AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

2/28/2025

RENDERING

INDEX OF DRAWINGS

PROJECT TEAM

MCG EXPLORE DESIGN

421 W. 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474
› exploredesign.com

FOR:
SUBMITTAL
PRICING

COVER SHEET

SHEET NO.
G101

ABBREVIATIONS

(E)	EXISTING	LVL	LAMINATED VENEER LUMBER
(N)	NEW	LWC	LIGHT WEIGHT CONCRETE
AB	ANCHOR BOLT	MAX	MAXIMUM
ACI	AMERICAN CONCRETE INSTITUTE	MCJ	MASONRY CONTROL JOINT
ADDL	ADDITIONAL	MECH	MECHANICAL
ADH	ADHESIVE	MEZZ	MEZZANINE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MFR('S)	MANUFACTURER('S)
		MIN	MINIMUM
AISI	AMERICAN IRON AND STEEL INSTITUTE	MISC	MISCELLANEOUS
ALT	ALTERNATE	MT	MAGNETIC PARTICLE TESTING
ARCH	ARCHITECTURAL	N/A	NOT APPLICABLE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	NDS	NATIONAL DESIGN SPECIFICATION
ASD	ALLOWABLE STRESS DESIGN	NFS	NON-FROST SUSCEPTIBLE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	NIC	NOT IN CONTRACT
		NTS	NOT TO SCALE
AWPA	AMERICAN WOOD PROTECTION ASSOCIATION	NWC	NORMAL WEIGHT CONCRETE
AWS	AMERICAN WELDING SOCIETY	OC	ON CENTER
BM	BEAM	OF	OUTSIDE FACE
BLDG	BUILDING	OPNG	OPENING
BLKG	BLOCKING	OPP	OPPOSITE (MIRRORED)
BOB	BOTTOM OF BEAM	OWSJ	OPEN WEB STEEL JOIST
BOD	BOTTOM OF DECK	OWWJ	OPEN WEB WOOD JOIST
BOF	BOTTOM OF FOUNDATION	PAF	POWDER ACTUATED FASTENER
BOS	BOTTOM OF STEEL	PC	PILE CAP
BOT	BOTTOM	PCC	PRECAST CONCRETE
BP	BASE PLATE	PEMB	PRE-ENGINEERED METAL BUILDING
BRG	BEARING	PERP	PERPENDICULAR
BTWN	BETWEEN	PJP	PARTIAL JOINT PENETRATION
C&C	COMPONENTS AND CLADDING	PL	PLATE
CFS	COLD-FORMED STEEL	PLF	POUNDS PER LINEAR FOOT
CIP	CAST-IN-PLACE	PREFAB	PREFABRICATED
CJ	CONTROL JOINT	PSF	POUNDS PER SQUARE FOOT
CJP	COMPLETE JOINT PENETRATION	PSI	POUNDS PER SQUARE INCH
CL	CENTERLINE	PSL	PARALLEL STRAND LUMBER
CLR	CLEAR	P-T	POST-TENSIONED
CMU	CONCRETE MASONRY UNIT	PT	PRESSURE TREATED
COL	COLUMN	QA	QUALITY ASSURANCE
COMP	COMPRESSIVE	QC	QUALITY CONTROL
CONC	CONCRETE	R	RADIUS
CONN	CONNECTION	RD	ROOF DRAIN
CONT	CONTINUOUS	REF	REFER / REFERENCE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	REINF	REINFORCED / REINFORCING
CTRD	CENTERED	REQD	REQUIRED
DBL	DOUBLE	RET	RETAINING
DEMO	DEMOLISH	SC	SLIP CRITICAL
DET	DETAIL	SCH	SCHEDULE
DF	DOUGLAS-FIR	SDI	STEEL DECK INSTITUTE
Ø OR DIA	DIAMETER	SEC	SECOND
DIM(S)	DIMENSION(S)	SECT	SECTION
DL	DEAD LOAD	SF	SQUARE FEET
DN	DOWN	SFRS	SEISMIC FORCE RESISTING SYSTEM
DWG(S)	DRAWING(S)	SHT	SHEET
EA	EACH	SHTHG	SHEATHING
EF	EACH FACE	SIM	SIMILAR
EJ	EXPANSION JOINT	SIP	STRUCTURAL INSULATED PANEL
ELEC	ELECTRICAL	SLBB	SHORT LEG BACK-TO-BACK
EMBED	EMBEDMENT	SLH	SHORT LEG HORIZONTAL
EQ	EQUAL	SLRS	SEISMIC LOAD RESISTING SYSTEM
EQUIP	EQUIPMENT	SLV	SHORT LEG VERTICAL
ESR	EVALUATION SERVICE REPORT	SMF	SPECIAL MOMENT FRAME
EW	EACH WAY	SOG	SLAB ON GRADE
EXT	EXTERIOR	SP	SPACE
FD	FLOOR DRAIN	SPEC	SPECIFICATION
FDN	FOUNDATION	SPF	SPRUCE-PINE-FIR
FFE	FINISHED FLOOR ELEVATION	SQ	SQUARE
FPSF	FROST PROTECTED SHALLOW FOOTING	SS	STAINLESS STEEL
FS	FROST SUSCEPTIBLE	STAGG	STAGGER / STAGGERED
FT	FOOT	STD	STANDARD
FTG	FOOTING	STIFF	STIFFENER
GA	GAUGE	STL	STEEL
GALV	GALVANIZED	STRUCT	STRUCTURAL
GB	GRADE BEAM	SUP	SUPPORT
GEOTECH	GEOTECHNICAL	SWWJ	SOLID WEB WOOD JOIST
GLB	GLUE-LAMINATED BEAM	SYM	SYMMETRICAL
GP	GUSSET PLATE	T&B	TOP AND BOTTOM
GR	GRADE	TDS	TIE DOWN SYSTEM
GSN	GENERAL STRUCTURAL NOTES	TG	TRUSS GIRDER
GWB	GYPSUM WALL BOARD	THK	THICK / THICKNESS
HD	HOLDOWN	THKND	THICKENED
HF	HEM-FIR	THRD	THREADED
HGR	HANGER	TL	TOTAL LOAD
HOR	HORIZONTAL	TOB	TOP OF BEAM
HS	HIGH STRENGTH	TOC	TOP OF CONCRETE
HSS	HOLLOW STRUCTURAL SECTION	TOD	TOP OF DECK
IBC	INTERNATIONAL BUILDING CODE	TOF	TOP OF FOUNDATION
ICC	INTERNATIONAL CODE COUNCIL	TOM	TOP OF MASONRY
ICF	INSULATED CONCRETE FORM	TOP	TOP OF PLATE
IEBC	INTERNATIONAL EXISTING BUILDING CODE	TOS	TOP OF STEEL
IF	INSIDE FACE	TOW	TOP OF WALL
IN	INCH	TRANS	TRANSVERSE
INT	INTERIOR	TYP	TYPICAL
JT	JOINT	UNO	UNLESS NOTED OTHERWISE
K	KIP (1,000 POUNDS)	UT	ULTRASONIC TESTING
KSI	KIPS PER SQUARE INCH	VERT	VERTICAL
LB(S)	POUND(S)	VSC	VERCO SIDELAP CONNECTION
LF	LINEAR FOOT	W/	WITH
LFRS	LATERAL FORCE RESISTING SYSTEM	W/C	WATER-TO-CEMENT
LL	LIVE LOAD	W/O	WITHOUT
LLBB	LONG LEG BACK-TO-BACK	WHS	WELDED HEADED STUD
LLH	LONG LEG HORIZONTAL	WP	WORKING POINT
LLV	LONG LEG VERITCAL	WPS('S)	WELDING PROCEDURE SPECIFICATION(S)
LONG	LONGITUDINAL	WSP	WOOD STRUCTURAL PANEL
LRFD	LOAD RESISTANCE FACTOR DESIGN	WWF	WELDED WIRE FABRIC
LSL	LAMINATED STRAND LUMBER		

SYMBOLS

DETAIL NUMBER / SHEET NUMBER — DETAIL CUT/CALLOUT

SECTION NUMBER / SHEET NUMBER — SECTION CUT

ELEVATION NUMBER / SHEET NUMBER — ELEVATION

IMAGE NUMBER / SHEET NUMBER — IMAGE REFERENCE

KEYNOTE

8" MASONRY WALL, UNO

12" MASONRY WALL, UNO

8" CONCRETE WALL, UNO

STEEL STUD WALL, UNO

WOOD STUD WALL, UNO

SW — COLD-FORMED STEEL SHEAR WALL SYMBOL

SW — WOOD SHEAR WALL SYMBOL

BEARING WALL LINE

CJ — WALL CONTROL JOINT

HDU2 — HOLDOWN

DIRECTION OF SLOPE

CHANGE IN ELEVATION OR SLAB DEPRESSION

RIGID (MOMENT) CONNECTION

BEAM SPLICE

(15") — CIRCULAR OPENING IN BEAM

(15") — RECTANGULAR OPENING IN BEAM WEB

BRACED FRAME MEMBER

(12) — NUMBER OF HEADED STUDS ON COMPOSITE STEEL BEAM

<-2 1/2"> — TOP OF STEEL ELEVATION RELATIVE TO BOTTOM OF DECK ELEVATION

[D] — DROPPED BEAM

[F] — FLUSH BEAM

INDICATES NUMBER OF ROWS OF BOLTS AT CONNECTION IF MORE THAN ONE ROW OF BOLTS OCCURS

(C=1/2") — BEAM CAMBER SIZE

0'-0" — SPOT ELEVATION

℄ — CENTER LINE

Ø — DIAMETER

OPENING

MECHANICAL EQUIPMENT

SPAN DIRECTION

1 — REVISION SYMBOL

DESIGN CRITERIA

DESIGN CODES AND STANDARDS

IBC-21: INTERNATIONAL BUILDING CODE, WITH LOCAL AMENDMENTS
IEBC-21: INTERNATIONAL EXISTING BUILDING CODE, WITH LOCAL AMENDMENTS
ASCE/SEI 7-16: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
ACI 318-19: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
ANSI/AWC NDS-2018: NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
ANSI/AWC PWF-2021: PERMANENT WOOD FOUNDATION DESIGN SPECIFICATION
ANSI/AWC SDPWS-2021: SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC

RISK CATEGORY — II

DESIGN LIVE LOADS

LOCATION	UNIFORM PSF	CONCENTRATED LBS	REMARKS
ROOFS, UNO	20**	—	—
FLOORS, UNO	80*	2,000	—
LOBBIES & FIRST FLOOR COORIDORS	100*	2,000	—

*REDUCIBLE
**SNOW LOADS GOVERN

DESIGN SNOW LOADS

GROUND SNOW LOAD, Pg	50 PSF
SNOW IMPORTANCE FACTOR, Is	1.0
SNOW EXPOSURE FACTOR, Ce	1.0
SNOW THERMAL FACTOR, Ct (COLD)	1.2
FLAT-ROOF SNOW LOAD, Pf (COLD)	42 PSF
SNOW DRIFT LOAD	PER PLANS
SNOW DRIFT WIDTH	PER PLANS
UNBALANCED SNOW LOADS	PER PLANS

DESIGN WIND LOADS

ULTIMATE WIND SPEED, Vult	115 MPH
NOMINAL WIND SPEED, Vasd	90 MPH
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	±0.18
C&C EDGE AND CORNER DISTANCE, "a"	10 FT

C&C PRESSURES (ULTIMATE):

LOCATION	REGION	ZONE	10 SQFT***	100 SQFT***	500 SQFT***
ROOF	INTERIOR	1	-41	-29	-22
		1'	-24	-20	-9
	EDGE	2	-54	-39	-31
	CORNER	3	-74	-46	-31
WALL	INTERIOR	4	-28	-20	-18
	CORNER	5	-35	-23	-18

***VALUES MAY BE LINEARLY INTERPOLATED

DESIGN SEISMIC LOADS

SEISMIC IMPORTANCE FACTOR, Ie	1.00
SITE CLASS	D
MAPPED SPECTRAL RESPONSE, Ss / S1	1.65g / 0.68g
DESIGN SPECTRAL RESPONSE, SDS / SD1	1.10g / 0.77g
SEISMIC DESIGN CATEGORY	D

EARTHWORK

ALLOWABLE BEARING PRESSURE	1,500 PSF

MATERIALS & STRENGTH

CONCRETE

ITEMS	MIN COMP STRENGTH	MAX W/C RATIO	AIR ENTRAINMENT	SLUMP
EXTERIOR CONCRETE	4,000 PSI	0.45	6%, ±1%	1 - 3 IN
FOUNDATIONS	3,000 PSI	0.50	5%, ±1%	1 - 3 IN
SLAB ON GRADE	4,000 PSI	0.45	—	1 - 4 IN

REINFORCING STEEL

ITEMS	ASTM	GRADE	MIN YIELD STRESS, Fy	REMARKS
REBAR, #3	A615	40	40 KSI	—
REBAR, #4 - #9	A615	60	60 KSI	—
REBAR, WELDABLE	A706	60	60 KSI	—
WELDED WIRE FABRIC	A185	60	60 KSI	—

WOOD

ITEMS	SIZE	SPECIES	GRADE	SPACING
STUDS	2x4	DF	STUD	16" OC
	2x6 OR LARGER	DF	#2	16" OC
JOISTS	2x4	DF	STUD	—
	2x6 OR LARGER	DF	#2	—
POSTS	2x4	DF	#2	—
	6x6 OR LARGER	DF	#1	—
BEAMS	—	DF	#2	—
LINTELS	—	DF	#2	—
LEDGERS	—	DF	#2	—
PLATES	—	DF	#2	—
BLOCKING	—	DF	#2	—

ENGINEERED LUMBER

ITEMS	TYPE	MANUFACTURER	REMARKS
LAMINATED VENEER LUMBER (BEAMS)	"VERSA-LAM" 2.1 3100 WEST (2800 FOR LESS THAN 3 1/2")	BOISE CASCADE OR APPROVED EQUIVALENT	ICC ESR-1387
LAMINATED VENEER LUMBER (STUDS)	VERSA-STUD 1.7 2400	BOISE CASCADE OR APPROVED EQUIVALENT	ICC ESR-1040
LAMINATED VENEER LUMBER	"VERSA-STRAND" 0.8E OR "VERSA-STUD" 1.7E 2400	BOISE CASCADE OR APPROVED EQUIVALENT	ICC ESR-1387
I-SERIES JOISTS	PER PLANS	BOISE CASCADE OR APPROVED EQUIVALENT	—
GLUED-LAMINATED BEAM	24F-V4 (SINGLE SPAN) 24F-V8 (CANTILEVER)	BOISE CASCADE OR APPROVED EQUIVALENT	—

PLYWOOD SHEATHING

ITEMS	THICKNESS	SPAN/INDEX RATIO	EDGE ATTACHMENT	FIELD ATTACHME...
ROOF	5/8"	32/16	10d AT 6" OC	10d AT 12"...
FLOOR*	3/4" T&G	48/24	10d AT 6" OC	10d AT 10"...
WALL**	7/16"	24/0	8d AT 6" OC	8d AT 12" OC

*USE RING SHANK NAILS AND GLUE SHEATHING TO FRAMING WITH AN APA AFG-01 QUALIFIED...
**AT SHEAR WALL SEE SHEAR WALL SCHEDULE FOR SHEATHING THICKNESS AND...

POST INSTALLED ANCHORS

ITEMS	BASE MATERIAL	CONNECTOR	PRODUCT	REMARKS
EPOXY ANCHOR	CONCRETE	THREADED ROD	HIT-HY 200-R ADHESIVE (HILTI)	ICC ESR-3187
			HIT-RE 500 V3 ADHESIVE (HILTI)	ICC ESR-3814
			AC200+ ADHESIVE (DEWALT)	ICC ESR-4027
			PURE110+ ADHESIVE (DEWALT)	ICC ESR-3298
			EPCON G5 ADHESIVE (ITW RED HEAD)	ICC ESR-1137
			SET-XP ADHESIVE (SIMPSON)	ICC ESR-2508
EXPANSION ANCHOR	CONCRETE	—	KWIK BOLT TZ (HILTI)	ICC ESR-1917
		—	POWER-STUD+ SD2 (DEWALT)	ICC ESR-2502
		—	TRUBOLT+ (ITW RED...	ICC ESR-2427
		—	STRONG-BOLT 2...	ICC ESR-3037
SCREW ANCHOR	CONCRETE	—	KWIK HUS-EZ (HILTI)	ICC ESR-3027
		—	SCREW-BOLT+ (DEWALT)	ICC ESR-3889
		—	TITEN HD (SIMPSON)	ICC ESR-2713

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA — 49 TH — Jesse Gobeli SE-13529 02/27/2025 REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

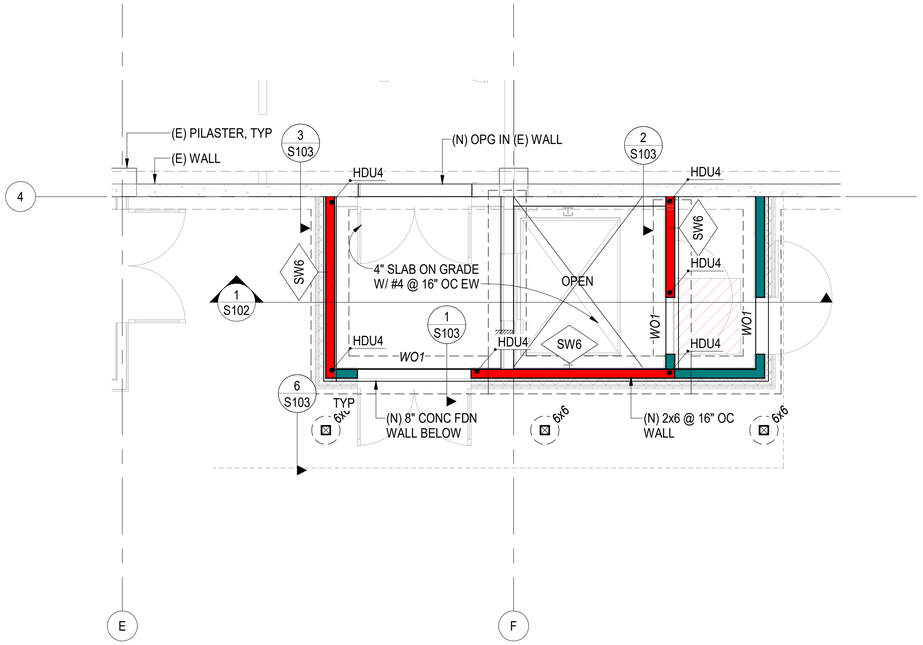
1400 Wasilla Shops Cr, Wasilla, AK

BID SET

JOB NO.	25.007
DATE:	02/27/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

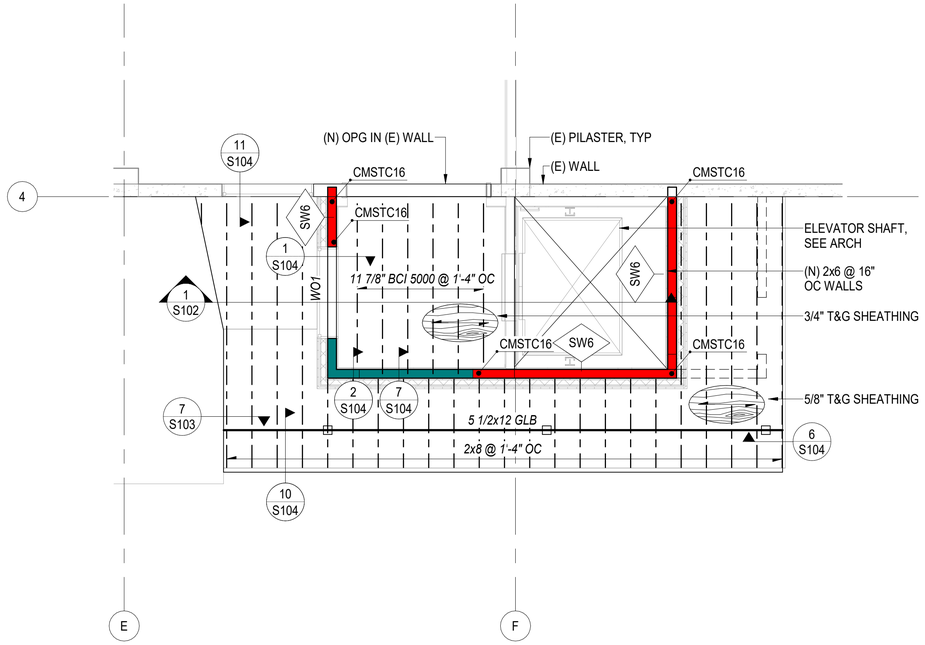
GENERAL STRUCTURAL INFORMATION

SHEET NO.
S001



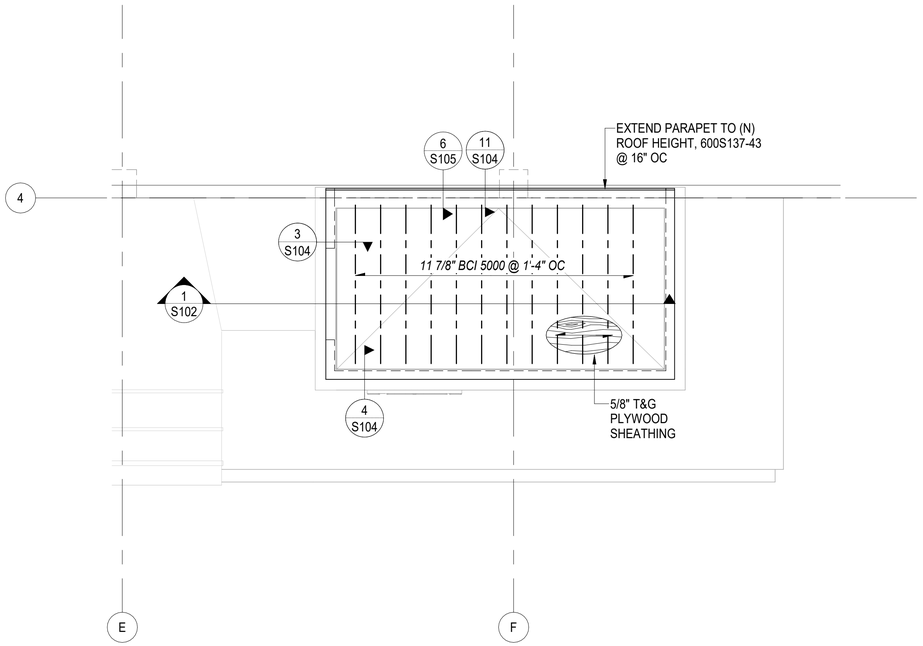
1 FIRST FLOOR FOUNDATION PLAN

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



2 SECOND FLOOR FRAMING PLAN

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



3 ELEVATOR ROOF FRAMING PLAN

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

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA 49 TH
Jesse Gobeli
SE-13529
02/27/2025
REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

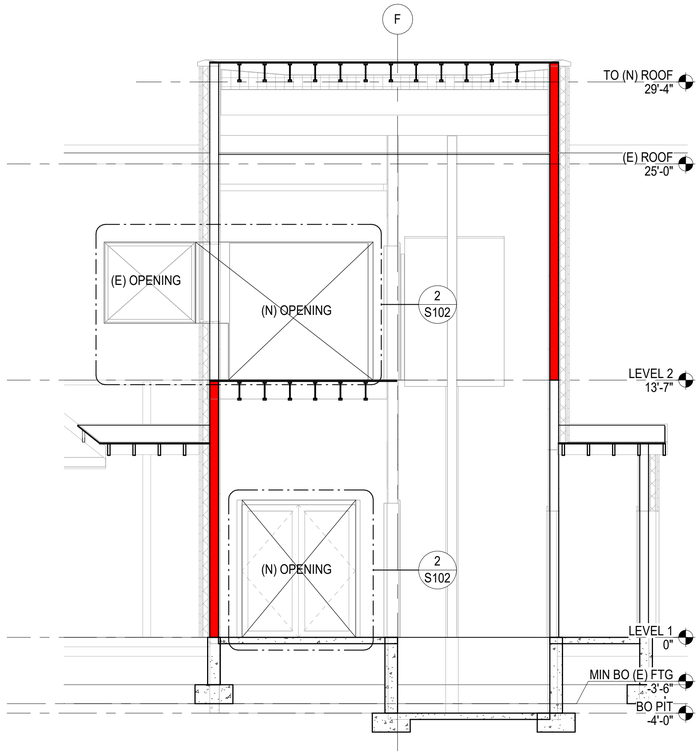
1400 Wasilla Shops Cr, Wasilla, AK

BID SET

JOB NO.	25.007
DATE:	02/27/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

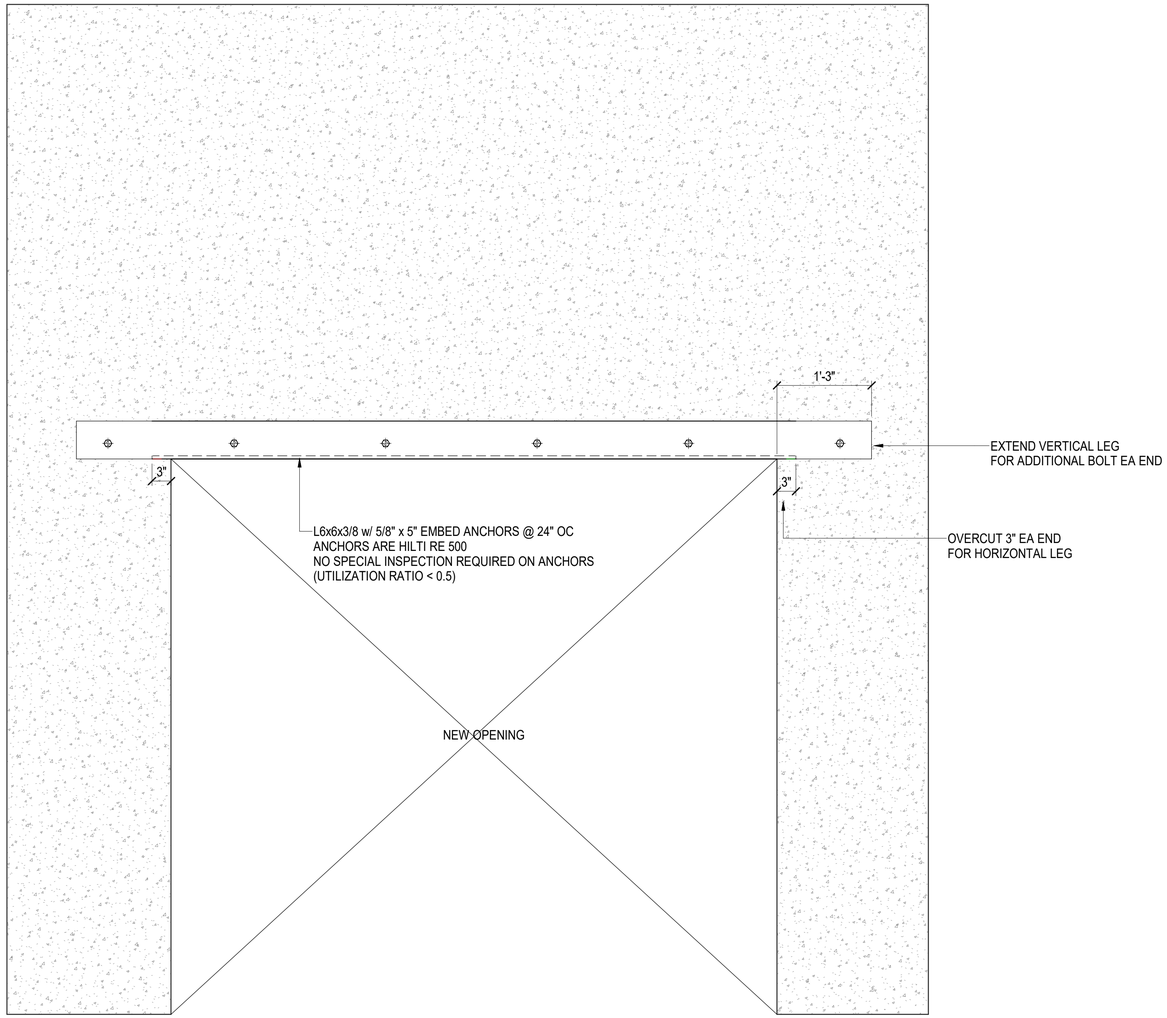
PLANS

SHEET NO.
S101



1 ELEVATOR SECTION

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



2 CONCRETE LINTEL ELEVATION

SCALE: NTS

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA
49 TH
Jesse Gobeli
SE-13529
02/27/2025
REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

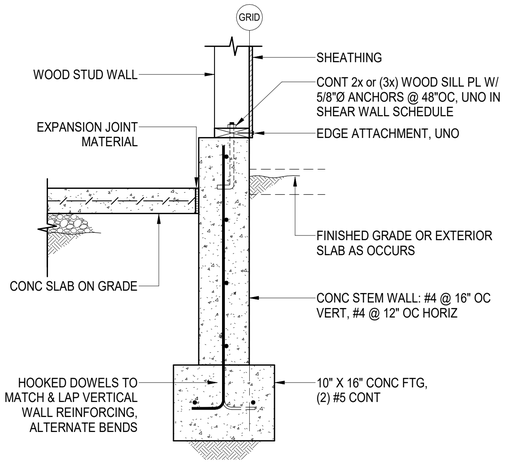
1400 Wasilla Shops Cr, Wasilla, AK

BID SET

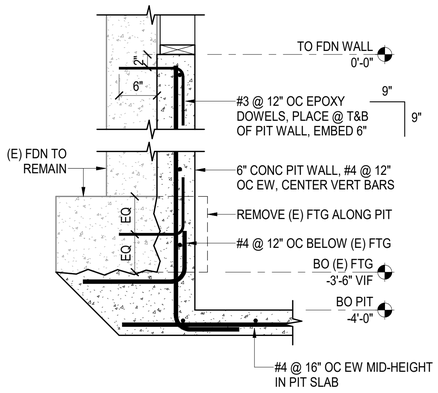
JOB NO.	**25.007**
DATE:	**02/27/2025**
PROJ. MGR.:	**Designer**
DRAWN BY:	**Author**
REVIEWED BY:	**Checker**
REVISIONS:	

SECTION

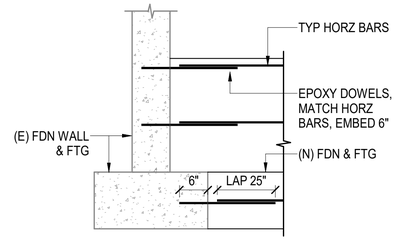
SHEET NO.
S102



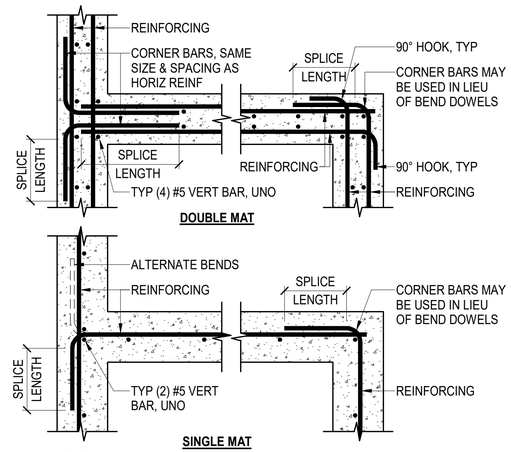
1 EXTERIOR WOOD STUD WALL AT CONCRETE FOOTING
SCALE: NTS



2 FOUNDATION UNDERPIN
SCALE: NTS



3 FOUNDATION TIE
SCALE: NTS



4 TYPICAL CONCRETE WALL INTERSECTION REINFORCING
SCALE: NTS (03005)

5 TYPICAL STEP FTG DETAIL
SCALE: NTS

6 SONOTUBE AT WOOD COLUMN
SCALE: NTS

7 OVERHANG CONNECTION
SCALE: NTS

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA 49 TH
Jesse Gobeli
SE-13529
02/27/2025
REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

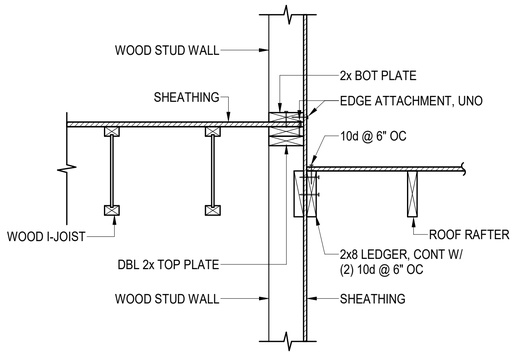
1400 Wasilla Shops Cr, Wasilla, AK

BID SET

JOB NO.	25.007
DATE:	02/27/2025
PROJ. MGR.:	JG
DRAWN BY:	ZB
REVIEWED BY:	JG
REVISIONS:	

DETAILS

SHEET NO.
S103

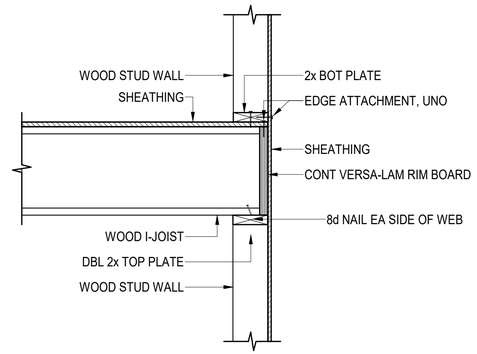


1 WOOD I-JOIST AT WOOD STUD WALL
SCALE: NTS

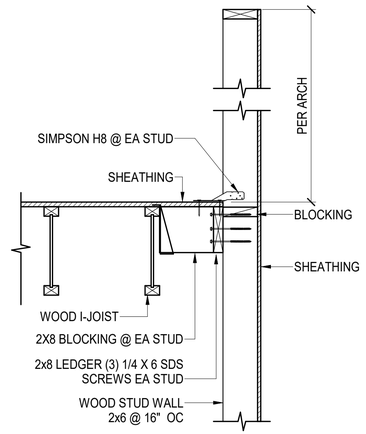
TYPICAL WOOD FASTENING SCHEDULE		
CONNECTION	FASTENING	LOCATION
JOIST TO SILL OR GIRDER	(3) 2 1/2"x0.131" NAILS (3) 3"x0.131" NAILS	TOENAIL
BRIDGING TO JOIST	(2) 2 1/2"x0.131" NAILS (2) 3"x0.131" NAILS	TOENAIL EACH END
SILL PLATE TO JOIST OR BLOCKING	3 1/2"x0.135" NAILS AT 16" OC 3"x0.131" NAILS AT 8" OC	TYPICAL FACE NAIL
TOP PLATE TO STUD	(2) 3 1/2"x0.162" NAILS (3) 3"x0.131" NAILS	END NAIL
STUD TO SILL PLATE	(4) 2 1/2"x0.131" NAILS (4) 3"x0.131" NAILS	TOENAIL
	(2) 3 1/2"x0.162" NAILS (3) 3"x0.131" NAILS	END NAIL
DOUBLE STUDS	3 1/2"x0.135" NAILS AT 16" OC 3"x0.131" NAILS AT 8" OC	FACE NAIL
DOUBLE TOP PLATES	3 1/2"x0.135" NAILS AT 24" OC 3"x0.131" NAILS AT 12" OC	TYPICAL FACE NAIL
	(8) 3 1/2"x0.162" NAILS (12) 3"x0.131" NAILS	LAP SPLICE
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 2 1/2"x0.131" NAILS (3) 3"x0.131" NAILS (3) 3" 14 GAUGE STAPLES	TOENAIL
RIM JOIST TO TOP PLATE	2 1/2"x0.131" NAILS AT 6" OC 3"x0.131" NAILS AT 6" OC	TOENAIL
TOP PLATES, LAPS AND INTERSECTIONS	(2) 3 1/2"x0.162" NAILS 3"x0.131" NAILS AT 6" OC	TOENAIL
CONTINUOUS HEADER, TWO PIECES	3 1/2"x0.162" NAILS AT 16" OC	EDGE
CONTINUOUS HEADER TO STUD	(4) 2 1/2"x0.131"	TOENAIL
WOOD JOIST TO PLATE	(3) 2 1/2"x0.131" NAILS (3) 3"x0.131" NAILS	TOENAIL
BUILT-UP CORNER STUDS	3 1/2"x0.162" NAILS AT 24" OC 3"x0.131" NAILS AT 16" OC	OVERLAPPING EDGES
BUILT-UP GIRDER AND BEAMS	4"x0.192" NAILS AT 32" OC 3"x0.131" NAILS AT 24" OC	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	(2) 4"x0.192" NAILS (3) 3"x0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE

GENERAL NOTES:
A. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16".
B. FASTENING SCHEDULE APPLIES UNO, WHERE DIFFERENCES OCCUR, GREATER REQUIREMENT GOVERNS.

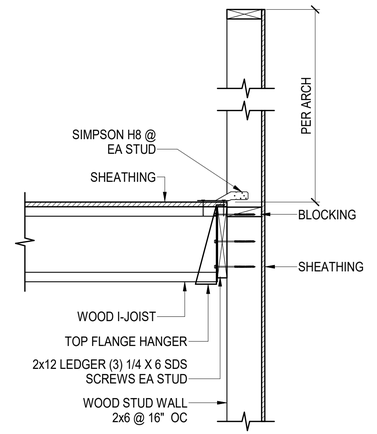
8 TYPICAL WOOD FASTENING
SCALE: NTS (06001)



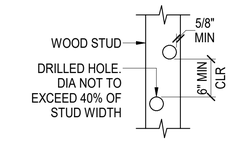
2 WOOD I-JOIST AT WOOD STUD WALL
SCALE: NTS

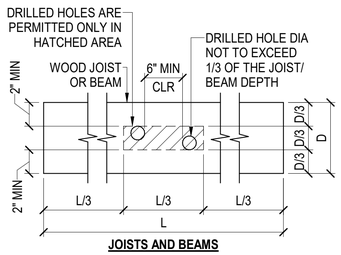


3 WOOD I-JOIST AT WOOD STUD WALL
SCALE: NTS



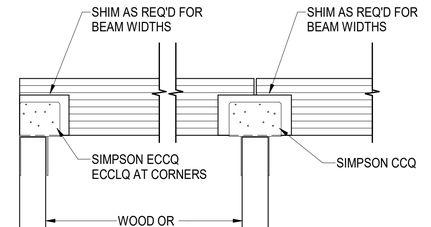
4 WOOD I-JOIST AT WOOD STUD WALL
SCALE: NTS



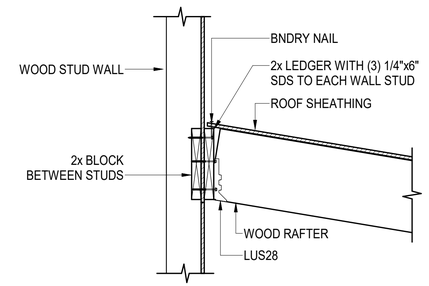


GENERAL NOTES:
A. DRILLED HOLES IN WOOD STUDS MAY BE INCREASED TO 60% OF STUD WIDTH IF ONE OF THE FOLLOWING CONDITIONS APPLY
   a. THE WALL IS A NON-BEARING WALL.
   b. THE STUDS ARE DOUBLED (NO MORE THAN TWO ADJACENT DOUBLED/DRILLED STUDS ARE PERMITTED).
B. "NON-BEARING" REFERS TO WALLS SUPPORTING NO LOADS OTHER THAN THE WEIGHT OF THE WALL. ALL OTHER WALLS SHALL BE CONSIDERED "BEARING" WALLS.
C. DETAIL APPLIES TO SOLID SAWN LUMBER ONLY.
D. DRILLED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A NOTCH OR CUT.
E. IF CONDITIONS EXCEED THOSE SHOWN CONTACT ENGINEER.

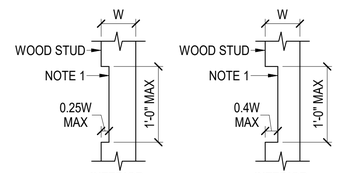
5 TYPICAL DRILLED HOLES IN SOLID SAWN WOOD FRAMING
SCALE: NTS (06002)

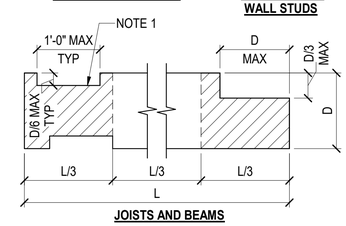


6 TYPICAL TIMBER POST CAP DETAIL
SCALE: NTS



7 WOOD RAFTERS AT WOOD STUD WALL
SCALE: NTS

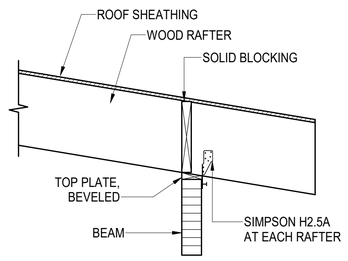




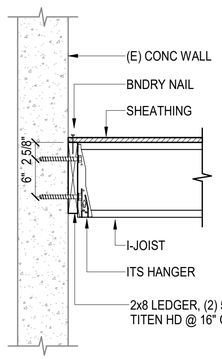
GENERAL NOTES:
A. NOTCHES IN EXTERIOR WALL STUDS IS NOT PERMITTED.
B. "NON-BEARING" REFERS TO WALLS SUPPORTING NO LOADS OTHER THAN THE WEIGHT OF THE WALL. ALL OTHER WALLS SHALL BE CONSIDERED "BEARING" WALLS.
C. DETAIL APPLIES TO SOLID SAWN LUMBER ONLY.
D. CUTS AND NOTCHES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A DRILLED HOLE.
E. IF CONDITIONS EXCEED THOSE SHOWN CONTACT ENGINEER.

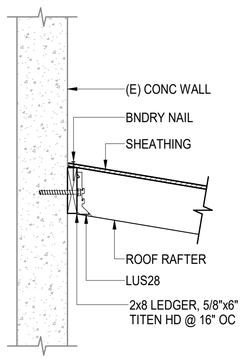
NOTE:
1. CUT OR NOTCH. OVERCUTTING NOT PERMITTED.

9 TYPICAL CUTS AND NOTCHES IN SOLID SAWN WOOD FRAMING
SCALE: NTS (06003)



10 WOOD RAFTERS AT GLB
SCALE: NTS





11 LEDGER AT CONCRETE WALL
SCALE: NTS

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA 49 TH
Jesse Gobeli
SE-13529
02/27/2025
REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID SET

JOB NO.	25.007
DATE:	02/27/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

DETAILS

SHEET NO.
S104

SHEAR WALL (SW) SCHEDULE

NOTES:
1. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
2. WHERE SHEATHING IS REQUIRED ON BOTH FACES OF WALL & NAIL SPACING IS LESS THAN 6" OC EACH FACE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT MEMBERS OR COMMON FRAMING MEMBER SHALL BE 3x OR THICKER & NAILS ON EACH FACE SHALL BE STAGGERED.
3. WHERE 8d NAILS SPACED AT 2" OC OR WHERE 10d NAILS ARE SPACED AT 3" OC OR LESS, FRAMING MEMBER SHALL BE 3x OR THICKER & NAILS SHALL BE STAGGERED.
4. (2) 2x STUDS STITCH-NAILED WITH (2) ROWS OF 16d NAILS AT 12" OC STAGGERED MAY BE SUBSTITUTED FOR 3x STUDS, BLOCKING OR SILL PLATES NOT AT FOUNDATION.
5. MAXIMUM STUD SPACING IS 24" OC.
6. ORIENT PANELS HORIZONTALLY OR VERTICALLY. ALL PANEL EDGES SHALL BE BACKED WITH 2x FRAMING (3x AS REQUIRED). BLOCK BETWEEN STUDS AT HORIZONTAL PANEL EDGES, UNO.
7. EDGE ATTACHMENT SPACING APPLIES TO ALL STUDS AT PANEL EDGES, TOP & BOTTOM & BLOCKING PANEL EDGES. LOCATE NAILS 3/8" MINIMUM FROM EDGES.
8. NAILS SHALL BE COMMON OR GALVANIZED (HOT DIPPED OR TUMBLED) BOX NAILS.
9. INSTALL 3"x3"x1/4" STEEL PLATE WASHERS AT ALL FOUNDATION ANCHORS.
10. SILL PLATE FRAMING ATTACHMENT ALSO APPLIES TO FRAMING ATTACHMENT ABOVE WALL TO WALL TOP PLATE, UNO.

KEYED NOTES:
A. CONTRACTOR'S OPTION TO USE ALTERNATE SILL PLATE SHOWN IN PARENTHESES ( ) WITH ALTERNATE ANCHOR BOLT SPACING SHOWN IN PARENTHESES ( ).
B. INSTALL 3x OR (2) 2x AT ALL SHEATHING PANEL JOINTS. FASTEN (2) 2x AT PANEL JOINTS TOGETHER WITH (2) 10d NAILS AT 4" OC, 2x4 FLAT BLOCKING IS PERMITTED.
C. INSTALL 3x AT SHEATHING PANEL JOINTS.

MARK	SHEATHING MATERIAL & ATTACHMENT				SILL PLATE & ATTACHMENT			REMARKS
	SHEATHING TYPE	SHEATHING THICKNESS	NUMBER OF FACES	EDGE ATTACHMENT	SILL PLATE	FOUNDATION ATTACHMENT	FRAMING ATTACHMENT	
SW6	WSP	7/16"	1	8d NAILS AT 6" OC	2x	5/8"Ø ANCHORS AT 48" OC	10d NAILS AT 5" OC	—

HOLDOWN SCHEDULE

NOTES:
1. AT STRAP HOLDOWNS, SEE MFR'S SPECIFICATIONS FOR DEFINITION OF CLEAR SPAN DIMENSIONS.
2. SEE TYPICAL DETAILS FOR SHARED HOLDOWN CONNECTION AT INTERSECTING SHEAR WALLS.
3. SEE TYPICAL DETAIL X / SXXX FOR ANCHOR EMBED LENGTH.

KEYED NOTES:
A. (2) 10d NAILS AT 4" OC.

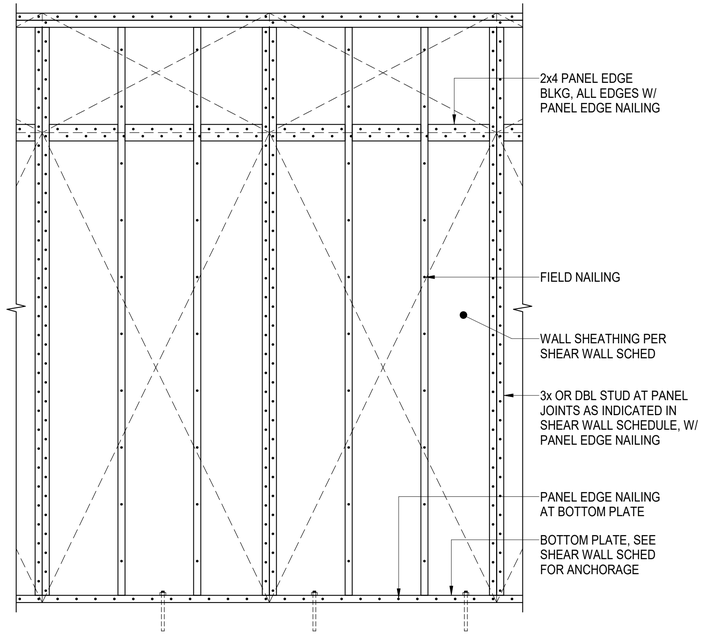
MARK	HOLDOWN TYPE	CONNECTION TO STUDS	BUILT-UP STUD CONNECTION AT EACH PLY	CONNECTION AT FOUNDATION	REMARKS
CMSTC16	SIMPSON CMSTC16 STRAP	(50) 16d SINKER NAILS AT (2) 2x MEMBER	NOTE A	—	STRAP LENGTH = 40" + CLEAR SPAN
HDU4	SIMPSON HDU4-SDS2.5	(10) 1/4"x2 1/2" SDS SCREWS AT (2) 2x MEMBER	NOTE A	5/8"Ø THREADED ROD ANCHOR, EMBED 6" IN SIMPSON SET-3G	—

WALL OPENING (WO) SCHEDULE

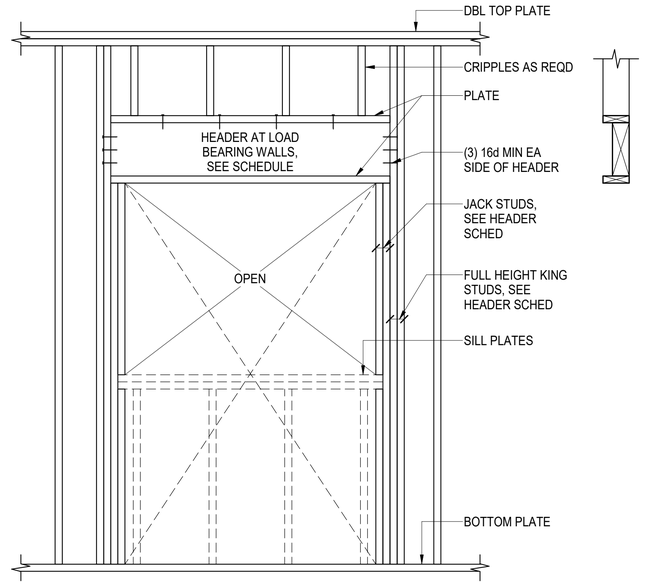
NOTES:
1. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.

MARK	TYPE	HEADER	TRIMMER STUD	JAMB STUDS	REMARKS
WO1	WOOD	4x12	2x6	(2) 2x6	—

NOTES:
1. PANELS ARE SHOWN VERTICAL, BUT MAY BE PLACED HORIZONTAL.
2. MIN EDGE DISTANCE FOR NAILS SHALL BE 3/8".
3. MIN SHEATHING SHEET SIZE SHALL BE 2'-0"x4'-0".
4. NAILS SHALL NOT BE OVERDRIVEN.
5. NAILS SHALL BE COMMON WIRE TYPE OR APPROVED EQUAL.

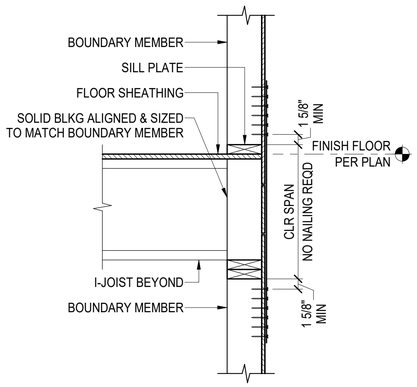


2 **SHEAR WALL NAILING DETAIL**
SCALE: NTS

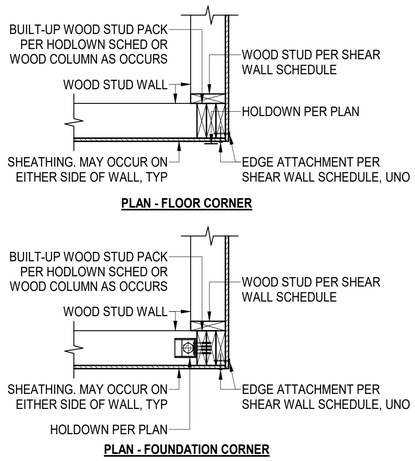


NOTE: HEADER IS REQD AT ALL WINDOW, DOOR, & MECHANICAL OPENINGS THRU STRUCTURAL WALLS, COORDINATE HEADER POSITION W/ MECHANICAL & ARCHITECTURAL DRAWINGS.

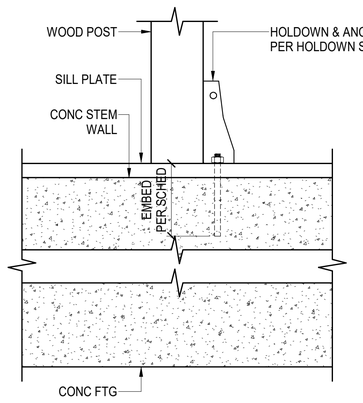
3 **TYPICAL HEADER DETAIL**
SCALE: NTS



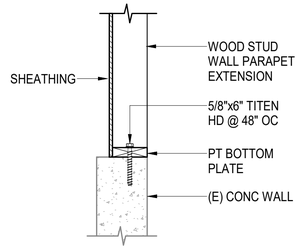
1 **TYPICAL HOLDOWN STRAP DETAIL**
SCALE: NTS



4 **TYPICAL SHARED HOLDOWN**
SCALE: NTS (06104)



5 **TYPICAL HOLDOWN AT CONC STEM WALL**
SCALE: NTS



6 **PARAPET EXTENSION**
SCALE: NTS

DEVISE ENGINEERING
8301 SCHOON STREET, SUITE 200
ANCHORAGE, AK 99518
PHONE: (907) 302-0455
WWW.DEVISE-ENG.COM
AK LICENSE #219671

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

STATE OF ALASKA 49 TH
Jesse Gobeli
SE-13529
02/27/2025
REGISTERED STRUCTURAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

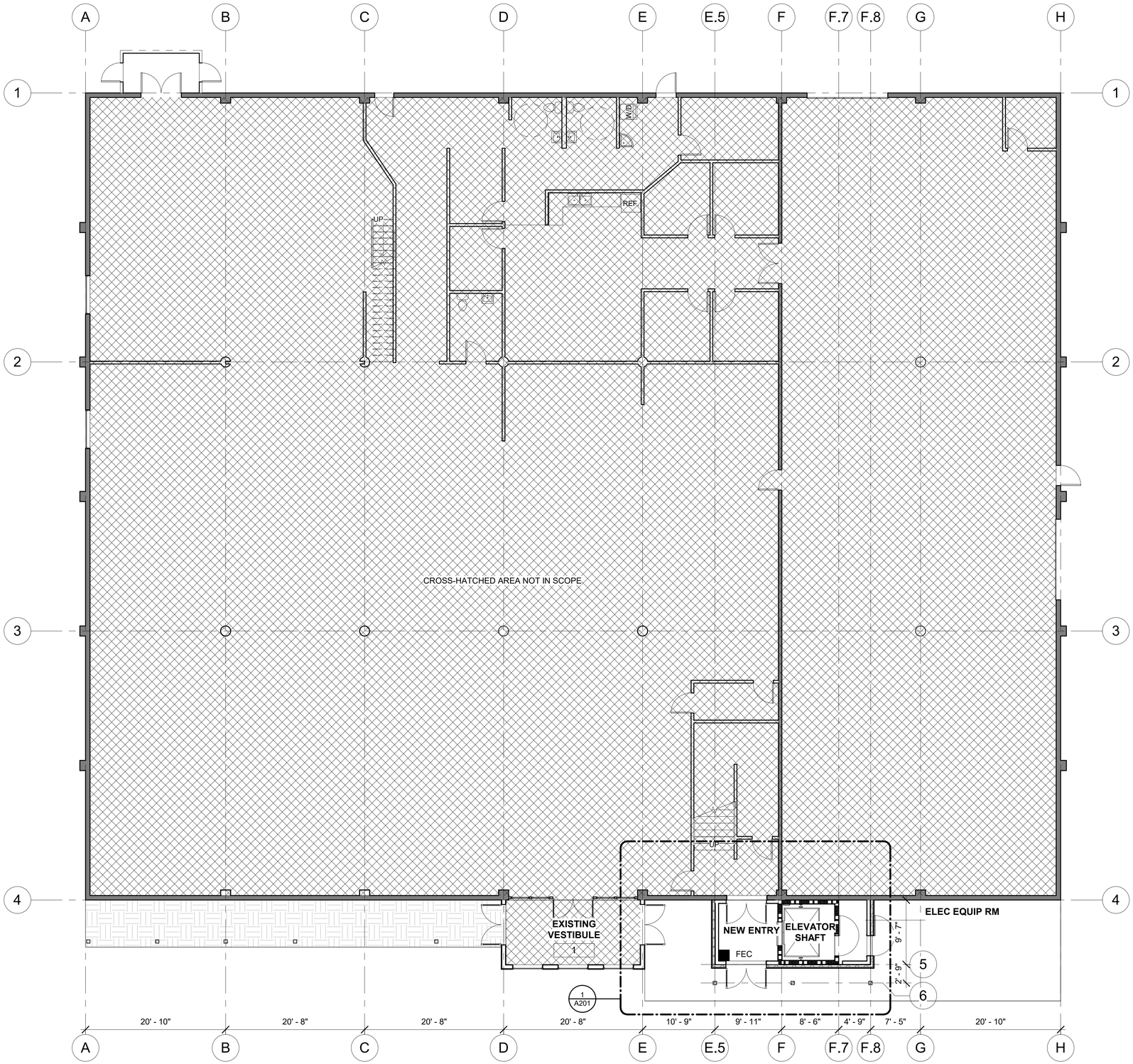
1400 Wasilla Shops Cr, Wasilla, AK

BID SET

JOB NO.	25.007
DATE:	02/27/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

DETAILS

SHEET NO.
S105



1 A001 LEVEL 1 REFERENCE PLAN
1/8" = 1'-0"

NORTH

GENERAL PROJECT DESCRIPTION

SELECTIVE DEMOLITION OF EXISTING ENTRY VESTIBULES AND LOW ROOF CANOPIES. CONSTRUCTION OF NEW TWO-STOREY METAL FRAMED VESTIBULE WITH AN ELEVATOR AND EXTENDED CANOPY ROOFS. SIDEWALK WILL GET EXTENDED.

CODE SUMMARY

Referenced codes:
- 2021 International Building Code with local amendments
- 2003 ANSI A117.1 - Accessible and Usable Buildings and Facilities

Chapter 3 Use & Occupancy:
2-story commercial building with a high-bay storage space on the west end. The proposed uses are offices and break room areas for the retail space on level 1, and further offices & storage on level 2 for a counseling service.
Occupancy types:
B – Business and accessory assembly spaces with fewer than 50 occupants
M – Mercantile – display and sale of merchandise and stock of goods, wares and merchandise accessible to the public
~~S-1 – Moderate hazard storage~~

Chapter 5 General Building Height & Area:
2 story structure with an automatic sprinkler system.
Table 503 - Construction type V-B (non-rated) Group M = 40 feet, 1 story above grade, 9,000sf
504.2 Automatic Sprinkler Increase = +20 feet, +1 story = 60 feet, 2 stories
506 Area Modifications
Frontage Increase = Entire building has 30'+ clear frontage therefore factor of increase = .75
Sprinkler Increase = factor of 3 for buildings with no more than 1 story above grade plane.
Modified allowable area = {9,000+[9,000x.75]+[9,000x3]}= 42,750sf/ story
Existing Gross Building Area = 17,254sf level 1, 17,049 level 2 = OK
New elevator vestibule is an addition to the existing area = 189sf on level 1, 147sf on level 2 = OK

GENERAL NOTES

1) FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS

2) GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL STRUCTURAL ENGINEERING BY AN ENGINEER LICENSED IN THE STATE OF ALASKA. THE INFORMATION SHOWN IN THE DRAWINGS OUTLINES A PERFORMANCE BASED SCOPE OF WORK AND THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL CODE REQUIREMENTS. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING FULL STRUCTURAL SHOP DRAWINGS FOR REVIEW AND APPROVAL.

3) ELECTRICAL DESIGN TO BE PERFORMED BY CONTRACTOR

MATERIALS AND FINISHES LEGEND

COMPOSITE SHINGLE ROOFING - MALARKEY "ALASKAN"; COLOR "ANTIQUE BROWN"

CEMENT BOARD SIDING - NICHIHA NICHIBOARD SMOOTH TEXTURE; 6" REVEAL; FACTORY PRIME ALL SIDES; FIELD PAINT AS INDICATED ON DRAWINGS

EMBOSSED CONCRETE - BRICKFORM "HERRINGBONE SLATE" STAMP PATTERN; COLOR/HARDENER "SHADOW SLATE 1045"

PAINT 1 - COLOR SHERWIN WILLIAMS "COPPER MOUNTAIN SW 6356"

PAINT 2 - COLOR SHERWIN WILLIAMS "ANJOU PEAR SW 6381"

PAINT 3 - COLOR SHERWIN WILLIAMS "STATUS BRONZE SW 7034"

PORCELAIN FLOOR & WALL TILE - CROSSVILLE MAIN STREET; COLOR "CAFE CARAMEL AV 212"; SIZE 6"X18"; PATTERN ASHLAR.

LIFE SAFETY LEGEND

PORTABLE FIRE EXTINGUISHER TYPE: MIN. 2A-10BC

FEC	SEMI-RECESSED WALL CABINET; PROVIDE & INSTALL
FE	WALL BRACKET MOUNT; PROVIDE & INSTALL
	1 HR RATED ASSEMBLY

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

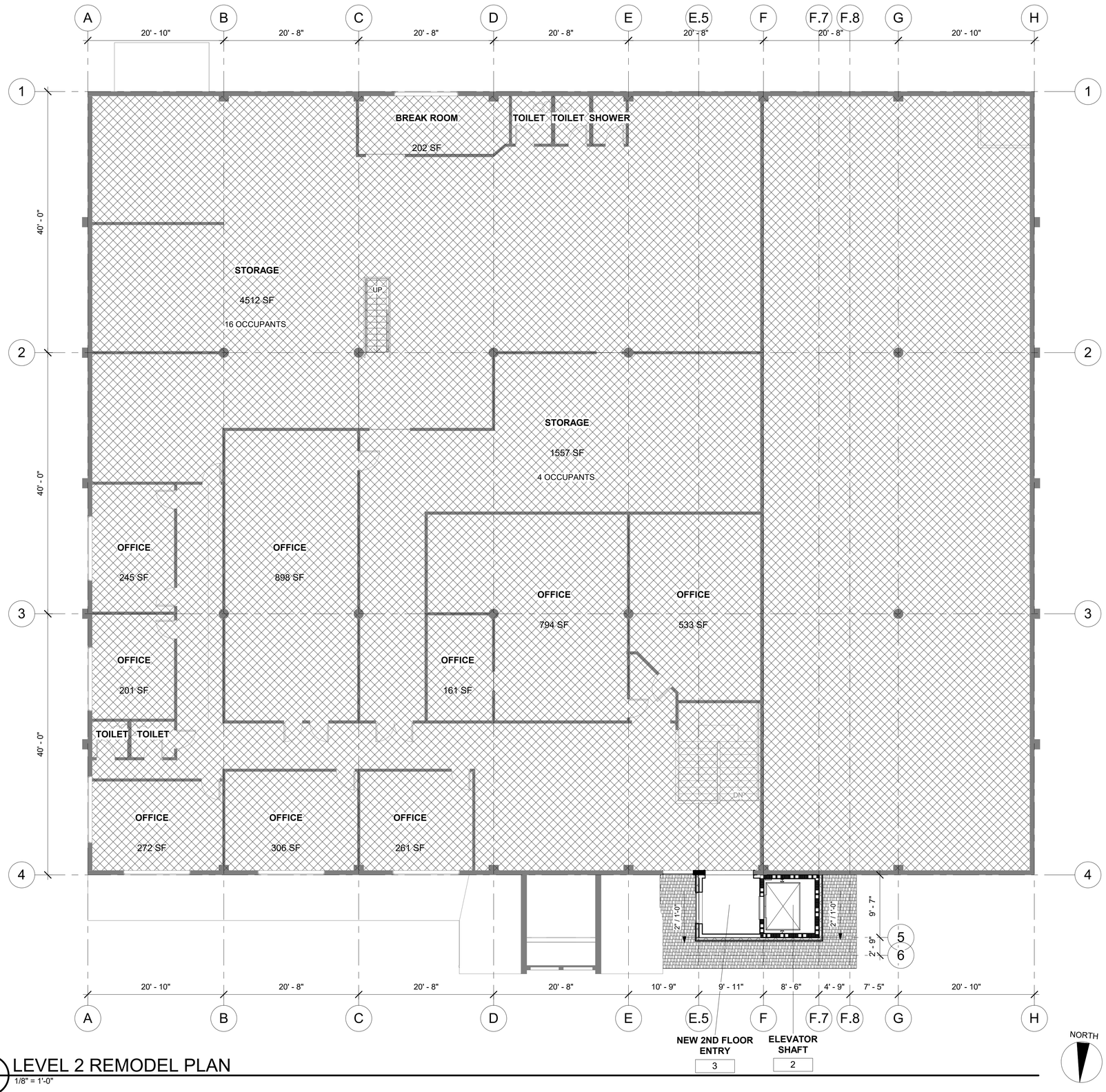
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	GPB
DRAWN BY:	GPB
REVIEWED BY:	JEM
REVISIONS:	

LEVEL 1 REFERENCE PLAN / CODE SUMMARY

SHEET NO.
A001



1 A002 LEVEL 2 REMODEL PLAN

1/8" = 1'-0"

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

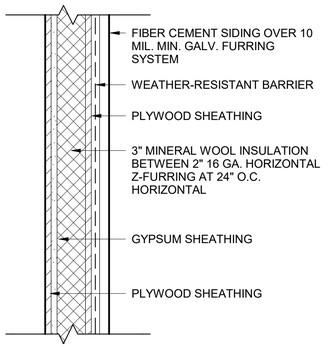
BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

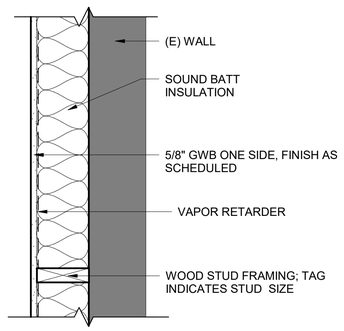
LEVEL 2 REFERENCE PLAN

SHEET NO.
A002

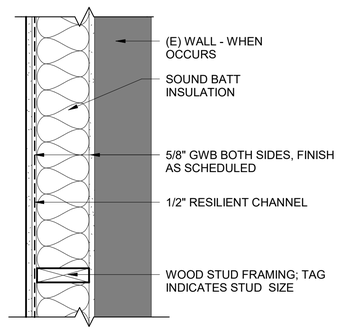
VERTICAL ASSEMBLIES



A WALL TYPE - EXTERIOR
AT CEMENTITIOUS SIDING

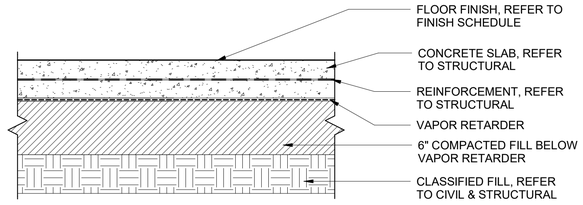


B INTERIOR PARTITION

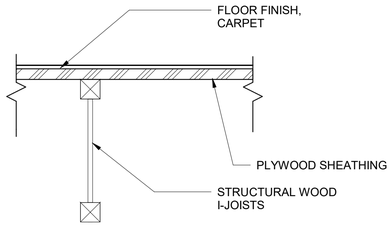


C INTERIOR PARTITION
UL 305 (ONE HOUR)

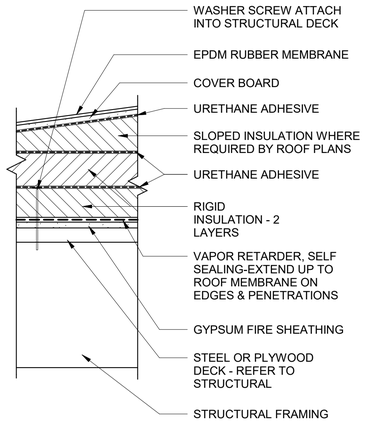
HORIZONTAL ASSEMBLIES



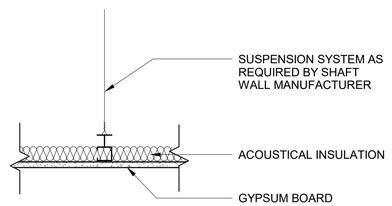
1 FLOOR ASSEMBLY (ON GRADE)



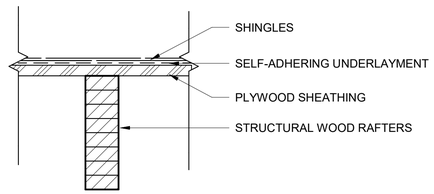
2 FLOOR ASSEMBLY - LEVEL 2



3 ROOF ASSEMBLY - NEW CONST.
ADHERED MEMBRANE ROOF SYSTEM



4 HORIZONTAL ASSEMBLY



5 CANOPY ROOF ASSEMBLY

GENERAL NOTES

1) ALL WALL FRAMING AND GWB CONTINUE TO BOTTOM OF STRUCTURE ABOVE UNLESS OTHERWISE NOTED.

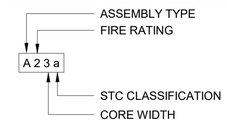
2) ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED. DIMENSIONING POINTS ARE TO THE WALL MEMBER AND NOT TO THE FACE OF ANY FURRING SHOWN ON THE WALL TYPES.

3) USE DEFLECTION HEADS AT ALL NONSTRUCTURAL / NON LOAD BEARING WALLS

4) ALL FIRE RATED WALLS SHALL EXTEND FULL HEIGHT FROM FLOOR TO STRUCTURAL DECK ABOVE, COMPLETE WITH FIRE SEALANTS, FIRE TAPE AT ALL JOINTS, AND FIRE DAMPERS AT DUCTS.

LEGEND

WALL TAG SYMBOL:



NOTE: WALL TYPES THAT HAVE MULTIPLE LAYERS OF GWB ON ONE SIDE ONLY WILL HAVE TAGS PLACED ON SIDE WITH MULTIPLE LAYERS

WALL TYPE - PER ASSEMBLY:

FIRE RATING
0 NON-RATED
1 1 HOUR
2 2 HOUR
S SMOKE RATED

CORE WIDTH
1 WOOD STUD (1 1/2")
2 WOOD STUD (2 1/2")
4 WOOD STUD (3 1/2")
6 WOOD STUD (5 1/2")
8 WOOD STUD (7 1/4")

FOR:
SUBMITTAL
PRICING

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

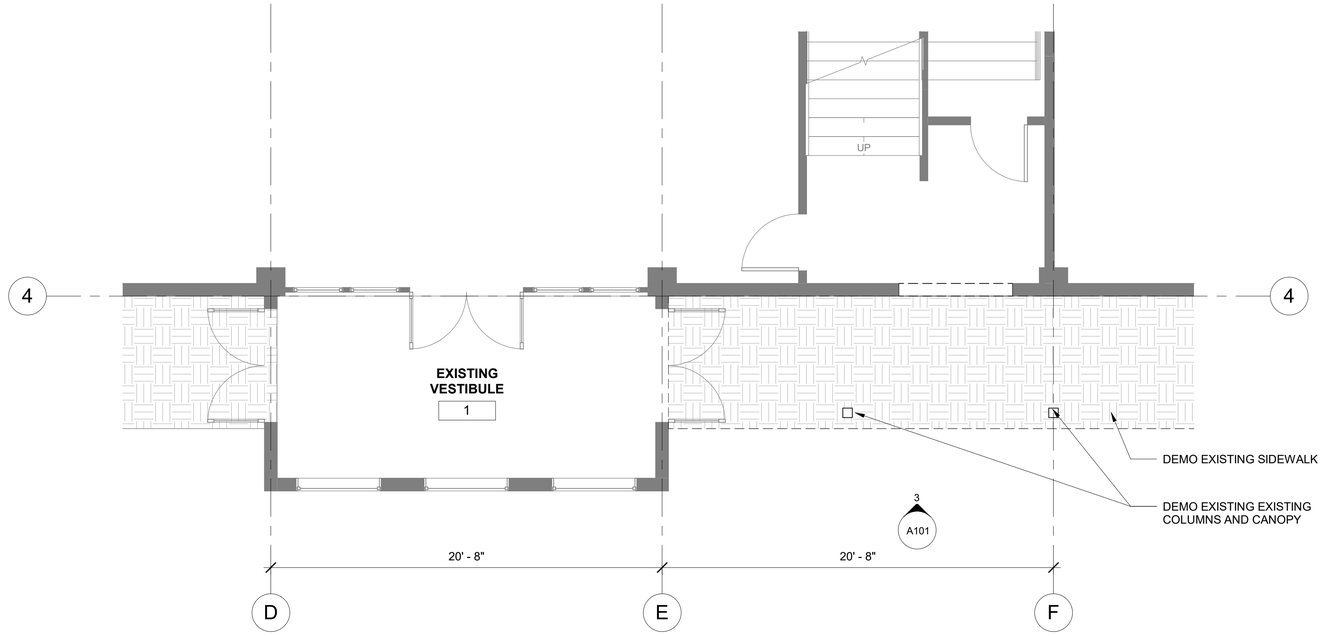
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

ASSEMBLIES

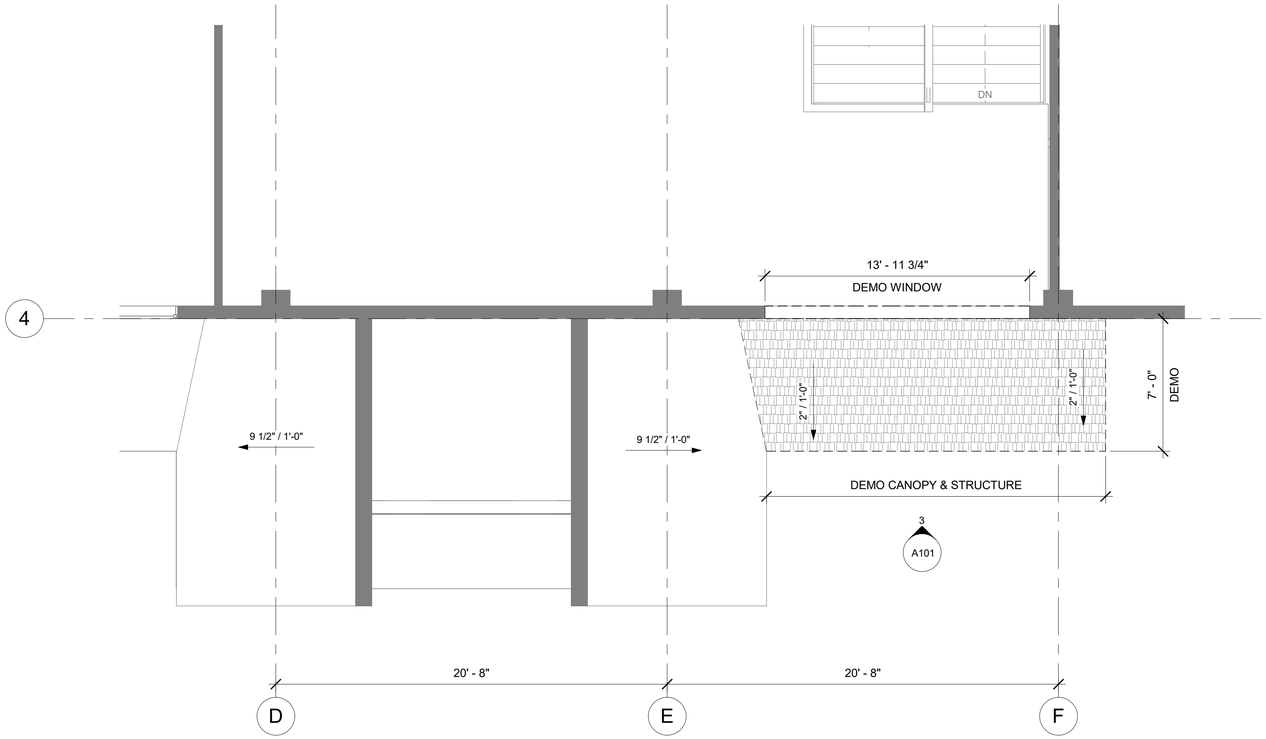
SHEET NO.
A060



1 A101 LEVEL 1 DEMO PLAN

1/4" = 1'-0"

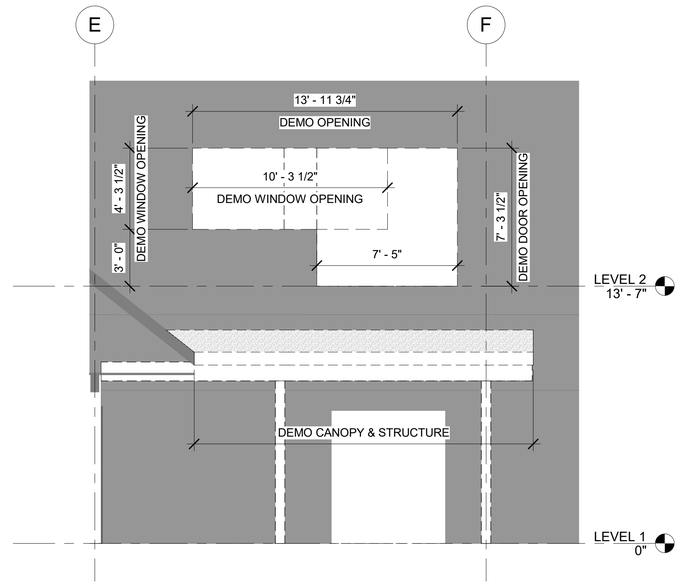
NORTH



2 A101 LEVEL 2 DEMO PLAN.

1/4" = 1'-0"

NORTH



3 A101 DEMO ELEVATION

1/4" = 1'-0"

FOR:
- SUBMITTAL
- PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	**2013039**
DATE:	**2/28/2025**
PROJ. MGR.:	**Designer**
DRAWN BY:	**Author**
REVIEWED BY:	**Checker**
REVISIONS:	

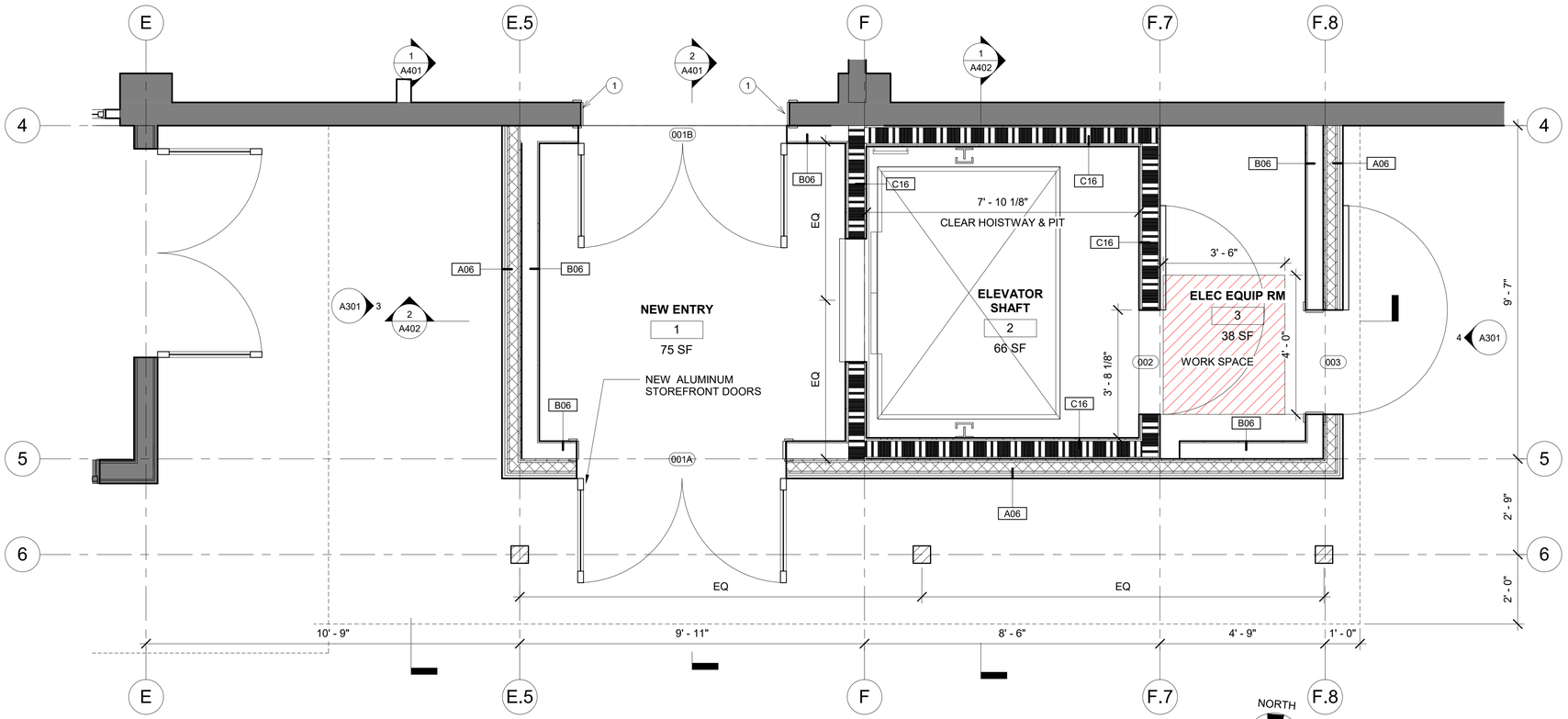
DEMO PLANS/ELEVATION

SHEET NO.

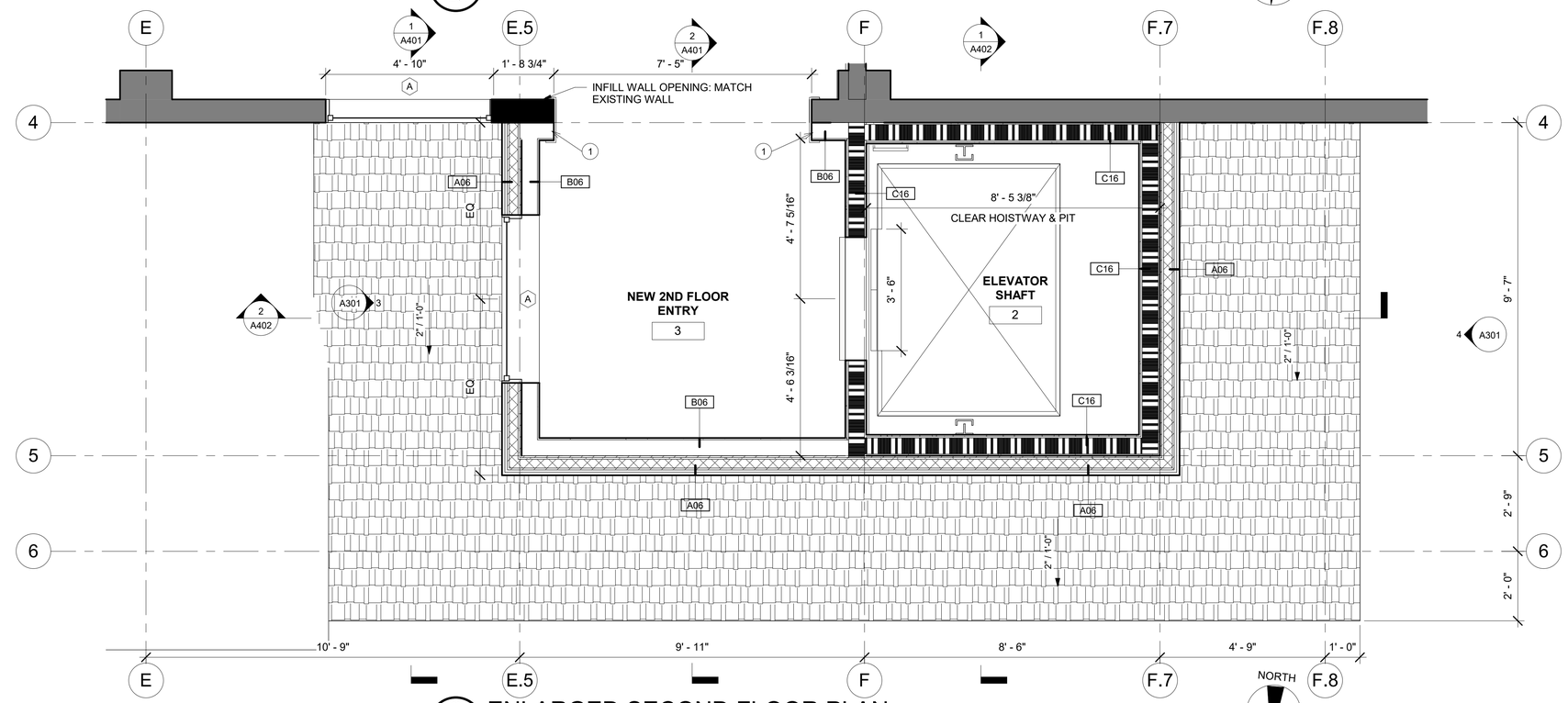
A101

KEYNOTES

1 DOOR FRAME (HM-1) TO WRAP AROUND BOTH EXISTING WALL OPENING AND NEW WALL



1 A201 ENLARGED FIRST FLOOR PLAN
1/2" = 1'-0"



2 A201 ENLARGED SECOND FLOOR PLAN
1/2" = 1'-0"

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159
WASILLA SHOPS

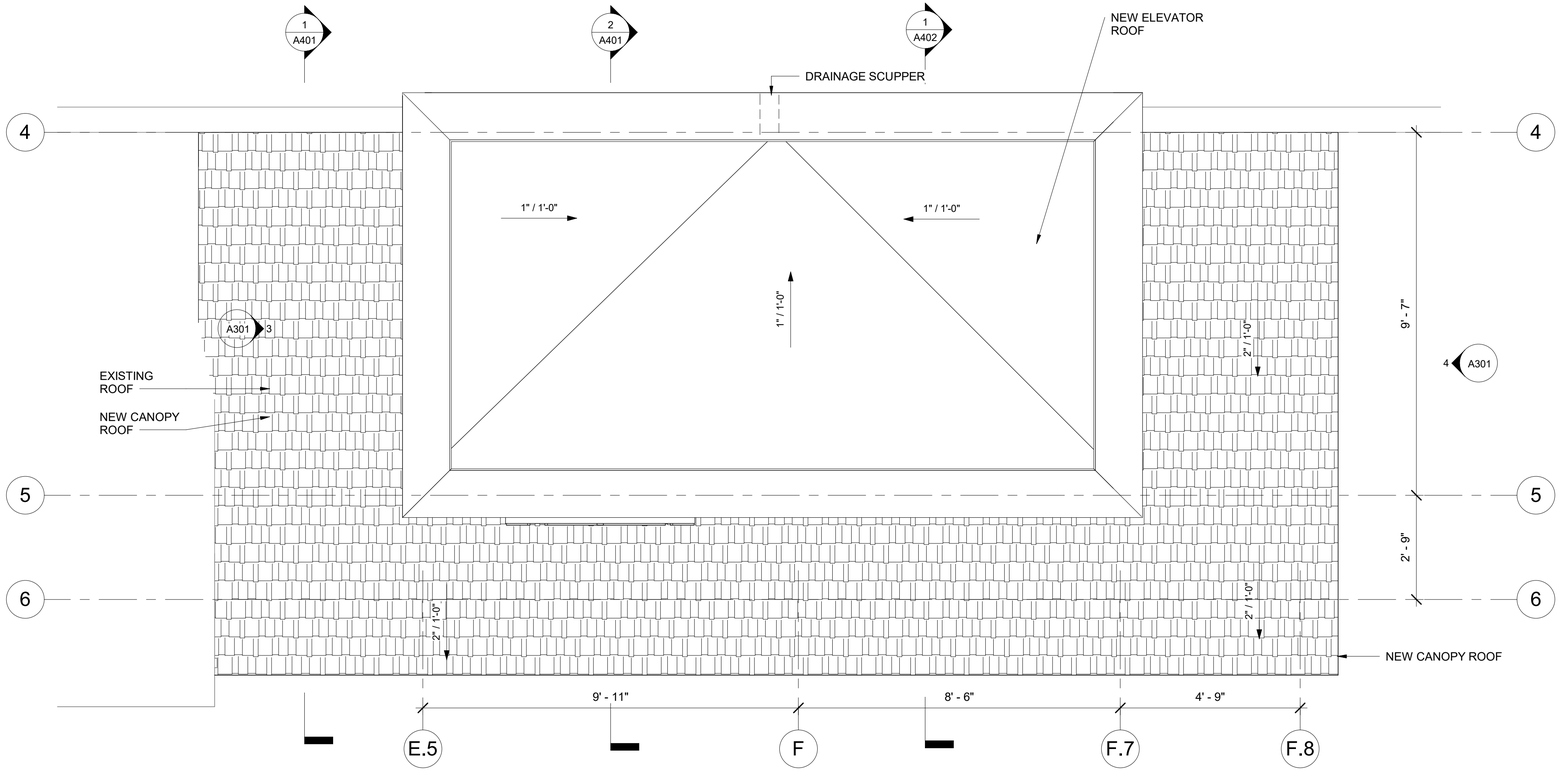
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	GPB
DRAWN BY:	GPB
REVIEWED BY:	JEM
REVISIONS:	

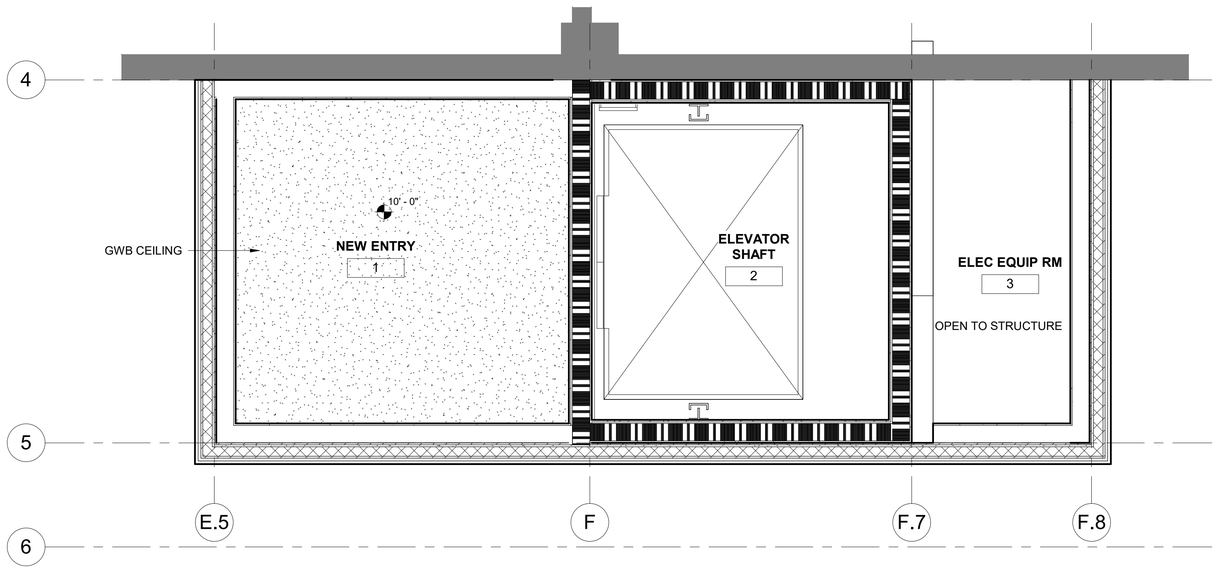
ENLARGED ENTRY VESTIBULE PLANS

SHEET NO.
A201



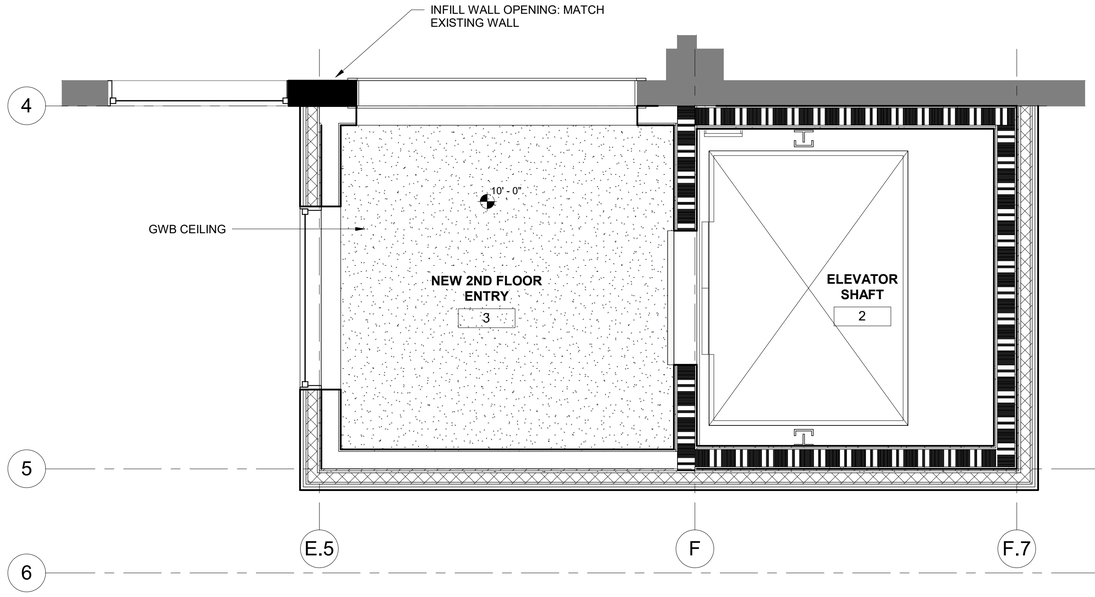
1 A202 ENLARGED T.O. NEW ROOF PLAN

1/2" = 1'-0"



2 A202 ENLARGED RCP PLAN - LEVEL 1

1/2" = 1'-0"



3 A202 ENLARGED RCP PLAN - LEVEL 2

1/2" = 1'-0"

FOR:
- SUBMITTAL
- PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

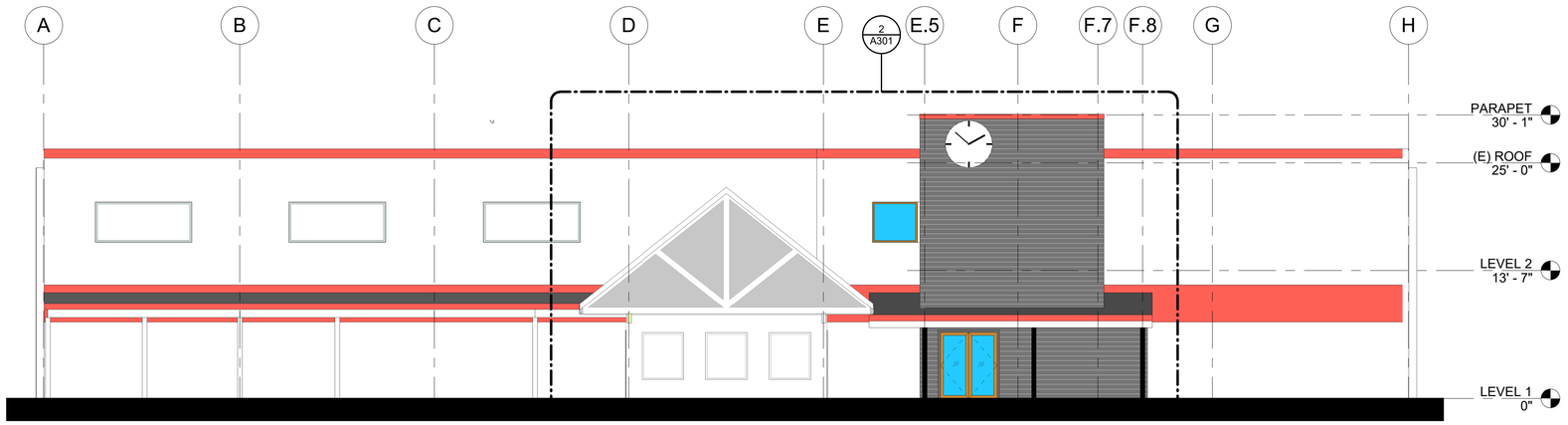
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

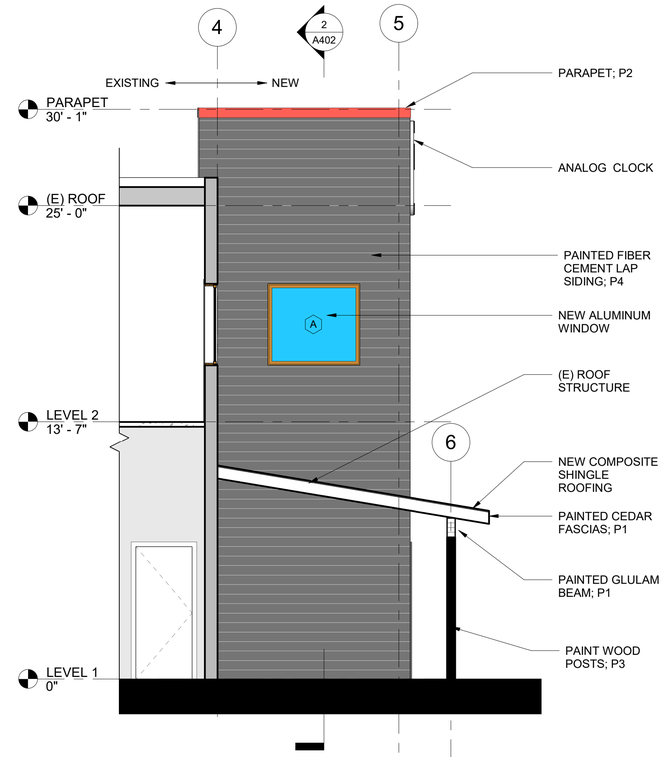
JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

ENLARGED ENTRY VESTIBULE ROOF PLAN, RCPS

SHEET NO.
A202



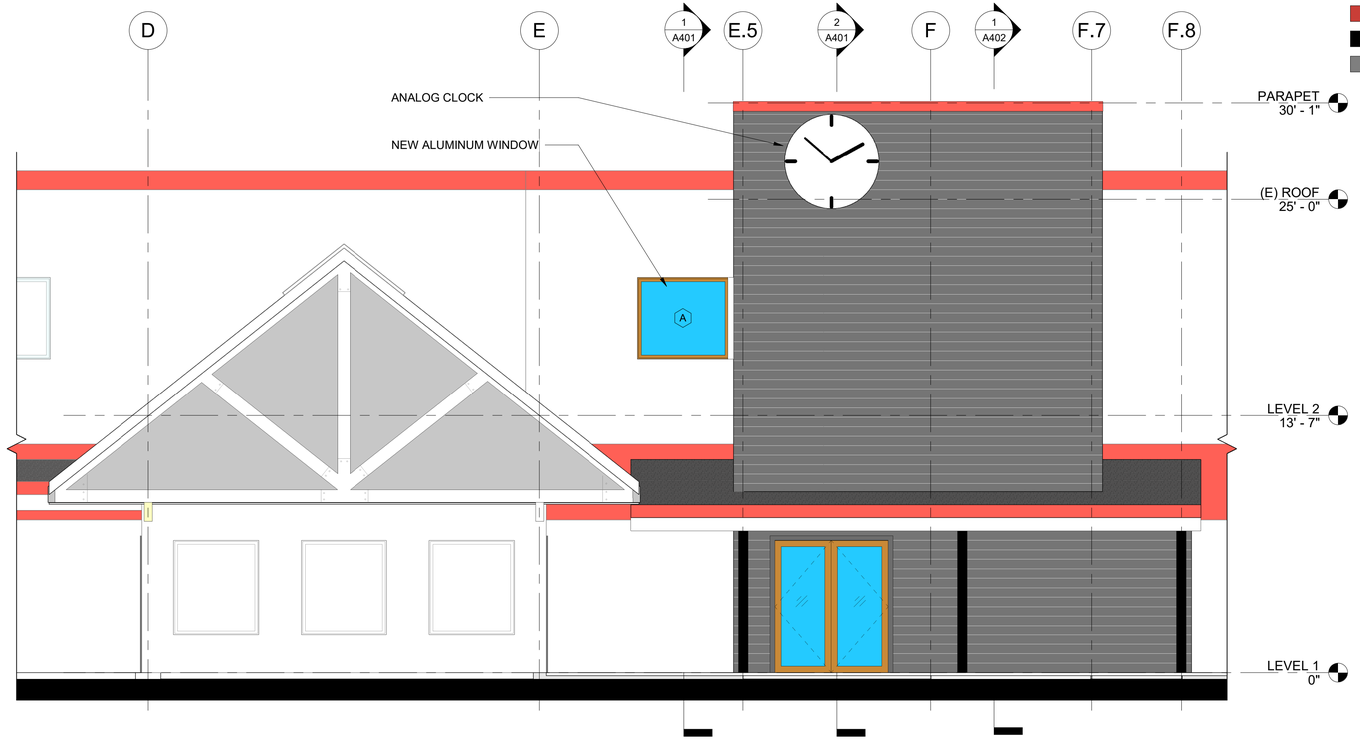
1 A301 NORTH ELEVATION
1/8" = 1'-0"



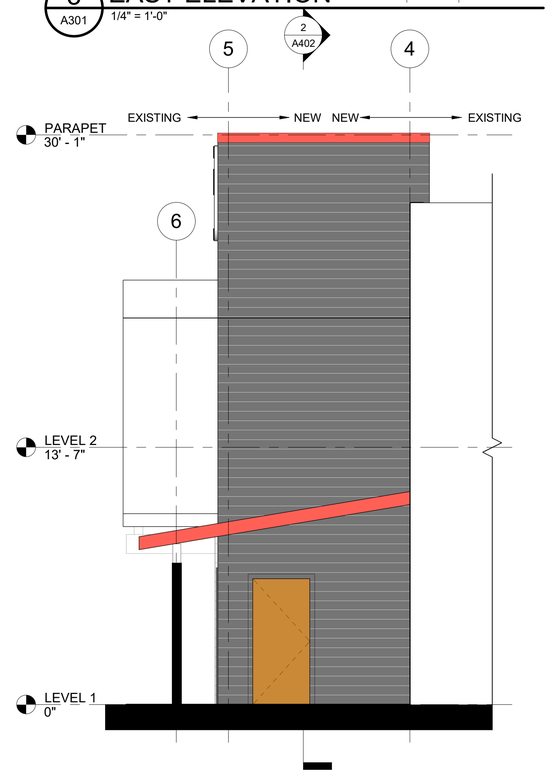
3 A301 EAST ELEVATION
1/4" = 1'-0"

PAINT LEGEND

- P1: 1730-1
- P2: P170-7
- P3: HDC-MD-04
- P4: RAH-94



2 A301 ENLARGED NORTH ELEVATION
1/4" = 1'-0"



4 A301 WEST ELEVATION
1/4" = 1'-0"

FOR:
- SUBMITTAL
- PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

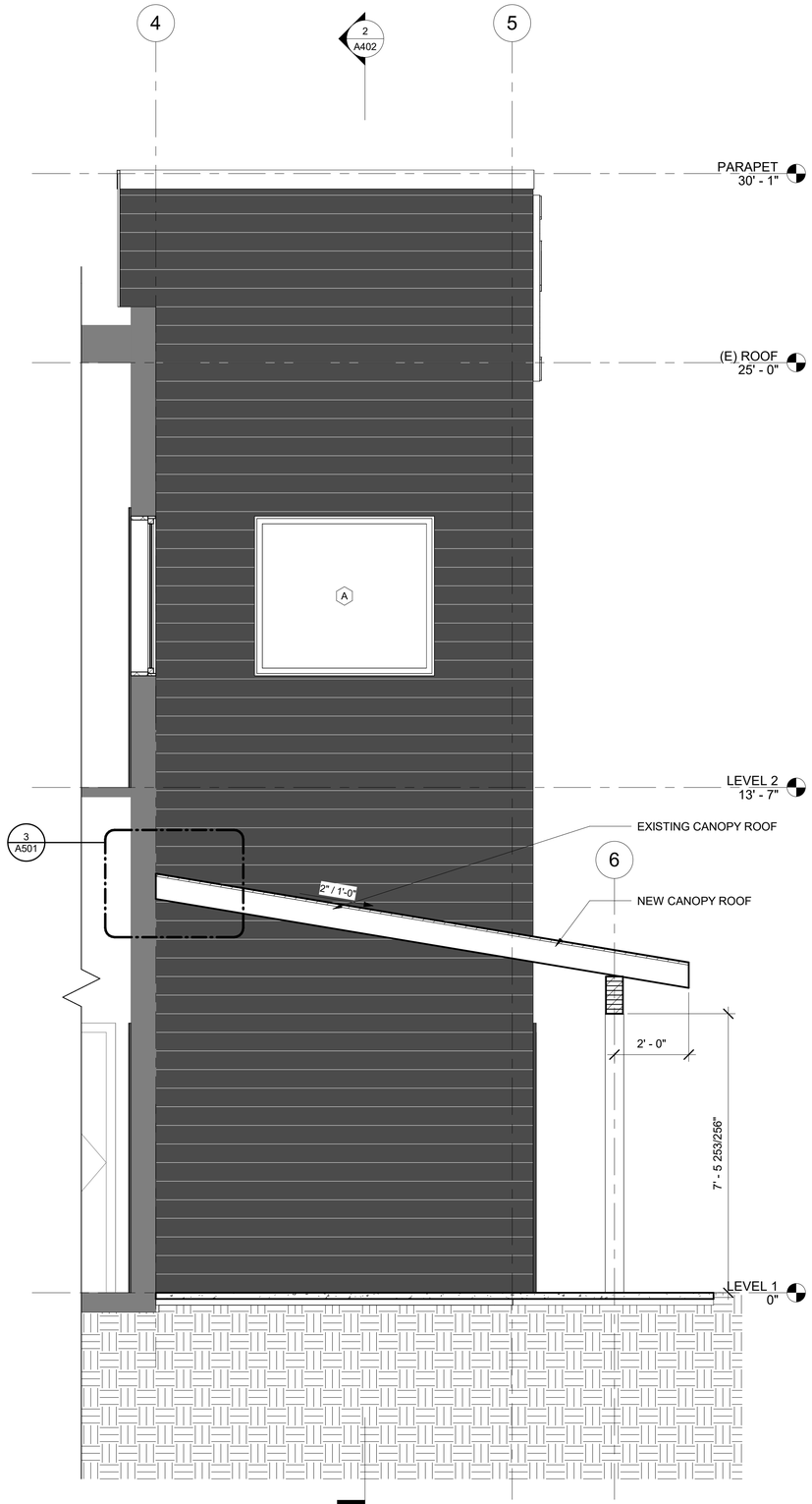
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

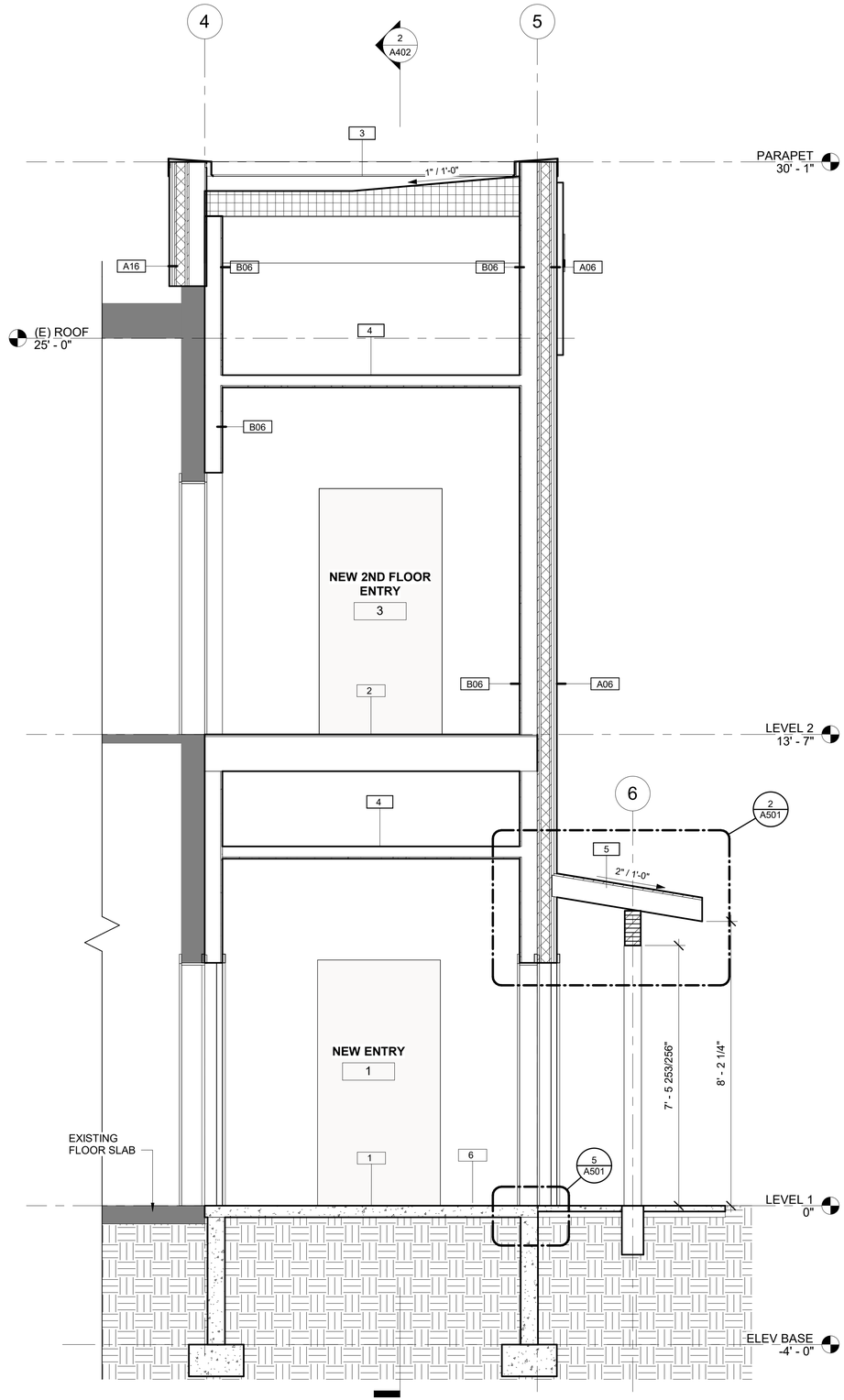
JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	GPB
DRAWN BY:	SP
REVIEWED BY:	GPB
REVISIONS:	

EXTERIOR ELEVATIONS

SHEET NO.
A301



1 A401 NEW ENTRY SECTION B1
1/2" = 1'-0"



2 A401 NEW ENTRY SECTION B
1/2" = 1'-0"

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

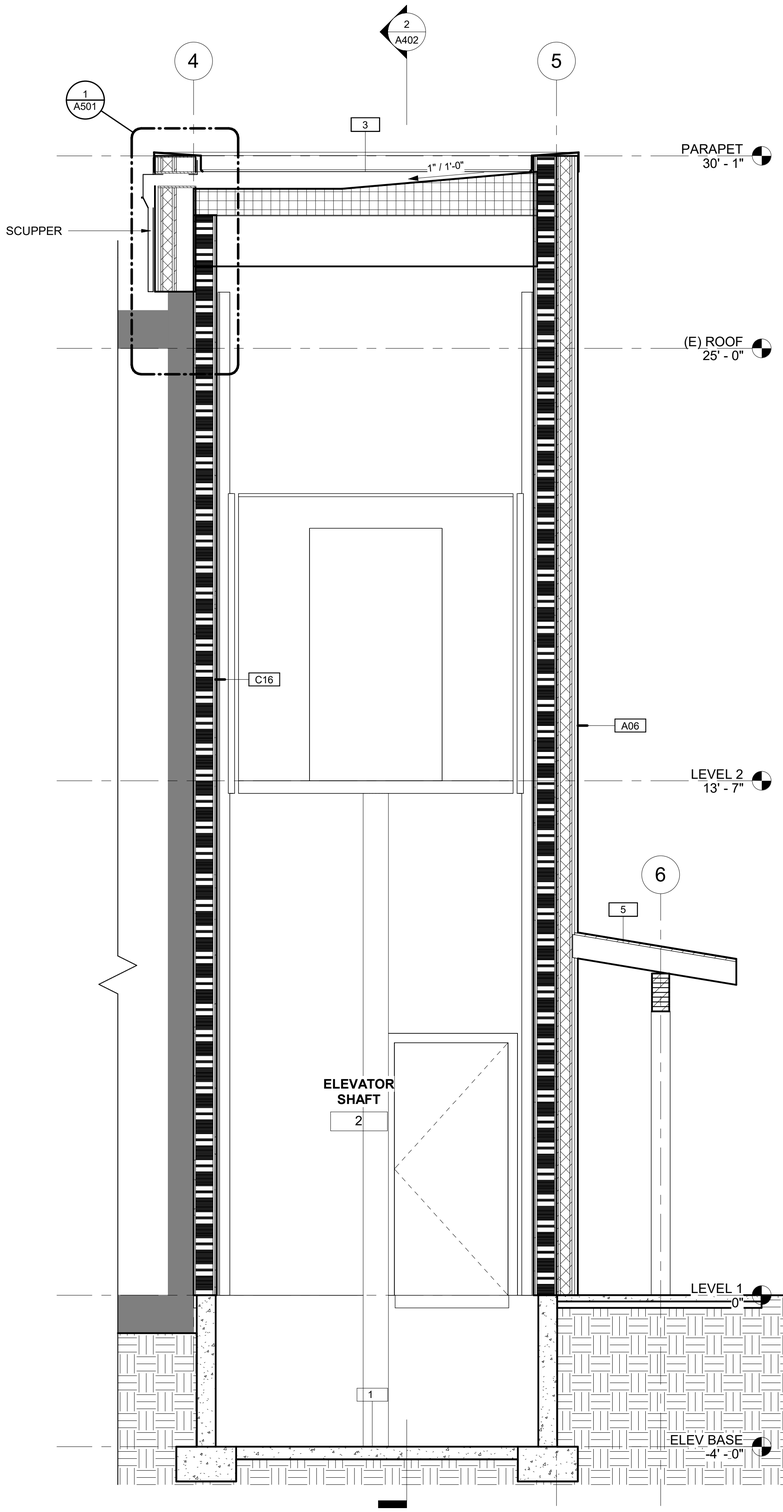
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	GPB
DRAWN BY:	SP
REVIEWED BY:	GPB
REVISIONS:	

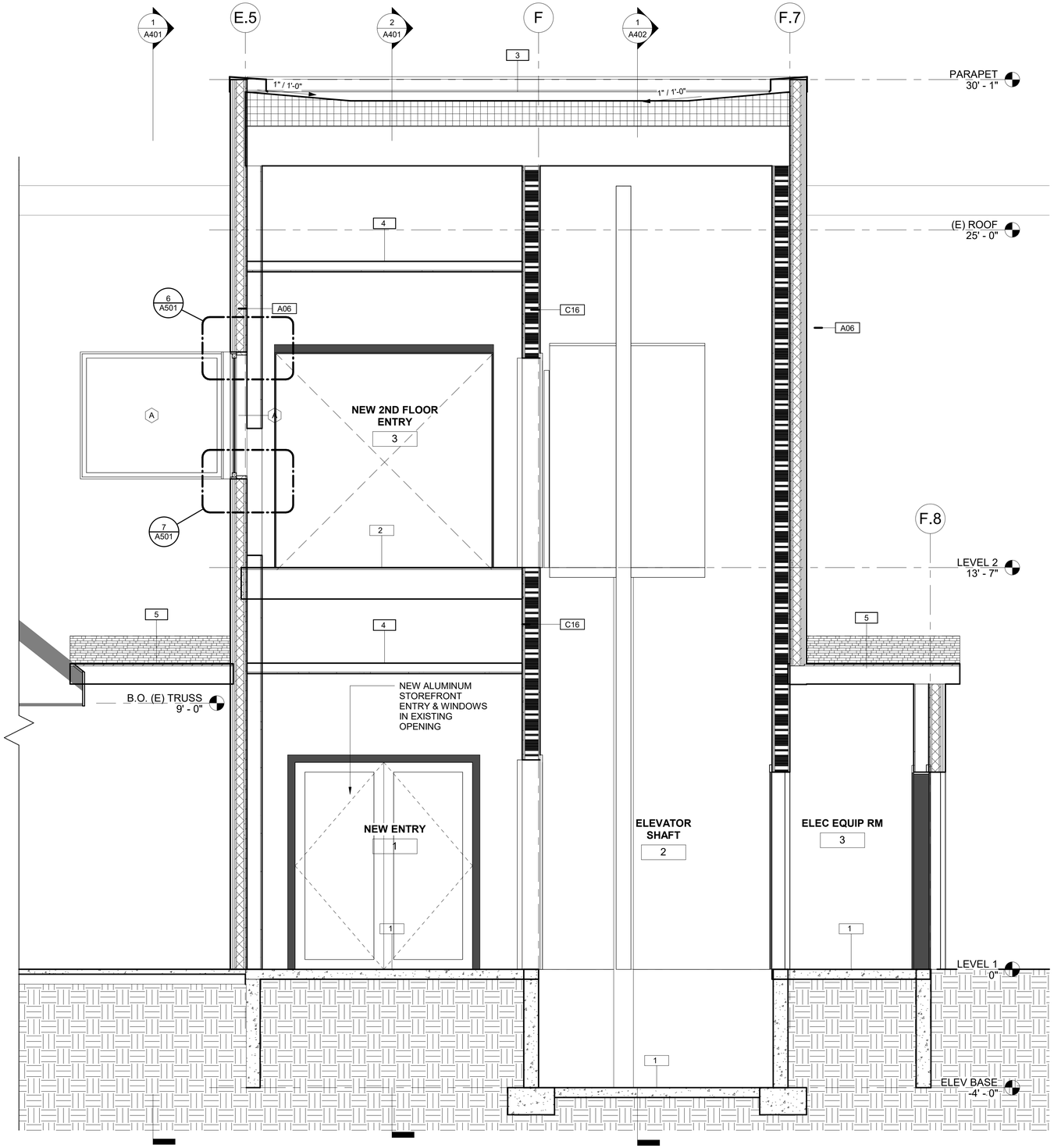
BUILDING SECTIONS

SHEET NO.
A401



1 A402 ELEVATOR SHAFT SECTION

1/2" = 1'-0"



2 A402 NEW ENTRY SECTION A

1/2" = 1'-0"

FOR:
- SUBMITTAL
- PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

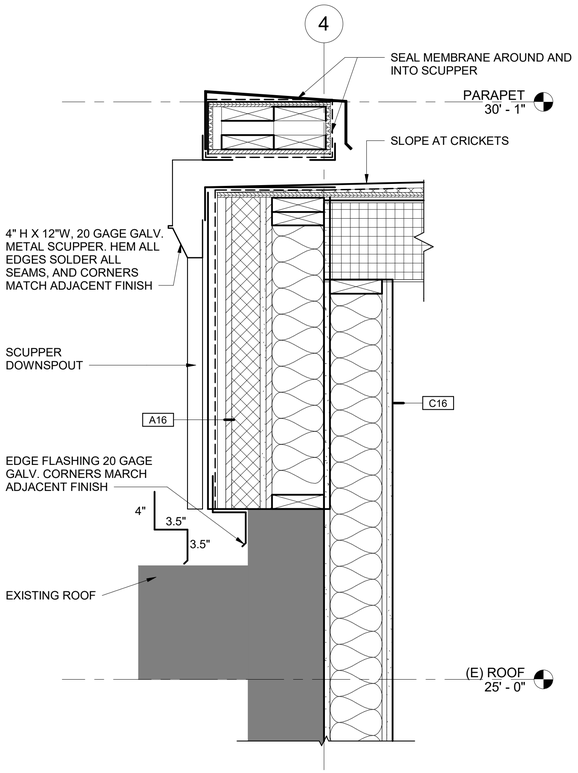
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

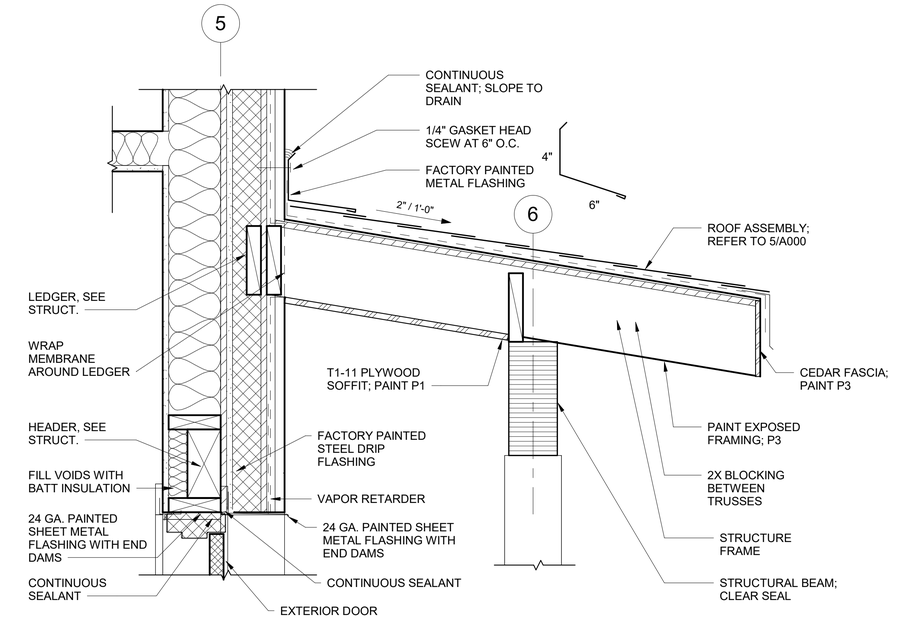
JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	Designer
DRAWN BY:	Author
REVIEWED BY:	Checker
REVISIONS:	

BUILDING SECTIONS

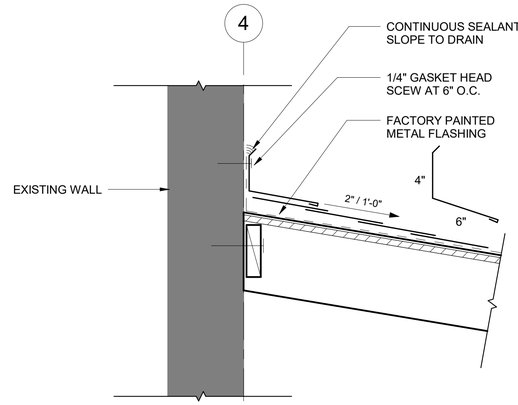
SHEET NO.
A402



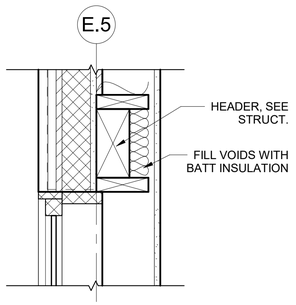
1 A501 PARAPET EXTENTION DETAIL
1 1/2" = 1'-0"



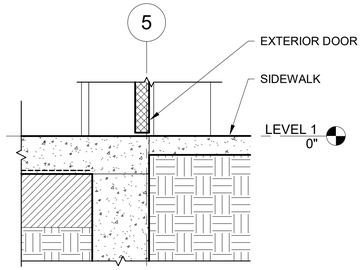
2 A501 CANOPY & DOOR HEADER DETAIL
1 1/2" = 1'-0"



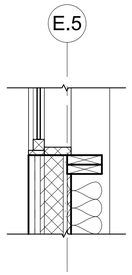
3 A501 CANOPY AT EXISTING WALL
1 1/2" = 1'-0"



6 A501 EXTERIOR WINDOW HEAD DETAIL
1 1/2" = 1'-0"



5 A501 EXTERIOR DOOR SILL AT CONCRETE
1 1/2" = 1'-0"



7 A501 EXTERIOR WINDOW SILL DETAIL
1" = 1'-0"

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	2013039
DATE:	2/28/2025
PROJ. MGR.:	GPB
DRAWN BY:	GPB
REVIEWED BY:	JEM
REVISIONS:	

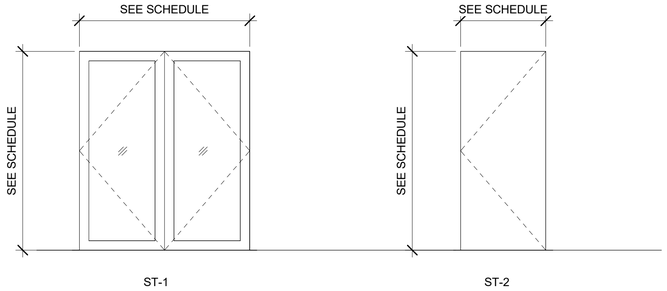
DETAILS

SHEET NO.
A501

DOOR SCHEDULE

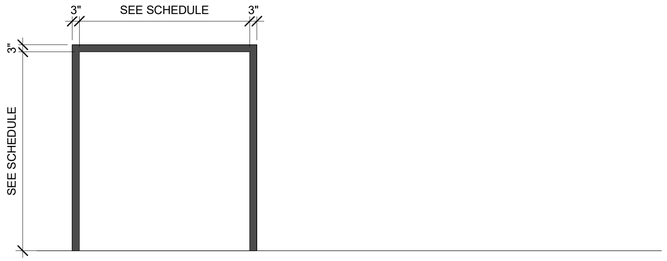
DOOR #	WIDTH		HEIGHT	DOOR FINISH	DOOR TYPE	FRAME TYPE	RATING	DETAILS		
	LEAF 1	LEAF 2						HEAD	JAMB	SILL
001A	6' - 0"	3' - 0"	7' - 0"	GLASS & WOOD	ST-1	IHM-1		2/A-501	TYP	5/A-501
001B	6' - 0"	3' - 0"	7' - 0"	GLASS & WOOD	ST-1	HM-1		TYP	TYP	TYP
001D	3' - 0"		6' - 8"	WOOD				2/A-501	TYP	5/A-501
002	3' - 0"		6' - 8"	METAL	ST-2	HM-1		TYP	TYP	TYP
003	3' - 0"		6' - 8"	WOOD	ST-2	IHM-1		2/A-501	TYP	5/A-501

DOOR TYPES



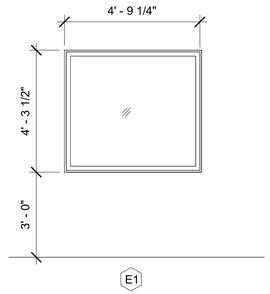
ST-1 ST-2

FRAME TYPES



HM-1
IHM-1

WINDOW TYPES



EXTERIOR ALUMINUM FRAME WINDOW

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	**2013039**
DATE:	**2/28/2025**
PROJ. MGR.:	**Designer**
DRAWN BY:	**Author**
REVIEWED BY:	**Checker**
REVISIONS:	

WINDOW TYPE AND DOOR SCHEDULE

SHEET NO.
A601

LEGEND & ABBREVIATIONS

ABBR.	EXPLANATION	SYMBOL
A	AIR - COMPRESSED	A
	AIR EXTRACTOR	
	AIR FLOW MEASURING DEVICE	
	AIR FOIL TURNING VANES	
AAV	AUTOMATIC AIR VENT	
AFF	ABOVE FINISHED FLOOR	
BDD	BACKDRAFT DAMPER	
BD	BALANCING DAMPER	
	BALANCING/ISOLATION VALVE	
	BALL VALVE	
CC	COOLING COIL	
CFM	CUBIC FEET/MINUTE	
CO	CLEANOUT	
CV	CHECK VALVE	
CW	COLD WATER	
DD	DUCT DETECTOR	DD
	DUCT IDENTIFICATION SYMBOL	②
(E)	EXISTING	
E/A	EXHAUST AIR	
	EXPANSION COMPENSATOR	
F	FIRE	F
FCO	FLOOR CLEANOUT	
FDC	FIRE DEPARTMENT CONNECTION	
FD	FLOOR DRAIN	
	FLEXIBLE CONNECTION	
	FLEXIBLE DUCT	
	FLOW CONTROL VALVE	
FOS	FUEL OIL SUPPLY	FOS
FOR	FUEL OIL RETURN	FOR
FSD	FIRE SMOKE DAMPER	FSD
G	GAS	G
	GLOBE VALVE	
GS	GLYCOL SUPPLY	GS
GR	GLYCOL RETURN	GR
HB	HOSE BIBB	
HC	HEATING COIL	
HW	HOT WATER	
HWC	HOT WATER CIRCULATION	
HWR	HEATING WATER RETURN	HWR
HWS	HEATING WATER SUPPLY	HWS
MOD	MOTOR OPERATED DAMPER	M
MOV	2-WAY MOTOR OPERATED VALVE	
MOV	3-WAY MOTOR OPERATED VALVE	
NIC	NOT IN CONTRACT	
O/A	OUTSIDE AIR	
	PIPE ANCHOR	
	PIPE GUIDE	
POC	POINT OF CONNECTION	
POD	POINT OF DISCONNECT	
	PRESSURE GAGE	
PRV	PRESSURE RELIEF VALVE	
PW	PUMPED WASTE	PW
R/A	RETURN AIR	
RD	ROOF DRAIN	
RL	RAIN LEADER	RL
RV	RELIEF VALVE	
	RETURN AIR SLOT	
	RETURN/EXHAUST AIR REG. OR GRILLE	
S	SANITARY SOIL	
S/A	SUPPLY AIR	
	SQUARE HEAD COCK	
	STRAINER WITH DRAIN VALVE	
SD	STORM DRAIN	SD
SL	ACOUSTICALLY LINED DUCT	
SP	SPRINKLER	SP
	STATIC PRESSURE SENSOR	SP
	SUPPLY AIR SLOT W/FLEX DUCT	
	SUPPLY AIR REG. GRILLE, OR DIFFUSER	
TW	TEMPERED WATER	TW
	THERMALLY INSULATED DUCT OR PIPE	
	THERMOMETER	
T'STAT	THERMOSTAT	T
T'STAT	RETURN AIR THERMOSTAT	
	UNION	
V	VENT	V
VTR	VENT THRU ROOF	
WCO	WALL CLEANOUT	
W	WASTE	

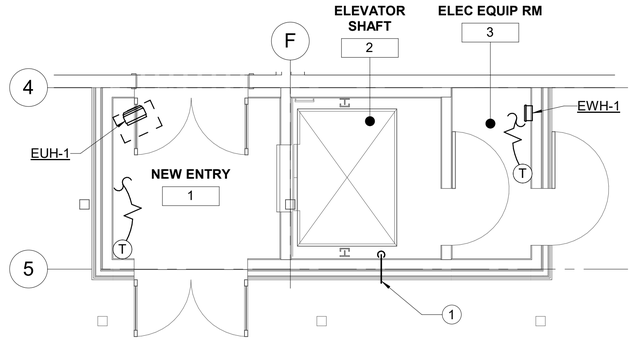
THIS IS A STANDARD LEGEND, SOME SYMBOLS SHOWN ON LEGEND ARE NOT NECESSARILY ON THE DRAWING.

ELECTRIC HEATING UNIT SCHEDULE

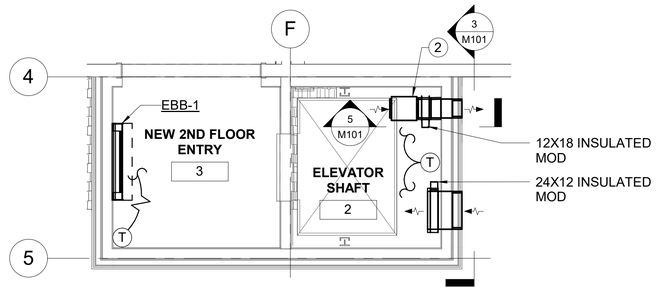
SYMBOL	TYPE	LOCATION	UNIT POWER KW/VOLTS/PH	CFM	RPM	MOTOR HP/VOLTS/PH	DESIGN BASIS PRODUCT
EUH-1	UNIT HEATER	LEVEL 1 LOBBY	3.7 / 208 / 3	350	1600	18A / 208 / 3	QMARK MUH05-21 3.7KW, ELECTRIC UNIT HEATER WITH THERMOSTAT
EBB-1	BASE BOARD	LEVEL 2 LOBBY	1 / 208 / 1	--	--	--	QMARK QMKC2504W 1000W, 4.8A, ELECTRIC BASEBOARD HEATER WITH THERMOSTAT.
EWH-1	WALL HEATER	ELEC EQ ROOM	2 / 208 / 1	65	--	--	QMARK CWH1208DSF, 2000W, 9.6A, FAN-FORCED WALL HEATER WITH CWHSM SURFACE MOUNTING FRAME

FAN SCHEDULE

SYMBOL	LOCATION	CFM	S.P.		RPM	O.V. FPM	TYPE		USE	MOTOR HP/VOLTS/PH	DESIGN BASIS PRODUCT
			TOT	EXT			FAN	WHL			
EF-1	ELEVATOR SHAFT	250	--	0.4	1342	255	CEN	--	E/A	1/25 / 115 / 1	GREENHECK SQ-90-VG, PROVIDE DIAL ON MOTOR FOR BALANCING

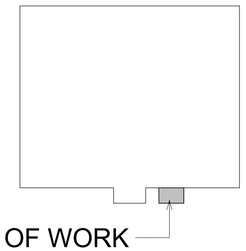


1 M101 LEVEL 1 - FLOOR PLAN
1/4" = 1'-0"



2 M101 LEVEL 2 - FLOOR PLAN
1/4" = 1'-0"

KEY PLAN

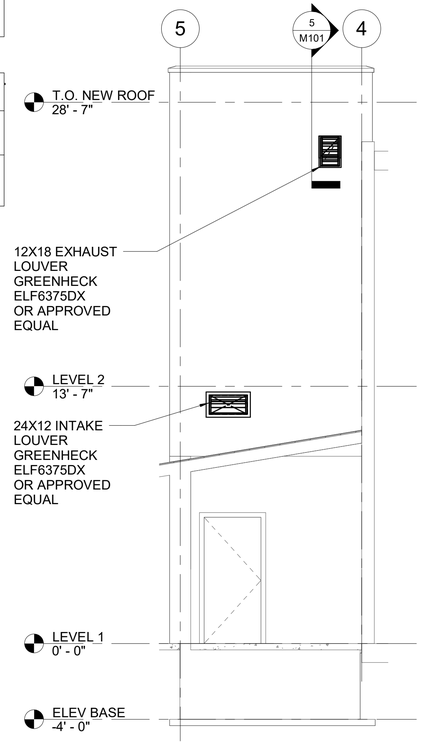


SHEET NOTES:

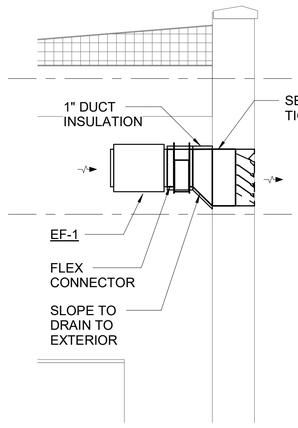
1. PROVIDE DISCHARGE PIPE AT PIT AND LABEL "ELEVATOR PIT DISCHARGE" IN LETTERS A MINIMUM OF ONE-HALF INCH IN HEIGHT. PROVIDE 3/4" GARDEN HOSE CONNECTION ON INTERIOR.
2. REFER TO 4-M101 FOR VENTILATION FAN CONTROL AND COOLING THERMOSTAT PLACEMENT IN ELEVATOR SHAFT.

GENERAL NOTES:

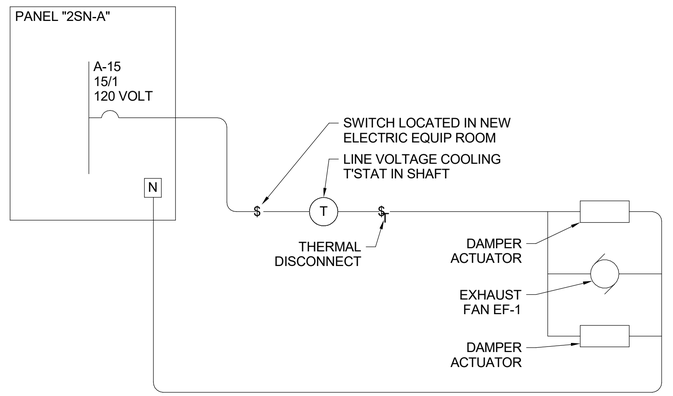
1. PROVIDE WALL MOUNTED THERMOSTATS TO ELECTRIC UNITS.
2. ANTICIPATE ADDITIONAL SPRINKLER HEADS IN LOBBIES AND AT BOTTOM OF SHAFT. PROVIDE ADDITIONAL SPRINKLER HEADS AS REQUIRED IN ADDITION PER ELEVATOR CODE AND NFPA13.
3. REFER TO ARCHITECTURAL AND ELECTRICAL SHEETS FOR RELATED DEMOLITION INFORMATION.



3 M101 EXTERIOR MECHANICAL SECTION
1/4" = 1'-0"



5 M101 EXHAUST FAN SECTION
1/2" = 1'-0"



4 M101 VENTILATION FAN CONTROL DIAGRAM
NTS

FOR:
SUBMITTAL
PRICING

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA Consulting Engineers, Inc.

STATE OF ALASKA 49 TH
SCOTT C HALA
02/27/28
ME-11405
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	24024WSE
DATE:	02/28/2025
PROJ. MGR.:	NAC
DRAWN BY:	NAC
REVIEWED BY:	SCH
REVISIONS:	

LEGEND, SCHEDULE, FLOOR PLANS AND SECTIONS

SHEET NO.
M101

DIVISION 15 - MECHANICAL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. WORK CONSISTS OF PROVIDING LABOR, PRODUCTS, AND IN PERFORMING ALL OPERATIONS REQUIRED FOR THE COMPLETE OPERATING INSTALLATION OF ALL MECHANICAL SYSTEMS AS SHOWN AND SPECIFIED, IN STRICT ACCORDANCE WITH SPECIFICATIONS, APPLICABLE DRAWINGS, TERMS, AND CONDITIONS OF THE CONTRACT AND ALL APPLICABLE CODES AND ORDINANCES GOVERNING INSTALLATION OF THE VARIOUS MECHANICAL SYSTEMS. CORRELATE ALL WORK FULLY WITH THE WORK OF OTHER CRAFTS. PROVIDE ALL SYSTEMS COMPLETE AND IN PROPER OPERATING ORDER.

1.2 REGULATORY REQUIREMENTS

A. COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODES, ORDINANCES AND REGULATIONS IN EXISTENCE AT BID DATE AFFECTING MATERIALS AND METHODS OF INSTALLATION OF THE MECHANICAL SYSTEMS. FOLLOW RECOMMENDED PRACTICES AS SET DOWN BY ASME, SMACNA, INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, UNIFORM PLUMBING CODE, INTERNATIONAL FIRE CODE, NATIONAL ELECTRICAL CODE, AND OSHA AS THEY APPLY TO THIS PROJECT EXCEPT IN CASES WHERE STATUTES GOVERN.

1.3 MANUFACTURER'S WARRANTIES

A. IN THE EVENT OF EQUIPMENT OR COMPONENT FAILURE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE SUCH DEFECTIVE EQUIPMENT OR COMPONENTS AND BEAR ALL ASSOCIATED COSTS. THE CONTRACTOR SHALL PURSUE MANUFACTURER'S WRITTEN IMPLIED WARRANTIES TO THE EXTENT NECESSARY TO OBTAIN REPLACEMENT EQUIPMENT OR COMPONENTS PRIOR TO ANY OTHER ACTION BEING INITIATED.

1.4 ELECTRICAL WORK

A. ALL WIRING SHALL BE IN ACCORDANCE WITH NEC, STATE, AND LOCAL CODES.

1.5 TESTS AND INSPECTIONS

A. SCHEDULE, OBTAIN, AND PAY ALL FEES AND/OR SERVICES REQUIRED BY LOCAL AUTHORITIES AND BY THESE SPECIFICATIONS, TO TEST THE MECHANICAL SYSTEMS AS SPECIFIED.

B. DEFICIENCIES: IMMEDIATELY CORRECT ALL DEFICIENCIES, WHICH ARE EVIDENCED DURING THE TESTS AND REPEAT TESTS UNTIL SYSTEM IS APPROVED. DO NOT COVER OR CONCEAL PIPING, EQUIPMENT, OR OTHER PORTIONS OF THE MECHANICAL INSTALLATIONS UNTIL SATISFACTORY TESTS ARE MADE AND APPROVED.

C. COMPLETION: UPON COMPLETION OF THE MECHANICAL INSTALLATION, DEMONSTRATE TO THE CONTRACTING AGENCY'S SATISFACTION THAT THE SYSTEMS HAVE BEEN INSTALLED IN A SATISFACTORY MANNER IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, AND APPLICABLE CODES. DEMONSTRATE DYNAMIC OPERATION OF ALL SYSTEMS. SHOW THAT ALL CONTROLS ARE OPERABLE AND ARE PROPERLY ADJUSTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FINAL SYSTEMS BALANCE, THAT ALL SYSTEMS ARE PROPERLY BALANCED, THAT ALL EQUIPMENT OPERATES PROPERLY, THAT FILTERS AND STRAINERS ARE CLEAN, AND THAT ALL COMPONENTS OF ALL SYSTEMS ARE INSTALLED AND ADJUSTED FOR PROPER OPERATION.

1.6 PROJECT/SITE CONDITIONS

A. INSTALL WORK IN LOCATIONS SHOWN ON DRAWINGS, UNLESS PREVENTED BY PROJECT CONDITIONS.

B. PROVIDE INFORMATION SHOWING PROPOSED REARRANGEMENT OF WORK TO MEET PROJECT CONDITIONS, INCLUDING CHANGES TO WORK SPECIFIED IN OTHER SECTIONS OR INTERFERENCE WITH SITE CONDITIONS NOT IN THE CONTRACT. OBTAIN PERMISSION OF OWNER BEFORE PROCEEDING.

1.7 SUBMITTALS

A. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM ANY REQUIREMENTS OF CONTRACT DOCUMENTS. PROVISION OF A COMPLETE AND SATISFACTORY WORKING INSTALLATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

B. SUBMITTALS SHALL BE MADE IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS.

1.8 OPERATION AND MAINTENANCE MANUALS

A. PROVIDE OPERATION AND MAINTENANCE (O&M) MANUALS FOR TRAINING OF AND FUTURE REFERENCE BY, OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF SYSTEMS AND RELATED EQUIPMENT. BIND EACH MANUAL IN A HARD-BACKED, LOOSE-LEAF, THREE-RING BINDER. USE 8-1/2" X 11" WHITE PAPER.

B. SUBMITTAL OF O&M MANUALS SHALL BE MADE IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS.

PART 2 - PRODUCTS

2.1 MECHANICAL IDENTIFICATION

A. EQUIPMENT

1. NAMEPLATES: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.

2.2 DUCTWORK

1. DUCT SIZES: INSIDE CLEAR DIMENSIONS.

B. MATERIALS

1. GENERAL: NON-COMBUSTIBLE OR CONFORMING TO REQUIREMENTS FOR CLASS 1 AIR DUCT MATERIALS OR UL 181.
2. STEEL DUCTS: ASTM A525 GALVANIZED STEEL SHEET, LOCK FORMING QUALITY, HAVING ZINC COATING OF 1.25 OZ PER SQUARE FOOT FOR EACH SIDE IN CONFORMANCE WITH ASTM A90.

C. DUCT INSULATION

1. INSULATE OUTSIDE AIR DUCTWORK WITH 2 INCH RIGID GLASS FIBER INSULATION, K=.24 AT 75 DEGREES F, 450 DEGREES F SERVICE TEMPERATURE, 0.02 PERM VAPOR TRANSMISSION, 5 PERCENT WATER VAPOR SORPTION.
2. INSULATE EXHAUST DUCTWORK AIR DUCTWORK WITH 1 INCH RIGID FSK FACED GLASS FIBER INSULATION, K=.24 AT 75 DEGREES F, 450 DEGREES F SERVICE TEMPERATURE, 0.02 PERM VAPOR TRANSMISSION, 5 PERCENT WATER VAPOR SORPTION.

D. DUCTWORK INSTALLATION

1. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS AND ASHRAE HANDBOOKS, EXCEPT AS INDICATED. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURE INDICATED.
2. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE. DIVERGENCE UPSTREAM OF EQUIPMENT SHALL NOT EXCEED 30 DEGREES, CONVERGENCE DOWNSTREAM SHALL NOT EXCEED 45 DEGREES.
3. USE DOUBLE NUTS AND LOCK WASHERS ON THREADED ROD SUPPORTS.

E. DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM	MATERIAL
EXHAUST	STEEL

2.3 TEMPERATURE CONTROLS

A. PROVIDE ELECTRONIC TEMPERATURE CONTROLS FOR ALL EQUIPMENT AND SYSTEMS SPECIFIED INCLUDING BUT NOT LIMITED TO THE FOLLOWING.

1. ELECTRIC UNIT HEATER, BASEBOARD, AND WALL HEATER
2. EXHAUST FANS

B. PROVIDE NECESSARY HARDWARE, WIRING, CONDUIT AND TERMINAL UNIT CONTROLS FOR A COMPLETE AND FUNCTIONAL CONTROL SYSTEM.

C. MANUFACTURER SHALL BE COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS REQUIRED FOR SYSTEM CONTROL WITH MINIMUM FIVE YEARS EXPERIENCE.

D. INSTALLER: COMPANY SPECIALIZING IN APPLYING THE WORK WITH MINIMUM FIVE YEARS EXPERIENCE.

2.4 TESTING, ADJUSTING, AND BALANCING

A. EXAMINATION

1. BEFORE COMMENCING WORK, VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE. ENSURE THE FOLLOWING:
   a. EQUIPMENT IS OPERABLE AND IN A SAFE AND NORMAL CONDITION.
   b. TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE.
   c. PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT.
   d. FINAL FILTERS ARE CLEAN AND IN PLACE. IF REQUIRED, INSTALL TEMPORARY MEDIA IN ADDITION TO FINAL FILTERS.
   e. DUCT SYSTEMS ARE CLEAN OF DEBRIS.
   f. CORRECT FAN ROTATION.
   g. FIRE AND VOLUME DAMPERS ARE IN PLACE AND OPEN.
   h. ACCESS DOORS ARE CLOSED AND DUCT END CAPS ARE IN PLACE.
   i. AIR OUTLETS ARE INSTALLED AND CONNECTED.
   j. DUCT SYSTEM LEAKAGE HAS BEEN MINIMIZED.
   k. HYDRONIC SYSTEMS HAVE BEEN FLUSHED, FILLED, AND VENTED.
   l. PROPER STRAINER BASKETS ARE CLEAN AND IN PLACE.
   m. SERVICE AND BALANCE VALVES ARE OPEN.
2. REPORT ANY DEFECTS OR DEFICIENCIES NOTED DURING PERFORMANCE OF SERVICES TO ARCHITECT/ENGINEER.
3. PROMPTLY REPORT ABNORMAL CONDITIONS IN MECHANICAL SYSTEMS OR CONDITIONS WHICH PREVENT SYSTEM BALANCE.
4. IF, FOR DESIGN REASONS, SYSTEM CANNOT BE PROPERLY BALANCED, REPORT AS SOON AS OBSERVED.
5. BEGINNING OF WORK MEANS ACCEPTANCE OF EXISTING CONDITIONS.

B. PREPARATION

1. PROVIDE INSTRUMENTS REQUIRED FOR TESTING, ADJUSTING, AND BALANCING OPERATIONS.
2. PROVIDE ADDITIONAL BALANCING DEVICES AS REQUIRED.

C. INSTALLATION TOLERANCES

1. ADJUST AIR HANDLING SYSTEMS TO PLUS OR MINUS 5 PERCENT FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS FROM FIGURES INDICATED.
2. ADJUST HYDRONIC SYSTEMS TO PLUS OR MINUS 10 PERCENT OF DESIGN.

D. ADJUSTING

1. RECORDED DATA SHALL REPRESENT ACTUALLY MEASURED, OR OBSERVED CONDITION.
2. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
3. AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR THAT SUCH DISRUPTION HAS BEEN RECTIFIED.
4. LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS, CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.

E. AIR SYSTEM PROCEDURE

1. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE REQUIRED OR DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES.
2. MAKE AIR QUANTITY MEASUREMENTS IN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS SECTIONAL AREA OF DUCT.
3. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS.
4. ADJUST DISTRIBUTION SYSTEM TO OBTAIN UNIFORM SPACE TEMPERATURES FREE FROM OBJECTIONABLE DRAFTS AND NOISE.
5. USE VOLUME CONTROL DEVICES TO REGULATE AIR QUANTITIES ONLY TO EXTENT THAT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS. EFFECT VOLUME CONTROL BY DUCT INTERNAL DEVICES SUCH AS DAMPERS AND SPLITTERS.
6. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE DRIVE CHANGES REQUIRED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION.
7. PROVIDE SYSTEM SCHEMATIC WITH REQUIRED AND ACTUAL AIR QUANTITIES RECORDED AT EACH OUTLET OR INLET.
8. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL PRESSURE DROPS, AND TOTAL PRESSURE ACROSS THE FAN. MAKE ALLOWANCES FOR 50 PERCENT LOADING OF FILTERS.
9. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS.
10. MEASURE TEMPERATURE CONDITIONS ACROSS OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS TO CHECK LEAKAGE.
11. WHERE MODULATING DAMPERS ARE PROVIDED, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS.

FOR:
SUBMITTAL
PRICING

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA
Consulting Engineers, Inc.

STATE OF ALASKA
49 TH
SCOTT C HALA
02/27/28
ME-11405
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159
WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCS

JOB NO.	24024WSE
DATE:	02/28/2025
PROJ. MGR.:	NAC
DRAWN BY:	NAC
REVIEWED BY:	SCH
REVISIONS:	

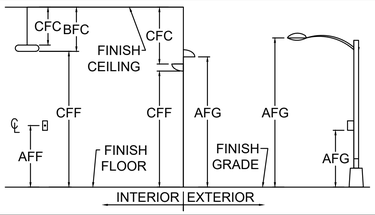
SPECIFICATIONS

SHEET NO.
M102

ABBREVIATIONS LEGEND

ABBR.	EXPLANATION
AB	ABOVE BASEBOARD
AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATS	AUTOMATIC TRANSFER SWITCH
BCU	BARE COPPER
BFC	BELOW FINISHED CEILING
CFC	CLEARANCE FROM CEILING
CFF	CLEARANCE FROM FLOOR
CT	CURRENT TRANSFORMER
DDC	DIRECT DIGITAL CONTROL
EM	EMERGENCY LIGHT, CIRCUIT, PANEL
ETR	EXISTING TO REMAIN
GDP	GENERATOR DISTRIBUTION PANEL
GEC	GROUNDING ELECTRODE CONDUCTOR
HBH	HEAD BOLT HEATER
HDPE	HIGH DENSITY POLYETHYLENE
HEA	HOMER ELECTRIC ASSOCIATION
HOA	HANDS OFF AUTO
MCC	MOTOR CONTROL CENTER
MC	METAL CLAD CABLE
MDP	MAIN DISTRIBUTION PANEL
NIC	NOT IN CONTRACT
PA	PUBLIC ADDRESS
PVC	POLYVINYL CHLORIDE
RSC	RIGID STEEL CONDUIT
SPD	SURGE PROTECTION DEVICE
STBY	STANDBY CIRCUIT
TC	TIMECLOCK
TP	TAMPER RESISTANT
TVSS	TRANSIT VOLTAGE SURGE SUPPRESSION
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
W	WALL MOUNT +60" AFF
WAP	WIRELESS ACCESS PORT
WP	WEATHERPROOF
XFMR	TRANSFORMER

MOUNTING LEGEND



NOTES LEGEND

X. - GENERAL NOTE
APPLIES TO SHEET.

(X) - SHEET NOTE
APPLIES TO SPECIFIC CALLOUT.

LIGHTING LEGEND

- WALL MOUNT
- SURFACE MOUNT
- RECESSED
- 2X2 LIGHTING FIXTURE RECESSED
- 2X4 LIGHTING FIXTURE RECESSED
- 2X2 SURFACE MOUNT
- 2X4 SURFACE MOUNT
- WALL MOUNT
- EXTERIOR LIGHT SINGLE WITH POLE MOUNT
- PHOTOCELL
- OCCUPANCY SENSOR CEILING MOUNT
- $K KEY OPERATED SWITCH
- $LM SWITCH, LOW VOLTAGE MASTER
- $P SWITCH WITH PILOT LIGHT
- $0 OCCUPANCY SENSOR SWITCH
- $ SWITCH, SINGLE POLE
- $2 SWITCH, DOUBLE POLE
- $3 SWITCH, THREE-WAY
- $4 SWITCH, FOUR-WAY
- EMERGENCY LIGHT BATTERY POWERED
- EMERGENCY LIGHT REMOTE HEAD
- EXIT SIGN WALL MOUNTED
  SHADOWING INDICATES FACE
- EXIT SIGN CEILING MOUNTED
  SHADOWING INDICATES FACE
- EXIT SIGN DOUBLE FACE
  ARROWS INDICATE CHEVRONS

COMMUNICATIONS LEGEND

- OUTLET, COMBINATION TELEPHONE/DATA
- DATA, WALL MOUNTED
- TELEPHONE, WALL MOUNTED
- CEILING DATA OUTLET
- FLOOR DATA OUTLET
- SPEAKER CEILING MOUNTED
- SPEAKER WALL MOUNTED
- TV OUTLET

FIRE LEGEND

- EMERGENCY PHONE ACCESSIBLE
- DH DOOR HOLDER
- DCL DOOR CLOSER
- S_C SPEAKER CEILING MOUNT
- S SPEAKER
- HORN + STROBE
- HORN
- H HEAT DETECTOR
- BELL
- STROBE WALL MOUNT
- STROBE CEILING MOUNT
- ROTATING BEACON
- SMOKE DETECTOR
- P PHOTOELECTRIC SMOKE DETECTOR
- F PULL STATION / FIRE ALARM BOX
- TS TAMPER SWITCH
- FS FLOW SWITCH/DETECTOR
- $_{xx}$ HEAT SENSOR : XX = TYPE
  EX: 130, 195, ROR
- $_{xx}$ GAS DETECTOR : XX = TYPE
  EX: CO, CH_4
- FLAME DETECTOR
- PRE PUSH BUTTON
- A ABORT SWITCH
- UPS UNINTERRUPTIBLE POWER SUPPLY
- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM ANNUNCIATOR
- BATT BATTERY CABINET
- AMP AMPLIFIER RACK

POWER LEGEND

- ELECTRICAL POWER PANEL
- ELECTRICAL DISTRIBUTION PANEL
- ELECTRICAL LIGHTING PANEL
- PANELBOARD CABINET FLUSH MOUNT
- PANELBOARD CABINET SURFACE MOUNT
- SWITCHBOARD NEW
- SWITCHBOARD EXISTING
- M METER
- CONTROLLER/DISCONNECT
- UNFUSED DISCONNECT
- FUSED DISCONNECT
- VARIABLE FREQUENCY DRIVE
- CONTROLLER
- CONTACTOR
- MOTOR SINGLE PHASE
- (X) MOTOR SINGLE PHASE X = HORSE POWER
- MOTOR 3PH
- (X) MOTOR 3PH : X = HORSE POWER
- G GENERATOR POWER
- T TRANSFORMER
- $T THERMAL SWITCH
- T THERMOSTAT
- HOMERUN 2-#12, #12G UON
- GARAGE DOOR PUSH BUTTON

WIRING DEVICES LEGEND

- PUSH BUTTON
- J JUNCTION BOX
- GFCI RECEPTACLE - DUPLEX
- RECEPTACLE - DUPLEX CEILING MOUNT
- RECEPTACLE - DUPLEX
- RECEPTACLE - DUPLEX FLOOR MOUNT
- RECEPTACLE - QUAD FLOOR MOUNT
- RECEPTACLE - DUPLEX ON EMERGENCY POWER
- RECEPTACLE - DUPLEX ISOLATION GROUND
- RECEPTACLE - QUAD
- RECEPTACLE - SINGLE
- $_x$ RECEPTACLE - X-NEMA CALLOUT
- OR EQUIPMENT CONNECTION

LINE TYPE LEGEND

- EXISTING
- NEW
- DEMOLITION

SITE LEGEND

- OH-E — OVERHEAD ELECTRICAL
- UG-E — UNDERGROUND ELECTRICAL
- UG-FO — UNDERGROUND FIBER OPTIC
- — X — FENCE
- UTILITY POLE

THESE ARE STANDARD LEGENDS, ALL SYMBOLS SHOWN ON LEGENDS ARE NOT NECESSARILY ON THE DRAWING(S).

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA Consulting Engineers, Inc.

STATE OF ALASKA 49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

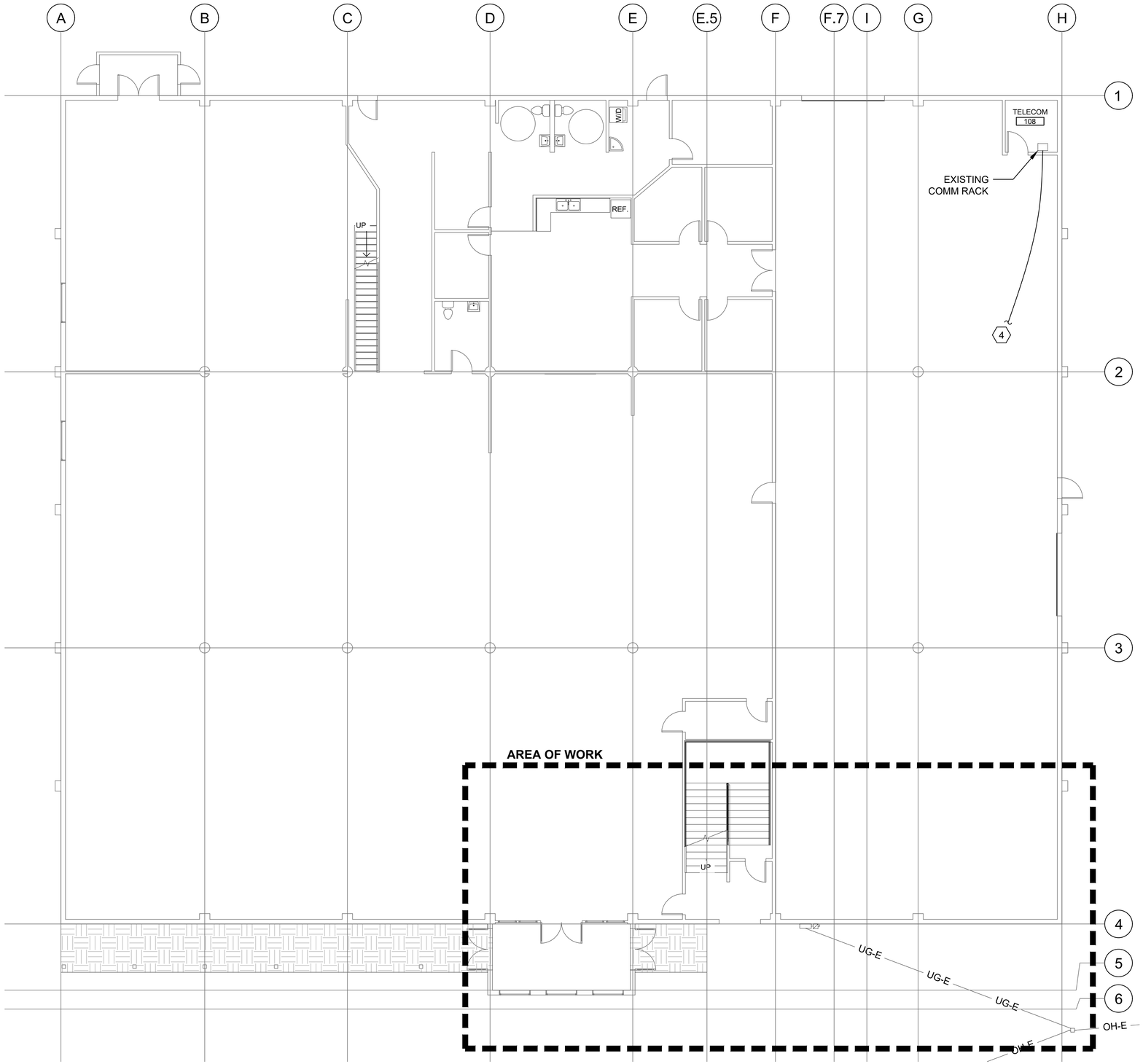
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

LEGENDS AND ABBREVIATIONS

SHEET NO.
E001



NOTES:

1. MINIMUM CIRCUIT SIZE IS 2-#12, 1-#12 GND, 1/2" CONDUIT, UON.
2. MOUNT RECEPTACLES AT 18" AFF, UON.
3. PROVIDE MINIMUM 18 INCH LIQUIDTIGHT FLEXIBLE METAL CONDUIT SLACK LOOP AT ALL CONDUIT TRANSITIONS FROM UNDERGROUND TO ABOVE GROUND TO ACCOMODATE DIFFERENTIAL MOVEMENT.

(4) PROVIDE ANALOG TELEPHONE LINE FROM EXISTING COMM RACK TO NEW ELEVATOR CAR. SEE SHEET E401 FOR ENLARGED VIEW.

1 / E101 OVERALL PLAN
1/8" = 1'-0"

N

0' 2' 4' 8' 16'
22X34 SHEET 1/8" = 1'-0"
11X17 SHEET 1/16" = 1'-0"

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA
Consulting Engineers, Inc.

STATE OF ALASKA
49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

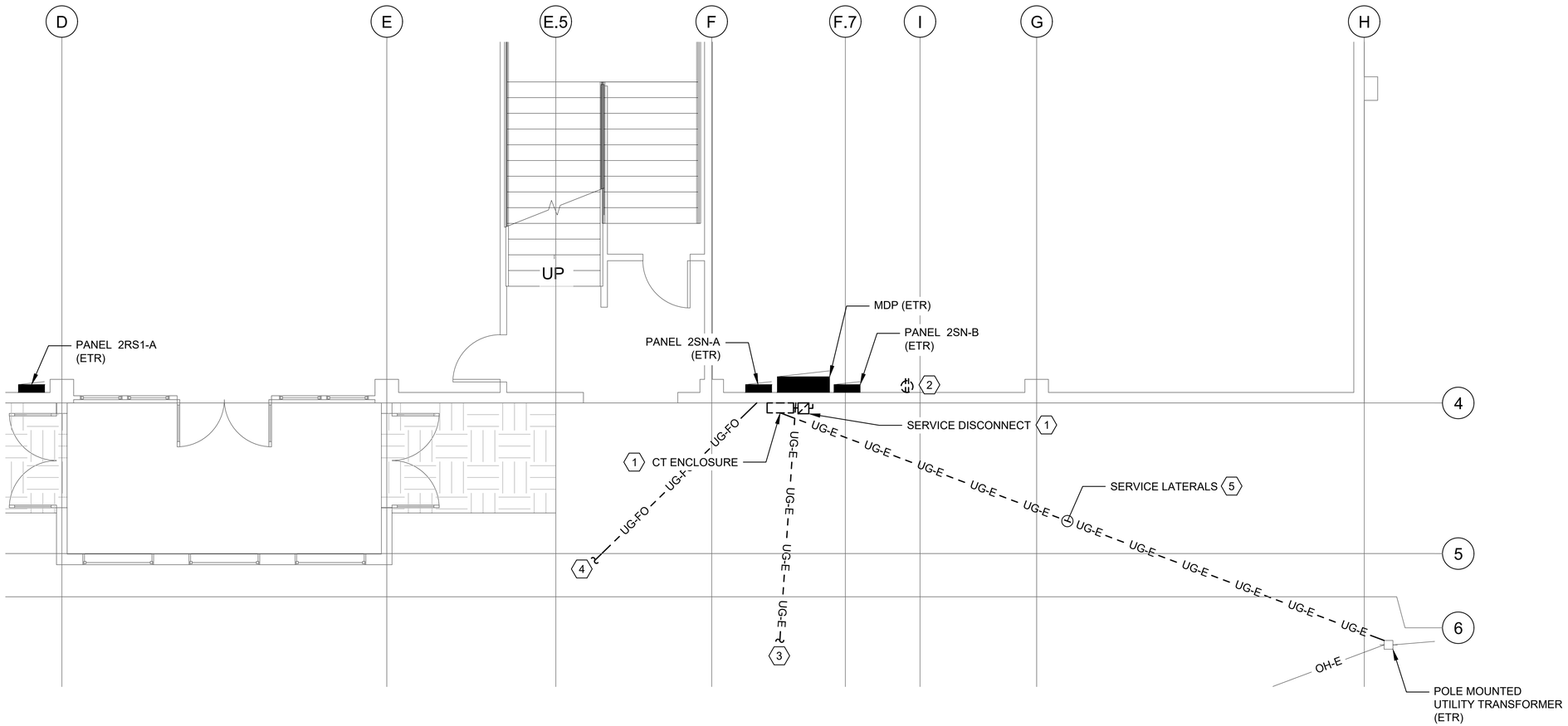
JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

OVERALL PLAN

SHEET NO.
E101

NOTES:

1. REMOVE CT ENCLOSURE AND SERVICE DISCONNECT FOR REINSTALLATION. DEMOLISH EXISTING 300A FUSE INSIDE SERVICE DISCONNECT. DEMOLISH EXISTING #2/0 CONDUCTORS FEEDING THE MDP FROM THE SERVICE DISCONNECT.
2. REMOVE RECEPTACLE AND ASSOCIATED CONDUIT FOR REINSTALLATION.
3. REMOVE PARKING LOT LIGHTING CONDUCTORS AND CONDUIT FOR REINSTALLATION.
4. COORDINATE WITH TELECOM UTILITY TO REMOVE FIBER OPTIC SERVICE CONDUCTORS FOR REINSTALLATION.
5. COORDINATE WITH UTILITY TO DISCONNECT SERVICE LATERALS AT CT ENCLOSURE TO RELOCATE SERVICE EQUIPMENT.



1 / E301 ENLARGED FIRST FLOOR DEMOLITION PLAN
1/4" = 1'-0"

N

0' 1' 2' 4' 8'
22X34 SHEET 1/4" = 1'-0"
11X17 SHEET 1/8" = 1'-0"

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA
Consulting Engineers, Inc.

STATE OF ALASKA
49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

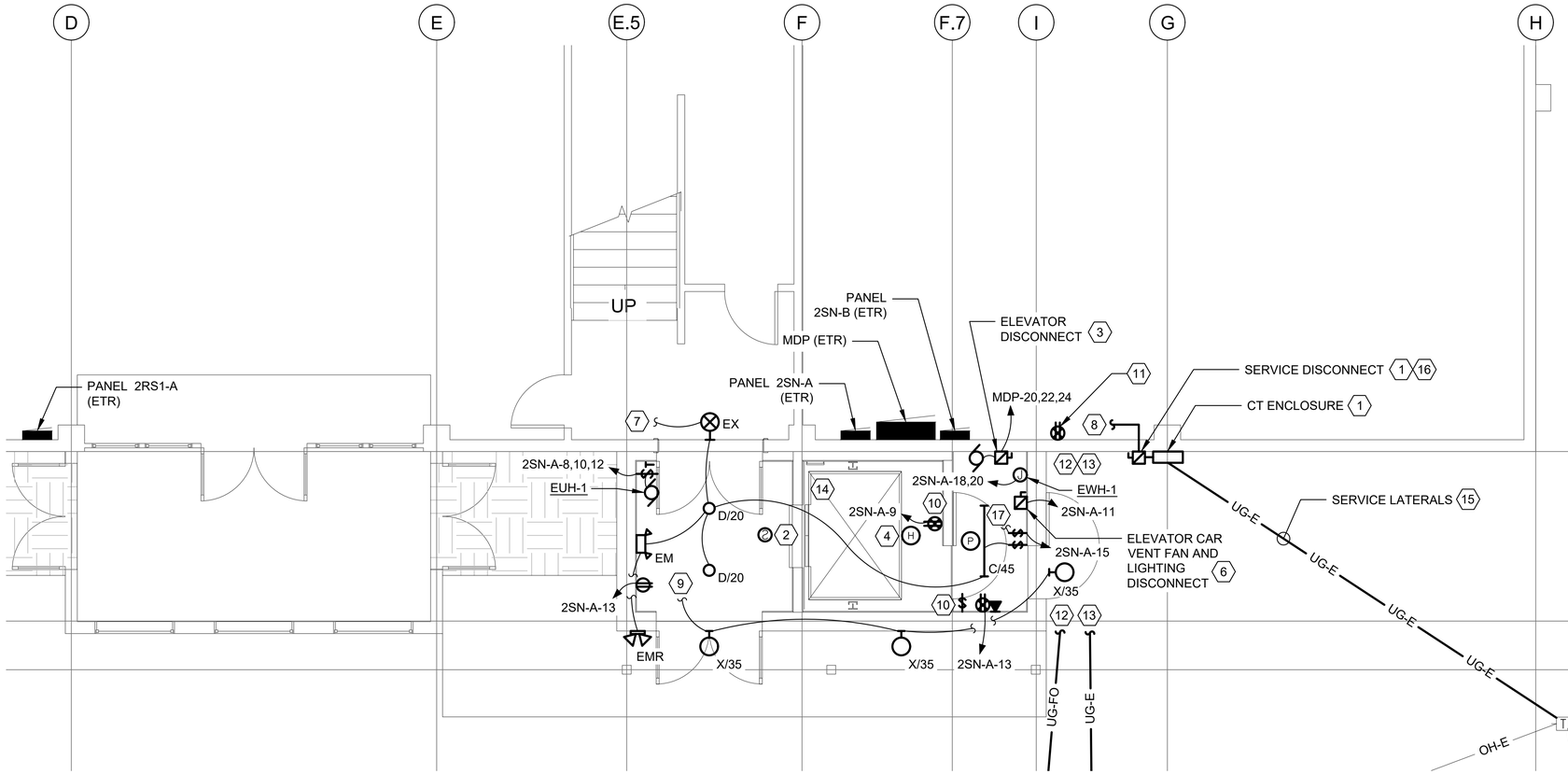
1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

ENLARGED FIRST FLOOR DEMO PLAN

SHEET NO.
E301



1 / E401 ENLARGED FIRST FLOOR NEW WORK PLAN

1/4" = 1'-0"

N

0' 1' 2' 4' 8'

22X34 SHEET 1/4" = 1'-0"

11X17 SHEET 1/8" = 1'-0"

NOTES:

1. REINSTALL CT ENCLOSURE AND SERVICE DISCONNECT IN NEW LOCATION AS SHOWN. PROVIDE NEW 400A CLASS R TIME DELAY FUSE IN SERVICE DISCONNECT.
2. CONNECT SMOKE DETECTOR TO ELEVATOR CONTROLS.
3. PROVIDE 4-#4 CONDUCTORS AND A #8 GND IN A 1-1/4" CONDUIT FROM ELEVATOR DISCONNECT TO ELEVATOR CONTROL AND PUMP.
4. PROVIDE HEAT DETECTOR IN ELEVATOR PIT. CONNECT TO EXISTING FIRE ALARM SYSTEM.
5. PROVIDE FIRE ALARM FLASHING SIGNAL IN THE ELEVATOR CAR WHEN FIRE DETECTION DEVICES ARE ACTIVATED.
6. PROVIDE ELEVATOR CAR VENT FAN AND LIGHTING LOCKING DISCONNECT MEANS AS REQUIRED BY ANSI A17.1 AND NEC ARTICLE 620.53. CONNECT TO ELEVATOR CONTROLS.
7. CONNECT TO EXISTING LIGHTING CIRCUIT. CONTRACTOR TO VERIFY EXISTING CIRCUIT IN FIELD.
8. RECONNECT SERVICE DISCONNECT TO MDP. PROVIDE 2 SETS OF 4#3/0, #6 GND IN SINGLE 3" CONDUIT TO FEED EXISTING MAIN BREAKER IN THE MDP. RUN CONDUIT ABOVE BATTERY CHARGERS.
9. CONNECT TO EXISTING EXTERIOR LIGHTING CIRCUIT.
10. PROVIDE RECEPTACLE AND LIGHT IN ELEVATOR PIT. PROVIDE LIGHT SWITCH NEAR PIT DOOR IN ELEVATOR EQUIPMENT ROOM. MOUNT RECEPTACLE AT 3' AFF.
11. REINSTALL RECEPTACLE AT 24" AFF. RECONNECT TO EXISTING CIRCUIT.
12. COORDINATE WITH TELECOM UTILITY TO RECONNECT FIBER OPTIC SERVICE AT NEW EXTERIOR PENETRATION.
13. RECONNECT PARKING LOT LIGHTING AT NEW EXTERIOR PENETRATION.
14. PROVIDE A DEDICATED ANALOG PHONE LINE TO ELEVATOR CAR FROM TELECOM ROOM.
15. COORDINATE WITH UTILITY TO RECONNECT SERVICE LATERALS AT CT ENCLOSURE.
16. ESTABLISH UFER GROUND AND CONNECT TO EXISTING GROUNDING SYSTEM. PROVIDE (2) 3/4" X 10' GROUND RODS WITH 10' MINIMUM SPACING, BOND TO NEW FOUNDATION. PROVIDE #2 GROUNDING ELECTRODE CONDUCTOR. PROVIDE #2 MAIN BONDING JUMPER. PROVIDE #3 EQUIPMENT GROUNDING CONDUCTOR TO MDP. USE COPPER CONDUCTORS AND GROUND RODS.
17. PROVIDE SWITCH, CONNECT TO EXHAUST FAN EF-1 IN ELEVATOR SHAFT.

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA Consulting Engineers, Inc.

STATE OF ALASKA 49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

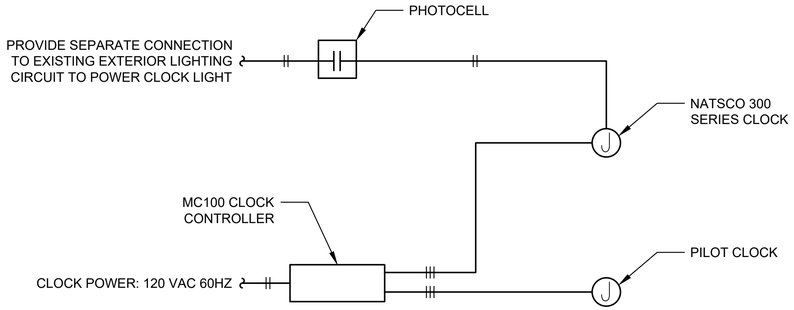
BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

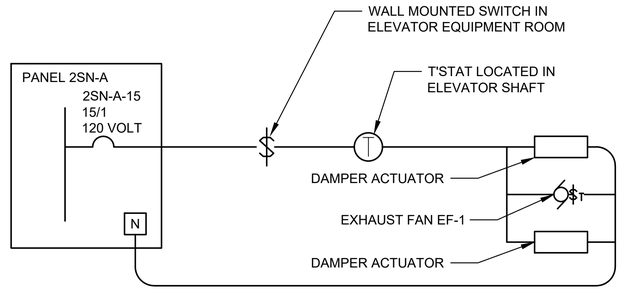
ENLARGED FIRST FLOOR NEW WORK PLAN

SHEET NO.

E401



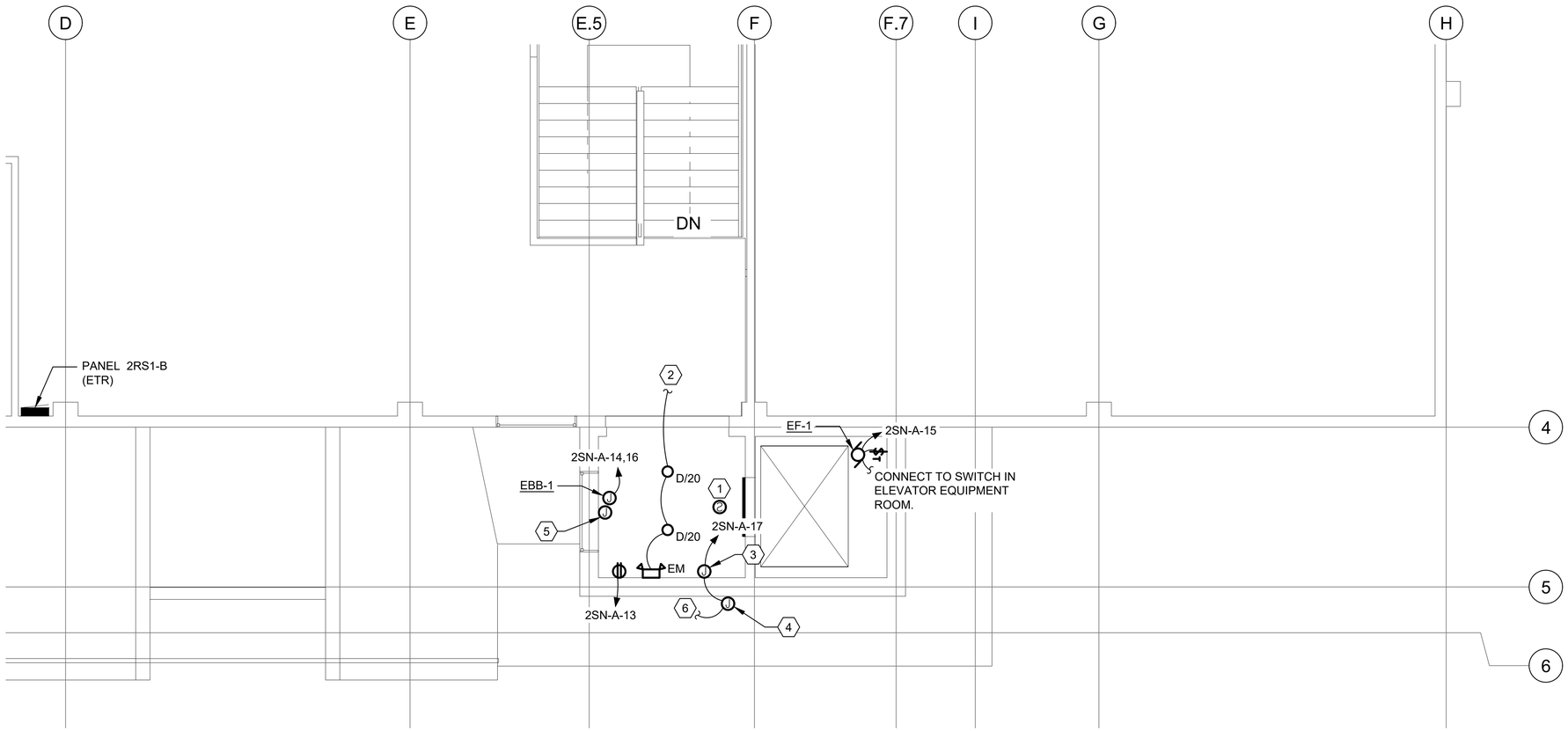
2 NATSCO CLOCK TYPICAL WIRING DIAGRAM
2 / E402
NTS



3 EXHAUST FAN CONTROL DIAGRAM
3 / E402
NTS

NOTES:

1. CONNECT SMOKE DETECTOR TO ELEVATOR CONTROLS.
2. CONNECT TO EXISTING LIGHTING CIRCUIT.
3. WALL MOUNT MC-100 CONTROLLER FOR CLOCK AT 48" AFF. SEE NATSCO 300 SERIES TYPICAL CLOCK WIRING DIAGRAM 2/E402.
4. PROVIDE CONNECTIONS TO NATSCO 300 SERIES CLOCK.
5. WALL MOUNT PILOT CLOCK AT 96" AFF. CENTER ALONG WALL FACING ELEVATOR DOOR. CONNECT TO MC-100 CONTROLLER.
6. PROVIDE SEPARATE CONNECTION FOR CLOCK LIGHT. CONNECT TO EXISTING EXTERIOR LIGHTING CIRCUIT. CONTROL CLOCK LIGHT WITH PHOTOCELL.



1 ENLARGED SECOND FLOOR NEW WORK PLAN
1 / E402
1/4" = 1'-0"

N

0' 1' 2' 4' 8'
22X34 SHEET 1/4" = 1'-0"
11X17 SHEET 1/8" = 1'-0"

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA Consulting Engineers, Inc.

STATE OF ALASKA 49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

ENLARGED SECOND FLOOR NEW WORK PLAN

SHEET NO.
E402

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	TOTAL LUMEN	LUMEN/ WATT	MOUNTING	DESCRIPTION	MODEL
C/45		4028	137	CEILING MOUNT 10'-0" AFF	PENDANT MOUNT LED, 80CRI, 4000K, 5000LM, FROSTED DROP LENS, DAMP LOCATION RATED.	LITHONIA: ZL1D-L48-5000LM-FST-MVOLT-40K-80CRI
D/20		1966	100	CEILING MOUNT 10'-0" AFF	6IN ROUND LED, 80CRI, 4000K, 2000LM, WIDE DISTRIBUTION, CLEAR LENS, WET RATED.	GOTHAM ARCHITECTURAL: EVO6-40/20-AR-WD-LSS-MVOLT
EM		-	-	WALL MOUNT 8'-0" AFF	EMERGENCY LED LIGHT, 640 LUMENS, TWO ADJUSTABLE HEADS.	LITHONIA: ELM4L-LTP-SDRT
EMR				EXTERIOR WALL MOUNT 8'-0" AFF	EXTERIOR REMOTE HEADS, WET LOCATION RATED, 220 LUMENS.	LITHONIA: ELMRW-LP220L-DBLXD-T
EX		-	-	WALL/CEILING MOUNT	LED EXIT LIGHT. WHITE THERMOPLASTIC HOUSING, RED LETTERING. PROVIDE SELF DIAGNOSTICS AND BATTERY BACKUP OPTION.	LITHONIA: LQM-S-W-3-R-MVOLT-ELN-SD
X/35		3216	100	EXTERIOR WALL MOUNT 10'-0" AFG	WDGE2 LED, 80CRI, 4000K, 3000LM, P3 PERFORMANCE PACKAGE, -40F RATED, TYPE 3 MEDIUM DISTRIBUTION.	LITHONIA: WDGE2-LED-P3-40K-80CRI-T3M-PE

VERIFY CATALOG NUMBER WITH FIXTURE DESCRIPTION FOR ADDITIONAL REQUIREMENT. MANUFACTURER NUMBER IS BASIS OF DESIGN SUBMIT SUBSTITUTIONS IN ACCORDANCE WITH DIVISION 01 FOR APPROVAL.

NEC 220.87 Service Load Calc (addition to an existing service)

KENAI SUPPLY WASILLA

Existing Load

Maximum Demand	51.00	kW (1-year history as reported by the utility)
Power Factor	0.90	Estimated
Feeder Load	56.67	kVA Connected Load
Demand Factor	125%	NEC 220.87(2)
Calculated Load	70.83	kVA Demand Load 197 Amps

New Load

Voltage 208 3 Phase

	Units	VA/Unit	kVA	NEC Factor	NEC kVA
Lighting					
Elevator Equipment Room	1	45	0.05	1.25	0.06
Elevator Pit Light	1	20	0.02	2.25	0.05
New First Floor Entry	2	20	0.04	1.25	0.05
New Second Floor Entry	2	20	0.04	1.25	0.05
NATSCO Clock Lighting	1	800	0.80	1.25	1.00
Exterior Lighting	3	35	0.11	1.25	0.13
Lighting Total			1.05		1.33
Receptacle					
General Receptacles	4	180	0.72		
Receptacle Total			0.72	1.000	0.72
Mechanical					
Exhaust Fan EF-1	1	355	0.36	1.00	0.36
Unit Heater EUH-1	1	3700	3.70	1.00	3.70
Electric Baseboard EBB-1	1	1000	1.00	1.00	1.00
Electric Wall Heater EWH-1	1	2000	2.00	1.00	2.00
Elevator (20 HP)	1	21510	21.51	1.00	21.51
Mechanical Total			28.57		28.57
Miscellaneous					
NATSCO Clock Power	1	100	0.10	1.00	0.10
Largest Motor		21510		0.25	5.38
Misc Total			0.10		5.48

New Load Total	30.44 kVA	36.10 kVA
	84.48 Amps	100.19 Amps

Total New Load Summary

	Connected Load	NEC Load
Existing Load	56.67 kVA	70.83 kVA
New Load	30.44 kVA	36.10 kVA
Total Service Load	87.10 kVA	**106.93 kVA**
	242 Amps	**297 Amps**

Existing Service Size	400	Amps	208	Volts	3 Phase
Will Provide	26%	Spare Capacity			

PANEL: 2MDP (E)	MOUNTING		MAINS			OPTIONS			
PROJECT: ARRC KENAI SUPPLY BLDG	SURFACE		BREAKER			SOLID NEUTRAL GROUND BUS BAR			
LOCATION: ROOM 107									
VOLTAGE: 208Y/120 VOLT	3 PHASE		4 WIRE		800 A	MCB			10k AIC
CIRCUIT DESCRIPTION	KVA	AMP	P	CKT	CKT	AMP	P	KVA	CIRCUIT DESCRIPTION
PANEL 2SS		200	3	1	2	100	3		PANEL 2RS1-A
				3	4				
				5	6				
PANEL 2BR		100	3	7	8	100	3		PANEL 2RS2-A
				9	10				
				11	12				
PANEL 2SN-B	37.1	200	3	13	14	100	3	**36.1**	PANEL 2SN-A
				15	16				
				17	18				
SPACE				19	20				
SPACE				21	22	**100**	**3**	**21.5**	**ELEVATOR**
SPACE				23	24				
SPARE				25	26				SPACE
SPACE				27	28				SPACE
SPACE				29	30				SPACE
SPACE				31	32				MAIN
SPACE				33	34				MAIN
SPACE				35	36				MAIN
SPACE				37	38				MAIN
SPACE				39	40				MAIN
SPACE				41	42				MAIN
CONNECTED LOAD:		94.7	KVA	262.9	A	REMARKS:			
DEMAND LOAD:		100.1	KVA	277.8	A				
DATE:									
REV:									

PANEL: 2SN-A (E)	MOUNTING		MAINS			OPTIONS			
PROJECT: ARRC KENAI SUPPLY BLDG	SURFACE		LUGS			SOLID NEUTRAL GROUND BUS BAR			
LOCATION: ROOM 107									
VOLTAGE: 208Y/120 VOLT	3 PHASE		4 WIRE		100 A	MLO			10k AIC
CIRCUIT DESCRIPTION	KVA	AMP	P	CKT	CKT	AMP	P	KVA	CIRCUIT DESCRIPTION
PARKING LOT LIGHT POLE		20	1	1	2	20	1		FIRE SYSTEM AIR COMPRESSOR
SIGN CIRCUIT IN JUNCTION BOX		20	1	3	4	30	2	5.0	RETAIL AREA ENTRY HEATER
SIGN CIRCUIT IN JUNCTION BOX		20	1	5	6				
SIGN CIRCUIT IN JUNCTION BOX		20	1	7	8	**20**	**3**	**3.7**	**ENTRY UNIT HEATER EUH-1**
ELEVATOR PIT LIGHT AND RECEPTACLE	**0.2**	**20**	**1**	9	10				
ELEVATOR CAR VENT FAN AND LIGHT	**0.1**	**15**	**1**	11	12				
NEW RECEPTACLES	**0.5**	**20**	**1**	13	14	**20**	**2**	**1.0**	**ENTRY BASEBOARD HEATER EBB-1**
EXHAUST FAN EF-1	**0.4**	**15**	**1**	15	16				
NATSCO CLOCK POWER	**0.1**	**20**	**1**	17	18	**20**	**2**	**2.0**	**ELECTRIC WALL HEATER EWH-1**
SPACE				19	20				
SPACE				21	22				SPACE
SPACE				23	24				SPACE
SPARE				25	26				SPACE
SPACE				27	28				SPACE
SPACE				29	30				SPACE
SPACE				31	32				SPACE
SPACE				33	34				SPACE
SPACE				35	36				SPACE
SPACE				37	38				SPACE
SPACE				39	40				SPACE
SPACE				41	42				SPACE
CONNECTED LOAD:		13.0	KVA	36.1	A	REMARKS:			
DEMAND LOAD:		13.1	KVA	36.3	A				
DATE:									
REV:									

MCG EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA Consulting Engineers, Inc.

STATE OF ALASKA 49TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

SCHEDULES AND LOAD CALC

SHEET NO.
E600

ELECTRICAL

PART 1 - GENERAL

1.1 SCOPE

A. PROVIDE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON DRAWINGS AND SPECIFIED. FURNISH ALL LABOR, EQUIPMENT, APPLIANCES, MATERIALS, AND PERFORM OPERATIONS REQUIRED FOR COMPLETE INSTALLATION IN ACCORDANCE WITH ALL SECTIONS OF SPECIFICATIONS, DRAWINGS, CODES, AND CONDITIONS OF CONTRACT.

1.2 CODES, STANDARDS, FEES, PERMITS

A. COMPLY WITH LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, LOCAL CODES, AMENDMENTS, ORDINANCES AND REQUIREMENTS OF UTILITY COMPANIES' FURNISHING SERVICES TO INSTALLATION. COMPLY WITH NEMA, UL, ANSI, ICEA AND OTHER INDUSTRY STANDARDS. COMPLY WITH REQUIREMENTS OF IBC, IMC, UPC, AND OTHER APPLICABLE CODES.

B. SECURE AND PAY FOR ALL INSPECTIONS, FEES, PERMITS, ETC., REQUIRED BY LOCAL AND STATE AGENCIES.

1.3 DRAWINGS

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL FEATURES OF WORK. INSTALL ELECTRICAL ITEMS TO PROVIDE SYMMETRICAL APPEARANCE. DO NOT SCALE DRAWINGS. REVIEW OTHER DRAWINGS AND ADJUST WORK TO CONFORM TO CONDITIONS SHOWN. VERIFY FIELD CONDITIONS. IMMEDIATELY CONTACT THE OWNER'S REPRESENTATIVE FOR CLARIFICATION OF QUESTIONABLE, OBSCURE ITEMS, OR APPARENT CONFLICTS. THE OWNER'S REPRESENTATIVE'S DECISION IS FINAL FOR ALL CLARIFICATIONS REQUESTED. EXTRA COST RESULTING FROM A CONDITION WHERE CLARIFICATION WAS NOT REQUESTED: MADE AT NO INCREASE IN CONTRACT AMOUNT UNLESS EXTRA COST IS APPROVED IN WRITING.

1.4 WORKMANSHIP

A. CONSIDERED AS IMPORTANT AS ELECTRICAL AND MECHANICAL EFFICIENCY AND SUBJECT TO APPROVAL. EMPLOY WORKMEN SKILLED IN TRADE AND FAMILIAR WITH PARTICULAR TECHNIQUES APPLICABLE TO VARIOUS SECTIONS OF WORK. INSTALL IN ACCORDANCE WITH NECA “STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING.”

1.5 COORDINATION

A. COORDINATE WITH OTHER TRADES FOR PROPER INSTALLATION AND TIMELY EXECUTION. ANY CHANGES NECESSITATED BY FAILURE TO PROPERLY COORDINATE WORK: MADE AT NO INCREASE IN CONTRACT AMOUNT.

B. VERIFY INFORMATION SHOWN ON PLANS WITH EQUIPMENT ITEMS ACTUALLY FURNISHED WHERE EQUIPMENT IS FURNISHED OR INSTALLED BY OTHERS. NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICTS.

C. COORDINATE WITH SERVING UTILITIES. PROVIDE ALL EQUIPMENT AND LABOR REQUIRED, INCLUDE ALL COSTS NECESSARY FOR COMPLETE ELECTRICAL SERVICES.

1.6 REMODEL WORK

A. EXISTING CONDITIONS NOTED ON THE DRAWINGS WERE PREPARED FROM PREVIOUS CONSTRUCTION DRAWINGS. VISIT SITE, VERIFY EXISTING CONDITIONS AND ALLOW ADEQUATE MONIES TO COVER ADDITIONAL WORK REQUIRED AS A RESULT OF AS-BUILT CONDITIONS. ASSUME THAT THE AS-BUILT INFORMATION DOES NOT INDICATE EXACT CONDUIT ROUTING OR CIRCUITING. INCLUDE NECESSARY WORK TO PROVIDE CIRCUIT CONTINUITY TO EXISTING CIRCUITS THAT MAY BE AFFECTED BY NEW WORK. CUT BACK EXISTING WORK BEING REMOVED OR ABANDONED BEYOND FINISHED SURFACES TO ALLOW REPAIR AND REFINISHING. ASSUME CONDITION OF WIRING IS SUITABLE FOR RECONNECTING.

B. NOTIFY OWNER'S REPRESENTATIVE OF ANY FIELD CONDITIONS WHERE CONTRACTOR CANNOT REUSE EXISTING MATERIAL OR EQUIPMENT BECAUSE OF DETERIORATED CONDITIONS. ALSO NOTIFY OWNER'S REPRESENTATIVE OF ANY EXISTING CONDITIONS WHICH MAY BE CONSIDERED UNSAFE OR IN NEED OF REPAIR.

C. CERTAIN ITEMS SUCH AS FIXTURES ARE NOTED ON DRAWINGS TO BE REUSED. THOROUGHLY CLEAN, PLACE IN LIKE NEW CONDITION AND, IN THE CASE OF LIGHTING FIXTURES, PROVIDE WITH NEW LAMPS.

1.7 SUBMITTALS

A. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM ANY REQUIREMENTS OF CONTRACT DOCUMENTS. PROVISION OF A COMPLETE AND SATISFACTORY WORKING INSTALLATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

B. UNLESS NOTED, SUBMIT FIVE COPIES OF ALL MATERIALS AND EQUIPMENT INCLUDING LIGHTING FIXTURES, WIRING DEVICES, CONDUCTORS AND DISCONNECTS.

1.8 SUBSTITUTIONS

A. MAKE NO SUBSTITUTIONS OR REVISIONS WITHOUT WRITTEN APPROVAL. FOR EQUIPMENT SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS: MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION. ALL SIMILAR EQUIPMENT SAME MANUFACTURER THROUGHOUT.

1.9 PROJECT COMPLETION

A. THOROUGHLY CLEAN INSIDE AND OUT ALL FIXTURES AND EQUIPMENT. CLEAN PREMISES OF CONSTRUCTION DEBRIS. CALL FOR FINAL CONSTRUCTION OBSERVATION. CONDUCT OPERATING TEST FOR APPROVAL. DEMONSTRATE INSTALLATION TO OPERATE SATISFACTORILY IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS. PROVIDE PERSONNEL TO ASSIST ENGINEER IN REMOVAL AND REPLACEMENT OF EQUIPMENT FOR OBSERVATION PURPOSES.

B. SHOULD ANY PORTION OF INSTALLATION FAIL, REPAIR OR REPLACE ITEMS UNTIL ITEMS CAN BE DEMONSTRATED TO COMPLY.

C. SECURITY, FIRE ALARM AND EMERGENCY SYSTEMS MUST BE OPERATIONAL THROUGHOUT DURATION OF PROJECT. DISABLE PORTIONS OF SYSTEM ONLY AS REQUIRED FOR NEW EQUIPMENT CONNECTIONS.

D. SUBMIT A LETTER CERTIFYING COMPLETION OF PROJECT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS. TURN OVER RECORD DRAWINGS TO OWNER.

E. SUBMIT OPERATING AND MAINTENANCE MANUALS TO OWNER, TRAIN OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF ELECTRICAL SYSTEMS.

1.10 GUARANTEE

A. GUARANTEE ALL MATERIAL TO BE NEW, ALL WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE ANY WORK OR MATERIAL DEEMED DEFECTIVE DURING THE GUARANTEE PERIOD AT NO COST TO THE OWNER.

PART 2 - PRODUCTS

2.1 RACEWAYS

A. GALVANIZED RIGID STEEL CONDUIT OR INTERMEDIATE METAL CONDUIT: USE IN DAMP OR WET LOCATIONS, UNDERGROUND, IN CONCRETE OR CMU, WHERE SUBJECT TO PHYSICAL DAMAGE, FOR SERVICE CONDUCTORS AND PANELBOARD FEEDERS.

B. ELECTRICAL METALLIC TUBING: USE IN ALL OTHER AREAS UNLESS OTHERWISE INDICATED. PROVIDE RAINTIGHT/CONCRETE-TIGHT COMPRESSION FITTINGS.

C. FLEXIBLE METALLIC CONDUIT: USE FOR FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT TO ISOLATE VIBRATION OR ALLOW RELOCATION.

D. NO CONDUIT ALLOWED EMBEDDED IN SPRAY-APPLIED FIREPROOFING OR BETWEEN STRUCTURAL STEEL MEMBERS AND GYPSUM WALL BOARD.

E. UNLESS NOTED, INSTALL RACEWAYS CONCEALED EXCEPT AT SURFACE CABINETS, MOTOR AND EQUIPMENT CONNECTIONS, AND IN UTILITY ROOMS. LOCATE RACEWAYS TO NOT ENDANGER STRENGTH OF STRUCTURAL MEMBERS, AND SIX INCHES MINIMUM FROM PARALLEL RUNS OF HEAT PIPING. DO NOT INSTALL RACEWAYS IN OR THROUGH STRUCTURAL MEMBERS UNLESS SPECIFICALLY APPROVED. CROSS EXPANSION JOINTS WITH EXPANSION FITTINGS AND BONDING CONDUCTOR.

F. PROVIDE PULL WIRE IN RACEWAYS INSTALLED BUT LEFT EMPTY.

2.2 WIRE AND CABLE

A. INSTALL ALL CONDUCTORS IN APPROVED RACEWAY SYSTEMS. ALL CONDUCTOR SIZES BASED ON COPPER. #12 AWG MINIMUM EXCEPT CONTROL WIRING MAY BE #14.

B. MINIMUM INSULATION RATING: 75 DEGREES C, 600 VOLT. IN LIGHTING FIXTURE CHANNELS, HIGH TEMPERATURE AREAS: 90 DEGREES C, 600 VOLT.

C. 120 VOLT BRANCH CIRCUIT LENGTHS FROM PANEL TO FIRST OUTLET EXCEEDING 75': NO. 10 AWG MINIMUM.

D. INCREASE CONDUCTOR SIZES TO #10 AWG OR USE 90 DEGREES C-RATED INSULATION TO OFFSET DERATING FACTOR, WHEN MORE THAN THREE 20 AMP CONDUCTORS ARE INSTALLED IN SINGLE RACEWAY.

E. CABLE FOR FIRE ALARM SYSTEMS AND OTHER SPECIAL INSTALLATIONS: AS DESCRIBED UNDER OTHER SECTIONS OF SPECIFICATIONS, NOTED ON DRAWINGS, OR RECOMMENDED BY MANUFACTURER.

F. COLOR CODE 120/208 VOLT SYSTEMS: BLACK, RED, BLUE AND WHITE. 277/480 SYSTEMS: BROWN, YELLOW, ORANGE AND GRAY WITH AN IDENTIFIABLE COLORED STRIPE. MATCH EXISTING COLOR CODE IN REMODEL AREAS IF DIFFERENT FROM ABOVE. CODE SOUND AND SIGNAL SYSTEMS WIRING AND ANY SPECIAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S DIAGRAMS OR RECOMMENDATIONS.

G. ELEVATOR CABLE INSULATION TO BE THERMOSET INSULATION RATED AT 600V.

H. CONNECTIONS:

1. #6 AND LARGER: SOLDERLESS LUGS.

2. #8 AND SMALLER: INSULATED WIRE NUT CONNECTOR, IDEAL "WINGNUT" HARD SHELL.

I. LOW VOLTAGE, SPECIAL PURPOSE, COAXIAL CABLES, ETC.: INSTALL AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS.

J. TRAVELING CABLES SHALL BE SUPPORTED BY STEEL SUPPORTING MEMBERS. CABLES SHALL BE LOCATED SO AS TO REDUCE TO A MINIMUM THE POSSIBILITY OF DAMAGE DUE TO THE CABLES COMING IN CONTACT WITH THE HOIST CONSTRUCTION OR EQUIPMENT IN THE HOIST WAY. WHERE NECESSARY SUITABLE GUARDS SHALL BE PROVIDED TO PROTECT THE CABLES AGAINST DAMAGE.

2.3 BOXES

A. WHERE CONDUIT SYSTEMS IS USED, PROVIDE GALVANIZED OR CADMIUM PLATED, ONE PIECE PRESSED OR WELDED STEEL WITH DEVICE FINISH RING AND GANG COVER. FOUR INCH SQUARE OR OCTAGONAL, 1-1/2" DEEP MINIMUM SIZE. PROVIDE STEEL SQUARE CORNER MASONRY BOXES AND FINISH RINGS IN MASONRY, CONCRETE OR CONCRETE BLOCK WALLS.

B. THROUGH WALL BOXES NOT PERMITTED. PROVIDE SIX INCH MINIMUM NIPPLE BETWEEN OUTLETS SHOWN BACK-TO-BACK ON COMMON WALLS. MINIMUM 24" SEPARATION IN FIRE-RATED WALLS AND PENETRATIONS. SET FLUSH WITH WALL OR CEILING FINISH. PROVIDE ISOLATION BARRIER BETWEEN DISSIMILAR VOLTAGES IN SAME OUTLET AND WHERE LINE-TO-LINE VOLTAGE EXCEEDS 300 VOLTS.

C. VERIFY LOCATION OF ALL RECEPTACLES. MOUNT RECEPTACLES AND SWITCHES AS FOLLOWS, UNLESS OTHERWISE INDICATED ON DRAWINGS.

FINISHED FLOOR TO CENTERLINE OF OUTLET: 18"

WALL SWITCHES: 4'-0"

D. PROVIDE ADDITIONAL PULL BOXES AS REQUIRED TO AVOID EXCESS PULLING TENSIONS AND TO FACILITATE WORK.

2.4 CABINETS

A. PROVIDE CABINETS OF CODE GAUGE, ZINC-COATED SHEET STEEL, INTERIOR DIMENSIONS AS INDICATED, WITH HINGED DOOR AND FLUSH CATCH. PROVIDE WITH 3/4" PLYWOOD INTERIOR BACKBOARD WITH MANUFACTURER'S STANDARD FINISH. KEY TO MATCH PANELBOARDS.

2.5 PANELBOARDS AND OVERCURRENT PROTECTION

A. PROVIDE CIRCUIT BREAKERS OF THERMAL MAGNETIC TYPE, QUICK-MAKE, QUICK-BREAK WITH A MINIMUM OF 10,000 AIC RATING AT 120, 240 VOLT, 14,000 AIC AT 277/480 VOLT. MEET NEMA STANDARD AB1. PROVIDE HIGH INTERRUPTING CAPACITY AND NON-FUSE TYPE CURRENT LIMITING CIRCUIT BREAKERS WHERE SHOWN. PROVIDE MULTI-POLE BREAKERS WITH INTERNAL COMMON TRIP.

B. PROVIDE CIRCUIT BREAKERS DESIGNATED "GFI" EQUIPPED WITH INTEGRAL CLASS A GROUND FAULT CIRCUIT INTERRUPTER SET TO TRIP ON GROUND FAULT OF SIX MILLIAMPS OR GREATER.

2.6 WIRING DEVICES

A. DUPLEX RECEPTACLES: 20 AMP, 125 VOLT, NEMA TYPE 5-20R, MEET FEDERAL SPECIFICATION W-C-596F TESTS. COLOR AS DIRECTED BY ARCHITECT. PROVIDE OUTLETS DESIGNATED GFI WITH INTEGRAL CLASS A GROUND FAULT CIRCUIT INTERRUPTER UL 943-LISTED.

B. SWITCHES: 20 AMP, 120/277 VOLT, MEET FEDERAL SPECIFICATION W-S-896E, UL #20, SELF-GROUNDING. COLOR AS DIRECTED.

C. DEVICE PLATES: UL LISTED, ONE PIECE FLUSH PLATES STAINLESS STEEL.

2.7 MOTORS AND CONNECTIONS

A. PROVIDE MOTORS DESIGNED FOR SPECIFIC APPLICATION AND DUTY WHERE APPLIED, DELIVER RATED HORSEPOWER WITHOUT EXCEEDING TEMPERATURE RATINGS WHEN OPERATED ON POWER SYSTEMS WITH COMBINED VARIATION IN VOLTAGE AND FREQUENCY NOT MORE THAN ±10%. 230/208 VOLT DUAL RATED MOTORS NOT CONSIDERED SUITABLE FOR USE ON 208 VOLT SYSTEMS. PROVIDE 208 VOLT OR 200 VOLT MOTORS.

B. RATE FOR VOLTAGE AND PHASE STIPULATED IN THE VARIOUS SCHEDULES AND SUPPLY VOLTAGE SHOWN ON DRAWINGS. VERIFY FROM DRAWINGS AND SPECIFICATIONS AVAILABLE SUPPLY CHARACTERISTICS. FURNISH MOTORS THAT WILL PERFORM SATISFACTORILY UNDER CONDITIONS SPECIFIED. MOTORS, WHEN RUN AT FULL LOAD OR LESS, AND OPERATING AT SYSTEM VOLTAGE, NOT TO EXCEED 40 DEGREE C. RISE.

C. UNLESS OTHERWISE INDICATED, HEATING, VENTILATING AND PLUMBING EQUIPMENT MOTORS AND CONTROLS ARE FURNISHED, SET IN PLACE, AND WIRED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: (COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.)

(MC = MECHANICAL CONTRACTOR)
(EC = ELECTRICAL CONTRACTOR)

ITEM	FURNISHED BY	SET IN PLACE BY	WIRED POWER	WIRED CONTROL
EQUIPMENT MOTORS	MC	MC	EC	MC
MAGNETIC MOTOR STARTERS:				
a) AUTOMATICALLY CONTROLLED WITH OR WITHOUT HOA SWITCHES	EC	EC	EC	MC
b) MANUALLY CONTROLLED	EC	EC	EC	EC
c) IN PACKAGED EQUIPMENT	MC	MC	EC	MC
DISCONNECT SWITCHES, MANUAL MOTOR STARTERS, THERMAL OVERLOAD SWITCHES	EC	EC	EC	--
CONTROL RELAYS, TRANSFORMERS, TIME CLOCKS, THERMOSTATS, VALVES, FLOAT CONTROLS, DAMPER MOTORS, EP AND PE SWITCHES, OTHER MISCELLANEOUS MECHANICAL CONTROLS	MC	MC	MC	MC

MCG
EXPLORE DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA
Consulting Engineers, Inc.

STATE OF ALASKA
49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	24024WSE
DATE:	02.27.25
PROJ. MGR.:	KRR
DRAWN BY:	AHD
REVIEWED BY:	EWC
REVISIONS:	

ELECTRICAL SPECIFICATIONS

SHEET NO.
E700

2.8 MOTOR STARTER AND DISCONNECTS

A. PROVIDE EACH MOTOR WITH DISCONNECTING MEANS AND WITH SUITABLE CONTROLLER OR OTHER DEVICE AS REQUIRED, COMPLETE WITH MANUAL OR AUTOMATIC CONTROL OF STANDARD NEMA SIZES.

B. PROVIDE ACROSS-THE-LINE COMBINATION STARTER-DISCONNECT MAGNETIC STARTERS WITH AMBIENT COMPENSATED THERMAL OVERLOAD PROTECTION SET AT 115% MEASURED FULL LOAD CURRENT IN EACH UNGROUNDED PHASE WITH MAINTENANCE-FREE, DOUBLE BREAK, SOLID SILVER ALLOY CONTACTS.

C. PROVIDE CONTROL POWER TRANSFORMERS WHERE NECESSARY FOR OPERATION OF CONTACTOR SOLENOIDS AND CONTROL CIRCUIT DEVICES AT 120 VOLTS.

D. ARRANGE CONTROL CIRCUITS FOR MANUAL, AUTO AND OTHER SIGNAL INPUTS FROM MECHANICAL CONTROL PANELS, AND ARRANGE CONTROL POWER TO DE-ENERGIZE CONTROL CIRCUITS WHENEVER OPERATING POWER SUPPLY TO PARTICULAR EQUIPMENT IS DISCONNECTED.

E. PROVIDE HORSEPOWER RATED MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION FOR EACH SINGLE PHASE MOTOR. SIZE HEATERS FOR 115% MEASURED FULL LOAD CURRENT.

F. WHERE SHOWN, PROVIDE FUSED SWITCH TYPE COMBINATION STARTERS FOR ALL THREE PHASE MOTORS RATED 7.0 FULL LOAD AMPERES AND BELOW. SIZE FUSES FOR APPROXIMATELY 115% OF MOTOR FULL LOAD CURRENT. PROVIDE NON-FUSED SWITCH TYPE FOR ALL THREE PHASE MOTORS RATED ABOVE 7.0 FULL LOAD AMPERES. PROVIDE CLASS R REJECTION FEATURE.

G. DISCONNECTS: HEAVY DUTY SAFETY SWITCHES, CIRCUIT BREAKERS OR MANUAL MOTOR STARTING SWITCHES.

2.9 GROUNDING

A. GROUND ALL ELECTRICAL DEVICES, MOTORS, METALLIC PIPING, DUCTWORK, METAL FRAMING, ETC., IN ACCORDANCE WITH N.E.C. ARTICLE 250.

B. UTILIZE THE METALLIC RACEWAY SYSTEM AS THE SYSTEM GROUNDING PATH FOR ALL DEVICES UNLESS OTHERWISE NOTED AND AS OTHERWISE REQUIRED BY M.O.A. AMENDMENTS TO N.E.C.

C. PROVIDE SEPARATE GREEN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUIT.

D. METAL RACEWAY ATTACHED TO ELEVATOR CARS: METAL RACEWAYS TYPE MC CABLE, MI CABLE, OR AC CABLE ATTACHED TO THE ELEVATOR CARS SHALL BE BOUND TO METAL PARTS OF THE CAR THAT ARE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

2.10 LIGHTING FIXTURES

A. PROVIDE ALL NEW FIXTURES, UL LISTED AND EQUIPPED WITH NECESSARY FRAMES AND MODIFICATIONS REQUIRED FOR COMPLETE INSTALLATION. UNIFORMLY SPACE AND COORDINATE INSTALLATION WITH CEILING OR WALL PATTERNS, GRILLES, REGISTERS, ETC., AS APPROVED. COORDINATE TO AVOID CONFLICTS.

B. COORDINATE ALL LIGHTING FIXTURES WITH CEILING TYPES PRIOR TO ORDERING. PROVIDE REQUIRED MOUNTING DEVICES, FRAMES, ETC., AT NO ADDITIONAL COST.

C. SET FIXTURES TRUE AND PLUMB, FREE OF LIGHT LEAKS, WARPS, DENTS, IRREGULARITIES.

2.11 FIRE ALARM SYSTEM

A. ALL MAJOR COMPONENTS OF THE SYSTEM. TO MATCH EXISTING MANUFACTURER. FINAL CONNECTIONS, CHECK-OUT AND START-UP BY FACTORY AUTHORIZED REPRESENTATIVE.

B. INITIATE DEVICES LOCATED IN THE LOBBY, ELEVATOR SHAFT AND ELEVATOR MECHANICAL ROOM SHALL INITIATION PHASE 1 EMERGENCY RECALL (ELEVATOR IMMEDIATELY DROPS TO LOBBY AND OPEN DOORS).

PART 3 - EXECUTION

3.1 GENERAL

A. INSTALL ALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND INSTALLATION DRAWINGS, UNLESS OTHERWISE INDICATED AND IN ACCORDANCE WITH NECA'S "STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING".

B. SEAL PENETRATIONS WITH UL-LISTED FIREPROOFING MATERIALS TO MAINTAIN FIREPROOFING INTEGRITY AND WATERTIGHTNESS.

C. SEAL AIRTIGHT ALL PENETRATIONS THROUGH SMOKE PARTITIONING, FAN PLENUMS, DUCTWORK, AND VAPOR BARRIERS.

D. REPLACE OR REPAIR ANY SPRAY-APPLIED FIREPROOFING OR INSULATION DAMAGED BY INSTALLATION OF ELECTRICAL EQUIPMENT.

E. REPAIR ALL DAMAGE TO FINISHED SURFACES WHERE CAUSED BY INSTALLATION OF ELECTRICAL EQUIPMENT.

F. PROVIDE PROPER IDENTIFICATION FOR PANELS, SWITCHES, OR ANY ITEM OF ELECTRICAL EQUIPMENT USED AS A CONTROL DEVICE OR DISCONNECTING MEANS FOR ANY EQUIPMENT. IDENTIFY BOXES CONTAINING EMERGENCY CIRCUITS PER N.E.C. ARTICLE 700-9.

G. PROVIDE TYPED UPDATED PANEL SCHEDULES.

3.2 SUPPORTS

A. SUPPORT RACEWAYS ON APPROVED TYPES OF WALL BRACKETS, CEILING TRAPEZE HANGERS OR MALLEABLE IRON STRAPS. PLUMBERS PERFORATED STRAP NOT PERMITTED AS MEANS OF SUPPORT.

DO NOT SUSPEND RACEWAYS OR EQUIPMENT FROM CEILING TIE WIRE OR T-BAR, FROM STEAM, WATER OR OTHER PIPING OR DUCTWORK, BUT SUPPORT INDEPENDENTLY.

B. ANCHOR EQUIPMENT TO THE BUILDING STRUCTURE TO RESIST SEISMIC DESIGN CATEGORY D EARTHQUAKE FORCES. PROVIDE ADEQUATE BACKING AT STRUCTURAL ATTACHMENT POINTS TO ACCEPT THE FORCES INVOLVED.

PROVIDE EQUIPMENT SUPPORTED BY FLEXIBLE ISOLATION MOUNTS WITH EARTHQUAKE RESTRAINING SUPPORTS.

C. SECURE BOXES, WALL BRACKETS, CABINETS AND HANGERS BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY AND GYPBOARD; PRESET INSERTS OR EXPANSION BOLTS IN SOLID MASONRY AND CONCRETE; MACHINE SCREWS, BOLTS OR WELDING ON METAL SURFACES; AND WOOD SCREWS IN WOOD CONSTRUCTION.

D. FOR FIXTURES WEIGHING 56 POUNDS OR MORE, SUPPORT LUMINAIRES FROM STRUCTURAL MEMBERS CAPABLE OF SUPPORTING TOTAL WEIGHT AND INDEPENDENTLY FROM WIRING SYSTEM.

3.3 AS-BUILT DRAWINGS

A. KEEP CLEAN SET OF PRINTS AT JOB SITE AND RECORD ALL ELECTRICAL CHANGES THAT OCCURRED DURING CONSTRUCTION. FAILURE TO DO SO MAY DELAY PAYMENT.

B. AT END OF CONSTRUCTION, PROVIDE ONE COMPLETE SET OF DRAWINGS INDICATING ALL FIELD CHANGES FOR RECORD PURPOSES TO THE OWNER'S REPRESENTATIVE.

END OF SECTION

MCG
EXPLORE
DESIGN
421 West 1st Avenue, Suite 300
Anchorage, Alaska 99501
907.563.8474 | F 907.563.4572
exploredesign.com

MBA
Consulting Engineers, Inc.

STATE OF ALASKA
49 TH
EDWARD W. CARLSON
02/27/2025
EE-9354
REGISTERED PROFESSIONAL ENGINEER

AK RAILROAD CORPORATION

MP159 WASILLA SHOPS

1400 Wasilla Shops Cr, Wasilla, AK

BID DOCUMENTS

JOB NO.	**24024WSE**
DATE:	**02.27.25**
PROJ. MGR.:	**KRR**
DRAWN BY:	**AHD**
REVIEWED BY:	**EWC**
REVISIONS:	

ELECTRICAL SPECIFICATIONS

SHEET NO.
E701