# 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.

# SYMBOLS LEGEND

ROOM IDENTIFICATION — XXX / XXX

DOOR NUMBER — XXX

WINDOW NUMBER — XX

EQUIPMENT NUMBER — XX

WALL TYPE — W1

CENTERLINE — CL

NORTH ARROW

HOSE BIB

DATUM

REVISION — #

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 / X / A#.# / E / S

**City of Puyallup Development Engineering APPROVED**
See permit for additional requirements.
Linda Lian
01/28/2022
8:41:02 AM

See approved b-21-0727 site plan.pdf for Engineering conditions. LL 01/28/2022

# 2018 IBC REFERENCE

**CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION**
305.1 EDUCATIONAL GROUP E... BUILDING OR STRUCTURE...BY SIX OR MORE PERSONS AT ANY ONE TIME FOR EDUCATIONAL PURPOSES THROUGH THE 12TH GRADE

**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
$A_O = [A_t + (NS * I_f)] * S_O$
$A_t$ = 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
$S_O$ = 2
= [28,500 SF + (9,500*1.37)]* 2
= 83,063 SF

| PROVIDED | GYM (E) | LOBBY-A (E) | **CLASSROOM-A (N)** |
|---|---|---|---|
| HEIGHT | 34'-0" | 32'-0" | 32'-0" |
| STORY | 1 | 1 | 1 |
| AREA | 12,133 SF | 3,146 SF | 7,061 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 7: FIRE AND SMOKE PROTECTION FEATURES**
TABLE 716.1(2) OPENING FIRE PROTECTION ASSEMBLIES, RATING
AT 1 HR FIRE-RATED WALL, EXIT ACCESS - 1 HR RATED DOOR
AT 1 HR FIRE-RATED WALL, ALL OTHERS - 3/4 HR RATED DOOR
722.6.1.1 MAXIMUM FIRE-RESISTANCE RATING
FIRE-RESISTANCE RATINGS CALCULATED FOR (WOOD) ASSEMBLIES USING THE METHODS IN SECTION 722.6 SHALL BE LIMITED TO NOT MORE THAN 1 HOUR

**CHAPTER 9: FIRE PROTECTION SYSTEMS**
903.2.3 GROUP E
AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED
906.1 EXCEPTIONS TO INSTALL FIRE-EXTINGUISHER
EACH CLASSROOM WILL HAVE MIN 2-A:20-B:C FIRE EXTINGUISHER; ALSO THERE WILL BE (2) MIN 2-A:20-B:C FIRE EXTINGUISHER IN EVERY 75' IN THE HALLWAY.
907.2.3 GROUP E
A MANUAL FIRE ALARM SYSTEM THAT INITIATES THE OCCUPANT NOTIFICATION SIGNAL UTILIZING AN EMERGENCY COMMUNICATION SYSTEM IS REQUIRED. ALSO, AUTOMATIC SPRINKLER SYSTEM SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM

**CHAPTER 10: MEANS OF EGRESS**
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
TABLE 1004.5 MAX FLOOR AREA ALLOWANCES PER OCCUPANT
EDUCATIONAL CLASSROOM: 20 NET
1005.3.1 STAIRWAYS...EXCEPTION 1: FOR OTHER THAN GROUP H AND I-2, THE CAPACITY OF MEANS OF EGRESS STAIRWAYS SHALL BE CALCULATED BY...FACTOR OF 0.2 INCH PER OCCUPANT IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM
1005.3.2 OTHER EGRESS COMPONENTS SIZING EXCEPTION 1
MULTIPLIED BY 0.15" PER OCCUPANT
TABLE 1006.3.2 MINIMUM NUMBER OF EXITS PER STORY: 1-500 PEOPLE, 2 EXITS
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
1007.1.1 TWO EXITS OR EXIT ACCESS DOORWAY: WHERE TWO EXITS ARE REQUIRED...(EXCEPTIONS 2 WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM), THE SEPARATION DISTANCE SHALL BE NOT LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVE.
1009.3.2 STAIRWAY WIDTH EXCEPTIONS 1: THE CLEAR WIDTH OF 48" BETWEEN HANDRAILS I NOT REQUIRED IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM
1010.1.1 SIZE OF DOOR: THE REQUIRED CAPACITY OF EACH DOOR OPENING SHALL BE SUFFICIENT FOR THE OCCUPANT LOAD THEREOF AND SHALL PROVIDE A MIN CLEAR OPENING WIDTH OF 21".
1010.1.4.2 POWER-OPERATED DOORS. WHERE MEANS OF EGRESS DOORS ARE OPERATED OR ASSISTED BY POWER, THE DESIGN SHALL BE SUCH THAT IN THE EVENT OF POWER FAILURE, THE DOOR IS CAPABLE OF BEING OPENED MANUALLY...OR CLOSED WHERE NECESSARY TO SAFEGUARD MEANS OF EGRESS
1010.1.4.4 LOCKING ARRANGEMENTS IN EDUCATIONAL OCCUPANCIES: IN GROUP E... EGRESS DOORS FROM CLASSROOMS... SHALL BE PERMITTED TO BE PROVIDED WITH LOCKING ARRANGEMENTS DESIGNED TO KEEP INTRUDERS FROM ENTERING THE ROOM... THE DOOR SHALL BE CAPABLE OF BEING UNLOCKED FROM OUTSIDE THE ROOM WITH A KEY... THE DOOR SHALL BE OPENABLE FROM WITHIN THE ROOM
1010.1.7 THRESHOLDS...AT DOORWAYS SHALL NOT EXCEED ¾"
1010.1.9.2 HARDWARE HEIGHT... INSTALLED 34 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE FINISHED FLOOR
1010.1.10 PANIC AND FIRE EXIT HARDWARE: SWINGING DOORS SERVING...E OCCUPANCY SHALL NOT BE PROVIDED WITH A LATCH OR LOCK OTHER THAN PANIC HARDWARE OR FIRE EXIT HARDWARE
1011.5.2 RISER HEIGHT AND TREAD DEPTH: STAIR RISER HEIGHTS SHALL BE 7" MAX AND 4" MIN. RECTANGULAR TREAD DEPTHS SHALL BE 11 INCHES MIN.
1011.7.3 ENCLOSURE UNDER INTERIOR STAIRWAYS... SHALL BE PROTECTED BY 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION. ACCESS TO THE ENCLOSED SPACE SHALL NOT BE DIRECTLY FROM WITHIN THE STAIRWAY ENCLOSURE.
1013.1 EXIT SIGNS REQUIRED...READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL...EXIT SIGN PLACEMENT SHALL BE SUCH THAT ANY POINT IN AN EXIT ACCESS CORRIDOR OR EXIT PASSAGEWAY IS WITHIN 100 FEET OR THE LISTED VIEWING DISTANCE OF THE SIGN, WHICHEVER IS LESS
1013.6.3 POWER SOURCE: TO ENSURE CONTINUED ILLUMINATION FOR A DURATION OF NOT LESS THAN 90 MIN IN CASE OF PRIMARY POWER LOSS....PROVIDED FROM STORAGE BATTERIES...
1014.2 HANDRAIL HEIGHT: NOT LESS THAN 34" AND NOT MORE THAN 38"
1014.7 HANDRAIL CLEARANCE: CLEAR SPACE BETWEEN A HANDRAIL AND A WALL OR OTHER SURFACE SHALL NOT BE LESS THAN 1 ½"
1015.2 GUARDS REQUIRED: GUARDS SHALL BE LOCATED ALONG OPEN SIDED WALKING SURFACES...MORE THAN 30" MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36"
1015.3 GUARDS HEIGHT SHALL BE NOT LESS THAN 42"
1015.4 GUARDS OPENING LIMITATIONS: REQUIRED GUARDS SHALL NOT HAVE OPENINGS THAT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER FROM THE WALKING SURFACE TO THE REQUIRED GUARD HEIGHT
EXCEPTION: THE TRIANGULAR OPENINGS AT THE OPEN SIDES OF A STAIR, FORMED BY THE RISER, TREAD AND BOTTOM RAIL SHALL NOT ALLOW PASSAGE OF A SPHERE 6"
TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE: E, WITH SPRINKLER = 250
1019.3 OCCUPANCIES OTHER THAN GROUP I-2 AND I-3...EXCEPTIONS 1: EXIT ACCESS THAT SERVE...BETWEEN ONLY TWO STORIES... (DOESN'T REQUIRE TO BE ENCLOSED WITH A SHAFT ENCLOSURE CONSTRUCTION)
TABLE 1020.1 CORRIDOR FIRE-RESISTANCE RATING: E, WITH SPRINKLER SYSTEM. "0" DOESN'T REQUIRE FIRE-RESISTANCE RATING
TABLE 1020.2 MIN CORRIDOR WIDTH: IN GROUP E WITH A CORRIDOR HAVING AN OCCUPANT LOAD OF 100 OR MORE - MIN 72"

**CHAPTER 12 INTERIOR ENVIRONMENT**
1202.3 UNVENTED ENCLOSED RAFTER ASSEMBLY IS PERMITTED WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET
NO INTERIOR CLASS I VAPOR RETARDERS
5.2 PERFORMED INSULATION BOARD IS USED AS THE AIR-IMPERMEABLE INSULATION LAYER

**SECTION 29 PLUMBING SYSTEMS**

TABLE 2902.1 | **EDUCATION:**
WATER CLOSET: MALE 1 PER 35 | FEMALE 1 PER 25
LAVATORIES: MALE 1 PER 85| FEMALE 1 PER 50
"E" FOR GROUP E OCCUPANCIES: THE NUMBER OF OCCUPANTS SHALL BE DETERMINED BY USING A CALCULATION OF 100 SQFT GROSS BUILDING AREA PER STUDENT FOR THE MINIMUM NUMBER OF PLUMBING FIXTURES
2902.1.1.2 URINALS IN MEN'S FACILITIES... SHALL NOT BE REDUCED TO LESS THAN 25% OF THE MIN SPECIFIED (NUMBER OF WATER CLOSET).
2902.5 DRINKING FOUNTAIN LOCATION: PUBLIC DRINKING FOUNTAINS ARE LOCATED WITHIN A DISTANCE OF TRAVEL OF 500 FEET
2902.5.1 DRINKING FOUNTAIN NUMBER: OCCUPANCY LOADS OVER 30 SHALL HAVE ONE DRINKING FOUNTAIN FOR THE FIRST 150 OCCUPANTS, THEN ONE PER EACH ADDITIONAL 500 OCCUPANTS

# PLUMBING CALC

**PHASE IIB + PHASE IIIA**

| APPLICABLE CODE | PHASE | OCCUPANCY | SQFT | OCC FOR PLUMB (SF/100)** | OCCUPANY LOAD: TOTAL OCC LOAD | OCCUPANY LOAD: MALES (TOTAL/2) | OCCUPANY LOAD: FEMALE (TOTAL/2) | WC: M REQ'D 1:35 | WC: F REQ'D 1:25 | LAV: M REQ'D 1:85 | LAV: F REQ'D 1:50 | Drinkler Fountain REQ'D 1:150 1 EVERY 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2018 IBC**** | IIB+IIIA* | E SCHOOL | 22434 * | 224 | 224 | 112 | 112 | 3 | 4 | 1 | 2 | 1 |
| * INCLUDE EXISTING GYMNASIUM AREA FOR FIXTURE CALCULATION | | | | | TOTAL REQ'D | | | 3 | 4 | 1 | 2 | 1 |
| ** PER WASHINGTON AMENDMENT | | | | | PROVIDED | | | 3+3*** | 9 | 4 | 4 | 2 |
| *** MAX 25% OF REQ'D TOIET CAN BE URINAL | | | | | | | | | | | | |
| **** TABLE 2902.1, FOOTNOTE "e" | | | | | | | | | | | | |

**City of Puyallup Development & Permitting Services ISSUED PERMIT**
Building | Planning
Engineering | Public Works
Fire | Traffic

Approval of submitted plans is not an approval of omissions or oversights by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

# LIST OF DRAWINGS


**GENERAL**
G0.1 PROJECT INFORMATION
G0.2 CODE STUDY

**ARCHITECTURAL**
A0.1~A0.5 SPECIFICATIONS
A1.1 SITE PLAN
A2.1 MAIN FLOOR PLAN
A2.2 SECOND FLOOR PLAN
A2.3 ROOF PLAN
A2.4 MAIN FLOOR RCP
A2.5 SECOND FLOOR RCP
A3.1 BUILDING ELEVATIONS
A4.1~A4.3 BUILDING SECTION
A5.12~A5.41 ENLARGED PLAN & ENLARGED SECTIONS
A7.1 DOOR/WIN SCHEDULE

**STRUCTURAL**
S1.1 GENERAL NOTES
S1.2 GENERAL DETAILS
S2.1 FOUNDATION PLAN
S2.2 2ND FLOOR FRAMING PLAN
S2.3 ROOF FRAMING PLAN
S2.4 STEEL FRAMING ELEVATIONS
S3.1 DETAILS 1
S3.2 DETAILS
S3.3 DETAILS

**MECHANICAL**
M1 LEGEND ABB. AND GENERAL NOTES
M2 SCHEDULES I
M3 SCHEDULES II
M4 FIRST FLOOR PLAN
M5 SECOND FLOOR PLAN
M6 ROOF PLAN
M7 DETAILS I
M8 DETAILS II 1
M9 SEQUENCE OF OPERATIONS I

**ELECTRICAL**
E000 COVER
E001 LEGENDS/NREC
E100 SITE PLAN
E200 LIGHTING
E201 LIGHTING
E300 POWER
E301 POWER
E302 POWER
E500 ONELINE
E501 PANEL SCHEDULES 1
E503 DOCUMENTATION
E504 DOCUMENTATION

**PLUMBING**
P0.01 PLUMBING LEGENDS, SCHEDULES AND NOTES
P0.02 PLUMBING DETAILS AND NOTES
P0.03 PLUMBING RISER DIAGRAMS
P1.01 PLUMBING FOUNDATION PLAN
P2.01 PLUMBING LEVEL 1 PLAN
P2.01A PLUMBING LEVEL 1 PLAN ENLARGED
P2.02 PLUMBING LEVEL 2 PLAN
P2.02A PLUMBING LEVEL 2 PLAN ENLARGED
P2.03 PLUMBING ROOF PLAN


# CODE/ZONING INFORMATION

**GOVERNING CODE**
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 UNIFORM PLUMBING CODE
2018 WASHINGTON STATE ENERGY CODE, COMMERCIAL
ADOPTED BY WA STATE BUILDING CODE COUNCIL
AND ANY CITY OF PUYALLUP ORDINANCE

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

**ENERGY COMPLIANCE**
PRESCRIPTIVE PATH
AIR BARRIER TESTING PER 2018 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
- AIR LEAKAGE TESTING SHALL BE PERFORMED PER ASTM C779 (OR EQUIVALENT) AND THE TARGET LEAKAGE RATE IS 0.25 cfm/ft2 AT 0.3 IN. WG
- SUBMIT AIR LEAKAGE TEST REPORTS TO JURISDICTION AND OWNER
- IF INITIAL TEST RESULT EXCEEDS 0.25 cfm/ft2, INDICATE THAT INSPECTION AND ALL PRACTICAL CORRECTIVE ACTIONS BE COMPLETED AND DOC IN THE AIR LEAKAGE TEST REPORT
- IF INITIAL TEST RESULT EXCEEDS 0.40 cfm/ft2, INDICATE THAT CORRECTIVE ACTIONS SHALL ALSO INCLUDE RE-TESTING
- INDICATE AIR BARRIER TEST REPORT IN PROJECT CLOSE OUT DOCUMENTATION PROVIDED TO BUILDING OWNER

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

**City of Puyallup Building APPROVED**
See permit for additional requirements.
JMontgomery
01/11/2022
7:37:26 AM

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

# PROJECT INFORMATION

**PROJECT NAME**
CASCADE CHRISTIAN JR HIGH SCHOOL | PHASE IIB & PHASE IIIA
**PROJECT ADDRESS**
815 21ST STREET SE
PUYALLUP, WA 98372
**PROJECT DESCRIPTION**
PHASE IIB: ENTRY CANOPY
PHASE IIIA: CORE & SHELL + FINISH MAIN FLOOR OF PHASE III
**TAX PARCEL NUMBER**
0420352148
**CORE-AND SHELL PERMIT**
SITE CIVIL PERMIT# E-16-0150
OFF SITE CIVIL PERMIT # E-16-0261
**DEFERRED PERMITS**
SPRINKLER, ELECTRICAL (L&I), FIRE ALARM 1
**LEGAL DESCRIPTION**
SEE SITE CIVIL PERMIT

# PROJECT DIRECTORY


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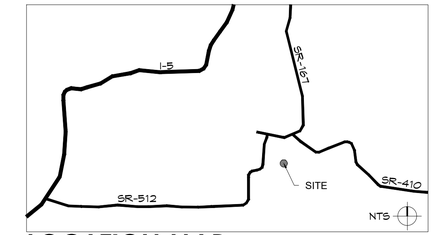
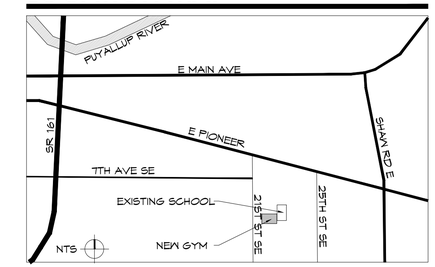
# VICINITY MAP




# LOCATION MAP




# 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 | SCHEDULE |
| C.O. | CLEAR OPENING | SHTG | SHEATHING |
| COL. | COLUMN | S.D. | SMOKE DETECTOR |
| CONC. | CONCRETE | TEM | TEMPER/SAFETY GLASS |
| C.J. | CONTROL JOINT | | |
| 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 | VIF | VERIFY IN FIELD |
| E.J. | EXPANSION JOINT | WIN | WINDOW |
| EXT. | EXTERIOR | W.T. | WEATHER THRESHOLD |
| F.O.F. | FACE OF FINISH | W/ | WITH |
| F.F. | FINISH FLOOR | W/O | WITHOUT |
| FT | FOOT (FEET) | WD | WOOD |
| FTG | FOOTING | | |
| FND | FOUNDATION | | |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PROJECT LEAD
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3774 REGISTERED ARCHITECT
JEFFREY E. BROWN
STATE OF WASHINGTON

PROJECT NAME/ADDRESS

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PUYALLUP, WA 98372


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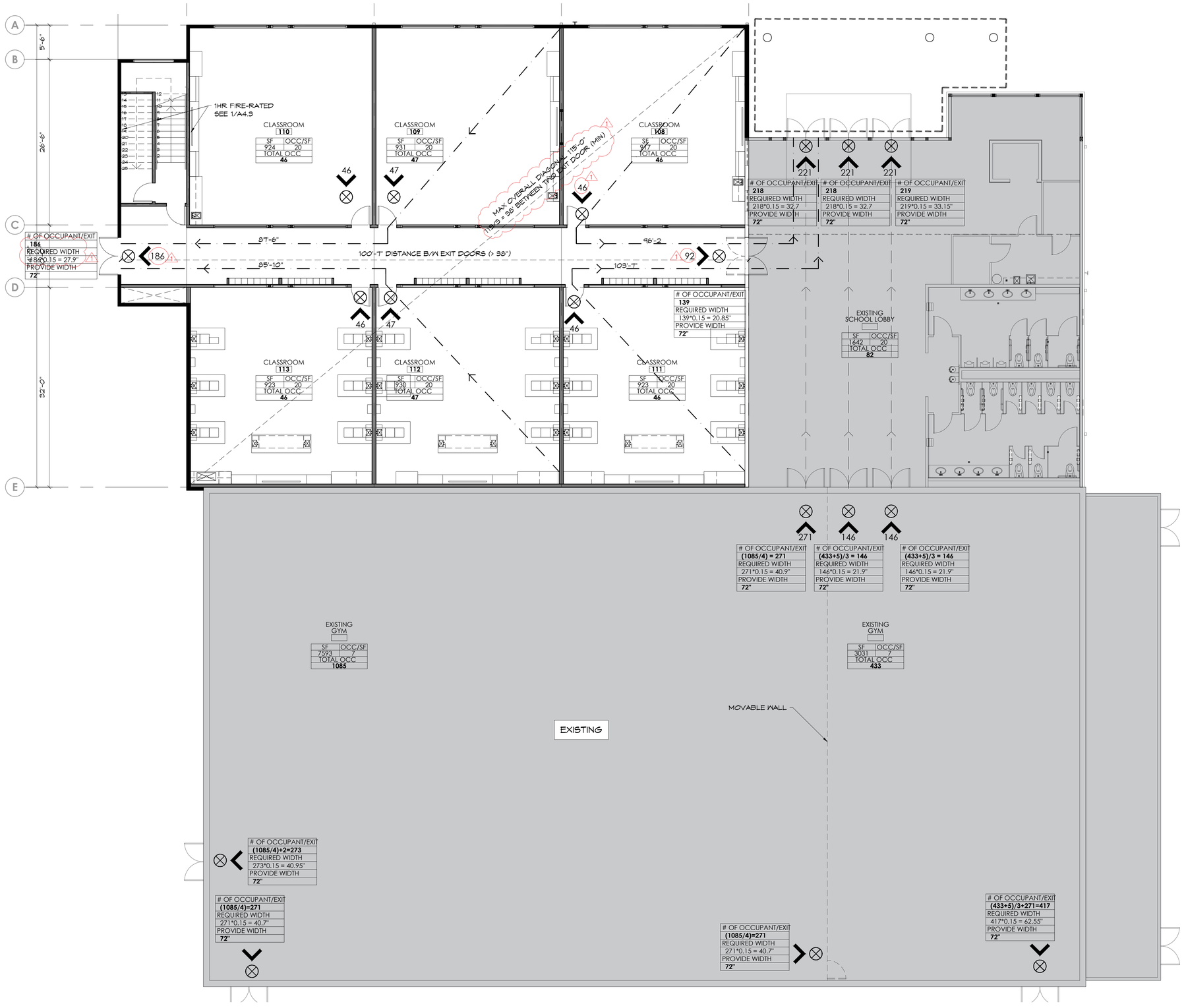
PROJECT NUMBER
21007

DRAWING TYPE
**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
|---|---|---|
| 10.20.21 | PERMIT | |
| 12.06.21 | REV - CITY | 1 |

SHEET TITLE
**GENERAL INFORMATION**

SHEET #
**G0.1**




## EXIT ACCESS ROUTE

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

B-21-0727CITY OF PUYALLUP

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |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PROJECT NAME/ADDRESS

**CASCADE CHRISTIAN JR. HIGH SCHOOL**
**PHASE IIIA**

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PUYALLUP, WA 98372


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PROJECT NUMBER

21007

DRAWING TYPE

**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
|---|---|---|
| 10.20.21 | PERMIT | |
| 12.06.21 | REV - CITY | 1 |

SHEET TITLE

**EXIT ACCESS CODE**

SHEET #

**G0.2**

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

B-21-0727CITY OF PUYALLUP

**DIVISION 1 – GENERAL REQUIREMENTS**

00 21 00 EXAMINATION OF SITE AND DOCUMENTS
It is recommended that before submitting a bid proposal, each bidder should:
1. Carefully examine drawings and specifications
2. Visit the site of the work.
3. Be fully informed of all existing conditions and ask requisite questions to the owner to understand the site and document requirements.
4. Include a bid sum sufficient to cover all work described in the Contract Documents

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

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 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



A. 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
A. Delivery and Acceptance Requirements:
1. Deliver material in accordance with Section 01 61 00 - Common Product Requirements.
2. Deliver materials and accessories in insulation manufacture's original packaging with identification labels intact and in sizes to suit project.
3. Ensure insulation materials are not exposed to moisture during delivery.
4. Replace wet or damaged insulation materials.
B. 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.
1. Store in original packaging until installed. C. 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.
2. Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.
3. Collect and separate for disposal paper and plastic material in appropriate on-site storage containers for recycling [in accordance with Waste Management Plan].

Manufacturer
Manufacturer: ROCKWOOL™, 4594 Cayce Road, Byhalia, MS 38611-7550, Phone: 905-878-8474, 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.
1. Size: 16.25 x 48 inches.



3. R value/1 inch at 75 ºF: 4.0 h ft2 ºF/Btu.
4. 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. 1. Visually inspect substrate in presence of Consultant. 2. Ensure surfaces are free of snow, ice, frost, grease and other deleterious materials. 3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant. B. Start of insulation installation indicates installer's acceptance of substrate installation conditions

Cleaning
A. Progress Cleaning: Perform cleanup as work progresses [in accordance with Section 01 74 00 - Cleaning and Waste Management]. 1. Leave work area clean at end of each day.
B. Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment [in accordance with Section 01 74 00 – Cleaning and Waste Management].
C. Waste Management:
1. Co-ordinate recycling of waste materials with 01 74 19 - Construction Waste Management and Disposal.
2. Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section.
3. 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, 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 Developed 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-drying.
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
a. 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.
b. 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:
c. 120 degrees F, ambient.
d. 180 degrees F, surface.

Panels
Panel: AEP Span, a Division of ASC Profiles LLC; Nu-Wave Corrugated. Net coverage 43-2/3", rib depth 7/8" @2 2/3" O.C.
1. Base Metal
a. Material:

(1) Steel conforming to ASTM A792 Zincalume®/Galvalume®, minimum yield 50,000 psi, thickness 22 gauge

(2) [For primers thicker than 0.5 mil or if gauge is 20 or 18] Steel conforming to ASTM A653 (formerly ASTM A446), G-90 Galvanized, minimum yield 40,000 psi, thickness [choose one] 24 gauge (standard), 22, 20, or 18 gauge (non-standard).

b. Protective Coating:

(1) Conform to ASTM A792, AZ50 (Zincalume/Galvalume).

(2) [For primers thicker than 0.5 mil] Conform to ASTM A924 (formerly ASTM A525) G-90 Galvanized.



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CASCADE

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**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
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SHEET TITLE
**SPECIFICATION**

SHEET #
**A0.1**

Exterior Finishes
DuraTech® 5000 (Polyvinylidine Fluoride), full 70% 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 10-30% when tested in accordance with ASTM D-523- 89 at 60°.

Interior Finish:
a. Primer Coat Material: Corrosion-resistant primer; primer coat dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
b. Color: Off-White to Light Gray

Color:
a. Cool Regal Blue

Fabrication:
a. Unless otherwise shown on drawings or specified herein, panels shall be full length. Fabricate flashings and accessories in longest practical lengths.
b. Roofing panels shall be factory formed. Field formed panels are not acceptable.

Examination
a. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
b. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions.

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
a. 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:



Fasteners shall be of high quality stainless steel to ensure resistance to corrosion.
For field painting, fasteners shall be treated to accept paint adhesion.
a. 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 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
1. ASTM B136 - Standard Method for Measurement of Stain Resistance of Anodic Coatings on Aluminum.
2. 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.
3. ASTM C834 - Standard Specification for Latex Sealants.
4. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
5. ASTM C1186 - Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.
6. ASTM D523 - Standard Test Method for Specular Gloss.
7. ASTM D1117 - Standard Guide for Evaluating Nonwoven Fabrics.
8. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
9. ASTM D1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
10. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
11. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.
12. ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test.
13. ASTM D4585 - Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation.
14. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.



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)



15. ASTM E96 - Test Methods for Water Vapor Transmission of Materials.
16. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
17. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.
18. 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
19. Finish areas designated by Architect.
20. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
21. 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
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;



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:
a) R-Value: R-38
b) 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



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 HardieWrap 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.

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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



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PROJECT NUMBER
21007

DRAWING TYPE
**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
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| 10.20.21 | PERMIT | |
| 12.06.21 | REV - CITY | |

SHEET TITLE
**SPECIFICATION**

SHEET #
**A0.2**

B-21-0727CITY OF PUYALLUP

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 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

.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®.
a) 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.

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.

Installation General
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.
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 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.



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SHEET TITLE
**SPECIFICATION**

SHEET #
**A0.3**

B-21-0727CITY OF PUYALLUP

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 trades 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 6 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 wedges spaced not more than 200 mm (8 inch) apart. Fill joint with sealant. Where flashing is surface mounted on flat surfaces.

a. When top edge is double folded anchor flat portion below sealant "V" joint with fasteners spaced not over 400 mm (16 inch) on center:
   1) Locate fasteners in masonry mortar joints.
   2) Use screws to sheet metal or wood.
b. 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:

a. Secure to face construction in accordance, with manufacturer's instructions.
b. 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 and 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.



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.
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).



**07 92 00 JOINT SEALANTS**

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):
1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. 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.
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 [UJS#___]: 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.

**09 65 00 VINYL COMPOSITION TILE**

MANUFACTURER

Resilient tile flooring, wall base, adhesives, and subfloor preparation products and accessories. Armstrong Flooring Inc.
MATERIALS
Standard Excelon Imperial Texture, 1/8"

**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 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings



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PROJECT NUMBER
21007

DRAWING TYPE
**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
|---|---|---|
| 10.20.21 | PERMIT | |
| 12.06.21 | REV - CITY | |

SHEET TITLE
**SPECIFICATION**

SHEET #
**A0.4**

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

A. 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

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.

3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory



B. 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**

A. 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.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

C. 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**

A. 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:

1. Acoustical Panels: Sagging and warping

2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: One (1) year from date of substantial completion

2. Grid: One (1) year from date of substantial completion

C. 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**

A. 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.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

**MANUFACTURERS**

A. Ceiling Panels:

1. Armstrong World Industries, Inc.

B. Suspension Systems:

1. Armstrong World Industries, Inc.

C: Perimeter Systems

1. Armstrong World Industries, Inc.
2.

**ACOUSTICAL CEILING UNITS**

A. Acoustical Panels Type AP

1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24 in x 48 in
5. Edge Profile: Angled Tegular 15/16 in

6. Noise Reduction Coefficient( NRC): ASTM C 423; Classified with UL label on product carton 0.55

7. Ceiling Attenuation Class (CAC) : ASTM C 1414; Classified with UL label on product carton 40



8. Sabin:N/A
9. Articulation Class (AC):
10. Flame Spread: ASTM E 1264; Fire Resistive
11. Light Reflectance (LR) White Panel: ASTM E 1477; 0.81
12. Dimensional Stability: Standard
13. Recycle Content: Post-Consumer - 1% Pre-Consumer - 54%

14. Acceptable Product: CORTEGA Second Look, 2758 as manufactured by Armstrong World Industries

**INSTALLATION**

A. Follow manufacturer installation instructions.

B. 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.

C. 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.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. 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**

A. Replace damaged and broken panels.

B. 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.
C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, 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



B-21-0727CITY OF PUYALLUP

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CASCADE

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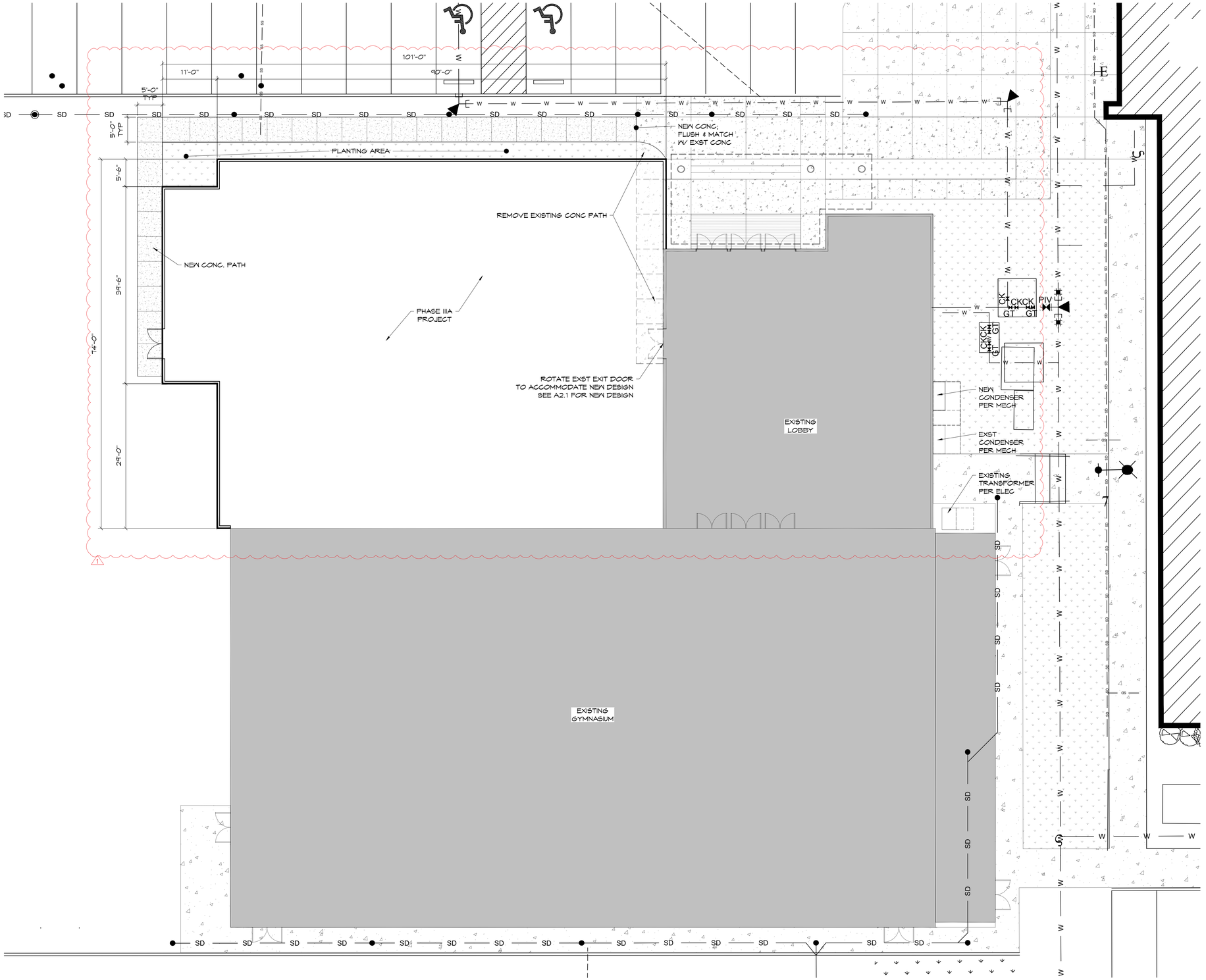
SHEET TITLE
**SPECIFICATION**

SHEET #
**A0.5**

B-21-0727CITY OF PUYALLUP




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

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

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| Engineering | Public Works |
| Fire | Traffic |


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SHEET TITLE
**PARTIAL SITE PLAN**

SHEET #
**A1.1**

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City of Puyallup
Development & Permitting Services
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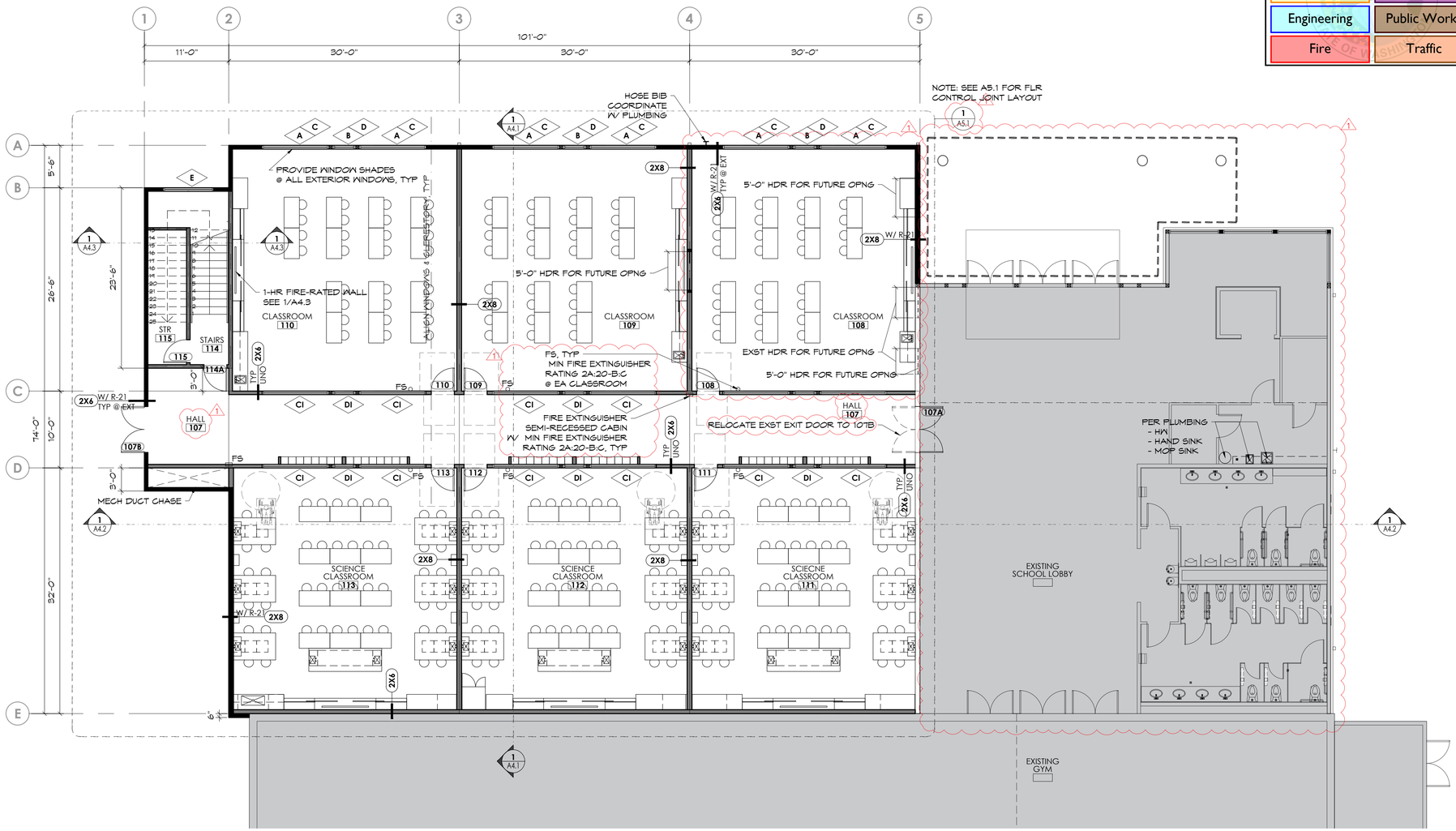


## MAIN FLOOR PLAN

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


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SHEET TITLE
**MAIN FLOOR PLAN**

SHEET #
**A2.1**

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**City of Puyallup**
**Development & Permitting Services**
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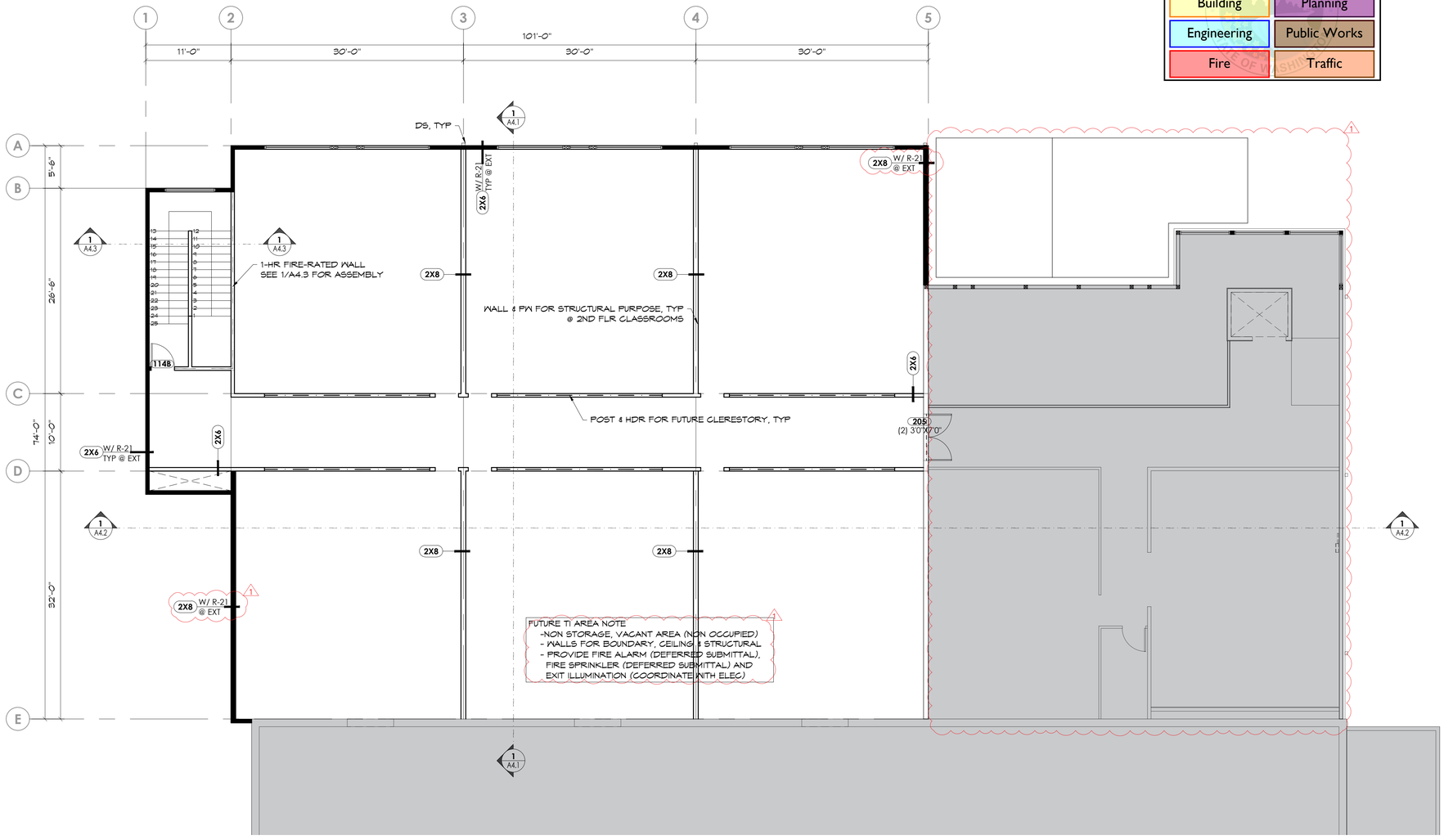


## 2ND FLOOR PLAN (UNFINISHED)

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


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SHEET TITLE
**2ND FLOOR PLAN**

SHEET #
**A2.2**

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**City of Puyallup**
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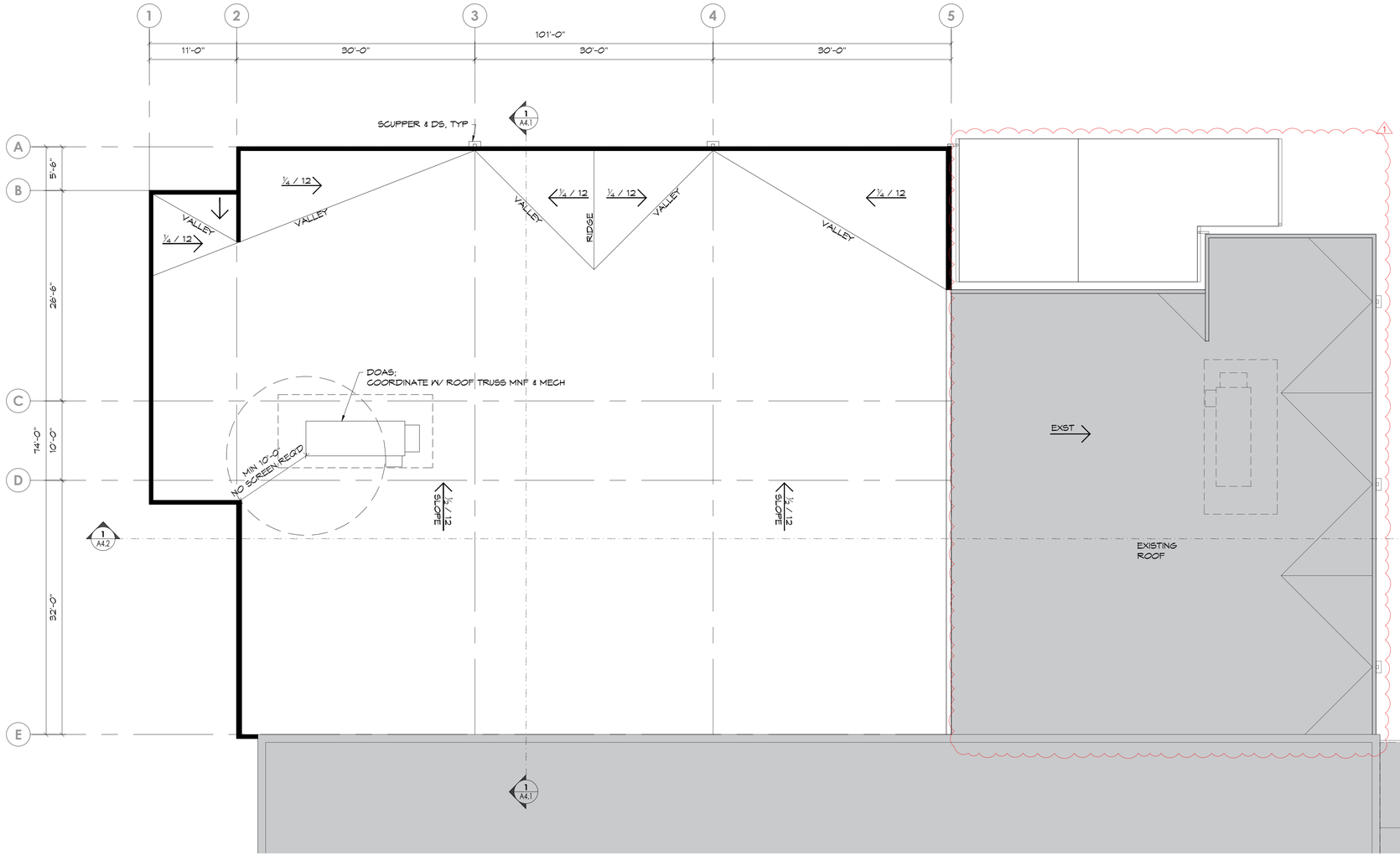


## ROOF PLAN

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


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SHEET TITLE

**ROOF PLAN**

SHEET #

**A2.3**

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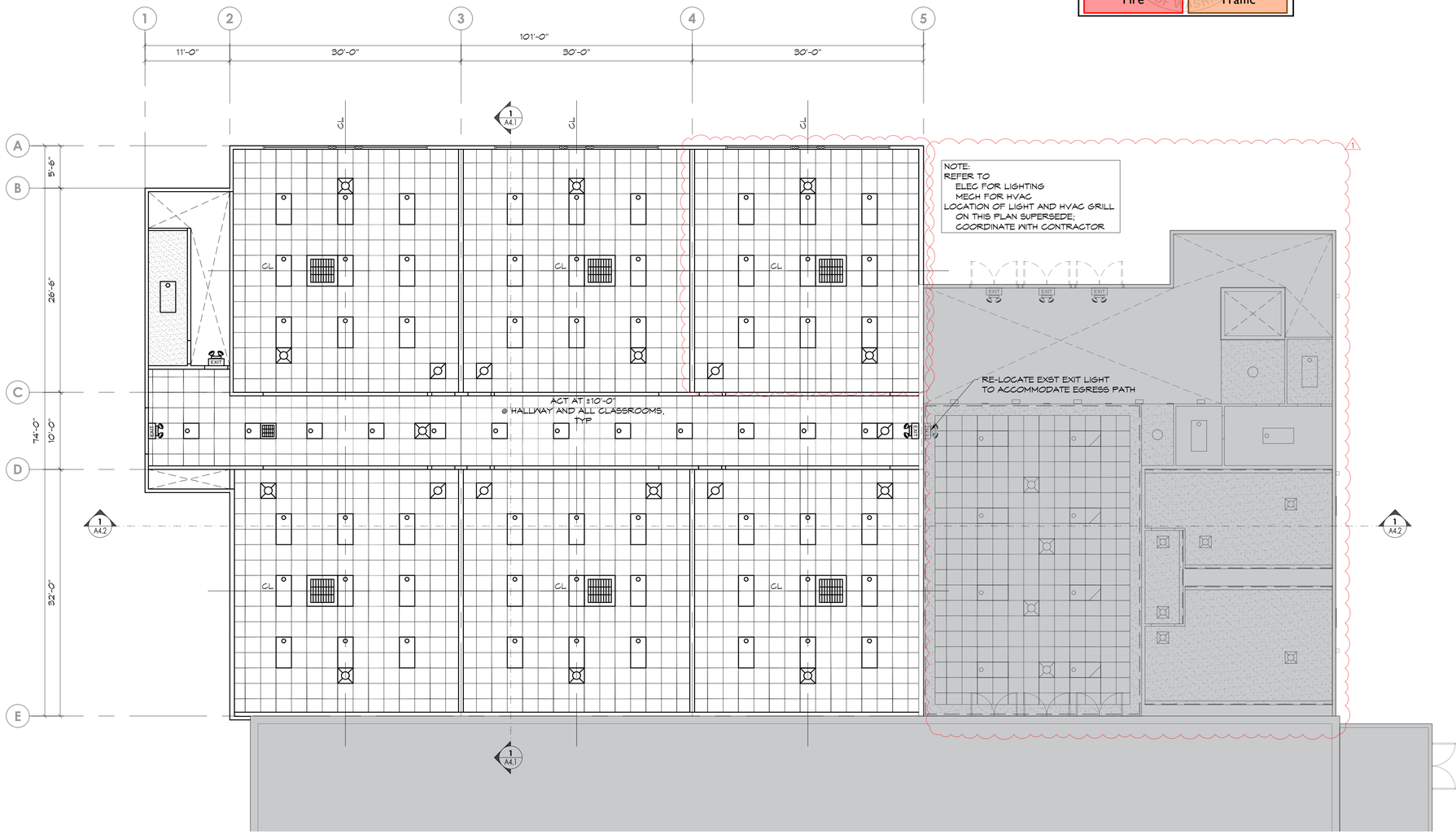


## MAIN FLOOR RCP

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


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**CASCADE CHRISTIAN JR. HIGH SCHOOL PHASE IIIA**

815 21ST STREET SE
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PROJECT NUMBER
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**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
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| 12.06.21 | REV - CITY | 1 |

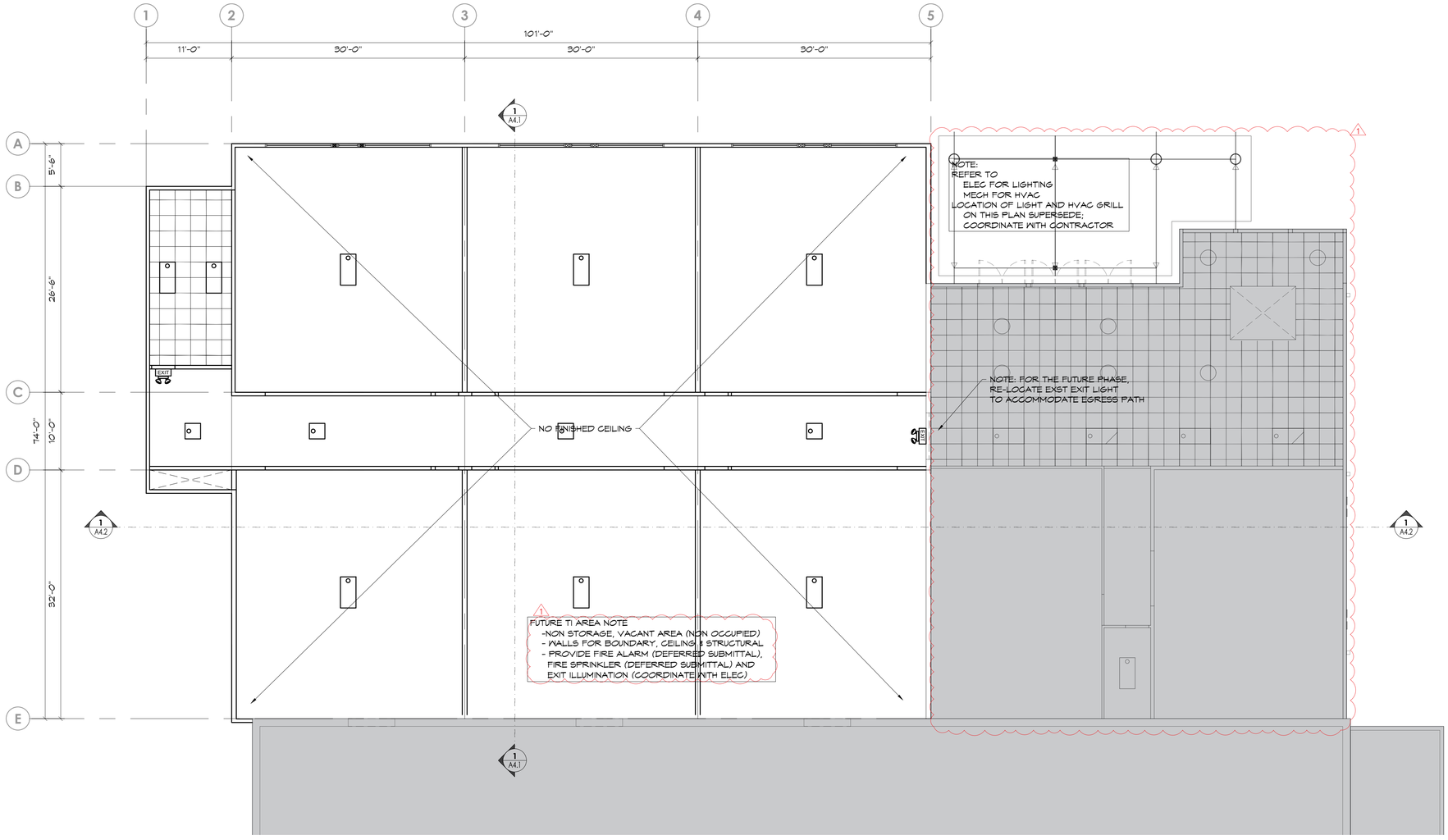
SHEET TITLE
**MAIN FLOOR RCP**

SHEET #
**A2.4**

B-21-0727CITY OF PUYALLUP

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |




## 2ND FLOOR RCP

(11X17) SCALE : 1/16" = 1'-0"
(22X34) SCALE : 1/8" = 1'-0"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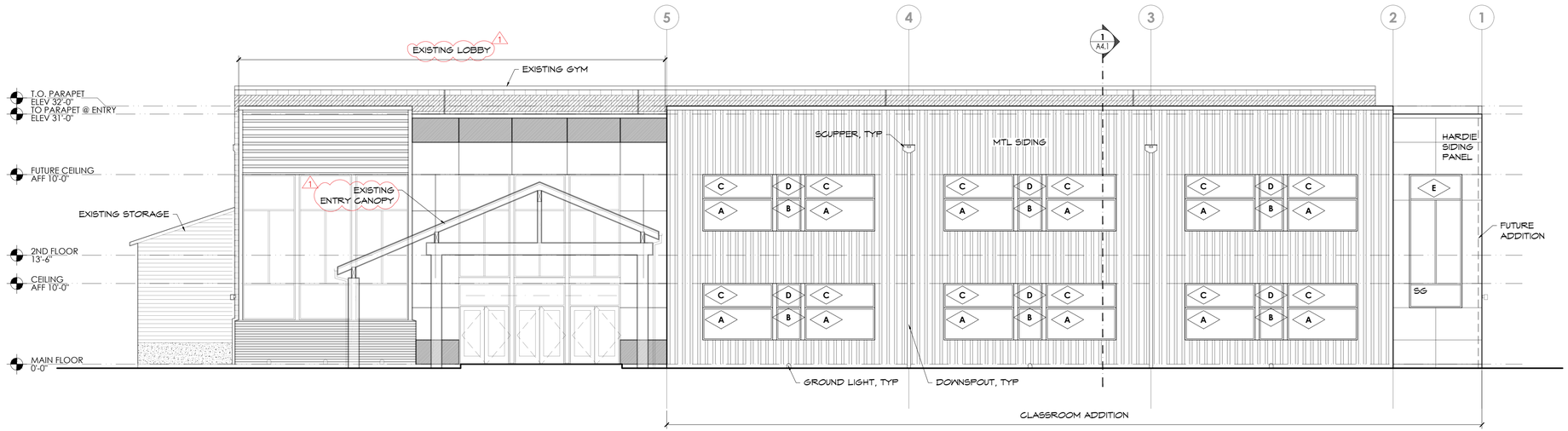
SHEET TITLE
**2ND FLOOR RCP**

SHEET #
**A2.5**

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

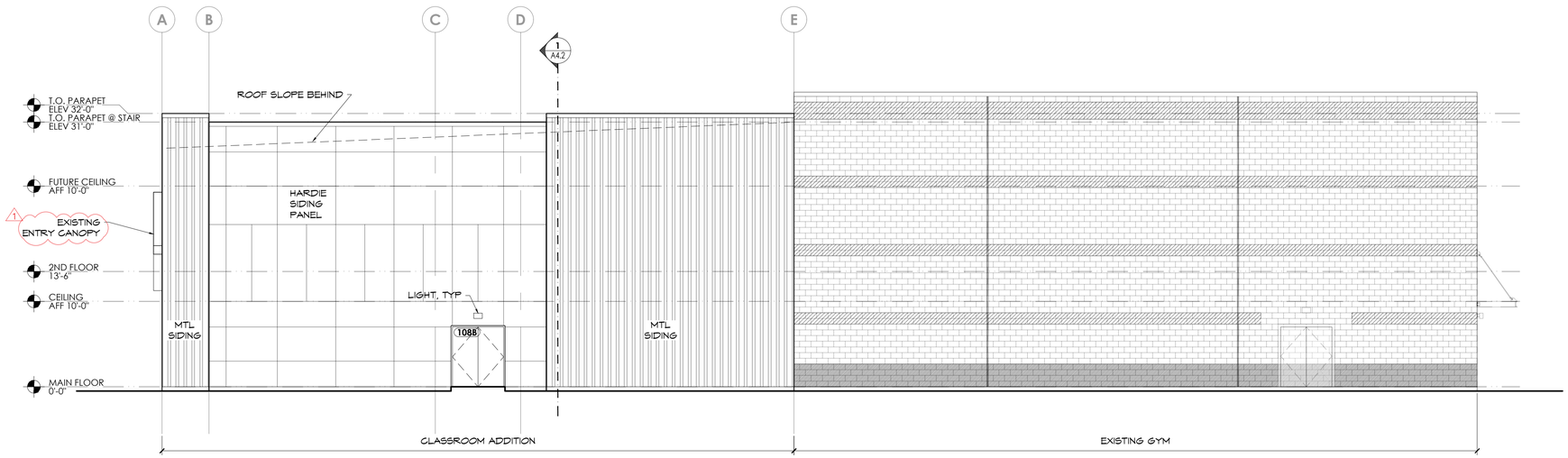
| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

B-21-0727CITY OF PUYALLUP




## 1 NORTH ELEVATION

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




## 2 WEST ELEVATION

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

**BUILDING ELEVATIONS**

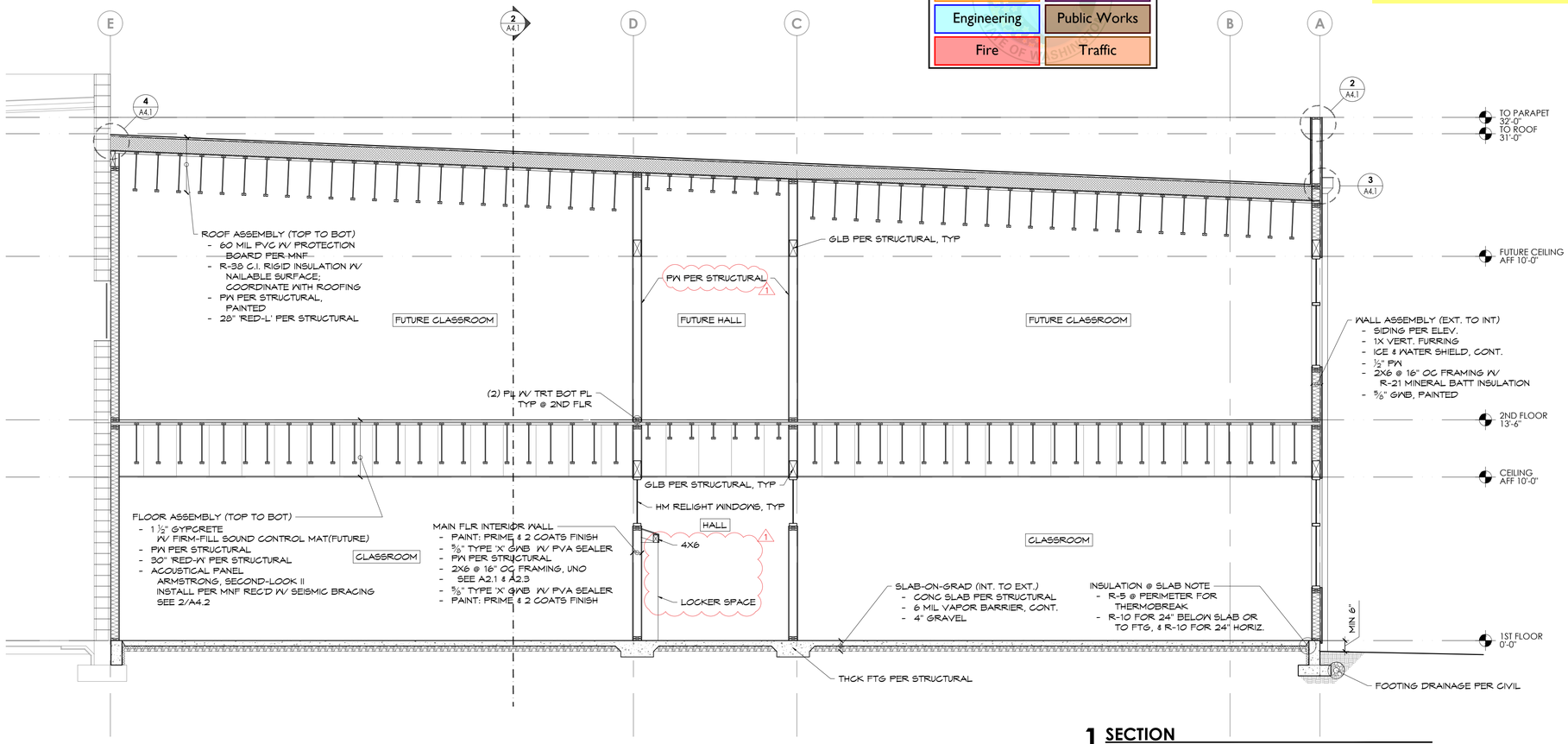
SHEET #

**A3.1**

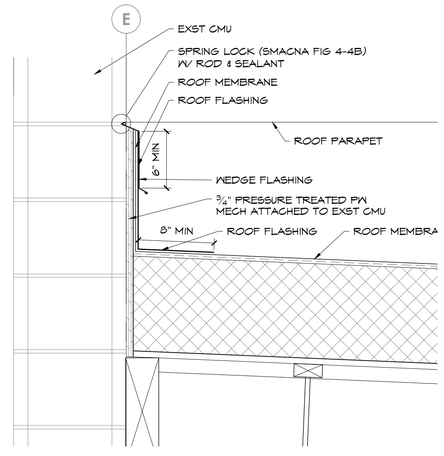
City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

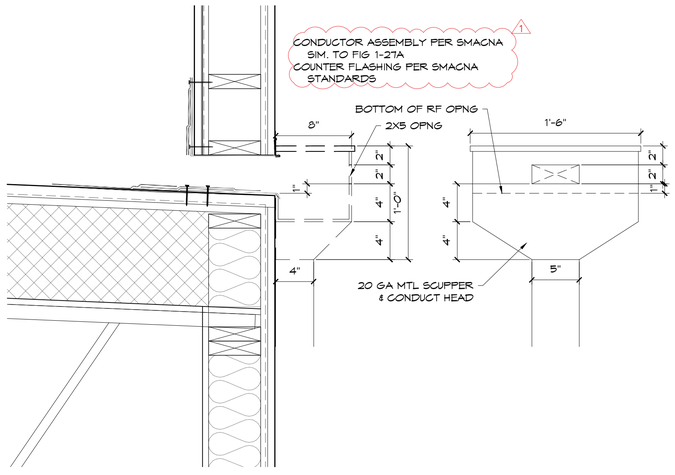
B-21-0727CITY OF PUYALLUP



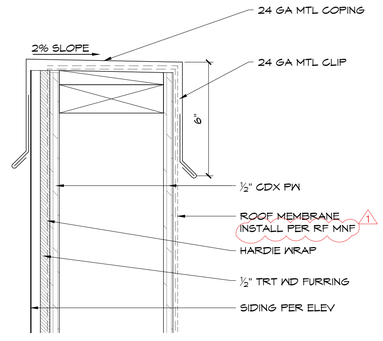

## 1 SECTION
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"




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




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




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

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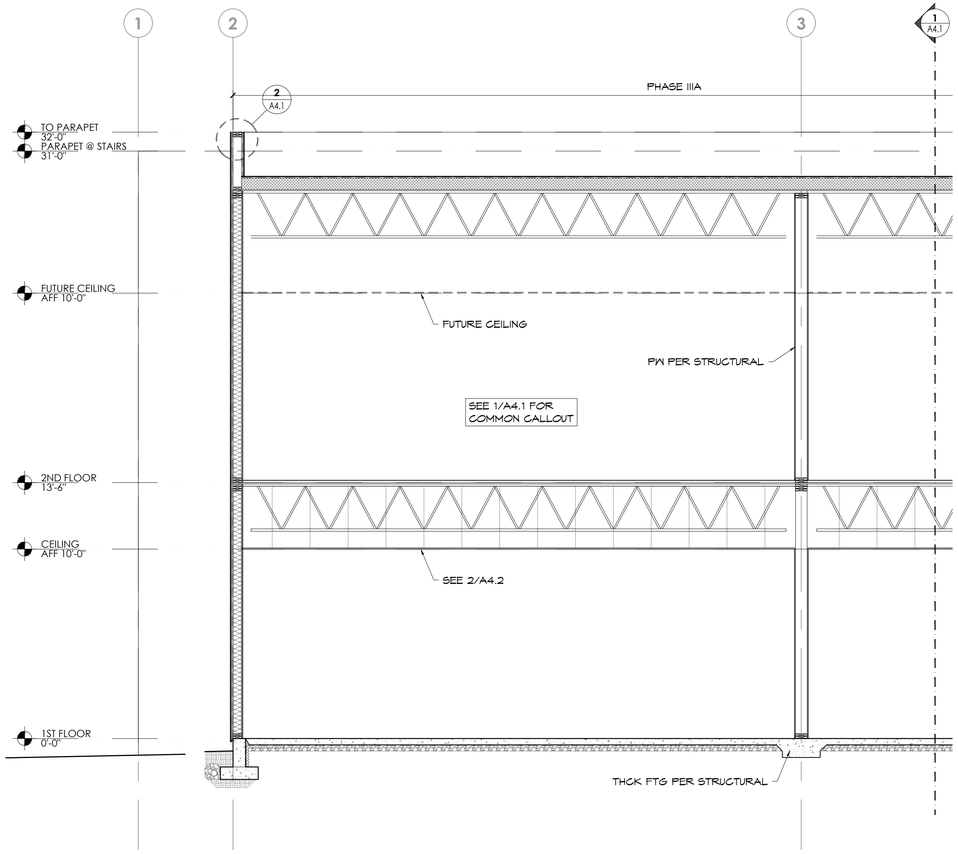
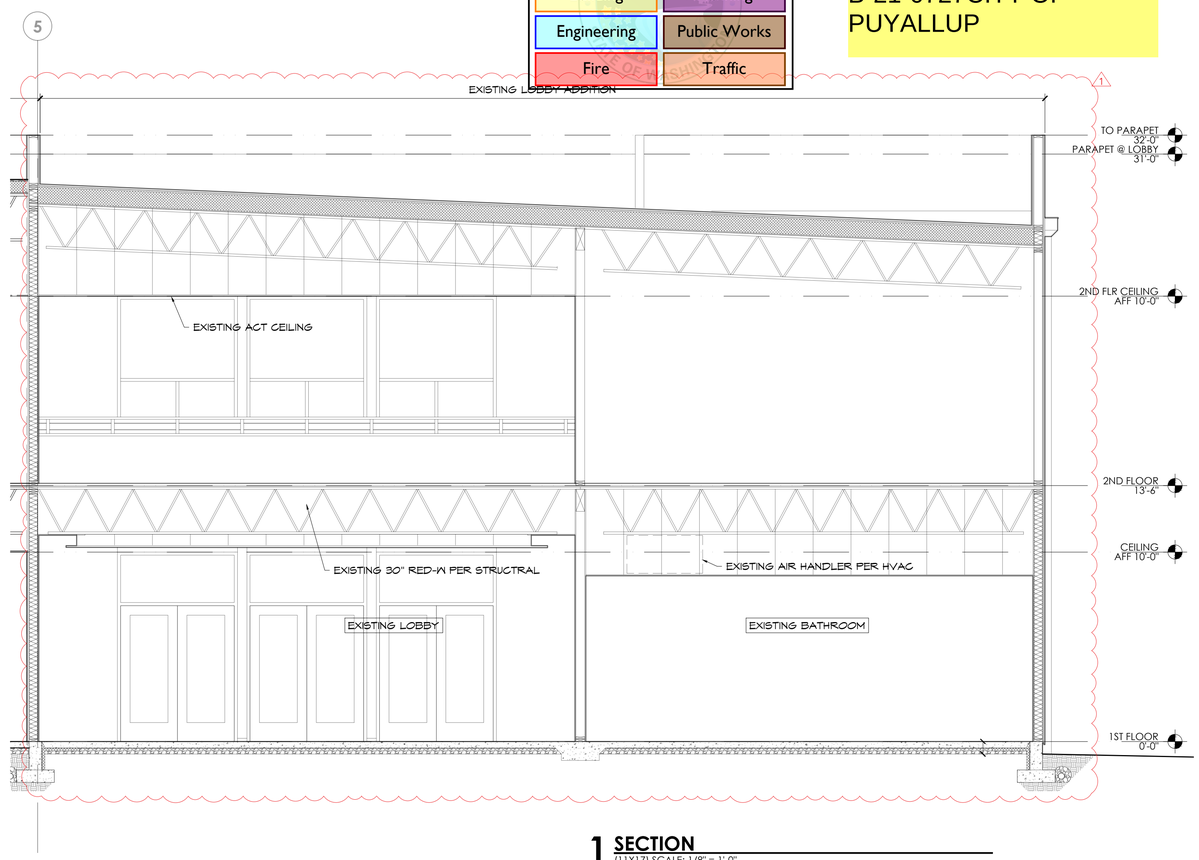
SHEET TITLE
**BUILDING SECTIONS**

SHEET #
**A4.1**

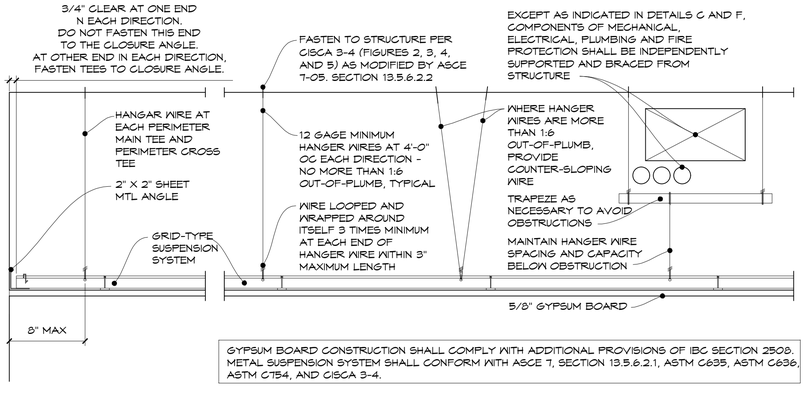
City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

B-21-0727CITY OF PUYALLUP

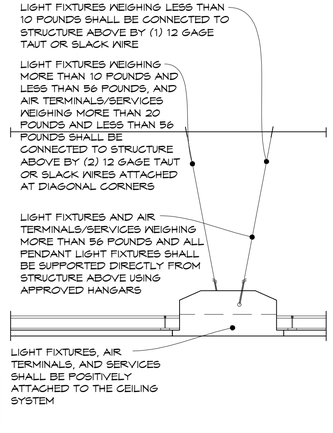


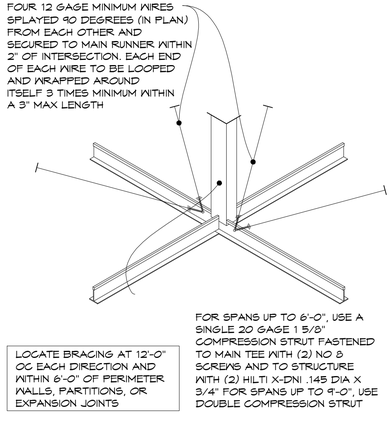

## 1 SECTION
(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



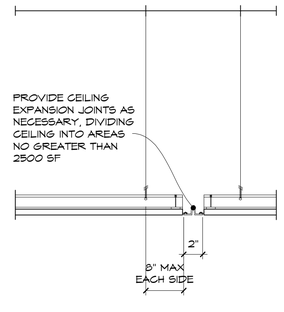

A PERIMETER SUPPORT | B GENERAL SUPPORT



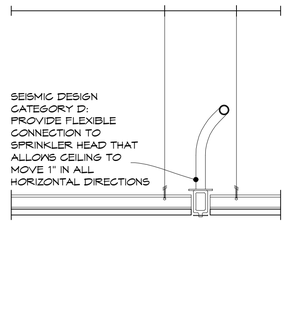

C LIGHT FIXTURE AND MECHANICAL SERVICE SUPPORT




D LATERAL BRACING REQUIRED IF ANY OF THE FOLLOWING EXISTS
-GYPSUM BOARD CEILING THAT EXTENDS WALL-TO-WALL




E EXP. JOINT FOR CLG EXCEEDING 2500 SF




F SPRINKLER HEAD CLEARANCE

## 2 INSTALLATION OF SUSPENDED CEILING
NTS

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STATE OF WASHINGTON

PROJECT NAME/ADDRESS

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PUYALLUP, WA 98372

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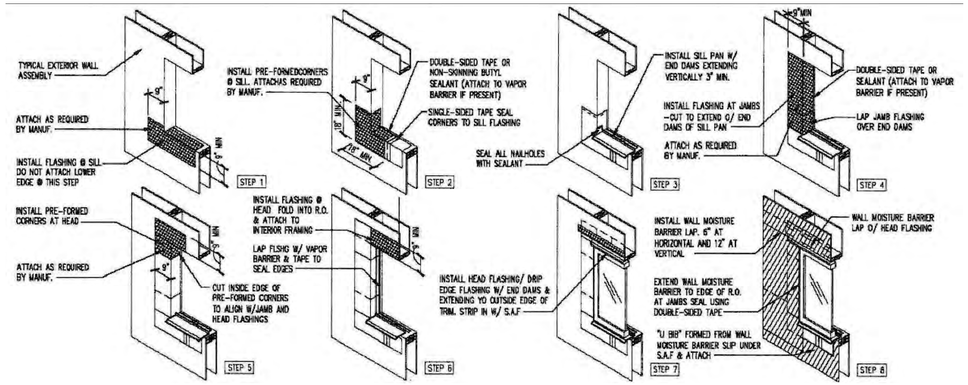
SHEET TITLE
**BUILDING SECTIONS**

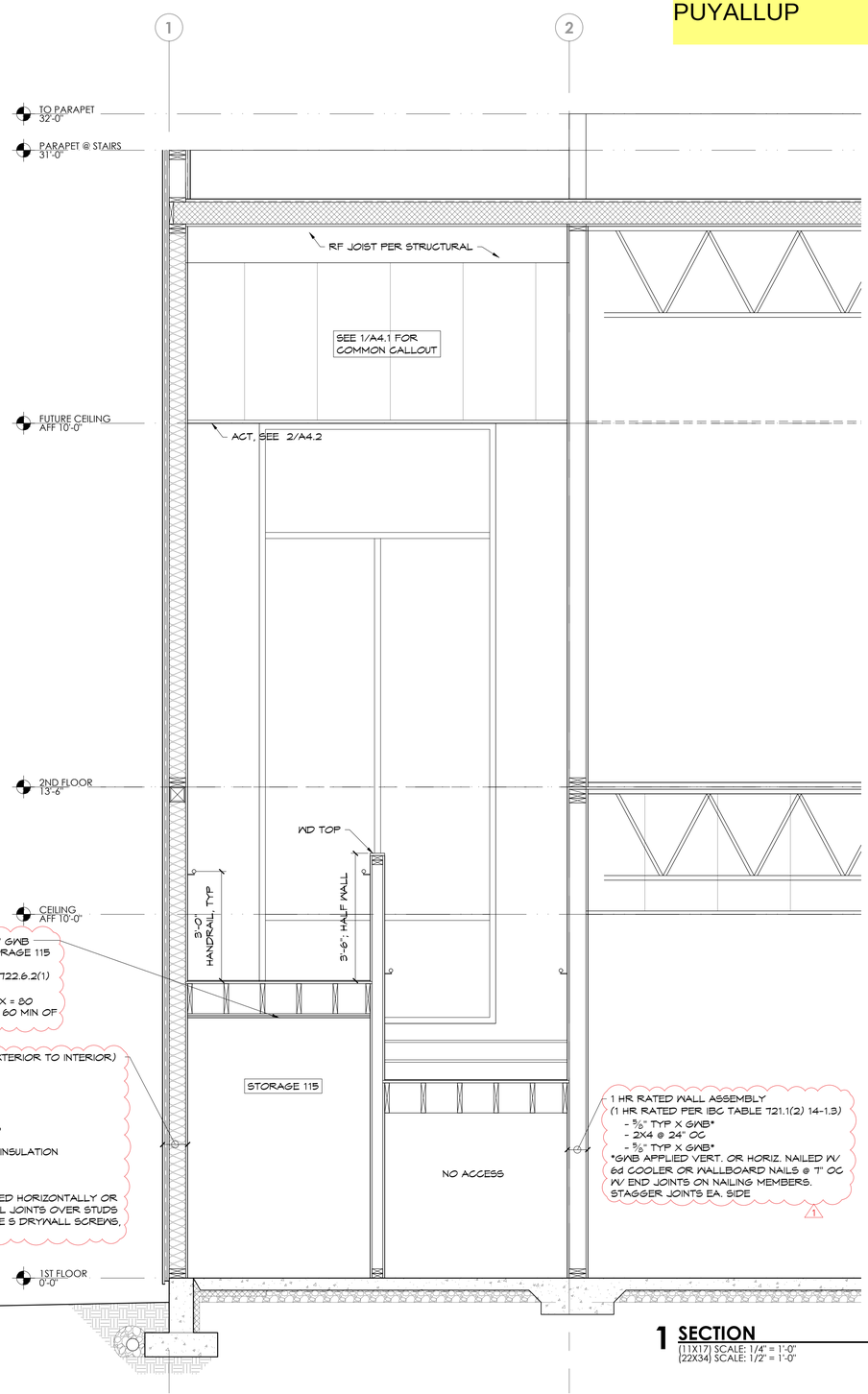
SHEET #
**A4.2**

B-21-0727CITY OF PUYALLUP




## 2 TYP MIN OPNG FLASHING INSTALLATION

NTC




## 1 SECTION

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

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |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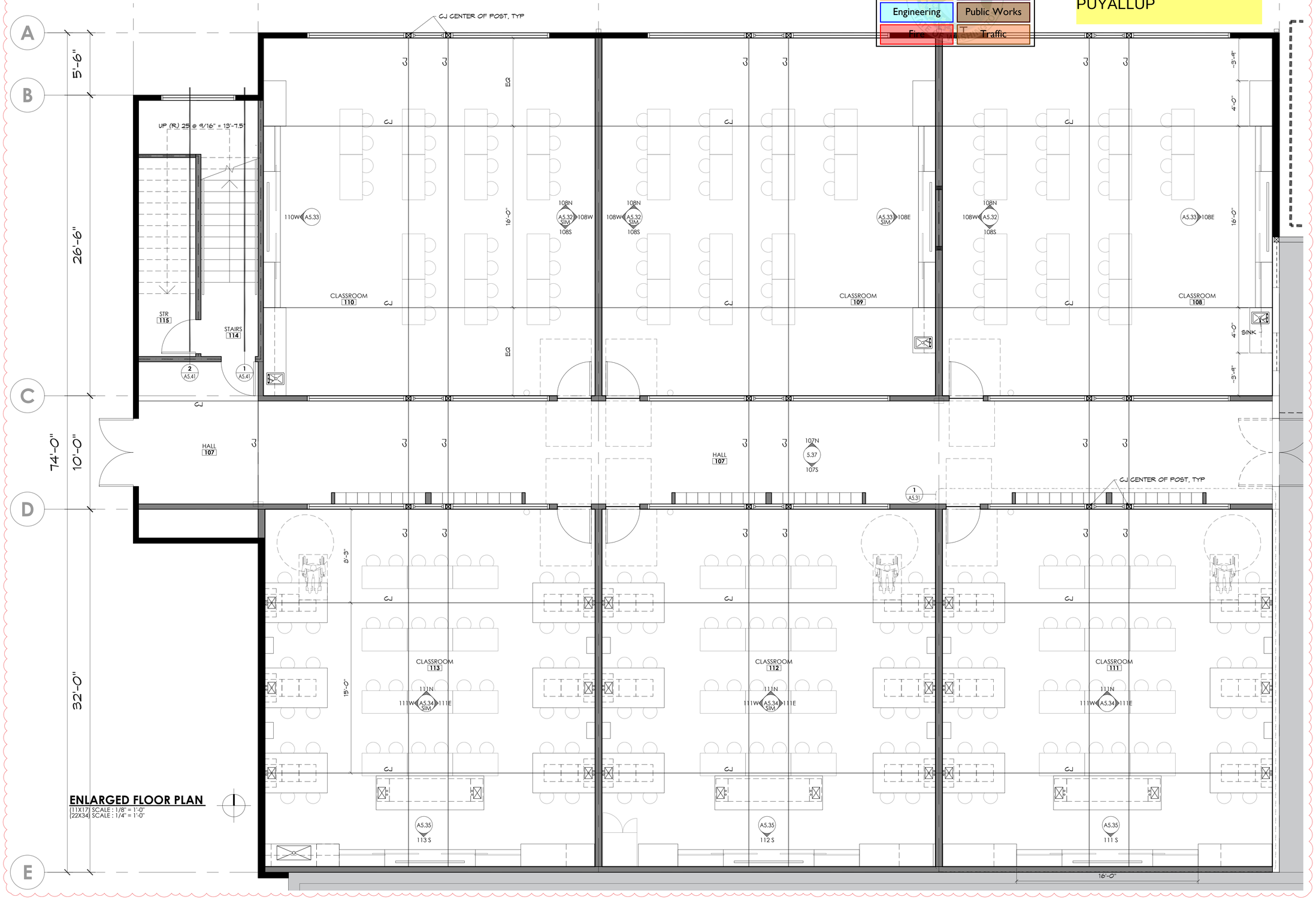
SHEET TITLE
**BUILDING SECTIONS**

SHEET #
**A4.3**

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

B-21-0727CITY OF PUYALLUP




## ENLARGED FLOOR PLAN

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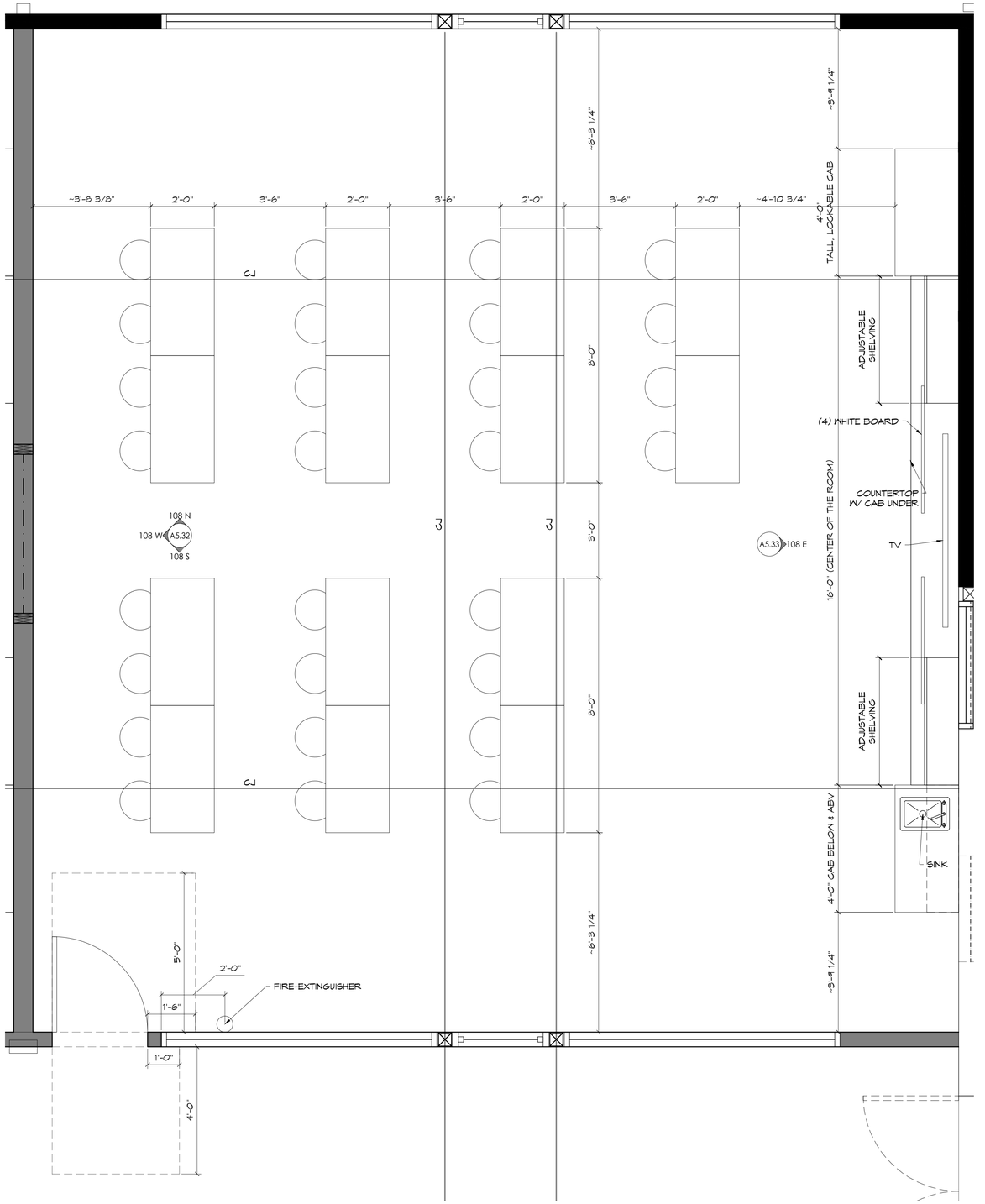
SHEET TITLE
**ENLARGED FLOOR PLAN** 1

SHEET #
**A5.12**

B-21-0727CITY OF PUYALLUP

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |




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

**FINISH SCHEDULE - CASCADE CHRISTIAN SCHOOL - GENERAL CLASSROOM ADDITION**

| | KEY | LOCATION | DESCRIPTION | MNF | SPECIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| GEN. CLASS-ROOM | 1 | FLOOR | POLISHED CONCRETE | | | SEE A5.1 FOR JOINT LAYOUT |
| | 2 | BASE | 6" RUBBER BASE | ROBBY | | |
| | 3.1 | WALL, TYP | GWB W/ PAINT-1 | SHERWIN WILLIAM | | LEVEL 4 FINISH |
| | 3.12 | WALL@LOBBY | CONTROL JOINT | CLARKDIETRICH | ZNCJ | CONTROL JOINT LAYOUT PER A5.21 MITOR HORZ. VERT. JOINTS |
| | 3.2 | WALL | GWB W/ PAINT-1 + ERASIBLE SURFACE | | | |
| | 3.3 | ROLLER SHADES | | | | AT EXTERIOR WINDOWS |
| | 4 | CEILING | 2'X4' ACOUSTIC CEILING | ARMSTRONG | | |
| | 5 | CAB | MAPLE P-PAM | WILSON ART | | |
| | 5.1 | COUNTER TOP | EPOXY RESIN | | | |

2 MATERIAL LIST - GENERAL CLASSROOM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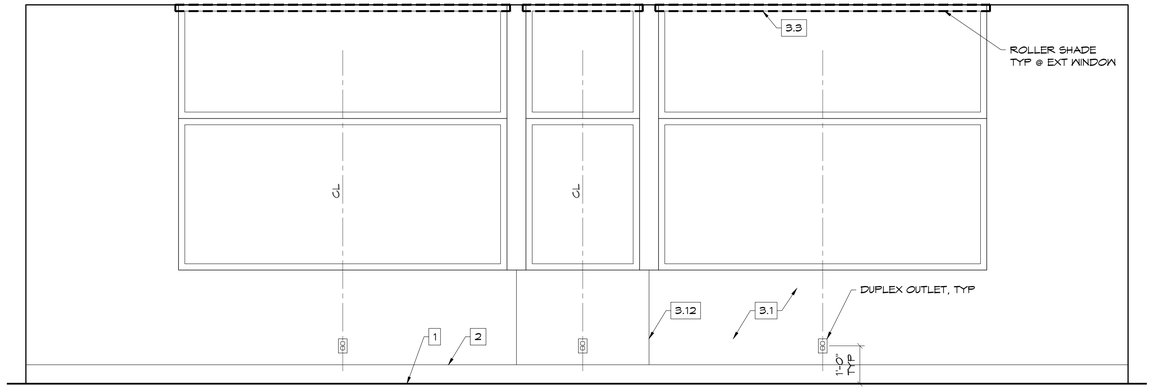
SHEET TITLE
ENLARGED CLASSROOM

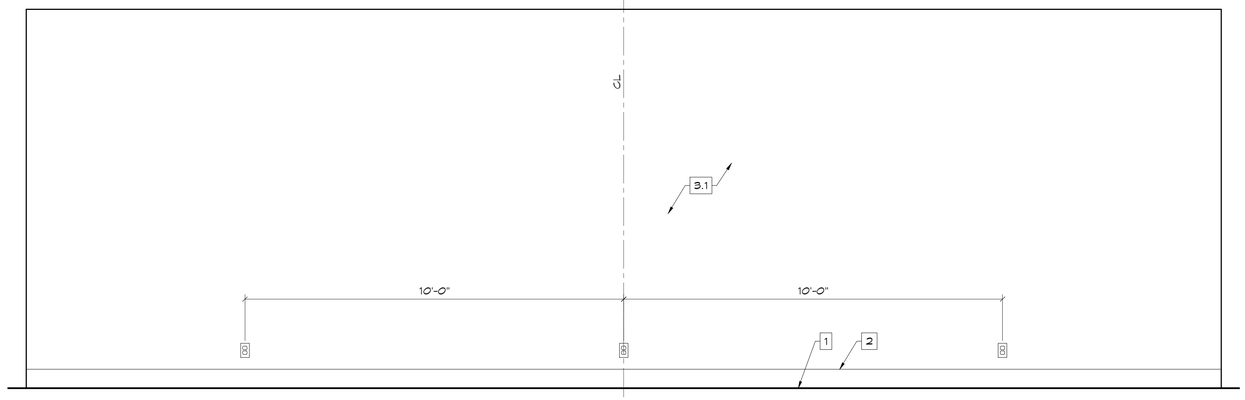
SHEET #
A5.31

B-21-0727CITY OF PUYALLUP



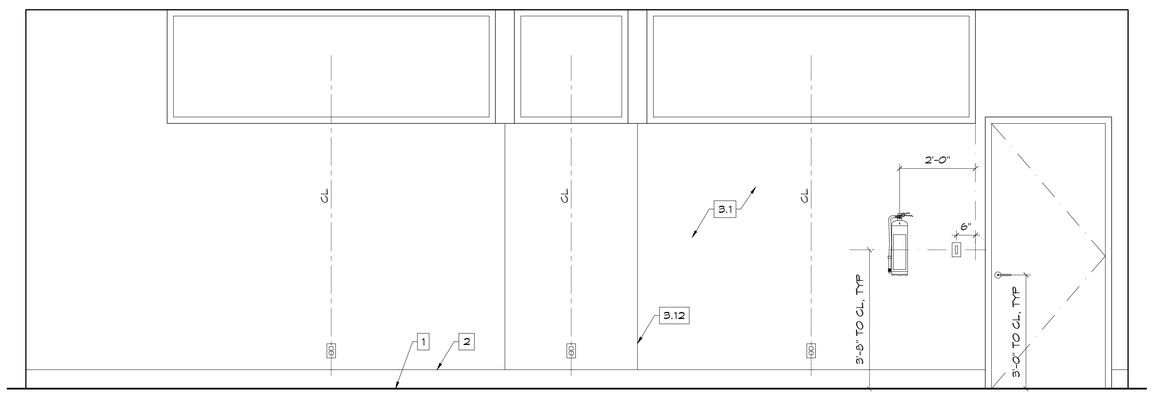

## 108 N GENERALL CLASSROOM

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




## 108 W GENERALL CLASSROOM

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




## 108 S GENERALL CLASSROOM

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

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |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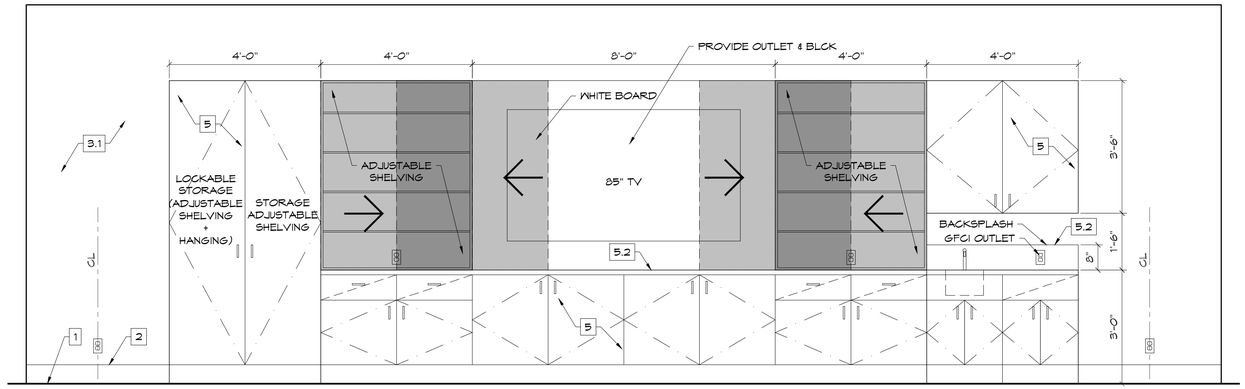
SHEET TITLE
**INT. ELEV GENERAL CLASS**

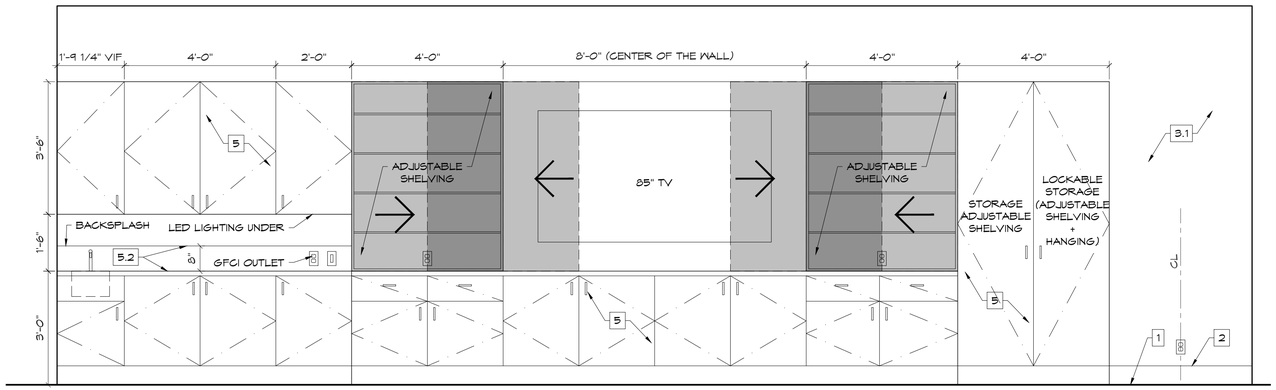
SHEET #
**A5.32**

B-21-0727CITY OF PUYALLUP




## 108 E GENERAL CLASSROOM

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




## 110 W GENERAL CLASSROOM

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

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |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STATE OF WASHINGTON

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SHEET TITLE

**INT. ELEV GENERAL CLASS**

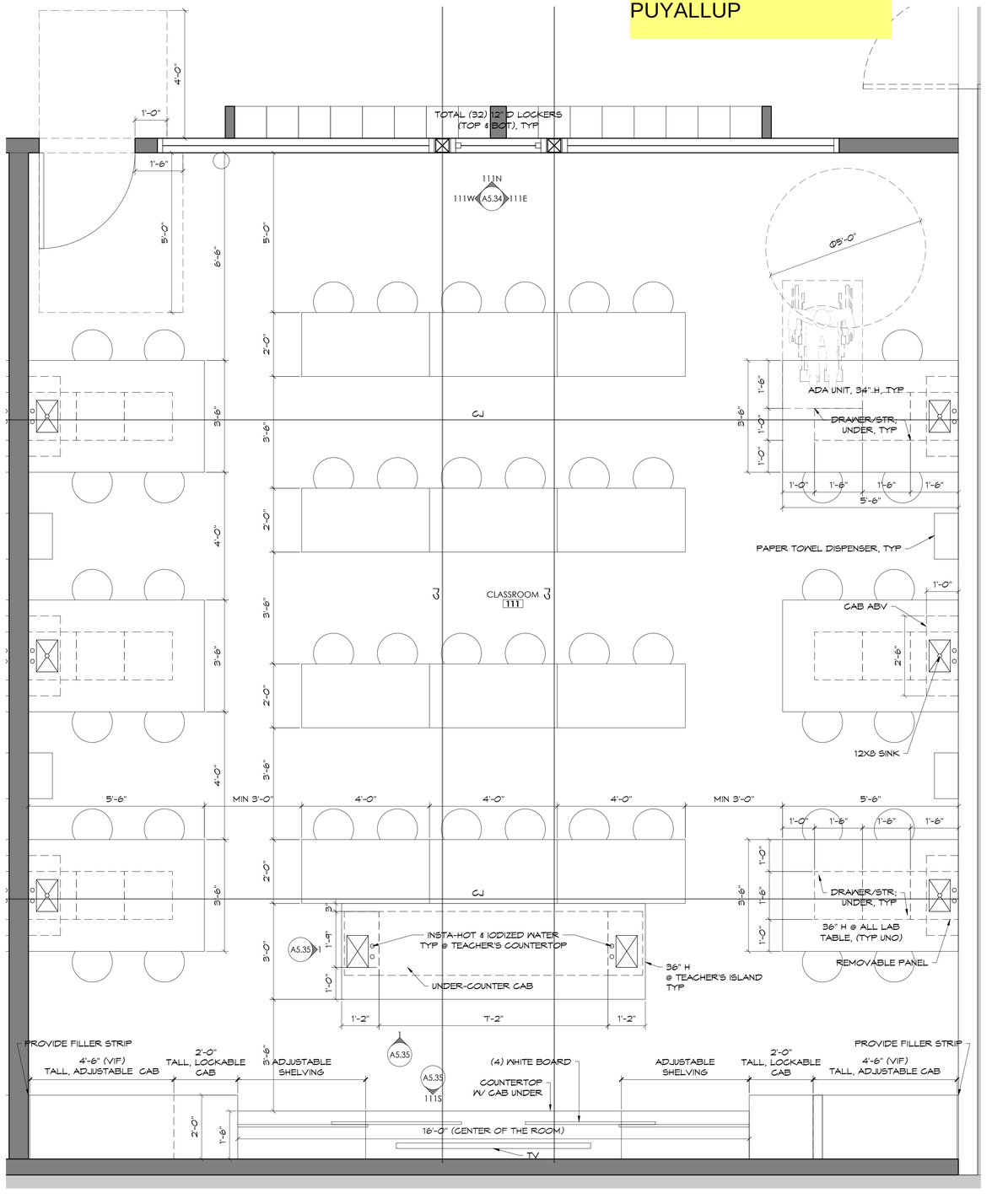
SHEET #

**A5.33**

B-21-0727CITY OF PUYALLUP

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |




**FINISH SCHEDULE - CASCADE CHRISTIAN SCHOOL - GENERAL CLASSROOM ADDITION**

| | KEY | LOCATION | DESCRIPTION | MNF | SPECIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| SCIENCE CLASS-ROOM | 1 | FLOOR | POLISHED CONCRETE | TBD | | SEE A5.1 FOR JOINT LAYOUT |
| | 2 | BASE COVE | 6" RUBBER BASE | | | |
| | 3.1 | WALL, TYP | GWB W/ PAINT-1 | SHERWIN WILLIAM | | LEVEL 4 FINISH |
| | 3.12 | WALL@LOBBY | CONTROL JOINT | CLARKDIETRICH | ZNCJ | CONTROL JOINT LAYOUT PER A5.21 MITOR HORZ. VERT. JOINTS |
| | 4 | CEILING | 2'X4' ACOUSTIC CEILING | ARMSTRONG | | |
| | 5 | CAB | MAPLE P-PAM | WILSON ART | | |
| | 5.2 | COUNTERTOP | P-LAM | WILSONART | | |

## 2 MATERIAL LIST - SCIENCE ROOM

## 1 SCIENCE CLASSROOM (TYP)

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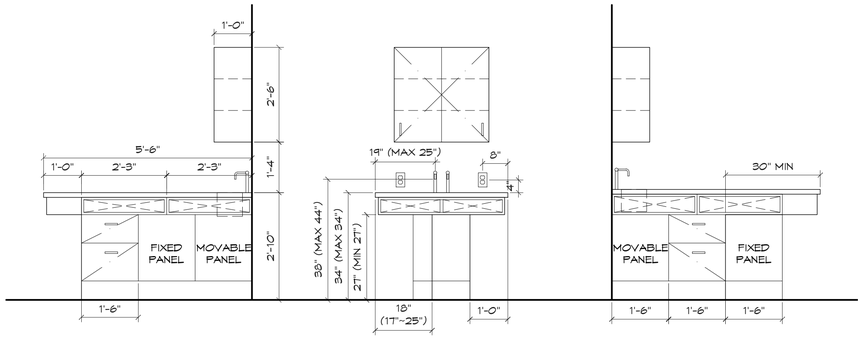
SHEET TITLE

**ENLARGED CLASSROOM**

SHEET #

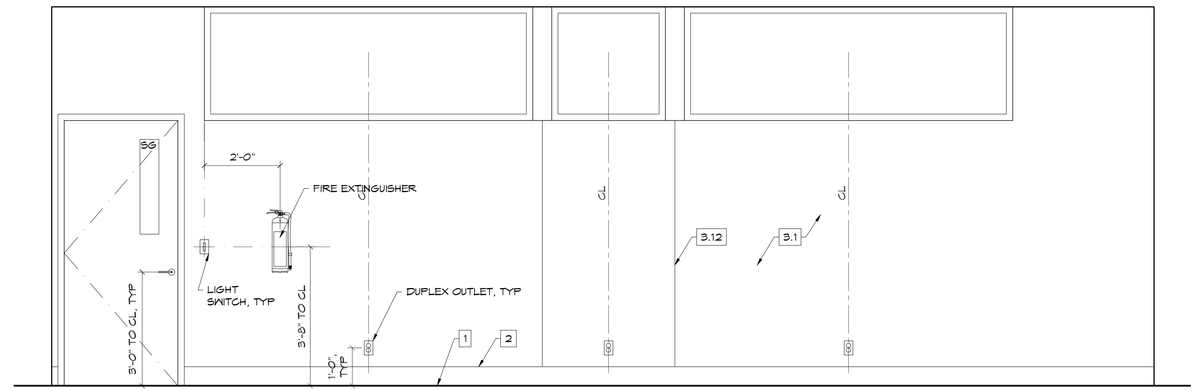
**A5.34**

B-21-0727CITY OF PUYALLUP



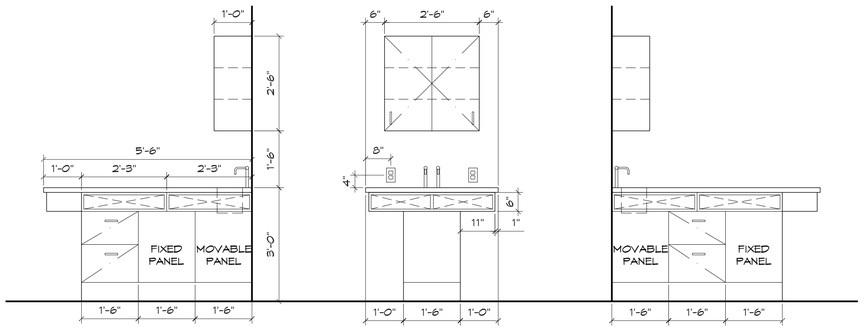

## 1 ADA LAB TABLE

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



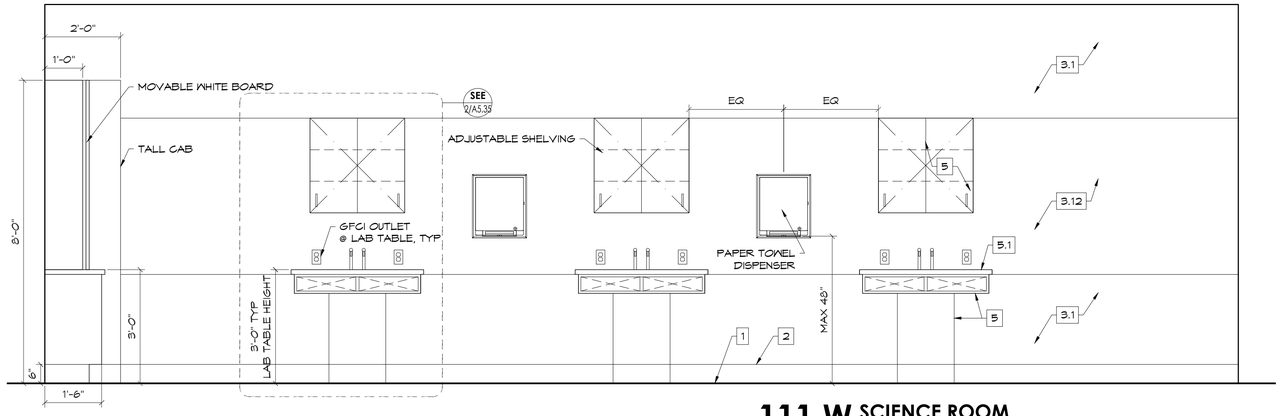

## 111 N SCIENCE ROOM

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



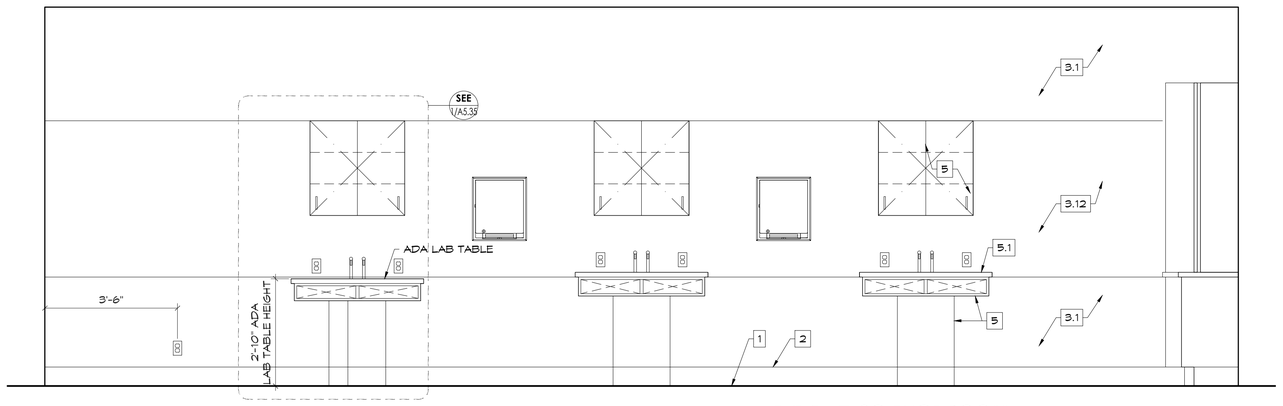

## 2 LAB TABLE

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




## 111 W SCIENCE ROOM

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




## 111 E SCIENCE ROOM

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

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |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SHEET TITLE
**INT. ELEV SCIENCE CLASS**

SHEET #
**A5.35**

City of Puyallup
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| | |
|---|---|
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| Engineering | Public Works |
| Fire | Traffic |

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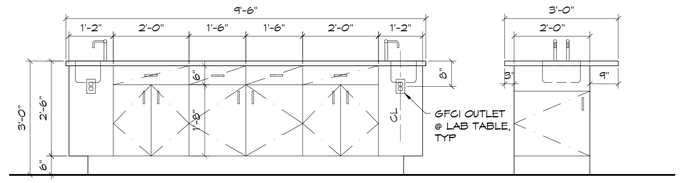
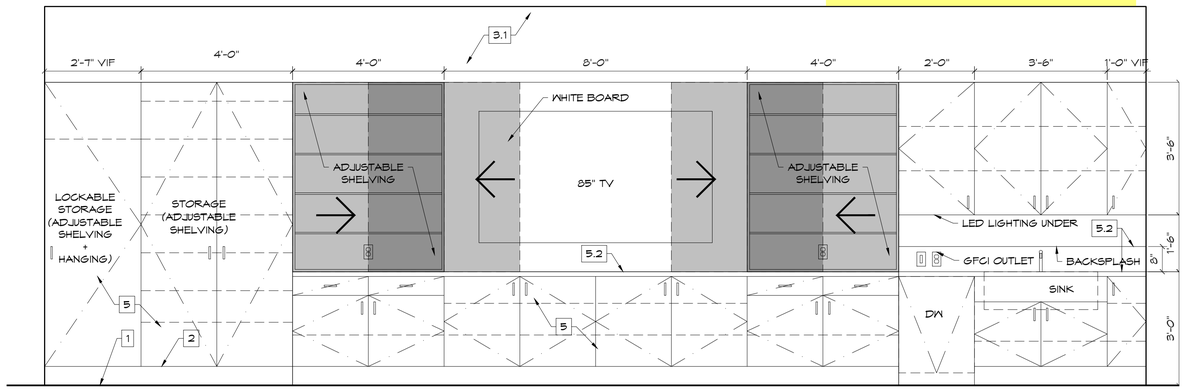
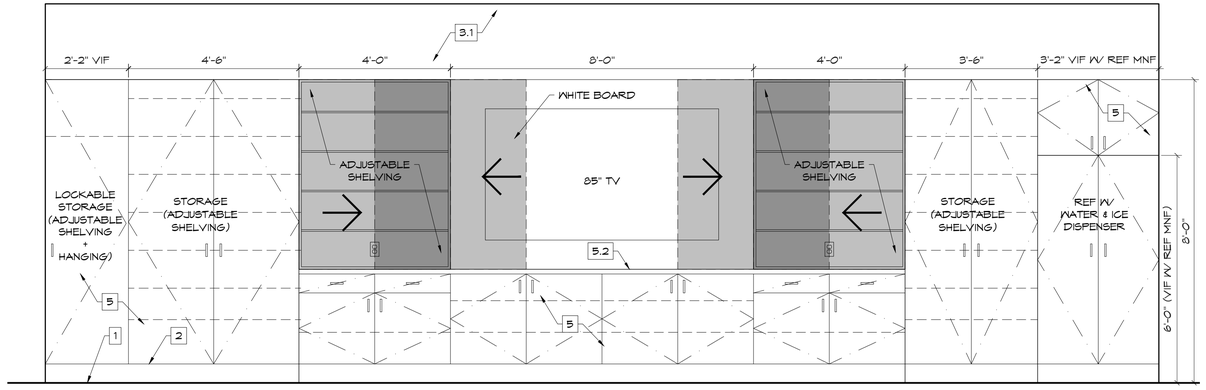


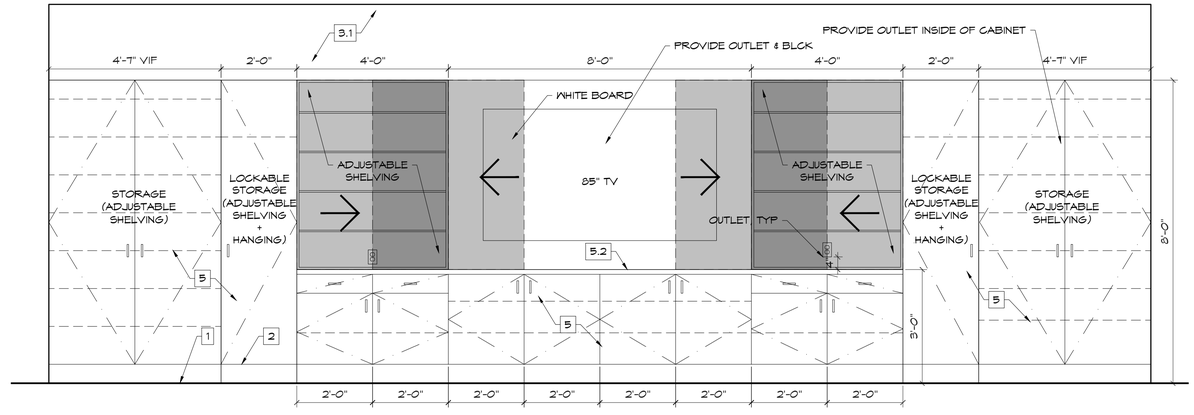

## 1 TEACHER'S ISLAND
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE : 1/2" = 1'-0"




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




## 112 S SCIENCE ROOM
(11X17) SCALE: 1/4" = 1'-0"
(22X34) SCALE : 1/2" = 1'-0"




## 111 S SCIENCE ROOM
(11X17) SCALE : 1/4" = 1'-0"
(22X34) SCALE : 1/2" = 1'-0"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SHEET TITLE
**INT. ELEV SCIENCE CLASS**

SHEET #
**A5.36**

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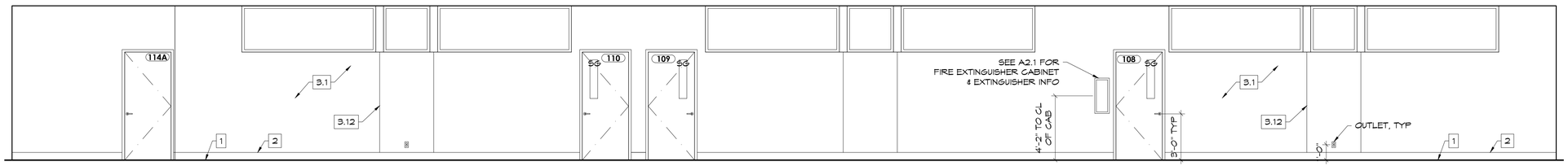
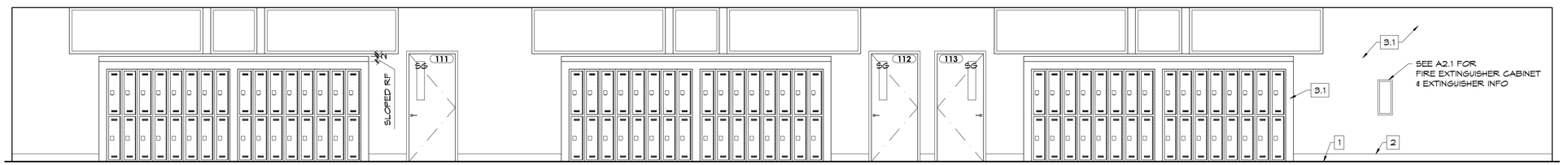



## 107 N HALLWAY

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




## 107 S HALLWAY

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

City of Puyallup
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| | |
|---|---|
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| Engineering | Public Works |
| Fire | Traffic |


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SHEET TITLE
**INT. ELEV HALLWAY**

SHEET #
**A5.37**

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
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| Engineering | Public Works |
| Fire | Traffic |

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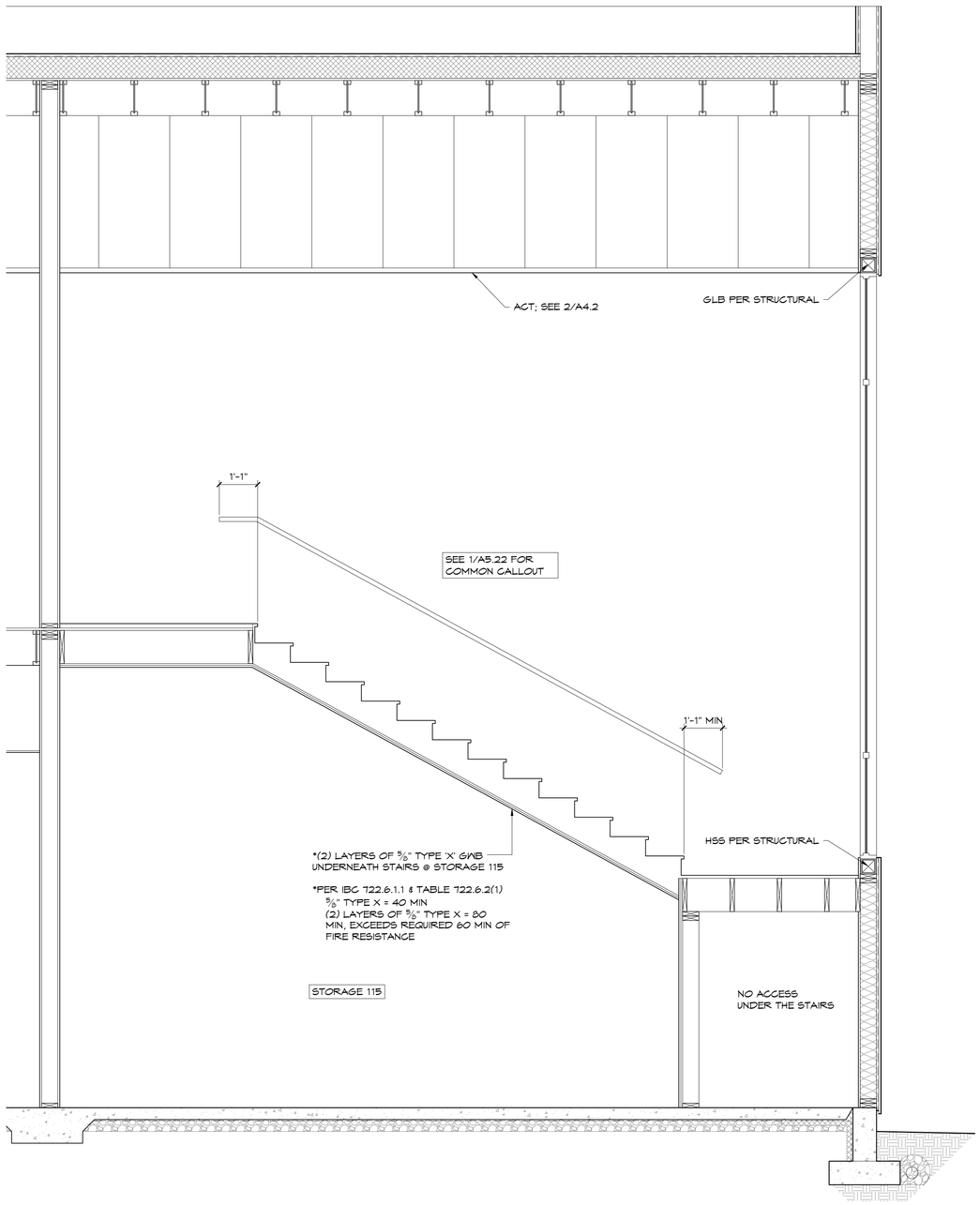
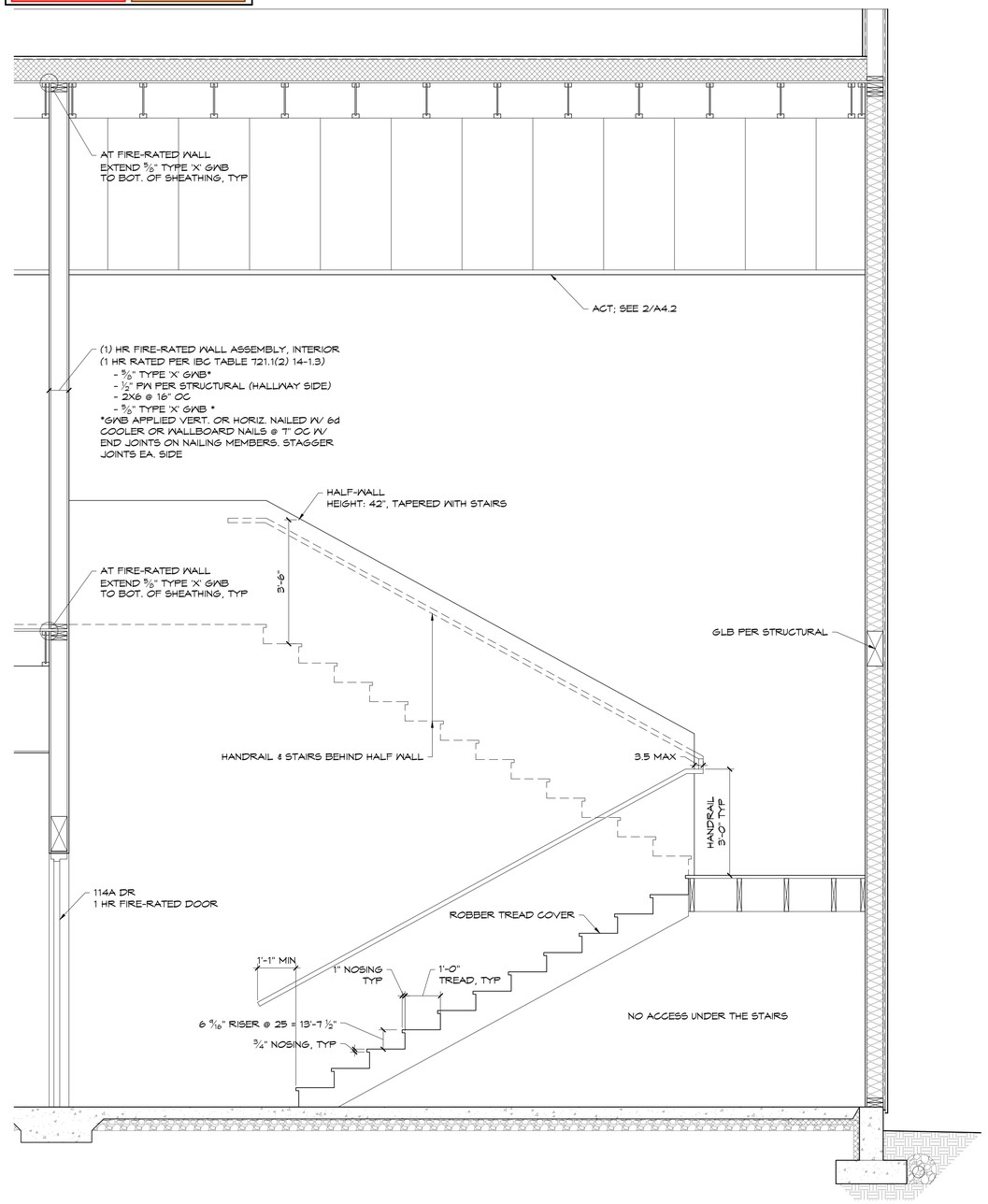



## 2 WEST STAIR - SECTION

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




## 1 WEST STAIR - SECTION

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SHEET TITLE
**WEST STAIRS SECTIONS**

SHEET #
**A5.41**

| NO. | LOCATION | DOORS* | | | | | | FRAME | | | HDWR SET | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TYPE | WIDTH | HEIGHT | THICK | MAT | FINISH | TYPE | MAT | FINISH | | |
| 107A | HALL | D1 | (2) 3'-0" | 7'-0" | 1 3/4" | HM | PT | F1 | HM | PT | ENTRY LOCK | KICK PLATE \| RELITE (SG) \| 180 DEGREE OPEN DOOR (OFFSET-HINDGE) \| MAGNATIC HOLDERS \| COORDINATOR \|PANIC BAR \| SELF-CLOSER \|REMOVABLE MULLION \| SMOKE SEAL |
| 107B | HALL | D1 | (2) 3'-0" | 7'-0" | 1 3/4" | HM | PT | F2 | HM | PT | ENTRY LOCK | KICK PLATE \| WEATHER STRIP\| PANIC BAR\| SELF-CLOSER \| REMOVABLE MULLION \| WIRING FOR FUTURE MAGNATIC HOLDERS |
| 108 | CLASSROOM | D2 | (2) 3'-0" | 7'-0" | 1 3/4" | WD | FAC | F3 | AL | FAC | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 109 | CLASSROOM | D2 | (2) 3'-0" | 7'-0" | 1 3/4" | WD | FAC | F4 | AL | FAC | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 110 | CLASSROOM | D2 | (2) 3'-0" | 7'-0" | 1 3/4" | WD | FAC | F5 | AL | FAC | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 111 | CLASSROOM | D2 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F6 | HM | PT | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 112 | CLASSROOM | D2 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F7 | HM | PT | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 113 | CLASSROOM | D2 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F8 | HM | PT | CLASSROOM SECURITY | PLAIN SLICED WHITE MAPLE \| RELITE (SG) \| KICKPLATES \| SELF-CLOSER W/ HOLD FEATURE (VERIFY DEGREE THAT UNLOCKS HOLD) \| ACOUSTIC WEATHER STRIP \| FLOOR STOP |
| 114A | STAIRS | D1 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F9 | HM | PT | PASSAGE | PANIC BAR \| SELF-CLOSER \| 60 MIN FIRE-RATED \| SMOKE SEAL \| FLOOR STOP |
| 114B | STAIRS | D1 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F10 | HM | PT | PASSAGE | PANIC BAR \| SELF-CLOSER \| 60 MIN FIRE-RATED \| SMOKE SEAL \| FLR STOP |
| 115 | STORAGE | D1 | 3'-0" | 7'-0" | 1 3/4" | WD | PT | F11 | HM | PT | STORAGE LOCK | 45 MIN FIRE-RATED \| SELF-CLOSER \| FLOOR STOP |
| 205 | HALL | D1 | (2) 3'-0" | 7'-0" | 1 3/4" | HM | PT | F12 | HM | PT | STORAGE LOCK | KICK PLATE \| RELITE (SG) \| MAGNATIC HOLDERS \| COORDINATOR \| PANIC BAR \| SELF-CLOSER \|REMOVABLE MULLION \| SMOKE SEAL |

*NOTE:
ALL WD DOOR TO BE SOLID CORE

## EXTERIOR STOREFRONT PERFORMANCE

1. U-VALUE: 0.3 FOR NONMETAL FRAMING
   0.38 FOR FIXED
   0.40 FOR OPERABLE
   0.60 FOR 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 REQ'D 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 REQ'D 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-RION-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

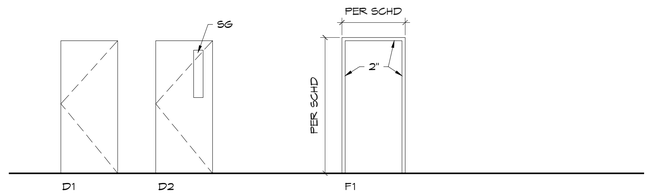
## EXTERIOR FRAMES

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

# 1 DOOR SCHEDULE

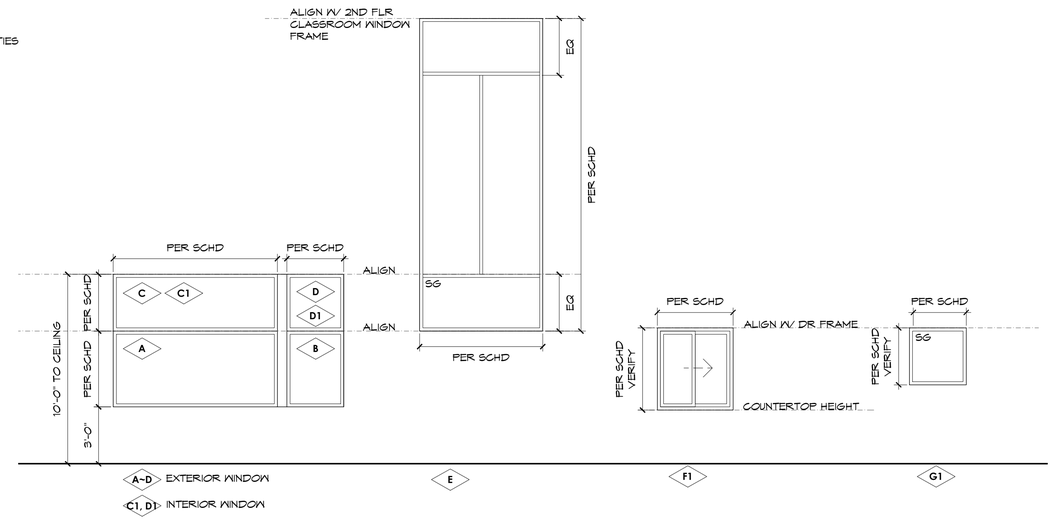
B-21-0727CITY OF PUYALLUP

NOTE:
1. ALL INTERIOR WOOD DOOR TO BE SOLID-CORE # BIRCH VENEER WITH (2) COATS OF LOW VOC STAIN
2. ALL OPNG SHALL BE SEALED, CAULKED, AND WEATHER-STRIPPED FOR ENERGY CODE
3. ALL EXIT DOORS FROM GYMNASIUM TO HAVE PANIC EXIT HARDWARE. OTHER DOORS TO HAVE LEVER HANDLES
4. FENESTRATION PRODUCTS SHALL BE LABELED W/ RATED U-FACTOR, SHGC, VT, AND LEAKAGE RATING
5. SG = SAFETY GLAZING
6. DOOR SWING PER A2.1-A2.3
7. DOOR WIDTH AND HEIGHT PER SCHD, TYP




| MARK | WIDTH ft | WIDTH in | HEIGHT ft | HEIGHT in | TYPE | GLASS | REMARKS | ENERGY AREA/WN | QA | AREA | U-VALUE | U*AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EXTERIOR** | | | | | | | | | | | | |
| A | 8 | 8 | 4 | 0 | FIXED | LOW-E \| DBL | | 34.67 | 6 | 208.00 | 0.30 | 62.40 |
| B | 3 | 0 | 4 | 0 | FIXED | LOW-E \| DBL | | 12.00 | 3 | 36.00 | 0.30 | 10.80 |
| C | 8 | 8 | 3 | 0 | FIXED | LOW-E \| DBL | | 26.00 | 6 | 156.00 | 0.30 | 46.80 |
| D | 3 | 0 | 3 | 0 | FIXED | LOW-E \| DBL | | 9.00 | 3 | 27.00 | 0.30 | 8.10 |
| E | 6 | 6 | 16 | 6 | FIXED | LOW-E \| DBL | SAFETY GLAZING | 107.25 | 1 | 107.25 | 0.30 | 32.18 |
| | | | | | | | | | | | | |
| **INTERIOR** | | | | | | | | | | | | |
| C1 | 8 | 8 | 3 | 0 | FIXED | | | | | | | |
| D1 | 3 | 0 | 3 | 0 | FIXED | | | | | | | |
| F1 | 4 | 0 | 4 | 4 | OPERABLE | | FLUSH SILL W/ COUNTERTOP | | | | | |
| G1 | 3 | 0 | 3 | 0 | FIXED | | SAFETY GLAZING | | | | | |

# 2 WINDOW SCHEDULE

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PROJECT NUMBER
21007

DRAWING TYPE
**PERMIT DOCUMENTS**

| DATE | ISSUE | NO. |
|---|---|---|
| 10.20.21 | PERMIT | |
| 12.06.21 | REV - CITY | 1 |

SHEET TITLE
**DOOR SCHD & TYPE WINDOW SCHD**

SHEET #
**A7.1**

B-21-0727CITY OF PUYALLUP

## 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 2018 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 | $I_p$ = 1.1 |
| CLASSROOM | 40 PSF | ACTUAL | |
| CORRIDOR EXIT | 100 PSF | ACTUAL | |
| SLAB-ON-GRADE | 125 PSF | ACTUAL | |

* 15% INCREASE IN STRESSES FOR ND 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
$S_{DS}$ = 1.27
$S_1$ = 0.44
SITE CLASS D
$S_{DS}$ = 1.02
$S_{D1}$ = N/A
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

| | | |
|---|---|---|
| WELDED 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 E70 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 ½ TIMES DEAD LOAD DEFLECTION. UNLESS OTHERWISE SHOWN ALL BEAMS SHALL BE COMBINATION 24F-1.8E AS LISTED IN ANC-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: | | | | |
| a. Verify weldability of reinforcing bars other than ASTM A706; | — | X | AWS D1.4 ACI 318: 26.6.4 | — |
| 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: | | | | |
| a. Application of prestressing forces; and | X | — | ACI 318: 2610 | — |
| 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 | 6.3 |
| Manufacturer certifications for welding consumables available | 6.2 |
| 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 | 6.5.2 |
| • Dimensions (alignment, root opening, root face, bevel) | 5.22 |
| • Cleanliness (condition of steel surfaces) | 5.15 |
| • Tacking (tack weld quality and location) | 5.18 |
| • Backing type and fit (if applicable) | 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) | 5.22.1 |
| • Cleanliness (condition of steel surfaces) | 5.15 |
| • Tacking (tack weld quality and location) | 5.18 |
| Check welding 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 | 6.2 |
| • Packaging | 5.3.1 |
| • Exposure control | 5.3.2 (for SMAW), 5.3.3 (for SAW) |
| No welding over cracked tack welds | 5.18 |
| Environmental conditions | |
| • Wind speed within limits | 5.12.1 |
| • Precipitation and temperature | 5.12.2 |
| WPS followed | 6.3.3, 6.5.2, 5.5, 5.21 |
| • Settings on welding equipment | |
| • Travel speeed | |
| • Selected welding materials | |
| • Shielding gas type/flow rate | |
| • Preheat applied | 5.6, 5.7 |
| • Interpass temperature maintained (min/max.) | |
| • Proper position (F, V, H, OH) | |
| Welding techniques | 6.5.2, 6.5.3, 5.24 |
| • Interpass and final cleaning | 5.30.1 |
| • Each pass within profile limitations | |
| • Each pass meets quality requirements | |

*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 | 6.5.3 |
| • Crack prohibition | Table 6.1(1) |
| • Weld/base-metal fusion | Table 6.1(2) |
| • Crater cross section | Table 6.1(3) |
| • Weld profiles | Table 6.1(4), 5.24 |
| • Weld size | Table 6.1(6) |
| • Undercut | Table 6.1(7) |
| • Porosity | 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 | 6.5.4, 6.5.5 |

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


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ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

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PHASE III & IV
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
21007

DRAWING TYPE
PERMIT DOCUMENTS

| ISSUE DATE | ISSUE DESCRIP. | NO. |
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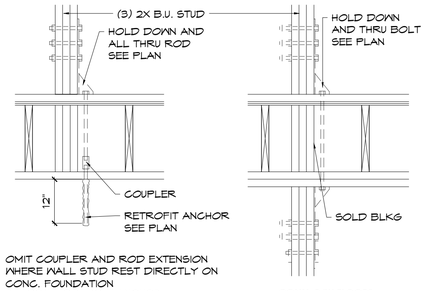
| 12.06.21 | REV-CITY | |

SHEET TITLE
GENERAL NOTE

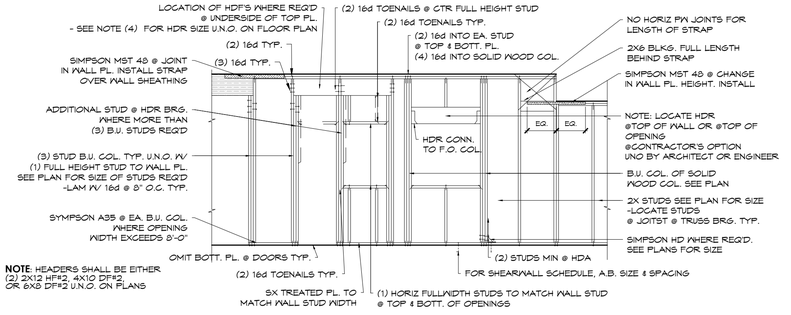
SHEET #
S1.1

B-21-0727CITY 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 @ 7 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. |

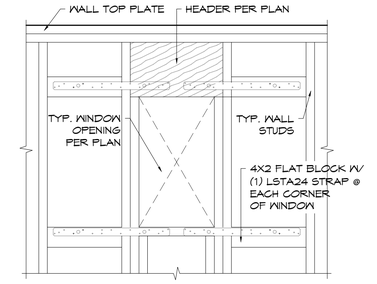
**SHEAR WALL SCHED. NOTE:**

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 REQ'D FOR LATERAL STRENGTH |
|---|---|---|
| 8d 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" |

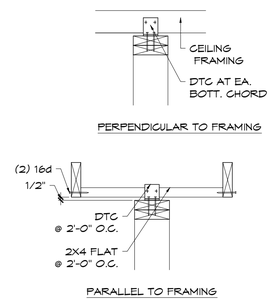
## 4 SHEAR WALL NAILING SCHEDULE




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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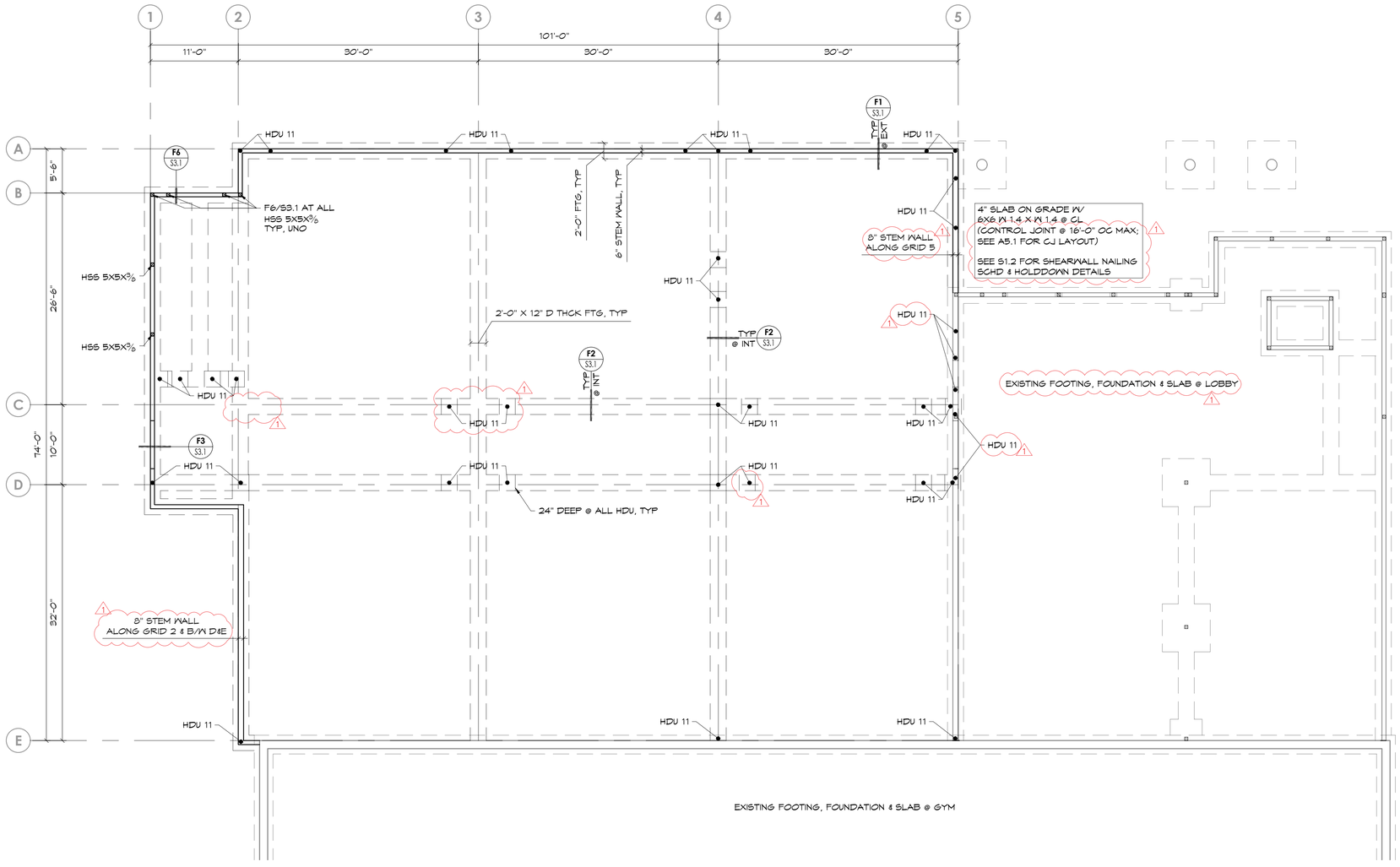
SHEET TITLE
GENERAL DETAILS

SHEET #
S1.2

B-21-0727CITY OF PUYALLUP




City of Puyallup
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ISSUED PERMIT

| | |
|---|---|
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## FOUNDATION PLAN

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


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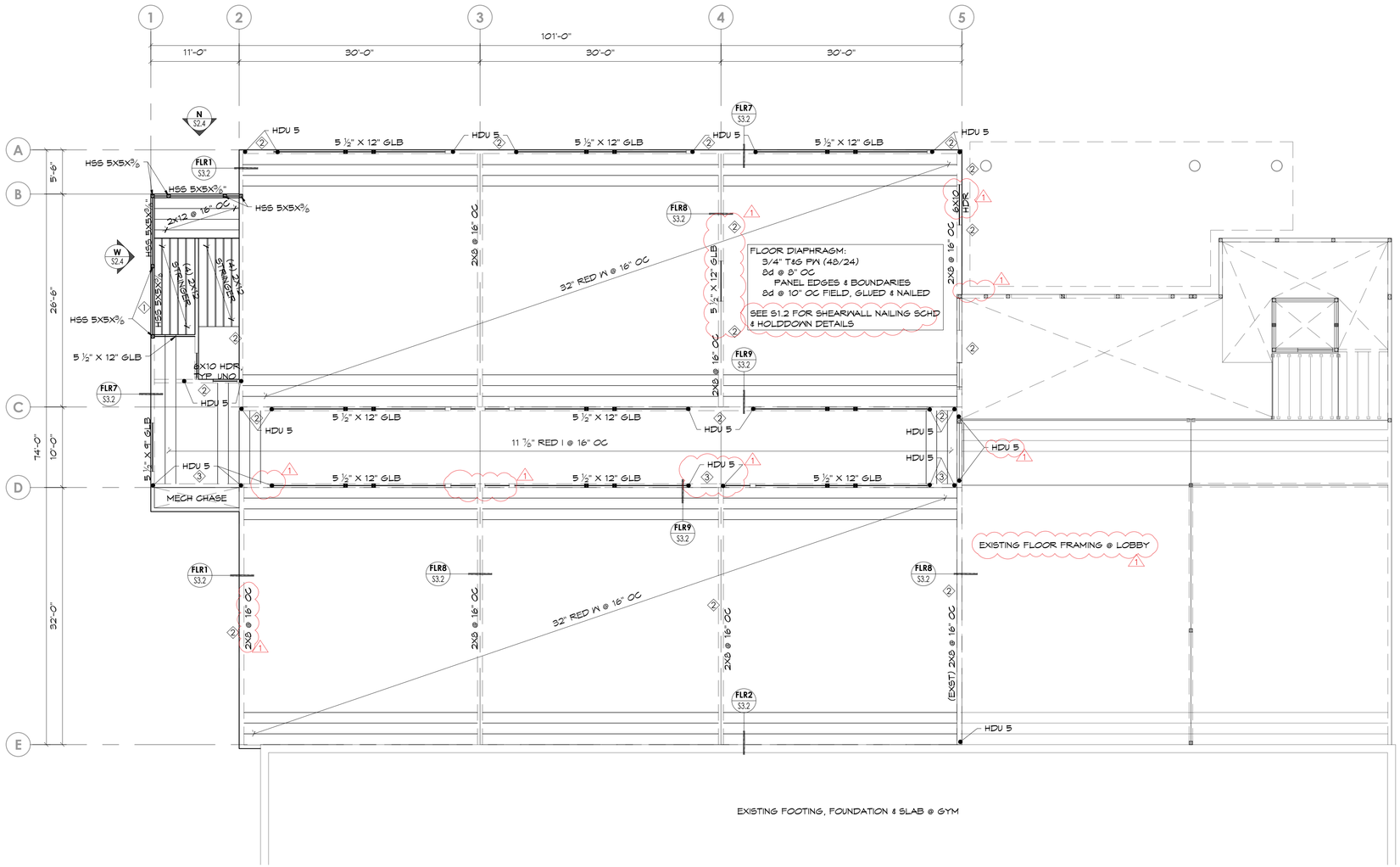
SHEET TITLE
**FOUNDATION PLAN**

SHEET #
**S2.1**

B-21-0727CITY OF PUYALLUP




City of Puyallup
Development & Permitting Services
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| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

## 2ND FLOOR FRAMING PLAN

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


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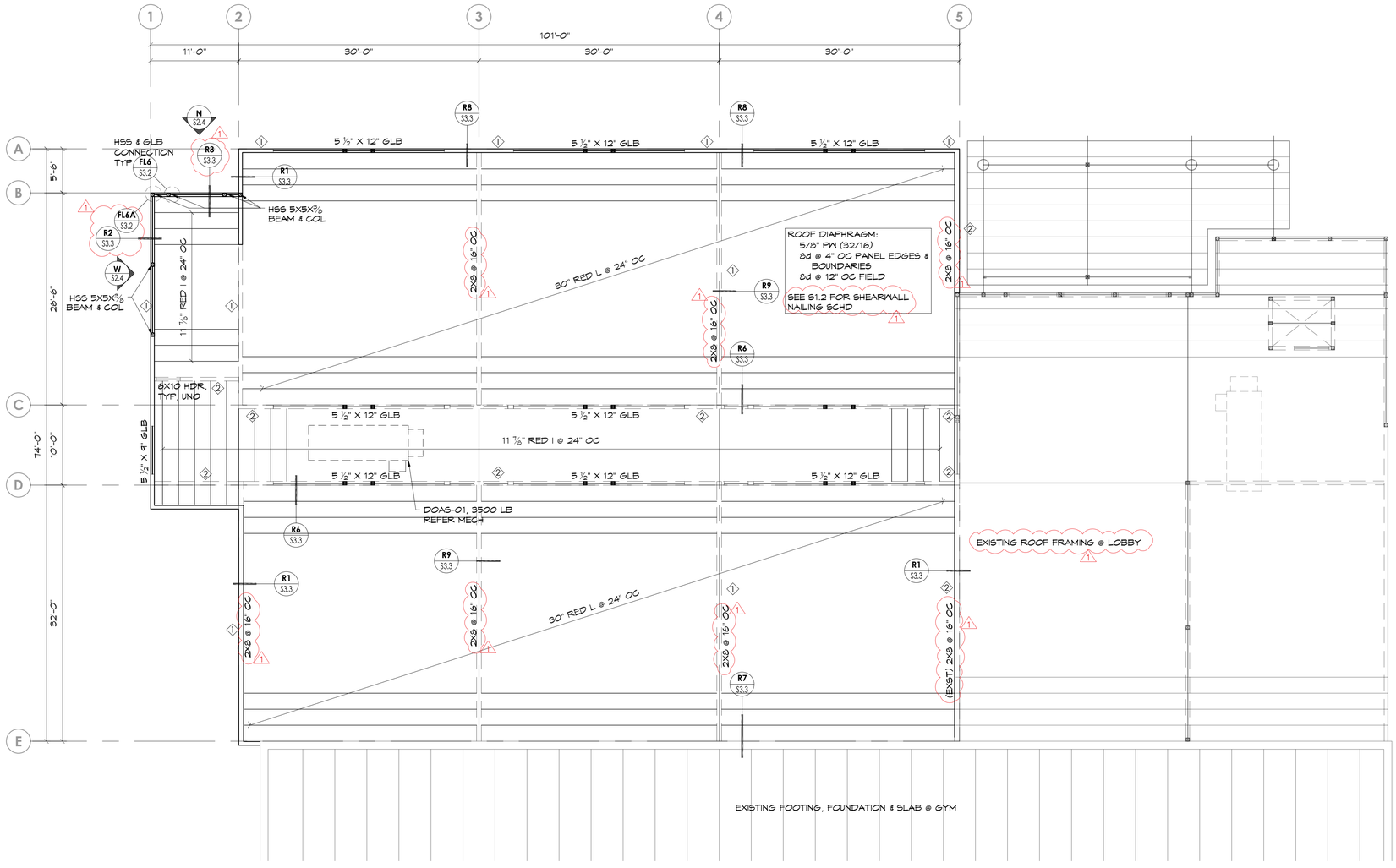
SHEET TITLE
2ND FLOOR FRAMING PLAN

SHEET #
S2.2

B-21-0727CITY OF PUYALLUP




City of Puyallup
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| | |
|---|---|
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## ROOF FRAMING PLAN

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


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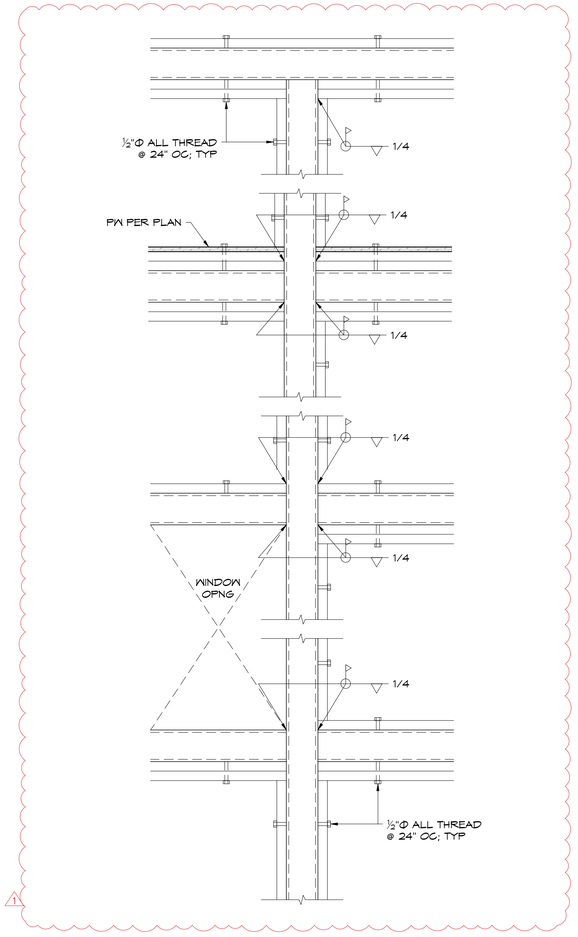
SHEET TITLE
**ROOF FRAMING PLAN**

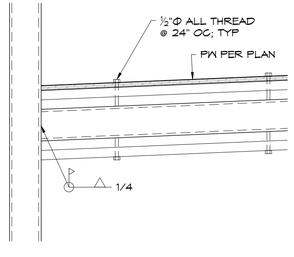
SHEET #
**S2.3**

B-21-0727CITY OF PUYALLUP



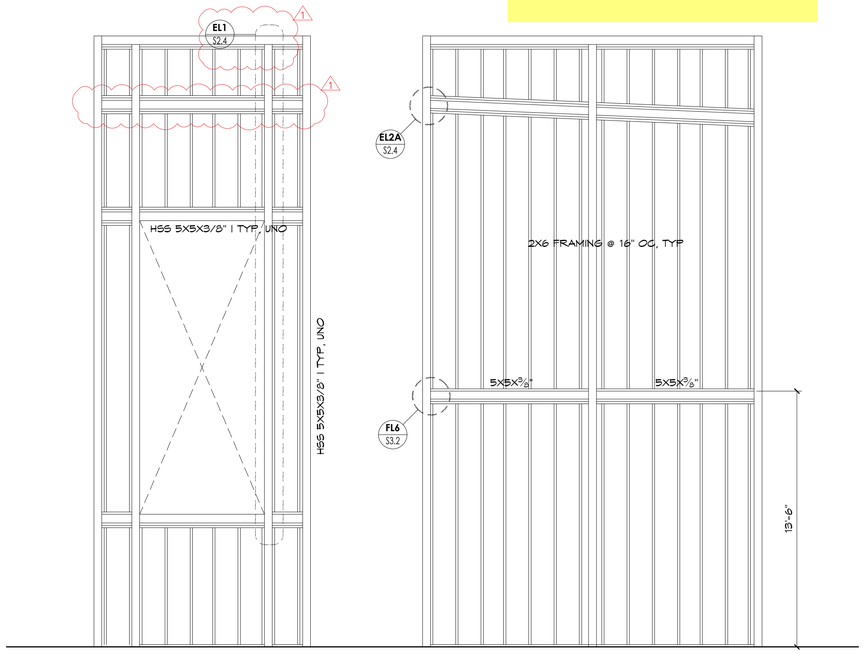

## EL1 ENLARGED ELEVATION

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




## EL2A ENLARGED ELEVATION

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




## N STEEL ELEVATION @ STIARS

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

## W STEEL ELEVATION @ STIARS

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

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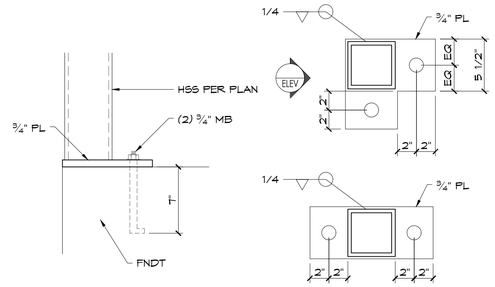
SHEET TITLE

**STEEL FRAMING ELEVATIONS**

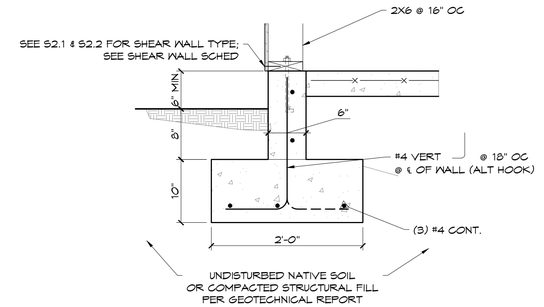
SHEET #

**S2.4**



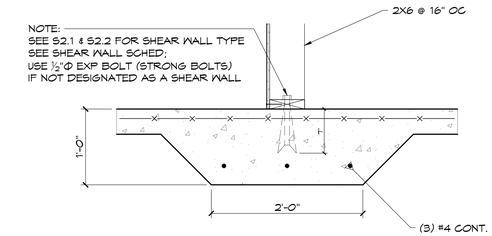

## F6 SECTION

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




## F1 SECTION

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




## F2 SECTION

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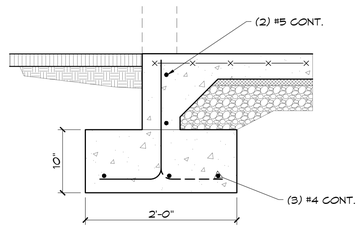
(22X34) SCALE : 1" = 1'-0"




## F3 SECTION

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

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## F4~F5 NOT IN USE

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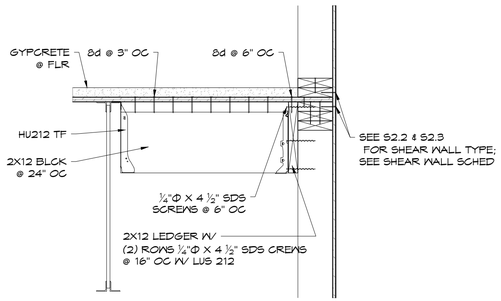
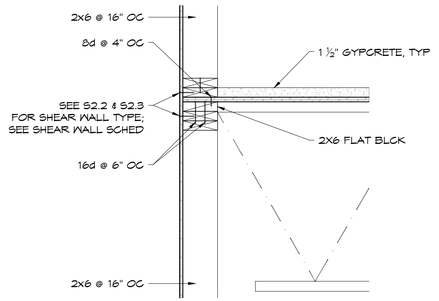
SHEET TITLE

**DETAILS**

SHEET #

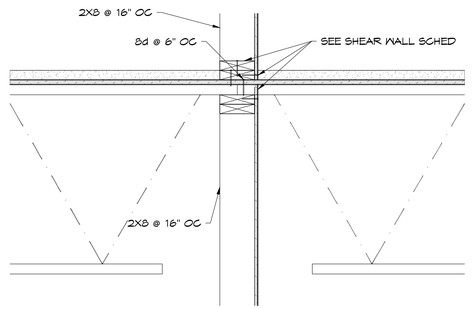
**S3.1**



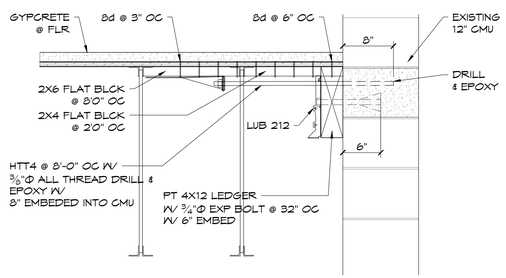

## FL7 SECTION

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



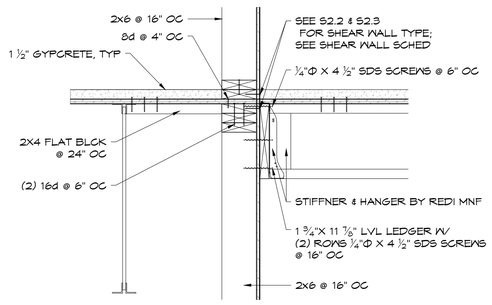

## FL1 SECTION

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




## FL8 SECTION

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



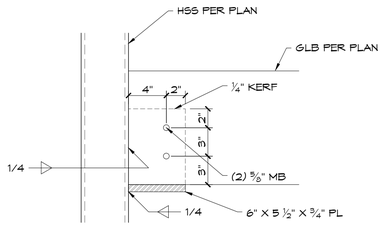

## FL2 SECTION

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

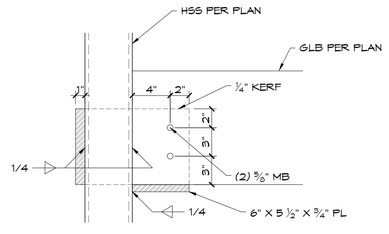
B-21-0727CITY OF PUYALLUP

## FL9 SECTION

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




## FL3~FL5 NOT IN USE




1

## FL6A SECTION (FL6 ALTERNATE)

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

## FL6 SECTION

(11X17) SCALE : 3/4" = 1'-0"
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City of Puyallup
Development & Permitting Services
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| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |


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PROJECT NAME/ADDRESS

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815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER

21007

DRAWING TYPE

**PERMIT DOCUMENTS**

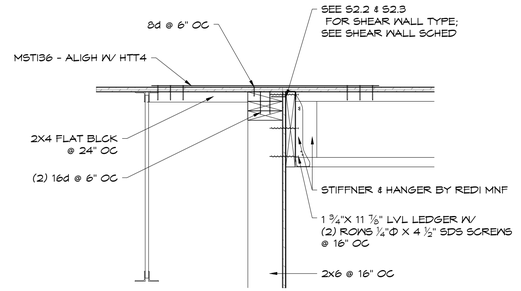
| ISSUE DATE | ISSUE DESCRIP. | NO. |
|---|---|---|
| 09.15.21 | PERMIT | |
| 12.06.21 | REV-CITY | 1 |

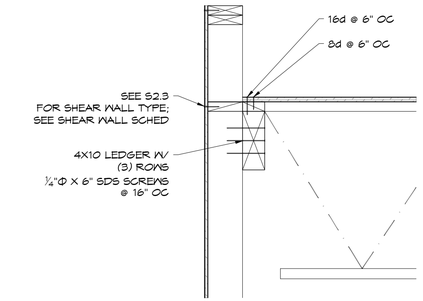
SHEET TITLE

**DETAILS**

SHEET #

**S3.2**




## R6 SECTION

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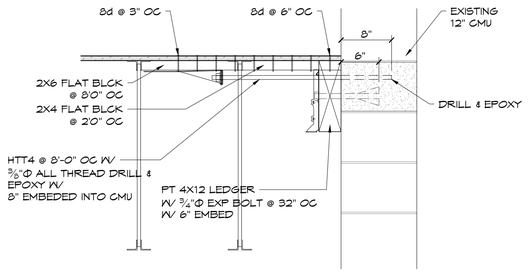
(22X34) SCALE : 1" = 1'-0"

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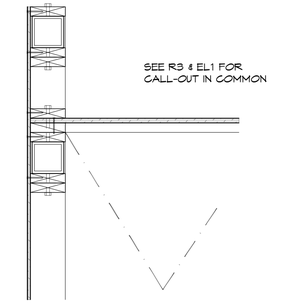
(22X34) SCALE : 1" = 1'-0"

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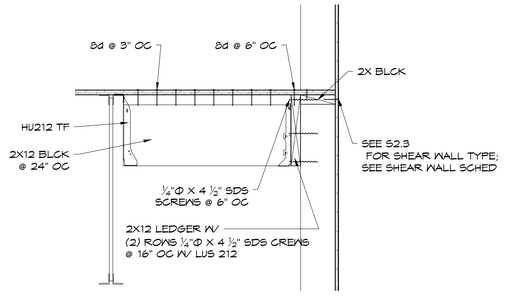


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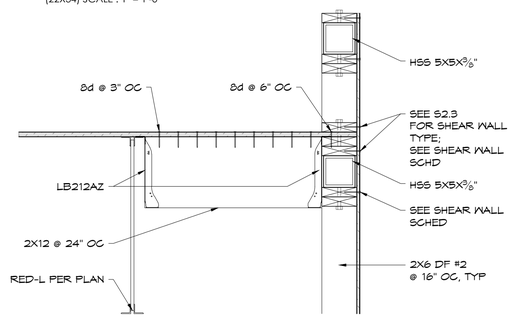


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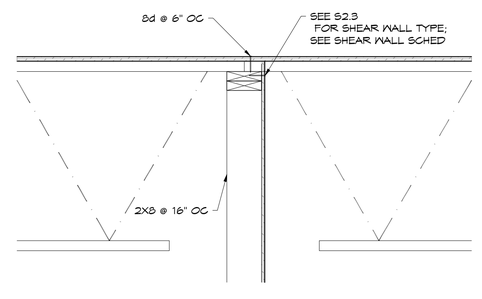


## R3 SECTION

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

## R9 SECTION

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

## R4~R5 NOT IN USE

B-21-0727CITY OF PUYALLUP

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SHEET TITLE
DETAILS

SHEET #
S3.3

## GENERAL NOTES

1. ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS.
2. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
3. COORDINATE MECHANICAL WORK WITH THE GENERAL CONTRACTOR AND CO-CONTRACTORS AS APPLICABLE.
4. A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
5. ALL PIPING & DUCTWORK IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING. [COORDINATE WITH ARCHITECTURAL DOCUMENTS FOR FURRING & CHASE LOCATIONS & SIZES].
6. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
7. ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
8. ACCESS DOORS WHERE REQUIRED SHALL BE FURNISHED BY ASEI.

HVAC/SHEET METAL:

1. THE FIRST FIGURE OF DUCT SIZE CALLOUTS INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS. PROVIDE ANY APPLICABLE DUCT LINING AND INSULATION PER THESE PLANS.
2. TOTAL STATIC PRESSURE NOTED IN SCHEDULES SHALL BE ASSUMED TO INCLUDE DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
3. ALL SUPPLY AIR FILTERS SHALL BE AS SCHEDULED.
4. AIR TERMINAL SIZES SHOWN ON PLANS ARE NECK SIZES. PROVIDE ADDITIONAL PANS, HARDWARE, ETC., REQUIRED TO INSTALL AIR TERMINAL IN CEILING SYSTEM.
5. DUCTWORK SHALL BE LOW PRESSURE.
6. CONSTRUCT DUCTWORK ACCORDING TO WASHINGTON STATE ENERGY CODE SECTION C403.10.2. ALL DUCT WORK SHALL BE PRIMED GALVANIZED SHEET STEEL, LOCK FORMING QUALITY, FABRICATED IN ACCORDANCE TO SMACNA STANDARDS. DUCT GAUGES AND SUPPORTS ARE PER IMC. ALL DUCT TRAVERSE SEAMS AND LONGITUDINAL JOINTS SHALL BE SEALED.
7. PROVIDE TURNING VANES IN ALL MITERED RECTANGULAR DUCT ELBOWS & TEES.
8. PROVIDE MOTORIZED DAMPERS ON OUTDOOR AIR SUPPLY, AND EXHAUST OPENINGS. DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT AT 1" W.C. WHERE SHOWN.
9. VENTILATION AND EXHAUST AIR IS PROVIDED IN ACCORDANCE WITH IMC 403.3.1.1.
10. PROVIDE EACH ZONE WITH THERMOSTATIC CONTROLS THAT PROVIDE A DEADBAND OF AT LEAST 5 DEGREES FAHRENHEIT IN WHICH HEATING OR COOLING ENERGY IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM. THERMOSTAT SHALL BE CAPABLE OF THERMOSTATIC SETBACK, AUTOMATIC SETBACK AND SHUTDOWN, AND AUTOMATIC START CAPABILITIES PER WASHINGTON STATE ENERGY CODE SECTION C403.4.
11. PROVIDE TEMPORARY COVERS OVER OPEN ENDS OF EQUIPMENT AND DUCTWORK DURING CONSTRUCTION.
12. PROVIDE MANUAL VOLUME DAMPER FOR EACH DIFFUSER, REGISTER, AND GRILLE.
13. ASEI TO AIR BALANCE ALL SYSTEMS TO WITHIN 10% OF DESIGN AIRFLOW UPON PROJECT COMPLETION.
12. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED AND SEALED PER WASHINGTON STATE ENERGY CODE SECTION C403.10.1.

PIPING:

1. INSULATE PIPING PER WASHINGTON STATE ENERGY CODE SECTION C403.10.3.
2. ALL PRESSURES LISTED ARE GAGE PRESSURES UNLESS OTHERWISE NOTED.
3. PROVIDE COMPLETE CONDENSATE DRAINAGE SYSTEM FOR ALL [ENTER EQUIPMENT TYPES HERE]. FIELD ROUTE DRAINAGE PIPING FROM EQUIPMENT TO NEAREST DRAIN LOCATION (SUCH AS SERVICE SINK, FUNNEL DRAIN, ETC.). SLOPE NON-PRESSURIZED DRAIN PIPING TO DRAIN LOCATION. PIPING & FITTINGS SHALL BE PVC OR [CPVC][COPPER]. USE [CPVC][COPPER] FOR ALL PLENUM APPLICATIONS OR WHERE NONCOMBUSTIBLE PIPING IS REQUIRED. MINIMUM PIPE SIZE SHALL BE 3/4". INCREASE PIPE SIZE WHERE APPLICABLE PER IMC 307.2.2.
4. VALVES SHALL BE INSTALLED SO THAT SYSTEM REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
5. VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS UNLESS OTHERWISE NOTED.
6. THE PROPOSED ROUTING FOR THE REFRIGERATION PIPING BETWEEN THE INDOOR AND OUTDOOR UNITS IS INDICATED AS A SINGLE LINE ON THE PLANS. THAT SINGLE LINE REPRESENTS ALL THE PIPING RUNS REQUIRED FOR THE SYSTEM DESIGNED. SIZE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATION.

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 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 PROVIDE 120V SERVICE OUTLET WITHIN 25 FEET OF EACH PIECE OF MECHANICAL EQUIPMENT.
4. 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.

## GENERAL CONTRACT REQUIREMENTS

1. THE DRAWINGS ARE DIAGRAMMATIC. COORDINATE INSTALLATION WITH THE BUILDING, PROVIDE ALL NECESSARY OFFSETS, CHANGES IN DIRECTION, EXTENSIONS AND ASSOCIATED MATERIALS FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
2. COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL PIPE OR DUCT OFFSETS WHERE REQUIRED TO COORDINATE INSTALLATION.
3. LOCATIONS AND SIZES OF FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH OTHER TRADES INVOLVED.
4. MAINTAIN A SET OF PLANS ON SITE. RECORD ALL CHANGES TO ACTUAL ARRANGEMENTS ON THESE PLANS. PROVIDE THIS SET OF PLANS TO THE OWNER'S REPRESENTATIVE WHEN WORK IS COMPLETE.
5. PROJECT SCHEDULING: COMPLY WITH OWNER'S REQUIREMENTS
6. OPERATION AND MAINTENANCE MANUAL: PROVIDE COMPLETE OPERATIONS AND MAINTENANCE MANUAL IN HARD COVER. PROVIDE OPERATIONS, MAINTENANCE AND PARTS DATA ON ANY ITEM OR EQUIPMENT UPON PROJECT COMPLETION.
7. WARRANTY PROVISIONS: THE CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND SYSTEMS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIAL, EQUIPMENT, OR POOR WORKMANSHIP, WHICH MAY SHOW ITSELF DURING THIS WARRANTY PERIOD.

## SEISMIC AND VIBRATION REQUIREMENTS

1. HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.
   A. PROVIDE ALL SEISMIC RESTRAINT REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND THE APPLICABLE CODES.
2. VIBRATION CRITERIA: PROVIDE VIBRATION ISOLATION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE): APPLICATIONS HANDBOOK.

## BASIC MATERIALS AND METHODS

1. ALL MATERIALS AND EQUIPMENT SHALL BE LISTED OR LABELED BY A RECOGNIZED AGENCY. UL, AGA, FM, CSA, ARI, ETC.
2. EQUIPMENT SHALL BE AS INDICATED ON THE DRAWING SCHEDULES. THE DRAWING SCHEDULES ESTABLISH THE LEVEL OF QUALITY.
3. MECHANICAL SYSTEM PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE BUILDING CODE IN FORCE IN THE AUTHORITY HAVING JURISDICTION FOR THIS PROJECT. THIS INCLUDES PIPING, DUCTWORK, SUPPORTS, CONDUIT, AND ANY OTHER SYSTEM AND APPURTENANCE PROVIDED AS PART OF THE MECHANICAL WORK OF THIS CONTRACT.
4. MOTORS SHALL COMPLY WITH THE WSEC.
5. ELECTRICAL INSTALLATION SHALL COMPLY WITH THE NEC.
6. PROTECT OF STORED MATERIALS. REPLACE DAMAGED MATERIALS PRIOR TO INSTALLATION.
7. PROVIDE WATER-TIGHT SEAL FOR OPENINGS TO THE BUILDING THROUGH WHICH PIPE PASSES.
8. PROVIDE AND INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS) STANDARDS, SPECIFICALLY STANDARD SP-69, "PIPE HANGERS AND SUPPORTS - SELECTION AND APPLICATION" AND STANDARD SP-58, "PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN AND MANUFACTURE". PROVIDE PIPE SUPPORT SPACING IN ACCORDANCE WITH THE UPC OR IMC.
9. TESTING: ALL WORK UNDER THIS CONTRACT SHALL BE THOROUGHLY AND SYSTEMATICALLY TESTED, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. PIPE TESTING SHALL BE EITHER AS SPECIFIED IN THE APPROPRIATE SPECIFICATION SECTION, OR AS SPECIFIED IN THE APPLICABLE PLUMBING OR MECHANICAL CODE. DUCTWORK SHALL BE TESTED AS PART OF THE AIR BALANCING PROCESS. NOTIFY THE OWNER'S REPRESENTATIVE 48-HOURS IN ADVANCE OF ALL TESTS. TESTS SHALL BE MAINTAINED UNTIL APPROVED.
10. START-UP, BALANCING AND COMMISSIONING.
    A. EQUIPMENT STARTUP SHALL BE PERFORMED BY QUALIFIED PERSONNEL. THE TECHNICAL SPECIFICATION SECTIONS WILL DETAIL OTHER SPECIAL REQUIREMENTS, IF ANY. PROVIDE A STATEMENT OF THE STARTUP TECHNICIAN'S QUALIFICATIONS IF REQUESTED.
    B. BALANCE ALL AIR SYSTEMS. BALANCE IN ACCORDANCE WITH EITHER NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR AMERICAN AIR BALANCE COUNCIL (AABC) CRITERIA.
    C. PROVIDE COMMISSIONING IN ACCORDANCE WITH THE WSEC.

## AIR DISTRIBUTION SYSTEM - GENERAL

1. PROVIDE PER THE IMC, THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) "DUCT CONSTRUCTION MANUAL, METAL AND FLEXIBLE", AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
2. IN ADDITION TO THE REQUIREMENTS ABOVE, INSTALL EQUIPMENT AND COMPONENTS IN ACCORDANCE WITH THE PUBLISHED MANUFACTURER'S INSTALLATION REQUIREMENTS.
3. FIRE DAMPERS: UL LISTED FOR SERVICE INTENDED, INSTALL IN ACCORDANCE WITH THE LISTING. BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF THE PRODUCT.
4. FLEXIBLE CONNECTIONS: PROVIDE AT EACH FAN AND AIR HANDLING UNIT CONNECTION TO DUCT.
5. ACCESS PANELS: PROVIDE FOR MAINTENANCE OF ALL DUCT-MOUNTED EQUIPMENT (FIRE DAMPERS, CONTROL DAMPERS, COILS, ETC.).
6. LOCATE VALVES, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE.
   A. INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE.
6. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE.
   A. PROVIDE 16 GA, STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING.
   B. PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS.
   C. PROVIDE DUCT ACCESS PANELS FOR FIRE DAMPER ACTUATOR ACCESS.

## LOW PRESSURE STEEL DUCTWORK

1. GALVANIZED CARBON STEEL PER SMACNA STANDARDS.
2. FLEXIBLE DUCTWORK SHALL BE VINYL COATED SPRING STEEL HELIX BONDED TO A VINYL COATED FIBERGLASS MECH LINER WRAPPED WITH FIBERGLASS WOOL INSULATION. JACKET WITH A REINFORCED METALIZED MYLER/ NEOPRENE LAMINATE OUTER CASING.

## FANS

1. SCHEDULED FANS SHALL BE THE BASIS OF DESIGN. UNITS OF SIMILAR CONSTRUCTION AND CAPABILITIES MAY BE SUBMITTED FOR REVIEW.
2. PROVIDE CURBS SLOPED TO MATCH ROOF PITCH FOR ROOF TOP FANS.
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND AS NOTED ON PLANS.
4. PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

## FILTERS

1. PROVIDE 2" MERV 8, PLEATED, DISPOSABLE FILTERS. SIZE OF FILTER SHALL BE COMPATIBLE WITH FILTER BOX OR AIR HANDLER.

## VRF UNITS

1. BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNITS.
2. MAJOR COMPONENTS INCLUDE:
   A. EVAPORATOR AND CONDENSER UNITS.
   B. CONTROLS - UNITS SHALL BE CONTROLLED BY MANUFACTURER'S PROPRIETARY TEMPERATURE CONTROL SYSTEM.
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

## DEDICATED OUTDOOR AIR UNITS

1. BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNIT.
2. CABINET SHALL INCLUDE FACTORY WIRING, CONTROLS, BLOWERS, FILTERS, INSTALLED INLET AIR THERMISTERS, AND ENTHALPIC HEAT EXCHANGER.
3. APPROVED MANUFACTURER: PREMISYS.

## AIR TERMINALS

1. SCHEDULED GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE BASIS OF DESIGN. UNITS OF SIMILAR CONSTRUCTION AND CAPABILITIES MAY BE SUBMITTED FOR REVIEW. DEVICES SHALL DISTRIBUTE THE QUANTITY OF AIRFLOW UNIFORMLY THROUGHOUT THE INDICATED SPACE WITHOUT CAUSING NOTICEABLE NOISE OR DRAFTS.
2. PROVIDE ALL DEVICES FOR COMPLETE INSTALLATION DEPENDING ON LOCATION OF INSTALLATION (IE: A.C.T OR HARD LID CEILINGS).
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND AS NOTED ON PLANS.

## AIR BALANCING

1. SCOPE OF WORK INCLUDES SETTING VOLUME (FLOW) AND SPEED ADJUSTMENTS TO HVAC. INSTRUMENTATION USED TO BALANCE THIS SYSTEM SHALL BE IN GOOD CONDITION AND MAINTAINED. IF REQUIRED BY THE OWNER, THE TESTS SHALL BE DONE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
2. THE BALANCER SHALL BE AN INDEPENDENT FIRM THAT SPECIALIZES IN BALANCING AND TESTING OF PUMPING SYSTEMS AND AIR MOVING EQUIPMENT/ AIR DISTRIBUTION AND EXHAUST SYSTEMS. THE BALANCER SHALL PROVIDE PROOF OF HAVING SUCCESSFULLY COMPLETED FIVE PROJECTS OF SIMILAR SCOPE. TESTING AND ADJUSTING SHALL BE PERFORMED IN ACCORDANCE WITH NEBB OR AABC STANDARDS AND PROCEDURES.
3. DAMAGE DONE TO THE SYSTEM BY THE BALANCER SHALL BY HIS/HER RESPONSIBILITY TO RECTIFY. NEATLY TYPED RECORDS SHALL BE MAINTAINED AT ALL STEPS, ADJUSTMENTS, AND BEGINNING AND FINAL READINGS. THE RECORDS SHALL ALSO INCLUDE MEASUREMENT LOCATIONS, DESIGN CAPACITIES, AND DATES AND NAMES OF PERSONNEL INVOLVED. FINAL SETTINGS SHALL BE CLEARLY MARKED ON EACH BALANCING DEVICE.
4. CHECK OUT TEMPERATURE CONTROLS TO ASSURE PROPER CONTROL SEQUENCE, PROPER CONTROL SETTINGS, AND PROPER CONTROL CALIBRATION. REPORT MALFUNCTIONS IN LOGS UNDER "ADDITIONAL REMARKS."
5. AIR BALANCE LOG:
   a. TEST AND ADJUST ENTIRE SYSTEM WITHIN SCOPE OF WORK. VOLUMES SHALL BE WITHIN 10% OF DESIGN REQUIREMENTS.
   b. MEASURE TOTAL STATIC PRESSURE INCLUDING DUCT SYSTEM, TERMINAL UNITS, FILTERS, ETC.
   c. ADJUST AND RECORD SYSTEM TO DESIGN RECIRCULATED AIR CFM.
   d. DIFFUSERS, GRILLES AND REGISTERS SHALL BE ADJUSTED TO MINIMIZE DRAFTS IN ALL AREAS.
   e. ALL FILTERS SHALL BE CLEAN AND IN PLACE BEFORE STARTING FANS.
   f. DATA: RECORD AND CHECK THE FOLLOWING SYSTEMS AND EQUIPMENT.
      - AIR TERMINALS: SUPPLY, RETURN, OR EXHAUST IDENTIFICATIONS, CATALOGUE IDENTIFICATION, APPLICATIONS FACTORS, DESIGN AND RECORDED VELOCITIES AND AIR QUANTITIES, AND STATIC PRESSURES.

## COPPER PIPING

1. COPPER PIPING SHALL BE USED CONDENSATE PIPING.
2. MATERIALS FOR ABOVE GROUND COPPER PIPE, FITTINGS AND ACCESSORIES. ASTM B88, TYPE "L".
3. PROVIDE LEAD-FREE SOLDER JOINTS FOR PIPING 2" AND SMALLER.

## COPPER LINESET

1. COPPER LINESET SHALL BE USED FOR REFRIGERANT PIPING.
2. SIZE OF PIPING SHALL BE PER THE MANUFACTURER'S RECOMMENDATION AND REQUIREMENTS.
3. MATERIALS FOR COPPER LINESET SHALL BE SOFT ANNEALED COPPER. CONTRACTOR TO SELECT END FINISHING TO SUIT INSTALLATION AND MANUFACTURER'S RECOMMENDATION.

## PLASTIC PIPE, DWV & SEWER

1. PVC PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS SHALL BE PER IAPMO INSTALLATION STANDARD (IS) 09-03, "PVC BUILDING DRAIN, WASTE, AND VENT PIPE AND FITTINGS."

## PIPING SYSTEM SPECIALTIES

1. SPECIALITY PIPE SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. THEY SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES ARE INSTALLED
2. PROVIDE DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS.
3. TEST PLUGS: PROVIDE NIPPLES AND COUPLINGS TO MAKE THE TEST PLUGS EXTEND THROUGH THE INSULATED PIPE.

## VALVES

1. VALVES SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. VALVES SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES ARE INSTALLED.

## PIPE TESTING

1. WASTE AND VENT PIPING SHALL BE TESTED WITH AT LEAST 10 FOOT HEAD OF WATER FOR A PERIOD OF NOT LESS THAN 15 MINUTES. TESTS SHALL BE PER UPC CHAPTER 7. TEST GAUGES SHALL BE PER UPC 318.
2. REFRIGERANT PIPING SHALL BE TESTED FOR A PERIOD OF NOT LESS THAN 60 MINUTES AT A PRESSURE NOT LOWER THAN THE DESIGN PRESSURES OR THE SETTING OF THE PRESSURE RELIEF DEVICES. TEST PER IMC SECTION 1110.
3. PIPING IS CONSIDERED "PASSED" IF THE PRESSURE REMAINS UNCHANGED FOR THE DURATIONS LISTED ABOVE.

## REFRIGERANT PIPE INSULATION

1. RUBBER OR FLEXIBLE FOAM STYLE INSULATION FOR REFRIGERANT PIPING SYSTEMS SHALL BE PROVIDED WITH LINESET.
2. PROVIDE PER THE WSEC AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS. INSULATION THICKNESSES SHALL COMPLY WITH WSEC.
3. LINESET PIPING EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE. PROVIDE ARMAFLEX SHIELD OR EQUAL IN AREAS THAT ARE EXTERIOR TO THE BUILDING ENVELOPE OR AREAS THAT ARE SUBJECT TO DAMAGE.

## APPLICABLE CODES

AS ADOPTED BY THE CITY OF PUYALLUP, WASHINGTON

INTERNATIONAL MECHANICAL CODE, IMC 2018
INTERNATIONAL BUILDING CODE, IBC 2018
WASHINGTON STATE ENERGY CODE, WSEC 2018
INTERNATIONAL FUEL GAS CODE, IFGC 2018
UNIFORM PLUMBING CODE, UPC 2018

AND ASSOCIATED WASHINGTON ADMINISTRATIVE CODE AMENDMENTS

## DESIGN CONDITIONS

OUTDOOR CONDITIONS (PUYALLUP)
COOLING: 86°F DB (WSEC)
HEATING: 26°F DB (WSEC)

INDOOR CONDITIONS
COOLING: 75°F DB, 50% RH
HEATING: 70°F DB

## SCOPE OF WORK

1. PROVIDE VRF SYSTEMS FOR CLASSROOM ADDITION.
2. PROVIDE DOAS SYSTEMS FOR ADDITION VENTILATION. PROVIDE DEMAND CONTROL VENTILATION IN CLASSROOM SPACES.
3. PROVIDE FREEZE PROTECTION IN SECOND FLOOR SHELL.

## MECHANICAL LEGEND

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|
| | SUPPLY DUCT, OSA DUCT UP | | VOLUME DAMPER (VD) |
| | SUPPLY DUCT, OSA DUCT DOWN | M | MOTORIZED DAMPER |
| | RETURN, RELIEF, TRANSFER UP | | BACKDRAFT DAMPER |
| | RETURN, RELIEF, TRANSFER DOWN | X"Ø | ROUND DUCT |
| | RECTANGULAR ELBOW WITH TURNING VANES | X/X | SQUARE DUCT |
| | ROUND/ RECTANGULAR ELBOW | | SQUARE 4-WAY CEILING DIFFUSERS |
| | RECTANGULAR DUCT SQUARE ELBOW UP | | RETURN/ EXHAUST GRILLE |
| | RECTANGULAR DUCT, RADIUS ELBOW UP | R | REFRIGERANT PIPING |
| | RECTANGULAR DUCT, SQUARE ELBOW DOWN | C | CONDENSATE |
| | RECTANGULAR DUCT, RADIUS ELBOW DOWN | T | THERMOSTAT (T'STAT) |
| P-01 | EQUIPMENT ABBREVIATION AND NUMBER (TAG) | SP | SPACE PRESSURE SENSOR |
| SD-X, XX/XX XXX CFM | AIR TERMINAL TYPE, SIZE, AND CFM | PE | PRESSURE ELEMENT |
| X / XX | DETAIL NUMBER / DRAWING NUMBER WHERE DRAWN | OS | OCCUPANCY SENSOR |
| | FLEXIBLE DUCT | C02 | CARBON DIOXIDE SENSOR |
| | | VFD | VARIABLE FREQUENCY DRIVE |

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| (E) | EXISTING | LAT | LATERAL |
| AABC | AMERICAN AIR BALANCE COUNCIL | LB/LBS/# | POUND/ POUNDS |
| AFF | ABOVE FINISHED FLOOR | LF | LINEAR FEET |
| AFUE | ANNUAL FUEL UTILIZATION EFFICIENCY | LVL | LEVEL |
| AG | AIR GAP | MAX | MAXIMUM |
| AGA | AMERICAN GAS ASSOCIATION | MC | MECHANICAL CONTRACTOR |
| AHRI | AIR CONDITIONING, HEATING, & REFRIGERATION INSTITUTE | MCA | MAXIMUM CIRCUIT AMPACITY |
| AMP | AMPERAGE | MERV | MINIMUM EFFICIENCY REPORTING VALUE |
| ASHRAE | AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS | MFG/MFR | MANUFACTURER |
| | | MIN | MINIMUM |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS | MOCP/ MOP | MAXIMUM OVER CURRENT PROTECTION |
| | | MSS | MANUFACTURER'S STANDARDIZATION SOCIETY |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS | NEBB | NATIONAL ENVIRONMENTAL BALANCING BUREAU |
| BAS | BUILDING AUTOMATION SYSTEM | NEMA | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| BHP | BREAK HORSE POWER | | |
| CFH | CUBIC FEET PER HOUR | OC | ON CENTER |
| CFM | CUBIC FEET PER MINUTE | NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| COND | CONDENSATE | NO | NUMBER |
| CONFIG | CONFIGURATION | NOM | NOMINAL |
| CSA | CANADIAN STANDARDS ASSOCIATION | NTS | NOT TO SCALE |
| DB | DRY BULB | OSA | OUTSIDE AIR |
| DC | DOUBLE CHECK | PH | PHASE |
| DDC | DIRECT DIGITAL CONTROLS | PSF | POUNDS PER SQUARE FOOT |
| dF | DEGREES FAHRENHEIT | RA | RETURN AIR |
| DIA | DIAMETER | RH | RELATIVE HUMIDITY |
| DN | DOWN | RP | REDUCED PRESSURE |
| DOAS | DEDICATED OUTSIDE AIR SYSTEM | RPM | REVOLUTIONS PER MINUTE |
| DX | DIRECT EXPANSION | SA | SUPPLY AIR |
| EA | EXHAUST AIR | SF | SQUARE FEET |
| EAT | ENTERING AIR TEMPERATURE | SMACNA | SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION |
| EC | ELECTRICAL CONTRACTOR | | |
| ECM | ELECTRICALLY COMMUTATED MOTOR | SPEC | SPECIFICATION |
| EFF | EFFICIENCY | THRD | THREADED |
| ESP | EXTERNAL STATIC PRESSURE | TYP | TYPICAL |
| ETC | ET CETERA | UL | UNDERWRITERS LABORATORY |
| EX. SP. | EXTERNAL STATIC PRESSURE | UPC | UNIFORM PLUMBING CODE |
| FLA | FULL LOAD AMPS | VOLT | VOLTAGE |
| FM | FACTORY MANUAL | VRF | VARIABLE REFRIGERANT FLOW |
| FT | FEET | VAV | VARIABLE AIR VOLUME |
| GA | GAUGE | VERT | VERTICAL |
| HP | HORSEPOWER | W/ | WITH |
| HR | HOUR | WIN | WINTER |
| IBC | INTERNATIONAL BUILDING CODE | WSEC | WASHINGTON STATE ENERGY CODE |
| IFGC | INTERNATIONAL FUEL GAS CODE | WSFU | WATER SUPPLY FIXTURE UNITS |
| IMC | INTERNATIONAL MECHANICAL CODE | | |
| IN | INCH | | |
| IU | INDOOR UNIT | | |

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B-21-0727CITY OF PUYALLUP

BRIAN SCOTT MIDDLEBROOK — STATE OF WASHINGTON — 52776 — 11/19/2021 — REGISTERED PROFESSIONAL ENGINEER

| REVISIONS | CHANGE | | |
|---|---|---|---|
| DATE | | 11/19/2021 | PERMIT SET |

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| DRAWN | DESIGN | DATE |
|---|---|---|
| RPG | BSM | 11/19/2021 |

APPROVED

CASCADE CHRISTIAN JUNIOR HIGH

LEGEND, ABBREVIATIONS, AND GENERAL NOTES

815 21ST STREET SE

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AIR CONDITIONING/SHEET METAL/REFRIGERATION/PROFESSIONAL ENGINEERS/SERVICE & MAINTENANCE

SHEET NO. M1 OF 9

JOB NO. 4126

## DEDICATED OUTSIDE AIR UNIT SCHEDULE

| UNIT NO | MFR | MODEL | LOCATION | CONFIG | AREA SERVED | SUPPLY FAN DATA | | | | | EXHAUST FAN DATA | | | | | ENTHALPY WHEEL DATA | | | | | | | GAS HEATER DATA | | | | FILTER | WEIGHT | ELECTRICAL | | | | STARTER | DISCON | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CFM | HP | BHP | ESP | RPM | CFM | HP | BHP | ESP | RPM | WIN EAT | WIN LAT | WIN EFF | SUM EAT | SUM LAT | SUM EFF | WHEEL HP | TYPE | INPUIT | OUTPUT | LAT | | LBS | MCA | MOP | V | PH | FURN BY | FURN BY | |
| DOAS-01 | VALENT | VXE-112-41-30H-G | ROOF | HORIZONTAL DISCHARGE | FIRST FLOOR CLASSROOMS | 4380 | 5 | 4.88 | 0.89 | 2397 | 3690 | 5 | 3.8 | 0.73 | 2214 | 24 | 50.7 | 61.2 | 86.1 | 79.7 | 61.5 | - | INDIRECT | 200 MBH | 160 MBH | 84.5 | MERV 8 | 2520 | 33.2 | 45 | 208 | 3 | MFG | EC | 1, 2, 3, 4 |

NOTES

1. PROVIDE WITH MOTORIZED LOW LEAKAGW OUTDOOR AIR AND RETURN AIR DAMPERS
2. PROVIDE WITH MANUFACTURER'S SEISMICALLY RATED CURB, SLOPED TO MATCH ROOF PITCH.
3. PROVIDED WITH TWO STAGES OF HEAT.

## INDOOR UNIT SCHEDULE

| UNIT NO | MFR | MODEL | TYPE | SYSTEM SERVE | AREA SERVED | AIRFLOW CFM | ESP IN. W.C. | OSA CFM | COOLING (MBH) | | HEATING (MBH) | WEIGHT | ELECTRICAL | | | | STARTER FURN BY | DISCON FURN BY | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | TOTAL | SENSIBLE | TOTAL | | MCA | MOP | V | PH | | | |
| IU-01 | NOT USED | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IU-02 | NOT USED | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IU-03 | NOT USED | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IU-04 | NOT USED | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| IU-05 | MITSUBISHI | PMFY-P12NBMU-ER5 | CEILING CASSETTE | OU-01 | HALL 108 | 328 | - | - | 12 | - | 13.5 | 38 | 0.26 | 15 | 208 | 1 | MFG | EC | 2, 3, 5 |
| IU-06 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-01 | CLASSROOM 109 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |
| IU-07 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-01 | CLASSROOM 110 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |
| IU-08 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-01 | CLASSROOM 113 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |
| IU-09 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-01 | CLASSROOM 112 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |
| IU-10 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-01 | CLASSROOM 111 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |
| IU-11 | MITSUBISHI | PLFY-EP24NEMU-E | CEILING CASSETTE | OU-02 | CLASSROOM 108 | 636 | - | - | 24 | - | 27 | 66 | 0.54 | 15 | 208 | 1 | MFG | EC | 2, 3, 4, 5 |

NOTES

1. PROVIDE WITH CONDENSATE DRAIN PAN AND CONDENSATE PUMP OPTION.
2. PROVIDE WITH ALL APPURTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.
3. SEE CORRESPONDING OUTDOOR UNIT SCHEDULE FOR CAPACITY AND EFFICIENCY DATA.
4. SET UNIT TO LOW SPEED.
5. OSA AIR PROVIDED BY DEDICATED OUTDOOR AIR UNIT PER WSEC C403.3.5.3.
6. ROUTE 14 GA AWG 3WIRE W/ GROUND BETWEEN INDOOR AND OUTDOOR UNIT FOR UNIT POWER.

## BRANCH CIRCUIT CONTROLLER SCHEDULE

| UNIT NO | MFG | MODEL | WEIGHT | ELECTRICAL | | | | STARTER | DISCON | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | LBS | MCA | MOP | V | PH | FURN BY | FURN BY | |
| BCC-01 | MITSUBISHI | CMB-P1013 | 148 | 1.08 | 15 | 208 | 1 | MFG | EC | 1, 2 |

NOTES:

1. PROVIDE WITH BALL VALVES ON EACH PORT.
2. PROVIDE WITH CONDENSATE PUMP OPTION.

## OUTDOOR UNIT SCHEDULE

| UNIT NO | MFR | MODEL | LOCATION | COOLING (MBH) | | HEATING (MBH) | | WEIGHT | ELECTRICAL MODULES | | | | STARTER | DISCON | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | TOTAL | IEER (SEER) | TOTAL | COP (HPSF) | (LBS) | MCA | MOP | V | PH | FURN BY | FURN BY | |
| OU-01 | MITSUBISHI | PURY-P192TSKMU-A | FIRST FLOOR | 192 | 19.3 | 215 | 3.364 | 1076 | 34 | 40 | 208 | 3 | MFG | EC | 1, 2, 3, 4, 5, 6 |

NOTES

1. COOLING CAPACITY MBH AT 95 D.B. OUTDOOR AND 80 D.B./67 W.B. INDOOR.
2. HEATING CAPACITY AND EFFICIENCY AT 43 W.B. OUTDOOR AND 70 D.B. INDOOR.
3. PROVIDE ADDITIONAL REFIRGERANT CHARGE AS REQUIRED TO FULLY CHARGE SYSTEM.
4. PROVIDE WITH ALL APPUTUNANCES NECESSARY FOR A COMPLETE INSTALLATION.
5. PROVIDE WITH R410-A REFRIGERANT.
6. PROVIDE ALL UNITS LOCATED OUTDOOSR WITH LOCKING REFRIGERANT ACCESS PORT PER IMC 1101.10

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## HEATER SCHEDULE

| UNIT NO | MFR | MODEL | AREA SERVED | WEIGHT (LBS) | CAPACITY (MBH) | MOTOR (HP) | INPUT (MBH) | OUTPUT (MBH) | EFFICIENCY | ELECTRICAL | | | | | | STARTER FURN BY | DISCON FURN BY | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | WATTS | MCA | FLA | MOP | V | PH | | | |
| WH-01 | INDEECO | WCI | STAIRS 114 | 30 | - | - | - | - | - | 1125 | 5.8 | - | - | 208 | 1 | MC | EC | 1,2,3 |
| GH-01 | REZNOR | MODEL F | HALL 208 | 100 | 100 | 1/30 | 100 | 80 | 80% | 195 | - | - | - | 115 | 1 | MC | EC | 4,5,6,7 |

NOTES

1. PROVIDE WITH INTEGRAL SINGLE POLE THERMOSTAT. SET THERMOSTAT TO 65 DEG F.
2. MOUNT HEATER AT 12" ABOVE FINISHED FLOOR.
3. PROVIDE WITH SURFACE MOUNTING KIT.
4. PROVIDE WITH REMOTE THERMOSTAT. SET THERMOSTAT TO 50 DEG F.
5. PROVIDE WITH TWO STAGE GAS CONTROL (50% LOW FIRE).
6. PROVIDE WITH FOUR POINT SUSPENSION KIT.
7. PROVIDE WITH NATURAL GAS CONNECTION SIZE OF 1/2".

B-21-0727CITY OF PUYALLUP

## EXISTING EQUIPMENT SCHEDULE

| UNIT NO | TYPE | MFR | MODEL | DESCRIPTION/ DATA | SCOPE | NOTES |
|---|---|---|---|---|---|---|
| E-AH-01 | AIR HANDLER | MITSUBISHI | PEFY-P36NMAU-E3 | 36 MBH COOLING, 40 MBH HEATING. 1165 CFM | CONNECT TO BCC-01 | |
| E-AH-02 | AIR HANDLER | MITSUBISHI | PEFY-P36NMAU-E3 | 36 MBH COOLING, 40 MBH HEATING. 1165 CFM | CONNECT TO BCC-01 | |
| E-RTU-01 | AIR HANDLER | DAIKIN | DPS020A | 300 MBH, 240 MBH, 80 AFUE, 8000 CFM | EXISTING TO REMAIN | |
| E-RTU-02 | AIR HANDLER | DAIKIN | DPS018A | 300 MBH, 240 MBH, 80 AFUE, 8000 CFM | EXISTING TO REMAIN | |
| E-ERV-01 | DOAS | LOSSNAY | LGH-F300RVX-E | 300 CFM, 66% EFFICIENT | EXISTING TO REMAIN | |
| E-ERV-02 | DOAS | LOSSNAY | LGH-F470RVX-E | 470 CFM, 69% EFFICIENT | EXISTING TO REMAIN | |

NOTES:

BRIAN SCOTT MIDDLEBROOK — STATE OF WASHINGTON — 52776 — 11/19/2021 — REGISTERED PROFESSIONAL ENGINEER

| REVISIONS | DATE | |
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DRAWN RPG | DESIGN BSM | DATE 11/19/2021 | APPROVED

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AIR CONDITIONING/SHEET METAL/REFRIGERATION/PROFESSIONAL ENGINEERS/SERVICE & MAINTENANCE

SHEET NO. M2 OF 9 | JOB NO. 4126

## MISCELLANEOUS EQUIPMENT SCHEDULE

| UNIT NO | TYPE | MFG | MODEL | DESCRIPTION/ DATA | NOTES |
|---|---|---|---|---|---|
| PR-01 | PRESSURE REDUCING VALVE | MAXITROL | 325-3(B)L | 2PSI INLET PRESSURE, 250 MBH MAXIMUM LOAD. 1/2". | 1 |
| PR-02 | PRESSURE REDUCING VALVE | MAXITROL | 325-3(B)L | 2PSI INLET PRESSURE, 250 MBH MAXIMUM LOAD. 1/2". | 2 |
| MD-01 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-02 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-03 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-04 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-05 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x14 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-06 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x12 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-07 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x14 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-08 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x12 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-09 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x14 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-10 | MOTORIZED DAMPER | GREENHECK | VCD-20 | 14x12 DAMPER, OPPOSED BLADE SINGLE FLANGE. | 3 |
| MD-11 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-12 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 12" DAMPER, BUTTERFLY STYLE. | 3 |
| MD-13 | MOTORIZED DAMPER | GREENHECK | VCDR-50 | 6" DAMPER, BUTTERFLY STYLE. | 3 |

NOTES:

1. PROVIDE WITH 12A09 VENT LIMITING DEVICE.
2. PROVIDE WITH 13A15 VENT PROTECTOR FOR OUTDOOR APPLICATIONS.
3. PROVIDE WITH BELIMO LMB24-3 24V, 45 IN-LB TORQUE, ON/ OFF DAMPER WITHOUT SPRING RETURN.

## VENTILATION SCHEDULE

| ZONE NUMBER | ZONE NAME | PRIMARY AIRFLOW | ZONE OSA, $V_{OT}$ | ROOM NAME | OCCUPANCY DESCRIPTION | $A_Z$ | $P_Z$ DENSITY | $P_Z$ | $R_p$ | $OSA_p$ | $R_A$ | $OSA_A$ | MISC | $V_{BZ}$ | DISTRIBUTION EFFECTIVENESS | TOTAL OSA $V_{OZ}$ | CORRECTED OSA | EA PER SF | # OF TOILETS | # OF SHOWERS | REQUIRED EA | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DOAS 1 | | 4380 | 108 CLASSROOM | CLASSROOM 9+ | 920 | 35 | 33 | 10 | 330 | 0.12 | 111 | | 441 | 0.8 | 552 | 560 | | | | 0 | |
| | | | | 108 HALL | CORRIDOR | 945.5 | 0 | 0 | 0 | 0 | 0.06 | 57 | | 57 | 0.8 | 72 | 150 | | | | 0 | |
| | | | | 109 CLASSROOM | CLASSROOM 9+ | 927.2 | 35 | 33 | 10 | 330 | 0.12 | 112 | | 442 | 0.8 | 553 | 560 | | | | 0 | |
| | | | | 110 CLASSROOM | CLASSROOM 9+ | 922.3 | 35 | 33 | 10 | 330 | 0.12 | 111 | | 441 | 0.8 | 552 | 560 | | | | 0 | |
| | | | | 111 CLASSROOM | SCIENCE CLASSROOM | 921 | 25 | 24 | 10 | 240 | 0.18 | 166 | | 406 | 0.8 | 508 | 850 | 1 | | | 921 | |
| | | | | 112 CLASSROOM | SCIENCE CLASSROOM | 926 | 25 | 24 | 10 | 240 | 0.18 | 167 | | 407 | 0.8 | 509 | 850 | 1 | | | 926 | |
| | | | | 113 CLASSROOM | SCIENCE CLASSROOM | 921 | 25 | 24 | 10 | 240 | 0.18 | 166 | | 406 | 0.8 | 508 | 850 | 1 | | | 921 | |
| | | | | 114 STAIRS | CORRIDOR | 140 | 0 | 0 | 0 | 0 | 0.06 | 9 | | 9 | 0.8 | 12 | 0 | | | | 0 | |
| | | | | 115 STORAGE | STORAGE | 88.4 | 0 | 0 | 0 | 0 | 0.12 | 11 | | 11 | 0.8 | 14 | 0 | | | | 0 | |
| | | | | | | | | | | | | | | | | | | | | | | |

GENERAL NOTES:

1. ZONE NAME AND NUMBER CORRESPONDS TO LOAD CALCULATION.

NOTES:

1. EXHAUSTED AT 70 CFM/ FLUSH VALVE FIXTURE.
2. SERVED BY EXISTING DOAS.

## REFRIGERANT MANAGEMENT SCHEDULE

| OUTDOOR UNIT | INDOOR UNITS | ROOM NAME | ROOM AREA | ROOM HEIGHT | VOLUME | REFRIGERANT QUANTITY | REFRIGERANT LBS/1000 CF | ALLOWED REFRIGERANT PER 1000 SF | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| OU-01 | IU-01 | NOT USED | - | - | - | - | - | - | |
| OU-01 | IU-02 | NOT USED | - | - | - | - | - | - | |
| OU-01 | IU-03 | NOT USED | - | - | - | - | - | - | |
| OU-01 | IU-04 | NOT USED | - | - | - | - | - | - | |
| OU-01 | IU-05 | 108 HALL | 945 | 9 | 8505 | 58.3 | 6.85 | 26 | |
| OU-01 | IU-06 | 109 CLASSROOM | 932 | 9 | 8388 | 58.3 | 6.95 | 26 | |
| OU-01 | IU-07 | 110 CLASSROOM | 923 | 9 | 8307 | 58.3 | 7.02 | 26 | |
| OU-01 | IU-08 | 113 CLASSROOM | 921 | 9 | 8289 | 58.3 | 7.03 | 26 | |
| OU-01 | IU-09 | 112 CLASSROOM | 926 | 9 | 8334 | 58.3 | 7.00 | 26 | |
| OU-01 | IU-10 | 111 CLASSROOM | 917 | 9 | 8253 | 58.3 | 7.06 | 26 | |
| OU-01 | IU-11 | 108 CLASSROOM | 918 | 9 | 8262 | 58.3 | 7.06 | 26 | |
| OU-01 | E-AH-01/02 | 1XX SCHOOL LOBBY | 1752.97 | 9 | 15776.73 | 58.3 | 3.70 | 26 | |

NOTES:

## DUCT INSULATION SCHEDULE

| DUCT SYSTEM | DUCT LOCATION AND USE | CLIMATE ZONE | AIRFLOW | MINIMUM INSTALLED DUCT INSULATION R-VALUE[a,b] | NOTES |
|---|---|---|---|---|---|
| OUTDOOR AIR | INSIDE CONDITIONED SPACE AND UPSTREAM OF AUTOMATIC SHUT OFF DAMPER. | 4C AND 5B | ≥2800 CFM | 4.5 | SEE SECTION C403.10.1.1 FOR ADDITIONAL REQUIREMENTS |
| OUTDOOR AIR | INSIDE CONDITIONED SPACE AND DOWNSTREAM OF AUTOMATIC SHUT OFF DAMPER TO HVAC UNIT OR ROOM. | 4C | ≥2800 CFM | 3.0 | |
| OUTDOOR AIR | INSIDE CONDITIONED SPACE AND DOWNSTREAM OF AUTOMATIC SHUT OFF DAMPER TO HVAC UNIT OR ROOM. | 5B | ≥2800 CFM | 2.5 | |
| OUTDOOR AIR | INSIDE CONDITIONED SPACE | 4C AND 5B | ≥2800 CFM | 1.5 | SEE EXCEPTION 1 TO SECTION C403.10.1.1 FOR ADDITIONAL DETAILS |

A. INSULATION R-VALUES, MEASURED IN h · ft² x °F/BTU, ARE FOR THE INSULATION AS INSTALLED AND DO NOT INCLUDE FILM RESISTANCE. THE REQUIRED MINIMUM THICKNESSES DO NOT CONSIDER WATER VAPOR TRANSMISSION AND POSSIBLE SURFACE CONDENSATION. INSULATION RESISTANCE MEASURED ON A HORIZONTAL PLANE IN ACCORDANCE WITH ASTM C518 AT A MEAN TEMPERATURE OF 75°F AT THE INSTALLED THICKNESS.

B. SEE INTERNATIONAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUCT INSTALLATION REQUIREMENTS.

## PIPE INSULATION SCHEDULE

| FLUID OPERATING AND USAGE (°F) | INSULATION CONDUCTIVITY | | NOMINAL OR TUBE SIZE (inches) | | | | |
|---|---|---|---|---|---|---|---|
| | BTU · in./(h · ft² · °F) | TEMPERATURE, °F | < 1 | 1 to 1-1/2 | 1-1/2 to < 4 | 4 to < 8 | ≥8 |
| > 350 | 0.32 - 0.34 | 250 | 4.5 | 5.0 | 5.0 | 5.0 | 5.0 |
| 251 - 350 | 0.29 - 0.32 | 200 | 3.0 | 4.0 | 4.5 | 4.5 | 4.5 |
| 201 - 250 | 0.27 - 0.30 | 150 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 |
| 141 - 200 | 0.25 - 0.29 | 125 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 |
| 105 - 140 | 0.21 - 0.28 | 100 | 1 | 1.0 | 1.5 | 1.5 | 1.5 |
| 40 - 60 | 0.21 - 0.27 | 75 | 0.5 | 0.5 | 1.0 | 1.0 | 1.0 |
| < 40 | 0.20 - 0.26 | 75 | 0.5 | 1.0 | 1.0 | 1.0 | 1.5 |

GENERAL NOTES:

1. FOR PIPING SMALLER THAN 1-1/2 INCH (38mm) AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF THESE THICKNESSES BY 1 INCH (25mm) SHALL BE PERMITTED (BEFORE THICKNESSES REQUIRED IN FOOTNOTE b) NOT TO A THICKNESS LESS THAN 1 INCH (25mm).
2. FOR INSULATION OUTSIDE THE STATED CONDUCTIVITY RANGE, THE MINIMUM THICKNESS (*T*) SHALL BE DETERMINED AS FOLLOWS:

$T = r\{(1 + t/r)^{K/k} - 1\}$

WHERE:

*T* = MINIMUM INSULATION THICKNESS,
*r* = ACTUAL OUTSIDE RADIUS OF PIPE,
*t* = INSULATION THICKNESS LISTED IN THE TABLE FOR APPLICABLE FLUID TEMPERATURE AND PIPE SIZE.
*K* = CONDUCTIVITY OF ALTERNATE MATERIAL AT MEAN RATING TEMPERATURE INDICATED FOR THE APPLICABLE FLUID TEMPERATURE (Btu · in/h · ft² x °F)
k = THE UPPER VALUE OF THE CONDUCTIVITY RANGE LISTED IN THE TABLE FOR THE APPLICABLE FLUID TEMPERATURE.

3. FOR DIRECT-BURIED HEATING AND HOT WATER SYSTEM PIPING, REDUCTION OF THESE THICKNESSES BY 1-1/2 INCHES (38mm) SHALL BE PERMITTED (BEFORE THICKNESS ADJUSTMENT REQUIRED IN FOOTNOTE b BY BUT NOT TO THICKNESS LESS THAN 1 INCH (25mm)

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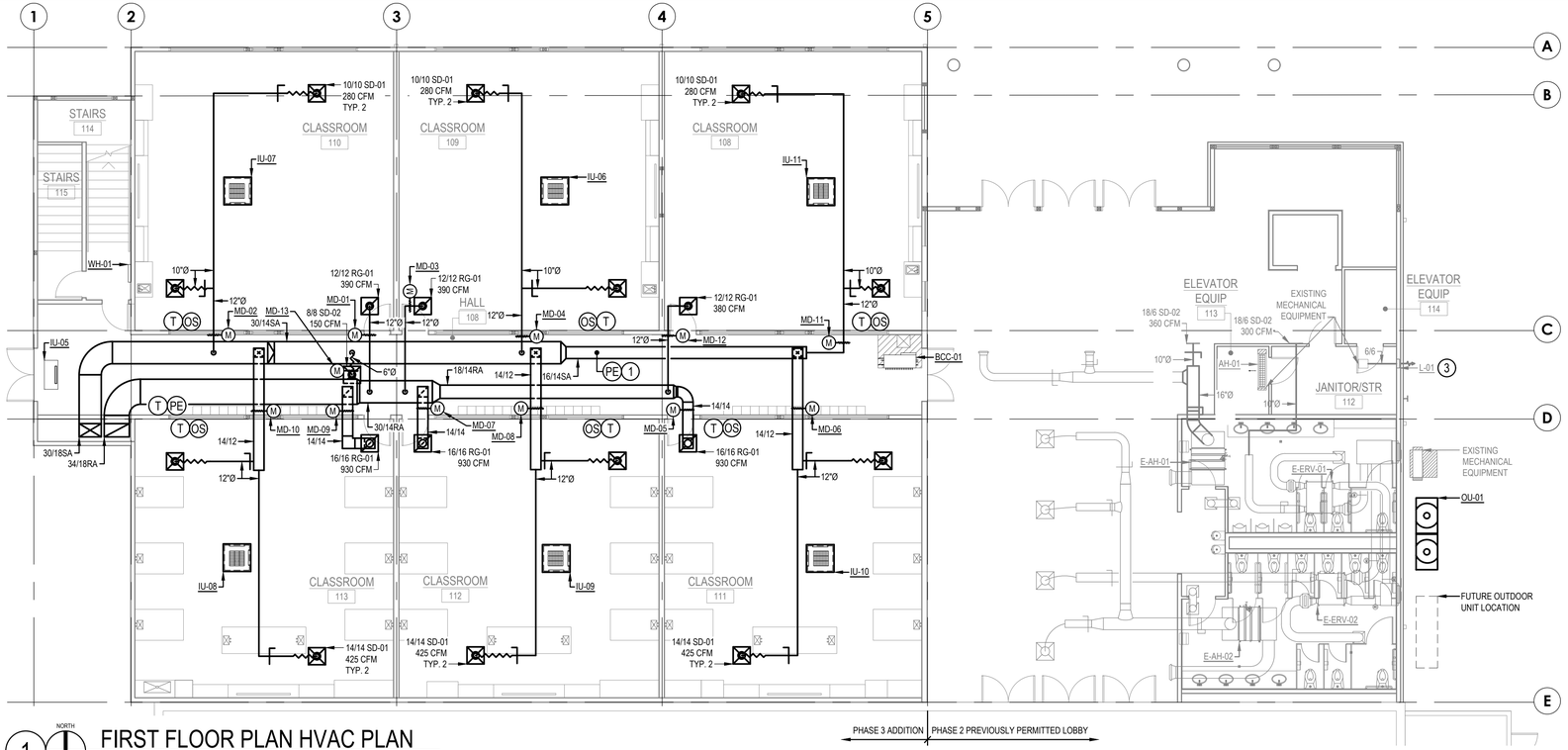
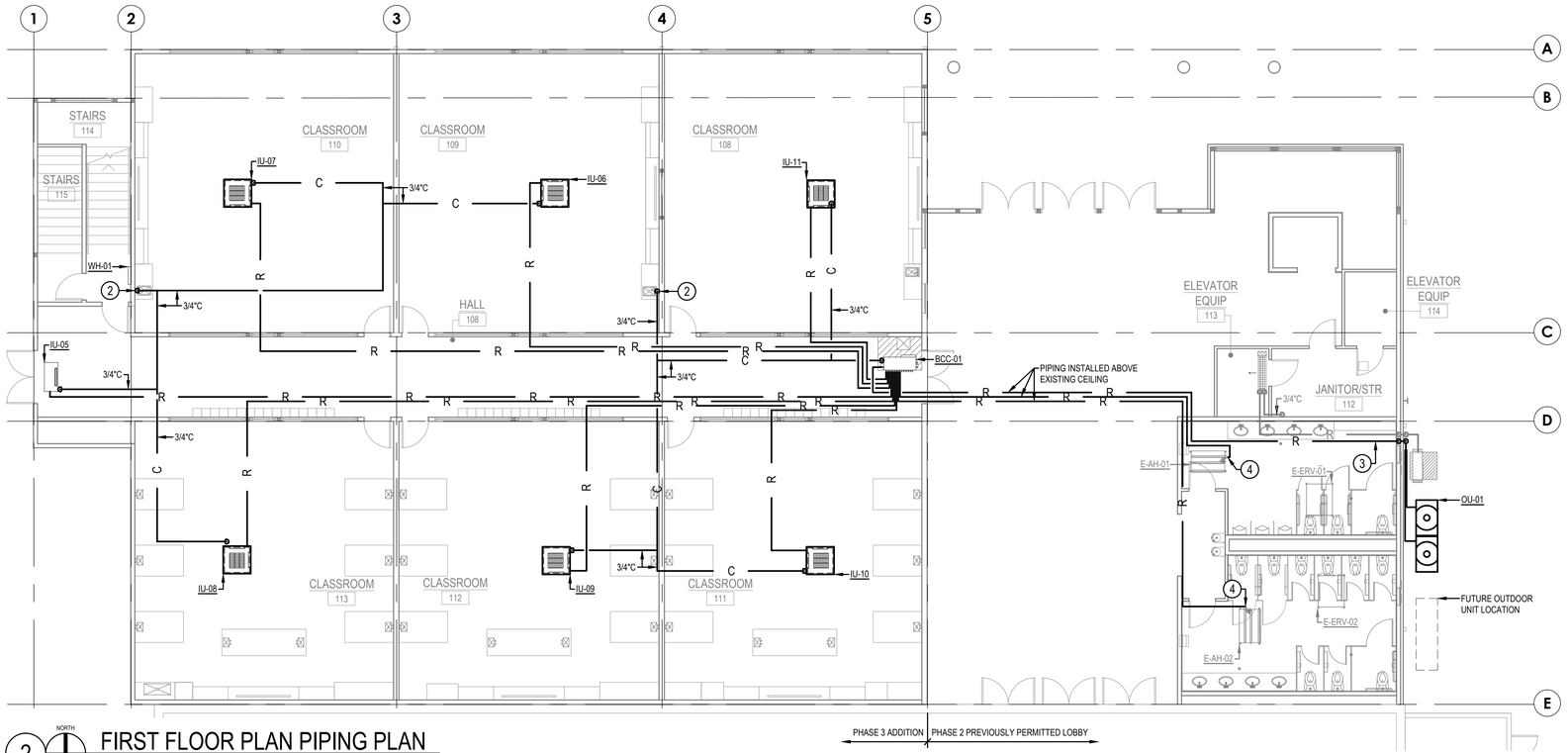
SHEET NO. M3 OF 9 | JOB NO. 4126




1 NORTH

## FIRST FLOOR PLAN HVAC PLAN

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




2 NORTH

## FIRST FLOOR PLAN PIPING PLAN

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

## GENERAL NOTES

1. LINES AND EQUIPMENT SHOWN DARK IS NEW WORK. LINES AND EQUIPMENT SHOWN LIGHT IS EXISTING TO REMAIN.
2. OCCUPANCY SENSORS SHALL BE WATT STOPPER CI-24.

## PLAN NOTES

1. INSTALL DUCT PRESSURE SENSOR IN SUPPLY AIR DUCT IN THIS APPROXIMATE LOCATION.
2. ROUTE 3/4" CONDENSATE DOWN WALL TO SINK TAIL PIECE. TAIL PIECE PROVIDED BY PLUMBING CONTRACTOR.
3. PROVIDE BRAIDED COPPER FLEXIBLE CONNECTOR, R410 RATED, 650 PSI MAXIMUM WORKING PRESSURE, PARKING INDUSTRIES OR EQUAL.
4. CONNECTED REFRIGERANT TO EXISTING MECHANICAL EQUIPMENT.

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FIRST FLOOR PLAN

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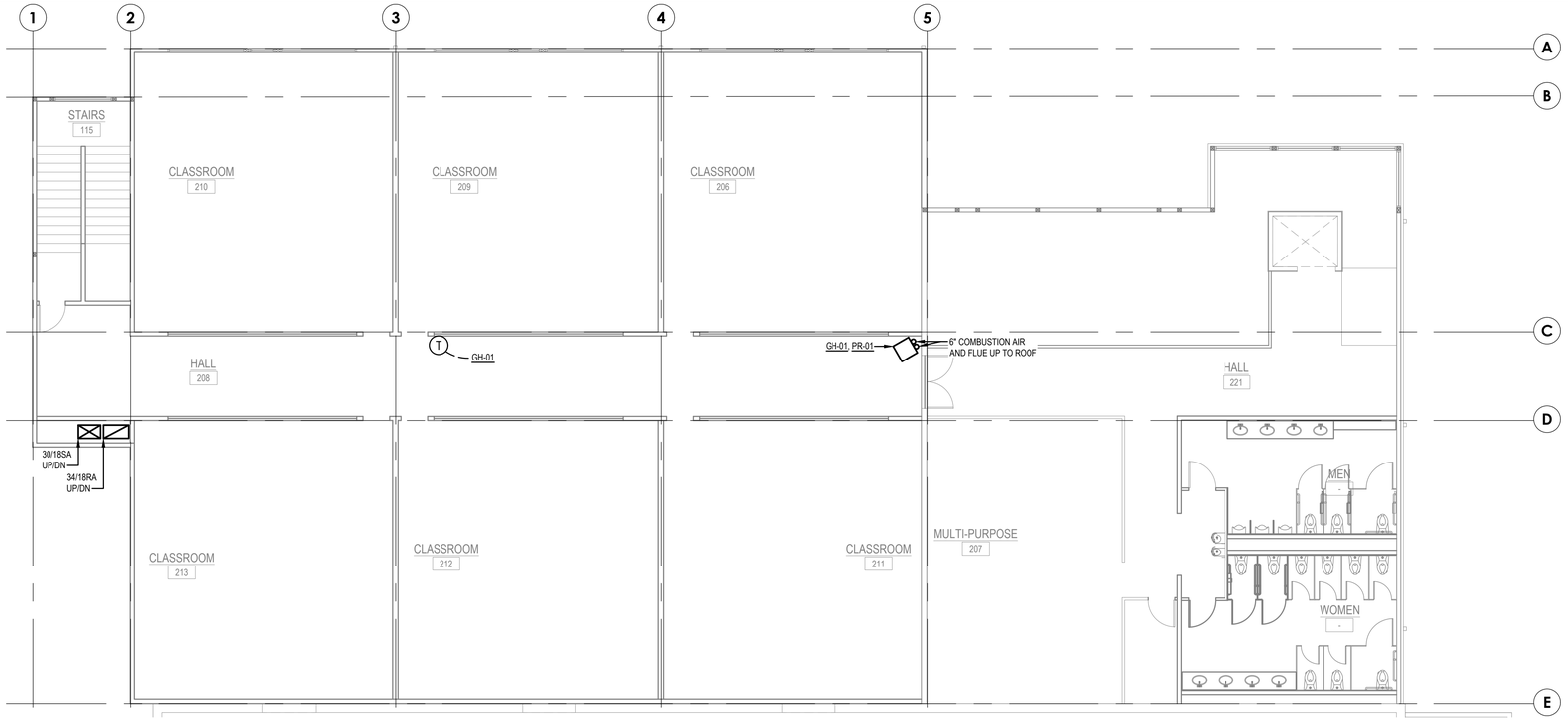
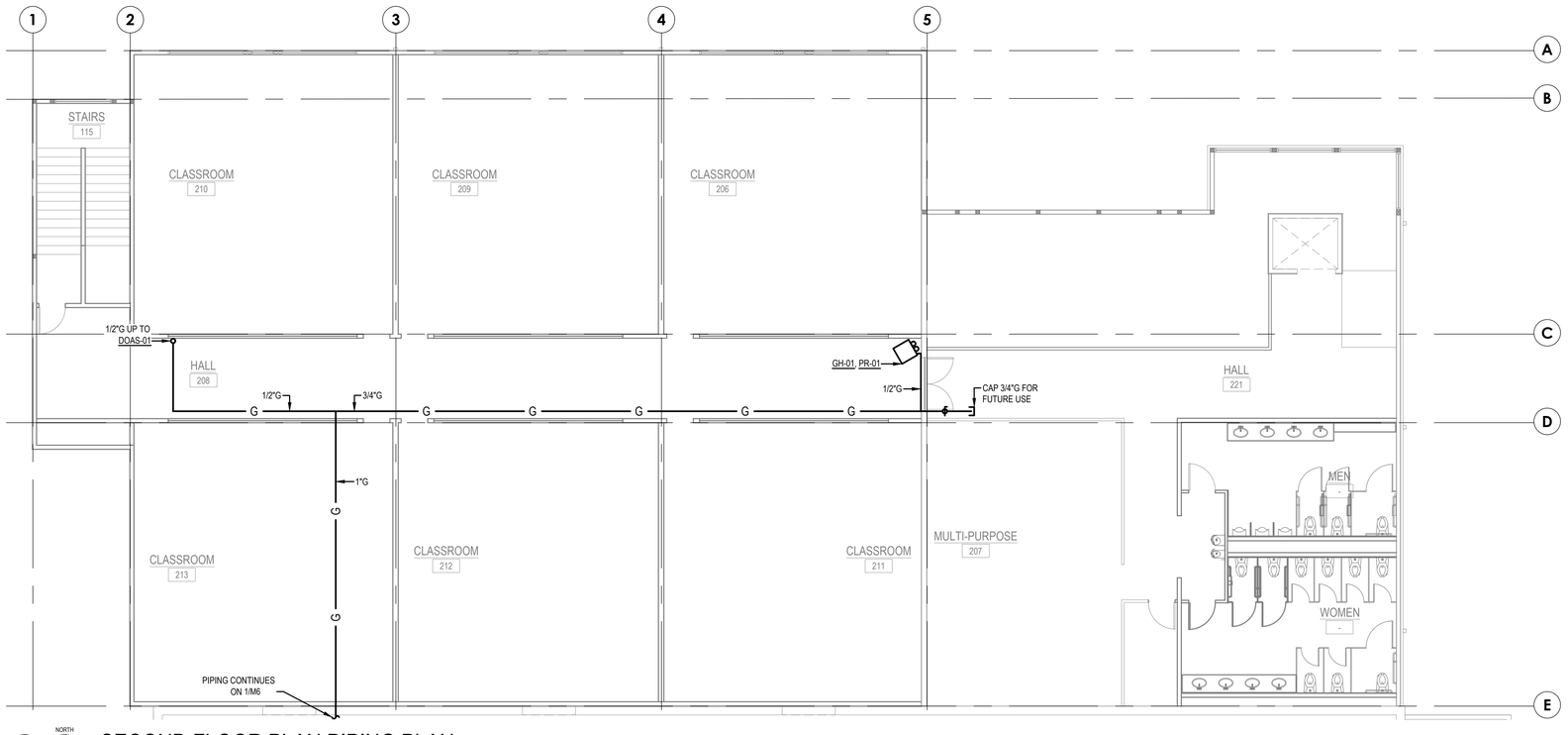



NORTH

## 1 SECOND FLOOR HVAC PLAN

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




NORTH

## 2 SECOND FLOOR PLAN PIPING PLAN

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

## GENERAL NOTES

1. WORK ON THIS PAGE IS LIMITED TO FREEZE PROTECTION, DUCTWORK FOR THE LOWER FLOOR, AND ACCOMMODATIONS TO FUTURE WORK.

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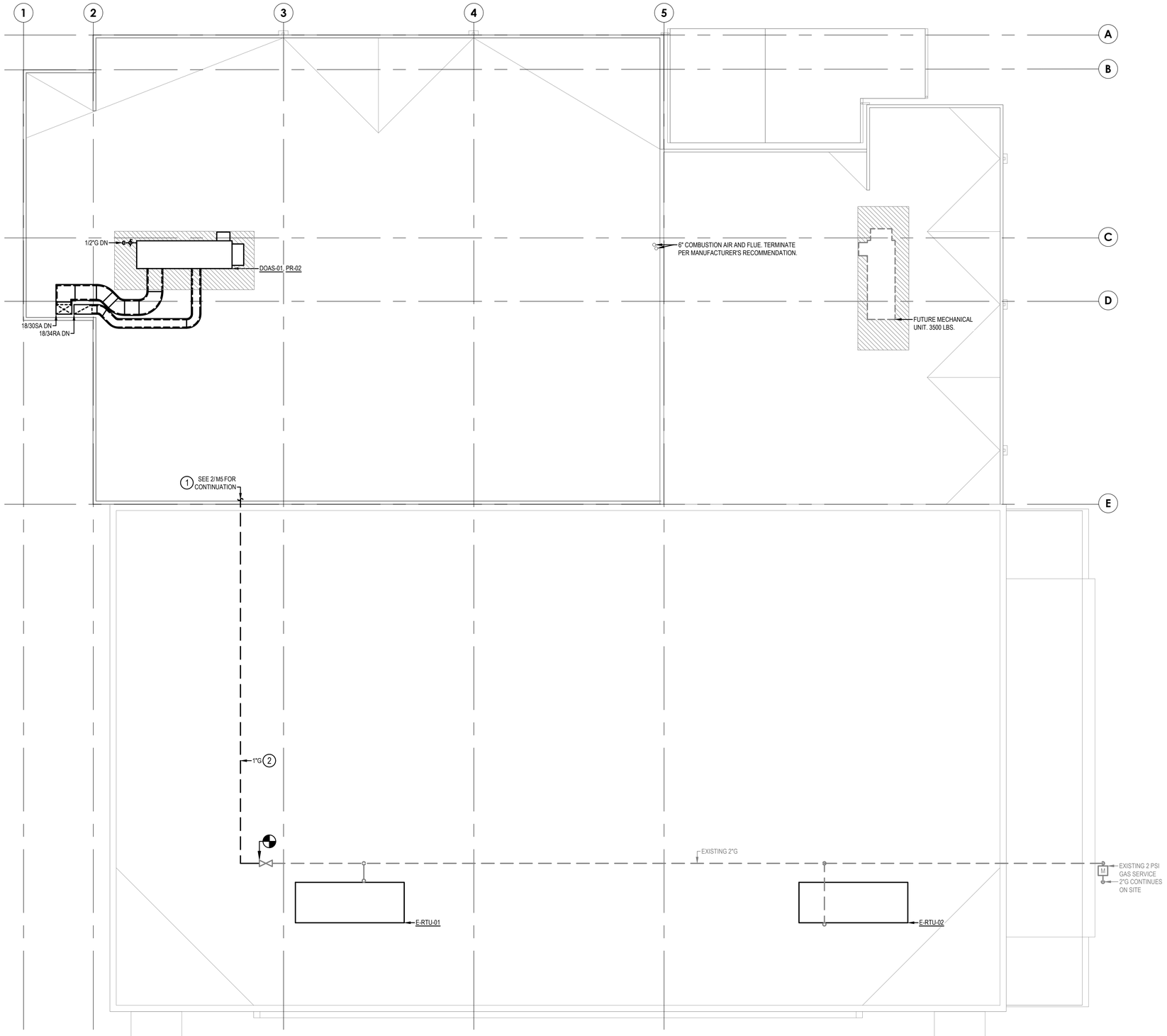


1 NORTH ROOF PLAN
SCALE: 1/8" = 1'-0"

6 M7 | 7 M7 | 8 M7 | 9 M8

## GENERAL NOTES

1. LINE ROOFTOP DUCTWORK WITH R-8 INSULATION.

## PLAN NOTES

1. CORE DRILL THROUGH EXISTING MASONRY WALL.
2. ROUTE PIPING BETWEEN JOISTS, CLOSE TO CEILING STRUCTURE.

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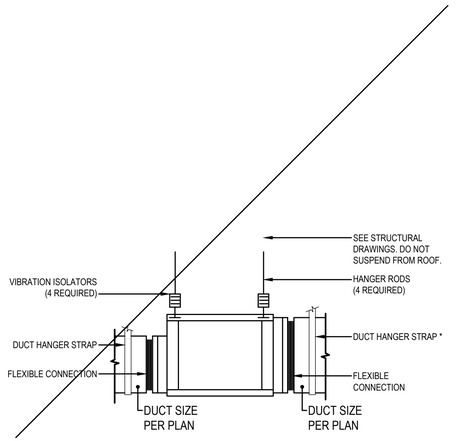
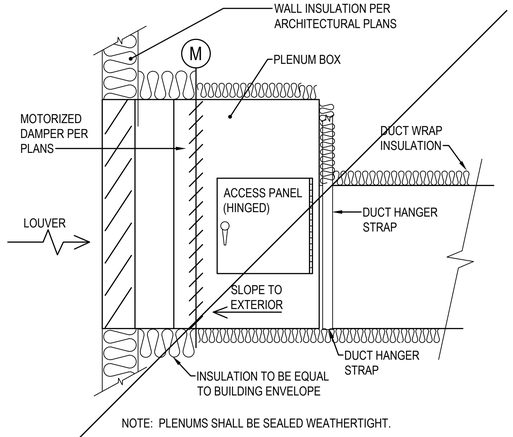
JOB NO. 4126

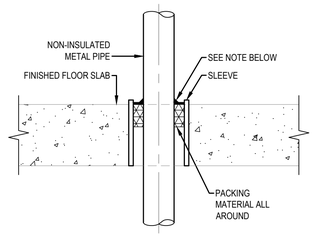



## 1 INLINE EXHAUST FAN DETAIL
SCALE: NTS



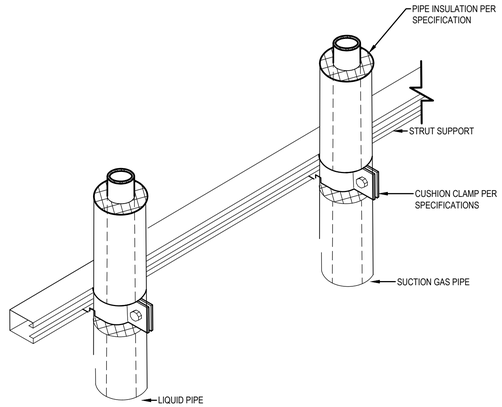

NOTE: PLENUMS SHALL BE SEALED WEATHERTIGHT.

## 2 DUCT AT LOUVER INSTALLATION DETAIL
SCALE: NTS

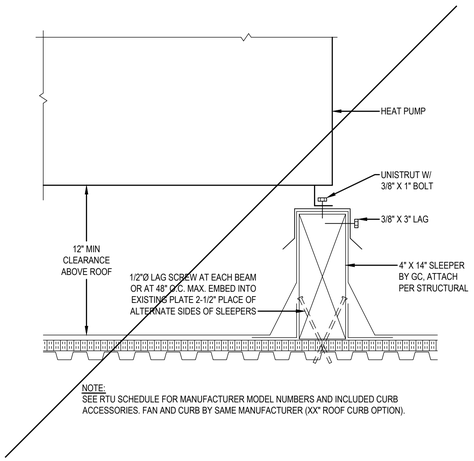



NOTE:
FIRE BARRIER SILICONE SEALANT ALL AROUND, 3M OR OTHER APPROVED, (UL LISTED, PER ASTM-E-814), INSTALL PER MANUFACTURER'S INSTALLATION REQUIREMENTS TO MEET CODE APPLICATION.

## 3 FIRE STOPPING AT FLOOR
SCALE: NTS

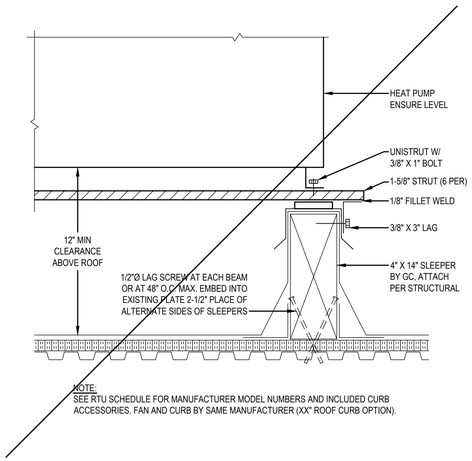



## 4 VERTICAL REFRIGERANT PIPE SUPPORT DETAIL
SCALE: NTS



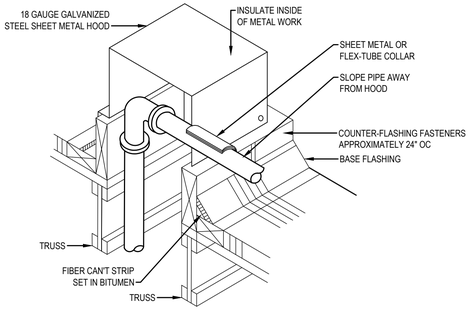

NOTE:
SEE RTU SCHEDULE FOR MANUFACTURER MODEL NUMBERS AND INCLUDED CURB ACCESSORIES. FAN AND CURB BY SAME MANUFACTURER (XX" ROOF CURB OPTION).

## 5 HEAT PUMP HP-1 SLEEPER DETAIL
SCALE: NTS

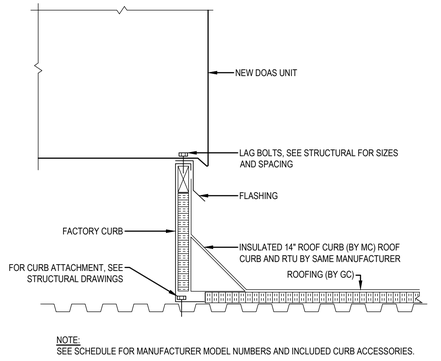



NOTE:
SEE RTU SCHEDULE FOR MANUFACTURER MODEL NUMBERS AND INCLUDED CURB ACCESSORIES. FAN AND CURB BY SAME MANUFACTURER (XX" ROOF CURB OPTION).

## 6 HEAT PUMP OU-01 SLEEPER DETAIL
SCALE: NTS




## 7 ROOFTOP PIPE PENETRATION DETAIL
SCALE: NTS




NOTE:
SEE SCHEDULE FOR MANUFACTURER MODEL NUMBERS AND INCLUDED CURB ACCESSORIES.

## 8 DOAS UNIT MOUNTING
SCALE: NTS

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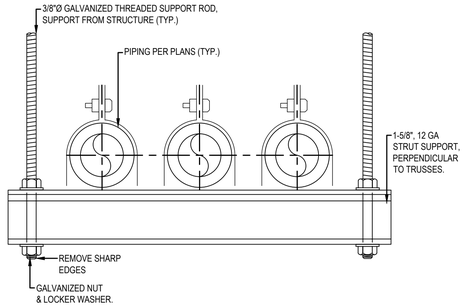
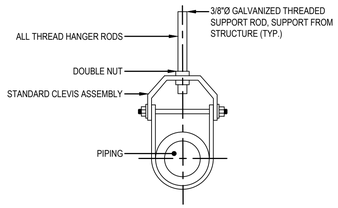
SHEET NO. M7 OF 9 | JOB NO. 4126

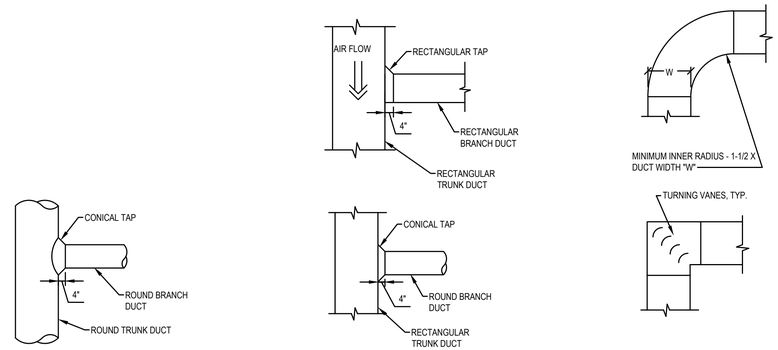



NOTE:
PROVIDE THREE SUPPORT RODS FOR STRUT LONGER THAN 24"

## 1 PIPE TRAPEZE DETAIL
SCALE: NTS



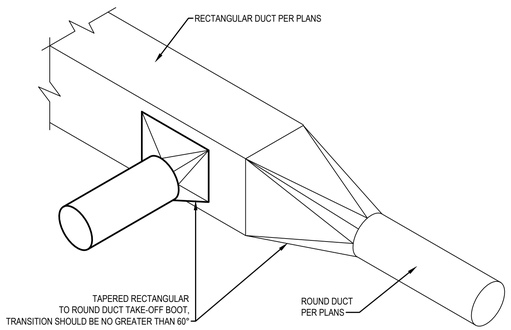

## 2 PIPE HANGER DETAIL
SCALE: NTS



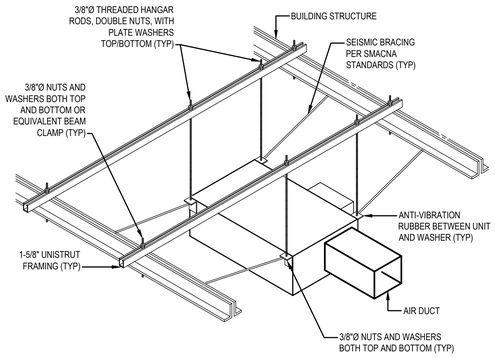

NOTE:
1. CONSTRUCT PER SMACNA DUCT CONSTRUCTION GUIDE, LATEST VERSION.

## 3 TYPICAL DUCT ELBOW AND DUCT TEE DETAILS
SCALE: NTS

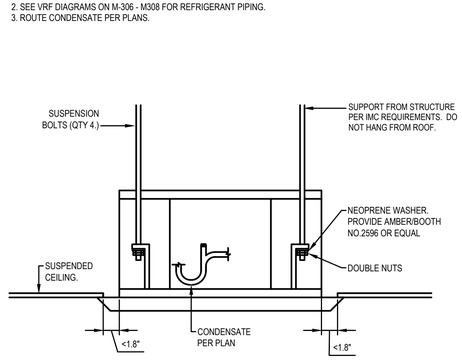
NOTE:
1. MAINTAIN ACCESS CLEARANCE AS NOTED ON PLANS.
2. SEE VRF DIAGRAMS ON M-306 - M308 FOR REFRIGERANT PIPING.
3. ROUTE CONDENSATE PER PLANS.



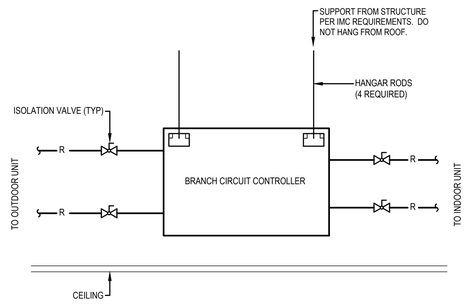

## 4 RECTANGULAR TO ROUND DUCT TRANSITION INSTALLATION DETAIL
SCALE: NTS



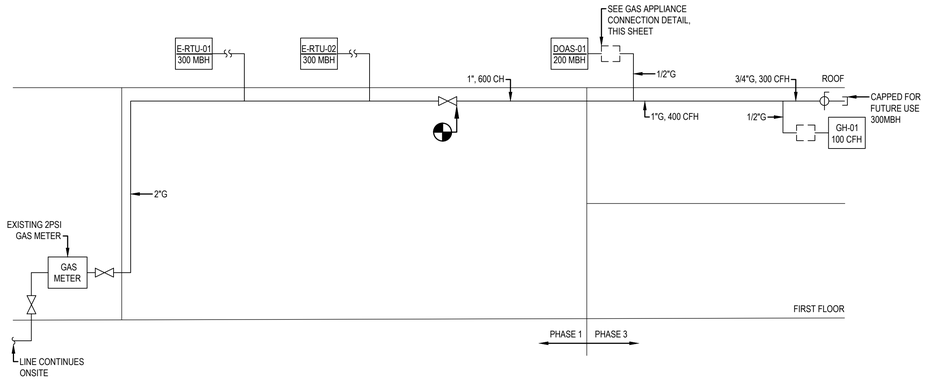

## 5 TYPICAL SUSPENDED EQUIPMENT
SCALE: NTS




## 6 INDOOR UNIT INSTALLATION DETAIL
SCALE: NTS

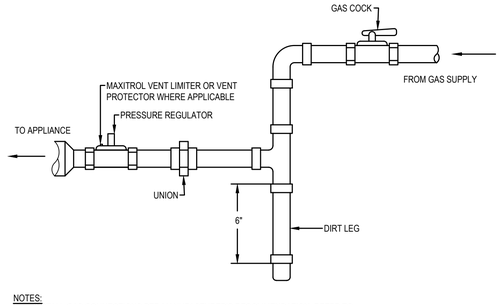



## 7 VRF BRANCH SELECTOR CONNECTION DETAIL
SCALE: NTS




NOTES:
1. GAS PIPING SIZED BASED ON TABLE 402.4(5) IFGC 2015, 2 PSI INLET PRESSURE USING THE LONGEST LENGTH METHOD.
2. GAS METER A SHALL ACCOMMODATE 1200 CFH OF NATURAL GAS THROUGH 400 LF.

## 8 GAS FLOW DIAGRAM
SCALE: NTS




NOTES:
1. INSTALL GAS CONNECTIONS PER MANUFACTURER'S RECOMMENDATION. REFER TO MECHANICAL DOCUMENTS AND CONSTRUCTION SUBMITTALS FOR MORE INFORMATION.
2. INSTALL TEST PLUGS WHERE APPROPRIATE PER MAXITROL INSTALLATION DIRECTIONS.

## 9 GAS APPLIANCE CONNECTION DETAIL
SCALE: NTS

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SHEET NO. M8 OF 9
JOB NO. 4126

## SEQUENCE OF OPERATIONS

1. TYPICAL SYSTEM SCHEDULE:
   a. OFF HOURS ARE 6:00 PM TO 6:00 AM AND WEEKENDS, ADJUSTABLE.
   b. MORNING WARM-UP IS TO BE STARTED AT AN "OPTIMAL START" TIME. OCCUPIED HOURS ARE 6:00 AM TO 6:00 PM MONDAY THROUGH FRIDAY, ADJUSTABLE.

2. TYPICAL SETPOINTS (ADJUSTABLE):
   HEATING SPACE TEMPERATURE - 70 DEGREES FAHRENHEIT
   COOLING SPACE TEMPERATURE - 75 DEGREES FAHRENHEIT

## MISCELLANEOUS CONTROLS

A. GENERAL
   1. PROVIDE AND INSTALL ALL NECESSARY DEVICES, RELAYS, SWITCHES, SENSORS, DAMPERS, CONDUIT, AND WIRING TO PROVIDE A COMPLETE AND OPERATIONAL DDC SYSTEM.
   2. SYSTEM OCCUPANCY SCHEDULE SHALL BE COORDINATED WITH THE BUILDING OWNER.
   3. PID LOOPS: WHENEVER A MOTOR RPM, DAMPER POSITION, OR VALVE POSITION IS TO MODULATE IN RESPONSE TO A SENSOR OUTPUT, A PID LOOP IS TO BE UTILIZED TO ACHIEVE THE DESIRED CONTROL FUNCTION. PID LOOP VARIABLES SHALL BE TUNED PER INDUSTRY STANDARDS, PROPORTIONAL, INTEGRAL AND DERIVATIVE VARIABLES SHALL BE USED.
   4. PROPORTIONAL CONTROL: WHENEVER THE TERM PROPORTIONAL IS USED IN THE SEQUENCES IT IS INTENDED THAT PID LOOPS ARE EMPLOYED TO ACHIEVE THAT CONTROL.
   5. INTERLOCKS: PROVIDE ALL NECESSARY EQUIPMENT, DEVICES, WIRING, AND PROGRAMMING FOR INTERLOCK OF EQUIPMENT AS SHOWN ON EQUIPMENT SCHEDULES.

B. TIMING OF CONTROL WORK:
   1. THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO BALANCING OF THE PROJECT, CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION FOR THE BALANCER. THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO HVAC SYSTEM COMMISSIONING AND CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION AND TESTING DURING COMMISSION. THE CONTROL SYSTEM SHALL BE COMMISSIONED PRIOR TO OWNER OCCUPANCY.

C. INTERLOCKS:
   1. PROVIDE ALL NECESSARY EQUIPMENT, DEVICES, WIRING AND PROGRAMMING FORINTERLOCK OF EQUIPMENT AS SHOWN ON THE EQUIPMENT SCHEDULES.

D. EMCS TRACK CHANGES:
   5. EMCS SHALL RECORD SOFTWARE CHANGES AND USER LOGIN NAME FROM BEGINNING OF INSTALLATION.

E. TRENDING:
   1. ALL CONTROL SYSTEM INPUT AND OUTPUT POINTS SHALL BE ACCESSIBLE AND PROGRAMMED FOR TRENDING. A GRAPHIC TRENDING PACKAGE SHALL BE AVAILABLE.

## WALL HEATERS

GENERAL:
1. UNIT SHALL ACTIVATE TO MAINTAIN TEMPERATURE.

TEMPERATURE SETPOINT:
1. TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE)

## GAS UNIT HEATERS

GENERAL :
1. UNIT SHALL STAGE TO MAINTAIN SPACE TEMPERATURE.
2. TEMPERATURE SUBPOINT IS 50°F (ADJUSTABLE).

## DOAS SEQUENCE

GENERAL
CONTROLLER SHALL BE PROVIDED WITH REQUIRED SENSORS AND PROGRAMMING FOR ROOFTOP UNIT. CONTROLLER SHALL BE FACTORY PROGRAMMED, MOUNTED AND TESTED. CONTROLLER SHALL HAVE A LCD READOUT FOR CHANGING SET POINTS AND MONITORING UNIT OPERATION.
1. ZONE SPACE TEMPERATURE SENSORS SHALL BE EQUIPPED WITH PUSHBUTTONS TO PROVIDE UNOCCUPIED OVERRIDE REQUEST. OVERRIDE RUNTIME SHALL BE 2 HOURS (ADJUSTABLE).
2. UNIT SHALL BE PROGRAMMED FOR START/STOP THROUGH THE DDC SYSTEM BASED ON DESIGNED OCCUPIED MODES WITH WEEKDAY, WEEKEND, AND HOLIDAY SCHEDULES.
3. OCCUPIED/UNOCCUPIED MODES: SHALL BE BASED ON A 7-DAY TIME CLOCK INTERNAL TO THE CONTROLLER. THE SCHEDULE SHALL BE SET BY THE END USER.

SUPPLY BLOWER SEQUENCE: THE SUPPLY BLOWER IS PROVIDED WITH A FACTORY MOUNTED VARIABLE FREQUENCY DRIVE. THE SUPPLY BLOWER SPEED WILL BE CONTROLLED WITH THE FOLLOWING SEQUENCE.
1. SUPPLY FAN SHALL START VIA A SCHEDULE (ADJUSTABLE) OR OVERRIDE COMMAND (ADJUSTABLE). OVERRIDE COMMAND CAN BE TRIGGERED BY A ZONE SPACE TEMPERATURE SENSOR UNOCCUPIED OVERRIDE REQUEST OR BY EMCS USER INTERFACE.
2. OUTSIDE AIR DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPER SHALL FAIL CLOSED.
3. SUPPLY FAN SPEED VARIES TO MAINTAIN DUCT PRESSURE SETPOINT. SETPOINT SHALL RANGE BETWEEN 0.3" W.C. TO 1.0" W.C. (ADJUSTABLE) BASED ON MOTORIZED DAMPER POSITIONS. AIR BALANCER TO SELECT FINAL SETPOINTS.
4. FAN ALARMS:
   A. FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED. PROOF IS VIA SAIL SWITCH. EMCS RECORDS FAN ALARM.
   B. HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM. EMCS RECORDS FIRE/SMOKE ALARM.
   C. HARDWIRE FAN SHUTDOWN UPON HIGH DUCT PRESSURE ALARM ACTIVATION. EMCS RECORDS HIGH PRESSURE ALARM.

EXHAUST BLOWER SEQUENCE: THE EXHAUST BLOWER IS PROVIDED WITH A FACTORY MOUNTED VARIABLE FREQUENCY DRIVE. THE EXHAUST BLOWER SPEED WILL BE CONTROLLED WITH THE FOLLOWING SEQUENCE.
1. EXHAUST OPERATES WHENEVER THE SUPPLY FAN IS PROVEN ON.
2. EXHAUST DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPERS SHALL FAIL CLOSED.
3. EXHAUST FAN SPEED VARIES TO MAINTAIN SPACE PRESSURE SETPOINT. SETPOINT SHALL RANGE BETWEEN 0.05" W.C. TO .10" W.C. (ADJUSTABLE) WITH RESPECT TO AMBIENT CONDITIONS. AIR BALANCER TO SELECT FINAL SETPOINTS.
4. FAN ALARMS:
   A. FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED. EMCS RECORDS FAN ALARM. PROOF IS VIA SAIL SWITCH.
   B. HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM. EMCS RECORDS FIRE/SMOKE ALARM.
   C. HARDWIRE FAN SHUTDOWN UPON HIGH DUCT PRESSURE ALARM ACTIVATION. EMCS RECORDS HIGH PRESSURE ALARM.

## DOAS SEQUENCE (CONTINUED)

HEATING SEQUENCE:
1. THE HEATING IS CONTROLLED TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT. THE HEATING WILL BE LOCKED OUT WHEN THE OUTSIDE AIR IS > 80 F.
2. INDIRECT GAS FURNACE: THE CONTROLLER WILL MODULATE THE INDIRECT GAS FURNACE TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT (ADJ.).

TEMPERATURE SET POINTS
THE CONTROLLER WILL MODULATE THE HEATING AND COOLING TO MAINTAIN AN ACTIVE SET POINT.
1. OUTSIDE (OA) RESET: THE CONTROLLER WILL MONITOR THE OUTDOOR AIR TEMPERATURE AND ADJUSTS THE DESIRED SUPPLY TEMPERATURE SET POINT ACCORDINGLY. WHEN THE OUTDOOR AIR IS BELOW 55 F, THE CONTROLLER WILL CHANGE THE SUPPLY SET POINT TO 70 F. IF THE OUTDOOR AIR IS ABOVE 65 F, THE CONTROLLER WILL CHANGE THE SUPPLY SET POINT TO 55 F. IF THE OUTDOOR AIR TEMPERATURE IS BETWEEN 55 F AND 65 F, THE SUPPLY SET POINT CHANGES ACCORDING TO THE OUTDOOR AIR RESET FUNCTION.

2. BUILDING FREEZE PROTECTION: IF THE SUPPLY AIR TEMPERATURE DROPS BELOW 35 F (ADJ.) FOR 5 MINUTES (ADJ.), THE CONTROLLER WILL DE-ENERGIZE THE UNIT AND ACTIVATE THE ALARM OUTPUT AFTER A PRESET TIME DELAY.

3. TEMPERATURE PROTECTION: THE CONTROLLER WILL ENABLE THE SUPPLY FAN TO MODULATE DOWN TO HELP THE UNIT KEEP UP WITH HEATING DEMAND IN THE EVENT OF WHEEL FAILURE OR THE UNIT OPERATING OUTSIDE DESIGN CONDITIONS.

ENERGY WHEEL FROST CONTROL: FROST CONTROL FOR THE ENERGY WHEEL IS ENABLED WHEN FROST IS PRESENT ON THE WHEEL; BASED ON THE OUTSIDE AIR TEMPERATURE AND THE PRESSURE DROP ACROSS THE WHEEL. IF THE OUTDOOR AIR TEMPERATURE IS BELOW 5 F , ADJ. AND THE DIFFERENTIAL PRESSURE ACROSS THE WHEEL IS ABOUT 1.5", ADJ. FROST CONTROL WILL ENABLE.
1. TIMED EXHAUST (100% OA ONLY): WHEN FROSTING IS OCCURRING, THE SUPPLY BLOWER IS CYCLED (30 MIN. ON / 5 MIN. OFF, ADJ.) TO ALLOW THE WARM EXHAUST AIR TO DEFROST THE WHEEL. ONCE THE PRESSURE DROP DECREASES BELOW THE SET POINT, FROST MODE IS DE-ENERGIZED AND THE SUPPLY BLOWER IS NO LONGER CYCLED.

ECONOMIZER SEQUENCE: WHEN THE APPLICATION REQUIRES COOLING, AND THE OUTDOOR AIR CONDITIONS ARE SUITABLE FOR FREE COOLING, THE CONTROLLER WILL MODULATE THE ENERGY WHEEL SPEED TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT.
1. DEW POINT/DRY BULB: THE ECONOMIZER WILL BE LOCKED OUT WHEN: THE OUTSIDE AIR IS < 40 F DB (ADJ.) OR > 75 F DB(ADJ.) OR > 55 F DEW POINT (ADJ.), OR THERE IS A CALL FOR HEATING.

MISCELLANEOUS ALARMS INDICATION: THE CONTROLLER WILL DISPLAY ALARMS AND HAVE ONE DIGITAL OUTPUT FOR REMOTE INDICATION OF AN ALARM CONDITION. ALARMS INCLUDE:
1. DIRTY WHEEL ALARM: THE CONTROLLER MONITORS PRESSURE ACROSS THE WHEEL AND SENDS AN ALARM IN THE CASE OF AN INCREASED PRESSURE DROP.
2. TEMPERATURE SENSOR ALARM: THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED AIR TEMPERATURE SENSOR.

ACCESSORIES: THE FOLLOWING ACCESSORIES WILL BE INCLUDED WITH THE UNIT TO EXPAND THE FUNCTIONALITY OR USABILITY OF THE CONTROLLER.
MICROPROCESSOR M-NET: UNIT WILL BE CONTROLLED THROUGH THE DDC CONTROLLER AND COMMUNICATION TO M-NET THROUGH A FACTORY-MOUNTED CONTROLLER M-NET AND CONTROL/MONITOR THE FOLLOWING:
- UNIT ENABLE/DISABLE
- SUPPLY TEMPERATURE SET POINT OR COLD COIL TEMPERATURE SET POINT
- GLOBAL ALARMS

PHASE AND BROWNOUT PROTECTION: FACTORY MOUNTED AND WIRED COMPONENT WHICH MONITORS THE MAIN POWER COMING INTO THE UNIT. IF A PHASE DROPS OUT, OR IF THE INCOMING VOLTAGE EXCEEDS THE ACCEPTABLE RANGE, THE COMPONENT WILL TURN OFF THE UNIT TO HELP PROTECT THE ELECTRICAL SYSTEMS.

OCCUPANCY SENSORS:
1. WHERE SHOWN ON PLANS, OCCUPANCY SENSORS SHALL CONTROL ROOM MOTORIZED DAMPERS. IF ROOM IS UNOCCUPIED FOR 5 MINUTES (ADJUSTABLE), MOTORIZED DAMPERS SHALL CLOSE.

## SPLIT SYSTEM CONTROL SEQUENCE

GENERAL
1. SPLIT SYSTEMS INDOOR/OUTDOOR UNITS SHALL BE CONTROLLED BY LOCAL THERMOSTAT. UNITS SHALL OPERATE ON INTERNAL CONTROLS TO MAINTAIN ROOM SETPOINT.

TEMPERATURE SETPOINT
1. IDF ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 75°F (ADJUSTABLE) FOR COOLING CONTROL.
2. EQUIPMENT ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL.

## EXHAUST FANS

EF-01:
1. FAN SHALL OPERATE ON OCCUPANCY SCHEDULE
1. FAN ALARM SHALL ACTIVATE IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED.

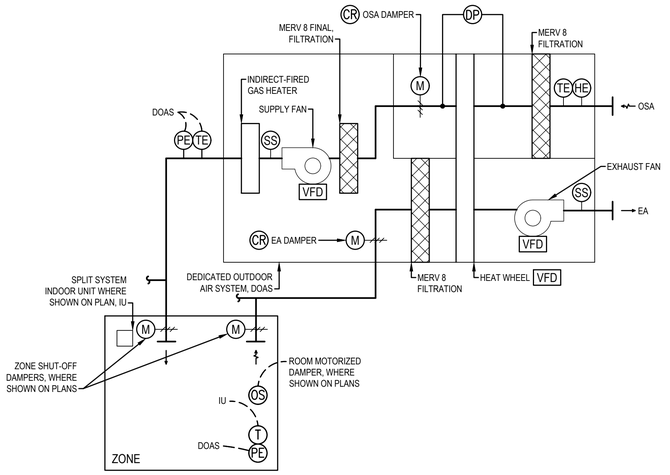
EF-02
1. FAN SHALL OPERATE 100% WHEN DOAS-01 EXHAUST FAN IS RUNNING.

## VRF CONTROL SEQUENCE

GENERAL

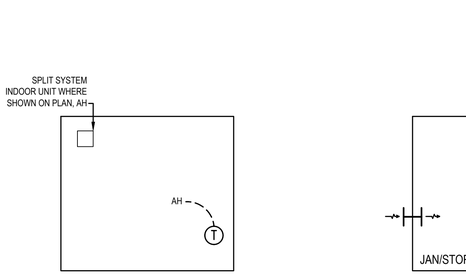
A. ON/OFF CONTROL: THE INDOOR UNITS CAN BE COMMANDED ON/OFF EITHER BY A SCHEDULE IN THE CENTRAL CONTROLLER OR AT THE REMOTE CONTROLLER. IF ALL INDOOR UNITS ARE OFF, THE OUTDOOR UNIT SHALL TURN OFF.
B. NIGHT SETBACK MODE: THE SYSTEM SHALL CYCLE ON DURING UNOCCUPIED PERIODS AS NEEDED TO MAINTAIN UNOCCUPIED TEMPERATURE SET POINT.
C. SPACE TEMPERATURE CONTROL: THE INDOOR UNIT SHALL MODULATE ITS INTERNAL LINEAR EXPANSION VALVE TO MAINTAIN THE TEMPERATURE SET POINT VIA THE INDOOR UNITS INTERNAL CONTROLS.
   1. THE SET POINT IS ADJUSTABLE AT THE REMOTE CONTROLLER OR CENTRAL CONTROLLER. THE TEMPERATURE SET POINT CAN ALSO BE SCHEDULED AT THE REMOTE CONTROLLER OR THE CENTRAL CONTROLLER.
D. MODE CONTROL:
   1. AUTO MODE:
      a. THE INDOOR UNIT SHALL DETERMINE WHETHER IT SHOULD BE IN AUTO-HEAT MODE OR AUTO-COOL MODE BASED ON SPACE TEMPERATURE RELATIVE TO TEMPERATURE SET POINT. IF THE INDOOR UNIT IS IN AUTO HEAT MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE HEAT MODE SEQUENCE. IF THE INDOOR UNIT IS IN AUTO COOL MODE, THE INDOOR UNIT CONTROL BOARD SHALL FOLLOW THE COOL MODE SEQUENCE.
      b. THE INDOOR UNIT SHALL SWITCH FROM AUTOHEAT TO AUTOCOOL WHEN THE SPACE TEMPERATURE RISES ABOVE AND REMAINS ABOVE THE TEMPERATURE SET POINT PLUS THE DEAD BAND FOR 3 MINUTES.
      c. THE INDOOR UNIT WILL SWITCH FROM AUTOCOOL TO AUTOHEAT WHEN THE SPACE TEMPERATURE DROPS BELOW AND REMAINS BELOW THE TEMPERATURE SET POINT MINUS THE DEAD BAND FOR 3 MINUTES.
   2. HEATING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION VALVE TO MAINTAIN TEMPERATURE SET POINT.
   3. COOLING MODE: THE INDOOR UNIT SHALL MODULATE ITS LINEAR EXPANSION VALVE TO MAINTAIN TEMPERATURE SET POINT.
E. FAN/VANE CONTROL: FAN SPEED AND VANE DIRECTION (IF APPLICABLE) SHALL BE ADJUSTABLE BY THE USER AT THE REMOTE CONTROLLER AND/OR THE CENTRAL CONTROLLER.

F. TEMPERATURE SETPOINT:
   1. EQUIPMENT ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL.

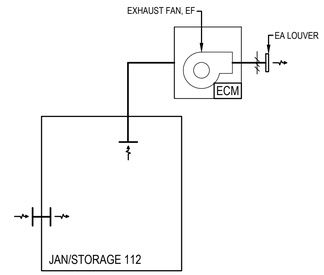



## DOAS SYSTEM FLOW DIAGRAM

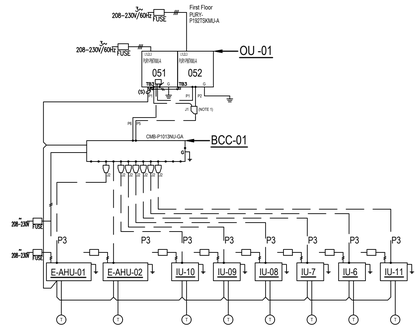
NOT TO SCALE




NOT TO SCALE




NOT TO SCALE




1 FLOW DIAGRAM
SCALE: NTS

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

## GENERAL NOTES

1. PIPING IS SCHEMATIC IN NATURE CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.

## DIAGRAM SYMBOL LEGEND

- POWER WIRE
- CONTROL WIRE
- REFER. PIPING

## PIPING AND CONTROLS

| SYMBOL | DESCRIPTION |
|---|---|
| J1 | REDUCER |
| J2 | CMY-R200NCBK |
| J3 | CMY-R200NCBK |
| CR | PAC-YT53CRAU-J |

| PIPING SYMBOL | LIQUID PIPE | GAS PIPE SIZE |
|---|---|---|
| P1 | 1/4" | 1/2 |
| P2 | 3/8" | 5/8" |
| P3 | 7/8" | 1-1/8" |
| P4 | 3/4 | |
| P5 | | 1-1/8" |
| P6 | | 7/8" |

B-21-0727CITY OF PUYALLUP

BRIAN SCOTT MIDDLEBROOK — STATE OF WASHINGTON — 527761 — REGISTERED PROFESSIONAL ENGINEER — 11/19/2021

| REVISIONS | DATE | |
|---|---|---|
| CHANGE | 11/19/2021 | PERMIT SET |

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| DRAWN | DESIGN | DATE | APPROVED |
|---|---|---|---|
| RPG | BSM | 11/19/2021 | |

CASCADE CHRISTIAN JUNIOR HIGH
SEQUENCE OF OPERATIONS I
815 21ST STREET SE
PUYALLUP, WASHINGTON 98372

Air Systems Engineering Inc.
AIR CONDITIONING DESIGN & INSTALLATION
(253) 572-8484
3502 SOUTH FIFE/TACOMA, WA 98409
COMFORT SYSTEMS USA
AIR CONDITIONING/SHEET METAL/REFRIGERATION/PROFESSIONAL ENGINEERS/SERVICE & MAINTENANCE

SHEET NO. M9 OF 9
JOB NO. 4126

# SYMBOLS

SWITCHING

- SINGLE POLE
- THREEWAY
- FOURWAY
- LOCKING
- DIMMER
- MANUAL MOTOR STARTER W/ THERMAL OVERLOADS
- TIMER
- PILOT LIGHT
- VARIABLE SPEED FAN CONTROLLER
- OCCUPANCY SENSOR WALLBOX MOUNT
- OCCUPANCY SENSOR CEILING MOUNT
- 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
- MOTO CONNECTION (NUMBER=HORSEPOWER)
- DISCONNECT SWITCH
- DISCONNECT SWITCH- FUSED
- SPECIAL RECEPTACLE
- 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.

# CASCADE CHRISTIAN JR HIGH SCHOOL - GYM TENANT IMPROVEMENT

# 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**
04203352148
**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

B-21-0727CITY OF PUYALLUP

Separate electrical permit is required with Washington State Department of Labor & Industries. https://lni.wa.gov/licensing-permits/electrical/electrical-permits-fees-and-inspections or Licensing information: Call 1-800-647-0982

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

# PLAN SHEET INDEX


| SHEET NO. | SHEET DESCRIPTION |
|---|---|
| E000 | COVER SHEET |
| E001 | LEGENDS/NREC |
| E100 | SITE PLAN |
| E200 | LIGHTING PLAN FLOOR 1 |
| E201 | LIGHTING PLAN FLOOR 2 |
| E300 | POWER PLAN FLOOR 1 |
| E301 | POWER PLAN FLOOR 2 |
| E302 | POWER PLAN ROOF |
| E400 | DETAILS |
| E500 | ONELINE |
| E501 | LOAD CALC / PANEL SCHEDULE / MECH SCHEDULES |
| E502 | FAULT CURRENT CALCS |
| E503 | SYSTEM SUBMITTALS |
| 504 | SYSTEM SUBMITTALS |


# PROJECT DIRECTORY


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253.572.9484

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253.820.3063


# ELECTRICAL CONTRACTOR CONTACT

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

CONTACT INFO CARD

WEBSITE

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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 |
|---|---|---|---|---|---|
| 38 | L1 | | 2X4 | 37 | |
| 28 | L1E | | 2X4 E | 37 | |
| 239 | L2 | | COVE LIGHTING | 478 | |
| | L3 | EXIT | EXIT SIGN | | |
| 6 | L4 | | LED PENDANT | 40 | |
| 7 | L5 | | 2X2 | 33 | |
| 8 | L5E | | 2X2 E | 33 | |
| 2 | L6 | | STAIR LIGHT | 34 | |
| 9 | L7 | | STAIR PENDANT | 40 | |
| 13 | L8 | | CANOPY LIGHT | | |
| 2 | L9 | | WALL LIGHT | | |
| 11 | L10 | | BATHROOM VANITY LIGHT | | |
| 1 | L11 | | EXTERIOR WALL LIGHT | | |
| 3 | L12 | | EXTERIOR GROUND LIGHT | | |
| 2 | L13 | | EMERGENCY LIGHTING | | |



## LIGHTING COMPLIANCE SUMMARY

2018 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

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| | | | |
|---|---|---|---|
| Project & Applicant Information | Project Title | CASCADE CHRISTIAN PHASE 3 - 2018 WSEC | For Building Department Use: Date: Dec 15, 2021 |
| | Project Address | 815 21ST ST SE PUYALLUP, WA 98372 | |
| | Applicant Name | suzy fountaine | |
| | Applicant Phone | 253-202-2555 | |
| | Applicant Email | suzyf@boonenw.com | |

For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| General Occupancy | All Commercial | | General Building Use Type | | Education, Primary (Elem/Mid) | Building Cond. Floor Area | 22,434 |
| General Project Types | Building Addition | New Building or Addition Lighting Scope | Interior Lighting Exterior Lighting | Alteration Lighting Scope | | Project Cond. Floor Area | 7,061 |
| | | | | | | Floors Above Grade | 2 |
| | | | | | | Compliance Method | Compliance Method 1 - General |
| Lighting Project Description | LIGHTING IN HALLS AND CLASSROOMS | | | | | | |

| Lighting Compliance Scope and Method | Project Type | Interior / Exterior (Interior includes both interior & parking) | Luminaire Replacement Scope | Compliance Method | LPA Calculation Adjustment | Compliance Verification |
|---|---|---|---|---|---|---|
| | Building Addition | Interior Lighting | | Building area | No Calculation Adjustments selected | COMPLIES |
| | Building Addition | Exterior Lighting | | | Not applicable to exterior | COMPLIES |
| Additional Efficiency Options Included | Reduced lighting power density credit | | | | | |

| Project Title | CASCADE CHRISTIAN PHASE 3 - 2018 WSEC | Date | Dec 15, 2021 |
|---|---|---|---|
| Lighting Power Calculation | BUILDING ADDITION - INTERIOR LIGHTING | Compliance Verification | COMPLIES |
| Compliance Method | Building area | LPA Calculation Adjustment | none |

Interior Lighting Power Allowance - Building Area

| Building Areas | Gross Interior Area (SF) | LPA (Watts/SF) | Total Watts Allowed (SF x LPA x 1) | Total Proposed Watts By Building Area | Compliance Status by Building Area |
|---|---|---|---|---|---|
| School/university | 10,700 | 0.70 | 7,490 | 3,500 | COMPLIES |

Proposed Lighting Power Density

| Fixture Type/Application | Fixture ID | Building Area | New or Existing-to-Remain | Quantity of Fixtures, CLDs or Luminaires (#F) | Watts per Fixture, CLD or Luminaire (WpF) | Total Linear Feet (LF) | Watts per Linear Foot (WpLF) | Total Watts Proposed (#F x WpF) or (LF x WpLF) |
|---|---|---|---|---|---|---|---|---|
| Individual Fixtures | | | | | | | | |
| Troffer | 2X4 | School/university | New | 66 | 37 | | | 2,442 |
| Troffer | 2X2 | School/university | New | 30 | 33 | | | 990 |
| Wall-mounted | STAIR | School/university | New | 2 | 34 | | | 68 |

| Project Title | CASCADE CHRISTIAN PHASE 3 - 2018 WSEC | Date | Dec 15, 2021 |
|---|---|---|---|
| Proposed Fixtures Details | BUILDING ADDITION - INTERIOR LIGHTING | | |

| Fixture Type/Application | Fixture ID | Location in Documents | Lamp Type | Building Area | New or Existing-to-Remain |
|---|---|---|---|---|---|
| Individual Fixtures | | | | | |
| Troffer | 2X4 | ALL | LED | School/university | New |
| | Fixture Description: 2X4 | | | Are these fixtures located within a daylight zone?: Yes, controls provided | |
| | Daylight zone location(s): Sidelit daylight zones (primary and/or secondary) | | | Dimming method: Continuous dimming | |
| | Do these fixtures require specific application lighting controls?: None required | | | | |
| Troffer | 2X2 | ALL | LED | School/university | New |
| | Fixture Description: 2X2 | | | Are these fixtures located within a daylight zone?: Yes, controls provided | |
| | Daylight zone location(s): Sidelit daylight zones (primary and/or secondary) | | | Dimming method: Continuous dimming | |
| | Do these fixtures require specific application lighting controls?: None required | | | | |
| Wall-mounted | STAIR | ALL | LED | School/university | New |
| | Fixture Description: STAIR | | | Are these fixtures located within a daylight zone?: Yes, controls provided | |
| | Daylight zone location(s): Sidelit daylight zones (primary and/or secondary) | | | Dimming method: Continuous dimming | |
| | Do these fixtures require specific application lighting controls?: None required | | | | |



| Project Title | CASCADE CHRISTIAN PHASE 3 - 2018 WSEC | Date | Dec 15, 2021 |
|---|---|---|---|
| Lighting Power Calculation | BUILDING ADDITION - EXTERIOR LIGHTING | Compliance Verification | COMPLIES |
| Exterior Lighting Zone | ZONE 3 | Base Site Allowance | 500 |

Exterior Tradable Lighting Power Allowance

| Tradable Surface | Tradable Surface Sub-Type | Surface Area (SF) | LPA (Watts/SF) | Linear Feet (LF) | LPA (Watts/LF) | Total Watts Allowed (LPA x SF) or (LPA x LF) | Total Tradable Proposed Watts | Tradable Compliance Status |
|---|---|---|---|---|---|---|---|---|
| Building grounds | Walkways 10 feet and wider | 13,495 | 0.11 | | | 1,485 | | |
| Building entrances and exits | Entry canopies | 654 | 0.40 | | | 262 | | |
| | | | | | Base Site Allowance | 500 | | |
| | | | | | Totals | 2,246 | 250 | COMPLIES |

Proposed Tradable Lighting Power Density

| Fixture Type | Fixture ID | Tradable Surface Type | Quantity of Fixtures (#F) | Watts or Wattage Limit per Fixture (WpF) | Total Linear Feet (LF) | Watts per Linear Foot (WpLF) | Total Watts Proposed (#F x WpF) or (LF x WpLF) |
|---|---|---|---|---|---|---|---|
| Individual Fixtures | | | | | | | |
| Canopy | L8 | Building entrances and exits - Entry canopies | 13 | 10 | | | 130 |
| Wall-mounted | EXTERIOR WALL LIGHT | Building grounds - Walkways 10 feet and wider | 3 | 40 | | | 120 |
| | | | | | | Tradable Proposed Total | 250 |



**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

B-21-0727CITY OF PUYALLUP

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 |

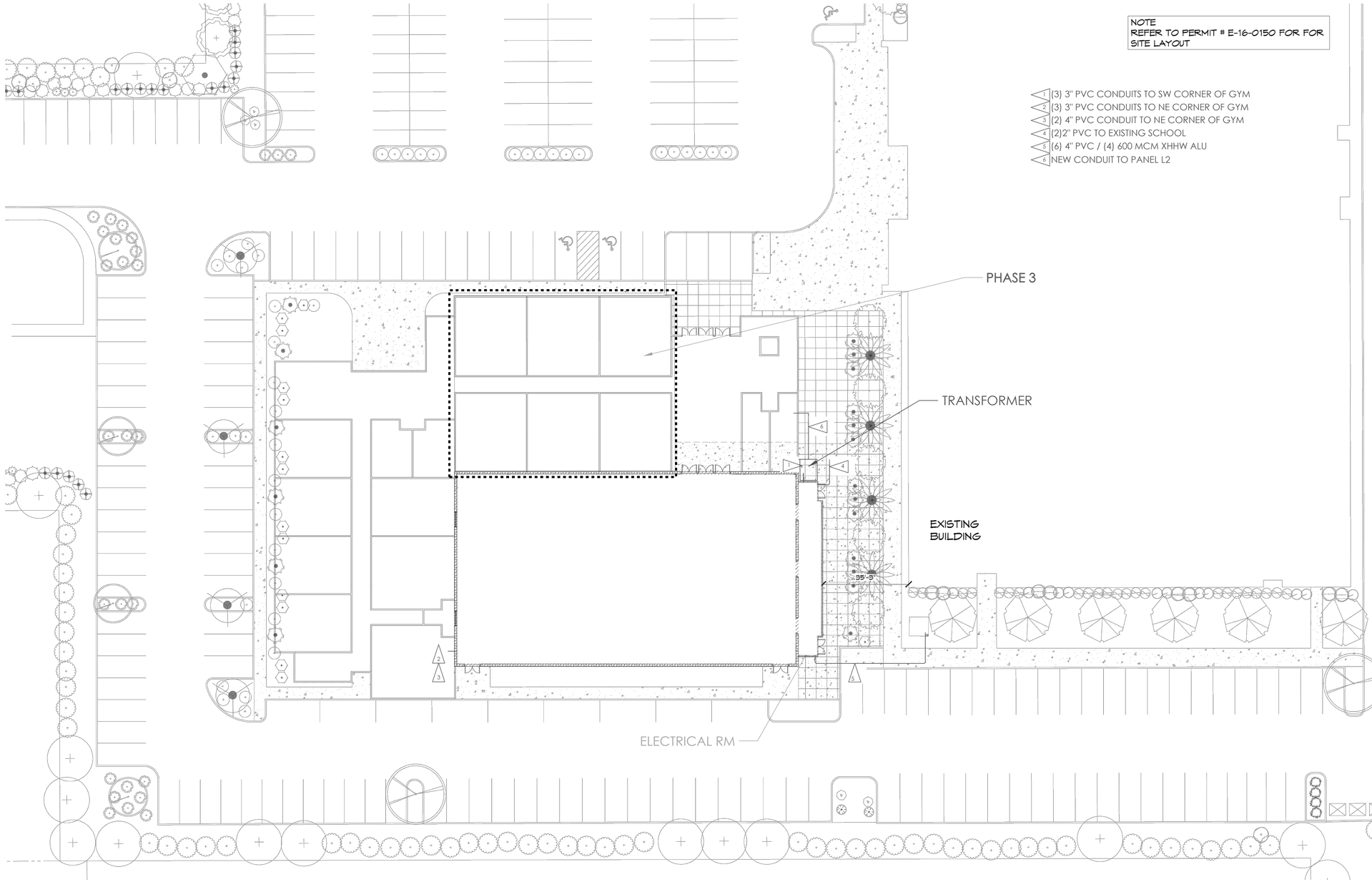
REVISIONS

JOB NO.- PC190002

LEGENDS/NREC

SHEET NO.

E001




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

(3) 3" PVC CONDUITS TO SW CORNER OF GYM
(3) 3" PVC CONDUITS TO NE CORNER OF GYM
(2) 4" PVC CONDUIT TO NE CORNER OF GYM
(2)2" PVC TO EXISTING SCHOOL
(6) 4" PVC / (4) 600 MCM XHHW ALU
NEW CONDUIT TO PANEL L2

SITE PLAN
NOT TO SCALE

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

B-21-0727CITY OF PUYALLUP

BOONE ELECTRIC
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TENANT IMPROVEMENT
PHASE 3
815 21ST ST SE
PUYALLUP, WA 98372

CONSTRUCTION SET

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| | | SUBMITTAL |
| | | CONSTRUCTION |
| | | AS BUILT |

REVISIONS

JOB NO.- PC190002

SITE PLAN

SHEET NO.

E100

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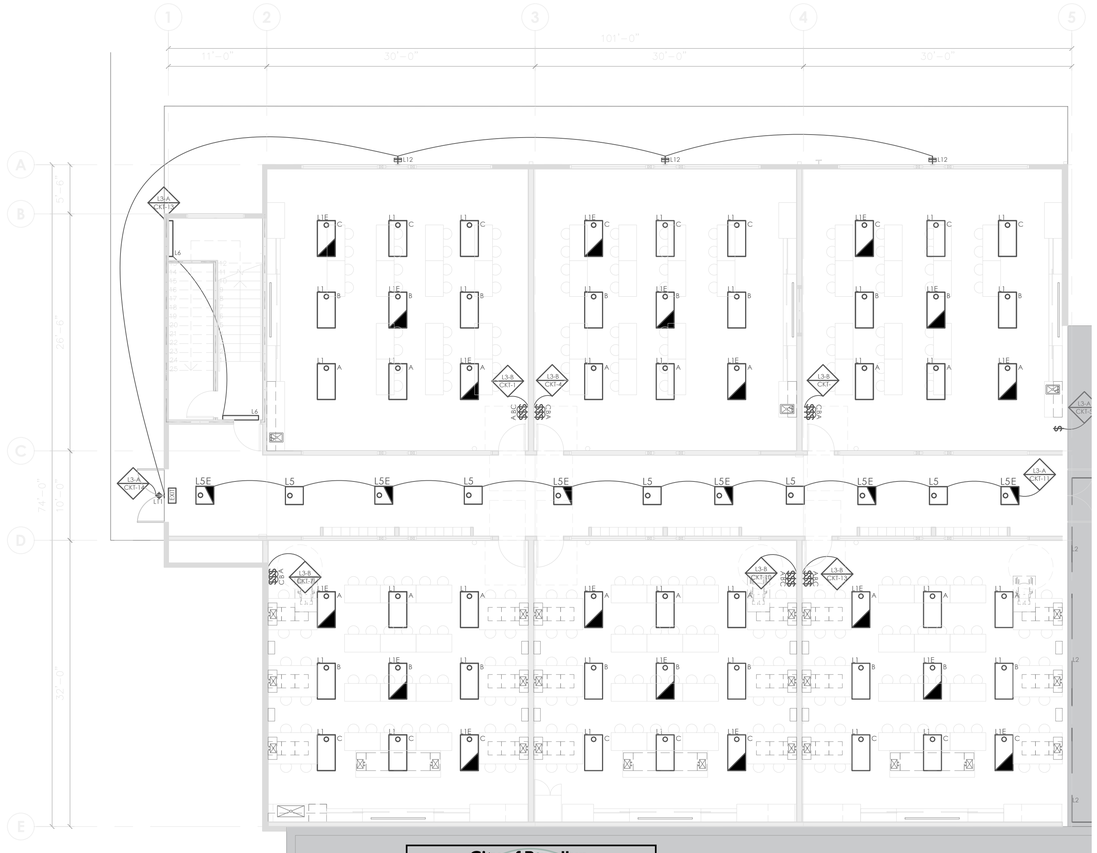


City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

LIGHTING PLAN - FLOOR 1

1/8"=1'

B-21-0727CITY OF PUYALLUP

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

LIGHTING

SHEET NO.

E200

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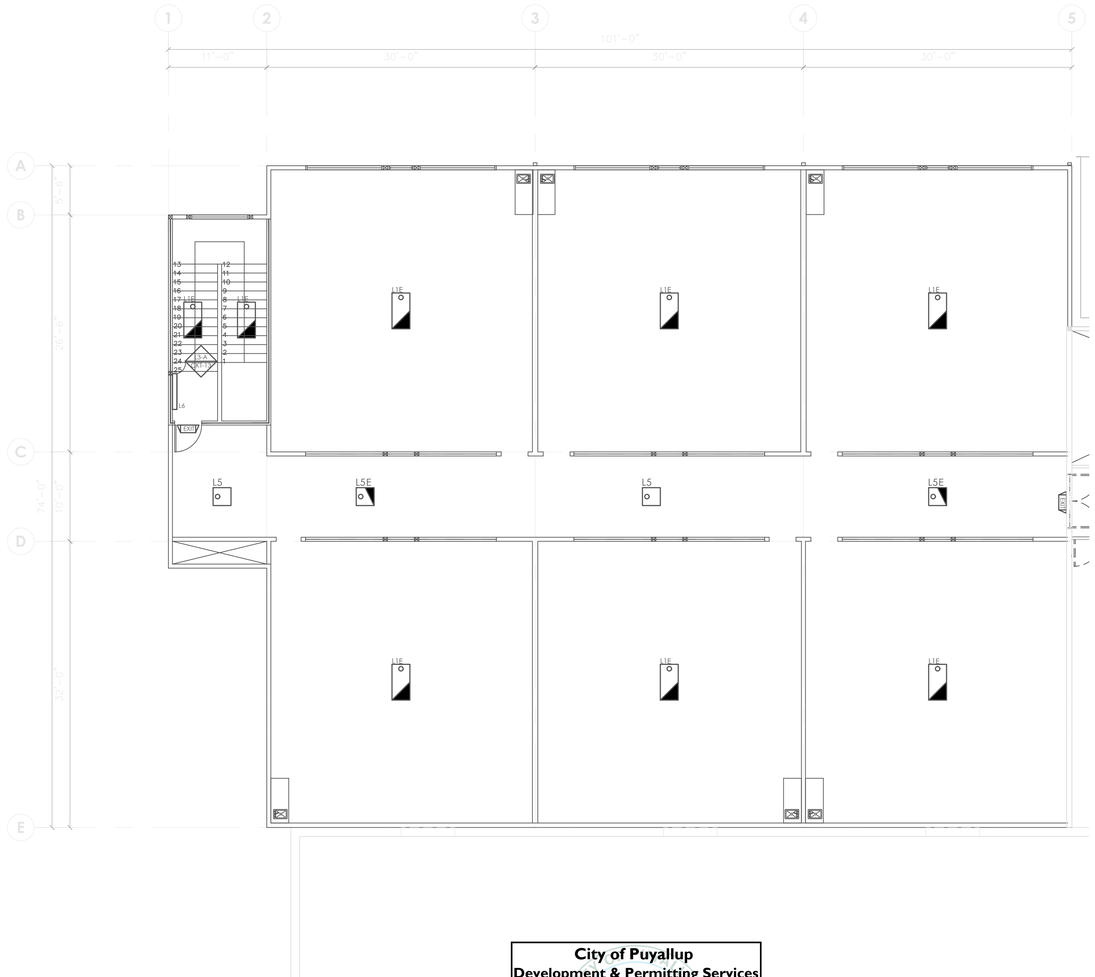


LIGHTING PLAN - FLOOR 2

1/8"=1'

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

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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

LIGHTING

SHEET NO.

E201

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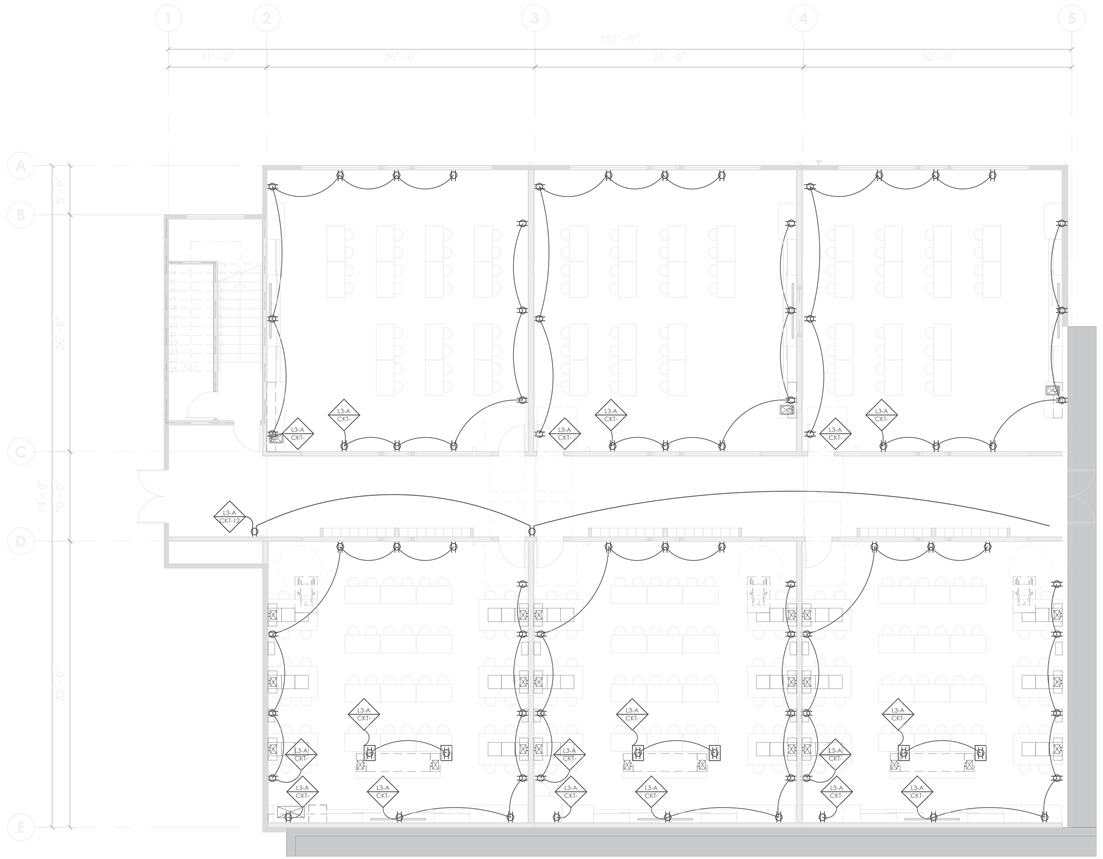


POWER PLAN - FLOOR 1

1/8" = 1'

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

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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

POWER

SHEET NO.

E300

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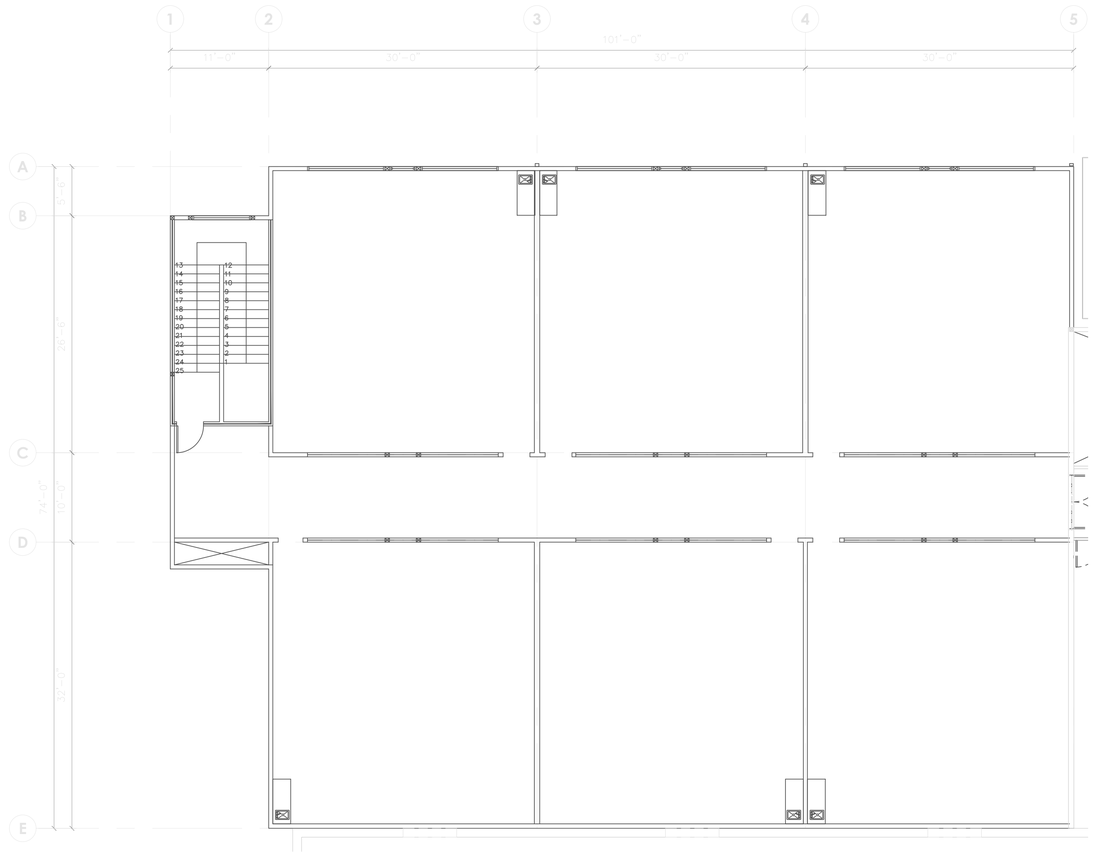


POWER PLAN - FLOOR 2

1/8" = 1'

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

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CONSTRUCTION SET

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

REVISIONS

JOB NO.- PC190002

POWER

SHEET NO.

E301

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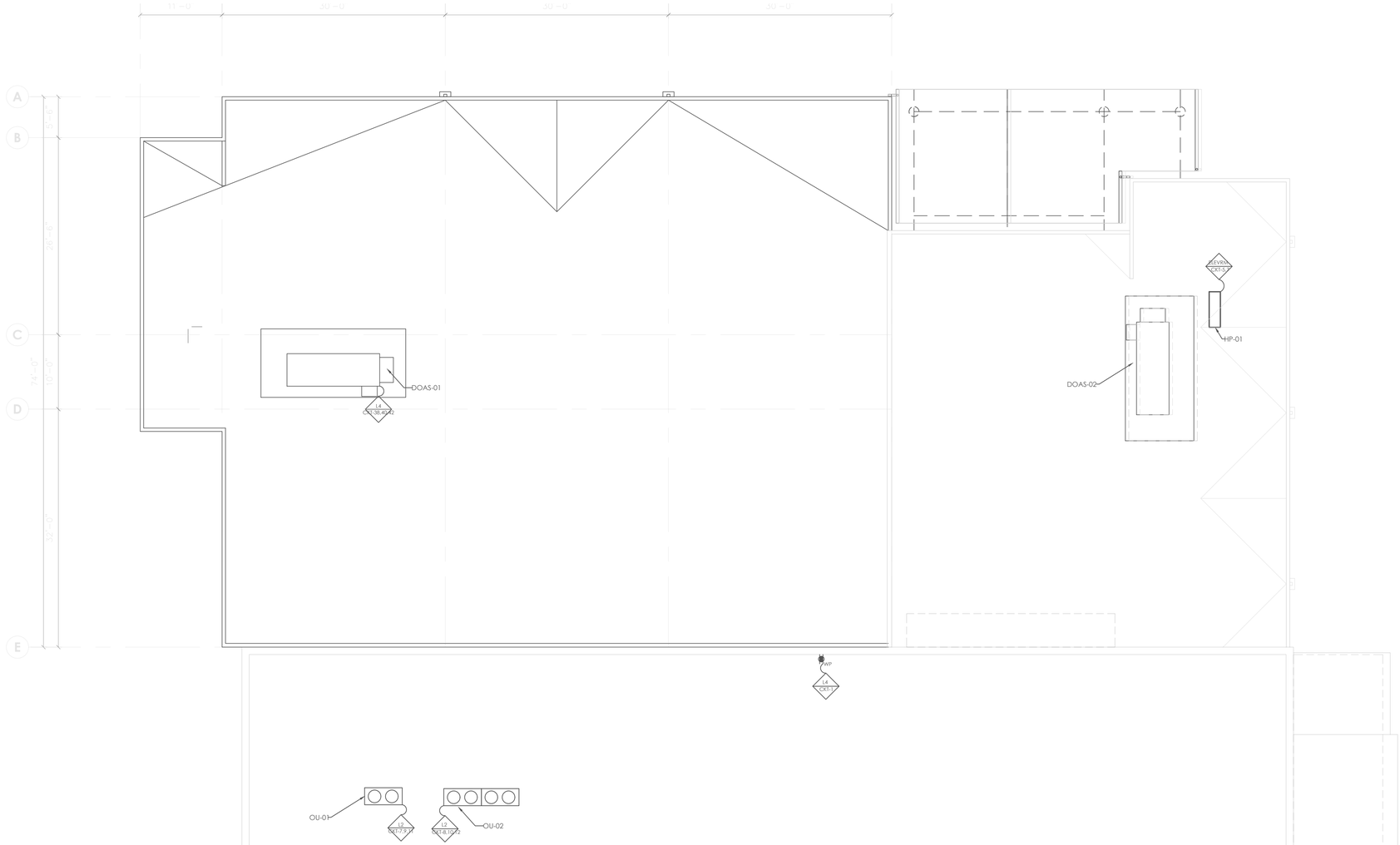


City of Puyallup
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ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

POWER PLAN - ROOF

1/8" = 1'

B-21-0727CITY OF PUYALLUP

BOONE ELECTRIC

PUYALLUP ■ SPOKANE

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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

POWER

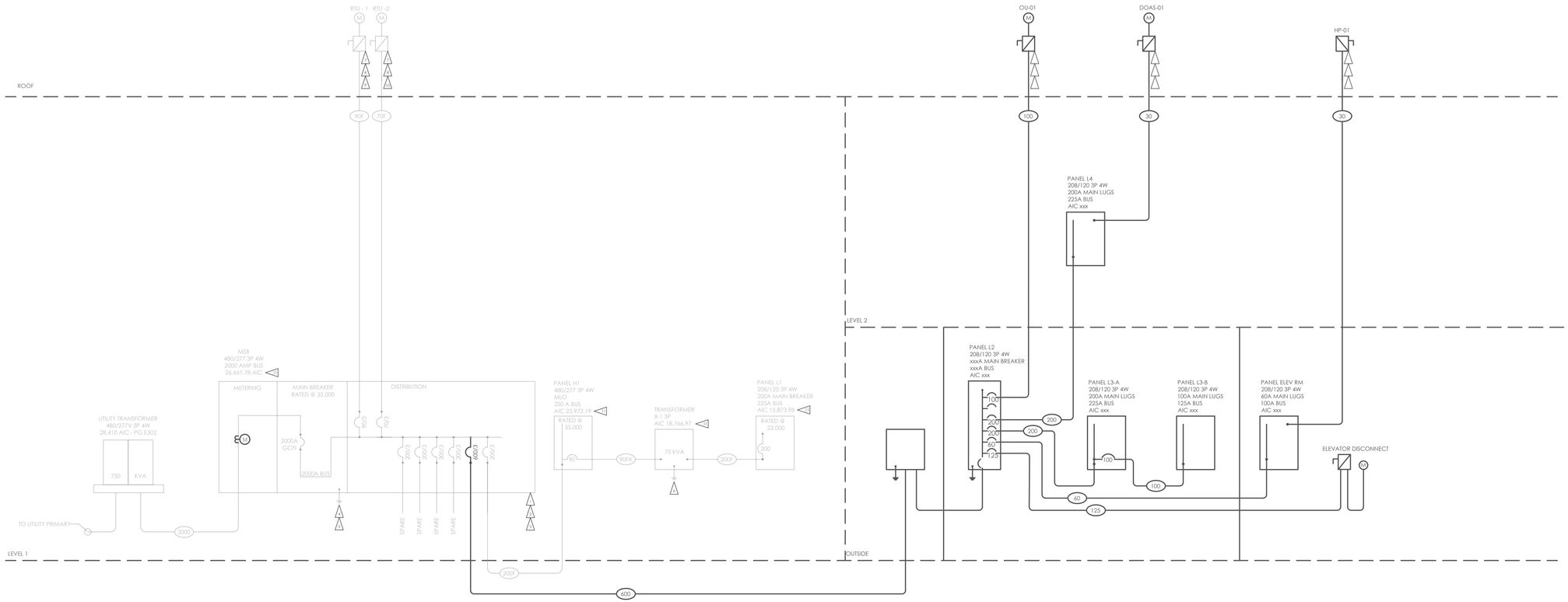
SHEET NO.

E302

S:\PLANS\2019 PROJECTS\PC190002 - CASCADE CHRISTIAN JR HIGH\PHASE 3\ELECTRICAL\CASCADE CHRISTIAN JR HIGH SCHOOL - PHASE 3 12142021.dwg, 12/15/2021 7:50:17 AM, DESIGN SET

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 1/2 EMT / (4) #1 XHHW ALU #6 XHHW ALU GROUND
90FX 1 1/2 EMT / (4) #1 XHHW ALU #2 XHHW ALU GROUND
70F 1 1/2" EMT / (4) #4 THHN CU #8 THHN CU GROUND

1. (3) 3" PVC FUTURE CONDUITS TO SW CORNER OF GYM
2. (3) 3" PVC FUTURE CONDUITS TO NE CORNER OF GYM
3. (2) 4" PVC FUTURE CONDUIT TO NE CORNER OF GYM
4. 3/0 BARE CU TO COLD WATER
5. #4 BARE CU TO UFFER
6. #4 CU TO MSB GROUND
7. 480/277 V 3P 4W 100A FUSED DISCONNECT NEMA 3
8. RATE AT 22,000 AIC
9. 90 AMP 600V TYPE J FUSE
10. 70 AMP 600V TYPE J FUSE
11. SEE CALCULATION ON SHEET E502




**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
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| | | AS BUILT |

REVISIONS

JOB NO.- PC190002

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 | 40.558 | D | 75 KVA TRANSFORMER | ② |
| 3 | LIGHTING: SMALL GYM | L | 1.036 | 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 | | | | 45.65 KVA | 56.12 AMP |

OLATED GROUND BUS — EED THRU LUGS — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

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 | 0.360 | 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 MATT | D | 2.370 | 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 |

OLATED GROUND BUS — EED THRU LUGS — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

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 | 10.419 | D | PANEL L4 | ② |
| 3 | " | | | " | B | " | | | " | 4 |
| 5 | " | | | " | C | " | | | " | 6 |
| 7 | OU-O1 | M | 21.980 | 100/3 | A | 70/3 | | M | OU-02 - FUTURE | 8 |
| 9 | " | | | " | B | " | | | " | 10 |
| 11 | " | | | " | C | " | | | " | 12 |
| 13 | ELEV RM | M | 4.186 | 60/3 | A | 125/3 | 26.280 | 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 | | | 26.28 | 82.64 KVA | 229.37 AMP |
| NET CALC. LOAD | | | 52.43 | | | | 30.21 | | | 6.57 | 89.21 KVA | 247.61 AMP |

OLATED GROUND BUS — EED THRU LUGS — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

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 & 105 LIGHTING | L | 0.099 | 20/1 | A | 20/1 | 0.180 | R | BATHROOM 107 RECEPTICLE | ② |
| 3 | RM 106 LIGHTING | L | 0.033 | 20/1 | B | 20/1 | 0.720 | R | RM 105 & 106 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 | 108 HALL LIGHTING | L | 0.364 | 20/1 | C | 20/1 | 0.540 | R | 108 HALL RECEPTICLES | 12 |
| 13 | 115 STAIR LIGHTING | L | 0.070 | 20/1 | A | 20/1 | 0.174 | L | EXTERIOR LIGHTING | 14 |
| 15 | 012, 013, 014 LIGHTING | L | 0.099 | 20/1 | B | 20/1 | 0.180 | R | 012 JANITOR RECEPTICLE | 16 |
| 17 | ELEV LIGHTING | L | 0.096 | 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 | 0.828 | 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 | 2.248 | 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 | 6.773 | D | L3-B | 38 |
| 39 | | | | | B | " | | | " | 40 |
| 41 | | | | | C | " | | | " | 42 |

PHASE LOAD — PHASE A= 5.46 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 | 3.25 | 5.58 | | 3.37 | | | 6.77 | | | 18.98 KVA | 52.69 AMP | |
| NET CALC. LOAD | 4.08 | 5.58 | | 3.37 | | | 6.77 | | | 19.80 KVA | 54.96 AMP | |

OLATED GROUND BUS — EED THRU LUGS — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

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 | 0.335 | 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 | 0.335 | 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 | L | 0.335 | 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 | 0.335 | 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 | 0.335 | 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 — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL 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 021 RECEPTICLES | ② |
| 3 | UPSTAIRS LIGHTING HALL 221 | L | 0.354 | 20/1 | B | 20/1 | 0.780 | 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 | 1.35 | 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 — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

REMARKS:

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

| CKT | AD DESCRIPTION | TYPE | KVA | A/P | ASE | A/P | KVA | TYPE | D DESCRIPTION | CKT |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CAR LIGHTS | L | | 20/1 | A | 20/1 | | L | PIT GFCI | ② |
| 3 | ROOM GFCI | 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 |

SE LOAD — PHASE A= 1.67 KVA — PHASE B= KVA — PHASE C= 1.67 KVA

| AD TYPE | L | R | M | H | WH | | D | A | K | LM | TOTAL LOADS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VN. LOAD | | | 3.35 | | | | | | | 3.35 | 3.35 KVA | 9.30 AMP |
| ALC. LOAD | | | 3.35 | | | | | | | 0.84 | 4.19 KVA | 11.62 AMP |

OLATED GROUND BUS — EED THRU LUGS — 4N BKR SHUNT TRIP — ANEL SKIRTS — URFACE
AINTIGHT NEMA-3R ENCLOSURE — OUBLE LUGS — RVICE ENTRANCE LABEL — NTEGRAL TVSS — LUSH

REMARKS:

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building — Planning
Engineering — Public Works
Fire — Traffic

B-21-0727CITY OF PUYALLUP

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

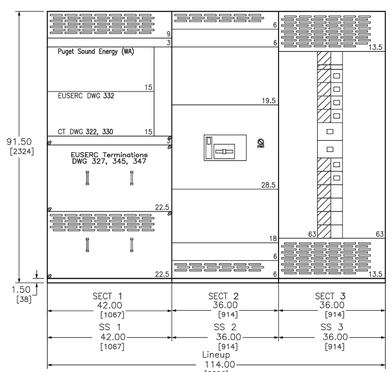
JOB NO.- PC190002

PANEL SCHEDULES

SHEET NO.

E501

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |




## SWITCHBOARD GENERAL NOTES

### PRODUCT DESCRIPTION & RATINGS

**Power System Data**
480Y/277V 3Ph 4W 60Hz / 3 Phase Wye
Solidly Grounded
System Short Circuit Current Rating: 35kA RMS
Incoming Section 1 Cable Through the Bottom Left of Lineup

**Bus System Data**
2000A Tin/Aluminum & Silver/Copper Main Bus
(4) .25x2.00 IN/6x51 mm Al Bus Bar Per Phase/Neutral
(1) .25x1.50 IN/6x38 mm Al Ground Bus

**Enclosure Data**
Type 1 Free Standing
Exterior Paint Color: ANSI 49
Front Accessibility Only Required
Handling: Rollers & Lifting Assemblies
Rodent barriers
Base channels cannot be removed from EUSERC switchboard line-ups
Utility sealing hardware installed for unmetered bus compartments

**Estimated Shipping Weight**
Shipping Split 1 820.00 lbs / 371.95 kgs
Shipping Split 2 570.00 lbs / 258.55 kgs
Shipping Split 3 790.00 lbs / 358.34 kgs
Complete Lineup 2180.00 lbs / 988.85 kgs

**Code Standards**
U.L. Deadfront and suitable for use as Service Entrance when not more than six (6) disconnecting means are provided.

**Rating Nameplates**
ST1- Deadfront - Section Bus 2000A
ST2- Service Entrance - Section Bus 2000A
ST3- Deadfront - Section Bus 2000A

### PRODUCT INFORMATION

**Wiring**
All wiring to be Machine Tool Wire type

**Instruction Bulletins**
Reference BO043-055 For Handling, Installation, Anchoring, Inspection And Maintenance Information

**Product Accessories/Options**
24V Trip Unit Display Power
Locally Mounted ERMS Switch

DUAL DIMENSIONS: INCHES / MILLIMETERS

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: MDP |
| JOB LOCATION: | EQUIPMENT TYPE: QED-2 Switchboard |
| DRAWN BY: (Q2C) | DRAWING TYPE: GENERAL NOTES |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: August 01 2019 | DWG# FQ-812488-20792821-01 PG 1 OF 2 REV -- |
| DRAWING STATUS: QUOTE | |

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |

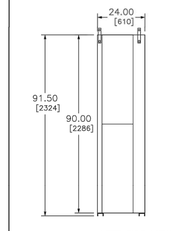
## POWER STYLE QED-2 SWITCHBOARD

| SECT NO | CKT NO | IMD /GMD CONFIG | DEVICE/FRAME RATING | TRIP AMP | FUSE/ TRIP | #P | DESIGNATION | N/P | LUG/WIRE INFORMATION | | | | ACCESSORIES / NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | QTY | PHASE WIRE RANGE | QTY | NEUT WIRE RANGE | |
| 1 | UCT | – | 2000A | – | – | – | Puget Sound Energy (WA) | No | 6 | 3/0 – 750 kcmil | 6 | 3/0 – 750 kcmil | |
| 2 | M1 | FIX | RK 2000A Plug A | 2000A | P-LSIG | 3P | | No | – | – | – | – | GF PLA ERMS,TU |
| 2 | M1 | – | Line Side | – | – | – | – | – | – | Bus | – | Bus | – |
| 3 | 1 | 4.5 in | BG | 70A | – | 3P | | No | 1 | #14 – 1/0 AWG | 1 | #14 – 1/0 AWG | |
| 3 | 2 | 4.5 in | BG | 90A | – | 3P | | No | 1 | #14 – 1/0 AWG | 1 | #14 – 1/0 AWG | |
| 3 | 3 | 4.5 in | JG | 200A | – | 3P | | No | 1 | 3/0 – 350 kcmil | 1 | 3/0 – 350kcmil | |
| 3 | 4 | 4.5 in | JG | 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 | JG | 200A | – | 3P | | No | 1 | 3/0 – 350 kcmil | 1 | 3/0 – 350kcmil | |
| 3 | 8 | 4.5 in | JG | 200A | – | 3P | | No | 1 | 3/0 – 350 kcmil | 1 | 3/0 – 350kcmil | |

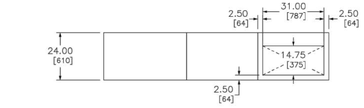
| LEGEND | |
|---|---|
| ERMS | Energy Reduction Maintenance SW |
| GF | Ground Fault |
| PLA | Padlock Attachment-Fixed |
| TU | 24V Trip Unit Display Power |

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: MDP |
| JOB LOCATION: | EQUIPMENT TYPE: QED-2 Switchboard |
| DRAWN BY: (Q2C) | DRAWING TYPE: SCHEDULE |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: August 01 2019 | DWG# OQ-812488-20792821-01 PG 2 OF 2 REV -- |
| DRAWING STATUS: QUOTE | |

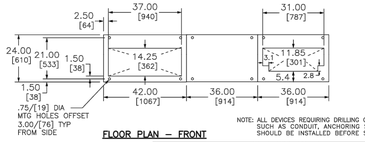
| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |




LEFT SIDE VIEW




TOP VIEW – FRONT



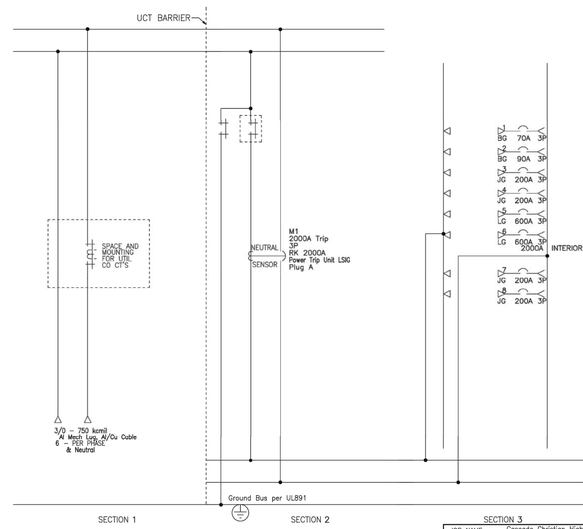

FLOOR PLAN – FRONT

NOTE: ALL DEVICES REQUIRING DRILLING OR INSERTION IN MOUNTING PAD SUCH AS CONDUIT, ANCHORING STUDS, SLEEVE INSERTS, ETC. SHOULD BE INSTALLED BEFORE SETTING EQUIPMENT IN PLACE.

DUAL DIMENSIONS: INCHES / MILLIMETERS

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: MDP |
| JOB LOCATION: | EQUIPMENT TYPE: QED-2 Switchboard |
| DRAWN BY: (Q2C) | DRAWING TYPE: SIDE, TOP VIEW & FLOOR PLAN |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: August 01 2019 | DWG# FQ-812488-20792821-01 PG 2 OF 2 REV -- |
| DRAWING STATUS: QUOTE | |

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |




| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: MDP |
| JOB LOCATION: | EQUIPMENT TYPE: QED-2 Switchboard |
| DRAWN BY: (Q2C) | DRAWING TYPE: ONE LINE |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: August 01 2019 | DWG# OQ-812488-20792821-01 PG 1 OF 2 REV -- |
| DRAWING STATUS: QUOTE | |

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

B-21-0727CITY OF PUYALLUP

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

S:\PLANS\2019 PROJECTS\PC190002 - CASCADE CHRISTIAN JR HIGH\PHASE 3\ELECTRICAL\CASCADE CHRISTIAN JR HIGH SCHOOL - PHASE 3 12142021.dwg, 12/15/2021 7:50:20 AM, DESIGN SET

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
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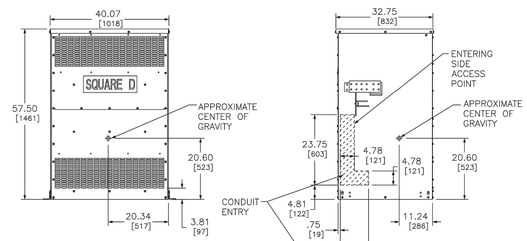
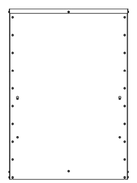








SEISMIC QUALIFICATION
TO BE COMPLIANT WITH THE SEISMIC REQUIREMENTS OF ASCE/SEI 7.
THIS UNIT IS SELF CERTIFIED TO ICS ES AC156 BY SHAKE TABLE QUALIFICATION TESTING
THE ENCLOSURE ABOVE IS 25J.

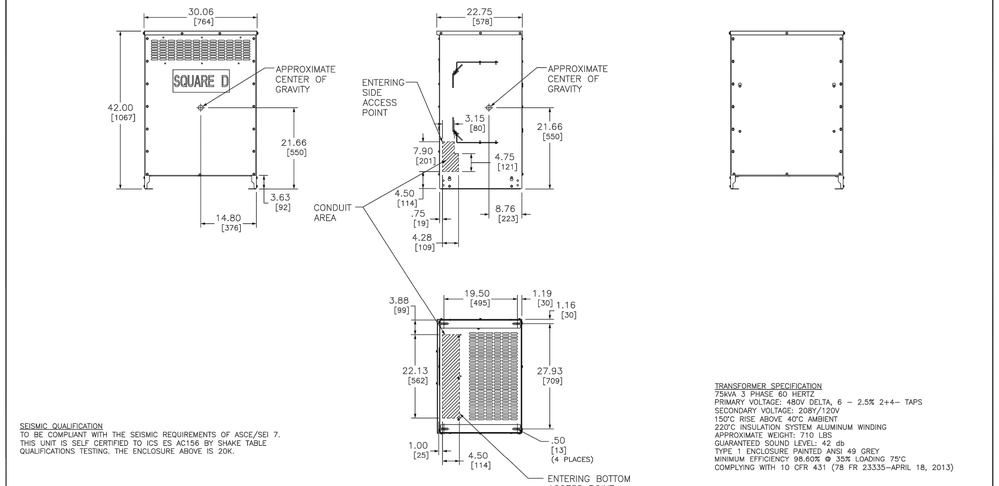
NOTES:
cULus LISTED TO UL1561 AND C22. 2No47, FILE NUMBER E6868
NEMA ST–20 (2014) ROUTINE TESTS ARE COMPLETED ON ALL UNITS.
MANUFACTURED IN ISO9001 FACILITIES
GREEN PREMIUM (RoHS/REACH COMPLIANT, PRODUCT ENVIRONMENTAL PROFILE)
REGISTERED TO DOE VIA 10 CFR 429 & NRCAN
MINIMUM SIDE AND REAR CLEARANCE 1/2 INCH PER UL1561 ALCOVE TESTING.
FRONT ACCESS MUST COMPLY WITH NEC WORK SPACE REQUIREMENTS.
WIRE ACCESS SHOWN SHADED ABOVE. LOCATIONS ARE FRONT SIDES AND FRONT BOTTOM.

TRANSFORMER SPECIFICATION
300kVA 3 PHASE 60 HERTZ 490B
PRIMARY VOLTAGE: 480V Delta, 6 – 2.5% 2+4– Taps
SECONDARY VOLTAGE: 208Y/120V
150 Deg C RISE ABOVE 40 Deg C AMBIENT
220 Deg C INSULATION SYSTEM Aluminum WINDING
MAXIMUM WEIGHT: 2,091 LBS
Type 1 Standard Painted ANSI 49 Grey
MINIMUM EFFICIENCY 99.02% @ 35% LOADING 75 Deg C
COMPLYING WITH 10 CFR 431 (78 FR 23335–APRIL 18, 2013)

DUAL DIMENSIONS: INCHES
MILLIMETERS

EX300T3H

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: |
| JOB LOCATION: | EQUIPMENT TYPE: LV DISTRIBUTION TRANSFORMER |
| DRAWN BY: (02C) | DRAWING TYPE: ELEVATION VIEW |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: March 08 2019 | DWG# EQ–812488–20831057–01 PG 1 OF 1 REV – |
| DRAWING STATUS: QUOTE NOT FOR CONSTRUCTION | |




SEISMIC QUALIFICATION
TO BE COMPLIANT WITH THE SEISMIC REQUIREMENTS OF ASCE/SEI 7.
THIS UNIT IS SELF CERTIFIED TO ICS ES AC156 BY SHAKE TABLE
QUALIFICATIONS TESTING. THE ENCLOSURE ABOVE IS 20K.

NOTES:
cULus LISTED TO UL1561 AND C22. 2No47, FILE NUMBER E6868.
ALL UNITS 100% TESTED PRIOR TO SHIPPING TO NEMA ST–20 (2014).
MANUFACTURED IN ISO 9001 FACILITIES.
GREEN PREMIUM (RoHS/REACH COMPLAINT, PRODUCT ENVIRONMENTAL PROFILE).
REGISTERED TO DOE VIA 10 CFR 429 & NRCAN.
MINIMUM CLEARANCE 1/2 INCH PER ALCOVE TESTING UL 1561. SIDES AND REAR
FRONT ACCESS MUST COMPLY WITH NEC WORK SPACE REQUIREMENTS. MINIMUM
CLEARANCE OF 6.00/[152].
CONDUIT ENTRY AREA ARE SHOWN SHADED ABOVE, LOCATIONS ARE FRONT SIDES AND
FRONT BOTTOM.

TRANSFORMER SPECIFICATION
75kVA 3 PHASE 60 HERTZ
PRIMARY VOLTAGE: 480V DELTA, 6 – 2.5% 2+4– TAPS
SECONDARY VOLTAGE: 208Y/120V
150°C RISE ABOVE 40°C AMBIENT
220°C INSULATION SYSTEM ALUMINUM WINDING
APPROXIMATE WEIGHT: 710 LBS
GUARANTEED SOUND LEVEL: 42 db
TYPE 1 ENCLOSURE PAINTED ANSI 49 GREY
MINIMUM EFFICIENCY 98.60% @ 35% LOADING 75°C
COMPLYING WITH 10 CFR 431 (78 FR 23335–APRIL 18, 2013)

DUAL DIMENSIONS: INCHES
MILLIMETERS

JULY 2018

LOW VOLTAGE DISTRIBUTION TRANSFORMER
DOE 2016
DRY TYPE TRANSFORMERS
CATALOG NO EX75T3H
3 PHASE, 480 DELTA, SECONDARY 208Y/120

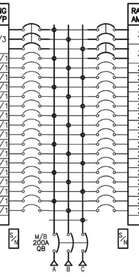
SQUARE D by Schneider Electric
DWG# NO. EX75T3H

EX75T3H

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |

| CKT NO | ACCESSORIES | TYPE | RATING AMP/P |
|---|---|---|---|
| 1 | | QOB | 30/3 |
| 3 | | | |
| 5 | | | |
| 7 | | QOB | 20/1 |
| 9 | | QOB | 20/1 |
| 11 | | QOB | 20/1 |
| 13 | | QOB | 20/1 |
| 15 | | QOB | 20/1 |
| 17 | | QOB | 20/1 |
| 19 | | QOB | 20/1 |
| 21 | | QOB | 20/1 |
| 23 | | QOB | 20/1 |
| 25 | | QOB | 20/1 |
| 27 | | QOB | 20/1 |
| 29 | | QOB | 20/1 |
| 31 | | QOB | 20/1 |
| 33 | | QOB | 20/1 |
| 35 | | QOB | 20/1 |
| 37 | | QOB | 20/1 |
| 39 | | QOB | 20/1 |
| 41 | BLANK | | |

| RATING AMP/P | TYPE | ACCESSORIES | CKT NO |
|---|---|---|---|
| 30/2 | QOB | | 2 |
| | | | 4 |
| 30/2 | QOB | | 6 |
| 20/1 | QOB | | 8 |
| 20/1 | QOB | | 10 |
| 20/1 | QOB | | 12 |
| 20/1 | QOB | | 14 |
| 20/1 | QOB | | 16 |
| 20/1 | QOB | | 18 |
| 20/1 | QOB | | 20 |
| 20/1 | QOB | | 22 |
| 20/1 | QOB | | 24 |
| 20/1 | QOB | | 26 |
| 20/1 | QOB | | 28 |
| 20/1 | QOB | | 30 |
| 20/1 | QOB | | 32 |
| 20/1 | QOB | | 34 |
| 20/1 | QOB | | 36 |
| 20/1 | QOB | | 38 |
| 20/1 | QOB | | 40 |
| | | BLANK | 42 |




PHYSICAL DATA
ENCLOSURE Type 1
Surface with Door
FRONT CAT#: NC50S
BOX CAT#: MH50
DIMENSIONS:
50"(1270mm)Hx20"(508mm)Wx5.75"(146mm)D
WIRE BENDING SPACE:
TOP – 5"(127)mm
BOTTOM – 10.47"(267)mm
SIDE – 6.13"(156)mm
PBA: 707A
BUSSING: 225A RATED ALUMINUM BUS
Tin Plated
OPTIONAL FEATURES:
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR

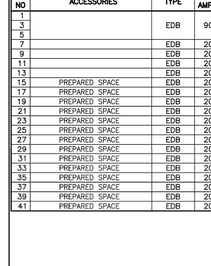
ELECTRICAL DATA
SYSTEM: 208Y/120V 3Ph 4W 60Hz
System Ampacity: 200A
10kA SYMS. SCCR
MAIN: MAIN BREAKER QB 200A
Bottom FEED
10kA AIR
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – #4 – 300 kcmil
----------BRANCH SUMMATION----------
1 – 30A/3P QOB 33 – 20A/1P QOB
2 – 30A/2P QOB

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: |
| JOB LOCATION: | EQUIPMENT TYPE: NQ (Circuit Breaker Type) PANEL 1 OF 1 |
| DRAWN BY: (02C) | DRAWING TYPE: ONE LINE DIAGRAM |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: June 27 2019 | DWG# QQ–812488–27053393–01 PG 1 OF 1 REV – |
| DRAWING STATUS: QUOTE | |

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |
| – | ---- | -- | --/--/-- |

| CKT NO | ACCESSORIES | TYPE | RATING AMP/P |
|---|---|---|---|
| 1 | | EDB | 90/3 |
| 3 | | | |
| 5 | | | |
| 7 | | EDB | 20/1 |
| 9 | | EDB | 20/1 |
| 11 | | EDB | 20/1 |
| 13 | | EDB | 20/1 |
| 15 | PREPARED SPACE | EDB | 20/1 |
| 17 | PREPARED SPACE | EDB | 20/1 |
| 19 | PREPARED SPACE | EDB | 20/1 |
| 21 | PREPARED SPACE | EDB | 20/1 |
| 23 | PREPARED SPACE | EDB | 20/1 |
| 25 | PREPARED SPACE | EDB | 20/1 |
| 27 | PREPARED SPACE | EDB | 20/1 |
| 29 | PREPARED SPACE | EDB | 20/1 |
| 31 | PREPARED SPACE | EDB | 20/1 |
| 33 | PREPARED SPACE | EDB | 20/1 |
| 35 | PREPARED SPACE | EDB | 20/1 |
| 37 | PREPARED SPACE | EDB | 20/1 |
| 39 | PREPARED SPACE | EDB | 20/1 |
| 41 | PREPARED SPACE | EDB | 20/1 |

| RATING AMP/P | TYPE | ACCESSORIES | CKT NO |
|---|---|---|---|
| 20/1 | EDB | | 2 |
| 20/1 | EDB | | 4 |
| 20/1 | EDB | | 6 |
| 20/1 | EDB | | 8 |
| 20/1 | EDB | | 10 |
| 20/1 | EDB | | 12 |
| 20/1 | EDB | PREPARED SPACE | 14 |
| 20/1 | EDB | PREPARED SPACE | 16 |
| 20/1 | EDB | PREPARED SPACE | 18 |
| 20/1 | EDB | PREPARED SPACE | 20 |
| 20/1 | EDB | PREPARED SPACE | 22 |
| 20/1 | EDB | PREPARED SPACE | 24 |
| 20/1 | EDB | PREPARED SPACE | 26 |
| 20/1 | EDB | PREPARED SPACE | 28 |
| 20/1 | EDB | PREPARED SPACE | 30 |
| 20/1 | EDB | PREPARED SPACE | 32 |
| 20/1 | EDB | PREPARED SPACE | 34 |
| 20/1 | EDB | PREPARED SPACE | 36 |
| 20/1 | EDB | PREPARED SPACE | 38 |
| 20/1 | EDB | PREPARED SPACE | 40 |
| 20/1 | EDB | PREPARED SPACE | 42 |




PHYSICAL DATA
ENCLOSURE Type 1
Surface with Door
FRONT CAT#: NC44S
BOX CAT#: MH44
DIMENSIONS:
44"(1118mm)Hx20"(508mm)Wx5.75"(146mm)D
WIRE BENDING SPACE:
TOP – 5"(127)mm
BOTTOM – 13.25"(337)mm
SIDE – 4.1"(104)mm
PBA: 550
BUSSING: 250A RATED ALUMINUM BUS
Tin Plated
OPTIONAL FEATURES:
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR

ELECTRICAL DATA
SYSTEM: 480Y/277V 3Ph 4W 60Hz
System Ampacity: 200A
14kA SYMS. SCCR
MAIN: MAIN LUGS : 200A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – #6 – 350 kcmil
----------BRANCH SUMMATION----------
1 – 90A/3P EDB 10 – 20A/1P EDB
29 – 20A/1P–PS EDB

| | |
|---|---|
| JOB NAME: Cascade Christian High School | EQUIPMENT DESIGNATION: |
| JOB LOCATION: | EQUIPMENT TYPE: NF (Circuit Breaker Type) PANEL 1 OF 1 |
| DRAWN BY: (02C) | DRAWING TYPE: ONE LINE DIAGRAM |
| ENGR: | SQUARE D by Schneider Electric |
| DATE: June 27 2019 | DWG# QQ–812488–27053207–01 PG 1 OF 1 REV – |
| DRAWING STATUS: QUOTE | |

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

B-21-0727CITY OF PUYALLUP

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.

E504

S:\PLANS\2019 PROJECTS\PC190002 - CASCADE CHRISTIAN JR HIGH\PHASE 3\ELECTRICAL\CASCADE CHRISTIAN JR HIGH SCHOOL - PHASE 3 12142021.dwg, 12/15/2021 7:50:22 AM, DESIGN SET

## MECHANICAL ABBREVIATIONS

| ABBREV. | DESCRIPTION |
|---|---|
| ADA | AMERICANS WITH DISABILITIES ACT |
| AFF | ABOVE FINISHED FLOOR |
| BTUH | BRITISH THERMAL UNIT PER HOUR |
| BLDG | BUILDING |
| CB | CATCH BASIN |
| CI | CAST IRON |
| CLG | CEILING |
| C/O | CLEANOUT |
| CW | COLD WATER |
| CV | CHECK VALVE |
| DEG F, °F | DEGREE FAHRENHEIT |
| DCVA | DOUBLE CHECK VALVE ASSEMBLY |
| DN | DOWN |
| EQUIP | EQUIPMENT |
| ELEC, EC | ELECTRICAL, ELECTRICAL CONTRACTOR |
| ELEV | ELEVATION |
| FL | FLOOR |
| FCO | FLOOR CLEANOUT |
| OFCI | OWNER FURNISHED CONTRACTOR INSTALLED |
| FIX | FIXTURE |
| FT | FEET |
| FPS | FEET PER SECOND |
| G | NATURAL GAS |
| GA | GAUGE |
| GC | GENERAL CONTRACTOR |
| GPH | GALLON PER HOUR |
| GPM | GALLON PER MINUTE |
| HVAC | HEATING, VENTILATION, & AIR CONDITIONING |
| HB | HOSE BIBB |
| HP | HORSE POWER |
| HW | HOT WATER |
| HWC | HOT WATER CIRCULATING |
| I.E. | INVERT ELEVATION |
| KW | KILOWATT |
| LB | POUND |
| LF | LINEAL FEET |
| MH | MAN HOLE |
| MC | MECHANICAL HVAC CONTRACTOR |
| MFR | MANUFACTURER |
| MAX | MAXIMUM |
| MBH | THOUSAND BTUH |
| MECH | MECHANICAL |
| MIN | MINIMUM |
| NA | NOT APPLICABLE |
| NIC | NOT IN CONTRACT |
| NTS | NOT TO SCALE |
| NO., # | NUMBER |
| OC | ON CENTER |
| OFD | OVERFLOW DRAIN |
| ORL | OVERFLOW RAIN LEADER |
| OW | OIL WASTE |
| PC | PLUMBING CONTRACTOR |
| PH | PHASE |
| POC | POINT OF CONNECTION |
| P.D.I. | PLUMBING AND DRAINAGE INSTITUTE |
| PSI | POUNDS PER SQUARE INCH |
| PD | PRESSURE DROP |
| PSIG | POUNDS PER SQUARE INCH GAGE |
| PRV | PRESSURE REDUCING VALVE |
| RD | ROOF DRAIN |
| REQ'D | REQUIRED |
| RPBP | REDUCED PRINCIPLE BACKFLOW PREVENTER |
| RPM | REVOLUTIONS PER MINUTE |
| RM | ROOM |
| RL | RAIN LEADER |
| SD | STORM DRAIN |
| SQ | SQUARE |
| SCO | SURFACE CLEANOUT |
| SS | SANITARY SEWER |
| TEMP | TEMPERATURE |
| TYP | TYPICAL |
| VTR | VENT THROUGH ROOF |
| V | VOLTS, VOLTAGE, VENT |
| WCO | WALL CLEAN OUT |
| WH | WALL HYDRANT |
| W | WASTE |
| W/ | WITH |
| W/O | WITHOUT |
| WSFU | WATER SUPPLY FIXTURE UNITS |
| (S) | SUDS RELIEF WASTE RISER |

| SYMBOL | DESCRIPTION |
|---|---|
| TOP,NEXT,BOTTOM / TOP,NEXT,BOTTOM | PIPE SIZE LABEL |
| LEFT,NEXT,RIGHT / LEFT,NEXT,RIGHT | PIPE SIZE LABEL |

## PLUMBING LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | COLD WATER PIPING |
| | HOT WATER PIPING (120°) |
| | HOT WATER CIRCULATION PIPING |
| —140°— | HOT WATER PIPING (140°) |
| | WASTE PIPING |
| | EXISTING WASTE PIPING |
| | VENT PIPING |
| —OW— | OIL WASTE PIPING |
| —G— | NATURAL GAS PIPING |
| —RL— | RAIN LEADER PIPING |
| —ORL— | OVERFLOW RAIN LEADER PIPING |
| —ST— | STORM PIPING |
| —PW— | PUMPED WASTE PIPING |
| VTR | VENT THROUGH ROOF |
| | REDUCED PRESSURE BACKFLOW PREVENTER (RPBP) |
| | OVERFLOW ROOF DRAIN |
| | ROOF DRAIN |
| | STRAINER |
| FCO | FLOOR CLEANOUT (FCO) |
| | WALL CLEANOUT (WCO) |
| | FLOOR DRAIN |
| | FUNNEL FLOOR DRAIN |
| | GARAGE DRAIN |
| | BALANCING VALVE |
| | PRESSURE REDUCING VALVE |
| | UNION |
| | CHECK VALVE |
| | BALL VALVE |
| | RELIEF OR SAFETY VALVE |
| | GATE VALVE |
| | WALL HYDRANT / HOSE BIBB |
| | CAP (FOR FUTURE) |
| | TRAP PRIMER |

## STATIC WATER PRESSURE

STATIC PRESSURE: 38 PSI AT 70.75' PER SITE READING.

## PLUMBING EQUIPMENT SCHEDULE

| SYMBOL | DESCRIPTION |
|---|---|
| EWH-1 | ELECTRIC WATER HEATER – AO SMITH DSE 100–60, (60KW, 480V, 3PH), 100 GALLON. |
| TMV-1 | THERMOSTATIC MIXING VALVE – SYMMONS 7–1000, TEMPER WATER TO MAXIMUM TEMPERATURE OF 120°F. |
| CP-1 | CIRCULATION PUMP – GRUNDFOS UP15–10B7, DOMESTIC HOT WATER PUMP, 1GPM @ 4FTHD, 115V, 1PH, 28 WATTS |
| EXT-1 | EXPANSION TANK – AMTROL ST–12–C. ASME. |
| ESP-1 | ELEVATOR SUMP PUMP – BARNES SP50 SUBMERSIBLE, 1/2 HP, 1–PHASE, 120V, 6.8AMPS, CORDED. 50 GPM AT 12.4 FT.HD. |
| BV-1 | BALANCING VALVE – B&G CIRCUIT SETTER, LINE SIZE |

## 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" |
| ●E | SIOUX CHIEF #654–E(S). (S) SWEAT OR THREADED | 114–154 | 1" |
| ●F | SIOUX CHIEF #655–F(S). (S) SWEAT OR THREADED | 155–300 | 1" |

* VALUES PER MANUFACTURER (DOES NOT MATCH UPC WSFU VALUES).

## 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" | – |
| FS-1 | FLOOR SINK – ZURN FD–2375 | 4" | 2" | – |
| HD-1 | HUB DRAIN – 4"X6"X24" (INDIRECT RECEPTACLE FOR ELEVATOR SUMP PUMP) | 4" | 2" | – |

## PLUMBING FIXTURE SCHEDULE

| SYMBOL | DESCRIPTION | MANUFACTURE & MODEL NUMBERS | W | V | CW | HW | REMARKS |
|---|---|---|---|---|---|---|---|
| P-1 | WATER CLOSET<br>WALL MOUNT<br>FLUSH VALVE | CLOSET: KOHLER #K–4325<br>SEAT: BEMIS #1955–C<br>VALVE: SLOAN #8111 (SENSOR/BATTERY) | 3" | 2" | 1¼" | – | INSTALL WITH WALL CARRIER. |
| P-1A (ADA) | WATER CLOSET<br>WALL MOUNT<br>FLUSH VALVE | CLOSET: KOHLER #K–4325<br>SEAT: BEMIS #1955–C<br>VALVE: SLOAN #8111 (SENSOR/BATTERY) | 3" | 2" | 1¼" | – | ADA COMPLIANT, RIM MOUNTED 16" ABOVE FINISHED FLOOR. WALL CARRIER: JOSAM, |
| P-2 | URINAL<br>WALL MOUNT<br>FLUSH VALVE | URINAL: KOHLER #K–4991–ET<br>VALVE: SLOAN #8186–1 (SENSOR/BATTERY) | 2" | ½" | 1" | – | INSTALL URINAL WITH WALL FLANGE. |
| P-3 | LAVATORY<br>UNDERMOUNT<br>– | BASIN: KOHLER #K–20000 CAXTON<br>FAUCET: SYMMONS #S–6080–G<br>SUPPLIES: BRASSCRAFT #KTCR19C | 2" | ½" | ½" | ½" | INSTALL LAVATORY BASIN, SENSOR (BATTERY) OPERATED FAUCET, P–TRAP, FLAT GRID DRAIN, HANDYSHIELD TRAP COVERS, & SUPPLY STOPS. |
| P-4 (ADA) | WATER COOLER<br>WALL MOUNT<br>DUAL HEIGHT | UNIT: ELKAY #EZSTL8–WSLK<br>SUPPLY: BRASSCRAFT #KTCR19C | 2" | ½" | ½" | – | ADA COMPLIANT, INSTALL P–TRAP. |
| P-5 | SINK<br>–<br>– | BASIN: PROVIDED BY OTHERS<br>FAUCET: PROVIDED BY OTHERS<br>SUPPLIES: BRASSCRAFT #KTCR19C | 2" | ½" | ½" | ½" | |
| P-5A | SINK<br>36" WIDE<br>– | BASIN: PROVIDED BY OTHERS<br>FAUCET: PROVIDED BY OTHERS<br>SUPPLIES: BRASSCRAFT #KTCR19C | 2" | ½" | ½" | ½" | |
| P-6 | HAND SINK<br>WALLHUNG<br>– | BASIN: ADVANCED TABCO 7–PS–68<br>FAUCET: –<br>SUPPLIES: BRASSCRAFT #KTCR19C | 2" | ½" | ½" | ½" | STAINLESS STEEL WALL HUNG SINK WITH INTEGRAL FAUCET. |
| P-7 | MOP SINK<br>–<br>– | BASIN: FIAT MSB–2424–10<br>FAUCET: CHICAGO FAUCET 897–RCF<br>SUPPLIES: BRASSCRAFT #KTCR19C | 3" | 2" | ½" | ½" | PROVIDE WITH 24"X24"X10" SINK, FLAT GRID STRAINER, WALL MOUNT FAUCET WITH VACUUM BREAKER, HOSE, & HOSE BRACKET. |
| WH-1 | FREEZEPROOF<br>WALL HYDRANT | UNIT: PRIER #C–634 | – | – | ¾" | – | WITH INTEGRAL VACUUM BREAKER, MOUNT AT 24" ABOVE FINISHED GRADE. |
| DW-1 | DISHWASHER | UNIT: PROVIDED BY OTHERS | – | – | – | – | PROVIDE ROUGH–IN FOR DISHWASHER. SUPPLY STOP, AIRGAP FITTING, DISHWASHER WYE TAILPIECE, DISHWASHER, DISHWASHER SUPPLY HOSE, AND DISHWASHER DRAIN HOSE SUPPLIED BY OTHERS. |

## PLUMBING GENERAL NOTES

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 | – | 0.28 BTU/IN/H*SQFT*F |

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 CURRENT STATE OF WASHINGTON ADOPTED CODES:
   A) UNIFORM PLUMBING CODE (UPC)
   B) 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 SURESEAL 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 DRAWING SHEET INDEX



| SHEET NUMBER | SHEET TITLE |
|---|---|
| P0.01 | PLUMBING LEGENDS SCHEDULES AND NOTES |
| P0.02 | PLUMBING DETAILS AND NOTES |
| P0.03 | PLUMBING RISER DIAGRAMS |
| P1.01 | PLUMBING FOUNDATION PLAN |
| P2.01 | PLUMBING LEVEL 1 PLAN |
| P2.01A | PLUMBING LEVEL 1 PLAN ENLARGED |
| P2.02 | PLUMBING LEVEL 2 PLAN |
| P2.02A | PLUMBING LEVEL 2 PLAN ENLARGED |
| P2.03 | PLUMBING ROOF PLAN |



City of Puyallup
Development & Permitting Services
ISSUED PERMIT

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|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

B-21-0727CITY OF PUYALLUP


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CASCADE CHRISTIAN JUNIOR HIGH PHASE IIB & IIIA

815 21ST STREET SE
PUYALLUP, WA. 98372

PLUMBING LEGENDS, SCHEDULES, AND NOTES

CHRISTOPHER L. COMBS, STATE OF WASHINGTON, 24571, REGISTERED PROFESSIONAL ENGINEER, 12/1/2021


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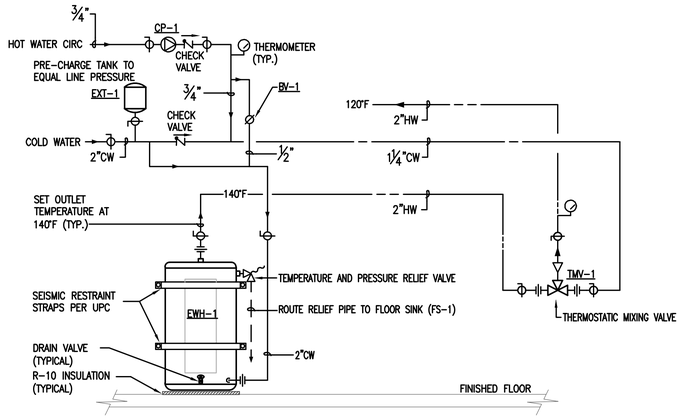
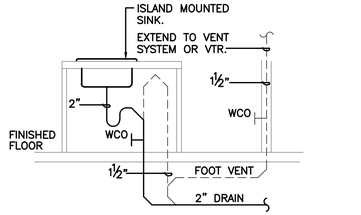
P0.01




ELECTRIC WATER HEATER DETAIL 1 / P0.02

NOT TO SCALE




ISLAND VENT DETAIL 2 / P0.02

NOT TO SCALE

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PLUMBING DETAILS AND NOTES

CHRISTOPHER L. COMBS
STATE OF WASHINGTON
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P0.02

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City of Puyallup
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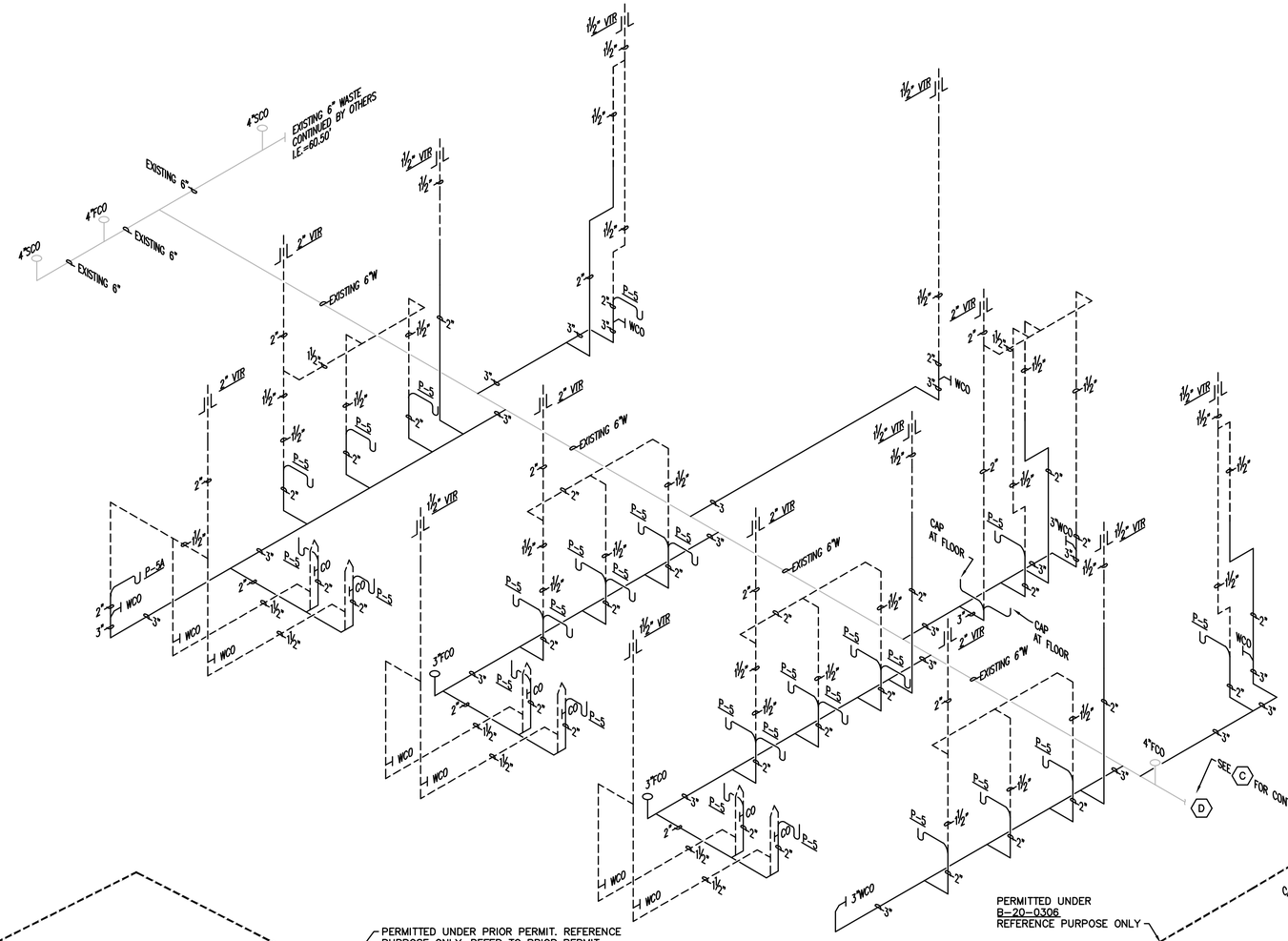


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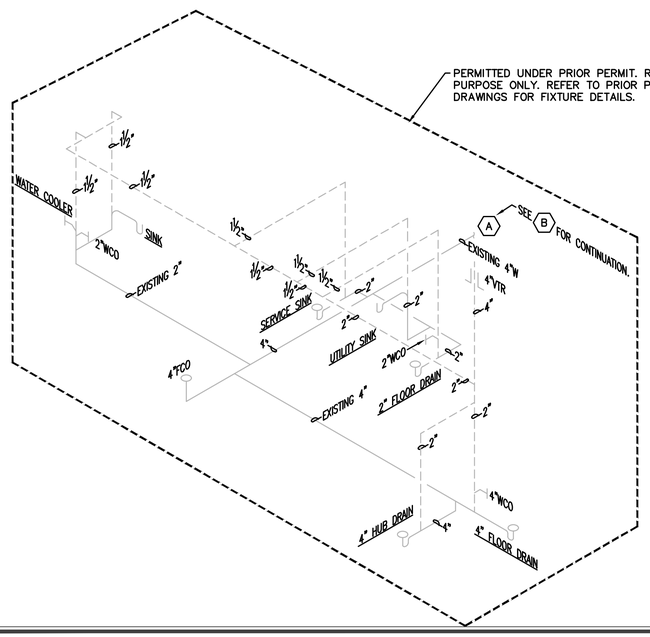


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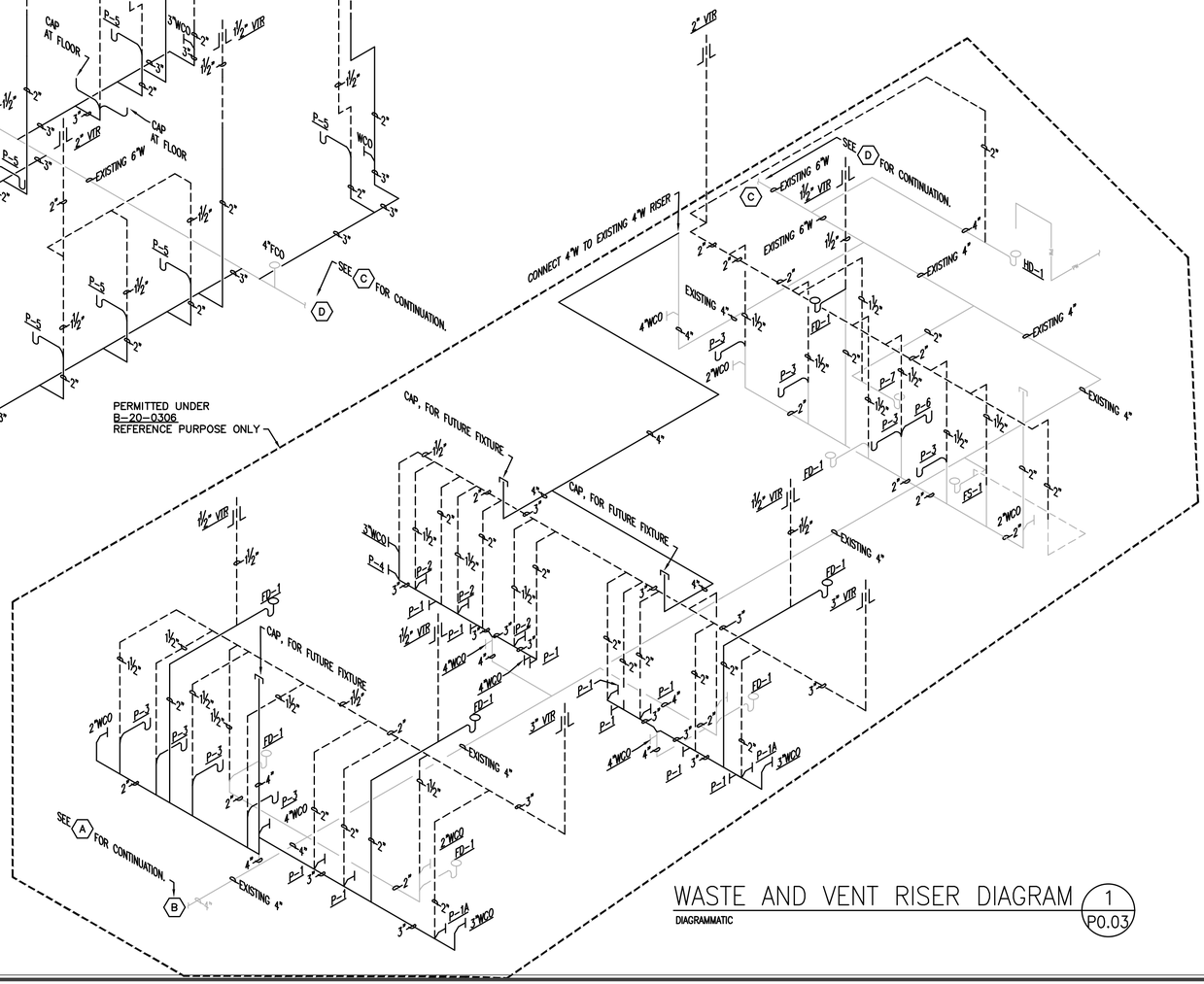


WASTE AND VENT RISER DIAGRAM 1 P0.03
DIAGRAMMATIC


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PUYALLUP, WA. 98372

PLUMBING RISER DIAGRAMS

CHRISTOPHER L. COMBS
STATE OF WASHINGTON
14571
REGISTERED
PROFESSIONAL ENGINEER
12/1/2021


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P0.03

B-21-0727CITY OF PUYALLUP

**City of Puyallup**
**Development & Permitting Services**
**ISSUED PERMIT**

| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

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CONSTRUCTION NOTES

1. CAP WASTE AT FINISHED FLOOR SURFACE.

FINISHED FLOOR ELEVATION = 67.75'

SCALE
1/8"=1'-0"

NORTH

# PLUMBING FOUNDATION PLAN

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


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PLUMBING FOUNDATION PLAN

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P1.01

B-21-0727CITY OF PUYALLUP

**City of Puyallup**
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|---|---|
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| Fire | Traffic |

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RESERVE SPACE FOR FUTURE DOMESTIC WATER BOOSTER PUMP.

HATCHED AREA NOT IN SCOPE OF WORK

SCALE
1/8"=1'-0"

NORTH

## PLUMBING LEVEL 1 PLAN
SCALE: 1/8" = 1'-0"


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PLUMBING LEVEL 1 PLAN

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P2.01

B-21-0727CITY OF PUYALLUP

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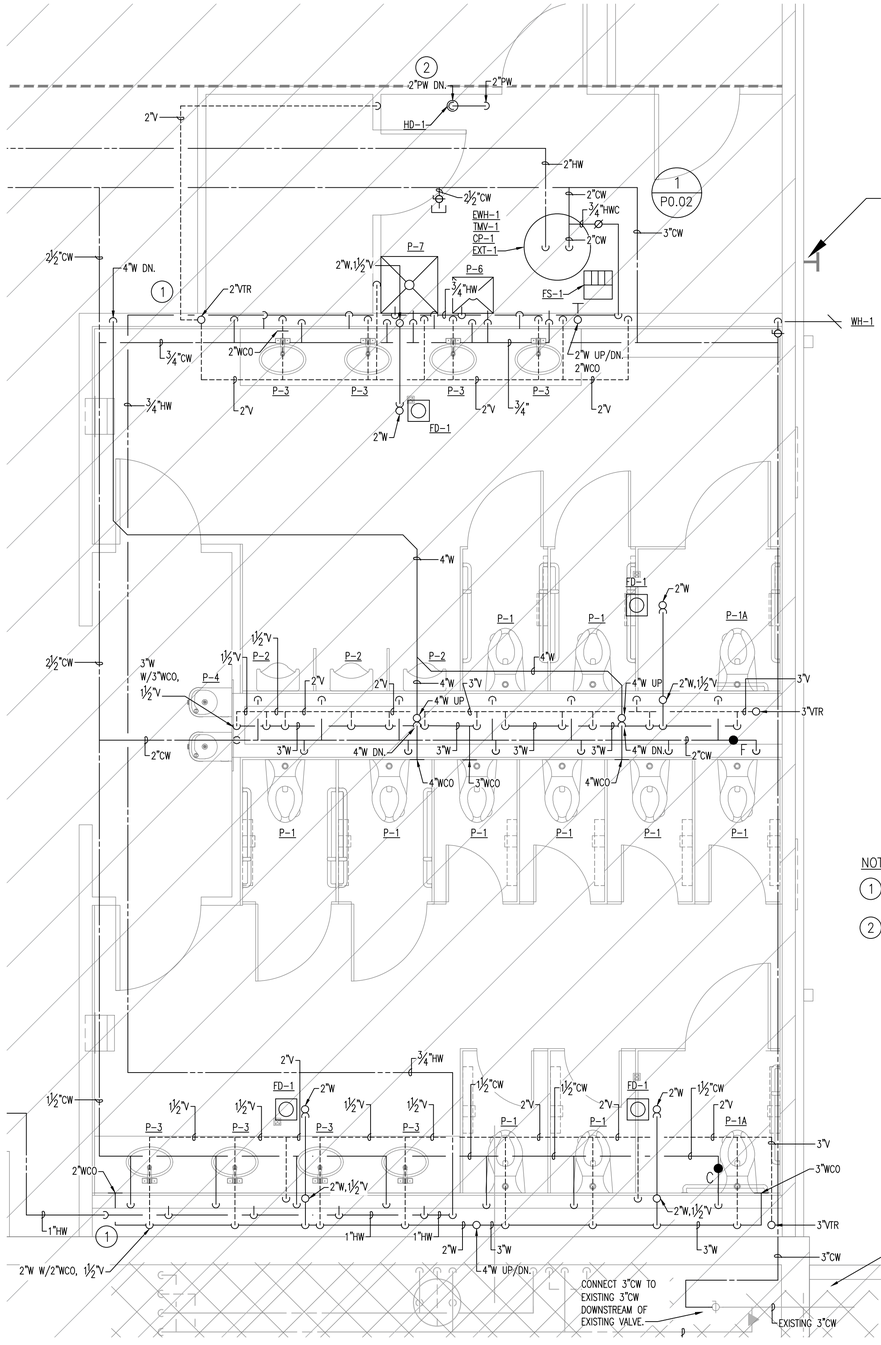
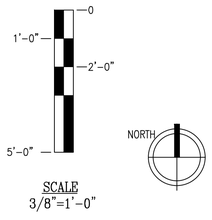



NOTES:

1. ROUTE HW SUPPLY IN WALL WITHIN 2'-0" OF LAVATORY STOPS PER WSEC.
2. PUMPED WASTE MUST DISCHARGE INTO TOP OF HUB DRAIN WITH AIR GAP.

1 / P2.01A PLUMBING LEVEL 1 PLAN ENLARGED
SCALE: 3/8" = 1'-0"




SCALE
3/8"=1'-0"

City of Puyallup
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PLUMBING LEVEL 1 PLAN ENLARGED

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P2.01A

B-21-0727CITY OF PUYALLUP

City of Puyallup
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| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

FINISHED FLOOR ELEVATION = 81.25'

1 P2.02A

SCALE
1/8"=1'-0"

NORTH

## PLUMBING LEVEL 2 PLAN
SCALE: 1/8" = 1'-0"


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PLUMBING LEVEL 2 PLAN

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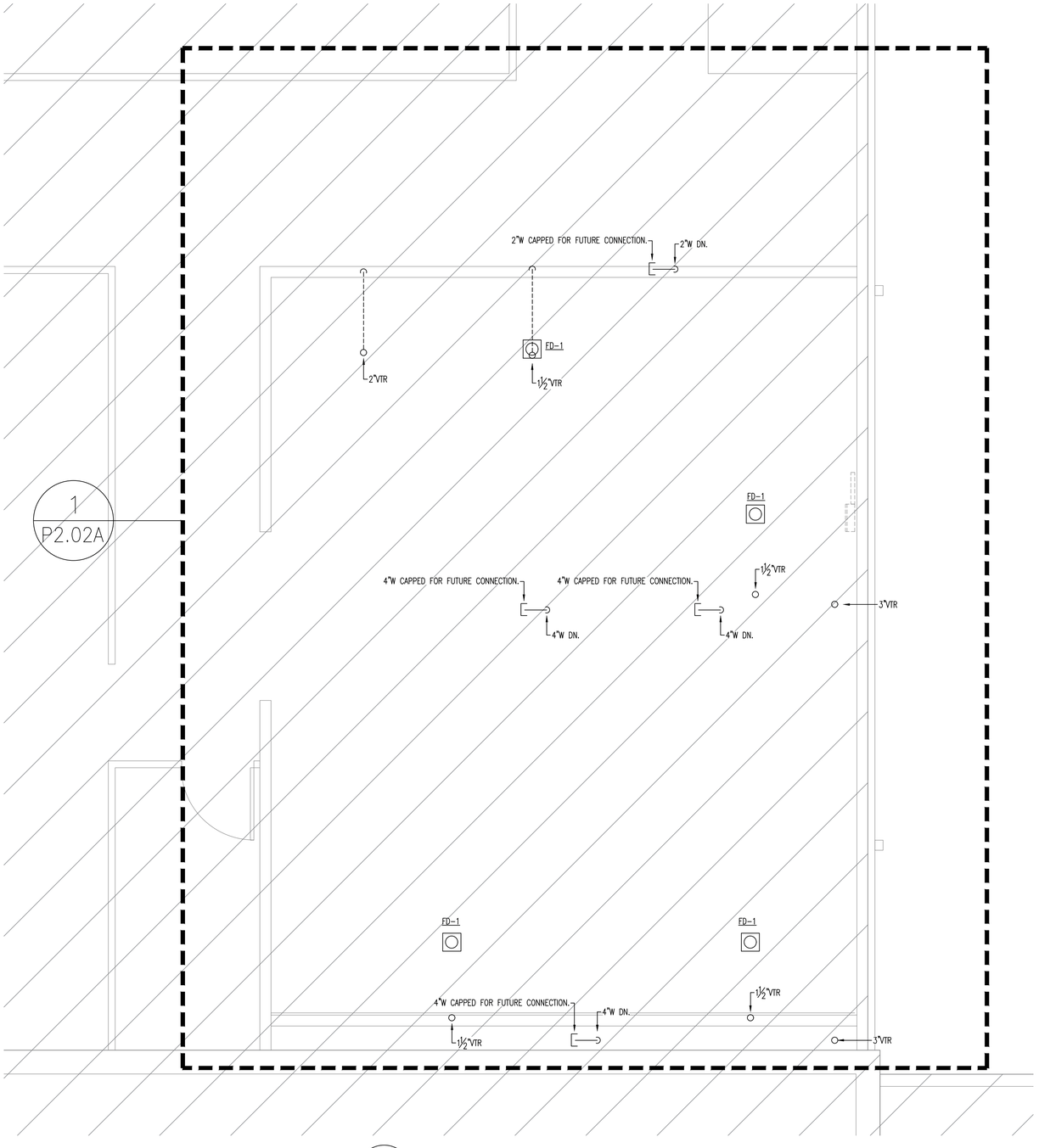
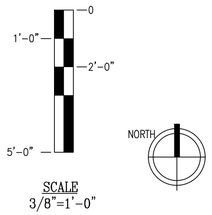
P2.02




1 P2.02A PLUMBING LEVEL 2 PLAN ENLARGED
SCALE: 3/8" = 1'-0"




SCALE
3/8"=1'-0"

B-21-0727CITY OF PUYALLUP

City of Puyallup
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PLUMBING LEVEL 2 PLAN ENLARGED

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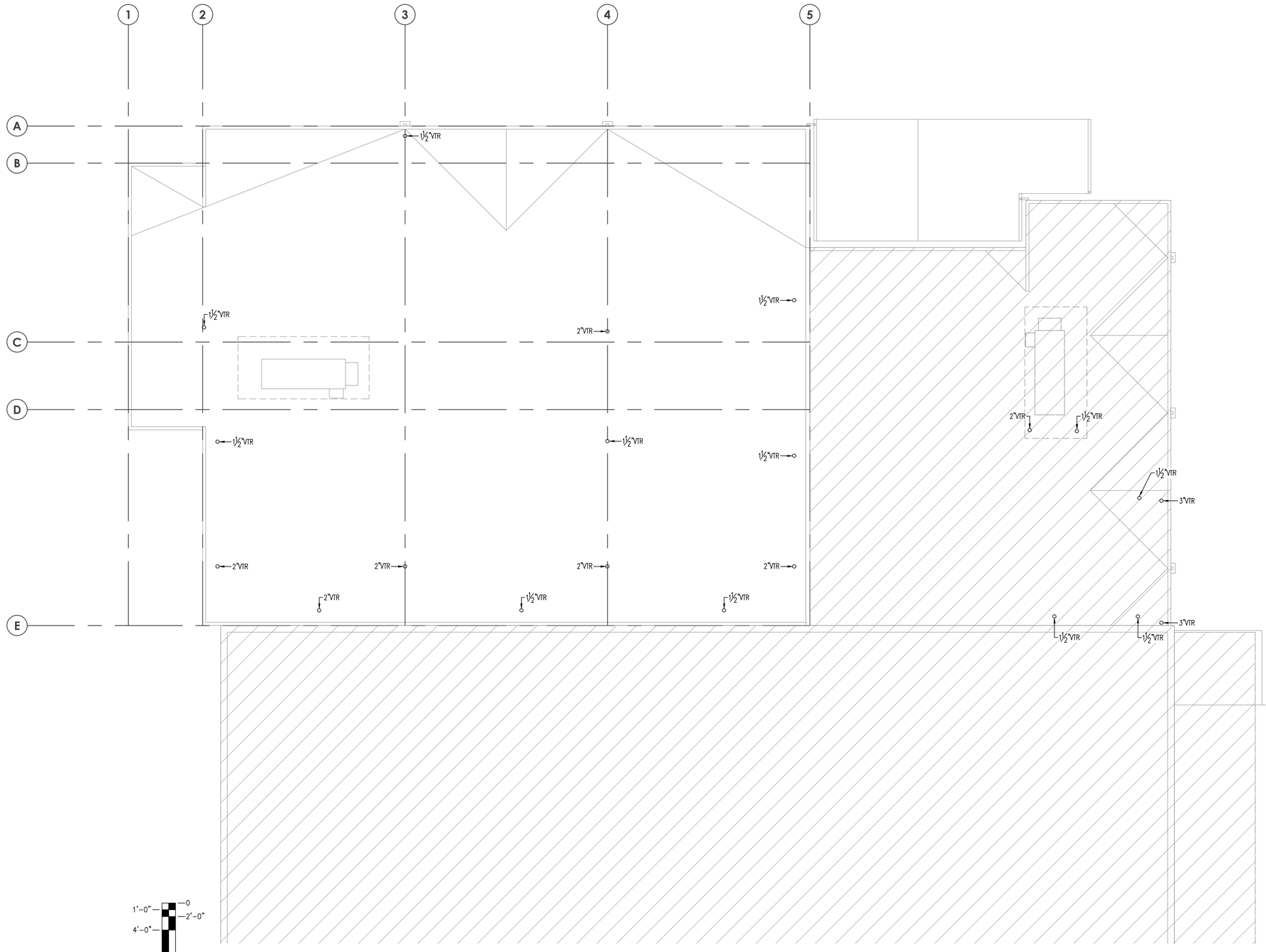
P2.02A




B-21-0727CITY OF PUYALLUP

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| | |
|---|---|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

1'-0" — 0
4'-0" — 2'-0"
8'-0"
16'-0"

SCALE
1/8"=1'-0"

NORTH

## PLUMBING ROOF PLAN
SCALE: 1/8" = 1'-0"


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