ZONING DISTRICT:

OR (OPEN SPACE AND RECREATION)

CLIMATE ZONE:

OCCUPANCY CLASSIFICATION: UTILITY AND MISCELLANEOUS GROUP U

CONSTRUCTION TYPE:

(CONSTRUCTION WILL BE ALL NON-COMBUSTIBLE, 1-HR RATED, NON-SPRINKLERED)

ZONE DISTRICT REQUIREMENTS

OR - OPEN SPACE AND RECREATION

424 SF

21'-0"

+/- 120 FT

+/- 84 FT

+/- 1,576 FT

PROPOSED

1,227,460 SF +/-

SQUARE FOOTAGE | # OF UNITS

VARIANCE?

(YES/NO)

NO

NO

NO

425 SF

DESCRIPTION

ZONE DISTRICT

REQUIREMENTS

2,500 SF MIN.

NO MAX

NO MAX

NO MAX

34' MAX.

22' MAX.

25' MIN

25' MIN

20' MIN

N/A

N/A

N/A

N/A

SKI AREA

AMUSEMENT, OUTDOOR

APPLICABLE CODES:

2018 IBC

2018 IECC

2018 IMC

2018 IFGC

CITY OF STEAMBOAT CDC

PROJECT SUMMARY TABLE

ZONING (EXIST & PROPOSED)

GROSS FLOOR AREA

UNIT SIZE (GROSS) NUMBER OF UNITS

USE BREAKDOWN

ACCESSORY USE

LOT COVERAGE

FRONT SETBACK

SIDE SETBACK

REAR SETBACK

SNOW STORAGE

PARKING

FLOOR AREA RATIO

OVERALL BUILDING HEIGHT

AVERAGE PLATE HEIGHT

FRONTAGE AREA HEIGHT

UPPER STORY SETBACK

SECOND STORY INTENSITY

PRINCIPAL USE

STANDARDS

LOT AREA

FRONTAGE

ICC/ANSI A117.1 (2009) ADAAG 2010

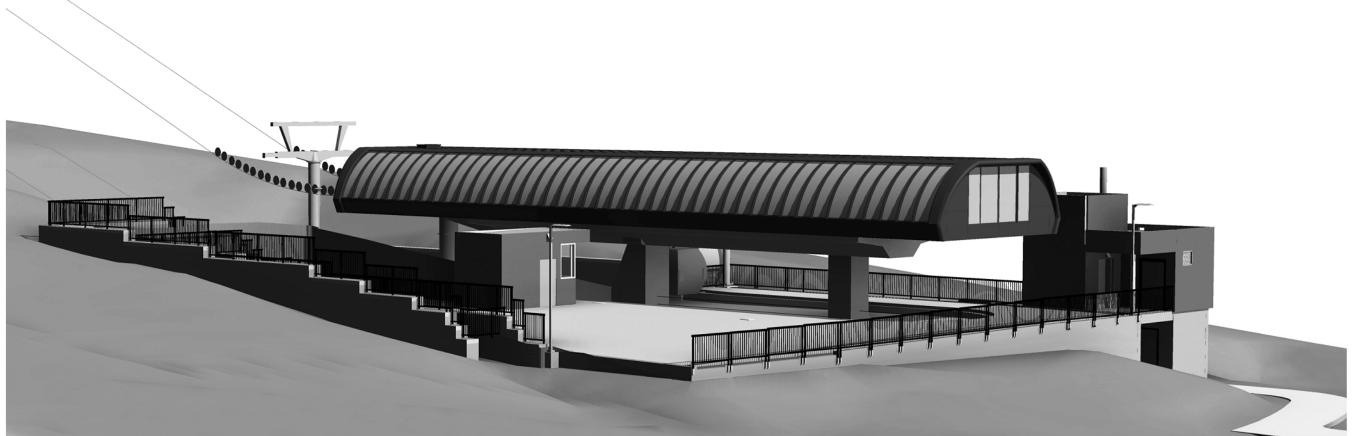
BID / PERMIT SET

LEGAL DESCRIPTION:

LOT 2 SKI HILL SUBDIVISION REPLAT OF PARCEL D

ALSO KNOWN AS:

STEAMBOAT GONDOLA



FOR:

RELOCATION



PROJECT TEAM

TRAFFIC ENGINEER:

CONTACT: KÁRI McDOWELL SCHROEDER

McDOWELL ENGINEERING 1099 CAPITOL STREET, SUITE 208

EMAIL: kari@mcdowelleng.com

PO BOX 4259

EAGLE, CO 81631 PHONE: (970) 623-0788

OWNER:

STEAMBOAT SKI & RESORT CORPORATION 2305 MT WERNER CIRCLE STEAMBOAT SPRINGS, CO 80487 PHONE: (970) 871-5381 CONTACT: JÍM SCHNEIDER EMAIL: JSCHNEIDER@STEAMBOAT.COM

ARCHITECT:

ERIC SMITH ASSOCIATES, P.C. 1919 7TH STREET BOULDER, CO 80302 PHONE: (303) 442-5458 CONTACT: KATE LEGGETT, ARCHITECT KATE@ESAPC.COM

MECHANICAL / PLUMBING ENGINEER: THE BALLARD GROUP

2525 SOUTH WADSWORTH BLVD, STE 200 LAKEWOOD, CO 80227 PHONE: (303) 988-4514 CONTACT: TÍM HARRIS (PLUMBING) ERIC BAALMAN (HVAC) EMAIL: THARRIS@THEBALLARDGROUP.COM EBAALMAN@THEBALLARDGROUP.COM **CIVIL ENGINEER:** LANDMARK CONSULTANTS, INC

141 9TH STREET PO BOX 774943 STEAMBOAT SPRINGS, CO 80477 PHONE: (970) 871-9494 CONTACT: ERIK GRIEPENTROG EMAIL: ERIKG@LANDMARK-CO.COM

STRUCTURAL ENGINEER:

ANTHEM STRUCTURAL ENGINEERS 430 YAMPA STREET STEAMBOAT SPRINGS, CO 80487 PHONE: (303) 300-3338 CONTACT: CHARLIE ROOS EMAIL: CROOS@ANTHEMSTRUCTURAL.COM

ELECTRICAL ENGINEER: AE DESIGN

1900 WAZEE STREET #205 DENVER, CO 80202 PHONE: (303) 601-1743 CONTACT: JÓN BROOKS EMAIL: JBROOKS@AEDESIGN-INC.COM

SHEET INDEX

GENERAL	
AG001	PROJECT COVER SHEET
AG002	CODE REVIEW
AG003	SPECIFICATIONS
AG004	SPECIFICATIONS
CIVIL	
C.002	CIVIL NOTES
C.003	EXISTING CONDITIONS PLAN - OVERALL
C.004	EXISTING CONDITIONS PLAN - DETAILED
C.005	EXISTING CONDITIONS PLAN - UTILITY DETAIL
C.090	HORIZONTAL CONTROL PLAN
C.100	CIVIL SITE PLAN - SURFACE REFERENCE
C.101	CIVIL SITE PLAN - UTILITY REFERENCE
C.210	SUBSURFACE DRAIN PLAN
C.300	GRADING & DRAINAGE PLAN - OVERALL WITH AERIAL IMA
C.301	GRADING & DRAINAGE PLAN - OVERALL
C.302	GRADING & DRAINAGE PLAN - DETAILED
C.310	RETAINING WALL PLAN & PROFILE
C.320	STORM SEWER PLAN & PROFILE
C.500	DETAILS
C.501	DETAILS
C.502	DETAILS
C.510	DETAILS
C.511	DETAILS
ARCHITECTURAL	
AS001	ARCHITECTURAL SITE PLAN
Λ101	LOWER LEVEL DLAN

DETAILS
ARCHITECTURAL SITE PLAN
LOWER LEVEL PLAN
FIRST LEVEL PLAN
LOWER LEVEL CONNECTION TO PROMENADE
ROOF LEVEL PLAN
EXTERIOR ELEVATIONS
EXTERIOR ELEVATIONS
EXTERIOR ELEVATIONS & BLDG SECTIONS
SITE SECTIONS
BUILDING AND WALL SECTIONS
FLOOR AND CEILING PLANS
FIRE RATED ASSEMBLIES
FIRE RATED ASSEMBLIES & WALLTYPES
ASSEMBLY DETAILS
3D BUILDING VIEWS

STRUCTURAL	
S 0.01	STRUCTURAL COVER SHEET
S 0.02	SPECIAL INSPECITONS
S 1.01	FOUNDATION PLAN
S 1.02	MAIN AND ROOF LEVEL FRAMING PLANS
S 1.03	BURGESS CREEK BRIDGE PLAN
S 5.01	TYPICAL DETAILS
S 5.02	DETAILS
S 5.03	DETAILS AND SCHEDULES

MP001	MECHANICAL/PLUMBING COVER SHEET
M101	LOWER LEVEL HVAC PLAN
M111	FIRST LEVEL HVAC PLAN
M300	HVAC SCHEDULES
M400	HVAC DETAILS AND CONTROL DRAWINGS
PLUMBING	
P100	PLUMBING SITE PLAN
P101	LOWER LEVEL PLUMBING PLAN
P301	PLUMBING SCHEDULES AND DETAILS

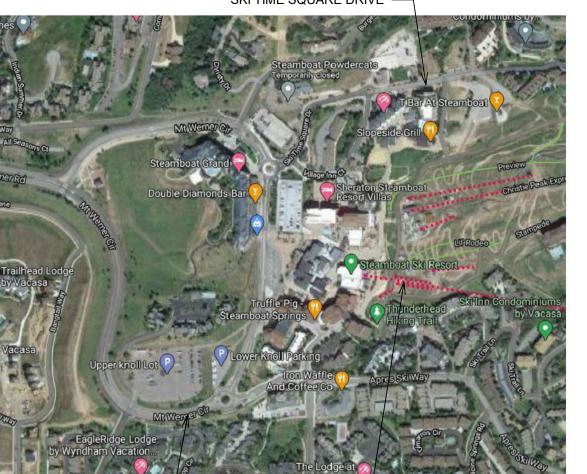
MECHANICAL

ELECTRICAL	
E000	ELECTRICAL COVER SHEET
E010	ELECTRICAL SITE PLAN
E101	ELECTRICAL LOWER LEVEL POWER PLAN
E111	ELECTRICAL FIRST LEVEL POWER PLAN
E201	ELECTRICAL LOWER LEVEL LIGHTING PLAN
E211	ELECTRICAL FIRST FLOOR LIGHTING PLAN
E500	ELECTRICAL ONE LINE DIAGRAM
E600	ELECTRICAL DIAGRAMS
E700	ELECTRICAL SCHEDULES
E800	ELECTRICAL LIGHTING SCHEDULES

ELECTRICAL LIGHTING COMPLIANCE

VICINITY MAP

SKI TIME SQUARE DRIVE —



PROJECT SITE -

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further

architect. Design and construction are complex.

performed their services with due care and diligence

these plans shall be reported immediately to the

shall relieve the architect from responsibility for the

consequences arriving out of such changes.

and shall not be copied, changed or disclosed in an

written consent of Eric Smith Associates, P.C.

REVISIONS

Job Number: 20034 12/30/20 Drawn By: Checked By: Checker

Project Phase DESIGN DEVELOPMENT

Sheet Title PROJECT COVER SHEET

Sheet Number

MT WERNER CIRCLE

CHAPTER 5 GENERAL BLDG HEIGHT & AREA:

Area, Building: The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. (from Commentary - the area measured within the perimeter formed by the inside surface of the exterior walls.)

CONSTRUCTION TYPE:

(CONSTRUCTION WILL BE ALL NON-COMBUSTIBLE, 1-HR RATED)

HEIGHT (TABLE 504.3): TYPE VA ALLOWED HEIGHT = 50' PROPOSED HEIGHT = 25'

TABLE 506.2 ALLOWABLE AREA FACTOR IN SF: TYPE VA, U OCCUPANCY ALLOWABLE AREA = 9,000 SF PROPOSED AREA = 425 SF

TABLE 509 INCIDENTAL USES:

ROOMS WITH BOILERS WHERE THE LARGEST PIECE OF EQUIPMENT IS OVER 15 PSI AND 10 HORSEPOWER

SEPARATION AND/OR PROTECTION = 1 HOUR OR PROVIDE AUTOMATIC SPRINKLER SYSTEM 1 HOUR RATED SEPARATION WILL BE PROVIDED AT BOILER ROOM.

CHAPTER 6 TYPES OF CONSTRUCTION:

STRUCTURE **BEARING WALL** EXTERIOR 1-HR

INTERIOR **NON-BEARING**

1-HR FOR 5<X<10 SEPARATIONS EXTERIOR 0-HR FOR X>30 SEPARATIONS

INTERIOR FLOORS 1-HR ROOFS

ADJACENT SPACES.

CHAPTER 7 FIRE RESISTANCE CONSTRUCTION:

SECTION 713.4 FIRE RESISTANCE RATING SHAFT ENCLOSURES SHALL HAVE A FIRE RESISTIVE RATING OF NOT LESS THAN 1-HOUR WHERE CONNECTING LESS THAN FOUR STORIES. ELEVATOR SHAFT AND MACHINE ROOM TO HAVE 1-HR SEPARATION OF

CHAPTER 9 FIRE PROTECTION SYSTEMS:

TABLE 903.2.11.6 ADDITIONAL REQUIRED SUPPRESSION SYSTEMS: INCIDENTAL USE AREA SEE SECTION 509.4

CHAPTER 10 MEANS OF EGRESS:

TABLE 1004.5 MAX FLOOR AREA ALLOWANCES PER OCCUPANT: BOILER/ELEVATOR

425 SF / 300 SF PER OCC = 2 OCCUPANTS PLATFORM

USING AIRPORT TERMINAL WAITING AREAS @ 15 SF PER OCC GROSS PLATFORM/ OP CABIN 6.600 SF / 15 SF PER OCC = 440 OCCUPANTS

SECTION 1005.3.1 STAIRWAYS:

BOILER/ELEVATOR & PLATFORM 442 OCC X .3" = 132.6" OF STAIR EGRESS REQUIRED DURING THE SUMMER GRIP-STRUT STAIRS WILL BE PROVIDED AT THE

SECTION 1005.3.25 OTHER EGRESS COMPONENTS:

PLATFORM EDGE FOR EGRESS (133" MIN IN WIDTH)

442 OCC X .2" = 88.4" OF OTHER EGRESS OCCUPANCY DURING THE WINTER OCCUPANTS CAN WALK DIRECTLY OFF OF THE PLATFORM. 89" MIN OF EGRESS WILL BE PROVIDED.

SECTION 1111 SIGNAGE:

SIGNAGE TO BE PROVIDED PER SECTION 1111. VERIFY ALL LOCATION OF SIGNAGE WITH OWNER IN FIELD, SIGNAGE TO MEET ALL REQUIREMENTS OF 2018 IBC, ANSI A117, ADA AND CDC.

CHAPTER 11 - ACCESSIBILITY:

THE ELEVATOR HAS BEEN PROVIDED FOR ACCESSIBLE ACCESS TO THE PLATFORM. NEW SNOW MELTED CONCRETE PATH FROM THE ELEVATOR TO THE EXISTING PROMENADE WILL HAVE A SLOPE OF 5% MAX.

A PHONE WILL BE PROVIDED AT THE ELEVATOR (ON BOTH LEVELS) TO CONTACT SSRC SECURITY. OWNER WILL HAVE PROCEDURE IN PLACE TO EVACUATE GUESTS FROM PLATFORM IN THE CASE OF AN ISSUE WITH THE ELEVATOR.

CHAPTER 17 - SPECIAL INSPECTIONS:

1704.2 General - Where application is made to the Building Official for construction as specified in section 105, the Owner or the owner's authorized agent, other than the contractor, shall employ one or more approved agencies to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the approved agencies to the building official. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 110.

1705.14 Spray fire-resistant materials. See section 1705.14 for required verification and inspection of spray fire-resistant materials applied to structural

See more information on Special Inspection requirements on S0.01

PROJECT GENERAL NOTES:

1. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSION AND CONDITIONS IN FIELD. DISCREPANCIES IN DIMENSIONS. EXISTING CONDITIONS AND FIELD MEASUREMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE COMMENCEMENT OF THE WORK.

2. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION MEETS OR EXCEEDS APPLICABLE CODES AND STANDARD PRACTICES, INCLUDING ALL FEDERAL, STATE AND LOCAL BUILDING REQUIREMENTS.

3. CONTRACTOR TO VERIFY TEMPERED GLAZING PROVIDED AT NEW DOORS AND WINDOWS PER CODE.

4. CONTRACTOR TO VERIFY MANUFACTURES INSTRUCTIONS AND PROCEDURES FOR INSTALLATION OF ALL MATERIALS & EQUIPMENT.

5. THROUGH-PENETRATION OR MEMBRANE PENETRATION

6. ALL WORK CONNECTED WITH THIS PROJECT BY ANY TRADE INVOLVED SHALL BE DONE IN A WORKMANSHIP TYPE MANNER IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE.

7. CONTRACTOR SHALL PROVIDE JOB SITE CLEAN UP. SORT AND RECYCLE JOBSITE DEBRIS TO THE FULLEST EXTENT POSSIBLE INCLUDING CARDBOARD, STEEL, WOOD, ACOUSTICAL TILE, GLASS

AND GYPSUM BD. CLEAN AND REMOVE CONSTRUCTION DEBRIS FROM THE SITE ON A DAILY BASIS. UPON JOB COMPLETION, LEAVE THE SITE IN A NEAT AND ORDERLY CONDITION. PROVIDE TRASH REMOVAL FOR PROJECT RELATED WORK BY SUBCONTRACTORS, ETC.

FIRESTOPPING OF ALL FIRE-RESISTANT ASSEMBLIES REQUIRED PER IBC SECTION 713.

8. COORDINATE PROJECT WORK WITH OWNER, LIFT PROVIDER AND BASE VILLAGE PROJECT. ACTIVITIES AND ACCESS TO AND AROUND THE PROJECT SITE WILL BE REQUIRED AT THE MOUNTAIN AND AT THE BASE VILLAGE DURING CONSTRUCTION.

9.ALL PERMITS (OCCUPANCY, ELECTRICAL, PLUMBING AND ALL OTHERS) REQUIRED BY STATE AND LOCAL CODES, EXCEPT THOSE ACQUIRED BY SUBCONTRACTORS, ARE TO BE SECURED BY THE GENERAL CONTRACTOR WITH COPIES TO OWNER WITHOUT EXTRA CHARGE. ALL PERMITS ACQUIRED BY SUBCONTRACTORS SHALL BE SUBMITTED TO THE GENERAL CONTRACTOR FOR RECORD.

10.EACH TRADE SHALL VERIFY ALL REQUIREMENTS PERTAINING TO WORK PERFORMED IN THE PROJECT AND ANY REQUIRED PERMITS. ALL SUBCONTRACTORS SHALL DIRECT QUESTIONS, CHANGES OR REQUESTS THROUGH THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL SUBMIT ALL REQUESTS, CHANGES OR QUESTIONS TO THE ARCHITECT IN WRITING.

11.NO UTILITY, TELECOMM, LOW VOLTAGE, DATA SERVICE, ETC. MAY BE DISCONNECTED WITHOUT FIRST CONTACTING THE FACILITY MANAGER IN ADVANCE FOR AUTHORIZATION. THERE SHOULD BE NO INTERRUPTION OF EXISTING SYSTEMS.

12.ALL EGRESS PATHS SHALL REMAIN OPEN AND AVAILABLE TO OWNER AND GUESTS.

13.IF UNANTICIPATED MECHANICAL, PLUMBING, ELECTRICAL, STRUCTURAL ELEMENTS OR ANY OTHER CONDITIONS ARE ENCOUNTERED WHICH MIGHT CONFLICT WITH THE INTENDED FUNCTION OF THE RENOVATION CONTACT THE ARCHITECT IMMEDIATELY FOR CLARIFICATION. COORDINATE ACTIVITIES WITH THE FACILITY MANAGER IN ADVANCE OF DOING WORK.

14.COORDINATE WORK OF DISCIPLINES, (ARCH., STRUCT., ELEC., MECH., PIPING, I.T., ETC.) WITH EXISTING CONDITIONS, SPECIAL REQUIREMENTS AND CONSTRUCTION

15.CONTRACTOR SHALL COMPLY WITH OWNER'S REQUIREMENTS FOR STORAGE, REMOVALS, NOISE LEVELS, VENTILATION AND LIMITATIONS OF ACCESS TO SITE. COORDINATE WITH FACILITY MANAGER FOR CLARIFICATION. NO CHANGE ORDERS WILL BE PERMITTED FOR FAILURE TO BE AWARE OF OWNER'S REQUIREMENTS.

16.PROVIDE, ERECT AND MAINTAIN TEMPORARY WORK AS MAY BE REQUIRED FOR PROTECTION OF THOSE IN OR ABOUT THE BUILDING.

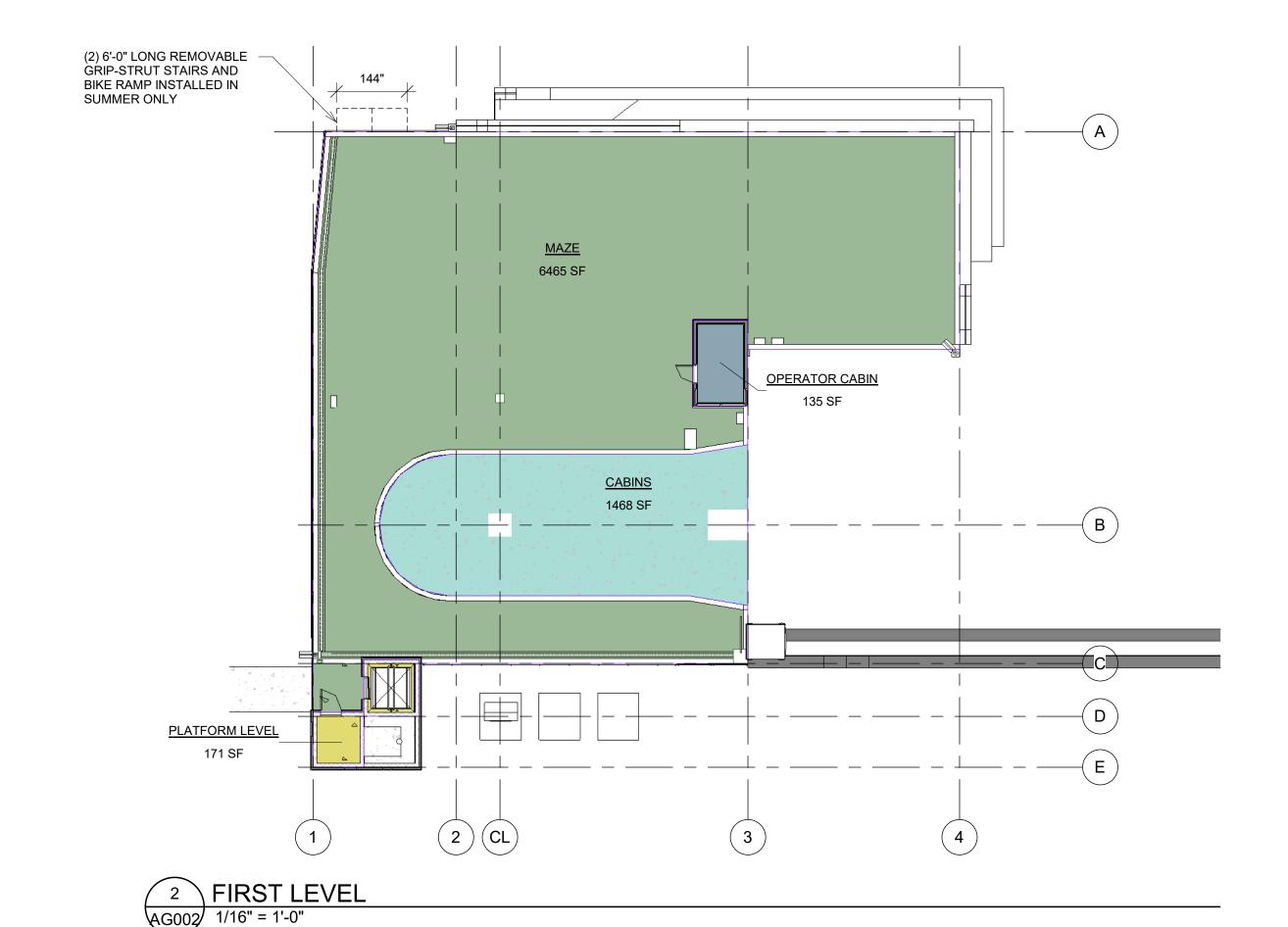
17.PROVIDE BARRICADES, PLASTIC COVERS, DUST BARRIERS, WARNING SIGNS, FIRE EXTINGUISHERS AND OTHER NECESSARY EQUIPMENT FOR THE PROTECTION AND SAFETY OF PERSONNEL, MATERIALS AND EQUIPMENT IN THE AREA.

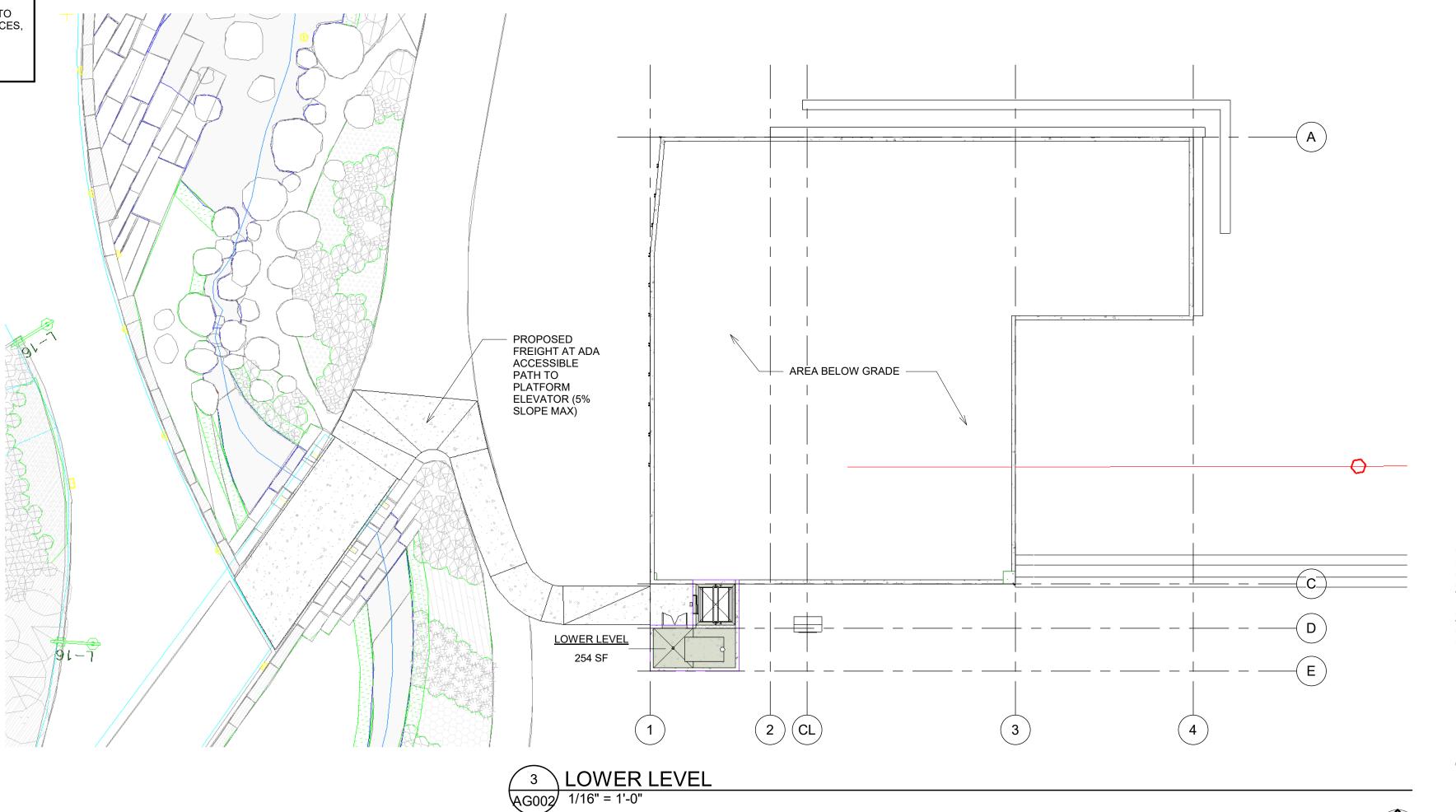
18.EACH CONTRACTOR SHALL INCLUDE COST OF MATERIAL AND LABOR NECESSARY TO PROVIDE ALL REQUIRED SUPPORTS, BEAMS, ANGLES, HANGERS, RODS, BASES, BRACES, CHANNELS, ETC. TO PROPERLY SUPPORT THEIR CONTRACT WORK.

19.PROVIDE ADEQUATE SUPPORTING BLOCKING WHERE REQUIRED.

ELEVATOR/BOILER BLDG AREA Area Name

LOWER LEVEL 254 SF PLATFORM LEVEL 171 SF 425 SF





SMITH

NOTICE: DUTY OF COOPERATION Release of these plans contemplates further cooperation among the owner, his contractor and the architect Design and construction are complex Although the architect and his consultants have performed their services with due care and diligence. they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for the consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect of responsibility for all consequences arriving out of such changes.

Smith Associates, P.C. as instruments of service shall remain property of Eric Smith Associates, P.C. and shall not be copied, changed or disclosed in any form whatsoever without first obtaining the express written consent of Eric Smith Associates, P.C. Eric Smith Associates, P.C

REVISIONS Description

Job Number: | 20034 12/30/20 Drawn By: Author Checked By: Checker

Project Phase DESIGN DEVELOPMENT

Sheet Title CODE REVIEW

DIVISION 02 - EXISTING CONDITIONS

MAINTENANCE OF EXISTING CONDITIONS:

DO NOT DISTURB THE SITE BEYOND LIMITS OF NECESSARY ACTIVITY FOR

EXECUTION OF THE CONTRACT DOCUMENTS.

Hazardous Material found during Construction:

If the Contractor becomes aware of the presence of hazardous materials in any form at the Project site including, but limited to, asbestos, asbestos containing materials, polychlorinated biphenyl (PCB), lead based paints or other toxic substances he shall, prior to commencement of any portion of the Work, provide notice to the Owner of the presence, location, and condition of any known or suspected materials that are discovered. Such notice shall be in writing and

submitted no more than twenty-four (24) hours after such materials are discovered.

In the event of such discovery, the Contractor shall not proceed with the Work until he has received written authorization from

the Owner. If the Contractor proceeds with the Work without said authorization, he does so at his own risk.

In the event such materials are identified or encountered during the course of the Project, the Owner, at its expense, shall take

all reasonable actions to properly and safely deal with such materials

The Contractor and subcontractors must comply with all applicable environmental federal, state, local environmental,

DIVISION 03 - CONCRETE

safety laws and regulations.

03 00 00 CONCRETE
CONTRACTOR TO COORDINATE AND PROVIDE SPECIAL INSPECTIONS AS REQUIRED BY BUILDING DEPARTMENT OR STRUCTURAL ENGINEER.

REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ALL CONCRETE WORK INCLUDING STEEL REINFORCING, TOPPING AND STRUCTURAL SLAB DESIGN AND PATCHING.

PROVIDE TOOLED CONTROL JOINTS AND CONSTRUCTION JOINTS AT FLATWORK TO MATCH EXISTING ADJACENT JOINT PATTERNS. CONSTRUCTION JOINTS TO BE PROVIDED AT EXTERIOR SLABS AT 4'-0" OC MAX IN EACH DIRECTION AND WHERE NECESSARY DUE TO PROJECT CONDITIONS. VERIFY IF EXPANSION JOINTS ARE REQUIRED.

EXTERIOR (VERTICAL AND HORIZONTAL CONCRETE AND MASONRY) INTRAGUARD PENETRATING, WATER REPELLENT, SILANE/SILOXANE SEALING COMPOUND BY WR

MEADOWS OR EQUAL.

INTERIOR SLAB **BROOM FINISH WITH**

APPLY "SEALTIGHT VOCOMP 20" CONCRETE SEALER BY WR MEADOWS (OR EQUAL) PER MANUFACTURES RECOMMENDATIONS AT ALL INTERIOR SLABS.

DIVISION 04 - MASONRY

<u>04 20 00 CONCRETE UNIT MASONRY</u> CONTRACTOR TO COORDINATE AND PROVIDE SPECIAL INSPECTIONS AS REQUIRED BY BUILDING DEPARTMENT OR STRUCTURAL ENGINEER.

CONCRETE MASONRY UNITS SHALL COMPLY WITH ASTM STANDARDS. PATTERN AND SIZE PER DRAWINGS.

ELEVATOR AND BOILER ROOM WALLS AT PLATFORM LEVEL

CONSTRUCTION OF CMU SHALL TAKE PLACE WITHIN TEMPERATURE RANGE AS SPECIFIED BY MORTAR MANUFACTURER. CURING TEMPERATURES TO BE MAINTAINED FOR DURATION OF TIME AS SPECIFIED BY MORTAR MANUFACTURER. REMOVE EXCESS MORTAR AND PROVIDE TOLLED JOINTS.

SEE STRUCTURAL FOR MORE INFORMATION.

DIVISION 05 - METAL

REFER TO AND COMPLY WITH ALL STRUCTURAL DRAWINGS AND SPECIFICATIONS.

STRUCTURAL ENGINEER SHALL REVIEW ALL STRUCTURAL STEEL UNLESS NOTED OTHERWISE ON THE DRAWINGS. PROVIDE SHOP DRAWINGS FOR STRUCTURAL STEEL BEAMS, COLUMNS, LOOSE STEEL LINTELS, CONCRETE EMBED PLATES, ETC. SHOP PRIME ALL EXPOSED AND CONCEALED METAL COMPONENTS, ALL SHOP DRAWINGS SHALL BE CHECKED BY SUPPLIER AND REVIEWED BY CONTRACTOR PRIOR TO SUBMITTAL TO ARCHITECT.

DO NOT CUT HOLES THROUGH STEEL FOR PENETRATIONS OF PLUMBING ETC. WITHOUT PRIOR APPROVAL FROM STRUCTURAL ENGINEER.

FURNISH AND INSTALL ALL HANGERS, HURRICANE RAFTER CLIPS, WALL BRACKETS, END CLOSURES, FLANGES MISCELLANEOUS FITTINGS, SLEEVES, INSERTS AND ANCHORS INCLUDING FOR INTERCONNECTIONS OF PIPE AND ATTACHMENTS OF RAILINGS AND HANDRAILS TO OTHER WORK. BRACKETS, COLUMNS, LINTELS, ETC.

<u>05 41 00 STRUCTURAL METAL STUD FRAMING</u>

PRIOR TO BUILDING ANY EXTERIOR OR INTERIOR WALLS, ALL FRAMING DIMENSIONS SHOULD BE VERIFIED BY THE CONTRACTOR. NOTIFY THE ARCHITECT OR ANY DISCREPANCIES.

SEE STRUCTURAL FOR METAL STUD SPECIFICATION.

05 52 00 METAL RAILINGS

EXTERIOR RAILINGS AT PERIMETER OF PLATFORM AND ON RETAINING WALLS.

SUBMIT SHOP DRAWINGS OF METAL FABRICATIONS AND PREFABRICATED ITEMS.

GRIND EXPOSED EDGES AND WELDS SMOOTH AND FLUSH. NO TACK WELDS ALLOWED AS FINISHED PRODUCT.

FABRICATE ANCHORS AND RELATED COMPONENTS FOR METAL FABRICATIONS OF SAME MATERIAL AND FINISH UNLESS OTHERWISE SPECIFIED.

REFERENCES: American Society for Testing of Materials (ASTM): ASTM A36 - Standard Specification for Carbon Structural Steel.

ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and

ASTM A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

Product Data: Manufacturer's data sheets for products and assemblies specified. Preparation instructions and recommendations.

Storage and handling requirements and recommendations. Cleaning methods.

Indicate profiles, sizes, connections, size and type of fasteners, accessories. Show location of rails and guardrails including plans, details of components and anchor details. Field Verified Measurements: Verify dimensions indicated on Drawings.

Verification Samples: For each finish specified, two samples representing actual colors specified.

INSTALL PER ADA AND IBC CODE REQUIREMENTS FOR DESIGN CLEARANCES, HEIGHT AND ATTACHMENT.

EXTERIOR EXPOSURE - PRE-FINISH KYNAR FINISH COLOR BLACK (OR APPROVED EQUAL)

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 13 26 SELF-ADHERING SHEET WATERPROOFING LOCATION: Foundation vertical walls.

MANUFACTURER: Carlisle Coatings and Waterproofing Incorporated or equal.

CCW MiraDRI Carlisle 860/861 - a self-adhesive membrane of not less than 60 mils thickness, consisting of a 56 mil rubberized-asphalt membrane laminated to 4 mil cross-laminated polyyetheylene film, and shall meet or exceed the

following requirements:

1. Thickness: 60 mils, ASTM D 3767 2. Tensile Strength (Membrane): 325 psi, ASTM D 412 3. Tensile Strength (Film): 5000 psi. ASTM D 882

4. Elongation: 350% minimum, ASTM D 412 5. Permeance: 0.05 Perm maximum, ASTM E 96

6. Flexibility, 180° bend over 1 in. mandrel at -45°F: Unaffected, ASTM D 1970 7. Crack Cycling at -25°F (100 cycles): Unaffected, ASTM C 836 8. Peel Strength: 10.0 lb/in, ASTM D 903

9. Lap Adhesion: 19.0 lb/in, ASTM D 1876 10. Puncture Resistance: 60 lb (min), ASTM E 154 11. Soil Burial 16 weeks: No Effect, GSA-PBS 07121 12. Water Absorption: 0.1% by wt., ASTM D 570

13. Hydrostatic Head: 230 ft., ASTM D 5385 For application temperatures between 25°F and 65°F, use CCW-861 Sheet Membrane and

CCW-702, CCW-702LV, or CCW-715. For application temperatures above 40°F use CCW MiraDRI 860 sheet membrane and CCW-702, CCW-702LV, CCW-702WB, CCW-715, CCWAWP, or Cav-Grip.

ACCESSORY PRODUCTS:

A. Surface Primer: Shall be CCW-702, CCW-702LV, CCW-715, CCW-702WB, CCW-AWP or Cav-Grip.

B. Mastic: Shall be CCW-704 Mastic. C. Sealants: Shall be CCW-703 Vertical Grade Liquiseal Membrane, CCW-LM-800XL, CCW-201 two-component Polyurethane Sealant or approved sealant by CCW.

E. Protection Course: Shall be CCW-Protection Board-H or HS, CCW-300HV for horizontal surfaces or CCW-Protection Board-V or CCW-200V for vertical surfaces. F. Drainage Composite: Shall be CCW MiraDRAIN as recommended by the manufacturer for each

G. Perimeter Drainage System: Where required shall be CCW MiraDRAIN HC.

Install per manufacturers recommendations.

Installation to be done by trained and certified installers.

Upon completion and acceptance of the work required by this section, the manufacturer will issue a warranty agreeing to promptly replace defective materials installed by an approved applicator for a period of 5 years.

Provide foundation perimeter drainage system per Soils Report. Provide clean-outs at all corners.

D. Backer Rod: Shall be closed-cell polyethylene foam rod.

07 21 00 THERMAL INSULATION:PROVIDE INSULATING MATERIALS AS NOTED BELOW AND IN THE DRAWINGS. SEE FLOOR AND WALL TYPE DRAWINGS FOR MORE INFORMATION.

Basis of Design - "UNFACED CertainTeed Fiber Glass Building Insulation". No kraft facing allowed on insulation. Thermal Batts to be un-faced and friction fit into studs. Flame spread index of 25 or less for use in non-combustible

construction. - Exterior metal stud cavity = 3 1/2" (R-15)

EPDM Membrane Roof

- Tapered polyisocyanurate tapered ISO 1 board roof insulation above roof structure. Coordinate insulation type with roofing mfr recommendations.

6" thickness min (R-30)

Basis of Design - Owens Corning FOAMULAR & FOAMULAR NGX 400 and 600 XPS Insulation or equal

- 25 PSI minimum under platform pavers with snowmelt - 60 PSI minimum under concrete slab on grade with snowmelt

CLOSED CELL SPRAY INSULATION

Basis of Design - CertainTeed Certa-Spray Closed Cell Foam or equal - 2" CLOSED CELL SPRAY FOAM LOCATED BELOW METAL DECK AT PLATFORM LEVEL CONCRETE FLOOR SYSTEM FOR SNOWMELT LOCATED IN CONCRETE FLOOR IN THAT AREA. PROVIDE EXTERIOR GYP BD ENCLOSURE FOR SOFFIT BELOW TO PROVIDE 15 MINUTE THERMAL BARRIER.

Provide R-19 batt wrap around all exhaust vent duct lines that penetrate the exterior wall or that extend in and through the attic or floor systems.

Provide preformed foam insulation wrap around all plumbing lines that penetrate or set within 36" of exterior walls or in attic spaces. Verify all plumbing and HVAC insulation with Mechanical and Plumbing drawings and Specs.

SILL SEALER

Provide sill sealer at top of concrete slabs, entire length. Manufacturer: Dow "Weathermate" or approved equal.

Expandable foamed-in-place insulation at all window/door shim spaces and at any other voids and or gaps in exterior walls using care to avoid bowing frames from overfilling.

Provide manufactures warranty on all insulation products.

ARCHITECT OR OWNER TO INSPECT ALL INSULATION PRIOR TO CONCEALMENT.

07 25 00 WEATHER BARRIERS:

At new exterior metal stud walls. Verify weather barrier is compatible with wall system per Metal Siding manufacturers' requirements.

Basis of Design:

DuPont Tyvek "CommercialWrap". Install as per manufactures recommendations. Tape lapped joints with "Tyvek Contractors Tape".

Note: Provide extended 10 years on standard warranty by having site observations performed by Tyvek.

Door and window sills, jambs and heads: Flash all door and window edges with 9" minimum width DuPont™ StraightFlash™ flashing, manufactured by DuPont. Lap flashing over nailing fins after door and window installation is completed per Manufacturers recommendations.

07 46 00 SIDING

Rib Height: ⁵/₈"

Metal wall siding at exterior of Elevator/Boiler Room Building.

MBCI Exposed Fastening System PBD. System based on metal siding at Operator Cabin as specified by lift provider.

Product Specifications • Applications: Roof and Wall • Coverage Width: 32" • Rib Spacing: 2.67" on Center

• Minimum Slope: 3:12 • Panel Attachment: Exposed Fastening System

 Gauges: 26 (standard) • Finishes: Smooth (standard) Coatings: Signature® 200

FINISH TO BE CHARCOAL GRAY. VERIFY WITH OWNER AND LIFT PROVIDER BEFORE ORDERING AS METAL SIDING IS TO MATCH OPERATOR CABIN METAL SIDING COLOR.

SAMPLES: PROVIDE WALL PANEL AND COLOR SAMPLES TO OWNER FOR THEIR RECORDS.

PROVIDE MANUFACTURERS STANDARD WARRANTY

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 50 00 MEMBRANE ROOFING

SINGLE - PLY MEMBRANE ROOFING SYSTEM

Location - Elevator/Boiler Room Building Roof

Compatibility: Provide products recommended by manufacturers to be fully compatible with indicated substrates. Provide separation of materials as required to eliminate contact between incompatible materials.

General: Ethylene propylene diene monomers formed into uniform, flexible sheets complying with ASTM D 4637, Type 1. Class A: Minimum Provide fully adhered 60 mil SPM-60W EPDM.

Exposed Face Color: White

Fully adhered with mechanically attached insulation (or as required by roofing manufacturer)

MANUFACTURERS

Subject to compliance with requirements, provide products of one of the following: CARLISLE SYNTEC (or approved equal)

Sheet Seaming System: Manufacturer's standard materials for sealing lapped joints, including edge sealer to cover

exposed spliced edges as recommended by membrane manufacturer. Cant Strips, Tapered Edge Strips and Flashing Accessories: Types recommended by membrane manufacturer, including adhesive tapes, flashing cements and sealants.

Flashing Material: Manufacturer's standard system compatible with single-ply membrane.

Slip Sheet: Type recommended by membrane manufacturer for protecting membrane from incompatible substrates.

Pipe Boot: Provide EPDM type pipe boot(s). Roof manufacturer's standard. Pipe boots to be used for all vent and pipe roof

Pressure Sensitive Walking Pads: Molded walkway pads with Factory-Applied SecurTAPE for EPDM membrane protection

in walking areas around roof. Equipment Pad: Provide each condensing unit with separate equipment pad. On the roof, each equipment pad is to sit on a

Insulating Materials: Provide Tapered Polyisocyanurate Tapered ISO 1 Board Roof Insulation sloping to drain. Fabricate with taper of 1/4" to 1/2" per foot, unless otherwise indicated. See also Thermal Insulation in Division 7

Mechanical Anchors: Corrosion-resistant type as recommended by insulation manufacturer and approved by membrane manufacturer for deck type and complying with fire and insurance wind-uplift rating requirements.

Warranty - Provide 20 – year total roof system warranty.

pressure sensitive walking pad to protect the roof system below.

Submit product data installation instructions and general recommendations from manufacturer of single-ply membrane system for types of roofing required. Include data substantiating that materials comply with requirements

Samples of finished roofing sheets, including T-shaped side/end-lap seam.

Certification that materials comply with local VOC limitations

07 60 00 FLASHING AND SHEET METAL

SHEET METAL FLASHING AND TRIM Summary: Roof flashing, drip edge, fascia, metal cap flashing, counter flashing, base flashing, roof to wall connections,

Basis of Design:

over door and window heads, at wall penetrations, miscellaneous sheet metal accessories, etc.

Prefinished Metal Pac-Clad flashing and trim by Petersen Aluminum or approved equal Provide all exposed flashing and trim pieces (drip edges, fascias, flashing, etc.) with Pac-Clad Petersen Aluminum

galvanized steel finish with Pac-Clad Kynar 500 top finish and polyester wash coat bottom finish in 22-GA steel. Pac-Clad flashing and trim in Kynar 500 custom colors to be selected by Owner/Architect from standard colors.

Sheet Metal Flashing and Trim Materials:

Zinc-coated steel: commercial quality with 0.20 percent copper, G90 hot-dip galvanized, mill phosphatized field painted, 20-GA, except as noted otherwise.

Metal Soffit: https://www.mbci.com/products/roof/soffits/artisan-/ Coverage Width - 12" Panel Attachment - Concealed Fastening System

Gauge - 24 (standard); 26, 22 (optional) Finishes - Smooth (standard)

Length - 4'-0" to 10'-0" Inquire about longer lengths FINISH TO BE CHARCOAL GRAY. VERIFY WITH OWNER AND LIFT PROVIDER BEFORE ORDERING AS METAL

SIDING IS TO MATCH OPERATOR CABIN METAL SIDING COLOR.

SAMPLES: PROVIDE WALL PANEL AND COLOR SAMPLES TO OWNER FOR THEIR RECORDS.

PROVIDE MANUFACTURERS STANDARD WARRANTY.

Install all flashing and sheet metal in strict accordance with SMACNA requirements, manufacturer's recommendations and in accordance with requirements of adjacent materials and systems.

Manufactures to include WR Meadows, Fortifiber Building Products, Protecto Wrap Company or approved equal.

Basis-of-Design: 40 mil."Air-Shield Thru-Wall Flashing" by WR Meadows

Plastic Sheet Flashing and Self-Adhering Sheet Flashing:

07 80 00 FIRE AND SMOKE PROTECTION

for conveyance and application.

Coatings - Signature® 200

CONCEALED SPRAYED-ON FIREPROOFING MATERIALS General: for concealed applications of sprayed-on fire proofing provided manufacturer's standard products complying with the requirements indicated in this article for material composition and physical properties representative of installed

<u>Material Composition:</u> Cementitious fireproofing consisting of factory-mixed, dry formulation of gypsum or Portland cement binders and lightweight mineral or synthetic aggregates mixed with water at Project site to form a slurry or mortar

Products:
Basis of Design: ISOLATEK INTERNATIONAL — Type 280 per UL D902

THE FIREPROOFING MATERIALS LISTED ARE PER THE UNDERWRITERS LABORATORIES. INC. SEE THE FIRE RATED ASSEMBLIES IN THE DOCUMENTS AND THE UL DESIGN PUBLISHED DIRECTORY FOR THE COMPLETE

PROVIDE product certificates from fireproofing manufacturers that each sprayed-on fireproofing product indicated for

Project complies with specified requirements including those for fire-test-response characteristics and compatibility with

adhesives, primers, and other surface coatings on substrates indicated to receive fireproofing.

ASSEMBLIES AND REQUIREMENTS.

AUXILIARY FIREPROOFING MATERIALS General: Provide auxiliary fireproofing materials that are compatible with sprayed-on fireproofing products and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in

07 84 13 PENETRATION FIRESTOPPING

- Sealant joints in fire-resistance-rated construction.

the fire-resistive designs indicated.

THIS SECTION INCLUDES FIRESTOPPING AT THE FOLLOWING SYSTEMS:

- THROUGH ROOF AND WALLS (60-MIN RATED) THIS SECTION INCLUDES FIRESTOPPING FOR THE FOLLOWING PENETRATIONS: - Both empty openings and openings containing cables, pipes, ducts, conduits and other penetrating items.

Contractor to submit UL fire assemblies for review for scope of penetrations as listed below.

Basis of Design: Hilti or 3M firestop systems and 3M firesafe products or approved equal. FIRESTOP SYSTEM INSTALLATION MUST MEET REQUIREMENTS OF ASTM E 814, UL 1479 OR UL 2079 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION BEING PENETRATED.

DIVISION 07 - THERMAL AND MOISTURE PROTECTION (cont)

07 84 13 PENETRATION FIRESTOPPING (CONT):

SUBMITTALS: PRODUCT DATA - MANUFACTURER'S SPECIFICATIONS AND TECHNICAL DATA FOR EACH MATERIAL INCLUDING THE COMPOSITION AND LIMITATIONS, DOCUMENTATION OF QUALIFIED FIRESTOP SYSTEMS TO BE USED AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL FIRE STOP PENETRATIONS THAT ARE PROPOSED BY THE CONTRACTOR PER FIELD VERIFICATION ARE TO PROVIDE A UL LISTED ASSEMBLY DETAIL THAT APPLIES TO THE PROPOSED LOCATION REQUIREMENTS.

CERTIFICATION BY FIRESTOPPING MFR THAT PRODUCTS SUPPLIED COMPLY WITH LOCAL REGULATIONS FOR USE OF LOW VOLATILE ORGANIC COMPOUNDS (VOCs) AND ARE NONTOXIC TO BUILDING OCCUPANTS.

INSTALLER QUALIFICATIONS - ENGAGE A EXPERIENCED INSTALLER WHO HAS COMPLETED FIRESTOPPING THAT IS SIMILAR IN MATERIAL, DESIGN AND EXTENT TO THAT INDICATED FOR PROJECT AND HAS PERFORMED SUCCESSFULLY.

PROVIDE FIRESTOPPING COMPOSED OF COMPONENTS THAT ARE COMPATIBLE WITH EACH OTHER. THE SUBSTRATES FORMING OPENINGS, AND THE ITEMS, IF ANY PENETRATING THE FIRESTOPPING UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THE FIRESTOPPING MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.

PRODUCTS:

Compatibility: Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.

Accessories: Provide components for each firestopping system that are needed to install fill materials. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistance-rated systems.

Applications: Provide firestopping systems composed of materials specified in this Section that comply with system performance and other requirements.

Ceramic-Fiber Sealant: Single-component formulation of ceramic fibers and inorganic binders.

Endothermic, Latex Sealant: Single-component, endothermic, latex formulation. Intumescent, Latex Sealant: Single-component, intumescent, latex formulation.

FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

Intumescent Putty: Nonhardening, dielectric, water-resistant putty containing no solvents, inorganic fibers or silicone compounds.

Intumescent Wrap Strips: Single-component, elastomeric sheet with aluminum foil on one side. Job-Mixed Vinyl Compound: Prepackaged vinyl-based powder product for mixing with water a Project site to

Silicone Sealant: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealant of grade indicated below:

formulation for openings in vertical and other surfaces requiring a nonslumping/gunnable sealant, unless indicated

produce a paintable compound, passing ASTM E 136, with flame-spread and smoke-developed ratings of zero per

firestop system limits use to nonsag grade for both opening conditions. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work

Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and nonsag

include, but are not limited to, the following: Ceramic-Fiber Sealant: Metacaulk 525, The RectorSeal Corporation.

Endothermic, Latex Sealant:

Fyre-Shield, Tremco, Inc. Intumescent Latex Sealant: Metacaulk 950, The RectorSeal Corporation.

FS611A Intumescent Firestop Sealant, Hilti Construction Chemicals, Inc.

Pensil 500 Intumescent Putty, General Electric Company. Flame-Safe FSP1000 Putty, International Protective Coatings Corporation.

Intumescent Wrap Strips: CS2420 Intumescent Wrap, Hilti Construction Chemicals, Inc.

Job-Mixed Vinyl Compound: USG Firecode Compound, United States Gypsum Company.

FS635 Trowelable Firestop Compound, Hilti Construction Chemical, Inc Pensil 100 Firestop Sealant, General Electric Company

Metacaulk 835, The RectorSeal Corporation.

Metacaulk 880, The RectorSeal Corporation.

concrete slabs for floors and decks.

MULTI-PART POURABLE URETHANE SEALANT

SILICONIZED ACRYLIC LATEX CAULK.

CS240 Firestop Sealant, Hilti Construction Chemicals, Inc.

Fyre-Sil, Tremco, Inc. Fyre-Sil S/L, Tremco, Inc.

INSTALL FIRESTOP MATERIALS IN ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY. COMPLY WITH

MANUFACTURER INSTRUCTIONS FOR INSTALLATION FOR ALL FIRESTOPPING MATERIALS.

07 90 00 JOINT PROTECTION PROVIDE THE FOLLOWING SEALANT TYPES WHERE INDICATED ON THE DRAWINGS AND AT OTHER TYPICAL LOCATION, INCLUDING BUT NOT LIMITED TO: - Exterior joints in vertical surfaces including perimeter joints and around dissimilar materials. - Exterior joints in horizontal traffic surfaces including control, expansion and isolation joint in cast-in-place

- Interior joints in horizontal traffic surfaces including perimeter joints of exterior openings, tile control and expansion joints, perimeter joints b/w interior wall surfaces and frames of interior doors, windows and elevator entrances, perimeter joints of toilet fixtures and hardware, interior trim locations. - Interior joints in horizontal traffic surfaces including control and expansion joints in cast-in-place

concrete slabs. - At all dissimilar material intersections.

PROVIDE JOINT SEALERS. JOINT FILLERS AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY SEALANT MANUFACTURER BASED ON TESTING AND FIELD

EXTERIOR AND INTERIOR:

REQUIREMENTS.

- DAP 50 YEAR "ALEX ULTRA 230 PREMIUM INDOOR/OUTDOOR SEALANT WITH MICROPBAN ANTIMICROBIAL PRODUCT PROTECTION" OR APPROVED EQUAL.

- POLYURETHANE COMPLYING WITH USE AT HORIZONTAL JOINTS IN CONCRETE FLATWORK.

"VULKEM 245 MAMECO WATERPROOFING SEALANT" AND "PECORA CORPORATION - NR-200

URESPAN" OR APPROVED EQUAL. LATEX JOINT SEALANT - INTERIOR TINTED/COLORED CAULK: - SPECTRUM MFG. CORP. "SPECTRUM 2000", TEC "ACCUCOLOR" OR APPROVED EQUAL

JOINT SEALANT BACKING: - POLYETHYLENE FOAM COMPRESSIVE ROD STOCK. PROVIDE BACKER ROD AT ALL JOINTS AS REQUIRED.

ASSEMBLIES SHALL BE SEALED PER REQUIRED UL ASSEMBLIES. COLORS TO MATCH ADJACENT MATERIALS, SUBMIT COLOR SAMPLES FOR FINAL SELECTION.

PROVIDE APPROPRIATE TYPE OF SEALANT FOR GIVEN APPLICATION. INSTALL PER MANUFACTURER

ALL PIPING, CONDUIT, PHONE/DATA LINES AND OTHER WIRING PENETRATIONS AT FIRE RATED

ERIC P SMITH MAR 05 2021 SED ARCY NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his contractor and the

architect. Design and construction are complex.

Although the architect and his consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated.

Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for the consequences. Changes made from the plans without

All design, documents and data prepared by Eric Smith Associates, P.C. as instruments of service shall remain property of Eric Smith Associates, P.C. and shall not be copied, changed or disclosed in any

consent of the architect are unauthorized and shall relieve the architect of responsibility for all

consequences arriving out of such changes.

form whatsoever without first obtaining the express written consent of Eric Smith Associates, P.C.

Eric Smith Associates, P.C.

REVISIONS Date Description



.Iob Number: 20034 12/30/20 Date: Drawn By: Author Checked By: Checker **Project Phase**

DESIGN DEVELOPMENT

Sheet Title SPECIFICATIONS **Sheet Number**

BASIS-OF-DESIGN FOR HOLLOW METAL DOORS & FRAMES CECO DOOR (ASSA ABLOY) OR APPROVED EQUAL www.cecordoor.com 888-264-7474

PRODUCT:

FIRE RATED AND NON FIRE RATED STEEL FRAMES SERIES SU STEEL FRAMES (UNEQUAL RABBET) FOR 1 3/4" THICK DOORS

STANDARD WALL APPLICATION, HANDED KNOCK DOWN CORNER AT EXISTING WALLS, WELDED CORNERS AT NEW WALLS 16 GA STEEL. FACTORY PRIMED.

SUBMITTALS:

PRODUCT DATA: DOOR MANUFACTURER'S TECHNICAL DATA FOR EACH TYPE OF FRAME. - SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING LOCATION AND SIZE OF EACH DOOR. FRAME, ELEVATION OF EACH KIND OF DOOR, HAND OF EACH COMPONENT, DETAILS OF CONSTRUCTION, LOCATION AND EXTENT OF HARDWARE BLOCKING, FIRE RATINGS, REQUIREMENTS FOR FACTORY FINISHING AND OTHER PERTINENT DATA.

WARRANTY

LIFETIME LIMITED.

08 13 00 METAL DOORS:

888-264-7474

DOOR LOCATION IS INDICATED ON DRAWINGS AND IN SCHEDULE

BASIS-OF-DESIGN FOR HOLLOW METAL DOORS & FRAMES CECO DOOR (ASSA ABLOY) OR APPROVED EQUAL www.cecordoor.com

FIRE RATED AND NON FIRE RATED METAL DOORS REGENT (RI) OR OMEGA (OI) HONEYCOMB CORE DOORS (FLUSH AND EMBOSSED PANEL STEEL DOORS, BEVELED LOCK EDGE) SIZE: 1 3/4" THICK 18 GA STEEL DOOR PANEL FACE, FACTORY PRIME.

PREP DOOR FOR HARDWARE

EXTERIOR METAL DOOR VERSADOOR (VU) POLYURETHANE FOAM CORE (FLUSH AND EMBOSSED PANEL STEEL DOORS, NON-HANDED)

18 GA STEEL DOOR PANEL FACE, FACTORY PRIME. PREP DOOR FOR HARDWARE

- PRODUCT DATA: DOOR MANUFACTURER'S TECHNICAL DATA FOR EACH TYPE OF DOOR.

FINISHING SPECIFICATIONS. - SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING LOCATION AND SIZE OF EACH DOOR, ELEVATION OF EACH KIND OF DOOR, HAND OF EACH COMPONENT, DETAILS OF CONSTRUCTION, LOCATION AND EXTENT OF HARDWARE BLOCKING, FIRE RATINGS, REQUIREMENTS FOR FACTORY FINISHING AND OTHER PERTINENT DATA.

INCLUDING DETAILS OF CORE AND EDGE CONSTRUCTION, TRIM FOR OPENINGS AND FACTORY

Provide tempered glass as required by code, and all weather-stripping, jamb extensions, adjustable thresholds, nailing fins, drip caps, etc. Attach door units as recommended by manufacturer. Doors shall be hung and shimmed, plumb and square, providing smooth operation and even closing.

WARRANTY LIFETIME LIMITED.

08 31 00 ACCESS DOORS AND PANELS Basis of Design - The Williams Brothers Corporation of America (www.wbdoors.com)

WB-FR 800 Series Standard Insulated Metal Fire Rated Access Door:

2-hour rated for floor/ceiling, 1-1/2 hour rated for wall assembly. Size as appropriate. Keep size as small as

Paint all doors to match adjacent surface

WB-DW 400 Series for Drywall Access Door:

Non-Rated Wall Assembly: size as appropriate. Keep size as small as possible. Paint all doors to match adjacent

Accessories, connectors, and related materials shall be as per manufacturer's instructions and building code requirements. Install per manufacturers recommendations.

08 70 00 DOOR HARDWARE:

WORK INCLUDED:

The work in this section shall include furnishing of all items of finish hardware as hereinafter specified or obviously necessary to complete the building, except those items, which are specifically excluded from this section of the specification.

RELATED WORK SPECIFIED ELSEWHERE:

Metal Frames: Section 08 12 00 Metal Doors: Section 08 13 00

REFERENCES:

A. ANSI/NFPA 80 - Fire Doors and Windows

B. AWI - Architectural Woodwork Institute C. BHMA - Builders' Hardware Manufacturers Association

D. DHI - Door and Hardware Institute E. NAAMM - National Association of Architectural Metal Manufacturers

F. NFPA 101 - Life Safety Code

G. ANSI/BHMA A156.17 **DESCRIPTION OF WORK:**

Furnish material to complete hardware work indicated, as specified herein, or as may be required by actual conditions at building. Include all necessary screws, bolts, expansion shield, other devices, if necessary as required for proper hardware application. The hardware supplier shall assume all responsibility for correct quantities.

All hardware shall meet the requirements of Federal, State, and Local codes and laws having jurisdiction over this project, notwithstanding any real or apparent conflict therewith in these specifications.

Fire-Rated Openings

Provide hardware for fire-rated openings in compliance with NFPA 80 and NFPA Standards No. 101. This requirement takes precedence over other requirements for such hardware. Provide hardware that has been tested and listed by UL for the types and sizes of doors required and complies with the requirements of the door and door frame labels.

Hardware as furnished shall conform to published template generally prepared for machine screw installation. Furnish each item complete with all screws required for installation. Typically, all exposed screw installation. Insofar as practical, furnish concealed type fasteners for hardware that is exposed. Screws shall be furnished with Phillips flat head, finished to match adjacent hardware.

Door closures and exit devices to be installed on wood or composite fire doors shall be attached with closed head through bolts (hex bolts).

Prior to ordering hardware, prepare and submit for review of hardware schedule covering all items required for entire

job. Schedule to identify manufacturer of each item and shall give type numbers and finish symbols; including catalog cuts for each item. No horizontal schedule will be accepted. Review of the hardware schedule shall not relieve contractor from furnishing all necessary hardware specified in this section.

Furnish suitable templates, together with finish hardware schedule to contractor, for distribution to necessary trades. Furnish three sets of operating and maintenance manuals for all hardware.

Submit samples as requested of any items of hardware to be furnished for the project for final review. Architect-Engineer is sole judge of equality.

Submit keying schedule as directed by Owner or Architect/Engineer.

General Contractor to Submit copy of final approved hardware schedule to Building Department.

DIVISION 08 - OPENINGS

08 70 00 DOOR HARDWARE (CONT):

General Contractor to Submit copy of final approved hardware schedule to Building Department.

Basis of Design hardware products for door hardware listed below (or equal): Products: Manufacturer: Hinges (MC) McKinney / Sargent / Ives

Cylinders (CR) Corbin/Russwin Locks/Latches (CR) Corbin/Russwin Exit Devices (CR) Corbin/Russwin Electronic Door Locks (AA) Assa Abloy VingCard Flex Closers (AA) Assa Abloy

Exit Devices (AA) Assa Abloy Overhead Stop/Holders (RW) Rockwood Miscellaneous Door Trim (RW) Rockwood (Silencers, door stops, etc.) Weatherstripping (PE) Pemco

Overlapping Astragal (PE) Pemco

Electric Strikes (AR) Adams Rite Magnetic Holders (RI) Rixson Furnish all items in US26D Brushed Satin Chrome except as indicated in the Hardware Schedule.

Use 2 pair of hinges or 2 each intermediate pivots at doors 7'-6" high and over. Use 5" x 4-1/2" hinges at doors 3'-6" wide and over. Furnish glass bead kits at exit devices where required.

Fasten all exit devices and closers with SNB's. Furnish all brackets required to mount closers, as required by frame or door details.

QUALITY ASSURANCE

Hardware furnished in connection with doors and frames requiring fire rated labels shall be approved for such use and have such labels as required.

Hardware shall meet the requirements of all applicable labeling authorities and shall complement the NFPA 80 and NFPA 101 requirements of Division 8.

Items not specifically listed, but incidental to or required for completion of project, shall be provided and shall conform in class, quality, and type as required for particular use or as specified in like and similar locations. All fastenings, templates, and all accessory items scheduled and/or required to complete project shall be provided.

A. Manufacturers: Companies specializing in manufacturing door hardware with minimum ten years experience. B. Hardware Supplier: Company specializing in supplying commercial door hardware who has maintained an office and has been furnishing hardware in the project's vicinity for a period of at least ten (10) years. Hardware supplier must be an authorized distributor of the products specified.

Hardware supplier shall have in his employment, at least one experienced Architectural Hardware Consultant (AHC) who is available at reasonable times during business hours for consultation about project's hardware and requirements to Owner, Architect and Contractor.

WARRANTY:

All items, except overhead closers, shall be warranted in writing by the manufacturer against failure due to defective materials and workmanship for a period of one (5) years commencing on the Date of Final Completion and Acceptance. In the event of product failure, promptly repair or replace item with no additional cost to the Owner.

Closers shall be warranted in writing by the manufacturer against failure due to defective materials and workmanship for a period of ten (10) years commencing on the Date of Final completion and Acceptance. In the event of product failure, promptly repair or replace item with no additional cost to the Owner.

A. Architectural Hardware Consultant shall inspect complete installation and certify that hardware has been furnished and installed in accordance with manufacturer's instructions and as specified herein. B. Provide two copies of certifications to Architect

Return to project one month after occupancy and adjust hardware for proper operation and function.

DIVISION 09 - FINISHES

galvanized, unless otherwise indicated.

SECTION 09 22 16 NON-STRUCTURAL MEAL FRAMING

Framing Members: Comply with ASTM C 754 for conditions indicated. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated. Protective Coating: Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40 (Z120). hot-dip

Studs: Manufacturer's standard profile for repetitive members, corner and end members, and fireresistance-rated assembly indicated on drawings.

Runner Tracks: Manufacturer's standard J-profile track with long-leg length as standard with Auxiliary Material.

Furring Channels (Furring Members): Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22.2 mm) deep.

Minimum Requirements: 25 gauge, hemmed edge detail required on all 25 gauge furring channel. Meets or exceeds SSMA requirements.

Depth: 7/8 inch Width Bottom: 2-1/2 inch wide minimum. Width Top: 1-1/4 inch wide

Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

Track Fasteners: Power-driven fasteners of size and material required to withstand loading conditions imposed on assemblies without exceeding allowable design stress of track, fasteners, or structural substrates in which anchors are

Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

Products: Subject to compliance with requirements, provide the following: Dietrich Metal Framing or approved equal.

Studs to be designed by manufacturer. Submit shop drawings for review and approval.

Install per manufacturers recommendations.

<u>09 29 00 GYPSUM BOARD</u>

YPE-X gypsum board - "USG 5/8" Sheetrock" fire code "X" or (approved equal) Refer to sound isolation and noise reducing assemblies for additional requirements. Seal all penetrations with approved

Exterior Sheathing - 5/8" Georgia-Pacific DensGlass GOLD Sheathing or equal. Verify sheathing system with exterior

Exterior Soffit - 5/8" USG Sheetrock Exterior Gypsum Ceiling Board with Firecode C Core at fire rated soffits with soffit finish (board or other finish) over the top.

Shaft Walls: 1" gypsum board shaft liner - "USG Sheetrock Brand Gypsum Liner Panels" or approved equal. Refer to fire

rated assembly details for more information.

Joint Treatment: "USG Durabond 90" joint compound Panel Fastening Method: Screw all walls and ceilings at required spacing. Provide non-corrosive fasteners at all wet

Accessories: "USG" metal square corner beads (26 GA, Zinc Coated), casing beads, tape and reinforcement, unless shown otherwise in drawings.

Finish: GYPSUM BOARD WALLS AND CEILING FINISHES ARE TO BE LEVEL 4.

Provide a sample (3'-0" x 3'-0") for Owner review and approval before construction.

DIVISION 09 - FINISHES (CONT)

09 91 13 EXTERIOR PAINTING Provide the following paint systems for the various substrates, as indicated. The systems are based on Benjamin Moore

and Co. and ICI, unless noted.

Provide pre-finished Kynar Finish (Or Approved Equal) on metal railings. Color: Black.

Exterior Metal Finish - Benjamin Moore

(C) 2ND COAT: SAME AS FIRST COAT"

(i.e. flashing, exposed piping, louvers, vents, steel lintels, etc. Any non-pre finished exposed metal locations) (A) PRIMER: "BENJAMIN MOORE" IRONCLAD RETARDO RUST INHIBITIVE PAINT (163) (B) 1ST COAT: "BENJAMIN MOORE" MOORE'S SEMI-GLOSS EXTERIOR LATEX HOUSE PAINT (105)

Submit product literature and color selections, color to be similar to adjacent wall material.

Sand and prep all interior and exterior metal receiving field finish prior to applying finishes to produce a very smooth

Install per manufacture's requirements

09 91 23 INTERIOR PAINTING: PROVIDE THE FOLLOWING PAINT SYSTEMS FOR THE VARIOUS SUBSTRATES, AS INDICATED. THE SYSTEMS ARE BASED ON BENJAMIN MOORE AND CO, AND ICI, UNLESS NOTED.

GYPSUM BOARD OR CONCRETE TYPICAL PAINT

(A) PRIOR TO DRYWALL TEXTURE (IF USED) APPLY ONE COAT OF "HAMILTON PREP COAT PLUS". PAINTER TO APPLY THIS COAT AS REQUIRED. PATCH CONCRETE AS REQUIRED.

(B) PRIMER: "BENJAMIN MOORE" REGAL CLASSIC PREMIUM INTERIOR LATEX PRIMER (N216). DRY FILM THICKNESS OF NOMINAL 1.5-1.6 MILS (0.038 mm - 0.040 mm)

(C) 1ST COAT: "BENJAMIN MOORE" REGAL CLASSIC PREMIUM INTERIOR 100% ACRYLIC EGGSHELL FINISH (N319). DRY FILM THICKNESS OF NOMINAL 1.2-1.5 MILS (0.030 mm - 0.038 mm). (D) 2ND COAT: SAME AS FIRST COAT

EXPOSED BRICK OR CMU PAINT (A) PRIOR TO PRIMER: "BENJAMIN MOORE" SUPER SPEC MASONRY INTERIOR/EXTERIOR HI-BUILD BLOCK FILLER (206) AS NEEDED FOR PITS IN EXISTING MASONRY. PAINTER TO APPLY THIS COAT AS REQUIRED. (B) PRIMER (MINIMUM TWO COATS PRIMER, DRY FILM THICKNESS OF NOMINAL 8-12 MILS (0.20mm - 0.30

"BENJAMIN MOORE" REGAL CLASSIC PREMIUM INTERIOR LATEX PRIMER (N216) (C) 1ST COAT: "BENJAMIN MOORE" REGAL CLASSIC PREMIUM INTERIOR 100% ACRYLIC EGGSHELL FINISH

DRY FILM THICKNESS OF NOMINAL 1.2 - 1.5 MILS (0.030 mm - 0.038 mm)

(D) 2ND COAT: SAME AS FIRST COAT

INTERIOR EXPOSED METAL/FERROUS (A) PRIMER: "BENJAMIN MOORE" SUPER SPEC HP ACRYLIC METAL PRIMER (P04) OR SUPER SPEC HP ALKYL PRIMER (P06)

(B) 1ST COAT: 1ST COAT: "BENJAMIN MOORE" REGAL CLASSIC PREMIUM INTERIOR 100% ACRYLIC **EGGSHELL FINISH**

(C) 2ND COAT: SAME AS FIRST COAT

PAINT COLOR SELECTIONS:

PAINT COLORS PER OWNER.

CONCRETE SLAB SEALANT: BASIS OF DESIGN: WR MEADOWS SEALTIGHT. VOCOMP-30, WATER-BASED, ACRYLIC, CONCRETE CURING AND SEALING COMPOUND.

PROVIDE SAMPLES AS NOTED UNDER SUBMITTALS BELOW FOR REVIEW BY OWNER AND ARCHITECT BEFORE PROVIDING ALL PAINT FOR PROJECT.

09 91 23 INTERIOR PAINTING (CONT)

INSTALL PER MANUFACTURES RECOMMENDATIONS.

Patch as needed, fill cracks and nail holes and correct any defects in substrate. Examine surfaces to receive paint/stain and report any deficiencies that might impair the performance of the installation. Work indicates acceptance of substrate.

Remove all hardware, fixtures and accessories from surfaces to receive finish

Caulk/fill all interior trim work to walls.

Paint black all framing and exposed materials behind screened vent openings and grills including soffit vents and ventilation chimney locations.

Samples at the site of all exterior and all interior colors and finishes shall be provided for approval by Owners/Architect prior to any ordering or staining or painting of any of the materials.

Finishes must be applied evenly; sags, runs and uneven finishes will not be accepted. Set all nail heads and fill holes with filler to match material. Filler to be compatible with finish. Paint all interior piping and mechanical and electrical equipment which is not prefinished and is exposed in finished spaces. Paint miscellaneous

Follow manufacturer's directions for proper spreading rate, thickness and acceptable temperature and humidity range.

for each coat of each finish sample.

vents. louvers, trim to match adjacent wall color or material.

Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use. Samples: Submit samples for Architect's review and color and texture only. Provide a listing of material and application

On 4" x 8" hardboard, provide two samples of each color and material, with texture to simulate actual conditions.

Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved. On concrete masonry, provide two 4" x 8" samples of masonry for each type of finish and color, defining filler, prime and finish coat.

On actual wall surfaces and other exterior and interior building components, duplicate painted finishes of prepared

texture is obtained; simulate finished lighting conditions for review of in place work.

samples. On at least 100 sq. ft. of surface as directed, provide full coat finish samples until required sheen, color and

DIVISION 10 - SPECIALTIES

10 14 00 SIGNAGE:

SIGNAGE IS TO BE PROVIDED PER IBC 2018, ANSI A117.1 AND IN ACCORDANCE WITH ADA 2010 SECTION

216 AND SHALL COMPLY WITH ADA 2010 SECTION 703.

LOCATION: SIGNAGE TO BE PROVIDE FOR BUT IS NOT LIMITED TO THESE LOCATIONS:

DIRECTIONAL SIGNAGE

EGRESS SIGNAGE MISCELLANEOUS IDENTIFICATION SIGNAGE FIRE EXTINGUISHER, FIRE ALARM RELATED SIGNAGE

PROVIDE AN ALLOWANCE OF FIVE THOUSAND DOLLARS (\$5,000,00) FOR SIGNAGE.

SIGNAGE PACKAGE TO BE PROVIDED BY CONTRACTOR FOR REVIEW BY OWNER AND ARCHITECT.

10 44 16 FIRE PROTECTION SPECIALTIES

FIRE EXTINGUISHERS AND CABINETS Provide fire extinguishers, cabinets, accessories manufactured by FIRE END & CROKER CORPORATION (www.croker.com) or approved equal.

LOCATIONS: Boiler Room

Actual locations and types of extinguishers to be determined/approved by local Fire Department.

INSTALL PER MANUFACTURERS REQUIREMENTS

DIVISION 14 - CONVEYING EQUIPMENT

HYDRAULIC PASSENGER ELEVATOR

LANDINGS - 2 FRONT OPENING

RATED LOAD - 3500 LB RATED SPEED - 100 TO 150 FPM DOORS - 3'-6" WIDE X 7'-0" HIGH HOISTWAY - 8'-4" WIDE X 6'-11" DEEP PIT DEPTH - 4'-0" SUMP PIT - REQUIRED TOTAL TRAVEL DISTANCE: 9'-0"

OPERATION SYSTEM - AUTOMATIC OPERATION AS DEFINED IN ASME A17.1 **AUXILIARY OPERATIONS - BATTER-POWERED LOWERING**

IN ADDITION TO LOCAL GOVERNING REGULATIONS AND INTERNATIONAL BUILDING CODE 2018. COMPLY

WITH APPLICABLE PROVISIONS OF ASME A17.1 SAFETY CODE FOR ELEVATORS AND ESCALATORS AND AMERICANS WITH DISABILITIES ACT (ADA), ACCESSIBILITY GUIDELINES (ADAAG).

<u>FINISHES:</u> CEILING - EXPOSED FRAME WITH LAY-IN PANELS

LIGHTING - COMPACT FLUORESCENT DOWNLIGHTS HANDRAILS - STAINLESS STEEL (PROVIDE ON 3 WALLS OF CAB)

CAB - DECORATIVE WALLS PANELS TO BE PLASTIC LAMINATE, CAB WALLS TO BE STEEL (PAINT) DOORS AND FRAMES - STAINLESS STEEL SILL - EXTRUDED METAL WITH GROOVED SURFACE ON NONSHRINK, NONMETALLIC GROUT.

PROVIDE PROTECTIVE BLANKET HOOKS AND TWO COMPLETE SETS OF FULL-HEIGHT BLANKETS.

PROVIDE INSPECTION CERTIFICATE MOUNTED UNDER ACRYLIC OVER WITH STAIN STAINLESS-STEEL

PROVIDE ALL CODE REQUIRED COMMUNICATION AND SIGNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO: CAR CONTROL STATIONS, EMERGENCY COMMUNICATIONS SYSTEM, FIRE DEPARTMENT COMMUNICATION SYSTEM, CAR POSITION INDICATOR WITH TRAVEL DIRECTION ARROWS, HALL PUSH-BUTTON STATIONS, HALL LANTERNS, ETC.

MINIMAL HEAT AND COOLING TO BE PROVIDED TO THE ELEVATOR MACHINE ROOM AND ELEVATOR

PROVIDE SEPARATE ELEVATOR MACHINE ROOM (NO MACHINE ROOM-LESS APPLICATIONS DUE TO

TEMPERATURE RANGES FOR MACHINE ROOM AND HOISTWAY TO USE FOR DESIGN OF HEATING/COOLING

FREIGHT: VERIFY THAT ELEVATOR CAN ACCOMMODATE FREIGHT AS WELL AS PASSENGERS.

HOISTWAY. MANUFACTURER TO PROVIDE MAX HEAT LOAD OF MACHINERY AND ALLOWABLE

EXPECT (2) CARTS AND (2) STAFF MEMBERS IN THE LIFT AT ONE TIME. **ELEVATOR MACHINE ROOM:**

FREIGHT CARTS ARE 52" X 24" WIDE AND WEIGH +/- 600 LBS WHEN LOADED.

WEATHER RESTRICTIONS). AVAILABLE MANUFACTURERS: SCHINDLER ELEVATOR CORP (BASIS OF DESIGN)

THYSSEN-KRUPP ELEVATOR GROUP OF NORTH AMERICA

OTIS ELEVATOR CO

(OR EQUAL)

DIVISION 22 - PLUMBING

Plumbing specifications per Plumbing Engineer.

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

HVAC specifications per Mechanical Engineer.

DIVISION 26 - ELECTRICAL Electrical specifications per Electrical Engineer

DIVISION 26 - COMMUNICATIONS Communications, Audio-Video, etc. specifications per Owner.

ERID P. SMITH MAR 05 2021

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Eric Smith Associates, P.C REVISIONS Description Date

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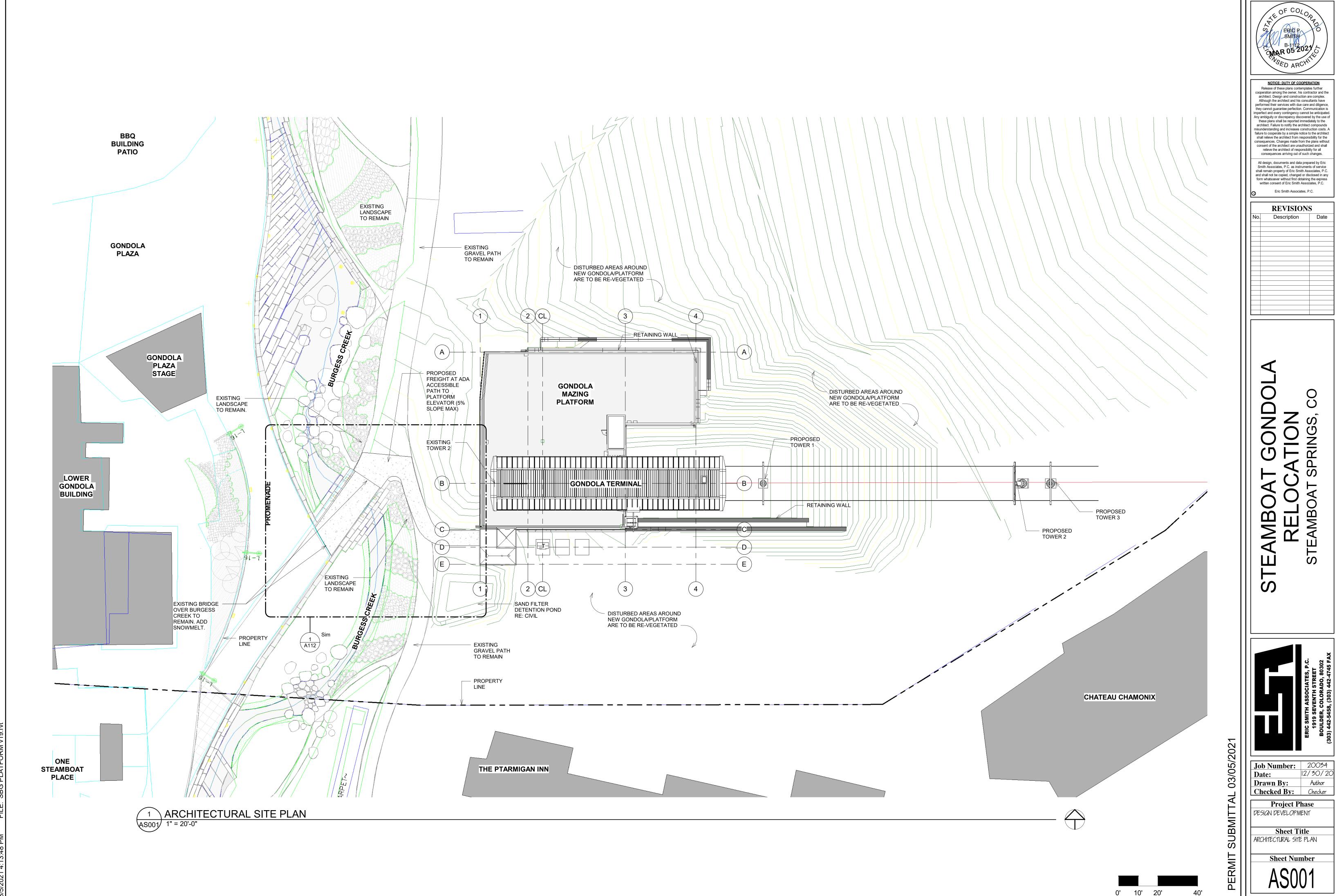
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Job Number: 20034

Sheet Number

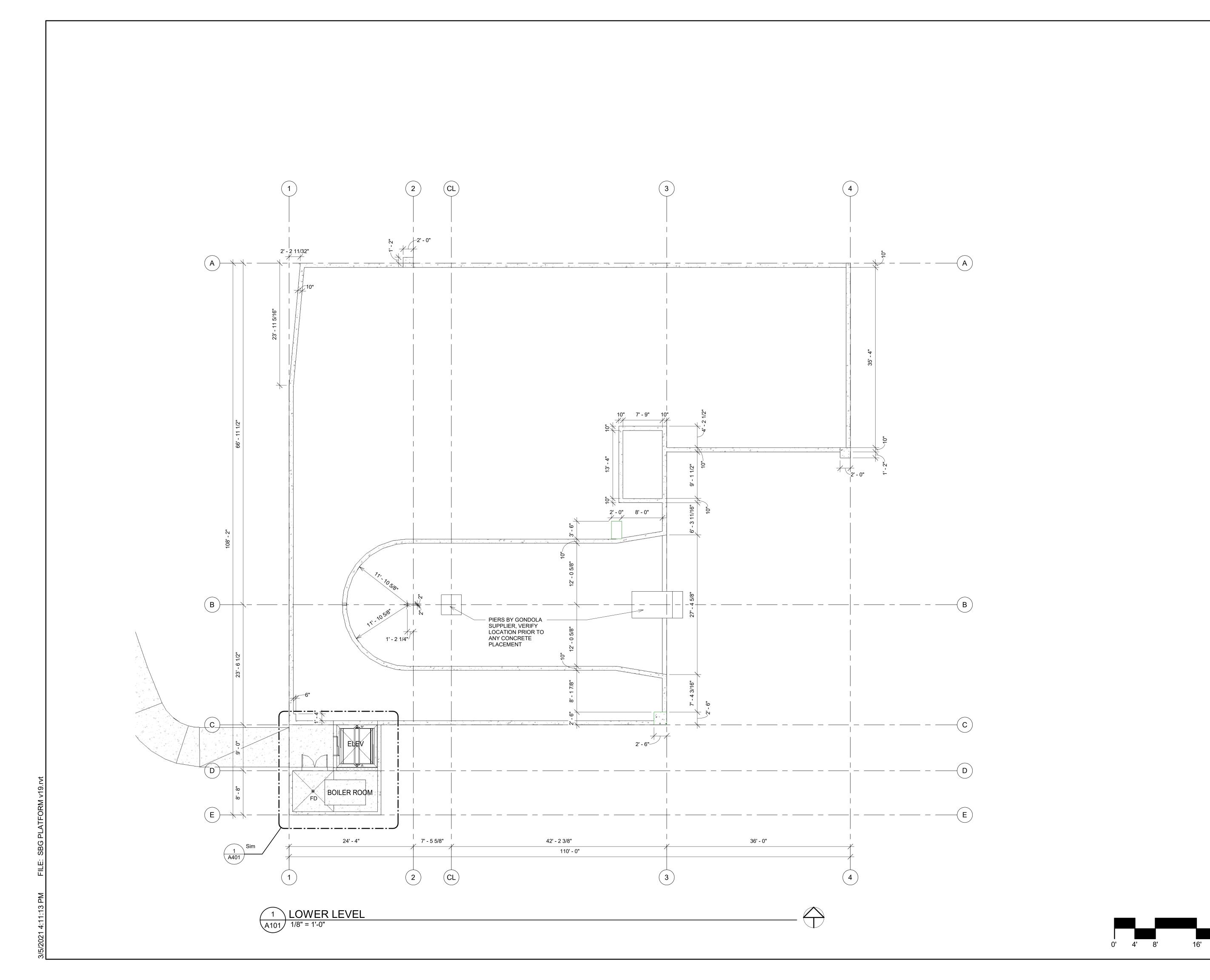
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SPECIFICATIONS



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Eric Smith Associates, P.C.

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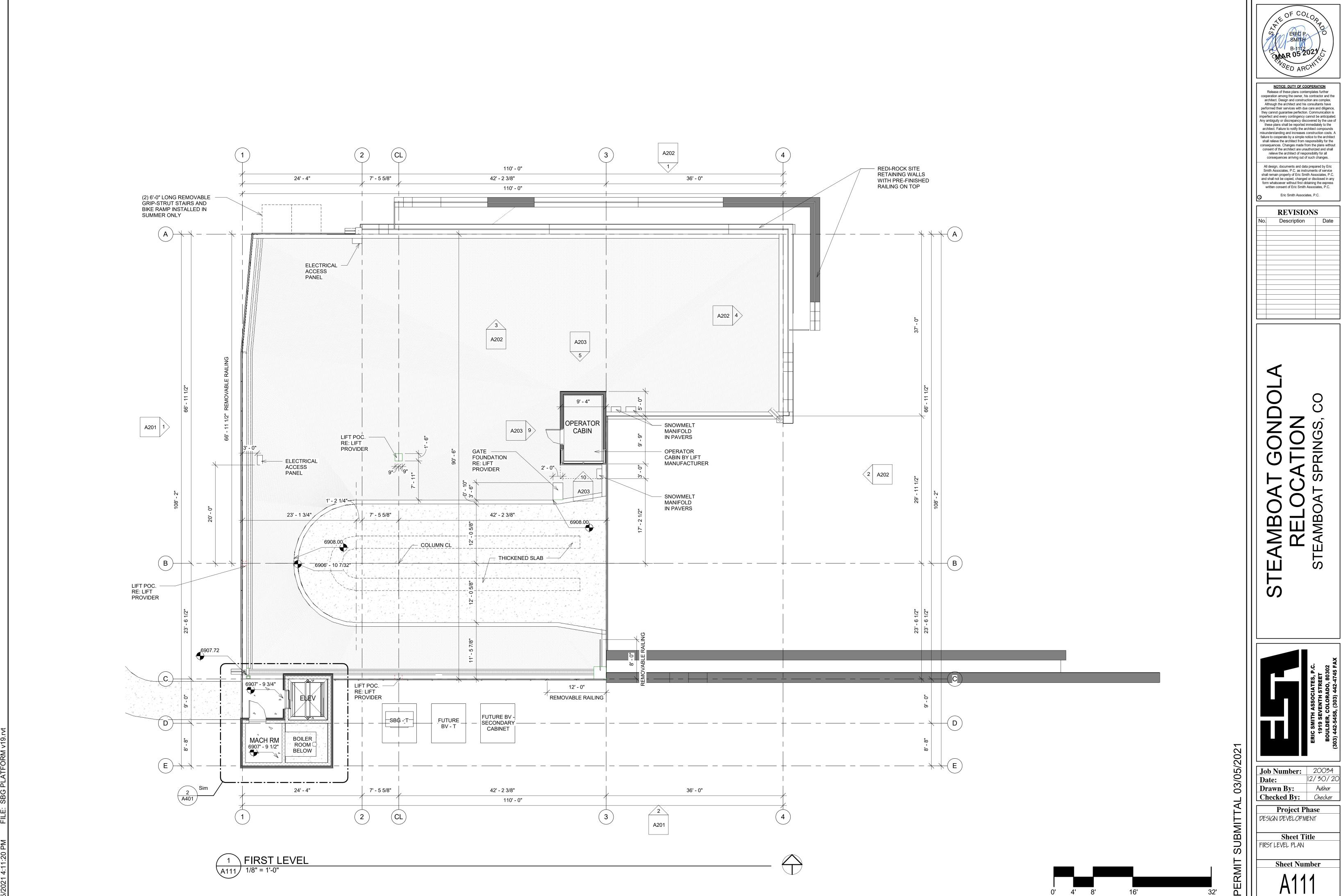
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Project Phase DESIGN DEVELOPMENT

Sheet Title LOWER LEVEL PLAN

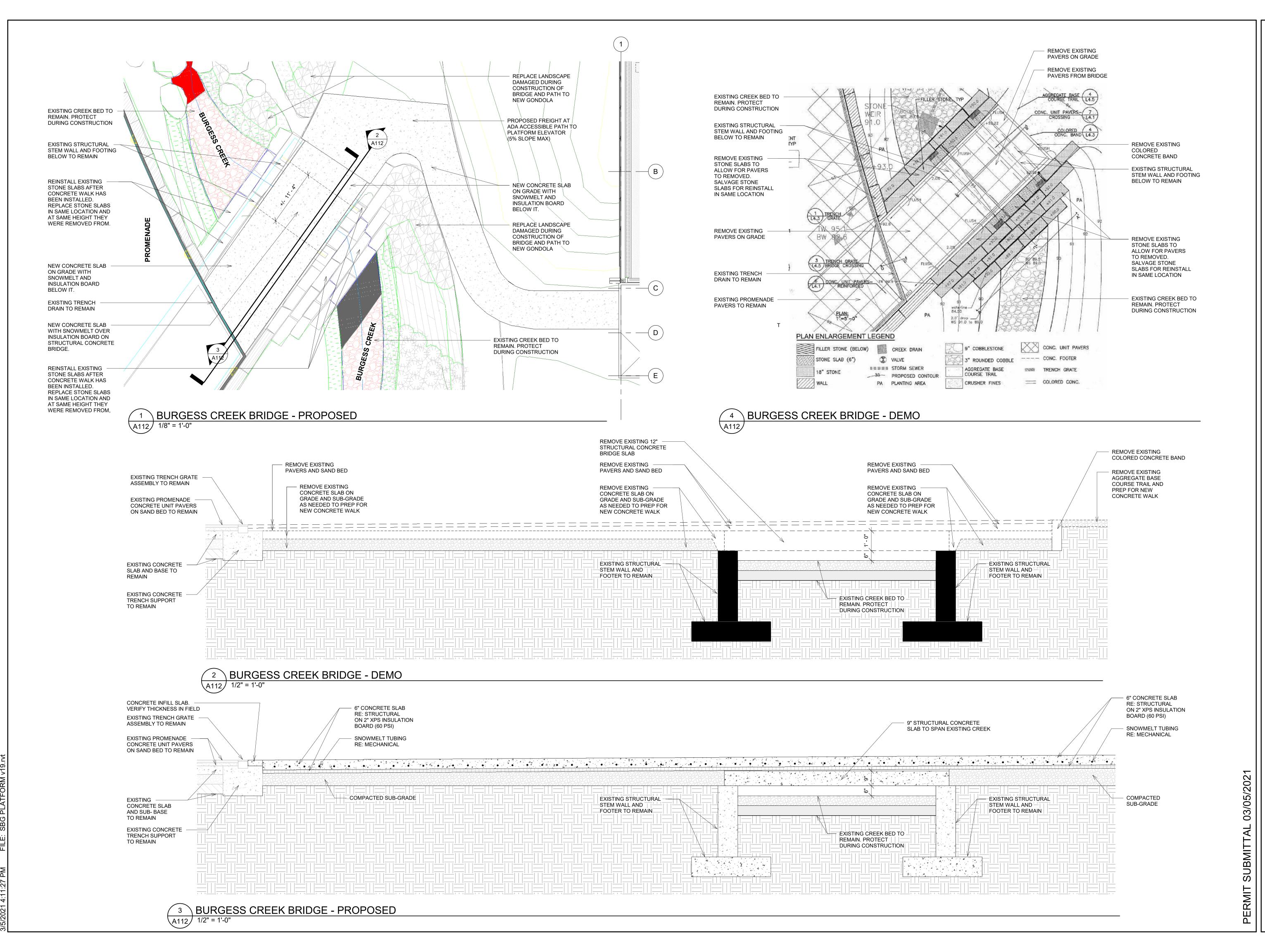


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Project Phase DESIGN DEVELOPMENT

Sheet Title FIRST LEVEL PLAN



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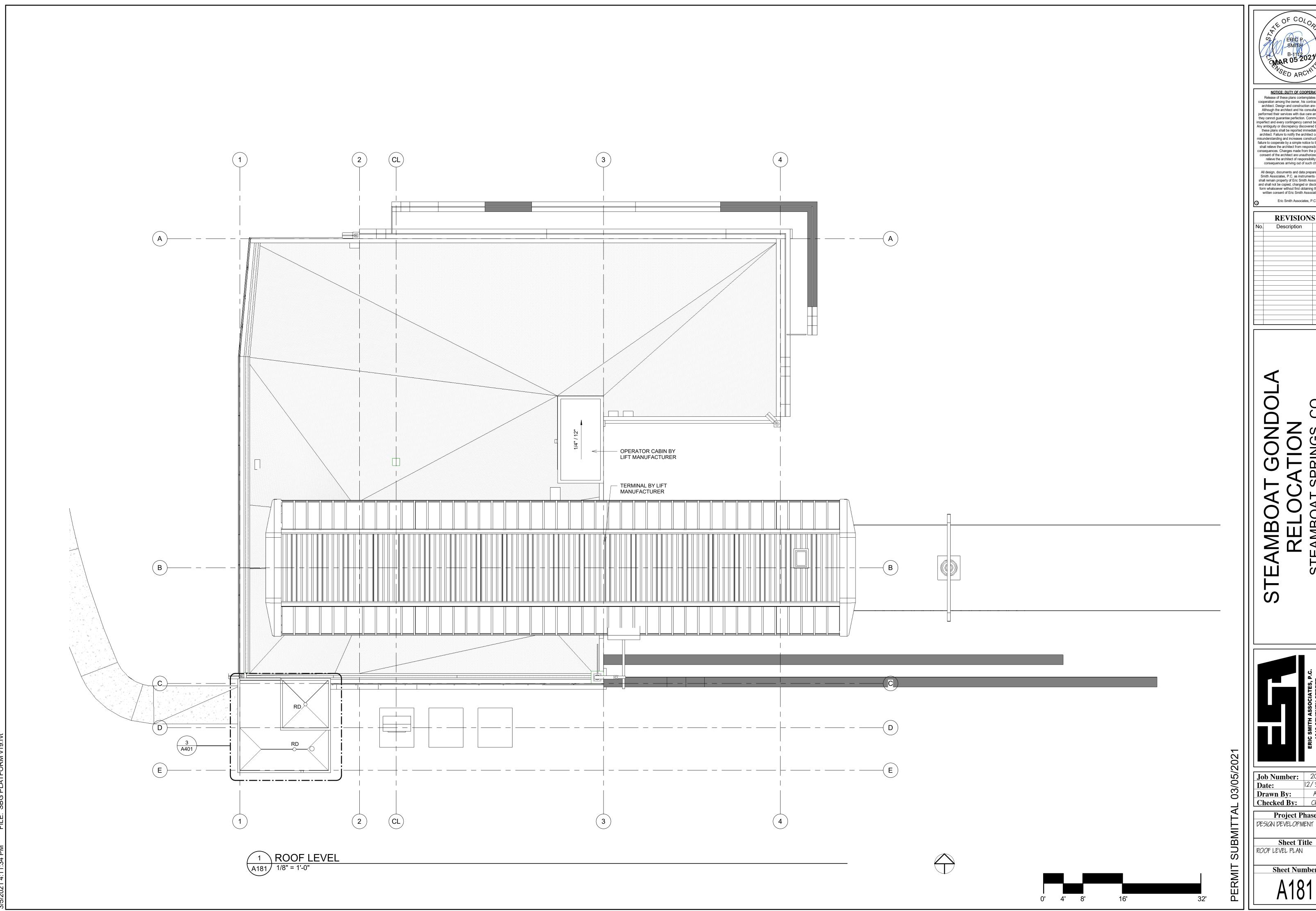
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Date: Drawn By: Checked By: Checker

Project Phase DESIGN DEVELOPMENT

Sheet Title LOWER LEVEL CONNECTION TO PROMENADE





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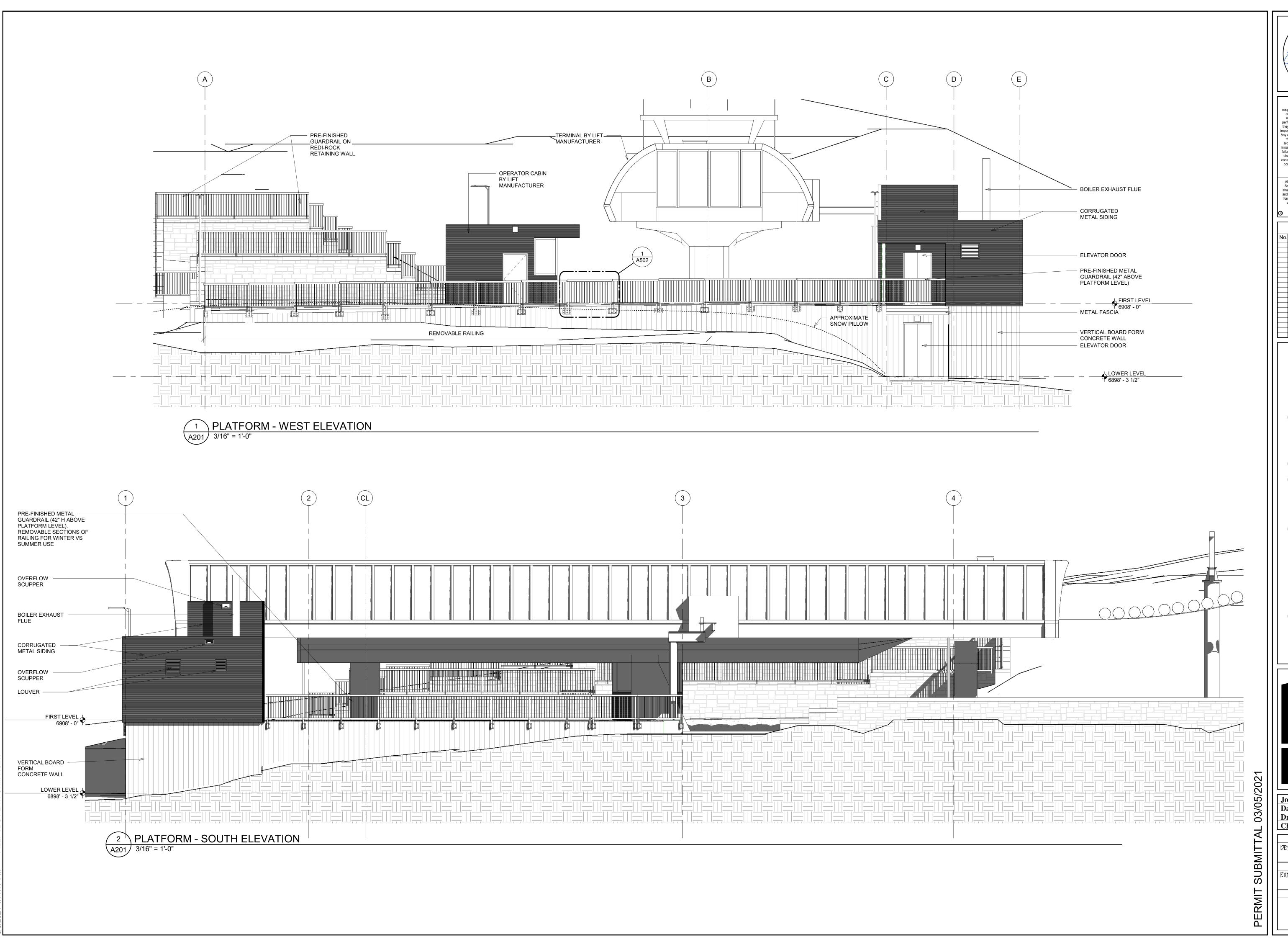


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Project Phase

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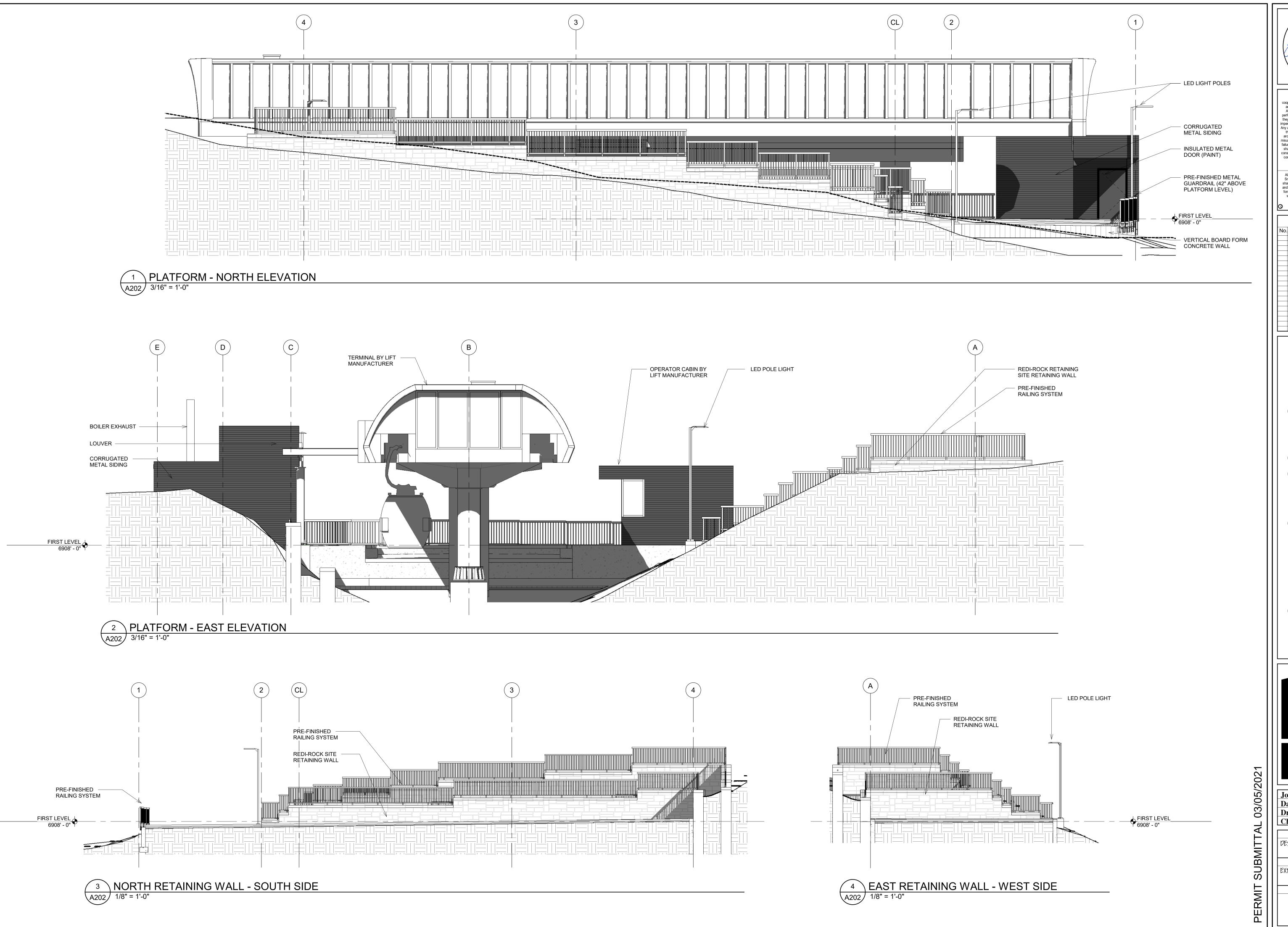
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Project Phase

DESIGN DEVELOPMENT

Sheet Title EXTERIOR ELEVATIONS



NOTICE: DUTY OF COOPERATION NOTICE: DUTY OF COOPERATION

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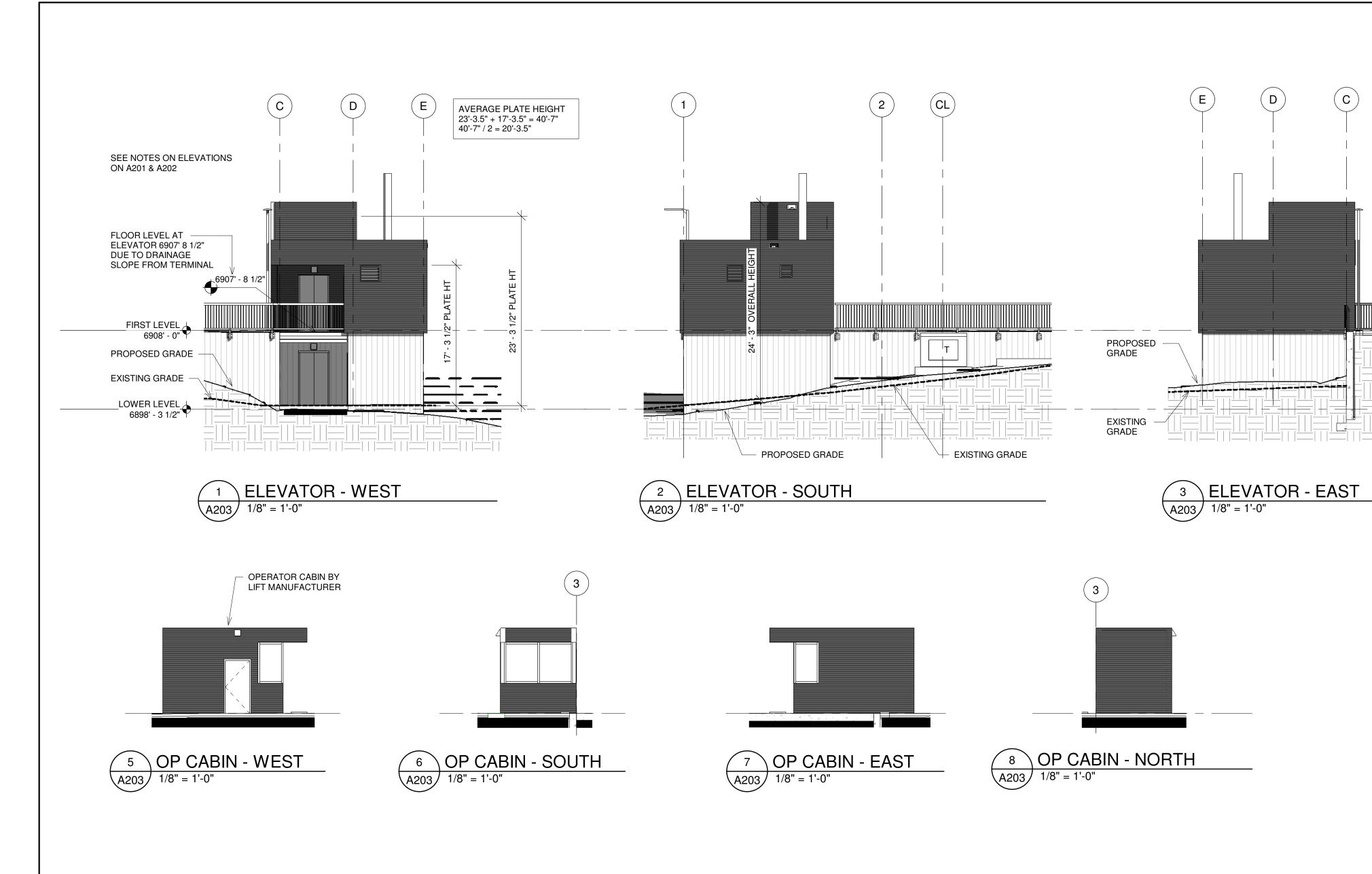
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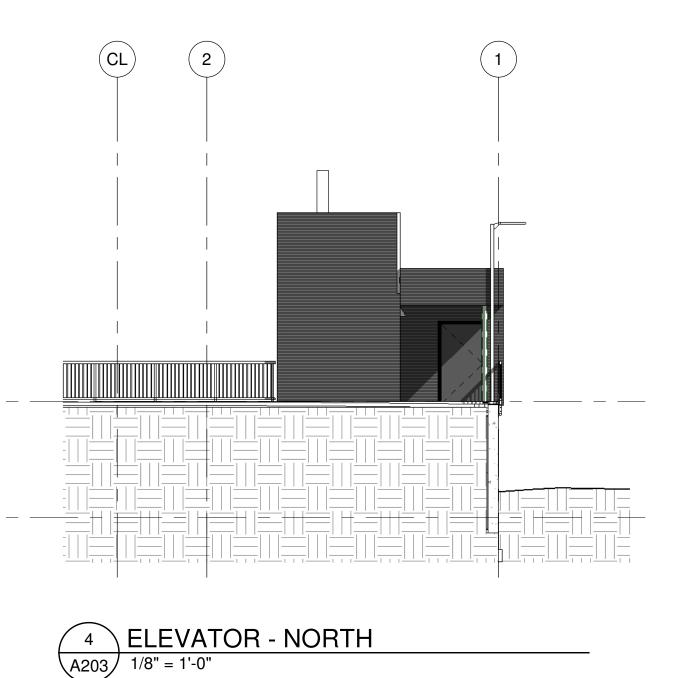
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Project Phase DESIGN DEVELOPMENT

Sheet Title EXTERIOR ELEVATIONS







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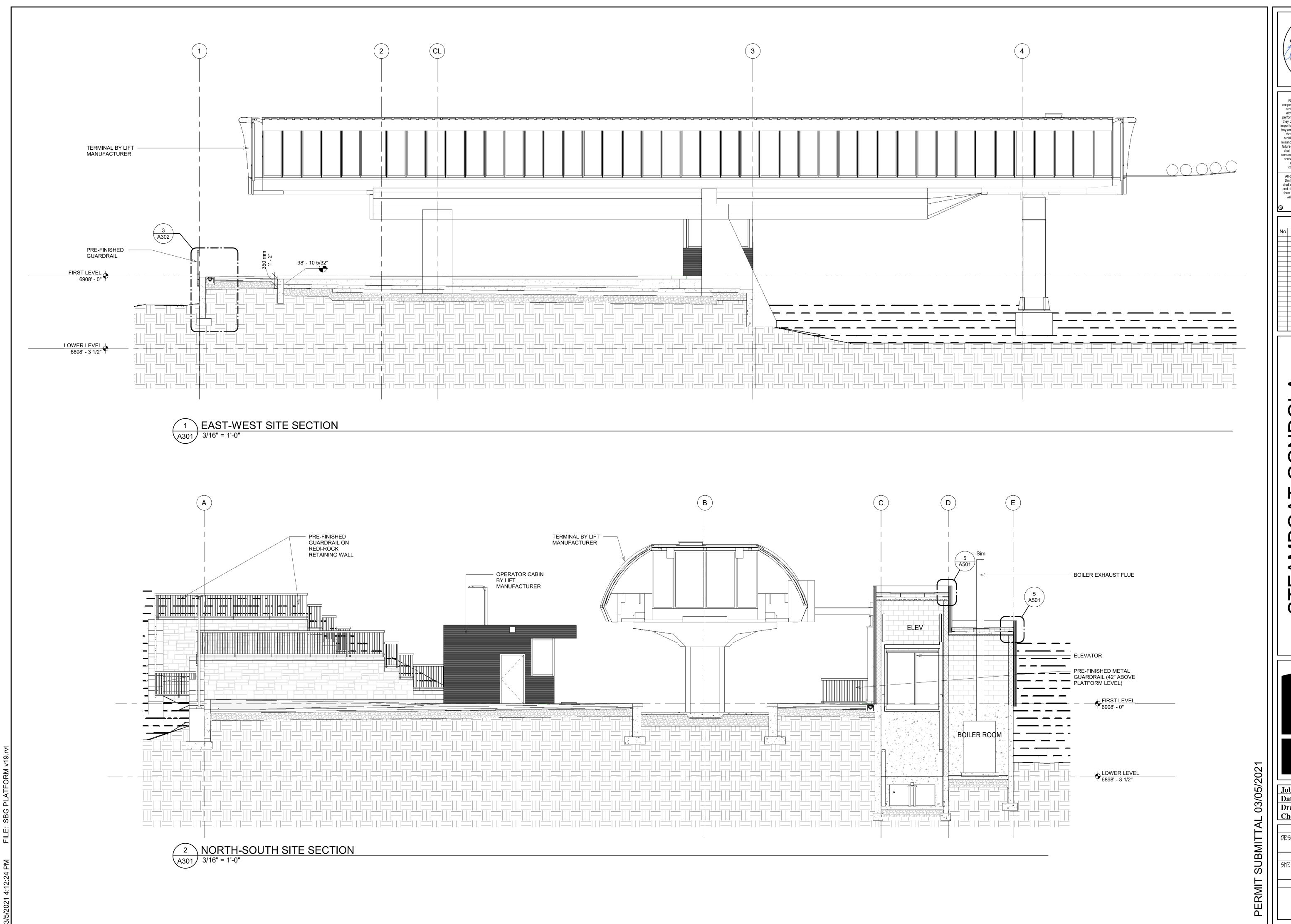
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Project Phase DESIGN DEVELOPMENT

Sheet Title
EXTERIOR ELEVATIONS &
BLDG SECTIONS



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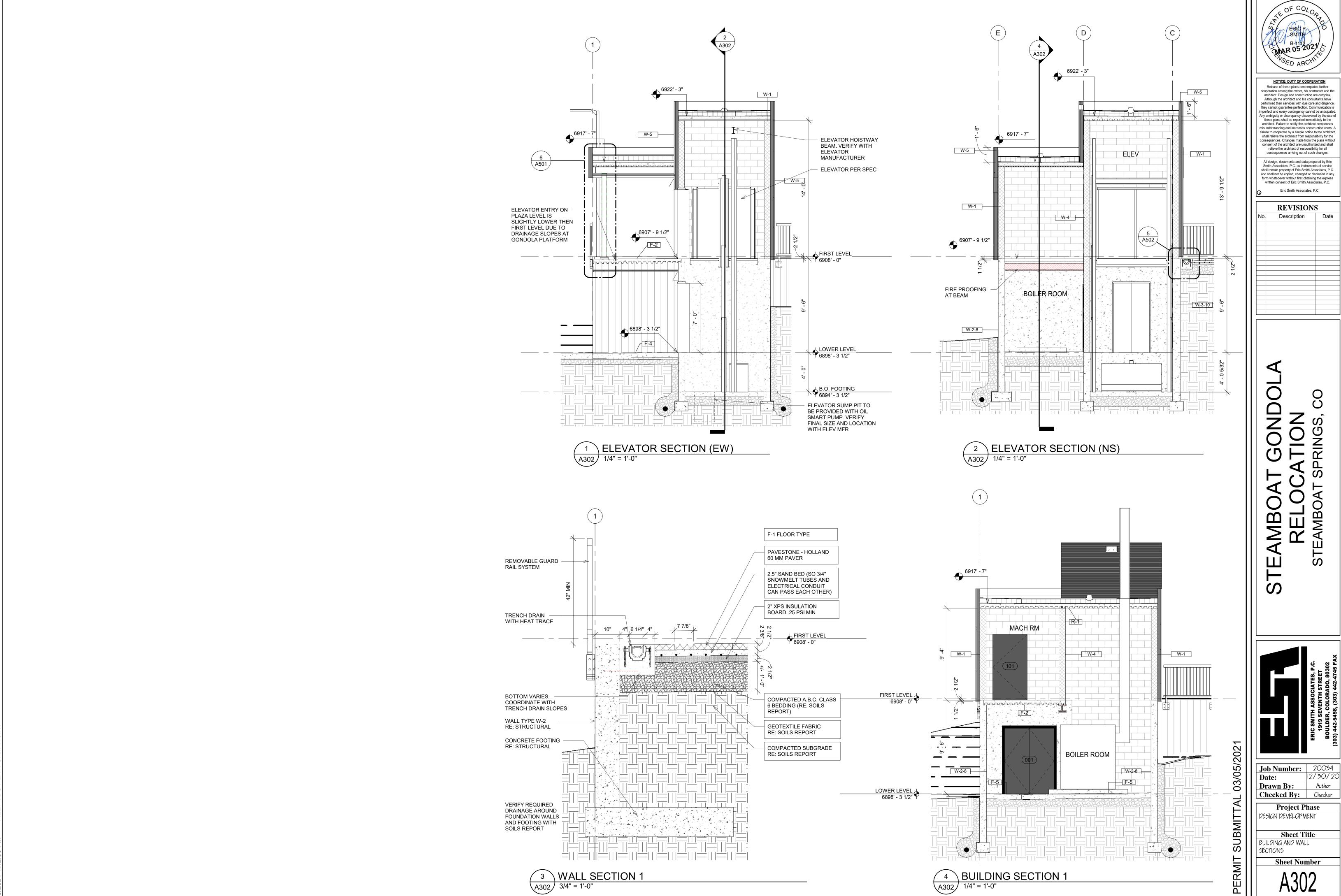


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Project Phase DESIGN DEVELOPMENT

Sheet Title

SITE SECTIONS





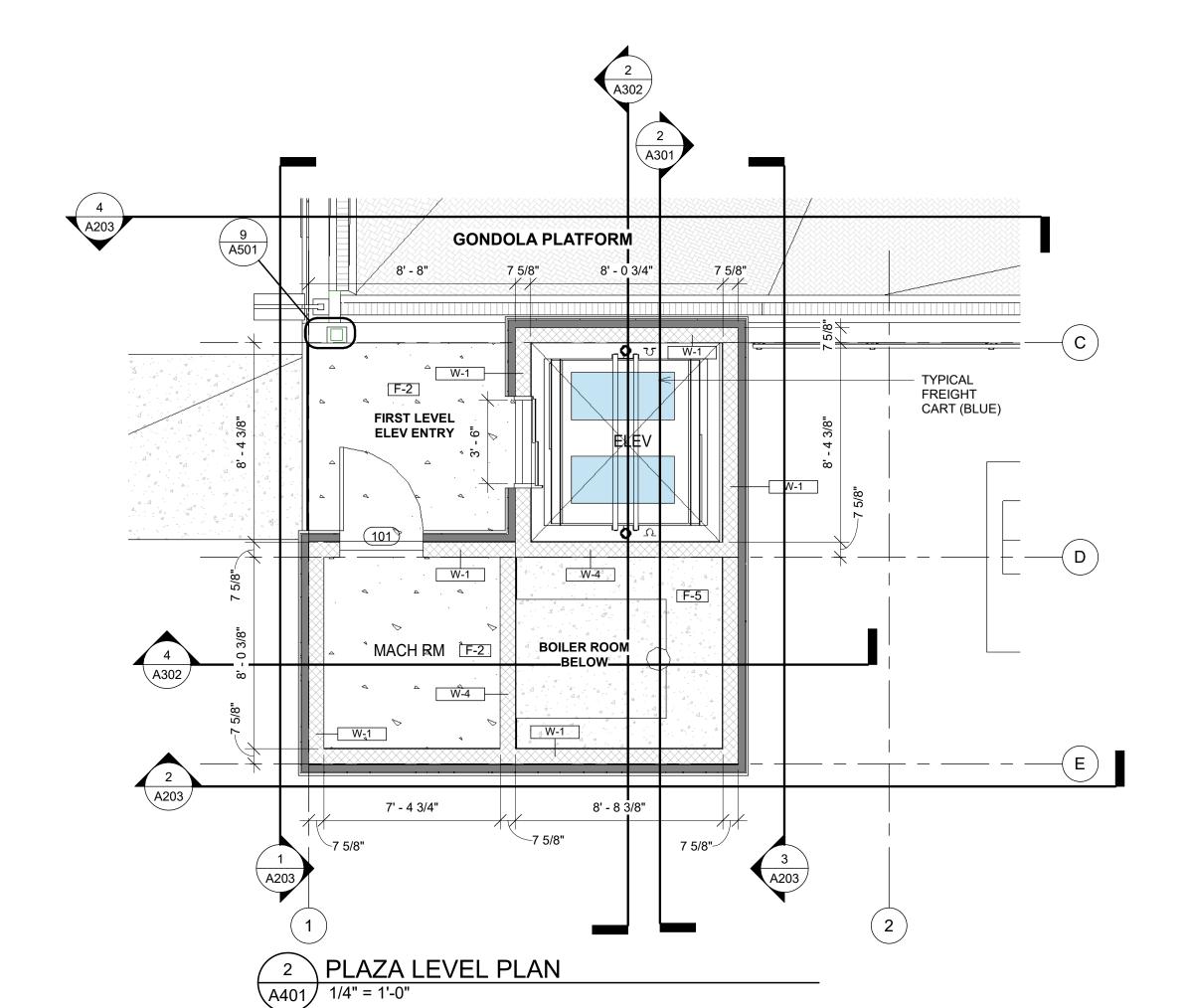
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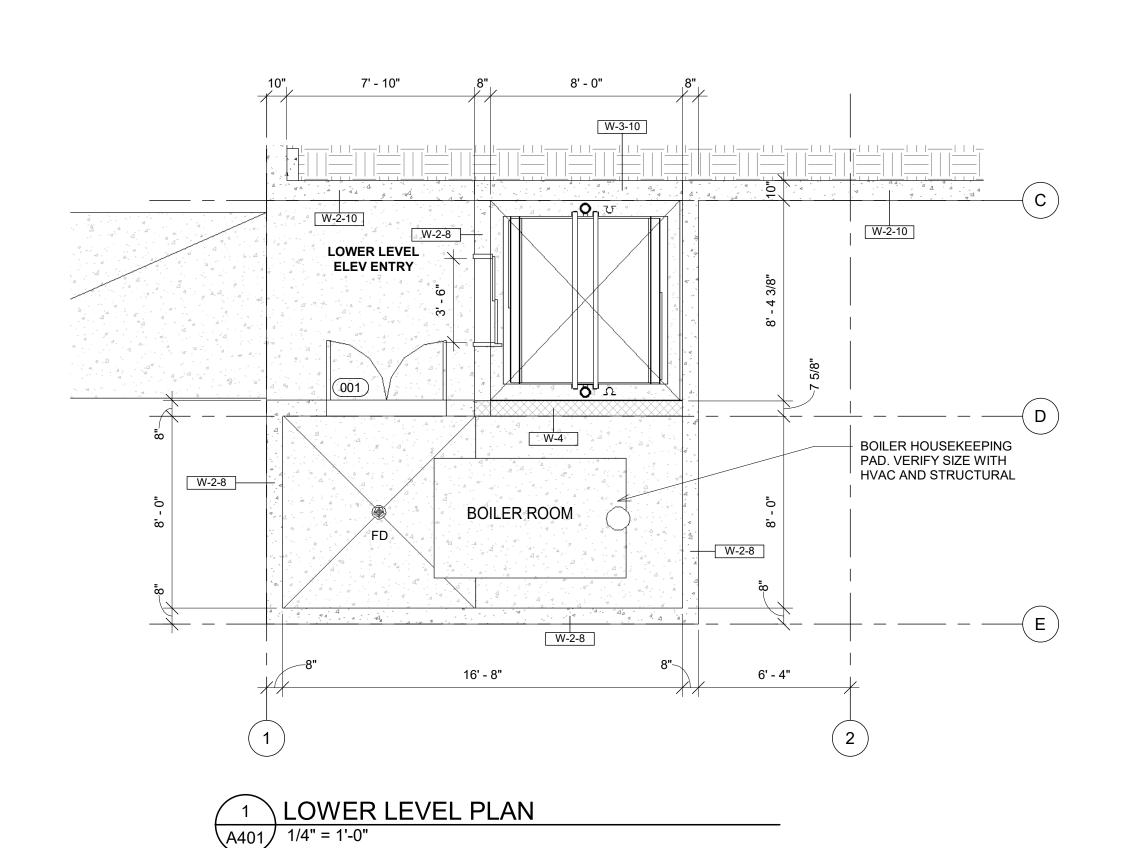
0' - 1 3/4" HM

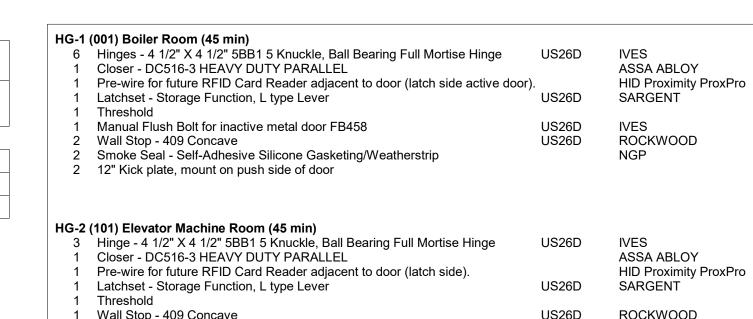
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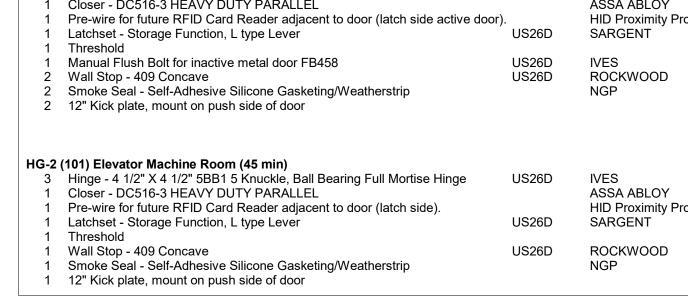
NO

5' - 0"

6' - 8"







<u>DOOR AND HARDWARE SCHEDULE NOTES:</u> 1. GENERAL CONTRACTOR TO COORDINATE THE NUMBER OF DOORS,

ROOF PLAN

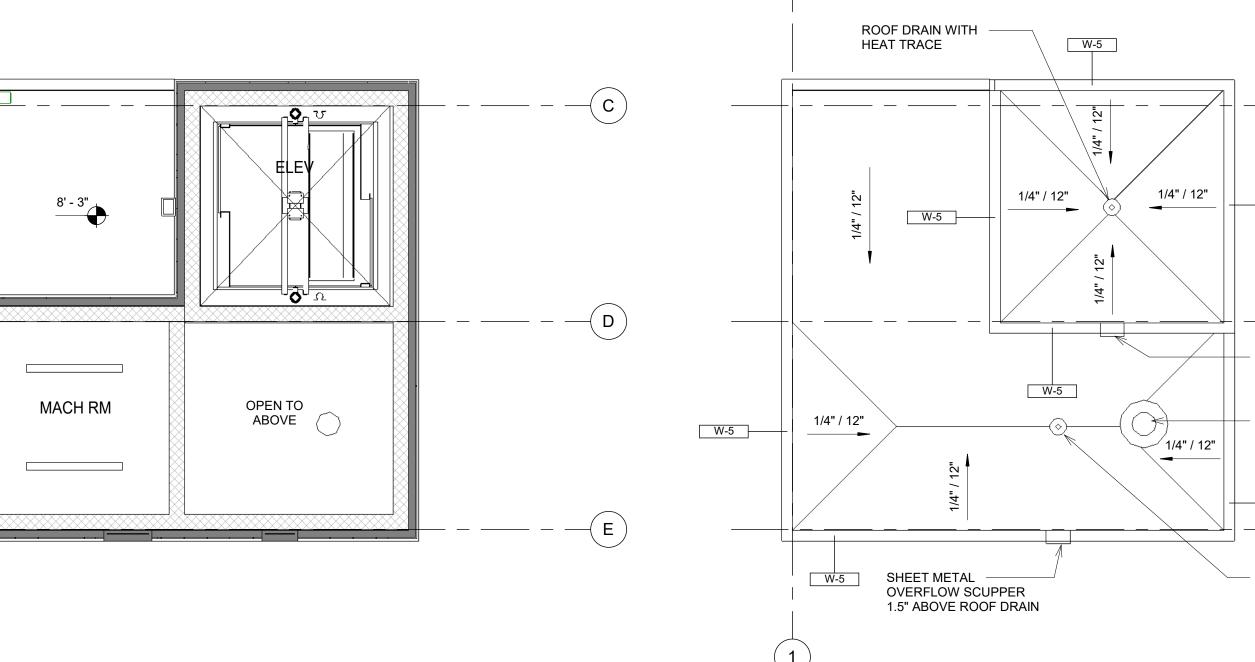
A401 1/4" = 1'-0"

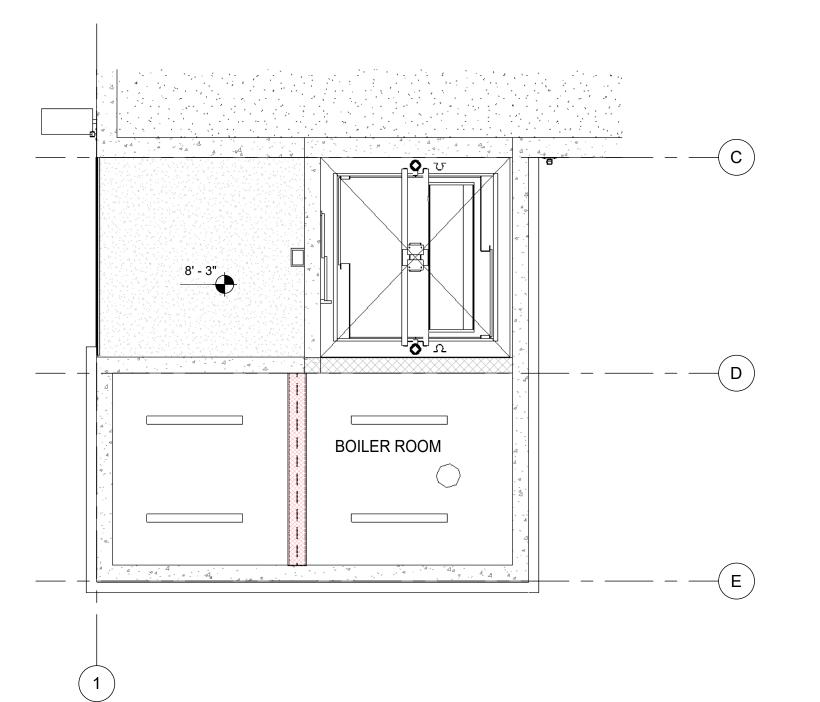
SWING AND THE NUMBER OF ITEMS WITHIN EACH HARDWARE GROUP WITH EACH SPECIFIC DOOR AT TIME OF DOOR AND HARDWARE SUBMITTAL.

2. DOOR HARDWARE IS BASIS-OF-DESIGN PER SPECIFICATIONS. REVIEW HARDWARE WITH OWNER, INCLUDING FUTURE RFID REQUIREMENTS.

3. DOOR OPENING PRESSURE: THE OPENING DOOR FORCE REQUIRES TO BE 5 LBF MAX. ALTERNATIVELY, PROVIDE AN AUTOMATIC DOOR

OPENER WITH STANDBY POWER TO OPERATE DOOR. 2010 ADA (404.2.9)1. 4. COORDINATE ALL KEYING WITH OWNER. CORBIN RUSSWIN RU46.







PLAZA LEVEL R.C.P.

A401 1/4" = 1'-0"

W-5 SHEET METAL OVERFLOW SCUPPER 1.5" ABOVE ROOF DRAIN **BOILER EXHAUST** FLUE. PROVIDE **BOOT PER ROOFING MFR** REQUIREMENTS W-5 - ROOF DRAIN WITH **HEAT TRACE**

ERIC P.

MAR 05 2021

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further

performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs.

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REVISIONS

Description

cooperation among the owner, his contractor and the architect. Design and construction are complex. Although the architect and his consultants have



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Project Phase

Sheet Title FLOOR AND CEILING PLANS

DESIGN DEVELOPMENT

encountered in the field. • When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide

Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.

• Only products which bear UL's Mark are considered Certified.

Allowable Variances

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and

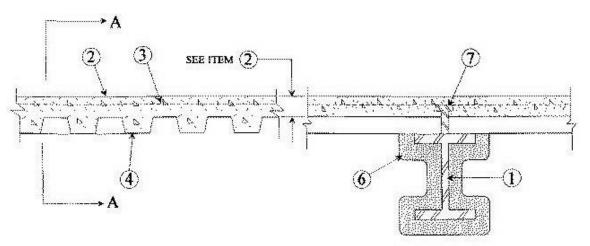
> Design No. D902 February 21, 2019

Restrained Assembly Ratings — 1, 1-1/2, 2 and 3 Hr.

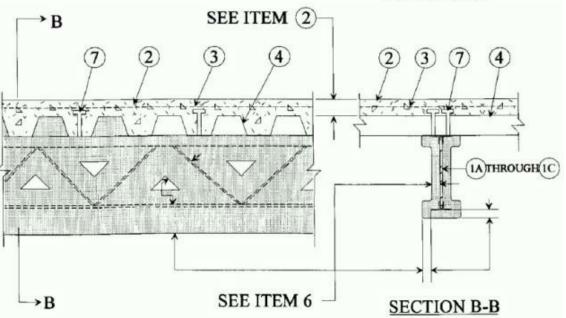
Unrestrained Assembly Ratings — 0, 1, 1-1/2, 2 or 3 Hr. (See Items 4 & 6) Unrestrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or CUL Certification Mark for jurisdictions employing the UL or CUL Certification (such as Canada), respectively.







1. Beam — W8X28, W8x24 or W6x12, min size, see Items 6A through 6E.

1A. Steel Joists — (Not Shown) — As an alternate to Item 1 — Composite or non-composite min 8k1 or min depth and weight shall be 8 in. and 4.9 lb/ft respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design stress of 30, 000 psi (30 ksi). Welded or bolted to end supports. The top chords shall consist of two angles measuring 1-1/4 by 1-1/4 by 0.127 in. thick. Bottom chords shall consist of two round bars measuring 0.566 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. Bearing plates shall consist of two angles measuring 1-1/2 by 2 by 0.188 in. thick and 5-1/16 in. long. Web members shall consist of 0.565 in. diam bars.

1B. Steel Joists — (Not Shown) — As an alternate to Item 1 — Composite or non-composite min 12k5 or min depth and weight shall be 12 in. and 7.1 lb/ft respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design stress of 30, 000 psi (30 ksi). Welded or bolted to end supports. Top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick. Bottom chords shall consist of two round bars measuring 0.675 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. Bearing plates shall consist of two angles measuring 2 by 2 by 0.192 in. thick and shall be min 4-15/16 in long. The second web member at each end shall consist of 0.654 in. diam round bar. All remaining web members, including the end web members, shall consist of 0.774 in. diam round bars. Bridging per S.J.I. specifications is required when non-composite joists are used.

1C. Steel Joists — (Not Shown) — As an alternate to Item 1 — Composite or non-composite min 12k5 or min depth and weight shall be 12 in. and 7.1 lb/ft respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design stress of 30, 000 psi (30 ksi). Welded or bolted to end supports. Top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick. Bottom chord shall consist of two round bars measuring 0.675 in. in diam. or two angles measuring 1 by 1 by 0.125 in. thick. The

second web member at each end shall consist of 0.654 in. diam round bar. All remaining web members, including the end web members, shall consist of 0.774 in. diam round bars. Bridging per S.J.I. specifications is required when non-composite joists are used. Note: Additional beams or joists from the N series designs may be substituted for the listed beam (item 1) or joist

(item 1A) respectively. When joists are substituted, the restrained rating of the joist must be equal to or greater than the restrained rating of the assembly. Additional beam and joist substitution requirements are in the front of the Fire Resistance Directory - III. FLOOR-

CEILINGS AND ROOF- CEILING, item 7 -Steel Joist or IV. BEAMS.

2. Normal Weight or Light Weight Concrete — Normal weight concrete, carbonate or siliceous aggregate, 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale or slate aggregate by rotary-kiln method or expanded clay aggregate by rotary- kiln or sintered-grate method, or pelletized expanded blast furnace slag aggregate, 3000 psi compressive strength, vibrated, 4 to 7 per cent entrained air.

Restrained Assembly Rating H r	Concrete (Type)	Concrete Unit Weight <u>pcf</u>	Concrete <u>Thkns</u> In.	
1	Normal Weight	147-153	3-1/2	
1-1/2	Normal Weight	147-153	4	
2	Normal Weight	147-153	4-1/2	
3	Normal Weight	147-153	5-1/4	
1	Light Weight	107-113	2-1/2	
1	Light Weight	107-120	2-5/8	
1-1/2	Light Weight	107-113	3	
2	Light Weight	107-113	3-1/4	
2	Light Weight	107-116	3-1/4*	
2	Light Weight	114-120	3-1/2	
3	Light Weight	107-113	4-3/16	
3	Light Weight	114-120	4-7/16	

* With 2 and 3 in, deep steel floor units only.

1. Welded Wire Fabric — 6x6 - W1.4xW1.4.

3A. Negative Reinforcement — (Optional, Not Shown) Used in lieu of Item 3 and with Items 3B or 3C. For floor spans with concrete cast continuous over the supporting beams. Deformed bars designed to resist the support moments of the concrete slab in accordance with the latest ACI Building Code Specifications.

3B. Fiber Reinforcement* — (Not Shown) — Required with Item 3A. Engineered synthetic fibers added to concrete mix to control shrinkage cracks in concrete. Fibers added to concrete mix at rate of 1 lb of fiber for each cubic yard **PROPEX OPERATING COMPANY L L C** — Fibermesh 150 and Fibermesh 300.

3C. Fiber Reinforcement* — (Not Shown) — Required with Item 3A. Any fiber reinforcement bearing the UL Classification Marking for Fire Resistance, Classified for use in lieu of welded wire fabric. See Fiber Reinforcement (CBXQ) Category for names of manufacturers.

2. Steel Floor and Form Units* — Composite 1-1/2, 1-5/8, 2 or 3 in. deep galv units or 4-1/2 in. deep noncomposite galv units. Fluted units may be phos/ptd. Min gauges are 22 MSG for fluted and 20/20 for cellular and partial cellular units. The following combinations of units may be used: 1. All 24, 26, 28 or 36 in. wide cellular or partial cellular.

3. One or two 3 in. deep, 12 in. wide, 18/18 MSG min cellular alternating with 3 in. deep fluted or other cellular.

(4) Any blend of fluted and 24, 26, 28 or 36 in. wide cellular or partial cellular. (5) Corrugated, nom 1-5/16 or 2 in. deep, 30 in. wide, 24 MSG min galv units with shear wires factory welded to deck corrugations. Welded to supports 12 in. OC through welding washers. For shear wire spacing of 8 in. or less

the steel deck stress shall not exceed 20 KSI. For shear wire spacing greater than 8 in. OC but less than or equal to 12 in. OC steel deck stress shall not exceed 12 KSI. ASC STEEL DECK, DIV OF ASC PROFILES L L C — 32 in. wide Types NH-32, NHN-32, NHF-32; 36 in. wide, Types BH-36, BHN-36, BHN-35- 1/4, BHF-36, BHF-36A, 2WHS-36, 2WHF-36, 2WHF-36A, 3WxH-36,

3WxHF-36, 3WxHF-36A, 3WH-36, 3WHF-36, 3WHF-36A, 3W-36, 3WF-36, DG3W-36, DG3WF-36. All units may be galvanized or Prime Shield. Non-cellular decks may be vented designated with a "V" suffix to the product name. Cellular deck top and bottom sections may be riveted together (designated with "Fr") vs. arc spot welded, "F"

CANAM STEEL CORP — 24 in. wide Type P-2432 composite or 36 in. wide Type P-3623, P-3606, P-3615 and 24 in wide Type P-2432 composite, Type P-3606 and P-3615 non-composite

CANAM STEEL CORP — 12 or 24 in. wide, Types 1-1/2, 2, or 3 in. LOK-Floor and LOK-Floor Cell; 36 in. wide, Types 2 or 3 in. LOK-Floor and LOK-Floor Cell; 24, 30 or 36 in. wide, Type 1-1/2 in. B-LOK and B-LOK Cell; 24 in. wide, Types N-LOK and N-LOK Cell

CENTRIA, A DIVISION OF NCI GROUP, INC — QL Types, 24 in. wide, 3 or 3 inverted, UKX, 21 or 21 inverted, 2 in. 99, 121, AKX, NKX, TKX; 24 or 30 in. wide GKX, GKXH, GKX-A; 36 in. wide 2 in. 99, AKX, WKX; 12 in. wide NKC, TKC; 12 in. wide non-composite Sec 12. Side joints of 99, 121, TKC, TKX, WKX may be welded together 60 in. OC. Side joints of 99, AKX, WKX, GKX, GKX-A, TKX may be fastened together with min 1 in. long No. 12x14 selfdrilling, self-tapping steel screws 36 in. OC

CHIA TEH CONSTRUCTION MATERIAL CO LTD — 24 or 36 in. wide Mac-Lok 3; 24 in. wide CFD-3

DECK WEST INC — 36 in. wide Type B-DW, Inverted B-DW, BA-DW, Inverted BA-DW, 2-DW or 3-DW. Side joints of Type 2-DW and 3-DW may be fastened together with min 1 in. long No. 12 x 14 self-drilling, self-tapping steel screws 36 in. OC

DESIGN ASSISTANCE CONSTRUCTION SYSTEMS INC — 36 in. wide Type DACS1.5CD, or 24 in. wide Type DACS2.0CD, or DACS3.0CD

EPIC METALS CORP — 24 in. wide Types EC150, EC150 inverted, EC300, EC366, ECP150, ECP300, ECP366,

ECA; 30 in. wide Types ECB150, ECBR150; 36 in. wide Types EC156, EC266, ECP266

KAM INDUSTRIES LTD, DBA CORDECK — 24 in. wide, Types 2 or 3 in. WDR

MARLYN STEEL DECKS INC — Type 1.5 CF, 2.0 CF or 3.0 CF

respectively; or Types PLN3-CD, N3-CD, PLN3, N3.

Strength 1.5 SBN; Units may be phos/ptd

limited to the following units and limitations:

NEW MILLENNIUM BUILDING SYSTEMS L L C — 24 or 36 in. wide Types Mac-Lok 2, Mac-Lok 3; 24 in. wide Types B2C, B2FC, NC, NFC; 30 in. wide, Type B3C; 12 in. wide Mac-Way Cellular 45 MDW, 2-633 MTWA, 3-633 MTWA+. 30 in. wide, Mac-Cor Types 1 and 2

NEW MILLENNIUM BUILDING SYSTEMS L L C — 24 or 36 in. wide Types 2.0CD, 3.0CD, 2.0CFD, 3.0CFD, 3.0CFDES; 24, 30 or 36 in. wide

Types 1.5CD, 1.5CDI, 1.5CDR, 1.5CFD. Fluted units may be phos/painted or galvanized. ROOF DECK INC — 36 in. wide Types LOK-1-1/2, LOK-1-1/2R; 24 in. wide Types LOK-2, LOK-3

VALLEY JOIST, SUB OF EBSCO INDUSTRIES INC — 24 or 36 in. wide Types WVC 1-1/2 or WVC 2

VERCO DECKING INC - A NUCOR CO — FORMLOK™ deck types PLB, B, BR, PLN3, N3, PLN, N, PLW2, W2, PLW3. W3. Units are min 24 in. wide and may be galvanized, phos./ptd., or mill finish. Units may be cellular or acoustical cellular, with the suffix "CD" or "CD-AC" added to the product name, respectively. All non-cellular deck may be vented or non-vented. 12 in. wide PLW2, W2, PLW3 or W3 units may be blended with 24 or 36 in. wide PLW2, W2, PLW3 or W3 units,

VULCRAFT, DIV OF NUCOR CORP — 24, 30 or 36 in. wide Types 1.5VL, 1.5VLI, 1.5PLVLI, 1.5VLP, 1.5 VLR, 1.5PLVLP; 24 or 36 in. wide Types 1.5VLPA, 1.5PLVLPA, 2VLI, 2.0PLVLI, 2VLJ, 3VLI, 3.0PLVLI, 3VLJ, 2VLP, 2.0PLVLP, 3VLP, 3.0PLVLP, 2VLPA, 2.0PLVLPA, 3VLPA, 3.0PLVLPA. Types 1.5VL, 1.5VLI, 1.5PLVLI, 1.5 VLR, 1.5VLPA, 1.5PLVLPA, 2VLI, 2.0PLVLI, 2VLJ, 3VLI, 3.0PLVLI, 3VLJ units may be phos/ptd. 24 or 36 in. wide Types 2VLJ, 3VLJ units ++ may be used for max 2 hr Restrained Assembly Rating. 36 in. wide Types 1.5 SB, 1.5

SBR; 24 or 36 in wide Types 2.0 SB, 3.0 SB, 36 in. wide Type High Strength 1.5 SBI, 36 in. wide Type High

Spacing of welds attaching units to supports shall be 12 in. OC for 12, 24, 36 in. wide units, four welds per sheet for 30 in. wide units. 6 in. OC for 18 in. wide and Sec. 12 units. Unless specified otherwise for specific units types, adjacent units button-punched or welded together 36 in. OC along side joints. For 3 Hr Rating, units with

overlapping type side joints welded together 24 in. OC max. When a superimposed load of 250 PSF is desired the spacing of welds or button-punches shall not exceed 24 in. OC along side joints.

+ 12 in. wide, 1-1/2 in. deep Mac-Way units may be blended with 24 in. wide B2C or 30 in wide B3C units in a blend of one cell to one or more fluted units. 12 in. wide, 2 in. deep Mac-Way units may be blended with 24 or 36 in. wide Mac-Lock units in a blend of one cell to one or more fluted units. 12 in. wide, 3 in. deep Mac-Way units may be blended with 24 or 36 in. wide Mac-Lock 3 units in a blend of one cell to one or more fluted units. The side edge of the fluted units is placed on the top of the side edge of the Mac-Way unit and the two are welded together with welding washers spaced a max. of 32 in. OC for Mac-Lock 2 or 3 units and a max of 24 in. OC for the B2C or B3C

++ Side joints of Types 2VLJ or 3VLJ units may be fastened together with No. 8-3/4 in. long self-drilling Tek screws driven diagonally from the top side through the joint of the units at 36 in. O. C. max. Alternate Construction — Non-composite units of the same type listed above may be used provided allowable loading is calculated on the basis of non-composite design. The Unrestrained Assembly Rating is equal to the Unrestrained Beam Rating (See Item 6) for a max 3 Hr and is

a. 1-1/2, 2 and 3 in. deep, 24 or 36 in. wide, 22 MSG or thicker fluted with clear spans not more than 7 ft, 8 in.

(b) 1-1/2, 2 and 3 in. deep, 24 or 36 in. wide, 20 MSG or thicker fluted with clear spans not more than 8 ft, 8 in. (c) 1-1/2 and 2 in. deep, 24 or 36 in. wide, 16 MSG or thicker fluted and 18/18 MSG or thicker cellular with clear spans not more than 9 ft, 11 in.

(d)3 in. deep, 36 in. wide, 18 MSG or thicker fluted and 24 in. wide, 20/18 MSG or thicker cellular with clear spans not more than 13 ft, 2 in.

For assemblies utilizing 3-1/4 in. light weight concrete topping with a max Restrained Assembly Rating of 2 Hr, the Unrestrained Assembly Rating is equal to the Unrestrained Beam Rating (See Item 6) and is limited to the following floor units and spans:

(a) 1-1/2, 2 and 3 in. deep, 24 or 36 in. wide, 22 MSG fluted and 20/20 MSG cellular with clear spans not more than 9 ft, 6 in.

(b) 2 and 3 in. deep, 24 or 36 in. wide, 20 MSG fluted and 20/20 MSG cellular with clear spans not more than

(c) 3 in. deep, 24 in. wide, 20 MSG fluted and 20/20 MSG cellular with clear spans not more than 13 ft, 2 in.

4A. Steel Floor and Form Units* — As an alternate to Item 4, for use only when top of steel beam (Item 1) is filled solid with concrete for the full width of bearing from top of steel beam to top of concrete (Item 2): BAILEY METAL PRODUCTS LTD — Type COMSLAB™ 210 and COMSLAB™ 225, Steel End Closure Flashing

5. Joint Cover — (Use with fluted units optional — Not Shown) — 2 in. wide cloth adhesive tape applied following the contour of the units.

6. Spray-Applied Fire Resistive Materials* — Applied by spraying with water to the final thicknesses shown below. When fluted steel deck is used and the fire protection thickness selected is based on all fluted deck, the area between the steel deck and the top flange of the steel beam shall be filled. When fluted steel deck is used and the steel beam is sprayed with the thicknesses applicable to cellular of blended units, the area between the steel deck and the top flange of the steel beam shall be plugged. Beam surfaces must be clean and free of dirt, loose scale, and oil. Min average density of 13 pcf with min. individual density of 11 pcf for Types II, II HS, or DC/F. Min average and min individual densities of 22 pcf and 19 pcf, respectively, for type HP. For method of density determination, refer to Design Information Section. The thickness of the Spray-Applied Fire Resistive Materials on the Structural Members (Item 1, 1A, or 1B) shall be as follows:

Min Thkns Spray Applied Resistive Mtl. In

Restrained

Unrestrained

Concrete

sembly ating	Beam Rating	Type				
312	The state of the s		W8x28 When Deck Is All Fluted	W8x28 When Deck Is Blend or All Cellular	Joist Item 1A When Deck Is Fluted Cellular or Blend	Joist Item 1B When Deck Is Fluted Cellular or Blend
1	1	NW	3/8,5/8*	3/8,11/16*	1+	
1-1/2	Ĭ	NW	3/8,5/8*	3/8,11/16*	1-9/16	-
2	1	NW	3/8,5/8*	3/8,11/16*	2-1/16	=
2	2	NW	3/4	13/16	2-1/16	-
2	3	NW	1-3/16	1-5/16	2-5	3-1/4
3	1-1/2	NW	1/2	1/2	-	3-1/4
3	2	NW	3/4	13/16	_	3-1/4
3	3	NW	1-3/16	1-5/16	9 2-4 8	3-1/4
1	1	<u>tw</u>	3/8,5/8*	7/16,11/16*	1-1/8+	===
1-1/2]1	LW	3/8,5/8*	7/16,11/16*	1-3/4	<u></u>
2	1	LW	3/8,5/8*	7/16,11/16*	2-1/4	-
2	2	LW	1	1	2-1/4	==
2	3	LW	1-9/16	1-5/8	3 1 (3	3-1/4
3	1-1/2	LW	5/8	11/16		3-1/4
3	2	LW	1	Ĩ.	s—s:	3-1/4
3	3	LW	1-9/16	1-5/8	8 <u>2—</u> 83	3-1/4

* This thickness applies when optional Item 12 or 13 are used over 3-1/4 in. light weight concrete topping. ** This thickness applies when optional Item 12 or 13 are used over 3-1/4 in. light weight concrete topping. + When bottom chords consist of 1 by 1 by 0.125 in. thick steel angles, the thickness of spray-applied fire resistive material shall be increased by 1/4 in. on the bottom chord only.

ISOLATEK INTERNATIONAL — Type D-C/F, HP, II or Type II HS. Investigated for exterior use. Type EBS or Type X adhesive/surface sealer optional.

6A. Spray-Applied Fire Resistive Materials* — Alternate to Item 6. See table below for appropriate thicknesses. When fluted steel deck is used and the fire protection thickness selected is based on all fluted deck, the area between the steel deck and the top flange of the steel beam shall be filled. When fluted steel deck is used and the steel beam is sprayed with the thicknesses applicable to cellular or blended units, the area between the steel deck and the top flange of the steel beam shall be plugged. Prepared by mixing with water and spray-applied in one or more coats to beam surfaces which must be clean and free of dirt. loose scale and oil. Min average density of 17.5 pcf with min individual value of 17.0 pcf. For method of density determination, see Design Information Section, Sprayed Material.

Restrained	Unrestrained Beam	Min Thkns Applied Resistive Mtl, In					
Assembly Rating Hr	Rating Hr	W8x28 When Deck Is All Fluted	W8x28 When Deck Is Blend or All Cellular				
1, 1-1/2, 2	1	5/16, 7/16*	5/16, 7/16*				
2	2	11/16	13/16				
2	3	1-1/16	1-5/16				
3	1-1/2	1/2	9/16				
3	2	11/16	13/16				
3	3	1-1/16	1-5/16				

* This thickness applies when optional Items 12, 13 are used over 3-1/4 in. light weight concrete **ISOLATEK INTERNATIONAL** — Type 280

6B. Spray-Applied Fire Resistive Materials* — Alternate to Items 6 and 6A. Prepared by mixing with water. Spray-applied in one or more coats to beam surfaces to a min final thickness as shown in the tables below. Beam surfaces must be clean and free of dirt, loose scale and oil. When fluted steel deck is used and the fire protection thickness selected is based on all fluted deck, the area between the steel deck and the top flange of the steel beam shall be filled. When fluted steel deck is used and the steel beam is sprayed with the thicknesses applicable to cellular or blended units, the area between the steel deck and the top flange of the steel beam shall be plugged.

Min average and min individual density of 15 pcf and 14 pcf respectively for Types 300, 300AC, 300 ES, 300 HS, 300 N, 3000, 3000ES, and SB. For Types 400, 400 AC and 400 ES min average and min individual density of 22 pcf and 19 pcf respectively. Min avg density of 44 pcf with min ind value of 40 pcf for Types M-II and TG. Min avg density of 47 pcf, with min individual value of 43 pcf for Type M-II/P. The thickness of the material on the Structural Members (Item 1 and 1C) shall be as follows:

Restrained Assembly Rating Hr	Unrestrained Beam Rating Hr	W8x28 When Deck Is All Fluted	Min Thkns Spray Appl W8x28 When Deck Is Blend or All Cellular	lied Resistive Mtl, In Joist (Item 1C) When Deck Is Fluted Cellular or Blend
1	1	5/16, 7/16*	5/16, 7/16*	9/16+
1-1/2	1	5/16, 7/16*	5/16, 7/16*	1
2	1	5/16, 7/16*	5/16, 7/16*	1-3/8
2	2	11/16	13/16	1-3/8
2	3	1-1/16	1-5/16	2-1/4
3	1-1/2	1/2	9/16	2-1/4
3	2	11/16	13/16	2-1/4
3	3	1-1/16	1-5/16	2-1/4

* This thickness applies when optional Item 12 or 13 are used over 3-1/4 in, light weight concrete topping. + When bottom chords consist of 1 in. by 1 in. by 0.125 in. thick steel angles, the thickness of spray-applied fire resistive material shall be increased by 1/4 in. on the bottom chord only. BERLIN CO LTD — Types 300, 300ES, 300N, SB, or 400; Type M-II, TG and M-II/P

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Types 300, 300AC, 400, or 400AC; Type M-II, TG and M-II/P ISOLATEK INTERNATIONAL — Types 300, 300AC 300ES, 300HS, 300N, SB, 400, 400AC, 400ES, 3000 or 3000ES; Type M-II, TG and M-II/P **NEWKEM PRODUCTS CORP** — Types 300, 300ES, 300N, 400, or SB; Type M-II, TG and M-II/P

6C. Mastic and Intumescent Coatings* — As an alternate to Items 6 through 6B. For use with fluted steel floor and form units only. Min. size W8x24 or W6x12 beams shall be primed with a phenolic modified alkyd primer, a metal alkyd primer, an acrylic primer or an epoxy primer at a nominal thickness of 2 mil. Coating spray or brush applied in accordance with the manufacturer's instructions at the min dry thickness as shown in the table below. The thickness shown below includes the primer thickness. Flutes above beam to be completely filled with minimum 6 pcf mineral wool insulation, or the top flange of the beam to be protected with the same thickness of coating as required on the

linimum Dry hickness mils	Minimum Dry Thickness mm Beam Size		Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr
53	1.34	W8x24	1	2
95	2.41	W8x24	1-1/2	3
73	1.83	W6x12	1	2
123	3.10	W6x12	1-1/2	3

BERLIN CO LTD — Type WB 3. Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB4, Investigated for Exterior Use with top coat as described in Item 6E

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type WB 3. Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB4, Investigated for Exterior Use with top coat as described in Item 6E

ISOLATEK INTERNATIONAL — Type SprayFilm-WB 3 and Type WB 3. Investigated for Interior General Purpose. Type SprayFilm-WB 4 and Type WB 4, Investigated for Interior General Purpose. Type SprayFilm-WB 4 and Type WB4. Investigated for Exterior Use with top coat as described in Item 6E

NEWKEM PRODUCTS CORP — Type WB 3. Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB4, Investigated for Exterior Use with top coat as described in Item 6E

6D. Mastic and Intumescent Coatings* — As an alternate to Items 6 through 6C. For use with normal weight concrete. Min. size W8x28 beams shall be primed with a phenolic modified alkyd primer a metal alkyd primer, an acrylic primer or an epoxy primer at a nominal thickness of 2 mil. Coating spray or brush applied in accordance with the manufacturer's instructions at the min dry thickness as shown in the table below. The thickness shown below includes the primer thickness. The top surface of the top flange where fluted units are used must be protected with the coating material at the same min dry thickness at a min distance of 1 in. (25 mm) inward from the flange tip on both sides of the beam. Mineral wool insulation optional above top surface of the beam.

Minimum Dry Minimum Dry Thickness mils Thickness m			Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr
103	2.62	Fluted or Cellular	1-1/2	2
179	4.55	Cellular	1-1/2	3
341	8.67	Cellular	2	3

BERLIN CO LTD — Type WB 3. Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB 4, Investigated for Exterior Use with top coat as described in Item 6E

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type WB 3, Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB 4, Investigated for Exterior Use with top coat as described in Item 6E

ISOLATEK INTERNATIONAL — Type SprayFilm-WB 3 and Type WB 3. Investigated for Interior General Purpose, Type SprayFilm-WB 4 and Type WB 4, Investigated for Interior General Purpose, Type SprayFilm-WB 4 and Type WB 4, Investigated for Exterior Use with top coat as described in Item 6E

NEWKEM PRODUCTS CORP — Type WB 3. Investigated for Interior General Purpose. Type WB 4, Investigated for Interior General Purpose. Type WB4, Investigated for Exterior Use with top coat as described

6E. **Top Coat** — Type SprayFilm — TOPSEAL and Type TOPSEAL required for Exterior Use, applied at a minimum dry thickness of 14 mils (0.34 mm) over the intumescent material. See Classification information in the **Mastic and Intumescent Coating** (CDWZ) category, Isolatek International, for mixing requirements.

6F. **Mastic and Intumescent Coatings*** — As an alternate to Items 6 through 6D. For use with normal weight or light weight concrete and fluted steel floor and form units only. Min size W8x24 beams shall be primed with a phenolic modified alkyd primer at a thickness of 2 mils or a epoxy primer at a nominal thickness of 1 mil. Coating spray or brush applied in accordance with the manufacturer's instructions at the thicknesses shown below. The thickness includes the thickness of primer. The top surface of the top flange where fluted units are used must be protected with the coating material at the same min dry thickness or filled with nominal 4 pcf

Minimum Dry Thickness mils	Minimum Dry Thickness mm	Beam Size	Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr
35	0.88	W8x24	1	2
66	1.68	W8x24	1-1/2	3

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type WB-5. Investigated for Interior General Purpose

ISOLATEK INTERNATIONAL — Type WB-5. Investigated for Interior General Purpose

7. Shear Connector Studs — (Optional) — Studs, 3/4 in. diam by 3 in. long, for 1-1/2 in. deep form units to 5-1/4 in. long for 3 in. deep form units, headed type or equivalent per AISC specifications. Welded to the top flange of the beam through the steel form units.

8.Lath Hanger — (Optional, Not Shown) For use in caged beams with Items 6, 6A or 6B Galv steel 6 SWG min diam spaced 27 in. O. C.

9.Clips — (Optional, Not Shown) For use in caged beams with Items 6, 6A or 6B No. 24 MSG spring steel pushed on to top and bottom flanges of beam spaced 6 in. O. C. max.

10. Metal Lath — (Optional, Not Shown) — For use in caged beams with Items 6, 6A or 6B 3/8 in. diamond mesh or rib lath, 3.4 lbs per sq yd expanded steel attached to beam with clips spaced 6 in. OC max; or tied to lath hangers with 18 SWG galv steel wire spaced 6 in. OC max.

11 . Electrical Inserts* — (Not Shown) — Classified as "Outlet Boxes and Fittings Classified for Fire Resistance".

12. Mineral and Fiberboards* — (Optional, Not Shown) — Applied over concrete floor with no restriction on board thickness. When mineral and fiber boards are used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Mineral and Fiber Board (CERZ) category for names of manufacturers.

13. Foamed Plastic* — (Optional, Not Shown) — Consisting of polyisocyanurate or urethane roof insulations. Applied over concrete floor with no restrictions on thickness. When polyisocyanurate or urethane insulation is used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Foamed Plastic (CCVW) for list of manufacturers.

14. Insulating Concrete — (Optional, Not Shown) — Various types of insulating concrete prepared and applied A. Vermiculite Concrete - Blend 6 to 8 cu ft of **Vermiculite Aggregate*** to 94 lb Portland cement and air entraining agent. Min thickness of 2 in. as measured to the top surface of the structural concrete or foamed plastic (Item 15) when it is used. See Vermiculite Aggregate (CJZZ) category for names of Classified

B. Cellular Concrete-Roof Topping Mixture* - Concentrate mixed with water and Portland cement per manufacturer's specifications. Min. thickness of 2-in. as measured to the top surface of the structural concrete or foamed plastic (Item 15 and 15A) when used. Cast dry density and 28-day min compressive strength of 190

psi as determined with ASTM C495-66.

ERIN P. SMITH MAR 05 202). NOTICE: DUTY OF COOPERATION Release of these plans contemplates further

cooperation among the owner, his contractor and the architect. Design and construction are complex. Although the architect and his consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for the

consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect of responsibility for all consequences arriving out of such changes. All design, documents and data prepared by Eric Smith Associates, P.C. as instruments of service shall remain property of Eric Smith Associates, P.C. and shall not be copied, changed or disclosed in any

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Description Date

Job Number: 20034 12/30/20 Date: Author Drawn By: Checked By: Checker

Project Phase DESIGN DEVELOPMENT

Sheet Title FIRE RATED ASSEMBLIES Sheet Number

ELASTIZELL CORP OF AMERICA — Type II, with a cast dry density of 39 (+ or - 3.0) pcf

SIPLAST INC — Mix #1, Cast dry density of 32 (+ or -) 3 pcf

SIPLAST INC — Mix #2, Cast dry density of 36 (+ or -) 3 pcf

C. Cellular Concrete-Roof Topping Mixture* - Foam concentrate mixed with water, Portland cement and UL Classified Vermiculite Aggregate per manufacture's application instructions. Cast dry density of 33 (+ or -) 3 pcf and 28 day compressive strength of min 250 psi as determined in accordance with ASTM

AERIX INDUSTRIES — Mix #3

ELASTIZELL CORP OF AMERICA — Type II. Mix #1 of cast dry density 39 (+ or -) 3.0 pcf, Mix #2 of cast dry density 40 (+ or -) 3.0 pcf, Mix #3 of cast dry density 47 (+ or -) 3.0 pcf

SIPLAST INC — Mix #3

D. Perlite Concrete - 6 cu ft of **Perlite Aggregate*** to 94 lb of Portland Cement and 1-1/2 pt air entraining agent. Min thickness 2 in. as measured to the top surface of structural concrete or foamed plastic (Item 15A) when it is used. See Perlite Aggregate (CFFX) in Fire Resistance Directory for names of Classified companies.

15. Foamed Plastic* — (Optional, Not Shown) — For use only with vermiculite (Item 14A) or cellular (Item 14B) concretes-Rigid polystyrene foamed plastic insulation having slots and/or holes sandwiched between vermiculite concrete slurry which is applied to the normal or light weight concrete surface and vermiculite concrete topping (Item 14A). See Foamed Plastic* (BRYX) category in Building Materials Directory or Foamed Plastic* (CCVW) Category in Fire Resistance Directory for list of Classified companies.

15A. Foamed Plastic* — (Not Shown) — For use only with cellular or perlite concrete. Nominal 24 by 48 in. polystyrene foamed plastic insulation boards having a density of 1.0 (+ or - 0.1) pcf, encapsulated within concrete topping. Each insulation board shall contain six nominal 3 in. diameter holes oriented in two rows of three holes each with the holes spaced 12 in, OC transversely and 16 in, OC longitudinally. See Foamed Plastic* (BRYX) category in Building Materials Directory or Foamed Plastic* (CCYW) category in Fire Resistance Directory for list of Classified companies.

16. Roof Covering Materials* — (Optional, Not Shown) — Consisting of materials compatible with insulations described herein which provide Class A, B or C coverings. See Built-Up Roof Covering Materials in Building Materials Directory.

17. Insulated Concrete — (Optional, Not Shown) — various types of insulated concrete prepared and applied in the thickness indicated.

A. Vermiculite Concrete — Mix consists of 6 cu ft of Vermiculite Aggregate*, 94 lbs of Portland cement and 6 ox of air entraining agent. Thickness to be 2 in min from the top plane of steel roof deck. **ELASTIZELL CORP OF AMERICA** — Types MS16-U, MSV 200.

B. Perlite Concrete — Mix consists of 6.2 cu ft Perlite Aggregate* to 94 lbs of Portland cement and 1-1/2 pt air entraining agent. Compressive strength 80 psi min. See Perlite Aggregate (CFFX) category for names of Classified companies.

18. Wall and Partition Facings and Accessories — (Optional, Not Shown) Sound barrier for use with items 19 and 20: Acoustic Sleeper Pads stapled or adhered to the underside of the subflooring panels spaced 24 in. OC. STC ARCHITECTURAL PRODUCTS L L C DBA STC SOUND CONTROL — Acoustic Sleeper

19. Structural Cement Fiber Units* — (Optional, Not Shown) - (For use with item 18) - Min 3/4 in. thick tongue and groove non- combustible structural cement fiber board loosely laid over concrete. **ECTEK INTERNATIONAL INC** — Armoroc Panel

UNITED STATES GYPSUM CO — USG Structural Panel

EASI BUILDING PRODUCTS, INC. — Versaroc

20. Building Units* — (Optional, Not Shown) - (For use with item 18) - Panels loosely laid over concrete. **DRAGONBOARD USA L L C** — Type DragonBoard, DragonBoard Flooring **EXTREMEGREEN BUILDING PRODUCTS LLC** — Type 3/4 in. Shiplap Edge Extremegreen™ Board, 5/8

in. Tapered Edge Extremegreen™ Board, 1/2 in. Tapered Edge Extremegreen™ Board.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

included in the equation. If an equation is not provided in the particular UL design being referenced, the IBC equation with the appropriate material constants should be used. The values for the material related constants should be verified with the material supplier.

VI.8.9 Concrete-Filled HSS Columns. Concrete-filled Hollow Structural Sections (HSS) can effectively sustain load during a fire exposure without benefit of external protection. The concrete mass provides an increased capacity for absorbing the heat caused by the fire and thereby extends the duration for load resistance. Research conducted at the National Research Council of Canada provided a basis for establishing an empirical equation to predict the fire resistance of concrete-filled round and square HSS sections^{12,13,14}. The equation is presented in ASCE/SFPE 29-99¹⁵ as follows:

R =Fire Resistance Rating (hours) a =Shape and material parameter

> 0.07 - circular section with siliceous aggregate concrete fill 0.08 - circular section with carbonate aggregate concrete fill 0.06 - square or rectangular section with siliceous aggregate fill

0.07 - square or rectangular section with

carbonate aggregate concrete fill = 28 day concrete compressive strength (ksi) KL =Column effective length (ft) Outside diameter of circular HSS (in.) Outside dimension of square HSS (in.) Least outside dimension of rectangular HSS

= Column compressive force due to unfactored dead load and live load (kips)

The fire performance of a concrete-filled HSS column improves when heat absorption occurs as the moisture in the concrete is converted to steam. The heat absorbed during this phase change is significant, however the resulting steam must be released to prevent the adverse effects of an internal pressure build-up. Thus, vent holes need to be provided in the steel section. Two ½ in.(12.7 mm) diameter holes should be placed opposite each other at the top and bottom of the column. The bottom holes should be rotated 90° relative to the top holes.

The application of the formula is limited. Since it is based on actual column tests, the application must fit within the range of the parameters considered in the testing. The following restrictions are placed on the use of the equation:

resistance rating of 2 hours or less. 2. The 28 day compressive strength of the fill concrete

1. The calculation is limited to columns requiring a fire

must be between f_c '=2.9 ksi (20 MPa) and f_c '= 5.8 ksi

3. The column effective length must be between 6.5 ft

mm) and 16 in. (406 mm). Square and rectangular sections must have a D

4. Round sections must have a D between 5½ in. (140

between 51/2 in. (140 mm) and 12 in. (305 mm). 6. Compressive force C shall not exceed the design

strength of the concrete core at ambient temperatures

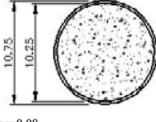
determined in accordance with the AISC LRFD

7. Vent holes must be provided at the top and bottom of the column section to relieve steam pressure.

Specification for Structural Steel Buildings.

VI.8.9.1 EXAMPLE VI-4

Determine the fire resistance rating of a round concretefilled HSS 10.75 x 0.25 having an effective length (KL) of 10 ft (3.05 m) subjected to an unfactored dead load of 45 kips (200 kN) and an unfactored live load of 35 kips (156 kN). Carbonate coarse aggregate is used in the concrete fill that has a 28 day compressive strength of 4,000 psi (27.6 MPa).



 $f_c' = 4,000 \text{ psi}$ KL = 10 ft D = 10.75 in. C = 45 + 35 = 80 kips

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TABLE 722.2.1.1 MINIMUM EQUIVALENT THICKNESS OF CAST-IN-PLACE OR PRECAST CONCRETE WALLS, LOAD-BEARING OR NONLOAD-BEARING

CONCRETE	MINIMU	IMUM SLAB THICKNESS (inches) FOR FIRE-RESISTANC RATING OF									
TYPE	1 hour	1 ¹ / ₂ hours	2 hours	3 hours	4 hours						
Siliceous	3.5	4.3	5.0	6.2	7.0						
Carbonate	3.2	4.0	4.6	5.7	6.6						
Sand- lightweight	2.7	3.3	3.8	4.6	5.4						
Lightweight	2.5	3.1	3.6	4.4	5.1						

For SI: 1 inch = 25.4 mm.

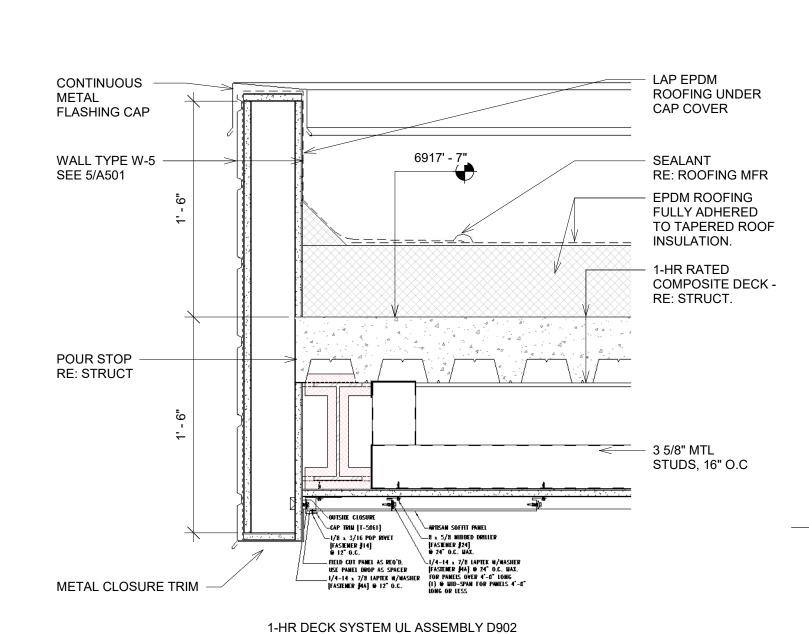
Table 1—Fire Resistance Rating Period of Concrete Masonry Assemblies (refs. 1, 2, 3)

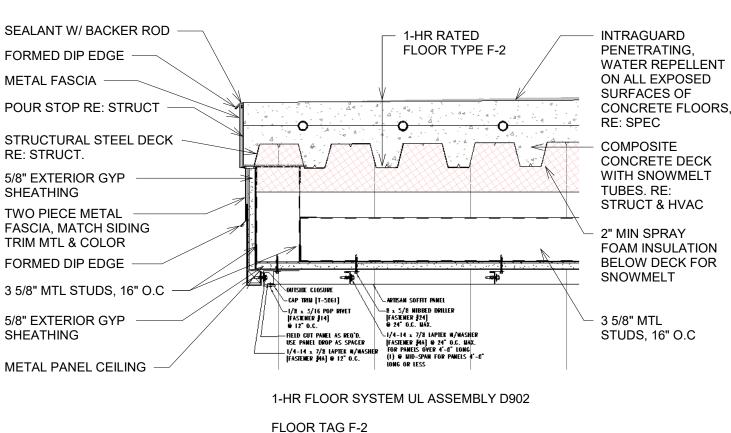
Aggregate type in the	Min	Minimum required equivalent thickness, in. (mm), for fire resistance rating, hours ^{A, B}												A, B	
concrete masonry unit ^C	4	33/4	31/2	31/4	3	23/4	21/2	21/4	2	13/4	11/2	11/4	1	3/4	1/2
Calcareous or siliceous gravel	6.2	6.0	5.8	5.5	5.3	5.0	4.8	4.5	4.2	3.9	3.6	3.2	2.8	2.4	2.0
Limestone, cinders or unexpanded slag	5.9	5.7	5.5	5.2	5.0	4.8	4.5	4.3	4.0	3.7	3.4	3.1	2.7	2.3	1.9
Expanded clay, shale, or slate	5.1	4.9	4.8	4.6	4.4	4.2	4.0	3.8	3.6	3.4	3.3	2.9	2.6	2.2	1.8
Expanded slag or pumice	4.7	4.5	4.4	4.2	4.0	3.8	3.6	3.4	3.2	3.0	2.7	2.5	2.1	1.9	1.5
A Fire registance rating between the b	Fire recistance entire hetween the hovely fire recistance entire periods listed may be determined by linear interpolation based on the equivalent														

ire resistance rating between the hourly fire resistance rating periods listed may be determined by linear interpolati thickness value of the concrete masonry unit. The requirements of ASTM C55, ASTM C73, ASTM C90 or ASTM C744 (refs. 13, 14, 6, 15) shall apply. Include equivalent thickness of finishes where applicable: see section "Effects of Finishes on Fire Resistance Ratings." Where combustible members are framed into the wall, the thickness of solid material between the end of each member and opposite wall face, or

between members set in from opposite sides, must be at least 93% of thickness shown. Minimum required equivalent thickness corresponding to the hourly fire resistance rating for units made with a combination of aggregates shall be determined by linear interpolation based on the percent by volume of each aggregate used in the manufacture.

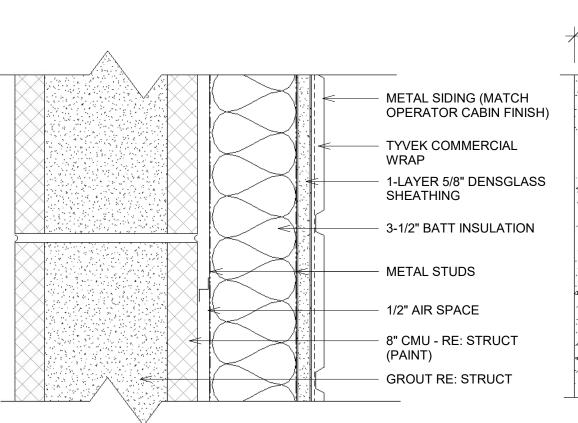
Ref: https://ncma.org/resource/fire-resistance-ratings-of-concrete-masonry-assemblies/



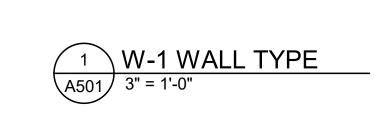


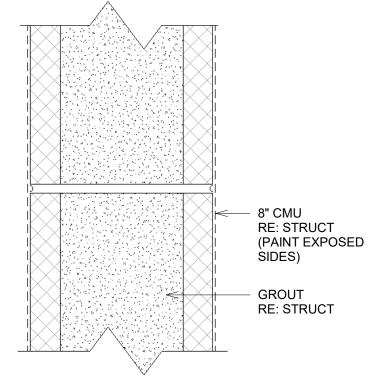
ROOF TAG R-1

SLAB EDGE / FASCIA DETAIL (F-2 & R-1)

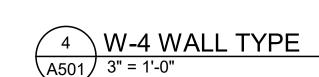


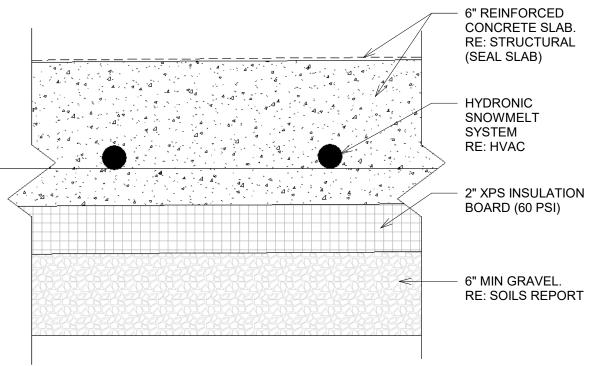
1-HOUR FIRE RATED ASSEMBLY BASED NCMA TABLE WALL TAG: W-1



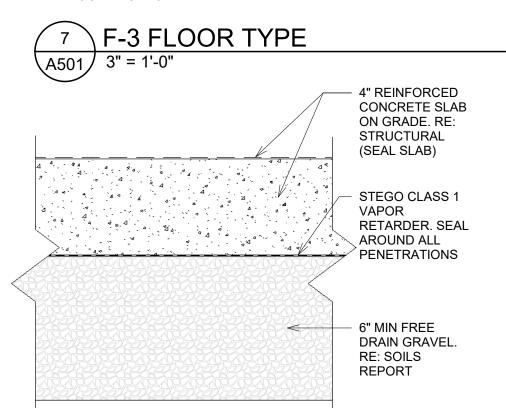


1-HOUR FIRE RATED ASSEMBLY BASED NCMA TABLE 1 WALL TAG: W-4



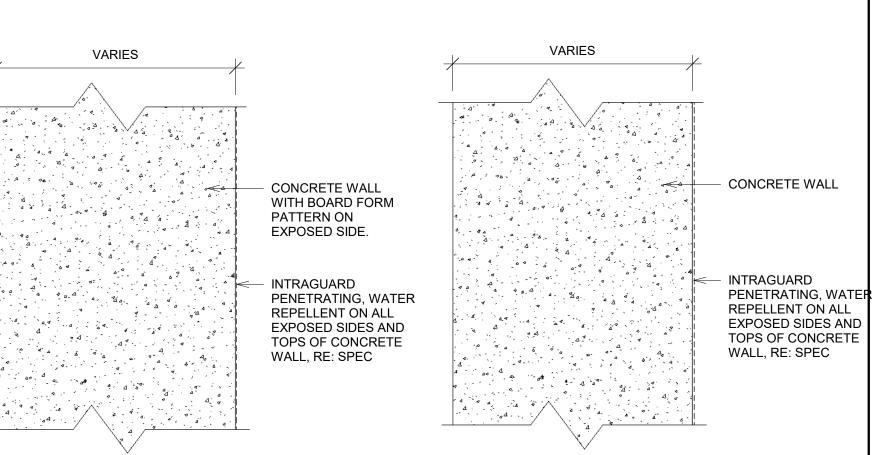


FLOOR TAG: F-3



FLOOR TAG: F-4





1-HR FIRE RATED ASSEMBLY PER IBC 2018 TABLE 722.2.1.1

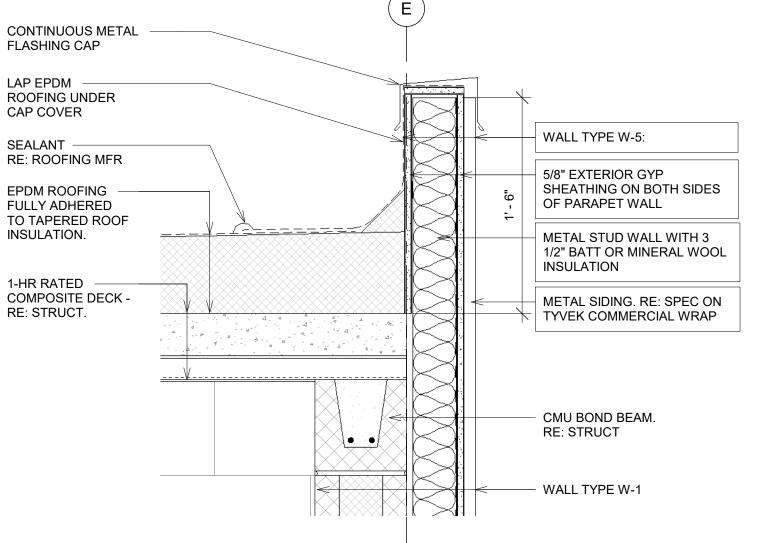
WALL TAG: W-2-10 = 10" CONCRETE WALL W-2-8 = 8" CONCRETE WALL

W-2 WALL TYPE

1-HR FIRE RATED ASSEMBLY PER IBC 2018 TABLE 722.2.1.1 WALL TAG:

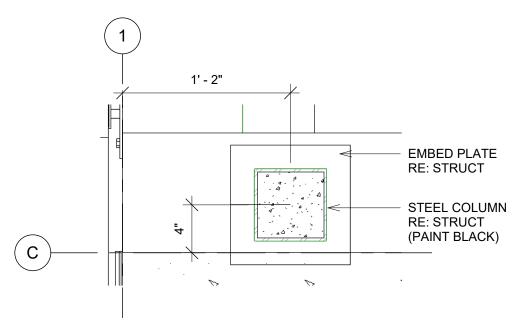
W-3-10 = 10" CONCRETE WALL W-3-8 = 8" CONCRETE WALL

W-3 WALL TYPE



WALL TYPE W-5 PARAPET WALL

PARAPET DETAIL - W-5 WALL TYPE 1 1/2" = 1'-0"



1-HR RATED CONCRETE FILLED STEEL COLUMN SEE SECTION VI.8.9 (THIS SHEET)

COLUMN DETAIL A501 / 1 1/2" = 1'-0"

> F-1 FLOOR TYPE **SEE A302**

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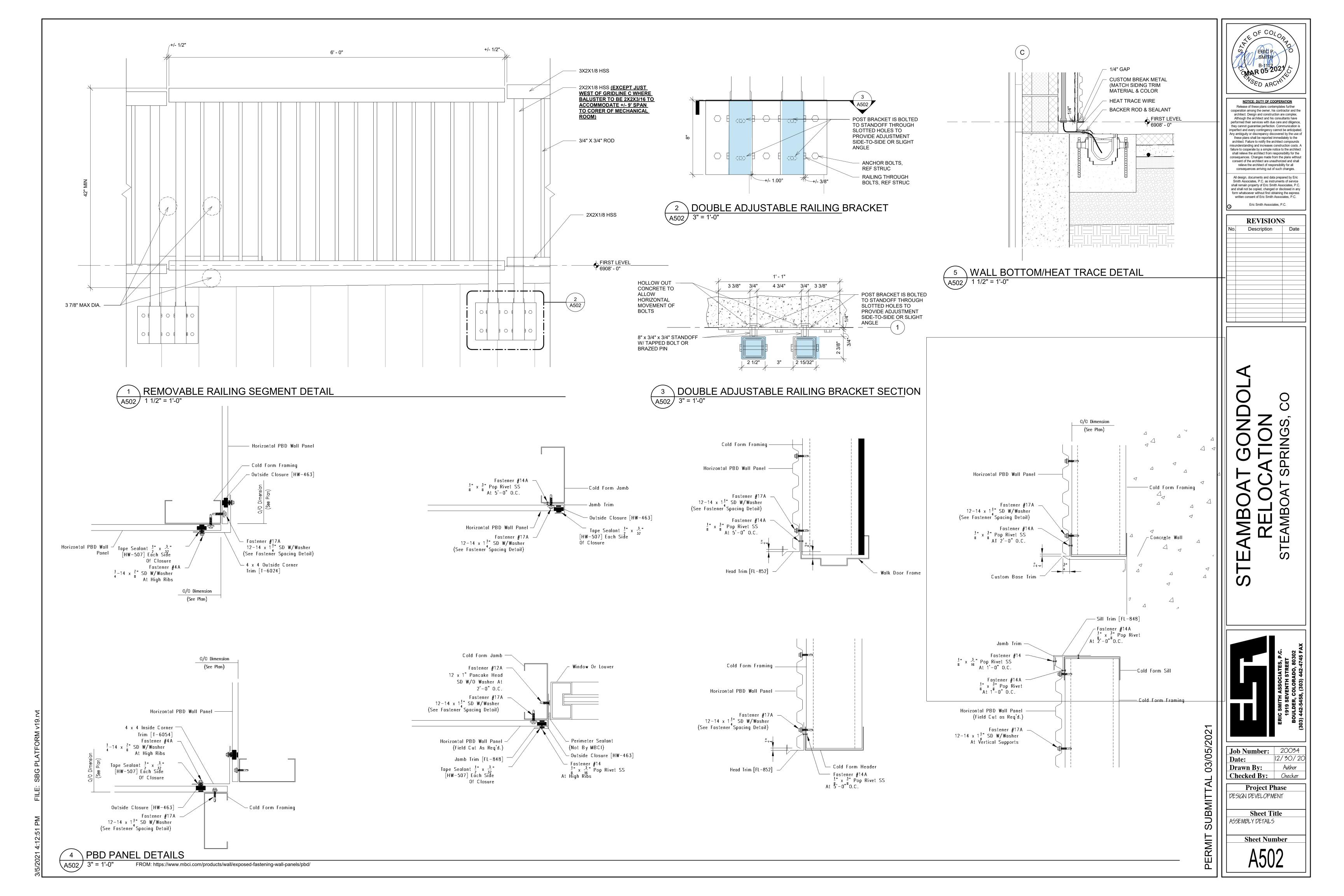
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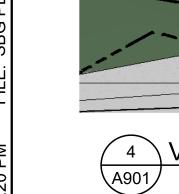
REVISIONS Description

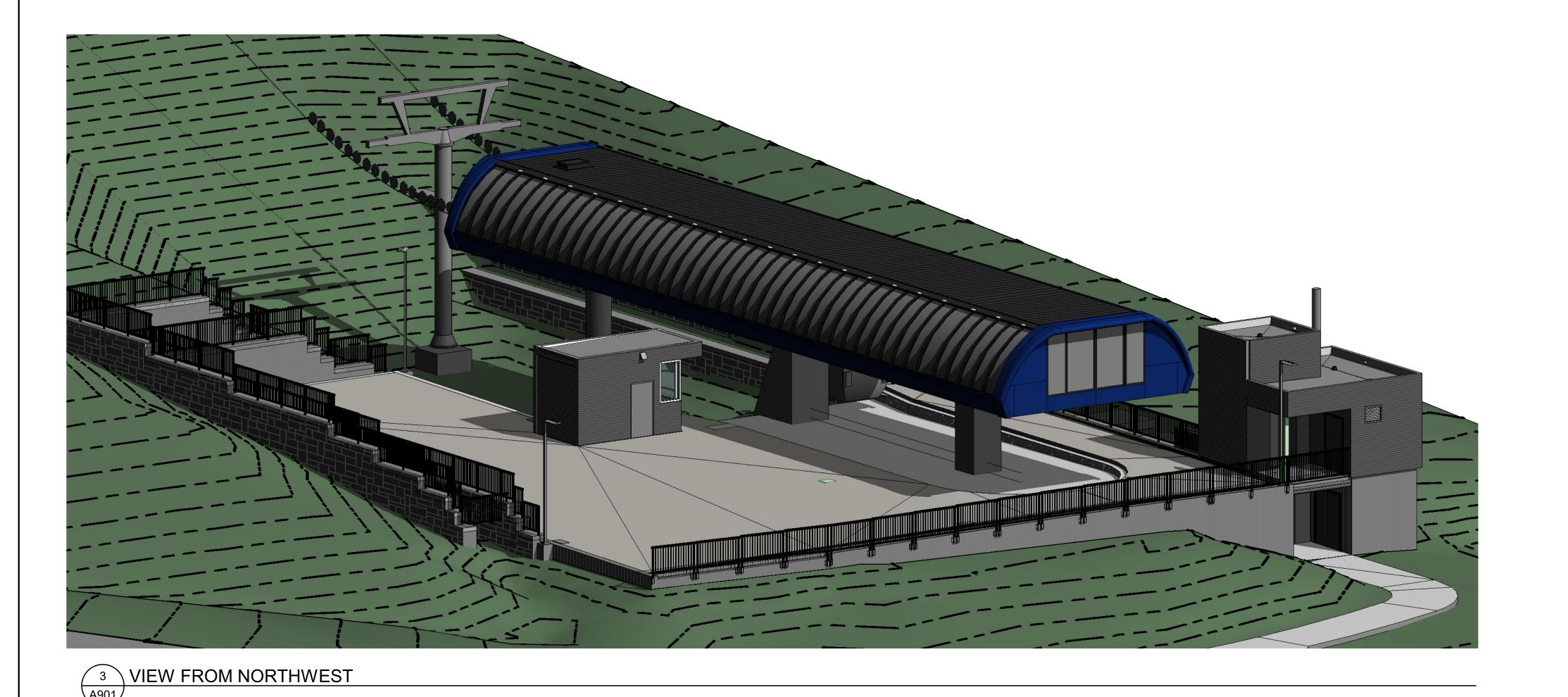
Job Number: 20034 12/30/20 Date: Author Drawn By: Checked By: Checker

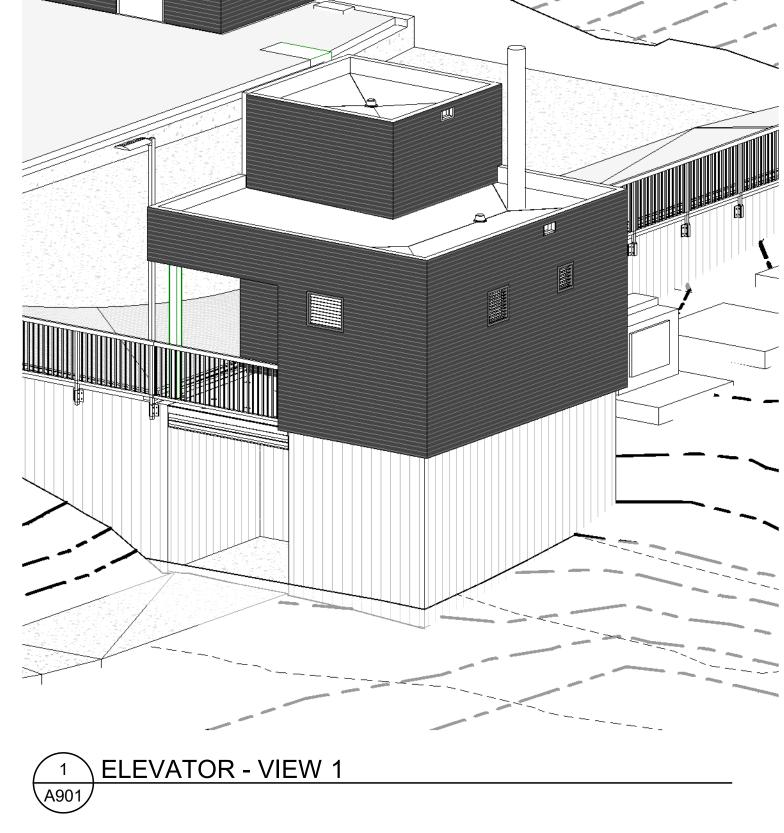
Project Phase DESIGN DEVELOPMENT

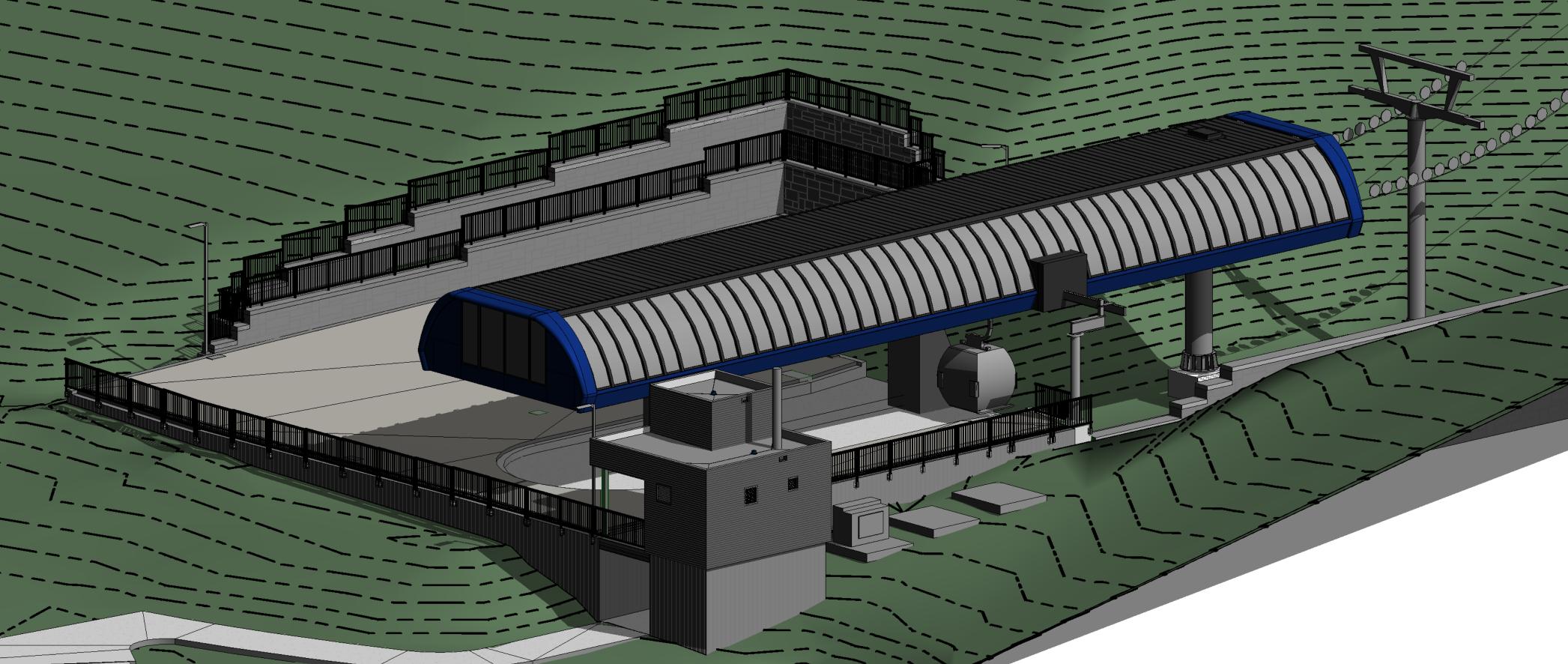
Sheet Title FIRE RATED ASSEMBLIES & WALLTYPES

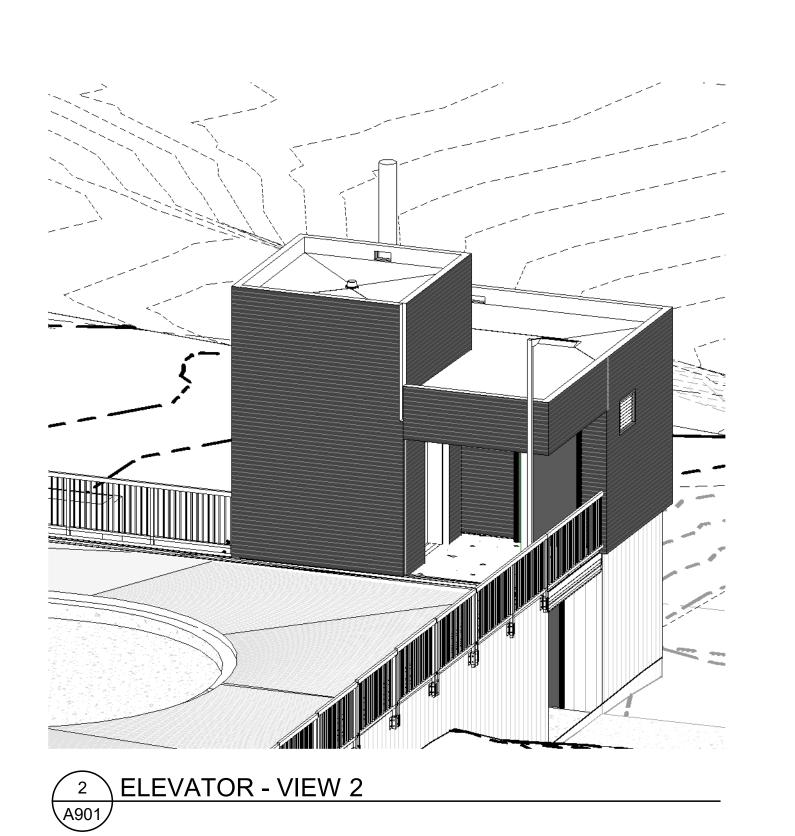












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REVISIONS Description

Project Phase
DESIGN DEVELOPMENT

4 VIEW FROM SOUTHWEST