DRAWINGS, NOTES FOR SLUMP REQUIREMENTS.
10. THE CONTRACTOR WILL EMPLOY A TESTING LABORATORY TO PERFORM THE FOLLOWING TESTS AND TO SUBMIT TEST REPORTS.
11. SAMPLING AND TESTING FOR QUALITY CONTROL DURING THE PLACEMENT OF CONCRETE WILL INCLUDE THE FOLLOWING, AS DIRECTED BY THE ARCHITECT.

SITE MIXED CONCRETE SHALL CONFORM TO ACI-613-34. READY MIXED CONCRETE SHALL CONFORM TO ASTM C94. SLABS SHALL DEVELOP A STRENGTH OF 3500 PSI WITH A SEVEN (7) DAY STRENGTH 65% OF ULTIMATE STRENGTH.

CONCRETE SAMPLING & TESTING:
SAMPLING FRESH CONCRETE: ASTM C 172, EXCEPT MODIFIED SLUMP ASTM C 143, ONE TEST FOR EACH CONCRETE LOAD AT POINT OF DISCHARGE, AND ONE TEST FOR EACH SET OF COMPRESSIVE STRENGTH TEST SPECIMENS. ON LARGER PROJECTS, PROVIDE ONE TEST FOR EVERY THIRD LOAD OR USE RANDOM NUMBERS FOR DETERMINING THE NUMBER OF TESTS.

AIR CONTENT:
ASTM C 231 PRESSURE FOR NORMAL WEIGHT CONCRETE: ONE FOR EACH TIME A SET OF COMPRESSIVE STRENGTH TEST SPECIMENS.

CONCRETE TEMPERATURE:
TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEGREES F. AND BELOW, AND WHEN 80 DEGREES AND ABOVE, AND EACH TIME A SET OF COMPRESSION TEST SPECIMENS IS MADE.

COMPRESSION TEST SPECIMEN:
ASTM C 31 - ONE SET OF THREE (3) STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST, UNLESS OTHERWISE DIRECTED. MOLD AND STORE CYLINDERS FOR LABORATORY CURED TEST SPECIMENS, EXCEPT WHEN FIELD-CURED TEST SPECIMENS ARE REQUIRED.

COMPRESSIVE STRENGTH TEST:
ASTM C 39 - ONE SET FOR EACH 100 CU. YDS. OR FRACTION THEREOF OF EACH CONCRETE CLASS PLACED IN ANY ONE DAY OR FOR EACH 5,000 SQ. FT. OF SURFACE AREA PLACED, ONE SPECIMEN TESTED AT 7 DAYS, ONE SPECIMEN TESTED AT 28 DAYS, AND ONE SPECIMEN RETAINED IN RESERVE FOR LATER TESTING, IF REQUIRED. WHEN THE STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85% OF COMPANION LABORATORY-CURED CYLINDERS, EVALUATE CURRENT OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND CURING THE IN-PLACE CONCRETE.

TEST RESULTS WILL BE REPORTED IN WRITING TO THE ARCHITECT AND THE CONTRACTOR ON THE SAME DAY THAT TESTS ARE MADE. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH IN THE STRUCTURE DESIGN, COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS AND LOCATION OF TEST.

ADDITIONAL TESTS:
THE TESTING SERVICE WILL MAKE ADDITIONAL TESTS OF INPLACE CONCRETE WHEN TEST RESULTS INDICATE THE SPECIFIED CONCRETE STRENGTHS AND OTHER CHARACTERISTICS HAVE NOT BE ATTAINED IN THE STRUCTURE, AS DIRECTED BY THE ARCHITECT. THE TESTING SERVICE MAY CONDUCT TESTS TO DETERMINE ADEQUACY OF CONCRETE BY CORED CYLINDERS COMPLYING WITH ASTM C 42, OR BY OTHER METHODS AS DIRECTED. CONTRACTOR SHALL PAY FOR SUCH TESTS CONDUCTED AND ANY OTHER ADDITIONAL TESTING, AS MAY BE REQUIRED WHEN UNACCEPTABLE CONCRETE IS VERIFIED.
REMOVE AND REPLACE UNACCEPTABLE CONCRETE AS DIRECTED BY ARCHITECT.

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
A5.0

PROJECT NUMBER:
25141

05 00 00 METALS

GENERAL:
PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED HEREIN DRAWINGS INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTIALS, NECESSARY AND REQUIRED TO COMPLETE WORK.

PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS AND STANDARDS SHALL BE MINIMUM GUIDELINES, MORE STRINGENT BUILDING CODE REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PAYING ALL FEES FOR STEEL TESTING.

AISC - THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
AWS - AMERICAN WELDING SOCIETY - STANDARD QUALIFICATION PROCEDURE.
AISC - CODE OF STANDARD PRACTICE FOR DESIGN, FABRICATION AND ERECTION.
RCSC - SPECIFICATIONS FOR STRUCTURAL JOINTS.
SJI - STEEL JOIST INSTITUTE SPECIFICATIONS.

FABRICATOR SHALL BE QUALIFIED THAT PARTICIPATES IN AISC QUALITY CERTIFICATION PROGRAM AND IS AN AISC CERTIFIED PLANT, CATEGORY STD OR CAN PROVIDE A WRITTEN QUALITY CONTROL PROGRAM CERTIFIED BY AN INDEPENDENT TESTING AGENCY.

INSTALLER SHALL BE QUALIFIED THAT PARTICIPATES IN AISC QUALITY CERTIFICATION PROGRAM AND IS AN AISC CERTIFIED ERECTOR, CATEGORY CSE OR CAN PROVIDE A WRITTEN QUALITY CONTROL PROGRAM CERTIFIED BY AN INDEPENDENT TESTING AGENCY.

WELDING QUALIFICATIONS: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO AWS D1.1/ D1.1M, "STRUCTURAL WELDING CODE-STEEL.

06 00 00 WOOD AND PLASTICS

06 10 00 ROUGH CARPENTRY GENERAL DESCRIPTION: WORK OF THIS SECTION SHALL INCLUDE ALL MATERIALS AND INSTALLATION NECESSARY TO PROVIDE ROUGH CARPENTRY AS SHOWN AND DETAILED WITH-IN THE CONSTRUCTION DOCUMENTS AND SPECIFIED HEREIN.

QUALITY ASSURANCE REFERENCES:
AMERICAN FOREST AND PAPER ASSOCIATION (AFPA): NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.

AMERICAN LUMBER STANDARDS COMMITTEE (ALSC): GRADING STANDARDS.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
MAT-FORMED WOOD PARTICLEBOARD: ANSI A208.1.
BASIC HARDBOARD: ANSI/AHA A135.4.

AMERICAN PLYWOOD ASSOCIATION (APA): STANDARD GRADING RULES.

AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA): PRESERVATIVE AND FIRE RETARDANT TREATMENT.

SUBMITTALS & PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS, DATA AND INSTALLATION INSTRUCTIONS FOR REVIEW.

CERTIFICATES:
PRESSURE TREATMENT: SUBMIT MILL CERTIFICATE VERIFYING COMPLIANCE AS SPECIFIED, FOR EACH SHIPMENT RECEIVED, IN ADDITION TO A STAMP ON EACH PIECE OF LUMBER, FROM AN APPROVED INDEPENDENT INSPECTING AGENCY OPERATING UNDER THE OVERVIEW OF THE ALSC.

LUMBER GRADES: WHERE LUMBER AND PLYWOOD IS EXPOSED TO VIEW AND CLEAR FINISHED, PROVIDE CERTIFICATES IN LIEU OF GRADE STAMPING AND TRADE MARKS.

ROUGH HARDWARE:
PROVIDE AND SET ALL ROUGH HARDWARE, SUCH AS SPIKES, NAILS, SCREWS, ANCHORS AND BOLTS, SHOWN OR NECESSARY FOR THE EXECUTION OF THE WORK. ALL SHALL BE OF SUITABLE TYPE, AND OF SUFFICIENT SIZE AND LENGTH TO DRAW THE WORK FIRMLY TOGETHER, AND HOLD IT PERMANENTLY IN PLACE. PROVIDE ALL BOLTS, ANCHORS, ETC., REQUIRED TO BE FORMED INTO CONCRETE, TO THE CONCRETE CONTRACTOR FOR SETTING OF ITEMS PROVIDED UNDER THIS DIVISION.

ROUGH LUMBER:
EXCEPT AS OTHERWISE SPECIFIED, ROUGH LUMBER SHALL BE KILN-DRIED, MARKED BY STANDARD ASSOCIATION MARKINGS, OF SOUND QUALITY, THOROUGHLY SEASONED, SURFACED FOUR SIDES AND WITH A MAXIMUM MOISTURE CONTENT OF 15. WOOD SHALL BE TREATED WITH INDUSTRY STANDARD PRESERVATIVE WHERE REQUIRED.

BEAMS - LAMINATED VENEER LUMBER. (LVL)
A. Fb = 2,600 PSI MIN., E=1.9 x 1,000,000.
B. SPANS AS SHOWN.
C. BEAMS SHALL BEAR MANUFACTURER'S MARK AND BE WARRANTED AGAINST DEFECTS FOR THE LIFE OF THE STRUCTURE.

STUDDING – DIMENSIONAL:
K.D. WHITE WOODS (#1 OR BETTER) 2x4, 2x6, 2x8 OR 2x10 (AS INDICATED) AT 12" or 16" O.C. SPACING AS SHOWN. PIECES SHALL BE INDIVIDUALLY EXAMINED. PIECES WHICH ARE NOT STRAIGHT, TRUE AND SOUND SHALL BE REJECTED AND NOT USED IN FINISHED AREAS OF BUILDING. MIN. FIBER STRESS SHALL BE Fb= 850 - 875 psi, MINIMUM. SEE STRUCTURAL FOR LOCATIONS.

DIMENSIONAL HEADERS - #2 SPF, HEM-FIR, DOUG-FIR
A. Fb = 875 PSI MIN.
B. E=1.3 x 1,000,000 PSI MIN.

EXTERIOR WALL SHEATHING (ZIP SYSTEM)
7/16" APA RATED PLYWOOD OR ORIENTED STRAND BOARD SHEATHING WITH APPLIED INSULATION, SEE SECTION 06 16 00 INSULATING AIR & MOISTURE RESISTANT SHEATHING AS INDICATED. SEE STRUCTURAL FOR SHEAR WALL LOCATIONS.

ROOF SHEATHING - SLOPED ROOF AREAS
APA RATED 32/20 5/8" ORIENTED STRAND BOARD SHEATHING, EXPOSURE 1 WITH EDGE SUPPORT CLIPS AND/OR BLOCKING. ROOF SHALL CONFORM TO APA 'CODE PLUS' CRITERIA.
5/8" CLIPPED IS RECOMMENDED, BUT ½" CLIPPED IS ACCEPTABLE.

BLOCKING:
PROVIDE SUPPLEMENTARY FRAMING, BLOCKING AND BRACING AT TERMINATIONS IN THE WORK AND FOR SUPPORT OF ALL INDICATED AND OWNER PROVIDED FIXTURES, EQUIPMENT SERVICES, CABINETRY, COUNTERS, CLOSET SHELVING, HEAVY TRIM, WOOD TRIM & WAINSCOTING, GRAB BARS, TOILET ACCESSORIES, FURNISHINGS, ETC. AND SIMILAR CONSTRUCTION TO COMPLY W/ DETAILS INDICATED AND W/ RECOMMENDATIONS OF THE GYPSUM BOARD MANUFACTURER OR THE FIXTURE OR EQUIPMENT SUPPLIER OR, IF NO SPECIFIC INSTRUCTIONS ARE AVAILABLE, W/ "GYPSUM CONSTRUCTION HANDBOOK" PUBLISHED BY UNITED STATES GYPSUM CO. OR ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ITS IS THE GENERAL CONTRACTORS RESPONSIBILITY TO MEET WITH THE ARCHITECT / OWNER'S REPRESENTATIVE TO DETERMINE TYPE, LENGTH WIDTH, HEIGHT, ETC. OF BLOCKING.

WOOD TREATMENT:
WHERE INDICATED ON DRAWINGS, SPECIFIED HEREIN, OR REQUIRED BY BUILDING REGULATIONS, AND IN GENERAL WHERE WOOD IS IN CONTACT WITH CONCRETE OR MASONRY, WOOD SHALL BE TREATED WITH ACQ PRESERVATIVE. LUMBER, PLYWOOD, POSTS, ETC. SHALL BE TREATED WITH PRESERVATIVE CONFORMING TO AMERICAN WOOD PRESERVERS ASSOCIATION STANDARD P-5 AND FEDERAL STANDARD TT-W-550. THE TREATING PROCESS AND RESULTS THEREOF SHALL MEET FEDERAL SPECIFICATION TT-W-571, AWPA COMMODITY STANDARDS AS APPLICABLE. LUMBER AND PLYWOOD SHALL BE PRESSURE IMPREGNATED IN ACCORDANCE WITH THE SPECIFICATIONS FOR ACQ PRESERVATIVE.

06 16 00 INSULATING AIR & MOISTURE RESISTANT SHEATHING
GENERAL: PROVIDE AND INSTALL INSULATING WALL SHEATHING WITH INTEGRAL WEATHER-RESISTIVE BARRIER. PROVIDE PRODUCT SUBMITTAL DATA FOR EACH TYPE OF SHEATHING WITH ALL TECHNICAL AND PERFORMANCE DATA, TYPICAL DETAILS, INSTALLATION DATA, ETC.

PRODUCTS/ MANUFACTURERS:
MANUFACTURERS: HUBER ENGINEERED WOODS LLC, ZIP SYSTEM R-SHEATHING OR APPROVED EQUAL. PRODUCT SHALL MEET ASTM E2357 AIR BARRIER ASSEMBLY AIR LEAKAGE, LESS THAN 0.04 CFM / S.F. AT 1.57 LBS / S.F. AND ASTM E96/E96M WATER-VAPOR PERMEANCE FACER OF 12 PERMS MIN. WHEN TESTED.
1" OX-BOARD IS AN ACCEPTABLE ALTERNATE.

MATERIALS AS FOLLOWS (PANEL MAKE-UP):
SHEATHING:
ORIENTED STRAND BOARD (OSB) US DEPT. OF COMMERCE DOC PS 2. PANELS MADE WITH BINDER CONTAINING NO ADDED UREA FORMALDEHYDE.

RIGID FOAM PLASTIC INSULATING BOARD:
RIGID POLYISOCYANURATE FOAM CORE COMPLYING WITH ICC-ES AC12, w/ COATED GLASS FIBER FACERS ON BOTH SIDES. INSULATION SHALL BE ASTM C1289 TYPE II CLASS 2, 2.0 P.C.F., 20 PSI, SQUARE EDGE FINISH WITH A PERM RATE OF LESS THAN 1.0.

COMPOSITE INSULATING WALL SHEATHING SHALL BE OSB EXPOSURE 1, 24/16 SPAN RATING (7/16" THICK) WITH FACTORY LAMINATED WATER RESISTIVE BARRIER EXTERIOR FACER WITH RIGID FOAM PLASTIC INSULATING BOARD LAMINATED TO INTERIOR FACE. PANELS SHALL BE ONE INCH (1") THICK WITH AN R-3 INSULATION VALUE. WEATHER BARRIER FACER SHALL BE MEDIUM DENSITY PHENOLIC IMPREGNATED POLYMER MODIFIED SHEET MATERIAL COMPLYING WITH ICC-ES AC38.

FASTEN PANELS WITH CORRISION RESISTANT SIZE AND TYPE COMPLYING WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROJECT CONDITIONS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. SEAL JOINTS WITH SELF-ADHERING SEAM AND FLASHING TAPE OR LIQUID APPLIED FLASHING MEMBRANE AS RECOMMENED BY MANUFACTURER FOR THE DIFFERENT TYPES AND REGIONAL LOCATIONS OF PRODUCT USAGE.

PANELS SHALL BE SQUARE EDGED AND NOT BE EXPOSED MORE THAN 180 DAYS PER MANUFACTURERS RECOMMENDATIONS.

INSTALLATION:
EXAMINE FRAMING SPACING AND ALIGNMENT TO DETERMINE IF WORK IS READY TO RECEIVE SHEATHING. PROCEED WITH SHEATHING WORK ONCE CONDITIONS MEET REQUIREMENTS. PROVIDE AND INSTALL NSTALL SHEATHING PANELS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, REQUIREMENTS OF APPLICABLE EVALUATION REPORTS, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. COORDINATE SHEATHING INSTALLATION WITH FLASHING AND JOINT SEALANT SEQUENCING AND INSTALLATION AND WITH ADJACENT BUILDING AIR AND MOISTURE BARRIER COMPONENTS TO PROVIDE COMPLETE, CONTINUOUS AIR- AND MOISTURE- BARRIER.

06 17 60 PRE-ENGINEERED WOOD ROOF TRUSSES
GENERAL: DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION I SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

SUMMARY
THIS SECTION INCLUDES THE FOLLOWING:
ALL PRE-ENGINEERED WOOD TRUSSES INICATED AND ALL ASSOCIATED TRUSS ACCESSORIES.

PERFORMANCE REQUIREMENTS
STRUCTURAL PERFORMANCE: ENGINEER, FABRICATE, AND ERECT METAL-PLATE-CONNECTED WOOD TRUSSES TO WITHSTAND DESIGN LOADS WITHIN LIMITS AND UNDER CONDITIONS REQUIRED.

DESIGN SPECIFICATIONS AND LOADS - SEE STRUCTURAL SHEETS FOR REQUIREMENTS. VERTICAL DEFLECTION OF L/360 FOR FLOORS AND L/240 FOR ROOFS OF SPAN DUE TO TOTAL LOAD.

SERIES, SPACING AND DEPTH OF MEMBERS AS SHOWN ON DRAWINGS. PROVIDE ALL NECESSARY ACCESSORIES, INCLUDING BUT NOT LIMITED TO LAYOUT DRAWING, BLOCKING, SQUASH BLOCKS, STIFFENERS, HARDWARE ETC. AS REQUIRED BY THE MANUFACTURER.

ENGINEERING RESPONSIBILITY: ENGAGE A FABRICATOR WHO USES A QUALIFIED PROFESSIONAL ENGINEER TO PREPARE CALCULATIONS, SHOP DRAWINGS, AND OTHER STRUCTURAL DATA FOR METALPLATE-CONNECTED WOOD TRUSSES.

QUALITY ASSURANCE:
FABRICATOR'S QUALIFICATIONS: ENGAGE A FIRM THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS FOR QUALITY CONTROL AND IS EXPERIENCED IN FABRICATING METAL-PLATE-CONNECTED WOOD TRUSSES SIMILAR TO THOSE INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE:

FABRICATOR PARTICIPATES IN A RECOGNIZED QUALITY-ASSURANCE PROGRAMTHAT INVOLVES INSPECTION BY SPIB; TIMBER PRODUCTS INSPECTION, INC.; TRUSS PLATE INSTITUTE (TPI); OR OTHER INDEPENDENT INSPECTING AND TESTING AGENCY ACCEPTABLE TO ARCHITECT AND AUTHORITIES HAVING JURISDICTION.

COMPLY WITH APPLICABLE REQUIREMENTS AND RECOMMENDATIONS OF THE FOLLOWING PUBLICATIONS:
ANSI/TPI 1 I, "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION."
TPI HIB "COMMENTARY AND RECOMMENDATIONS FOR HANDLING INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES."
TPI DSB "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES."

METAL-PLATE CONNECTOR MANUFACTURER'S QUALIFICATIONS: A MANUFACTURER THAT IS A MEMBER OF TPI AND THAT COMPLIES WITH TPI QUALITY-CONTROL PROCEDURES FOR MANUFACTURE OF CONNECTOR PLATES PUBLISHED IN ANSI/TPI I. SINGLE-SOURCE RESPONSIBILITY FOR CONNECTOR PLATES: PROVIDE METAL CONNECTOR PLATES FROM ONE SOURCE AND BY A SINGLE MANUFACTURER.

WOOD STRUCTURAL DESIGN STANDARD: COMPLY WITH APPLICABLE REQUIREMENTS OF AFPA'S "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" AND ITS "SUPPLEMENT."

SINGLE-SOURCE ENGINEERING RESPONSIBILITY: PROVIDE TRUSSES ENGINEERED BY METAL-PLATE CONNECTOR MANUFACTURER TO SUPPORT SUPERIMPOSED DEAD LIVE AND WIND LOADS INDICATED, WITH DESIGN APPROVED AND CERTIFIED BY A QUALIFIED PROFESSIONAL ENGINEER.

PROFESSIONAL ENGINEER QUALIFICATIONS: A PROFESSIONAL ENGINEER WHO IS LEGALLY AUTHORIZED TO PRACTICE IN THE JURISDICTION WHERE PROJECT IS LOCATED AND WHO IS EXPERIENCED IN PROVIDING ENGINEERING SERVICES OF THE KIND INDICATED THAT HAVE RESULTED IN INSTALLING METAL-PLATE-CONNECTED WOOD TRUSSES SIMILAR TO THOSE INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

PRODUCTS/ MANUFACTURERS:
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
METAL CONNECTOR PLATES:
ALPINE ENGINEERED PRODUCTS, INC.
COMPUTRUS, INC.
MITEK INDUSTRIES, INC.
ROBBINS MANUFACTURING COMPANY.
TEE-LOK CORPORATION.
TRUSWAL SYSTEMS CORPORATION.
METAL FRAMING ANCHORS:
CLEVELAND STEEL SPECIALTY CO.
HARLEN METAL PRODUCTS, INC.
SILVER METAL PRODUCTS, INC.
SIMPSON STRONG-TIE COMPANY, INC.
SOUTHEASTERN METALS MANUFACTURING CO., INC.
UNITED STEEL PRODUCTS CO.

DIMENSION LUMBER:
LUMBER STANDARDS: COMPLY WITH DOC PS 20, "AMERICAN SOFTWOOD LUMBER STANDARD," AND WITH APPLICABLE GRADING RULES OF INSPECTION AGENCIES CERTIFIED BY ALSC'S BOARD OF REVIEW.

INSPECTION AGENCIES: INSPECTION AGENCIES, AND THE ABBREVIATIONS USED TO REFERENCE THEM, INCLUDE THE FOLLOWING:
SPIB - SOUTHERN PINE INSPECTION BUREAU.

GRADE STAMPS: PROVIDE LUMBER WITH EACH PIECE FACTORY MARKED WITH GRADE STAMP OF INSPECTION AGENCY EVIDENCING COMPLIANCE WITH GRADING RULE REQUIREMENTS AND IDENTIFYING GRADING AGENCY, GRADE, SPECIES, MOISTURE CONTENT AT TIME OF SURFACING, AND MILL.

PROVIDE DRESSED LUMBER, S4S, MANUFACTURED TO ACTUAL SIZES REQUIRED BY DOC PS 20 FOR MOISTURE CONTENT SPECIFIED, TO COMPLY WITH REQUIREMENTS INDICATED BELOW:
PROVIDE LUMBER WITH 15 PERCENT MAXIMUM MOISTURE CONTENT AT TIME OF DRESSING.

GRADE AND SPECIES: PROVIDE VISUALLY GRADED DIMENSION LUMBER FOR TRUSS CHORD AND WEB MEMBERS, OF THE FOLLOWING GRADE AND SPECIES:
ALL TRUSS MEMBERS SHALL BE SOUTHERN YELLOW PINE (OR AS DETERMINED BY MANUFACTURER), NO. 2 GRADE OR BETTER. NUMBER 3 GRADE LUMBER WILL NOT BE ACCEPTED. LUMBER SHALL BE EXPOSED AND MUST BE FREE OF NICKS, GOUGES, AND IMPERFECTIONS.

METAL CONNECTOR PLATES:
FABRICATE CONNECTOR PLATES FROM METAL COMPLYING WITH REQUIREMENTS INDICATED BELOW:
ELECTROLYTIC ZINC-COATED STEEL SHEET: ASTM A 591 (ASTM A 59LM), STRUCTURAL-(PHYSICAL) QUALITY STEEL SHEET, ZINC COATED BY ELECTRODEPOSITION; 33,000-PSI (230-MPA) MINIMUM YIELD STRENGTH, .COATING CLASS C, AND NOT LESS THAN 0.0474 INCH (1 -20 MM) THICK.
CONNECTOR PLATES WILL BE LEFT EXPOSED AND MUST BE AESTHETICALLY ACCEPTABLE TO OWNER. VERIFY CONNECTOR ACCEPTABILITY WITH OWNER AND ARCHITECT PRIOR TO BID.

FASTENERS:
PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIED BELOW FOR MATERIAL AND MANUFACTURE.

TRUSS MEMBERS ARE EXPOSED TO WEATHER OR TO HIGH RELATIVE HUMIDITIES, PROVIDE FASTENERS WITH A HOT-DIP ZINC COATING PER ASTM A 153 OR OF STAINLESS STEEL, TYPE 304 OR 316.

NAILS, WIRE, BRADS & STAPLES: FS FF-N-L05, WOOD SCREWS: ASMEB18.6.1, POWER DRIVEN FASTENERS: CABO NER-272 OR LAG BOLTS & SCREWS: ASME B18.2.L (ASME BL8.2.3.8M).

BOLTS: STEEL BOLTS COMPLYING WITH ASTM A 307, GRADE A (ASTM F 568, PROPERTY CLASS 4.6); WITH ASTM A 563 (ASTM A 563M) HEX NUTS AND, WHERE INDICATED, FLAT WASHERS.

METAL FRAMING ANCHORS:
GENERAL: PROVIDE METAL FRAMING ANCHORS OF STRUCTURAL CAPACITY, TYPE, SIZE, METAL, AND FINISH INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIED, INCLUDING THE FOLLOWING:

RESEARCH OR EVALUATION REPORTS: PROVIDE PRODUCTS FOR WHICH MODEL CODE RESEARCH OR EVALUATION REPORTS EXIST THAT ARE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND THAT EVIDENCE COMPLIANCE OF METAL FRAMING ANCHORS FOR APPLICATION INDICATED WITH BUILDING CODE IN EFFECT FOR THIS PROJECT.

ALLOWABLE DESIGN LOADS: PROVIDE PRODUCTS WITH ALLOWABLE DESIGN LOADS, AS PUBLISHED BY MANUFACTURER, THAT MEET OR EXCEED THOSE INDICATED. MANUFACTURER'S PUBLISHED VALUES SHALL BE DETERMINED FROM EMPIRICAL DATA OR BY RATIONAL ENGINEERING ANALYSIS, AND DEMONSTRATED BY COMPREHENSIVE TESTING PERFORMED BY A QUALIFIED INDEPENDENT TESTING AGENCY.

GALVANIZED STEEL SHEET: HOT-DIP, ZINC-COATED STEEL SHEET COMPLYING WITH ASTM A 653, G60 (ASTM A 653M, ZL80) COATING DESIGNATION; STRUCTURAL, COMMERCIAL, OR LOCK-FORMING QUALITY, AS STANDARD WITH MANUFACTURER FOR TYPE OF ANCHOR INDICATED.

STAINLESS-STEEL SHEET: ASTM A 666, TYPE 304 OR 316, CHROMIUM NICKEL STEEL SHEET; 33,000-PSI (230-MPA) MINIMUM YIELD STRENGTH.

FABRICATION:
CUT TRUSS MEMBERS TO ACCURATE LENGTHS, ANGLES, AND SIZES TO PRODUCE CLOSE-FITTING JOINTS. FABRICATE METAL CONNECTOR PLATES TO SIZE, CONFIGURATION, THICKNESS, AND ANÓHORAGE DETAILS REQUIRED TO WITHSTAND DESIGN LOADINGS FOR TYPES OFJOINT DESIGNS INDICATED. ASSEMBLE TRUSS MEMBERS IN DESIGN CONFIGURATION INDICATED USING JIGS OR OTHER MEANS TO ENSURE UNIFORMITY AND ACCURACY OF ASSEMBLY WITH JOINTS CLOSELY FITTED TO COMPLY WITH TOLERANCES OF ANSI/TPI I. POSITION MEMBERS TO PRODUCE DESIGN CAMBER INDICATED.

FABRICATE WOOD TRUSSES WITHIN MANUFACTURING TOLERANCES OF ANSI/TPI. CONNECT TRUSS MEMBERS BY METAL CONNECTOR PLATES LOCATED AND SECURELY EMBEDDED SIMULTANEOUSLY INTO BOTH SIDES OF WOOD MEMBERS BY AIR OR HYDRAULIC PRESS. UTILIZE CONNECTORS APPROVED BY OWNER AND ARCHITECT.

EXECUTION/ INSTALLATION:
DO NOT INSTALL WOOD TRUSSES UNTIL SUPPORTING CONSTRUCTION IS INPLACE AND IS BRACED AND SECURED. BEFORE INSTALLING, SPLICE TRUSSES DELIVERED TO PROJECT SITE IN MORE THAN ONE PIECE. HOIST TRUSSES IN PLACE BY LIFTING EQUIPMENT SUITED TO SIZES AND TYPES OF TRUSSES REQUIRED, EXERCISING CARE NOT TO DAMAGE TRUSS MEMBERS OR JOINTS BY OUT-OF-PLANE BENDING OR OTHER AUSES.

INSTALL AND BRACE TRUSSES ACCORDING TO RECOMMENDATIONS OF TPI AND AS INDICATED. INSTALL TRUSSES PLUMB, SQUARE, AND TRUE TO LINE AND SECURELY FASTEN TO SUPPORTING CONSTRUCTION. ADJUST AND ALIGN TRUSSES IN LOCATION AT SPACING INDICATED ON PLANS. ANCHOR TRUSSES SECURELY AT ALL BEARING POINTS USING METAL FRAMING ANCHORS. INSTALL FASTENERS THROUGH EACH FASTENER HOLE IN METAL FRAMING ANCHOR ACCORDING TO MANUFACTURER'S FASTENING SCHEDULES AND WRITTEN INSTRUCTIONS. SECURELY CONNECT EACH TRUSS PLY REQUIRED FOR FORMING BUILT-UP GIRDER TRUSSES.
ANCHOR TRUSSES TO GIRDER TRUSSES AS INDICATED.

INSTALL AND FASTEN PERMANENT BRACING DURING TRUSS ERECTION AND BEFORE CONSTRUCTION LOADS ARE APPLIED. ANCHOR ENDS OF PERMANENT BRACING WHERE TERMINATING AT WALLS OR BEAMS.
INSTALL AND FASTEN STRONG BACK BRACING VERTICALLY AGAINST VERTICAL WEB OF PARALLEL-CHORD FLOOR TRUSSES AT CENTERS INDICATED.

INSTALL WOOD TRUSSES WITHIN INSTALLATION TOLERANCES OF ANSI/TPI 1. DO NOT CUT OR REMOVE TRUSS MEMBERS. RETURN WOOD TRUSSES THAT ARE DAMAGED OR DO NOT MEET REQUIREMENTS TO FABRICATOR AND REPLACE WITH TRUSSES THAT DO MEET REQUIREMENTS. DO NOT ALTER TRUSSES IN THE FIELD.

06 40 00 INTERIOR WOOD TRIM:
GENERAL: SECTION INCLUDES SOLID WOOD FINGER JOINTED PRIMED DOOR, WINDOW AND BASE TRIMS AS INDICATED THROUGHOUT THE CONSTRUCTION DOCUMENTS.

REFERENCE STANDARDS:
WESTERN WOOD PRODUCTS ASSOCIATION (WWPA):

QUALITY ASSURANCE: INSTALLER QUALIFICATIONS: MUST HAVE 5 YEARS' EXPERIENCE INSTALLING PRIMED FINGER JOINTED TRIM OF THE TYPES AND SIZES IDENTIFIED IN THIS SPECIFICATION. PROVIDE EACH TYPE OF PRODUCT FROM A SINGLE MANUFACTURING SOURCE TO ENSURE UNIFORMITY.

PRODUCTS: PROVIDE AND INSTALL APPEARANCE GRADE PINE PRIMED FINGER JOINTED SMOOTH TRIMS WITH TIGHT KNOTS. TRIMS SHALL BE THOROUGHLY SEASONED, KILN DRIED TO A MOISTURE CONTENT OF 9%. TRIMS SHALL BE OF THE LONGEST LENGTHS POSSIBLE. WHERE JOINTS ARE REQUIRED OR NECESSARY THEY SHALL BE CUT ON A 45 DEGREE ANGLE AND THE GRAIN CAREFULLY MATCHED TO MINIMIZE APPEARANCE OF A JOINT. FASTEN WITH APPROPRIATE INTERIOR AND/ OR EXTERIOR FASTENER. PAINTED FINISH SHALL BE AS SELECTED BY ARCHITECT/ OWNER.

TRIMS (PRIMED FINGER JOINTED) AS FOLLOWS:

DOOR/ WINDOW CASING(S): #376, 11/16" x 2-1/4".

INSTALLATION: INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, APPROVED SUBMITTALS, AND IN PROPER RELATIONSHIP WITH ADJACENT CONSTRUCTION. INSTALL PRODUCTS ACCORDING TO WESTERN WOOD PRODUCTS ASSOCIATION INSTALLATION GUIDELINES AND WITH ADHERENCE TO LOCAL BUILDING CODES AND REGULATIONS WHERE THE PROJECT IS LOCATED. INSTALLATION WILL VARY BASED ON THE PROJECT, FOLLOW ALL APPROPRIATE BUILDING CODES AND INDUSTRY BEST PRACTICES. FINISH MATERIALS ON ALL SIDES AND ENDS. APPLY TOUCH UP COATING ON NEW CUTS. FACTORY PRIMED OR FINISHING IS PREFERRED.
06 42 00 PLASTIC LAMINATE/ STAINLESS STEEL CLAD COUNTERTOPS:
GENERAL: THIS SECTION TO INCLUDE PLASTIC-LAMINATE/ STAINLESS STEEL CLAD COUNTERTOPS, FABRICATOR SHALL BE A CERTIFIED PARTICIPANT IN AWI's QUALITY CERTIFICATION PROGRAM.

PLASTIC LAMINATE COUNTERTOPS – RECEPTION AREA – VERIFY SCOPE WITH OWNER.
STAINLESS STEEL COUNTERTOPS – CLINIC AREA – VERIFY SCOPE WITH OWNER.

PRODUCTS: PROVIDE AND INSTALL AS SHOWN THE DRAWINGS AND/ OR HEREIN SPECIFIED PRE-FINISHED FACTORY MADE OR CUSTOM MADE PLASTIC LAMINATE/ STAINLESS STEEL CLAD COUNTERTOPS, TRIMS AND NECESSARY ACCESSORIES. UNLESS OTHERWISE INDICATED, COMPLY WITH THE "ARCHITECTURAL WOODWORK STANDARDS" FOR GRADES OF ARCHITECTURAL PLASTIC-LAMINATE COUNTERTOPS INDICATED FOR CONSTRUCTION, FINISHES, INSTALLATION, AND OTHER REQUIREMENTS. PROVIDE CERTIFICATES FROM AWI CERTIFICATION PROGRAM INDICATING THAT WOODWORK, INCLUDING INSTALLATION, COMPLIES WITH REQUIREMENTS OF GRADES SPECIFIED.

MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to: Montcalm County Animal Control

154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
A5.1

PROJECT NUMBER:
25141

FORMICA CORPORATION.
WILSONART LLC.

HIGH-PRESSURE DECORATIVE LAMINATE/ STAINLESS STEEL: SHALL COMPLY NEMA LD 3, GRADE HGS.
COLORS, PATTERNS, AND FINISHES: PROVIDE MATERIALS AND PRODUCTS THAT RESULT IN COLORS AND TEXTURES OF EXPOSED LAMINATE/ S.S. SURFACES COMPLYING WITH THE FOLLOWING REQUIREMENTS:
AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE INCLUDING THE FOLLOWING CATEGORIES: STANDARDS, PATTERNS, MATTE & REGULAR FINISHES, STAINLESS STEEL, - ALL FINISHES.
EDGE TREATMENT: SAME AS LAMINATE/ S.S. CLADDING ON HORIZONTAL SURFACES.
CORE MATERIAL AT SINKS: PARTICLEBOARD MADE WITH EXTERIOR GLUE OR EXTERIOR-GRADE PLYWOOD.
CORE THICKNESS: 3/4 INCH. BUILD UP COUNTERTOP THICKNESS TO 1-1/2 INCHES AT FRONT, BACK, AND ENDS WITH ADDITIONAL LAYERS OF CORE MATERIAL LAMINATED TO TOP. BACKER SHEET: PROVIDE PLASTIC-LAMINATE BACKER SHEET, NEMA LD 3, GRADE BKL, ON UNDERSIDE OF COUNTERTOP SUBSTRATE. PAPER BACKING: PROVIDE PAPER BACKING ON UNDERSIDE OF COUNTERTOP SUBSTRATE.

WOOD MATERIALS, PROVIDE MATERIALS THAT COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR EACH TYPE OF WOODWORK AND QUALITY GRADE SPECIFIED UNLESS OTHERWISE INDICATED. WOOD MOISTURE CONTENT SHALL BE 5 TO 10 PERCENT. COMPOSITE WOOD AND AGRIFIBER PRODUCTS: PROVIDE MATERIALS THAT COMPLY WITH REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR EACH TYPE OF WOODWORK AND QUALITY GRADE SPECIFIED UNLESS OTHERWISE INDICATED, AS FOLLOWS:
PARTICLEBOARD: ANSI A208.1, GRADE M-2.
SOFTWOOD PLYWOOD: DOC PS 1, MEDIUM-DENSITY OVERLAY.

FABRICATION: FABRICATE COUNTERTOPS TO DIMENSIONS, PROFILES, AND DETAILS INDICATED. PROVIDE FRONT AND END OVERHANG OF 1 INCH OVER BASE CABINETS. EASE EDGES TO RADIUS INDICATED FOR THE FOLLOWING:
SOLID-WOOD (LUMBER) MEMBERS: 1/16 INCH UNLESS OTHERWISE INDICATED.
COMPLETE FABRICATION, INCLUDING ASSEMBLY, TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. DISASSEMBLE COMPONENTS ONLY AS NECESSARY FOR SHIPMENT AND INSTALLATION. WHERE NECESSARY FOR FITTING AT SITE, PROVIDE AMPLE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.

EXECUTION: BEFORE INSTALLATION, CONDITION COUNTERTOPS TO AVERAGE PREVAILING HUMIDITY CONDITIONS IN INSTALLATION AREAS. INSTALL COUNTERTOPS TO COMPLY WITH SAME GRADE AS ITEM TO BE INSTALLED. ASSEMBLE COUNTERTOPS AND COMPLETE FABRICATION AT PROJECT SITE TO THE EXTENT THAT IT WAS NOT COMPLETED IN THE SHOP. PROVIDE CUTOUTS FOR APPLIANCES, PLUMBING FIXTURES, ELECTRICAL WORK, AND SIMILAR ITEMS. SEAL EDGES OF CUTOUTS BY SATURATING WITH VARNISH.

FIELD JOINTING: PREPARE EDGES TO BE JOINED IN SHOP SO PROJECT-SITE PROCESSING OF TOP AND EDGE SURFACES IS NOT REQUIRED. SECURE FIELD JOINTS IN PLASTIC-LAMINATE COUNTERTOPS WITH CONCEALED CLAMPING DEVICES LOCATED WITHIN 6 INCHES OF FRONT AND BACK EDGES AND AT INTERVALS NOT EXCEEDING 24 INCHES. TIGHTEN ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO EXERT A CONSTANT, HEAVY-CLAMPING PRESSURE AT JOINTS. INSTALL COUNTERTOPS LEVEL, PLUMB, TRUE, AND STRAIGHT. SHIM AS REQUIRED WITH CONCEALED SHIMS. INSTALL LEVEL AND PLUMB TO A TOLERANCE OF 1/8 INCH IN 96 INCHES. SCRIBE AND CUT COUNTERTOPS TO FIT ADJOINING WORK, REFINISH CUT SURFACES, AND REPAIR DAMAGED FINISH AT CUTS.
COUNTERTOPS: ANCHOR SECURELY BY SCREWING THROUGH CORNER BLOCKS OF BASE CABINETS OR OTHER SUPPORTS INTO UNDERSIDE OF COUNTERTOP.
INSTALL COUNTERTOPS WITH NO MORE THAN 1/8 INCH IN 96-INCH SAG, BOW, OR OTHER VARIATION FROM A STRAIGHT LINE.
SECURE BACKSPLASHES TO TOPS WITH CONCEALED METAL BRACKETS AT 16 INCHES O.C. AND TO WALLS WITH ADHESIVE.
SEAL JUNCTURES OF TOPS, SPLASHES, AND WALLS WITH MILDEW-RESISTANT SILICONE SEALANT OR ANOTHER PERMANENTLY ELASTIC SEALING COMPOUND RECOMMENDED BY COUNTERTOP MATERIAL MANUFACTURER.

07 00 00 THERMAL & MOISTURE PROTECTION

GENERAL:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTIONS FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS.

PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.

07 01 00 GRADE VAPOR BARRIER or RETARDER
GENERAL: WHERE SHOWN ON DRAWINGS PROVIDE/ FURNISH UNDERSLAB VAPOR RETARDER. INSTALLATION SHALL INCLUDE ALL PARTS, PIECES, COMPONENTS, ETC. FOR A COMPLETE INSTALLATION.

REFERENCE STANDARDS:
ASTM D1709 STANDARD TEST METHODS FOR IMPACT RESISTANCE OF PLASTIC FILM BY THE FREE-FALLING DART METHOD.
ASTM E96 STANDARD TEST METHODS FOR WATER VAPOR TRANSMISSION OF MATERIALS. ASTM E154 STANDARD TEST METHODS FOR WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH UNDER CONCRETE SLABS, ON WALLS OR AS GROUND COVER.
ASTM E1643 STANDARD PRACTICE FOR INSTALLATION OF WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH OR GRANULAR FILL UNDER CONCRETE SLABS.
ASTM E1745 STANDARD SPECIFICATION FOR WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS.

PRODUCTS:
PROVIDE .010" (10 MIL) POLYETHYLENE FILM VAPOR BARRIER or RETARDER UNDER ALL INTERIOR CONCRETE SLABS. LAP ALL JOINTS 6" AND TURN UP AT WALLS. ALL TEARS AND PENETRATIONS SHALL BE REPAIRED OR REPLACED BEFORE APPLICATION OF TOPPING. MATERIAL WEIGHT SHALL BE 49 LBS/ 3,000 S.F., CLASS A WITH THE FOLLOWING TESTS:
TENSILE STRENGTH: ASTM E154, 52 LBS PER INCH, NEW MATERIAL.
ASTEM E154, 53 LBS PER INCH, AFTER SOAKING.
PUNCTURE RESISTANCE: ASTM D1709, >1,500 GRAMS.
PERMEANCE: ASTM E96, E154, 0.090 U.S. PERMS, NEW MATERIAL.

ACCESSORIES: SEAMING TAPE: VAPORBOND TAPE, 4" TAPE APPROVED BY VAPOR RETARDER MANUFACTURER. PIPE BOOT KITS: VAPORBOOT SYSTEM OR OTHER APPROVED MANUFACTURER'S SUPPLIED PIPE BOOT SYSTEM. BUTYL SEALANT 2-SIDED TAPE. MULTI-PIPE PENETRATION SEALANT.

MANUFACTURER'S INSTRUCTIONS: COMPLY WITH MANUFACTURER'S PRODUCT DATA, INCLUDING PRODUCT TECHNICAL BULLETINS, PRODUCT CATALOG INSTALLATION INSTRUCTIONS AND PRODUCT CARTON/LABEL INSTRUCTIONS FOR INSTALLATION. REFERENCE SPEC-DATA SECTION 5, INSTALLATION. VERIFY THAT SUBSTRATE CONDITIONS ARE ACCEPTABLE FOR PRODUCT INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL IN ACCORDANCE WITH ASTM E1643.

07 01 50 AIR INFILTRATION & WEATHER BARRIERS

SEE SECTION 06 16 00 INSULATING AIR & MOISTURE RESISTANT SHEATHING ABOVE.

07 20 00 SILL SEAL/ SILL GASKET:
GENERAL: WHERE SHOWN ON DRAWINGS PROVIDE/ FURNISH SILL SEAL/ SILL GASKET. INSTALLATION SHALL INCLUDE ALL PARTS, PIECES, COMPONENTS, ETC. FOR A COMPLETE INSTALLATION.

PRODUCTS: PROVIDE SILL SEAL BETWEEN ALL FOUNDATION WALLS/ SLABS AND WOOD FRAMING AT ALL EXTERIOR WALLS AND BETWEEN EXTERIOR MASONRY/CONCRETE WALLS AND BEARING PLATES. REMOVE ALL HIGH POINTS ON WALLS GREATER THAN 7/32" BEFORE INSTALLING SILL SEAL. FIT ALL JOINTS BETWEEN PIECES OF SILL SEAL TIGHTLY. SILL SEAL PRODUCT SHALL BE OWENS CORNING "PROPINK COMFORTSEAL SILL GASKET", POLYETHYLENE FOAM AS MANUFACTURED BY OWENS CORNING INSULATING SYSTEMS LLC, OR APPROVED EQUAL.

INSTALLATION INSTRUCTIONS: SMOOTH THE TOP SURFACE OF THE FOUNDATION WALL FOR MINIMAL VARIATION, UNROLL THE SILL GASKET ON THE TOP SURFACE OF THE FOUNDATION WALL OR FASTEN TO THE BOTTOM OF THE SILL PLATE ON TILT-UP WALL SECTIONS WITH RIDGED SIDE TOWARD ROUGHEST SURFACE. OVERLAP ALL END AND PERPENDICULAR JOINTS. PIERCE THE SILL GASKET AT ANCHOR BOLT LOCATIONS. SET AND ANCHOR SILL PLATE TO THE FOUNDATION WALL. FOLLOW THE CURRENT MANUFACTURER'S PRODUCT INSTALLATION INSTRUCTIONS.

07 21 00 THERMAL BUILDING INSULATION:
GENERAL: WHERE SHOWN ON DRAWINGS PROVIDE/ FURNISH THERMAL BUILDING INSULATION. INSTALLATION SHALL INCLUDE ALL PARTS, PIECES, COMPONENTS, ETC. FOR A COMPLETE INSTALLATION.

PRODUCTS:
EXTERIOR WALL INSULATION (STUD CAVITY):
PNEUMATICALLY SPRAYED DAMP BLOWN CELLULOSE INSULATION INTO OPEN WALL CAVITIES, NU-WOOL WALLSEAL. MANUFACTURED FROM RECYCLED NEWSPAPER, 85% MINIMUM CONTENT. TREAT FIBERS TO CREATE PERMENATE FLAME RESISTANCE SPREAD INDEX ≤ 15, SMOKE DEVELOPED INDEX OF ≤ 5 AND WITH A EPA REGISTERED FUNGICIDE ADDITIVE. PRODUCT SHALL BE UL CLASSIFIED MEETING R-8078, CPSC STANDARDS, ASTM E119, ASTM C739 AND ES REPORT ESR-2217.

PNEUMATICALLY SPRAY CELLULOSE INSULATION WITH CONTROLLED WATER FOG FOR ADHESION INTO OPEN WALL CAVITIES AFTER MECHANICAL, PLUMBING, ELECTRICAL, AND OTHER UTILITY INSTALLATIONS HAVE BEEN COMPLETED. INSTALL CELLULOSE INSULATION TO A DENSITY OF 3.0 TO 3.5 LBS. PER CU. FT TO PREVENT SETTLING IN WALL CAVITIES. USE QUANTITY OF WATER IN INSTALLATION TO ENSURE PROPER ADHESION INTO WALL CAVITIES AND PROPER DENSITY. INSTALL GYPSUM BOARD TO 2x WALLS A MINIMUM OF 24 HOURS AFTER INSTALLATION OF PNEUMATICALLY SPRAYED DAMP CELLULOSE INSULATION.

INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE MINIMUM THICKNESS AND "R" VALUE AS NOTED ON DRAWINGS (WALLS R-21 MIN.). PROTECT INSTALLED CELLULOSE INSULATION FROM DAMAGE DURING CONSTRUCTION. PROVIDE CERTIFICATION LISTING THE TYPE, MANUFACTURER & R-VALUE FOR EACH ELEMENT.

EXTERIOR WALL SHEATHING / INSULATION (EXTERIOR FACE – CONTINUOUS INSULATION):
INSTALL 1" THICK COMBINATION SHEATHING / INSULATION BOARD FROM LOWEST FINISH FLOOR TO TOP OF WALL PLATE OR UNLESS OTHERWISE INDICATED (R=3 MINIMUM). INSTALLATION SHALL BE AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. MANUFACTURERS HUBER ENGINEERED WOODS - ZIP SYSTEM OR OX-BOARD. PROVIDE CERTIFICATION LISTING THE TYPE, MANUFACTURER & R-VALUE FOR EACH ELEMENT.

ATTIC INSULATION:
PNEUMATICALLY BLOWN DRY CELLULOSE INSULATION INTO ATTICS & FLOOR ASSEMBLIES, NU-WOOL PREMIUM CELLULOSE INSULATION. MANUFACTURED FROM RECYCLED NEWSPAPER, 85% MINIMUM CONTENT. TREAT FIBERS TO CREATE PERMENATE FLAME RESISTANCE SPREAD INDEX ≤ 15, SMOKE DEVELOPED INDEX OF ≤ 5 AND WITH A EPA REGISTERED FUNGICIDE ADDITIVE. PRODUCT SHALL BE UL CLASSIFIED MEETING R-8078, CPSC STANDARDS, ASTM E119, ASTM C739 AND ES REPORT ESR-2217.

PNEUMATICALLY BLOW CELLULOSE INSULATION AFTER MECHANICAL, PLUMBING, ELECTRICAL, AND OTHER UTILITY INSTALLATIONS HAVE BEEN COMPLETED. ENSURE HEAT-PRODUCING DEVICES IN ATTICS HAVE BARRIERS CONSTRUCTED AROUND THEM TO PREVENT CONTACT WITH CELLULOSE INSULATION. INSTALL CELLULOSE INSULATION TO A DENSITY OF 1.6 TO 3.5 LBS. PER CU. FT.

INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE MINIMUM THICKNESS AND "R" VALUE AS NOTED ON DRAWINGS (ATTICS R-49, MIN.). PROVIDE INSULATION MARKERS EVERY 300 S.F. WITH INCHES & R-VALUE INDICATORS. PROTECT INSTALLED CELLULOSE INSULATION FROM DAMAGE DURING CONSTRUCTION.

GLASS-FIBER BLANKET INSULATION (SOUND BATT):
GLASS-FIBER BLANKET, UNFACED WALL SOUND INSULATION: ASTM C 665, TYPE I; WITH MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50, RESPECTIVELY, PER ASTM E 84; PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS. 3-1/2" FIBERGLASS BATT SOUND INSULATION WHERE SHOWN ON THE DRAWINGS. INSULATION AS MANUFACTURED BY CERTAINTEED, KNAUF OR OWENS CORNING, OR EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, "R" VALUE EQUALLING R-11, MIN. PROVIDE CERTIFICATION LISTING THE TYPE, MANUFACTURER & R-VALUE FOR EACH ELEMENT.
FOUNDATION INSULATION (BELOW GRADE SLAB LOCATIONS):
INSTALL 3" THICK INSULATION FROM FINISH FLOOR DOWN TO TOP OF FOOTING OR TO A MINIMUM OF TWO (2) FEET BELOW FINISH GRADE UNLESS OTHERWISE INDICATED (R=15 MINIMUM). INSTALLATION SHALL BE AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.

WALL/ HEADER INSULATION:
INSTALL 2" THICK INSULATION (R-10) IN WALL/ HEADER LOCATIONS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.

07 30 00 SHINGLED ROOFING:
GENERAL: WHERE SHOWN ON DRAWINGS PROVIDE/ FURNISH GRANULE SURFACED ASPHALT SHINGLE ROOFING, MOISTURE SHEDDING UNDERLAYMENT, EAVES, VALLEY AND RIDGE PROTECTION AND ASSOCIATED METAL FLASHING. PRODUCT BASED ON CEERTAINTEED LANDMARK OR APPROVED EQUAL, CERTAINTEED CORPORATION, VALLEY FORGE PA 19482, 800-233-8990. INSTALLATION SHALL INCLUDE ALL PARTS, PIECES, COMPONENTS, ETC. FOR A COMPLETE INSTALLATION.

REFERENCES (PRODUCT):
ASTM A 653/A 653M – STANDARD SPECIFICATION FOR STEEL SHEETS, ZINC-COATED (GALVANIZED) OR ZINC-IRON-ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS.
ASTM B 209 – STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SHEET AND PLATE.
ASTM B 370 – STANDARD SPECIFICATION FOR COPPER SHEET AND STRIP FOR BUILDING CONSTRUCTION.
ASTM D 225 – STANDARD SPECIFICATION FOR ASPHALT SHINGLES (ORGANIC FELT) SURFACED WITH MINERAL GRANULES.
ASTM D 226 – STANDARD SPECIFICATION FOR ASPHALT-SATURATED ORGANIC FELT USED IN ROOFING AND WATERPROOFING.
ASTM D 1970 – STANDARD SPECIFICATION FOR SELF-ADHERING POLYMER MODIFIED BITUMINOUS SHEET MATERIALS USED AS STEEP ROOFING UNDERLAYMENT FOR ICE DAM PROTECTION.

ASTM D 3018 – STANDARD SPECIFICATION FOR CLASS A SHINGLES SURFACED WITH MINERAL GRANULES.
ASTM D 3161 – STANDARD TEST METHOD FOR WIND RESISTANCE OF ASPHALT SHINGLES (FAN-INDUCED METHOD).

ASTM D 3462 – STANDARD SPECIFICATION FOR ASPHALT SHINGLES MADE FROM GLASS FELT AND SURFACED WITH MINERAL GRANULES.
ASTM D 4586 – STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS-FREE.
ASTM D-4869 – STANDARD SPECIFICATION FOR ASPHALT-SATURATED ORGANIC FELT SHINGLE UNDERLAYMENT USED IN ROOFING.
ASTM D 6757 – STANDARD SPECIFICATION FOR INORGANIC UNDERLAYMENT FOR USE WITH STEEP SLOPE ROOFING PRODUCTS.
ASTM D7158 – STANDARD TEST METHOD FOR WIND RESISTANCE OF ASPHALT SHINGLES (UPLIFT FORCE/UPLIFT RESISTANCE METHOD).
ASTM E 108 – STANDARD TEST METHODS FOR FIRE TEST OF ROOF COVERINGS.
ASTM G 21 – DETERMINING RESISTANCE OF SYNTHETIC POLYMERS TO FUNGI.

QUALITY ASSURANCE: INSTALLER MINIMUM QUALIFICATIONS: INSTALLER SHALL BE LICENSED OR OTHERWISE AUTHORIZED BY ALL FEDERAL, STATE AND LOCAL AUTHORITIES TO INSTALL ALL PRODUCTS SPECIFIED IN THIS SECTION. INSTALLER SHALL PERFORM WORK IN ACCORDANCE WITH NRCA ROOFING AND WATERPROOFING MANUAL. WORK SHALL BE ACCEPTABLE TO THE ASPHALT SHINGLE MANUFACTURER.

MOCK-UP: PROVIDE A MOCK-UP FOR EVALUATION OF SURFACE PREPARATION TECHNIQUES AND APPLICATION WORKMANSHIP. FINISH AREAS DESIGNATED BY ARCHITECT, DO NOT PROCEED WITH REMAINING WORK UNTIL WORKMANSHIP, COLOR AND PATTERN ARE APPROVED BY ARCHITECT. REWORK MOCK-UP AREA AS REQUIRED TO PRODUCE ACCEPTABLE WORK.
PRE-INSTALLATION MEETING – CONDUCT A PRE-INSTALLATION MEETING AT THE SITE PRIOR TO COMMENCING WORK OF THIS SECTION: REQUIRE ATTENDANCE OF ENTITIES DIRECTLY CONCERNED WITH ROOF INSTALLATION. AGENDA WILL INCLUDE:
INSTALLATION METHODS AND MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS, SAFETY PROCEDURES, COORDINATION WITH INSTALLATION OF OTHER WORK, AVAILABILITY OF ROOFING MATERIALS. PREPARATION AND APPROVAL OF SUBSTRATE AND PENETRATIONS THROUGH ROOF. OTHER ITEMS RELATED TO SUCCESSFUL EXECUTION OF WORK. PRODUCT COMPLIANCE – VERIFY THAT PRODUCTS CONFORM WITH ALL REQUIREMENTS SPECIFIED BY LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
MAINTAIN ONE COPY OF MANUFACTURER'S APPLICATION INSTRUCTIONS ON THE PROJECT SITE.

PRODUCTS:
ASPHALT FIBERGLASS SHINGLES, CERTAINTEED LANDMARK, CONFORMING TO ASTM D 3018 TYPE I – SELF-SEALING, UL CERTIFICATION OF ASTM D 3462, ASTM D 3161/UL997 110-MPH WIND RESISTANCE AND UL CLASS A FIRE RESISTANCE, GLASS FIBER MAT BASE, CERAMICALLY COLORED/UV RESISTANT MINERAL SURFACE GRANULES ACROSS ENTIRE FACE OF SHINGLE; ALGAE-RESISTANCE; TWO PIECE LAMINATE SHINGLE.
CERTAINTEED SPECIFIED CORRESPONDING HIP AND RIDGE ACCESSORY PRODUCTS ARE INSTALLED AS CAP SHINGLES (SHADOW RIDGE™, CEDAR CREST™, MOUNTAIN RIDGE™).
CERTAINTEED SPECIFIED CORRESPONDING STARTER SHINGLES ARE INSTALLED ALONG THE ROOF EAVES AND RAKES (SWIFTSTART™ AND HIGH-PERFORMANCE STARTER).
WEIGHT: 240 POUNDS PER SQUARE (DEPENDENT ON MANUFACTURING LOCATION, 100 SQUARE FEET).

SHEET MATERIALS:
EAVES PROTECTION: CERTAINTEED "WINTERGUARD"; ASTM D1970 SHEET BARRIER OF SELF-ADHERING RUBBERIZED ASPHALT MEMBRANE SHINGLE UNDERLAYMENT HAVING INTERNAL REINFORCEMENT AND "SPLIT" BACK PLASTIC RELEASE FILM; PROVIDE MATERIAL WARRANTY EQUAL IN DURATION TO THAT OF SHINGLES BEING APPLIED.
UNDERLAYMENT: CERTAINTEED "ROOFERS' SELECT", ASTM D 6757; ASPHALT-IMPREGNATED FIBERGLASS-REINFORCED ORGANIC FELT DESIGNED FOR USE ON ROOF DECKS AS A WATER-RESISTANT LAYER BENEATH ROOFING SHINGLES

UNDERLAYMENT: CERTAINTEED "DIAMOND DECK", ASTM D 226 AND ASTM D 4869 SYNTHETIC POLYMER-BASED SCRIM REINFORCED UNDERLAYMENT DESIGNED FOR USE ON ROOF DECKS AS A WATER-RESISTANT LAYER BENEATH ASPHALT SHINGLES, WOOD SHINGLES, AND SHAKES, METAL SHINGLES OR SLATE.

UNDERLAYMENT: ASTM D 4869, ASPHALT SATURATED FELT.

UNDERLAYMENT: ASTM D 226, ASPHALT SATURATED FELT (NON-PERFORATED).

WATERPROOFING UNDERLAYMENT: CERTAINTEED "WINTERGUARD"; ASTM D 1970 SHEET BARRIER OF SELF-ADHERING RUBBERIZED ASPHALT MEMBRANE SHINGLE UNDERLAYMENT HAVING INTERNAL REINFORCEMENT, AND "SPLIT" BACK PLASTIC RELEASE FILM; USE IN "LOW SLOPE' AREAS (BELOW 4:12, BUT NO LESS THAN 2:12 PITCH); PROVIDE MATERIAL WARRANTY WITH EQUAL IN DURATION TO THAT OF SHINGLES BEING APPLIED .
FLASHING MATERIALS:
SHEET FLASHING: ASTM A 361/A361M; 26 GAUGE (0.45 MM) STEEL WITH MINIMUM G115/Z350 GALVANIZED COATING
SHEET FLASHING: ASTM B 209; 0.025 (0.63MM) THICK ALUMINUM, MILL FINISH.
SHEET FLASHING: ASTM B 370; COLD ROLLED COPPER; 16 OUNCES PER SQUARE FOOT (0.55MM), NATURAL FINISH.
BITUMINOUS PAINT: ACID AND ALKALI RESISTANT TYPE; BLACK COLOR.
TINNER'S PAINT: COLOR AS SELECTED BY ARCHITECT TO COORDINATE WITH SHINGLE COLOR.
ACCESSORIES:
NAILS: STANDARD ROUND WIRE TYPE ROOFING NAILS, CORROSION RESISTANT; HOT DIPPED ZINC COATED STEEL, ALUMINUM OR CHROMATED STEEL; MINIMUM 3.8 INCH (9.5MM) HEAD DIAMETER; MINIMUM 11 OR 12 GAGE (2.5MM) SHANK DIAMETER; SHANK TO BE SUFFICIENT LENGTH TO PENETRATE THROUGH THE ROOF SHEATHING OR ¾ INCH (19MM) INTO SOLID WOOD, PLYWOOD OR NON-VENEER WOOD DECKING.

ASPHALT ROOFING CEMENT: ASTM D 4586, TYPE I OR II

DRIP EDGES SHALL BE PREFINISHED ALUMINUM, 0.019 INCH GAUGE, 2-3/4 INCH x 1-3/4 INCH, AS RECOMMENDED BY SHINGLE MANUFACTURER, COLOR AS SELECTED BY OWNER/ARCHITECT. INSTALL IN ACCORDANCE W/ MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS.

ATTIC VENTILATION:
CERTAINTEED RIDGE VENT (4 LF) FILTERED OR UNFILTERED, 12 IN. WIDTH.
SHINGLE OVER RIDGE VENT DESIGNED WITH AN EXTERNAL BAFFLE TO DEFLECT WIND AND WEATHER OVER THE VENT. THE EXTERNAL BAFFLE CREATES LOW PRESSURE OVER THE VENT OPENINGS TO "PULL" AIR FROM THE ATTIC.
INTERNAL WEATHER FILTER HELPS PROTECT THE ATTIC FROM WIND DRIVEN RAIN, SNOW, DUST AND INSECTS.
12" VENT PROVIDES 18 SQ INCHES OF NET FREE AREA PER LINEAR FOOT.
CERTAINTEED RIDGE VENT IS PRE-FORMED TO A 4/12 PITCH, AND FITS PITCHES FROM 3/12 TO 16/12.
LIMITED LIFETIME WARRANTY AND 5-YEAR SURESTART™ PROTECTION. SHINGLEVENT II, SHFV (18 SQ. IN.) AND COR-A-VENT V-600E-II (20 SQ. IN.), APPROVED EQUALS.

EXAMINATION/ INSTALLATION:
VERIFY EXISTING SITE CONDITIONS, VERIFY THAT ROOF PENETRATIONS AND PLUMBING STACKS ARE IN PLACE AND FLASHED TO DECK SURFACES. VERIFY DECK SURFACES ARE DRY AND FREE OF RIDGES, WARPS OR VOIDS. FOLLOW SHINGLE MANUFACTURER'S RECOMMENDATIONS FOR ACCEPTABLE PREPARATION OF ROOF DECK MATERIAL. BROOM CLEAN DECK SURFACES UNDER EAVE PROTECTION AND UNDERLAYMENT PRIOR TO THEIR APPLICATION.

EAVE ICE DAM PROTECTION:
PLACE EAVE EDGE AND GABLE METAL EDGE FLASHING TIGHT WITH FASCIA BOARDS. WEATHER-LAP JOINTS 2 INCHES (50MM). SECURE FLANGE WITH NAILS SPACED 8 INCHES (200 MM) ON CENTER.
APPLY CERTAINTEED "WINTERGUARD" WATERPROOFING SHINGLE UNDERLAYMENT AS EAVE PROTECTION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. EXTEND EAVE PROTECTION MEMBRANE MINIMUM 24 INCHES (640 MM) UP SLOPE BEYOND INTERIOR FACE OF EXTERIOR WALL OR AS INDICATED WITH-IN CONSTRUCTION DOCUMENTS.

PROTECTIVE UNDERLAYMENT- ROOF SLOPES BETWEEN 2:12 AND 4:12: APPLY ONE LAYER OF "WINTERGUARD" OVER ALL AREAS NOT PROTECTED BY WINTERGUARD AT EAVES, WITH END AND EDGES WEATHER LAPPED MINIMUM OF 19 INCHES (480 MM) STAGGER END LAPS EACH CONSECUTIVE LAYER. NAIL IN PLACE. ROOF SLOPES BETWEEN 2:12 AND 4:12: APPLY TWO LAYERS OF ROOFER'S SELECT OR D4869 UNDERLAYMENT OVER AREAS NOT PROTECTED MY WINTERGUARD AT EAVES, WITH ENDS AND EDGES WEATHER-LAPPED 19 INCHES (480 MM) .STAGGER END LAPS EACH CONSECUTIVE LAYER. NAIL IN PLACE. ROOF SLOPES BETWEEN 2:12 AND 4:12 – USE OF DIAMOND DECK SYNTHETIC ROOFING UNDERLAYMENT. FOLLOW MANUFACTURER'S PRINTED INSTRUCTIONS FOR LOW SLOPE APPLICATION OF THIS PRODUCT. DO NOT USE STAPLES ON THIS PRODUCT.
ROOF SLOPES 4:12 OR GREATER: INSTALL ONE LAYER OF ASPHALT FELT SHINGLE UNDERLAYMENT PERPENDICULAR TO SLOPE OF ROOF AND LAP MINIMUM 4 INCHES (100 MM) OVER EAVE PROTECTION. WEATHER-LAP AND SEAL WATERTIGHT WITH ASPHALT ROOFING CEMENT ITEMS PROJECTING THROUGH OR MOUNTED ON ROOF. AVOID CONTACT OR SOLVENT-BASED CEMENTS WITH WINTERGUARD AND DIAMOND DECK
INSTALLATION – VALLEY PROTECTION
FOR "CLOSED-CUT," "WOVEN," AND "OPEN" VALLEYS, FIRST PLACE ONE PLY OF WINTERGUARD, MINIMUM 36 INCHES (910 MM) WIDE, CENTERED OVER VALLEYS. LAP JOINTS MINIMUM OF 6 INCHES (152 MM) FOLLOW INSTRUCTIONS OF SHINGLE AND WATERPROOFING MEMBRANE MANUFACTURER.
INSTALLATON – METAL FLASHING
WEATHER-LAP JOINTS MINIMUM 2 INCHES (50 MM). SEAL WORK PROJECTING THROUGH OR MOUNTED ON ROOF WITH ASPHALT ROOFING CEMENT AND MAKE WEATHER TIGHT.
INSTALLATION – ASPHALT SHINGLES
INSTALL SHINGLES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR PRODUCT TYPE AND APPLICATION SPECIFIED.

07 31 75 METAL FASCIA AND SOFFIT (MATCH EXISTING):
PROVIDE AND INSTALL ROLLEX ALUMINUM RIBBED FASCIA AND SOFFIT PANELS (ALUMINUM FASCIA STEPPED, ALUMINUM VENTED SOFFIT @ EAVES AND ALUMINUM SOLID SOFFITS @ GABLE ENDS) AS SHOWN ON DRAWINGS. SOFFIT AND FASCIA PANELS SHALL BE MADE OF 3105 ALUMINUM ALLOY AND H-18 HARDNESS. MINIMUM TENSILE STRENGTH SHALL BE 28,000 PSI, MINIMUM YIELD STRENGTH SHALL BE 24,000 PSI. THE FASCIA THICKNESS SHALL BE 0.024". THE SOFFIT THICKNESS SHALL BE 0.019". FASCIA AND SOFFIT PANELS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

SOFFIT PANELS WILL BE VENTILATED AND NON-VENTILATED. VENTED PANELS WILL BE LANCED .0600 IN DEPTH CREATING A SERIES OF .3120 RADIUS OPENINGS ON 1/2" STAGGERED CENTERS, CREATING A UNIFORM PATTERN. THE FREE AREA SHALL BE 9.72 SQ. IN. PER LINEAL FOOT, FOR A 12" PANEL, 12.96 SQ. IN. PER LINEAL FOOT FOR A 16" PANEL AND 19.44 SQ. IN. PER LINEAL FOOT FOR A 24" PANEL.

USE MANUFACTURER'S STANDARD ACCESSORIES UNLESS NOTED OTHERWISE LISTED ON DRAWINGS.

07 31 80 DRIP EDGES:
PREFINISHED ALUMINUM, 0.019 INCH GAUGE, 2-3/4 INCH x 1-3/4 INCH, AS RECOMMENDED BY SHINGLE MANUFACTURER, COLOR AS SELECTED BY OWNER/ARCHITECT. INSTALL IN ACCORDANCE W/ MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS.

07 40 00 METAL SIDING (MATCH EXISTING):
GENERAL:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTION FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.

PROVIDE AND INSTALL METAL SIDING AND ACCESSORIES NECESSARY/ REQUIRED INSTALLATION MATERIALS FOR A COMPLETE INSTALLATION PER THE MANUFACTURERS SPECIFICATIONS. REFER TO MANUFACTURERS REFERENCE STANDARDS, ADMINISTRATIVE REQUIREMENTS, SUBMITTALS, QUALITY ASSURANCE, DELIVERY, STORAGE, HANDLING AND INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION/ REQUIREMENTS. WARRANTY PERIOD SHALL BE TWENTY (20) YEARS FROM THE DATE OF SUBSTANTIAL COMPLETION.

PRODUCTS: METAL SIDING BASED ON ATAS INTERNATIONAL, INC., ALLENTOWN, PA, 1-610-395-8445. GRAND V PANELS, 0.0.32" ALUMINUM, 1/2" x 32" WIDE COVERAGE, METAL SIDING PANEL, OR OWNER APPROVED EQUAL. ROOF PANELS SHALL BE PROVIDED WITH COLOR MATCHED FASTENERS. PROVIDE WITH MATCHING TRIM AND FLAT STOCK. METAL ROOFING TO BE INSTALLED OVER WOOD ROOF SHEATHING AS RECOMMENDED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL RECOMMENDED MATERIALS PER THE MANUFACTURER'S STANDARD INSTALLATION DETAILS.

TECHNICAL DATA: METAL SIDING SHALL MEET THE FOLLOWING:
DRY FILM THICKNESS ASTM D 1005, ASTM D 1400, ASTM D 4138 OR ASTM D 5796. SPECULAR GLOSS: ASTM D 523.
PENCIL HARDNESS: ASTM D 3363.
T-BEND FLEXIBILITY: ASTM D 4145.
MANDREL BEND FLEXIBILITY: ASTM D 522.
IMPACT RESISTANCE: ASTM D 2794.
ADHESION: ASTM D 3359.

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:	
S. Kleinsorge	
DRAWN BY:	
K. Taylor	
DATE ISSUED:	
November 21, 2025	Permits
SHEET NUMBER:	
A5.2	
PROJECT NUMBER:	
25141	

WATER IMMERSION RESISTANCE: ASTM D 870.
ABRASION RESISTANCE: ASTM D 968.
ACID RESISTANCE: ASTM D 1308.
ACID RAIN RESISTANCE (KESTERNICH): ASTM G 87 OR DIN 50018.
SALT SPRAY: ASTM B 117.
CYCLIC SALT SPRAY: ASTM D 5894 AND ASTM D 5487.
HUMIDITY RESISTANCE: ASTM D 2247.
ACCELERATED WEATHERING: ASTM D 822 AND ASTM G 155, ASTM G 151 OR ASTM G 153.
COLOR RETENTION, FLORIDA EXPOSURE: ASTM D 2244.
CHALKING RESISTANCE: ASTM D 4214.
CLEVELAND CONDENSING CABINET: ASTM D 4585.
CURE TEST, MEK RESISTANCE: ASTM D 5402.
ALKALI RESISTANCE, SODIUM HYDROXIDE: ASTM D 1308, PROCEDURE 7.2.
FLAME SPREAD RATING: ASTM E 84.
ORGANIC COATINGS MEET REQUIREMENTS OF AAMA 2605 WHEN APPLIED TO ALUMINUM.

PANEL TESTING/ RATINGS: METAL ROOFING SHALL MEET THE FOLLOWING:
UPLIFT: UL 580.
AIR INFILTRATION: ASTM E283.
WATER PENETRATION: ASTM E331.
GALVANIZED STEEL: ASTM A 653 • 55% AL-ZN ALLOY COATED STEEL: ASTM A 792.
ALUMINUM: ASTM B 209.
COPPER: ASTM B 370.
COIL COATING: ASTM A 755.

INSTALLATION: INSTALLATION IS WITH DIRECT FASTENING METHODS. WHEN USED IN SIDING APPLICATIONS SPECIAL PRACTICES AND RESTRICTIONS APPLY. INSTALLATION MANUALS AND HANDS-ON TRAINING VIA SEMINARS ARE AVAILABLE THROUGH ATAS. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.

07 71 00 ROOF SPECIALTIES (AS APPLICABLE)
PROVIDE AND INSTALL ALL ROOF SPECIALTIES, SHEET METAL FLASHINGS AS INDICATED OR HERE-IN SPECIFIED TO INCLUDE MANUFACTURED REGLETS WITH COUNTER FLASHING, FORMED ROOF DRAINAGE SHEET METAL FABRICATIONS, FORMED LOW SLOPE ROOF SHEET METAL FABRICATIONS AND FORMED WALL SHEET METAL FABRICATIONS. PROVIDE PRODUCT DATA SHEET(S) FOR ALL FLASHINGS AND TRIM INCLUDING PLANS, ELEVATIONS, AND ATTACHMENT DETAILS, ETC.

QUALITY ASSURANCE: SHEET METAL FLASHINGS AND TRIMS SHALL WITHSTAND WIND LOADS, STRUCTURAL MOVEMENT, THERMALLY INDUCED MOVEMENT AND EXPOSURE TO WEATHER WITHOUT FAILURE DUE TO DEFECTIVE MANUFACTURING, FABRICATION, INSTALLATION OR OTHER CONSTRUCTION DEFECTS. PRODUCTS SHALL COMPLY WITH NRCA "THE ROOFING MANUAL" AND SMACNA "ARCHITECTURAL SHEET METAL MANUAL. COMPLY WITH SPRI ES-1 WIND DESIGN STANDARD FOR THE WIND SPEED INDICATED IN THE CONSTRUCTION DOCUMENTS. ALLOW FOR THERMAL MOVEMENT WITH 120 DEGREE AMBIENT TEMPERATURE CHANGE AND/ OR 180 DEGREE MATERIAL SURFACES.

SHEET METALS SHALL BE PROVIDED WITH REMOVEABLE PROTECTIVE COVERINGS PRIOR TO SHIPPING. ALUMINUM SHEETS SHALL COMPLY W/ ASTM B 209, ALLOYAS A STANDARD FOR REQUIRED MANUFACTURERS FINISH. FINISH WILL BE SELECTED BY ARCHITECT FROM MANUFACTURERS STANDARD COLORS, INCLUDING MILL FINISH.
PROVIDE SHEET METAL MANUFACTURER UNDERLAYMENT MATERIALS WHERE SHEET METAL FLASHING AND TRIMS ARE APPLIED DIRECTLY OVER METAL DECK, SOLID SHEATHING, DISSIMILAR MATERIALS OR CORROSIVE SUBSTRATES. UNDERLAYMENT PRODUCTS SHALL BE 30 MIL MINIMUM.

PROVIDE MATERIALS AND TYPES OF FASTENERS, SOLDER, PROTECTIVE COATINGS, SEALANTS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION AS RECOMMENDED BY THE MANUFACTURER. FASTENERS SHALL BE PROVIDED TO WITHSTAND DESIGN WIND LOADS FROM LISTED WIND SPEEDS AND AS RECOMMENDED BY THE MANUFACTURER. EXPOSED FASTENERS SHALL HAVE MATCHING COLORED HEADS OF SHEET METAL USING PLASTIC CAPS OR A FACTORY APPLIED COATING, PROVIDE WITH METAL BACKED EPDM or PVC SEALING WASHERS BENEATH HEADS OF EXPOSED FASTENERS. BLIND FASTENERS SHALL BE HIGH STRENGTH ALUMINUM OR STAINLESS STEEL RIVETS SUITABLE FOR METAL FASTENING. FASTENERS FOR ALUMINUM OR ZINC COATED STEEL SHEET SHALL BE SERIES 300 STAINLESS STEEL.

PROVIDE AND INSTALL SEALANTS, SEALER TAPE OR COATINGS AS FOLLOWS:

ELASTOMERIC SEALANT:
ASTM C 920 ELASTOMERIC POLYURETHANE or SILICONE POLYMER SEALANT OF TYPE AND GRADE AND USE CLASSIFICATIONREQUIRED TO SEAL JOINTS IN SHEET METAL FLASHINGS AND TRIM.

BUTYL SEALANT:
ASTM C 1311, SINGLE COMPONENT, SOLVENT RELEASE BUTYL RUBBER SEALANT POLYISOBUTYLENE PLASTICIZED.

EXPOXY SEAM SEALER:
(2) PART NONCORROSIVE, ALUMINUM SEAM SEALING CEMENTING COMPOUND.

SEALANT TAPE:
PRESSURE SENSITIVE, 100% SOLIDS, POLYISOBUTYLENE COMPOUND SEALANT TAPE.

BITUMINOUS COATING:
COLD APPLIED ASPHALT EMULSION, ASTM D 1187.

ASPHALT ROOF'ING CEMENT:
ASTM D 4586, ASBESTOS FREE AND OF CONSISTENCY REQUIRED FOR APPLICATION.

REGLETS SHALL BE ALUMINUM 0.024" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

ROOF DRAINAGE SHEET METAL FABRICATIONS, PARAPET SCUPPERS CONSTRUCTED TO DIMENSIONS REQUIRED, FABRICATE FROM ALUMINUM 0.032" THICK. FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

LOW SLOPE ROOF SHEET METAL FABRICATIONS, ROOF EDGE FLASHING, COPINGS, BASE FLASHING, COUNTER FLASHING, ROOF PENETRATION FLASHING AND ROOF DRAIN FLASHING SHALL BE AS FOLLOWS:

ROOF EDGE:
FABRICATE FROM ALUMINUM 0.050" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

COPINGS:
FABRICATE FROM ALUMINUM 0.050" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

BASE FLASHING
FABRICATE FROM ALUMINUM 0.040" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

COUNTER:
FABRICATE FROM ALUMINUM 0.032" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

ROOF PENETRATION:
FABRICATE FROM ALUMINUM ZINC ALLOY 0.028" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

ROOF DRAIN:
FABRICATE FROM STAINLESS STEEL 0.016" THICK.

WALL SHEET METAL FABRICATIONS, THROUGH WALL FLASHINGS, OPEN FLASHINGS IN FRAME CONSTRUCTION AND WALL EXPANSION JOINT COVERS SHALL BE AS FOLLOWS:

THRU WALL :
FABRICATE FROM STAINLESS STEEL 0.016" THICK.

FRAME CONST:
FABRICATE FROM ALUMINUM 0.032" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

COVERS:
FABRICATE FROM ALUMINUM 0.040" THICK, FINISH WILL BE AS SELECTED FROM MANUFACTURERS STANDARD COLORS INCLUDING MILL FININSH.

INSTALLATION, GENERAL: INSTALL ROOF SPECIALTIES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. ANCHOR ROOF SPECIALTIES SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. USE FASTENERS, SOLDER, PROTECTIVE COATINGS, SEPARATORS, UNDERLAYMENTS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED TO COMPLETE ROOF-SPECIALTY SYSTEMS.
INSTALL ROOF SPECIALTIES LEVEL, PLUMB, TRUE TO LINE AND ELEVATION; WITH LIMITED OIL-CANNING AND WITHOUT WARPING, JOGS IN ALIGNMENT, BUCKLING, OR TOOL MARKS.
PROVIDE UNIFORM, NEAT SEAMS WITH MINIMUM EXPOSURE OF SOLDER AND SEALANT.
INSTALL ROOF SPECIALTIES TO FIT SUBSTRATES AND TO RESULT IN WEATHERTIGHT PERFORMANCE. VERIFY SHAPES AND DIMENSIONS OF SURFACES TO BE COVERED BEFORE MANUFACTURE.
TORCH CUTTING OF ROOF SPECIALTIES IS NOT PERMITTED.
DO NOT USE GRAPHITE PENCILS TO MARK METAL SURFACES.

07 92 00 CAULKING AND JOINT SEALANTS:
PROVIDE CAULKING AND JOINT SEALANTS WHERE INDICATED ON THE DRAWINGS, OR AS SPECIFIED HEREIN AS REQUIRED TO ELIMINATE MOISTURE PENETRATION. APPLICATIONS OF CAULKING AND JOINT SEALANTS WILL BE REQUIRED, BUT NOT LIMITED TO, THE FOLLOWING:

LOCATIONS:
1. FLASHING REGLETS AND RETAINERS.
2. INTERIOR SOUND AND AIR SEALED JOINTS.
3. CONTROL JOINTS IN SLABS.
4. ISOLATION JOINTS BETWEEN STRUCTURE AND OTHER COMPONENTS.
5. JOINTS AT PENETRATIONS OF WALLS AND FLOORS, FROM PIPING, CONDUIT AND OTHER SERVICES AND EQUIPMENT.
6. JOINTS BETWEEN ITEMS OF EQUIPMENT AND OTHER CONSTRUCTION.
7. JOINTS BETWEEN DISSIMILAR MATERIALS.

WARRANTY(S): SPECIAL INSTALLER'S WARRANTY: INSTALLER AGREES TO REPAIR OR REPLACE JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.
WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO FURNISH JOINT SEALANTS TO REPAIR OR REPLACE THOSE JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.
WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

ALL INTERIOR CAULKING AND FILLING (EXCEPT FOR SOUND CONTROL & CONTROL JOINTS IN SLABS) SHALL BE DONE WITH AN ACRYLIC LATEX BASE CAULKING COMPOUND EQUAL TO DAP ACRYLIC LATEX CAULK OR TREMCO SMALL JOINT SEALANT. CAULKING TO BE NON-STAINING AND SHALL ACCEPT PAINT OR SCHEDULED FINISH. FILL JOINTS TO A DEPTH IN A RANGE OF 75% TO 125% OF JOINT WIDTH, BUT NEVER MORE THAN A 1/2" DEEP NOR LESS THAN 1/4" DEEP. CONTROL JOINTS IN SLABS SHALL BE FILLED WITH SONNEBORN 'EPOLITH-P' OR EQUAL.

INTERIOR CAULKING FOR ACOUSTICAL SOUND CONTROL SHALL BE TITEBOND GREENCHOICE SOUND SEALANT OR EQUAL. THE SEALANT SHALL BE AN ACRYLIC POLYMER THAT REMAINS SOFT AND FLEXIBLE. INSTALL AT THE JOINT BETEEN THE FLOOR AND THE FIRST LAYER OF DRYWALL.
EXTERIOR CAULKING SHALL BE TREMCO 'DYMERIC' OR A TWO PART POLYSULFIDE ELASTOMERIC TYPE 2 SEALANT. CLEAN AND PRIME ALL JOINTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FILL JOINTS TO A DEPTH IN A RANGE OF 75% TO 125% OF JOINT WIDTH, BUT NEVER MORE THAN A 1/2" DEEP NOR LESS THAN 1/4" DEEP.

AT EXTERIOR ALUM/ HOLLOW METAL FRAMES SILLS, CAULK WITH BUTYL RUBBER CAULKING EQUAL TO TREMCO BUTYL SEALANT OR PTI757 BUTYL SEALER CONFORMING TO FEDERAL SPECIFICATION TT-S-001657, TYPE 1.

SEALANTS SHALL BE ACRYLIC POLYMERIC RESIN BASED COMPOUND WITH A MINIMUM 90% SOLIDS CONTENT CONFORMING TO REQUIREMENTS OF FEDERAL SPECIFICATION TT-S 230A, TYPE II, EQUAL TO DAP ONE-PART ACRYLIC SEALANT OR TREMCO MONO-LASTO-MERIC.
SEALANTS AT ROOFS SHALL BE AS MANUFACTURED BY OR SPECIFICALLY APPROVED BY THE ROOFING MANUFACTURER. SEALANTS SHALL BE COMPLETELY COMPATIBLE WITH THE ROOF SYSTEM COMPONENTS.

PREPARATION:
SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:
REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.
CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION.
JOINT PRIMING: PRIME JOINT SUBSTRATES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE.
MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES.
INSTALLATION OF JOINT SEALANTS: GENERAL: COMPLY WITH ASTM C 1193 AND JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.
INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.
INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:
PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.
PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES. PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8A IN ASTM C 1193 UNLESS OTHERWISE INDICATED.

08 00 00 DOORS & WINDOWS

08 11 13 HOLLOW METAL DOORS AND FRAMES:
GENERAL SUMMARY: PROVIDE AND INSTALL DOORS, DOOR FRAMES AND BORROW LITE FRAMES. FRAMES ARE TO BE MANUFACTURED TO SIZES & TYPES SHOWN ON THE DOOR OR WINDOW SCHEDULE AND OR DRAWINGS.

MINIMUM THICKNESS: MINIMUM THICKNESS OF BASE METAL WITHOUT COATINGS ACCORDING TO NAAMM-HMMA 803 OR ANSI/SDI A250.8.

COORDINATE ANCHORAGE INSTALLATION FOR HOLLOW-METAL FRAMES. FURNISH SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLING ANCHORAGES, INCLUDING SLEEVES, CONCRETE INSERTS, ANCHOR BOLTS, AND ITEMS WITH INTEGRAL ANCHORS. DELIVER SUCH ITEMS TO PROJECT SITE IN TIME FOR INSTALLATION.
COORDINATE REQUIREMENTS FOR INSTALLATION OF DOOR HARDWARE, ELECTRIFIED DOOR HARDWARE, AND ACCESS CONTROL AND SECURITY SYSTEMS.

ACTION SUBMITTALS AND OR PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
SHOP DRAWINGS: INCLUDE THE FOLLOWING:
ELEVATIONS OF EACH DOOR TYPE.
DETAILS OF DOORS, INCLUDING VERTICAL- AND HORIZONTAL-EDGE DETAILS AND METAL THICKNESSES.
FRAME DETAILS FOR EACH FRAME TYPE, INCLUDING DIMENSIONED PROFILES AND METAL THICKNESSES.

PRODUCT SCHEDULE: FOR HOLLOW-METAL DOORS AND FRAMES, PREPARED BY OR UNDER THE SUPERVISION OF SUPPLIER, USING SAME REFERENCE NUMBERS FOR DETAILS AND OPENINGS AS THOSE ON DRAWINGS. COORDINATE WITH FINAL DOOR HARDWARE SCHEDULE.

DELIVER HOLLOW-METAL DOORS AND FRAMES PALLETIZED, PACKAGED, OR CRATED TO PROVIDE PROTECTION DURING TRANSIT AND PROJECT-SITE STORAGE. DO NOT USE NONVENTED PLASTIC. PROVIDE ADDITIONAL PROTECTION TO PREVENT DAMAGE TO FACTORY-FINISHED UNITS. DELIVER WELDED FRAMES WITH TWO REMOVABLE SPREADER BARS ACROSS BOTTOM OF FRAMES, TACK WELDED TO JAMBS AND MULLIONS. STORE HOLLOW-METAL DOORS AND FRAMES VERTICALLY UNDER COVER AT PROJECT SITE WITH HEAD UP. PLACE ON MINIMUM 4-INCH- (102-MM-) HIGH WOOD BLOCKING. PROVIDE MINIMUM 1/4-INCH (6-MM) SPACE BETWEEN EACH STACKED DOOR TO PERMIT AIR CIRCULATION.

PRODUCTS:
MANUFACTURERS
SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
CECO DOOR; ASSA ABLOY.
CURRIES COMPANY; ASSA ABLOY.
FLEMING DOOR PRODUCTS LTD.; ASSA ABLOY GROUP COMPANY.
STEELCRAFT; AN ALLEGION BRAND.
SOURCE LIMITATIONS: OBTAIN HOLLOW-METAL WORK FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

PERFORMANCE REQUIREMENTS
FIRE-RATED ASSEMBLIES: COMPLYING WITH NFPA 80 AND LISTED AND LABELED BY A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR FIRE-PROTECTION RATINGS AND TEMPERATURE-RISE LIMITS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C.
SMOKE- AND DRAFT-CONTROL ASSEMBLIES: PROVIDE ASSEMBLIES WITH GASKETS LISTED AND LABELED FOR SMOKE AND DRAFT CONTROL BY A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, BASED ON TESTING ACCORDING TO UL 1784 AND INSTALLED IN COMPLIANCE WITH NFPA 105.
TEMPERATURE-RISE LIMIT: AT VERTICAL EXIT ENCLOSURES AND EXIT PASSAGEWAYS, PROVIDE DOORS THAT HAVE A MAXIMUM TRANSMITTED TEMPERATURE END POINT OF NOT MORE THAN 450 DEG F (250 DEG C) ABOVE AMBIENT AFTER 30 MINUTES OF STANDARD FIRE-TEST EXPOSURE.
FIRE-RATED, BORROWED-LITE ASSEMBLIES: ASSEMBLIES COMPLYING WITH NFPA 80 AND LISTED AND LABELED BY A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE-PROTECTION RATINGS INDICATED, BASED ON TESTING ACCORDING TO NFPA 257 OR UL 9.

INTERIOR STANDARD STEEL DOORS AND FRAMES
CONSTRUCT HOLLOW-METAL DOORS AND FRAMES TO COMPLY WITH STANDARDS INDICATED FOR MATERIALS, FABRICATION, HARDWARE LOCATIONS, HARDWARE REINFORCEMENT, TOLERANCES, AND CLEARANCES, AND AS SPECIFIED.
HEAVY-DUTY DOORS AND FRAMES: ANSI/SDI A250.8, LEVEL 2; ANSI/SDI A250.4, LEVEL B.
TYPE: AS INDICATED IN THE DOOR AND FRAME SCHEDULE.
THICKNESS: 1-3/4 INCHES (44.5 MM).
FACE: UNCOATED STEEL SHEET, MINIMUM THICKNESS OF 0.042 INCH.
EDGE CONSTRUCTION: MODEL 1, FULL FLUSH.
CORE: MANUFACTURER'S STANDARD.
FIRE-RATED CORE: MANUFACTURER'S STANDARD VERTICAL STEEL STIFFENER CORE FOR FIRE-RATED AND TEMPERATURE-RISE-RATED DOORS.

FRAMES:
MATERIALS: UNCOATED STEEL SHEET, MIN. THICKNESS OF 0.053 INCH.
SIDELITE AND TRANSOM FRAMES: FABRICATED FROM SAME THICKNESS MATERIAL AS ADJACENT DOOR FRAME.
CONSTRUCTION: FACE WELDED.
EXPOSED FINISH: PRIME.
BORROWED LITES
FABRICATE OF UNCOATED STEEL SHEET, MINIMUM THICKNESS OF 0.053 INCH, FACE WELDED CONSTRUCTION, FABRICATE IN ONE PIECE EXCEPT WHERE HANDLING AND SHIPPING LIMITATIONS REQUIRE MULTIPLE SECTIONS. WHERE FRAMES ARE FABRICATED IN SECTIONS DUE TO SHIPPING OR HANDLING LIMITATIONS, PROVIDE ALIGNMENT PLATES OR ANGLES AT EACH JOINT, FABRICATED OF METAL OF SAME OR GREATER THICKNESS AS METAL AS FRAMES. PROVIDE COUNTERSUNK, FLAT- OR OVAL-HEAD EXPOSED SCREWS AND BOLTS FOR EXPOSED FASTENERS UNLESS OTHERWISE INDICATED.
FRAME ANCHORAGE
JAMB ANCHORS:
TYPE: ANCHORS OF MINIMUM SIZE AND TYPE REQUIRED BY APPLICABLE DOOR AND FRAME STANDARD, AND SUITABLE FOR PERFORMANCE LEVEL INDICATED.
QUANTITY: MIN. OF THREE (3) ANCHORS PER JAMB, WITH ONE ADDITIONAL ANCHOR FOR FRAMES WITH NO FLOOR ANCHOR. PROVIDE ONE (1) ADDITIONAL ANCHOR FOR EACH 24 INCHES OF FRAME HGT ABOVE 7 FT.
POSTINSTALLED EXPANSION ANCHOR: MINIMUM 3/8 INCH DIA. BOLTS W/ EXPANSION SHIELDS OR INSERTS, WITH MANF'S STD PIPE SPACER.
PART 2 -
FLOOR ANCHORS: PROVIDE FLOOR ANCHORS FOR EACH JAMB AND MULLION THAT EXTENDS TO FLOOR.
MATERIAL: ASTM A 879/A 879M, COMMERCIAL STEEL (CS), 04Z (12G) COATING DESIGNATION; MILL PHOSPHATIZED.
FOR ANCHORS BUILT INTO EXTERIOR WALLS, STEEL SHEET COMPLYING WITH ASTM A 1008/A 1008M OR ASTM A 1011/A 1011M; HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M, CLASS B.

MATERIALS:
COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, COMMERCIAL STEEL (CS), TYPE B; SUITABLE FOR EXPOSED APPLICATIONS.
HOT-ROLLED STEEL SHEET: ASTM A 1011/A 1011M, COMMERCIAL STEEL (CS), TYPE B; FREE OF SCALE, PITTING, OR SURFACE DEFECTS; PICKLED AND OILED.
INSERTS, BOLTS, AND FASTENERS: HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M.
POWER-ACTUATED FASTENERS IN CONCRETE: FASTENER SYSTEM OF TYPE SUITABLE FOR APPLICATION INDICATED, FABRICATED FROM CORROSION-RESISTANT MATERIALS, WITH CLIPS OR OTHER ACCESSORY DEVICES FOR ATTACHING HOLLOW- METAL FRAMES OF TYPE INDICATED.
MINERAL-FIBER INSULATION: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING); CONSISTING OF FIBERS MANUFACTURED FROM SLAG OR ROCK WOOL; WITH MAX. FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 25 AND 50, RESPECTIVELY; PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
GLAZING: COMPLY WITH REQUIREMENTS IN SECTION 08 8000 "GLAZING."
FABRICATION
DOOR ASTRAGALS: PROVIDE OVERLAPPING ASTRAGAL ON ONE LEAF OF PAIRS OF DOORS WHERE REQUIRED BY NFPA 80 FOR FIRE-PERFORMANCE RATING OR WHERE INDICATED. EXTEND MINIMUM 3/4 INCH (19 MM) BEYOND EDGE OF DOOR ON WHICH ASTRAGAL IS MOUNTED OR AS REQUIRED TO COMPLY WITH PUBLISHED LISTING OF QUALIFIED TESTING AGENCY.
HOLLOW-METAL FRAMES: FABRICATE IN ONE PIECE EXCEPT WHERE HANDLING AND SHIPPING LIMITATIONS REQUIRE MULTIPLE SECTIONS. WHERE FRAMES ARE FABRICATED IN SECTIONS, PROVIDE ALIGNMENT PLATES OR ANGLES AT EACH JOINT, FABRICATED OF METAL OF SAME OR GREATER THICKNESS AS FRAMES.
SIDELITE AND TRANSOM BAR FRAMES: PROVIDE CLOSED TUBULAR MEMBERS WITH NO VISIBLE FACE SEAMS OR JOINTS, FABRICATED FROM SAME MATERIAL AS DOOR FRAME. FASTEN MEMBERS AT CROSSINGS AND TO JAMBS BY WELDING.
PROVIDE COUNTERSUNK, FLAT- OR OVAL-HEAD EXPOSED SCREWS AND BOLTS FOR EXPOSED FASTENERS UNLESS OTHERWISE INDICATED.
DOOR SILENCERS: EXCEPT ON WEATHER-STRIPPED FRAMES, DRILL STOPS TO RECEIVE DOOR SILENCERS AS FOLLOWS. KEEP HOLES CLEAR DURING CONSTRUCTION.
SINGLE-DOOR FRAMES: DRILL STOP IN STRIKE JAMB TO RECEIVE THREE DOOR SILENCERS.
DOUBLE-DOOR FRAMES: DRILL STOP IN HEAD JAMB TO RECEIVE TWO DOOR SILENCERS.
HARDWARE PREPARATION: FACTORY PREPARE HOLLOW-METAL DOORS AND FRAMES TO RECEIVE TEMPLATED MORTISED HARDWARE, AND ELECTRICAL WIRING; INCLUDE CUTOUTS, REINFORCEMENT, MORTISING, DRILLING, AND TAPPING ACCORDING TO SDI A250.6, THE DOOR HARDWARE SCHEDULE, AND TEMPLATES.
REINFORCE DOORS AND FRAMES TO RECEIVE NONTEMPLATED, MORTISED, AND SURFACE-MOUNTED DOOR HARDWARE.
COMPLY WITH BHMA A156.115 FOR PREPARING HOLLOW-METAL DOORS AND FRAMES FOR HARDWARE.
GLAZED LITES: PROVIDE STOPS AND MOLDINGS AROUND GLAZED LITES WHERE INDICATED. FORM CORNERS OF STOPS AND MOLDINGS WITH BUTTED OR MITERED HAIRLINE JOINTS.
PROVIDE STOPS AND MOLDINGS FLUSH WITH FACE OF DOOR, AND WITH SQUARE STOPS UNLESS OTHERWISE INDICATED.
PROVIDE FIXED FRAME MOLDINGS ON OUTSIDE OF EXTERIOR AND ON SECURE SIDE OF INTERIOR DOORS AND FRAMES. PROVIDE LOOSE STOPS AND MOLDINGS ON INSIDE OF HOLLOW-METAL DOORS AND FRAMES.
COORDINATE RABBET WIDTH BETWEEN FIXED AND REMOVABLE STOPS WITH GLAZING AND INSTALLATION TYPES INDICATED.
PROVIDE STOPS FOR INSTALLATION WITH COUNTERSUNK FLAT- OR OVAL-HEAD MACHINE SCREWS SPACED UNIFORMLY NOT MORE THAN 9 INCHES (230 MM) O.C. AND NOT MORE THAN 2 INCHES (51 MM) O.C. FROM EACH CORNER.
STEEL FINISHES
PRIME FINISH: CLEAN, PRETREAT, AND APPLY MANUFACTURER'S STANDARD PRIMER.
SHOP PRIMER: MANUFACTURER'S STANDARD, FAST-CURING, LEAD- AND CHROMATE-FREE PRIMER COMPLYING WITH SDI A250.10; RECOMMENDED BY PRIMER MANUFACTURER FOR SUBSTRATE; COMPATIBLE WITH SUBSTRATE AND FIELD-APPLIED COATINGS DESPITE PROLONGED EXPOSURE.

REFER TO DOOR SCHEDULE FOR WHICH DOORS & FRAMES SHALL BE GALVANIZED, EXTERIOR DOORS & FRAMES.

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Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
A5.3

PROJECT NUMBER:
25141

EXECUTION: REMOVE WELDED-IN SHIPPING SPREADERS INSTALLED AT FACTORY. RESTORE EXPOSED FINISH BY GRINDING, FILLING, AND DRESSING, AS REQUIRED TO MAKE REPAIRED AREA SMOOTH, FLUSH, AND INVISIBLE ON EXPOSED FACES. TOUCH UP FACTORY-APPLIED FINISHES WHERE SPREADERS ARE REMOVED.
DRILL AND TAP DOORS AND FRAMES TO RECEIVE NONTEMPLATED, MORTISED, AND SURFACE-MOUNTED DOOR HARDWARE.

INSTALLATION
GENERAL: INSTALL HOLLOW-METAL DOORS AND FRAMES PLUMB, RIGID, PROPERLY ALIGNED, AND SECURELY FASTENED IN PLACE. COMPLY WITH APPROVED SHOP DRAWINGS AND WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
HOLLOW-METAL FRAMES: COMPLY WITH ANSI/SDI A250.11.
SET FRAMES ACCURATELY IN POSITION; PLUMBED, ALIGNED, AND BRACED SECURELY UNTIL PERMANENT ANCHORS ARE SET. AFTER WALL CONSTRUCTION IS COMPLETE, REMOVE TEMPORARY BRACES WITHOUT DAMAGE TO COMPLETED WORK.
WHERE FRAMES ARE FABRICATED IN SECTIONS, FIELD SPLICE AT APPROVED LOCATIONS BY WELDING FACE JOINT CONTINUOUSLY; GRIND, FILL, DRESS, AND MAKE SPLICE SMOOTH, FLUSH, AND INVISIBLE ON EXPOSED FACES. TOUCH-UP FINISHES.
INSTALL FRAMES WITH REMOVABLE STOPS LOCATED ON SECURE SIDE OF OPENING.
FIRE-RATED OPENINGS: INSTALL FRAMES ACCORDING TO NFPA 80.
FLOOR ANCHORS: SECURE WITH POSTINSTALLED EXPANSION ANCHORS.
FLOOR ANCHORS MAY BE SET WITH POWER-ACTUATED FASTENERS INSTEAD OF POSTINSTALLED EXPANSION ANCHORS IF SO INDICATED AND APPROVED ON SHOP DRAWINGS.

SOLIDLY PACK MINERAL-FIBER INSULATION INSIDE FRAMES.
MASONRY WALLS: COORDINATE INSTALLATION OF FRAMES TO ALLOW FOR SOLIDLY FILLING SPACE BETWEEN FRAMES AND MASONRY WITH GROUT OR MORTAR.
IN-PLACE CONCRETE OR MASONRY CONSTRUCTION: SECURE FRAMES IN PLACE WITH POSTINSTALLED EXPANSION ANCHORS. COUNTERSINK ANCHORS, AND FILL AND MAKE SMOOTH, FLUSH, AND INVISIBLE ON EXPOSED FACES.
IN-PLACE METAL OR WOOD-STUD PARTITIONS: SECURE FRAMES IN PLACE WITH POSTINSTALLED EXPANSION ANCHORS THROUGH FLOOR ANCHORS AT EACH JAMB. COUNTERSINK ANCHORS, AND FILL AND MAKE SMOOTH, FLUSH, AND INVISIBLE ON EXPOSED FACES.
INSTALLATION TOLERANCES: ADJUST HOLLOW-METAL FRAMES TO THE FOLLOWING TOLERANCES:
SQUARENESS: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT DOOR RABBET ON A LINE 90 DEGREES FROM JAMB PERPENDICULAR TO FRAME HEAD.
ALIGNMENT: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT JAMBS ON A HORIZONTAL LINE PARALLEL TO PLANE OF WALL.
TWIST: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT OPPOSITE FACE CORNERS OF JAMBS ON PARALLEL LINES, AND PERPENDICULAR TO PLANE OF WALL.
PLUMBNESS: PLUS OR MINUS 1/16 INCH (1.6 MM), MEASURED AT JAMBS AT FLOOR.
HOLLOW-METAL DOORS: FIT AND ADJUST HOLLOW-METAL DOORS ACCURATELY IN FRAMES, WITHIN CLEARANCES SPECIFIED BELOW.
NON-FIRE-RATED STEEL DOORS: COMPLY WITH ANSI/SDI A250.8.
FIRE-RATED DOORS: INSTALL DOORS WITH CLEARANCES ACCORDING TO NFPA 80.
SMOKE-CONTROL DOORS: INSTALL DOORS ACCORDING TO NFPA 105.
GLAZING: COMPLY WITH INSTALLATION REQUIREMENTS IN SECTION 08 80 00 "GLAZING" AND WITH HOLLOW-METAL MANUFACTURER'S WRITTEN INSTRUCTIONS.

CLEANING AND TOUCHUP
PRIME-COAT TOUCHUP: IMMEDIATELY AFTER ERECTION, SAND SMOOTH RUSTED OR DAMAGED AREAS OF PRIME COAT AND APPLY TOUCHUP OF COMPATIBLE AIR-DRYING, RUST-INHIBITIVE PRIMER.

08 16 50 PRE-HUNG MOLDED DOORS:
GENERAL: PROVIDE MOLDED or WOOD VENEER SOLID CORE DOOR IN PRE-HUNG PRIMED WOOD FRAME.

REFERENCE STANDARDS:
SEE MANUFACTURERS REFERENCE STANDARDS FOR A LISTING OF ALL TESTING AND REQUIREMENTS.

QUALITY ASSUANCE:
MOCKUP: PROVIDE SAMPLE UNIT OF REPRESENTATIVE PRODUCT SIZE AND USING MANUFACTURER APPROVED INSTALLATION METHODS TO DETERMINE ACCEPTABILITY OF DOOR INSTALLATION METHODS. APPROVED MOCKUP SHALL REPRESENT MINIMUM QUALITY REQUIRED FOR THE WORK. APPROVED MOCKUP SHALL REMAIN IN PLACE WITHIN THE WORK.

SUBMITTALS: PROVIDE DOCUMENTATION FOR SPECIFIED PERFORMANCE AS REQUIRED. MANUFACTURERS' INSTALLATION INSTRUCTIONS. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL HAVE SUCCESSFUL EXPERIENCE IN PRODUCING THE TYPE OF PRODUCT REQUIRED FOR PROJECT APPLICATIONS EQUIVALENT TO THE REQUIREMENTS FOR THIS PROJECT.

PRODUCTS: DOORS SHALL BE ARCHITECTURAL INTERIOR, CARRARA COVE & BEAD STICKING 2-PANEL SMOOTH DOOR, AS MANUFACTURED BY MMI DOOR, INC. OR APPROVED EQUAL. DOORS SHALL FACTORY FIT IN PRIMED WOOD FRAMES AND SHALL BE FACTORY MACHINED FOR FINISHED HARDWARE. ALL WORK SPECIFIED HEREIN SHALL BE CONSTRUCTED AND FABRICATED IN ACCORDANCE WITH THE BEST PRACTICES OF THIS TRADE AND SHALL BE FREE FROM DEFECTS IMPAIRING STRENGTH, DURABILITY OR APPEARANCE AND OF THE BEST COMMERCIAL QUALITY FOR PURPOSES SPECIFIED. THEY SHALL BE MADE TO WITHSTAND STRAINS AND STRESSES TO WHICH THEY ARE NORMALLY SUBJECTED, TRUE TO DETAIL, CLEAN, STRAIGHT, WITH SMOOTH FINISHED SURFACES. PROVIDE W/ US15 HINGES.

DOORS SHALL BE OF TYPES, SIZES AND THICKNESSES AS SHOWN, NOTED OR SPECIFIED HEREIN. DOORS SHALL BE PROTECTED AT ALL TIMES. WORK DAMAGED PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT SHALL BE REPLACED WITH NEW AT THE CONTRACTOR'S EXPENSE. DOORS SHALL BE PROPERLY HUNG IN FRAMES SO AS TO OPERATE AND LATCH SATISFACTORILY. PROVIDE 1/8" MAXIMUM CLEARANCE AT HEAD AND JAMBS.

DOORS SHALL BE CONSTRUCTED OF MANUFACTURERS STANDARDS FOR NON-RATED DOORS.

EXAMINATION/ PREPARATION: EXAMINE LOCATIONS TO RECEIVE DOORS. NOTIFY ARCHITECT OF CONDITIONS THAT WOULD ADVERSELY AFFECT INSTALLATION OR SUBSEQUENT USE. DO NOT BEGIN INSTALLATION UNTIL UNACCEPTABLE CONDITIONS ARE CORRECTED.

INSTALLATION: ENSURE FRAMES ARE SOLIDLY ANCHORED, ALLOWING NO DEFLECTION WHEN DOORS ARE INSTALLED. ENSURE FRAMES ARE PLUMB, LEVEL, SQUARE, AND WITHIN TOLERANCE. REPARATION ALLOW DOORS TO BECOME ACCLIMATED TO BUILDING TEMPERATURE AND RELATIVE HUMIDITY FOR A MINIMUM OF 24 HOURS BEFORE INSTALLATION. INSTALL DOORS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL DOORS AT LOCATIONS INDICATED ON THE DOOR SCHEDULE. INSTALL DOORS PLUMB, LEVEL, AND SQUARE. INSTALL DOOR HARDWARE.

PROTECTION: PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS PRIOR TO SUBSTANTIAL COMPLETION IN ACCORDANCE WITH MANUFACTURERS WRITTEN RECOMMENDATIONS. GUIDANCE FOR PROPER FINISHING, PAINTING.

08 31 00 ACCESS DOORS:
GENERAL: FURNISH AND INSTALL CEILING ACCESS DOORS (INSULATED ATTIC ACCESS TYPE), AS SHOWN ON DRAWINGS AND/ OR HEREIN SPECIFIED.

QUALITY ASSURANCE: PROVIDE SINGLE SOURCE SUPPLIER FOR CONSISTENT APPEARANCE THROUGHOUT THE BUILDING. PROVIDE MANUFACTURERS STANDARD WARRANTIES.

PRODUCTS: FLUSH ACCESS EQUIPMENT DOOR(S) SHALL BE MODEL DW SERIES AS MANUFACTURED BY ELMDOR. DOORS SHALL BE DW STANDARD SIZES AND AS INDICATED WITH-IN THE CONSTRUCTION DOCUMENTS. DOOR SHALL BE FABRICATED FROM 20 GAGE, W/ 2" FIRE RATED RIGID INSULATION IN COMPOSITE TYPE CONSTRUCTION. FRAME SHALL BE FABRICATED FROM 16 GAGE, BOTH DOOR & FRAME WITH GALVANNEALED STEEL WITH A WHITE PRIME COAT FINISH, SUITABLE FOR FINISH PAINTING. DOORS SHALL HAVE ROUNDED SAFETY CORNERS AND A CONCEALED PIVOTING ROD HINGE. FRAME SHALL BE ONE PIECE CONSTRUCTION WITH NO MITERS OR WELDS ON THE FACE. LATCH SHALL BE KEY OPERATED, CYLINDER LOCK.

FLUSH FIRE RATED ATTIC DOOR(S) SHALL BE MODEL FRC SERIES/ MODEL FRC22x36, NOMINAL AS MANUFACTURED BY ELMDOR. DOORS SHALL INSTALLED AS LOCATED SIZES AND AS INDICATED WITH-IN THE CONSTRUCTION DOCUMENTS. DOOR AND FRAME SHALL BE FABRICATED FROM 16 GAGE, GALVANNEALED STEEL WITH A WHITE PRIME COAT FINISH, SUITABLE FOR FINISH PAINTING. DOORS SHALL HAVE ROUNDED SAFETY CORNERS AND A CONCEALED PIVOTING ROD HINGE. FRAME SHALL BE ONE PIECE CONSTRUCTION WITH NO MITERS OR WELDS ON THE FACE. ACCESS DOOR SHALL HAVE AUTOMATIC CLOSER, BE SELF-LATCHING AND CONTAIN INTERIOR LATCH RELEASE. EXTERIOR LATCHING SHALL BE RECESSED AND UNIVERSAL SELF-LATCHING BOLT, OPERATED BY EITHER A KNURLED KNOB OR FLUSH KEY. UNDERWRITERS LABORATORIES CLASSIFICATION SHALL BE: CLASSIFIED ACCESS FRAME AND FIRE DOOR ASSEMBLY 1-1/2 HOURS, "B" LABEL. MEETS ANSI-UL 10B STANDARD.

INSTALLATION: EXAMINE SUBSTRATES FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING ACCESS DOORS AND FRAMES. ADJUST DOORS AND HARDWARE, AFTER INSTALLATION, FOR PROPER OPERATION.

08 50 00 VINYL WINDOWS:
GENERAL:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTION FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.

PROVIDE AND INSTALL VINYL WINDOWS, WINDOW ACCESSORIES AND ALL NECESSARY/ REQUIRED INSTALLATION MATERIALS FOR A COMPLETE INSTALLATION PER THE MANUFACTURERS SPECIFICATIONS. REFER TO MANUFACTURERS REFERENCE STANDARDS, ADMINISTRATIVE REQUIREMENTS, SUBMITTALS, QUALITY ASSURANCE, DELIVERY, STORAGE, HANDLING AND INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION/ REQUIREMENTS.

REFERENCE STANDARDS:
SEE MANUFACTURERS REFERENCE STANDARDS FOR A LISTING OF ALL TESTING AND REQUIREMENTS.

QUALITY ASSUANCE:
MANUFACTURER QUALIFICATIONS: MINIMUM 5 YEAR EXPERIENCE MANUFACTURING SIMILAR PRODUCTS. INSTALLER QUALIFICATIONS: 2 YEAR EXPERIENCE INSTALLING SIMILAR PRODUCTS.

MOCKUP: PROVIDE SAMPLE UNIT OF REPRESENTATIVE PRODUCT SIZE AND USING MANUFACTURER APPROVED INSTALLATION METHODS TO DETERMINE ACCEPTABILITY OF WINDOW AND INSTALLATION METHODS. APPROVED MOCKUP SHALL REPRESENT MINIMUM QUALITY REQUIRED FOR THE WORK. APPROVED MOCKUP SHALL REMAIN IN PLACE WITHIN THE WORK.

SUBMITTALS: PROVIDE DOCUMENTATION FOR SPECIFIED PERFORMANCE AS REQUIRED. MANUFACTURERS' INSTALLATION INSTRUCTIONS. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL HAVE SUCCESSFUL EXPERIENCE IN PRODUCING THE TYPE OF PRODUCT REQUIRED FOR PROJECT APPLICATIONS EQUIVALENT TO THE REQUIREMENTS FOR THIS PROJECT.

PRODUCT/ MANUFACTURER:
PLY GEM or AMERICAN CRAFTSMAN VINYL WINDOWS, CASEMENT (EXTERIOR WINDOWS) OR STATIONARY (INTERIOR @ CAT ROOM) PLY GEM 500 SERIES or AMERICAN CRAFTSMAN 70 SERIES OWNER APPROVED EQUAL. PROVIDE WINDOW ALL STANDARD FEATURES ALONG WITH OWNER SELECTED CUSTOM OPTIONS AND AS INDICATED WITH-IN CONSTRUCTION DRAWINGS.

PERFORMANCE REQUIREMENTS:
WINDOW PRODUCTS SHALL COMPLY WITH AAMA/ WDMA/ CSA 101/ I.S.2/ A440 CERTIFICATION, PERFORMANCE GRADE 50 AND CLASS R. PERFORMANCE CRITERIA SHALL BE SET AT AN ABSOLUTE MINIMUM OF THE AREA/ REGION AS RELATED TO THERMAL TRANSMITTANCE U-FACTOR = 0.45, SOLAR HEAT GAIN COEFFICIENT = 0.33, MINIMUM VALUES TO COMPLY WITH MICHIGAN ENERGY CODE, TABLE C402.4. SOUND TRANSMISSION AND WINDBORNE-DEBRIS-IMPACT RESISTANCE.

FRAMES AND SASHES:
FRAMES AND SASHES SHALL BE IMPACT RESISTANT, UV STABILIZED PVC COMPLYING WITH AAMA/WDMA/CSA 101/I.S.2/A440.

EXTERIOR FINISH:
MANUFACTURERS STANDARD HIGH PERFORMANCE FINISH (COLOR AS SELECTED BY OWNER).

GLASS:
SHALL BE INSULATING TYPE WITH ARGON GAS BLEND BETWEEN PANES WITH LOW-E COATING ON SECOND SURFACE. GLASS SHALL COMPLY WITH ASTM C1036, TYPE 1, CLASS 1, q3.

HARDWARE:
SHALL BE MANUFACTURERS STANDARD HARDWARE FABRICATED FROM DIE-CAST ZINC COMPLYING WITH AAMA 907, OR OTHER CORROSION RESISTANT MATERIAL COMPATIBLE WITH ADJACENT MATERIALS. HARDWARE SHALL SMOOTHLY OPERATE, CLOSE TIGHTLY AND SECURELY LOCK. HARDWARE SHALL BE APPROPRIATELY SIZED TO ACCOMMODATE SASH SIZE, DIMENSION AND WEIGHT (COLOR AS SELECTED BY OWNER).

SCREENS:
PROVIDE ALL OPERATING WINDOW UNITS WITH MANUFACTURERS RECOMMENDED SCREEN(S).

INSTALLATION:
INSTALLATION SHALL BE IN ACCORDANCE WITH REVIEWED PRODUCT DATA, FINAL SHOP DRAWINGS ALONG WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION RECOMMENDATIONS, AND AS INDICATED ON THE DRAWINGS. COMPLY WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS FOR INSTALLATION AND TOLERANCES.

08 71 00 FINISH HARDWARE:
GENERAL: FURNISH AND INSTALL FINISH HARDWARE FOR ALL SWINGING, BYPASS-SLIDING, ETC., DOORS. AS SHOWN ON DRAWINGS AND/ OR HEREIN SPECIFIED.

QUALITY ASSURANCE: INSTALLER QUALIFICATIONS: SUPPLIER OF PRODUCTS AND AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY PRODUCT MANUFACTURERS AND AN ARCHITECTURAL HARDWARE CONSULTANT WHO IS AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING.

ARCHITECTURAL HARDWARE CONSULTANT QUALIFICATIONS: A PERSON WHO IS EXPERIENCED IN PROVIDING CONSULTING SERVICES FOR DOOR HARDWARE INSTALLATIONS THAT ARE COMPARABLE IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT AND WHO IS CURRENTLY CERTIFIED BY DHI AS FOLLOWS:
FOR DOOR HARDWARE, AN ARCHITECTURAL HARDWARE CONSULTANT (AHC).
SOURCE LIMITATIONS: PROVIDE ELECTRIFIED DOOR HARDWARE FROM SAME MANUFACTURER AS MECHANICAL DOOR HARDWARE, UNLESS OTHERWISE INDICATED. MANUFACTURERS THAT PERFORM ELECTRICAL MODIFICATIONS AND THAT ARE LISTED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION ARE ACCEPTABLE.
FIRE-RATED DOOR ASSEMBLIES: WHERE FIRE-RATED DOOR ASSEMBLIES ARE INDICATED, PROVIDE DOOR HARDWARE RATED FOR USE IN ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A QUALIFIED TESTING AGENCY, FOR FIRE-PROTECTION RATINGS INDICATED, BASED ON TESTING AT POSITIVE PRESSURE ACCORDING TO NFPA 252 OR UL 10C, UNLESS OTHERWISE INDICATED.
ELECTRIFIED DOOR HARDWARE: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
MEANS OF EGRESS DOORS: LATCHES DO NOT REQUIRE MORE THAN 15 LBF TO RELEASE THE LATCH. LOCKS DO NOT REQUIRE USE OF A KEY, TOOL, OR SPECIAL KNOWLEDGE FOR OPERATION.
ACCESSIBILITY REQUIREMENTS: COMPLY WITH APPLICABLE PROVISIONS IN THE CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN, THE CURRENT ABA STANDARDS OF THE FEDERAL AGENCY HAVING JURISDICTION AND ICC ANSI A117.1 2017 FOR DOOR HARDWARE ON DOORS IN AN ACCESSIBLE ROUTE.
PROVIDE OPERATING DEVICES THAT DO NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST AND THAT OPERATE WITH A FORCE OF NOT MORE THAN 5 LBF.
COMPLY WITH THE FOLLOWING MAXIMUM OPENING-FORCE REQUIREMENTS:
INTERIOR, NON-FIRE-RATED HINGED DOORS: 5 LBF APPLIED PERPENDICULAR TO DOOR.
SLIDING OR FOLDING DOORS: 5 LBF APPLIED PARALLEL TO DOOR AT LATCH.
FIRE DOORS: MINIMUM OPENING FORCE ALLOWABLE BY AUTHORITIES HAVING JURISDICTION.
BEVEL RAISED THRESHOLDS WITH A SLOPE OF NOT MORE THAN 1:2. PROVIDE THRESHOLDS NOT MORE THAN 1/2 INCH HIGH.
CLOSERS: ADJUST DOOR AND GATE CLOSER SWEEP PERIODS SO THAT, FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM.
SPRING HINGES: ADJUST DOOR AND GATE SPRING HINGES SO THAT, FROM AN OPEN POSITION OF 70 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO THE CLOSED POSITION IS 1.5 SECONDS MINIMUM.

FIRE RATED DOORS SHALL BE EQUIPPED WITH CLOSERS AND FIRE RATED HARDWARE. EGRESS ONLY DOORS SHALL HAVE NO EXTERIOR HARDWARE. LEVERS SHALL BE USED ON ALL LOCK AND PASSAGE SETS. MOUNTING HEIGHTS SHALL CONFORM TO APPLICABLE BARRIER FREE REGULATIONS.

REFERENCE TO ARTICLES BY NAME OR CATALOG NUMBER SHALL BE INTREPRETED AS ESTABLISHING A STANDARD OF QUALITY AND NOT BE CONSTRUED AS LIMITING COMPETITION. ALTERNATE ARTICLES OF HARDWARE MAY BE USED, BUT ONLY AFTER BEING APPROVED BY THE OWNER OR

BUTTS, STRIKES, THUMB TURNS	PBB
LOCK/ PASSAGE SETS, DUMMY LEVERS	PDQ
DEAD BOLT, FLUSH BOLTS	PDQ
CLOSERS, CYLINDERS	PDQ
EXIT DEVICES, PANICS	PDQ
WEATHERSTRIP, SMOKE SEALS	REESE
THRESHOLDS, SWEEPS	REESE
PUSH / PULLS, KICKPLATES, STOPS	PDQ
POWER OPERATOR, ACTUATORS	SDC
SLIDING DOOR HARDWARE	KN CROWDER
OVERHEAD, WALL, FLOOR & HINGE PIN STOPS	PDQ

ALL FINISH HARDWARE OF A LIKE KIND SHALL BE SUPPLIED FROM ONE MANUFACTURER. HARDWARE FOR FIRE RATED OPENINGS SHALL COMPLY WITH STANDARDS OF AIA (NBFU) PAMPHLET NO. 80 AND NFPA STANDARD 80. THESE STANDARDS SHALL TAKE PRECEDENCE OVER OTHER REQMT'S. ALL SUCH HARDWARE SHALL BE TESTED AND LISTED BY UL AS MEETING THE REQUIREMENTS FOR THEIR SPECIFIED USE.

SUPPLIER SHALL PROVIDE TEMPLATES TO THE APPROPRIATE SUPPLIERS AND SUBCONTRACTORS IN SUFFICIENT TIME SO AS NOT TO HINDER THE PROGRESS OF CONSTRUCTION. FURNISH TO THE ARCHITECT FIVE (5) COPIES OF THE PROPOSED HARDWARE SCHEDULE FOR APPROVAL.

PRIOR TO APPROVAL OF THE FINAL HARDWARE SCHEDULE, THE SUPPLIER SHALL PROVIDE THE ARCHITECT WITH ONE SAMPLE OF EACH ITEM WHICH IS PROPOSED AS A SUBSTITUTION FOR ITEMS HEREIN SPECIFIED. THE ARCHITECT SHALL REVIEW SAMPLES FOR DESIGN, COLOR AND TEXTURES ONLY; HARDWARE SHALL COMPLY WITH REQUIREMENTS TO BE EQUAL TO ITEMS.
UNLESS OTHERWISE SHOWN OR SPECIFIED OR REQUIRED TO MEET GOVERNING REGULATIONS, HARDWARE SHALL BE MOUNTED AT HEIGHTS RECOMMENDED BY NBMA "RECOMMENDED LOCATIONS FOR BUILDER'S HARDWARE". ALL MOUNTING HEIGHTS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY GUIDELINES, ANSI A117.1 2017 and THE 2018/ 2021 INTERNATIONAL BUILDING CODE W/ PENNSYLVANIA AMENDMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

PRODUCTS:
MANUFACTURER'S AS LISTED WITH-IN THE HARDWARE SETS IN CONSTRUCTION DOCUMENTS.
HINGES – BHMA A 156.1.
SELF-CLOSING HINGES & PIVOTS – BHMA A 156.17.
CONTINUOUS HINGES - BHMA A 156.26., 0.120 INCH THICK.
LOCKS & LATCHES – BORED LOCK - BHMA A 156.2.
MORTISE LOCK - BHMA A 156.13.
MANUAL FLUSH BOLTS - BHMA A 156.16. MORTISE INTO THE DOOR.
AUTOMATIC FLUSH BOLTS - BHMA A 156.16. MORTISE INTO THE DOOR.
LOCK CYLINDERS – TUMBLER TYPE.
KEYING – FACTORY REGISTERED COMPLYING WITH GUIDELINES IN BHMA 156.28, APPENDIX A.
COORDINATORS - BHMA A 156.3.
ASTRAGALS - BHMA A 156.22.
CLOSERS - BHMA A 156.4.
CLOSER HOLD OPENS - BHMA A 156.15.
STOPS & HOLDERS - BHMA A 156.16.
OVERHEAD STOPS & HOLDERS - BHMA A 156.8.
THRESHOLDS - BHMA A 156.21.
SLIDING DOOR HARDWARE - BHMA A 156.14.

CHECK, CLEAN AND ADJUST EACH ITEM OF HARDWARE TO ENSURE PROPER OPERATION BEFORE LEAVING JOB. REPLACE ANY UNITS WHICH CANNOT BE LEFT IN A FREE AND SMOOTH ACTING CONDITION OR WHICH DO NOT MEET REQUIREMENTS OF THEIR INTENDED USE.

HARDWARE VENDOR SHALL VERIFY WITH DOOR VENDOR WHICH HARDWARE ITEMS SHALL BE SUPPLIED WITH DOORS. ITEMS SUPPLIED WITH DOORS SHALL BE EQUAL TO THESE LISTED IN THE HARDWARE SCHEDULE.

ALL PASSAGE AND LOCKSETS SHALL HAVE ADA ACCESSIBLE LEVER OPERATORS, NO EXCEPTIONS.

08 80 00 GLASS AND GLAZING:
GENERAL:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTION FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION. WARRANTY SHALL BE A MINIMUM OF TEN (10) YEARS FROM THE DATE OF SUBSTANTIAL COMPLETION.

PROVIDE AND INSTALL GLASS AND GLAZING, GLASS AND GLAZING ACCESSORIES AND ALL NECESSARY/ REQUIRED INSTALLATION MATERIALS FOR A COMPLETE INSTALLATION PER THE MANUFACTURERS SPECIFICATIONS. REFER TO MANUFACTURERS REFERENCE STANDARDS, ADMINISTRATIVE REQUIREMENTS, SUBMITTALS, QUALITY ASSURANCE, DELIVERY, STORAGE, HANDLING AND INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION/ REQUIREMENTS. REFER TO THE CONSTRUCTION DRAWINGS FOR DESIGN WIND PRESSURES AND SNOW LOADS.

PRODUCTS: POLISHED PLATE GLASS AND CLEAR WINDOW GLASS SHALL COMPLY WITH FEDERAL SPECIFICATION(S) DD-G-451, B QUALITY AND ASTM C1036, DOUBLE STRENGTH ALL PANES OVER SIX (6) SQUARE FEET AND GREATER THAN 24" WIDE. WINDOW GLASS SHALL COMPLY WITH WINDOW MANUFACTURER WHEN PROVIDED WITH THE WINDOW UNIT.

SAFETY GLASS AND TEMPERED GLASS SHALL COMPLY WITH FEDERAL SPECIFICATION(S) AND ANSI Z-97-1, B QUALITY AND ASTM C1048, +/- 1/4" THICKNESS. INSTALL AT ALL SIDELIGHTS, TRANSOMS AND OTHER LOCATIONS DEEMED HAZARDOUS BY THE BUILDING CODE AND AS INDICATED WITH-IN THE PLANS AND HERE-IN SPECIFIED.

INSULATING GLASS SHALL COMPLY WITH FEDERAL SPECIFICATION(S) DD-451C, ANSI Z-97-1, B QUALITY AND S.I.G.M.A. CBA RATINGAND ASTM E2190. GLASS SHALL BE 1" OVERALL THICKNESS / DIMENSION WITH BOTH LITES BEING 1/4" CLEAR FLOAT TYPE, GAS FILLED GLASS CAVITY, LOW EMISSIVITY (LOW-E COATING) ON #2 SURFACE. GLASS SHALL HAVE A DUAL SEAL WITH DESICCANT FILLED METAL SPACER (COLOR AS SELECTED BY OWNER) CONTINUOUS AT CORNERS WITH TEN (10) YEAR MINIMUM PERFORMANCE WARRANTY.

FIRE RATED GLASS SHALL EQUAL TO PYRAN OR FIRELITE, FIRE RATED GLASS CERAMIC, 3/16" THICK, STANDARD GRADE. GLASS SHALL BE FIRE RATED FOR 90 MINUTES WITH REQUIRED HOSE STREAM TEST.

GLAZING SEALANT SHALL BE A NEUTRAL-CURING SILICONE COMPLYING WITH ASTM C 920, TYPE S, GRADE NS, CLASS 50 NT. GLAZING TAPES SHALL EITHER BACK BEDDING MASTIC COMPLYING WITH AAMA 804.3, AAMA 806.3 AND AAMA 807.3. EXPANDED CELLULAR TYPE SHALL COMPLY WITH AAMA 810.1, TYPES 1 or 2 AS REQUIRED. SEALANT & TAPES SHALL BE APPROVED PRODUCTS BY GLASS MANUFACTURER.

GLAZING, GENERAL: COMPLY WITH COMBINED WRITTEN INSTRUCTIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED, INCLUDING THOSE IN REFERENCED GLAZING PUBLICATIONS. PROTECT GLASS EDGES FROM DAMAGE DURING HANDLING AND INSTALLATION. REMOVE DAMAGED GLASS FROM PROJECT SITE AND LEGALLY DISPOSE OF OFF PROJECT SITE. DAMAGED GLASS INCLUDES GLASS WITH EDGE DAMAGE OR OTHER IMPERFECTIONS THAT, WHEN INSTALLED, COULD WEAKEN GLASS, IMPAIR PERFORMANCE, OR IMPAIR APPEARANCE. APPLY PRIMERS TO JOINT SURFACES WHERE REQUIRED FOR ADHESION OF SEALANTS, AS DETERMINED BY PRECONSTRUCTION TESTING. INSTALL SETTING BLOCKS IN SILL RABBETS, SIZED AND LOCATED TO COMPLY WITH REFERENCED GLAZING PUBLICATIONS, UNLESS OTHERWISE REQUIRED BY GLASS MANUFACTURER. SET BLOCKS IN THIN COURSE OF COMPATIBLE SEALANT SUITABLE FOR HEEL BEAD. DO NOT EXCEED EDGE PRESSURES STIPULATED BY GLASS MANUFACTURERS FOR INSTALLING GLASS LITES. PROVIDE SPACERS FOR GLASS LITES WHERE LENGTH PLUS WIDTH IS LARGER THAN 50 INCHES. PROVIDE EDGE BLOCKING WHERE INDICATED OR NEEDED TO PREVENT GLASS LITES FROM MOVING SIDEWAYS IN GLAZING CHANNEL, AS RECOMMENDED IN WRITING BY
GLASS MANUFACTURER AND ACCORDING TO REQUIREMENTS IN REFERENCED GLAZING PUBLICATIONS.

CLEANING AND PROTECTION: IMMEDIATELY AFTER INSTALLATION REMOVE NONPERMANENT LABELS AND CLEAN SURFACES. PROTECT GLASS FROM CONTACT WITH CONTAMINATING SUBSTANCES RESULTING FROM CONSTRUCTION OPERATIONS. EXAMINE GLASS SURFACES ADJACENT TO OR BELOW EXTERIOR CONCRETE AND OTHER MASONRY SURFACES AT FREQUENT INTERVALS DURING CONSTRUCTION, BUT NOT LESS THAN ONCE A MONTH, FOR BUILDUP OF DIRT, SCUM, ALKALINE DEPOSITS, OR STAINS. IF, DESPITE SUCH PROTECTION, CONTAMINATING SUBSTANCES DO COME INTO CONTACT WITH GLASS, REMOVE SUBSTANCES IMMEDIATELY AS RECOMMENDED IN WRITING BY GLASS MANUFACTURER. REMOVE AND REPLACE GLASS THAT CANNOT BE CLEANED WITHOUT DAMAGE TO COATINGS. REMOVE AND REPLACE GLASS THAT IS DAMAGED DURING CONSTRUCTION PERIOD.

09 00 00 FINISHES

09 20 00 GYPSUM DRYWALL:
GENERAL:
THE WORK UNDER THIS SECTION INCLUDES THE FURNISHING AND INSTALLATION OF INTERIOR GYPSUM DRYWALL AND TILE BACKING PANELS (IF ANY) AS HEREIN SPECIFIED OR SHOWN ON DRAWINGS, COMPLETE WITH ALL ACCESSORIES AND SUSPENSION SYSTEMS REQUIRED FOR A COMPLETE INSTALLATION.

PERFORMANCE REQUIREMENTS: FIRE-RESISTANCE-RATED ASSEMBLIES: FOR FIRE-RESISTANCE-RATED ASSEMBLIES, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 119 BY AN INDEPENDENT TESTING AGENCY. STC-RATED

ARCHITECTURE
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THE DK DESIGN GROUP
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Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD: S. Kleinsorge
DRAWN BY: K. Taylor
DATE ISSUED: November 21, 2025 Permits
SHEET NUMBER: A5.4
PROJECT NUMBER: 25141

ASSEMBLIES: FOR STC-RATED ASSEMBLIES, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 90 AND CLASSIFIED ACCORDING TO ASTM E 413 BY AN INDEPENDENT TESTING AGENCY.

GYPSUM BOARD – GENERAL: PROVIDE MAXIMUM LENGTHS AND WIDTHS AVAILABLE THAT WILL MINIMIZE JOINTS IN EACH AREA AND THAT CORRESPOND WITH SUPPORT SYSTEM INDICATED. INTERIOR GYPSUM BOARD SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE THE FOLLOWING MANUFACTURERS:

- CERTAINTEED CORPORATION
- NATIONAL GYPSUM COMPANY
- UNITED STATES GYPSUM COMPANY

GYPSUM BOARD PRODUCTS:

- INTERIOR GYPSUM WALLBOARD SHALL COMPLY WITH ASTM C 1396/C 1396M, 5/8 INCH THICK, WITH TAPERED EDGES. HIGH IMPACT WHERE INDICATED.
- INTERIOR GYPSUM WALLBOARD TYPE 'X' SHALL COMPLY WITH ASTM C 1396/C 1396M, 5/8 INCH THICK, WITH TAPERED EDGES. HIGH IMPACT WHERE INDICATED.
- INTERIOR FLEXIBLE GYPSUM WALLBOARD SHALL COMPLY WITH ASTM C 1396/C 1396M, 1/4 INCH THICK, WITH TAPERED EDGES.
- INTERIOR CEILING GYPSUM WALLBOARD SHALL COMPLY WITH ASTM C 1396/C 1396M, 5/8 INCH THICK, WITH TAPERED EDGES.
- INTERIOR MOISTURE/MOLD-RESISTANT GYPSUM WALLBOARD SHALL COMPLY WITH ASTM C 1396/C 1396M, W/ MOISTURE/ MOLD RESISTANT CORE & PAPER SURFACES COMPLYING WITH ASTM D 3273 & ASTM D 3274, 5/8 INCH THICK, WITH TAPERED EDGES. HIGH IMPACT WHERE INDICATED.

TILE BACKING PRODUCTS:

- CEMENTITIOUS BACKER UNITS SHALL COMPLY WITH ANSI A118.9, ASTM C 1288 or ASTM C 1325 WITH MANUFACTURERS STANDARD EDGES. CEMENTITIOUS BACKER UNITS SHALL BE ½ INCH AND MOLD RESISTANT, COMPLYING WITH ASTM D 3273 & ASTM D 3274 THICK.

TRIM ACCESSORIES - INTERIOR TRIM SHALL COMPLY WITH ASTM C 1047. MATERIALS SHALL BE GALVANIZED OR ALUMINUM-COATED STEEL SHEET, ROLLED ZINC, PLASTIC, OR PAPER-FACED GALVANIZED-STEEL SHEET. SHAPES AS FOLLOWS:

- CORNERBEAD.
- BULLNOSE BEAD.
- LC-BEAD: J-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
- L-BEAD: L-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
- U-BEAD: J-SHAPED; EXPOSED SHORT FLANGE DOES NOT RECEIVE JOINT COMPOUND.
- EXPANSION (CONTROL) JOINT.

CURVED-EDGE CORNERBEAD: WITH NOTCHED OR FLEXIBLE FLANGES.

JOINT TREATMENT MATERIALS: SHALL COMPLY WITH ASTM C 475/C 475M.

- JOINT TAPE:
  - INTERIOR GYPSUM BOARD: PAPER.
  - EXTERIOR GYPSUM SOFFIT BOARD: PAPER.
  - GLASS-MAT GYPSUM SHEATHING BOARD: 10-BY-10 GLASS MESH.
  - TILE BACKING PANELS: AS RECOMMENDED BY PANEL MANUFACTURER.
- JOINT COMPOUND FOR INTERIOR GYPSUM BOARD: FOR EACH COAT, USE FORMULATION THAT IS COMPATIBLE WITH OTHER COMPOUNDS APPLIED ON PREVIOUS OR FOR SUCCESSIVE COATS.
  - PREFILLING: AT OPEN JOINTS, ROUNDED OR BEVELED PANEL EDGES, AND DAMAGED SURFACE AREAS, USE SETTING-TYPE TAPING COMPOUND.
  - EMBEDDING AND FIRST COAT: FOR EMBEDDING TAPE AND FIRST COAT ON JOINTS, FASTENERS, AND TRIM FLANGES, USE DRYING-TYPE, ALL-PURPOSE COMPOUND. USE SETTING-TYPE COMPOUND FOR INSTALLING PAPER-FACED METAL TRIM ACCESSORIES.
  - FILL COAT: FOR SECOND COAT, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
  - FINISH COAT: FOR THIRD COAT, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
  - SKIM COAT: FOR FINAL COAT OF LEVEL 5 FINISH, USE DRYING-TYPE, ALL-PURPOSE COMPOUND.
- JOINT COMPOUND FOR TILE BACKING PANELS:
  - GLASS-MAT, WATER-RESISTANT BACKING PANEL: AS RECOMMENDED BY BACKING PANEL MANUFACTURER.
  - CEMENTITIOUS BACKER UNITS: AS RECOMMENDED BY BACKER UNIT MANUFACTURER.

AUXILIARY MATERIALS:

GENERAL: COMPLY WITH REFERENCED INSTALLATION STANDARDS AND MANUFACTURERS WRITTEN INSTRUCTIONS. FASTENERS SHALL COMPLY WITH ASTM C 1002 UNLESS OTHERWISE INDICATED. IF STEEL SUBSTRATE MEMBERS ARE PRESENT USE SCREWS COMPLYING WITH ASTM C 954 FROM 0.033 TO 0.112 INCH THICK. WHERE CEMENTITIOUS BACKER UNITS ARE USED USE SCREWS OF TYPE AND SIZE AS RECOMMENDED BY THE PANEL MANUFACTURER. LAMINATING ADHESIVES OR JOINT COMPOUNDS SHALL BE AS RECOMMENDED BY GYPSUM PANEL MANUFACTURER.

INSTALLATION:

ALL GYPSUM DRYWALL AND RELATED SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER BOARDS OF MAXIMUM PRACTICAL LENGTH SHALL BE USED SO THAT A MINIMUM NUMBER OF END JOINTS OCCUR. BOARDS SHALL BE BROUGHT INTO CONTACT WITH EACH OTHER, BUT SHALL NOT BE FORCED INTO PLACE. END JOINTS SHALL BE STAGGERED. FASTEN WALLBOARD TO FRAMING MEMBER AS RECOMMENDED BY MANUFACTURER. VERIFY THAT THE STRUCTURE TO RECEIVE DRYWALL IS FREE OF DEFECTS WHICH WILL RESULT IN A POOR APPLICATION OR CAUSE LATENT DEFECTS IN WORKMANSHIP. COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE OF SUBSTRATE. COMPLY WITH ASTM C 840.

GYPSUM WALLBOARD SHALL BE HELD IN FIRM CONTACT WITH THE FRAMING MEMBER WHILE FASTENERS ARE BEING DRIVEN. FASTENING SHALL PROCEED FROM CENTER PORTION OF WALLBOARD TOWARD THE EDGES AND ENDS. FASTENERS SHALL BE SET WITH THE HEADS SLIGHTLY BELOW THE SURFACE OF THE WALLBOARD IN A DIMPLE FORMED BY THE HAMMER OR POWER DRIVER. CARE SHALL BE TAKEN TO AVOID BREAKING THE FACE PAPER OF THE WALLBOARD. IMPROPERLY DRIVEN FASTENERS SHALL BE REMOVED. INSTALL CORNER AND CASING BEADS AT ALL CORNERS AND EDGES.

GYPSUM PANEL SURFACES SHALL BE ISOLATED WITH CONTROL JOINTS WHERE SHOWN ON DRAWINGS AND/ OR IN THE FOLLOWING CONDITIONS:

- PARTITION, OR FURRING ABUTS A STRUCTURAL ELEMENT (EXCEPT FLOOR) OR DISSIMILAR WALL OR CEILING.
- CEILING ABUTS A STRUCTURAL ELEMENT, DISSIMILAR WALL OR PARTITION OR OTHER VERTICAL PENETRATION.
- CONSTRUCTION CHANGES WITHIN PLANE OF PARTITION OR CEILING.
- PARTITION OR FURRING RUN EXCEEDS 30 FT.
- CEILING DIMENSIONS EXCEED 50 FT. IN EITHER DIRECTION WITH PERIMETER RELIEF, 30 FT. WITHOUT RELIEF.
- EXPANSION OR CONTROL JOINTS OCCUR IN THE EXTERIOR WALL.

REINFORCE ALL PENETRATIONS OF GYPSUM BOARD DIAPHRAGM SUCH AS DOOR FRAMES, BORROWED LIGHTS, ACCESS DOORS, ETC. TO DISTRIBUTE CONCENTRATED STRESSES.
TO FINISH, TAPE ALL JOINTS AND APPLY JOINT AND TOPPING COMPOUNDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. LEVEL 5 FINISHING SHALL BE USED EXCEPT WHERE NOTED OTHERWISE HEREIN. CEILING AND WALL ANGLES AND INSIDE CORNER ANGLES SHALL BE REINFORCED WITH THE TAPE FOLDED TO CONFORM TO THE ANGLE AND EMBEDDED INTO JOINT COMPOUND. ALL INSIDE CORNERS SHALL BE COATED WITH AT LEAST THREE (3) COATS OF JOINT COMPOUND OR TOPPING COMPOUND. ALL NAIL OR SCREW HEAD DIMPLES SHALL RECEIVE THREE (3) COATS. THIS MAY BE APPLIED AS EACH COAT IS APPLIED TO THE JOINTS. FLANGES OF WALLBOARD CORNER BEAD SHALL BE CONCEALED BY AT LEAST THREE (3) COATS OF COMPOUND.

SAND AS REQUIRED AT ALL JOINTS AND FASTENER HEADS FOR A SMOOTH SURFACE READY FOR DECORATION AND FREE OF TOOL MARKS AND RIDGES. A THIN SKIM COAT OF JOINT COMPOUND, OR A MATERIAL MANUFACTURED ESPECIALLY FOR THIS PURPOSE, SHALL BE APPLIED TO THE ENTIRE SURFACE. PROVIDE CONTROL JOINTS AT STRUCTURAL ELEMENTS AND NO LESS THAN 30'-0" O.C. IN WALLS. GYPSUM BOARD IN CONCEALED LOCATIONS (ABOVE FINISHED CEILINGS, ETC.) SHALL BE **FINISHED TO LEVEL 2. MAINTAIN A UNIFORM ROOM TEMPERATURE BETWEEN 55 F AND 70 F IN COLD** WEATHER DURING APPLICATION AND UNTIL COMPLETELY DRY OR OCCUPIED. PROVIDE ADEQUATE VENTILATION. REMOVE ALL DEBRIS AND SPILLS AND LEAVE READY FOR FINISH.

A LEVEL 4 FINISH IS REQUIRED AT ALL EXPOSED AREAS.

09 60 00 GENERAL FLOORING PREP (GRADE SLABS):
GENERAL:
ALL PERTINENT REQUIREMENTS OF THE INSTRUCTION FOR BIDDERS, THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND FINISH SCHEDULE SHALL FORM PART OF THESE SPECIFICATIONS. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS, NECESSARY AND REQUIRED FOR THEIR COMPLETION.

PROVIDE AND INSTALL FLOOR PREP, FLOOR PREP ACCESSORIES AND ALL NECESSARY/ REQUIRED INSTALLATION MATERIALS FOR A COMPLETE INSTALLATION PER THE MANUFACTURERS SPECIFICATIONS. REFER TO MANUFACTURERS REFERENCE STANDARDS, ADMINISTRATIVE REQUIREMENTS, SUBMITTALS, QUALITY ASSURANCE, DELIVERY, STORAGE, HANDLING AND INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION/ REQUIREMENTS.

THE WORK UNDER THIS SECTION INCLUDES THE FURNISHING AND INSTALLATION OF FLOOR PREP AT NEW SLAB ON GRADE AREAS IN ROOMS SCHEDULED TO RECEIVE A NEW FLOOR FINISH, AS HEREIN SPECIFIED OR SHOWN ON DRAWINGS, COMPLETE W/ ALL ACCESSORIES AND PRODUCTS REQUIRED FOR COMPLETE INSTALLATION OF SCHEDULED FLOOR FINISH OVER NEW CONCRETE SLAB SUBSTRATE IF REQUIRED.

INSTALLATION SHALL BE IN ACCORDANCE WITH BOTH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

09 63 25 VINYL COVE BASE:
PROVIDE VINYL BASE AND ACCESSORIES AS HEREIN SPECIFIED, SCHEDULED AND/OR INDICATED ON DRAWINGS. MATERIALS SHALL BE AS MANUFACTURED BY ARMSTRONG OR JOHNSONITE.

VINYL BASE MUST CONFORM TO FEDERAL SPECIFICATION SS-W-40A. BASE SHALL BE 1/8" THICK, ARMSTRONG, JOHNSONITE OR EQUAL 4" HIGH, STANDARD COVE BASE. COLOR AS SELECTED BY ARCHITECT.

GENERAL CONTRACTOR SHALL MAINTAIN ALL ROOMS AT A MINIMUM OF 70 DEGREES F. FOR AT LEAST 48 HOURS BEFORE, DURING AND 48 HOURS AFTER APPLICATION OF BASE. ADHESIVES AND INSTALLATION PROCEDURE SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND/ OR RECOMMENDATIONS.

09 70 00 FIBERGLASS REINFORCED PANELS:
FRP BASED ON MARLITE STANDARD FRP PANELS. VERIFY PEBBLE OR SMOOTH FINISH WITH OWNER. SELECT FROM MANUFACTURER'S STANDARD COLORS. PANELS SHALL HAVE A CLASS 1/ A FIRE RATING. PROVIDE WITH ALL NECESSARY REQUIRED TRIMS AND CORNER GUARDS.

09 90 00 PAINTING:
MATERIALS:
MATERIALS USED SHALL BE FIRST LINE QUALITY PRODUCTS AS MANUFACTURED BY ONE OF THE FOLLOWING (NO SUBSTITUTIONS WITHOUT PRIOR, WRITTEN APPROVAL):

PRODUCTS: PAINT, GENERAL MPI STANDARDS: PRODUCTS SHALL COMPLY WITH MPI STANDARDS INDICATED AND SHALL BE LISTED IN ITS "MPI APPROVED PRODUCTS LISTS. MATERIAL COMPATIBILITY, MATERIALS FOR USE WITHIN EACH PAINT SYSTEM SHALL BE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE. FOR EACH COAT IN A PAINT SYSTEM, PRODUCTS SHALL BE RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURERS FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED. VOC CONTENT: PRODUCTS SHALL COMPLY WITH VOC LIMITS OF AUTHORITIES HAVING JURISDICTION OR AS FOLLOWS:

- FLAT PAINTS AND COATINGS: 50 G/L.
- NONFLAT PAINTS AND COATINGS: 150 G/L.
- DRY-FOG COATINGS: 400 G/L.
- PRIMERS, SEALERS, AND UNDERCOATERS: 200 G/L.
- ANTICORROSIVE AND ANTIRUST PAINTS APPLIED TO FERROUS METALS: 250 G/L.
- ZINC-RICH INDUSTRIAL MAINTENANCE PRIMERS: 340 G/L.
- PRETREATMENT WASH PRIMERS: 420 G/L.
- FLOOR COATINGS: 100 G/L.
- SHELLACS, CLEAR: 730 G/L.
- SHELLACS, PIGMENTED: 550 G/L.

EXECUTION/ EXAMINATION: EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK. MAXIMUM MOISTURE CONTENT OF SUBSTRATES: WHEN MEASURED WITH AN ELECTRONIC MOISTURE METER AS FOLLOWS: MASONRY (CLAY AND CMUS): 12 PERCENT.
GYPSUM BOARD: 12 PERCENT.
VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.
GYPSUM BOARD SUBSTRATES: VERIFY THAT FINISHING COMPOUND IS SANDED SMOOTH.
PROCEED WITH COATING APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
APPLICATION OF COATING INDICATES ACCEPTANCE OF SURFACES AND CONDITIONS.

PREPARATION: COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES AND PAINT SYSTEMS INDICATED.
REMOVE HARDWARE, COVERS, PLATES, AND SIMILAR ITEMS ALREADY IN PLACE THAT ARE REMOVABLE AND ARE NOT TO BE PAINTED. IF REMOVAL IS IMPRACTICAL OR IMPOSSIBLE BECAUSE OF SIZE OR WEIGHT OF ITEM, PROVIDE SURFACE-APPLIED PROTECTION BEFORE SURFACE PREPARATION AND PAINTING.
AFTER COMPLETING PAINTING OPERATIONS, USE WORKERS SKILLED IN THE TRADES INVOLVED TO REINSTALL ITEMS THAT WERE REMOVED. REMOVE SURFACE-APPLIED PROTECTION IF ANY.
CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DUST, DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS OR APPLY TIE COAT AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED. MASONRY SUBSTRATES: REMOVE EFFLORESCENCE AND CHALK. DO NOT PAINT SURFACES IF MOISTURE CONTENT OR ALKALINITY OF SURFACES OR MORTAR JOINTS EXCEEDS THAT PERMITTED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
STEEL SUBSTRATES: REMOVE RUST, LOOSE MILL SCALE, AND SHOP PRIMER, IF ANY. CLEAN USING METHODS RECOMMENDED IN WRITING BY PAINT MANUFACTURER.
SHOP-PRIMED STEEL SUBSTRATES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND AREAS WHERE SHOP PAINT IS ABRADED. PAINT EXPOSED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PRIMING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PRIMED SURFACES.
GALVANIZED-METAL SUBSTRATES: REMOVE GREASE AND OIL RESIDUE FROM GALVANIZED SHEET METAL BY MECHANICAL METHODS TO PRODUCE CLEAN, LIGHTLY ETCHED SURFACES THAT PROMOTE ADHESION OF SUBSEQUENTLY APPLIED PAINTS.

APPLICATION: PAINT EXPOSED SURFACES, EXCEPT WHERE THESE SPECIFICATIONS INDICATE THAT THE SURFACE OR MATERIAL IS NOT TO BE PAINTED OR IS TO REMAIN NATURAL. IF AN ITEM OR A SURFACE IS NOT SPECIFICALLY MENTIONED, PAINT THE ITEM OR SURFACE THE SAME AS SIMILAR ADJACENT MATERIALS OR SURFACES. IF A COLOR OF FINISH IS NOT INDICATED, ARCHITECT WILL SELECT FROM STANDARD COLORS AND FINISHES AVAILABLE. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND TO RECOMMENDATIONS IN "MPI MANUAL."
USE APPLICATORS AND TECHNIQUES SUITED FOR PAINT AND SUBSTRATE INDICATED.
PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES. BEFORE FINAL INSTALLATION, PAINT SURFACES BEHIND PERMANENTLY FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY.
PAINT FRONT AND BACKSIDES OF ACCESS PANELS, REMOVABLE OR HINGED COVERS, AND SIMILAR HINGED ITEMS TO MATCH EXPOSED SURFACES.
DO NOT PAINT OVER LABELS OF INDEPENDENT TESTING AGENCIES OR EQUIPMENT NAME, IDENTIFICATION, PERFORMANCE RATING, OR NOMENCLATURE PLATES.
PRIMERS SPECIFIED IN PAINTING SCHEDULES MAY BE OMITTED ON ITEMS THAT ARE FACTORY PRIMED OR FACTORY FINISHED IF ACCEPTABLE TO TOPCOAT MANUFACTURERS.
IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS. PAINTING FIRE SUPPRESSION, PLUMBING, HVAC, ELECTRICAL, COMMUNICATION, AND ELECTRONIC SAFETY AND SECURITY WORK:
PAINT THE FOLLOWING WORK WHERE EXPOSED IN EQUIPMENT ROOMS: TANKS THAT DO NOT HAVE FACTORY-APPLIED FINAL FINISHES.
DUCT, EQUIPMENT, AND PIPE INSULATION HAVING COTTON OR CANVAS INSULATION COVERING OR OTHER PAINTABLE JACKET MATERIAL.
PAINT THE FOLLOWING WORK WHERE EXPOSED IN OCCUPIED SPACES:
EQUIPMENT, INCLUDING PANELBOARDS.
UNINSULATED METAL PIPING.
UNINSULATED PLASTIC PIPING.
PIPE HANGERS AND SUPPORTS.
METAL CONDUIT.
PLASTIC CONDUIT.
DUCT, EQUIPMENT, AND PIPE INSULATION HAVING COTTON OR CANVAS INSULATION COVERING OR OTHER PAINTABLE JACKET MATERIAL.
OTHER ITEMS AS DIRECTED BY ARCHITECT, OWNER OR GENERAL CONTRACTOR.
PAINT PORTIONS OF INTERNAL SURFACES OF METAL DUCTS, WITHOUT LINER, BEHIND AIR INLETS AND OUTLETS THAT ARE VISIBLE FROM OCCUPIED SPACES FLAT BLACK.

FIELD QUALITY CONTROL: DRY FILM THICKNESS TESTING: OWNER MAY ENGAGE THE SERVICES OF A QUALIFIED TESTING AND INSPECTING AGENCY TO INSPECT AND TEST PAINT FOR DRY FILM THICKNESS.
CONTRACTOR SHALL TOUCH UP AND RESTORE PAINTED SURFACES DAMAGED BY TESTING.
IF TEST RESULTS SHOW THAT DRY FILM THICKNESS OF APPLIED PAINT DOES NOT COMPLY WITH PAINT MANUFACTURER'S WRITTEN RECOMMENDATIONS, CONTRACTOR SHALL PAY FOR TESTING AND APPLY ADDITIONAL COATS AS NEEDED TO PROVIDE DRY FILM THICKNESS THAT COMPLIES WITH PAINT MANUFACTURER'S WRITTEN RECOMMENDATIONS.
CLEANING AND PROTECTION: AT END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM PROJECT SITE. AFTER COMPLETING PAINT APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED PAINTS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

SHERWIN-WILLIAMS COMPANY
SCHEDULE OF PAINTING:
EXTERIOR:

EXTERIOR METAL (UNGALVANIZED FERROUS)

FIRST COAT:	SW DTM PRIMER FINISH B66W1
SECOND COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES
THIRD COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES

EXTERIOR METAL (GALVANIZED FERROUS)

FIRST COAT:	SW DTM PRIMER FINISH B66W1
SECOND COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES
THIRD COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES

EXTERIOR PVC

FIRST COAT:	SW DTM PRIMER FINISH B66W1
SECOND COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES
THIRD COAT:	SW DTM ACRYLIC GLASS COATING, B66 SERIES

INTERIOR:
INTERIOR DRYWALL (EXTERIOR WALLS AND ATTIC CEILING LIDS)

FIRST COAT:	SW PROMAR INT. LATEX MOISTURE V.B. PRIMER
SECOND COAT:	SW PROMAR INT. LATEX MOISTRUE V.B. PRIMER
THIRD COAT:	SW PROMAR 200 LATEX EGGSHELL B20W200
FOURTH COAT:	SW PROMAR 200 LATEX EGGSHELL B20W200

INTERIOR DRYWALL (INTERIOR WALLS AND NON-ATTIC CEILINGS)

FIRST COAT:	SW PROMAR 200 WALL PRIMER, B28W200
SECOND COAT:	SW PROMAR 200 LATEX EGGSHELL B20W200
THIRD COAT:	SW PROMAR 200 LATEX EGGSHELL, B20W200

INTERIOR DRYWALL (EPOXY INTERIOR WALLS AND NON-ATTIC CEILINGS)

FIRST COAT:	SW PROMAR 200 ZERO VOC LATEX PRIMER
SECOND COAT:	SW PROMART 200 ZERO VOC LATEX PRIMER
THIRD COAT:	SW EPOXY LATEX EGGSHELL B73-360
FOURTH COAT:	SW EPOXY LATEX EGGSHELL B73-360

INTERIOR METAL (GALVANIZED FERROUS, DOOR FRAMES)

FIRST COAT:	SW PRO-INDUS. PRE-CAT. WATER BASED EPOXY EGGSHELL
SECOND COAT:	SW PRO-INDUS. PRE-CAT. WATER BASED EPOXY EGGSHEL

INTERIOR METAL (UNGALVANIZED FERROUS, DOOR FRAMES)

FIRST COAT:	SW PRO-INDUS. PRE-CAT. WATER BASED EPOXY EGGSHELL
SECOND COAT:	SW PRO-INDUS. PRE-CAT. WATER BASED EPOXY EGGSHEL

INTERIOR METAL (GALVANIZED FERROUS, EXPOSED STEEL STRUCTURE)

FIRST COAT:	SW DTM ACRYLIC PRIMER B66W1
SECOND COAT:	SW DTM PRIMER FINISH B66 SERIES
THIRD COAT:	SW DTM PRIMER FINISH B66 SERIES

10 00 00 SPECIALTIES

10 10 00 SIGNAGE:
PROVIDE AND INSTALL SIGNS AS DESCRIBED BELOW. SIGNS SHALL BE BY ASI SIGN SYSTEMS, MADISON HEIGHTS, MICHIGAN OR APPROVED EQUAL. SIGNS SHALL CONFORM TO ADAAG AND MICHIGAN ACCESSIBILITY/ BARRIER FREE DESIGN RULES.

PROVIDE AND INSTALL RESTROOM SIGNS, ONE (1) FOR EACH NEW RESTROOM WITH THE FOLLOWING INFORMATION AS APPROPRIATE:

INTERNATIONAL SYMBOL OF BARRIER FREE COMPLIANCE
"RESTROOM", "MEN" OR "WOMEN" IN GRADE 2 BRAILLE
"RESTROOM", "MEN" OR "WOMEN" IN 1|" LETTERS, CAPITALS ONLY
THE INTERNATIONAL PICTOGRAM DEPICTING MAN AND WOMAN; 6" HIGH, WITH ROOM NAME.

LETTERS/GRAPHICS SHALL BE RAISED 1/32" FROM FACE. SIGNS SHALL BE ASI, SPF OPTION, 0.080" ACRYLIC FACEPLATE LAMINATED TO 0.080" ACRYLIC BACK. LETTERS, GRAPHICS AND BACKGROUND COLORS SHALL BE AS SELECTED BY ARCHITECT. ALL LETTERING AND GRAPHICS SHALL BE IN CONFORMANCE WITH MICHIGAN ACCESSIBILITY/ BARRIER FREE CODE AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.

TACTILE EXIT SIGNS SHALL BE PROVIDED AT EACH DOOR TO A GRADE LEVEL EXIT.

INSTALL/MOUNT SIGNAGE IN ACCORDANCE WITH MICHIGAN ACCESSIBILITY/ BARRIER FREE REGULATIONS AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND AS SHOWN ON DRAWINGS. SIGNS SHALL BE STRAIGHT AND PLUMB.

SIGNS SHALL BE MOUNTED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOORS OF TOILET ROOMS, A MINIMUM OF 60" AFF. IN THE EVENT OF A CONFLICT BETWEEN THE ADAAG AND THE CURRENT MICHIGAN ACCESSIBILITY/ BARRIER FREE RULES, MICHIGAN ACCESSIBILITY/ BARRIER FREE RULES SHALL TAKE PRECEDENT. WHERE SEVERAL OPTIONS ARE ACCEPTABLE, THE OWNER SHALL DETERMINE THE FINAL PLACEMENT.

EACH ROOM (ASSUME SIX (6) TOTAL, SHALL BE IDENTIFIED WITH A PLAQUE, 3" X 8" WITH TEXT APPLIED TO THE REVERSE SIDE (ASP PROCESS) AND BRAILLE LETTERS AND NUMBERS. ROOM NAME SHALL BE AS SHOWN ON DRAWINGS, NUMBER SYSTEM SHALL BE AS DETERMINED BY ARCHITECT FOLLOWING AWARD OF CONTRACT (NUMBERING SYSTEM ON DRAWINGS IS NOT THE FINAL NUMBERING SYSTEM). PLAQUES SHALL BE ASI, SPE OPTION, WITH ALL CAPITAL LETTERS NOST LESS THE 5/8" HIGH (LETTERS SHALL BE AS LARGE AS POSSIBLE), ROOM NUMBERS NOT LESS THAN 11/2" HIGH. SIGNS SHALL BE MOUNTED USING SILASTIC ADHESIVE AND VINYL TAPE (SA METHOD). BACKGROUND COLOR(S), LETTER STYLE, AND GRAPHICS SHALL BE AS SELECTED BY ARCHITECT.

INSTALL/MOUNT SIGNAGE IN ACCORDANCE WITH MICHIGAN ACCESSIBILITY/ BARRIER FREE REGULATIONS, ANSI A117.1-2017 AND 2010 AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND AS SHOWN ON DRAWINGS. SIGNS SHALL BE STRAIGHT AND PLUMB.

10 20 00 LOUVERS (WHERE APPLICABLE):
PROVIDE LOUVERS COMPLYING WITH PERFORMANCE REQUIREMENTS INDICATED, AS DEMONSTRATED BY TESTING MANUFACTURER'S STOCK UNITS 48 INCHES WIDE BY 48 INCHES HIGH. TEST UNITS ACCORDING TO AMCA 500. PERFORM THE TESTS ON UNPAINTED, CLEANED, DEGREASED UNITS. PERFORM WATER-PENETRATION TESTING ON LOUVERS WITHOUT SCREENS.
PERFORMANCE REQUIREMENTS:
PROVIDE EXTERIOR METAL LOUVERS CAPABLE OF WITHSTANDING THE EFFECTS OF LOADS AND STRESSES FROM WIND AND NORMAL THERMAL MOVEMENT WITHOUT EVIDENCING PERMANENT DEFORMATION OF LOUVER COMPONENTS INCLUDING BLADES, FRAMES, AND SUPPORTS: NOISE OR METAL FATIGUE CAUSED BY LOUVER BLADE RATTLE OR FLUTTER: OR PERMANENT DAMAGE TO FASTENERS AND ANCHORS. LOUVERS MUST WITHSTAND WIND LOADS OF UNIFORM PRESSURE (VELOCITY PRESSURE) OF 20 LBF/SQ.FT. (960 Pa), ACTING INWARD OR OUTWARD. PROVIDE LOUVERS THAT ALLOW FOR THERMAL MOVEMENTS RESULTING FROM THE FOLLOWING MAXIMUM CHANGE (RANGE) IN AMBIENT AND SURFACE.

TEMPERATURES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, AND OTHER DETRIMENTAL EFFECTS:

TEMPERATURE CHANGE (RANGE)120 DEG. F, AMBIENT
180 DEG. F (100 DEG. C), MATERIAL SURFACES.

PRODUCTS:
LOUVERS SHALL BE MANUFACTURED BY THE FOLLOWING MANUFACTURERS:

- AIROLITE CO.
- GREENHECK FAN CORPORATION
- HART & COOLEY, INC., RELIABLE METAL PRODUCTS DIVISION
- RUSKIN MANUFACTURING, TOMKINS INDUSTRIES, INC.

NOTE: LOUVERS SHALL BE BASED ON RUSKIN ELF 375 DX.

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Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
A5.5

PROJECT NUMBER:
25141

LOUVER CONSTRUCTION:
ALUMINUM EXTRUSIONS SHALL BE IN ACCORDANCE WITH ASTM B221 (ASTM B 221M), ALLOY 6063-T5 OR T-52. ALUMINUM SHEETS SHALL BE IN ACCORDANCE WITH ASTM B 209 (ASTM B 209M), ALLOW 3003 OR 5005 WITH TEMPER AS REQUIRED FOR FORMING, OR AS OTHERWISE RECOMMENDED BY METAL PRODUCER FOR REQUIRED FINISH. ALUMINUM CASTINGS SHALL BE IN ACCORDANCE WITH ASTM B 26 (ASTM B 26M), ALLOY 319. FASTENERS SHALL BE OF THE SAME BASIC METAL AND ALLOW AS FASTENED METAL OR 300 SERIES STAINLESS STEEL, UNLESS OTHERWISE INDICATED. DO NOT USE METALS THAT ARE INCOMPATIBLE WITH JOINED MATERIALS: USE TYPES AND SIZES TO SUIT UNIT INSTALLATION CONDITIONS. USE PHILIPS FLAT-HEAD SCREWS FOR EXPOSED FASTENERS, UNLESS NOTED OTHERWISE.

ANCHORS AND INSERTS ARE TO BE OF TYPE, SIZE AND MATERIAL REQUIRED FOR LOADING AND INSTALLATION INDICATED. USE NONFERROUS METAL OR HOT-DIPPED GALVANIZED ANCHORS AND INSERTS FOR EXTERIOR INSTALLATIONS AND ELSEWHERE AS NEEDED FOR CORROSION RESISTANCE. USE TOOTHED STEEL OR EXPANSION BOLT DEVICES FOR DRILLED-IN-PLACE ANCHORS. WHERE BITUMINOUS PAINT IS USED, IT SHALL BE COLD-APPLIED ASPHALT MASTIC COMPLYING WITH SSPC-PAINT 12 BUT CONTAINING NO ASBESTOS FIBERS, OR COLD-APPLIED ASPHALT EMULSION COMPLYING WITH ASTM D 1187.

FIXED, EXTRUDED-ALUMINUM LOUVERS:

PROVIDE FIXED BLADE LOUVERS WITH EXTRUDED-ALUMINUM FRAMES AND BLADES. FRAME AND SILL SHALL BE COMPATIBLE WITH ADJACENT WALL AND SPECIFICALLY MANUFACTURED TO FIT CONSTRUCTION OPENINGS WITH ACCURATE FIT AND ADEQUATE SUPPORT FOR WEATHERPROOF INSTALLATION, RUSKIN MODEL ELF 375 DX: BASIS OF DESIGN. HORIZONTAL, DRAINABLE-BLADE LOUVERS SHALL BE FABRICATED WITH CLOSE-FITTING, FIELD-MADE SPLICE JOINTS IN BLADES DESIGNED TO PERMIT EXPANSION AND CONTRACTION WITHOUT DEFORMING BLADES OR FRAMEWORK AND WITH MULLIONS RECESSED FROM FRONT EDGES OF BLADES SO BLADES HAVE CONTINUOUS APPEARANCE. LOUVERS SHALL BE AS FOLLOWS:

LOUVER DEPTH: 4" UNLESS NOTED OTHERWISE.
FRAME THICKNESS: 0.081 INCH.
BLADE THICKNESS: 0.081 INCH.
BLADE ANGLE & SPACING: 37.5 DEGREES AND 5-1/16" O.C.
PERFORMANCE REQ'TS: STANDARD AIRFLOW NOT LESS THAN 800 cfm WITH NOT MORE THAN 0.10 wg STATIC PRESSURE LOSS.
AMCA SEAL: MARK UNITS WITH AMCA CERTIFIED RATINGS SEAL.

LOUVER SCREENS:
PROVIDE EACH EXTERIOR LOUVER WITH LOUVER SCREENS COMPLYING WITH THE FOLLOWING REQUIREMENTS: LOCATE SCREENS ON INTERIOR FACE OF FIXED LOUVERS, SCREENS TO BE BIRD SCREENING UNLESS NOTED OTHERWISE. SECURE SCREENS TO LOUVER FRAMES WITH STAINLESS-STEEL MACHINE SCREWS, SPACED A MAXIMUM OF 6 INCHES FROM EACH CORNER AND 12 INCHES O.C. FABRICATE SCREEN FRAMES WITH MITERED CORNERS TO LOUVER SIZES INDICATED AND TO COMPLY WITH THE FOLLOWING REQUIREMENTS: SAME KIND AND FORM OF METAL AS INDICATED FOR LOUVER TO WHICH SCREENS ARE ATTACHED. REINFORCE EXTRUDED-ALUMINUM SCREEN FRAMES AT CORNERS WITH CLIPS. SCREENS TO HAVE SAME FINISH AS LOUVER FRAMES TO WHICH THE SCREENS ARE ATTACHED. SCREENS TO BE NON-REWIRABLE, U-SHAPED FRAMES FOR PERMANENTLY SECURING SCREEN MESH. LOUVER SCREENING FOR ALUMINUM LOUVERS TO BE BIRD SCREENING, ALUMINUM, \ INCH SQUARE MESH, 0.063 INCH WIRE.

BLANK-OFF PANELS:
FABRICATE BLANK-OFF PANELS FROM MATERIALS AND TO SIZES INDICATED AND COMPLY WITH THE FOLLOWING REQUIREMENTS: SAME AS FINISH APPLIED TO LOUVERS, BUT BLACK COLOR. ATTACH BLANK-OFF PANELS TO BACK OF LOUVER FRAMES WITH STAINLESS-STEEL SHEET-METAL SCREWS. FOR UNINSULATED, BLANK-OFF PANELS, THE METAL SHEET SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS: ALUMINUM SHEET FOR ALUMINUM LOUVERS TO BE 0.050 INCH THICK, UNLESS NOTED OTHERWISE.

FINISHES – GENERAL, MANUFACTURERS STANDARD(S).

10 52 00 FIRE PROTECTION SPECIALTIES:
GENERAL :
FURNISH AND INSTALL DRY TYPE A-B-C FIRE EXTINGUISHERS IN RECESSED CABINETS OR WALL MOUNTED BRACKETS WHERE SHOWN ON DRAWINGS AND AS NOTED BELOW. UNITS CARRY U.L. LABEL OF APPROVAL: UNITS SHALL BE CHARGED AND INSPECTED PRIOR TO SUBSTANTIAL COMPLETION OF PROJECT. EQUIPMENT AS MANUFACTURED BY J.L. INDUSTRIES, LARSEN'S MANUFACTURING COMPANY, OR ARCHITECT APPROVED EQUAL.

PRODUCTS:
FIRE EXTINGUISHER (RECEPTION AREA): EQUAL TO LARSEN'S MANUFACTURING COMPANY MP-5, U.L. RATING 2-A:10-A:B:C, MULTI-PURPOSE DRY CHEMICAL, 5 LB., CLASS ABC. ONE (1) TOTAL IN ADDITION.

FIRE EXTINGUISHER BRACKET: EQUAL TO LARSEN'S MANUFACTURING COMPANY MODEL #817 FOR MP 2-1/2 AND MODEL #16591 FOR MP-5 OR MANUFACTURERS STANDARD. PROVIDE AT LOCATION REQUIRED BY INSPECTOR (RECEPTION AREA).

INSTALLATION:
FIRE EXTINGUISHERS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH MICHIGAN BUILDING CODE, MICHIGAN/ LOCAL FIRE MARSHAL'S REGULATIONS AND NFPA 10, MOST RECENT EDITION. UNITS SHALL BE CHARGED AND INSPECTED PRIOR TO SUBSTANTIAL COMPLETION OF PROJECT. MOUNT TOP OF CABINETS APPROXIMATELY 5'-4" A.F.F. ANCHOR UNITS SECURELY: SET SQUARE AND RECESSED TIGHT TO WALL.

10 80 00 TOILET AND BATH ACCESSORIES (BUILDING 1 ONLY, UNLESS NOTED OTHERWISE)
MATERIALS USED SHALL BE FIRST LINE QUALITY AS MANUFACTURED BY BOBRICK WASHROOM EQUIPMENT, INC. OR APPROVED MANUFACTURER BY OWNER. UNLESS NOTED OTHERWISE, WHERE THE PRODUCT OF A CERTAIN MANUFACTURER IS HEREINAFTER SPECIFIED, A SIMILAR PRODUCT OF ANY OF THE MANUFACTURERS HEREIN BEFORE LISTED MAY BE USED, IF APPROVED, PROVIDED THE SAME FINISH, TEXTURE AND DURABILITY ARE OBTAINED.

TOILET PAPER HOLDERS:
TOILET PAPER HOLDERS SHALL BE BRADLEY 5241-50, SURFACE MOUNTED, TWO (2) ROLL, SATIN FINISH, 22 GAUGE STAINLESS STEEL. NO THEFT RESISTANT SPINDLES. NO CONTROLLED DELIVERY. PROVIDE AT EACH WATER CLOSET, ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

GRAB BARS:
GRAB BARS SHALL BE BRADLEY 8120 SERIES, STANDARD FINISH, 1 1/4" DIAMETER, ESCUTCHEONS TO SNAP OVER FLANGES. PROVIDE (1) SET AS LISTED BELOW, FOR EACH ACCESSIBLE/ BARRIER FREE WATER CLOSET. ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

8120 x 18"
8120 x 36"
8120 x 42"

SOAP DISPENSER:
BRADLEY 6A00 SURFACE MOUNTED PUSH BUTTON AND SPOUT UNIT WITH STAINLESS STEEL FINISH. PROVIDE (1) AT EACH LAVATORY LOCATION, ONE (1) @ ACCESSIBLE TOILET ROOM.

PAPER TOWEL DISPENSERS:
BRADLEY 2A10 SURFACE MOUNTED C-FOLD TOWEL DISPENSER. PROVIDE ONE (1) AT EACH LAVATORY / SINK LOCATION. ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

DRAIN PIPE INSULATION KITS:
BROCAR OR INSUL-GUARD, ADA COMPLIANT UNDERSINK PIPE INSULATION, SOFT, NON-YELLOWING, FLAME RETARDANT VINYL COVERING. BASED ON BROCAR KIT #C500R OR EQUAL. ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

COAT/ROBE HOOKS:
COAT/ROBE HOOKS SHALL BE BRADLEY WA-24, STAINLESS STEEL, OR PRE-APPROVED EQUAL. ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

MOP RACK AND SHELF:
SEE PLUMBING FIXTURE SCHEDULE OR MOP RACK AND SHELF SHALL BE BRADLEY 9984, SATIN FINISH STAINLESS STEEL WITH FOUR (4) MOP HOLDERS, THREE (3) HOOKS AND ROD FOR WET RAGS. PROVIDE AT MECHANICAL ROOM or JANITOR CLOSET @ MOP SINK, COORDINATE WITH PLUMBING DRAWINGS.

MIRRORS:
BRADLEY 780 MIRROR WITH STAINLESS STEEL FRAME. PROVIDE (1) AT EACH LAVATORY LOCATION OR SEE GLASS AND GLAZING SPECIFICATION SECTION. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION. ONE (1) @ EACH ACCESSIBLE TOILET ROOM.

MOUNT ALL TOILET ACCESSORIES IN ACCORDANCE WITH ANSI A117.1 - 2017 EDITION AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND AS SHOWN ON DRAWINGS. IN EVENT OF CONFLICT BETWEEN MOUNTING STANDARDS, ANSI SHALL BE FOLLOWED.

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Proposed 30' x 50' Addition to:
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154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
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MECHANICAL SPECIFICATIONS

SECTION	
23 00 00 BASIC MECHANICAL REQUIREMENTS	1. ALL WORK TO BE DONE AND MATERIALS FURNISHED COMPLYING WITH APPLICABLE LAWS AND REGULATIONS, INCLUDING THE 2021 MICHIGAN MECHANICAL CODE (M.M.C.), ASHRAE 90.1-2019 "ENERGY STANDARDS FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS", ASHRAE 62.1-2019 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY", 2021 MICHIGAN PLUMBING CODE (M.P.C.), CURRENTLY ENFORCED MICHIGAN BUILDING CODE (M.B.C.), AND LOCAL, STATE, AND FEDERAL FIRE SAFETY CODES (NFPA). 2. ALL MATERIALS USED SHALL BE NEW AND UNDAMAGED. 3. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION INDUSTRY STANDARDS AND WORKMANSHIP. 4. LABEL PIPING AND EQUIPMENT USING PROFESSIONAL MARKERS PER ASME A13.1-1996: 4.1. PROVIDE PROFESSIONAL PIPE STICKERS ON ALL NEW PIPING 1" AND GREATER IDENTIFYING TYPE AND DIRECTION OF FLOW. 4.2. PROVIDE PROFESSIONAL ENGRAVED PLASTIC EQUIPMENT NAMEPLATES FOR ALL HVAC EQUIPMENT IDENTIFYING EQUIPMENT TAG AND NUMBER. SEE PLANS FOR EQUIPMENT TAG NUMBERS (FOR EXAMPLE, B-1, P-1, AHU-1, ... ETC.) 5. FURNISH ALL ACCESS DOORS (RATED OR NON-RATED AS REQUIRED) WHERE VALVES OR EQUIPMENT ARE CONCEALED BEHIND A NON-ACCESSIBLE CEILING OR WALL. FURNISH ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION. 6. FURNISH STEEL SLEEVES WHERE PIPES PENETRATE RATED WALLS. PROVIDE FIRESTOPPING MATERIALS AND SYSTEM TO MAINTAIN THE REQUIRED RATING OF THE WALL PENETRATED. PROVIDE SHOP DRAWINGS SHOWING LISTING AND RATING OF FIRESTOPPING MATERIALS. 7. AT SUBSTANTIAL COMPLETION OF CONSTRUCTION, FURNISH AS-BUILT PLANS TO ARCH/ENGINEER FOR APPROVAL BEFORE THEY ARE TURNED OVER TO THE OWNER. 8. THE CONTRACTOR SHALL ARRANGE TO MEET AND INSTRUCT THE OWNER IN THE USE AND MAINTENANCE OF SYSTEMS AND EQUIPMENT. THIS INSTRUCTION SHALL BE FOR A MINIMUM OF (4) HOURS. AN ADDITIONAL (2) HOURS OF INSTRUCTION FOR THE OWNER WILL BE GIVEN IN THE OPERATION OF THE TEMPERATURE CONTROLS BY THE INSTALLER OF THE TEMPERATURE CONTROLS. 9. ALL MANUFACTURED EQUIPMENT, ACCESSORIES AND MATERIALS SHALL BE USED AS INTENDED BY THE MANUFACTURER, IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS. 10. THE CONTRACTOR SHALL PROVIDE, IN ADDITION TO ANY OTHER WARRANTIES SPECIFIED, A ONE (1) YEAR FULL LABOR AND MATERIAL WARRANTY ON ALL WORKMANSHIP, MATERIAL AND EQUIPMENT FURNISHED FOR THIS PROJECT. 11. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL OPENINGS AND REQUIRED LINTELS NEEDED FOR THE GENERAL CONTRACTOR FOR THE INSTALLATION OF MECHANICAL EQUIPMENT. 12. SAWCUTS, LINTELS, HEADERS, AND STRUCTURAL MODIFICATIONS TO THE BUILDING STRUCTURE NEEDED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT SHALL BE APPROVED BY THE GENERAL CONTRACTOR, BEFORE INSTALLATION. 13. IN GENERAL, OPENINGS AND REQUIRED LINTELS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILS AND TEMPLATES OF ALL OPENINGS NECESSARY FOR MECHANICAL EQUIPMENT INSTALLATION INCLUDING: HOUSING, ACCESS DOORS, INSPECTION DOORS, AND PASSAGEWAYS FOR MECHANICAL EQUIPMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SEALING CRACKS AND FINISHING ROUGH EDGES LEFT FOLLOWING MECHANICAL INSTALLATION. 14. THE USE OF THE MECHANICAL EQUIPMENT FOR HEATING, COOLING, OR DRYING DURING CONSTRUCTION IS PROHIBITED, UNLESS APPROVED BY WRITTEN DOCUMENTATION BY THE OWNER. 15. APPROVED EQUALS: MECHANICAL EQUIPMENT MANUFACTURED BY A COMPANY OTHER THAN THAT WHICH WAS SPECIFIED IN THE SCHEDULE MAY BE SUBSTITUTED BY APPROVED SHOP DRAWINGS CONTINGENT UPON MEETING THE DESIGN, APPEARANCE, AND FUNCTIONAL STANDARDS ESTABLISHED BY THE ORIGINALLY SPECIFIED ITEM(S). THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS, CLEARANCES, ASSEMBLY, FIT, ETC. OF THE APPROVED EQUAL(S) AND THEIR AFFECT ON OTHER EQUIPMENT FIT AND OPERATION. THE MECH. CONTRACTOR IS LIABLE FOR ANY ADDED COSTS TO HIMSELF OR OTHERS CAUSED BY THE APPROVED EQUALS. 16. SUBMITTALS 16.1. FURNISH SHOP DRAWINGS TO ARCH/ENGINEER FOR APPROVAL PRIOR TO PLACING DELIVERY ORDERS. PROVIDE SHOP DRAWINGS OF ALL MANUFACTURED EQUIPMENT AND MATERIALS EXCEPT PIPE, PIPE FITTINGS, AND GALVANIZED DUCTWORK. 16.2. AT SUBSTANTIAL COMPLETION OF CONSTRUCTION, FURNISH AS-BUILT PLANS TO ARCH/ENGINEER FOR APPROVAL. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, APPROVED AS-BUILT PLANS SHALL BE PROVIDED TO THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE, AS A MINIMUM, THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES. 16.3. AN OPERATING MANUAL AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT THE MINIMUM: 16.3.1. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. 16.3.2. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. 16.3.3. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY. 16.3.4. HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR IN PROGRAMMING COMMENTS. 16.3.5. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET POINTS.
23 05 29 HANGERS AND SUPPORTS OF HVAC PIPING AND EQUIPMENT	1. FURNISH PIPE AND DUCT HANGERS, WHERE REQUIRED, FIRMLY SUPPORTED FROM THE BUILDING CONSTRUCTION, IN AN APPROVED MANNER. 2. SUPPORT PIPING SYSTEMS SECURELY WHILE ALLOWING FOR PIPE AND BUILDING EXPANSION AND CONTRACTION. 2.1. USE ADJUSTABLE CLEVIS HANGERS OR ADJUSTABLE STEEL BAND HANGERS. 2.2. MAXIMUM HORIZONTAL SPACING FOR GAS PIPING SHALL BE IN ACCORDANCE WITH THE IFGC - SECTION 415: 2.2.1. STEEL PIPE: 1/2" PIPE EVERY 6'-0". 3/4"-1" PIPE EVERY 8'-0". 1-1/4" PIPE AND LARGER EVERY 10'-0". 3. SUPPORT DUCTWORK WITH APPROVED DUCT HANGERS AT INTERVALS NOT EXCEEDING 10'-0" OR BY OTHER APPROVED DUCT SUPPORT SYSTEMS DESIGNED IN ACCORDANCE WITH THE MBC. 4. FLEXIBLE AND OTHER FACTORY-MADE DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. 5. FURNISH MECHANICAL EQUIPMENT SUPPORTS AS DETAILED OR AS REQUIRED TO SAFELY AND PERMANENTLY CARRY THE WEIGHT OF THE EQUIPMENT.

SECTION	
23 05 93 TESTING, ADJUSTING, AND BALANCING	1. THE MECHANICAL CONTRACTOR SHALL SUBCONTRACT A TEST AND BALANCE CONTRACTOR TO BALANCE THE SYSTEMS DESCRIBED BELOW. 2. THE BALANCING SHALL BE COMPLETED BY AN INDEPENDENT TEST AND BALANCE CONTRACTOR WHO IS NOT AN EMPLOYEE OF THE MECHANICAL CONTRACTOR. 3. PER COMPLIANCE WITH ASHRAE 90.1-2013, THE BALANCER SHALL SUBMIT AN AIR BALANCE REPORT TO THE ENGINEER AND STATE OR COUNTY INSPECTOR. 4. THE BALANCE REPORT SHALL SHOW PROOF THAT THE SYSTEM HAS BEEN BALANCED TO +/- 10% OF THE DESIGNED FLOW RATE. IT IS THE MECHANICAL CONTRACTOR AND TEST AND BALANCER'S DUTY TO PROVIDE ACCURATE DATA, SO AREAS OF INCORRECT FLOW MAY BE DISCLOSED TO THE ENGINEER, INSPECTOR, AND OWNER. 5. SCOPE: ALL AIRSIDE SYSTEMS, COMPONENTS, ETC. INCLUDING SUPPLY, RETURN, OUTDOOR, AND EXHAUST AIR SYSTEMS IDENTIFIED BELOW SHALL BE BALANCED. THE BALANCER SHALL PROVIDE SHEAVES AND BELTS AS NEEDED TO PROPERLY BALANCE EQUIPMENT TO +/- 10% OF THE DESIGNED AIRFLOWS. ALL DIFFUSERS, REGISTERS, GRILLES, AND LOUVERS SHALL BE INDIVIDUALLY BALANCED AND LISTED IN THE BALANCE REPORT. ALL AIRSIDE EQUIPMENT, SUPPLY, RETURN, AND OUTDOOR AIR FLOWRATES SHALL BE LISTED IN THE BALANCE REPORT.
23 07 13 DUCT & DUCT INSULATION	1. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN COMPLIANCE WITH 20121 M.M.C. CHAPTER 6, AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS. ALL DUCTWORK SHALL BE SEALED AND INSULATED PER ASHRAE 90.1-2013 TABLE 6.8.2.B. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH NAIMA NATIONAL INSULATION STANDARDS. 2. UNLESS OTHERWISE NOTED ON PLANS, ALL SUPPLY AND RETURN DUCTWORK LOCATED WITHIN TEN (10) FEET OF THE EQUIPMENT FAN SHALL BE LINED WITH 1/2" ACOUSTICAL DUCT LINER. DUCT DIMENSIONS SHOWN ON MECHANICAL PLANS ARE INTERIOR DIMENSIONS. 3. ALL INSULATION MATERIALS SHALL HAVE THE FOLLOWING SURFACE BURNING CHARACTERISTICS: FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E84, NFPA 255, OR UL 723. 4. GLASS FIBER, FLEXIBLE 4.1. ASTM C553; FLEXIBLE, NONCOMBUSTIBLE BLANKET. 4.1.1. 'K' ('KSI') VALUE: 0.36 AT 75 DEGREES F (0.052 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C518. 4.1.2. MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F (121 DEGREES C). 4.1.3. MAXIMUM WATER VAPOR SORPTION: 5.0 PERCENT BY WEIGHT. 4.2. VAPOR BARRIER JACKET 4.2.1. KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. 4.2.2. SECURE WITH PRESSURE SENSITIVE TAPE. 5. MINIMUM AIR DUCT INSULATION: 5.1. MINIMUM SUPPLY AIR DUCT INSULATION: 5.1.1. VENTILATED ATTIC: R-6 5.1.2. UNCONDITIONED SPACE: R-3.5 5.1.3. INDIRECTLY CONDITIONED SPACE: R-1.9, (PLENUMS AND ABOVE UNINSULATED CEILINGS (LAY-IN, GYP. BOARD) THAT ARE WITHIN THE INSULATED BUILDING ENVELOPE). 5.2. MINIMUM RETURN AIR DUCT INSULATION: 5.2.1. VENTILATED ATTIC: R-6 (FRESH AIR & COMBUSTION AIR DUCTS). 5.2.2. UNCONDITIONED SPACE: NONE 5.2.3. INDIRECTLY CONDITIONED SPACE: NONE 6. ALL EXHAUST DUCTWORK THAT PASSES THROUGH AN UNHEATED ATTIC OR CRAWLSPACE SHALL BE INSULATED WITH R-3.5, FOIL-BACKED, FIBERGLASS INSULATION. 7. IN VENTILATED AND UNVENTED ATTICS, WHERE POSSIBLE, INSULATION CONTRACTOR SHALL INSULATE OVER TOP OF OF INSULATED DUCTWORK.
23 09 00 INSTRUMENTA-TION AND CONTROL FOR HVAC	1. THE MECHANICAL CONTRACTOR OR CONTRACTED TEMPERATURE CONTROL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY THERMOSTATS, CONTROL RELAYS, SENSORS, CONTROL WIRING, DAMPERS, ACTUATORS, ETC., REQUIRED TO PROVIDE A FULLY OPERATIONAL HVAC SYSTEM. 2. THE THERMOSTAT SHALL BE DIGITAL-ELECTRONIC, WITH BACKLIT LCD DISPLAY, WIFI CAPABILITY, 7-DAY PROGRAMMABLE, WITH PROGRAMMABLE OCCUPIED AND UNOCCUPIED "CONTINUOUS FAN" AND "AUTO FAN" FUNCTIONALITY, 2-STAGE HEAT, 1-STAGE COOLING. 3. SEQUENCE OF OPERATIONS: 3.1. FURNACES AND CONDENSING UNITS F-1 and CU-1: THE FURNACE(S) AND CONDENSING UNIT(S) SHALL UTILIZE THERMOSTAT CONTROL SYSTEM FURNISHED AS PART OF THE UNIT(S), OR SPECIFIED TO BE PROVIDED AS OPTIONS OR ACCESSORIES BY THE MANUFACTURER OF THE UNIT(S). ALL WIRING WILL BE DONE IN ACCORDANCE WITH APPROVED SHOP DRAWINGS FURNISHED BY THE MANUFACTURER. OUTDOOR AIR MOTORIZED DAMPERS WILL BE INTERLOCKED WITH FURNACE SUPPLY FAN. 3.2. ALL EXHAUST FANS: SHALL BE CONTROLLED BY A PROGRAMMABLE TIMER OR WALL SWITCH AS INDICATED. CONTRACTOR SHALL COORDINATE TIME OF OPERATION WITH OWNER, PROGRAM TIMER, AND PROVIDE OWNER'S TRAINING ON ADJUSTMENT OF THE TIMER.

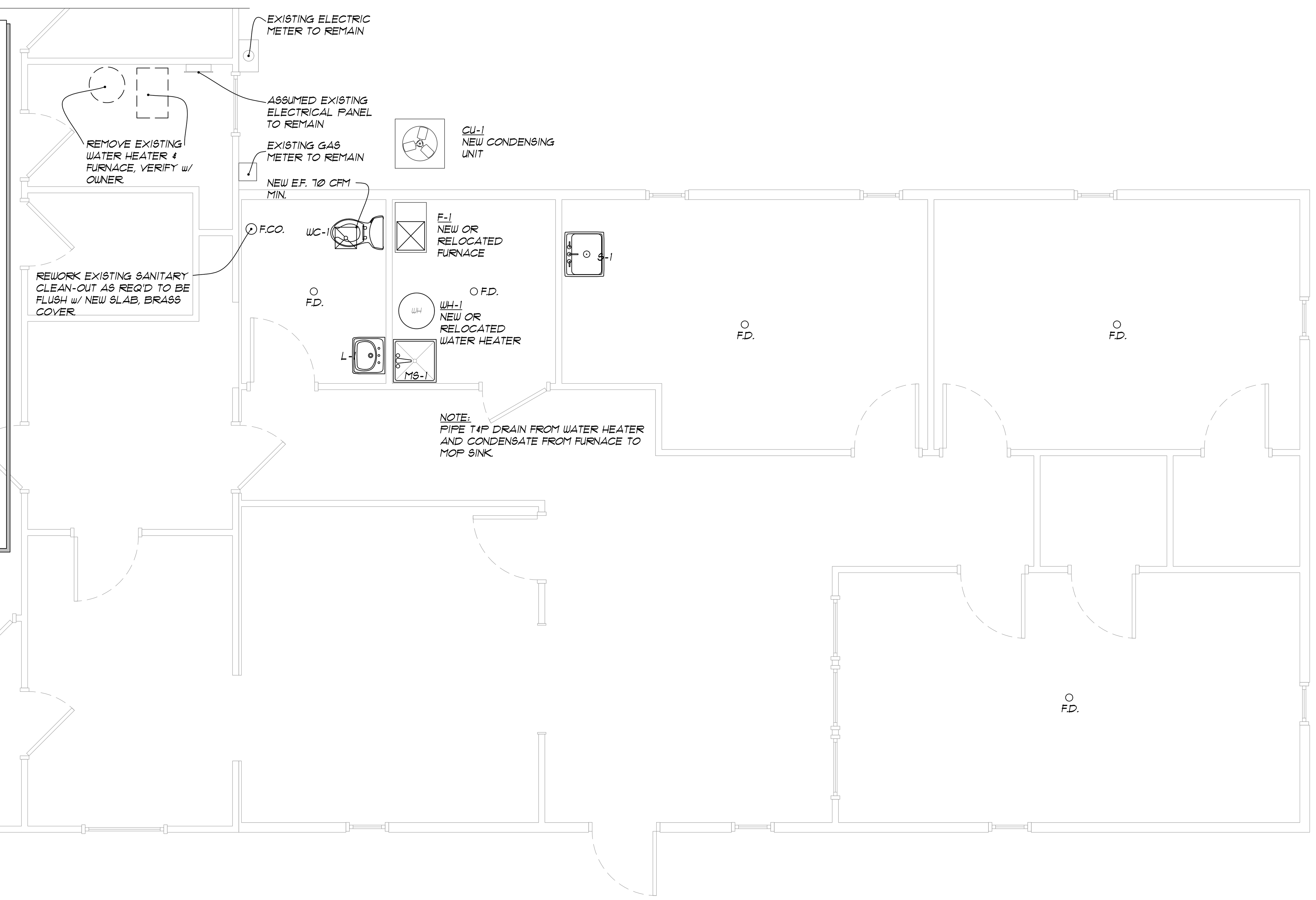
SECTION	
23 11 00 FACILITY FUEL PIPING	1. GAS PIPING SHALL COMPLY WITH THE CURRENTLY ENFORCED VERSION OF THE INTERNATIONAL FUEL GAS CODE (I.F.G.C.). 2. GAS SERVICE: THE MECHANICAL CONTRACTOR SHALL ARRANGE WITH THE LIQUID PROPANE GAS SUPPLIER TO PROVIDE PROPANE TANK, PIPING, REGULATOR, AND ASSOCIATED EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL PIPING AND VALVES TO GAS BURYING EQUIPMENT. COSTS AND FEES: THE MECHANICAL CONTRACTOR SHALL OBTAIN PERMITS AND PAY ALL COSTS ASSOCIATED WITH THE GAS SERVICE. 3. ABOVE GROUND GAS PIPING SHALL BE SCHEDULE 40, BLACK IRON WITH MALLEABLE IRON THREADED FITTINGS, SUPPORT PIPING WITH ADJUSTABLE BAND TYPE PIPE HANGERS, EQUAL TO ITT-GRINNEL FIG. 97. INSTALL DRIP LEG WITH UNION AND VALVE AT CONNECTION TO EACH PIECE OF EQUIPMENT. PROVIDE VALVE ON DISCHARGE OF METER. GAS SHUT-OFF VALVES SHALL BE 150 PSI, NON-SHOCK WOG, BRONZE BODY, STRAIGHT CONFIGURATION, AND/OR SHALL COMPLY WITH I.F.G.C TABLE 409.1.1 AND SHALL MEET ANSI Z21.15, CSA REQUIREMENT 3-88, ASME B16.44, ASME B16.33. 4. INSTALL AND TEST GAS PIPING IN COMPLIANCE WITH UTILITY COMPANY REGULATIONS AND THE LATEST VERSION OF THE INTERNATIONAL FUEL GAS CODE, NFPA NO. 54.
23 33 00 AIR DUCT ACCESSORIES	1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF ALL FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS. 1.1. FIRE AND SMOKE DAMPERS: FIRE AND SMOKE DAMPERS SHALL BE UL LABLED ACCORDING TO UL STANDARD 555, "STANDARD FOR FIRE DAMPERS". ALL FIRE AND SMOKE DAMPERS SHALL MEET THE FIRE RATING SPECIFIED AND SCHEDULED. 1.2. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE ENTIRE FIRE DAMPER ASSEMBLY INCLUDING: DAMPER, ACTUATORS, MOTORS, COLLARS, FRAMES, ETC. 1.3. THE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE 2009 M.M.C., M.B.C. AND NFPA STANDARDS. 2. THE MECHANICAL CONTRACTOR SHALL PROVIDE ONE (1) ACCESS DOOR FOR EACH FIRE AND/OR SMOKE DAMPER IN ACCORDANCE TO SMACNA DUCT INSTALLATION STANDARDS. 3. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING VOLUME DAMPERS ON EACH SUPPLY AIR REGISTER AS SCHEDULED SO THAT EACH SUPPLY AIR REGISTER AND SYSTEM CAN BE BALANCE PER ASHRAE 90.1-2013 SECTION 6.7.2.3 REQUIREMENTS. 4. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING VOLUME DAMPERS, TURNING VANES, ACCESS DOORS, VIBRATION ISOLATORS, ETC. THE ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
23 34 23 HVAC POWER VENTILATORS	1. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL VENTILATOR(S) AND/OR EXHAUST FAN(S) AS SHOWN AND SCHEDULED. THE UNIT(S) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, AND SHALL PERFORM AT THE CONDITIONS SCHEDULED. 2. INSTALL VENTILATOR(S) AND/OR EXHAUST FAN(S) WITH CLEARANCES FOR SERVICE AND MAINTENANCE. 3. THE MECHANICAL CONTRACTOR SHALL PROVIDE ONE (1) BACKDRAFT DAMPER FOR EACH VENTILATOR AND/OR EXHAUST FAN, OR SHALL VERIFY A BACKDRAFT DAMPER HAS BEEN FACTORY INSTALLED. 4. THE MECHANICAL CONTRACTOR SHALL ADJUST DAMPER LINKAGES FOR PROPER OPERATION. IF THE VENTILATOR(S) AND/OR EXHAUST FAN(S) ARE BELT DRIVEN, THE MECHANICAL CONTRACTOR SHALL ADJUST BELT TENSION AT START-UP 5. CENTRIFUGAL DOWNBLAST EXHAUST VENTILATORS: 5.1. HOUSING: 16 GAGE SPUN ALUMINUM WITH CORROSION RESISTANT FASTENERS. 5.2. ONE-PIECE FAN BASE WITH HIGH EFFICIENCY VENTURI INLET AND CONTINUOUSLY WELDED CURB CAP CORNERS; SPUN ALUMINUM 5.3. MOTOR: ENCLOSED IN A WEATHER TIGHT COMPARTMENT, SEPARATED FROM THE EXHAUST; HEAVY DUTY MOTOR PERMANENTLY LUBRICATED SEALED BEARINGS. 5.4. AIRFLOW: AS LISTED ON THE EXHAUST FAN SCHEDULE 5.5. VOLTAGE: AS LISTED ON THE EXHAUST FAN SCHEDULE. UL RATED. 5.6. MANUFACTURERS: LOREN COOK, ACME, GREENHECK
23 54 00 FURNACES AND CONDENSING UNITS	1. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL FURNACE(S) AND CONDENSING UNIT(S) AS SHOWN AND SCHEDULED. THE UNIT(S) SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, AND SHALL PERFORM AT THE CONDITIONS SCHEDULED. 2. THE FURNACE SHALL INCLUDE: 2.1. NATURAL GAS BURNER WITH ELECTRICAL IGNITION, INJECTION-TYPE BURNER, 3-PASS HEAT EXCHANGER, SEALED COMBUSTION, DIRECT-VENT. 2.2. BURNER CAPACITY AND AFUE EFFICIENCY AS LISTED ON THE FURNACE SCHEDULE. 2.3. BLOWER CAPACITY (CFM), AND SINGLE, TWO-STAGE OR VARIABLE SPEED BLOWER AS SCHEDULED. 2.4. FURNACES INSTALLED IN GARAGES OR ADJACENT TO GARAGES (IN CLOSETS OR ROOMS THAT CONNECT BY A DOOR) SHALL BE INSTALLED A MINIMUM OF 18 INCHES ABOVE THE FLOOR. 2.5. THE MECHANICAL CONTRACTOR SHALL PROVIDE TWO (2) SETS OF FILTERS FOR EACH FURNACE AND SHALL BE RESPONSIBLE FOR CHANGING FILTERS WITHIN TWO (2) WEEKS OF START-UP. 3. THE CONDENSING UNIT SHALL INCLUDE: 3.1. COOLING CAPACITY AND RATED COOLING TONS AS LISTED ON THE CONDENSING UNIT SCHEDULE. 3.2. R-410A (PURON) REFRIGERANT. 3.3. MINIMUM 13 SEER (SEASONAL ENERGY EFFICIENCY RATING). 3.4. INSULATED REFRIGERANT LINESETS. 4. MOUNT FURNACE ON 10" MINIMUM HEIGHT RETURN AIR PLENUM WITH FILTER ACCESS TO UTILIZE BOTTOM RETURN AIR INLET. 5. SEAL ALL LINESET WALL PENETRATIONS WITH CLOSED-CELL, FOAM INSULATION AND NON-HARDENING CAULK. 6. IF INSTALLED ON THE GROUND, THE CONDENSING UNIT SHALL BE INSTALLED ON A PREFABRICATED MOLDED PLASTIC OR 4" CONCRETE HOUSEKEEPING PAD. 7. IF THE CONDENSING UNIT IS INSTALLED DURING THE HEATING SEASON, THE CONTRACTOR SHALL PROVIDE A REFRIGERANT CHARGE THE FOLLOWING COOLING SEASON.

PLUMBING SPECIFICATIONS

SECTION	
15010 BASIC MECHANICAL REQUIREMENTS	1. ALL WORK TO BE DONE AND MATERIALS FURNISHED COMPLYING WITH APPLICABLE LAWS AND REGULATIONS, INCLUDING THE STATE OF MICHIGAN MECHANICAL, PLUMBING AND FIRE SAFETY CODES. OBTAIN AND PAY FOR REQUIRED PERMITS AND FEES. 2. ALL MATERIALS USED SHALL BE NEW AND UNDAMAGED. 3. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION INDUSTRY STANDARDS AND WORKMANSHIP. 4. FURNISH SHOP DRAWINGS TO ARCH/ENGINEER FOR APPROVAL PRIOR TO PLACING DELIVERY ORDERS. PROVIDE SHOP DRAWINGS OF ALL MANUFACTURED EQUIPMENT AND MATERIALS EXCEPT PIPE, PIPE FITTINGS AND GALVANIZED DUCTWORK. 5. FURNISH ACCESS DOORS (RATED OR NON-RATED AS REQUIRED) WHERE VALVES OR EQUIPMENT ARE CONCEALED BEHIND A NON-ACCESSIBLE CEILING OR WALL. FURNISH ACCESS DOORS TO GENERAL CONTRACTOR FOR INSTALLATION. 6. FURNISH STEEL PIPE SLEEVES WHERE PIPES PENETRATE RATED WALLS. PROVIDE FIRESTOPPING MATERIALS AND SYSTEM TO MAINTAIN THE REQUIRED RATING OF THE WALL PENETRATED. PROVIDE SHOP DRAWINGS SHOWING LISTING AND RATING OF FIRESTOPPING MATERIALS. 7. ALL MANUFACTURED EQUIPMENT, ACCESSORIES AND MATERIALS SHALL BE USED AS INTENDED BY THE MANUFACTURER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS. 8. CONTRACTOR SHALL PROVIDE IN ADDITION TO ANY OTHER WARRANTIES SPECIFIED, A ONE YEAR FULL LABOR AND MATERIAL WARRANTY ON ALL WORKMANSHIP, MATERIAL AND EQUIPMENT FURNISHED FOR THIS PROJECT. 9. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL OPENINGS AND REQUIRED LINTELS NEEDED FOR THE GENERAL CONTRACTOR, FOR THE INSTALLATION OF MECHANICAL EQUIPMENT. 10. SAWCUTS, LINTELS, HEADERS, AND STRUCTURAL MODIFICATIONS TO THE BUILDING STRUCTURE NEEDED FOR THE INSTALLATION OF MECHANICAL EQUIPMENT SHALL BE APPROVED BY THE GENERAL CONTRACTOR, BEFORE INSTALLATION. 11. IN GENERAL, OPENINGS AND REQUIRED LINTELS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILS AND TEMPLATES OF ALL OPENINGS NECESSARY FOR MECHANICAL EQUIPMENT INSTALLATION INCLUDING: HOUSING, ACCESS DOORS, INSPECTION DOORS, AND PASSAGEWAYS FOR MECHANICAL EQUIPMENT. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SEALING CRACKS AND FINISHING ROUGH EDGES LEFT FOLLOWING MECHANICAL INSTALLATION. 12. APPROVAL EQUALS: PLUMBING ITEMS MANUFACTURED BY A COMPANY OTHER THAN THAT WHICH WAS SPECIFIED IN THE SCHEDULE MAY BE SUBSTITUTED BY APPROVED SHOP DRAWINGS CONTINGENT UPON MEETING THE DESIGN, APPEARANCE, AND FUNCTIONAL STANDARDS ESTABLISHED BY THE ORIGINALLY SPECIFIED ITEM(S). THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS, CLEARANCES, ASSEMBLY, FIT, ETC. OF OF THE APPROVED EQUAL(S), AND THEIR AFFECT ON OTHER EQUIPMENT FIT AND OPERATION. THE CONTRACTOR IS LIABLE FOR FOR ANY ADDED COSTS TO HIMSELF OR OTHERS CAUSED BY THE APPROVED EQUALS.
15100 VALVES	1. BALL VALVES SHALL BE CLASS 125 FOR WATER AND 200 FOR C.A. WITH ENDS AND MATERIALS TO MATCH PIPING SYSTEMS. 2. BALL VALVES 2" AND SMALLER SHALL HAVE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE AND BALANCING STOPS, ENDS TO MATCH PIPING SYSTEM.
15140 SUPPORTS & ANCHORS	1. FURNISH PIPE HANGERS, WHERE REQUIRED, FIRMLY SUPPORTED FROM BUILDING STEEL, CONCRETE OR MASONRY STRUCTURE. SUPPORT PIPING SYSTEMS SECURELY WHILE ALLOWING FOR PIPE AND BUILDING EXPANSION AND CONTRACTION. PROVIDE COPPER PLATED HANGERS FOR COPPER PIPE. USE ADJUSTABLE CLEVIS HANGERS OR ADJUSTABLE STEEL BAND HANGERS. MAXIMUM SPACING SHALL BE 5' FOR 1/2" PIPING, 7' FOR 3/4" TO 1-1/4" PIPING, 9' FOR 1-1/2" TO 2" PIPING. FURNISH PLUMBING EQUIPMENT SUPPORTS AS DETAILED OR AS REQUIRED TO SAFELY AND PERMANENTLY CARRY THE WEIGHT OF THE EQUIPMENT.
15250 PLUMBING INSULATION	1. INSULATE ABOVE FLOOR WATER PIPING WITH ELASTOMERIC PLASTIC PREFORMED PIPE INSULATION WITHOUT JACKETING. ALL INSULATING MATERIALS TO HAVE FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPMENT RATING OF 50 OR LESS AS TESTED BY ANSI/ASTM E 84 (NFPA 233) METHOD. INSULATE ALL PIPING WITH SURFACE TEMPERATURES BELOW 75 DEGREE F WITH 1/2" INSULATION. INSULATE ALL PIPING WITH SURFACE TEMPERATURES 75 DEGREES F AND HIGHER WITH 1" THICK INSULATION. JOINTS IN INSULATION SHALL BE GLUED, NOT TAPED. WHERE EXISTING INSULATED PIPES ARE CONNECTED TO, REPAIR EXISTING INSULATION WITH NEW INSULATION OF THE SAME THICKNESS AS EXISTING. WHERE PIPES ARE EXPOSED AND LESS THAN 8' ABOVE FLOOR, PROVIDE HEAVY DUTY METAL JACKETING OVER INSULATION.
15411 WATER DISTRIBUTION SYSTEM	1. ABOVE GRADE: WATER PIPING SHALL BE TYPE L COPPER ASTM B 75, ASTM B 88, ASTM B 251, ASTM B 447 WITH WROUGHT COPPER SOLDER-JOINT FITTINGS ASME B 16, 2. ABOVE GRADE: WATER PIPING 1-1/4" OR LESS SHALL BE TYPE CROSS-LINKED POLYETHYLENE TUBING CSA B137.5, ASTM F876, ASTM F877, NSF - 14 WITH COMPRESSION FITTINGS, BRASS ELBOWS AND COPPER TYPE 'L' VALVED MANIFOLD. CSA B137.5, ASTM F1807. 3. BELOW GRADE: WATER PIPING SHALL BE TYPE CROSS-LINKED POLYETHYLENE TUBING ASTM F876, ASTM F877, NSF - 14 WITH BRASS CRIMP OR COMPRESSION FITTINGS CSA B137.5, ASTM F1807. 4. THOROUGHLY FLUSH AND CLEAN ALL NEW AND EXISTING WATER PIPING SYSTEMS. TEST ALL PIPING SYSTEMS PER REGULATIONS IN ITEM NO.1 OR AT 225 PSI FOR A MINIMUM OF 2 HOURS WITH NO PRESSURE DROP INDICATED PRIOR TO INSULATING. 5. STERILIZE ALL DOMESTIC WATER PIPING PER REQUIREMENTS OF LOCAL HEALTH DEPARTMENT.
15420 DRAINAGE & VENT SYSTEMS	1. WITHIN BUILDING, SCHEDULE 40 PVC, DWN TYPE PIPE AND SOLVENT WELDED PIPE FITTINGS, SCHEDULE 30 PVC PIPE MAY BE USED FOR VENT PIPING WHERE PERMITTED BY CODE. HORIZONTAL PIPE SHALL BE SUPPORTED BY ADJUSTABLE RING HANGERS EQUAL TO ITT-GRINNEL FIG. 97. VERTICAL PIPING SHALL BE SUPPORTED AT EACH FLOOR OR ATTIC LEVEL BY RISER CLAMPS EQUAL TO ITT-GRINNEL FIG. 261.
15440 PLUMBING FIXTURES	1. PLUMBING FIXTURES SHALL BE INSTALLED WHERE SHOWN ON THE ARCHITECTURAL DRAWINGS. INSTALL FIXTURES LEVEL AND PLUMB. FURNISH TRAPS WHERE REQUIRED. FIXTURES SHALL BE EASILY REMOVABLE FOR SERVICE AND CLEANING. 2. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO FIXTURES WITH STOP VALVES, CHROME PLATED 17 GAUGE BRASS TRAPS WITH CHROME PLATED ESCUTCHEONS IN EXPOSED AREAS. BRAIDED NYLON FLEXIBLE SUPPLIES AND PVC SLIP JOINT TRAPS MAY BE USED IN HIDDEN AREAS LIKE CABINETS. 3. SEAL ALL FIXTURES TO WALL AND FLOOR USING SILICONE SEALANT. MATCH SEALANT COLOR TO FIXTURE COLOR. 4. FIXTURES DESIGNATED BARRIER FREE SHALL BE INSTALLED IN COMPLIANCE WITH AMERICAN'S WITH DISABILITIES ACT.

NOTES:
1. PLUMBING & MECHANICAL SYSTEMS SHALL BE DESIGN BUILD BY COLLABORATION BETWEEN THE OWNER, GENERAL CONTRACTOR, AND PLUMBING & MECHANICAL SUB-CONTRACTORS.
2. ITEMS SHOWN ARE FOR BIDDING PURPOSES ONLY.
3. NEW FURNACE & CONDENSING UNIT SHALL BE SIZED TO SERVICE EXISTING FACILITY AND NEW ADDITION. FURNACE SHALL ZONES AS FOLLOWS:
   1. EXISTING
   2. ADDITION
   REUSE / TIE INTO EXISTING DUCTWORK
4. NEW WATER HEATER SHALL BE SIZED TO SERVE EXISTING FACILITY AND NEW ADDITION. PROVIDE HOT WATER RE-CIRCULATION LINE, PUMP & EXPANSION TANK. REUSE / TIE INTO EXISTING HOT & COLD WATER SUPPLY PIPING.
5. VERIFY EXHAUST REQUIREMENTS BEYOND CODE RESTROOM (70 CFM MIN.) REQUIREMENT.
6. UTILITIES ASSUMED TO BE PROPERLY SIZED TO ACCOMMODATE PROPOSED ADDITION. CONTRACTOR SHALL VERIFY MAIN SIZES, CONTACT OWNER WITH DISCREPANCIES.
7. PROVIDE ACCESSIBLE SHUT-OFF VALVES TO EACH FIXTURE AS REQUIRED, CONCEAL WHERE PERMISSABLE.
8. WATER REQUIREMENTS:
   LAVATORY, SINK (L-1, S-1): 1/2" CW, HW.
   MOP SINK (MS-1): 1/2" CW, HW.
   HOSE BIBB (HB-1): 1/2" CW.
   WATER HEATER (WH-1): 3/4"/ 1" CW, HW.
   WATER CLOSET (WC-1): 1/2" CW.

   FLOOR DRAIN = F.D.
   FLOOR CLEANOUT = F.CO.



NOTE:
WORK SHALL BE INSTALLED PER THE 2021 EDITIONS OF THE MICHIGAN PLUMBING & MECHANICAL CODES ALONG WITH INDUSTRY & MANUFACTURER RECOMMENDATIONS & STANDARDS.

PLUMBING & MECHANICAL PROPOSED FLOOR PLAN

SCALE 1/4" = 1'-0"

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
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Proposed 30' x 50' Addition to:

Montcalm County Animal Control

154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

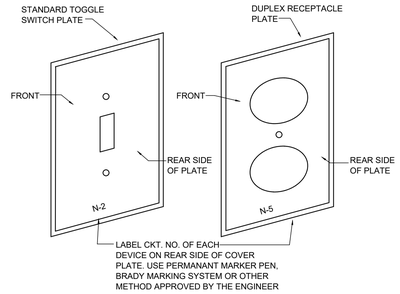
DRAWN BY:
K. Taylor

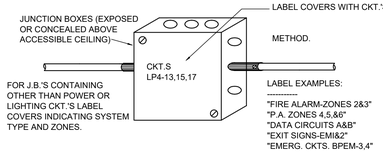
DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
ME1.0

PROJECT NUMBER:
25141

ELECTRICAL IDENTIFICATION





GENERAL ELECTRICAL NOTES:

1. PRIOR TO SUBMITTING A PROPOSAL, BIDDER SHALL HAVE VISITED THE CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
2. ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ENFORCEABLE EDITION OF THE N.E.C., LOCAL AND STATE CODES, ORDINANCES, REGULATIONS, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), AND ADA GUIDELINES WITH THE LOCAL CODE AUTHORITIES HAVING JURISDICTION.
3. ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTION FOR HIS WORK. AT THE COMPLETION OF ELECTRICAL WORK, THE ELECTRICAL CONTRACTOR SHALL FURNISH THE OWNER WITH ALL CERTIFICATES OF FINAL INSPECTION AND APPROVALS.
4. ELECTRICAL MATERIALS SHALL BE NEW, AND BEAR THE "UL" LABEL OR LISTING.
5. BRANCH CIRCUIT WIRE FOR LIGHTING, RECEPTACLE AND SMALL POWER SHALL BE COPPER, RATED 75 DEGREES C, MINIMUM SIZE #12 AWG, AND BE IN CONDUIT (25FT. MAXIMUM UNLESS OTHERWISE APPROVED BY ARCHITECT/ENGINEER/OWNER), OR "THWN" OR "THHN" WIRING IN CONDUIT, MINIMUM SIZE 1/2" UNLESS OTHERWISE NOTED OR REQUIRED BY CODE. FEEDERS AND SECONDARY SERVICE CONDUCTORS SHALL BE STRANDED COPPER WITH 600 VOLT INSULATION, RATED 90° C, TYPE "THHN", "THWN", OR "THWN-2" AND BE INSTALLED IN EMT OR PVC CONDUIT, MINIMUM SIZE 1/2" UNLESS OTHERWISE NOTED OR REQUIRED BY CODE. ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE DELIVERED TO PROJECT IN UNBROKEN AND UNDAMAGED CARTONS AND REELS.
6. FUSES SHALL BE "UL" LISTED, DUAL-ELEMENT AS MANUFACTURED BY BUSSMAN CO., OR APPROVED EQUAL (200,000 AIC).
7. RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE, RATED 125 VOLT, 20 AMP, GROUNDED TYPE (NEMA 5-20R), TAMPER RESISTANT U.N.O. AND EQUAL TO LEVITON #BR SERIES, OR EQUAL BY GENERAL ELECTRIC, COOPER, HUBBELL, ARROW-HART, OR P & S. COLOR TO MATCH DEVICE PLATE . COORDINATE COLOR WITH ARCHITECT/OWNER.
8. SWITCHES SHALL BE RATED 15A OR 20A, 120/277 VOLT, COMMERCIAL SPECIFICATION GRADE, SINGLE, DOUBLE-POLE, THREE-WAY, ETC. AS INDICATED, BY LEVITON #CSB SERIES OR EQUAL BY GENERAL ELECTRIC, COOPER, HUBBELL, ARROW-HART, P & S, OR LUTRON. COLOR TO MATCH DEVICE PLATE . COORDINATE COLOR WITH ARCHITECT/OWNER.
9. PLATES FOR SWITCHES AND RECEPTACLES SHALL BE STAINLESS STEEL.
10. LAMPS - ALL LAMPS SHALL BE CLASSIFIED "ENERGY SAVING". PROVIDE A MINIMUM OF 3% OR TWO (2), WHICH EVER IS GREATER, OF EACH LAMP TYPE TO THE OWNER AT PROJECT CLOSEOUT.
11. ALL LIGHT FIXTURES HAVE BEEN SELECTED BY THE ARCHITECT AND THE ENGINEER FOR THE BASIS OF DESIGN. ALL LIGHT FIXTURE SHALL BE AS AS SPECIFIED OR EQUAL OR BETTER QUALITY. ALL SUBMITTED EQUALS SHALL BE REVIEWED BY ENGINEER AND/OR ARCHITECT PRIOR TO APPROVAL.
12. INTEGRAL EMERGENCY BATTERIES AND REMOTE EMERGENCY MINI-INVERTERS SHALL PROVIDE A MINIMUM OF 90 MINUTES OF RUN-TIME FOR LAMPS AS SHOWN BY IOTA, BODINE, COOPER, LITHONIA, OR APPROVED EQUAL.
13. PANELBOARDS SHALL BE RATED 120/240V, 1 PHASE, 3W, AS NOTED WITH BOLT-ON TYPE BRANCH CIRCUIT BREAKERS RATED A MINIMUM 25,000 A.I.C. (VERIFY WITH UTILITY COMPANY). PANELBOARDS SHALL BE SQUARE D, TYPE NQ (SURFACE), QO (RECESSED) OR EQUAL AS MANUF. BY CUTLER-HAMMER, GENERAL ELECTRIC (GE), OR SIEMENS.
14. PROVIDE UPDATED, ACCURATE, AND TYPED PANEL SCHEDULES. DOCUMENT ALL CHANGES ON FINAL AS-BUILT DRAWINGS AS REQUIRED. PANEL LABELING SHALL INCLUDE FAULT CURRENT MARKING PER NEC 110.24 AND ARC-FLASH WARNING PER NEC 110.16.
15. SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS AND PILOT LIGHT, SURFACE OR FLUSH MOUNTED AS NOTED BY SQUARE D CLASS 2510 OR EQUAL.
16. DISCONNECT SWITCHES SHALL BE RATED 250V, OR 600V, FUSED OR NON-FUSED AS NOTED, GENERAL-DUTY TYPE; NEMA 1, FOR INDOOR USE, AND NEMA 3R FOR OUTDOOR USE BY SQUARE D OR EQUAL BY CUTLER-HAMMER, OR SIEMENS.
17. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF (4) HOURS OF TRAINING AS NECESSARY TO THE OWNER ON THE LIGHTING CONTROLS, AND ALL ELECTRICAL EQUIPMENT AND/OR DEVICES.
18. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
19. THE ELECTRICAL CONTRACTOR SHALL PERIODICALLY REMOVE FROM THE SITE ALL DEBRIS AND RUBBISH ACCUMULATING AS A RESULT OF THE ELECTRICAL INSTALLATION. UPON COMPLETION OF THE PROJECT, HE SHALL DISPOSE OF ALL DEBRIS AND RUBBISH AND SHALL LEAVE ALL AREAS CLEAN. THE INTERIORS OF ALL CABINETS, PULL BOXES, AND EQUIPMENT ENCLOSURES SHALL BE FREE OF ANY DEBRIS.
20. UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC OR SCHEDULE 80 PVC WHERE SUBJECT TO PHYSICAL DAMAGE AS REQUIRED.
21. ELECTRICAL JOINTS WILL BE PERMITTED ONLY IN JUNCTION AND OUTLET BOXES. ALL JOINTS SHALL BE FIRMLY BONDED TOGETHER AND TAPED OR SHALL BE MADE WITH MECHANICAL CONNECTORS.
22. WITHIN THIRTY (30) DAYS AFTER THE ELECTRICAL CONTRACTOR HAS BEEN NOTIFIED TO PROCEED WITH THE WORK, HE SHALL SUBMIT TO THE ARCHITECT/ENGINEER SIX (6) COPIES OF EACH OF THE FOLLOWING DRAWINGS AND DATA SHEETS FOR APPROVAL. ALL EQUIPMENT FOR WHICH SHOP DRAWINGS ARE BEING SUBMITTED SHALL NOT BE ORDERED UNTIL APPROVED DRAWINGS HAVE BEEN RETURNED. SUCH SUBMITTALS SHALL INCLUDE:
    *LIGHTING FIXTURE CUTS AND PERFORMANCE DATA SHEETS.
    *WIRING DEVICES.
    *ELECTRICAL DISTRIBUTION EQUIPMENT.
23. ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER BUILDING TRADES. IF ANY DISCREPANCIES OCCUR, CONSULT WITH THE ARCHITECT AND/OR OWNER BEFORE CONTINUING.
24. DRAWINGS ARE DIAGRAMMATIC ONLY!!! EXISTING CONDITIONS TAKEN FROM EXISTING DRAWINGS, PANEL SCHEDULES, AND CASUAL FIELD OBSERVATIONS. NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE FOUND THAT AFFECT THE WORK TO BE PERFORMED, PRIOR TO PROCEEDING.
25. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OPERATING AND MAINTENANCE INSTRUCTION MANUALS, CERTIFICATES OF INSPECTION, TEST REPORTS, SPARE PARTS, AND RECORD DRAWINGS (AS-BUILTS) TO THE OWNER PRIOR TO CLOSEOUT. FINAL PAYMENT WILL ONLY BE MADE AFTER THE FINAL PUNCHLIST COMPLETION AND RECEIPT OF THE ABOVE CLOSEOUT DOCUMENTATION.
26. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER HIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER. SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AT NO EXPENSE TO THE OWNER.
27. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT ELECTRIC UTILITY COMPANIES SERVICE POINTS AND PRIMARY SERVICE CONDUIT, ROUTING, AND SIZE WITH UTILITY COMPANY SERVICE PLANNERS/ENGINEERS PRIOR TO BEGINNING WORK.
28. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE BOX AND RACEWAY SYSTEM FOR THE LOW-VOLTAGE CABLING SYSTEMS (TELEPHONE, DATA, ETC.) THAT ARE TO BE PROVIDED AND INSTALLED BY THE OWNER. THESE DRAWINGS ARE DIAGRAMMATICAL AND THE LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN THE FIELD.
29. ALL NEW BRANCH WIRING SHALL BE COLOR CODED BY THE FOLLOWING VOLTAGE SYSTEMS AND LABELED AT THEIR SOURCE PER 2023 NEC SECTION #210.5.

WIRE SIZE REQUIREMENTS

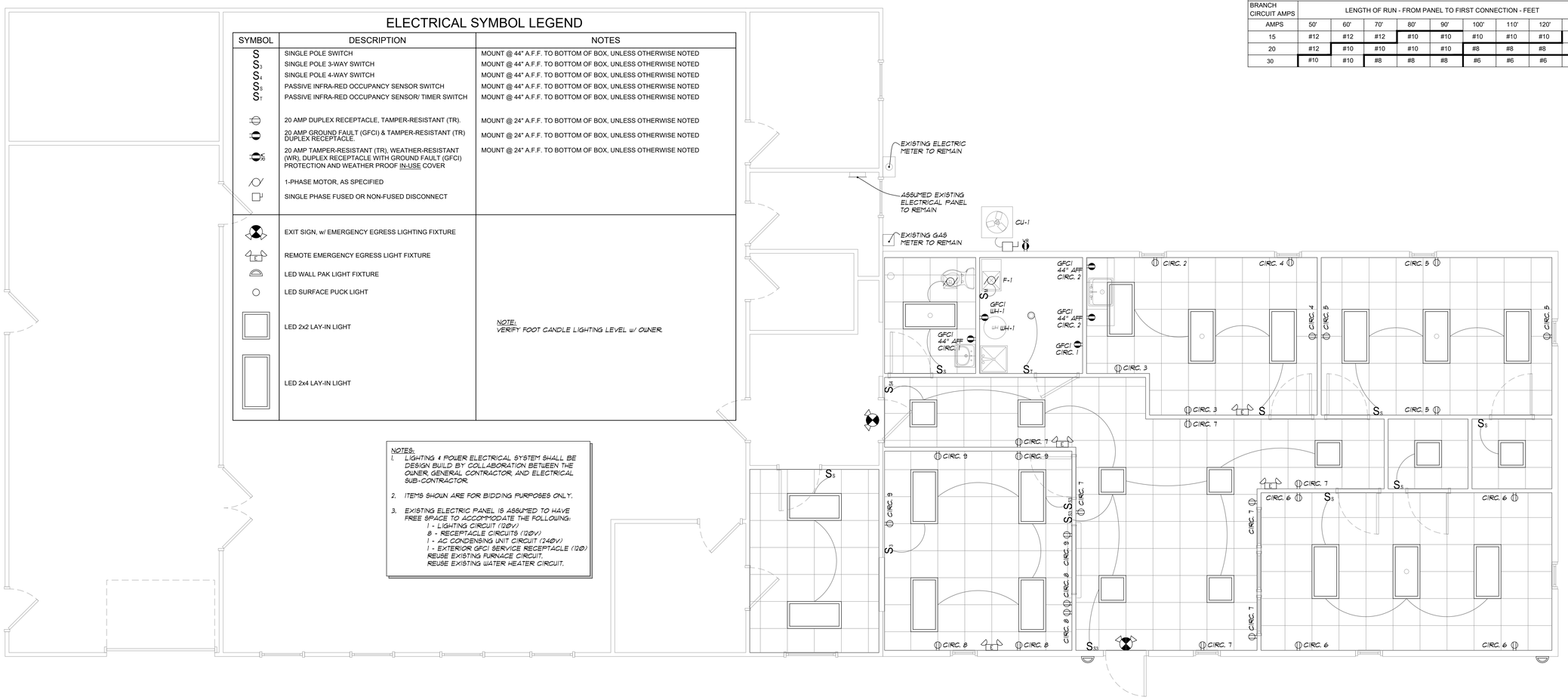
NOTE:
BASED ON A MAXIMUM OF 3.6-VOLT DROP (3%) ON 120V CIRCUITS.
WIRES FOR RUNS OVER 100'-0" SHALL BE DETERMINED ON THIS
A MAXIMUM OF A 3% DROP ALLOWED.

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

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	NOTES
S	SINGLE POLE SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_2	SINGLE POLE 3-WAY SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_4	SINGLE POLE 4-WAY SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_5	PASSIVE INFRA-RED OCCUPANCY SENSOR SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
S_T	PASSIVE INFRA-RED OCCUPANCY SENSOR/ TIMER SWITCH	MOUNT @ 44" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	20 AMP DUPLEX RECEPTACLE, TAMPER-RESISTANT (TR).	MOUNT @ 24" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	20 AMP GROUND FAULT (GFCI) & TAMPER-RESISTANT (TR) DUPLEX RECEPTACLE.	MOUNT @ 24" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
WR	20 AMP TAMPER-RESISTANT (TR), WEATHER-RESISTANT (WR), DUPLEX RECEPTACLE WITH GROUND FAULT (GFCI) PROTECTION AND WEATHER PROOF IN-USE COVER	MOUNT @ 24" A.F.F. TO BOTTOM OF BOX, UNLESS OTHERWISE NOTED
	1-PHASE MOTOR, AS SPECIFIED	
	SINGLE PHASE FUSED OR NON-FUSED DISCONNECT	
	EXIT SIGN, w/ EMERGENCY EGRESS LIGHTING FIXTURE	
	REMOTE EMERGENCY EGRESS LIGHT FIXTURE	
	LED WALL PAK LIGHT FIXTURE	
	LED SURFACE PUCK LIGHT	
	LED 2x2 LAY-IN LIGHT	NOTE: VERIFY FOOT CANDLE LIGHTING LEVEL w/ OWNER.
	LED 2x4 LAY-IN LIGHT	

NOTES:
1. LIGHTING & POWER ELECTRICAL SYSTEM SHALL BE DESIGN BUILD BY COLLABORATION BETWEEN THE OWNER, GENERAL CONTRACTOR, AND ELECTRICAL SUB-CONTRACTOR.
2. ITEMS SHOWN ARE FOR BIDDING PURPOSES ONLY.
3. EXISTING ELECTRIC PANEL IS ASSUMED TO HAVE FREE SPACE TO ACCOMMODATE THE FOLLOWING:
   1 - LIGHTING CIRCUIT (120V)
   8 - RECEPTACLE CIRCUITS (120V)
   1 - AC CONDENSING UNIT CIRCUIT (240V)
   1 - EXTERIOR GFCI SERVICE RECEPTACLE (120)
   REUSE EXISTING FURNACE CIRCUIT.
   REUSE EXISTING WATER HEATER CIRCUIT.



NOTE:
WORK SHALL BE INSTALLED PER THE 2023 EDITION OF MICHIGAN ELECTRICAL & NATIONAL ELECTRICAL CODE ALONG WITH INDUSTRY & MANUFACTURER RECOMMENDATIONS & STANDARDS.

ELECTRICAL LIGHTING & POWER PROPOSED FLOOR PLAN

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

ARCHITECTURE
CONSTRUCTION MANAGEMENT
DEVELOPMENT

THE DK DESIGN GROUP

1104 S. MITCHELL ST.
CADILLAC, MICHIGAN 49601
(231) 779-4002
(231) 779-4022 FAX

Proposed 30' x 50' Addition to:
Montcalm County Animal Control
154 E. Quarterline Street
Stanton, MI 48888

ARCHITECT OF RECORD:
S. Kleinsorge

DRAWN BY:
K. Taylor

DATE ISSUED:
November 21, 2025 Permits

SHEET NUMBER:
ME2.0

PROJECT NUMBER:
25141