APPROVED

2015 IBC REFERENCE

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION
305.1 EDUCATIONAL GROUP E:
THE ASSEMBLY FUNCTION IS ANCILLARY AND SUPPORTIVE TO THE EXISTING ADJACENT EDUCATIONAL FACILITY. THE STORAGE ROOM IS LESS THAN 10% OF THE BUILDING AREA, WHICH CAN BE CLASSIFIED AS GROUP E

CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS
PROPOSED BUILDING DESIGN: E OCCUPANCY | SPRINKLER | TYPE V-B

	CODE
ALLOWABLE HEIGHT (TABLE 504.3)	60'
ALLOWABLE STORY(TABLE 504.4)	2
ALLOWABLE AREA (TABLE 506.2)	28,500 SF
ALLOWABLE AREA (EQ 506.2.3)	83,063 SF (SEE BELOW CALC)

AREA CALCULATION PER 506.2.3 SINGLE-OCCUPANCY, MULTI STORY BUILDING
$A_a = [A_t + (NS * I_f)] * S_a$
A_t = 28,500 SF
NS = 9,500 SF
$I_f = [F/P - 0.25] * W / 30$
F= BLDG PERIMETER THAT FRONTS ON A PUBLIC WAY W/ MIN DI. OF 20' = 592'-8"
P = PERIMETER OF ENTIRE BLDG = 592'-8"
W = WIDTH OF PUBLIC WAY = [449'-8"X60'-0" (MAX) + 80'-0"*33'-3" + 63'-0"*45'-7"]/592'-8" = 31519.95/592.67 = 54.87
= [592'-8"/592'-8"-0.25] * 54.87/30 = 0.75*1.83
= 1.37
S_a = 2
= [28,500 SF + (9,500*1.37)]* 2
= 83,063 SF

	PROVIDED	GYM (E)	LOBBY (NEW)
HEIGHT	34'-0"	32'-0"	
STORY	1	1	
AREA	12,133 SF	3,146 SF	

*ALSO REFER "DOC-FUTURE PLAN" FOR OVERALL PLAN

CHAPTER 6: TYPES OF CONSTRUCTION
TABLE 601 FIRE-RESISTANCE RATING REQUIREMENT FOR TYPE V-B

PRIMARY STRUCTURAL FRAME	0 HR
BEARING WALLS (EXT & INT)	0 HR
FLOOR AND ASSOCIATED SECONDARY MEMBERS	0 HR
ROOF AND ASSOCIATED SECONDARY MEMBERS	0 HR

TABLE 602 FIRE-RESISTANCE RATING REQUIREMENT
X>=30 0 HR (PROVIDE >40' SEPARATION THROUGHOUT ALL PHASES)
602.5 TYPE V
TYPE V CONSTRUCTION IS THAT TYPE OF CONSTRUCTION IN WHICH THE STRUCTURAL ELEMENTS, EXTERIOR WALLS AND INTERIOR WALLS ARE OF ANY MATERIALS PERMITTED

CHAPTER 9: FIRE PROTECTION SYSTEMS
903.2.3 GROUP E
AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED

CHAPTER 10: MEANS OF EGRESS
THE ADDITION OF LOBBY SPACE IS INTERVENING SPACES OF THE GYMNASIUM. SEE A0.2 FOR OCCUPANT LOAD AND TRAVEL DISTANCE.
1004.3 POSTING OF OCCUPANT LOAD
EVERY ROOM OR SPACE THAT IS AN ASSEMBLY OCCUPANCY SHALL HAVE THE OCCUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE NEAR THE MAIN EXIT OR EXIT ACCESS DOORWAY FROM THE ROOM OR SPACE
1005.3.2 OTHER EGRESS COMPONENTS SIZING EXCEPTION 1
MULTIPLIED BY 0.15" PER OCCUPANT
1006.2.1 EGRESS BASED ON OCCUPANT LOAD AND COMMON PATH
TWO EXITS (ACCESS) SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN 1/2 OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE BUILDING OR AREA TO BE SERVED MEASURED IN A STRAIGHT LINE BETWEEN THEM
1006.2.1.1
FOUR EXITS OR EXIT ACCESS DOORWAYS SHALL BE PROVIDED W/ AN OCCUPANT LOAD GREATER THAN 1,000
1010.1.10 PANIC AND FIRE EXIT HARDWARE
DOORS SERVING ROOMS OR SPACES WITH AN OCCUPANT LOAD OF 50 OR MORE IN A GROUP E OCCUPANCY SHALL NOT BE PROVIDED WITH A LATCH OR LOCK OTHER THAN PANIC HARDWARE OR FIRE EXIT HARDWARE
EXCEPTIONS: DOORS SERVING A E OCCUPANCY SHALL BE PERMITTED TO BE ELECTROMAGNETICALLY LOCKED IN ACCORDANCE WITH SECTION 1010.1.9.9
1013.1 EXIT SIGNS REQUIREMENT
EXITS AND EXIT ACCESS DOORS SHALL BE MARKED BY AN APPROVED EXIT SIGN READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL. EXIT SIGN PLACEMENT SHALL BE SUCH THAT NO POINT IN AN EXIT ACCESS CORRIDOR OR EXIT PASSAGEWAY IS MORE THAN 100 FEET OR THE LISTED VIEWING DISTANCE FOR THE SIGN, WHICHEVER IS LEES FROM THE NEAREST VISIBLE EXIT SIGN
TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE:
A OCCUPANCY WITH SPRINKLER: 250'

SECTION 29 PLUMBING SYSTEMS
SEE BELOW FOR PLUMBING CALC

APPLICABLE CODE	OCCUPANCY	SQFT	OCC FOR PLUMB (SF/100)**	OCCUPANY LOAD			WC		LAV		Drinkler Founta
				TOTAL OCC LOAD	MALES (TOTAL/2)	FEMALE (TOTAL/2)	M REQ'D 1: 35	F REQ'D 1: 25	M REQ'D 1: 85	F REQ'D 1: 50	REQ'D 1:150 1 EVERY 500
2015 IBC****	E SCHOOL	15276 *	153	153	76.5	76.5	2	3	1	2	1
						TOTAL REQ'D	2	3	1	2	1
						PROVIDED	3+3***	9	4	4	2*****

* (E) GYM + (N) LOBBY AREA (12,133 SF + 3,146 SF)
** PER WASHINGTON AMENDMENT
*** MAX 25% OF REQ'D TOIET CAN BE URINAL
**** TABLE 2902.1, FOOTNOTE "e"
***** (1) EXISTING AT GYM, (1) NEW AT LOBBY

GENERAL NOTES

1. **CODE CONFLICTS**
ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH MOST CURRENT APPLICABLE CODE AND ORDINANCES OF PIERCE COUNTY
2. **DISCREPANCY**
IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT DISCREPANCIES FOUND WITHIN THESE DOCUMENTS TO THE ARCHITECT AS SOON AS THEY ARE DISCOVERED
3. **SCALING DRAWINGS**
DO NOT SCALE THE DRAWINGS. CONTACT ARCHITECT WITH ANY CONFLICTS
4. **DIMENSIONS**
DIMENSIONS ARE TO FACE OF STUD AND FACE OF CONC. U.N.O. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, EXISTING CONDITIONS, AND MEMBER SIZES PERTAINING TO THE WORK PRIOR TO PROCEEDING. ALL DIMENSIONS OF EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE ARCHITECT MUST BE NOTIFIED IN WRITING OF ANY VARIATION FROM THE DIMENSIONS AND/OR CONDITIONS SHOWN ON THESE DRAWINGS.
5. **DOORS AND WINDOWS**
ALL WINDOW AND DOOR SIZES SHALL BE VERIFIED AND FIELD MEASURED PRIOR TO FABRICATION
6. **EXISTING CONDITIONS**
THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AT THE SITE AND SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY UNCERTAINTIES OR DISCREPANCIES WITHIN THESES DOCUMENTS
CONTRACTOR SHALL PROTECT THE EXISTING SITE WORK, LANDSCAPING, AND AREAS OF THE SITE NOT IN THE SCOPE OF WORK
7. **DEMOLITION**
CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. PROTECT EXISTING STRUCTURE TO REMAIN
8. **HEALTH AND SAFETY**
CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY PRECAUTIONS AND THE MEANS AND METHODS TO PERFORM THE WORK.
CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS
9. **QUALITY STANDARDS**
ALL CONSTRUCTION SHALL MEET OR EXCEED INDUSTRY STANDARDS. DETAILS ARE PROVIDED FOR MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A DETAIL FOR GUIDANCE AND REVIEW FOR ACCEPTANCE.
CONTRACTOR SHALL PROVIDE BLOCKING AS REQUIRED FOR ALL CASEWORK, FIXTURE, AND SPECIALTY ITEMS.

CODE/ZONING INFORMATION

GOVERNING CODE
2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 UNIFORM PLUMBING CODE
2015 INTERNATIONAL FIRE CODE
2015 WASHINGTON STATE ENERGY CODE, COMMERCIAL
2013 NFPA STANDARD 72
2013 NFPA STANDARD 13, 13-D, AND 13-R
AND ANY CITY OF PUYALLUP ORDINANCE

ZONING
RS-08/RS-04
HEIGHT LIMIT: 35'

ENERGY COMPLIANCE
AIR BARRIER TESTING PER 2015 WSEC
- ALL JOINTS AND SEAMS SHALL BE SEALED, INCLUDING SEALING TRANSITIONS IN PLACES AND CHANGES IN MATERIAL.
- ALL PENETRATIONS OF THE AIR BARRIER SHALL BE CAULKED, GASKETED, OR OTHERWISE SEALED IN A MANNER COMPATIBLE WITH THE CONSTRUCTION MATERIALS AND LOCATIONS.
- RECESSED LIGHTING FIXTURES SHALL COMPLY WITH SECTION C402.5.8

PROJECT CLOSURE DOCUMENT
PROVIDE PROJECT CLOSE DOCUMENTATION INCLUDING WSEC ENVELOPE COMPLIANCE FORM AND CALCULATION AND FENESTRATION NFRC RATING CERTIFICATES

SYMBOLS LEGEND

ROOM IDENTIFICATION — ROOM NAME ###
DOOR NUMBER — XXX
WINDOW NUMBER — XX
EQUIPMENT NUMBER — XX
WALL TYPE — W1
CENTERLINE
NORTH ARROW
HOSE BIB
DATUM
REVISION — 1
SMOKE DETECTOR — S
SMOKE &CO DETECTOR — SCO
COLUMN GRID/LINE
ENLARGED DETAIL MARK — X / A#.##
BUILDING SECTION MARK — X / A#.#
DETAIL MARK — X / A#.##
EXTERIOR ELEVATIONS SYMBOL — X / A#.#
INTERIOR ELEVATION SYMBOL — N / W A#.# E / S

ABBREVIATIONS

&	AND	GWB	GYPSUM WALL BOARD
<	ANGLE	HDR	HEADER
@	AT	INT.	INTERIOR
°	DEGREE	MFR	MANUFACTURE
ø	DIAMETER	NTS	NOT TO SCALE
B/W	BETWEEN	O.C.	ON CENTER
BLCK	BLOCKING	RC	RAIN CHAIN
℄	CENTERLINE	PW, PLW	PLY WOOD
APP.	APPROXIMATE(LY)	REF	REFRIGERATOR
CLR.	CLEAR(ANCE)	SCHD	SCHDULE
C.O.	CLEAR OPENING	SHTG	SHEATHING
COL.	COLUMN	S.D.	SMOKE DETECTOR
CONC.	CONCRETE	TEM	TEMPER/SAFETY
C.J.	CONTROL JOINT		GLASS
DEMO	DEMOLISH (ION)	T.O.BM	TOP OF BEAM
DN	DOWN	T.O.P.	TOP OF PLATE
DIM	DIMENSION	T.O.S.	TOP OF STEEL
D/W	DISH WASHER	TYP.	TYPICAL
ELEC.	ELECTRIC (AL)	U.N.O.	UNLESS NOTICED OTHERWISE
E.Q.	EQUAL		
E.J.	EXPANSION JOINT	VIF	VERIFY IN FIELD
EXT.	EXTERIOR	WIN	WINDOW
F.O.F.	FACE OF FINISH	W.T.	WEATHER THRESHOLD
F.F.	FINISH FLOOR	W/	WITH
FT	FOOT (FEET)	W/O	WITHOUT
FTG	FOOTING	WD	WOOD
FND	FOUNDATION		

LIST OF DRAWINGS

PROJECT INFORMATION

PROJECT NAME
CASCADE CHRISTIAN JR HIGH SCHOOL | LOBBY ADDITION
PROJECT ADDRESS
815 21ST STREET SE
PUYALLUP, WA 98372
PROJECT DESCRIPTION
LOBBY ADDITION
TAX PARCEL NUMBER
0420352148
CORE-AND SHELL PERMIT
SITE CIVIL PERMIT# E-16-0150
OFF SITE CIVIL PERMIT # E-16-0261
DEFERRED PERMITS 3
SPRINKLER, FIRE ALARM, ELECTRICAL (L&I)
LEGAL DESCRIPTION
SEE SITE CIVIL PERMIT

PROJECT DIRECTORY

THE OWNER
CASCADE CHRISTIAN SCHOOLS
DON JOHNSON
815 21ST ST SE
PUYALLUP, WA 98372
253.841.1776

THE ARCHITECT
JEFF BROWN ARCHITECTURE
JEFF BROWN, ARCHITECT, AIA
1218 'C' STREET S.
TACOMA, WA 98444
253.606.8324
JEFF@JEFFBROWNARCHITECTURE.COM

STRUCTURAL ENGINEER
CHRIS FYNBOE, P.E.
CHRIS FYNBOE
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253.537.8128

CONTRACTOR
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BRET PORTER
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PUYALLUP, WA 98371
andrew.havranek@absherco.com
253.845.9544

MECHANICAL
AIR SYSTEMS ENGINEERING INC
DOUG CRAWFORD
3602 S PINE ST
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dougc@aseinet.com
253.572.9484

ELECTRIC
BOONE ELECTRIC
JEFF PLATT
11409 58TH AVE E
PUYALLUP, WA 98373
jeff_p@boonenw.com
253.820.3063

PLUMBING
TACOMA PLUMBING
TODD STAKSET
1817 112TH STREET EAST SUITE G
TACOMA, WA 98445
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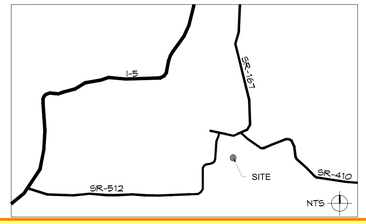
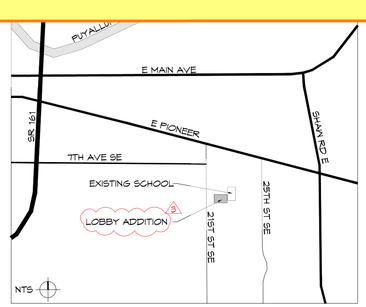
253.606.4392

FIRE-SPRINKLER
COLUMBIA FIRE
JOHN GOLDBERG
111 S. FINDLAY ST
SEATTLE, WA 98108
john@columbiafire.net
206.232.8569

VICINITY MAP





12-17-2021 JMREVISIONS TO B-20-0306

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3774 REGISTERED ARCHITECT JEFFREY E. BROWN STATE OF WASHINGTON

PROJECT NAME/ADDRESS

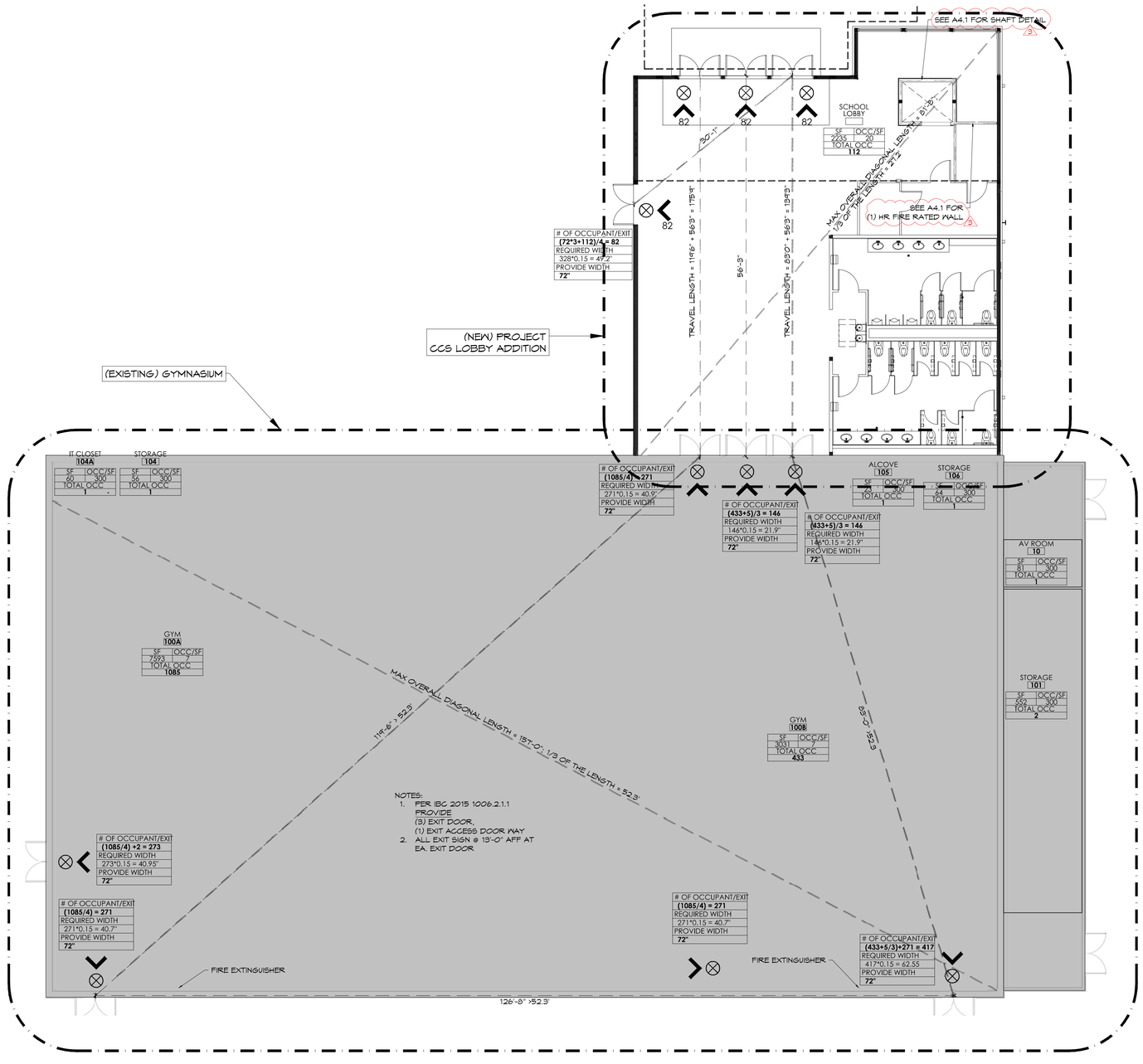
CASCADE CHRISTIAN JR. HIGH SCHOOL
LOBBY ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
11.24.20	REVISION	2
11.11.21	REVISION-CITY	

SHEET TITLE
PROJECT INFORMAITON

SHEET #
G0.1



EGRESS CODE STUDY

(11X17) SCALE: 1/16" = 1'-0"
(22X34) SCALE: 1/8" = 1'-0"

JEFF BROWN ARCHITECTURE
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JEFFREY E. BROWN
STATE OF WASHINGTON

PROJECT NAME/ADDRESS

CASCADE CHRISTIAN JR. HIGH SCHOOL
LOBBY ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
11.24.20	REVISION	2
11.11.21	REVISION-CITY	3

SHEET TITLE
CODE STUDY

SHEET #
G0.2

B-21-0959CITY OF PUYALLUP

DIVISION 1 – GENERAL REQUIREMENTS

00 10 00 SUMMARY OF WORK:

Phase II Lobby and restroom exterior and interior addition to existing Phase I Gymnasium

01 11 16 SUMMARIES OF WORK BY OTHERS:

Plumbing Design and Construction, Electrical Design and Construction

00 21 00 EXAMINATION OF SITE AND DOCUMENTS:

It is recommended that before submitting a bid proposal, each bidder should:

- Carefully examine drawings and specifications
- Visit the site of the work.
- Be fully informed of all existing conditions and ask requisite questions to the owner to understand the site and document requirements.
- Include a bid sum sufficient to cover all work described in the Contract Documents

01 21 19 INSPECTION TESTING ALLOWANCES:

All inspections required by the City or County building department and/or indicated on the Contract documents shall be arranged by the General Contractor.

01 31 00 COORDINATION:

The General Contractor shall coordinate (but not be limited to) demolition, excavation, foundations and a concrete slabs, framing, structure, interior and exterior finishes, mechanical, electrical, plumbing, fore protection, site and special inspections and work by others.

01 31 00 TEMPORARY CONSTRUCTION FACILITIES:

The General Contractor shall provide temporary sanitary facilities, fire protection and barrier protections. Sub-Contractors shall provide secure storage facilities.

01 56 36 SECURITY:

The General Contractors shall provide protection of construction work, stored materials, and property.

01 66 00 MATERIAL AND EQUIPMENT:

Store materials above grade and protect from moisture and physical damage per product and material manufacturer's recommendations. Coordinate with the owner for location of storage on the property.

01 70 00 CONTRACT CLOSEOUT:

Clean exposed surfaces, building equipment, mechanical ducts, et al after construction has been complete. Provide Auto-cad based as-built drawings, warranties, operation, and maintenance manuals and demonstrate the fire protection, mechanical and electrical operations to the Owner. Submits all lien releases and submit certificates of inspection and occupancy permits.

DIVISION 3 – CONCRETE

03 30 00 CASE-IN-PLACE CONCRETE:

Refer to structural construction notes and specifications.

DIVISION 4 – Masonry

01 21 00 CONCRETE UNIT VENEER MASONRY:

- Mutual Materials - 4 x 8 x 16, Ground face, Charcoal to match Gymnasium Base CMU material. Mortar (Portland Cement, Masonry Cement, Hydrated Lime, Mortar Aggregate, and Mineral Oxide Mortar Color Tinting Compounds) to be provided according to industry and manufacturer's standards.
- Masonry units shall be delivered to the jobsite on pallets or standard cube format. Store product in single stacks on level ground and cover with waterproof covering (e.g., tarpaulins) to protect the blocks from inclement weather. Handle blocks carefully to avoid breakage and damage to the surfaces.
- Protection of Work: Cover tops of walls each day after installation to keep open walls protected and dry.
- Use masonry cleaners such as Prosoco Masonry Cleaner. Follow manufacturer's instructions for proper mixing and application. Do not apply cleaner with pressure spray above 50 psi. CAUTION! Never use Muriatic Acid solution on units. Masonry cleaners are specified and to be used on architectural CMU only. No cleaners are needed on standard CMU. Rubbing & pointing of walls only, is required.
- Protect concrete masonry units and mortar from excessive moisture during installation.
- Do not install masonry units when the temperature drops below 40 degree and above 90 degrees.
- Install CMU plumb, true and level in a running bond coursing. Set units flush on the exposed side of the wall and allow variation in the unit width to run on the concealed face of the wall. Install CMU with 3/8" thick mortar joints.
- Install CMU plumb, true and level. Install CMU with 3/8" mortar joints.
- Lay blocks from more than one pallet at a time during installation. Lay units using the best concrete masonry practices. Lay blocks with the faces level,

plumb and true to the line strung horizontally at the face. Complete masonry construction using procedures and workmanship consistent with the best masonry practices.

- Cutting: Make all unit cuts, including those for bonding, holes, boxes, etc., with motor-driven masonry saws, using either an abrasive or diamond blade. Cut neatly and locate for best appearance.
- Mortar Bedding and Jointing: - Lay units with full mortar coverage on head and bed joints, taking care not to block cores to be grouted or filled with masonry insulation. - Tool all mortar joints -when thumbprint hard - into a concave configuration.
- Care should be taken to remove mortar from the face of masonry units before it sets.
- Tuckpoint the joints of scored units for proper appearance. All exterior scored units must be tuckpointed to prevent water penetration. DO NOT USE RAKE JOINTS – UNLESS NOTED.
- Cavity wall construction is recommended for exterior walls, with proper flashing, venting and weep holes. - Always test a small, inconspicuous area before using cleaners. Do not use acids or abrasives on finished surfaces.
- Install flashing at locations shown in the plans and in strict accordance with the details and the best masonry flashing practices.
- Install weep holes and vents at proper intervals (32" O.C. above bed joints, typical) at courses above grade, above flashing and at any water stops over windows, doors and beams.
- The textured or ground faces shall be free from chips, cracks or any other imperfection that would detract from the overall appearance of the finished wall when viewed from a distance of twenty (20) feet at right angles to the wall with normal lighting.
- Keep walls clean daily during installation using brushes. Do not allow excess mortar lumps or smears to harden on the finished surfaces. Harsh cleaning methods after walls have been erected may mar the surface of the blocks.
- Clean the completed walls with masonry cleaner, strictly following the manufacturer's instructions-- including thorough rinsing. Do not use acid or abrasives on the finished surfaces. Failure to strictly follow manufacturer's instructions can result in permanent damage to the block faces.
- Properly installed and cleaned architectural masonry units need virtually no maintenance other than routine cleaning with standard commercial grade cleaning agents.

DIVISION 5 – Metals

05 10 00 STRUCTURAL STEEL AND METAL STUDSL

Refer to structural notes and specifications

DIVISION 6 – Wood and Plastic

06 11 00 WOOD AND PLASTIC:

Refer to structural construction notes and specifications. Provide blocking for shear wall, fire blocking, casework, toilet partitions and toilet accessories, stair/ramp handrails, wall mounted fixtures and equipment and as otherwise required.

DIVISION 7 – THERMAL

07 21 10 EXTERIOR WALL INSULATION

- Reference Standards:
  - ASTM International (ASTM); ASTM C167 - [2009], Standard Test Method for Thickness and Density of Blanket or Batt Thermal Insulations;
  - ASTM C518 - [2010], Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. 8.
  - ASTM C665 - [2011], Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing:
  - ASTM E84 - [2012b], Standard Test Method for Surface Burning Characteristics of Building Materials ;ASTM E136 - [2011], Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C. B.
  - US Green Building Council (USGBC). 1. LEED v4-[2014], LEED (Leadership in Energy and Environmental Design): Green Building Rating System.
- Delivery, Storage and Handling
  - Delivery and Acceptance Requirements:
  - Deliver material in accordance with Section 01 61 00 - Common Product Requirements.
  - Deliver materials and accessories in insulation manufacture's original packaging with identification labels intact and in sizes to suit project.
  - Ensure insulation materials are not exposed to moisture during delivery.
  - Replace wet or camaged insulation materials.
- Storage and Handling Requirements:
  - Store materials off ground in dry location and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - Store in original packaging until installed.
- Packaging Waste Management:
  - ROCKWOOL™ Blanket (and Batt) Insulation Section 07 21 16 Master Guide Specification (COMFORTBATT®) Page 3 January 2018 1.

Separate and recycle waste packaging materials in accordance with Section 01 74 19 - Construction Waste Management and Disposal.
  - Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.
  - Collect and separate for disposal paper and plastic material in appropriate on-site storage containers for recycling [in accordance with Waste Management Plan].
- Manufacturer:
  - ROCKWOOL™, 4594 Cayce Road, Byhalia, MS 38611-7550, Phone: 905-873-8474, Toll Free: 1-800-265-6878, e-mail: contactus@rockwool.com, URL: www.rockwool.com.\
- Performance Criteria:
  - Batt Insulation for exterior stud walls:
    - To ASTM C665. Type 1. 1. Fire performance: a. Non-combustibility:
    - To ASTM E136. b. Surface Burning Characteristics:
    - To ASTM E84. 1) Flame spread: 0. 2) Smoke developed: 0. 2. Thermal resistance:
    - To ASTM C518. 3. Density: 2 lb/ft3 to ASTM C167. .4 Recycled content: [40] [16] % minimum.
- Materials:
  - Non-combustible, lightweight, semi-rigid mineral wool batt insulation to ASTM C665, Type 1.
    - Size: 16.25 x 48 inches.
    - Thickness: 5.5 inches. (169091)
    - R value/1 inch at 75 °F: 4.0 h ft2 °F/Btu.
    - Acceptable Material: ROCKWOOL COMFORTBAT®.
- Accessories:
  - Mechanical fasteners in accordance with insulation manufacturer's written recommendations.
- Installers:
  - Use only installers with [5] years minimum experience with work similar to work of this Section
- Examination:
  - Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for insulation installation in accordance with manufacturer's written recommendations.
  - Visually inspect substrate in presence of Consultant.
  - Ensure surfaces are free of snow, ice, frost, grease and other deleterious materials.
  - Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

  - Start of insulation installation indicates installer's acceptance of substrate installation conditions
- Cleaning:
  - Progress Cleaning: Perform cleanup as work progresses [in accordance with Section 01 74 00 - Clearing and Waste Management]. 1. Leave work area clean at end of each day.
  - Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment [in accordance with Section 01 74 00 – Cleaning and Waste Management].
  - Waste Management:
  - Co-ordinate recycling of waste materials with 01 74 19 - Construction Waste Management and Disposal.
  - Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section.
  - Remove recycling containers and bins from site and dispose of materials at appropriate facility.

07 22 10 SLAB INSULATION (CONCRETE SLAB AND WALLS)

- Standards, Codes Compliance:
  - Meets ASTM C578 Type VI (FOAMULAR® 400 XPS Insulation; UL Classification Certificate U-19712; Code Evaluation Report UL ER8811-0112; ASTM E119 Fire Resistance Rated Wall Assemblies 12
- Description:
  - Owens Corning "FORMLULAR" 400, 1" THICKNESS R-5, 2" THICKNESS R-10
- Technical Information:
  - FOAMULAR® XPS Insulation is a non-structural material and must be installed on framing which is independently braced and structurally adequate to meet required construction and service loading conditions.
  - FOAMULAR® XPS Insulation can be exposed to the exterior during normal construction cycles. During that time some fading of color may begin due to UV exposure, and, if exposed for extended periods of time, some degradation or "dusting" of the polystyrene surface may begin. It is best if the product is covered within 60 days to minimize degradation. Once covered, the deterioration stops, and damage is limited to the thin top surface layers of cells. Cells below are generally unharmed and still useful insulation.
  - FOAMULAR® Extruded Polystyrene Insulation has a maximum service temperature of 165°F. Taking simple precautions during construction can minimize the potential for heat related damage. Install only as much
  - FOAMULAR® XPS Insulation as can be covered in the same day. For horizontal applications, always turn the print side down so the black print does not show to the sun which may at times act as a solar collector,

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CASCADE CHRISTIAN JR. HIGH SCHOOL
LOBBY ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
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raising the temperature of the foam under the print to an unacceptable level. Provide a final finish covering or temporary white opaque covering to avoid possible damage when dark (nonwhite) surfaces are used over FOAMULAR® XPS Insulation. Do not cover FOAMULAR® XPS Insulation either stored (factory wrapped or unwrapped), or partially installed, with dark colored (non-white), or clear (non-opaque) coverings and leave it exposed to the sun. If improperly covered, and exposed to the right combination of sun, time and temperature, FOAMULAR® XPS Insulation deformation damage may occur rapidly. See Owens Corning publication number 10015704.

07 27 00 CONTINUOUS AIR AND VAPOR BARRIER

- Applicable Standards:
  - Model Building Codes: ICC National Building Code
  - Water Vapor Permeance: ASTM C665, section 7.4 Water-vapor Permeance
  - ASTM E96
- Fire Properties:
  - ASTM E84; Flame Spread < 25Smoke Develcped Index < 450
- Product:
  - CertainTeed 'MemBrain' Continuous Air barrier and Smart Vapor Retarder
- Limitations:
  - Do not use low permeance and interior finishes such as wall paper or vapor retarding paints with MemBrain.
- Installation in Wood Framing:
  - MemBrain may be installed as a continuous interior barrier in accordance with the manufacturers' recommendations for wood framing (30-28-137)

07 42 13 METAL WALL PANELS

- References:
  - ASCE 7: Minimum Design Loads for Buildings and Other Structures.
  - ASTM A653: Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
  - ASTM A792: Steel Sheet, 55 % Aluminum Zinc Alloy Coated by the Hot Dip Process.
  - ASTM C1371: Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
  - ASTM C1549: Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
  - ASTM D523: Specular Gloss.
  - ASTM E283: Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

  - ASTM E331: Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
  - ASTM E1592: Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
  - ASTM E1918: Measuring Solar Reflectance of Horizontal and Low Sloped Surfaces in the Field.
  - ASTM E1980: Calculating Solar Reflectance Index of Horizontal and Low Sloped Opaque Surfaces.
  - CRRC-1 Method #1: Measuring Solar Reflectance of a Flat, Opaque, and Heterogeneous Surface Using a Portable Solar Reflectometer.
  - SMACNA Architectural Sheet Metal Manual.
- Delivery and Storage
  - Storage and Handling Requirements:
    - Keep panels and accessory items dry.
    - Protect against damage and discoloration.
    - Handle panels with non-marring slings.
    - Support panels to prevent permanent deformation.
    - Store panels above ground, with one end elevated for drainage.
    - Protect panels against standing water and condensation between adjacent surfaces.
    - If panels become wet, immediately separate sheets, wipe dry with clean cloth, and keep sheets separate for air-crying.
    - Painted panels shall be shipped with protective plastic sheeting or a strippable film coating between panels. Remove strippable film coating prior to installation. Do not allow strippable film coating to remain on panels in extreme heat, cold, or direct sunlight or other UV source.
- Warranty
  - Manufacturer's Warranty: Manufacturer's standard 25-year performance warranty, stating the following:
  - Architectural fluorocarbon finish:
    - Will be free of fading or color change in excess of 5 Hunter delta-E units as determined by ASTM D2244-02.
    - Will not chalk in excess of numerical rating of 8 when measured in accordance with standard procedures specified in ASTM D4214-98 method D659.
    - Will not peel, crack, chip, or delaminae.
    - Metal substrate will not rupture, fail structurally, or perforate.
- Installer's Warranty:
  - Warrant panels, flashings, sealants, fasteners and accessories against defective materials and/or workmanship, covering repairs required to maintain wall panels watertight and weatherproof with normal usage for two years following Project Substantial Completion date.
  - Furnish written warranty, signed by installer.

- Product
  - AEP Span, a Division of ASC Profiles LLC.; Perception Collection®.
- Performance Criteria
  - Wind Uplift
    - Panel system shall be ASTM E1592 tested under the supervision of an ANSI or ISO/IEC accredited laboratory and the laboratory shall issue the test report. Test data based on ASTM E330 is not acceptable.
    - Deflection Limits: Withstand wind loads with deflections no greater than [1/180] of the span.
  - Air Infiltration: 0.01 cfm/lf, maximum at a static difference of 6.24 psf when tested with sidelap sealant per ASTM E283.
  - Water Penetration Under Static Pressure: No leakage at 20 psf when tested with sidelap sealant per ASTM E331.
  - Thermal Movements: Accommodate thermal movement without buckling, joint opening, failure of connections, or other detrimental effects, through the following temperature changes:
    - 120 degrees F, ambient.
    - 180 degrees F, surface.
- Panels
  - Panel: AEP Span, a Division of ASC Profiles LLC; Perception Collection®
  - Material: Steel conforming to ASTM A792.
  - 22 GA Yield strength 50,000 psi, with aluminum-zinc alloy coating conforming to ASTM A792, Class AZ50.
  - 20 Gauge: Yield strength 40,000 psi; with zinc coating conforming to ASTM A653, Class G 90.
  - Thickness and yield strength as required for performance indicated; with aluminum-zinc alloy coating conforming to ASTM A792, Class AZ50 or with zinc coating conforming to ASTM A653, Class G 90.
  - Perception Collection®, #PC40-12, 12" coverage, two 3-1/2" rib profile, 7/8" rib height

- Finishes
  - Exterior Panel Finish: Provide primer and finish coat on exposed faces; provide primer on concealed faces of panels.
  - Dura Tech™ 5000: Polyvinylidine Fluoride, full 70 percent Kynar 500/Hylar 5000, consisting of a baked-on 0.15-0.20 mil corrosion resistant primer and a baked-on 0.70-0.80 mil finish coat with a specular gloss of 8 to 15 when tested in accordance with ASTM D523 at 60 degrees.
- Accessories
  - Clip: Panel clip with pre-drilled holes attachment holes at one end and panel hook at other end, sized to fit panels.

  - Product: AEP Span; Perception Collection® [Flush Mount or ¼" Stand-Off] Clip.
    - Material: 18 gauge (.0438 Min.), 40ksi yield min., G90 galvanized, material in conformance with ASTM A-653 Class G90.
    - Panel clips to be of proper design to resist uplift forces and reduce permanent deflection of panel assembly under design loads. Panel system manufacturer to provide proof that this has been addressed through use of clip strengthening ribs, short clip reach, or similar.
  - Trims and Flashings: Material, metal thickness, and finish to match panels. Profiles indicated in Drawings.
  - Panel Penetration Flashings: As recommended by panel manufacturer.
- Fabrication:
  - Panels shall be factory correctively leveled.
  - Fabrication Tolerances:
    - Flat metal surfaces will display waviness commonly referred to as "oil canning". This is caused by steel mill tolerances and is a characteristic, not a defect, of panels manufactured from light gauge metal. Panels are factory correctively-leveled to minimize the occurrence of "oil canning". As such, "oil canning" will not be accepted as cause for rejection.
- Examination
  - Verification of Conditions: With Installer present.
    - Examine conditions and substrates on which metal panels are to be installed. Structural support or substrate shall be flat and plumb to avoid panel stresses and distortion.
    - **[Verify that [air][weather]barrier work is complete and inspected.]**
    - Prior to starting work, correct defects.
  - Field Measurements:
    - Coordinate field measurements and fabrication schedule with construction progress.
    - Field measure prior to fabrication. Show recorded dimensions on shop drawings, including locations of shop-fabricated openings.
    - If field measurements differ from drawing dimensions, notify Architect prior to fabrication.
- Tolerances:
  - Deviations from flat plane shall not exceed the following.
  - 1/4 inch in 20 feet vertically or horizontally 1/8 inch in 5 feet.
- Preparation
  - Protection:
    - Treat contacting surfaces of dissimilar materials to prevent electrolytic corrosion.

    - Where panels or trim may come in contact with dissimilar materials or treated lumber, fabricate transitions to facilitate drainage and minimize possibility of galvanic corrosion.
    - At points of contact with dissimilar metal or treated lumber, coat panel or trim with protective paint or separate materials with a weatherproof underlayment.
    - Direct contact or run-off from CCA, ACQ, AC, or other treated lumber (outdoor wood) or fire retardant impregnated or treated wood shakes or siding can cause panels and trim to fail prematurely. Avoid contact with these materials.
- Installation
  - Panels and Flashing:
    - Install according to approved shop drawings.
    - Comply with methods and recommendations of SMACNA Architectural Sheet
    - Metal Manual for flashing configurations required.
    - Overlap flashing at least 6 inches.
    - Discrepancies between job site conditions and shop drawings shall be brought to the attention of the Architect for resolution.
      - Cutting and Fitting:
      - Cut panels neat, square, and true with shearing action cutters. Torch or power saw cutting is prohibited.
      - Openings 6 inches and larger: Shop fabricate and reinforce to maintain original load capacity.
      - Openings less than 6 inches: Field cutting is acceptable.
- Accessories:
  - Install trims, panel closures, flashings according to Drawings and manufacturer's recommended details.
  - Sealant Installation: Apply according to approved shop drawings and SMACNA Architectural Sheet Metal Manual recommendations.

07 45 70 CEMENTITIOUS PANELS

- References
  - ASTM B136 - Standard Method for Measurement of Stain Resistance of Anodic Coatings on Aluminum.
  - ASTM B244 - Standard Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments.
  - ASTM C834 - Standard Specification for Latex Sealants.
  - ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
  - ASTM C1186 - Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.
  - ASTM D523 - Standard Test Method for Specular Gloss.
  - ASTM D1117 - Standard Guide for Evaluating Nonwoven Fabrics.

  - ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
  - ASTM D1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
  - ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
  - ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.
  - ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test.
  - ASTM D4585 - Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation.
  - ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - ASTM E96 - Test Methods for Water Vapor Transmission of Materials.
  - ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
  - ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.
  - ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure
  - AATCC127 - Water Resistance: Hydrostatic Pressure Test.
  - TAPPI – T460 - Air Resistance of Paper (Gurley Method).
- Quality Assurance
  - Mock-Up: Provide a mock-up for evaluation of surface preparation techniques
    - Finish areas designated by Architect.
    - Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
    - Refinish mock-up area as required to produce acceptable work.
- Delivery, Storage and Handling
  - Store products in manufacturer's unopened packaging until ready for installation.
  - Store siding flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
  - Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- Project Conditions
  - Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- Warranty

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- Manufacturer's Warranty: Provide Hardie HZ10 Reveal Panel Limited Product Warranty, with 30-year limited product warranty against manufacturing defects.
- Manufacturer
  - Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 231 South LaSalle Street Unit 2000, Chicago, IL 60606. ASD. Toll Free Tel: 866-274-3464; Tel: 312-705-6000; Email: request info (info@jameshardie.com); Web: http://www.jameshardiepros.com/Products/Hardie-Reveal-Panel-System
- Cement Cladding Panels
  - Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 231 South LaSalle Street Unit 2000, Chicago, IL 60606. ASD. Toll Free Tel: 866-274-3464; Tel: 312-705-6000; Email: request info (info@jameshardie.com); Web: http://www.jameshardiepros.com/Products/Hardie-Reveal-Panel-System
  - Manufacturer's Climate Zone Product: HZ5 for freezing wet climates with a green tint primer.
- Weather Barrier
  - Weather Barrier: James Hardie HardieWrap and HarcieWrap Flashing and Seam Tapes.
  - Code Compliance Requirement for Weather Barrier:
  - Thickness, 11 mil sheet.
  - Breathability in accordance with ASTM E96.
  - Tear strength in accordance with ASTM D1117.
  - Water resistance in accordance with AATCC127.
  - Air Penetration in accordance with TAPPI – T460.
  - HardieWrap Weather Barrier ICC-ES Evaluation Report ESR-2258
- Furring Strapping
  - Rainscreen Cavity: Install Hardie Reveal Panels on a drained and vented rainscreen cavity, with a minimum 3/4 inch (19mm) air cavity. Selection of cavity vent materials shall be incorporated into the design to prevent insect and pest entry.
- Accessories
  - Trims: Reveal™ Trims manufactured by Custom Aluminum of Elgin, IL in the following profiles supplied by James Hardie. Aluminum alloy 6063-T5 with a minimum thickness of 0.050 inch. All reveal trims are 8 feet in length.
    - Surround horizontal trim.
    - Surround vertical trim.
    - Surround horizontal end cut transition trim.
    - Surround outside corner trim.
    - Surround inside corner trim.
    - Surround J channel trim.
    - Surround drainage flashing.

- Recess horizontal trim.
- Recess vertical trim.
- Recess horizontal edge trim.
- Recess vertical F-trim.
- Recess outside corner trim.
- Recess drainage flashing.
- Finishes of Reveal Trims:
- Primed for field painting; coating tested to ASTM D3363, ASTM D3359, D2794, D4585, D523, and D1308.

- Fasteners
  - Fasteners: For attaching Hardie Reveal Panel direct to sheathing to a rain screen provide the following:
  - Wood Framing, Countersunk Screws: No 8 by 0.39 inch head diameter by 1-5/8 inch long
  - Fasteners shall be of high quality stainless steel to ensure resistance to corrosion. For field painting, fasteners shall be treated to accept paint adhesion.
    - Alternatives must be approved by the architect, e.g. decorative screws, nails, bugle head screws, and similar items.
- Finishes
  - Factory Primer: Provide factory applied universal primer.
  - Primer: Factory applied sealer/primer by James Hardie. Apply flat sheen finishes to panels.
  - Factory Finish for Trim:
    - Trim for Factory-Applied Coating and Field-Applied Finish: Chem Film.
- Examination
  - Do not begin installation until substrates have been properly prepared.
  - If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- Preparation
  - Clean surfaces thoroughly prior to installation.
  - Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
  - Ensure that drainage plane in intact and all penetrations are sealed.
- Installation
  - Wood Framing:
    - See architectural framing plans complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
    - Install water-resistive barriers and claddings to dry surfaces.
    - Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.

- Protect siding from other trades.
- Furring:
  - Install furring on a minimum 3/4 inch (19mm) rainscreen cavity, or in accordance with local building code for rainscreen requirements.
- Installation: Install materials in strict accordance with manufacturer's installation instructions.
  - Fastening Method: Countersunk and filled.
  - Place fasteners no closer than 3/4 inch (9.5 mm) from panel edges and 2 inches (51 mm) from panel corners.
  - Use fasteners as specified in the James Hardie Tech Data sheet and in the Hardie Reveal Panel Installation Instruction.
  - Install panel using 1/2 inch (13 mm) spacers at horizontal joints. Leave bottom edge of panel above all horizontal trims exposed, no caulking shall be placed at this overlap of Horizontal Reveal Trim. Factory primed edge shall always be used.
  - Install a kickout flashing to deflect water away from the siding at the roof intersection.
  - Install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then install the kickout.
  - Allow minimum vertical clearance between the bottom edge of siding and any other material in strict accordance with the manufacturer's installation instructions and as determined by James Hardie Zone.
  - Maintain clearance between siding and adjacent finished grade.
  - Specific framing and fastener requirements - refer to the applicable building code compliance reports.
- Finishing
  - Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic exterior flat grade paint with flat finish within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.
  - Field cut edges shall be coated during the installation process using an exterior grade primer/sealer that is compatible with the type of paint to used on project.
- Protection
  - Protect installed products until completion of project.
  - Touch-up, repair or replace damaged products before Substantial Completion.

07 54 00 THERMOPLASTIC SINGLE-PLY ROOF SYSTEM

- References:
  - American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards
    - ASTM D-751 – Standard Test Methods for Coated Fabrics

- ASTM D-2137 - Standard Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics
- ASTM E-96 - Standard Test Methods for Water Vapor Transmission of Materials
- ASTM D1204 - Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
- ASTM D-471 - Standard Test Method for Rubber Property—Effect of Liquids
- ASTM D-1149 - Standard Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment
- ASTM C-1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer
- ASTM C-1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers
- ASTM G155 - Standard Practice for Operating Xenon Arc Light Apparatus For Exposure Of Non-Metallic Materials
- ASTM D573 - Standard Test Method for Rubber - Deterioration In An Air Oven
  - Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual
  - National Roofing Contractors Association (NRCA)
  - American Society of Civil Engineers (ASCE)
  - Factory Mutual (FM Global) - Approval Guide
  - Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306)
- Submittals
  - Product Data: Provide product data sheets for each type of product indicated in this section.
  - Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
  - Samples: Provide samples of insulations, fasteners, membrane materials and accessories for verification of quality.
  - Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.
- Quality Assurance
  - Manufacturer's Qualifications: GAF shall provide a roofing system that meets or exceeds all criteria listed in this section.
  - Installer's Qualifications: Installer shall be classified as a **Master or Master Select™** contractor as defined and certified by GAF.

- Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.
- Final Inspection: Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed, and final punch list completed.
- Performance Requirements
  - Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
  - GAF shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.
- Delivery, Storage and Handling
  - Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry a GAF® label.
  - Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.
  - Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
  - Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.
  - Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.
- Project Conditions
  - Weather:
    - Proceed with roofing only when existing and forecasted weather conditions permit.
    - Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water-based adhesives.
- Warranty
  - Provide Manufacturers standard EverGuard® Diamond Pledge Guarantee with single source coverage and no monetary limitation where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.
    - Duration: Up to Twenty (20) years from the date of completion.
  - *Materials and workmanship of listed products within this section when installed in accordance with current GAF application and specification

requirements. Contact GAF Contractor Services for the full terms and conditions of the guarantee.

- Manufacturer
  - GAF® - 1 Campus Drive, Parsippany, NJ 07054
- Insulation
  - Rigid polyisocyanurate board: with a glass-reinforced cellulosic felt facer. Conforms to or exceeds the requirements of ASTM C 1289 Type II, Class 1, Grade 2. EnergyGuard™ Polyiso Insulation, with the following characteristics:
    - R-Value: R-38
    - Compressive Strength: 20 psi
  - Rigid polyisocyanurate cover board: with coated polymer-bonded glass fiber mat facers on both major surfaces of the core foam conforming to or exceeding the requirements of ASTM C 1289, Type 2, Class 4, Grade 1.
  - **EnergyGuard™ HD Polyiso Insulation**, with the following characteristics:
    - Board Thickness: ½" or 12.7mm
    - Minimum Compressive Strength: 80psi (551kPa)
    - Thermal Resistance (LTTR value) of: >2.5
- Membrane Material
  - A smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. UL Listed, FM Approved, Dade County Product Approval, Florida Building Code Approved. White membrane is Energy Star Listed, CRRC Listed and Title 24 Compliant. EverGuard® TPO 60 mil thermoplastic single-ply roofing membrane by GAF.
  - 10' X 100', each roll contains 1000 sq. ft. of roofing material weighing 322 lbs. Each half sheet roll contains approximately 500 sq. ft. of roofing material, 5' X 100', weighing 162 lbs. Color: Energy Grey
- Flashing Materials
  - A smooth type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. UL Listed, FM Approved, Dade County Product Approval, Florida Building Code Approved. White membrane is Energy Star Listed, CRRC Listed and Title 24 Compliant. **EverGuard® TPO 60 mil** thermoplastic single-ply roofing membrane by GAF.
- Insulation Adhesive
  - Insulation Adhesive: **Oly-Bond 500™** distributed by GAF®.
- Accessories
  - Mechanical Fasteners
    - Drill-Tec™ Standard Screws: Standard duty alloy steel insulation fastener with CR-10 coating with a .220" diameter thread. Factory

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Mutual Standard 4470 Approved, #3 Phillips head for use on steel and wood decks.
- Drill•Tec™ Insulation Plates: Galvalume, 3" (76 mm) diameter, suitable for use with Drill•Tec™ Standard and HD screws, and Drill•Tec™ Spikes. Special design available for use with Drill•Tec™ Polymer Screws.

- Flashing Accessories
  - A smooth type, unreinforced thermoplastic polyolefin based membrane for use as an alternative flashing/reinforcing material for penetrations and corners. Required whenever preformed vent boots cannot be used, available in White, Tan, Gray, Regal Red, Regal Blue, and Hartford Green, 0.055 inches (55 mils) nominal thickness and sheet size: 24in x 50ft. EverGuard TPO Detailing Membrane, by GAF.
  - An 8 inch (20 cm) wide smooth type, polyester scrim reinforced thermoplastic polyolefin membrane strip for use as a cover strip over coated metal and stripping-in coated metal flanges and general repairs: 0.045 inches (45 mils) nominal thickness with 100 foot length, available in White, Tan, Gray, Regal Red, Regal Blue, and Hartford Green EverGuard TPO Flashing Membrane, by GAF.
  - Extruded aluminum termination bar with angled lip caulk receiver and lower leg bulb stiffener. Pre-punched slotted holes at 6" on center or 8" on center. ¾" x 10' with 0.090" cross section, Drill-Tec™ Termination Bar, by GAF.
  - A 6 inch (14 cm) wide, smooth type, heat-weldable polyester scrim reinforced thermoplastic polyolefin membrane strip. Designed for use as a cover strip over non-coated metal edges and flanges. Each full roll contains approximately 100 Lineal Ft. of material, 6' X 100'. EverGuard TPO Heat-Weld Cover Tape, by GAF.
  - .045" reinforced TPO membrane with pressure sensitive adhesive, to be installed on horizontal surfaces using plates and fasteners as a base attachment in fully adhered systems. Size 6" x 100', EverGuard® RTA (Roof Transition Anchor) Strip™, by GAF
  - 24 gauge steel with 0.025" thick TPO based film as required for fabrication into metal gravel stop and drip edge profiles, metal base and curb flashings, sealant pans, and scupper sleeves. Standard sheet size 4' x 10', sheet weight 47 lbs. Custom sizes available, **EverGuard® TPO Coated Metal**, by GAF.
- Wall and Curb Accessories
  - 55 mil TPO membrane and 24 gauge coated metal prefabricated into standard and custom size thru wall scuppers. Available in two sizes: 4" x 6" x 12" (l x w x d) with a 5.75" x 3.75" opening and 8" x 10" x 12" (l x w x d) with a 9.75" x 7.75" opening, **EverGuard® TPO Scupper**, by GAF

- Installation General
  - Install GAF's EverGuard® TPO roofing system according to all current application requirements in addition to those listed in this section.
  - Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.
  - Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.
  - Do not install wet, damaged or warped insulation boards.
  - Install insulation boards with staggered board joints in one direction (unless taping joint).
  - Install insulation boards snug. Gaps between board joints must not exceed ¼" (6 mm). All gaps in excess of ¼" (6 mm) must be filled with like insulation material.
  - Wood nailers must be 3-1/2" (8.9 cm) minimum width or 1" (25 mm) wider than metal flange. They shall be of equal thickness as the insulation, and be treated for rot resistance. All nailers must be securely fastened to the deck.
  - Do not kick insulation boards into place.
  - Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
  - Insulation should not be installed over new lightweight insulating concrete.
  - Do not install any more insulation than will be completely waterproofed each day.
- Insulation – Base Layer
  - The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increased in corner areas for FM 1-60 as well as perimeter and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.
  - Use only fasteners with a minimum 3 inch (7.6 cm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
- Insulation Sub-layers
  - The substrate must be free of and debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
  - OlyBond 500 must be applied using the specially designed PaceCart dispenser. OlyBond 500 SpotShot shall be applied using one of the

specially designed dual cartridge dispensers. OlyBond 500 Equipment Free Canister System dispenses with 25' hose and gun assembly included with product.
  - Install insulation layers applied with bands of OlyBond 500 spaced 12" O.C. Approximate coverage rate is ½ to 1 gallon per 100 square feet, depending on the substrate. Allow the foam to rise ¾" to 1". Walk each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (15.2 cm) to eliminate continuous vertical gaps.
  - Do not install any more insulation than will be completely waterproofed each day.
- Membrane Application
  - Adhered:
    - Place membrane so that wrinkles and buckles are not formed. Any wrinkles or buckles must be removed from the sheet prior to permanent attachment. Roof membrane shall be fully adhered immediately after it is rolled out, followed by welding to adjacent sheets.
    - Overlap roof membrane a minimum of 3" (15 cm) for side laps and 3" (15 cm) for end laps.
    - Install membrane so that the side laps run across the roof slope lapped towards drainage points.
    - All exposed sheet corners shall be rounded a minimum of 1".
    - Use full width rolls in the field and perimeter region of roof.
    - Use appropriate bonding adhesive for substrate surface, applied with a solvent-resistant roller, brush or squeegee.
    - Apply bonding adhesive at 3 squares of finished, mated surface area per 5 gallons. A greater quantity of bonding adhesive may be required based upon the substrate surface condition.
    - Prevent seam contamination by keeping the adhesive application a few inches back from the seam area.
    - Adhere approximately one half of the membrane sheet at a time. One half of the sheet's length shall be folded back in turn to allow for adhesive application. Lay membrane into adhesive once the bonding adhesive is tacky to the touch.
    - Roll membrane with a weighted roller to ensure complete bonding between adhesive and membrane.
    - Membrane laps shall be heat-welded together. All welds shall be continuous, without voids or partial welds. Welds shall be free of burns and scorch marks.
    - Weld shall be a minimum of 1-1/2" in width for automatic machine welding and a minimum 2" in width for hand welding.
    - All cut edges of reinforced membrane must be sealed with EverGuard TPO Cut Edge Sealant.

  - .045" thick reinforced TPO membrane fabricated corners. Available in four standard sizes to flash curbs. Four corners are required to flash the curb, **EverGuard® Corner Curb Wraps**, by GAF.
  - 0.045" thick molded TPO membrane outside corners of base and curb flashing. Hot-air welds directly to EverGuard TPO membrane. Size 4" x 4" with 6" flange, **EverGuard® TPO Universal Corners** by GAF.
  - 0.055" molded TPO membrane inside corners of base and curb flashing. Hot-air welds directly to EverGuard TPO membrane. Size 6" x 6" x 5.5" high **EverGuard® TPO Preformed Corners** by GAF.
  - 8" diameter, nominal .050" vacuum formed unreinforced TPO membrane for use in flashing outside corners of base and curb flashings, **EverGuard® TPO Fluted Corner**, by GAF.
- Penetration Accessories
  - 0.075" thick molded TPO membrane sized to accommodate most common pipe and conduits, (1" to 6" diameter pipes), including square tube. Hot-air welded directly to EverGuard TPO membrane, supplied with stainless steel clamping rings, **EverGuard® TPO Preformed Vent Boots** by GAF.
  - 0.045" thick molded TPO membrane preformed boots are split to accommodate most common pipes and conduits and available in three standard sizes, **EverGuard® TPO Split Pipe Boots**, by GAF.
  - 0.045" thick molded TPO membrane preformed square boots are split to accommodate most common square penetrations and conduits and available in three standard sizes, **EverGuard® TPO Square Tube Wraps**, by GAF.
  - .070 thick molded penetration pocket to provide structure and foundation for the application of a pourable sealant for a variety of roof penetrations, weldable and 9" x 6" x 4" (l x w x h). **EverGuard® TPO Pourable Sealer Pocket**
  - Constructed from spun aluminum and preflashed using .055" thick smooth type, unreinforced thermoplastic polyolefin membrane. Available in a wide range of sizes to allow a proper fit into any size roofing drain. **EverGuard® TPO Drain** by GAF
  - Aluminum drain unit coated with a weldable TPO compound. TPO membrane can be heat welded directly to the drain body, resulting in a strong, secure installation. Each drain is fitted with a BlueSeal® mechanical drain seal for a secure, tight seal into the building drain system. Available in two sizes (3" and 4"), and custom sizes are available. **EverGuard® TPO Coated Metal Drain** by GAF®
- Roof Edge Accessories
  - Coping system with pre-punched holes and snap-on design. Contains a metal clip that functions as a gutter to help channel water back onto the roof. Available for wall sizes 4" to 32" (102 mm – 813 mm). **M-Weld™ Snap-On Coping** (contains 20 gauge clip) or **M-Weld™ Snap-On Coping Plus** (contains 16 gauge clip) by GAF®
  - Three piece fascia system with continuous galvanized steel spring cant, exterior decorative snap-on fascia and available in 10 foot lengths in standard or custom colors, **EverGuard® Snap-on Fascia** by GAF®.
  -
  - Two piece fascia system with rigid terminator base plate and exterior decorative fascia cover available in 10 foot lengths in standard or custom colors for use with 45 mil and 60 mil only, **EverGuard® EZ Fascia** by GAF®.
  - Two piece fascia system with rigid extruded terminator base plate and exterior decorative snap-on fascia cover available in 10 foot lengths in standard or custom colors, **EverGuard® EZ Fascia EX** by GAF®.
    - Standard Colors: Statuary Bronze Mission Red Forest Green Slate Blue Concord Cream Black Patina Green Mint Green Redwood Dove Gray Rocky Gray Bone White Siam Blue Rawhide Regal Blue Hartford Green Medium Bronze Chocolate Brown Turquoise Boysenberry Sandstone Ascot White Shale Gray Sierra Tan
- Examination
  - Verify that the surfaces and site conditions are ready to receive work.
  - Verify that the deck is supported and secured.
  - Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
  - Verify that the deck surfaces are dry and free of ice or snow.
  - Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.
- Substrate Preparation
  - Plywood Deck
    - Plywood sheathing must be exterior grade, minimum 4 ply, and not less than 15/32" thick.
    - Preservatives or fire retardants used to treat the decking must be compatible with roofing materials.
    - The deck must be installed over joists that are spaced 24" (61 cm) o.c. or less.
    - The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking. "H" clips are not acceptable.
    - Panels must be installed with a 1/8" to 1/4" (3mm – 6mm) gap between panels and must match vertically at joints to within 1/8" (3mm).
    - Decking should be kept dry and roofed promptly after installation.
    - Code standards apply when their requirements exceed those listed here.

    - Supplemental membrane attachment is required at the base of all walls and curbs, and where the angle of the substrate changes by more than five (5) degrees (1" in 12"). Roofing membrane shall be secured to the structural deck with appropriate Drill-Tec screws and plates spaced every 12" o.c. The screws and plates must be installed no less than ½" from the membrane edge. Alternatively, the roofing membrane may be turned up the vertical plane a minimum of 3" and secured with screws and termination bar. Fastener spacing is the same as is used for in-lap attachment. The termination bar must be installed within 1-1/2" to 2" of the plane of the roof membrane, with a minimum of 1" of membrane extending above the termination bar.
    - Supplemental membrane attachment to the structural deck is required at all penetrations unless the insulation substrate is fully adhered to the deck. Roofing membrane shall be secured to the deck with appropriate Drill-Tec screws and plates.
    - Fasteners must be installed to achieve the proper embedment depth. Install fasteners without lean or tilt.
    - Install fasteners so that the plate or termination bar is drawn down tightly to the membrane surface. Properly installed fasteners will not allow the plate or termination bar to move (underdriving), but will not cause wrinkling of the membrane (overdriving).
- Flashings
  - General:
    - All penetrations must be at least 24" (61 cm) from curbs, walls, and edges to provide adequate space for proper flashing.
    - Flash all perimeter, curb, and penetration conditions with coated metal, membrane flashing, and flashing accessories as appropriate to the site condition.
    - All coated metal and membrane flashing corners shall be reinforced with preformed corners or non-reinforced membrane.
    - Hot-air weld all flashing membranes, accessories, and coated metal. A minimum 2" wide (hand welder) weld or minimum 1 - 1/2" automatic machine weld is required.
    - All cut edges of reinforced membrane must be sealed with EverGuard TPO Cut Edge Sealant.
    - Consult the EverGuard® Application and Specifications Manual or GAF Contractor Services for more information on specific construction details, or those not addressed in this section.
- Coated Metal Flashings:
  - Coated metal flashings shall be formed in accordance with current EverGuard construction details and SMACNA guidelines.
  - Coated metal sections used for roof edging, base flashing and coping shall be butted together with a ¼" gap to allow for expansion and contraction. Hot-air weld a 6" wide reinforced membrane flashing strip to

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PROJECT NUMBER
20004

DRAWING TYPE
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both sides of the joint, with approximately 1" on either side of the joint left un-welded to allow for expansion and contraction. 2" wide aluminum tape can be installed over the joint as a bond-breaker, to prevent welding in this area.
- Coated metal used for sealant pans, scupper inserts, corners of roof edging, base flashing and coping shall be overlapped or provided with separate metal pieces to create a continuous flange condition, and pop-riveted securely. Hot-air weld a 6" wide reinforced membrane flashing strip over all seams that will not be sealed during subsequent flashing installation.
- Provide a ½" hem for all exposed metal edges to provide corrosion protection and edge reinforcement for improved durability.
- Provide a ½" hem for all metal flange edges whenever possible to prevent wearing of the roofing and flashing membranes at the flange edge.
- Coated metal flashings shall be nailed to treated wood nailers or otherwise mechanically attached to the roof deck, wall or curb substrates, in accordance with construction detail requirements.

- Reinforced Membrane Flashings:
  - The thickness of the flashing membrane shall be the same as the thickness of the roofing membrane.
  - Membrane flashing may either be installed loose or fully adhered to the substrate surface in accordance with "Construction Detail Requirements".
  - Where flashings are to be fully adhered, apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.
  - Apply the adhesive only when outside temperature is above 40°F. Recommended minimum application temperature is 50°F to allow for easier adhesive application.
  - The membrane flashing shall be carefully positioned prior to application to avoid wrinkles and buckles.
- Un-reinforced Membrane Flashings:
  - Un-reinforced membrane is used to field-fabricate penetration or reinforcement flashings in locations where preformed corners and pipe boots cannot be properly installed.
  - Penetration flashings constructed of un-reinforced membrane are typically installed in two sections, a horizontal piece that extends onto the roofing

membrane and a vertical piece that extends up the penetration. The two pieces are overlapped and hot-air welded together.
  - The un-reinforced membrane flashing shall be adhered to the penetration surface. Apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.
- Roof Edges:
  - Roof edge flashings are applicable for gravel stop and drip edge conditions as well as for exterior edges of parapet walls.
  - Flash roof edges with metal flanges nailed 4" O.C. to pressure-treated wood nailers. Where required, hot-air weld roof membrane to coated metal flanges.
  - When the fascia width exceeds 4", coated metal roof edging must be attached with a continuous cleat to secure the lower fascia edge. The cleat must be secured to the building no less than 12" O.C.
  - Alternatively, roof edges may be flashed with a 2-piece snap on fascia system, adhering the roof membrane to a metal cant and face nailing the membrane 8" on center prior to installing a snap-on fascia.
  - Flash roof edge scuppers with a coated metal insert that is mechanically attached to the roof edge and integrated as a part of the metal edging.
- Parapet and Building Walls:
  - Flash walls with EverGuard TPO membrane adhered to the substrate with bonding adhesive, loose applied (Less than 24" in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.
  - Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the wall surface and membrane flashing underneath all exposed termination bars. Exposed termination bars shall be mechanically fastened 8" on center; termination bars that are counter flashed shall be fastened 12" on center.
  - Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:
    - Adhered Systems 12" on center
  - All coated metal wall flashings and loose applied membrane flashings must be provided with separate metal counterflashing, or metal copings.

  - Metal counterflashing may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with FlexSeal® roofing cement or FlexSeal® caulk grade.
  - Flash wall scuppers with a coated metal insert that is mechanically attached to the wall and integrated as part of the wall flashing.
- Curbs and Ducts:
  - Flash curbs and ducts with EverGuard TPO membrane adhered to the curb substrate with bonding adhesive, loose applied (Less than 18" in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.
  - Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the curb/duct surface and membrane flashing underneath all termination bars. Exposed termination bars shall be mechanically fastened every 8"o.c.; termination bars that are counter flashed shall be fastened 12" on center.
  - Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:
    - Adhered Systems 12" on center
  - All coated metal curb flashings and loose applied membrane flashings must be provided with separate metal counterflashing, or metal copings.
  - Metal counterflashing may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with FlexSeal® roofing cement or FlexSeal® caulk grade.
- Roof Drains:
  - Roof drains must be fitted with compression type clamping rings and strainer baskets. Original-type cast iron and aluminum drains, as well as retrofit-type cast iron, aluminum or molded plastic drains are acceptable.
  - Roof drains must be provided with a minimum 36" x 36" sump. Slope of tapered insulation within the sump shall not exceed 4" in 12".
  - Extend the roofing membrane over the drain opening. Locate the drain and cut a hole in the roofing membrane directly over the drain opening. Provide a ½" of membrane flap extending past the drain flange into the drain opening. Punch holes through the roofing membrane at drain bolt locations.
  - Lap seams shall not be located within the sump area. Where lap seams will be located within the sump area, a separate roof membrane drain flashing a minimum of 12" larger than the sump area must be installed. The roof membrane shall be mechanically attached 12" on center around the drain with screws and plates. The separate roof drain flashing shall be heat welded to the roof membrane beyond the screws and plates, extended over the drain flange, and secured as above.
  - Tighten the drain compression ring in place.
- Traffic Protection

  - Install walkway rolls at all roof access locations and other designated locations including roof-mounted equipment work locations and areas of repeated rooftop traffic.
  - Walkway pads must be spaced 2" apart to allow for drainage between the pads.
  - Heat-weld walkway rolls to the roof membrane surface continuously around the perimeter of the roll.
  - Walkway rolls may be installed with TPO primer and 3" seam tape.
    - Roll or brush the TPO primer on the back of the TPO pad along the edges and down the middle length of the pad.
    - Clean and prime the roof membrane where the pad will be installed.
    - Install tape to the back of the cleaned area of the pad and roll in with a silicone hand roller.
    - Remove release paper and install the tapes pads directly onto the roof membrane. Roll pads to secure in place
- Roof Protection
  - Protect all partially and fully completed roofing work from other trades until completion.
  - Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
  - When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
  - Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.
- Clean-up
  - All work areas are to be kept clean, clear and free of debris at all times.
  - Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
  - All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
  - Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
  - Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
  - Clean and restore all damaged surfaces to their original condition.

07 62 00 FLASHING AND SHEET METAL

- Description
  - Formed sheet metal work for wall and roof flashing, copings, roof edge metal, fasciae, drainage specialties, and formed expansion joint covers are specified in this section.

- Wind Design Standard:
  - Fabricate and install copings, roof-edge flashings, tested per ANSI/SPRI/FM ES-1 to resist design pressure required by the IBC.
- Submittals
  - Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- Flashing and Sheet Metal Materials
  - 24 gauge pre-finished sheet metal formed into details indicated throughout the construction documents.
- Installation
  - Install flashing and sheet metal items as shown in Sheet Metal and Air Conditioning Contractors National Association, Inc., publication, ARCHITECTURAL SHEET METAL MANUAL, except as otherwise shown or specified.
  - Apply sheet metal and other flashing material to surfaces which are smooth, sound, clean, dry and free from defects that might affect the application.
  - Remove projections which would puncture the materials and fill holes and depressions with material compatible with the substrate. Cover holes or cracks in wood wider than 6 mm (1/4 inch) with sheet metal compatible with the roofing and flashing material used.
  - Coordinate with masonry work for the application of a skim coat of mortar to surfaces of unit masonry to receive flashing material before the application of flashing.
  - Install bolts, rivets, and screws where indicated, specified, or required in accordance with the SMACNA Sheet Metal Manual. Space rivets at 75 mm (3 inch) on centers in two rows in a staggered position. Use neoprene washers under fastener heads when fastener head is exposed.
  - Coordinate with roofing work for the installation of metal base flashings and other metal items having roof flanges for anchorage and watertight installation.
  - Install flashings in conjunction with other traces so that flashings are inserted in other materials and joined together to provide a water tight installation.
  - Where required to prevent galvanic action between dissimilar metal isolate the contact areas of dissimilar metal with sheet lead, waterproof building paper, or a coat of bituminous paint.
    - Window-sill Flashing: Install flashing to extend not less than (4 inch) beyond ends of sill into vertical joint of masonry or veneer. Turn back edge up to terminate under window frame. Turn ends up one inch) and fold corners to form dam and extend to face of wall.
    - Door Sill Flashing: Install flashing under bottom of plate sills of doors over curbs opening onto roofs. Extend flashing out to form counter flashing or receiver for counter flashing over base flashing. Set in

sealant. Extend sill flashing 200 mm (8 inch) beyond jamb opening. Turn ends up one inch in vertical masonry joint, extend end to face of wall. Join to counter flashing for water-tight joint. Where doors thresholds cover over waterproof membranes install sill flashing over waterproof membrane under thresholds. Extend beyond opening to cover exposed portion of waterproof membrane and not less than 150 mm (6 inch) beyond door jamb opening at ends. Turn up approximately 5 mm (1/4 inch) under threshold.
    - Flashing at Masonry, Stone, or Precast Concrete Copings: Install flashing with drips on both wall faces unless shown otherwise. Form penetration openings to fit tight against dowel or other item with edge turned up. Seal penetrations with sealant.
    - Base Flashings: Install where roof membrane type base flashing is not used and where shown. Install flashing at intersections of roofs with vertical surfaces or at penetrations through roofs, to provide watertight construction. Install flashing at intersections of roofs with vertical surfaces or at penetrations through roofs, to provide watertight construction. Secure flange by nailing through roofing into wood blocking with nails spaced (3 inch) on centers or, when flange over (4 inch) wide terminate in a (1/2 inch) folded edge anchored with cleats spaced (8 inch) on center. Secure one end of cleat over nail heads. Lock other end into the seam. For long runs of base flashings install in lengths of not less than (8 feet) nor more than (ten feet). Install a (3 inch) wide slip type, loose lock expansion joint filled with sealant in joints of base flashing sections over (8 feet) in length. Lock and solder corner joints at corners. Extend base flashing up under counter flashing of roof specialties and accessories or equipment not less than (3 inch).
- Counter Flashings
  - Install counterflashing over and in conjunction with installation of base flashings, except as otherwise specified or shown. Install counterflashing to lap base flashings not less than 100 mm (4 inch). Install upper edge or top of counterflashing not less than 225 mm (9 inch) above top of the roofing. Lap joints not less than (4 inch). Stagger joints with relation to metal base flashing joints. Use surface applied counterflashing on existing surfaces and new work where not possible to integrate into item. When fastening to concrete or masonry, use screws driven in expansion shields set in concrete or masonry. Use screws to wood and sheet metal. Set fasteners in mortar joints of masonry work.
- One Piece Counterflashing:
  - Where flashing is installed at new masonry, coordinate to insure proper height, embed in mortar, and end lap. Where flashing is installed in reglet in concrete insert upper edge into reglet. Hold flashing in place with lead

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wedges spaced not more than 200 mm (8 inch) apart. Fill joint with sealant. Where flashing is surface mounted on flat surfaces.
  - When top edge is double folded anchor flat portion below sealant "V" joint with fasteners spaced not over 400 mm (16 inch) on center:
    - Locate fasteners in masonry mortar joints.
    - Use screws to sheet metal or wood.
  - Fill joint at top with sealant.
- Where receiver is installed at new masonry coordinate to ensure proper height, embed in mortar, and lap.
- Surface applied type receiver:
  - Secure to face construction in accordance, with manufacturer's instructions.
  - Completely fill space at the top edge of receiver with sealant.
- Insert counter flashing in receiver in accordance with fabricator or manufacturer's instructions and to fit tight against base flashing.
- Where vented edge occurs install so lower edge of counterflashing is against base flashing. When counter flashing is a component of other flashing install as shown.

▪ Reglets
- Install reglets in a manner to provide a watertight installation.
- Locate reglets not less than (9 inch) nor more than (16 inch) above roofing, and not less than (5 inch) nor more than inch) above 'cant strip'.
- Butt and align end joints or each section of reglet anc securely hold in position until concrete or mortar are hardened:
- Coordinate reglets for anchorage into concrete with formwork construction.
- Coordinate reglets for masonry to locate horizontally into mortar joints.

07 92 00 JOINT SEALANTS

▪ References
- ASTM C 510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
- ASTM C 661 - Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer.
- ASTM C 719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
- ASTM C 794 - Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
- ASTM C 834 - Specification for Latex Sealants.
- ASTM C 920 - Specification for Elastomeric Joint Sealants.
- ASTM C 1087 - Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.
- ASTM C 1193 - Guide for Use of Joint Sealants.

  - Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
  - Color: [White] [and] [Clear].
- SEALANT D: Tremco Tremflex 834
  - Latex Joint Sealant [LJS#___]: Siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
  - Basis of Design Product: Tremco, Inc., Tremflex 834.
  - Volatile Organic Compound (VOC) Content: 35 g/L maximum.
  - Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification
  - emissions levels.
  - Color: White, paintable.
- SEALANT E: Tremco Butyl Sealant
  - Butyl-Rubber-Based Joint Sealant: ASTM C 1311.
  - Basis of Design Product: Tremco, Inc., Tremco Butyl Sealant.
  - Volatile Organic Compound (VOC) Content: 250 g/L maximum.
  - Color: As selected by Architect from manufacturer's standard colors.

DIVISION 8 – DOORS AND WINDOWS

08 11 10 HOLLOWMETAL DOORS AND FRAMES

REFER TO ARCHITECTURAL DARWING PAGE A2.6

08 41 10 ALUMINUM-FRAMED ENTRANCE AND STOREFRONTS

REFER TO ARCHITECTURAL DARWING PAGE A2.6

08 41 10 ALUMINUM WINDOWS

REFER TO ARCHITECTURAL DARWING PAGE A2.6

DIVISION 9 – FINISHES

09 50 00 ACOUSTICAL CEILINGS

▪ REFERENCES
- American Society for Testing and Materials (ASTM):
  - ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
  - ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
  - ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
  - ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

- ASTM C 1247 - Standard Test Method for Durability of Sealants Exposed to Continuous Immersion in Liquids.
- ASTM C 1248 - Test Method for Staining of Porous Substrate by Joint Sealants.
- ASTM C 1311 - Specification for Solvent Release Sealants.
- ASTM C 1330 - Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
- ASTM D 412 - Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
- ASTM D 624 - Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- ASTM D 2203 - Standard Test Method for Staining from Sealants.
- ASTM D 2240 - Test Method for Rubber Property - Durometer Hardness.

▪ Administrative Requirements
- Coordination: Coordinate installation of joint sealants with cleaning of joint sealant substrates and other operations that may impact installation or finished joint sealant work.

▪ Samples for Color Selection: For each joint sealant type.

▪ Quality Assurance
- Installer Qualifications: Company with minimum of three years' experience specializing in work of this section, employing applicators trained for application of joint sealants required for this project, with record of successful completion of projects of similar scope, and approved by manufacturer.

▪ Single Source Responsibility
- Provide exterior joint sealants by a single manufacturer responsible for testing of Project substrates to verify compatibility and adhesion of joint sealants.

▪ Delivery Storage and Handling
- Accept materials on site in manufacturer's unopened original packaging. Store primers and sealants in dry location with ambient temperature range of 60 to 80 deg. F (15 to 27deg. C).

▪ Warranty
- Special Manufacturer's Warranty: Manufacturer's standard form in which joint sealant manufacturer agrees to furnish joint sealants to repair or replace those that demonstrate deterioration or adhesive or cohesive failure under normal use within warranty period specified. Warranty Period for Silicone Sealants: [Five] years date of Substantial Completion.
- Special Installer's Warranty: Original statement on Installer's letterhead in which Installer agrees to repair or replace joint sealants that demonstrate deterioration or failure within warranty period specified.

▪ Manufacturer
- Basis-of-Design Products: Provide joint sealant products manufactured by Tremco, Inc., **Commercial Sealants and Waterproofing Division,**

An RPM Company, Beachwood OH; (866) 321-6357; email: techresources@tremcoinc.com; www.tremcosealants.com,

▪ Materials
- VOC Content for Interior Applications: Provide sealants and sealant primers complying with the following VOC content limits per 40 CFR 59, Subpart D (EPA Method 24):
  - Architectural Sealants: 250 g/L.
  - Sealant Primers for Nonporous Substrates: 250 g/L.
  - Sealant Primers for Porous Substrates: 775 g/L.
- Compatibility: Provide joint sealants and accessory materials that are compatible with one another, and with adjacent materials, as demonstrated by sealant manufacturer using ASTM C 1087 testing and related experience.

▪ Silicone Joint Sealants
- Sealant A: Tremco Spectrem 1:
  - Single-Component, Non-sag, Non-Staining, Neutral-Curing Silicone Joint Sealant [SJS#__]: ASTM C 920, Type S, Grade NS, Class 100/50, Use NT; SWRI validated.
  - Basis of Design Product: Tremco, Inc., Spectrem 1.
  - Volatile Organic Compound (VOC) Content: 1 g/L maximum.
  - Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
  - Staining, ASTM C 1248: None on concrete, marble, granite, limestone, and brick.
  - Color: As selected by Architect from manufacturer's standard line of not less than 12 colors.
- SEALANT B: Tremco Spectrem 2
  - Single-Component, Non-sag, Non-Staining, Neutral-Curing Silicone Joint Sealant [SJS#__]: ASTM C 920, Type S, Grade NS, Class 50, Use NT; SWRI validated.
  - Basis of Design Product: Tremco, Inc., Spectrem 2.
  - Volatile Organic Compound (VOC) Content: 50 g/L maximum.
  - Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
  - Staining, ASTM C 1248: None on concrete, marble, granite, limestone, and brick.
  - Color: As selected by Architect from manufacturer's standard line of not less than 10 colors.
- SEALANT C: Tremco Tremsil 200:
  - Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant [SJS#__]: ASTM C 920, Type S, Grade NS, Class 25, Use NT.
  - Basis of Design Product: Tremco, Inc., Tremsil 200 Sanitary.
  - Volatile Organic Compound (VOC) Content: 1 g/L maximum.

- ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
- ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
- ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material
- Armstrong Fire Guard Products
  - ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
  - ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
  - ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
  - ASTM E 1264 Classification for Acoustical Ceiling Products
- International Building Code
  - ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality
  - NFPA 70 National Electrical Code
  - ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings
  - International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

▪ QUALITY ASSURANCE
- Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
  - Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
  - Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.
  - Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory
- Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a

fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

▪ DELIVERY, STORAGE AND HANDLING
- Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.
- Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

▪ WARRANTY
- Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
  - Acoustical Panels: Sagging and warping
  - Grid System: Rusting and manufacturer's defects
- Warranty Period:
  - Acoustical panels: One (1) year from date of substantial completion
  - Grid: One (1) year from date of substantial completion
- The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

▪ MAINTENANCE
- Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
  - Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
  - Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

▪ MANUFACTURERS
- Ceiling Panels:
  - Armstrong World Industries, Inc.
- Suspension Systems:
  - Armstrong World Industries, Inc.
- Perimeter Systems
  - Armstrong World Industries, Inc.

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PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
11.24.20	REVISION	2
11.11.21	REVISION-CITY	

SHEET TITLE
SPECIFICATIONS

SHEET #
A0.6

B-21-0959CITY OF PUYALLUP

- ACOUSTICAL CEILING UNITS
  - Acoustical Panels Type AP
    - Surface Texture: Medium
    - Composition: Mineral Fiber
    - Color: White
    - Size: 24 in x 48 in
    - Edge Profile: Angled Tegular 15/16 in
  - Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton 0.55
  - Ceiling Attenuation Class (CAC) : ASTM C 1414; Classified with UL label on product carton 40
    - Sabin:N/A
    - Articulation Class (AC):
    - Flame Spread: ASTM E 1264; Fire Resistive
    - Light Reflectance (LR) White Panel: ASTM E 1477; 0.81
    - Dimensional Stability: Standard
    - Recycle Content: Post-Consumer - 1% Pre-Consumer - 54%
  - Acceptable Product: CORTEGA Second Look, 2758 as manufactured by Armstrong World Industries
- INSTALLATION
  - Follow manufacturer installation instructions.
  - Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
  - Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight.
  - Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
  - For reveal edge panels. Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
  - Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.
- ADJUSTING AND CLEANING
  - Replace damaged and broken panels.
  - Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.
  - Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7676, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling

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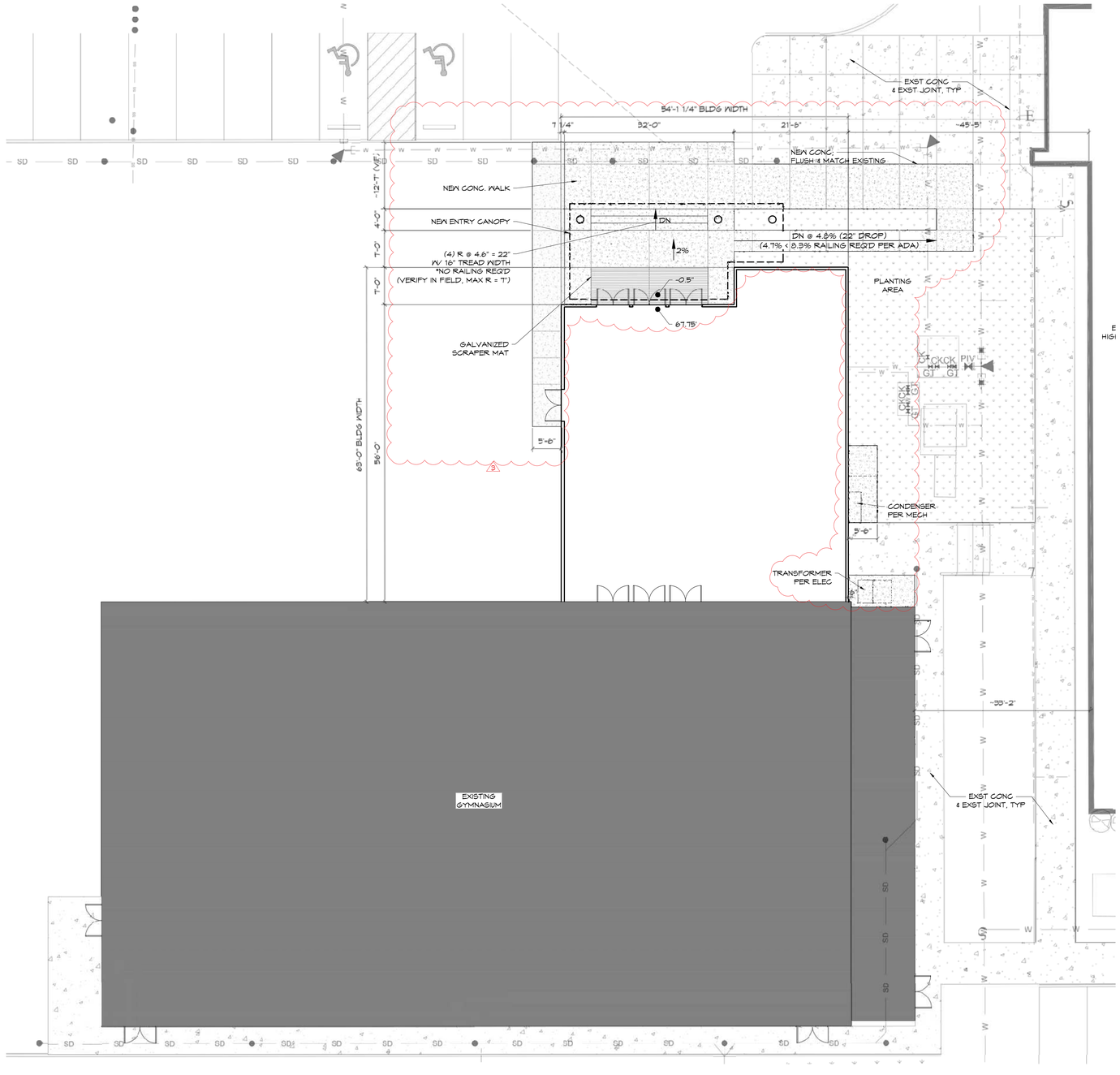
11.11.21	REVISION-CITY	

SHEET TITLE
SPECIFICATIONS

SHEET #
A0.7

B-21-0959CITY OF PUYALLUP



PARTIAL SITE
(11X17) SCALE: 1" = 20'
(22X34) SCALE: 1" = 10'

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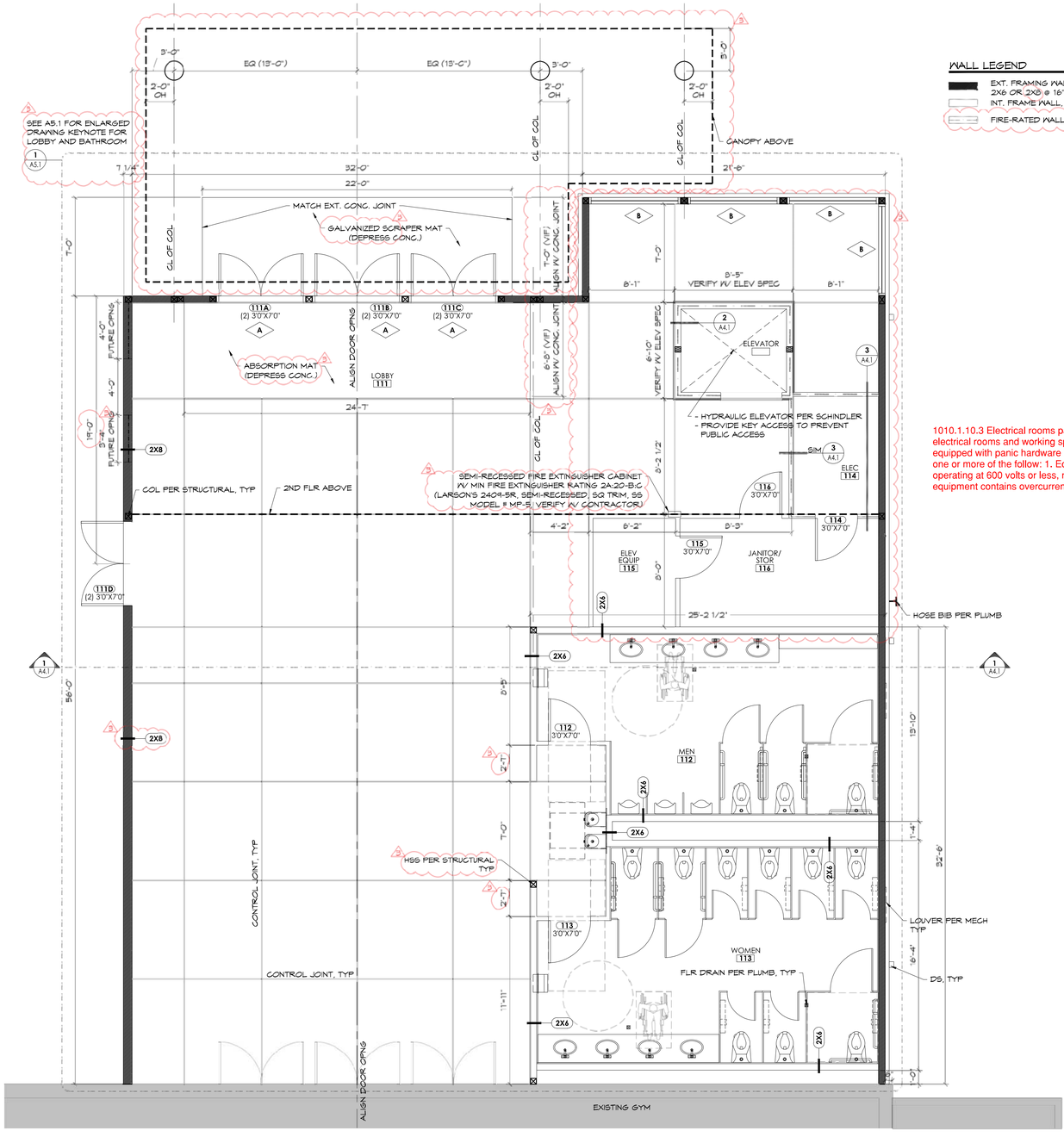
11.11.21	REVISION-CITY	3

SHEET TITLE
SITE PLAN

SHEET #
A1.1

B-21-0959CITY OF PUYALLUP



WALL LEGEND

- EXT. FRAMING WALL
  2X6 OR 2X8 @ 16" OC W/ R-21 INSULATION
- INT. FRAME WALL, 2X4 TYP, UNO
- FIRE-RATED WALL | SEE A4.1

1010.1.10.3 Electrical rooms panic and fire exit hardware Exit and exit access doors serving electrical rooms and working spaces shall swing in the direction of egress travel and shall be equipped with panic hardware or fire exit hardware where such rooms or working spaces contain one or more of the follow: 1. Equipment operating at more than 600 volts, nominal2. Equipment operating at 600 volts or less, nominal and rated at 800 amperes or more, and where the equipment contains overcurrent devices, switching devices or control devices.

1 MAIN FLOOR PLAN
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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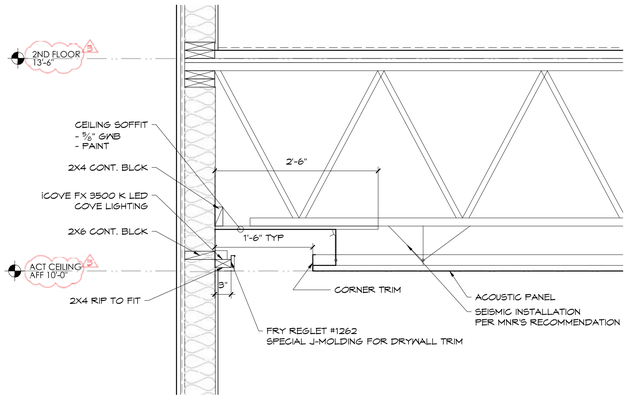
11.11.21	REVISION-CITY	3

SHEET TITLE
MAIN FLR PLAN

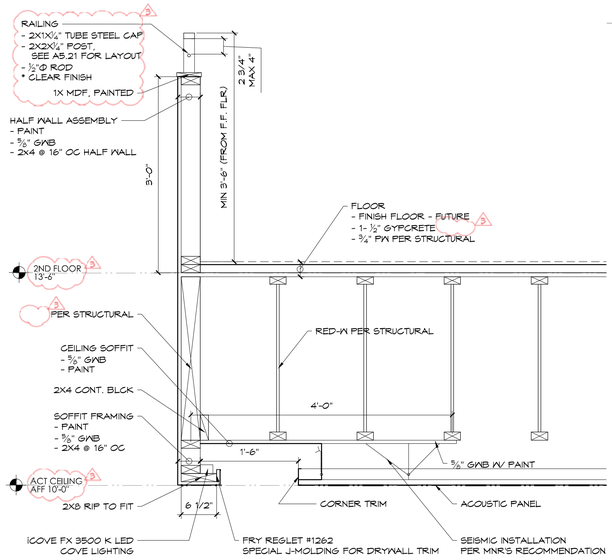
SHEET #
A2.1

B-21-0959CITY OF PUYALLUP



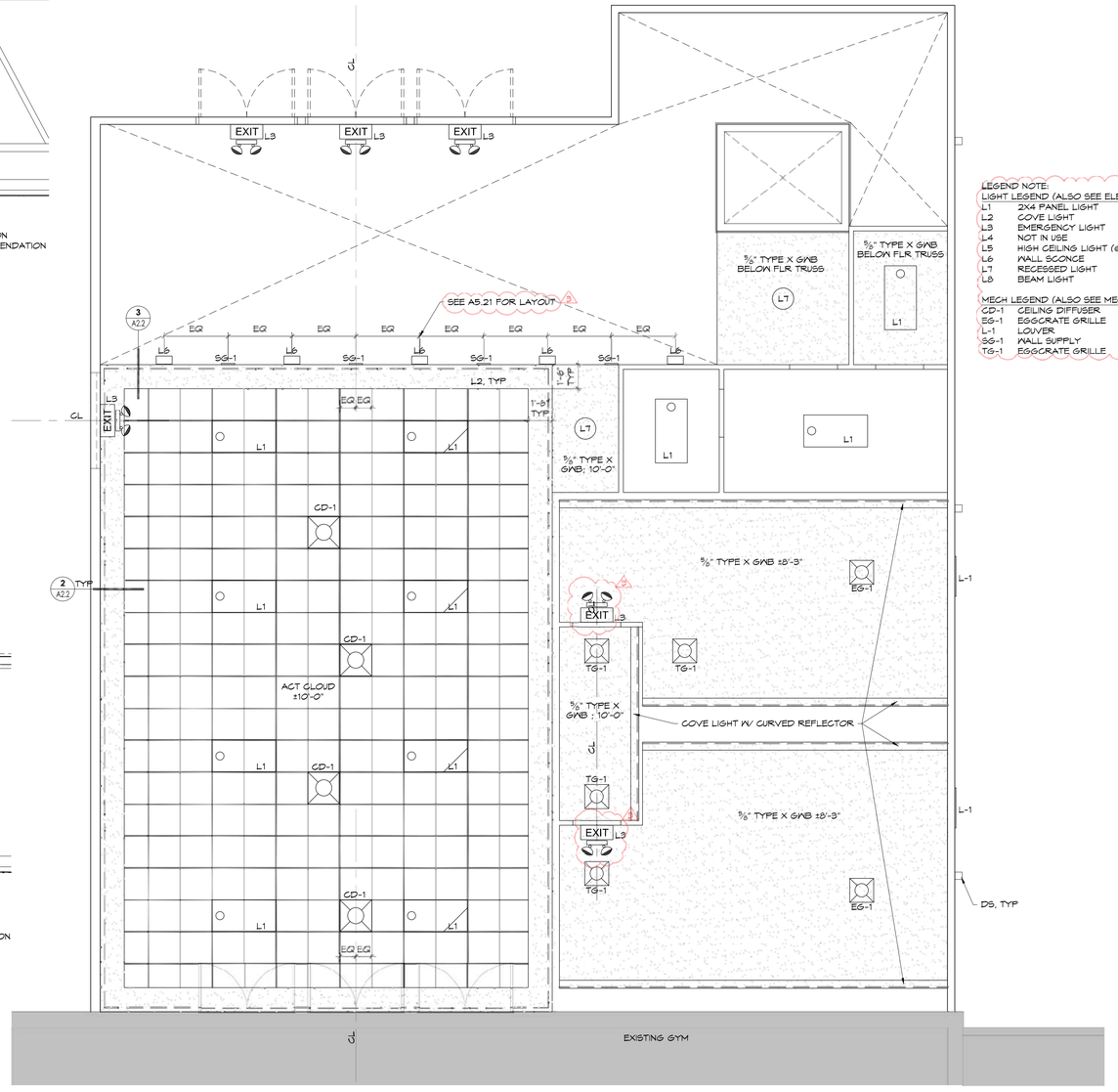
2 COVE LIGHT DETAIL (TYP)

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"



3 COVE LIGHT DETAIL (NORTH)

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"



1 MAIN FLR REFLECTED CEILING PLAN

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

LEGEND NOTE:
LIGHT LEGEND (ALSO SEE ELEC DRAWING)

L1	2X4 PANEL LIGHT
L2	COVE LIGHT
L3	EMERGENCY LIGHT
L4	NOT IN USE
L5	HIGH CEILING LIGHT (@ ENTRY)
L6	WALL SCONCE
L7	RECESSED LIGHT
L8	BEAM LIGHT

MECH LEGEND (ALSO SEE MECH DRAWING)

CD-1	CEILING DIFFUSER
EG-1	EGGCRATE GRILLE
L-1	LOUVER
SG-1	WALL SUPPLY
TG-1	EGGCRATE GRILLE

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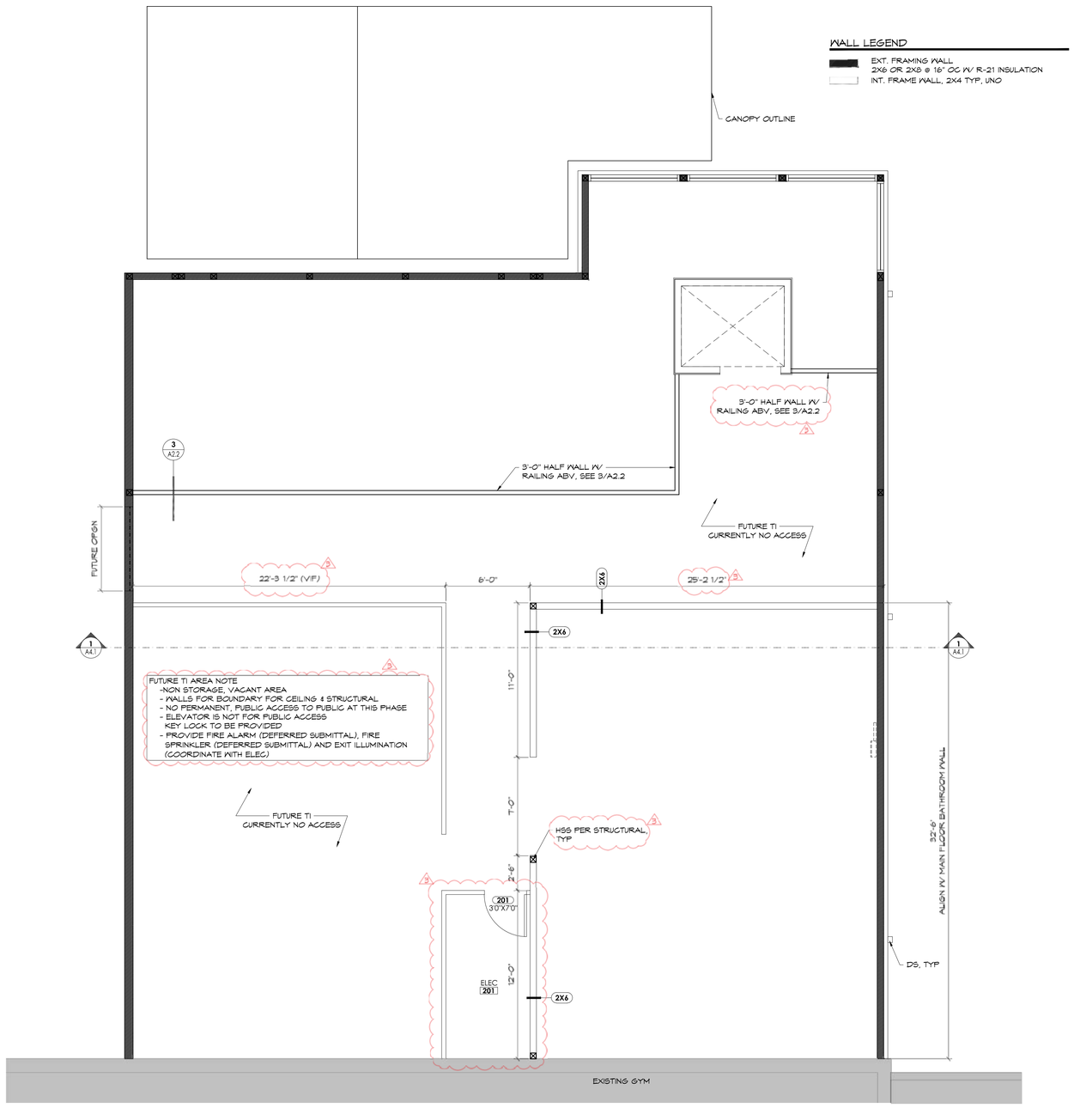
11.11.21	REVISION-CITY	3

SHEET TITLE
MAIN FLR RCP

SHEET #
A2.2

B-21-0959CITY OF PUYALLUP



1 **SECOND FLOOR PLAN**
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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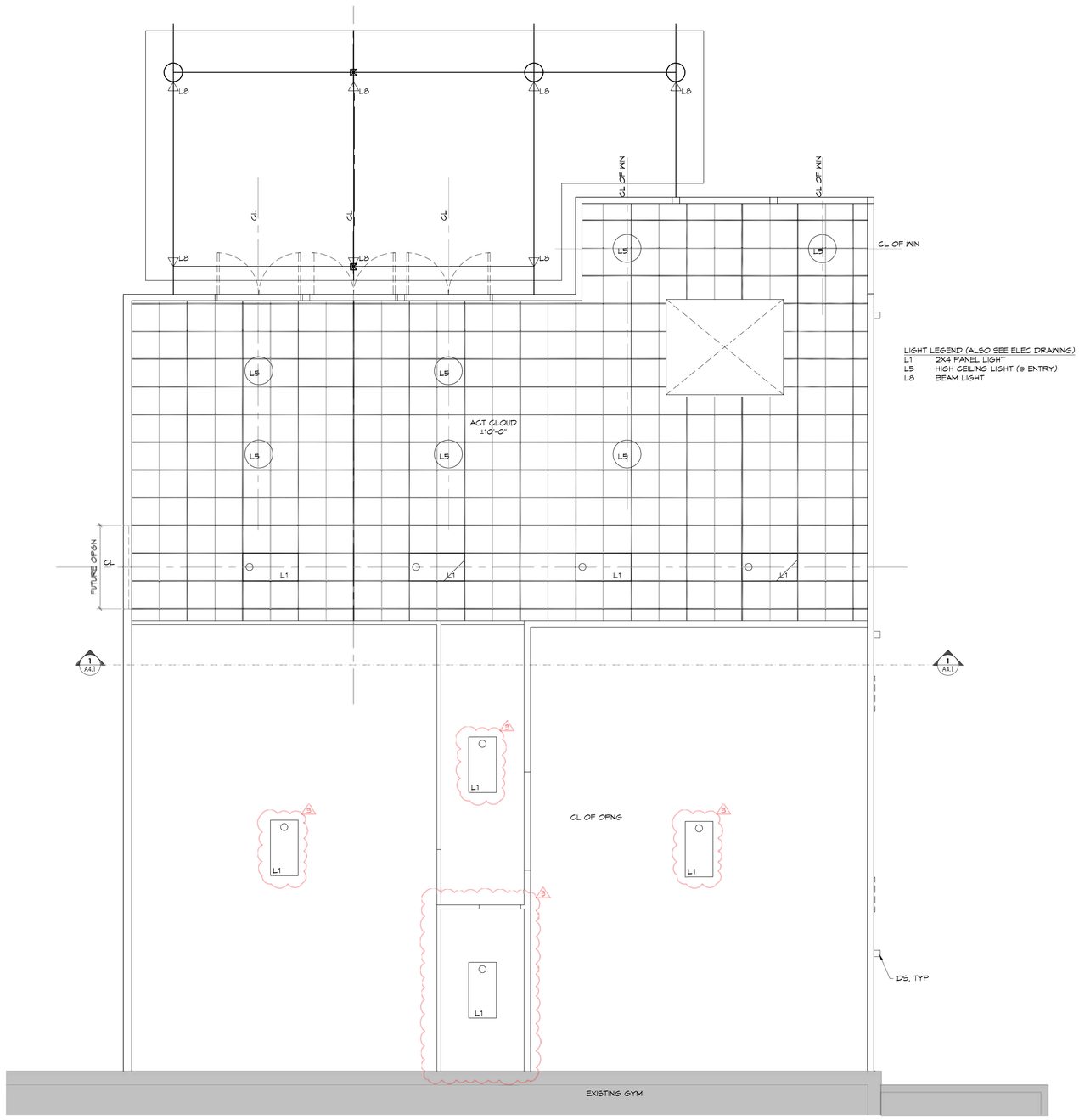
SHEET TITLE
SECOND FLOOR PLAN

SHEET #
A2.3

B-21-0959CITY OF PUYALLUP



1 **2ND FLR REFLECTED CEILING PLAN**
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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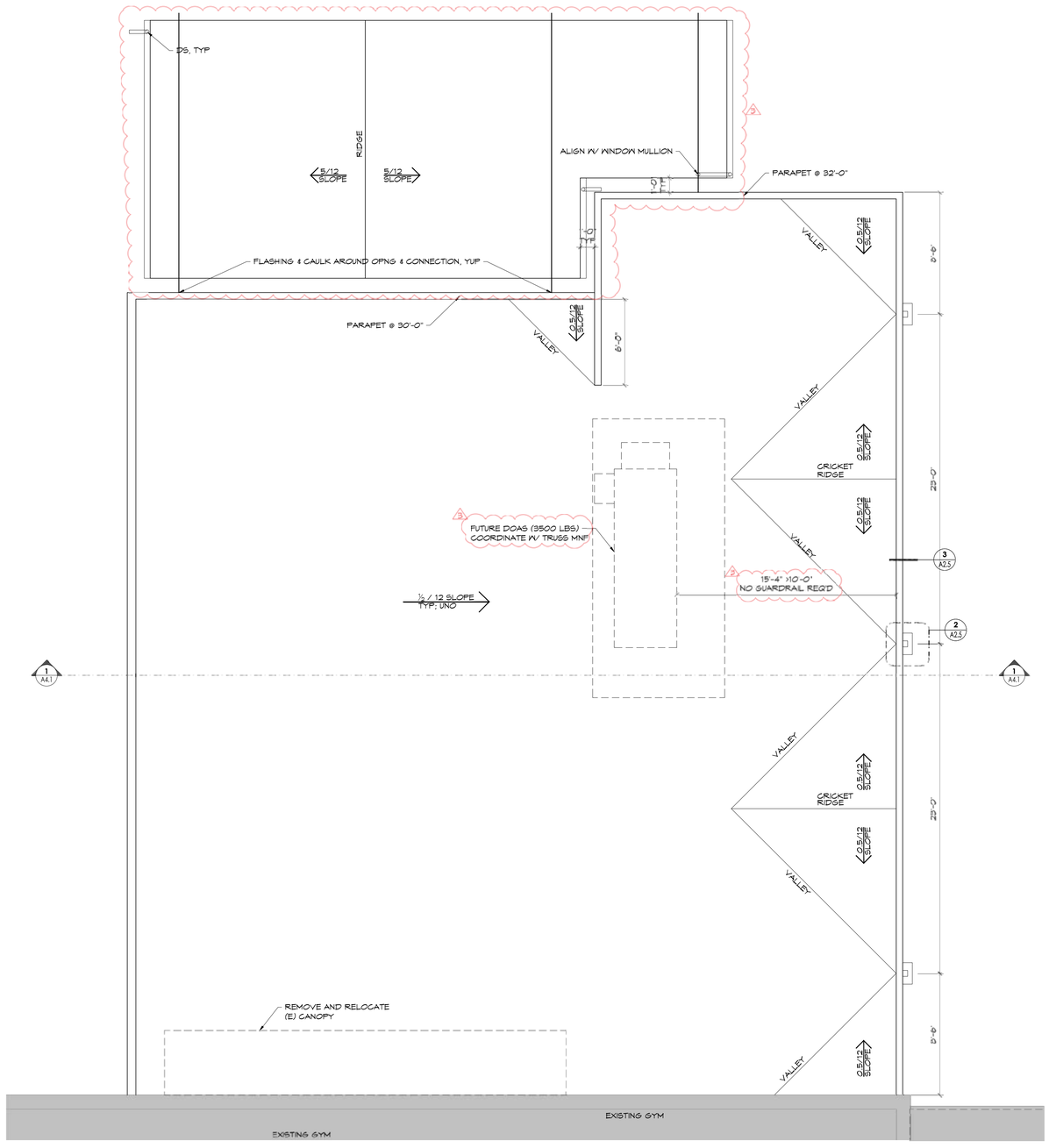
SHEET TITLE
2ND FLR RCP

SHEET #
A2.4

B-21-0959CITY OF PUYALLUP



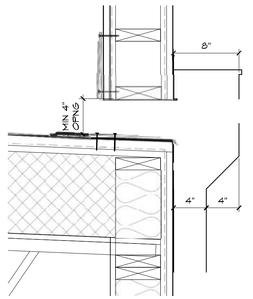
PROPOSED ROOF AREA:
3064 FT2

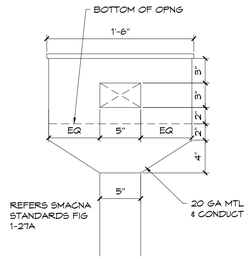
MODIFIED ROOF AREA
PER TABLE 1-1 DESIGN AREAS FOR PITCHED ROOFS
PITCH FROM LEVEL TO 3 IN/FT WILL HAVE A "B" FACTOR OF 1.00.
ROOF AREA X PITCH FACTOR = 3064 SF * 1.00
= 3064 FT2

REQUIRED DOWNSPOUT CAPACITY
PER TABLE 1-2 RAINFALL DATA AND DRAINAGE FACTORS
WASHINGTON SEATTLE AREA, CALCULATED ROOF AREA DRAINED PER DOWNSPOUT AREA IS
360 FT2/IN2 FROM STORE WHICH SHOULD BE EXCEEDED ONLY ONCE IN 100 YEARS
MODIFIED ROOF AREA / 360 FT2/IN2 = 3064 FT2 / 360 FT2/IN2
= 8.51 IN2

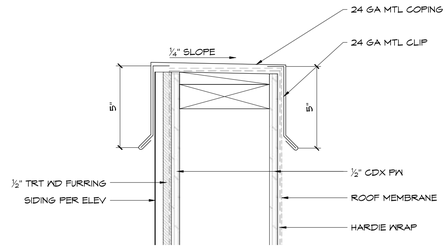
DOWNSPOUTS SELECTION/ REQUIREMENT
PROPOSE PLAIN 4"X5" SQ DOWNSPOUTS AND IT HAS 20 IN2 CAPACITY.
OF DOWNSPOUTS
REQUIRED DOWNSPOUTS CAPACITY / PROPOSED DOWNSPOUTS CAPACITY
= 8.51 IN2 / 20 (IN2/ DOWNSPOUTS)
= 0.4 DOWNSPOUTS
1 DOWNSPOUTS ARE REQUIRED

PROVIDE DOWNSPOUTS:
(3) 4"X5" SQ DOWNSPOUTS ARE PROVIDED





2 SCUPPER DETAIL
(11X17) SCALE: 3/4" = 1'-0"
(22X34) SCALE: 1-1/2" = 1'-0"



3 COPING DETAIL
(11X17) SCALE: 1-1/2" = 1'-0"
(22X34) SCALE: 3" = 1'-0"

1 ROOF PLAN
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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DRAWING TYPE
PERMIT DOCUMENTS

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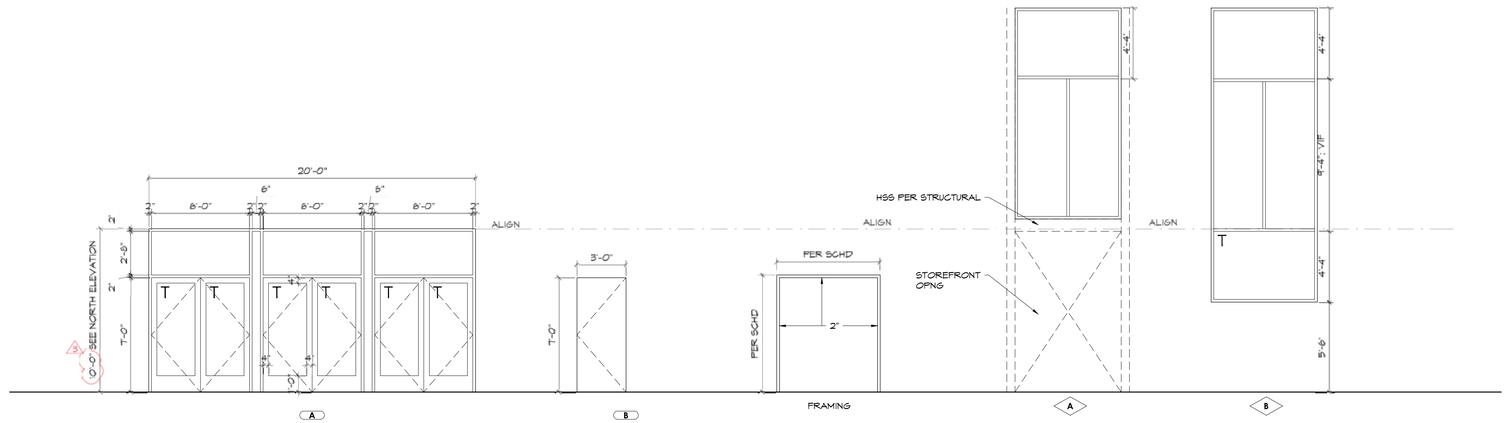
SHEET TITLE
ROOF PLAN & DETAILS

SHEET #
A2.5

B-21-0959CITY OF PUYALLUP



NOTES
1. ALL OPNG SHALL BE SEALED, CAULKED, AND WEATHER-STRIPPED FOR ENERGY CODE
2. ALL EXIT DOORS FROM GYMNASIUM TO HAVE PANIC EXIT HARDWARE. OTHER DOORS TO HAVE LEVER HANDLES
3. FENESTRATION PRODUCTS SHALL BE LABELED W/ RATED U-FACTOR, SHGC, VT, AND LEAKAGE RATING
4. T: SAFETY GLAZING

DOOR & FRAME TYPE
(11X17) SCALE : 1/8" = 1'-0"
(22X34) SCALE : 1/4" = 1'-0"

WINDOW TYPE
(11X17) SCALE : 1/8" = 1'-0"
(22X34) SCALE : 1/4" = 1'-0"

NO.	LOCATION	DOORS						FRAME			REMARKS
		TYPE	WIDTH	HEIGHT	THICK	MAT	FINISH	MAT	FINISH	HDWR SET	
111A	N. ENTRY	A	(2) 3'-0"	7'-0"	1 3/4"	AL	FAC	AL	FAC	ENTRY LOCK	WEATHER STRIP | PANIC BAR | CLOSER | TEMPER GLASS
111B	N. ENTRY	A	(2) 3'-0"	7'-0"	1 3/4"	AL	FAC	AL	FAC	ENTRY LOCK	WEATHER STRIP | PANIC BAR | CLOSER | TEMPER GLASS
111C	N. ENTRY	A	(2) 3'-0"	7'-0"	1 3/4"	AL	FAC	AL	FAC	ENTRY LOCK	WEATHER STRIP | PANIC BAR | CLOSER | TEMPER GLASS
111D	W. ENTRY	B	3'-0"	7'-0"	1 3/4"	HM	PT	HM	PT	ENTRY LOCK	WEATHER STRIP | PANIC BAR | CLOSER
112	MEN'S	B	3'-0"	7'-0"	1 3/4"	WD	PT	HM	PT	PASSAGE	
113	WOMEN'S	B	3'-0"	7'-0"	1 3/4"	WD	PT	HM	PT	PASSAGE	
114	ELEC. ROOM	B	3'-0"	7'-0"	1 3/4"	HM	PT	HM	PT	STORAGE LOCK	45 MIN FIRE-RATED
115	ELEV. EQUIP	B	3'-0"	7'-0"	1 3/4"	WD	PT	HM	PT		
116	JAN/STOR	B	3'-0"	7'-0"	1 3/4"	WD	PT	HM	PT	STORAGE LOCK	
201	ELEC. ROOM	B	3'-0"	7'-0"	1 3/4"	WD	PT	HM	PT	STORAGE LOCK	

DOOR SCHEDULE

EXTERIOR STOREFRONT PERFORMANCE
1. U-VALUE: 0.3 FOR NONMETAL FRAMING
   0.38 FOR METAL FRAMING (FIXED)
   0.40 FOR METAL FRAMING (OPERABLE)
   0.60 FOR METAL FRAMING (ENTRANCE DOORS)
2. AIR INFILTRATION: MAX AIR LEAKAGE THROUGH FIXED GLAZING AND FRAMING AREAS OF 0.04 CFM/S.F. OF FIXED WALL AREA

EXTERIOR STOREFRONT MANUFACTURE/MODEL
1. MFR: KAWNEER
2. MNF'S STANDARD EXTRUDED OR FORMED AL FRAMING MEMBERS
3. SIGHT LINE: 2"
4. DEPTH: 4 1/2"
5. ALL UNITS TO HAVE JAMB AND HEAD COMPENSATION RECEPTORS
6. MNF TO SUPPLY MATCHING PRE-FINISH BREAK MTL FOR ADJACENT CONDITIONS
7. FINISH: TO BE SELECTED FROM MNF'S STANDARD FINISH

EXTERIOR ENTRANCES
1. MFR: KAWNEER
2. PERFORMANCE CRITERIA: OVERALL U-VALUE INCLUDING GLAZING - 0.6 BTU/HR. SQFT DEG.F, MAX. PER AAMA 1503
3. FEATURES

A. THICKNESS	1-3/4"
B. TOP RAIL	4" WIDE
C. VERTICAL STILES:	4" WIDE
D. BOTTOM RAIL:	12" WIDE
E. GLAZING STOPS:	SQUARE
F. FINISH:	SAME AS STOREFRONT
G. ENTRANCE DR HRDW	
	TOP OFFSET PIVOT
	BOTTOM OFFSET PIVOT
	INTERMEDIATE PIVOT
	EXIT DEVICE
	CYLINDER
	PULL
	CLOSER
	FLOOR STOP & HOLDER
	THRESHOLD
	DOOR BOTTOM
	GASKET BY DOOR SUPPLIER

GLAZING
1. PROVIDE MANUFACTURE STANDARD STOREFRONT GLAZING COMPLYING WITH TABLE C 402.4 BUILDING ENVELOP FENESTRATION MAXIMUM U-FACTOR AND SHGC REQUIREMENTS PER 2015 WASHINGTON STATE ENERGY CODE

FLOAT GLASS
1. PERFORMANCE CRITERIA
   A. BY HORIZONTAL (ROLLER-HEARTH) PROCESS W/ ROLL-WAVE DISTORTION // TO BOT. EDGE OF GLASS AS INSTALLED U.O.N.
   B. ROLL-WAVE MAX DISTORTION TOLERANCE: 0.003" TARGET W/ 0.005"
      MAX PEAK TO VALLEY MEASUREMENT
   C. BOW AND WRAP MAX TOLERANCE: 50% OF THE MAX ALLOWED IN ASTM C 1048
   D. TINED TYPES: PERFORMANCE AND FEATURES TO MATCH BASIS OF DESIGN PRODUCT
2. ANNEALED TYPE: ASTM C 1036, TYPE 1, TRANSPARENT FLAT, CLASS 1 CLR, QUALITY Q3 (GLAZING SELECT
3. HEAT-STRENGTHENED IN ACCORDANCE W/ ASTM C 1048

FULLY TEMPERED IN ACCORDANCE W/ ASTM C1048
1. SAFETY GLAZING: COMPLY W/ 16 CFR 1201 TEST REQT FOR CATEGORY II

INSULATING GLAZING UNITS
1. FABRICATOR
   A. ANY OF THE MNF SPECIFIED FOR FLOAT GLASS
   B. ANY FABRICATOR CERTIFIED BY GLASS MNF FOR TYPE OF GLASS, COATING, AND TREATMENT INVOLVED AND CAPABLE OF PROVIDING SPECIFIED PERFORMANCE, FEATURES AND WARRANTY
2. SEALED INSULATING GLASS UNITS PERFORMANCE
   A. DURABILITY: CERTIFIED BY AN INDEPENDENT TESTING AGENCY TO COMPLY W/ ASTM E2190
   B. EDGE SPACERS: MATERIAL AS REQD TO MEET PERFORMANCE CRITERIA LISTED FOR ASSEMBLIES
      - COLOR: BLACK
   C. EDGE SEAL: GLASS TO ELASTOMER W/ SUPPLEMENTARY SILICONE SEALANT
      - COLOR: BLACK
   D. AIR SPACE: HERMETIC AIR
   E. U-VALUE: AS REQD TO MEET PERFORMANCE CRITERIA OF COMPLETE ASSEMBLY; NOT TO EXCEED 0.24 CENTER OF GLASS

HOLLOW METAL DOORS AND FRAMES (EXTERIOR DOORS, NON-FIRE RATED)
1. GRADE: ANSI A250.8 LEVEL 3, PHYSICAL PERFORMANCE LEVEL C, MODEL 2, SEAMLESS
2. THICKNESS: 1-3/4"
3. GALVANIZING: ALL COMPONENTS HOT-DIPPED ZINC-IRON-ALLOY-COATED IN ACCORDANCE W/ ASTM A653/A653M
4. INSULATING VALUE: U-VALUE OF 0.37
5. DOOR TOP AND CLOSURES: STEEL FLUSH W/ TOP OF FACES AND EDGES
6. DOOR EDGE PROFILES: BEVELED ON BOTH EDGES
7. FACE TEXTURE: SMOOTH
8. FINISH: FACTORY PRIMED FOR FILED FINISHING

EXTERIOR FRAMES
1. GALVANIZING: ALL COMPONENTS HOT-DIPPED ZINC-IRON-ALLOY
2. PROVIDE TRUE THERMAL BREAK
3. ASSEMBLY: FULLY WELDED
4. FINISH: FACTORY PRIMED FOR FIELD PAINTING
5. MINERAL FIBER INSULATION FOR FILLING FRAME CAVITIES

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CASCADE CHRISTIAN JR. HIGH SCHOOL LOBBY ADDITION
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PROJECT NUMBER
20004

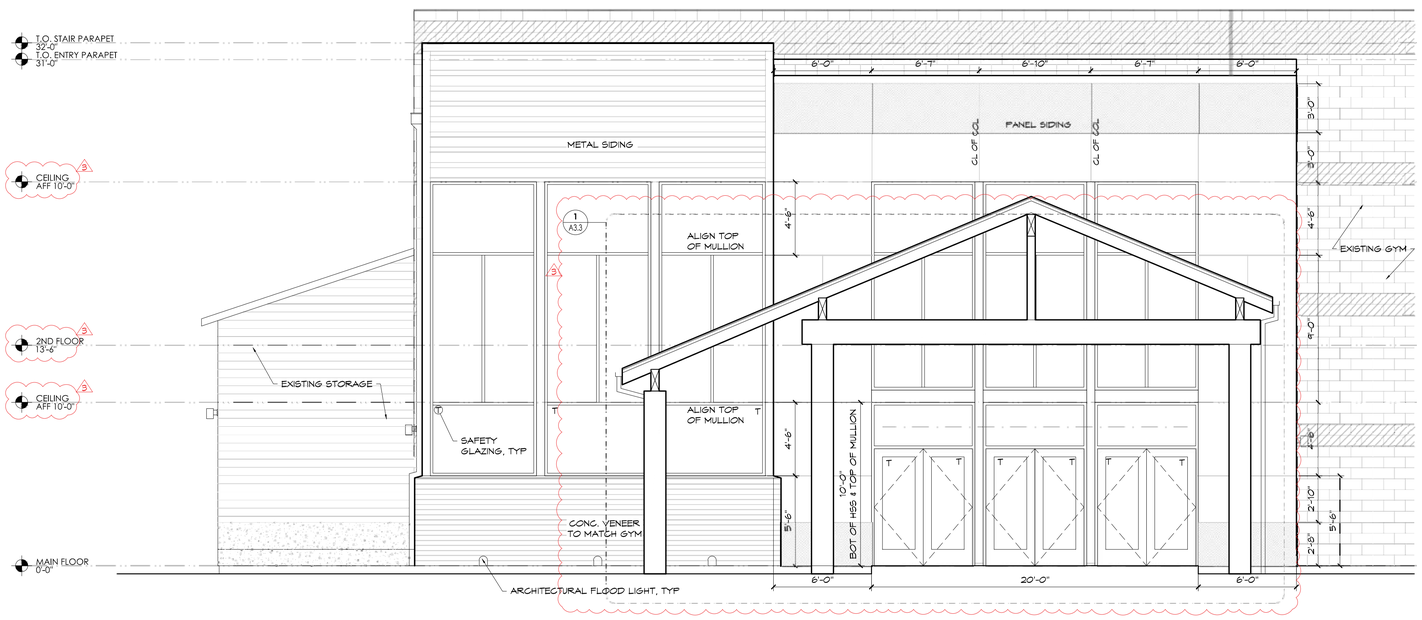
DRAWING TYPE
PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
11.24.20	REVISION	2
11.11.21	REVISION-CITY	3

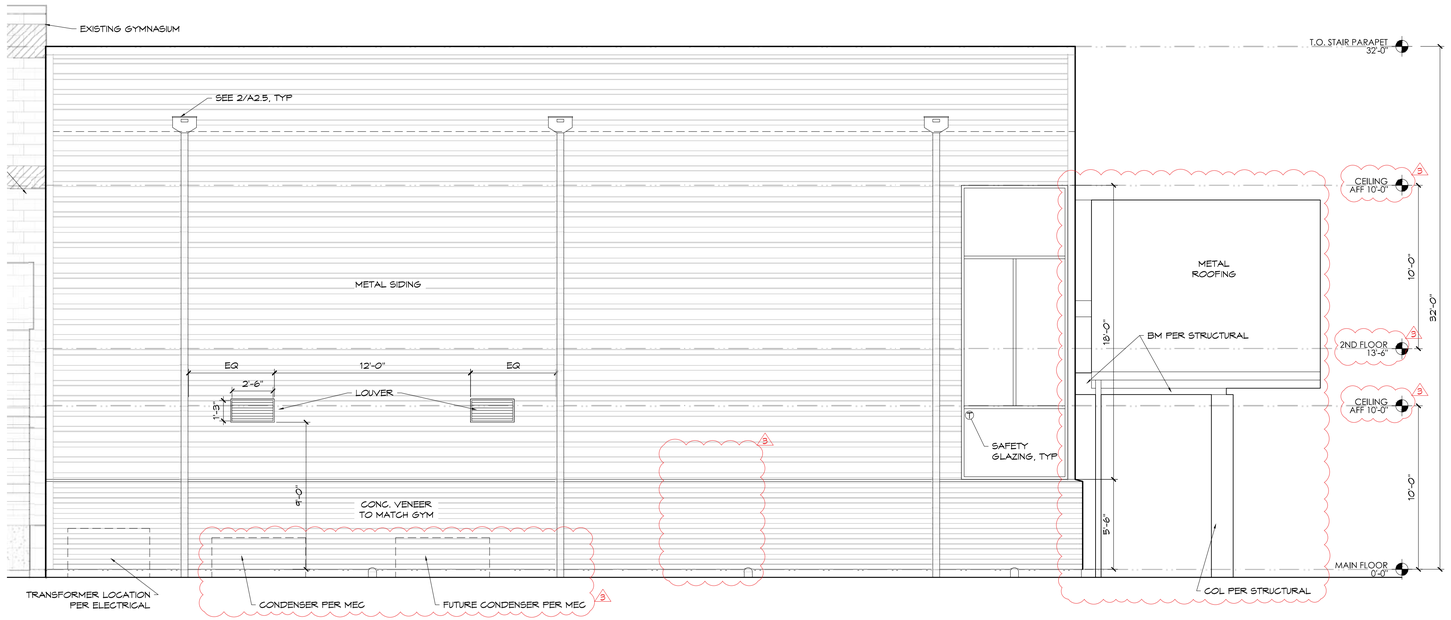
SHEET TITLE
DOOR & WINDOW SCHEDULE

SHEET #
A2.6

B-21-0959CITY OF PUYALLUP



1 NORTH ELEVATION
[11X17] SCALE: 1/8" = 1'-0"
[22X34] SCALE: 1/4" = 1'-0"



2 EAST ELEVATION
[11X17] SCALE: 1/8" = 1'-0"
[22X34] SCALE: 1/4" = 1'-0"

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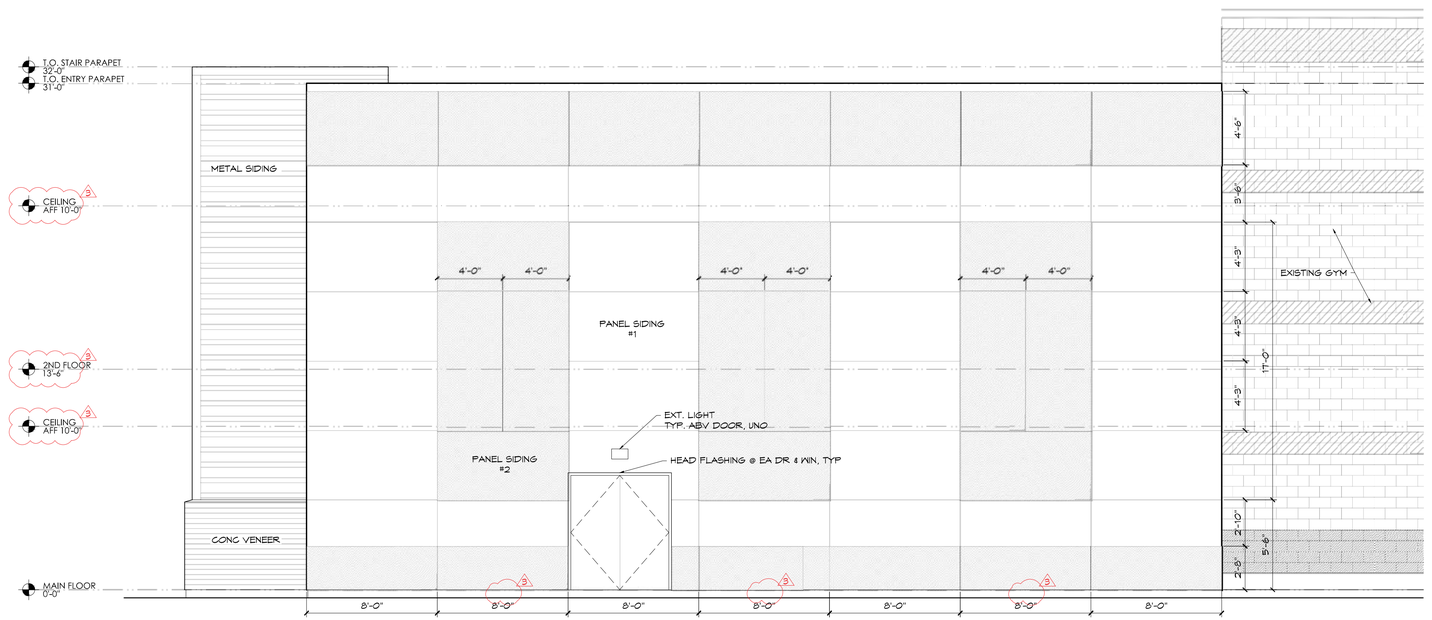
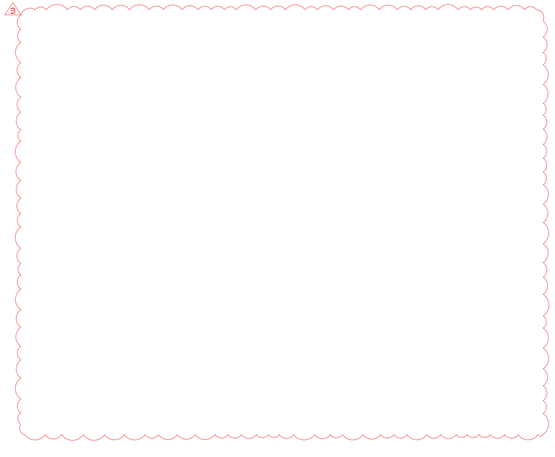
SHEET TITLE
BUILDING ELEVATIONS

SHEET #
A3.1

B-21-0959CITY OF PUYALLUP



1 WEST ELEVATION
[11X17] SCALE: 1/8" = 1'-0"
[22X34] SCALE: 1/4" = 1'-0"



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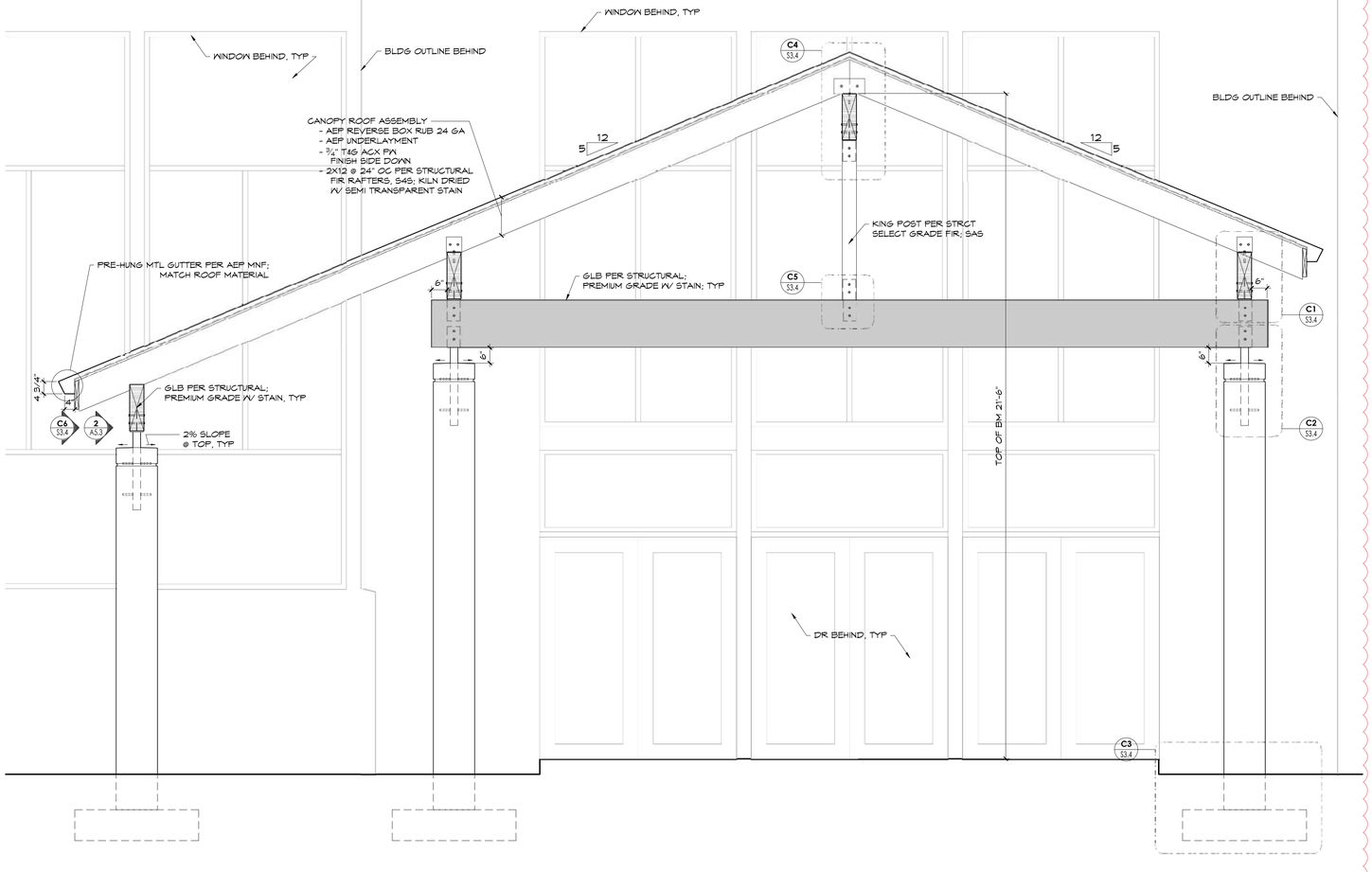
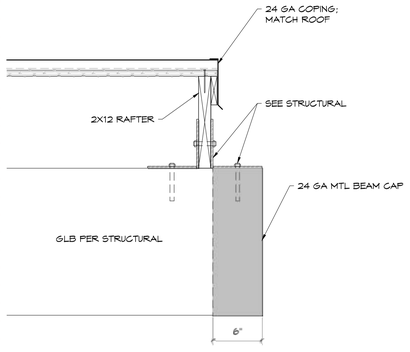
SHEET TITLE
BUILDING ELEVATION

SHEET #
A3.2

B-21-0959CITY OF PUYALLUP





2 ELEVATION VIEW @ BM CAP

(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"

1 ENTRY CANOPY

(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"

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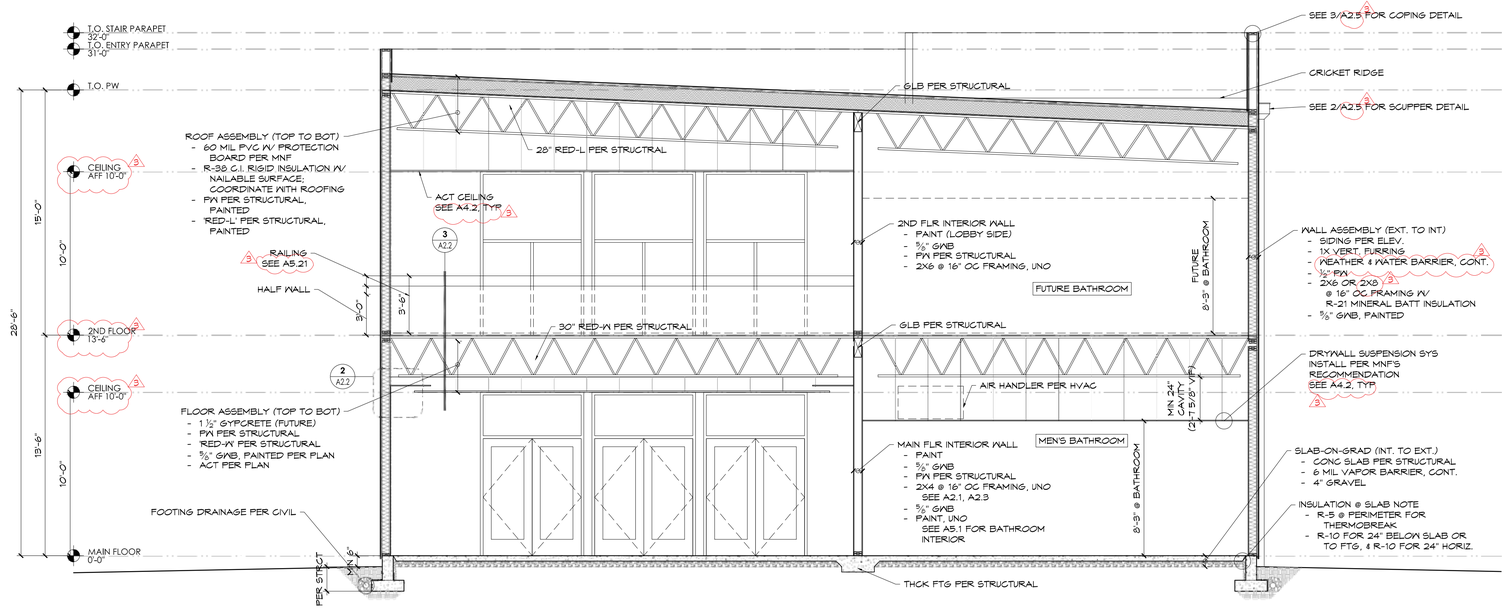
SHEET TITLE

ENTRY CANOPY

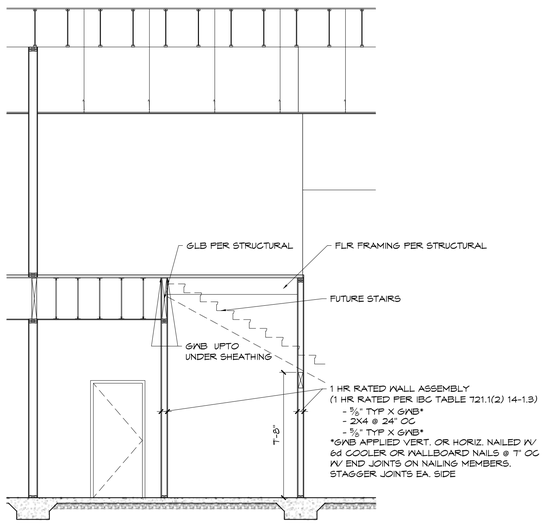
SHEET #

A3.3

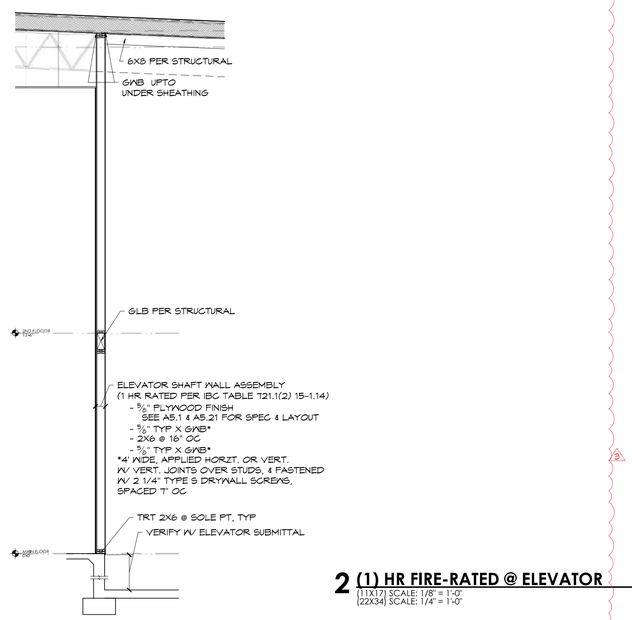
B-21-0959CITY OF PUYALLUP



1 E/W SECTION
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



3 (1) HR FIRE-RATED @ ELEC. ROOM
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



2 (1) HR FIRE-RATED @ ELEVATOR
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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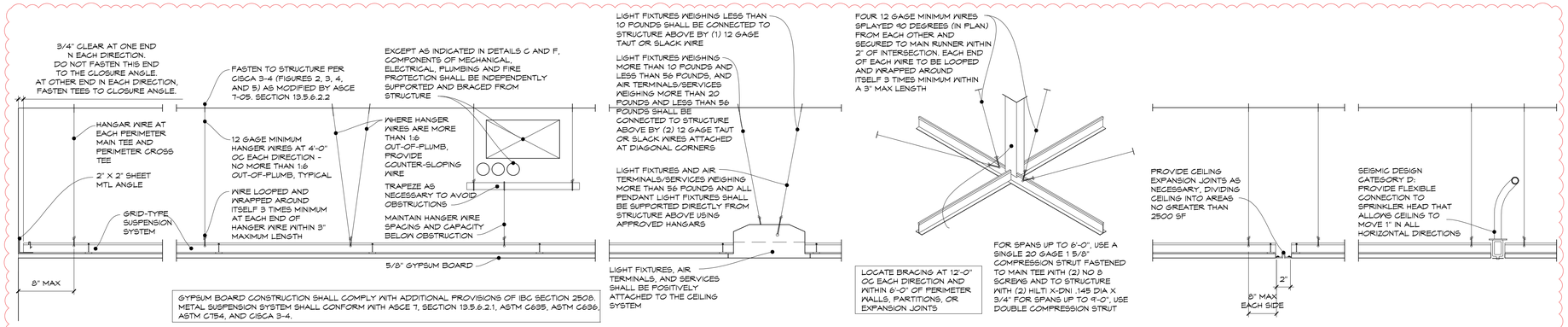
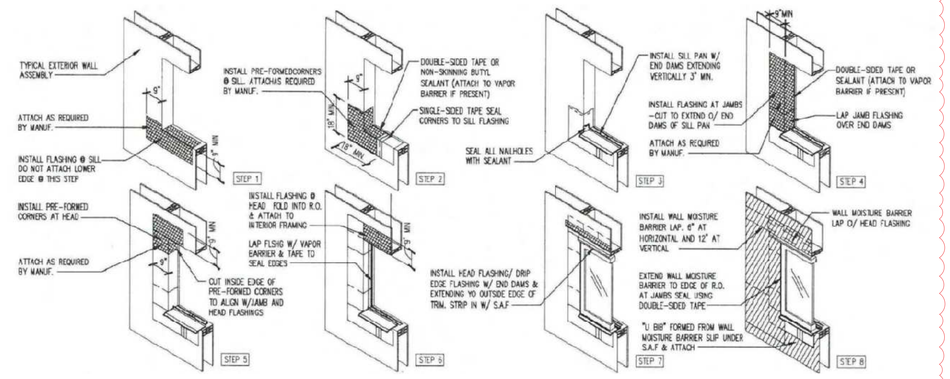
SHEET TITLE
BUILDING SECTION & WALL DETAILS

SHEET #
A4.1

B-21-0959CITY OF PUYALLUP



1 SUSPENSION CEILING INSTALLATION



2 MIN OPNG FLASHING INSTALLATION

NTS

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CASCADE CHRISTIAN JR. HIGH SCHOOL LOBBY ADDITION

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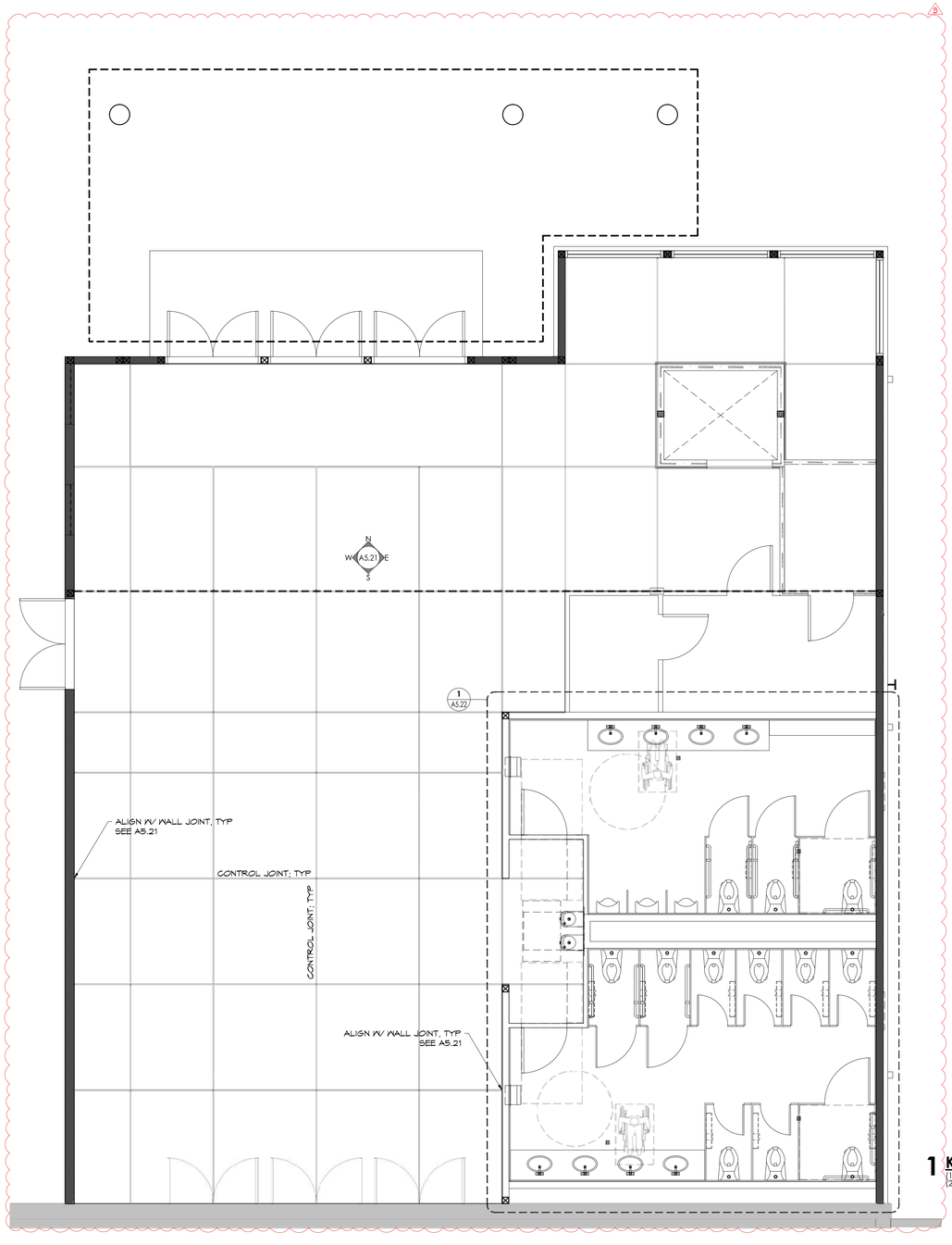
SHEET TITLE
DETAILS

SHEET #
A4.2

B-21-0959CITY OF PUYALLUP



1 KEY NOTE PLAN

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

FINISH SCHEDULE - CASCADE CHRISTIAN SCHOOL - LOBBY ADDITION

	KEY	LOCATION	DESCRIPTION	MNF	SPECIFICATION	REMARKS
MAIN FLOOR	1	FLOOR	POLISHED CONCRETE			SEE A5.1 FOR JOINT LAYOUT
	2	BASE	1X6 MDF W/ PAINT-2	SHERWIN WILLIAM		
	3.1	WALL, TYP	GWB W/ PAINT-1	SHERWIN WILLIAM		LEVEL 4 FINISH
	3.2	WALL@LOBBY	GWB W/ PAINT-1	SHERWIN WILLIAM		LEVEL 5 FINISH
	3.21	WALL@LOBBY	CONTROL JOINT	CLARKDIETRICH	ZNCJ	CONTROL JOINT LAYOUT PER A5.21 MITOR HORZ. VERT. JOINTS
	3.3	WALL@ELEV	5/8" MAPLE APPLEPLY	APPLPLY	SLIP MATCH	CLEAR COAT
	3.31	WALL@ELEV	CONTROL JOINT	FRY REGULET		JOINT LAYOUT PER A5.21
	4	CEILING LIGHT COVE	GWB W/ PAINT-3	SHERWIN WILLIAM		SEE A2.2
	5	CEILING	2'X4' ACOUSTIC CEILING	ARMSTRONG		MAIN & 2ND FLOOR CEILING PROVIDE EDGE TRIM SEE A2.2, A2.4
	6	NOT IN USE				
	7.1	WD CAP	1X5 MDF W/ PAINT	SHERWIN WILLIAM		
	7.2	TOP RAIL	2X1X1/4" TUBE STEEL			CLEAR COAT | SEE A5.21
	7.3	POST	2X2X1/4" TUBE STEEL			CLEAR COAT | SEE A5.21
	7.4	RAILING	1/2" ROD			CLEAR FINISH, SEE A5.21
MAIN FLOOR BATH-ROOM	11	FLOOR	POLISHED CONCRETE	TBD		
	12	BASE COVE	SCHLUTER	DILEX-AHK	FINISHED BRUSHED NICKEL	
	13	BASE	TILE-1			DARKER GROUT | 10" HEIGHT
	14	WAINSCOT	TILE-2	TBD		12"X24" TILE
	15	TILE WALL CAP	SCHLUTER	JOLLY	FINISHED BRUSHED NICKEL	
	16	UPPER WALL	GWB W/ PAINT-4	SHERWIN WILLIAM		
	17	TOILE PARTITIONS	P-LAM	WILSONART		
	18	VANITY TOP	SOLID SURFACE QUARTZ	PENTAL OR EQ		
	19	MIRROR		TBD		
	20	CEILING	DRYWALL SUSPENSION W/ PAINT -1	ARMSTRONG		

2 FINISH SCHEDULE

BATHROOM ACCESSORY SCHEDULE - CASCADE CHRISTIAN SCHOOL - LOBBY ADDITION

	KEY	LOCATION	DESCRIPTION	MNF	SPECIFICATION	REMARKS
MAIN FLR BATH-ROOM	1	BOTH	PAPER TOWEL DISPENSER	BOBRICK	B-39747	AUTOMATIC
	2	BOTH	SOAP DISPENSER	MATCH W/ FAUCET MNF		AUTOMATICL; DECK MOUNT
	3	MEN'S	TOILET TISSUE DISPENSER	BOBRICK	B-221	
	4	MEN'S	TOILET SEAT COVER DISPENSER	BOBRICK	B-3588	
	5	WOMEN'S	TOILET TOWEL, SEAT COVER & WASTE	BOBRICK	5A: B30919 5B: B30929	TOWELS TO BE CLOSE TO THE TOILET

3 BATHROOM ACCESSORY

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17774 REGISTERED ARCHITECT JEFFREY E. BROWN STATE OF WASHINGTON

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PUYALLUP, WA 98372

PROJECT NUMBER
20004

DRAWING TYPE
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09.18.20	REVISION-CITY	
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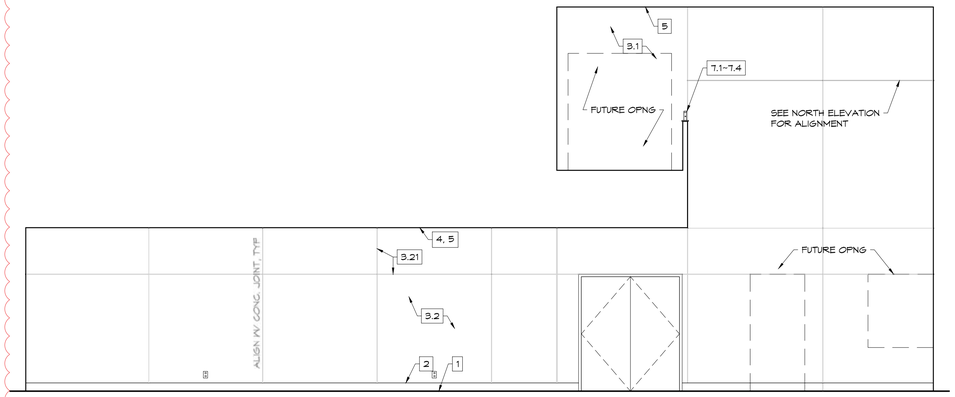
11.11.21	REVISION-CITY	3

SHEET TITLE
KEY NOTE PLAN & FINISH SCHD

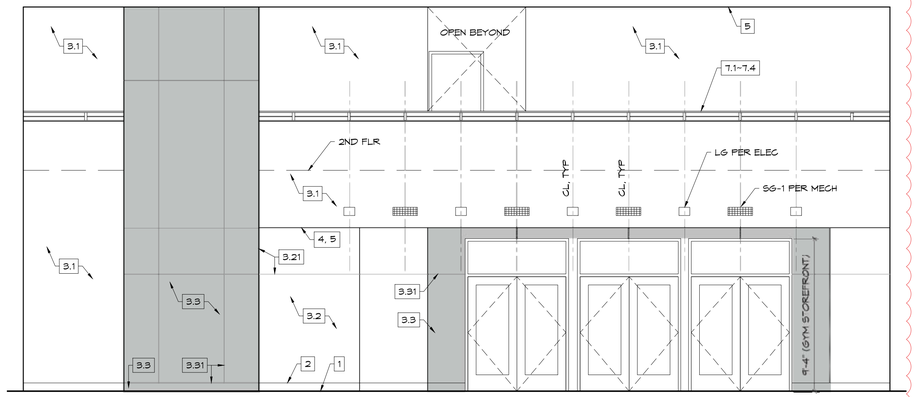
SHEET #
A5.1

B-21-0959CITY OF PUYALLUP

NOTE: SEE A5.1 FOR FINISH SCHEDULE



E LOBBY
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



S LOBBY
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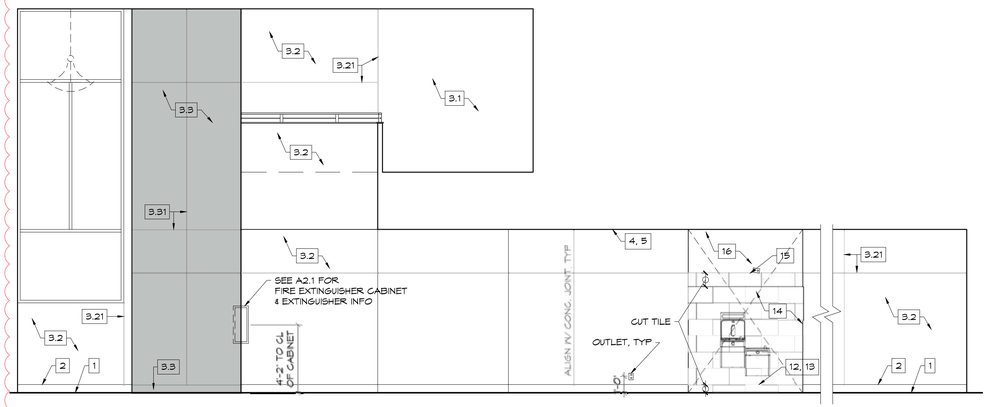
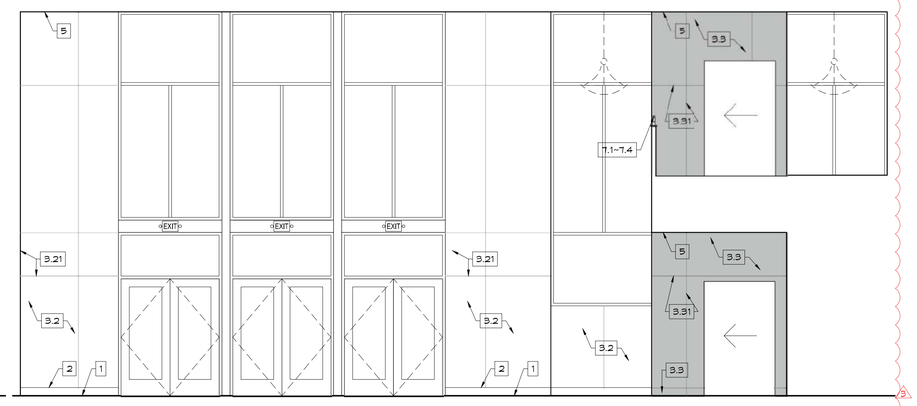
(22X34) SCALE: 1/4" = 1'-0"



W LOBBY
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



N LOBBY
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17774 REGISTERED ARCHITECT JEFFREY E. BROWN STATE OF WASHINGTON

PROJECT NAME/ADDRESS

CASCADE CHRISTIAN JR. HIGH SCHOOL LOBBY ADDITION

815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

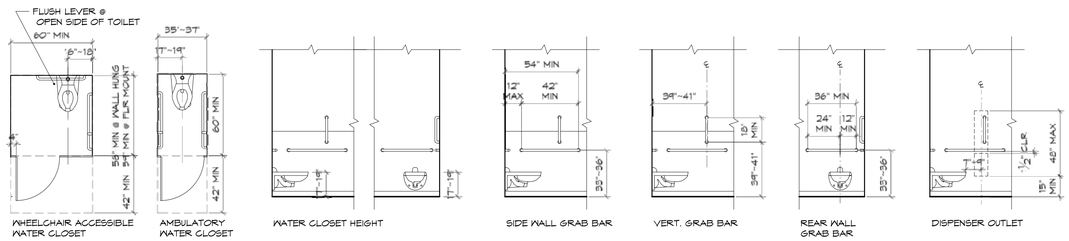
ISSUE DATE	ISSUE DESCRIPTION	NO.
04.27.20	PERMIT	
09.18.20	REVISION-CITY	1
11.24.20	REVISION	2
11.11.21	REVISION-CITY	3

SHEET TITLE
LOBBY INT. ELEVATIONS

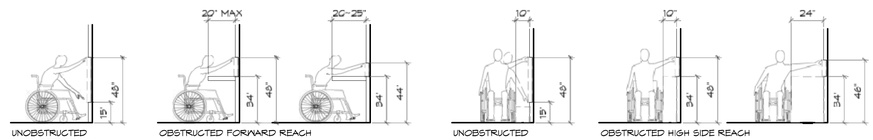
SHEET #
A5.21

B-21-0959CITY OF PUYALLUP

BATHROOM ACCESSORY SCHEDULE & MOUNTING HEIGHTS



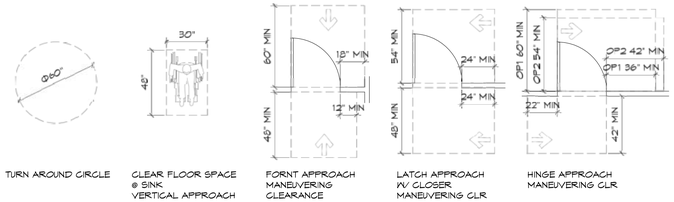
WHEELCHAIR ACCESSIBLE WATER CLOSET | AMBULATORY WATER CLOSET | WATER CLOSET HEIGHT | SIDE WALL GRAB BAR | VERT. GRAB BAR | REAR WALL GRAB BAR | DISPENSER OUTLET



UNOBSTRUCTED FORWARD REACH | OBSTRUCTED FORWARD REACH | UNOBSTRUCTED SIDE REACH | OBSTRUCTED HIGH SIDE REACH

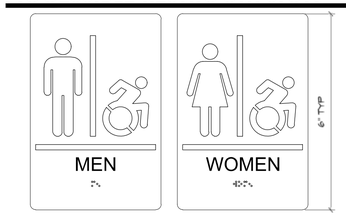
NOTE:
1. PROVIDE SOLID BLOCKING FOR ALL WALL MOUNTED CASEWORK, EQUIPMENT & ACCESSORIES
2. COORDINATE LOCATIONS FOR WALL MOUNTED EQUIPMENT WITH OWNER PRIOR TO INSTALLATION
3. GRAB BARS INSTALLATIONS SHALL RESIST A SINGLE CONCENTRATED LOAD OF 250 POUNDS APPLIED IN ANY DIRECTION AN ANY POINT.

ACCESSIBLE SYMBOLS KEY



TURN AROUND CIRCLE | CLEAR FLOOR SPACE @ SINK VERTICAL APPROACH | FORNT APPROACH MANEUVERING CLEARANCE | LATCH APPROACH W/ CLOSER MANEUVERING CLR | HINGE APPROACH MANEUVERING CLR

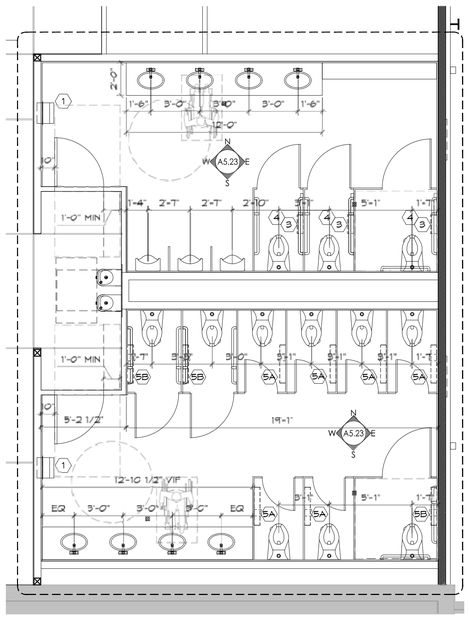
ACCESSIBLE RESTROOM SIGN



1. ALL HANDICAP ROOMS TO HAVE SINGAGE PER ICC 1101.2.9 (ICC A117.1 SECTION 703.6.3.1) ALL INTERIOR SIGNS DEPICTING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH SECTION 706 (ICC A117.1 SECTION 703)
2. ALL ACCESSIBLE SIGNAGE DEPICTING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE WHITE ON A BLUE BACKGROUND PER 1101.2.9 IN THE WA STATE AMENDMENTS TO THE IBC
3. MOUNT ACCESSIBLE SIGNS 40" MIN AFF, MEASURED TO THE BASELINE OF THE CHARACTER PER ICC/ANSI 117.1-2009 SECTION 703.4.5

RESTROOM GENERAL NOTES:

1. TOILET ROOM PLAN & ELEVATIONS ILLUSTRATE FIXTURE CLEARANCE DIMENSIONS, MOUNTING HEIGHTS AND ACCESSORY PLACEMENT. ACTUAL LAYOUT MAY VARY. SEE FLOOR PLAN FOR CORRECTION LAYOUT.
2. LOWER EDGE OF LAVATORY TO BE 2'-3" MIN. ABOVE FINISH FLOOR FOR KNEE CLEARANCE
3. MIRROR TO BE MOUNTED 3'-4" MAX ABOVE FINISH FLOOR.
4. GRAB BARS TO BE 1-1/4" ~ 1-1/2" IN DIAMETER, MOUNTED 1-1/2" FROM WALL. BARS SHALL BE CAPABLE OF SUPPORTING 300 LB LIVE LOAD WITHOUT PERMANENT DEFLECTION.
5. LAVATORY RIM TO BE 34" ABOVE FINISH FLOOR.
6. FLOORS SHALL BE SMOOTH, HARD, NON-ABSORBENT SURFACE SUCH AS SHEET VINYL OR OTHER AS ACCEPTABLE BY LOCAL HEALTH AND BUILDING DEPARTMENTS. FLOORING MATERIAL MUST EXTEND ONTO THE WALL AT LEAST 6". SEE FINISH SCHEDULE FOR MORE INFORMATION.
7. DIMENSIONS, NOTES, AND EQUIPMENT TYPICAL FOR ALL TOILET ROOMS, UNLESS NOTED OTHERWISE.
8. SEE FINISH SCHEDULE ON SHEET ID## FOR RESTROOM FINISH INFORMATION.
9. TOILET ROOM FAN TO BE INTEGRALLY SWITCHED WITH TOILET LIGHT AND VENTED TO THE OUTSIDE.
10. CONCRETE OR CMU WALLS IN TOILET ROOMS SHALL BE FURRED OUT AND FINISHED SIMILAR TO ADJACENT WALLS.
11. PROVIDE PAPER TOWEL DISPENSER. UNIT TO BE MOUNTED SO THAT CONTROLS OR OPENING ARE LOCATED 40" MAX ABOVE FINISH FLOOR.
12. GYPSUM BOARD APPLIED TO PLUMBING WALLS SHOULD BE WATER-RESISTANT.
13. WATER CLOSET FLUSH VALVE TO BE ON OPEN SIDE OF TANK.
14. PROVIDE BLOCKING AS REQUIRED TO SUPPORT SINK, GRAB BARS, AND OTHER HARDWARE.
15. TOILET PAPER DISPENSERS SHALL COMPLY WITH SECTION 309.4. WHERE THE DISPENSER IS LOCATED ABOVE THE GRAB BAR, THE OUTLET OF THE DISPENSER SHALL BE LOCATED WITHIN AN AREA 24" MIN AND 42" MAX FROM THE REAR WALL. THE OUTLET OF THE DISPENSER SHALL BE LOCATED 15" MIN AND 48" MAX ABOVE THE FLOOR. DISPENSERS SHALL COMPLY WITH SECTION 604.9. DISPENSERS SHALL NOT BE OF A TYPE THAT CONTROL DELIVERY, OR DO NOT ALLOW CONTINUOUS PAPER FLOW.
16. OUTLET SHALL BE 15" MIN AND 48" MAX ABOVE FINISH FLOOR. THERE SHALL BE 1-1/2" MIN CLEARANCE BELOW AND 12" MIN ABOVE THE GRAB BAR.
17. OTHER DISPENSERS AND DISPOSAL FIXTURES SHALL BE LOCATED 40" MAX ABOVE FINISH FLOOR, MEASURED TO ANY RACK, OPERATING CONTROL, RECEPTACLE OR DISPENSER
18. WALL WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE TO A HEIGHT OF 4'-0" ABOVE FINISH FLOOR.



1 RESTROOM PLAN

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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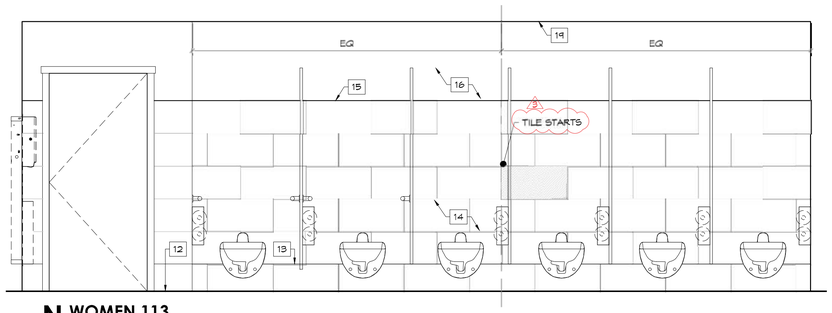
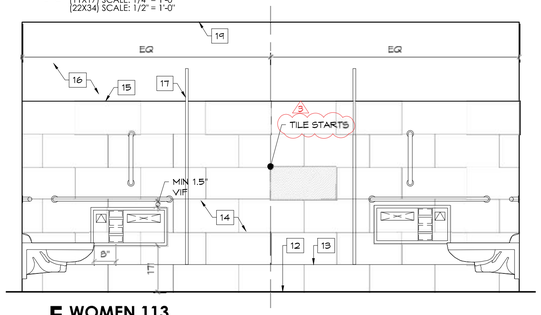
SHEET TITLE
BATHROOM NOTE 3

SHEET #
A5.22 3

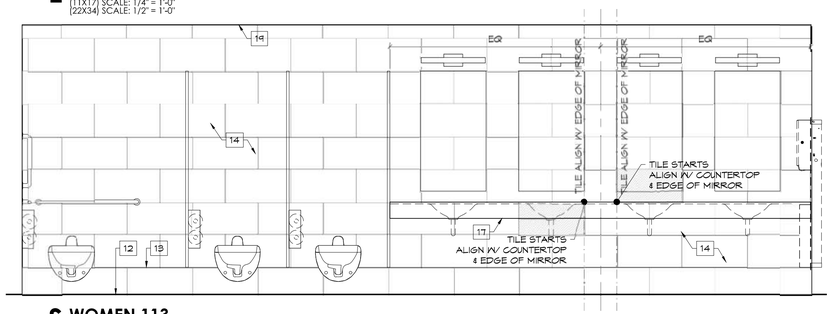
B-21-0959CITY OF PUYALLUP



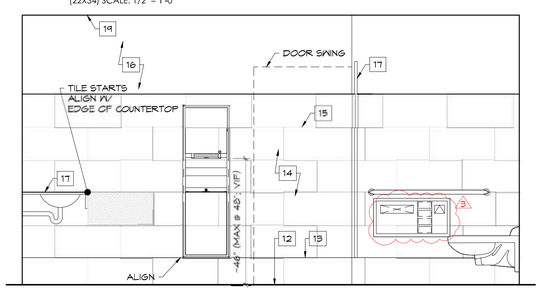
N WOMEN 113
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"



E WOMEN 113
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"

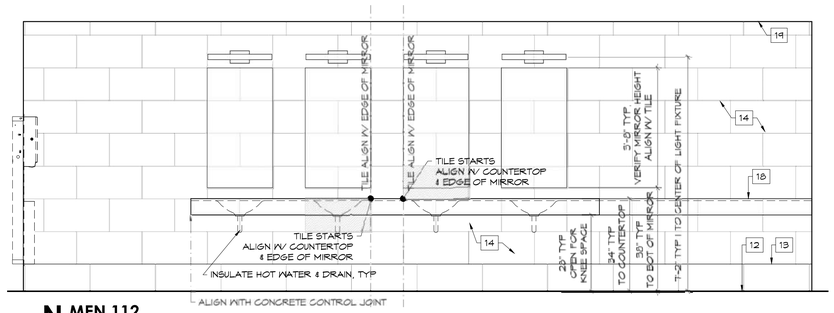


S WOMEN 113
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"



W WOMEN 113
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE: 1/2" = 1'-0"

NOTE: SEE A5.1 FOR FINISH SCHEDULE



N MEN 112
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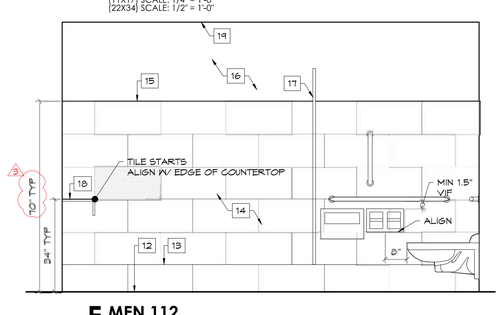
(22X34) SCALE: 1/2" = 1'-0"



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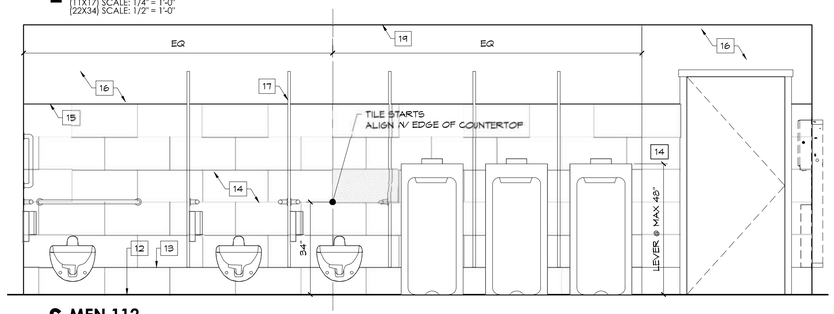
(22X34) SCALE: 1/2" = 1'-0"



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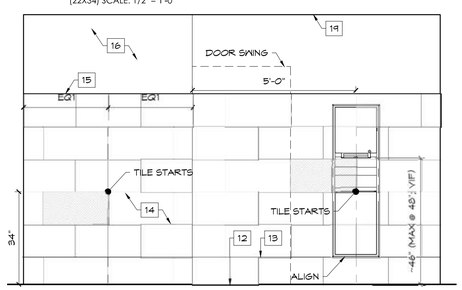

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SHEET TITLE
BATHROOM INT. ELEVATIONS

SHEET #
A5.23 3

B-21-0959CITY OF PUYALLUP

REVIEW ALL SPECIAL INSPECTIONS. SUBMIT REPORTS TO BUILDING INSPECTOR.

1.0 CONSTRUCTION NOTES

THESE NOTES SUPPLEMENT THE SPECIFICATION. ANY DISCREPANCY FOUND AMONG THE DRAWINGS, SPECIFICATIONS, THESE NOTES, AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT/ENGINEER, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE CONTRACTOR'S RISK. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK FOR FABRICATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL ERECTION BRACING, FORM WORK, AND TEMPORARY CONSTRUCTION SHORING

1.10 BIDDER'S WARRANTY

BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE CONTRACTOR WARRANTS THAT:

THE CONTRACTOR AND ALL SUBCONTRACTORS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS AND STRUCTURAL NOTES AND HAVE FOUND THEM COMPLETE AND FREE FROM AMBIGUOUS AND SUFFICIENT FOR THE PURPOSE INTEND

THE CONTRACTOR HAS CAREFULLY EXAMINED THE SITE OF THE WORK AND THAT FROM HIS OWN INVESTIGATIONS, HE HAS SATISFIED HIMSELF AS TO THE NATURE AND LOCATION OF THE WORK, AS TO THE CHARACTER, QUALITY, QUANTITIES OF MATERIAL AND DIFFICULTIES TO BE ENCOUNTERED, AS TO THE EXTENT OF EQUIPMENT AND OTHER FACILITIES NEEDED FOR THE PERFORMANCE OF THE WORK AND AS TO THE GENERAL AND LOCAL CONDITIONS, AND OTHER ITEMS WHICH MAY IN ANY WAY AFFECT THE WORK OR ITS PERFORMANCE;

THE CONTRACTOR AND ALL WORKMEN HE INTENDS TO USE ARE SKILLED AND EXPERIENCED IN THE TYPE OF CONSTRUCTION REPRESENTED BY THE DRAWINGS AND DOCUMENTS BID UPON

NEITHER THE CONTRACTOR NOR ANY OF HIS EMPLOYEES, AGENTS, INTENDED SUPPLIERS, OR SUBCONTRACTORS HAVE RELIED UPON ANY VERBAL REPRESENTATION ALLEGED AUTHORIZED OR UNAUTHORIZED FROM THE OWNER OR HIS EMPLOYEES OR AGENTS, INCLUDING THE ARCHITECT OR ENGINEERS, IN ASSEMBLING THE BID FIGURES

THE BID FIGURE IS BASED SOLELY UPON THE CONSTRUCTION CONTRACT DOCUMENTS AND PROPERLY ISSUED WRITTEN ADDENDA AND NOT UPON ANY OTHER WRITTEN OR VERBAL REPRESENTATIONS

1.20 CODE

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2015 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE LOCAL BUILDING AUTHORITY.

ALL REFERENCE TO OTHER CODES AND STANDARDS, (ACI, ASTM, ETC.,) SHALL BE FOR THE LATEST OR MOST CURRENT EDITION AVAILABLE.

1.30 DESIGN CRITERIA

UNIFORM LOADS:

LOADS	LIVE LOAD	DEAD LOAD	
ROOF	25 PSF*	ACTUAL	I_S = 1.1
CLASSROOM	40 PSF	ACTUAL	
CORRIDOR EXIT	100 PSF	ACTUAL	
SLAB-ON-GRADE	125 PSF	ACTUAL	

* 15% INCREASE IN STRESSES FOR WD FRAMING ALLOWED FOR SNOW LIVE LOAD

CONCENTRATED LOADS:

MECHANICAL UNITS OR OTHER CONCENTRATED LOADS ON ROOF OR FLOOR. ALL MANUFACTURES OF PRE-ENGINEERED SYSTEMS SHALL LOCATE, COORDINATE, VERIFY WEIGHTS, ETC., AND DESIGN THEIR SYSTEM FOR THESE LOADS.

LATERAL LOADS:

WIND (IBC 1609)
110 MPH -3 SECOND GUST
I_W = 1.0
EXPOSURE B

EARTHQUAKE DESIGN DATA (IBC 1613)
I_e = 1.25
S_S = 1.25
S_L = 0.48
SITE CLASS D
S_{DS} = 0.83
S_{DI} = 0.48
SEISMIC DESIGN CATEGORY: D
BEARING WALL SYSTEM
-LIGHT FRAMING WALL WITH SHEAR PANELS
-WOOD STRUCTURAL PANELS
V = 0.16W (STRENGTH DESIGN)
C_S = 0.16
R = 6.5
EQUIVALENT LATERAL FORCE METHODS

1.40 SOIL DATA

1500 PSF BEARING -SEE SOILS REPORT BY KRAZAN & ASSOC.

1.50 INSPECTION -SEE SPECIFICATION

1.60 DIFFERED SUBMITTALS / SHOP DRAWINGS

SUBMIT DIFFERED SUBMITTALS / SHOP DRAWINGS TO BE REVIEWED BY THE ENGINEER FOR THE FOLLOWING:
CONCRETE MIX
REINFORCING STEEL
PRE-ENGINEERED STEEL / WOOD TRUSSES (WASHINGTON STATE SEAL REQUIRED)
GLUE-LAMINATED MEMBERS
RED IRON

1.70 MISCELLANEOUS

VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD

VERIFY SIZE AND LOCATION OF ALL OPENINGS IN THE FLOORS, ROOF AND WALLS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS

CONSTRUCTION DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS OF SECTIONS OF THIS PROJECT AS APPROVED BY THE ARCHITECT/ENGINEER

SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR DIMENSIONS AND LOCATIONS OF OPENINGS NOT DIMENSIONED OR SHOWN ON STRUCTURAL PLANS

1.80 SPECIAL INSPECTION

IN ACCORDANCE WITH IBC SECTION 1704 SHALL BE PROVIDED FOR THE FOLLOWING WORK ITEMS: (REFER TP SECTION 1704 FOR COMPLETE DESCRIPTIONS)

ITEM	REQUIRED FOR	FREQUENCY
REINFORCED CONCRETE	REINFORCING	PERIODIC
	REINFORCING WELDING	
	BOLTS INSTALLED IN CONC.	CONTINUOUS
	USE OF CORRECT DESIGN MIX	PERIODIC
	SLUMP & AIR TESTS	CONTINUOUS
	PLACEMENT OF CONC.	CONTINUOUS
	CURING TEMP. & TECHNIQUE	PERIODIC
HIGH STRENGTH BOLTS	ID MARKINGS	PERIODIC
	MFR CERTIFICATE	PERIODIC
	BEARING-TYPE CONNECTION	PERIODIC
	SIP-CRITICAL CONNECTION	CONT./PERD.
EPOXY ANCHOR BOLTS	DRILLING & EPOXY	CONTINUOUS
STRUCTURAL STEEL	ID MAKING PER CONSTRUCTION DOC'S	
	MFR CERTIFIED MILL TEST REPORT	
STRUCTURAL STEEL WELDING	ALL PENETRATION GROOVE WELDS	CONTINUOUS
	MULTI-PASS FILLET WELDS	CONTINUOUS
	SINGLE PASS FILLET WELDS >5/16"	CONTINUOUS
	SINGLE PASS FILLET WELDS ≤ 5/16"	PERIODIC
TIMBER	SHEAR WALL & DIAPHRAGM NAILING	PERIODIC
	DRAG STRUTS AND HOLDOWNS	PERIODIC

1.90 QUALITY ASSURANCE

QUALITY ASSURANCE PLANS FOR SEISMIC RESISTANCE:

UNLESS OTHERWISE PROVIDED BY THE ARCHITECT OR OTHER CONSULTANTS FOR THIS PROJECT, THE CONTRACTOR SHALL PROVIDE QUALITY ASSURANCE FOR EACH OF THE FOLLOWING SYSTEMS:
PIPING SYSTEMS AND MECHANICAL UNITS CONTAINING FLAMMABLE COMBUSTIBLE OR HIGHLY TOXIC MATERIALS
ANCHORAGE OF ELECTRICAL EQUIPMENT USED FOR EMERGENCY OR STANDBY POWER SYSTEMS
SUSPENDED CEILING SYSTEMS AND THEIR ANCHORAGE

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE BUILDING'S SEISMIC -FORCE-RESISTING SYSTEM OR OTHER SYSTEM LISTED IN THE QUALITY ASSURANCE PLAN(S) SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL, OWNER AND ARCHITECT PRIOR TO COMMENCEMENT OF THE WORK ON THAT SYSTEM. THE STATEMENT OF RESPONSIBILITY SHALL MEET ALL THE REQUIREMENTS OF IBC 1705.3

2.0 SITE WORK

2.10 EXCAVATION

EXCAVATE TO DEPTH SHOWN AND TO FIRM UNDISTRIBUTED MATERIAL.

OVER-EXCAVATIONS SHALL BE BACKFILLED WITH LEAN CONCRETE (f'_c = 2,000 psi) AT THE CONTRACTOR'S EXPENSE. EXERCISE EXTREME CARE DURING EXCAVATION TO AVOID DAMAGE TO BURIED LINES, TANKS, AND OTHER CONCEALED ITEMS. UPON DISCOVERY, DO NOT PROCEED WITH WORK UNTIL RECEIVING WRITTEN INSTRUCTIONS FROM ARCHITECT. A COMPETENT REPRESENTATIVE OF THE OWNER SHALL INSPECT ALL FOOTING EXCAVATIONS FOR SUITABILITY OF BEARING SURFACES PRIOR TO PLACEMENT OF REINFORCING STEEL. PROVIDE DRAINAGE AS NECESSARY TO AVOID WATER -SOFTENED SUB-GRADE.

2.20 FILL, BACKFILL, AND COMPACTION

BACKFILL AGAINST WALLS SHALL NOT BE PLACED UNTIL AFTER THE REMOVAL OF ALL MATERIAL SUBJECT TO ROT OR CORROSION. ALL FILL PLACED AGAINST RETAINING WALLS OR BASEMENT WALLS SHALL BE FREE-DRAINING GRANULAR MATERIAL. STRUCTURAL FILL OTHER THAN PEA GRAVEL SHALL BE GRANULAR, PLACED IN 6 INCH LIFTS AND COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 (MOD. PROCTOR) AND ASTM D-698 (STANDARD PROCTOR). PEA GRAVEL FILL SHALL HAVE A MAXIMUM PARTICLES SIZE OF 3/8" DIAMETER.

3.0 STRUCTURAL CONCRETE

3.10 GENERAL

ALL CONCRETE SHALL BE HARD ROCK CONCRETE MEETING REQUIREMENTS OF ACI-301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS." PROPORTIONING OF INGREDIENTS FOR EACH CONCRETE MIX SHALL BE BY METHOD 2 OR THE ALTERNATE PROCEDURE GIVEN IN ACI-301, PLACE CONCRETE PER ACI-304 AND CONFORM TO ACI-604(306) FOR WINTER CONCRETING AND ACI-605(305) FOR HOT WEATHER CONCRETE. USE INTERIOR MECHANICAL VIBRATORS WITH 7,000 RPM MINIMUM FREQUENCY. DO NOT OVER-VIBRATE. CONCRETE SHALL BE PLACED IN A SINGLE POUR BETWEEN CONSTRUCTION OR CONTROL JOINTS. PROTECT ALL CONCRETE FROM PREMATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURE FOR SEVEN DAYS AFTER PLACING.

3.20 STRENGTH

28 DAY COMPRESSIVE STRENGTHS SHALL BE:

ITEMS	PSI	SLUMP
SLABS	3000	3" ± 1"
BEAMS, COLUMNS, VERTICALLY FORMED WALL	3000	3" ± 1"
FOOTING	3000	4" ± 1"

THESE SLUMPS MAY BE INCREASED WITH PROPER ADDITION OF ADMIXTURES FOR WORKABILITY WITHOUT CHANGING THE WATER CONTENT OF THE ORIGINAL APPROVED MIX DESIGN. ADMIXTURES CONTAINING CHLORIDES ARE NOT PERMITTED UNLESS APPROVED BY THE ENGINEER.

3.30 MATERIALS

CEMENT: ASTM 150, TYPE I OR TYPE I-II. ENGINEER'S APPROVAL IS NEEDED FOR USE OF TYPE III CEMENT

COARSE AND FINE AGGREGATES: ASTM C-33

WATER: CLEAN AND POTABLE

3.40 WATER REDUCING ADMIXTURES

WATER REDUCING ADMIXTURE: ASTM C-494. ADMIXTURES SHALL BE USED IN EXACT ACCORDANCE WITH MANUFACTURE'S INSTRUCTIONS

SYNERGIZED PERFORMANCE SYSTEMS: CONCRETE USING ADMIXTURES TO PRODUCE FLOW-ABLE CONCRETE MAY BE USED SUBJECT TO ENGINEER'S APPROVAL

AIR ENTRAINMENT: ASTM C-260 AND ASTM C-494, ENTRAIN 4% ± 1% BY VOLUME IN ALL EXPOSED CONCRETE

NO OTHER ADMIXTURE PERMITTED UNLESS APPROVED BY THE ENGINEER

3.50 FORMWORK AND SHORING

FOLLOW RECOMMENDED PRACTICE FOR CONCRETE FORMWORK (ACI-347)

RESHORING FOR EARLY REMOVAL OF ORIGINAL SUPPORTS WILL NOT BE PERMITTED

WHILE RESHORING OPERATIONS ARE UNDERWAY, NO CONSTRUCTION LOADS WILL BE PERMITTED ON THE NEW CONSTRUCTION

ALL SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR

FORMWORK SUPPORTS AND SHORING SHALL BE DESIGNED TO PROVIDE FINISHED CONCRETE SURFACES AT ALL FACES LEVEL, PLUMB, AND TRUE TO THE DIMENSIONS AND ELEVATIONS SHOWN. TOLERANCES AND VARIATIONS SHALL BE AS SPECIFIED

3.60 REINFORCING STEEL

DETAIL, FABRICATE, AND PLACE PER ACI-315 AND ACI-318. SUPPORT REINFORCEMENT WITH APPROVED CHAIRS, SPACERS, OR TIES

DEFORMED BAR REINFORCEMENT: ASTM A-615 GRADE 60

WELDED DEFORMED BAR REINFORCEMENT: ASTM A-615 GRADE 60 OR 40, WELDABLE GRADE, SUBMIT WELD PROCEDURES AND MILL CERTIFICATES SHOWING CARBON CONTENT FOR ALL BARS TO BE WELDED
WELED WIRE FABRIC — ASTM A-185 & ASTM A-82 — f_y = 65 KSI
DEFORMED BAR ANCHORS — ASTM A-496

ALL REINFORCING SHALL BE LA-SPLICED A MINIMUM LAP OF 40 BAR DIAMETERS EXCEPT AS NOTED SPECIFICALLY ON THE STRUCTURAL DRAWINGS. NO MORE THAN 50% OF HORIZONTAL OR VERTICAL BARS SHALL BE SPLICED OF ONE LOCATION.

PROVIDE ELBOW BARS (40 DIAMETER) TO LAP HORIZONTAL STEEL AT CORNERS AND INTERSECTIONS IN FOOTINGS AND WALLS

LAP WELDED FABRIC 12" OR ONE SPACING PLUS 2", WHICHEVER IS MORE

3.70 CONCRETE COVER ON REINFORCING (UNLESS SHOWN OTHERWISE)

BOTTOM OF FOOTINGS	3"
FORMED EARTH FACE & SLAB-ON-GRADE	2"
WALLS, WEATHER FACE	1 1/2"
COLUMNS AND BEAMS TO STIRRUPS	1 1/2"
BOTTOM OF INTERIOR SLAB	3/4"
WALLS, INSIDE FACE	1"

3.80 CONSTRUCTION JOINTS

CONSTRUCTION JOINT SPACING IN WALLS SHALL NOT EXCEED 50' ON CENTER EXCEPT AS DIRECTED BY THE ARCHITECT/ENGINEER

HORIZONTAL CONSTRUCTION JOINTS IN BEAMS AND GIRDERS ARE NOT PERMITTED EXCEPT WHERE INDICATED. VERTICAL CONSTRUCTION JOINTS IN BEAMS AND SLABS SHALL BE LOCATED BETWEEN THE MIDPOINT AND THE THIRD POINT OF THE SPAN. UNLESS NOTED OTHERWISE, LOCATION OF THE CONSTRUCTION OR CONTROL JOINTS IN SLAB-ON-GRADE SHALL BE ON COLUMN GRIDS OR UNDER PERMANENT PARTITIONS AND SHALL NOT EXCEED 20'-0" C/C EACH WAY.

NO JOINTS, BEAMS, OR GIRDERS SHALL BE SLEEVED FOR PIPING OR CONDUIT EXCEPT AS NOTED ON THE STRUCTURAL DRAWINGS OR AS APPROVED BY THE ARCHITECT/ENGINEER

ELECTRICAL CONDUIT IN SLABS, SHALL BE PLACED AT THE MID-DEPTH OF THE SLAB AT A MINIMUM SPACING OF THREE TIMES THE CONDUITS DIAMETER. CONDUIT OUTSIDE DIAMETER SHALL NOT EXCEED 1/3 OF THE SLAB THICKNESS

PROVIDE CONTROL JOINTS IN EXPOSED HOLLOW CORE TOPPING AT EACH END OF EACH HOLLOW CORE PLANK. PROVIDE ADDITIONAL JOINTS PARALLEL TO PLANKS AT 16' O/C/ MAXIMUM

5.0 METALS

5.10 WELDING

ALL WELDING SHALL BE IN ACCORDANCE WITH THE "STRUCTURAL WELDING CODE" ANSI/AWS D1.1. IN THE CASE OF WELDING REINFORCING BARS, ALL WELDING SHALL BE IN ACCORDANCE WITH ANSI/AWS D1.4. WELDING OF REINFORCEMENT BARS SHALL NOT BE ALLOWED EXCEPT WHERE SHOWN

MATERIALS: USE ONLY E60 OR E770 ELECTRODES

ALL WELDING SHALL BE BY CERTIFIED WELDERS. ALL FULL PENETRATION WELDS SHALL BE INSPECTED BY ULTRASONIC NON-DESTRUCTIVE TESTING PROCEDURES. SUBMIT TEST RESULTS TO ARCHITECT/ENGINEER FOR REVIEW.

5.20 STRUCTURAL STEEL

ALL DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO AISC "MANUAL OF STEEL CONSTRUCTION," LATEST EDITION

MATERIAL	
STEEL SHAPES/PLATES	ASTM A-36
PIPE COLUMNS	ASTM A-53, TYPE E OR S (f_y = 36 ksi.)
TUBE COLUMNS	ASTM A-500, GRADE B (f_y = 46 ksi.)
BOLTS, NUTS	ASTM A-307 UNLESS NOTED OTHERWISE

METAL PROTECTION: ALL STEEL EXPOSED TO WEATHER, MOISTURE, SOIL, OR AS NOTED SHALL BE GALVANIZED PER ASTM A-123 (1.25 OZ/SF MINIMUM). ALL OTHER STEEL SURFACES TO BE SHOP PRIMED AFTER FABRICATION

6.0 WOOD

6.10 GENERAL

FRAMING LUMBER SHALL BE DF#2 OR BETTER, EXCEPT THAT 2X FRAMING LUMBER MAY BE HF #2 UNLESS OTHERWISE SHOWN ON THE PLANS. ALL 2" LUMBER SHALL BE KILN DRIED (KD). EACH PIECE OF LUMBER SHALL BEAR A GRADE STAMP OF A RECOGNIZED LUMBER GRADING OR INSPECTION BUREAU OR AGENCY PER THE NIST AMERICAN SOFTWOOD LUMBER STANDARD PS 20-99

PROVIDE CUT OR MALLEABLE IRON WASHERS OR WHERE BOLT HEADS, NUTS, AND LAG SCREWS BEAR ON WOOD

TREAT ALL WOOD IN CONTACT WITH CONCRETE, MORTAR, GROUT, MASONRY, AND WITHIN 8" OF EARTH; ALL WOOD OVER WATER; AND ALL WOOD IN CONTACT WITH EARTH; WITH ONE OF THE FOLLOWING PROCESSES;
CHROMATED COPPER ARSENATE (CCA-C)
DOT SODIUM BORATE (SBX)
ALKALINE COPPER QUAT ACQ-C AND ACQ-D (CARBONATE)
COPPER AZOLE (CBA-A- AND CA-B)

WHERE POSSIBLE, PRE-CUT MATERIAL BEFORE TREATMENT. ALL FIELD CUTS AND DRILLED HOLES SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA M-4

6.20 ACCESSORIES

BOLTS SHALL BE ASTM A-307

WASHERS SHALL BE MALLEABLE IRON WASHERS (M.I.W.)OR HEAVY PLATE CUT WASHERS

NAILS SHALL BE COMMON, AMERICAN OR CANADIAN MANUFACTURES ONLY

LAG SCREWS, SHEAR PLATES -SEE NATIONAL DESIGN SPECIFICATIONS

ANCHORS AND CONNECTIONS SHALL BE SIMPSON, TECO, LUMBERLOK OR OTHER INTERNATIONAL CODE COUNCIL (ICC) APPROVED PRODUCTS. ALL FASTENERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE SHOWN.

ALL HARDWARE EXPOSED TO WEATHER, IN UNHEATED PORTIONS OF BUILDING, OR IN CONTACT WITH TREATED WOOD AS SPECIFIED ABOVE SHALL BE GALVANIZED AS FOLLOWS:
FASTENERS SHALL BE HOT DIPPED PER ASTM A 153 OR MECHANICALLY GALVANIZED PER ASTM B 695, CLASS 55 OR GREATER.
HARDWARE SHALL BE GALVANIZED PER ONE OF THE FOLLOWING PROCESS: ASTM A 653 CLASS 185 (SIMPSON ZMAX G185) OR BATCH/POST HOT DIPPED GALVANIZED PER ASTM A 123

STAINLESS STEEL HARDWARE AND FASTENERS SHALL BE USED IN CONNECTION WITH ANY PRESERVATIVE TREATMENT PROCESS NOT SPECIFICALLY LISTED ABOVE

6.30 MINIMUM NAILING

MINIMUM NAILING SHALL BE PER IBC TABLE 2304.9.1 -NAILING SCHEDULE

6.40 SHEATHING (PLYWOOD/OSB)

ALL GRADING SHALL CONFORM TO THE FOLLOWING STANDARDS:
NIST VOLUNTARY PRODUCT STANDARD PS 2-92. THICKNESS AND LAY-UP SHALL BE AS SHOWN. ALL PLYWOOD SHALL BE GROUP I OR II SPECIES. UNLESS OTHERWISE SHOWN, PROVIDE THE FOLLOWING MINIMUM NAILING:
PANEL EDGE — 8D @ 6" OC
INTERMED. SUPPORT — 8D @ 12" OC

6.50 GLUELAM BEAMS

MATERIALS, MANUFACTURE AND QUALITY CONTROL SHALL BE PER ANSI/AITC A-190.1 "STRUCTURAL GLUE LAMINATED TIMBER." UNLESS OTHERWISE SHOWN, CAMBER ALL BEAMS 1 1/2 TIMES DEAD LOAD DEFLECTION. UNLESS OTHERWISE SHOWN ALL BEAMS SHALL BE COMBINATION 24F-1.8E AS LISTED IN AWC-ASD TABLE 3.1, AND HAVE EXTERIOR GLUE. UNLESS OTHERWISE SHOWN, INDUSTRIAL APPEARANCE IS ACCEPTABLE.

6.60 WOOD ADHESIVE

ALL WOOD ADHESIVES SHALL BE ELASTOMERIC AND SHALL HAVE A CURRENT ICC-ES APPROVAL. APPLY ALL ADHESIVES IN ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S RECOMMENDATION

6.70 PRE-ENGINEERED TRUSSES

MEMBER GEOMETRY AND SPACING SHALL BE AS SHOWN ON THE PLANS. THE MANUFACTURER SHALL PROVIDE ADDITIONAL FRAMING MEMBER AS SHOWN OR AS NECESSARY TO PROVIDE SUPPORT FOR MECHANICAL EQUIPMENT, WALL, OR OTHER PARTITIONS, SNOW DRIFT LOADS, ETC. TRUSSES WITH SPANS GREATER THAN 35' SHALL HAVE THE HEEL PLATES DESIGNED CONSIDERING THE EFFECT OF ECCENTRIC LOADING

WHERE NOTED PRECUT BLOCKING, BRIDGING, BRACING, AND/OR FILLER PIECES SHALL BE FURNISHED BY THE MANUFACTURER. WHERE APPLICABLE, WIND UPLIFT BRACING, SHALL BE PROVIDED BY THE MANUFACTURE. UNLESS NOTED OTHERWISE, THE TRUSS MANUFACTURE SHALL SPECIFY AND FURNISH CONNECTION HARDWARE FOR THE INSTALLATION OF THEIR SYSTEM

SHOP DRAWINGS SHALL INDICATE ALL REQUIRED PERMANENT BRACING. SUPPORTING CALCULATIONS SHALL INDICATE MEMBER STRESSES, SPECIES/GRADES, AND APPLICABLE ICC-ES APPROVALS. SHOP DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON.

METAL PLATED TRUSSES SHALL BE MANUFACTURED A DETAILED IN CONFORMANCE WITH THE FOLLOWING STANDARDS:
ANSI/TPI 1-2002 NATIONAL DESIGN STANDARDS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION
ANSI/TIP 1-1995 CODE OF STANDARD PRACTICE FOR THE METAL PLATE CONNECTED WOOD TRUSS INDUSTRY
ANSI/TPI 2-1995 STANDARD FOR TESTING METAL PLATE CONNECTED WOOD TRUSSES

WHEN DELIVERED, THE COMPONENTS SHALL BE ACCOMPANIED BY THE FABRICATORS CERTIFICATE OF CONFORMANCE TO THE ABOVE REFERENCED STANDARDS, AND BY THE FOLLOWING USER ADVISORY NOTICES (OR NOTICE EQUIVALENT) TO:
BCSI-B1 SUMMARY SHEET -GUIDE FOR HANDING, INSTALLATION, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES
BCSI-B2 SUMMARY SHEET -TRUSS INSTALLATION AND TEMPORARY BRACING
BCSI-B3 SUMMARY SHEET -WEB MEMBER PERMANENT BRACING/WEB REINFORCEMENT
BCSI-B4 SUMMARY SHEET -CONSTRUCTION LOADING

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE
1. Inspect reinforcement, including prestressing tendons, and verify placement.	—	X	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. Reinforcing bar welding			AWS D1.4 ACI 318: 26.6.4	—
a. Verify weldability of reinforcing bars other than ASTM A706;	—	X		
b. Inspect single-pass fillet welds, maximum 5/16"; and		X		
c. Inspect all other welds.	X			
3. Inspect anchors cast in concrete.	—	X	ACI 318: 17.8.2	—
4. Inspect anchors post-installed in hardened concrete members.[b]				—
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	X		ACI 318: 17.8.2.4	
b. Mechanical anchors and adhesive anchors not defined in 4.a.		X	ACI 318: 17.8.2	
5. Verify use of required design mix	—	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	—	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	—	X	ACI 318: 26.5.3-26.5.5	1908.9
9. Inspect prestressed concrete for:			ACI 318: 2610	—
a. Application of prestressing forces; and	X	—		
b. Grouting of bonded prestressing tendons.	X	—		
10. Inspect erection of precast concrete members.	—	X	ACI 318: Ch. 26.8	—
11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 26.11.2	—
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	—	X	ACI318: 26.11.1.2(b)	—

TABLE C-N5.4-1
Inspection Tasks Prior to Welding

Inspection Tasks Prior to Welding	AWS D1.1/D1.1M References*
Welding procedure specifications (WPSs) available	5.3
Manufacturer certifications for welding consumables available	5.2
Material identification (type/grade)	6.2
Welder identification system	6.4 (welder qualification) (identification system not required by AWS D1.1/D1.1M)
Fit-up of groove welds (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	 6.5.2 5.22 5.15 5.18 5.10, 5.22.1.1
Configuration and finish of access holes	6.5.2, 5.17 (also see Section J1.6)
Fit-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	 5.22.1 5.15 5.18
Check weding equipment	6.2, 5.11

*AWS (2010)

TABLE C-N5.4-2
Inspection Tasks During Welding

Inspection Tasks During Welding	AWS D1.1/D1.1M References*
Use of qualified welders	6.4
Control and handling of welding consumables • Packaging • Exposure control	6.2 5.3.1 5.3.2 (for SMAW), 5.3.3 (for SAW)
No welding over cracked tack welds	5.18
Environmental conditions • Wind speed within limits • Precipitation and temperature	 5.12.1 5.12.2
WPS followed • Settings on welding equipment • Travel speeed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min/max.) • Proper position (F, V, H, OH)	6.3.3, 6.5.2, 5.5, 5.21 5.6, 5.7
Welding techniques • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements	6.5.2, 6.5.3, 5.24 5.30.1

*AWS (2010)

TABLE C-N5.4-3
Inspection Tasks After Welding

Inspection Tasks After Welding	AWS D1.1/D1.1M References**
Welds cleaned	5.30.1
Size, length and location of welds	6.5.1
Welds meet visual acceptance criteria • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	6.5.3 Table 6.1(1) Table 6.1(2) Table 6.1(3) Table 6.1(4), 5.24 Table 6.1(6) Table 6.1(7) Table 6.1(8)
Arc strikes	5.29
k-area*	not addressed in AWS
Backing removed and weld tabs removed (if required)	5.10, 5.31
Repair activities	6.5.3, 5.26
Document acceptance or rejection of welded joint or member	6.5.1, 6.5.6

* k-area issues were identified in AISC (1997b). See Commentary Section A3.1c and Section J10.8.
** AWS (2010)

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PROJECT NUMBER
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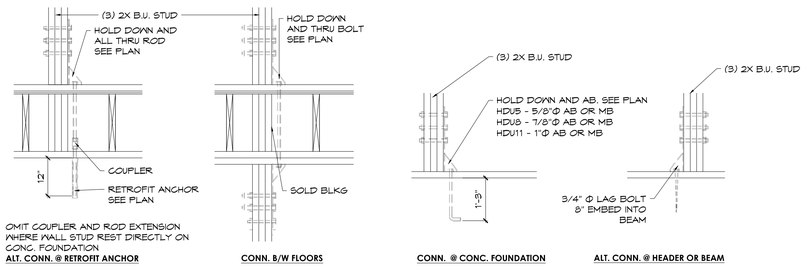
11.11.21	REVISION-CITY	

SHEET TITLE
GENERAL NOTE

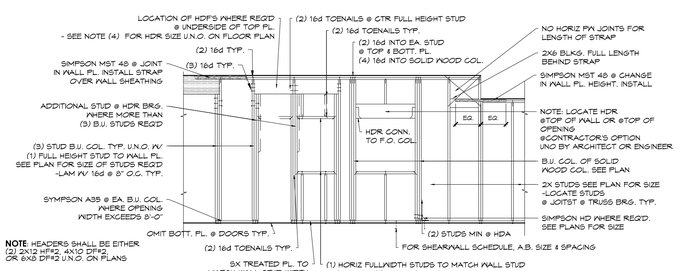
SHEET #
S1.1

B-21-0959CITY OF PUYALLUP



1 HOLD DOWN DETAILS

(11X17) SCALE : 1/2" - 1'-0"
(22X34) SCALE : 1" = 1'-0"



2 EXT & INT BEARING WA FRAM'G ELEV

NTS

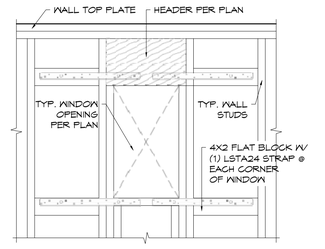
SHEARWALL NAILING SCHEDULE				
MARK (SHEAR CAPACITY)	WALL TYPE	PANEL EDGE NAILING (1) AND (2)	INTERMEDIATE NAILING (2)	BOTT. PL. ANCHOR BOLTING OR NAILING (5)
1 (200 lb/ft)	1/2" CDX PW, OSB, ONE SIDE	8d @ 6" O.C.	8d @ 12" O.C.	1/2" A.B. @ 48" O.C. OR 16d @ 1 1/2" O.C.
2 (350 lb/ft)	1/2" CDX PW, OR OSB, ONE SIDE	8d @ 3 1/2" O.C.	8d @ 12" O.C.	5/8" A.B. @ 40" O.C. OR 16d @ 4" O.C.
3 (700 lb/ft)	1/2" CDX PW, OR OSB, BOTH SIDES	8d @ 4" O.C. (4)	8d @ 12" O.C.	3/4" A.B. @ 34" O.C. OR 16d @ 2" O.C.

SHEAR WALL SCHED. NOTE:

1. BLOCK ALL PANEL EDGES
2. SEE NAILS - MIN. REQUIREMENTS
3. 2X STUDS SHALL BE HF#2 OR BETTER, KIN.-DRIED
4. USED 3X STUDS AND PLATES @ PANEL EDGES @ SHEARWALL 3 ONLY
5. ANCHOR BOLTS SHALL HAVE MIN. 3" BY 3" BY 1/4" THICK PL. WASHER
6. 7/16" OBS MAY BE SUBSTITUTED FOR 1/2" CDX

NAILS - MIN. REQUIREMENTS		
NAIL DESCRIPTION	MIN. WIRE DIAMETER	MIN. PENETRATION REQD FOR LATERAL STRENGTH
5d COOLER	0.086"	1.12"
6 d	0.099"	1.25"
8 d	0.113"	1.25"
10 d	0.128"	1.50"
16 d	0.141"	1.75"

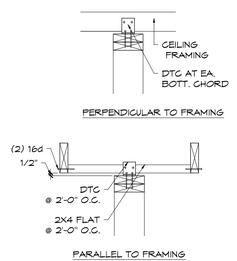
4 SHEAR WALL NAILING SCHEDULE



NOTE: NAIL WALL SHEATHING TO BLOCKS AS FOR SHEARWALL EDGE NAILING

3 WINDOW STRAPPING DETAIL

NTS



5 PARTITION WALL SUPPORT

(11X17) SCALE : 1/2" - 1'-0"
(22X34) SCALE : 1" = 1'-0"

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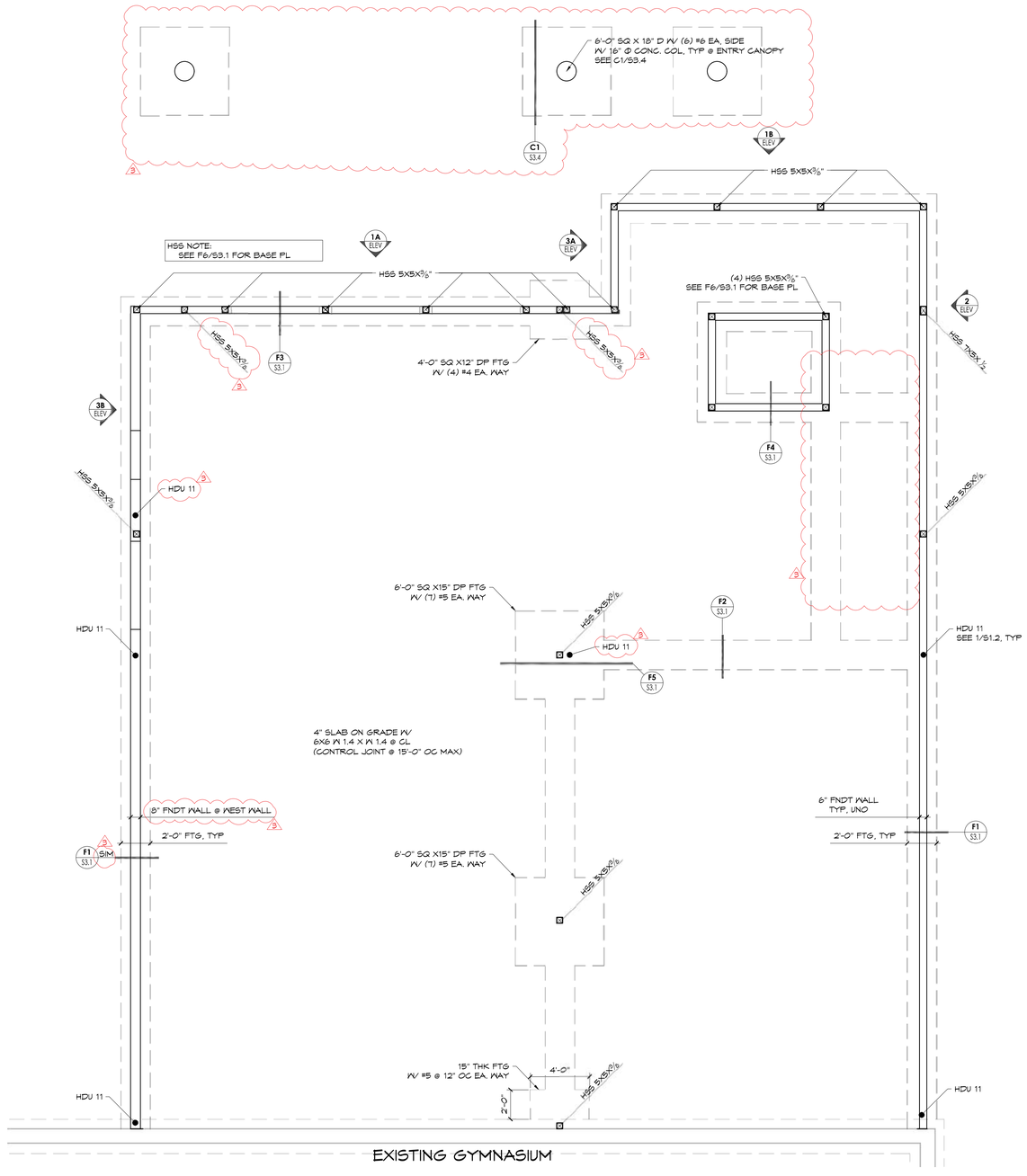
SHEET TITLE
GENERAL DETAILS

SHEET #
S1.2

B-21-0959CITY OF PUYALLUP



FOUNDATION PLAN

(11X17) SCALE : 1/8" = 1'-0"
(22X34) SCALE : 1/4" = 1'-0"

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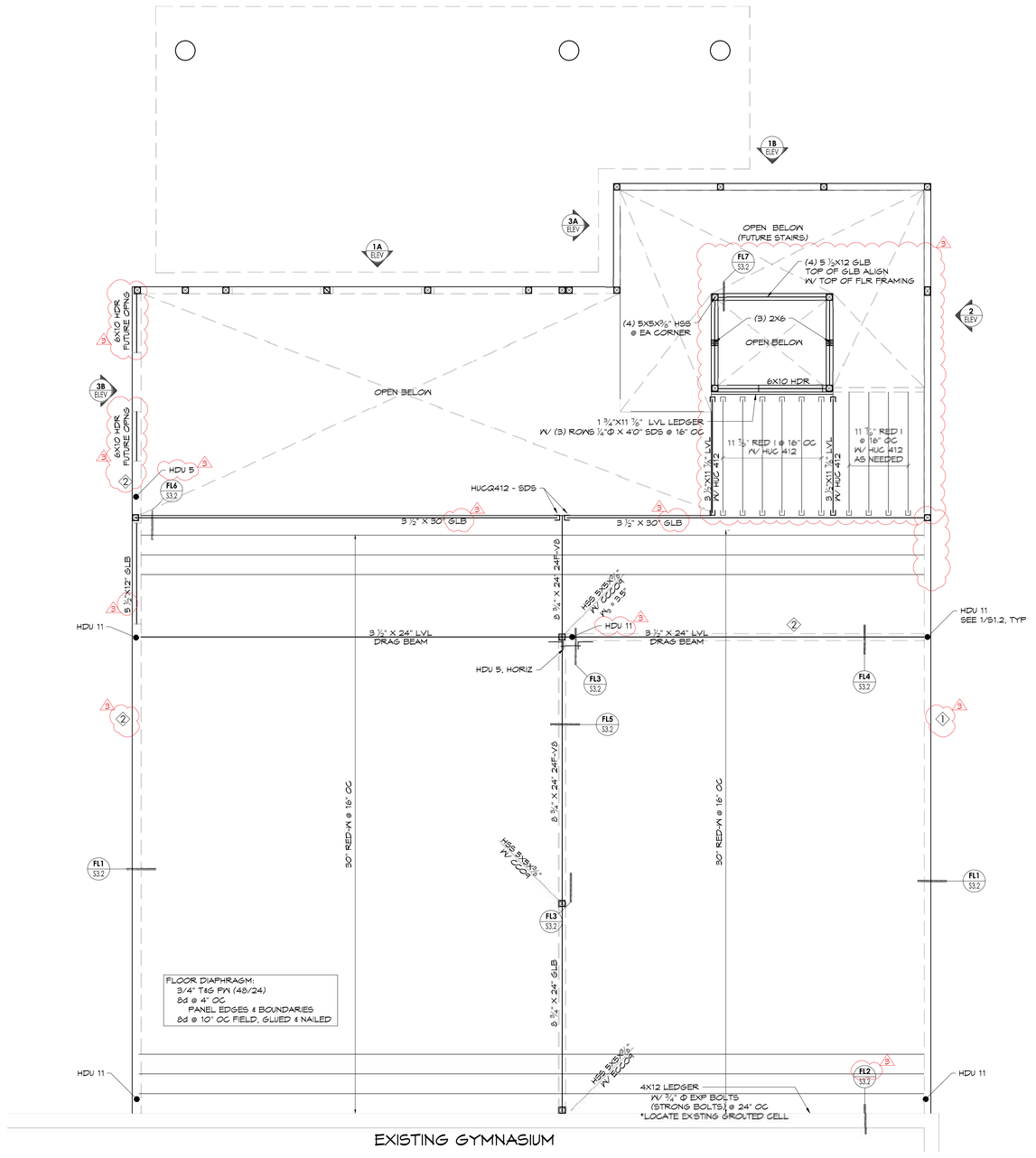
SHEET TITLE
FOUNDATION PLAN

SHEET #
S2.1

B-21-0959CITY OF PUYALLUP



2ND FLOOR FRAMING PLAN

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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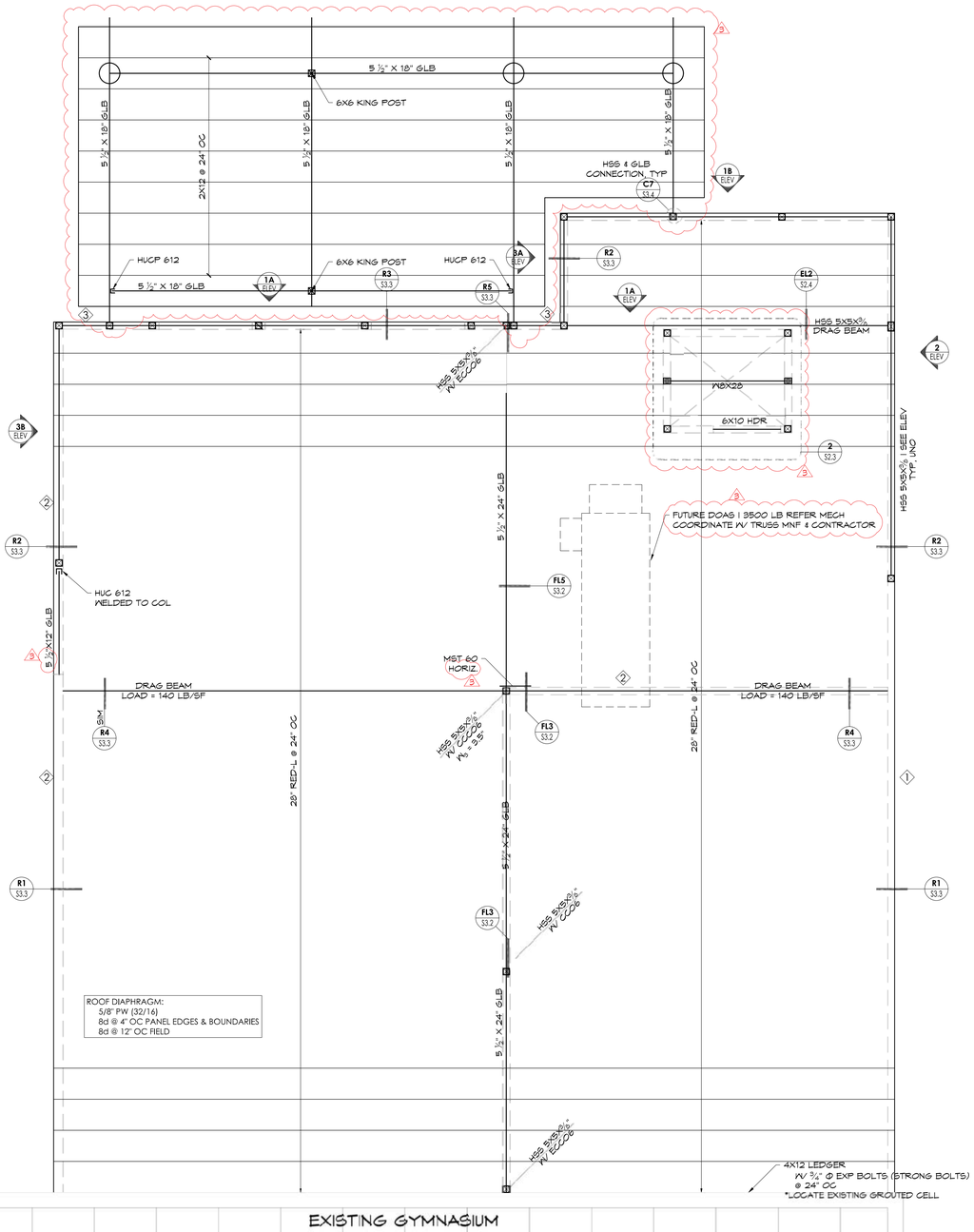
SHEET TITLE

2ND FLOOR FRAMING PLAN

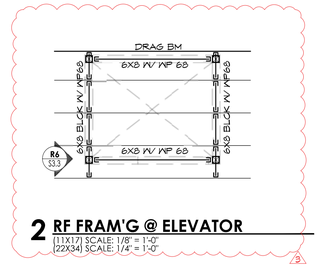
SHEET #

S2.2

B-21-0959CITY OF PUYALLUP



1 ROOF FRAMING PLAN
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



2 RF FRAM'G @ ELEVATOR
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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SHEET TITLE
ROOF FRAMING PLAN

SHEET #
S2.3

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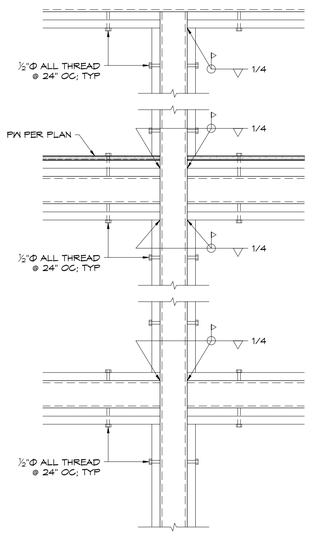
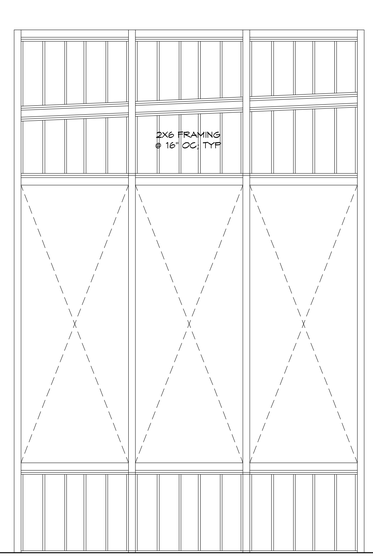
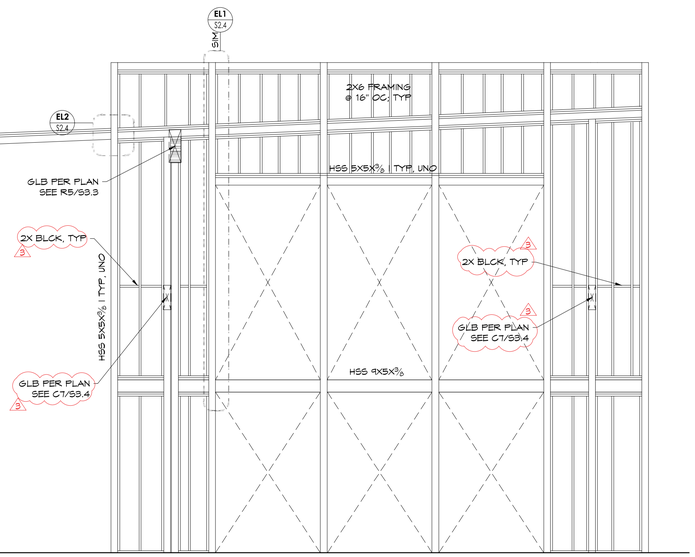


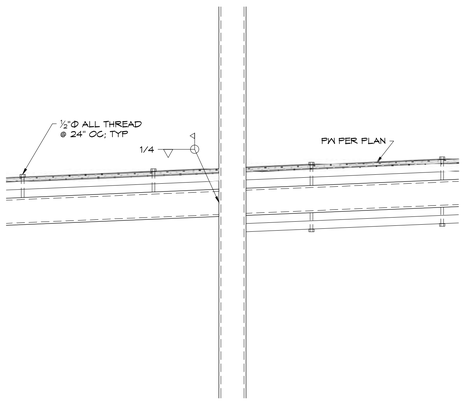
EL1 ENLARGED ELEVATION
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



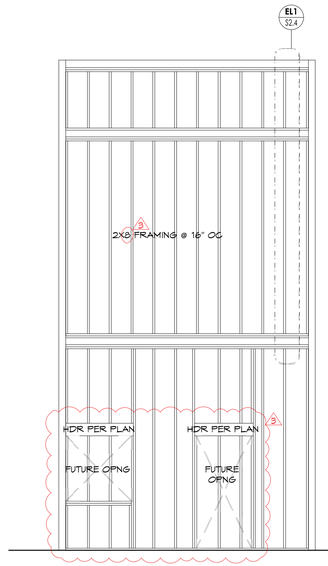
1B NORTH ELEVATION (@ STAIRS)
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



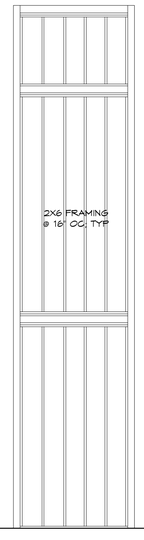
1A NORTH ELEVATION (@ ENTRY)
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



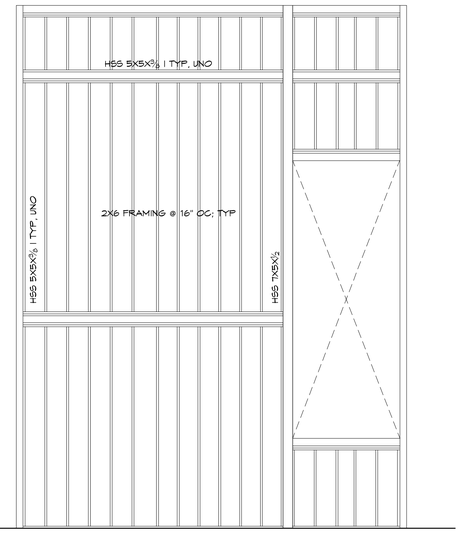
EL2 ENLARGED ELEVATION
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



3B WEST ELEVATION
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



3A WEST ELEVATION (@ STAIR)
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



2 EAST ELEVATION
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

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PROJECT NUMBER
20004

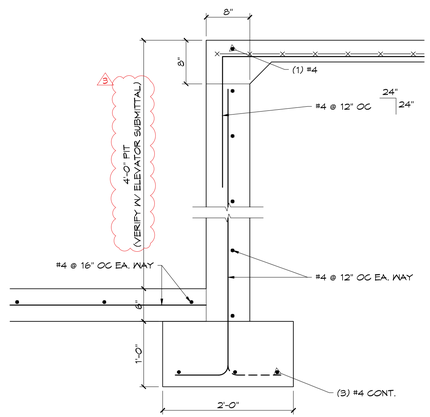
DRAWING TYPE
PERMIT DOCUMENTS

ISSUE DATE	ISSUE DESCRIP.	NO.
04.30.20	PERMIT	
09.15.20	REVISION	1
10.04.20	REVISION	
11.11.21	REVISION-CITY	2

SHEET TITLE
STEEL FRAMING ELEVATIONS

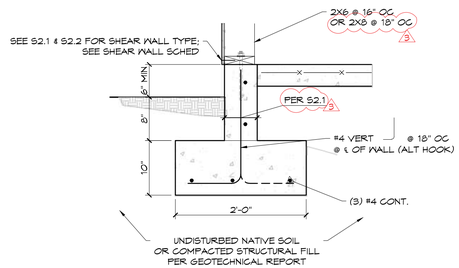
SHEET #
S2.4

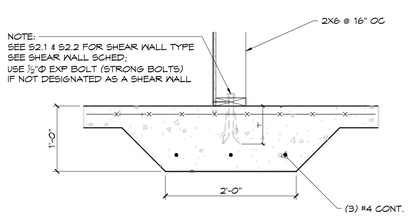
B-21-0959CITY OF PUYALLUP



F1 SECTION

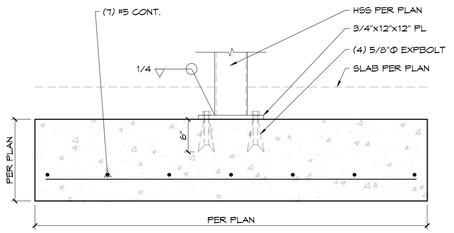
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"





F4 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



F2 SECTION

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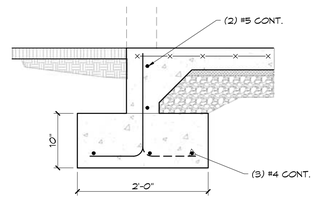
(22X34) SCALE : 1" = 1'-0"



F5 SECTION

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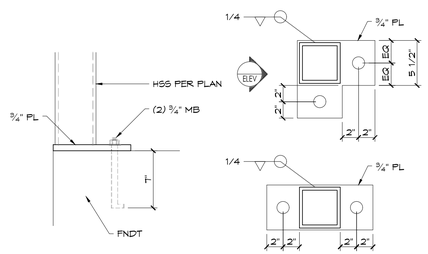
(22X34) SCALE : 1" = 1'-0"



F3 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"

F6 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"

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09.15.20	REVISION	1
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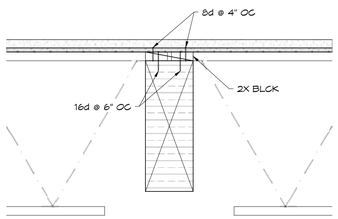
11.11.21	REVISION-CITY	3

SHEET TITLE
DETAILS

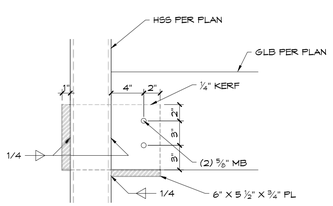
SHEET #
S3.1

HOOH

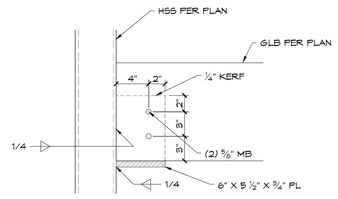
B-21-0959CITY OF PUYALLUP



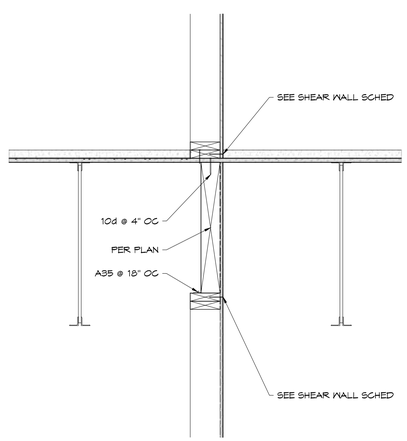
FL5 SECTION
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



FL6 SECTION
(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



FL7 SECTION
(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



FL4 SECTION
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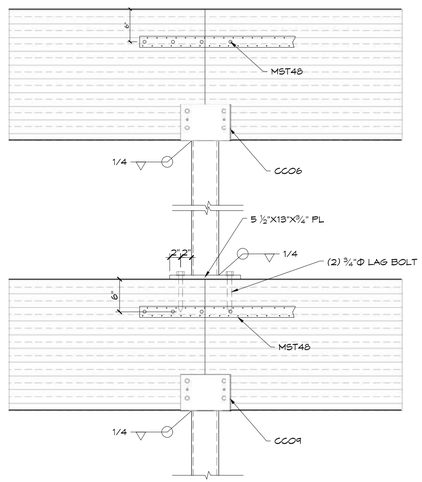
(22X34) SCALE : 1" = 1'-0"



FL3A SECTION (ALT)
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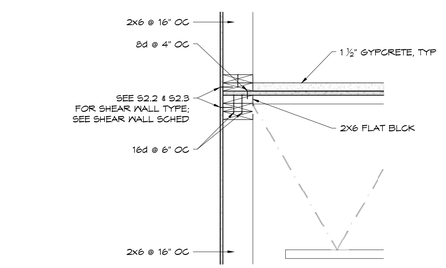
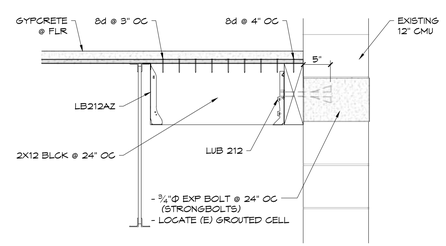
(22X34) SCALE : 1" = 1'-0"



FL1 SECTION
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



FL2 SECTION
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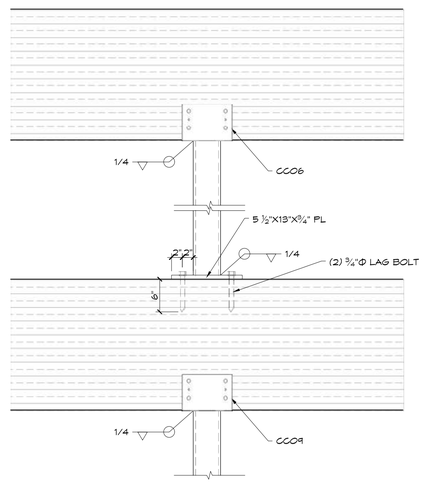
(22X34) SCALE : 1" = 1'-0"



FL3 SECTION
(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"

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PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

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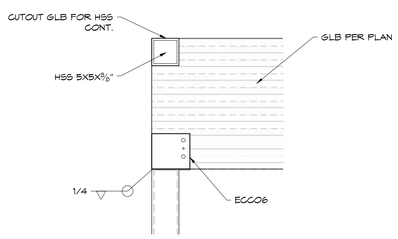
11.11.21	REVISION-CITY	2

SHEET TITLE
DETAILS

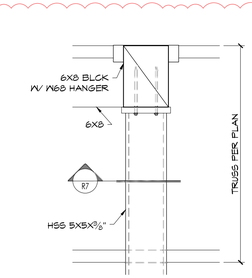
SHEET #
S3.2

B-21-0959CITY OF PUYALLUP



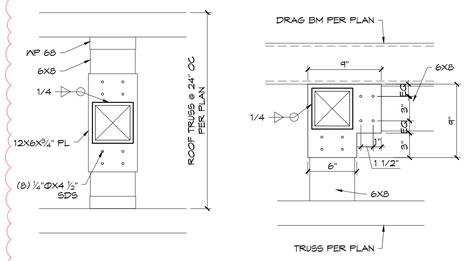
R5 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



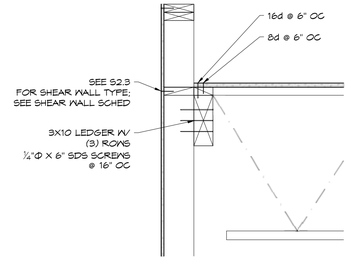
R6 DETAIL

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



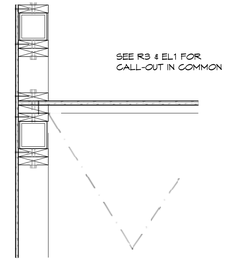
R7 DETAIL

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



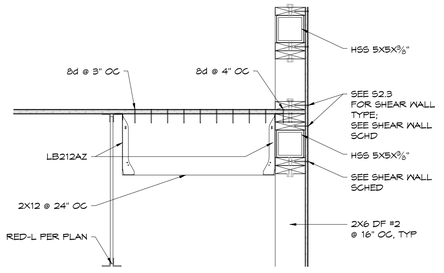
R1 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



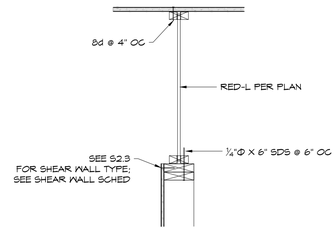
R2 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



R3 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"



R4 SECTION

(11X17) SCALE : 1/2" = 1'-0"
(22X34) SCALE : 1" = 1'-0"

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PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

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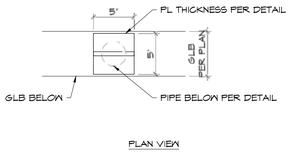
SHEET TITLE
DETAILS

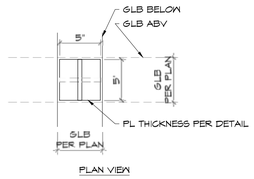
SHEET #
S3.3

B-21-0959CITY OF PUYALLUP



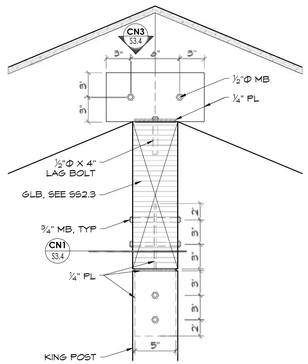
CN2 GLB TO TUBE STEEL CONN.

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



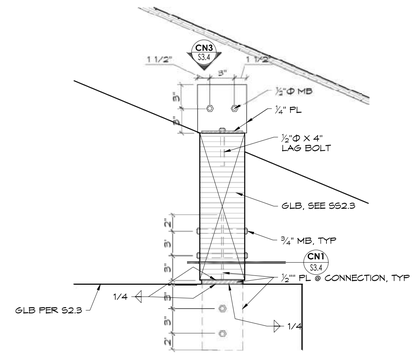
CN1 GLB TO GLB CONN.

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



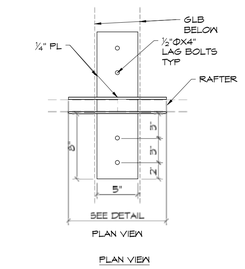
C4 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



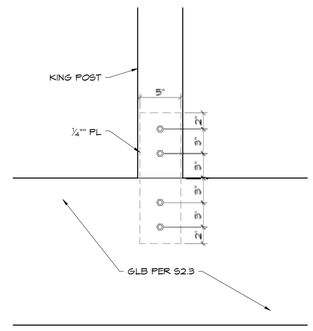
C1 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



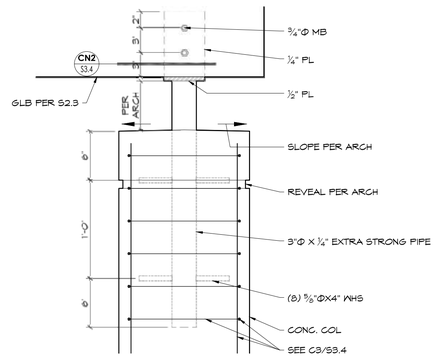
CN3 GLB TO RAFTER CONN.

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



C5 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



C2 SECTION

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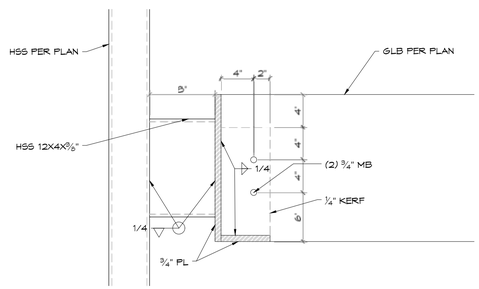
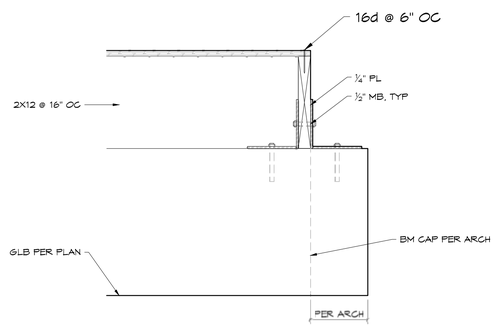
(22X34) SCALE : 1-1/2" = 1'-0"



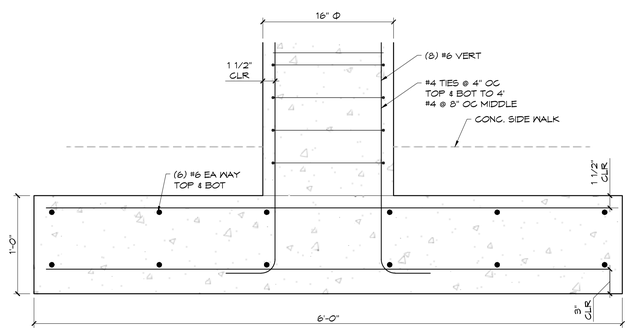
C7 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



C6 SECTION

(11X17) SCALE : 3/4" = 1'-0"
(22X34) SCALE : 1-1/2" = 1'-0"



C3 SECTION

(11X17) SCALE : 3/4" = 1'-0"
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PROJECT NUMBER
20004

DRAWING TYPE
PERMIT DOCUMENTS

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SHEET TITLE
CANOPY DETAILS

SHEET #
S3.4 2

MITSUBISHI CITY MULTI VRF INDOOR UNIT SCHEDULE - SECOND FLOOR

Tag Reference	Model	Type	Nominal Cooling Capacity (BTUh)	Nominal Heating Capacity (BTU/h)	Refrig Pipe Dim Liquid/Suction (inch)	Peak Fan Airflow (cfm)	Max Fan ESP Setting 208V/230V (IN WG)	Voltage/ Phase	Electrical MCA/MFS	Weight	Notes / Options
AH-1	PEFY-P36NMAU-E3	Ceiling concealed type (ducted	36,000.0	40,000.0	3/8 / 5/8	1165	0.6/0.6	208/230V1-phase	3.50(208V)/3.50(230V)/15	86 lbs	1,2
AH-2	PEFY-P36NMAU-E3	Ceiling concealed type (ducted	36,000.0	40,000.0	3/8 / 5/8	1165	0.6/0.6	208/230V1-phase	3.50(208V)/3.50(230V)/15	86 lbs	1,2

Notes & Options:
1. Units are heating only for this phase of the project. Phase 3 of project will tie into a Variable Refrigerant Flow system.
2. Per WSEC Section C403.3, Exception #1, DOAS is provided and economizer is not required.

Air Handler Tag	Fan-Coil Units Model #	Supply Air Opening WxH	Supply Air Plenum I.D. WxH	Return Air Opening WxH	Filter Rack WxH	Filters Quantity & Size	Airflow CFM	Filter Velocity FPM
AH-1,2	PEFY-P36NMAU-E3	53-9/16" x 7-1/16"	54x8	53-1/2" x 8-5/16"	60x10	x3 10x20x2	1165	280

Duct Heater Schedule

I.D. No.	Unit	Mfr.	Model	Duct Size	KW	Voltage	Ph	Control	Notes
DH-1	ERV-1	Warren	CBK	10"	5	480	3	24 V.	1
DH-2	ERV-2	Warren	CBK	12"	8	480	3	24 V.	1
DH-3	AH-1	Warren	CBK	16"	12	480	3	24 V.	1
DH-4	AH-2	Warren	CBK	16"	6	480	3	24 V.	1

Notes:
1. Provide built-in thermostat with SCR, set to 72°. Enabled when OSA temp is below 45°F. Interlock to unit ERV.
2. Provide built-in thermostat with SCR, set to 72°. Interlock to unit AH.

Mechanical Sheet Index

Sheet	Title
M-1	HVAC Notes & Schedules
M-2	HVAC Main Floor Plan & Building Section
Site	Site Plan (Jeff Brown Architecture)

DEDICATED OUTSIDE AIR SYSTEM WITH ENERGY RECOVERY VENTILATOR SCHEDULE

Lossnay Tag	Make and Model	Core Type	Airflow (cfm)	Max ESP (IN/WG)	Nominal Recovery Effectiveness (Extra High Fan Speed) Efficiency	Heating	Cooling	Voltage / Phase	MCA / MOCP	Weight LBS	Sound Rating dB(A)	Notes / Options
ERV-1	Lossnay LGH-F300RVX-E	Fixed Permeable Cross Plate	300	0.46	66%	63%	50%	208V/1-Phase	2.05/15	75	34	
ERV-2	Lossnay LGH-F470RVX-E	Fixed Permeable Cross Plate	470	0.6	69%	64%	51%	208V/1-Phase	3.1/15	110	345	

Grille, Register & Diffuser Schedule

I.D. No.	Mfr.& Model	Type	Neck Size	Overall Size L" x W" (Less Flange)	Material	Frame	OBD	Notes
CD-1	Titus MCD	Ceiling Modular Core Diffuser	10" x 10"	24" x 24"	Steel	3, Lay-In	No	
CD-2	Titus MCD	Ceiling Modular Core Diffuser	12" x 12"	24" x 24"	Steel	3, Lay-In	No	
SG-1	Titus 300RS	Double Deflection Wall Supply Register	18" x 6"	18" x 6"	Steel	1, Surface Mount	No	
SWR-1	Titus 350RL	Return Grille, Surface Mount	24" x 16"	24" x 16"	Steel	1, Surface Mount	No	
TG-1	Titus 50F	Eggcrate Grille	10" x 10"	10" x 10"	Aluminum	1, Surface Mount	Yes	
EG-1	Titus 50F	Eggcrate Grille	10" x 10"	10" x 10"	Aluminum	1, Surface Mount	Yes	

Thermostat & Controller Schedule

I.D. No.	Mfr. & Model	Type	Unit Served	Notes	Quantity
T	Mitsubishi PAC-40WAAU	Thermostat	AH-1 & AH-2	Mount @ 48" A.F.F.	2

T-stat shall be programmable, capable of 5 degree deadband, and have 2 occupied/2 unoccupied schedules for seven days per week. T-stat shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.

Louver Schedule

I.D. No.	Mfr.	Model	Location	Size	Free Area	Max. CFM	S.P.	Frame	Finish	Quantity	Notes
L-1	Greenheck	ESD-408	East Wall	30x24	1.15	770	0.08" w.c.	Flanged	Mill	2	
L-2	Greenheck	ESD-408	East Wall	12x12	0.3	55	0.02" w.c.	Flanged	Mill	1	

Control Damper Schedule

I.D. No.	Mfr.	Model	Type	Class	Leakage CFM per sq. ft.	Actuator Mfr. & Model	Actuator Voltage	Size	Quantity
MD-1	Greenheck	VCD-23	Opposed Blade	1	4cfm/sf @ 1 in.w.g.	Belimo LF120S	120	10"	2
MD-2	Greenheck	VCD-23	Opposed Blade	1	4cfm/sf @ 1 in.w.g.	Belimo LF120S	120	12"	2

Ductless Split System Indoor Unit Schedule

I.D. No.	Area Served	Outdoor Unit	Mfr.	Model	Type	Electrical Data Voltage	Ph.	MCA	Wall Mount Controller	Op. Wt. lbs	Notes
AH01	Elevator Machine Room	HP-01	Carrier	40MAHB012	Wall-Mounted	208	1	0.3125A	Yes	23 lbs.	1,2,3

Notes:
1) Provide with condensate drain pan and condensate pump option.
2) See corresponding outdoor unit schedule for capacity and efficiency data.
3) High efficiency heat pumps are provided in lieu of Economizer per WSEC Section 403.3, Exception #11, option a.

Ductless Split System Heat Pumps Outdoor Unit Schedule

I.D. No.	Area Served	Mfr.	Model	Refrigerant	Cooling Capacity Total btuh	SEER/EER	Heating Capacity Total btuh	HSPF/COP	Electrical Data Voltage	Ph.	MCA	MOCP	Op. Wt.	LineSet	Notes
HP-01	Elevator Machine Room	Carrier	38MAHBQ12AA3	R-410A	12,000	25.5/14.0	12,000	13/3.8	208/230	1	15	15	73 lbs.	1/4"L, 1/2"S	1

Notes
1) High efficiency heat pumps are provided in lieu of Economizer per WSEC Section 403.5, Exception #11, option a.

Fan Schedule

I.D. No.	Area Served	Mfr.	Model	Type	CFM	S.P.	RPM	Voltage	Ph.	HP or W	Op.Wt.	Controlled By	Notes
EF-01	Janitors	Greenheck	SP-80-VG	Centrifugal	55	0.375"	955	120	1	6.1 W	12 lbs.	Timer	1,2

Notes
1) Provide all fans with 70% or greater efficiency motors or ECM as required by WSEC.
2) EC to provide starter and disconnect.

SCOPE OF WORK

New Addition - Restrooms and Lobby

1. Design new HVAC to suit new addition.
2. Design new Men's, Women's restrooms exhaust systems.
3. Provide Heating and Cooling Calculations.
4. Assist with Envelope Compliance Calculations.
5. Provide Plans for permitting and construction by ASEI.
6. Plans to be designed under the supervision of a licensed Professional Engineer.

GENERAL NOTES

1. All duct sizes shown are clear **inside** dimensions.
2. All duct gauges and supports per 2015 International Mechanical Code and SMACNA Duct Construction Manual. All ductwork is constructed and sealed per IMC.
3. ASEI to air balance all systems to within 10% of design airflow upon project completion.
4. All duct transverse seams and longitudinal joints shall be sealed.
5. Materials within ducts or plenums shall have a flame spread rating less than 25 and a flame smoke development rating less than 50 per WSEC 2015.
6. All duct systems on this project are low pressure.
7. Auxiliary condensate drain overflow protection shall be provided per 2015 International Mechanical Code 307.2.3.
8. All ductwork is constructed and sealed per IMC. OSA ductwork meets air leakage requirements per C402.5 and vapor retarder requirements per the IBC.
9. Insulate supply and return duct work were not located in conditioned space with minimum R-6 Johns Manville Permacote Linacoustic R-300 liner or wrap. Insulate all outside air ducts with minimum R-8 Johns Manville Permacote Linacoustic R-300 liner or wrap. OSA ductwork meets air leakage requirements per C402.5 and vapor retarder requirements per the IBC.
10. 90% or more of all occupied, conditioned spaces are served by a DOAS per WSEC Section C403.3. Heating and cooling fans are configured to shut off and central equipment is configured to turn down, when there is no call for heating and cooling in the zone they serve.
11. Condensate drain piping shall be copper, PVC, or PEX.
12. Provide 1/2" SL for all air handler plenums constructed of sheet metal.
13. Spaces with DOAS and a heating/cooling system shall operate independently. Heating and cooling are configured to shut off when there is no call for heating or cooling per IECC section C403.6.2.
14. Mechanical ventilation is provided per IMC and configured to provide no more than 150% of the minimum required volume of outdoor air to each zone.
15. Adjacent zones controlled by separate thermostats are configured to prevent adjacent zones from operating in conflicting modes (one in heat, other in cool).

COORDINATION NOTES

General Contractor

1. General Contractor to cut and provide openings for all rooftop, ceiling, floor, and wall penetrations, including weatherproof sealing. ASEI to provide size and location.
2. General Contractor to provide framed openings where required for all mechanical penetrations, including headers if required. General Contractor to verify penetration locations with ASEI before framing openings.
3. General Contractor to provide service access per code to all mechanical equipment.
4. General Contractor to provide structure for mounting and hanging members of mechanical equipment.
5. General Contractor to provide all cutting of t-bar ceiling and extra material as required for HVAC installation.
6. General Contractor to provide access panels in hard lid ceiling.

Plumbing Contractor

1. ASEI to furnish and install all condensate drain lines per code.
2. Plumbing Contractor to offset vents 10 feet minimum from all HVAC fresh air intakes.

Electrical Contractor

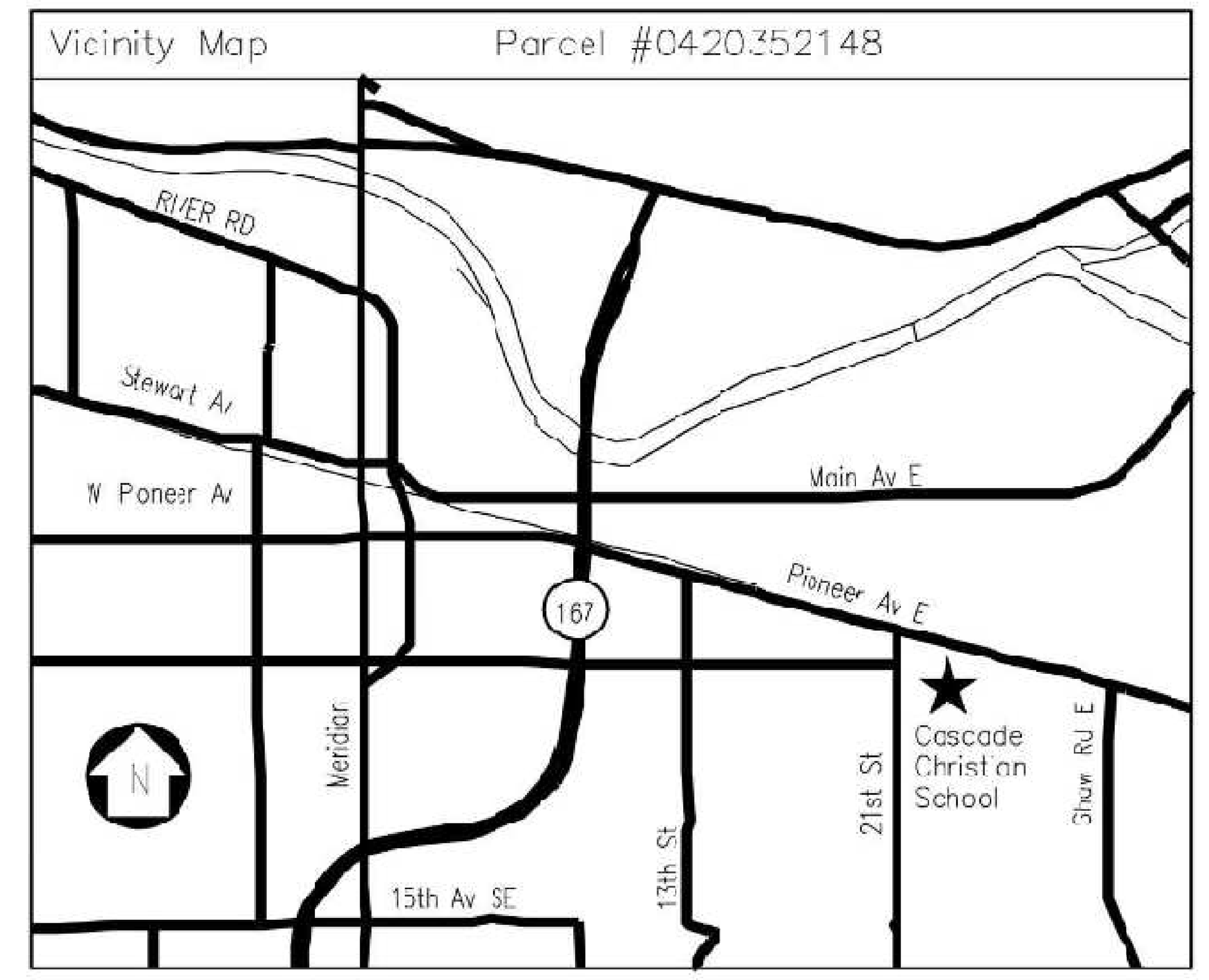
1. Electrical Contractor to provide all electrical connections, disconnects, and motor starters for mechanical equipment.
2. ASEI to install all 24 volt low voltage wiring for thermostats.
3. Electrical Contractor to verify equipment sizes, loads and locations with ASEI mechanical plan and with field conditions.
4. Electrical Contractor to provide 120v service outlet within 25 feet of each piece of mechanical equipment.
5. Electrical Contractor to install all line voltage wiring and conduit.

COMPLETION

Provide Test and Balance Report, Equipment Startup Test Reports, Operation and Maintenance Manuals, and As-built Record Drawings, as applicable, to Owner upon Project Completion.

Tax Description
Section 35 Township 20 Range 04 Quarter 21 : PARCEL "A" OF DBLR 95-12-11-0261 DESC AS FOLL COM AT INTER OF 21ST ST SE & 9TH AVE SE BEING ON SEC LI BETWEEN SECS 26 & 35 THE ALG SD SEC LI 30 FT TO ELY R/W LI OF SD 21ST ST SE & POB TH CONT E ALG SD SEC LI 181 FT TH N 01 DEG 11 MIN 52 SEC W 88 FT TH S 88 DEG 59 MIN 43 SEC W 181 FT TO ELY R/W LI OF 21ST ST SE TH N ALG SD R/W LI 91.25 FT TH E PAR/W SEC LI 585 FT TH N 01 DEG 11 MIN 52 SEC W 143.25 FT TH E PAR/W SEC LI 672.34 FT TO WLY R/W OF 25TH ST SE TH S ALG SD R/W 322.5 FT TO SEC LI TH CONT ALG SD WLY R/W LI OF 25TH ST SE 215.97 FT TH S 89 DEG 15 MIN 54 SEC W 253.06 FT TH S 01 DEG 01 MIN 12 SEC E 312.48 FT TH S 89 DEG 15 MIN 54 SEC W 371 FT TO E LI OF NW OF NE OF NW TH N ALG SD SUBD 196.75 FT TO SE COR OF N 1/2 OF NW OF NE OF NW TH W ALG SD SUBD 513.88 FT TO SE COR OF S 144 FT OF W 150 FT OF N 1/2 OF NW OF NE OF NW TH N 00 DEG 55 MIN 06 SEC W 144 FT TH S 89 DEG 09 MIN W 120 FT TO SE ELY R/W OF 21ST ST SE TH N ALG SD R/W 183.05 FT TO POB OUT OF 2-145, 2-010 & 04-20-26-3-007 SEG H-0611 JU 1/23/96JU

Vicinity Map Parcel #0420352148



CITY OF PUYALLUP APPROVAL

B-21-0959CITY OF PUYALLUP

REVISIONS DATE	CHANGE
APRIL 23, 2020	PERMIT SET
1 OCTOBER 8, 2020	ACCESS
2 NOVEMBER 9, 2021	LOBBY REVISION

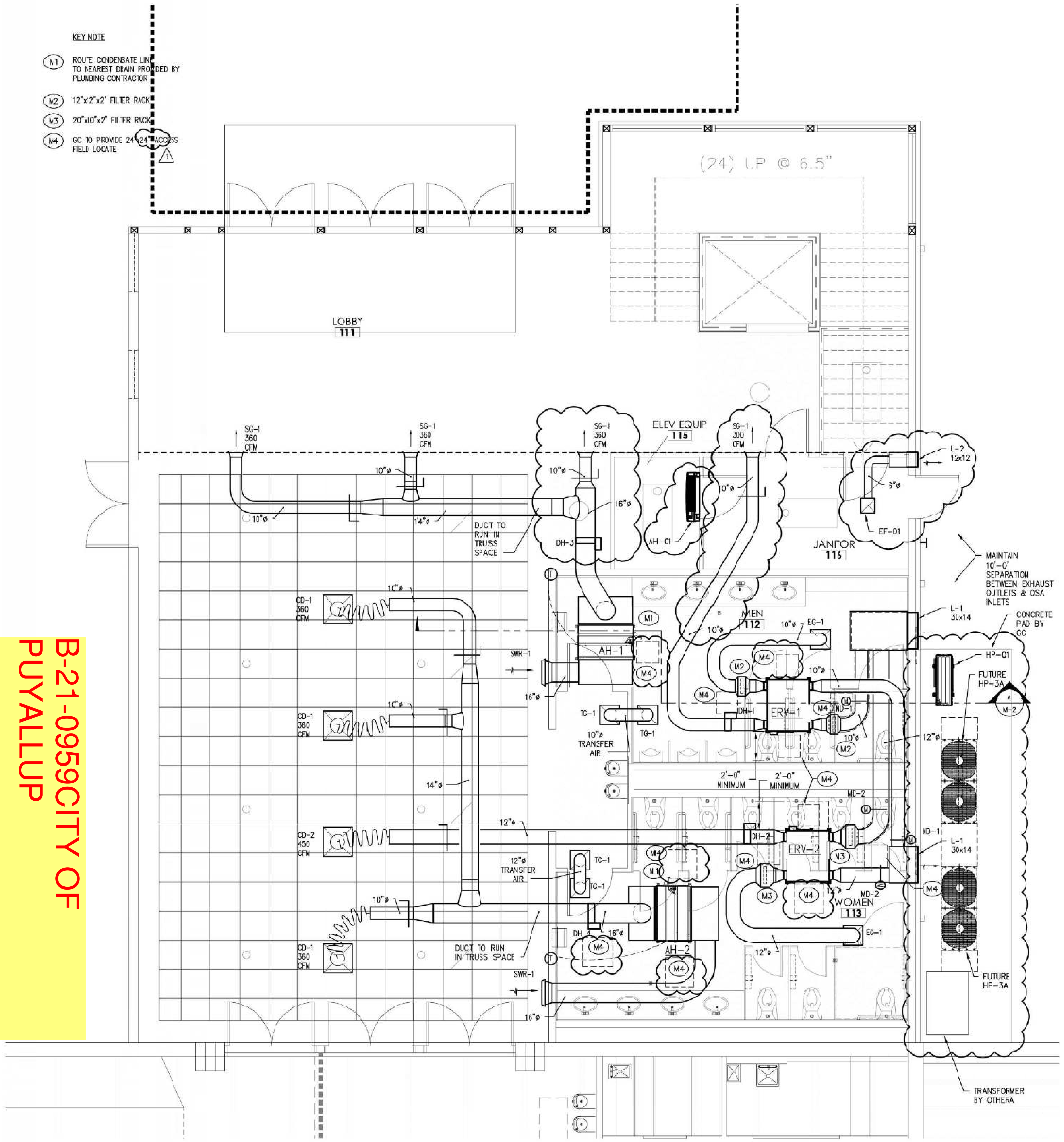
DRAWN BSR
DESIGN JL
DATE April 23, 2020
APPROVED

CASCADE CHRISTIAN SCHOOL
JR HIGH SCHOOL GYM LOBBY ADDITION
HVAC SCHEDULES AND NOTES

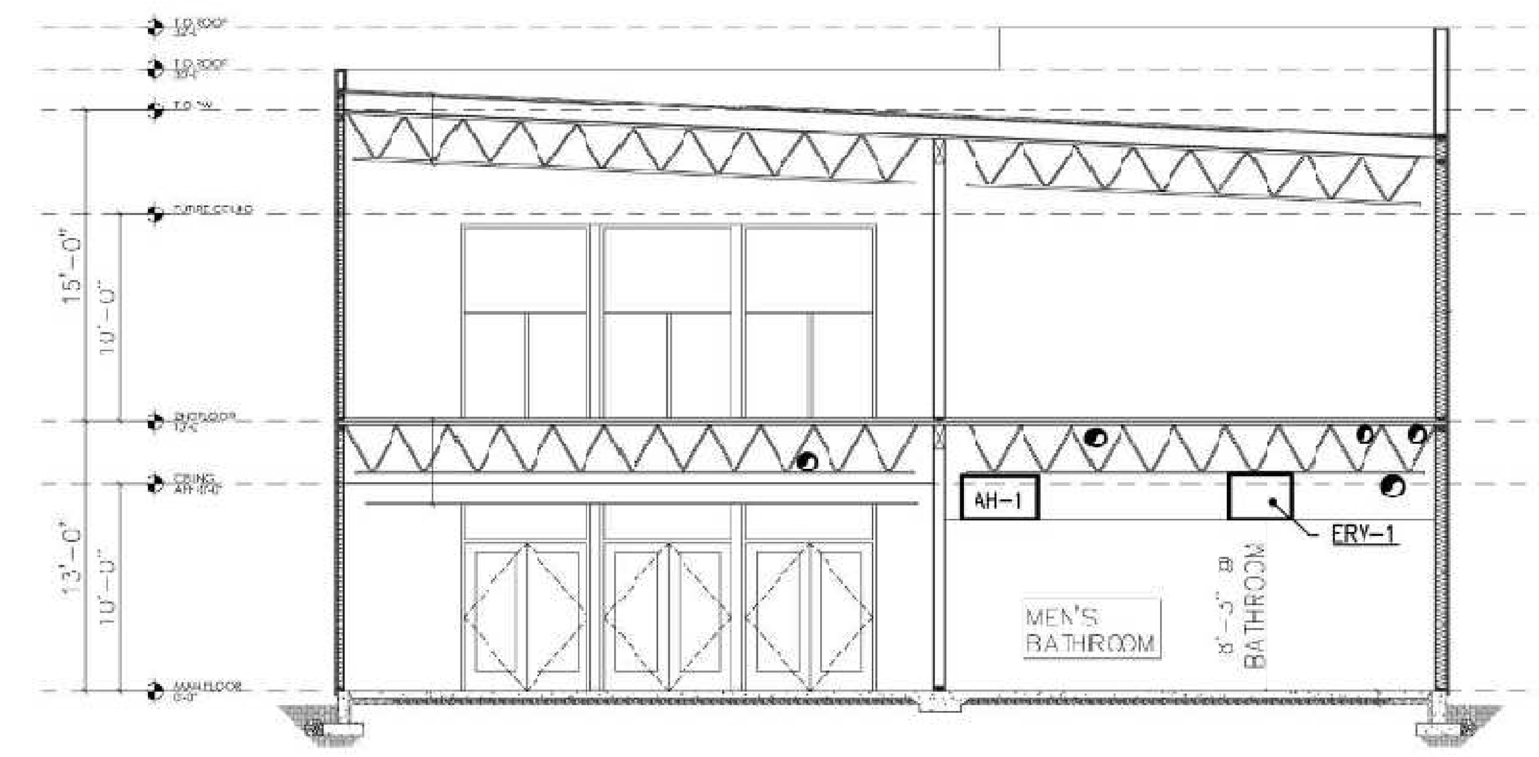
815 21ST ST SE
PUYALLUP, WA 98372

Air Systems Engineering Inc.
COMFORT SYSTEMS USA
AIR CONDITIONING DESIGN & INSTALLATION
AIR CONDITIONING/SHEET METAL/REFRIGERATION/PROFESSIONAL ENGINEERS/SERVICE & MAINTENANCE

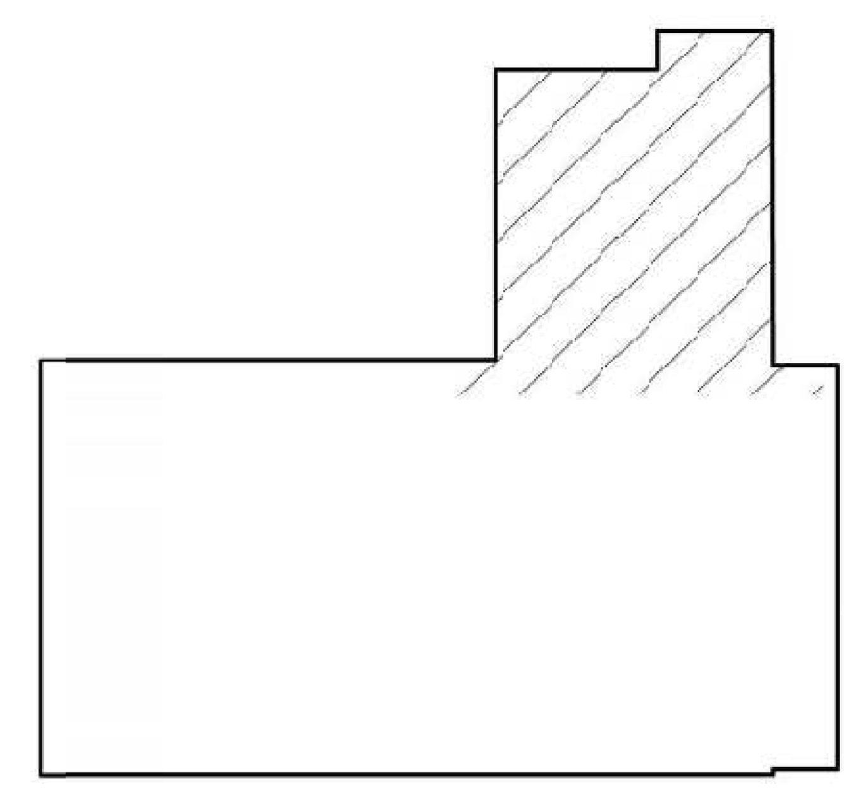
SHEET NO. M-1 OF 2
JOB NO. 4198



MAIN FLOOR HVAC PLAN
1/4"=1'-0"



BUILDING SECTION
1/8"=1'-0"



KEY PLAN
NOT TO SCALE

REVISIONS		
	DATE	CHANGE
	APRIL 23, 2020	PERMIT SET
1	OCTOBER 8, 2020	ACCESS
2	NOVEMBER 9, 2021	LOBBY REVISION

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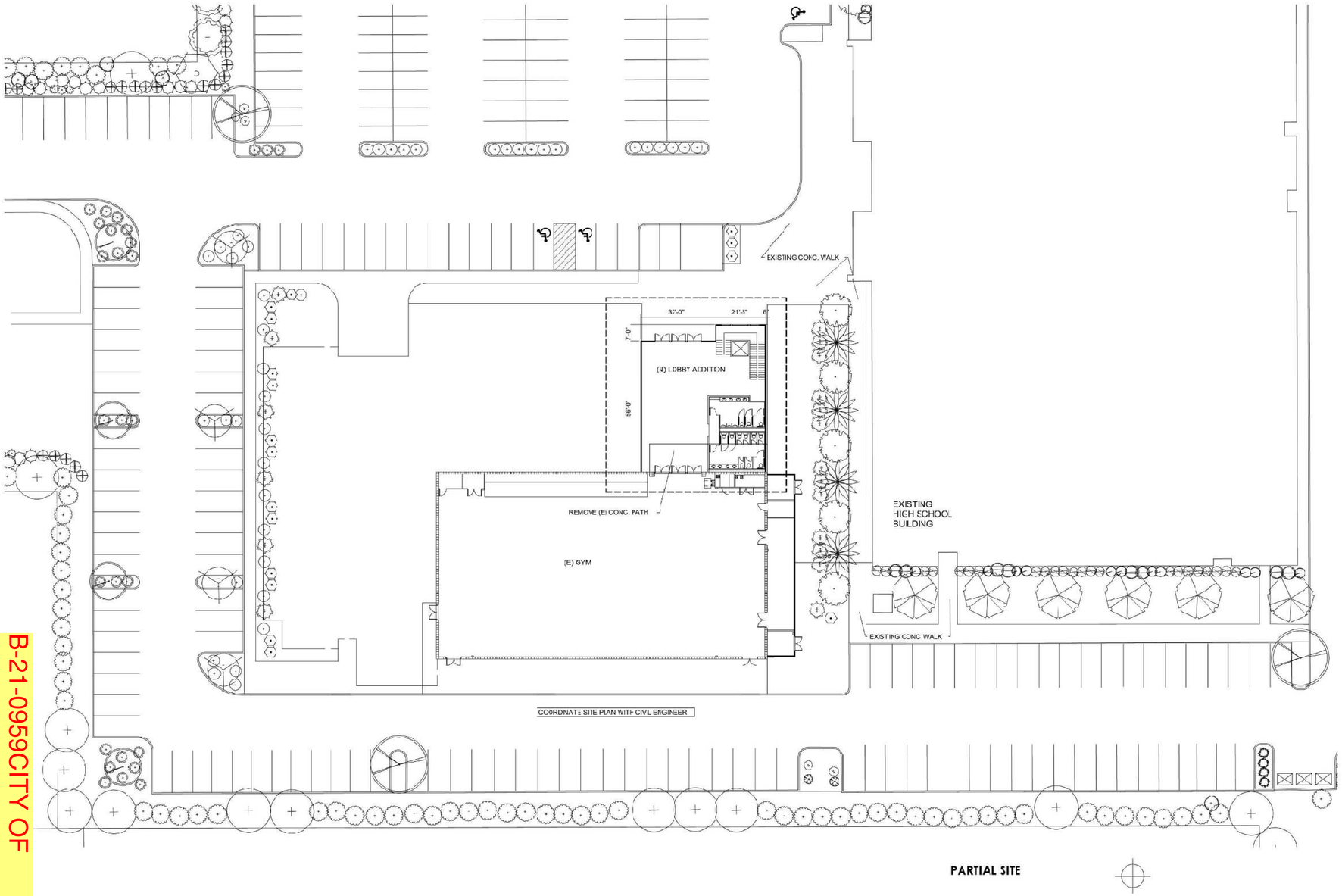
DRAWN BSR
DESIGN JL
DATE April 23, 2020
APPROVED

CASCADE CHRISTIAN SCHOOL
JR HIGH SCHOOL GYM LOBBY ADDITION
MAIN FLOOR HVAC PLAN & BUILDING SECTION

815 21ST ST SE
PUYALLUP, WA 98372

Air Systems Engineering Inc.
COMFORT SYSTEMS USA
AIR CONDITIONING DESIGN & INSTALLATION
(253) 572-3494
3602 SOUTH PINE/TACOMA, WA 98409
AIR CONDITIONING/SHEET METAL/REFRIGERATION/PROFESSIONAL ENGINEERS/SERVICE & MAINTENANCE

SHEET NO. M-2 OF 2
JOB NO. 4126



JEFF BROWN
ARCHITECTURE

JEFF BROWN ARCHITECTURE
1218 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E BROWN
253.414.8334
jeff@jeffbrownarchitecture.com

PROJECT NAME/ADDRESS

CASCADE CHRISTIAN JR. HIGH SCHOOL
LOBBY ADDITION

815 21ST STREET SE
PUYALLUP, WA 98372

B-21-0959CITY OF
PUYALLUP

REFERENCE ONLY

SITE

B-21-0959CITY OF PUYALLUP

SYMBOLS

SWITCHING

- $ SINGLE POLE
- $3 THREEWAY
- $4 FOURWAY
- $L LOCKING
- $D DIMMER
- $M MANUAL MOTOR STARTER W/ THERMAL OVERLOADS
- $T TIMER
- $P PILOT LIGHT
- $V VARIABLE SPEED FAN CONTROLLER
- OCCUPANCY SENSOR WALLBOX MOUNT
- OS OCCUPANCY SENSOR CEILING MOUNT
- $O OCCUPANCY SENSOR SWITCHED WALL MOUNT
- (a,b,c) DENOTES SWITCH LEGS

TELEPHONE-DATA

- DATA OUTLET- FP
- PHONE DATA LOCATION FP
- SMP SMART PANEL

POWER DEVICES

- PANELBOARD- FLUSH MOUNT
- PANELBOARD- SURFACE MOUNT
- TRANSFORMER
- FLOORBOX W/ DUPLEX RECEPTACLE
- M MOTO CONNECTION (NUMBER=HORSEPOWER)
- DISCONNECT SWITCH
- DISCONNECT SWITCH- FUSED
- SPECIAL RECEPTACLE
- T THERMOSTAT
- DUPLEX RECEPTACLE
- QUADRAPLEX RECEPTACLE
- JUNCTION BOX
- COUNTERTOP GFCI RECEPTACLE
- STANDARD RECEPTACLE

GENERAL NOTES

PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, LOCAL CODES, ORDINANCES AND REQUIREMENTS OF UTILITY COMPANIES FURNISHING SERVICES TO INSTALLATION.

PROVIDE ITEMS NECESSARY TO COMPLETE ELECTRICAL SYSTEMS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY CONDUIT, BOX, CONDUCTOR OR SIMILAR ITEMS FOR A COMPLETE INSTALLATION.

REFER TO ACHITECTURAL DRAWINGS FOR DIMENSIONS, ROOM AND AREA FINISHES, CEILING PLANS, DOOR SWINGS, FIRE RELATED PARTITIONS, CABINET/CASE WORK AND BUILT-IN DETAILS.

MOUNTING HEIGHT OF ALL WALL MOUNTED LIGHT FIXTURES SHALL BE PER ARCHITECTURAL PLANS, ELEVATIONS AN DETAILS.

COORDINATE ALL LIGHTING WITH MECHANICAL, PLUMBING AND FIRE SPRINKLER EQUIPMENT.

PROVIDE RACEWAY AND WIRING AS NOTED, ROUTED CONCEALED WITHIN BUILDING STRUCTURE WHERE POSSIBLE. WHERE RACEWAY/WIRES CANNOT BE CONCEALED, IT SHALL BE INSTALLED PER OWNER, ARCHITECT OR SUPERINTENDENT'S DIRECTION.

CONDUITS ON ROOF OR EXPOSED TO WEATHER SHALL BE EMT, LIQUID-TIGHT FLEX, OR SCH 80 PVC. PROVIDE WATER-TIGHT CONNECTIONS AND FITTINGS.

ALL EXTERIOR EQUIPMENT AND DEVICES SHALL BE WEATHERPROOF AND RAIN TIGHT.

ALL MOTOR STARTERS, VARIABLE FREQUENCY DRIVES, GARAGE CO SENSORS AND VAULT THERMOSTATS SHALL BE PROVIDED AND, IN SOME CASES, INSTALLED BY THE MECHANICAL CONTRACTOR.

PROVIDE METALLIC FLEX OR LIQUIDTITE FLEX CONDUITS FOR CONNECTIONS TO MOTORS OR MOTORIZED EQUIPMENT.

DISCONNECT, STARTER. CONTACTOR, PULL BOX, JUNCTION BOX, ETC ENCLOSURES SHALL BE PERMANENTLY LABELED TO IDENTIFY ITS DESIGNATION, VOLTAGE, AMPS, PHASE AND WHERE IT IS BEING FED FROM. ITS DESIGNATION NEEDS TO MATCH THE PLANS.

ELECTRICAL NON-METALLIC CABLE, ROMEX, SHALL BE USED WITHIN THE APARTMENTS WHEN THEY ARE WOOD FRAMED.

ELECTRICAL METALLIC CABLE, MC, SHALL BE USED IN CORRIDORS, COMMON AREAS, GARAGE AND WHEN METAL FRAMING IS PRESENT.

CONFIRM DEVICE STYLE, TYPE, AND COLOR WITH PROJECT MANAGER OR THE OWNERS BEFORE ORDERING AND INSTALLING DEVICES.

CONFIRM GROUND SIZE WHEN SPECIAL ORDERING MC FOR PARALLEL RUNS.

CONFIRM WIRE HAS AN R (RISER RATED) IF THE WIRE WILL BE GOING FROM FLOOR TO FLOOR.

PROJECT INFORMATION

PROJECT NAME
CASCADE CHRISTIAN JR HIGH SCHOOL | GYM-TENANT IMPROVEMENT
PROJECT ADDRESS
815 21ST STREET SE
PUYALLUP, WA 98372
PROJECT DESCRIPTION
TI FOR CASCADE CHRISTIAN JR HIGH SCHOOL GYM
TAX PARCEL NUMBER
0420352148
CORE-AND SHELL PERMIT
SITE CIVIL PERMIT# E-16-0150
OFF SITE CIVIL PERMIT # E-16-0261
BUILDING PERMIT# B-16-0281
DEFFERED PERMITS
SPRINKLER
LEGAL DESCRIPTION
SEE SITE CIVIL PERMIT

PROJECT DIRECTORY

THE OWNER
CASCADE CHRISTIAN SCHOOLS
DON JOHNSON
815 213T ST SE
PUYALLUP, WA 98372
253.841.1774

THE ARCHITECT
JEFF BROWN ARCHITECTURE
JEFF BROWN, ARCHITECT, AIA
1218 'C' STREET S.
TACOMA, WA 98444
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STRUCTURAL ENGINEER
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CHRIS FYNBOE
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CONTRACTOR
ABSHER CONSTRUCTION
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BRET PORTER
1001 SHAW ROAD
PUYALLUP, WA 98371
253.845.9544

PLUMBING
TACOMA PLUMBING
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1817 112TH STREET EAST SUITE G
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todd@tacomaplumbing.com
253.606.4392

MECHANICAL
AIR SYSTEMS ENGINEERING INC
DOUG CRAWFORD
3602 S FINE ST
TACOMA, WA 98409
dougc@airsinet.com
253.372.9484

ELECTRIC
BOONE ELECTRIC
JEFF PLATT
11409 58TH AVE E
PUYALLUP, WA 98373
jeff_p@boonenw.com
253.820.3063

PLAN SHEET INDEX

ELECTRICAL CONTRACTOR CONTACT

BOONE ELECTRIC - 11409 58Th Ave East Puyallup, WA 98373
Ph: 253-848-6998 Fax: 253-848-0542

CONTACT INFO CARD

WEBSITE

BOONE ELECTRIC
PUYALLUP ■ SPOKANE
11409 58Th Ave E. Puyallup, WA. 253-848-6998

CASCADE CHRISTIAN JR HIGH SCHOOL
TENANT IMPROVEMENT
PHASE 3
815 21ST ST SE
PUYALLUP, WA 98372

CONSTRUCTION SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
		SUBMITTAL
		CONSTRUCTION
		AS BUILT

REVISIONS

JOB NO.- PC190002

COVER

SHEET NO.

E000

LIGHTING SCHEDULE

QTY	LABEL	SYMBOL	DESCRIPTION	WATTS	LUMENS
5	L1		TROFFER	41	
5	L1E		TROFFER	41	
239ft	L2		COVE LIGHTING	478	
3	L3	EXIT	EXIT SIGN		
6	L4		MILLWORK TROPHY CASE	4	
6	L5		HIGH CEILING LOBBY		

Lighting Summary — LGT-SUM

Project Info			
Compliance forms do not require a password to use. Instructional and calculating cells are write-protected.	**Project Title:**	**CASCADE CHRISTIAN JR HIGH SCHOOL LOBBY ADDITION**	Date 4/20/2020
	Applicant Information. Provide contact information for individual who can respond to inquiries about compliance form information provided.		For Building Department Use
	Company Name:	**Boone Electric**	
	Company Address:	**11409 58th Ave E Puyallup, WA 98373**	
	Applicant Name:	**Suzy Fountaine**	
	Applicant Phone:	**253-848-3036**	
	Applicant Email:	**SuzyF@boonenw.com**	

Project Description — ☐ New Building ☑ Addition ☐ Alteration ☑ Plans Included
Include PROJ-SUM form (included in envelope forms workbook) with lighting compliance forms.

Building Additions — *Refer to Section C502.2.6 for additional requirements.*

Compliance Method	Interior lighting	Exterior lighting
Lighting systems in addition area comply with all applicable provisions as a stand alone new construction project	☐	☐
Lighting systems in addition are combined with existing building lighting systems to demonstrate compliance	☑	☐

Addition is combined with existing:
*For **interior** lighting projects, include new + existing interior lighting fixture wattage in Proposed Lighting Wattage table in LTG-INT-BLD or LTG-INT-SPACE form.*
*For **exterior** lighting projects, include new + existing exterior lighting fixture wattage in Proposed Tradable and Proposed Non-Tradable Lighting Wattage tables in LTG-EXT form.*

Interior and Exterior Lighting Alterations — *Select all Lighting Power and Lighting Control elements that apply to the scope of the retrofit project. If project includes a combination of spaces where less than 50% of the existing fixtures are replaced in some spaces, and 50% or more of the fixtures are replaced in others, then provide separate lighting power compliance forms for the two retrofit conditions. Spaces undergoing the same type of retrofit may be combined into one lighting power compliance form.*
Refer to Section C503.6 for additional requirements.
All alteration lighting controls shall be commissioned per C408.3.

Lighting Power	Interior lighting	Parking garage	Exterior lighting
50% or more of existing are replaced	☐	☐	☐
Less than 50% of existing are replaced	☐	☐	☐
Lamp and/or ballast replacement only – existing total wattage not increased	☐	☐	☐

50% or more replaced *- Total lighting power of new + existing-to-remain fixtures shall comply with total LPA per Sections C405.4.2 and C405.5.2. Include new + existing-to-remain fixtures in Proposed Lighting Wattage table in LTG-INT-BLD, LTG-INT-SPACE or LTG-EXT form.*
Less than 50% replaced *- Total lighting power of new + existing-to-remain fixtures shall not exceed the total lighting power prior to alteration. Include new + existing-to-remain fixtures in the Proposed Lighting Wattage table in LTG-INT-BLD, LTG-INT-SPACE or LTG-EXT form.*
50% threshold *applies to number of luminaires for interior spaces and parking garages, and total installed wattage for exterior luminaires.*

Lighting Controls	Interior lighting	Parking garage	Exterior lighting
New wiring is installed to serve added fixtures and/or fixtures relocated to new circuit(s)	☐	☐	☐
New or moved lighting panel	☐	☐	☐
Interior space is reconfigured - luminaires unchanged or relocated only	☐		

New wiring or circuit *- For interior lighting, provide required manual controls per C405.2.3, occupancy sensor controls per C405.2.1, daylight responsive controls per C405.2.4 and application specific lighting controls per C405.2.5. For exterior lighting, provide required controls per C405.2.7.*
New or moved panel *- Provide all applicable lighting controls as noted for New Wiring and automatic time switch controls per C405.2.2.*
Reconfigured interior space *- Provide all required lighting controls that apply to a new interior space. Application specific lighting control provisions per C405.2.5 do not apply to reconfigured spaces.*

☐ ***No changes are being made to the interior or exterior lighting systems and existing space uses and configurations are not changed.***

Change of Space Use — ☐ Existing interior lighting systems in areas undergoing a change in space use are upgraded to comply with LPAs for the new space types per Tables C405.4.2(1) or C405.4.2(2).
Identify interior spaces requiring LPD upgrade to the current Code in Proposed Lighting Wattage table in LTG-INT-BLD or LTG-INT-SPACE form.

Lighting Summary, cont. — LGT-SUM

Project Title:	**CASCADE CHRISTIAN JR HIGH SCHOOL LOBBY ADDITION PHASE 2**	Date 4/20/2020

Interior Lighting System Description — *Briefly describe interior lighting system type and features.*

Interior Lighting Power Allowance Method — ☐ Building Area Method ☑ Space-by-space Method
Select method used in project.

Interior Lighting Controls — ☐ All C405.2.1 - C405.2.8 Controls ☐ C405.2 Exception 5 Luminaire Level Lighting Control (LLLC) ☐ Additional Efficiency Package Option C406.4 Enhanced digital lighting controls
To comply with C406.4, no less than 90% of the total installed interior lighting power shall comply with the required controls per C406.4.

Dwelling Unit Interior Lighting — *Permanently installed interior lighting fixtures in dwelling units comply with:* ◉ No Dwelling Units
○ C405.2 thru C405.5 Commercial Lighting Controls and LPA
○ C406.3 High Efficacy Lighting
○ R404.1 Residential High Efficacy Lighting. *Dwelling unit lighting complies with WSEC Residential provisions in lieu of WSEC Commercial provisions.*

Exterior Lighting System Description — *Briefly describe exterior lighting system type and features.*

Interior Lighting - Space-By-Space Method — LTG-INT-SPACE

Project Title:	**CASCADE CHRISTIAN JR HIGH SCHOOL LOBBY ADDITION**		Date 4/20/2020
Calculation Area NOTE 9	○ New Construction ◉ Addition - stand alone ○ Addition + existing ○ Clear		For Building Department Use
	○ Spaces where <50% of luminaires are replaced ○ Spaces where ≥50% of luminaires are replaced ○ Spaces where the Use is changing (C505)		
LPA Calculation Type	○ Standard ◉ Additional Efficiency Package Option C406.3 Reduced Interior Lighting Power	○ Clear	
	To comply with C406.3, the Proposed LPD shall be 25% lower than the Target LPA. Refer to C406.3 for additional requirements.		

Maximum Allowed Lighting Wattage NOTE 1

Location (plan #, room #)	Space Type	Ceiling Height NOTE 2	Gross Interior Area in ft²	Allowed Watts per ft²	Watts Allowed (w atts/ft² x area)
E201 LOBBY	Corridor: all other	15*	1295	0.530	681
RESTROOM 1	Restroom: all other	10*	299	0.780	233
RESTROOM 2	Restroom: all other	10*	353	0.780	275
LOBBY	Corridor: all other	21*	991	0.530	525
		Total Area:	2928		
		Retail Display Allowance from LTG-INT-DISPLAY			
	Lobby Art/Exhibit Display Allowance from LTG-INT-DISPLAY NOTE 8			Allowed Watts	1715

Proposed Lighting Wattage NOTE 3

Location (plan #, room #)	Fixture Description NOTE 4, 5, 6	Number of Fixtures	Watts/ Fixture NOTE 7		Watts Proposed
E201 LOBBY	TROFFER L1, L1E	10	41		406
E201 LOBBY	COVE LIGHTING L2	153	2		230
RESTROOM 1	COVE LIGHTING L2	43	2		65
RESTROOM 2	COVE LIGHTING L2	43	2		65
E201 LOBBY	MILWORK LIGHTING L4	6	4		24
LOBBY	L5 HIGH CEILING PENDANT	6	37		222
			Proposed Retail Display Lighting from LTG-INT-DISPLAY		
			Total Proposed Watts		1011

Total Proposed Watts may not exceed Total Allowed Watts for Interior Lighting

Interior Lighting Power Allowance — **COMPLIES WITH C406.3**

Note 1 - List all unique space types per Table C405.4.2(2) that occur in the project scope. Select space-type category per from drop down menu.
Note 2 - Indicate ceiling height for all rums and spaces utilizing the ceiling height adjustment per Table C405.4.2(2). Footnotes d thru f.
Note 3 - List all proposed lighting fixtures including exempt lighting equipment and existing-to-remain fixtures.
Note 4 - For proposed Fixture Description, indicate fixture type, lamp type (e.g. T-8), number of lamps in the fixture, and ballast type (if included). For track lighting, list the length of the track (in feet) in addition to the fixture, lamp, and ballast information.
Note 5 - For lighting equipment eligible for exemption per C405.4.1, note exception number and leave Watts/Fixture blank.
Note 6 - Existing-to-remain fixtures shall be included in the Proposed Lighting Wattage table in the same manner as new fixtures. Identify as existing in fixture description.
Note 7 - For proposed Watts/Fixture enter the luminaire wattage for installed lamp and ballast using manufacturer or other approved source. For luminaires with screw-in lamps, enter the manufacturer's listed maximum input wattage of the fixture (not the lamp wattage). For low voltage lighting, enter the wattage of the transformer. For line voltage track/busway systems, enter the larger of the attached luminaire wattage or 50 watts/lineal foot, or enter the wattage limit of permanent current limiting device.
Note 8 - Lobby Art/Exhibit Display Allowance is independent of the Maximum Allowed Lighting Wattage.
Note 9 - Calculation Area Details:
a. Lighting fixtures in a building addition may comply as a stand alone project, or they may be combined with the overall existing building lighting systems to demonstrate compliance. Refer to C502.1.
b. For alterations and building additions, provide Space Types and gross interior areas in the Maximum Allowed Lighting Wattage table. If a building addition will comply as combined with the overall existing building lighting systems, include all applicable existing Space Types and gross interior areas.
c. If less than 50% of existing lighting fixtures will be replaced, provide total existing lighting wattage (prior to alteration) in the space provided in the Maximum Allowed Lighting Wattage table.

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CASCADE CHRISTIAN JR HIGH SCHOOL
TENANT IMPROVEMENT
PHASE 3
815 21ST ST SE
PUYALLUP, WA 98372

CONSTRUCTION SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
		SUBMITTAL
		CONSTRUCTION
		AS BUILT

REVISIONS

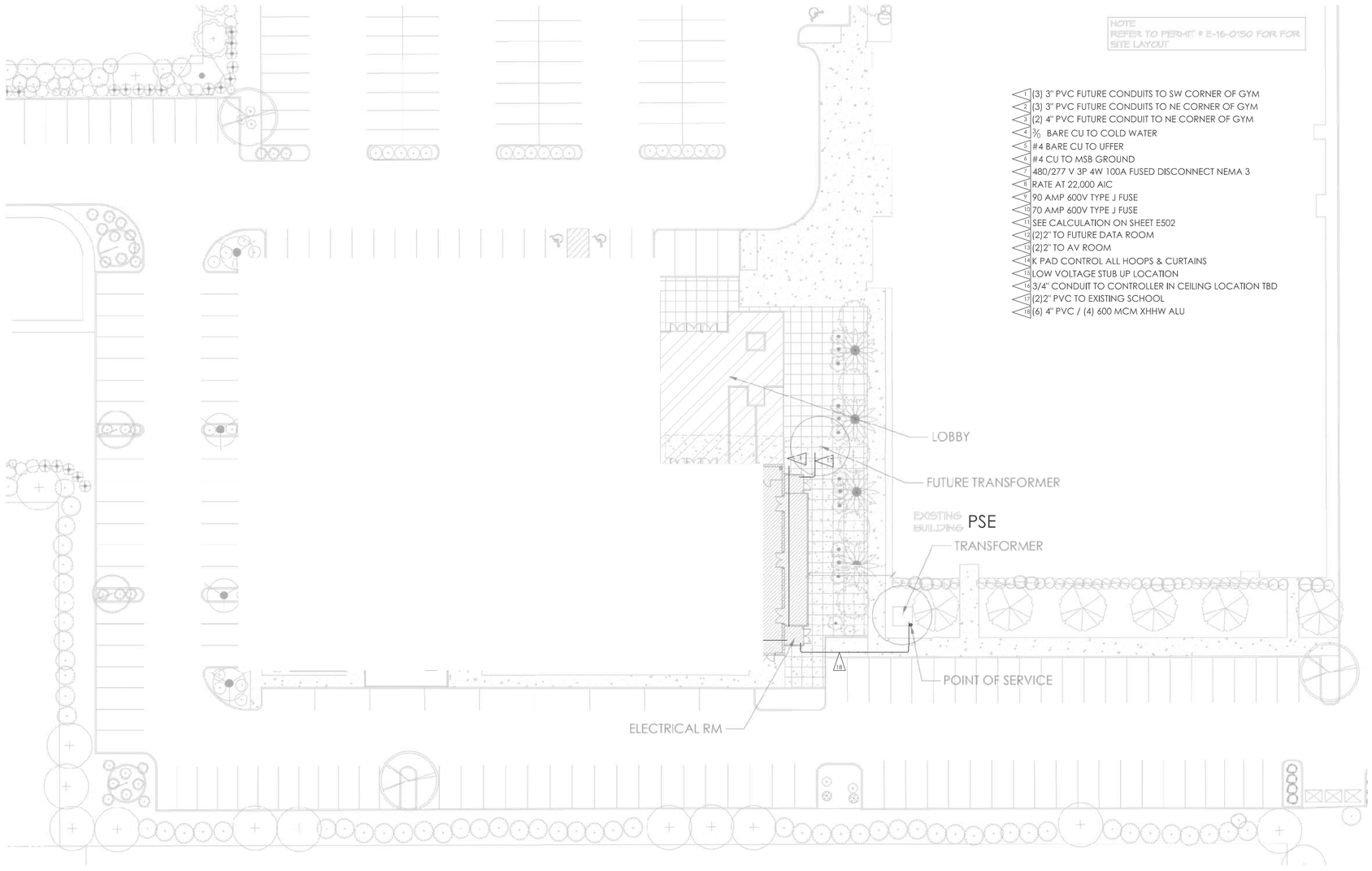
JOB NO.- PC190002

LEGENDS/NREC

SHEET NO.

E001

B-21-0959CITY OF PUYALLUP



NOTE
REFER TO PERMIT # E-16-0150 FOR FOR SITE LAYOUT

A (3) 3" PVC FUTURE CONDUITS TO SW CORNER OF GYM
A (3) 3" PVC FUTURE CONDUITS TO NE CORNER OF GYM
A (2) 4" PVC FUTURE CONDUIT TO NE CORNER OF GYM
A ⅜ BARE CU TO COLD WATER
A #4 BARE CU TO UFFER
A #4 CU TO MSB GROUND
A 480/277 V 3P 4W 100A FUSED DISCONNECT NEMA 3
A RATE AT 22,000 AIC
A 90 AMP 600V TYPE J FUSE
A 70 AMP 600V TYPE J FUSE
A SEE CALCULATION ON SHEET E502
A (2)2" TO FUTURE DATA ROOM
A (2)2" TO AV ROOM
A K PAD CONTROL ALL HOOPS & CURTAINS
A LOW VOLTAGE STUB UP LOCATION
A 3/4" CONDUIT TO CONTROLLER IN CEILING LOCATION TBD
A (2)2" PVC TO EXISTING SCHOOL
A (6) 4" PVC / (4) 600 MCM XHHW ALU

SITE PLAN

NOT TO SCALE

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CONSTRUCTION SET

BY	DATE	DESCRIPTION
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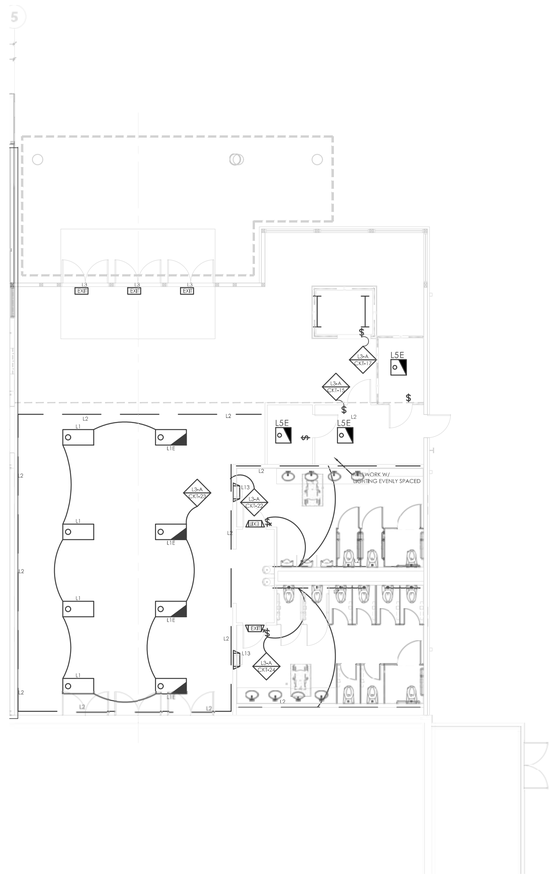
JOB NO.- PC190002

SITE PLAN

SHEET NO.

E100

B-21-0959CITY OF PUYALLUP



LIGHTING PLAN - FLOOR 1

1/8"=1'

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		AS BUILT

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LIGHTING

SHEET NO.

E200

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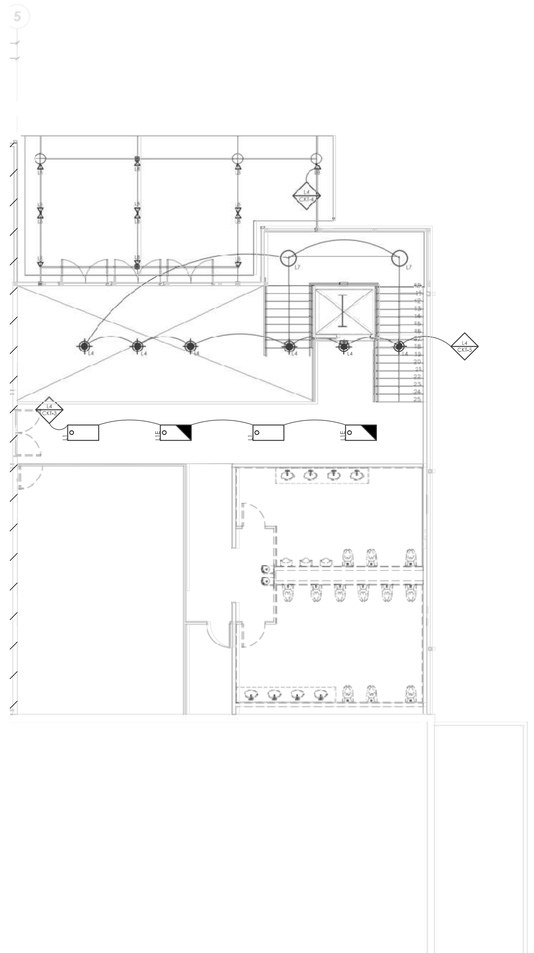

LIGHTING PLAN - FLOOR 2

1/8"=1'

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CONSTRUCTION SET

BY	DATE	DESCRIPTION
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		CONSTRUCTION
		AS BUILT

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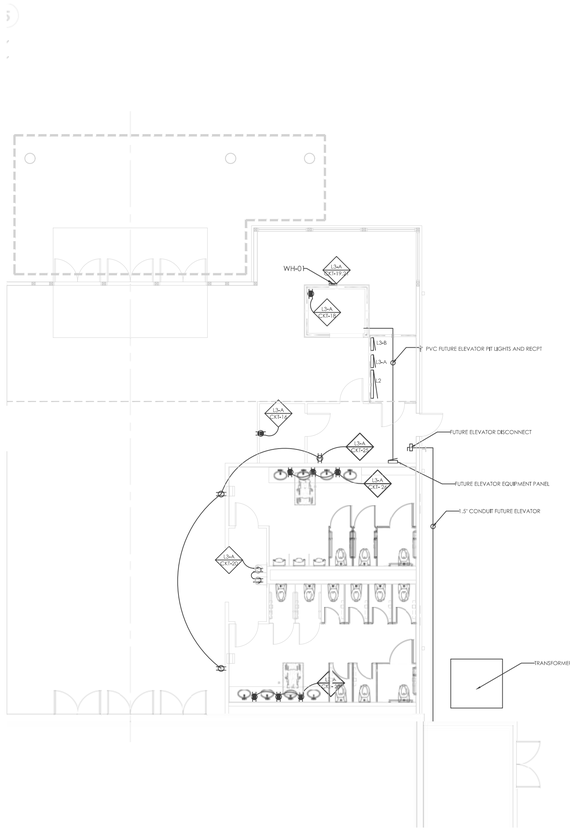
LIGHTING

SHEET NO.

E201



POWER PLAN - FLOOR 1

1/8" = 1'

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		CONSTRUCTION
		AS BUILT

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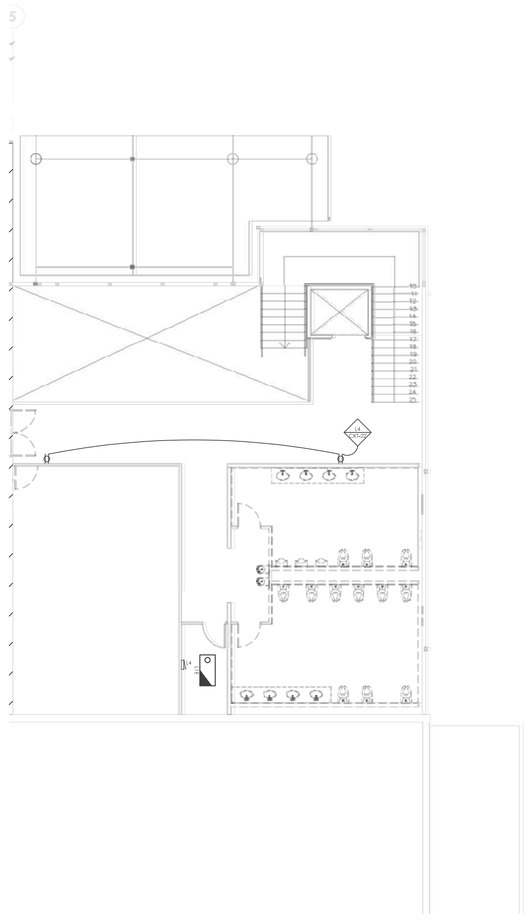
POWER

SHEET NO.

E300



POWER PLAN - FLOOR 2

1/8" = 1'

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		CONSTRUCTION
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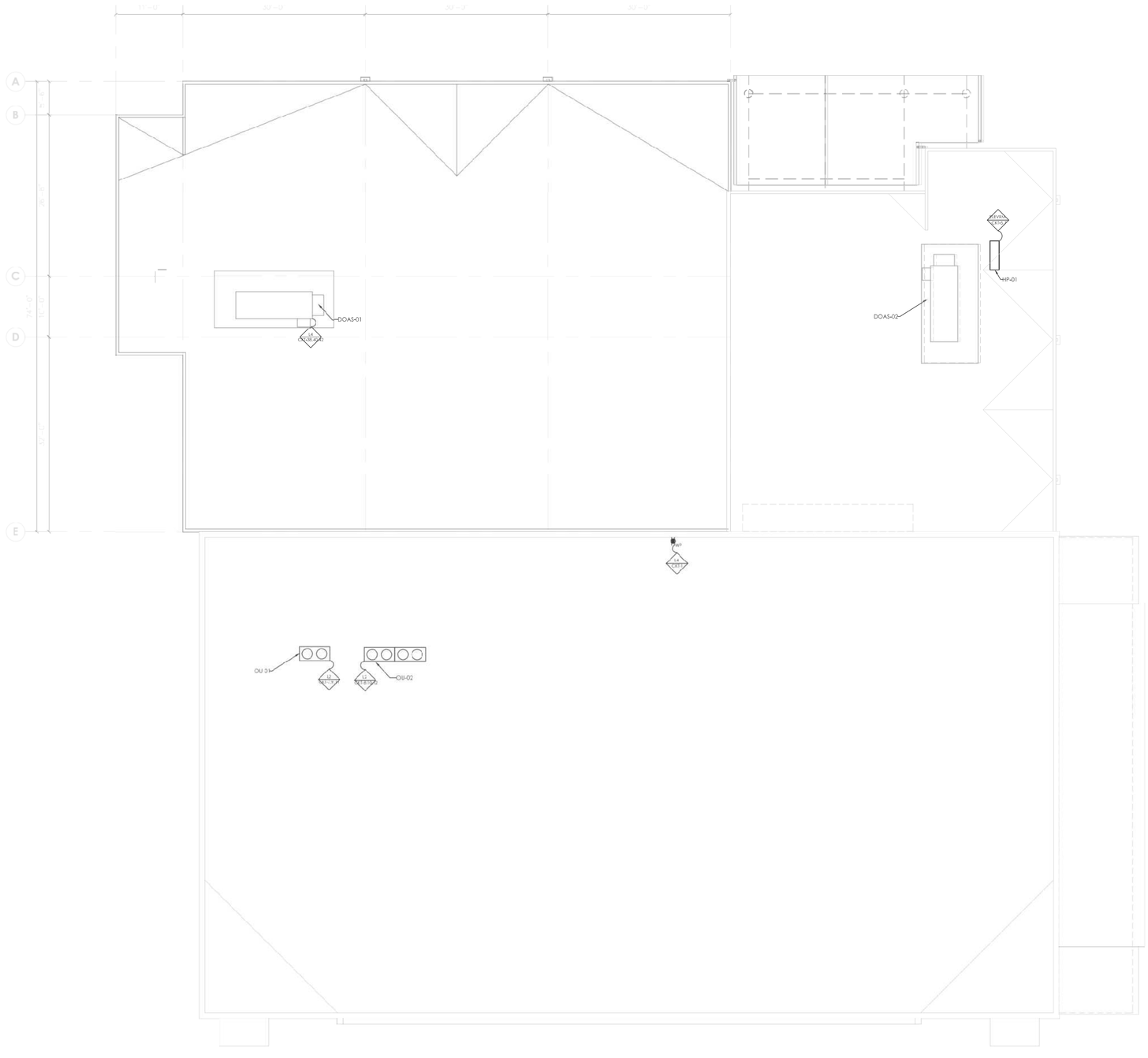
POWER

SHEET NO.

E301



POWER PLAN - ROOF

1/8" = 1'

BOONE ELECTRIC

PUYALLUP ■ SPOKANE

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		CONSTRUCTION
		AS BUILT

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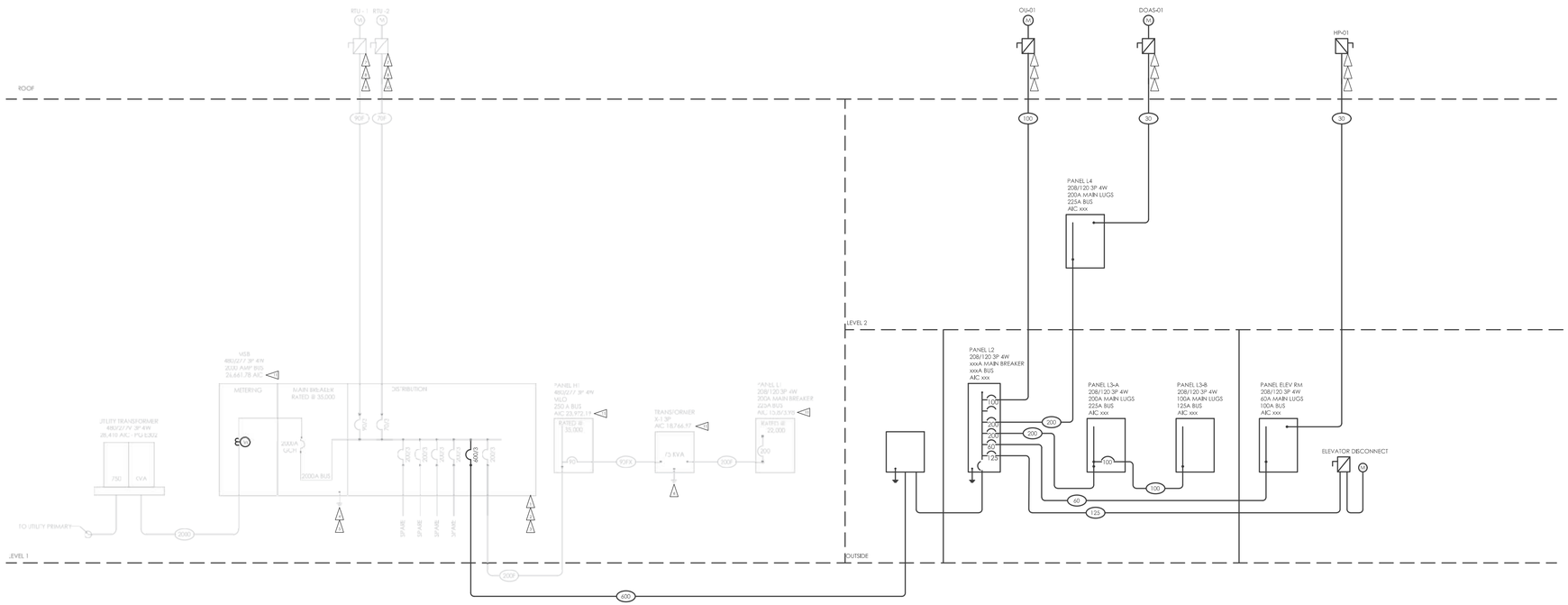
POWER

SHEET NO.

E302

2000 (6) 4" PVC / (4) 600 MCM XHHW ALU
600F (2) 3" PVC / (4) 500 MCM XHHW ALU 2/0 XHHW ALU GROUND
200F (1) 2" PVC / 4 250 XHHW ALU #4 XHHW ALU GROUND
90F 1 ½ EMT / (4) #1 XHHW ALU #6 XHHW ALU GROUND
90FX 1 ½ EMT / (4) #1 XHHW ALU #2 XHHW ALU GROUND
70F 1 ½" EMT / (4) #4 THHN CU #8 THHN CU GROUND

(3) 3" PVC FUTURE CONDUITS TO SW CORNER OF GYM
(3) 3" PVC FUTURE CONDUITS TO NE CORNER OF GYM
(2) 4" PVC FUTURE CONDUIT TO NE CORNER OF GYM
⅜ BARE CU TO COLD WATER
#4 BARE CU TO UFFER
#4 CU TO MSB GROUND
480/277 V 3P 4W 100A FUSED DISCONNECT NEMA 3
RATE AT 22,000 AIC
90 AMP 600V TYPE J FUSE
70 AMP 600V TYPE J FUSE
SEE CALCULATION ON SHEET E502



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ONELINE

SHEET NO.

E500

277/480 VOLT, 3 PHASE, 4 WIRE

MSB TOTAL LOAD	CONNECTED	DEMAND	
HVAC LOADS			
RTU 1	51.19 KVA	51.19 KVA	
RTU-2	43.21 KVA	43.21 KVA	
	94.4 KVA	94.4 KVA	
HOUSE LOADS			
LIGHTING LOAD	4.88 KVA	6.10 KVA	
RECEPTACLE LOAD	6.48 KVA	6.48 KVA	
MOTOR LOAD	8.75 KVA	8.75 KVA	
HEAT LOAD	0.75 KVA	0.75 KVA	
DEADICATED	24.26 KVA	24.26 KVA	
25% LARGEST MOTOR		0.32 KVA	
PANEL L2	**233.92 KVA**	**89.21 KVA**	
Total Load	**139.52 KVA**	**235.45 KVA**	**283.34 AMPS**

PANEL **H1** — LOCATION: MAIN ELECTRICAL ROOM — SERVING: Gymnasium — 480/277 VOLT, 3 PHASE, 4 WIRE — 35,000 AIC, 200 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	LIGHTING: MAIN GYM	L	2.851	20/1	A	90/3	40.656	D	75 KVA TRANSFORMER	2
3	LIGHTING: SMALL GYM	L	1.030	20/1	B					4
5	LIGHTING: OUTSIDE LIGHTS	L	0.250	20/1	C					6
7	WRESTLING SPOT LIGHTS	L	0.344	20/1	A					8
9	STORAGE ROOM LIGHTS	L	0.396	20/1	B					10
11					C					12
13					A					14
15					B					16
17					C					18
19					A					20
21					B					22
23					C					24
25					A					26
27					B					28
29					C					30
31					A					32
33					B					34
35					C					36
37					A					38
39					B					40
41					C					42

PHASE LOAD: PHASE A= 16.71 KVA, PHASE B= 14.95 KVA, PHASE C= 13.77 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD	4.88					40.56				45.43 KVA	54.65 AMP
NET CALC. LOAD	6.10					40.56				46.65 KVA	56.12 AMP

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REMARKS:

PANEL **L1** — LOCATION: MAIN ELECTRICAL ROOM — SERVING: Gymnasium — 208/120 VOLT, 3 PHASE, 4 WIRE — 35,000 AIC, 200 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	RECEPT: IT ROOM	R	0.900	20/1	A	20/1	2.030	D	RECEPT: AV ROOM	2
3	RECEPT: CENTER FLOOR	R	0.720	20/1	B	20/1	0.540	R	RECEPT: FLOOR SOUTH	4
5	RECEPT: SW WALL	R	0.900	20/1	C	20/1	0.540	R	RECEPT: FLOOR SOUTH	6
7	RECEPT: WEST WALL	R	0.540	20/1	A	20/1	0.540	R	RECEPT: NORTH WALL	8
9	RECEPT: EAST WALL	R	0.720	20/1	B	20/1	0.540	R	RECEPT: NORTH WALL	10
11	RECEPT: HOT BOX	D	1.500	20/1	C	20/1	1.200	D	RECEPT: DRINKING FOUNTAIN	12
13	BASKETBALL HOOP #1	D	1.270	20/1	A	20/1	1.270	M	BASKETBALL HOOP #6	14
15	BASKETBALL HOOP #2	D	1.270	20/1	B	20/1	1.270	M	BASKETBALL HOOP #7	16
17	BASKETBALL HOOP #3	D	1.270	20/1	C	20/1	1.270	M	BASKETBALL HOOP #8	18
19	BASKETBALL HOOP #4	D	1.270	20/1	A	20/1	1.270	M	ROLL DOWN CURTAIN	20
21	BASKETBALL HOOP #5	D	1.270	20/1	B	20/1	1.270	M	ROLL DOWN CURTAIN	22
23	WRESTLING MAT	D	3.373	20/3	C	20/1	1.200	M	SCOREBOARD #1	24
25	"				A	20/1	1.200	M	SCOREBOARD #2	26
27	"				B	20/1	0.360	D	AV SCREEN	28
29	RECEPT: AV ROOM	D	0.540	20/1	C	20/1	1.000	D	FIRE ALARM	30
31	RECEPT: STORAGE	R	0.360	20/1	A	20/1	0.180	D	RECEPT: ROOFTOP	32
33	EWH-1	H	0.750	20/2	B	30/2	5.200	D	AV SPLIT HVAC	34
35	"				C					36
37	RECEPT: ELECT	R	0.180	20/1	A	30/2	5.200	D	IT SPLIT HVAC	38
39					B					40
41					C					42

PHASE LOAD: PHASE A= 12.73 KVA, PHASE B= 14.33 KVA, PHASE C= 13.19 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD		6.48	8.75	0.75		24.26			1.27	40.24 KVA	111.70 AMP
NET CALC. LOAD		6.48	8.75	0.75		24.26			0.32	40.56 KVA	112.58 AMP

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REMARKS:

PANEL **L2** — LOCATION: — SERVING: — 208/120 VOLT, 3 PHASE, 4 WIRE — AIC, 600 AMP MAIN, BREAKER

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	PANEL L3-A	D	19.799	200/3	A	200/3	10.410	D	PANEL L4	2
3	"			"	B	"			"	4
5	"			"	C	"			"	6
7	CU-01	M	21.960	150/3	A	70/3		M	CU-02 - FUTURE	8
9	"			"	B	"			"	10
11	"			"	C	"			"	12
13	ELEV RM	M	4.186	60/3	A	125/3	26.200	M	ELEVATOR	14
15	"			"	B	"			"	16
17	"			"	C	"			"	18
19					A					20
21					B					22
23					C					24
25					A					26
27					B					28
29					C					30

PHASE LOAD: PHASE A= 27.55 KVA, PHASE B= 27.55 KVA, PHASE C= 27.55 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD			52.43			30.21			20.28	82.64 KVA	229.37 AMP
NET CALC. LOAD			52.43			30.21			5.57	89.21 KVA	247.61 AMP

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REMARKS:

PANEL **L3-A** — LOCATION: — SERVING: 1st FLOOR — 208/120 VOLT, 3 PHASE, 4 WIRE — AIC, 200 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	BATHROOM 107 & 106 LIGHTING	L	0.059	20/1	A	20/1	0.180	R	BATHROOM 107 RECEPTICLE	2
3	RM 100 LIGHTING	L	0.033	20/1	B	20/1	0.720	R	RM 103 & 100 RECEPTICLES	4
5	RM 103 & 104 LIGHTING	L	0.232	20/1	C	20/1	0.720	R	RM 103 & 104 RECEPTICLES	6
7	RM 102 OFFICE LIGHTING	L	0.132	20/1	A	20/1	0.540	R	RM 102 OFFICE RECEPTICLES	8
9	RM 101 OFFICE LIGHTING	L	0.132	20/1	B	20/1	0.540	R	RM 101 OFFICE RECEPTICLES	10
11	109 HALL LIGHTING	L	0.324	20/1	C	20/1	0.540	R	109 HALL RECEPTICLES	12
13	115 STAIR LIGHTING	L	0.073	20/1	A	20/1	0.174	L	EXTERIOR LIGHTING	14
15	312, 313, 314 LIGHTING	L	0.083	20/1	B	20/1	0.180	R	312 JANITOR RECEPTICLE	16
17	ELEV LIGHTING	L	0.056	20/1	C	20/1	0.180	R	ELEV RECEPTICLE	18
19	STAIR HEATER	H	1.125	20/2	A	20/1	0.360	R	WATER FOUNTAIN RECEPTICLE	20
21	"			"	B	20/1	0.500	L	MENS REST LIGHTING	22
23	LOBBY LIGHTING	L	0.029	20/1	C	20/1	0.500	L	WOMENS REST LIGHTING	24
25	LOBBY RECEPTICLES	R	0.540	20/1	A	20/1	0.540	R	MENS REST RECEPTICLES	26
27	BCC-01	H	2.245	20/2	B	20/1	0.540	R	WOMENS REST RECEPTICLES	28
29	"			"	C					30
31					A					32
33					B					34
35					C					36
37					A	100/3	5.773	D	L3-B	38
39					B	"			"	40
41					C	"			"	42

PHASE LOAD: PHASE A= 6.46 KVA, PHASE B= 6.69 KVA, PHASE C= 6.84 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD	3.26	5.56		3.37		6.77				18.98 KVA	52.69 AMP
NET CALC. LOAD	4.08	5.56		3.37		6.77				19.80 KVA	54.96 AMP

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REMARKS:

PANEL **L3-B** — LOCATION: — SERVING: 1ST FLOOR — 208/120 VOLT, 3 PHASE, 4 WIRE — AIC, 200 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	CLASS RM 110 LIGHTING	L	0.336	20/1	A	20/1	0.900	R	CLASS RM 110 RECEPTICLES	2
3	CLASS RM 110 DEDICATED RECEPTICLE	R	0.180	20/1	B	20/1	0.336	L	CLASS RM 109 LIGHTING	4
5	CLASS RM 109 RECEPTICLES	R	0.720	20/1	C	20/1	0.180	R	CLASS RM 109 DEDICATED RECEPTICLE	6
7	CLASS RM 113 LIGHTING		0.336	20/1	A	20/1	0.720	R	CLASS RM 113 RECEPTICLES	8
9	CLASS RM 113 DEDICATED RECEPTICLE	R	0.180	20/1	B	20/1	0.336	L	CLASS RM 112 LIGHTING	10
11	CLASS RM 112 RECEPTICLES	R	0.720	20/1	C	20/1	0.180	R	CLASS RM 112 DEDICATED RECEPTICLE	12
13	CLASS RM 111 LIGHTING	L	0.336	20/1	A	20/1	0.720	R	CLASS RM 111 RECEPTICLES	14
15	CLASS RM 111 DEDICATED RECEPTICLE	R	0.180	20/1	B					16
17					C					18
19					A					20
21					B					22
23					C					24
25					A					26
27					B					28
29					C					30
31					A					32
33					B					34
35					C					36
37					A					38
39					B					40
41					C					42

PHASE LOAD: PHASE A= 3.34 KVA, PHASE B= 1.21 KVA, PHASE C= 1.80 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD	1.67	4.68								6.35 KVA	17.64 AMP
NET CALC. LOAD	2.09	4.68								6.77 KVA	18.80 AMP

OLATED GROUND BUS · EED THRU LUGS · IN BKR SHUNT TRIP · ANEL SKIRTS · URFACE
AINTIGHT NEMA 3R ENCLOSURE · OUBLE LUGS · RVICE ENTRANCE LABEL · ITEGRAL TVSS · LUSH
REMARKS:

PANEL **L4** — LOCATION: — SERVING: 2nd FLOOR — 208/120 VOLT, 3 PHASE, 4 WIRE — AIC, 200 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	ROOF RECEPTICLE	R	0.180	20/1	A	20/1	0.360	R	UPSTAIRS HALL 221 RECEPTICLES	2
3	UPSTAIRS LIGHTING HALL 221	L	0.354	20/1	B	20/1	0.760	L	EXTERIOR CANOPY LIGHTING	4
5	UPSTAIRS LIGHTING HIGH CEILING	L	0.246	20/1	C					6
7					A					8
9					B					10
11					C					12
13					A					14
15					B					16
17					C					18
19					A					20
21					B					22
23					C					24
25					A					26
27					B					28
29					C					30
31					A					32
33					B					34
35					C					36
37					A	30/3	6.516	M	DOAS-01	38
39					B	"			"	40
41					C	"			"	42

PHASE LOAD: PHASE A= 2.71 KVA, PHASE B= 3.31 KVA, PHASE C= 2.42 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD	1.38	0.54	6.52						6.52	8.44 KVA	23.42 AMP
NET CALC. LOAD	1.73	0.54	6.52						1.63	10.41 KVA	28.90 AMP

OLATED GROUND BUS · EED THRU LUGS · IN BKR SHUNT TRIP · ANEL SKIRTS · URFACE
AINTIGHT NEMA 3R ENCLOSURE · OUBLE LUGS · RVICE ENTRANCE LABEL · ITEGRAL TVSS · LUSH
REMARKS:

PANEL **ELEV RM** — LOCATION: — SERVING: — 208/120 VOLT, 3 PHASE, 4 WIRE — AIC, 100 AMP MAIN, Lugs

CKT	LOAD DESCRIPTION	TYPE	KVA	A/P	PHASE	A/P	KVA	TYPE	LOAD DESCRIPTION	CKT
1	CAR LIGHTS	L		20/1	A	20/1		L	PIT GFCI	2
3	ROOM G-01	R		20/1	B	20/1		R	PIT LIGHTS	4
5	HP-01	M	3.349	30/2	C					6
7	"			"	A					8
9					B					10
11					C					12
13					A					14
15					B					16
17					C					18
19					A					20
21					B					22
23					C					24

PHASE LOAD: PHASE A= 1.67 KVA, PHASE B= KVA, PHASE C= 1.67 KVA

LOAD TYPE	L	R	M	H	WH	D	A	K	LM	TOTAL LOADS	
CONN. LOAD			3.35						3.35	3.35 KVA	9.30 AMP
NET CALC. LOAD			3.35						0.84	4.19 KVA	11.62 AMP

OLATED GROUND BUS · EED THRU LUGS · IN BKR SHUNT TRIP · ANEL SKIRTS · URFACE
AINTIGHT NEMA 3R ENCLOSURE · OUBLE LUGS · RVICE ENTRANCE LABEL · ITEGRAL TVSS · LUSH
REMARKS:

BOONE ELECTRIC
PUYALLUP ■ SPOKANE
11409 58th Ave E. Puyallup, WA. 253-848-6998

CASCADE CHRISTIAN JR HIGH SCHOOL
TENANT IMPROVEMENT
PHASE 3
815 21ST ST SE
PUYALLUP, WA 98372

CONSTRUCTION SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
		SUBMITTAL
		CONSTRUCTION
		AS BUILT

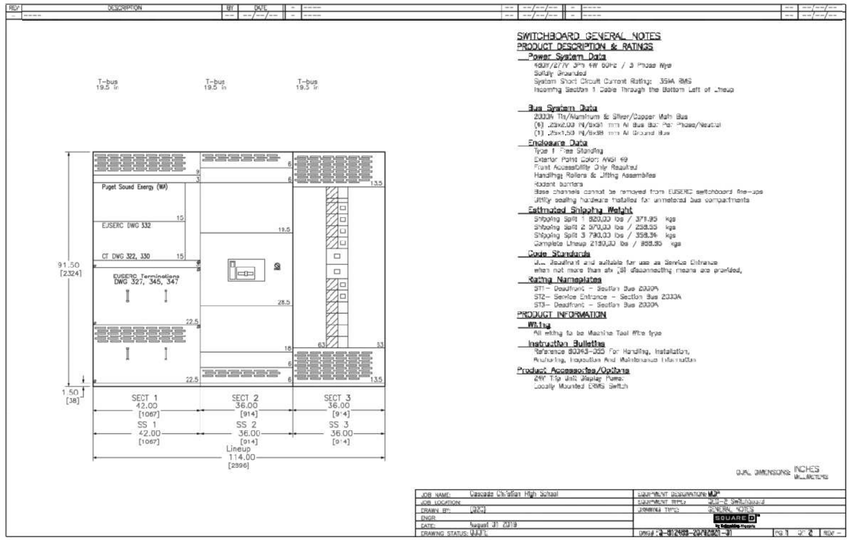
REVISIONS

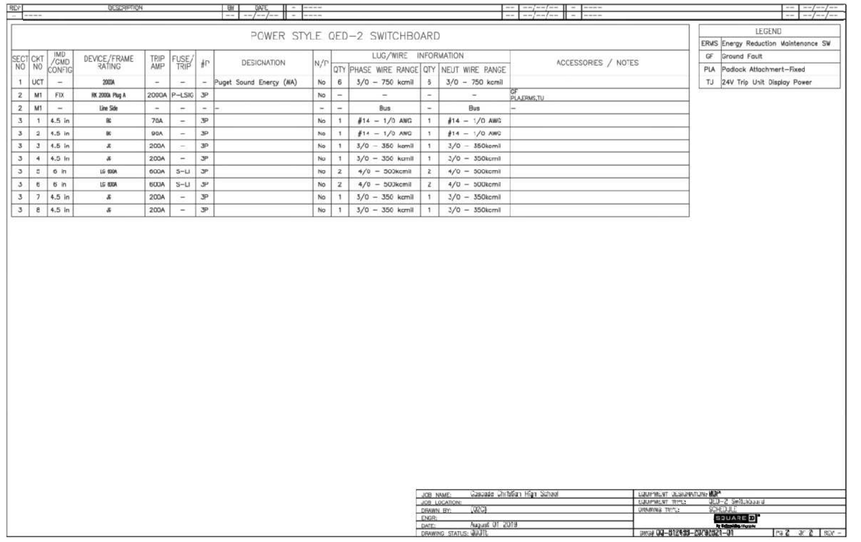
JOB NO.- PC190002

PANEL SCHEDULES

SHEET NO.

E501



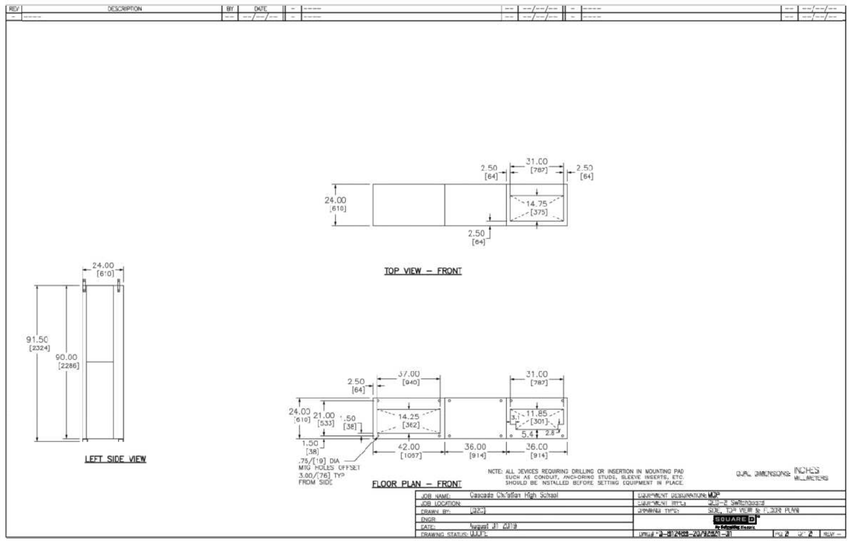

POWER STYLE QED-2 SWITCHBOARD

SECT NO	CKT NO	MD /CMD CONFIG	DEVICE/FRAME RATING	TRIP AMP	FUSE/ TRIP	#P	DESIGNATION	N/?	LUG/WIRE INFORMATION QTY	PHASE WIRE RANGE	QTY	NEUT WIRE RANGE	ACCESSORIES / NOTES
1	UCT	--	2333A	--	--	--	Puget Sound Energy (NW)	No	6	3/0 - 750 kcmil	5	3/0 - 750 kcmil	
2	M1	FIX	NF 2000A Plug A	2000A	P-LSIG	3P		No	--	--	--	--	GF PLA(RMLTU)
2	M1	--	Line Side	--	--	--		--	--	Bus	--	Bus	--
3	1	4.5 in	NE	70A	--	3P		No	1	#14 - 1/0 AWG	1	#14 - 1/0 AWG	
3	2	4.5 in	NE	90A	--	3P		No	1	#14 - 1/0 AWG	1	#14 - 1/0 AWG	
3	3	4.5 in	JL	200A	--	3P		No	1	3/0 - 350 kcmil	1	3/0 - 350kcmil	
3	4	4.5 in	JL	200A	--	3P		No	1	3/0 - 350 kcmil	1	3/0 - 350kcmil	
3	5	6 in	LG 600A	600A	S-LI	3P		No	2	4/0 - 500kcmil	2	4/0 - 500kcmil	
3	6	6 in	LG 600A	600A	S-LI	3P		No	2	4/0 - 500kcmil	2	4/0 - 500kcmil	
3	7	4.5 in	JL	200A	--	3P		No	1	3/0 - 350 kcmil	1	3/0 - 350kcmil	
3	8	4.5 in	JL	200A	--	3P		No	1	3/0 - 350 kcmil	1	3/0 - 350kcmil	

LEGEND

ERMS	Energy Reduction Maintenance SW
GF	Ground Fault
PLA	Padlock Attachment-Fixed
TJ	24V Trip Unit Display Power

JOB NAME: Cascade Christian High School
JOB LOCATION:
DRAWN BY: WBCB
ENGR:
DATE: August 27, 2019
DRAWING STATUS: BIDSET
EQUIPMENT DESIGNATION: MDP
EQUIPMENT RATED: 3Ø,4W,480Y/277V
DRAWING TYPE: ELEVATION, PLAN
SQUARE D
by Schneider Electric
Serial #: 3D-811458-02-0001-01
SHT 2 OF 2 REV --



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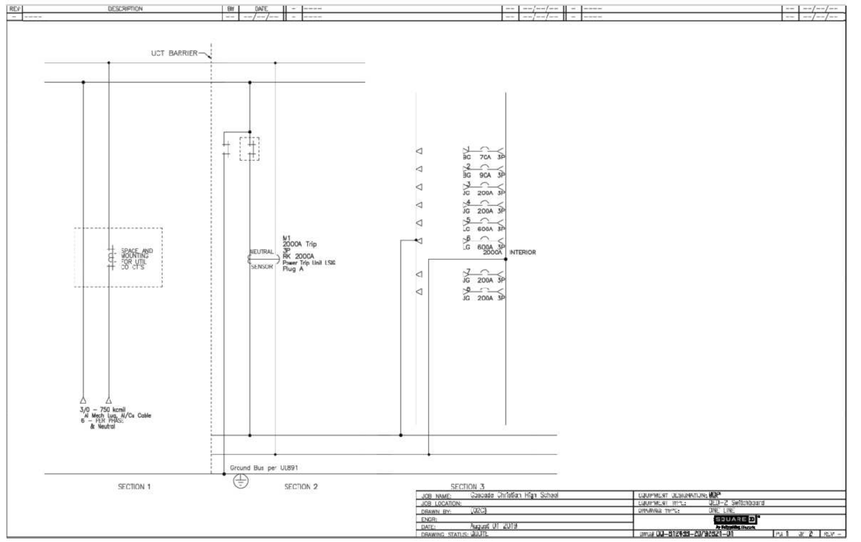

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SHT 1 OF 2 REV --

BOONE ELECTRIC
PUYALLUP SPOKANE
11409 58Th Ave E, Puyallup, WA 253-848-6998

CASCADE CHRISTIAN JR HIGH SCHOOL
TENANT IMPROVEMENT
PHASE 3
815 21ST ST SE
PUYALLUP, WA 98372

CONSTRUCTION SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
		SUBMITTAL
		CONSTRUCTION
		AS BUILT

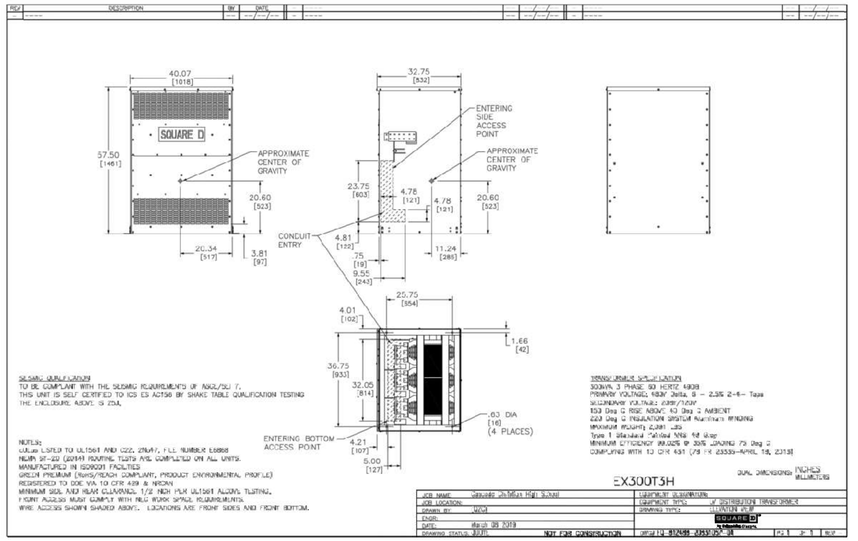
REVISIONS

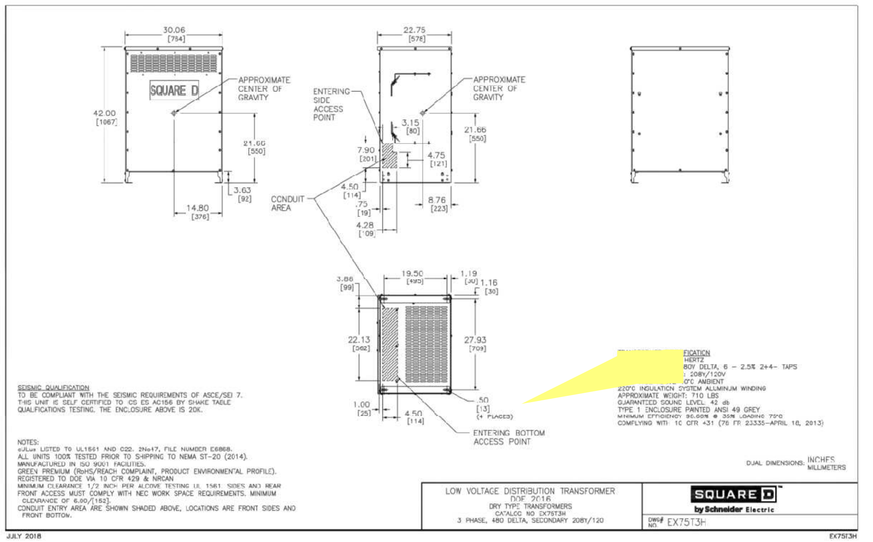
JOB NO.- PC190002

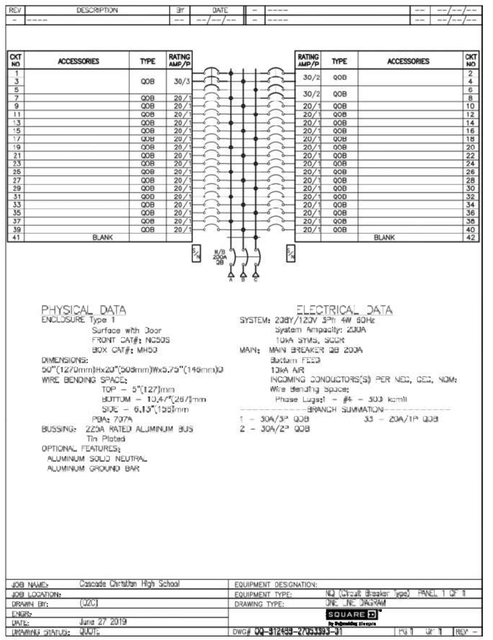
DOCUMENTATION

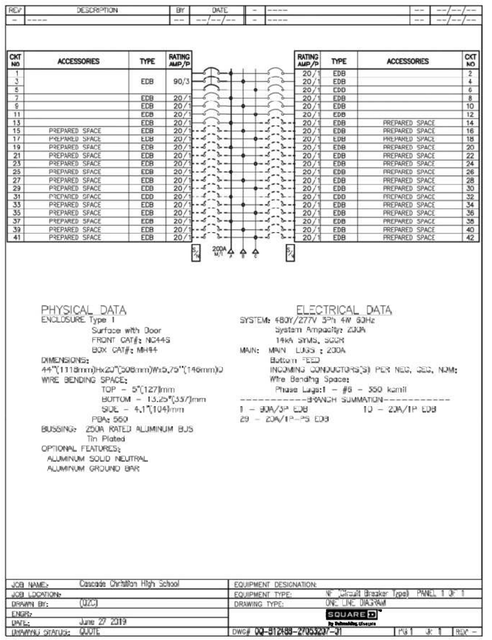
SHEET NO.

E503









BOONE ELECTRIC
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CONSTRUCTION SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
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REVISIONS

JOB NO.- PC190002

DOCUMENTATION

SHEET NO.

E504

DRAIN FIXTURE CONNECTION SCHEDULE

SYMBOL	DRAIN FIXTURE	LOCAL CONNECTION		
		WASTE	VENT	STORM
FD-1	FLOOR DRAIN – SIOUX CHIEF #833-3ANR, 5" ADJUSTABLE NICKEL BRONZE STRAINER, ABS DRAIN BODY WITH CLAMP RING AND RECTORSEAL TRAP SEAL.	2"	1½"	–
HD-1	HUB DRAIN – 4"X4"X24" (INDIRECT RECEPTACLE FOR ELEVATOR SUMP PUMP)	4"	2"	–

1

PLUMBING EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION
EWH-1	AO SMITH 50 GALLON ELECTRIC WATER HEATER (240V, 9KW, 1PH). NOTE: REPLACE EXISTING 20 GALLON WATER HEATER.
TMV-1	SYMMONS 7-200 THERMOSTATIC MIXING VALVE. TEMPER WATER TO MAXIMUM TEMPERATURE OF 120°F.
CP-1	GRUNDFOS UP15-10B5 DOMESTIC HOT WATER CIRCULATION PUMP. 2GPM @ 4 FEET OF HEAD.
ESP-1	ELEVATOR SUMP PUMP – BARNES SP50 SUBMERSIBLE, 1/2 HP, 1-PHASE, 120V, 6.8AMPS, CORDED. 50 GPM AT 12.4 FT.HD. BOSS OIL SENSOR SWITCH W/ NEMA 1 ENCLOSURE, HIGH WATER ALARM, HIGH OIL ALARM.

1

WATER HAMMER ARRESTOR SCHEDULE

SYMBOL	DESCRIPTION	WATER SUPPLY FIXTURE UNITS	SIZE
●A	SIOUX CHIEF #652-A(S). (S) SWEAT OR THREADED	1-11	½"
●B	SIOUX CHIEF #653-B(S). (S) SWEAT OR THREADED	12-32	¾"
●C	SIOUX CHIEF #654-C(S). (S) SWEAT OR THREADED	33-60	1"
●D	SIOUX CHIEF #655-D(S). (S) SWEAT OR THREADED	61-113	1"

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURE & MODEL NUMBERS	W	V	CW	HW	QTY	REMARKS
P-1	WATER CLOSET WALL MOUNT FLUSH VALVE	CLOSET: KOHLER #K-4325 SEAT: BEMIS #1955-C VALVE: SLOAN #8111 (SENSOR/BATTERY)	3"	2"	1¼"	–	10	INSTALL WITH WALL CARRIER.
P-1A (ADA)	WATER CLOSET WALL MOUNT FLUSH VALVE	CLOSET: KOHLER #K-4325 SEAT: BEMIS #1955-C VALVE: SLOAN #8111 (SENSOR/BATTERY)	3"	2"	1¼"	–	2	ADA COMPLIANT, RIM MOUNTED 16" ABOVE FINISHED FLOOR. WALL CARRIER: JOSAM.
P-2	URINAL WALL MOUNT FLUSH VALVE	URINAL: KOHLER #K-4991-ET VALVE: SLOAN #8186-1 (SENSOR/BATTERY)	2"	½"	1"	–	3	INSTALL URINAL WITH WALL FLANGE.
P-3	LAVATORY UNDERMOUNT –	BASIN: KOHLER #K-20000 CAXTON FAUCET: SYMMONS #S-6080-G SUPPLIES: BRASSCRAFT #KTCR19C	2"	½"	½"	½"	8	INSTALL LAVATORY BASIN, SENSOR (BATTERY) OPERATED FAUCET, P-TRAP, FLAT GRID DRAIN, HANDYSHIELD TRAP COVERS, & SUPPLY STOPS.
P-4 (ADA)	WATER COOLER WALL MOUNT DUAL HEIGHT	UNIT: ELKAY #EZSTL8-WSLK SUPPLY: BRASSCRAFT #KTCR19C	2"	½"	½"	–	1	ADA COMPLIANT, INSTALL P-TRAP.
WH-1	FREEZEPROOF WALL HYDRANT	UNIT: PRIER #C-634	–	–	¾"	–	1	WITH INTEGRAL VACUUM BREAKER, MOUNT AT 24" ABOVE FINISHED GRADE.

ALL VALUES PER UPC APPENDIX A

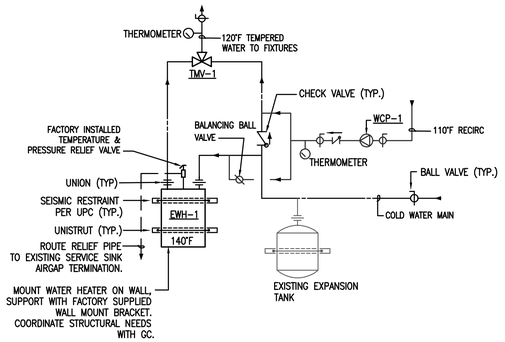
ABBREVIATIONS

ABBREV.	DESCRIPTION
ADA	AMERICANS WITH DISABILITIES ACT
CO	CLEANOUT
CW	COLD WATER
CV	CHECK VALVE
DEG F, °F	DEGREE FAHRENHEIT
DN	DOWN
EQUIP	EQUIPMENT
ELEC, EC	ELECTRICAL, ELECTRICAL CONTRACTOR
FCO	FLOOR CLEANOUT
FT	FEET
GC	GENERAL CONTRACTOR
GPM	GALLON PER MINUTE
HW	HOT WATER
HWC	HOT WATER CIRCULATING
I.E.	INVERT ELEVATION
KW	KILOWATT
MC	MECHANICAL HVAC CONTRACTOR
MFR	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
NO., #	NUMBER
PC	PLUMBING CONTRACTOR
PH	PHASE
P.D.I.	PLUMBING AND DRAINAGE INSTITUTE
PSI	POUNDS PER SQUARE INCH
SCO	SURFACE CLEANOUT
TYP	TYPICAL
VTR	VENT THROUGH ROOF
V	VOLTS, VOLTAGE
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
W	WASTE
W/	WITH

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	COLD WATER PIPING
	HOT WATER PIPING (120°)
	HOT WATER RECIRCULATION PIPING
	WASTE PIPING
PW	PUMPED WASTE PIPING
	VENT PIPING
	COLD WATER PIPING
	HOT WATER PIPING (120°)
	HOT WATER RECIRCULATION PIPING
	WASTE PIPING
	VENT PIPING
VTR	VENT THROUGH ROOF
	BACKFLOW PREVENTER
	OVERFLOW ROOF DRAIN
	ROOF DRAIN
	STRAINER
FCO	FLOOR CLEANOUT (FCO)
	WALL CLEANOUT (WCO)
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	FLOOR SINK
	AREA DRAIN
	BALANCING VALVE
	PRESSURE REDUCING VALVE
	UNION
	CHECK VALVE
	BALL VALVE
	RELIEF OR SAFETY VALVE
	GATE VALVE
A	WATER HAMMER ARRESTOR
	HOSE BIBB/WALL HYDRANT
	TRAP PRIMER

1



ELECTRIC WATER HEATER DETAIL 1 P0.01
DIAGRAMMATIC

B-21-0959CITY OF PUYALLUP

PLUMBING GENE

REQUIRED TO MEET L & I INSTALLATION REQUIREMENT AND CITY OF PUYALLUP ENGINEER DISPOSAL REQUIREMENTS.

1. PIPING MATERIAL SCHEDULE:

PIPING	LOCATION	MATERIAL	JOINT
COLD WATER:	ALL	TYPE 'L' COPPER	LEAD FREE SOLDER
HOT WATER:	ALL	TYPE 'L' COPPER	LEAD FREE SOLDER
HOT WATER RECIRCULATION:	ALL	TYPE 'L' COPPER	LEAD FREE SOLDER
WASTE:	ALL	PVC/DWV	SOLVENT CEMENT (PURPLE PRIMER)
VENT:	ALL	ABS	SOLVENT CEMENT

2. PIPING INSULATION SCHEDULE:

PIPING TYPE	PIPE SIZE	INSULATION TYPE	INSULATION MINIMUM WALL THICKNESS	CONDUCTIVITY RANGE (MAX)
HORIZONTAL COLD WATER (COPPER):	ALL	POLYFOAM	1/2"	–
HOT WATER: PER WSEC	ALL	POLYFOAM	1"	0.27 BTU/IN/HºSQFTºF

A) ALL PIPING INSULATION & COVERINGS SHALL HAVE AN ASTM FLAME SPREAD RATING OF 25 OR LESS & AN ASTM SMOKE DEVELOPED RATING OF 50 OR LESS.

B) COLD WATER RUNOUTS FROM MANIFOLD TO FIXTURE DO NOT REQUIRE INSULATION.

3. MATERIALS, METHODS & INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE FOLLOWING STATE OF WASHINGTON ADOPTED CODES:

A) 2015 UNIFORM PLUMBING CODE (UPC)

B) 2015 WASHINGTON STATE ENERGY CODE COMMERCIAL (WSEC)

4. PLUMBING PLANS ARE SCHEMATIC & DO NOT SHOW EVERY OFFSET REQUIRED. PRIOR TO COMMENCING ROUGH-IN, COORDINATE WITH ALL TRADES FOR ROUTING & CLEARANCE REQUIREMENTS.

5. PRIOR TO PLUMBING ROUGH-IN FOR ALL PLUMBING FIXTURES, VERIFY MOUNTING HEIGHT ELEVATIONS & ROUGH-IN LOCATIONS WITH ARCHITECTURAL FLOOR PLANS & ARCHITECTURAL INTERIOR ELEVATIONS.

6. TRENCHING, BACKFILLING & COMPACTING FOR UNDERGROUND PLUMBING PIPING SHALL BE THE RESPONSIBILITY OF TACOMA PLUMBING UNLESS STATED OTHERWISE IN THE CONTRACT DOCUMENTS.

7. SLOPE ALL WASTE PIPING 3" AND SMALLER AT 1/4" PER LINEAR FOOT. SLOPE ALL WASTE PIPING 4" AND LARGER AT 1/8" PER LINEAR FOOT.

8. WHERE POSSIBLE INSTALL SUSPENDED PIPING WITHIN 12" OF BUILDING STRUCTURE.

9. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOORS SHALL BE SLEEVED & FIRE STOPPED WITH UL LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY & RATING OF THE WALLS & FLOORS.

10. PIPING PENETRATIONS OF SMOKE RATED WALLS OR FLOORS SHALL BE SLEEVED & STOPPED WITH UL LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY & RATING OF THE WALLS & FLOORS.

11. INSTALL RECTORSEAL TRAP SEALS FOR ALL FLOOR DRAINS.

12. PROVIDE DIELECTRIC CONNECTIONS BETWEEN DISSIMILAR METALS.

13. INSTALL FLOOR/WALL CLEANOUTS SO THEY ARE EASILY ACCESSIBLE.

14. INSTALL FULL PORT BALL VALVES.

15. LOCATE & PROVIDE ALL REQUIRED FLOOR, WALL & FOOTING SLEEVES.

16. INSTALL ESCUTCHEON PLATES AT ALL EXPOSED FINISH WALL PIPE PENETRATIONS.

17. PLUMBING EQUIPMENT & VALVES SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS, UNLESS SHOWN ON ARCHITECTURAL DRAWINGS. REQUIRED ACCESS PANELS SHALL BE PROVIDED BY & INSTALLED BY THE GENERAL CONTRACTOR FOR CONCEALED INSTALLATION LOCATIONS.

18. THE GENERAL CONTRACTOR TO PROVIDE BACKING FOR ALL WALL MOUNT PLUMBING FIXTURES.

19. PLUMBING CONTRACTOR TO COORDINATE WITH THE GENERAL CONTRACTOR FOR PIPE ROUTING WHICH REQUIRES MODIFICATIONS TO BUILDING STRUCTURE, GENERAL CONTRACTOR TO PROVIDE ALL NECESSARY OPENINGS IN BUILDING STRUCTURAL COMPONENTS FOR PIPE ROUTING.

20. THE GENERAL CONTRACTOR TO PROVIDE ROUGH OPENINGS IN FINISH SURFACES FOR PLUMBING TRIM WORK.

21. BELOW GRADE STORM PIPING PROVIDED & INSTALLED BY OTHERS.

22. NATURAL GAS PIPING PROVIDED & INSTALLED BY OTHERS.

23. CONDENSATE PUMPS & PIPING PROVIDED & INSTALLED BY OTHERS.

24. PAINTING OF PIPING & PIPING COMPONENTS BY OTHERS.

25. ELECTRICAL POWER FOR PLUMBING EQUIPMENT PROVIDED & INSTALLED BY OTHERS.

26. HEAT TRACING PROVIDED & INSTALLED BY OTHERS.

PLUMBING DRAWINGS SHEET INDEX

SHEET NUMBER	DESCRIPTION
P0.01	PLUMBING LEGEND, SCHEDULES, NOTES, & DETAIL
P0.02	RISER DIAGRAMS & DETAIL
P1.01	PLUMBING FOUNDATION PLAN
P2.01	PLUMBING FLOOR PLANS

1

TACOMA PLUMBING and HEATING, Inc.
DESIGN BUILD
•
COMMERCIAL
•
INDUSTRIAL
•
UTILITIES
1817–112th Street East
Suite G
Tacoma, Washington
98445
Tacoma, Washington
98444
(253) 531-3444
INFO@TACOMAPLUMBING.COM
WWW.TACOMAPLUMBING.COM

CASCADE CHRISTIAN JUNIOR HIGH LOBBY ADDITION (PHASE II)

1

815 21ST STREET SE
PUYALLUP, WA. 98372

CHRISTOPHER L. COMBS STATE OF WASHINGTON 24571 REGISTERED PROFESSIONAL ENGINEER 11/19/2021

PLUMBING LEGEND, SCHEDULES, NOTES, & DETAIL

DESIGNED:	B.COMBS
DRAWN:	Z.BRUSER
REVIEWED:	C.COMBS
DATE:	11-19-2021
JOB NUMBER:	20008
REVISION:	
1 REVISED PHASING	11-19-2021
2 –	–
3 –	–
4 –	–
5 –	–

P0.01

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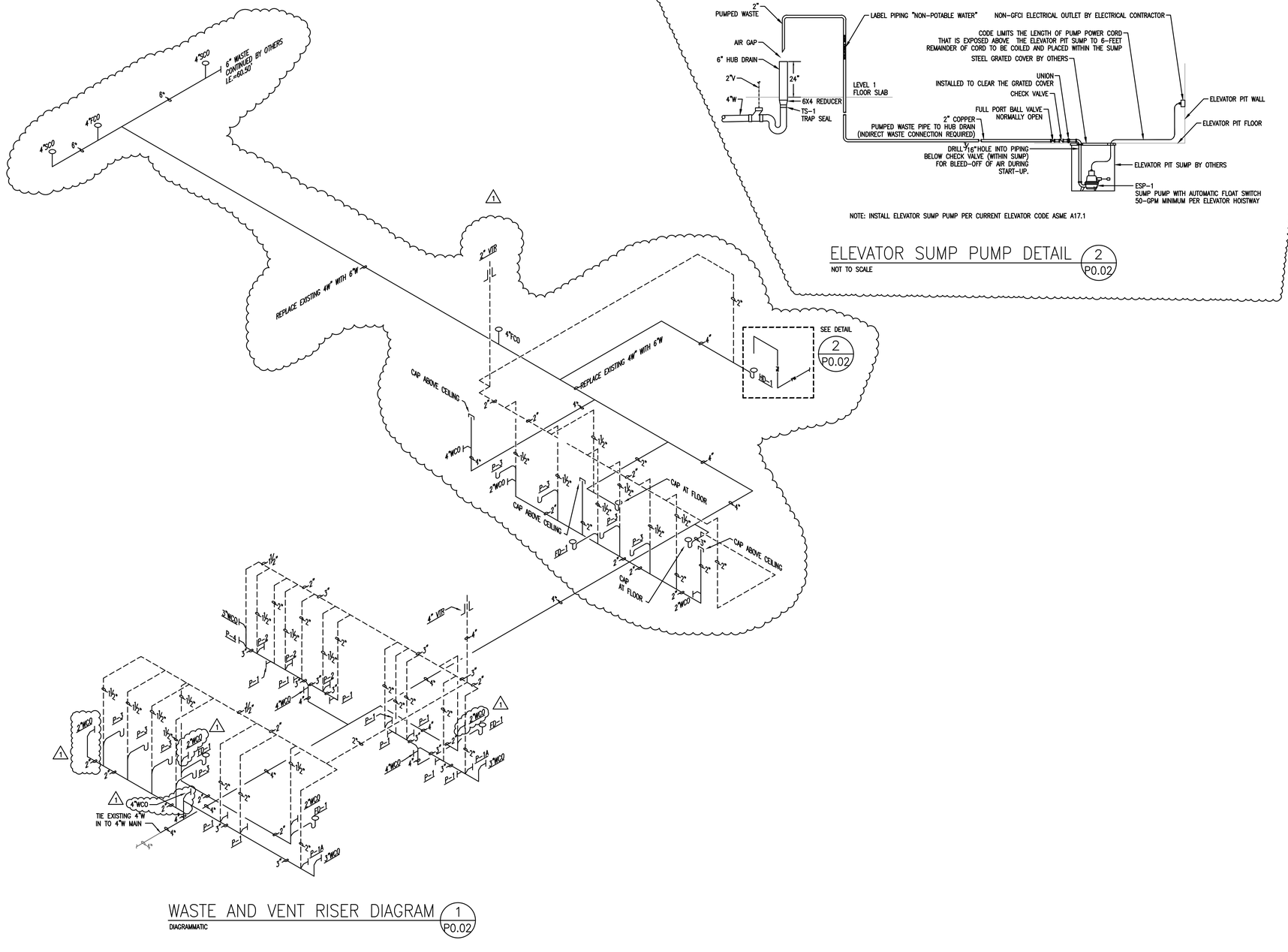

TACOMA PLUMBING and HEATING, Inc.
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(253) 531-3444
INFO@TACOMAPLUMBING.COM
WWW.TACOMAPLUMBING.COM

CASCADE CHRISTIAN JUNIOR HIGH LOBBY ADDITION (PHASE II)

815 21ST STREET SE
PUYALLUP, WA. 98372

CHRISTOPHER L. COMBS
STATE OF WASHINGTON
24571
REGISTERED
PROFESSIONAL ENGINEER
11/19/2021

RISER DIAGRAMS & DETAIL

DESIGNED:	B.COMBS
DRAWN:	Z.BRUSER
REVIEWED:	C.COMBS
DATE:	11-19-2021
JOB NUMBER:	20008

REVISION:
1 REVISED PHASING 11-19-2021
2 –
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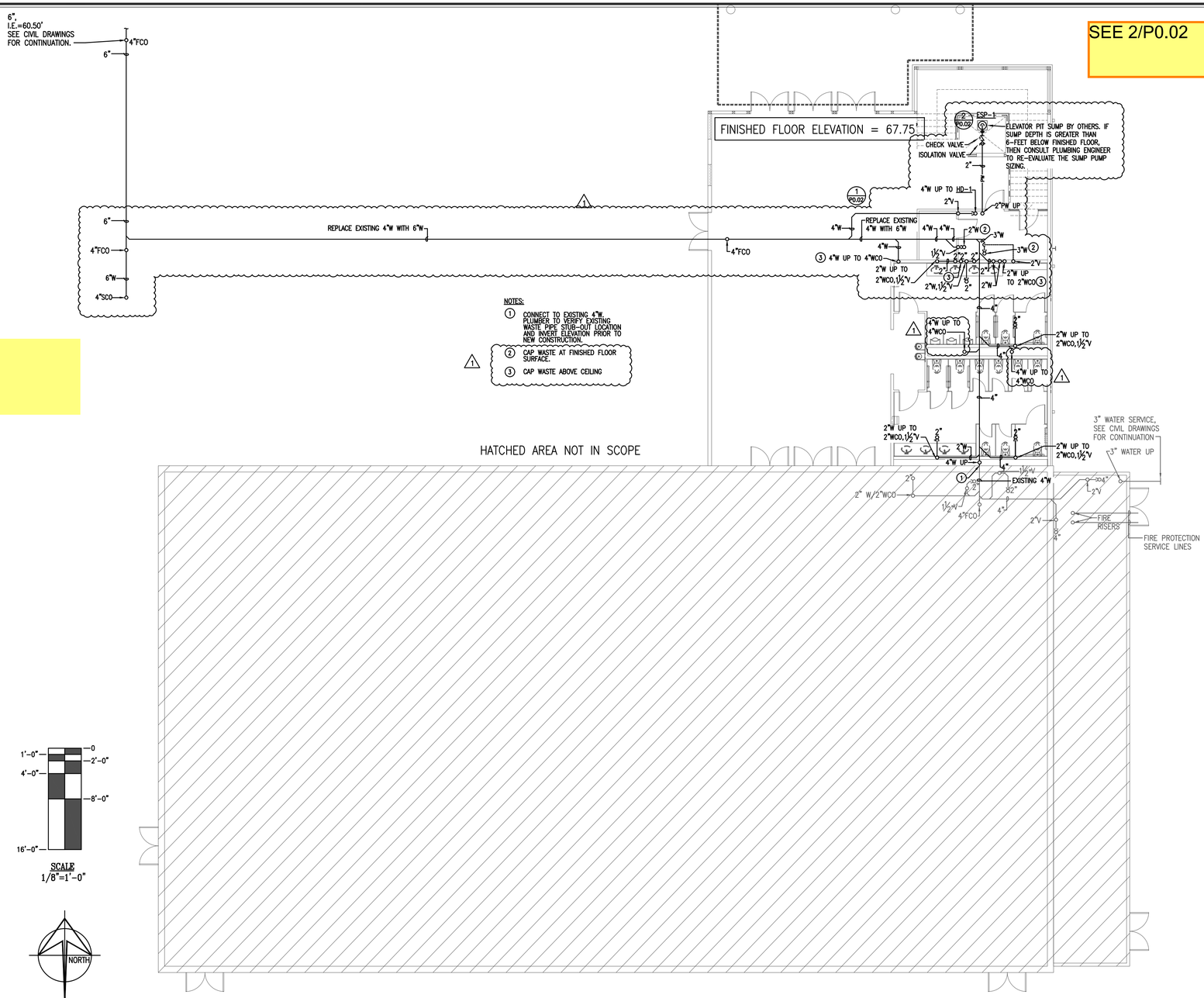

B-21-0959CITY OF PUYALLUP

1'–0" 0
2'–0"
4'–0"
8'–0"
16'–0"

SCALE
1/8"=1'–0"

NORTH

PLUMBING FOUNDATION PLAN
SCALE: 1/8"=1'–0"

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CASCADE CHRISTIAN JUNIOR HIGH LOBBY ADDITION (PHASE II)
1

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PUYALLUP, WA. 98372

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STATE OF WASHINGTON
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PLUMBING FOUNDATION PLAN

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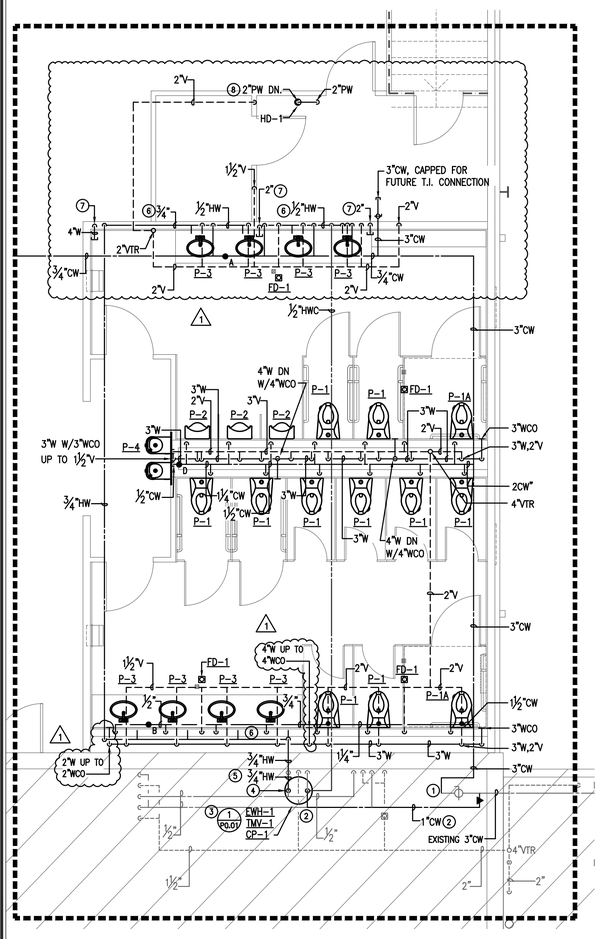
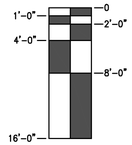
B-21-0959 CITY OF PUYALLUP



ENLARGED AREA PLAN

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



SCALE
1/8"=1'-0"

NOTES:

1. CONNECT TO EXISTING 3" COLD WATER
2. REPLACE EXISTING ¾"CW BRANCH TO WATER HEATER WITH NEW 1"CW. CONNECT TO EXISTING 3"CW MAIN AND CONNECT EXISTING FIXTURE BRANCHES TO NEW 1"CW. REINSTALL OR REPLACE EXISTING TRAP PRIMER AS NEEDED.
3. REPLACE EXISTING WATER HEATER WITH EWH-1.
4. CONNECT EXISTING ½"HW MAIN TO NEW ¾"HW MAIN.
5. CONNECT EXISTING ½"HW BRANCH INTO NEW ¾"HW MAIN.
6. ROUTE HW MAIN IN WALL WITHIN 2'-0" OF LAVATORY STOPS.
7. CAP WASTE ABOVE CEILING.
8. PUMPED WASTE MUST DISCHARGE INTO TOP OF HUB DRAIN WITH AIR GAP.

PLUMBING FLOOR PLAN

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

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CASCADE CHRISTIAN JUNIOR HIGH LOBBY ADDITION (PHASE II)

1

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PLUMBING
FLOOR PLANS

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