



Contract Plans

For Construction of:

009321

SR 525

MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION

SNOHOMISH COUNTY

VOLUME 5 OF 8

F. A. NO. TIGER-WA-2017-007, CFDA 20933
F. A. NO. PSRC-WA-2017-023, CFDA 20507



**Washington State
Department of Transportation**

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| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\KPFF\18w121i000.12.dlv | | | | | |
| PRINTED: 9:21:10 AM 1/11/2019 | LAST PRINTED BY: | | | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | R. JACKSON | | | | |
| DESIGNED BY: A. GASTINEAU | 1/18/19 | | | | WA-2017-007-00 |
| ENTERED BY: R. JACKSON | 1/18/19 | | | | REGION NO. STATE |
| CHECKED BY: D. ALIRE | 1/18/19 | | | | 10 WASH |
| MAR PROJ ENGR: C. TORRES | | | | | JOB NUMBER 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 00***** |

/ /2017

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

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SHT NO. PLAN NO. DESCRIPTION


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| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\KPFF\18w121io00_13.dlv | | | | | | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | 10.13 |
| PRINTED: 9:21:50 AM 1/11/2019 | LAST PRINTED BY: R. JACKSON | | | | | | | | SHEET 14 OF 1521 SHEETS |
| SUBMITTAL DATE: 1/18/19 | | | | | | / /2017 | | VOLUME 5 SHEET INDEX | |
| DESIGNED BY: A. GASTINEAU | 1/18/19 | | | | | | | | |
| ENTERED BY: R. JACKSON | 1/18/19 | | | | | | | | |
| CHECKED BY: D. ALIRE | 1/18/19 | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | |

ELECTRICAL PLAN SYMBOLS

EQUIPMENT AND DEVICES

| | |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \$ | SINGLE POLE TOGGLE SWITCH |
| \$& | SWITCH WITH SUBSCRIPT &. & CAN BE: 3 = 3-WAY TOGGLE SWITCH 4 = 4-WAY TOGGLE SWITCH b = TOGGLE SWITCH, SWITCH LEG B D = INTEGRAL 0-10V DIMMING DIAL O = INTEGRAL OCCUPANCY SENSOR V = INTEGRAL VACANCY SENSOR |
| ▼ | TELEPHONE OUTLET |
| ▽ | DATA OUTLET |
| JB or Q | JUNCTION BOX (J-BOX) |
| ⌚ | MOTOR CONNECTION |
| □ | PANEL OR CABINET |
| ⊙ | ENGINE GENERATOR |
| ⊕ | RECEPTACLE, 480V, 3 PHASE |
| ⊙ | GROUND ROD |
| ⊙ _T | GROUND TEST WELL |
| — | GROUND CABLE, 2'-6" (MIN) BELOW GRADE |
| 30□ | NONFUSED DISCONNECT SWITCH. SIZE INDICATED, 3 POLE UNLESS OTHERWISE INDICATED. |
| 60/40□ | FUSED DISCONNECT SWITCH. SIZE INDICATED, (60 = SWITCH RATING, 40 = FUSE RATING) 3 POLE UNLESS OTHERWISE INDICATED |
| 60□ | |
| 1⊞ | COMBINATION MAGNETIC STARTER, NEMA SIZE INDICATED, 3 POLE UNLESS OTHERWISE INDICATED. |
| Ⓣ | THERMOSTAT |
| Ⓣ | TRANSFORMER (PLAN) |
| Ⓜ | VAULT, UTILITY VAULT |
| □ | HORN |
| ⊞ | TYPE 1 JUNCTION BOX PER STANDARD PLANS |
| ⊞ | TYPE 2 JUNCTION BOX PER STANDARD PLANS |
| ■ | TYPE 8 JUNCTION BOX PER STANDARD PLANS |
| xx-xxx xxx | = EQUIP TAG = EQUIP RATING (HP OR WATT) |
| ⊕ | FIRST RESPONDER RADIO ENHANCEMENT ANTENNA |
| Ⓢ | PAGING SPEAKER |
| Ⓢ | WALL MOUNTED PAGING SPEAKER |

LIGHTING

| | |
|----------|------------------------------------------------------------------------------------------------|
| A 310 | LIGHT FIXTURE DESIGNATION, SEE LIGHT FIXTURE SCHEDULE FOR TYPE "A" 310 WATTS |
| E | SURFACE LIGHT FIXTURE ON EMERGENCY POWER TO SCALE ON DRAWINGS |
| E | |
| ○ | SURFACE MOUNT LIGHT FIXTURE TO SCALE ON DRAWINGS |
| ○ | |
| RECESSED | RECESSED LIGHT FIXTURE ON EMERGENCY POWER TO SCALE ON DRAWINGS |
| RECESSED | |
| ○ | RECESSED OR LINEAR LIGHT FIXTURE TO SCALE ON DRAWINGS |
| ○ | |
| NL | NL = NIGHT LIGHT. UNSWITCHED LIGHT OR ONE OR MORE UNSWITCHED LAMPS AS NOTED. |
| 7b | 7b = FED BY CIRCUIT #7, SWITCH LEG B. |
| —○— | STRIPLIGHT LUMINAIRE |
| — | LINEAR WALL MOUNTED LUMINAIRE |
| ⊙ | LIGHT FIXTURE |
| ⊙ | LIGHT FIXTURE ON EMERGENCY POWER |
| Ⓛ | EMERGENCY LIGHTING UNIT |
| →⊗ | EXIT SIGN, SURFACE OR CEILING MOUNTED, SINGLE FACE WITH DIRECTIONAL ARROWS AS INDICATED. |
| →⊗ | EXIT SIGN, SURFACE OR CEILING MOUNTED, DOUBLE FACE WITH DIRECTIONAL ARROWS AS INDICATED. |
| →⊗ | EXIT SIGN, WALL MOUNTED, SINGLE FACE WITH DIRECTIONAL ARROWS AS INDICATED. |
| Ⓛ | WALL MOUNTED LIGHT FIXTURE |
| ○ | LIGHT POLE |
| ⊕ | WALL WASHER |
| ⊕ | IN-GRADE UPLIGHT LUMINAIRE |

RECEPTACLES

| | |
|------------------|--------------------------------------------------------------|
| ⊕ | DUPLEX RECEPTACLE |
| ⊕ _{GFI} | DUPLEX RECEPTACLE, GFI=GROUND FAULT INTERRUPTER PROTECTED |
| ⊕ _{WP} | DUPLEX RECEPTACLE, WP = WEATHERPROOF COVER |
| ○ | SIMPLEX RECEPTACLE |
| ⊕ | 4-PLEX RECEPTACLE |
| ⊕ _{SP} | SURGE PROTECTIVE DUPLEX RECEPTACLE |
| ⊕ _{WR} | WEATHER RESISTANT DUPLEX RECEPTACLE |

RACEWAY/CIRCUIT DESIGNATIONS

| | |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P### | CONDUIT/CIRCUIT TAG, SEE CONDUIT AND CABLE SCHEDULE |
| L1/3,5 | CONDUIT: TICS DENOTE QUANTITY OF WIRES, LONG = NEUTRAL, CROSS TIC = GROUND, MIN 3/4"C, #12 AWG UNLESS NOTED OTHERWISE, ARROW = HOMERUN, L1/3,5 = PANEL/CIRCUIT |
| ⊕ | LB, LR, OR LL TYPE CONDUIT BODY TURNING AWAY FROM VIEWER |
| ⊕ | LB, LR, OR LL TYPE CONDUIT BODY TURNING TOWARDS VIEWER |
| ⊕ | LB, LR, OR LL TYPE CONDUIT BODY |
| ⊕ | T TYPE CONDUIT BODY |
| — | FLEXIBLE CORD OR CABLE |
| — HT — | HEAT TRACE |
| — OP — | OVERHEAD POWER |
| — BP — | BURIED POWER |
| — OC — | OVERHEAD COMMUNICATIONS OR CONTROL |
| — BC — | BURIED COMMUNICATIONS OR CONTROL |
| — | HEAVY SOLID LINES INDICATE NEW CONDUIT MATERIAL AND EQUIPMENT THAT IS EXPOSED |
| — | SCREENED SOLID LINES INDICATE EXISTING CONDUIT MATERIAL AND EQUIPMENT THAT IS EXPOSED |
| ----- | HEAVY DASHED LINES INDICATE NEW CONDUIT MATERIAL AND EQUIPMENT THAT IS HIDDEN FROM VIEW |
| ----- | SCREENED DASHED LINES INDICATE EXISTING CONDUIT MATERIAL AND EQUIPMENT THAT IS HIDDEN FROM VIEW |

FIRE ALARM DEVICES

| | |
|-------------------|-----------------------------------------------------------------------------------------|
| - BCL - - | UNDERGROUND COMMUNICATIONS |
| F | FIRE ALARM HORN/STROBE |
| FACP | FIRE ALARM CONTROL PANEL |
| FATC | FIRE ALARM TERMINAL CABINET |
| AMP | AMPLIFIER RACK |
| BATT | BATTERY CABINET |
| ESR | ELEVATOR STATUS/RECALL |
| PRE | PRE-ACTION SYSTEM/CONTROL UNIT |
| FAA | FIRE ALARM ANNUNCIATOR |
| EOL _{Re} | END OF LINE DEVICE - RESISTOR |
| FSD | FIRE SMOKE DAMPER |
| L | FIRE ALARM STROBE |
| CP | DUST COLLECTOR CONTROL PANEL |
| F | DUST COLLECTOR CONTROL PANEL |
| AOM | ADDRESSABLE OUTPUT CONTROL MODULE |
| AIM | ADDRESSABLE INPUT MONITOR MODULE |
| AIO ₂ | ADDRESSABLE INPUT/OUTPUT MODULE # DENOTES NUMBER OF INPUTS AND OUTPUTS |
| S | SMOKE DETECTOR/SENSOR - BASIC SHAPE ORIENTATION NOT TO BE CHANGED |
| Ⓢ | HEAT DETECTOR/SENSOR - (THERMAL DETECTION) ORIENTATION NOT TO BE CHANGED |
| Ⓢ | REMOTE ALARM INDICATING AND TEST SWITCH |
| Ⓢ | FIRE SERVICE OR EMERGENCY PHONE STATION - BASIC SHAPE |
| CD WⓈC | COMBINATION SPEAKER/VISIBLE - CEILING MOUNT CD= CANDELA RATING/SETTING W= WATTAGE |
| FS | FLOW SWITCH |
| PS | PRESSURE SWITCH |
| TS | TAMPER SWITCH |
| PB | PULL STATION |

FILE NAME: WS\Mukilteo\14W121_FerryTermConst\CADD\WSF\ 14w121eg01_00 Legend1.dwg

PRINTED: 7:34:01 AM 1/5/2018

LAST PRINTED BY:

Morin

SUBMITTAL DATE: 12/22/2017

DESIGNED BY: S. HOLLOWAY

12/22/2017

ENTERED BY: M. MORIN

12/22/2017

CHECKED BY: E. RAJAH

12/22/2017

MAR PROJ ENGR: C. TORRES

12/22/2017

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

REVISION

DATE

BY

FED.AID
PROJ.NO.

WA-2017-007-00

REGION NO. STATE
10 WASH

JOB NUMBER
18W121

CONTRACT NO.
00*****



1/5/2018



Washington State
Department of Transportation
WASHINGTON STATE FERRIES




SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

ELECTRICAL SYMBOLS I

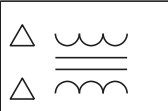
EG01.00

SHEET
1201
OF
1521
SHEETS

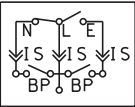
ONE-LINE DIAGRAM SYMBOLS




XFMR-42T1
75kVA
480V-208Y/120V
3Ø, 4W




XFMR ID
225 KVA
480-480V
3PH, 3W



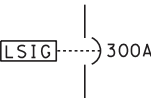
ATS WITH BYPASS AND
ISOLATION SWITCHES, 4-POLE
(SWITCHED NEUTRAL) U.O.N.




POWER METER



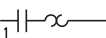
CONDUIT/CIRCUIT TAG, SEE
CONDUIT AND CABLE SCHEDULE



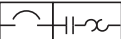
ELECTRONIC TRIP CIRCUIT
BREAKERS WITH FIELD-ADJUSTABLE
SETTINGS FOR THE FOLLOWING:
L = LONG TIME
S = SHORT TIME
I = INSTANTANEOUS
G = GROUND FAULT




CIRCUIT BREAKER, AMPERE TRIP SHOWN, 3 POLE
UNLESS OTHERWISE INDICATED




MAGNETIC STARTER WITH NEMA SIZE INDICATED
WITH OVERLOAD RELAY HEATER




COMBINATION MOTOR STARTER WITH ADJUSTABLE
MAGNETIC TRIP MOTOR CIRCUIT PROTECTION
CIRCUIT BREAKER. NEMA SIZED AND HORSEPOWER
RATED




SWITCH CURRENT RATING INDICATED, 3 POLE
UNLESS OTHERWISE NOTED




MOTOR
HORSEPOWER INDICATED



GROUND ROD,
GROUND




CURRENT
TRANSFORMER
(3)=3 CT'S




FUSE, AMPERE RATING
INDICATED

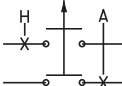
SCHEMATIC DIAGRAM SYMBOLS



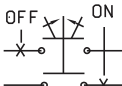
RELAY OR CONTACTOR CONTACT. NORMALLY CLOSED




RELAY OR CONTACTOR CONTACT. NORMALLY OPEN




SELECTOR SWITCH, MAINTAINED CONTACT
THREE POSITION (HOA SHOWN)




SELECTOR SWITCH, SPRING RETURN TO CENTER,
THREE POSITION




LIGHTING CONTACTOR, RELAY




PILOT LIGHT: A= AMBER G= GREEN
 R= RED Y= YELLOW




OVERLOAD
RELAY HEATER




TIMING RELAY




LIMIT SWITCH, NORMALLY CLOSED
HELD OPEN




LIMIT SWITCH, NORMALLY CLOSED



LIMIT SWITCH, NORMALLY OPEN
HELD CLOSED




LIMIT SWITCH, NORMALLY OPEN




AUXILIARY CONTACT

(a) CONTACT THAT IS OPEN WHEN THE MAIN DEVICE IS
IN THE STANDARD REFERENCE POSITION COMMONLY
REFERRED TO AS THE NONOPERATED OR DE-ENERGIZED
POSITION AND THAT CLOSSES WHEN THE DEVICE
ASSUMES THE OPPOSITE POSITION.


(b) CONTACT THAT IS CLOSED WHEN THE MAIN DEVICE IS
IN THE STANDARD REFERENCE POSITION COMMONLY
REFERRED TO AS THE NONOPERATED OR DE-ENERGIZED
POSITION AND THAT OPENS WHEN THE DEVICE ASSUMES
THE OPPOSITE POSITION.




PROXIMITY LIMIT SWITCH, NORMALLY CLOSED




PROXIMITY LIMIT SWITCHES, NORMALLY OPEN




PRESSURE SWITCH, CLOSE ON
PRESSURE SET POINT




TEMPERATURE SWITCH, NORMALLY CLOSED,
OPEN ON TEMPERATURE SET POINT




LEVEL SWITCH, NORMALLY OPEN




PB
PUSH BUTTON, NORMALLY CLOSED,
MUSHROOMHEAD MAINTAINED
CONTACT, PULL TO RELEASE




PUSH BUTTON NORMALLY OPEN,
MOMENTARY CONTACT



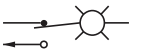
PUSH BUTTON NORMALLY CLOSED,
MOMENTARY CONTACT




ILLUMINATED PUSH BUTTON LIGHT




TIMER CONTACT NORMALLY
CLOSED, TIMED OPEN




PILOT LIGHT (PUSH TO TEST)




SOLENOID




SWITCH




RESISTOR




HEATER
##W
HEATER WATTAGE INDICATED



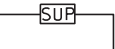
DUPLEX RECEPTACLE




HORN



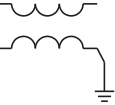
BELL



SUPPRESSOR

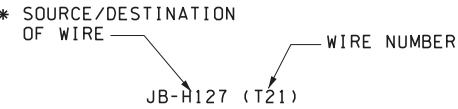


STROBE LIGHT



CONTROL POWER
TRANSFORMER

WIRE LABELING



* THE SOURCE OR DESTINATION OF THE WIRE IS THE
NEXT DEVICE THAT PROVIDES A TERMINAL FOR
THIS WIRE.

FILE NAME: WS\Mukilteo\14W121_FerryTermConst\CADD\WSF\ 14w121eg01_01 Legend2.dwg

PRINTED: 7:34:04 AM 1/5/2018

LAST PRINTED BY:

Morin

SUBMITTAL DATE: 12/22/2017

DESIGNED BY: S. HOLLOWAY

12/22/2017

ENTERED BY: M. MORIN

12/22/2017

CHECKED BY: E. RAJAH

12/22/2017

MAR PROJ ENGR: C. TORRES

12/22/2017

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ASST SECRETARY: A. SCARTON

REVISION

DATE

BY

FED.AID
PROJ.NO.

WA-2017-007-00

REGION NO. STATE
10 WASH

JOB NUMBER
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1/5/2018

COSI

Washington State
Department of Transportation
WASHINGTON STATE FERRIES



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

ELECTRICAL SYMBOLS II

EG01.01

SHEET
1202
OF
1521
SHEETS

GENERAL NOTES:

1. DIMENSIONS & SIZES SHOWN ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS AS DEPICTED ON THESE PLANS INCLUDING QUANTITIES, LOCATIONS, RATINGS, AND FUNCTION OF EXISTING EQUIPMENT, CONDUIT, AND WIRE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND SHALL ASSUME FULL RESPONSIBILITY FOR MEASURED QUANTITIES.
3. THE CONTRACTOR SHALL COORDINATE POWER, CONTROL, AND COMMUNICATIONS SYSTEMS SHUTDOWN WITH THE ENGINEER TO MINIMIZE DISRUPTION OF NORMAL FACILITY OPERATION.
4. CONDUIT AND WIRE NOTED FOR DEMOLITION SHALL BE REMOVED FROM THEIR POINT OF BEGINNING TO WHERE THEY TERMINATE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL ABANDONED WIRING ENCOUNTERED.
5. EQUIPMENT DIMENSIONS AND CONFIGURATION SHOWN ARE APPROXIMATE. ACTUAL SIZE AND LAYOUT SHALL BE PER THE ENGINEER APPROVED CONTRACTOR'S SHOP DRAWINGS.
6. CONTRACTOR IS RESPONSIBLE FOR ARRANGING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR WORK AREAS.
7. PROVIDE CONDUIT TAGS FOR ALL EXISTING AND NEW CONDUITS INDICATED ON THE PLANS.
8. SIZE JUNCTION BOXES PER NEC 314.28 UNLESS SHOWN OTHERWISE ON PLANS.

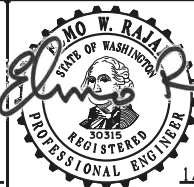
CABLE & CONDUIT ABBREVIATIONS

| | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2"C,10#12,2#12SP,#12G(C10) | 2" CONDUIT, TYPE PER SPECIAL PROVISIONS; TEN #12 CONDUCTORS PLUS TWO SPARE #12'S AND A #12 GROUND CONDUCTOR, INSULATION TYPE PER SPECIAL PROVISIONS; "C10" CONDUIT LABEL. |
| 1½"C(C100) | 1½" CONDUIT, TYPE PER SPECIAL PROVISIONS; SEE ONE-LINES OR PLANS FOR ENCLOSED CABLE AND WIRE INFORMATION; "C100" CONDUIT LABEL. |
| ¾"EC (F10) | ¾" EMPTY CONDUIT WITH PULL STRING, TYPE PER SPECIAL PROVISIONS; "F10" CONDUIT LABEL. |
| 1"LFMC(H10) | 1" LIQUIDTIGHT FLEXIBLE METAL CONDUIT, SEE ONE-LINES OR PLANS FOR ENCLOSED CABLE AND WIRE INFORMATION; "H10" CONDUIT LABEL. (LFMC, EC = EMPTY LIQUIDTIGHT FLEXIBLE METAL CONDUIT) |
| 24/C#12(10) | MULTICONDUCTOR CABLE. TWENTY-FOUR CONDUCTORS, SIZE #12; "10" CABLE LABEL. |

ABBREVIATIONS

| | | | | | |
|-------------|-------------------------------|--------------|-----------------------------------------|-------------|--------------------------------------------|
| A, AMP(S) | AMPERE(S) | HF | HEADFRAME | POS | POINT OF SALE |
| AB | ALLEN-BRADLEY | HGR | HANGER | PR | PAIR |
| AF | AMPERE FRAME | HH | HANDHOLE | PROX | PROXIMITY |
| AFF | ABOVE FINISH FLOOR | HID | HIGH INTENSITY DISCHARGE | PS | PRESSURE SWITCH |
| AG | AUXILIARY GUTTER | HOA | HAND-OFF-AUTO | PSE | PUGET SOUND ENERGY |
| AIC | AMPERES INTERRUPTING CAPACITY | HP | HORSEPOWER | PT | POTENTIAL TRANSFORMER |
| ALRM | ALARM | HPS | HIGH PRESSURE SODIUM | | PRESSURE TRANSDUCER |
| ANN, ANNC | ANNUNCIATOR | HPU | HYDRAULIC POWER UNIT | PTT | PUSH TO TEST |
| APPROX | APPROXIMATELY | HT | HEAT TRACE | PVC | POLYVINYL CHLORIDE CONDUIT |
| AT | AMPERE TRIP | HYD | HYDRAULIC | PWR | POWER |
| ATS | AUTOMATIC TRANSFER SWITCH | | | | |
| AUX | AUXILIARY | | | R | RELAY, RIGHT |
| AWG | AMERICAN WIRE GAUGE | | | RECPT, RCPT | RECEPTACLE |
| | | IC | INTERRUPTING CAPACITY | REQ'D | REQUIRED |
| BKR | BREAKER | ID | INSIDE DIAMETER | RGS | RIGID GALVANIZED STEEL CONDUIT |
| BOM | BILL OF MATERIALS | IMC | INTERMEDIATE METAL CONDUIT | | |
| | | IR | INFRARED | RGSP | RIGID GALVANIZED STEEL, PVC COATED CONDUIT |
| C | CONDUIT, CONDUCTOR | J, JB, J-BOX | JUNCTION BOX | RI | REMOTE INDICATOR |
| CAB | CABINET | JS | JOYSTICK | RL | RED LIGHT |
| CAT | CATALOG | | | RM | ROOM |
| CB | CIRCUIT BREAKER | Kcmil, KCM | THOUSAND CIRCULAR MILLS | | |
| CL | CENTERLINE | KV | KILOVOLT | S | SOUTH |
| CDF | CONTROLLED DENSITY FILL | KVA | KILOVOLT AMPERE | (S) | SHIELDED |
| CKT | CIRCUIT | KVAR | KILOVAR(S) | SF | SUPPLY FAN |
| CO | CONDUIT ONLY | KW | KILOWATT | SHT | SHEET |
| COMB | COMBINATION | | | SOL | SOLENOID |
| COMM | COMMUNICATION | L | LEFT | SP | SPARE |
| CP | CONTROL PANEL | LC | LIGHTING CONTACTOR | SOD | SQUARE D |
| CPT | CONTROL POWER TRANSFORMER | LCC | LINE CONTROL CABINET | SS | SELECTOR SWITCH |
| CPU | CENTRAL PROCESSING UNIT | LFC | LIQUIDTIGHT FLEXIBLE CONDUIT | SST, SS | STAINLESS STEEL |
| CR | CONTROL RELAY | | | SW | SWITCH |
| CS | CONTROL STATION | LFMC | LIQUIDTIGHT FLEXIBLE METAL CONDUIT | SWBD | SWITCHBOARD |
| CT | CURRENT TRANSFORMER | LOC'D | LOCATED | SWGR | SWITCHGEAR |
| CTRL | CONTROL | LT | LIGHT | | |
| CU | COPPER | LS | LIMIT SWITCH | TDR | TIME DELAY RELAY |
| | | | | TEL | TELEPHONE |
| DC | DIRECT CURRENT | M | MAGNETIC CONTACTOR COILS, METERS, MOTOR | TL | TWISTLOCK |
| DIA | DIAMETER | MCB | MAIN CIRCUIT BREAKER | TS | TEMPERATURE SWITCH,TOGGLE SWITCH |
| DIST | DISTRIBUTION | MCC | MOTOR CONTROL CENTER | TSP | TWISTED SHIELDED PAIR |
| DN | DOWN | MCR | MASTER CONTROL RELAY | TST | TWISTED SHIELDED TRIAD |
| DS | DISCONNECT SWITCH | MH | METAL HALIDE; MANHOLE | TTB | TELEPHONE TERMINAL BOARD |
| DWG | DRAWING | MISC | MISCELLANEOUS | TYP | TYPICAL |
| | | MLO | MAIN LUGS ONLY | | |
| E | EAST | MM, mm | MILLIMETER(S) | UG | UNDERGROUND |
| EC | EMPTY CONDUIT | MPZ | MINI POWER ZONE | UH | UNIT HEATER |
| EG | ENGINE GENERATOR | MS | MOTOR STARTER | UL | UNDERWRITERS |
| EGC | EQUIPMENT GROUND CONDUCTOR | MTR | MOTOR | | LABORATORIES, INC. |
| ELEC, ELECT | ELECTRICAL | MTS | MANUAL TRANSFER SWITCH | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| EMT | ELECTRICAL METALLIC TUBING | | | UV | UTILITY VAULT |
| ENC | ENCLOSED | N | NORTH | | |
| EQUIP | EQUIPMENT | NCHO | NORMALLY CLOSED HELD OPEN | V | VOLTS |
| EXIST | EXISTING | NEC | NATIONAL ELECTRICAL CODE | | |
| EWC | ELECTRIC WATER COOLER | NEUT | NEUTRAL | W | WATTS, WIRE |
| | | NOHC | NORMALLY OPEN HELD CLOSED | W/ | WITH |
| FC, FLEX | FLEXIBLE CONDUIT | NP | NAMEPLATE | WP | WEATHERPROOF |
| FDR | FEEDER | NTS | NOT TO SCALE | | |
| FLC | FLUORESCENT, COMPACT | | | XFMR | TRANSFORMER |
| FT | FEET | | | | |
| FS | FLOAT SWITCH | | | | |
| FU, F | FUSE | OC | ON CENTER | | |
| FVR | FULL VOLTAGE REVERSING | OD | OUTSIDE DIAMETER | | |
| FVNR | FULL VOLTAGE NON-REVERSING | OP | OVERHEAD POWER | | |
| FWD | FORWARD | | | | |
| | | P | POLE | | |
| G, GND | GROUND | PA | PUBLIC ADDRESS | | |
| GA | GAUGE | PB | PUSHBUTTON | | |
| GALV | GALVANIZED | PE, PC | PHOTOELECTRIC SENSOR (PHOTOCELL) | | |
| GEN | GENERATOR | | | | |
| GFI | GROUND FAULT INTERRUPTER | PH | PHASE | | |
| GL | GREEN LIGHT | PL OR P | PLATE | | |
| GWB | GYPSUM WALL BOARD | PLC | PROGRAMMABLE LOGIC CONTROLLER | | |
| | | PNL | PANEL | | |

| | | | | | |
|-----------------------------------------------------------------------------------------|------------------|----------|------|----|------------------|
| FILE NAME: WSF\Mulkiteo\14W121_FerryTermConst\CADD\WSF\ 14w121eg01_02 Abbreviations.dlv | | | | | |
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| SUBMITTAL DATE: 12/22/2017 | Morin | | | | WA-2017-007-00 |
| DESIGNED BY: S. HOLLOWAY | 12/22/2017 | | | | REGION NO. STATE |
| ENTERED BY: M. MORIN | 12/22/2017 | | | | 10 WASH |
| CHECKED BY: E. RAJAH | 12/22/2017 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | 12/22/2017 | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | | | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 00***** |



1/5/2018



Washington State
Department of Transportation
WASHINGTON STATE FERRIES



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
ELECTRICAL ABBREVIATIONS
AND NOTES

EG01.02
SHEET
1203
OF
1521
SHEETS

BUILDING PLAN SYMBOLS

- CONDUIT RUNS TURNING UP OR TOWARD OBSERVER
- CONDUIT RUNS TURNING DOWN OR AWAY FROM OBSERVER

LIGHTING

- OS

CEILING MOUNTED OCCUPANCY SENSOR
- OS

WALL MOUNTED OCCUPANCY SENSOR
- VS

CEILING MOUNTED VACANCY SENSOR
- VS

WALL MOUNTED VACANCY SENSOR
- PC

PHOTOCELL
- 7-A

RD**

LIGHT FIXTURE (SEE EG01.00 FOR LIST OF SYMBOLS) ON CIRCUIT 7, LIGHTING CONTROL ZONE A, REMOTE DRIVER RD** (FOR FIXTURES WITH REMOTE DRIVERS)



ABBREVIATIONS

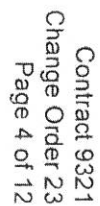
| | |
|-------------------------|--------------------------------------------------------------------------|
| AUTHORITY | WASHINGTON STATE FERRIES |
| BP | BYPASS |
| ECB | ENCLOSED CIRCUIT BREAKER |
| FMC FTA | FLEXIBLE METAL CONDUIT FEDERAL TRANSIT ADMINISTRATION |
| INV IS | INVERTER ISOLATION SWITCH |
| KAIC | KILO-AMPERE INTERRUPTING CURRENT |
| MOD | MODULE |
| NO(S) | NUMBER(S) |
| PV | PHOTOVOLTAIC |
| SMR SPD ST STR | SURFACE METAL RACEWAY SURGE PROTECTION DEVICE SHUNT TRIP STRING |
| UON | UNLESS OTHERWISE NOTED |
| WR WWD | WEATHER RESISTANT MUKILTEO WATER AND WASTEWATER DISTRICT |

GENERAL NOTES:

1. SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES SHOWN HEREIN AND IN DWGS. EG01.00 TO EG01.02 APPLY TO ALL ELECTRICAL DRAWINGS UNDER THIS CONTRACT. REFER TO INDIVIDUAL CONTRACT DRAWINGS FOR ADDITIONAL NOTES.
2. COORDINATE WORK SHOWN ON ELECTRICAL DRAWINGS WITH WORK INDICATED ON OTHER CONTRACT DRAWINGS.
3. RESTORE TO ORIGINAL CONDITION ALL EXISTING SYSTEMS AND AREAS THAT ARE DISTURBED AND/OR DAMAGED BY WORK UNDER THIS CONTRACT AS THE RESULT OF THE CONTRACTOR'S OPERATION TO THE SATISFACTION OF THE ENGINEER AND AT NO COST TO THE AUTHORITY.
4. MULTI-WIRE CIRCUITS (SHARED NEUTRAL) ARE NOT PERMITTED.
5. ALL CONVENIENCE RECEPTACLES SHALL BE MOUNTED AT 18" AFF (CENTER OF RECEPTACLE) UNLESS OTHERWISE NOTED ON THE ELECTRICAL PLANS OR SHOWN ON THE ARCHITECTURAL ELEVATIONS.
6. ALL LIGHT SWITCHES SHALL BE MOUNTED AT 42" AFF (CENTER OF SWITCH) UNLESS OTHERWISE NOTED ON THE ELECTRICAL PLANS OR SHOWN ON THE ARCHITECTURAL ELEVATIONS.
7. SET ALL PROTECTIVE DEVICES TO THE SETTINGS DETERMINED UNDER THE PROTECTIVE DEVICE COORDINATION STUDY PERFORMED BY THE CONTRACTOR UNDER THE REQUIREMENTS OF SPECIFICATION SECTION 26 05 73, AFTER THE CONTRACTOR SUBMITS THE STUDY TO AND OBTAINS THE APPROVAL FROM THE AUTHORITY.

THIS DWG. SUPPLEMENTS SYMBOLS, GENERAL NOTES, AND ABBREVIATIONS ON DWGS. EG01.00 TO EG01.02.

| | | | | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------|--|------------------|--|-----------------|--|---------|--|----|--|------------------|--|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------|--|---------|--|
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| PRINTED: 4:33:13 PM 1/15/2019 | | LAST PRINTED BY: | | | | | | | | FED.AID PROJ.NO. | | | | | | | | SHEET | |
| SUBMITTAL DATE: 1/18/19 | | 1/18/19 | | | | | | | | WA-2017-007-00 | | | | | | | | 1204 | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | | | REGION NO. STATE | | | | | | | | OF | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | | | 10 WASH | | | | | | | | 1521 | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | | | | | JOB NUMBER 18W121 | | | | | | SHEETS | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | CONTRACT NO. 009321 | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | BUILDING ELECTRICAL SYMBOLS, ABBREVIATIONS, AND NOTES | | | |



RFI 231 - Electrical Meter Monitoring by DDC

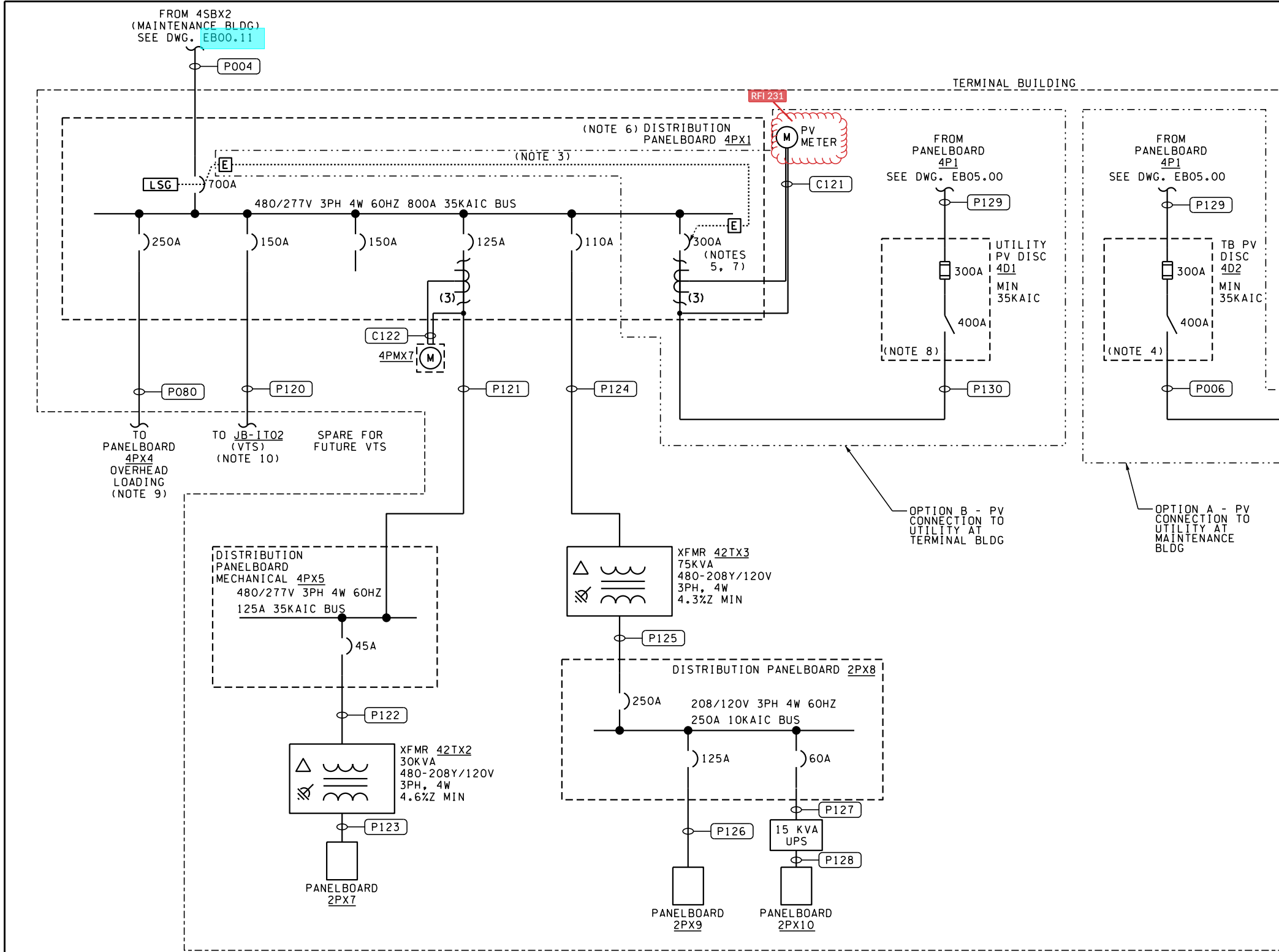
Per RFI 030, "Option A" shown on drawing EB00.11 has been selected for the solar connection. The PV meter shown on EB00.13 was part of "Option B" and has been removed from the design. FSi has agreed that the meters shown on drawing EB00.11 should be monitored by DDC.

RFI 030 - Solar Connection Options

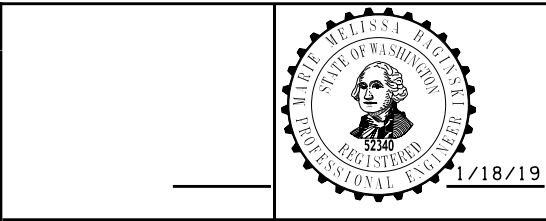
Option A is the preferred

NOTES:

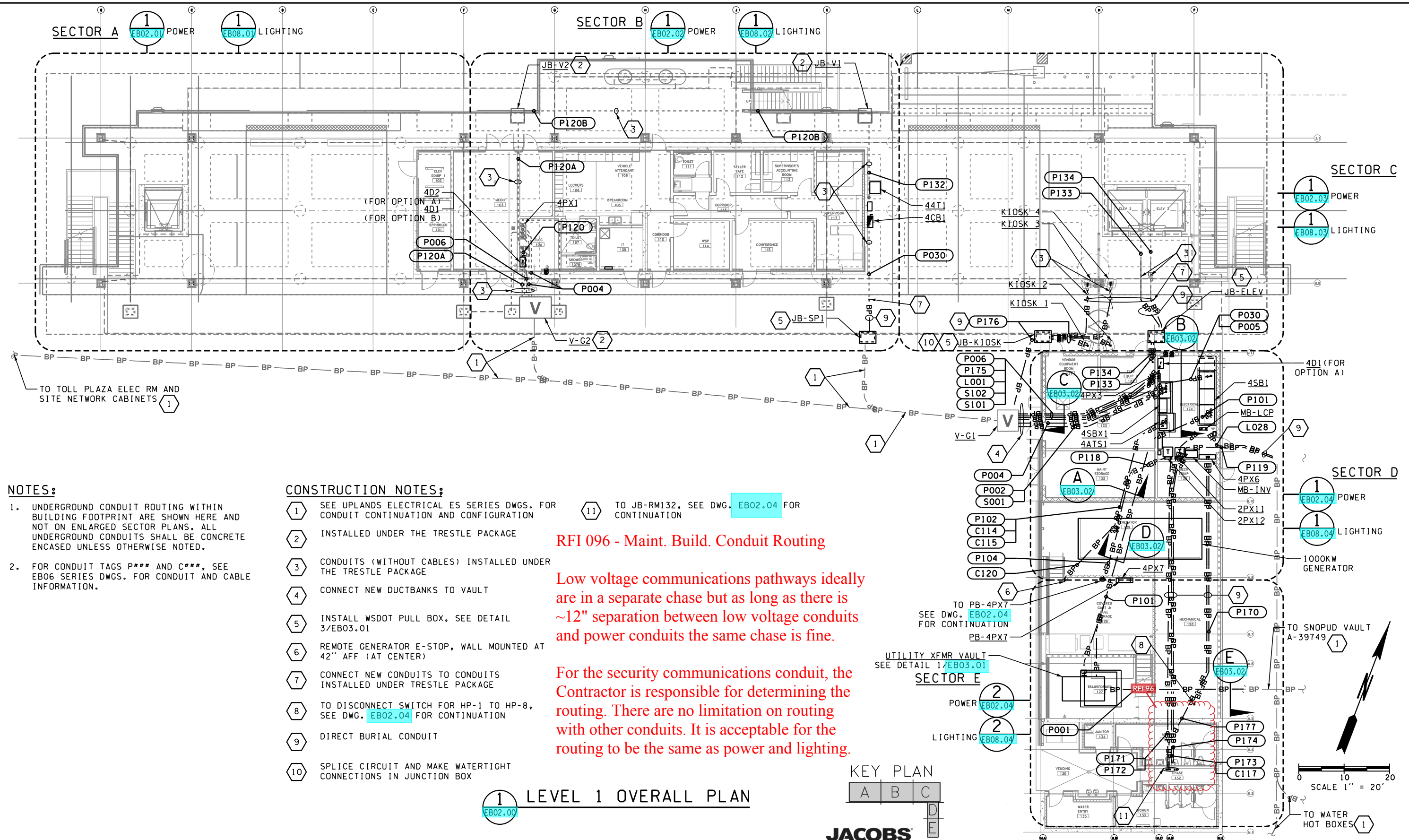
- NOT ALL CIRCUIT BREAKERS AND LOADS ON PANELBOARDS ARE SHOWN. FOR COMPLETE LIST OF CIRCUIT BREAKERS AND LOADS, SEE EB04 SERIES DWGS. FOR PANEL SCHEDULES.
- FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
- FOR OPTION B ONLY: PV CIRCUIT BREAKER AND 4PX1 MAIN CIRCUIT BREAKER SHALL BE ELECTRICALLY INTERLOCKED AS SUCH THAT THE PV CIRCUIT BREAKER WILL AUTOMATICALLY OPEN WHEN MAIN CIRCUIT BREAKER OPENS OR LOSS OF UTILITY POWER IS DETECTED. PV CIRCUIT BREAKER SHALL CLOSE ONLY WHEN MAIN CIRCUIT BREAKER IS CLOSED AND UTILITY POWER IS AVAILABLE.
- FOR OPTION A ONLY: PROVIDE AUXILIARY CONTACT KIT (1NO/1NC RATED MIN 240V, 6A) ACTIVATED BY SWITCH POSITION FOR PV RAPID SHUTDOWN. PROVIDE LABEL ON 4D2: "PV SYSTEM DISCONNECTING MEANS. ACTIVATES PV RAPID SHUTDOWN WHEN SWITCH IS OPENED."
- FOR OPTION B ONLY: PROVIDE PROVISIONS TO OPEN PV BREAKER WHEN GENERATOR IS RUNNING (VIA DRY CONTACTS INDICATING GENERATOR RUNNING OR ATS IN NORMAL POSITION) TO PREVENT BACKFEED TO THE GENERATOR.
- FOR OPTION B ONLY: PROVIDE LABEL ON 4PX1: "PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN. OPENING 4PX1 MAIN BREAKER SHUTS DOWN POWER TO BUILDING (EXCEPT LOADS ON EMERGENCY BATTERY INVERTERS) AND ACTIVATES PV RAPID SHUTDOWN."
- FOR OPTION B ONLY: PROVIDE AUXILIARY SWITCH (1A/1B RATED MIN 240V, 6A) ACTIVATED BY BREAKER POSITION FOR PV RAPID SHUTDOWN. PROVIDE LABEL ON 300A BREAKER IN 4PX1: "PV SYSTEM DISCONNECT. ACTIVATES PV RAPID SHUTDOWN WHEN BREAKER IS OPENED."
- FOR OPTION B ONLY: PROVIDE VISIBLE-OPEN LOCKABLE DISCONNECT SWITCH FOR UTILITY USE WITH AUXILIARY CONTACT KIT (1NO/1NC RATED MIN 240V, 6A) ACTIVATED BY SWITCH POSITION FOR PV RAPID SHUTDOWN. PROVIDE LABEL ON 4D1: "PV SYSTEM DISCONNECTING MEANS (UTILITY USE). ACTIVATES PV RAPID SHUTDOWN WHEN SWITCH IS OPENED."
- PROVIDE CONDUIT TO CONNECT TO THE RIGID CONDUIT ON THE OHL TRANSFER SPAN PROVIDED UNDER THE MARINE STRUCTURES CONSTRUCTION CONTRACT. PROVIDE CABLE TO PANEL 4PX4 IN THE OHL CAB. SEE THE EP REFERENCE DRAWINGS FOR LOCATION OF PANEL 4PX4 AND ROUTING OF CONDUIT PROVIDED ON THE OHL SYSTEM.
- PROVIDE CABLE AND CONDUIT TO JB-1T02 PROVIDED UNDER THE MARINE STRUCTURES CONSTRUCTION CONTRACT AND SPLICE TO CABLE PROVIDED UNDER THE MARINE STRUCTURES CONTRACT. SEE THE EV REFERENCE DRAWINGS FOR LOCATION OF JB-1T02.



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|-----------------------------------------------------------------------------|------------------------------|-----------------|---------|------------------|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb00_13.dwg | | | | |
| PRINTED: 4:39:22 PM 1/15/2019 | LAST PRINTED BY: [signature] | | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



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| SR 525 | | EB00.13 |
| MUKILTEO FERRY TERMINAL (PHASE 2) | | |
| FERRY TERMINAL CONSTRUCTION | | SHEET |
| | | 1207 |
| | | OF |
| BUILDING | | 1521 |
| ONE LINE DIAGRAM 3 | | SHEETS |



FILE NAME: WS\Mukilteo\14W121_FerryTermConst\JACOBS\14w121eb02_00.dwg

PRINTED: 4:42:25 PM 1/15/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

ENTERED BY: C. YUN

CHECKED BY: M. BAGINSKI

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

LAST PRINTED BY:

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CONFORMED PLANS

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NOTES:

1. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

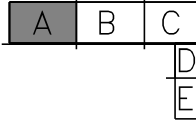
CONSTRUCTION NOTES:

- 1 CONDUITS TO RUN ABOVE LEVEL 1 CEILING PANELS BETWEEN THE BEAMS TO ELEVATOR PIT AND LEVEL 2 ABOVE AS SHOWN.
- 2 PROVIDE FUSIBLE DISCONNECT SWITCH WITH SHUNT TRIP MECHANISM, INTEGRAL 120V SECONDARY XFMR, SHUNT TRIP CONTROL CIRCUIT ILLUMINATED VISUAL DEVICE AND VOLTAGE MONITORING RELAY.
- 3 SPLICE CIRCUIT AND RUN 2*12 AND 1*12G IN 3/4" CONDUIT TO EACH HEAT TRACE POWER CONNECTION KIT/BOX (BY HEAT TRACE MANUFACTURER) FOR HEAT TRACE CABLES ON PIPES SPECIFIED IN THE PLUMBING PLANS.
- 4 RUN 4*12 CONTROL IN 3/4" C FROM GENERATOR REMOTE ANNUNCIATOR FOR GENERATOR RUNNING SIGNAL AT ELEV 1 LANDING PANEL.

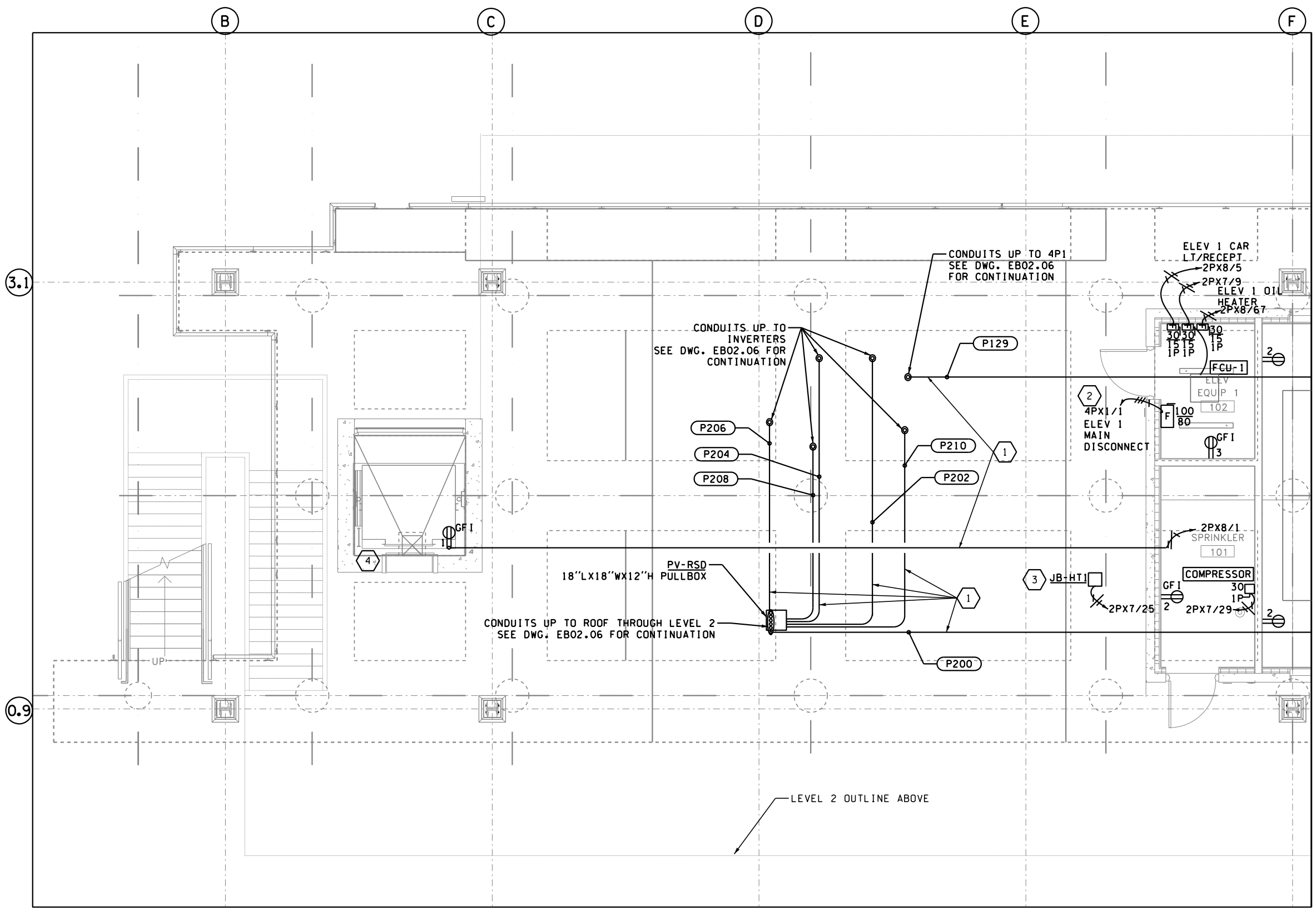
RFI 531 - Mechanical FCU Voltage Coordination

Agree with rerouting to different panels, however see markups on the next page, prefer no more than 3 FSUs on a circuit, 4 max where needed



KEY PLAN



SCALE 1/8" = 1'-0"



1 LEVEL 1 SECTOR A POWER PLAN
EB02.01

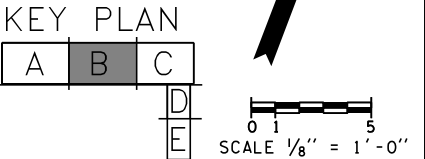
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- NOTES:**
1. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
 2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
 3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

- CONSTRUCTION NOTES:**
- 1 CONDUIT TO RUN ABOVE LEVEL 1 CEILING PANELS BETWEEN THE BEAMS UP TO LEVEL 2 AS SHOWN ON DWG. EB02.03.
 - 2 PROVIDE GROUND FAULT DETECTOR PANEL AS SHOWN ON DWG. EB03.04.
 - 3 SEE EB SERIES COMMUNICATIONS DWGS. FOR ALL EQUIPMENT FED FROM UPS PANEL 2PX10 IN RM 109.
 - 4 REMOTE ANNUNCIATOR SHALL HAVE ISOLATED RELAYS TO PROVIDE GENERATOR RUNNING SIGNALS TO ELEVATOR LANDINGS.

RFI 531 - Mechanical FCU Voltage Coordination

Agree with rerouting to different panels, however see markups on the next page, prefer no more than 3 FSUs on a circuit, 4 max where needed



1 LEVEL 1 SECTOR B POWER PLAN
EB02.02

See next Page EB02.02 B
For RFI 555 & 562 Notes

RFI 531

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| FILE NAME: WSV\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb02_02_14W121.dwg | | | | |
| PRINTED: 4:45:34 PM 1/15/2019 | LAST PRINTED BY: | | FED.AID PROJ.NO. | |
| SUBMITTAL DATE: 1/18/19 | staterj | | WA-2017-007-00 | |
| DESIGNED BY: C. YUN | 1/18/19 | | REGION NO. STATE | |
| ENTERED BY: C. YUN | 1/18/19 | | 10 WASH | |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | JOB NUMBER | |
| MAR PROJ ENGR: C. TORRES | | | 18W121 | |
| DIR TERM ENGR: N. MCINTOSH | | | CONTRACT NO. | |
| ASST SECRETARY: A. SCARTON | | | 009321 | |
| CONFORMED PLANS | | 1/18/19 | DATE | BY |
| REVISION | | | | |



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

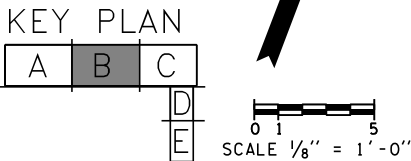
SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR B POWER PLAN

EB02.02
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RFI 555 - Updated Drawing Next Page EP03.00

- NOTES:
- FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
 - FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
 - ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

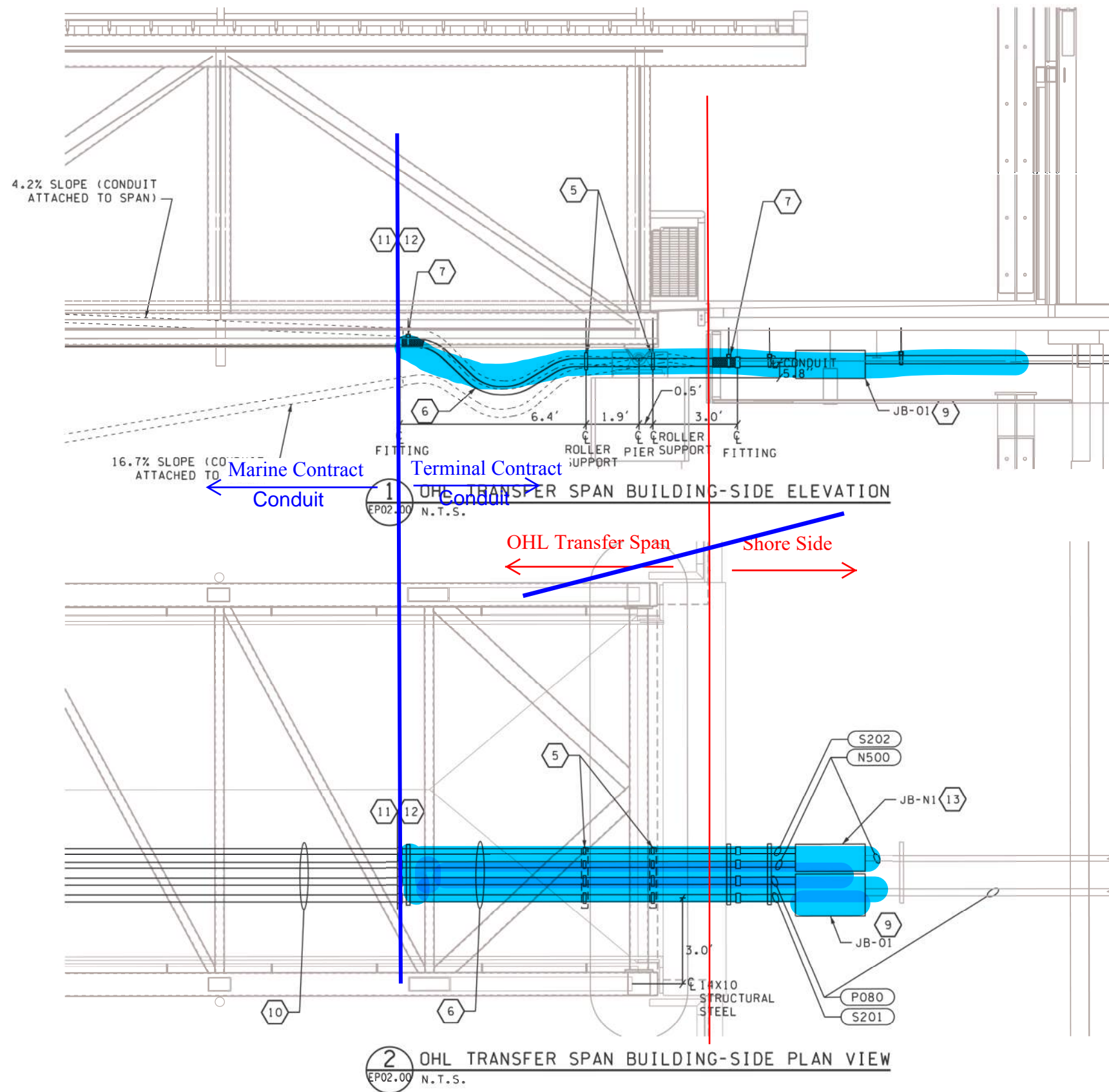
- CONSTRUCTION NOTES:
- CONDUIT TO RUN ABOVE LEVEL 1 CEILING PANELS BETWEEN THE BEAMS UP TO LEVEL 2 AS SHOWN ON DWG. EB02.03.
 - PROVIDE GROUND FAULT DETECTOR PANEL AS SHOWN ON DWG. EB03.04.
 - SEE EB SERIES COMMUNICATIONS DWGS. FOR ALL EQUIPMENT FED FROM UPS PANEL 2PX10 IN RM 109.
 - REMOTE ANNUNCIATOR SHALL HAVE ISOLATED RELAYS TO PROVIDE GENERATOR RUNNING SIGNALS TO ELEVATOR LANDINGS.



1 LEVEL 1 SECTOR B POWER PLAN
EB02.02

RFI 555
Page 4/5

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- SEE EB SERIES DWGS. FOR CONDUIT CONTINUATION TO TERMINAL BUILDING.
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CONSTRUCTION NOTES:

- FURNISH AND INSTALL COOPER B-LINE B3110 PIPE ROLLER SUPPORT (WITH NON-METALLIC POLYURETHANE ROLLER) OR APPROVED EQUAL.
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RFI 562 -

- Stainless steel yokes for non-metallic rollers are acceptable per manufactures specifications.
- provide liquid tight Strain Relief wire mesh support grips. Body of stainless steel with a neoprene gland to produce watertight seal. In Addition, a stainless steel self-locking wire mesh grip shall be attached to connector body.

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| PRINTED: 4:44:54 PM 9/19/2018 | LAST PRINTED BY: yunc | | | | |
| SUBMITTAL DATE: 08/23/18 | | | | | |
| DESIGNED BY: M. BAGINSKI | 9/19/2018 | | | | |
| ENTERED BY: M. BAGINSKI | 9/19/2018 | | | | |
| CHECKED BY: C. YUN | 9/19/2018 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | |
| | REVISION | DATE | BY | | |

| |
|---------------------|
| FED.AID PROJ.NO. |
| WA-2017-007-00 |
| REGION NO. STATE |
| 10 WASH |
| JOB NUMBER |
| 18W121 |
| CONTRACT NO. |
| 00**** |

JACOBS



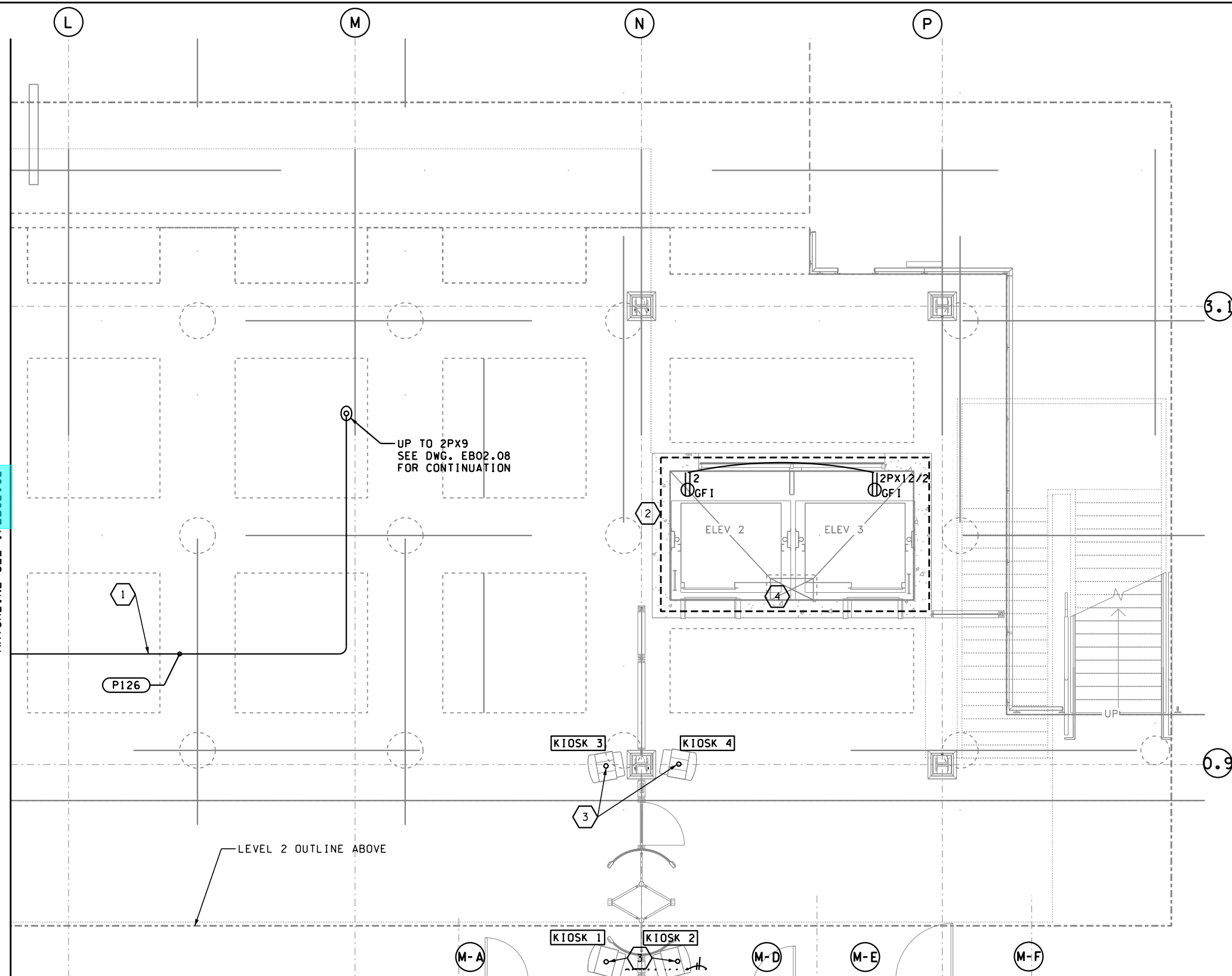
Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
MARINE STRUCTURES
OVERHEAD LOADING
ELECTRICAL DETAILS

EP03.00

SHEET
430
OF
484
SHEETS

MATCHLINE SEE 1/EB02.02



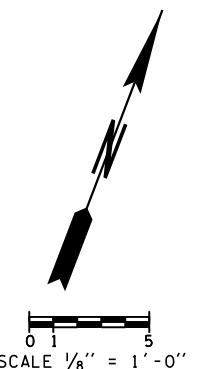
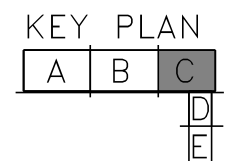
NOTES:

1. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX11, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

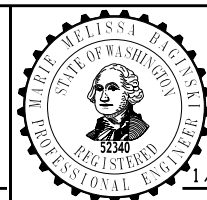
CONSTRUCTION NOTES:

- 1 CONDUITS TO RUN ABOVE LEVEL 1 CEILING PANELS BETWEEN THE BEAMS FROM ELECTRICAL ROOM TO ELEVATOR PIT AND LEVEL 2 ABOVE AS SHOWN.
- 2 ROUTE ALL CABLES IN ELEV 2/3 PIT BACK TO MB THROUGH CONDUITS P133 AND P134 SHOWN ON DWG. EB02.00.
- 3 ROUTE CABLES FOR KIOSK POWER BACK TO MB THROUGH CONDUITS P175 AND P176 SHOWN ON DWG. EB02.00.
- 4 RUN 4#12 CONTROL IN 3/4" C FROM GENERATOR REMOTE ANNUNCIATOR FOR GENERATOR RUNNING SIGNAL AT ELEV 2/3 LANDING PANEL.

1 LEVEL 1 SECTOR C POWER PLAN
EB02.03

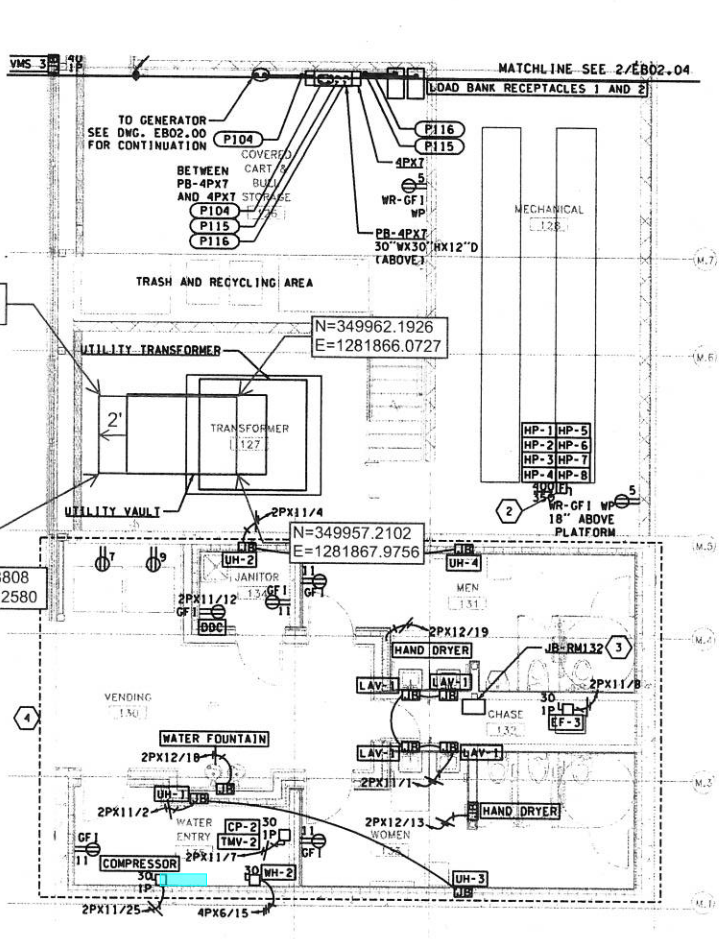
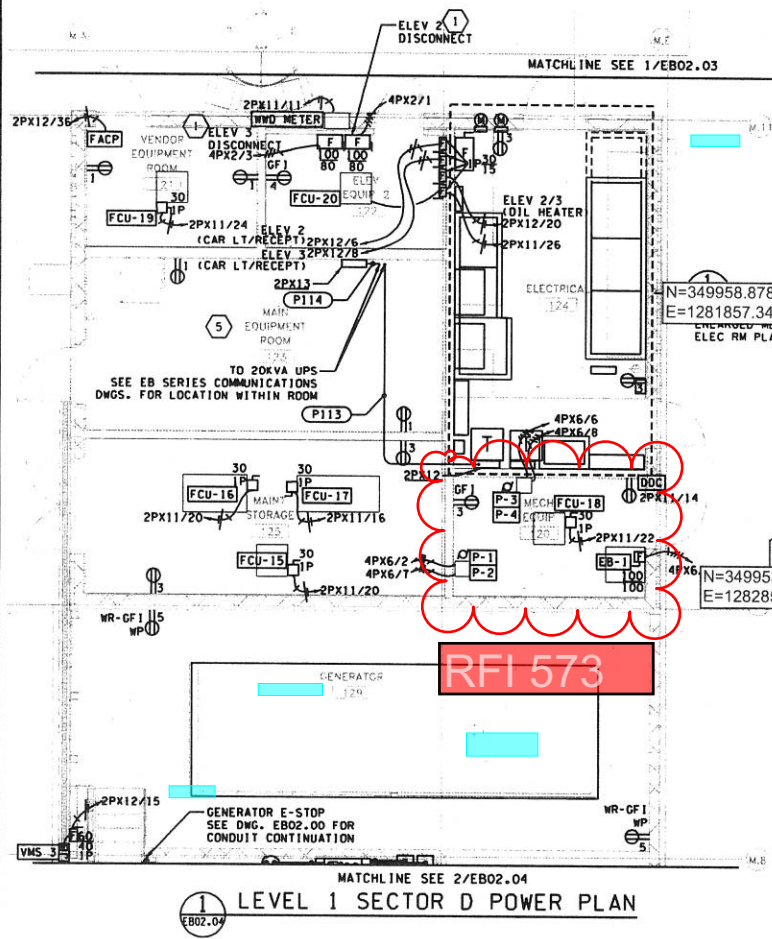


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| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR C POWER PLAN

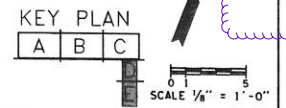
EB02.03
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1211
OF
1521
SHEETS



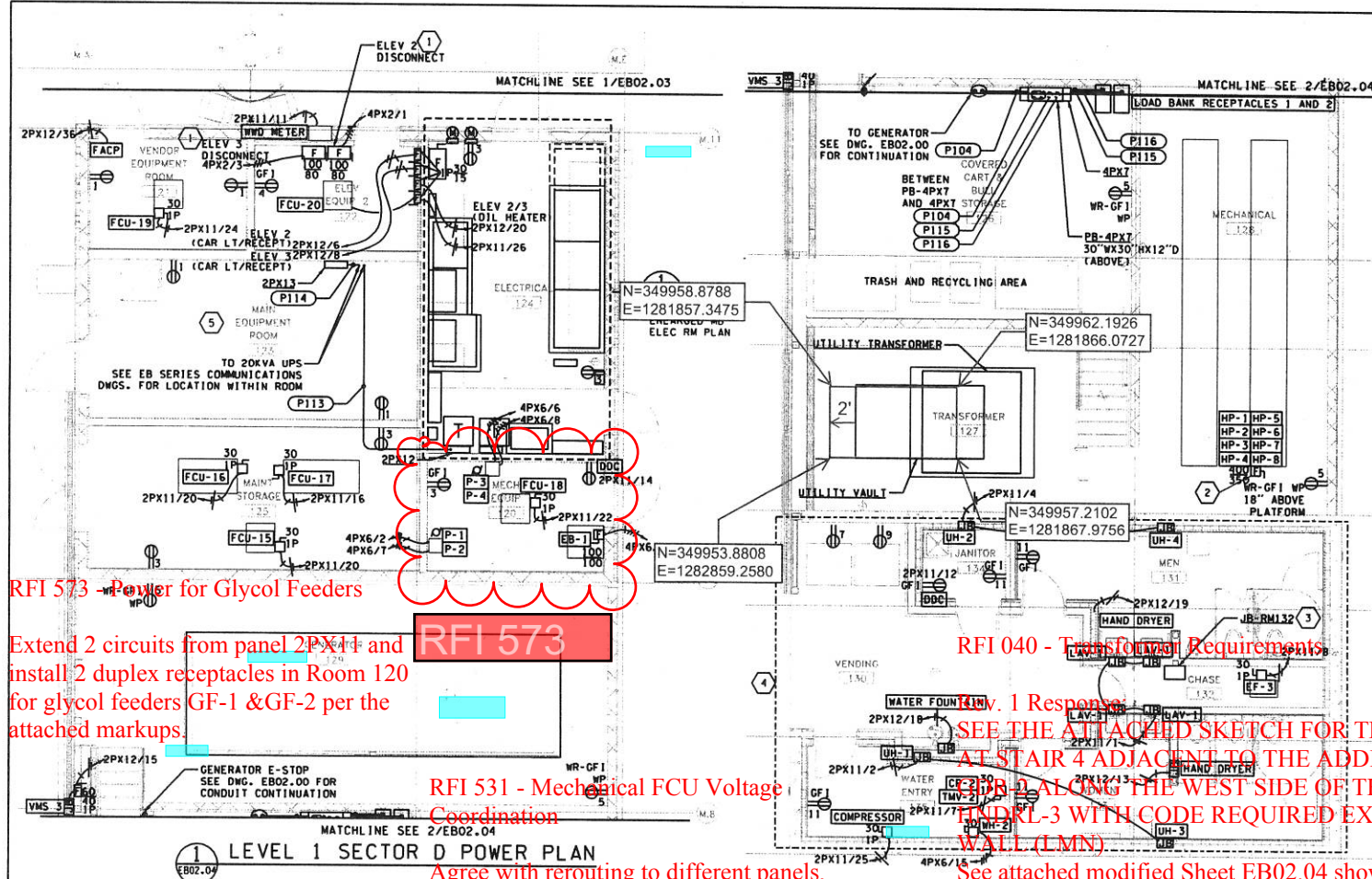
- NOTES:**
- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
 - ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX12, CIRCUIT NO. AS INDICATED. UON. HOMERUN BACK TO SOURCE.
 - FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
- CONSTRUCTION NOTES:**
- PROVIDE FUSIBLE DISCONNECT SWITCH WITH SHUNT TRIP MECHANISM, INTEGRAL 120V SECONDARY XFMR, SHUNT TRIP CONTROL CIRCUIT ILLUMINATED VISUAL DEVICE AND VOLTAGE MONITORING RELAY.
 - CONDUIT P170 ROUTED BELOW GRADE, SEE DWG. EB02.00 FOR CONTINUATION.
 - JB-RM132 CONNECTED TO CONDUITS P171, P172, P173, P177. SEE DWG. EB02.00 FOR CONTINUATION.
 - ROUTE ALL CIRCUITS IN ROOMS 130, 131, 132, 133, 134, 135 BACK TO ELEC RM VIA JB-RM132, UON. CONDUIT ROUTING BETWEEN JB-RM132 AND ROOMS WITHIN THIS AREA SHALL BE UNDERGROUND (DIRECT BURIAL), UON.
 - SEE EB SERIES COMMUNICATIONS DWGS. FOR ALL EQUIPMENT FED FROM UPS PANEL 2PX13 IN RM123.

LEVEL 1 SECTOR D POWER PLAN

LEVEL 1 SECTOR E POWER PLAN



| | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|---------------------------------------------------------------------------------------------------------------------|--|--|--|------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------------------------------------|
| FILE NAME: W:\Mukilteo\14W121_FerryTermConst\CA00\JACOBS\14W121eb02_04.dwg PRINTED: 8:18:32 PM 12/14/2017 SUBMITTAL DATE: 12/22/17 DESIGNED BY: C. YUN ENTERED BY: C. YUN CHECKED BY: M. BAGINSKI MAR PROJ ENGR: C. TORRES DIR TERM ENGR: N. MCINTOSH ASST SECRETARY: A. SCARTON | | | | FED.AID PROJ.NO. WA-2017-007-00 REGION NO. STATE 10 WASH JOB NUMBER 18W121 CONTRACT NO. 000000 | | | | SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL - LEVEL 1 SECTOR D & E POWER PLANS | | | | EB02.04 SHEET 1212 OF 1521 SHEETS |
| REVISION DATE BY | | | | 4/5/19 RFI 040 000000 | | | | JACOBS Washington State Department of Transportation WASHINGTON STATE FERRIES | | | | |



RFI 573 - Power for Glycol Feeders

Extend 2 circuits from panel 2PX11/24 and install 2 duplex receptacles in Room 120 for glycol feeders GF-1 & GF-2 per the attached markups.

RFI 573

RFI 531 - Mechanical FCU Voltage Coordination

Agree with rerouting to different panels, however see markups on the next page, prefer no more than 3 FSUs on a circuit, 4 max where needed

RFI 040 - Transformer Requirements

Rev. 1 Response
SEE THE ATTACHED SKETCH FOR THE ADDED CMU WALL [KPFF] AT STAIR 4 ADJACENT TO THE ADDED CMU WALL, ELIMINATE CORNER 2 ALONG THE WEST SIDE OF THE STAIR AND MOUNT HANDRL-3 WITH CODE REQUIRED EXTENSIONS TO THE NEW CMU WALL (LMN).
See attached modified Sheet EB02.04 showing the northing and easting locations of each corner of the proposed transformer vault. (Jacobs)

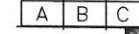
NOTES:

1. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
2. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX12, CIRCUIT NO. AS INDICATED. UON. HOMERUN BACK TO SOURCE.
3. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.

CONSTRUCTION NOTES:

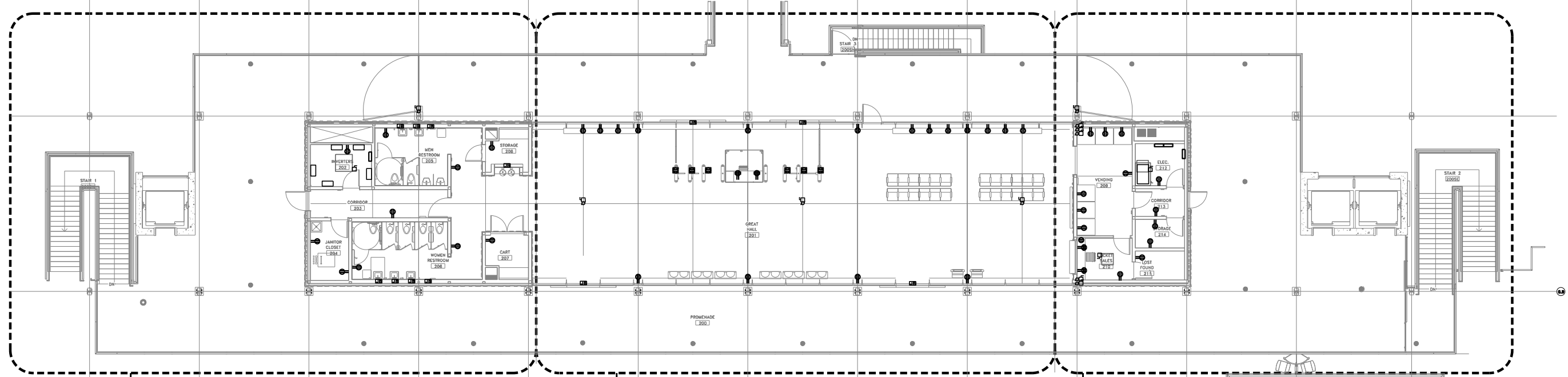
- 1 PROVIDE FUSIBLE DISCONNECT SWITCH WITH SHUNT TRIP MECHANISM, INTEGRAL 120V SECONDARY XFMR, SHUNT TRIP CONTROL CIRCUIT ILLUMINATED VISUAL DEVICE AND VOLTAGE MONITORING RELAY.
- 2 CONDUIT P170 ROUTED BELOW GRADE, SEE DWG. EB02.00 FOR CONTINUATION.
- 3 JB-RM132 CONNECTED TO CONDUITS P171, P172, P173, P177. SEE DWG. EB02.00 FOR CONTINUATION.
- 4 ROUTE ALL CIRCUITS IN ROOMS 130, 131, 132, 133, 134, 135 BACK TO ELEC RM VIA JB-RM132, UON. CONDUIT ROUTING BETWEEN JB-RM132 AND ROOMS WITHIN THIS AREA SHALL BE UNDERGROUND (DIRECT BURIAL), UON.
- 5 SEE EB SERIES COMMUNICATIONS DWGS. FOR ALL EQUIPMENT FED FROM UPS PANEL 2PX13 IN RM123.

KEY PLAN



SCALE 1/8" = 1'-0"

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| REVISION DATE BY | | | | RFI 040 4/5/19 | | | | JACOBS Washington State Department of Transportation WASHINGTON STATE FERRIES | | | | 12/15/2017 |



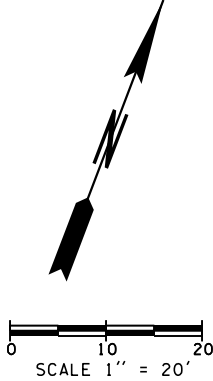
1
EB02.06 POWER
1
EB08.05 LIGHTING

1
EB02.07 POWER
1
EB08.06 LIGHTING

1
EB02.08 POWER
1
EB08.07 LIGHTING

1
EB02.05 LEVEL 2 OVERALL PLAN

KEY PLAN
A B C
D E

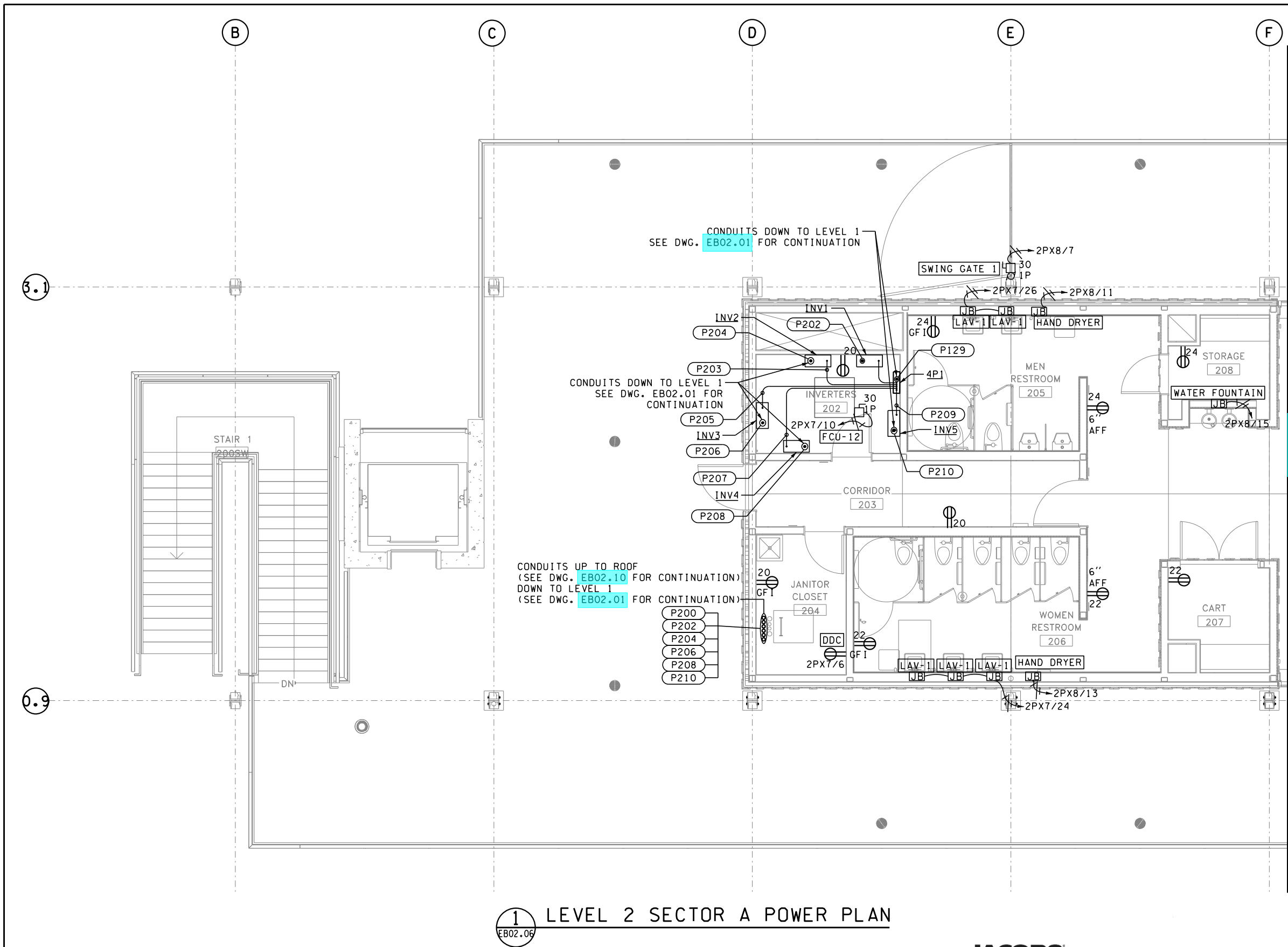


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| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE BY | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
OVERALL PLAN

EB02.05
SHEET
1213
OF
1521
SHEETS



- NOTES:**
1. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
 2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B). HOMERUN BACK TO SOURCE BY ROUTING CONDUITS UNDER LEVEL 2 FLOOR, UON.
 3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOME RUN BACK TO SOURCE.

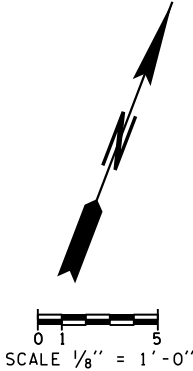
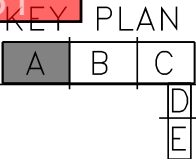
RFI 531 - Mechanical FCU Voltage Coordination

Agree with rerouting to different panels, however see markups on the next page, prefer no more than 3 FSUs on a circuit, 4 max where needed

MATCHLINE SEE 1/EB02.07



RFI 531



1 LEVEL 2 SECTOR A POWER PLAN
EB02.06

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| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
SECTOR A POWER PLAN

EB02.06
SHEET
1214
OF
1521
SHEETS

NOTES:

1. FOR CONDUIT TAGS P*** OR C***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B). HOMERUN BACK TO SOURCE BY ROUTING CONDUITS UNDER LEVEL 2 FLOOR, UON.
3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOME RUN BACK TO SOURCE.

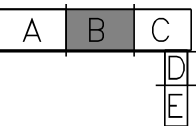
RFI 218 - Kiosk Rough-In

Provide (2) 3/4" d. conduit under each kiosk (1 for comm, 1 for power) for bottom installation; see attached sketches.
Also, see attached kiosk cut sheet.

CONSTRUCTION NOTES:

1. ROUTE CONDUIT THROUGH UTILITY TROUGH AS SHOWN ON DETAIL 5/A06.25. TYPE MC CABLE MAY BE USED IN LIEU OF CONDUIT INSIDE UTILITY TROUGH FOR BRANCH CIRCUITS (EXCLUDING LIGHTING CONTROL, CIRCUITS FED FROM EMERGENCY INVERTER).
2. ROUTE CONDUIT ABOVE WOOD BEAM AS SHOWN ON DETAIL 2/A03.65 TO CEILING FAN. CONDUITS BETWEEN GRID LINES 0.9 AND 3.1 SHALL BE ROUTED IN THE BUILDING NORTH-SOUTH OR EAST-WEST DIRECTION, PERPENDICULAR/PARALLEL TO GRID LINES. CONDUITS TO RUN DOWN TO LEVEL 1 THROUGH RM204.
3. FLIP-UP DUPLEX RECEPTACLE WITH JUNCTION BOX MOUNTED ON COUNTER, LEW ELECTRIC PUFF-CT-SS OR APPROVED EQUAL. USE 1/2" CONDUIT TO RUN UP TO CENTER RECEPTACLE BOX IN COUNTER AND TO RECEPTACLE BOXES ON EACH END. SEE DWG. A07.29 FOR MOUNTING DETAILS.

KEY PLAN



SCALE 1/8" = 1'-0"

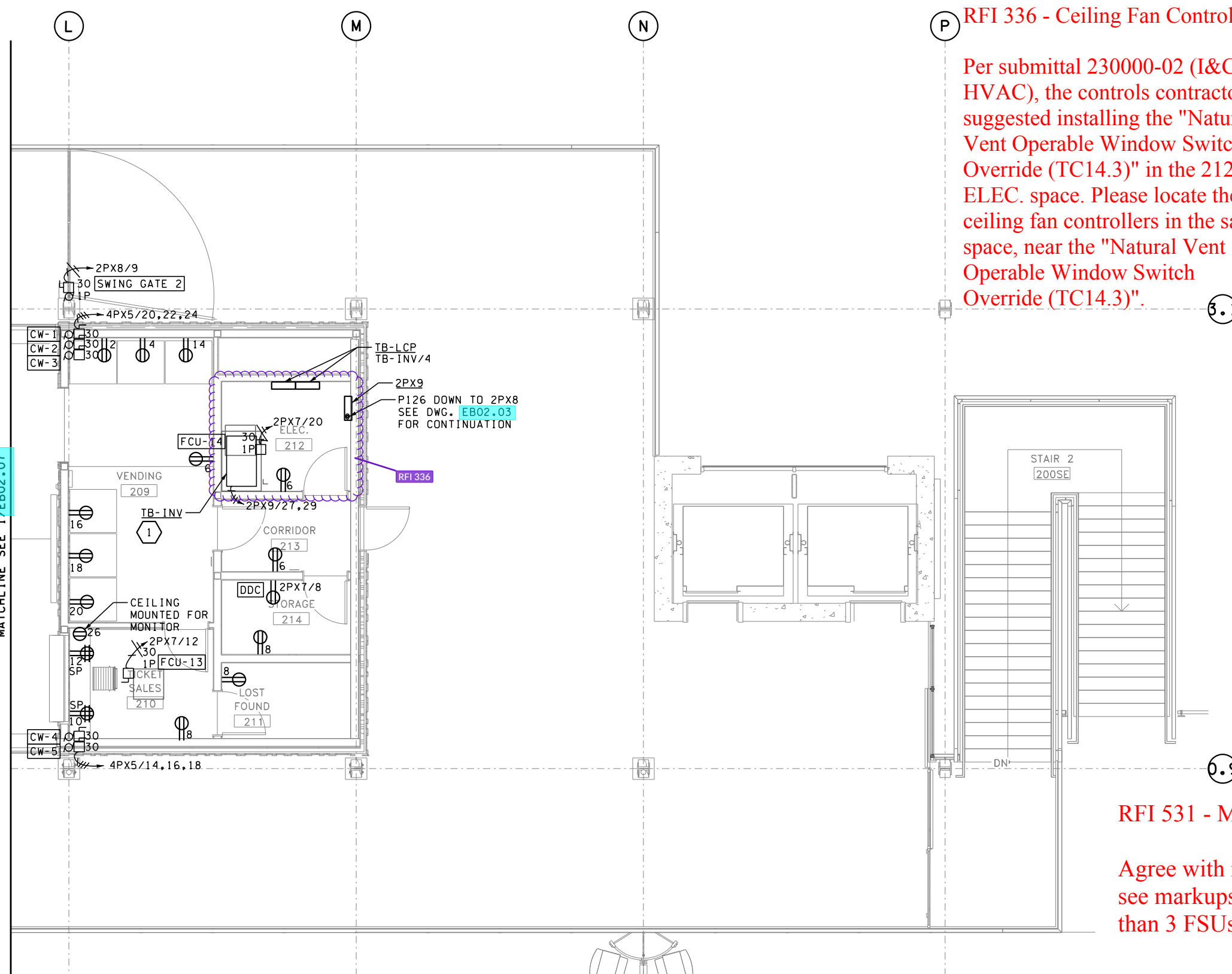
1 LEVEL 2 SECTOR B POWER PLAN

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| ENTERED BY: C. YUN | | | | CHECKED BY: M. BAGINSKI | | 1/18/19 | | REGION NO. STATE | |
| MAR PROJ ENGR: C. TORRES | | | | DIR TERM ENGR: N. MCINTOSH | | 1/18/19 | | 10 WASH | |
| ASST SECRETARY: A. SCARTON | | | | CONFORMED PLANS | | 1/18/19 | | JOB NUMBER | |
| | | | | REVISION | | DATE | | BY | |
| | | | | | | | | CONTRACT NO. | |
| | | | | | | | | 009321 | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
SECTOR B POWER PLAN

EB02.07
SHEET
1215
OF
1521
SHEETS

RFI 336 - Ceiling Fan Controller NOTES:

Per submittal 230000-02 (I&C for HVAC), the controls contractor suggested installing the "Natural Vent Operable Window Switch Override (TC14.3)" in the 212 - ELEC. space. Please locate the ceiling fan controllers in the same space, near the "Natural Vent Operable Window Switch Override (TC14.3)".

NOTES:

1. FOR CONDUIT TAGS P*** OR C***, SEE EBO6 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
2. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN ¾" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B). HOME RUN BACK TO SOURCE BY ROUTING CONDUITS UNDER LEVEL 2 FLOOR, UON.
3. ALL RECEPTACLES SHOWN ARE FED FROM PANEL 2PX9, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

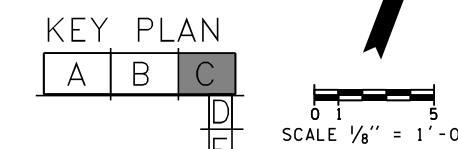
CONSTRUCTION NOTES:

- 1 PROVIDE 208V INPUT AND 120V OUTPUT 5KVA EMERGENCY INVERTER WITH MIN (10) 20A OUTPUT CIRCUIT BREAKERS DIVIDED EVENLY ACROSS THE TWO PHASES:

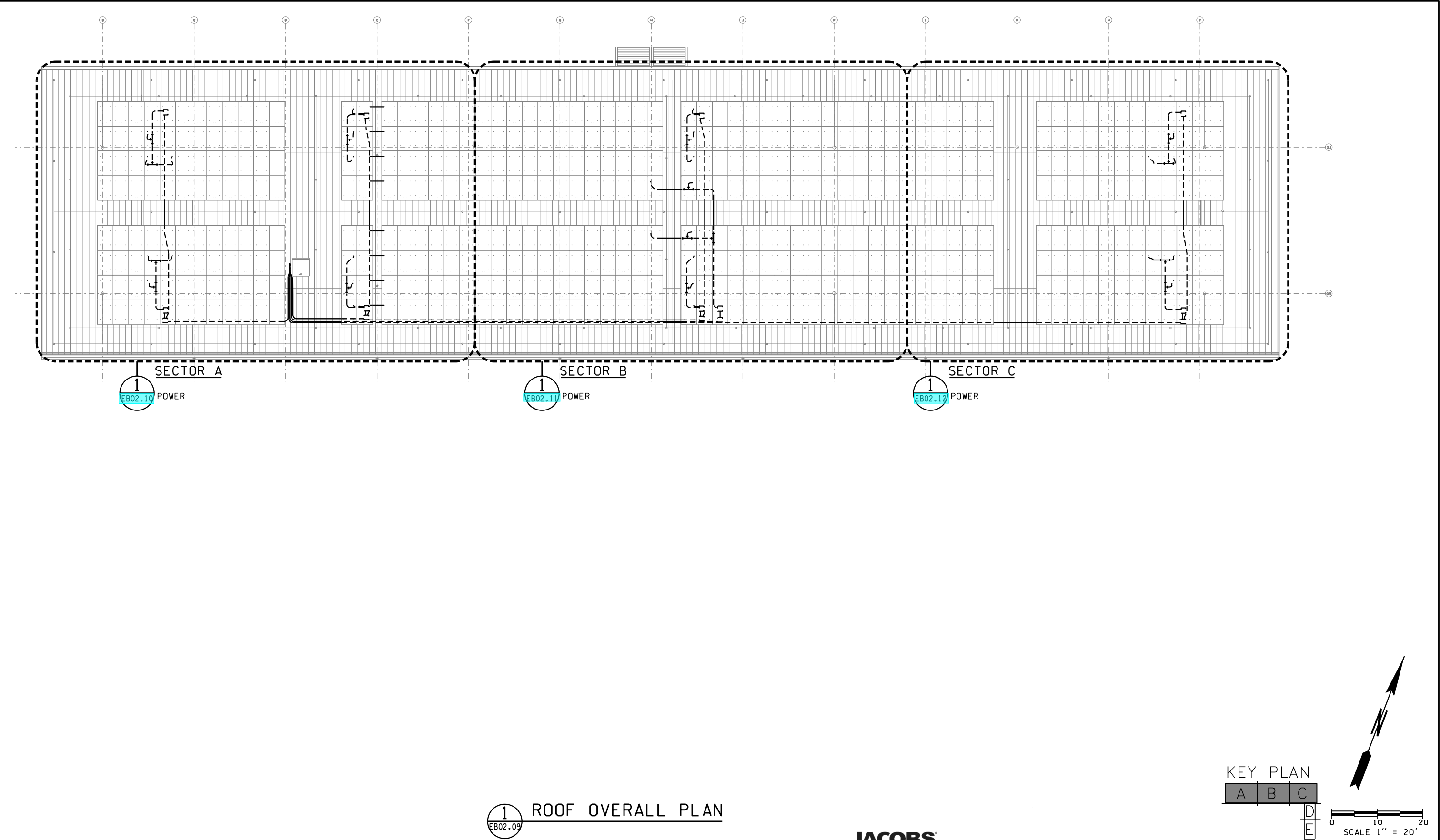
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| 2 | LEVEL 1 EXTERIOR | 1548 |
| 3 | RM201/209 | 838 |
| 4 | RM202/203/213/212/209/ 205/206, TB-LCP | 480 |
| 5 | LEVEL 2 EXTERIOR | 611 |
| 6 | SPARE | |
| 7 | SPARE | |
| 8 | SPARE | |
| 9 | SPARE | |
| 10 | 4PMX7 | 50 |

RFI 531 - Mechanical FCU Voltage Coordination

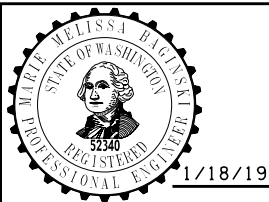
Agree with rerouting to different panels, however
see markups on the next page, prefer no more
than 3 FSUs on a circuit, 4 max where needed



① LEVEL 2 SECTOR C POWER PLAN

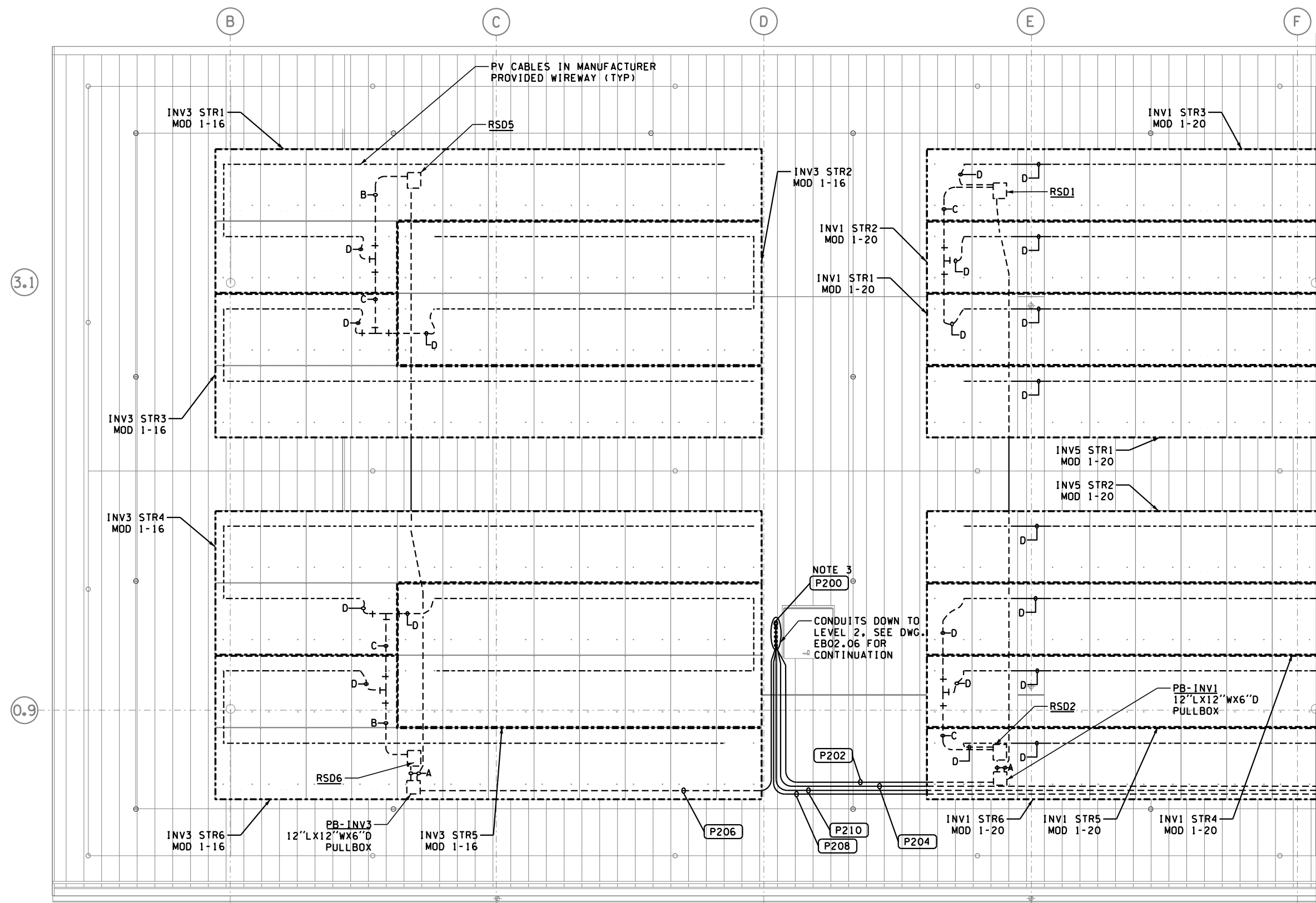


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| SUBMITTAL DATE: 1/18/19 | staterj | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE BY | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
ROOF - OVERALL PLAN

EB02.09
SHEET
1217
OF
1521
SHEETS

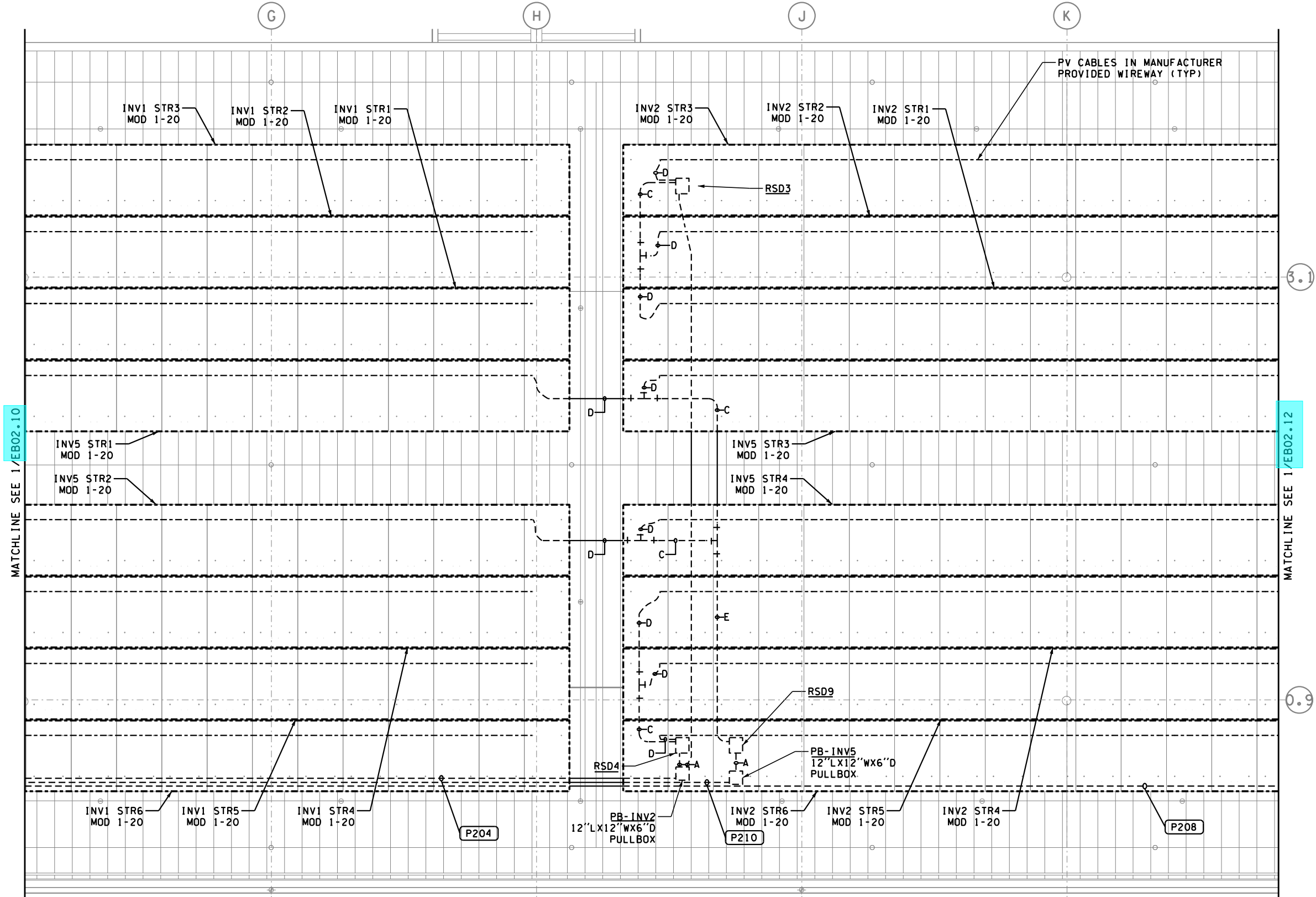


- NOTES:

MATCHLINE SEE 1/EB02.11

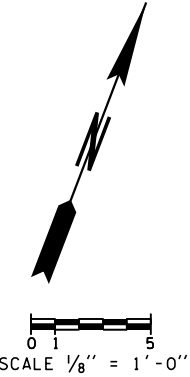
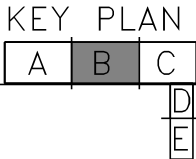
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| EB02.10 |
| SHEET 1218 OF 1521 SHEETS |

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| SUBMITTAL DATE: 1/18/19 | | slaterj | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | WA-2017-007-00 |
| ENTERED BY: C. YUN | | 1/18/19 | | | REGION NO. STATE |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | 10 WASH |
| MAR PROJ ENGR: C. TORRES | | | | | JOB NUMBER |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | | 1/18/19 | 18W121 |
| ASST SECRETARY: A. SCARTON | | REVISION | | DATE BY | CONTRACT NO. 009321 |



- NOTES:**
1. SEE DWG. **EB05.00** SERIES FOR PV SYSTEM SCHEMATICS.
 2. SEE DWG. **EB02.14** FOR LIGHTNING PROTECTION SYSTEM LAYOUT.
 3. CONDUIT ROUTING FOR P200 NOT SHOWN. RUN #12 WIRES IN CONDUIT AND ALL NECESSARY JUNCTION BOXES AND/OR CONDUIT BODIES TO EACH RSD* FOR PV RAPID SHUTDOWN. SEE DETAIL 2/EB05.00 FOR PV RAPID SHUTDOWN DIAGRAM. ROUTE CONDUITS USING SAME PATH AS THE 1KV PV CONDUITS AS MUCH AS POSSIBLE.

1 ROOF SECTOR B POWER PLAN

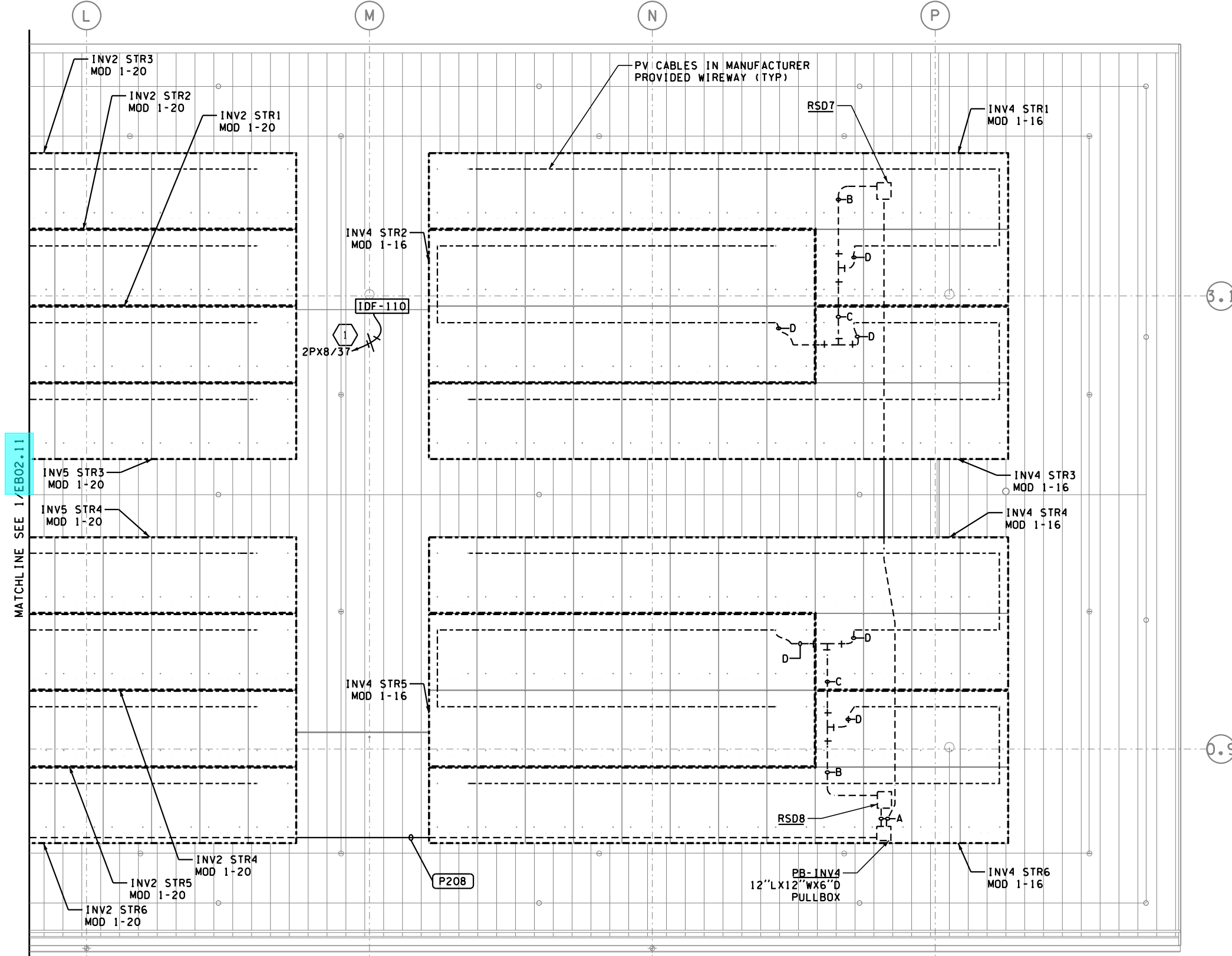


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| SUBMITTAL DATE: 1/18/19 | staterj | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - ROOF
SECTOR B POWER PLAN

EB02.11
SHEET
1219
OF
1521
SHEETS



- NOTES:**
- 1. SEE DWG. EB05.00 SERIES FOR PV SYSTEM SCHEMATICS.
 - 2. SEE DWG. EB02.14 FOR LIGHTNING PROTECTION SYSTEM LAYOUT.
 - 3. CONDUIT ROUTING FOR P200 NOT SHOWN. RUN #12 WIRES IN CONDUIT AND ALL NECESSARY JUNCTION BOXES AND/OR CONDUIT BODIES TO EACH RSD# FOR PV RAPID SHUTDOWN. SEE DETAIL 2/EB05.00 FOR PV RAPID SHUTDOWN DIAGRAM. ROUTE CONDUITS USING SAME PATH AS THE 1KV PV CONDUITS AS MUCH AS POSSIBLE.

CONSTRUCTION NOTES:



1 ROUTE CONDUIT USING THE SAME PATH AS THE PV CONDUITS ON THE ROOF, RUNNING DOWN TO LEVEL 1 THROUGH RM204 AS SHOWN ON DWG. EB02.10.

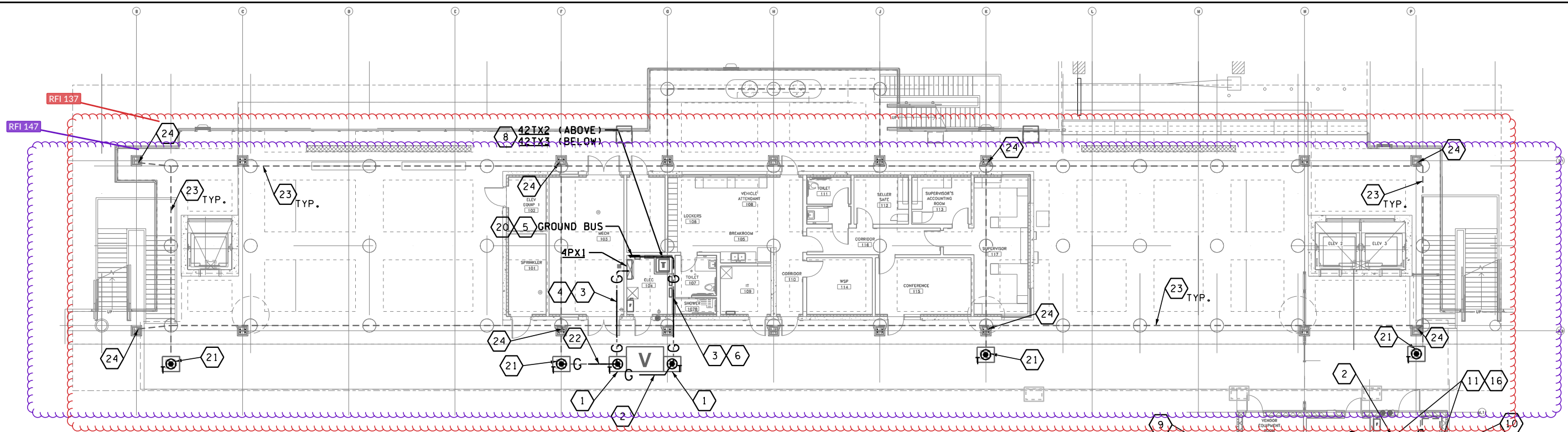
1 ROOF SECTOR C POWER PLAN
EB02.12

KEY PLAN

| | | |
|---|---|---|
| A | B | C |
| | | D |
| | | E |

SCALE 1/8" = 1'-0"

| | | | | | | | | | | | | | | | | | |
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| PRINTED: 11:18:21 AM 1/16/2019 | | LAST PRINTED BY: | | | | | | FED.AID PROJ.NO. | | | | | | MUKILTEO FERRY TERMINAL (PHASE 2) | | SHEET | |
| SUBMITTAL DATE: 1/18/19 | | signature | | | | | | | | | | | | FERRY TERMINAL CONSTRUCTION | | 1220 | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | WA-2017-007-00 | | | | | | | | OF | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | REGION NO. STATE | | | | | | | | 1521 | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | 10 WASH | | | | | | | | SHEETS | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | JOB NUMBER | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | 18W121 | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | CONTRACT NO. | | | | | | | |
| | | | | | | | | 009321 | | | | | | | | | |



NOTES:

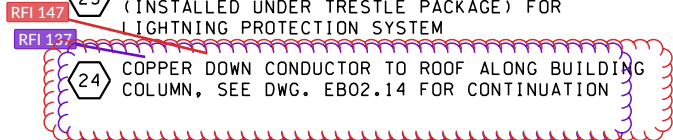
1. SEE DETAIL 1/EB03.02 FOR OVERALL GROUNDING ELECTRODE SYSTEM SCHEMATIC.

1 TERMINAL GROUNDING PLAN
EB02.13

CONSTRUCTION NOTES:

- 1 INSTALL GROUND ROD AND GROUND CONDUCTORS IN TYPE 4 JUNCTION BOX (JB INSTALLED UNDER TRESTLE PACKAGE). SEE DETAIL 1/EB03.00.
- 2 PROVIDE #4/0 BARE COPPER GROUND CONDUCTOR, MIN 30" COVER.
- 3 PROVIDE #2/0 INSULATED COPPER GROUND CONDUCTOR IN 1" CONDUIT (PART OF CONDUIT INSTALLED UNDER TRESTLE PACKAGE). EXTEND CONDUIT TO EQUIPMENT.
- 4 CONNECT GROUND CONDUCTOR TO PANELBOARD GROUND BUS. NEUTRAL BUS SHALL NOT BE BONDED TO GROUND BUS IN PANELBOARD.
- 5 PROVIDE 2'-0" GROUND BUS BAR, MOUNTED 1'-0" AFF. SEE DETAIL 2/EB03.00.
- 6 CONNECT GROUND CONDUCTOR TO GROUND BUS.
- 7 PROVIDE SNOPIED TRANSFORMER AND VAULT GROUNDING AND BONDING IN ACCORDANCE WITH SNOPIED ELECTRICAL SERVICE REQUIREMENTS.
- 8 GROUND XFMR PER DETAIL 3/EB03.00.
- 9 PROVIDE GROUND TEST WELL WITH TYPE 4 JUNCTION BOX. SEE DETAIL 1/EB03.00.
- 10 PROVIDE GROUND TEST WELL WITH TYPE 1 JUNCTION BOX. SEE DETAIL 1/EB03.00.
- 11 PROVIDE #3/0 INSULATED COPPER GROUND CONDUCTOR IN 1 1/4" CONDUIT, MIN 30" COVER.
- 12 CONNECT GROUND CONDUCTOR TO GENERATOR EQUIPMENT GROUNDING TERMINAL.
- 13 GROUND GENERATOR PER NEC FOR A SEPARATELY DERIVED SYSTEM.
- 14 CONNECT GROUND CONDUCTOR TO GENERATOR FRAME AND METAL PLATFORM USING EXOTHERMIC WELD CONNECTION.
- 15 PROVIDE 2'-0" GROUND BUS BAR, MOUNTED 7'-0" AFF. SEE DETAIL 2/EB03.00.
- 16 CONNECT GROUND CONDUCTOR TO SWITCHBOARD GROUND BUS.
- 17 CONNECT GROUND CONDUCTOR TO ATS EQUIPMENT GROUNDING TERMINAL.
- 18 CABLE TO CABLE CONNECTION IN EARTH, SEE DETAIL 5/EB03.00.
- 19 PROVIDE #3/0 INSULATED COPPER GROUND CONDUCTOR IN 1 1/4" CONDUIT FROM GROUND BUS TO NEAREST BUILDING STEEL AND METAL WATER PIPE. INSTALL BONDING JUMPER BETWEEN ALL DISCONTINUOUS METAL CONNECTIONS.
- 20 PROVIDE #2/0 INSULATED COPPER GROUND CONDUCTOR IN 1" CONDUIT FROM GROUND BUS TO NEAREST METAL PIPE AND BUILDING STEEL. INSTALL BONDING JUMPER BETWEEN ALL DISCONTINUOUS METAL CONNECTIONS.

- 21 INSTALL GROUND ROD AND CONNECT TO BARE COPPER CONDUCTOR IN TYPE 4 JUNCTION BOX (JB AND CONDUCTOR INSTALLED UNDER TRESTLE PACKAGE) FOR BUILDING LIGHTNING PROTECTION SYSTEM. SEE DETAIL 1/EB03.00.
- 22 CONNECT #4/0 BARE COPPER CONDUCTOR (CONDUCTOR INSTALLED UNDER TRESTLE PACKAGE) TO GROUND RODS IN TYPE 4 JUNCTION BOX TO BOND LIGHTNING PROTECTION SYSTEM AND BUILDING ELECTRICAL GROUNDING SYSTEM.
- 23 GROUND RING EMBEDDED IN TRESTLE CONCRETE SLAB (INSTALLED UNDER TRESTLE PACKAGE) FOR LIGHTNING PROTECTION SYSTEM
- 24 COPPER DOWN CONDUCTOR TO ROOF ALONG BUILDING COLUMN, SEE DWG. EB02.14 FOR CONTINUATION

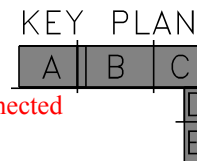


RFI 147 - Column Ground Repair

Only the 8 column plinths identified on the plans need ground conductors extended through them.
The additional grounding locations are not needed per the electrical drawings.

RFI 137 - Existing Column Ground Conductors

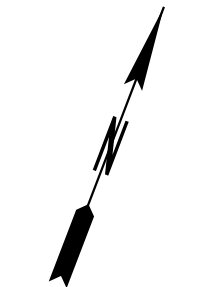
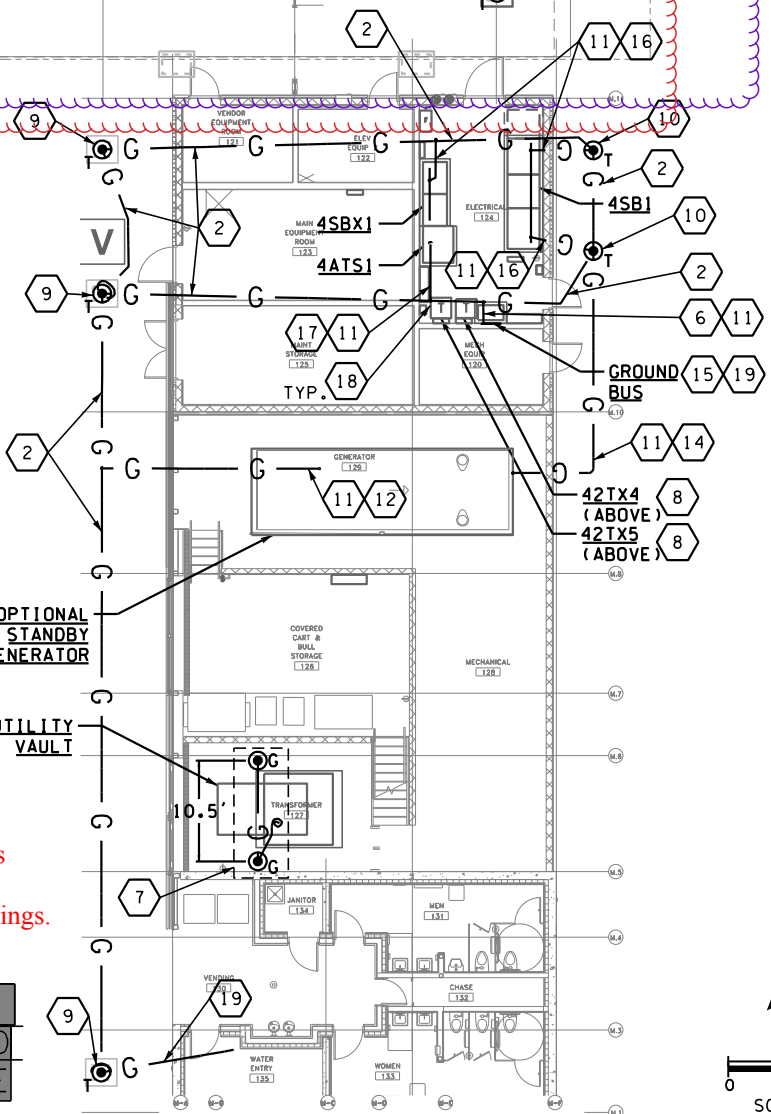
Per spec 260526(3.1)D.2 additional cable shall be connected to the 1' slack using exothermic-welded connectors.



JACOBS

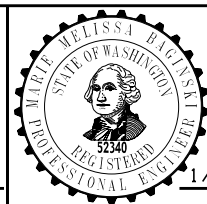


Washington State
Department of Transportation
WASHINGTON STATE FERRIES



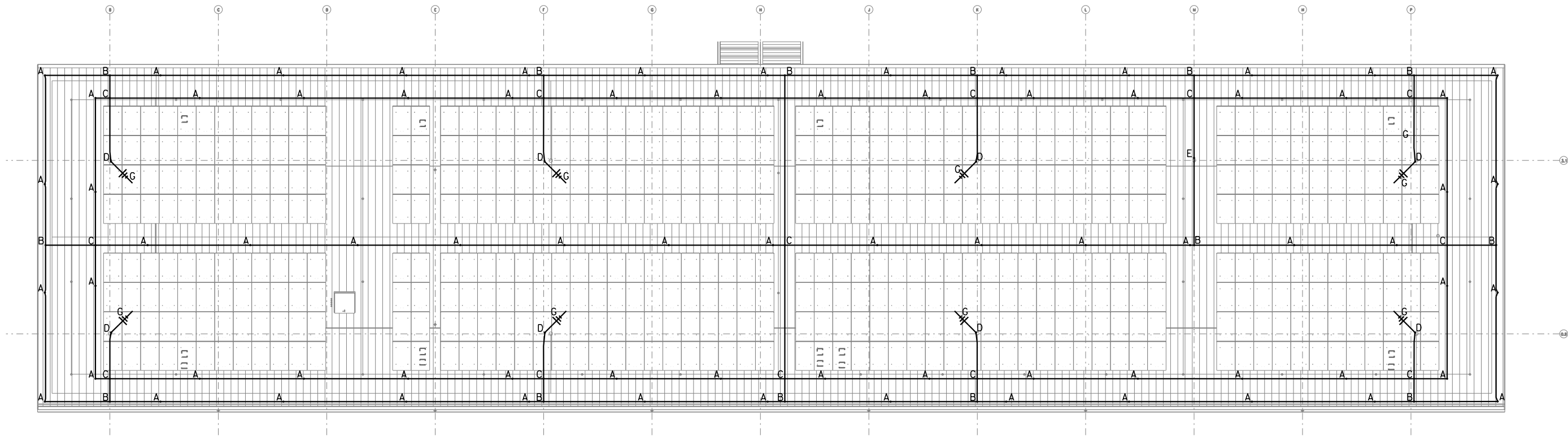
0 10 20
SCALE 1" = 20'

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| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
GROUNDING PLAN

EB02.13
SHEET
1221
OF
1521
SHEETS



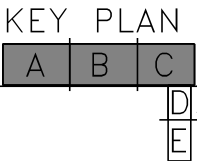
1 TERMINAL LIGHTNING PROTECTION PLAN
EB02.14



LEGEND

- A. 1/2" DIAMETER X 24" LONG ALUMINUM AIR TERMINAL WITH ALUMINUM STANDING SEAM BASE, SEE DETAIL 1/EB03.03
- CLASS I ALUMINUM CONDUCTOR SECURED TO BUILDING EVERY 3' MAX, SEE DETAIL 2/EB03.03
- B. CABLES CONNECTED WITH T CONNECTOR, SEE DETAIL 3/EB03.03
- C. CABLES CONNECTED WITH CROSS RUN CONNECTOR, SEE DETAIL 4/EB03.03
- D. COPPER DOWN CONDUCTOR WITH THRU-ROOF CONNECTOR AT BUILDING COLUMN, SEE DETAIL 6/EB03.03
- E. 1/2" DIAMETER X 24" LONG ALUMINUM AIR TERMINAL ON ANTENNA POLE, SEE DETAIL 7/EB03.03
- CLASS I COPPER DOWN CONDUCTOR CONNECTION THROUGH COLUMN PLINTH (IN THE QUADRANT INDICATED BY THE DIRECTION WHERE SYMBOL IS POINTING) TO GROUND RING INSTALLED UNDER TRESTLE PACKAGE, SEE DETAIL 5/EB03.03. SEE DWG. EB02.14 FOR CONTINUATION AT GROUND LEVEL.

NOTES:

1. THE DESIGN ABOVE DOES NOT SHOW ALL THE COMPONENTS FOR THE LIGHTNING PROTECTION SYSTEM. OBTAIN THE SERVICES OF A UL-LISTED OR LIGHTNING PROTECTION INSTITUTE (LPI) MASTER INSTALLER TO DESIGN AND INSTALL A COMPLETE LIGHTNING PROTECTION SYSTEM INSTALLATION IN ACCORDANCE WITH NFPA 780 OR UL 96A. A UL MASTER LABEL OR LPI CERTIFICATE SHALL BE PROVIDED.
2. BUILDING STEEL SHALL NOT BE USED AS SOLE DOWN CONDUCTORS.

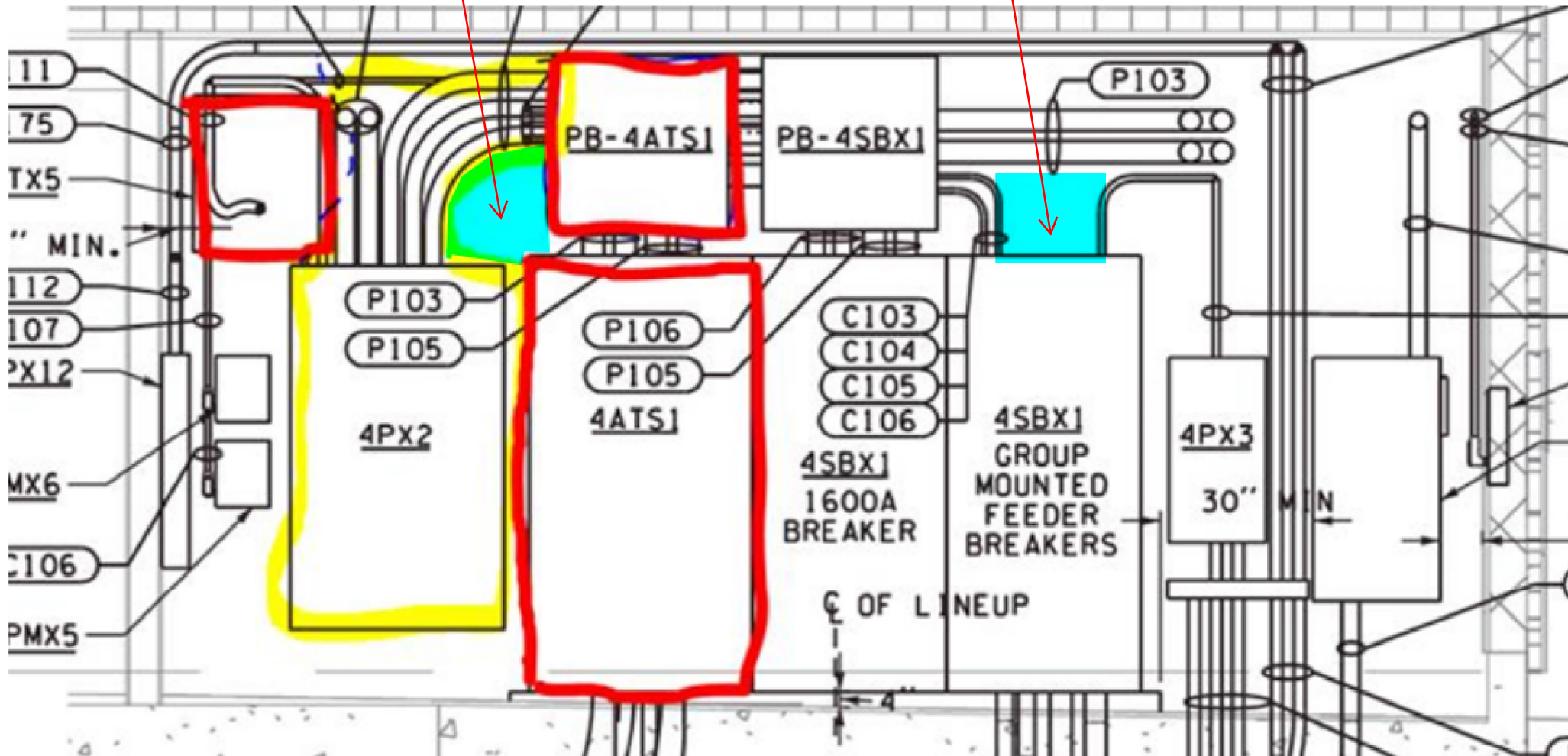


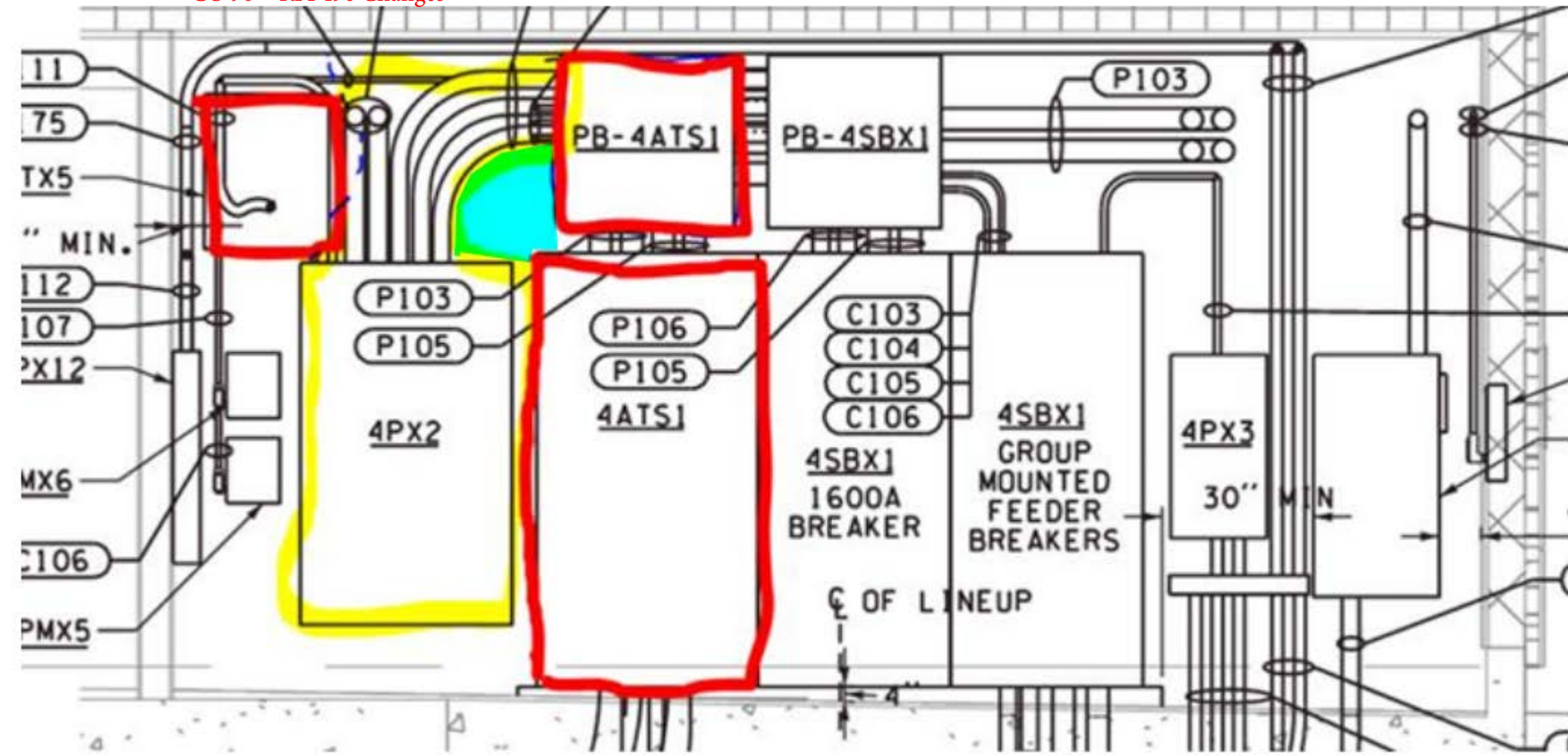
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| PRINTED: 11:21:00 AM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | | | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | signature | | | | WA-2017-007-00 REGION NO. STATE 10 WASH JOB NUMBER 18W121 CONTRACT NO. 009321 | | | | | | | | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | | | | | | | | | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | | | | | | | | | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | CONFORMED PLANS | | 1/18/19 | | TERMINAL LIGHTNING PROTECTION PLAN | | | | | | |
| | | | | | | REVISION | | DATE | BY | | | | | | | |

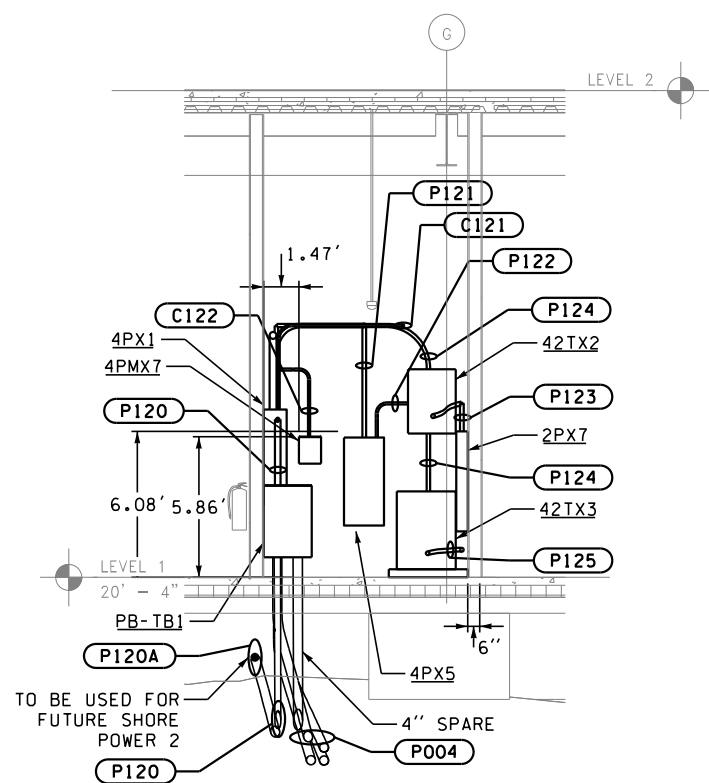
EB02.16
SHEET
OF
SHEETS

RETURN GRILLE

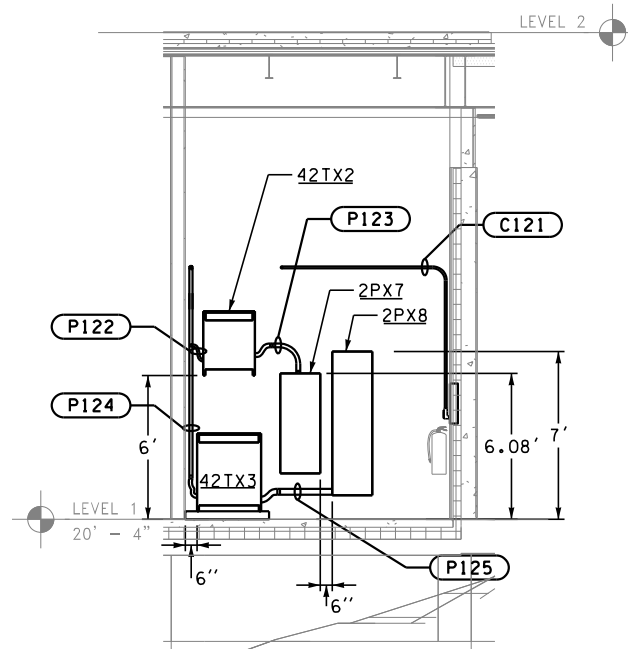
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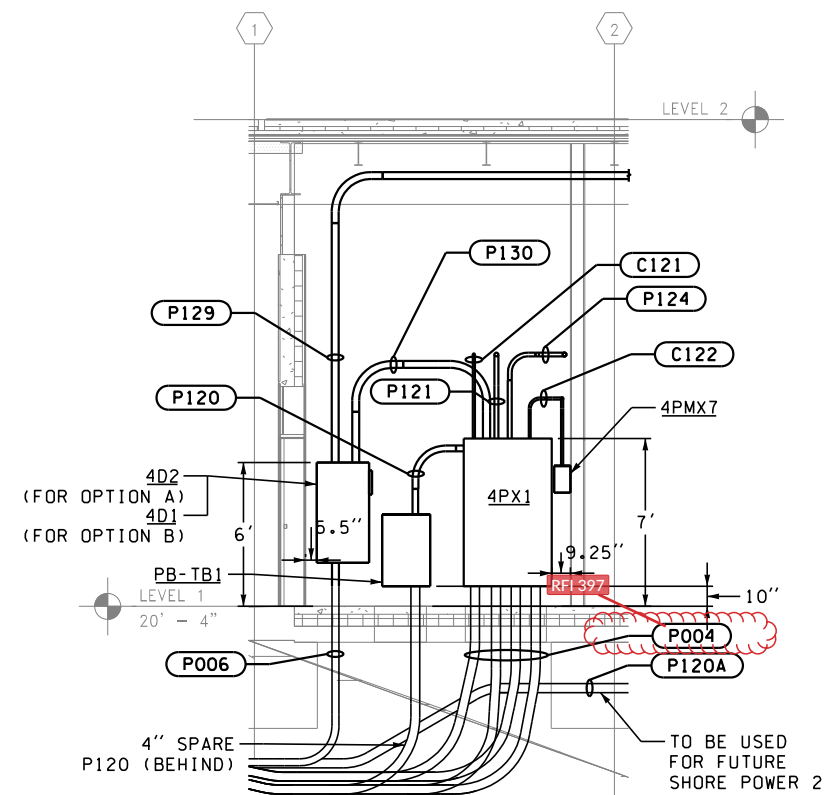




A TB ELEC RM VIEW - NORTH
EB02.15
SCALE 1/8" = 1'-0"



B TB ELEC RM VIEW - EAST
EB02.15
SCALE 1/8" = 1'-0"



C TB ELEC RM VIEW - WEST
EB02.15
SCALE 1/8" = 1'-0"

NOTES:

- HOUSEKEEPING PADS FOR FLOOR-MOUNTED EQUIPMENT SHALL BE 4" HIGH AND EXTEND 4" FROM EQUIPMENT FOOTPRINT ON ALL SIDES UNLESS OTHERWISE SHOWN.
- NOT ALL CONDUITS FROM PANELBOARDS ARE SHOWN IN THESE VIEWS.

RFI 397 - Conduit P004 Clarification

Only 2-4" conduits are required for conduit run P004 between V-G1 and V-G2 per detail C/ES03.21

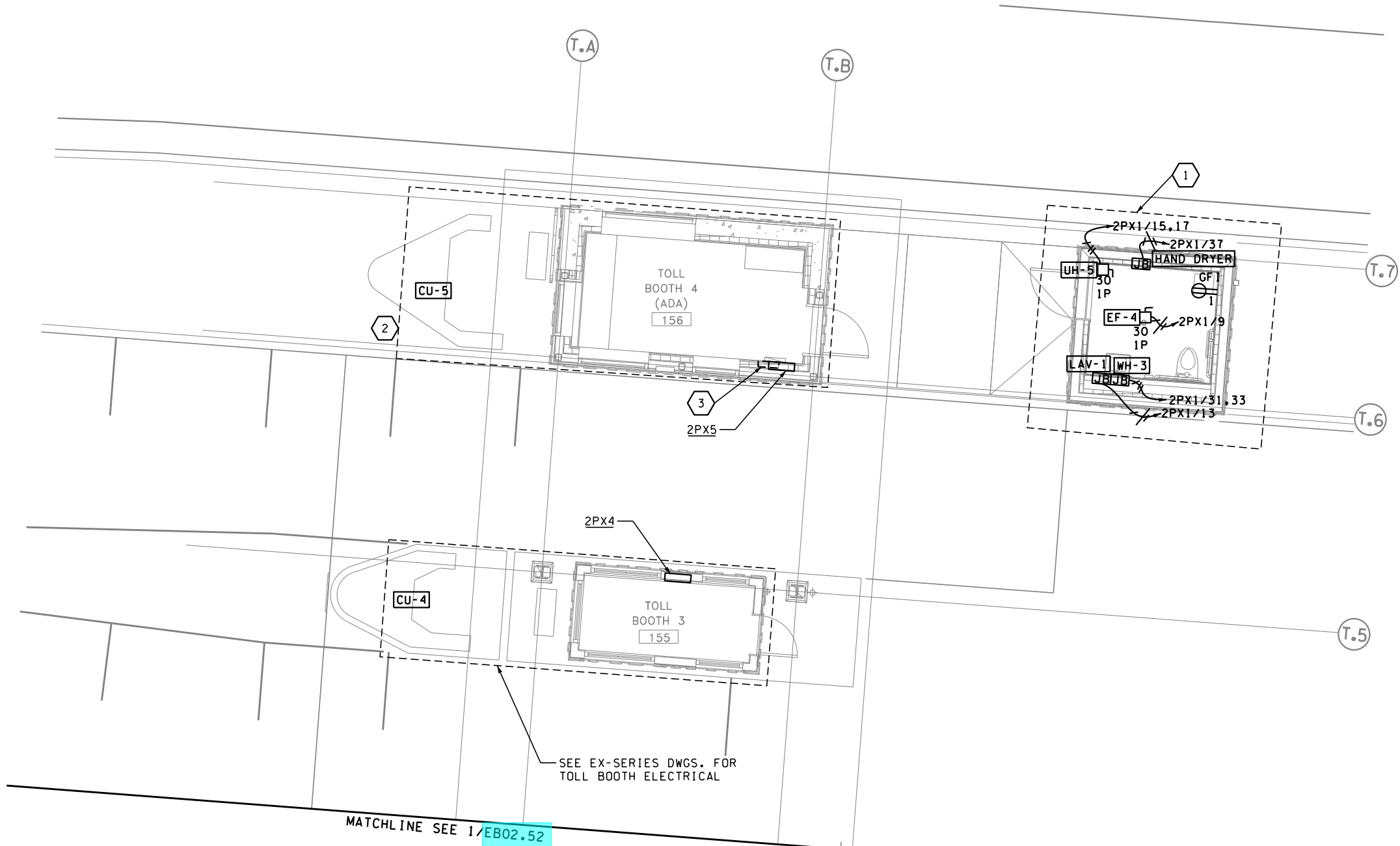
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| PRINTED: 11:24:45 AM 1/16/2019 | | LAST PRINTED BY: | | | | | | FED.AID PROJ.NO. | | | | SHEET | | |
| SUBMITTAL DATE: 1/18/19 | | slaterj | | | | | | WA-2017-007-00 | | | | 1225 | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | REGION NO. STATE | | | | OF | | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | 10 WASH | | | | 1521 | | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | JOB NUMBER 18W121 | | | | SHEETS | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | CONTRACT NO. 009321 | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | |
| | | | | | | | | | |  | | | | |
| | | | | | | | | | |  | | | | |
| | | | | | | | | | | Washington State Department of Transportation WASHINGTON STATE FERRIES | | | | |
| | | | | | | | | | | MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | | | |
| | | | | | | | | | | TERMINAL TB ELEC RM VIEWS | | | | |

NOTES:

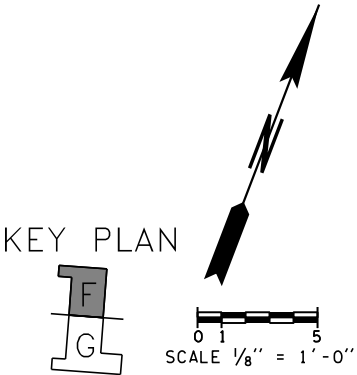
- 1. FOR UNDERGROUND CONDUITS IN THIS AREA, SEE DWG. EB02.50.
- 2. FOR CONDUIT TAGS P***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
- 3. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN ¾" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- 4. ALL EQUIPMENT SHOWN ARE FED FROM PANEL 2PX1, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.


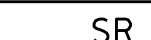
CONSTRUCTION NOTES:

- 1. ROUTE CABLES IN THIS ROOM BACK TO 2PX1 THROUGH CONDUITS P149 AND P015 SHOWN ON DWG. EB02.50
- 2. FOLLOW EQUIPMENT AND DEVICE LAYOUT, CONDUIT AND CABLE SIZES, AND CONSTRUCTION NOTES FOR TOLL BOOTHS 1 TO 3 ON EX SERIES DWGS, UNLESS OTHERWISE SHOWN HEREIN. ALL EQUIPMENT AND DEVICES IN TOLL BOOTH 4 SHALL BE CIRCUITED TO PANEL 2PX5 WITH BRANCH CIRCUIT NOS. SHOWN ON EX SERIES DWGS.
- 3. SERVICE PULLBOX AND TRANSITION SECTION TO POWER AND COMMUNICATIONS JUNCTION BOX UNDER FLOOR ACCESS PANEL AS SHOWN ON DWG. EX02.01 EXCEPT LOCATED AT SOUTHEAST CORNER OF TOLL BOOTH. POWER COMPARTMENT IN TRANSITION SECTION TO BE BELOW 2PX5.



1 LEVEL 1 SECTOR F POWER PLAN



| | | | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|------------------|--|-----------------|--|---------|--|----|--|------------------|--|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|--|--------|--|---------|--|
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| PRINTED: 11:28:36 AM 1/16/2019 | | LAST PRINTED BY: | | | | | | | | FED.AID PROJ.NO. | | | | | | | | SHEET | |
| SUBMITTAL DATE: 1/18/19 | | slaterj | | | | | | | | | | WA-2017-007-00 | | | | | | 1227 | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | | | | | REGION NO. STATE | | | | | | OF | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | | | | | 10 WASH | | | | | | 1521 | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | | | | | JOB NUMBER | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | 18W121 | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | CONTRACT NO. | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | 009321 | | | | | | SHEETS | |
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NOTES:

1. FOR UNDERGROUND CONDUITS IN THIS AREA, SEE DWG. EB02.50.
2. FOR CONDUIT TAGS P***, SEE EB06 SERIES DWGS. FOR CONDUIT AND CABLE INFORMATION.
3. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
4. ALL EQUIPMENT SHOWN ARE FED FROM PANEL 2PX1, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.

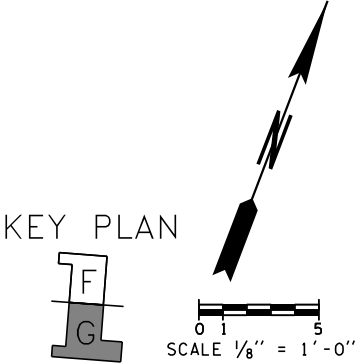
CONSTRUCTION NOTES:

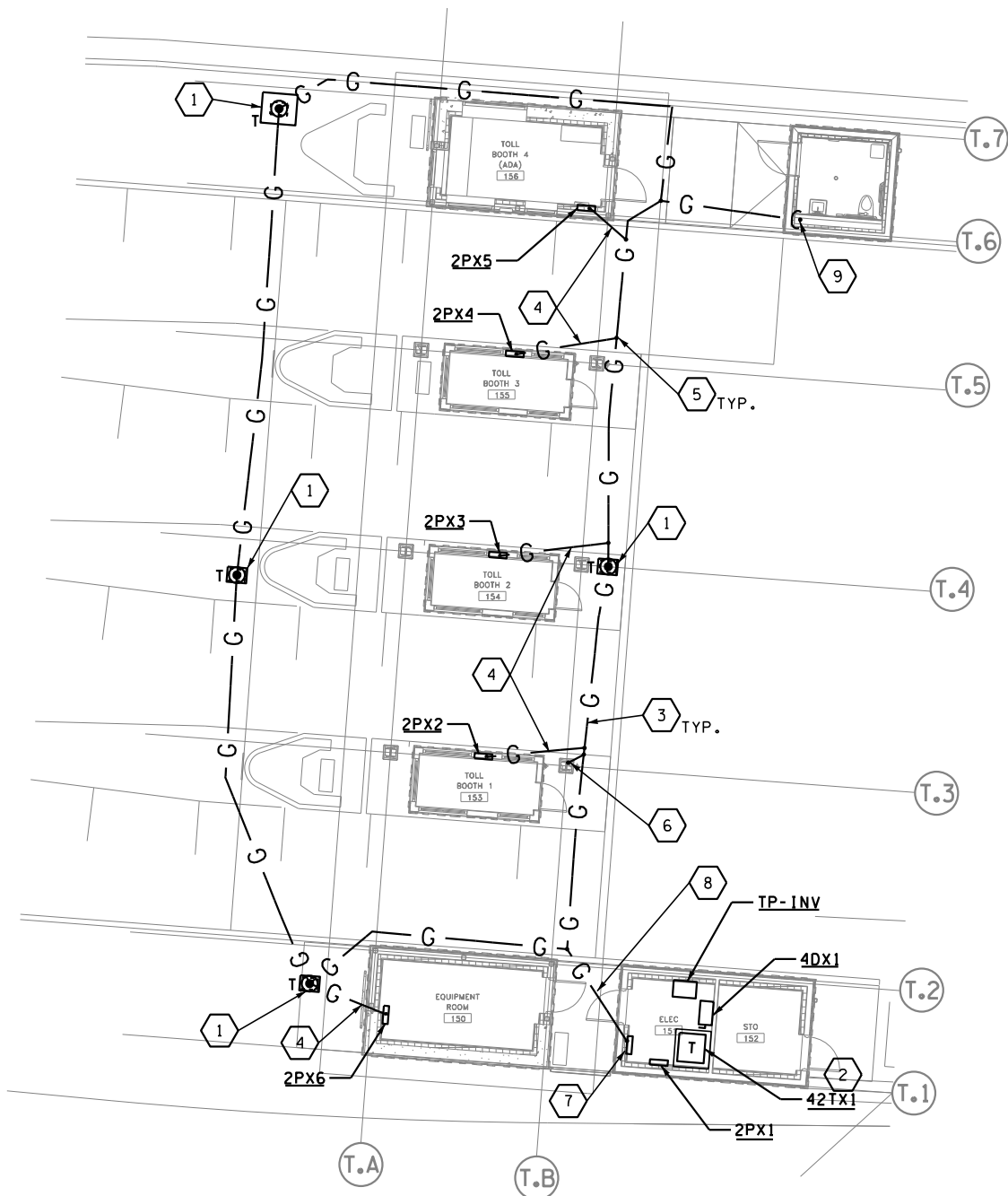
1. ROUTE CABLES FOR SS-1 BACK TO 2PX1 THROUGH CONDUIT P148 SHOWN ON DWG. EB02.50.
2. ROUTE CABLES FOR RM150 EQUIPMENT (NOT BACKED UP BY UPS POWER) BACK TO 2PX1 THROUGH CONDUIT P152 SHOWN ON DWG. EB02.50.
3. PROVIDE 120V (INPUT/OUTPUT) 500VA EMERGENCY INVERTER WITH MIN 6 OUTPUT CIRCUIT BREAKERS:

| BREAKER: | DESCRIPTION: | VA: |
|----------|-------------------------------|-----|
| 1 | RM150/151/157 EM LTG + TP-LCP | 294 |
| 2 | EXTERIOR EM LTG | 73 |
| 3 | SPARE | |
| 4 | SPARE | |
| 5 | SPARE | |
| 6 | SPARE | |
4. SEE EB SERIES COMMUNICATION DWGS. FOR ALL EQUIPMENT FED FROM UPS PANEL 2PX6 IN RM 150.



1 LEVEL 1 SECTOR G POWER PLAN
EB02.52





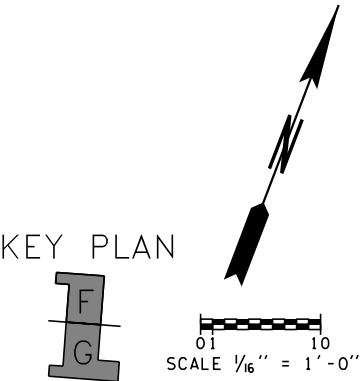
1 TOLL PLAZA GROUNDING PLAN
EB02.53

NOTES:

- 1. NEUTRAL BUS SHALL NOT BE BONDED TO GROUND BUS IN PANELBOARD.
- 2. CONDUIT SHALL BE PROVIDED FOR GROUND CONDUCTORS INSTALLED ABOVE GRADE OR EXPOSED, UON.
- 3. SEE DETAIL 1/EB03.02 FOR OVERALL GROUNDING ELECTRODE SYSTEM SCHEMATIC.

CONSTRUCTION NOTES:

- 1 GROUND TEST WELL WITH TYPE 1 JUNCTION BOX, SEE DETAIL 1/EB03.00
- 2 GROUND TRANSFORMER PER DETAIL 3/EB03.00
- 3 2 AWG TINNED COPPER GROUND RING CONDUCTOR
- 4 8 AWG INSULATED COPPER GROUND CONDUCTOR IN 3/4" CONDUIT TO PANELBOARD, CONNECT TO PANELBOARD GROUND BUS
- 5 CABLE TO CABLE CONNECTION, SEE DETAIL 5/EB03.00
- 6 2 AWG TINNED COPPER GROUND CONDUCTOR TO BUILDING STEEL, SEE DETAIL 4/EB03.00
- 7 2'-0" L GROUND BUS AT 18" AFF, SEE DETAIL 2/EB03.00
- 8 2 AWG COPPER GROUND CONDUCTOR IN 3/4" CONDUIT WHEN STUBBING OUT OF EARTH FOR CONNECTION TO GROUND BUS
- 9 2 AWG COPPER GROUND CONDUCTOR IN 3/4" CONDUIT WHEN STUBBING OUT OF EARTH TO NEAREST BUILDING STEEL AND METAL PIPE

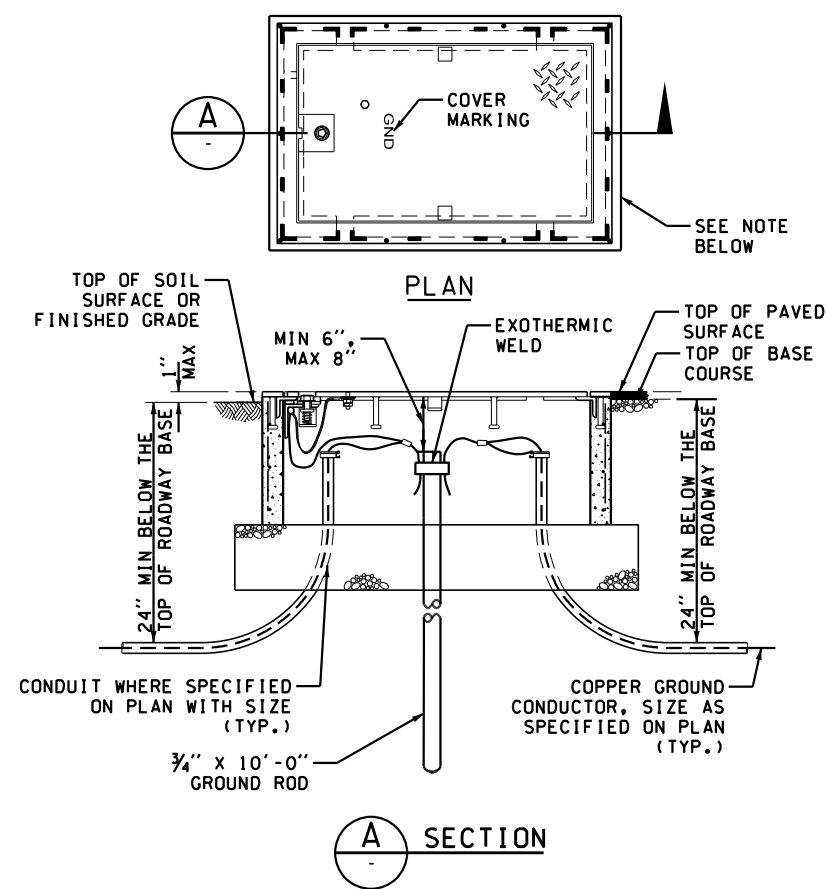


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| SUBMITTAL DATE: 1/18/19 | staterj | | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 009321 |



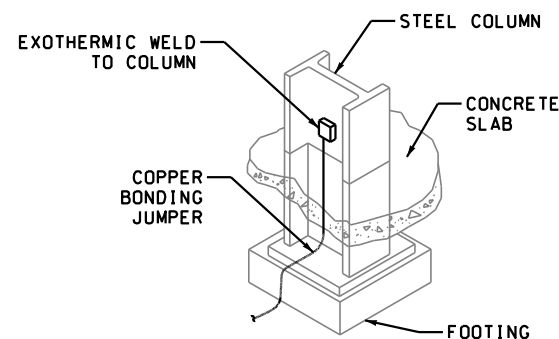
SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TOLL PLAZA
GROUNDING PLAN

EB02.53
SHEET
1229
OF
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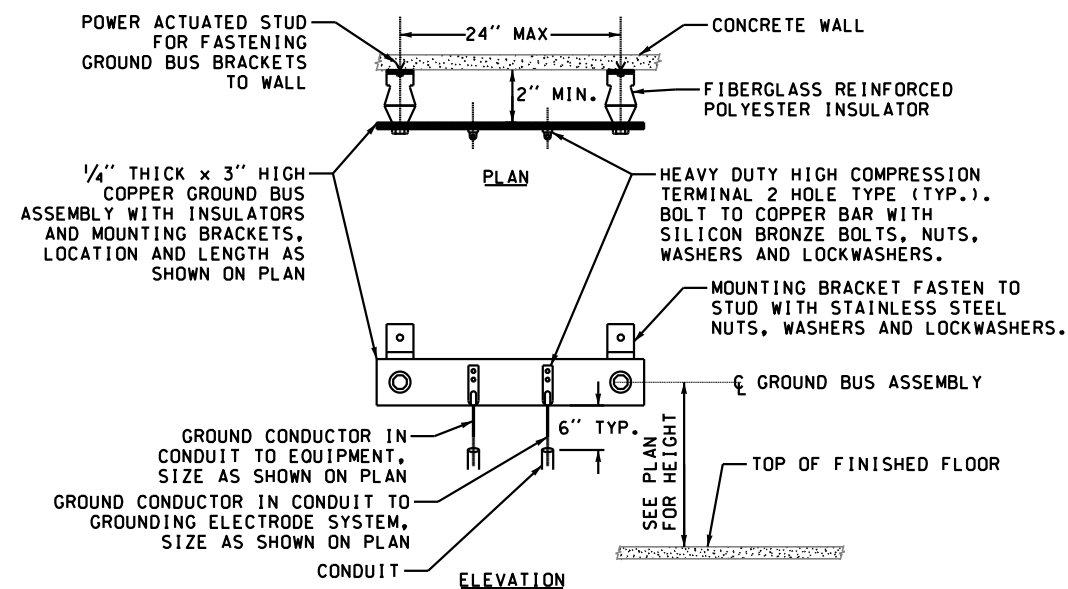


NOTE: STANDARD DUTY JUNCTION BOX TYPE 1 SHOWN FOR INSTALLATION IN NON-VEHICULAR AREAS). INSTALL JUNCTION BOX TYPE 1 AS SHOWN IN WSDOT STANDARD PLAN J-40.10-03. FOR JUNCTION BOX IN VEHICULAR AREAS, INSTALL JUNCTION BOX TYPE 4 AS SHOWN ON WSDOT STANDARD PLAN J-40.20-02.

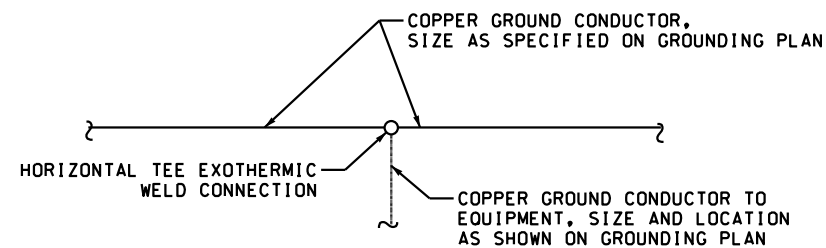
1 GROUND TEST WELL DETAIL
NTS



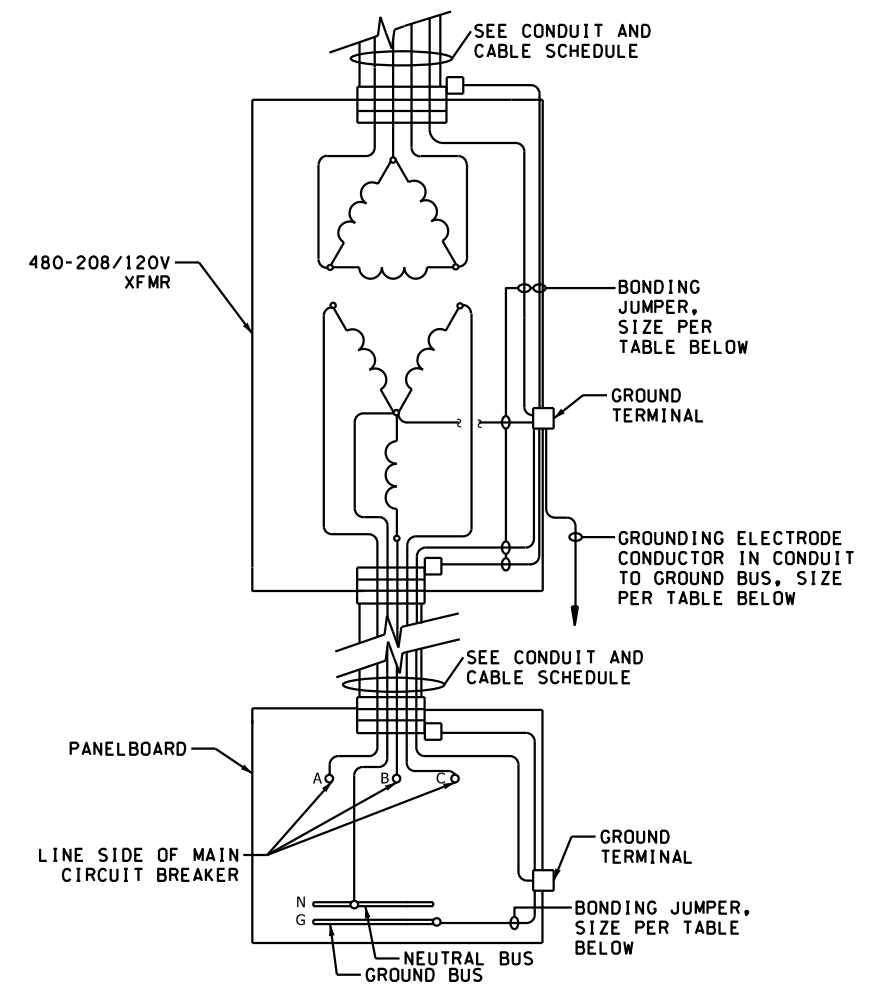
4 STEEL COLUMN GROUNDING DETAIL
NTS



2 GROUND BUS BAR DETAIL
NTS



5 CABLE TO CABLE CONNECTION DETAIL
NTS



| XFMR SIZE | BONDING JUMPER SIZE PER NEC TABLE 250.66 |
|-----------|------------------------------------------|
| 15 KVA | 8 AWG |
| 30 KVA | 6 AWG |
| 45 KVA | 4 AWG |
| 75 KVA | 2 AWG |
| 112.5 KVA | 1/0 AWG |

3 GROUNDING OF DRY-TYPE XFMR AND PANELBOARD DETAIL
NTS

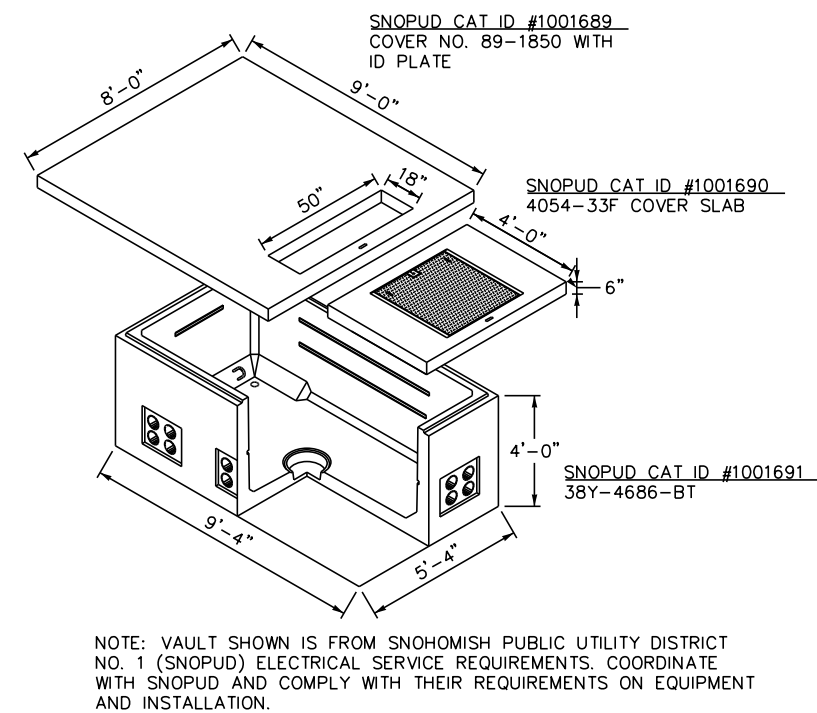
NOTES:

- CONDUITS WHERE SPECIFIED FOR GROUND CONDUCTORS SHALL BE AS FOLLOWS:
UNDERGROUND EXCEPT FOR ELBOWS AND CONDUIT STUB-UPS - PVC SCHEDULE 40
EXPOSED OUTDOOR, UNDERGROUND ELBOWS, AND CONDUIT STUB-UPS - RGS
EXPOSED INDOOR (FINISHED AREAS) - EMT
EXPOSED INDOOR (UNFINISHED AREAS) - RGS

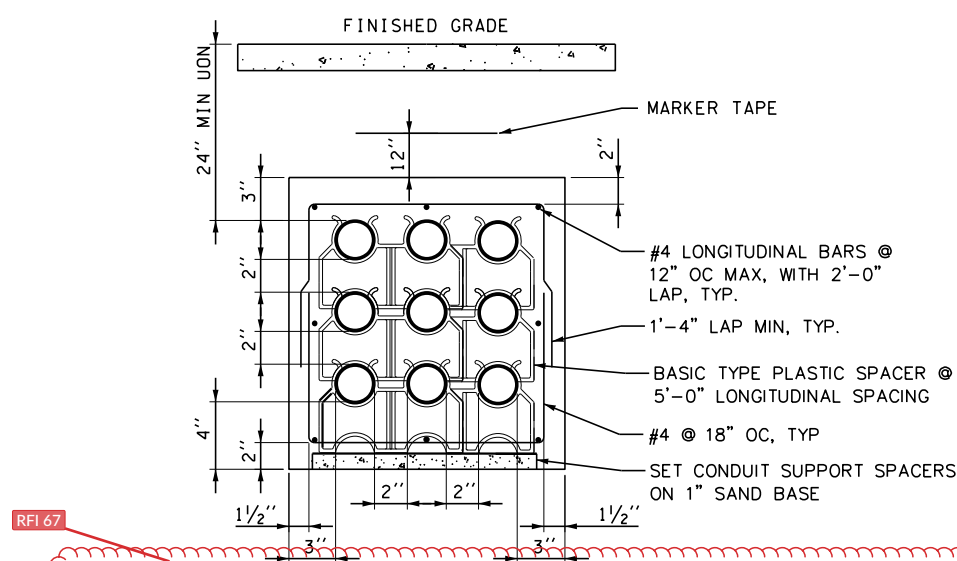
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| SUBMITTAL DATE: 1/18/19 | DESIGNED BY: C. YUN | 1/18/19 | WA-2017-007-00 |
| ENTERED BY: C. YUN | CHECKED BY: M. BAGINSKI | 1/18/19 | REGION NO. STATE |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | 1/18/19 | 10 WASH |
| ASST SECRETARY: A. SCARTON | CONFORMED PLANS | 1/18/19 | JOB NUMBER 18W121 |
| | REVISION | DATE | CONTRACT NO. 009321 |



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| SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | EB03.00 |
| BUILDING ELECTRICAL DETAILS 1 | SHEET 1230 OF 1521 SHEETS |

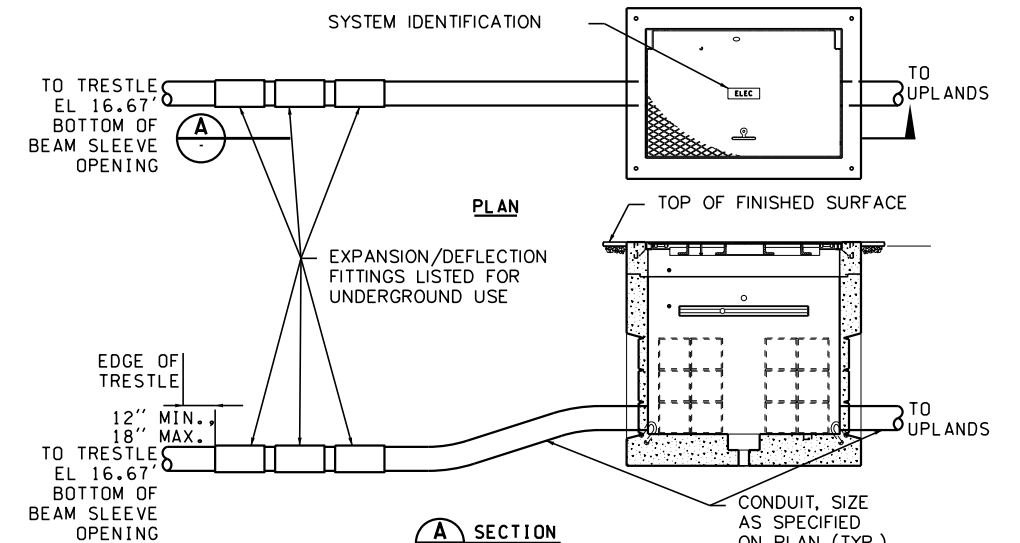


1 SNOPUD UTILITY XFMR VAULT DETAIL
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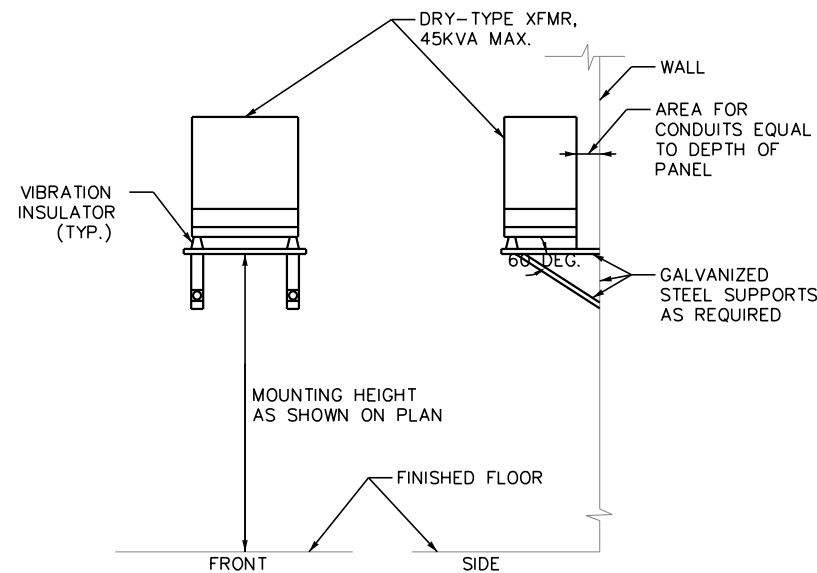
- NOTES:
1. CONDUIT SIZE AND CONFIGURATION AS SPECIFIED IN PLAN OR SECTION. CONDUIT SPACING IS TYPICAL FOR ALL CONDUIT DUCTBANKS.
 2. ALL DIMENSIONS ARE MINIMUM UON.
 3. SEE SITE CIVIL PLANS AND BUILDING ARCHITECTURAL PLANS FOR FINISHED GRADE ELEVATION.

2 TYPICAL DUCTBANK CONFIGURATION DETAIL
NTS

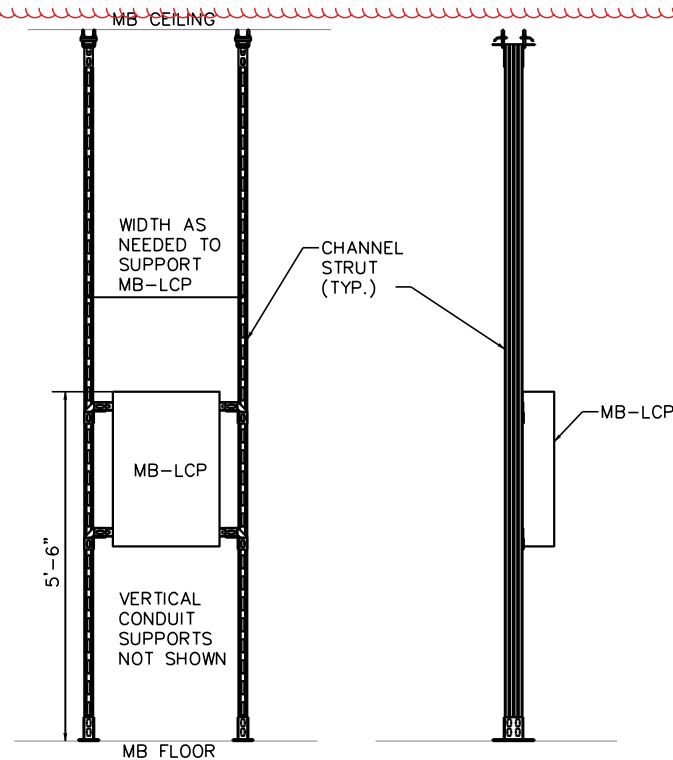


NOTE: WSDOT PULL BOX SHOWN ABOVE. INSTALL PULL BOX IN ACCORDANCE WITH WSDOT STANDARD PLAN J-90.10-02.

3 CONDUIT FLEX WITH UNDERGROUND PULL BOX DETAIL
NTS



4 WALL-MOUNTED XFMR DETAIL
NTS



NOTE: DESIGN AND INSTALL A FLOOR TO CEILING FREESTANDING PANEL MOUNTING SYSTEM WITH APPROPRIATE SEISMIC BRACING IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

5 FREESTANDING PANEL MOUNTING DETAIL
NTS

RFI 067 - Building Ductbank Specification

Concrete for ductbanks underneath and within 5' of building shall be 2500psi and per detail 2 on sheet EB03.01

FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb03_01.dwg

PRINTED: 11:34:23 AM 1/16/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

ENTERED BY: C. YUN

CHECKED BY: M. BAGINSKI

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

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1/18/19

1/18/19

1/18/19

1/18/19

1/18/19

1/18/19

1/18/19

CONFORMED PLANS

REVISION

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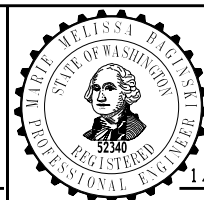
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Department of Transportation
WASHINGTON STATE FERRIES

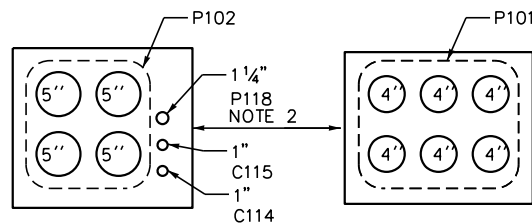


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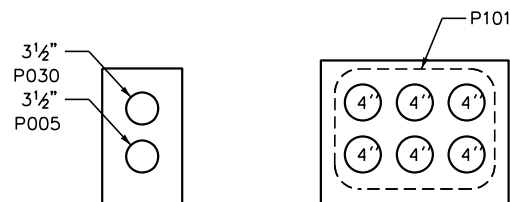
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MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL DETAILS 2

EB03.01

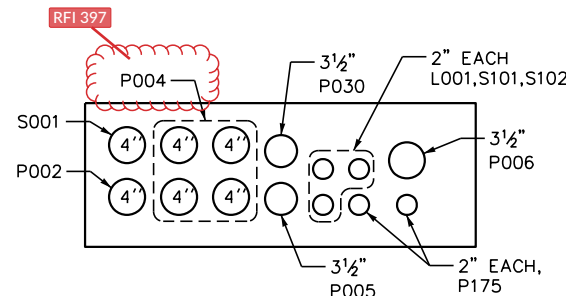
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1231
OF
1521
SHEETS



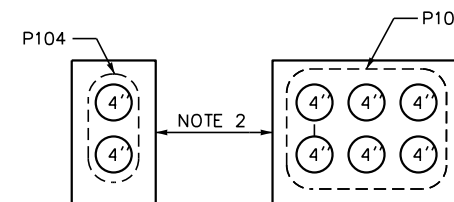
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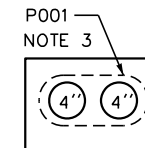
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C SECTION
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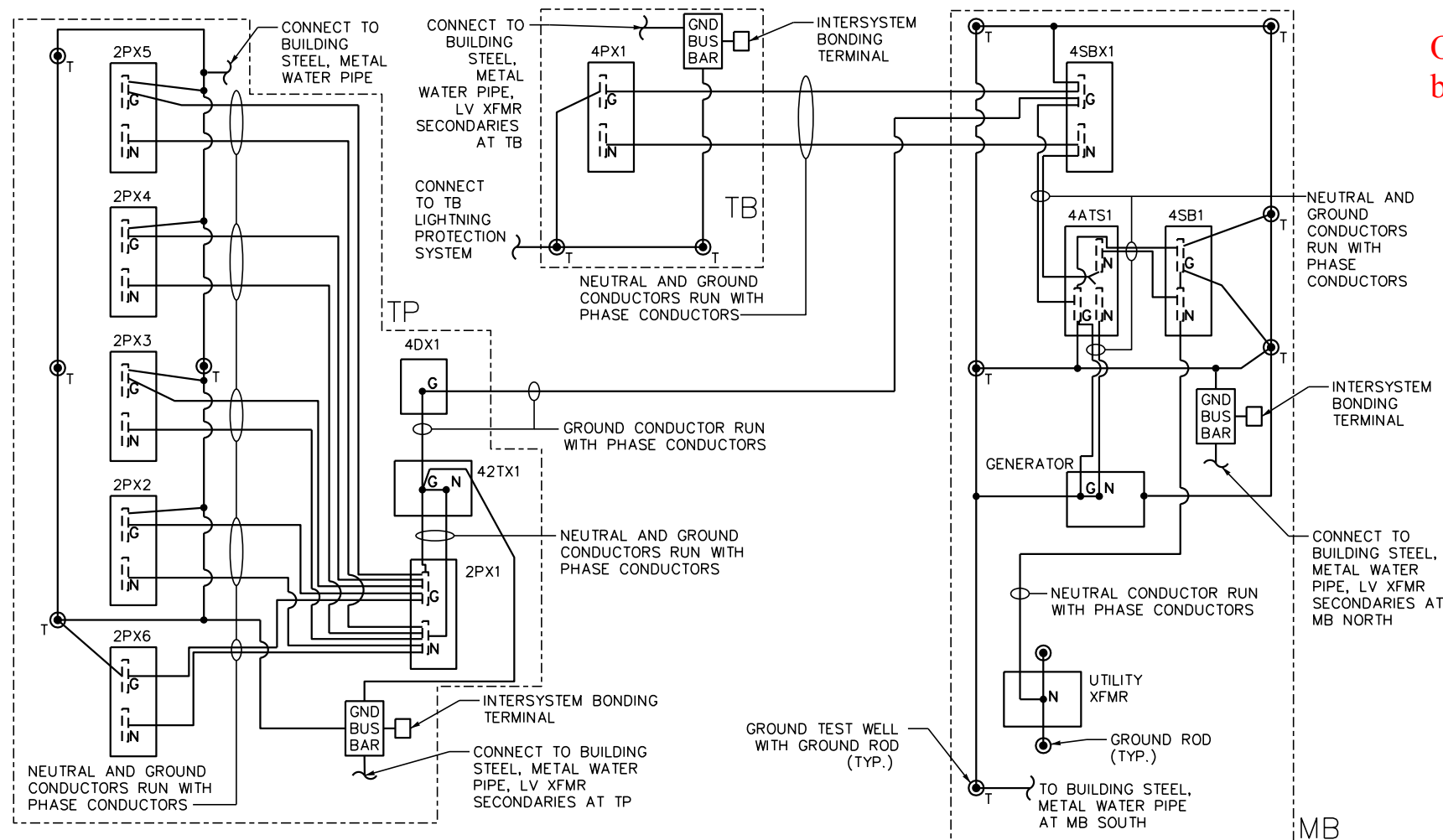
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EB02.00 NTS



E SECTION
EB02.00 NTS

RFI 397 - Conduit P004 Clarification

Only 2-4" conduits are required for conduit run P004 between V-G1 and V-G2 per detail C/ES03.21



SEE DWGS. [EB02.13](#) AND [EB02.53](#) FOR GROUNDING CONDUCTOR SIZING AND ROUTING.

1 OVERALL GROUNDING ELECTRODE SYSTEM SCHEMATIC
EB03.02 NTS

NOTES:

- SEE DETAIL [2/EB03.01](#) FOR TYPICAL DUCTBANK CONFIGURATION DETAIL FOR ALL DUCTBANKS SHOWN.
- MINIMIZE SPACING BETWEEN DUCTBANKS WHERE FEASIBLE. DUCTBANKS MAY BE COMBINED WHERE POSSIBLE.
- TOP OF SNOPOD PRIMARY DUCTBANK SHALL BE BETWEEN 36" AND 47" BELOW FINISHED GRADE.
- SEE COMMUNICATION PLANS FOR COMMUNICATION CONDUIT DETAILS.
- SEE SECURITY PLANS FOR SECURITY CONDUIT DETAILS.
- PROVIDE MIN. 12" SEPARATION BETWEEN POWER AND COMM CONDUITS.

FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb03_02.dwg

PRINTED: 11:35:34 AM 1/16/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

ENTERED BY: C. YUN

CHECKED BY: M. BAGINSKI

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

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WA-2017-007-00

REGION NO. STATE

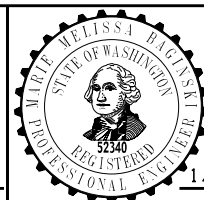
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CONTRACT NO.

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1/18/19

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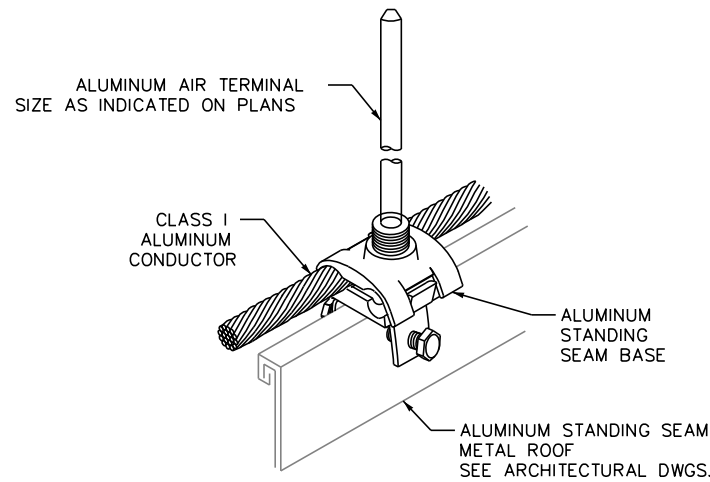


Washington State
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WASHINGTON STATE FERRIES

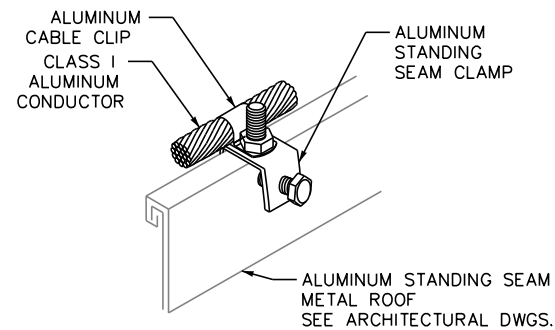
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MUKILTEO FERRY TERMINAL (PHASE 2)
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BUILDING
ELECTRICAL DETAILS 3

EB03.02

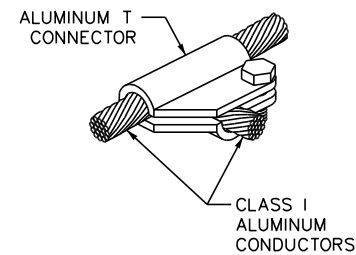
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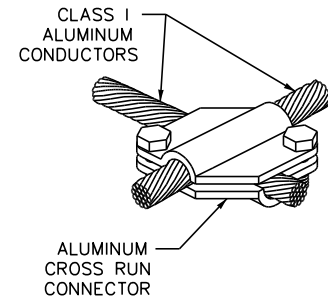
1 AIR TERMINAL ON STANDING SEAM BASE DETAIL
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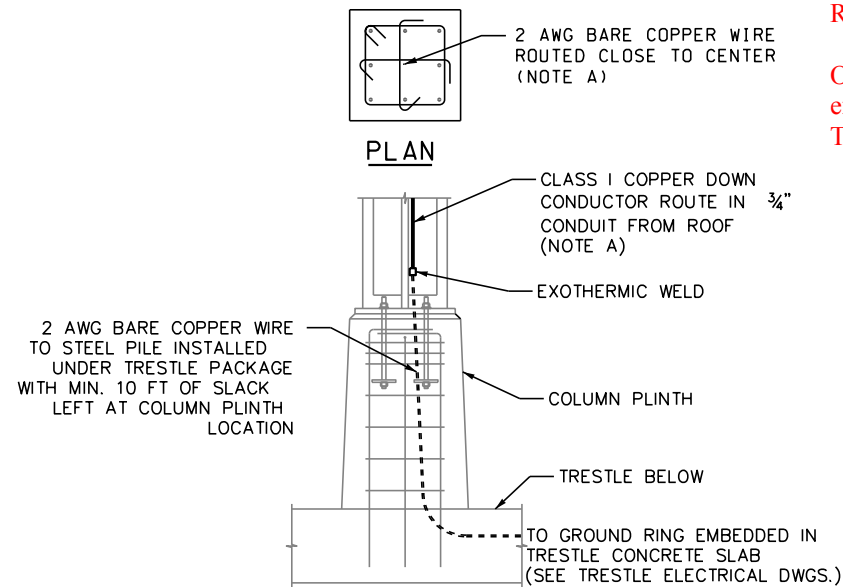
2 CABLE SUPPORT DETAIL
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3 T CONNECTOR DETAIL
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4 CROSS RUN CONNECTOR DETAIL
NTS

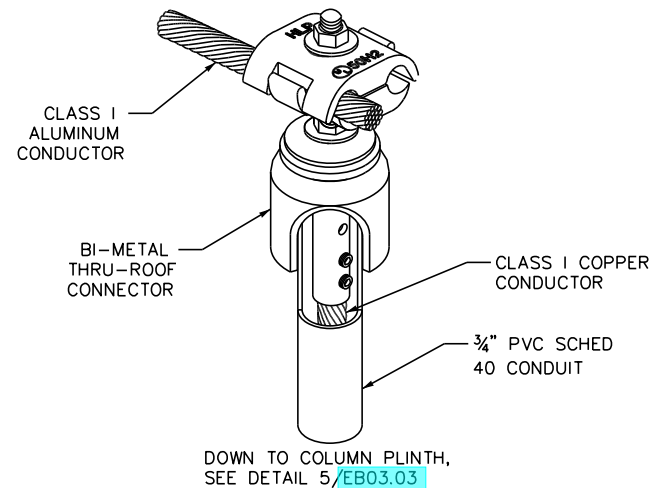


NOTE A: FOR COLUMNS BETWEEN GRID LINES A-H/3.1, ROUTE CONDUCTOR THROUGH SW QUADRANT OF BEAM. FOR COLUMNS BETWEEN GRID LINES A-H/0.9, ROUTE CONDUCTOR THROUGH NW QUADRANT OF BEAM. FOR COLUMNS BETWEEN GRID LINES H-P/3.1, ROUTE CONDUCTOR THROUGH SE QUADRANT OF BEAM. FOR COLUMNS BETWEEN GRID LINES H-P/0.9, ROUTE CONDUCTOR THROUGH NE QUADRANT OF BEAM. THIS APPLIES TO ALL COLUMNS INDICATED WITH THIS DETAIL ON DWG. EB02.14.

5 CONDUCTOR THROUGH COLUMN PLINTH DETAIL
NTS

RFI 147 - Column Ground Repair

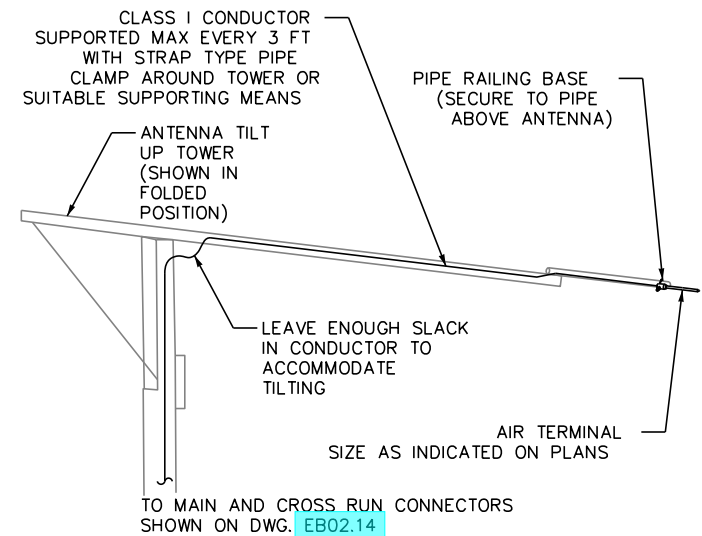
Only the 8 column plinths identified on the plans need ground conductors extended through them.
The additional grounding locations are not needed per the electrical drawings.



6 DOWN CONDUCTOR WITH THRU-ROOF CONNECTOR DETAIL
NTS

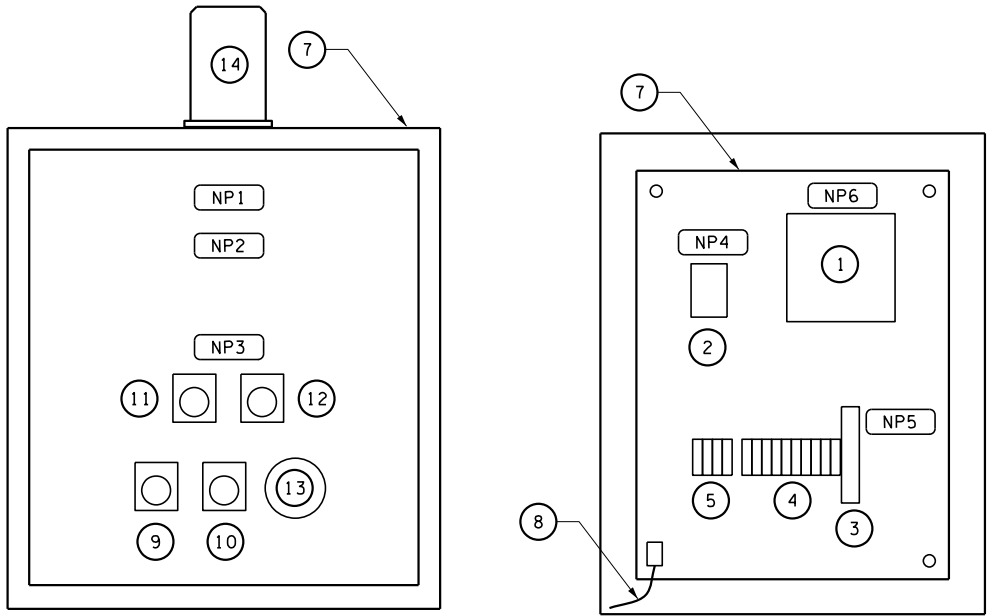
RFI 137 - Existing Column Ground Conductors

Per spec 260526(3.1)D.2 additional cable shall be connected to the 1' slack using exothermic-welded connectors.



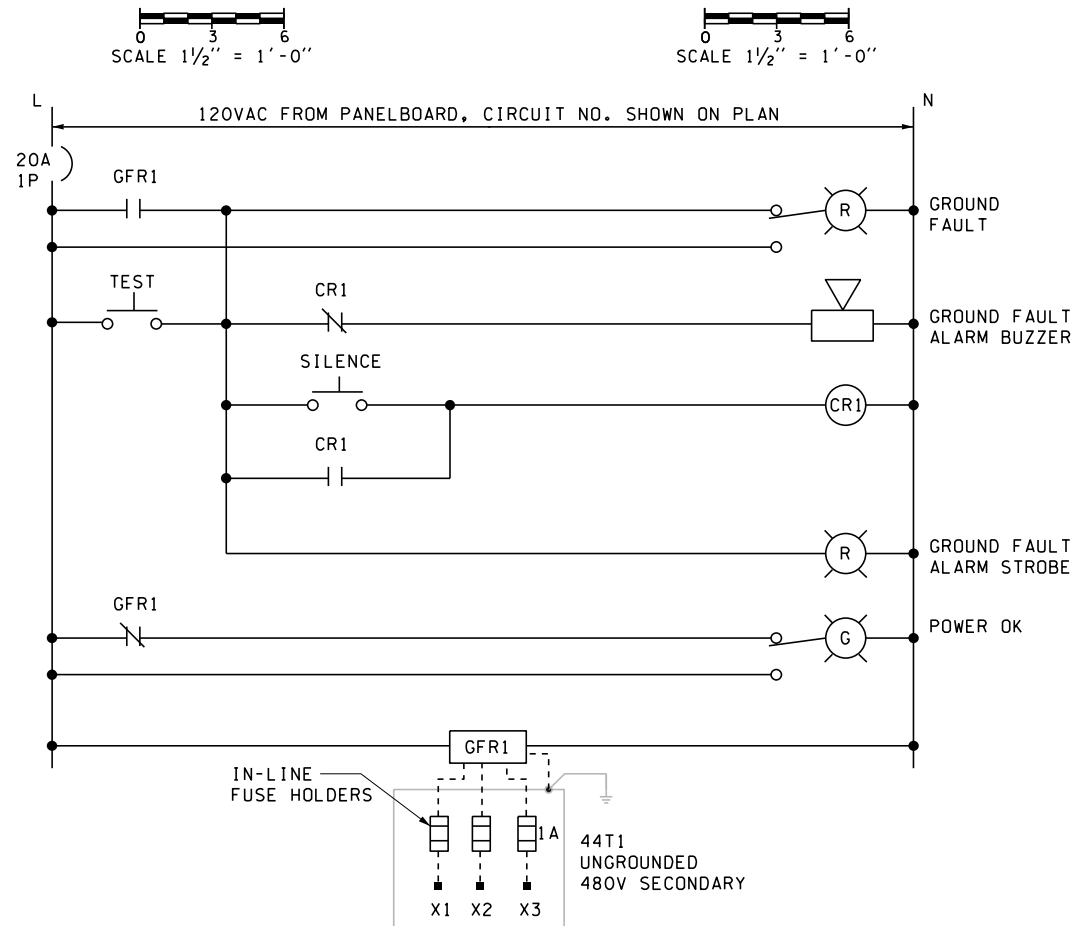
NOTE: ANTENNA NOT SHOWN. SEE COMMUNICATIONS DWGS. FOR ANTENNA AND ANTENNA TILT UP TOWER MOUNTING DETAILS.

7 AIR TERMINAL ON ANTENNA POLE DETAIL
NTS



CABINET DOOR LAYOUT

BACKPANEL LAYOUT



GROUND FAULT DETECTOR
PANEL SCHEMATIC DIAGRAM

| NAMEPLATE SCHEDULE | | | |
|--------------------|--------------------------|----------------------------------------------------------------------------------|-------------------------------------|
| NO. | SIZE | LETTERING | DESCRIPTION |
| NP1 | 1/2 3/8 3/8 3/8 | GROUND DETECTOR PANEL VOLTAGE: 120 & 480VAC SOURCE: PANEL -- & TRANSFORMER | PHENOLIC WHITE WITH BLACK LETTERING |
| NP2 | 1/2 3/8 | CAUTION! POWER FROM MULTIPLE SOURCES | PHENOLIC RED WITH WHITE LETTERING |
| NP3 | 3/8 | TRANSFORMER----- | PHENOLIC WHITE WITH BLACK LETTERING |
| NP4 | 1/4 | CR1 | PHENOLIC WHITE WITH BLACK LETTERING |
| NP5 | 1/4 | CB1 | PHENOLIC WHITE WITH BLACK LETTERING |
| NP6 | 1/4 | GFR1 | PHENOLIC WHITE WITH BLACK LETTERING |

BILL OF MATERIALS

| PC# | QTY | DESCRIPTION | MATERIAL ** |
|-----|-----|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 1 | GROUND FAULT DETECTOR RELAY | TYCO ELECTRONICS WILMAR PROTECTIVE RELAY WGD-480-120AC |
| 2 | 1 | CONTROL RELAY | TYCO ELECTRONIC (P&B) K10 SERIES RELAY PART NO. K10P-11A15-120 27E487 SOCKET 20C426 HOLD DOWN SPRING |
| 3 | 1 | CIRCUIT BREAKER | ALLEN-BRADLEY BULLETIN 1489 CIRCUIT BREAKER CAT. NO. 1489-A1C200 |
| 4 | 10 | CONTROL TERMINALS (WHITE) | ALLEN-BRADLEY TERMINAL BLOCK 1492-CA1L TERMINALS WITH 1492-N44 HIGH RISE MOUNTING RAIL 1492-N16 END BARRIER (QTY 2) 1492-N23 HEAVY DUTY END ANCHORS (QTY 2) 1492-N30 50-POLE JUMPERS (CUT TO LENGTH) |
| 5 | 4 | GROUND TERMINALS (GREEN) | ALLEN-BRADLEY TERMINAL BLOCK 1492-CA1LG TERMINALS WITH 1492-N44 HIGH RISE MOUNTING RAIL 1492-N16 END BARRIER (QTY 2) 1492-N23 HEAVY DUTY END ANCHORS (QTY 2) 1492-N30 50-POLE JUMPERS (CUT TO LENGTH) |
| 6 | 1 | 20"x16"x6" STAINLESS STEEL ENCLOSURE | HOFFMAN CAT. NO. A20H1606SS6LP |
| 7 | 1 | STEEL BACKPANEL | HOFFMAN CAT. NO. A20P16 |
| 8 | 1 | GROUNDING STRAP | HOFFMAN CAT. NO. AGS816 |
| 9 | 1 | MOMENTARY PUSH BUTTON OPERATOR WITH "SILENCE" NAMEPLATE | SQUARE D CLASS 9001 TYPE SK - 30mm CAT. NO. SKR1UH33 |
| 10 | 1 | MOMENTARY PUSH BUTTON OPERATOR WITH "TEST" NAMEPLATE | SQUARE D CLASS 9001 TYPE SK - 30mm CAT. NO. SKR1UH33 |
| 11 | 1 | GREEN PILOT LIGHT WITH "OK" NAMEPLATE | SQUARE D CLASS 9001 TYPE SK - 30mm CAT. NO. SKT1G31 |
| 12 | 1 | RED PILOT LIGHT WITH "FAULT" NAMEPLATE | SQUARE D CLASS 9001 TYPE SK - 30mm CAT. NO. SKT1R31 |
| 13 | 1 | ALARM BUZZER | ALLEN-BRADLEY 855P PANEL MOUNT SOUNDER, 65mm, CAT. NO. 855P-B10LE22 |
| 14 | 1 | ALARM STROBE LIGHT | FEDERAL SIGNAL STEAMLINE LOW PROFILE STROBE LIGHT. MODEL LP35, 120VAC, RED DOME |

** MANUFACTURER/MODEL LISTED OR APPROVED EQUAL

CONSTRUCTION NOTES:

- 1 INSERT THE NAME OF THE PANEL THAT SUPPLIES THE 120VAC CONTROL POWER.
- 2 INSERT THE NAME OF THE TRANSFORMER THE DETECTOR IS CONNECTED TO.

1 GROUND FAULT DETECTOR PANEL
EB03.04 NTS, UON

JACOBS

| | | | |
|-----------------------------------------------------------------------------|------------------|-----------------|------------------|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb03_04.dwg | | | |
| PRINTED: 11:38:06 AM 1/16/2019 | LAST PRINTED BY: | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | 1/18/19 | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL DETAILS 5

EB03.04
SHEET
1234
OF
1521
SHEETS

| PANELBOARD 4PX1 | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------------------------------------------|---------------|------|-----------------------|-------|-----------------|-----------|----------------------------|---------|------|------|
| MOUNTING: SURFACE | | | MAIN RATING: 700A MCB | | | LOCATION: ELEC RM 104 | | | | | | | |
| NEMA RATING: 12 | | | MAIN CABLES: P004 | | | TERMINAL BLDG | | | | | | | |
| VOLTAGE: 480Y/277V, 3PH, 4W | | | SOURCE: 4SBX1 | | | AIC RATINGS: 35,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 80/3 | 3#4, 1#8, 1" C | ELEVATOR 1 | 52 | | | 2 | 150/3 | -- | SPARE (FUTURE VTS) | 138 | | |
| | | | | | 52 | | | | | | | 138 | |
| | | | | | | 52 | | | | | | | 138 |
| 3 | 250/3 | P080 | PANELBOARD 4PX4 | 132 | | | 4 | 150/3 | P120 | VTS | 138 | | |
| | | | | | 137 | | | | | | | 138 | |
| | | | | | | 127 | | | | | | | 138 |
| 5 | 125/3 | P121 | PANELBOARD 4PX5 | 76.9 | | | 6 | 110/3 | P124 | PANELBOARD 2PX8 VIA 42TX3 | 75.2 | | |
| | | | | | 75.1 | | | | | | | 73.2 | |
| | | | | | | 77 | | | | | | | 76.8 |
| 7 | -- | -- | SPACE FOR MAX 250A BREAKER | | | | -- | | | SPACE FOR MAX 250A BREAKER | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 9 | 300/3 (NOTE 2) | -- | PV (OPTION B) OR SPACE FOR MAX 400A BREAKER | - | | | 10 | -- | -- | SPACE FOR MAX 400A BREAKER | | | |
| | | | | | - | | | | | | | | |
| | | | | | | - | | | | | | | |
| 11 | 20/3 | -- | SURGE PROTECTIVE DEVICE | 0.5 | | | 16 | | | | | | |
| | | | | | 0.5 | | | | | | | | |
| | | | | | | 0.5 | | | | | | | |
| TOTAL | | | | 261 | 265 | 257 | TOTAL | | | | 351 | 349 | 353 |
| NOTES: | | | | TOTAL AMPERES | | | | SUB-FEED | | | | | |
| ALL CIRCUIT BREAKERS GREATER THAN 250A SHALL HAVE LSIG ELECTRONIC TRIP UNITS. | | | | BUS A | | 612 | | SUB-FEED CABLES | | | | | |
| | | | | BUS B | | 614 | | | | | | | |
| | | | | BUS C | | 610 | | | | | | | |
| | | | | MAXIMUM KVA | | | | | | | | | |
| | | | | 511 | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | |
| 1. SEE CONDUIT & CABLE SCHEDULE FOR P### INFORMATION. | | | | | | | | | | | | | |
| 2. PROVIDE REVERSE FEED SUITABLE BREAKER WITH SHUNT TRIP FUNCTION AND AUXILIARY SWITCH. PV BREAKER AND 4PX1 MAIN BREAKER SHALL BE ON OPPOSITE ENDS OF THE PANELBOARD BUS. PROVIDE LABEL IN ACCORDANCE WITH NEC 705.12(D)(2)(3)(b). | | | | | | | | | | | | | |

| PANELBOARD 4PX2 | | | | | | | | | | | | | |
|-----------------------------|---------|------------------------|----------------------------|-----------------------|-----|-----|-------|----------|-----------|----------------------------|---------|------|----|
| MOUNTING: SURFACE | | MAIN RATING: 1000A MLO | | LOCATION: ELEC RM 124 | | | | | | | | | |
| NEMA RATING: 12 | | MAIN CABLES: P108 | | MAINTENANCE BLDG | | | | | | | | | |
| VOLTAGE: 480Y/277V, 3PH, 4W | | SOURCE: 4SBA1 | | AC RATING: 65,000 | | | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 80/3 | 3#4, 1#8, 1" C | ELEVATOR 2 | 62 | | | 2 | 70A 125A | P111 | 2PX12 VIA 42TX5 | 72.8 | 41.2 | |
| | | | | | 62 | | | | | | 40 | | |
| | | | | | | 62 | | | | | | | |
| 3 | 80/3 | 3#4, 1#8, 1" C | ELEVATOR 3 | 52 | | | 4 | 100/3 | | SPARE | | | |
| | | | | | 52 | | | | | | | | |
| | | | | | | 52 | | | | | | | |
| 5 | 700/3 | P108 | 4PX8 | 435 | | | 6 | | | | | | |
| | | | | | | 428 | | | | | | | |
| | | | | | | 428 | | | | | | | |
| 7 | | | SPACE FOR MAX 250A BREAKER | | | | 8 | | | SPACE FOR MAX 250A BREAKER | | | |
| 8 | | | SPACE FOR MAX 250A BREAKER | | | | 10 | | | SPACE FOR MAX 250A BREAKER | | | |
| 11 | | | SPACE FOR MAX 250A BREAKER | | | | 12 | | | SPACE FOR MAX 250A BREAKER | | | |
| TOTAL | | | | 538 | 532 | 533 | TOTAL | | | | 41 | 40 | 43 |

NOTES:

ALL CIRCUIT BREAKERS GREATER THAN 250A SHALL HAVE L&IG ELECTROMC TRIP UNITS.

1. SEE UPLANDS DWGS. CONDUIT AND CABLE SCHEDULE.

2. SEE WATERSIDE DWGS. CONDUIT AND CABLE SCHEDULE.

3. SEE CONDUIT & CABLE SCHEDULE FOR P1# INFORMATION.

| | |
|----------------------|---------|
| TOTAL AMPERES | |
| BUS A | 496 @16 |
| BUS B | 464 @16 |
| BUS C | 492 @11 |
| MAXIMUM KVA | |
| 483 | |

| PANELBOARD 4PX2 | | | |
|---------------------------|-----------|--------|--------------------------------------------|
| LOAD TYPE | CONNECTED | DEMAND | |
| LIGHTING (VA) | 3693 | 3693 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 5840 | 5840 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 30489 | 30489 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 700 | 700 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 118304 | 118304 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 10808 | 10808 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 314849 | 314849 | COUNTED HEATING OR AC, WHICHEVER IS LARGER |
| AC (VA) | 2604 | 0 | DEMAND = 100% CONNECTED |
| WATER HEATING (VA) | 4535 | 4535 | |
| SUBTOTAL (VA) | 492026 | 499422 | |
| TOTAL (A) AT 208V | 581.83 | 586.70 | |
| 20% SPARE (VA) | | 87664 | |
| TOTAL (VA) | | 587305 | |
| TOTAL (A) AT 480V | | 706.44 | |

| OCPD SIZING | |
|---------------------------------|--------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 4017 |
| MISC. CONTINUOUS (VA) | 36123 |
| HEATING (VA) | 303562 |
| WATER HEATING (VA) | 5873 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 5840 |
| MISC. NONCONTINUOUS (VA) | 700 |
| MOTORS + 25% LARGEST MOTOR (VA) | 129202 |
| AC (VA) | 0 |
| SPARE (VA) | 97664 |
| MIN TOTAL (VA) | 675761 |
| MIN TOTAL (A) AT 480V | 812.77 |

| | | | | | | | | | |
|--------------------------------------------------------------------------|--|--|--|---------------------|--|-----------------------------------|--|---------|--|
| FILE NAME: W:\M\1110014\121_FerryTermCons\1C400\JACOBS\14\121eb04_02.dwg | | | | JACOBS | | SR 525 | | EB04.02 | |
| PRINTED: 11:44:05 AM 1/16/2019 | | | | FED. AID PROJ. NO. | | MUKILTEO FERRY TERMINAL (PHASE 2) | | SHEET | |
| SUBMITTAL DATE: 1/18/19 | | | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | OF | |
| DESIGNED BY: C. YUN 1/18/19 | | | | REGION NO. STATE | | BUILDING | | SHEETS | |
| ENTERED BY: C. YUN 1/18/19 | | | | 10 WASH | | ELECTRICAL PANEL SCHEDULES 3 | | | |
| CHECKED BY: M. BAGINSKI 1/18/19 | | | | (8W12) | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | CONTRACT NO. 009321 | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | DATE BY | | | | | |
| ASST SECRETARY: A. SCARTON | | | | CONFORMED PLANS | | | | | |
| | | | | REVISION | | | | | |

| PANELBOARD 4PX3 | | | | | | | | | | | | | | | |
|------------------------------------------------------------------|---------|-----------|----------------------------------------------------------|---------|------|----------------------------------------------------------------------------------|--------------|---------|---------------------------------------------------------------------------------------|-----------------|---------|------|-------|--|--|
| MOUNTING: NEMA RATING: VOLTAGE: | | | <u>SURFACE</u> <u>12</u> <u>480Y/277V, 3PH, 4W</u> | | | MAIN RATING: <u>100A MLO</u> MAIN CABLES: <u>P107</u> SOURCE: <u>4SBX1</u> | | | LOCATION: <u>ELEC RM 124</u> <u>MAINTENANCE BLDG</u> AIC RATINGS: <u>65,000</u> | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | | |
| | | | | A | B | C | | | | | A | B | C | | |
| 1 | 20/1 | | SPARE | | | | 2 | 20/2 | | SPARE | | | | | |
| 3 | 20/1 | | SPARE | | | | 4 | | | | | | | | |
| 5 | 20/1 | | SPARE | | | | 6 | | | | 20/2 | | SPARE | | |
| 7 | 20/1 | | SPARE | | | | 8 | | | | | | | | |
| 9 | 20/1 | | SPARE | | | | 10 | 20/2 | | SPARE | | | | | |
| 11 | 20/1 | | SPARE | | | | 12 | | | | | | | | |
| 13 | 20/1 | | SPARE | | | | 14 | | | SPACE | | | | | |
| 15 | 20/1 | | SPARE | | | | 16 | | | SPACE | | | | | |
| 17 | | | SPACE | | | | 18 | | | SPACE | | | | | |
| 19 | | | SPACE | | | | 20 | | | SPACE | | | | | |
| 21 | 20/1 | L001 | PROMENADE LTG 1 | | 0.64 | | 22 | 20/1 | L001 | PROMENADE LTG 2 | | 0.64 | | | |
| 23 | 20/1 | L001 | SITE LTG 1 | | | 6.79 | 24 | 20/1 | L001 | SITE LTG 2 | | | 5.6 | | |
| 25 | 20/1 | L028 | EAST SIDEWALK LTG | 0.27 | | | 26 | | | SPACE | | | | | |
| 27 | | | SPACE | | | | 28 | | | SPACE | | | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | | | |
| TOTAL | | | | 0 | 1 | 7 | TOTAL | | | | 0 | 1 | 6 | | |
| NOTES: | | | | | | | | | | | | | | | |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. | | | | | | | | | | | | | | | |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| TOTAL AMPERES | | | | | | | | | | | | | | | |
| BUS A | 0.27 | | | | | | | | | | | | | | |
| BUS B | 1.28 | | | | | | | | | | | | | | |
| BUS C | 12 | | | | | | | | | | | | | | |
| MAXIMUM KVA | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |
| SUB-FEED | | | | | | | | | | | | | | | |
| SUB-FEED CABLES | | | | | | | | | | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND | | OCPD SIZING | |
|---------------------------|-----------|--------|-------------------------|---------------------------------|------|
| LIGHTING (VA) | 3862 | 3862 | DEMAND = 100% CONNECTED | 125% CONTINUOUS | |
| RECEPTACLE (VA) | 0 | 0 | NEC TABLE 220.44 | LIGHTING (VA) | 4828 |
| MISC. CONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED | MISC. CONTINUOUS (VA) | 0 |
| MISC. NONCONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED | HEATING (VA) | 0 |
| MOTORS (VA) | 0 | 0 | DEMAND = 100% CONNECTED | WATER HEATING (VA) | 0 |
| 25% OF LARGEST MOTOR (VA) | 0 | 0 | DEMAND = 100% CONNECTED | 100% NONCONTINUOUS | |
| HEATING (VA) | 0 | 0 | COUNTED HEATING OR AC, | RECEPTACLE (VA) | 0 |
| AC (VA) | 0 | 0 | WHICHEVER IS LARGER. | MISC. NONCONTINUOUS (VA) | 0 |
| WATER HEATING (VA) | 0 | 0 | DEMAND = 100% CONNECTED | MOTORS + 25% LARGEST MOTOR (VA) | 0 |
| SUBTOTAL (VA) | 3862 | 3862 | | AC (VA) | 0 |
| TOTAL (A) AT 208V | 4.65 | 4.65 | | SPARE (VA) | 772 |
| 20% SPARE (VA) | | 772 | | MIN TOTAL (VA) | 5600 |
| TOTAL (VA) | | 4635 | | MIN TOTAL (A) AT 480V | 6.74 |
| TOTAL (A) AT 480V | | 5.57 | | | |

| | | |
|---------------------------------|--|-------------|
| OCPD SIZING | | |
| <i>125% CONTINUOUS</i> | | |
| LIGHTING (VA) | | 4828 |
| MISC. CONTINUOUS (VA) | | 0 |
| HEATING (VA) | | 0 |
| WATER HEATING (VA) | | 0 |
| <i>100% NONCONTINUOUS</i> | | |
| RECEPTACLE (VA) | | 0 |
| MISC. NONCONTINUOUS (VA) | | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | | 0 |
| AC (VA) | | 0 |
| SPARE (VA) | | 772 |
| MIN TOTAL (VA) | | 5600 |
| MIN TOTAL (A) AT 480V | | 6.74 |

| | | | | | | | | | |
|------------------------------------------------------------------------------|--|--|------------------|--|-----------------|---------|------------------|--------------|--|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\ 14w121eb04-03.dlv | | | | | | | | | |
| PRINTED: 11:47:03 AM 1/16/2019 | | | LAST PRINTED BY: | | | | FED.AID PROJ.NO. | | |
| SUBMITTAL DATE: 1/18/19 | | | slaterj | | | | | | |
| DESIGNED BY: C. YUN | | | 1/18/19 | | | | WA-2017-007-00 | | |
| ITERATED BY: C. YUN | | | 1/18/19 | | | | REGION NO. | STATE | |
| CHECKED BY: M. BAGINSKI | | | 1/18/19 | | | | 10 | WASH | |
| ARR PROJ ENGR: C. TORRES | | | | | | | JOB NUMBER | 18W121 | |
| ARR TERM ENGR: N. MCINTOSH | | | | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. | |
| ASST SECRETARY: A. SCARTON | | | | | REVISION | DATE | BY | 009321 | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL PANEL SCHEDULES 4

SHEET
1238
OF
1521
SHEETS

PANELBOARD 4PX5

| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | |
|-------|---------|-----------|-------------|---------|------|------|-------|---------|-----------|---------------------------|------------|------|-----|--|
| | | | | A | B | C | | | | | A | B | C | |
| 1 | 30/3 | 4#10 | AHU-1 | 18.6 | | | 2 | 45/3 | P122 | PANELBOARD 2PX7 VIA 42TX2 | 22.7 | | | |
| 3 | | | | | 18.6 | | 4 | | | | | 20.8 | | |
| 5 | | | | | | 18.6 | 6 | | | | | | 23 | |
| 7 | 15/1 | | SPARE | | | | 8 | 15/3 | 4#12 | BP-1, BP-2 | 6 | | | |
| 9 | 15/1 | | SPARE | | | | 10 | | | | | 6 | | |
| 11 | 30/3 | 4#10 | WH-1 | | | 21.7 | 12 | | | | | | 6 | |
| 13 | | | | | 21.7 | | | 14 | 15/3 | 4#12 | CW-4, CW-5 | 3.2 | | |
| 15 | | | | | 21.7 | | | 16 | | | | | 3.2 | |
| 17 | 20/1 | | SPARE | | | | 18 | | | | | | 3.2 | |
| 19 | 20/1 | | SPARE | | | | 20 | 15/3 | 4#12 | CW-1, CW-2, CW-3 | 4.8 | | | |
| 21 | 20/1 | | SPARE | | | | 22 | | | | | 4.8 | | |
| 23 | | | SPACE | | | | 24 | | | | | | 4.8 | |
| 25 | | | SPACE | | | | 26 | | | SPACE | | | | |
| 27 | | | SPACE | | | | 28 | | | SPACE | | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | | |
| 31 | | | SPACE | | | | 32 | | | SPACE | | | | |
| 33 | | | SPACE | | | | 34 | | | SPACE | | | | |
| 35 | | | SPACE | | | | 36 | | | SPACE | | | | |
| 37 | | | SPACE | | | | 38 | | | SPACE | | | | |
| 39 | | | SPACE | | | | 40 | | | SPACE | | | | |
| 41 | | | SPACE | | | | 42 | | | SPACE | | | | |
| TOTAL | | | | 40 | 40 | 40 | TOTAL | | | | 37 | 35 | 37 | |

PANELBOARD 4PX5

| | |
|---------------------------------|---------------|
| CCPD SIZING | |
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 2250 |
| HEATING (VA) | 23686 |
| WATER HEATING (VA) | 24365 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 0 |
| MISC. NONCONTINUOUS (VA) | 400 |
| MOTORS + 25% LARGEST MOTOR (VA) | 20868 |
| AC (VA) | 0 |
| SPARE (VA) | 12302 |
| MIN TOTAL (VA) | 83871 |
| MIN TOTAL (A) AT 480V | 100.88 |

1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.

| PANELBOARD 2PX1 | | | | | | | | | | | | | | |
|-----------------------------|---------|----------------|------------------------------|---------|------|-----------------------|-----|---------|------------------|-------------------------------------------|---------|------|--------|-----|
| MOUNTING: SURFACE | | | MAIN RATING: 350A MCB | | | LOCATION: ELEC RM 151 | | | | | | | | |
| NEMA RATING: 12 | | | MAIN CABLES: P141 | | | TOLL PLAZA | | | | | | | | |
| VOLTAGE: 208Y/120V, 3PH, 4W | | | SOURCE: 4SBX1 VIA 4DX1/42TX1 | | | AIC RATINGS: 10,000 | | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | |
| | | | | A | B | C | | | | | A | B | C | |
| 1 | 20/1 | 3#12 | LTG/RECEPT - RM157 | 1.63 | | | 2 | 50/3 | P010, P142 | PANELBOARD 2PX2 TOLL BOOTH 1 | 19.4 | | | |
| 3 | 20/1 | 3#12 | LTG - RM152 | | 0.42 | | 4 | | | | | 15.5 | | |
| 5 | 20/1 | 3#12 | LTG - EXTERIOR | | | 4.48 | 6 | | | | | | 24 | |
| 7 | 20/1 | 3#12 | RECEPT - RM152/151/150 | 4.5 | | | 8 | 50/3 | P010, P011, P143 | PANELBOARD 2PX3 TOLL BOOTH 2 | 19.4 | | | |
| 9 | 15/1 | 3#12 | EF-4 | | 4.4 | | 10 | | | | | 15.5 | | |
| 11 | 20/1 | 3#12 | EF-5, EF-6 | | | 8.8 | 12 | | | | | | 24 | |
| 13 | 15/1 | 3#12 | LAV-1 - RM157 | 0.8 | | | 14 | 50/3 | P012, P144 | PANELBOARD 2PX4 TOLL BOOTH 3 | 19.4 | | | |
| 15 | 25/2 | 3#10 | UH-5 | | 16.8 | | 16 | | | | | 15.5 | | |
| 17 | | | | | | 16.8 | 18 | | | | | | 24 | |
| 19 | 25/2 | 3#10 | UH-6 | 16.8 | | | 20 | 50/3 | P012, P013, P145 | PANELBOARD 2PX5 TOLL BOOTH 4 | 19.4 | | | |
| 21 | | | | | 16.8 | | 22 | | | | | 15.5 | | |
| 23 | 25/2 | 3#10 | UH-7 | | | 16.8 | 24 | | | | | | 24 | |
| 25 | | | | 16.8 | | | 26 | | | 22 | | | | |
| 27 | 20/2 | P148 | SS-1/CU-1 | | 12 | | 28 | 60/3 | P146, P147 | PANELBOARD 2PX6 EQUIP RM VIA 15KVA UPS | | 15 | | |
| 29 | | | | | | 12 | 30 | | | | | | 31 | |
| 31 | 30/2 | 2#6, 1#6, 1" C | WH-3 | 19.7 | | | 32 | | | | 15/1 | 3#12 | TP-INV | 3.1 |
| 33 | | | | | 19.7 | | 34 | 35/2 | P070, P071 | IDF-11 | | 26.9 | | |
| 35 | 20/2 | 3#12 | SPARE | | | | 36 | | | | | | 26.9 | |
| 37 | 20/2 | 3#12 | RM 157 HAND DRYER | 12.5 | | | 38 | 35/2 | P070, P071, P072 | IDF-12 | 26.9 | | | |
| 39 | 20/1 | P014 | IRRIGATION CONTROLLER | | 2 | | 40 | | | | | 26.9 | | |
| 41 | | | SPACE | | | | 42 | | | | | | | |

| | | | | | | | | | | | | | |
|-------|--|--|-------|----|----|----|-------|------|------|-----------------------------------|-----|-----|------|
| 43 | | | SPACE | | | | 44 | | | SPACE | | | |
| 45 | | | SPACE | | | | 46 | | | SPACE | | | |
| 47 | | | SPACE | | | | 48 | 15/1 | 3#12 | FIRE ALARM RM 151 BPS (NOTE 2) | | | 0.83 |
| TOTAL | | | | 73 | 72 | 59 | TOTAL | | | | 130 | 131 | 154 |

| |
|--------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE |
| SCHEDULE. |
| |
| |

| | |
|---------------|-----|
| TOTAL AMPERES | |
| BUS A | 202 |
| BUS B | 203 |
| BUS C | 213 |
| MAXIMUM KVA | |
| 77 | |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

- NOTES:
- SEE CONDUIT & CABLE SCHEDULE FOR P### INFORMATION.
 - PROVIDE LISTED CIRCUIT BREAKER LOCK FOR LOCKING BREAKER-ON POSITION.

| PANELBOARD 2PX1 | | | | |
|---------------------------|-----------|--------|---------------------------------------------|--|
| LOAD TYPE | CONNECTED | DEMAND | | |
| LIGHTING (VA) | 1631 | 1631 | DEMAND = 100% CONNECTED | |
| RECEPTACLE (VA) | 6780 | 6780 | NEC TABLE 220.44 | |
| MISC. CONTINUOUS (VA) | 28431 | 28431 | DEMAND = 100% CONNECTED | |
| MISC. NONCONTINUOUS (VA) | 100 | 100 | DEMAND = 100% CONNECTED | |
| MOTORS (VA) | 3900 | 3900 | DEMAND = 100% CONNECTED | |
| 25% OF LARGEST MOTOR (VA) | 375 | 375 | DEMAND = 100% CONNECTED | |
| HEATING (VA) | 22627 | 22627 | COUNTED HEATING OR AC, WHICHEVER IS LARGER. | |
| AC (VA) | 6048 | 0 | DEMAND = 100% CONNECTED | |
| WATER HEATING (VA) | 4731 | 4731 | | |
| SUBTOTAL (VA) | 74623 | 68575 | | |
| TOTAL (A) AT 208V | 207.14 | 190.35 | | |
| 20% SPARE (VA) | | 13715 | | |
| TOTAL (VA) | | 82290 | | |
| TOTAL (A) AT 208V | | 228.42 | | |

| OCPD SIZING | |
|---------------------------------|--------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 2039 |
| MISC. CONTINUOUS (VA) | 35539 |
| HEATING (VA) | 28284 |
| WATER HEATING (VA) | 5913 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 6780 |
| MISC. NONCONTINUOUS (VA) | 100 |
| MOTORS + 25% LARGEST MOTOR (VA) | 4275 |
| AC (VA) | 0 |
| SPARE (VA) | 13715 |
| MIN TOTAL (VA) | 96645 |
| MIN TOTAL (A) AT 208V | 268.27 |

| | | | | | | | | | |
|----------------------------------------------------------------------------|------------------|-----------------|---------|----|--|--|--|------------------|--|
| FILE NAME: WS\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb04_06.dlv | | | | | | | | | |
| PRINTED: 11:50:51 AM 1/16/2019 | LAST PRINTED BY: | | | | | | | FED.AID PROJ.NO. | |
| SUBMITTAL DATE: 1/18/19 | staterj | | | | | | | WA-2017-007-00 | |
| DESIGNED BY: C. YUN | 1/18/19 | | | | | | | REGION NO. STATE | |
| ENTERED BY: C. YUN | 1/18/19 | | | | | | | 10 WASH | |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | | | | JOB NUMBER | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | 18W121 | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | | | CONTRACT NO. | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | 009321 | |



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Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

BUILDING
ELECTRICAL PANEL SCHEDULES 7

EB04.06
SHEET
1241
OF
1521
SHEETS

| PANELBOARD 2PX5 | | | | | | | | | | | | | |
|-----------------|---------|---------------------------|---------------------------------|--------------|-----|-------------------------|-------|--------------|-----------|---------------------------------------|---------|-----|-----|
| MOUNTING: | | <u>RECESSED</u> | | MAIN RATING: | | <u>60A MCB</u> | | LOCATION: | | <u>TOLL BOOTH</u> | | | |
| NEMA RATING: | | <u>1</u> | | MAIN CABLES: | | <u>P012, P013, P145</u> | | | | | | | |
| VOLTAGE: | | <u>208Y/120V, 3PH, 4W</u> | | SOURCE: | | <u>2PX1</u> | | AIC RATINGS: | | <u>10,000</u> | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/2 | | HEATER | 6.3 | | | 2 | 20/1 | | RECEPTACLES CEILING AND ATTIC | 1 | | |
| 3 | | | | | 6.3 | | 4 | 20/1 | | CLOCK | | 1 | |
| 5 | 20/1 | | LIGHTS | | | 1 | 6 | 20/2 | | AIR CONDITIONING UNIT | | | 6.3 |
| 7 | 20/1 | | SPARE | | | | 8 | | | | 6.3 | | |
| 9 | 20/1 | | RECEPTACLES FRONT COUNTERTOP | | 4 | | 10 | 20/1 | | FAN | | 1.7 | |
| 11 | 20/1 | | UPS RECEPTACLE | | | 9.6 | 12 | 20/1 | | OUTDOOR ELECTRONIC MESSAGE DISPLAY | | | 7 |
| 13 | 20/1 | | PLUGMOLD | 2.5 | | | 14 | 20/1 | | HEATER EFS CABINET | 3.3 | | |
| 15 | 20/1 | | PLUGMOLD | | 2.5 | | 16 | 20/1 | | SPARE | | | |
| 17 | 20/1 | | SPARE | | | | 18 | 20/1 | | SPARE | | | |
| 19 | 20/1 | | SPARE | | | | 20 | 20/1 | | SPARE | | | |
| 21 | 20/1 | | SPARE | | | | 22 | | | SPACE | | | |
| 23 | 20/1 | | SPARE | | | | 24 | | | SPACE | | | |
| TOTAL | | | | 9 | 13 | 11 | TOTAL | | | | 11 | 3 | 13 |

NOTES:

QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N.

CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE.

| TOTAL AMPERES | |
|---------------|------|
| BUS A | 19.4 |
| BUS B | 15.5 |
| BUS C | 24 |

| SUB-FEED | |
|-----------------|--|
| SUB-FEED CABLES | |

| MAXIMUM KVA |
|-------------|
| 9 |

NOTES:

1. SEE CONDUIT & CABLE SCHEDULE FOR P### INFORMATION.

| LOAD TYPE | CONNECTED | DEMAND |
|---------------------------|--------------|--------------|
| LIGHTING (VA) | 120 | 120 |
| RECEPTACLE (VA) | 1200 | 1200 |
| MISC. CONTINUOUS (VA) | 2112 | 2112 |
| MISC. NONCONTINUOUS (VA) | 0 | 0 |
| MOTORS (VA) | 204 | 204 |
| 25% OF LARGEST MOTOR (VA) | 51 | 51 |
| HEATING (VA) | 1908 | 1908 |
| AC (VA) | 1512 | 0 |
| WATER HEATING (VA) | 0 | 0 |
| SUBTOTAL (VA) | 7107 | 5595 |
| TOTAL (A) AT 208V | 19.73 | 15.53 |
| 20% SPARE (VA) | | 1119 |
| TOTAL (VA) | | 6714 |
| TOTAL (A) AT 208V | | 18.64 |

| | |
|---------------------------------|--------------|
| CCPD SIZING | |
| 125% CONTINUOUS | |
| LIGHTING (VA) | 150 |
| MISC. CONTINUOUS (VA) | 2640 |
| HEATING (VA) | 2385 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 1200 |
| MISC. NONCONTINUOUS (VA) | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | 255 |
| AC (VA) | 0 |
| SPARE (VA) | 1119 |
| MIN TOTAL (VA) | 7749 |
| MIN TOTAL (A) AT 208V | 21.51 |

| |
|--------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE |
| SCHEDULE. |
| |
| |

| TOTAL AMPERES | |
|---------------|------|
| BUS A | 19.4 |
| BUS B | 15.5 |
| BUS C | 24 |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

| |
|-------------|
| MAXIMUM KVA |
| 9 |

NOTES:
1. SEE CONDUIT & CABLE SCHEDULE FOR P### INFORMATION.

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1/18/19

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL PANEL SCHEDULES 8

EB04.07

SHEET
1242
OF
1521
SHEETS

| | | | | | | | | | |
|-----------------------------------------------------------------------------|--|--|--|------------------|--|---------|--|------------------|--|
| FILE NAME: WSF\Muk\iteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb04_07.dwg | | | | | | | | | |
| PRINTED: 11:51:52 AM 1/16/2019 | | | | LAST PRINTED BY: | | | | FED.AID PROJ.NO. | |
| SUBMITTAL DATE: 1/18/19 | | | | 1/18/19 | | | | | |
| DESIGNED BY: C. YUN | | | | 1/18/19 | | | | WA-2017-007-00 | |
| ENTERED BY: C. YUN | | | | 1/18/19 | | | | REGION NO. STATE | |
| CHECKED BY: M. BAGINSKI | | | | 1/18/19 | | | | 10 WASH | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | JOB NUMBER | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | 18W121 | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY CONTRACT NO. | |
| | | | | | | | | 009321 | |

| PANELBOARD 2PX6 | | | | | | | | | | | | | |
|--------------------------------------------------------------------|---------|-----------|-------------------------------------------------------------------------|---------|-----|-----------------------------------------------------------------|--------------|---------|-----------|-------------|---------|-----|-----|
| MOUNTING: SURFACE NEMA RATING: 1 VOLTAGE: 208Y/120V, 3PH, 4W | | | MAIN RATING: 60A MCB MAIN CABLES: P147 SOURCE: 2PX1 VIA 15KVA UPS | | | LOCATION: EQUIPMENT RM 150 TOLL PLAZA AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | RECEPT | 1.5 | | | 2 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 3 | 20/1 | 3#12 | RECEPT | | 1.5 | | 4 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 5 | 20/1 | 3#12 | RECEPT | | | 1.5 | 6 | 20/1 | 3#12 | RECEPT | | | 1.5 |
| 7 | 20/1 | 3#12 | RECEPT | 1.5 | | | 8 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 9 | 30/1 | 3#10 | RACK 150.01, PDU 1 | | 12 | | 10 | 20/1 | | SPARE | | | |
| 11 | 30/1 | 3#10 | RACK 150.01, PDU 2 | | | 12 | 12 | 20/1 | 3#12 | PDC-04 | | | 16 |
| 13 | 20/1 | | SPARE | | | | 14 | 20/1 | 3#12 | PDC-04 | 16 | | |
| 15 | | | SPACE | | | | 16 | | | SPACE | | | |
| 17 | | | SPACE | | | | 18 | | | SPACE | | | |
| TOTAL | | | | 3 | 14 | 14 | TOTAL | | | | 19 | 2 | 18 |
| BUS A | 22 | | | | | | | | | | | | |
| BUS B | 15 | | | | | | | | | | | | |
| BUS C | 31 | | | | | | | | | | | | |
| SUB-FEED CABLES | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |

| LOAD TYPE | CONNECTED | DEMAND | | OCPD SIZING | |
|---------------------------|-----------|--------|-------------------------|---------------------------------|-------|
| LIGHTING (VA) | 0 | 0 | DEMAND = 100% CONNECTED | 125% CONTINUOUS | |
| RECEPTACLE (VA) | 1440 | 1440 | NEC TABLE 220.44 | LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 6720 | 6720 | DEMAND = 100% CONNECTED | MISC. CONTINUOUS (VA) | 8400 |
| MISC. NONCONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED | HEATING (VA) | 0 |
| MOTORS (VA) | 0 | 0 | DEMAND = 100% CONNECTED | WATER HEATING (VA) | 0 |
| 25% OF LARGEST MOTOR (VA) | 0 | 0 | DEMAND = 100% CONNECTED | 100% NONCONTINUOUS | |
| HEATING (VA) | 0 | 0 | COUNTED HEATING OR AC, | RECEPTACLE (VA) | 1440 |
| AC (VA) | 0 | 0 | WHICHEVER IS LARGER. | MISC. NONCONTINUOUS (VA) | 0 |
| WATER HEATING (VA) | 0 | 0 | DEMAND = 100% CONNECTED | MOTORS + 25% LARGEST MOTOR (VA) | 0 |
| SUBTOTAL (VA) | 8160 | 8160 | | AC (VA) | 0 |
| TOTAL (A) AT 208V | 22.65 | 22.65 | | SPARE (VA) | 1632 |
| 20% SPARE (VA) | | 1632 | | MIN TOTAL (VA) | 11472 |
| TOTAL (VA) | | 9792 | | MIN TOTAL (A) AT 208V | 31.84 |
| TOTAL (A) AT 208V | | 27.18 | | | |

| | |
|---------------------------------|--------------|
| CCPD SIZING | |
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 8400 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 1440 |
| MISC. NONCONTINUOUS (VA) | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | 0 |
| AC (VA) | 0 |
| SPARE (VA) | 1632 |
| MIN TOTAL (VA) | 11472 |
| MIN TOTAL (A) AT 208V | 31.84 |

| PANELBOARD 2PX7 | | | | | | | | | | | | | |
|-----------------|-----------|--------------------|--------------------------------|------------------------|-----|-----------------------------|-----|---------|-----------|-------------------|---------|------|-----|
| MOUNTING: | | SURFACE | | MAIN RATING: 100A MCB | | LOCATION: ELECTRICAL RM 104 | | | | | | | |
| NEMA RATING: | | 12 | | MAIN CABLES: P123 | | TERMINAL BLDG | | | | | | | |
| VOLTAGE: | | 208Y/120V, 3PH, 4W | | SOURCE: 4PX5 VIA 42TX2 | | AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 15/1 | 3#12 | CF-1 | 7.2 | | | 2 | 15/1 | 3#12 | EF-2 | 9.8 | | |
| 3 | 15/1 | 3#12 | CF-2 | | 7.2 | | 4 | 15/1 | 3#12 | DDC RM103 | | 5 | |
| 5 | 15/1 | 3#12 | CF-3 | | | 7.2 | 6 | 15/1 | 3#12 | DDC RM204 | | | 5 |
| 7 | 15/1 | 3#12 | CP-1, TMV-1 | 2.5 | | | 8 | 15/1 | 3#12 | DDC RM214 | 5 | | |
| 9 | 15/1 | 3#12 | FCU-1 | | 2.9 | | 10 | 15/1 | 3#12 | FCU-12 | | 4.4 | |
| 11 | 15/1 | 3#12 | FCU-4 | | | 2.9 | 12 | 15/1 | 3#12 | FCU-13 | | | 2.9 |
| 13 | 15/1 | 3#12 | FCU-6 | 2.9 | | | 14 | 15/1 | 3#12 | FCU-5 | 5.8 | | |
| 15 | 15/1 | 3#12 | FCU-9 | | 2.9 | | 16 | 35/1 | 3#12 | FCU-2 | | 19.6 | |
| 17 | 15/1 | 3#12 | FCU-8 | | | 2.9 | 18 | 15/1 | 3#12 | FCU-3 | | | 2.9 |
| 19 | 15/1 | 3#12 | FCU-7 | 2.9 | | | 20 | 15/1 | 3#12 | FCU-14 | 2.9 | | |
| 21 | 15/1 | 3#12 | FCU-11 | | 4.4 | | 22 | 20/1 | | SPARE | | | |
| 23 | 15/1 | 3#12 | FCU-10 | | | 4.4 | 24 | 15/1 | 3#12 | LAV-1 RM206 | | | 0.8 |
| 25 | 30/1 GFEP | 3#10 | HEAT TRACE VIA JB-HT1 (NOTE 2) | 12.5 | | | 26 | 15/1 | 3#12 | LAV-1 RM205 | 0.8 | | |
| 27 | 20/1 | | SPARE | | | | 28 | 15/1 | 3#12 | LAV-1 RM107 RM111 | | 1.7 | |
| 29 | 40/1 | 3#10 | COMPRESSOR RM101 | | | 24 | 30 | | | SPACE | | | |
| 31 | | | SPACE | | | | 32 | | | SPACE | | | |
| 33 | | | SPACE | | | | 34 | | | SPACE | | | |
| 35 | | | SPACE | | | | 36 | | | SPACE | | | |

| | | | | | | | | | | | | | |
|-------|--|--|-------|----|----|----|-------|--|--|-------|----|----|----|
| 37 | | | SPACE | | | | 38 | | | SPACE | | | |
| 39 | | | SPACE | | | | 40 | | | SPACE | | | |
| 41 | | | SPACE | | | | 42 | | | SPACE | | | |
| TOTAL | | | | 28 | 17 | 41 | TOTAL | | | | 24 | 31 | 12 |

NOTES:

QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N.

CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE.

GFEP = GROUND FAULT EQUIPMENT PROTECTOR BREAKER

TOTAL AMPERES

BUS A

52.3

BUS B

48.1

BUS C

53

MAXIMUM KVA

19

SUB-FEED

SUB-FEED CABLES

NOTES:
1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.
2. PROVIDE LOCKABLE CIRCUIT BREAKER IN ACCORDANCE WITH NEC 110.25.

PANELBOARD 2PX7

| LOAD TYPE | CONNECTED | DEMAND | |
|---------------------------|-----------|--------|---------------------------------------------|
| LIGHTING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 0 | 0 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 1800 | 1800 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 400 | 400 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 6948 | 6948 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 720 | 720 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 3492 | 0 | COUNTED HEATING OR AC, WHICHEVER IS LARGER. |
| AC (VA) | 4272 | 4272 | DEMAND = 100% CONNECTED |
| WATER HEATING (VA) | 1500 | 1500 | |
| SUBTOTAL (VA) | 19132 | 15640 | |
| TOTAL (A) AT 208V | 53.11 | 43.41 | |
| 20% SPARE (VA) | | 3128 | |
| TOTAL (VA) | | 18768 | |
| TOTAL (A) AT 208V | | 52.10 | |

| OCPD SIZING | |
|---------------------------------|-------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 2250 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 1875 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 0 |
| MISC. NONCONTINUOUS (VA) | 400 |
| MOTORS + 25% LARGEST MOTOR (VA) | 7668 |
| AC (VA) | 4272 |
| SPARE (VA) | 3128 |
| MIN TOTAL (VA) | 19593 |
| MIN TOTAL (A) AT 208V | 54.39 |

| PANELBOARD 2PX8 | | | | | | | | | | | | | |
|-----------------|----------|--------------------|--------------------------------------------------|------------------------|------|-----------------------------|-----|---------|-----------|---------------------------|---------|-----|-----|
| MOUNTING: | | SURFACE | | MAIN RATING: 250A MCB | | LOCATION: ELECTRICAL RM 104 | | | | | | | |
| NEMA RATING: | | 12 | | MAIN CABLES: P125 | | TERMINAL BLDG | | | | | | | |
| VOLTAGE: | | 208Y/120V, 3PH, 4W | | SOURCE: 4PX1 VIA 42TX3 | | AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | ELEV 1 PIT LT/RECEPT | 2.24 | | | 2 | 20/1 | 3#12 | REC - RM 101/103 | 6 | | |
| 3 | 20/1 | 3#12 | ELEV 1 RM 102 LT/RECEPT | | 2.34 | | 4 | 20/1 | 3#12 | REC - RM 104/109 | | 4.5 | |
| 5 | 15/1 | 3#12 | ELEV 1 CAR LT/RECEPT/FAN | | | 2.33 | 6 | 20/1 | 3#12 | REC - RM 118/108/110 | | | 7.5 |
| 7 | 20/1 | 3#12 | SWING GATE 1 | 9.8 | | | 8 | 20/1 | 3#12 | REC - RM 107/105 | 3 | | |
| 9 | 20/1 | 3#12 | SWING GATE 2 | | 9.8 | | 10 | 20/1 | 3#12 | REC - RM 111A/116 | | 4.5 | |
| 11 | 20/1 | 3#12 | RM 205 HAND DRYER | | | 12.5 | 12 | 20/1 | 3#12 | REC - RM 115/117 | | | 6 |
| 13 | 20/1 | 3#12 | RM 206 HAND DRYER | 12.5 | | | 14 | 20/1 | 3#12 | REC - RM 112/113/117 | 7.5 | | |
| 15 | 20/1-GFI | 3#12 | WATER FOUNTAIN | | 5 | | 16 | 20/1 | 3#12 | REC - RM 113 | | 6 | |
| 17 | 20/1 | 3#12 | LTG - RM 101/103/104/118/107/ 105-106-108-110 | | | 5.98 | 18 | 20/1 | 3#12 | REC - RM 117 | | | 6 |
| 19 | 20/1 | 3#12 | LTG - RM 116/114/112/113/ 115/117/111 | 2.97 | | | 20 | 20/1 | 3#12 | REC - RM 202/203/204 | 4.5 | | |
| 21 | 20/1 | 3#12 | LTG - LVL1 CANOPY | | 4.42 | | 22 | 20/1 | 3#12 | REC - RM 206/207 | | 4.5 | |
| 23 | 20/1 | 3#12 | REC - RM 117 | | | 6 | 24 | 20/1 | 3#12 | REC - RM 205/208 | | | 4.5 |
| 25 | 20/1 | 3#12 | LTG - RM 202/204/203/208/207/ 205/206 | 5.38 | | | 26 | 20/1 | 3#12 | REC - RM 201 | 6 | | |
| 27 | 20/1 | 3#12 | TURNSTILES EAST | | 3.9 | | 28 | 20/1 | 3#12 | REC - RM 201 | | 6 | |
| 29 | 20/1 | 3#12 | TURNSTILES WEST | | | 3.9 | 30 | 20/1 | 3#12 | REC - RM 201 | | | 6 |
| 31 | 20/1 | 3#12 | GROUND FAULT PANEL CTRL | 4 | | | 32 | 20/1 | 3#12 | REC - RM 114 | 6 | | |
| 33 | 20/1 | 3#12 | KIOSKS 5,6 | | 0.83 | | 34 | 20/1 | 3#12 | REC - RM 114 | | 6 | |
| 35 | 20/1 | | SPARE | | | | 36 | 15/1 | 3#12 | REC - RM 105 REFRIG | | | 3 |
| 37 | 15/1 | 3#8 | IDF-110 (ROOF) | 12 | | | 38 | 15/1 | 3#12 | REC - RM 108/114/117 CCTV | 3.13 | | |
| 39 | 20/1 | | SPARE | | | | 40 | 20/1 | 3#12 | REC - RM 201 | | 4.5 | |
| 41 | 20/1 | 3#12 | RM 111 HAND DRYER | | | 12.5 | 42 | 20/1 | 3#12 | REC - RM 201 | | | 4.5 |
| 43 | 20/1 | | SPARE | | | | 44 | 20/1 | 3#12 | REC - RM 201 | 4.5 | | |
| 45 | | | SPACE | | | | 46 | | | SPACE | | | |
| 47 | | | SPACE | | | | 48 | | | SPACE | | | |
| 49 | | | SPACE | | | | 50 | | | SPACE | | | |
| 51 | | | SPACE | | | | 52 | | | SPACE | | | |
| 53 | | | SPACE | | | | 54 | | | SPACE | | | |

| | | | | | | | | | | | | | |
|-------|------|------|-----------------------------------|-----|-----|------|-------|-------|------|--------------------------------|------|------|-----|
| 55 | | | SPACE | | | | 56 | | | SPACE | | | |
| 57 | | | SPACE | | | | 58 | 20/1 | P200 | PV RAPID SHUTDOWN CONTROL | | 5.4 | |
| 59 | | | SPACE | | | | 60 | | | | | | 5.4 |
| 61 | | | SPACE | | | | 62 | | | | 47.8 | | |
| 63 | | | SPACE | | | | 64 | 125/3 | P126 | PANELBOARD 2PX9 | | 63.3 | |
| 65 | | | SPACE | | | | 66 | | | | | | 56 |
| 67 | 15/1 | 3#12 | ELEV 1 OIL HEATER | 4.2 | | | 68 | | | | 32 | | |
| 69 | 15/1 | 3#12 | CLEAN AGENT PANEL RM 109 (NOTE 2) | | 4.0 | | 70 | 60/3 | P127 | PANELBOARD 2PX10 VIA 15KVA UPS | | 34 | |
| 71 | 15/1 | 3#12 | FIRE ALARM RM 103 BPS (NOTE 2) | | | 0.83 | 72 | | | | | | 34 |
| TOTAL | | | | 53 | 30 | 44 | TOTAL | | | | 120 | 139 | 133 |

| |
|------------------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. |
| |
| |

| | |
|---------------|-----|
| TOTAL AMPERES | |
| BUS A | 174 |
| BUS B | 169 |
| BUS C | 177 |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

| |
|-------------|
| MAXIMUM KVA |
| 64 |

NOTES:

1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.
2. PROVIDE LISTED CIRCUIT BREAKER LOCK FOR LOCKING BREAKER-ON POSITION.

PANELBOARD 2PX8

| LOAD TYPE | CONNECTED | DEMAND |
|---------------------------|-----------|--------|
| LIGHTING (VA) | 13470 | 13470 |
| RECEPTACLE (VA) | 17640 | 13820 |
| MISC. CONTINUOUS (VA) | 21792 | 21792 |
| MISC. NONCONTINUOUS (VA) | 600 | 600 |
| MOTORS (VA) | 8364 | 8364 |
| 25% OF LARGEST MOTOR (VA) | 375 | 375 |
| HEATING (VA) | 504 | 504 |
| AC (VA) | 0 | 0 |
| WATER HEATING (VA) | 0 | 0 |
| SUBTOTAL (VA) | 62745 | 58925 |
| TOTAL (A) AT 208V | 174.17 | 163.56 |
| 20% SPARE (VA) | | 11785 |
| TOTAL (VA) | | 70710 |
| TOTAL (A) AT 208V | | 196.28 |

DEMAND = 100% CONNECTED
NEC TABLE 220.44
DEMAND = 100% CONNECTED
DEMAND = 100% CONNECTED
DEMAND = 100% CONNECTED
DEMAND = 100% CONNECTED
COUNTED HEATING OR AC, WHICHEVER IS LARGER.
DEMAND = 100% CONNECTED

| OCPD SIZING | |
|---------------------------------|--------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 16838 |
| MISC. CONTINUOUS (VA) | 27240 |
| HEATING (VA) | 630 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 13820 |
| MISC. NONCONTINUOUS (VA) | 600 |
| MOTORS + 25% LARGEST MOTOR (VA) | 8739 |
| AC (VA) | 0 |
| SPARE (VA) | 11785 |
| MIN TOTAL (VA) | 79652 |
| MIN TOTAL (A) AT 208V | 221.10 |

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SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL PANEL SCHEDULES 11

EB04.10

SHEET
1245
OF
1521
SHEETS

| | | | | | | | | | |
|-----------------------------------------------------------------------------|--|------------------------------|--|---------|----|--|--|---------------------|--|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb04_10.dwg | | | | | | | | | |
| PRINTED: 11:54:15 AM 1/16/2019 | | LAST PRINTED BY: [signature] | | | | | | FED.AID PROJ.NO. | |
| SUBMITTAL DATE: 1/18/19 | | DESIGNED BY: C. YUN | | 1/18/19 | | | | WA-2017-007-00 | |
| ENTERED BY: C. YUN | | CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | REGION NO. STATE | |
| MAR PROJ ENGR: C. TORRES | | DIR TERM ENGR: N. MCINTOSH | | | | | | 10 WASH | |
| ASST SECRETARY: A. SCARTON | | | | | | | | JOB NUMBER 18W121 | |
| | | CONFORMED PLANS | | 1/18/19 | | | | CONTRACT NO. 009321 | |
| | | REVISION | | DATE | BY | | | | |



| PANELBOARD 2PX9 | | | | | | | | | | | | | |
|-----------------------------|---------|-----------|-------------------------|---------|------|-----------------------------|-------|----------|-----------|------------------------|---------|-----|-----|
| MOUNTING: SURFACE | | | MAIN RATING: 125A MCB | | | LOCATION: ELECTRICAL RM 212 | | | | | | | |
| NEMA RATING: 12 | | | MAIN CABLES: P126 | | | TERMINAL BLDG | | | | | | | |
| VOLTAGE: 208Y/120V, 3PH, 4W | | | SOURCE: 2PX8 | | | AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | LTG - RM 211/214 | 0.84 | | | 2 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | 7 | | |
| 3 | 20/1 | 3#12 | LTG - RM 201 NORTH WALL | | 13.6 | | 4 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | | 7 | |
| 5 | 20/1 | 3#12 | LTG - RM 201 NORTH WALL | | | 6.81 | 6 | 20/1 | 3#12 | REC - RM 209/213/212 | | | 4.5 |
| 7 | 20/1 | 3#12 | LTG - RM 201 NORTH WALL | 6.81 | | | 8 | 20/1 | 3#12 | REC - RM 210/211/214 | 4.5 | | |
| 9 | 20/1 | 3#12 | LTG - RM 201 SOUTH WALL | | 6.81 | | 10 | 20/1 | 3#12 | REC - RM 210 | | 3 | |
| 11 | 20/1 | 3#12 | LTG - RM 201 SOUTH WALL | | | 6.81 | 12 | 20/1 | 3#12 | REC - RM 210 | | | 3 |
| 13 | 20/1 | 3#12 | LTG - RM 201 SOUTH WALL | 6.81 | | | 14 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | 7 | | |
| 15 | 20/1 | 3#12 | LTG - RM201/209 CEILING | | 2.06 | | 16 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | | 7 | |
| 17 | 20/1 | 3#12 | LTG - LVL2 EXT, OS | | | 3.87 | 18 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | | | 7 |
| 19 | 20/1 | 3#12 | SLIDE DOOR 1 | 3.15 | | | 20 | 20/1-GFI | 3#12 | REC - VENDING MACHINE | 7 | | |
| 21 | 20/1 | 3#12 | SLIDE DOOR 2 | | 3.15 | | 22 | 15/1 | 3#12 | VMS 1 | | 3 | |
| 23 | 20/1 | 3#12 | SLIDE DOOR 3 | | | 3.15 | 24 | 15/1 | 3#12 | VMS 2 | | | 3 |
| 25 | 20/1 | 3#12 | SLIDE DOOR 4 | 3.15 | | | 26 | 15/1 | 3#12 | REC - RM 210 MONITOR | 1.0 | | |
| 27 | 40/2 | 2#8, 1#10 | TB-INV | | 17.2 | | 28 | 20/1 | | SPARE | | | |
| 29 | | | | | | 17.3 | 30 | | | SPACE | | | |
| 31 | | | SPACE | | | | 32 | | | SPACE | | | |
| 33 | | | SPACE | | | | 34 | | | SPACE | | | |
| 35 | | | SPACE | | | | 36 | | | SPACE | | | |
| 37 | | | SPACE | | | | 38 | 15/3 | 3#12 | TB-LCP (PHASE MONITOR) | 0.5 | | |
| 39 | | | SPACE | | | | 40 | | | | | 0.5 | |
| 41 | | | SPACE | | | | 42 | | | | | | 0.5 |
| TOTAL | | | | 21 | 43 | 38 | TOTAL | | | | 27 | 21 | 18 |

| |
|------------------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. |
| GFI = GFI CIRCUIT BREAKER |
| |

| | |
|---------------|------|
| TOTAL AMPERES | |
| BUS A | 47.8 |
| BUS B | 63.3 |
| BUS C | 56 |

| |
|-------------|
| MAXIMUM KVA |
| 23 |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

NOTES:
1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.

| LOAD TYPE | CONNECTED | DEMAND | |
|---------------------------|-----------|--------|---------------------------------------------|
| LIGHTING (VA) | 10672 | 10672 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 1800 | 1800 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 6065 | 6065 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 1512 | 1512 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 95 | 95 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 0 | 0 | COUNTED HEATING OR AC, WHICHEVER IS LARGER. |
| AC (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| WATER HEATING (VA) | 0 | 0 | |
| SUBTOTAL (VA) | 20143 | 20143 | |
| TOTAL (A) AT 208V | 55.91 | 55.91 | |
| 20% SPARE (VA) | | 4029 | |
| TOTAL (VA) | | 24172 | |
| TOTAL (A) AT 208V | | 67.10 | |

| OCPD SIZING | |
|---------------------------------|-------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 13339 |
| MISC. CONTINUOUS (VA) | 7581 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 1800 |
| MISC. NONCONTINUOUS (VA) | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | 1607 |
| AC (VA) | 0 |
| SPARE (VA) | 4029 |
| MIN TOTAL (VA) | 28356 |
| MIN TOTAL (A) AT 208V | 78.71 |

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SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL PANEL SCHEDULES 12

EB04.11

SHEET
1246
OF
1521
SHEETS

| | | | | | |
|-----------------------------------------------------------------------------|------------------|-----------------|---------|----|------------------|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb04_11.dwg | | | | | |
| PRINTED: 11:55:20 AM 1/16/2019 | LAST PRINTED BY: | | | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | staterj | | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 009321 |



PANELBOARD 2PX10

MOUNTING: SURFACE
NEMA RATING: 12
VOLTAGE: 208Y/120V, 3PH, 4W

MAIN RATING: 60A MCB
MAIN CABLES: P128
SOURCE: 2PX8 VIA 15KVA UPS

LOCATION: IT RM 109
TERMINAL BLDG
AIC RATINGS: 10,000

| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
|-------|---------|-----------|--------------------|---------|-----|-----|-------|---------|-----------|------------------|---------|-----|-----|
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | RECEPT | 1.5 | | | 2 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 3 | 20/1 | 3#12 | RECEPT | | 1.5 | | 4 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 5 | 20/1 | 3#12 | RECEPT | | | 1.5 | 6 | 20/1 | 3#12 | RECEPT | | | 1.5 |
| 7 | 20/1 | 3#12 | RECEPT | 1.5 | | | 8 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 9 | 20/1 | 3#12 | RECEPT | | 1.5 | | 10 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 11 | 20/1 | 3#12 | RECEPT | | | 1.5 | 12 | 20/1 | 3#12 | RECEPT | | | 1.5 |
| 13 | 30/1 | 3#10 | RACK 109.01, PDU 1 | 12 | | | 14 | 20/1 | | SPARE | | | |
| 15 | 30/1 | 3#10 | RACK 109.01, PDU 2 | | 12 | | 16 | 20/1 | 3#12 | PDC-02 | | 16 | |
| 17 | 30/1 | 3#10 | RACK 109.02, PDU 1 | | | 12 | 18 | 20/1 | 3#12 | PDC-02 | | | 16 |
| 19 | 30/1 | 3#10 | RACK 109.02, PDU 2 | 12 | | | 20 | 20/1 | 3#12 | KEY BOX (NOTE 3) | 2 | | |
| 21 | 20/1 | | SPARE | | | | 22 | 20/1 | | SPARE | | | |
| 23 | 20/1 | | SPARE | | | | 24 | 20/1 | | SPARE | | | |
| 25 | | | SPACE | | | | 26 | | | SPACE | | | |
| 27 | | | SPACE | | | | 28 | | | SPACE | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | |
| TOTAL | | | | 27 | 15 | 15 | TOTAL | | | | 5 | 19 | 19 |

| |
|------------------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. |
| |
| |

| | |
|---------------|----|
| TOTAL AMPERES | |
| BUS A | 32 |
| BUS B | 34 |
| BUS C | 34 |
| | |
| MAXIMUM KVA | |
| 12 | |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

NOTES:

1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.
2. ROUTE CONDUITS AND CABLES TO RM109 EQUIPMENT (EQUIPMENT LAYOUT AS SHOWN ON DWG. EB12.10).
3. SEE SECURITY PLANS FOR LOCATION.

| LOAD TYPE | CONNECTED | DEMAND | |
|---------------------------|-----------|--------|-------------------------|
| LIGHTING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 2160 | 2160 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 9840 | 9840 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 0 | 0 | COUNTED HEATING OR AC, |
| AC (VA) | 0 | 0 | WHICHEVER IS LARGER. |
| WATER HEATING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| SUBTOTAL (VA) | 12000 | 12000 | |
| TOTAL (A) AT 208V | 33.31 | 33.31 | |
| 20% SPARE (VA) | | 2400 | |
| TOTAL (VA) | | 14400 | |
| TOTAL (A) AT 208V | | 39.97 | |

| | |
|---------------------------------|-------|
| OCPD SIZING | |
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 12300 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 2160 |
| MISC. NONCONTINUOUS (VA) | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | 0 |
| AC (VA) | 0 |
| SPARE (VA) | 2400 |
| MIN TOTAL (VA) | 16860 |
| MIN TOTAL (A) AT 208V | 46.80 |

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1/18/19

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

BUILDING
ELECTRICAL PANEL SCHEDULES 13

EB04.12

SHEET
1247
OF
1521
SHEETS

| | | | | | | | | | |
|-----------------------------------------------------------------------------|------------------|-----------------|---------|----|--|------------------|--------|------|--|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb04_12.dwg | | | | | | | | | |
| PRINTED: 11:56:09 AM 1/16/2019 | LAST PRINTED BY: | | | | | FED.AID PROJ.NO. | | | |
| SUBMITTAL DATE: 1/18/19 | staterj | | | | | WA-2017-007-00 | | | |
| DESIGNED BY: C. YUN | 1/18/19 | | | | | REGION NO. STATE | 10 | WASH | |
| ENTERED BY: C. YUN | 1/18/19 | | | | | JOB NUMBER | 18W121 | | |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | | CONTRACT NO. | 009321 | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | |

| PANELBOARD 2PX11 | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|---------|--------------------|-----------------------|------------------------|-----|-----------------------|-------|-----------------|-----------|-----------------------------------|---------|------|-----|
| MOUNTING: | | SURFACE | | MAIN RATING: 100A MCB | | LOCATION: ELEC RM 124 | | | | | | | |
| NEMA RATING: | | 12 | | MAIN CABLES: P110 | | MAINTENANCE BLDG | | | | | | | |
| VOLTAGE: | | 208Y/120V, 3PH, 4W | | SOURCE: 4PX6 VIA 42TX4 | | AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 15/1 | 3#12 | LAV-1 RM131 RM133 | 0.8 | | | 2 | 20/1 | 3#12 | UH-1, UH-3 (NOTE 2) | 0.72 | | |
| 3 | 20/1 | | SPARE | | | | 4 | 20/1 | 3#12 | UH-2, UH-4 (NOTE 2) | | 0.84 | |
| 5 | 20/1 | | SPARE | | | | 6 | 20/1 | | SPARE | | | |
| 7 | 15/1 | 3#12 | CP-2,TMV-2 | 2.5 | | | 8 | 20/1 | 3#12 | EF-3 | 4.4 | | |
| 9 | 15/1 | | SPARE | | | | 10 | 20/1 | | SPARE | | | |
| 11 | 15/1 | 3#12 | WWD METER | | | 0.14 | 12 | 15/1 | 3#12 | DDC RM134 | | | 5 |
| 13 | 20/1 | P119 | VTS WATER HOTBOX 1 | 1.5 | | | 14 | 15/1 | 3#12 | DDC RM120 | 5 | | |
| 15 | 20/1 | P119 | VTS WATER HOTBOX 2 | | 1.5 | | 16 | 15/1 | 3#12 | FCU-17 | | 7.2 | |
| 17 | 20/1 | 3#12 | BLDG WATER HOTBOX 1 | | | 0.75 | 18 | 15/1 | 3#12 | FCU-15 | | | 2.9 |
| 19 | 20/1 | 3#12 | BLDG WATER HOTBOX 2 | 0.75 | | | 20 | 20/1 | 3#12 | FCU-16 | 11.6 | | |
| 21 | 20/1 | | SPARE | | | | 22 | 15/1 | 3#12 | FCU-18 | | 2.9 | |
| 23 | 20/1 | | SPARE | | | | 24 | 20/1 | 3#12 | FCU-19 | | | 2.9 |
| 25 | 40/1 | 3#8 | COMPRESSOR RM135 | 24 | | | 26 | 20/1 | 3#12 | FCU-20 | 2.9 | | |
| 27 | | | SPACE | | | | 28 | 20/1 | | SPARE | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | |
| 31 | | | SPACE | | | | 32 | | | SPACE | | | |
| 33 | | | SPACE | | | | 34 | | | SPACE | | | |
| 35 | | | SPACE | | | | 36 | | | SPACE | | | |
| 37 | | | SPACE | | | | 38 | | | SPACE | | | |
| 39 | 40/2 | P118 | GENERATOR LOAD CENTER | | 25 | | 40 | | | SPACE | | | |
| 41 | | | | | | 25 | 42 | 15/1 | 3#12 | CLEAN AGENT PANEL RM 123 (NOTE 3) | | | 4 |
| TOTAL | | | | 30 | 27 | 26 | TOTAL | | | | 25 | 11 | 15 |
| NOTES: | | | | TOTAL AMPERES | | | | SUB-FEED | | | | | |
| GFI = GFI CIRCUIT BREAKER | | | | BUS A | | | | SUB-FEED CABLES | | | | | |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. | | | | BUS B | | | | | | | | | |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. | | | | BUS C | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | MAXIMUM KVA | | | | | | | | | |
| | | | | 20 | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | |
| 1. SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION. | | | | | | | | | | | | | |
| 2. PROVIDE LOCKABLE CIRCUIT BREAKER IN ACCORDANCE WITH NEC 110.25. | | | | | | | | | | | | | |
| 3. PROVIDE LISTED CIRCUIT BREAKER LOCK FOR LOCKING BREAKER-ON POSITION. | | | | | | | | | | | | | |

| PANELBOARD 2PX11 | | | |
|---------------------------|-----------|--------|---------------------------------------------|
| LOAD TYPE | CONNECTED | DEMAND | |
| LIGHTING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 0 | 0 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 7697 | 7697 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 100 | 100 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 3708 | 3708 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 720 | 720 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 1231 | 0 | COUNTED HEATING OR AC, WHICHEVER IS LARGER. |
| AC (VA) | 2604 | 2604 | DEMAND = 100% CONNECTED |
| WATER HEATING (VA) | 540 | 540 | |
| SUBTOTAL (VA) | 16600 | 15369 | |
| TOTAL (A) AT 208V | 46.08 | 42.66 | |
| 20% SPARE (VA) | | 3074 | |
| TOTAL (VA) | | 18443 | |
| TOTAL (A) AT 208V | | 51.19 | |

| OCPD SIZING | |
|---------------------------------|-------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 9621 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 675 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 0 |
| MISC. NONCONTINUOUS (VA) | 100 |
| MOTORS + 25% LARGEST MOTOR (VA) | 4428 |
| AC (VA) | 2604 |
| SPARE (VA) | 3074 |
| MIN TOTAL (VA) | 20502 |
| MIN TOTAL (A) AT 208V | 56.91 |

RFI 573 - Power for Glycol Feeders

Extend 2 circuits from panel 2PX11 and install 2 duplex receptacles in Room 120 for glycol feeders GF-1 &GF-2 per the attached markups.



70A Max Load

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| PANELBOARD 2PX12 | | | | | | | | | | | | | |
|---------------------------------------|----------|-------------------------------------|-------------------------------|----------------------------------------------------------------------|------|------------------------------------------------------------------|-------|---------|-----------|-------------------------------------|---------|------|------|
| MOUNTING: NEMA RATING: VOLTAGE: | | SURFACE 12 208Y/120V, 3PH, 4W | | MAIN RATING: 100A MCB MAIN CABLES: P112 SOURCE: 4PX2 VIA 42TX5 | | LOCATION: ELEC RM 124 MAINTENANCE BLDG A/C RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | REC - RM 121/123 | 6 | | | 2 | 20/1 | 3#12 | ELEV 2/3 PIT LTG/RECEPT | 4.02 | | |
| 3 | 20/1 | 3#12 | REC - RM 124/120 | | 7.5 | | 4 | 20/1 | 3#12 | ELEV 2/3 RM 122 LTG/RECEPT | | 2.34 | |
| 5 | 20/1 | 3#12 | REC - RM 129/128 | | | 8 | 6 | 15/1 | 3#12 | ELEV 2 CAR LT/RECEPT/FAN | | | 2.33 |
| 7 | 20/1-GFI | 3#10 | REC - VENDING MACHINES | 7 | | | 8 | 15/1 | 3#12 | ELEV 3 CAR LT/RECEPT/FAN | 2.33 | | |
| 9 | 20/1-GFI | 3#10 | REC - VENDING MACHINES | | 7 | | 10 | 20/1 | 3#12 | LTG - RM 120/121/124/125 | | 4.63 | |
| 11 | 20/1 | 3#12 | REC - RM 131/133/134/135 | | | 6 | 12 | 20/1 | 3#12 | LTG - RM 126/127/128/129 | | | 7.32 |
| 13 | 20/1 | 3#8 | RM 133 HAND DRYER | 12.5 | | | 14 | 20/1 | 3#12 | MB-INV | | 9.34 | |
| 15 | 40/1 | 2#8, 1#10 | VMS 3 | | 27 | | 16 | 20/1 | 3#12 | LTG - RM 130/131/133/134/135/132 | | 3.15 | |
| 17 | | | SPACE | | | | 18 | 20/1 | 3#12 | WATER FOUNTAIN | | | 6 |
| 19 | 20/1 | 3#8 | RM 131 HAND DRYER | 12.5 | | | 20 | 15/1 | 3#12 | ELEV 2/3 OIL HEATER | | 8.3 | |
| 21 | | | | | 26.9 | | 22 | | | SPACE | | | |
| 23 | 35/2 | P073 | IDF-13 | | | 26.9 | 24 | | | SPACE | | | |
| 25 | | | SPACE | | | | 26 | | | SPACE | | | |
| 27 | | | SPACE | | | | 28 | | | SPACE | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | |
| 31 | | | SPACE | | | | 32 | | | SPACE | | | |
| 33 | | | SPACE | | | | 34 | 15/1 | P176 | RE-ENTRY KIOSKS 1,2,3,4 | | 1.67 | |
| 35 | | | SPACE | | | | 36 | 15/1 | 3#12 | FACP (NOTE 2) | | | 0.83 |
| 37 | | | | 70 | | | 38 | | | | | 33 | |
| 39 | 100/3 | | 2PX13 400V/208V/120V SUBPANEL | | 70 | | 40 | 70/3 | P113 | 2PX13 VIA 20KVA UPS | | | 33 |
| 41 | | | | | 70 | | 42 | | | | | | 46 |
| TOTAL | | | | 38 | 68 | 39 | TOTAL | | | | 67 | 45 | 61 |

NOTES:

GFI = GFI CIRCUIT BREAKER

QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N

CONDUIT SIZE SHALL BE 3/4" U.O.N IN CONDUIT AND CABLE SCHEDULE

TOTAL AMPERES

| | |
|-------|-----|
| BUS A | 95 |
| BUS B | 113 |
| BUS C | 100 |

MAXIMUM KVA

41

SUB-FEED

SUB-FEED CABLES

| PANELBOARD 2PX12 | | |
|---------------------------|-----------|--------|
| LOAD TYPE | CONNECTED | DEMAND |
| LIGHTING (VA) | 3693 | 3693 |
| RECEPTACLE (VA) | 5840 | 5840 |
| MISC. CONTINUOUS (VA) | 22802 | 22802 |
| MISC. NONCONTINUOUS (VA) | 600 | 600 |
| MOTORS (VA) | 3000 | 3000 |
| 25% OF LARGEST MOTOR (VA) | 375 | 375 |
| HEATING (VA) | 988 | 988 |
| AC (VA) | 0 | 0 |
| WATER HEATING (VA) | 0 | 0 |
| SUBTOTAL (VA) | 27406 | 27406 |
| TOTAL (A) AT 208V | 163.89 | 163.89 |
| 20% SPARE (VA) | | 7481 |
| TOTAL (VA) | | 44887 |
| TOTAL (A) AT 208V | | 124.60 |

| OCPD SIZING | |
|---------------------------------|--------|
| 125% CONTINUOUS | 26502 |
| LIGHTING (VA) | 4617 |
| MISC. CONTINUOUS (VA) | 26502 |
| HEATING (VA) | 1245 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 5840 |
| MISC. NONCONTINUOUS (VA) | 600 |
| MOTORS + 25% LARGEST MOTOR (VA) | 3375 |
| AC (VA) | 0 |
| SPARE (VA) | 7481 |
| MIN TOTAL (VA) | 51780 |
| MIN TOTAL (A) AT 208V | 143.68 |

| PANELBOARD 2PX13 | | | | | | | | | | | | | |
|-----------------------------|---------|-----------|-----------------------------|---------|-----|---------------------------------|-------|---------|-----------|--------------------|---------|-----|-----|
| MOUNTING: SURFACE | | | MAIN RATING: 70A MCB | | | LOCATION: MAIN EQUIPMENT RM 123 | | | | | | | |
| NEMA RATING: 12 | | | MAIN CABLES: P114 | | | MAINTENANCE BLDG | | | | | | | |
| VOLTAGE: 208Y/120V, 3PH, 4W | | | SOURCE: 2PX12 VIA 20KVA UPS | | | AIC RATINGS: 10,000 | | | | | | | |
| CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | | CKT | BREAKER | WIRE SIZE | DESCRIPTION | AMPERES | | |
| | | | | A | B | C | | | | | A | B | C |
| 1 | 20/1 | 3#12 | RECEPT | 1.5 | | | 2 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 3 | 20/1 | 3#12 | RECEPT | | 1.5 | | 4 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 5 | 20/1 | 3#12 | RECEPT | | | 1.5 | 6 | 20/1 | 3#12 | RECEPT | | | 1.5 |
| 7 | 20/1 | 3#12 | RECEPT | 1.5 | | | 8 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 9 | 20/1 | 3#12 | RECEPT | | 1.5 | | 10 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 11 | 20/1 | 3#12 | RECEPT | | | 1.5 | 12 | 20/1 | 3#12 | RECEPT | | | 1.5 |
| 13 | 20/1 | 3#12 | RECEPT | 1.5 | | | 14 | 20/1 | 3#12 | RECEPT | 1.5 | | |
| 15 | 20/1 | 3#12 | RECEPT | | 1.5 | | 16 | 20/1 | 3#12 | RECEPT | | 1.5 | |
| 17 | 20/1 | 3#12 | PDC-01 | | | 16 | 18 | 20/1 | | SPARE | | | |
| 19 | 30/1 | 3#10 | RACK 123.01, PDU 1 | 12 | | | 20 | 20/1 | | SPARE | | | |
| 21 | 30/1 | 3#10 | RACK 123.01, PDU 2 | | 12 | | 22 | 30/1 | 3#10 | RACK 123.03, PDU 1 | | 12 | |
| 23 | 30/1 | 3#10 | RACK 123.02, PDU 1 | | | 12 | 24 | 30/1 | 3#10 | RACK 123.03, PDU 2 | | | 12 |
| 25 | 30/1 | 3#10 | RACK 123.02, PDU 2 | 12 | | | 26 | 20/1 | | SPARE | | | |
| 27 | 20/1 | | SPARE | | | | 28 | 20/1 | | SPARE | | | |
| 29 | | | SPACE | | | | 30 | | | SPACE | | | |
| TOTAL | | | | 29 | 17 | 31 | TOTAL | | | | 5 | 17 | 15 |

| |
|------------------------------------------------------------------|
| NOTES: |
| QUANTITY OF WIRES INCLUDE (1) EGC, U.O.N. |
| CONDUIT SIZE SHALL BE 3/4" U.O.N. IN CONDUIT AND CABLE SCHEDULE. |
| |
| |

| | |
|---------------|----|
| TOTAL AMPERES | |
| BUS A | 33 |
| BUS B | 33 |
| BUS C | 46 |

| | |
|-----------------|--|
| SUB-FEED | |
| SUB-FEED CABLES | |

| |
|-------------|
| MAXIMUM KVA |
| 17 |

- NOTES:
- SEE CONDUIT & CABLE SCHEDULES IN EB06 SERIES DWGS. FOR P### INFORMATION.
 - ROUTE CONDUITS AND CABLES TO RM123 EQUIPMENT (EQUIPMENT LAYOUT AS SHOWN ON DWG. EB12.09).

| LOAD TYPE | CONNECTED | DEMAND | |
|---------------------------|-----------|--------|-------------------------|
| LIGHTING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| RECEPTACLE (VA) | 2880 | 2880 | NEC TABLE 220.44 |
| MISC. CONTINUOUS (VA) | 10560 | 10560 | DEMAND = 100% CONNECTED |
| MISC. NONCONTINUOUS (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| MOTORS (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| 25% OF LARGEST MOTOR (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| HEATING (VA) | 0 | 0 | COUNTED HEATING OR AC, |
| AC (VA) | 0 | 0 | WHICHEVER IS LARGER. |
| WATER HEATING (VA) | 0 | 0 | DEMAND = 100% CONNECTED |
| SUBTOTAL (VA) | 13440 | 13440 | |
| TOTAL (A) AT 208V | 37.31 | 37.31 | |
| 20% SPARE (VA) | | 2688 | |
| TOTAL (VA) | | 16128 | |
| TOTAL (A) AT 208V | | 44.77 | |

| OCPD SIZING | |
|---------------------------------|-------|
| 125% CONTINUOUS | |
| LIGHTING (VA) | 0 |
| MISC. CONTINUOUS (VA) | 13200 |
| HEATING (VA) | 0 |
| WATER HEATING (VA) | 0 |
| 100% NONCONTINUOUS | |
| RECEPTACLE (VA) | 2880 |
| MISC. NONCONTINUOUS (VA) | 0 |
| MOTORS + 25% LARGEST MOTOR (VA) | 0 |
| AC (VA) | 0 |
| SPARE (VA) | 2688 |
| MIN TOTAL (VA) | 18768 |
| MIN TOTAL (A) AT 208V | 52.10 |

JACOBS



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

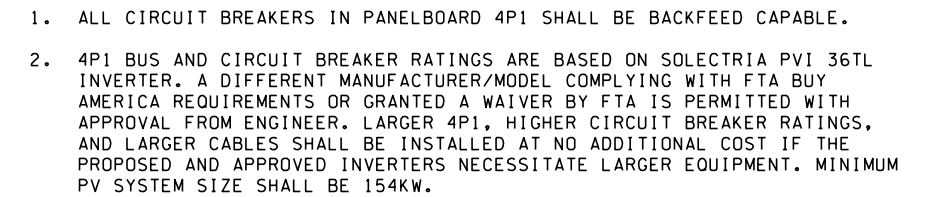


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
ELECTRICAL PANEL SCHEDULES 16

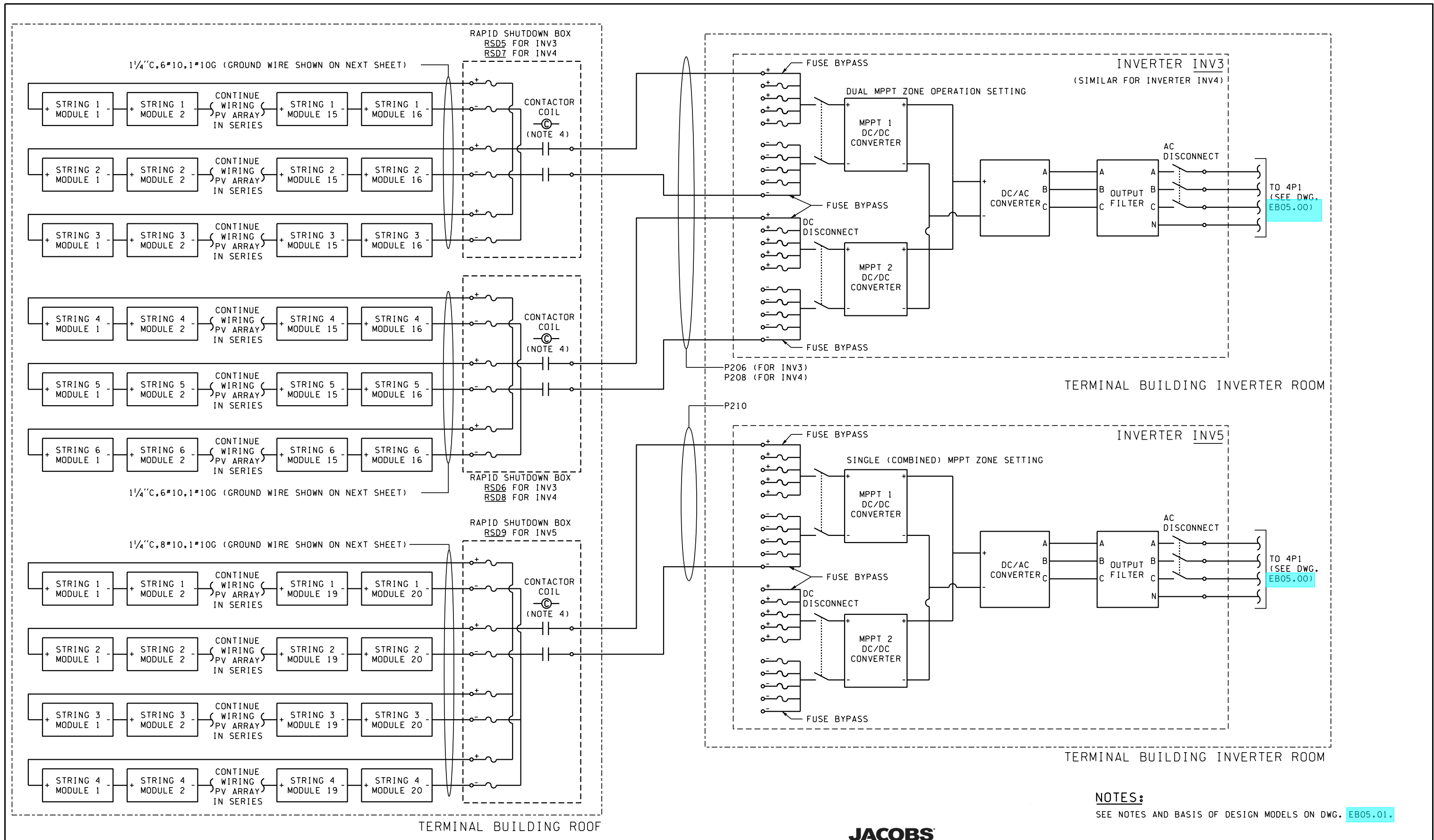
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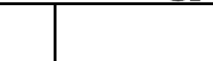
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| PRINTED: 11:59:07 AM 1/16/2019 | LAST PRINTED BY: | | | | | FED.AID PROJ.NO. | | | |
| SUBMITTAL DATE: 1/18/19 | staterj | | | | | WA-2017-007-00 | | | |
| DESIGNED BY: C. YUN | 1/18/19 | | | | | REGION NO. STATE | | | |
| ENTERED BY: C. YUN | 1/18/19 | | | | | 10 WASH | | | |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | | JOB NUMBER | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | 18W121 | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | CONTRACT NO. | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | 009321 | | | |



2 PV RAPID SHUTDOWN WIRING DIAGRAM
EB05.00 NTS



| | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|------------------|--|---------------------|--|-----------------------------------|--|--|--|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------|--|----------|
| FILE NAME: WS\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb05_01A.dwg | | | | | | | | | |  |  | Washington State Department of Transportation WASHINGTON STATE FERRIES | SR 525 | | EB05.01A |
| PRINTED: 1:30:23 PM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | MUKILTEO FERRY TERMINAL (PHASE 2) | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | s1aterj | | | | FERRY TERMINAL CONSTRUCTION | | | | | | | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | WA-2017-007-00 | | | | | | | | | | | |
| ENTERED BY: C. YUN | | 1/18/19 | | REGION NO. STATE | | | | | | | | | | | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | 10 WASH | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | JOB NUMBER | | PHOTOVOLTAIC SYSTEM | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | 18W121 | | SCHEMATIC 2 - DC | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | CONTRACT NO. | | | | | | | | | | | |
| | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | | |
| | | REVISION | | DATE BY | | | | | | | | | | | |
| | | | | 009321 | | | | | | | | | | | |

| CONDUIT NUMBER | CONDUIT SIZE | CABLE SIZE | FROM | TO | VIA | NOTES |
|----------------|--------------|--------------------------|------------------------|------------------------|-------------------|--------------------------------------------------|
| C101 | 1" | 5#10, 3#12 | 4SB1 | SNOPUD UTILITY METER | | |
| C102 | 1" | 5#10, 3#12 | 4SB1 | PV METER | | COMPLY WITH SNOPUD METERING REQUIREMENTS |
| C103 | 3/4" | 10#12 | 4SBX1 | 4PMX2 | | MB PV METER (FOR OPTION A ONLY) |
| C104 | 3/4" | 10#12 | 4SBX1 | 4PMX3 | | TOLL PLAZA METER |
| C105 | 3/4" | 10#12 | 4SBX1 | 4PMX4 | | TERMINAL BLDG METER |
| C106 | 3/4" | 10#12 | 4SBX1 | 4PMX5 | | MAINT BLDG METER |
| C107 | 3/4" | 10#12 | 4PX2 | 4PMX6 | | SITE POWER METER |
| C108 | 3/4" | CA76 | 4PM1 | WSF NETWORK (RM123) | | MB MECH METER |
| C109 | 3/4" | CA76 | 4PMX1 | WSF NETWORK (RM123) | | NOTE 3 |
| C110 | 3/4" | CA76 | 4PMX2 | WSF NETWORK (RM123) | | NOTE 3 |
| C111 | 3/4" | CA76 | 4PMX3 | WSF NETWORK (RM123) | | NOTE 3 |
| C112 | 3/4" | CA76 | 4PMX4 | WSF NETWORK (RM123) | | NOTE 3 |
| C113 | 3/4" | CA76 | 4PMX5 | WSF NETWORK (RM123) | | NOTE 3 |
| C113 | 3/4" | CA76 | 4PMX6 | WSF NETWORK (RM123) | | NOTE 3 |
| C114 | 1" | 8#12 | GENERATOR | 4ATS1 | | NOTE 3 |
| C115 | 1" | CA76 | GENERATOR | WSF NETWORK (RM123) | | |
| C116 | 1" | RESERVED | MB-LCP | V-G1 | | TO WSF NETWORK SWITCH. STUB CONDUIT UP IN RM123. |
| C117 | 2" | 30#14 | MB-LCP | RM132 | | SITE LIGHTING CONTROL |
| C118 | 3/4" | CA76 | MB-LCP | WSF NETWORK (RM123) | | SOUTH MB LTG CONTROL |
| C119 | 3/4" | CA76 | MB-INV | WSF NETWORK (RM123) | | NOTE 3 |
| C120 | 3/4" | 2#12 | GENERATOR | REMOTE GENERATOR ESTOP | | NOTE 3 |
| C121 | 1" | 5#10, 3#12 | 4PX1 | PV METER | | |
| C122 | 3/4" | 10#12 | 4PX1 | 4PMX7 | | TB PV METER OPTION B |
| C123 | 3/4" | CA76 | 4PMX7 | WSF NETWORK (RM109) | | TB MECH METER |
| C124 | 3/4" | 8#12 | 4AT1 | GROUND FAULT PANEL | | NOTE 4 |
| C125 | 3/4" | CA76 | GROUND FAULT PANEL | WSF NETWORK (RM109) | | SHORE POWER 1 |
| C126 | 3/4" | CA76 | GEN REMOTE ANNUNCIATOR | WSF NETWORK (RM109) | | NOTE 4 |
| C127 | 3/4" | CA76 | TB-LCP | WSF NETWORK (RM109) | | NOTE 4 |
| C128 | 3/4" | CA76 | TB-INV | WSF NETWORK (RM109) | | NOTE 4 |
| C151 | 1" | 12#12 | TP-LCP | CANOPY | RM150 | NOTE 4 |
| C152 | 3/4" | 4#12 | RM156 | | | TP LIGHTING CONTROL |
| C153 | 3/4" | CA76 | TP-LCP | WSF NETWORK (RM150) | | EXTERIOR WALL MOUNTED LTG CONTROL |
| C154 | 3/4" | CA76 | TP-INV | WSF NETWORK (RM150) | | NOTE 5 |
| P080 | 2 1/2" | 3#4/0, 1#4/0 | 4PX1 | 4PX4 | JB-O1 JB-O2 JB-O3 | NOTE 5 |
| P101 | (6) 4" | 5 SETS OF 4#000 | SNOPUD XFMR VAULT | 4SB1 | | ONL MAIN POWER FEED. NOTE 7 |
| P102 | (4) 5" | 4 SETS OF 4#000, 1#4/0G | GENERATOR | 4ATS1 | | WSF POWER. ONE CONDUIT IS SPARE |
| P103 | (4) 4" | 4 SETS OF 4#000, 1#4/0G | 4SB1 | 4ATS1 | PB-4SB1 PB-4ATS1 | GENERATOR POWER |
| | (2) 4" | 2 SETS OF 3#000, 1#1/0G | GENERATOR | 4PX7 | | ATS NORMAL SOURCE |
| | (4) 4" | 4 SETS OF 4#000, 1#4/0G | 4ATS1 | 4SBX1 | PB-4PX7 | LOAD BANK RECEPTACLE PANEL |
| | (3) 3" | 3 SETS OF 4#400, 1#2/0G | 4SBX1 | 4PX2 | | WSF MAIN DISTRIBUTION |
| | 1" | 4#6, 1#10G | 4SBX1 | 4PX3 | | MB MAIN 480V PANEL |
| P108 | (2) 3 1/2" | 2 SETS OF 4#500, 1#1/0G | 4PX2 | 4PX6 | | SITE POWER PANEL |
| P109 | 3/4" | 3#6, 1#10G | 4PX5 | 42TX4 | | MB MECH 480V PANEL |
| P110 | 1 1/2" | 4#1, 1#8G | 42TX4 | 2PX11 | | MB MECH XFMR |
| P111 | 1 1/2" | 3#4-1#000 3#1, 1#8G | 4PX2 | 42TX5 | | MB MECH 208/120V PANEL |
| P112 | 2 1/2" | 4#1/0-1#000 4#4/0 1#4/0G | 42TX5 | 2PX12 | | MB GENERAL XFMR |
| P113 | 1 1/4" | 4#4, 1#8G | 2PX12 | 10KVA UPS (RM123) | | MB GENERAL 208/120V PANEL |
| P114 | 1 1/4" | 4#4, 1#8G | 10KVA UPS (RM123) | 2PX13 | | RM123 UPS |
| | | | | | | RM123 UPS PANEL |

- NOTES:**
- FOR CONDUIT TAGS P0**, S0**, C0**, AND L0**, SEE UPLANDS ES10 SERIES DWGS FOR CONDUIT AND CABLE SCHEDULE. UON.
 - CAP ALL SPARE CONDUITS AT MINIMUM 1'-0" AFF UON.
 - CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN MAIN EQUIPMENT RM 123. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
 - CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN TERMINAL IT RM 109. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
 - CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN TOLL PLAZA EQUIPMENT RM 150. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
 - ROUTE AND WIRE P200 AS SHOWN ON DETAIL 2/EB05.00. SIZE CONDUIT PER NEC.
 - CABLE FOR ENTIRE CONDUIT RUN TO BE PROVIDED UNDER THIS CONTRACT. PART OF CONDUIT RUN TO BE INSTALLED IN THE MARINE STRUCTURES CONSTRUCTION CONTRACT. SEE REFERENCE DWG EP03.00 FOR PART OF CONDUIT RUN INCLUDED IN THIS CONTRACT.

Update size of P111 and P112 and the conductors

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Change Order 23
Page 10 of 12

FILE NAME: W:\MUKILTEO\14121_FerryTerminalConst\CADD\JACOBS\14121eb05_00.dwg

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| PRINTED: 1:32:30 PM 1/16/2019 | LAST PRINTED BY: |
| SUBMITTAL DATE: 1/18/19 | DESIGNED BY: C. YUN |
| ENTERED BY: C. YUN | CHECKED BY: M. BAGINSKI |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: M. MCINTOSH |
| ASST SECRETARY: A. SCARTON | CONFORMED PLANS |
| REVISION | DATE 1/18/19 |
| BY | DATE |



JACOBS

Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
CONDUIT AND CABLE SCHEDULE 1

EB06.00
SHEET
OF
SHEETS

| CONDUIT NUMBER | CONDUIT SIZE | CABLE SIZE | FROM | TO | VIA | | | | | | | NOTES |
|-------------------|-----------------|-------------------------|------------------------|------------------------|---------|----------|----------|----|----|----|----|--------------------------------------------------|
| C101 | 1" | 5#10, 3#12 | 4SB1 | SNOPUD UTILITY METER | -- | -- | -- | -- | -- | -- | -- | COMPLY WITH SNOPUD METERING REQUIREMENTS |
| C102 | 1" | 5#10, 3#12 | 4SB1 | PV METER | -- | -- | -- | -- | -- | -- | -- | MB PV METER (FOR OPTION A ONLY) |
| C103 | 3/4" | 10#12 | 4SBX1 | 4PMX2 | -- | -- | -- | -- | -- | -- | -- | TOLL PLAZA METER |
| C104 | 3/4" | 10#12 | 4SBX1 | 4PMX3 | -- | -- | -- | -- | -- | -- | -- | TERMINAL BLDG METER |
| C105 | 3/4" | 10#12 | 4SBX1 | 4PMX4 | -- | -- | -- | -- | -- | -- | -- | MAINT BLDG METER |
| C106 | 3/4" | 10#12 | 4SBX1 | 4PMX5 | -- | -- | -- | -- | -- | -- | -- | SITE POWER METER |
| C107 | 3/4" | 10#12 | 4PX2 | 4PMX6 | -- | -- | -- | -- | -- | -- | -- | MB MECH METER |
| C108 | 3/4" | CAT6 | 4PM1 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C109 | 3/4" | CAT6 | 4PMX1 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C110 | 3/4" | CAT6 | 4PMX2 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C111 | 3/4" | CAT6 | 4PMX3 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C112 | 3/4" | CAT6 | 4PMX4 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C113 | 3/4" | CAT6 | 4PMX5 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C113 | 3/4" | CAT6 | 4PMX6 | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C114 | 1" | 8#12 | GENERATOR | 4ATS1 | -- | -- | -- | -- | -- | -- | -- | |
| C115 | 1" | CAT6 | GENERATOR | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | TO WSF NETWORK SWITCH. STUB CONDUIT UP IN RM123. |
| C116 | 1" | RESERVED | MB-LCP | V-G1 | -- | -- | -- | -- | -- | -- | -- | SITE LIGHTING CONTROL |
| C117 | 2" | 30#14 | MB-LCP | RM132 | | | | | | | | SOUTH MB LTG CONTROL |
| C118 | 3/4" | CAT6 | MB-LCP | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C119 | 3/4" | CAT6 | MB-INV | WSF NETWORK (RM123) | -- | -- | -- | -- | -- | -- | -- | NOTE 3 |
| C120 | 3/4" | 2#12 | GENERATOR | REMOTE GENERATOR ESTOP | -- | -- | -- | -- | -- | -- | -- | |
| C121 | 1" | 5#10, 3#12 | 4PX1 | PV METER | -- | -- | -- | -- | -- | -- | -- | TB PV METER OPTION B |
| C122 | 3/4" | 10#12 | 4PX1 | 4PMX7 | -- | -- | -- | -- | -- | -- | -- | TB MECH METER |
| C123 | 3/4" | CAT6 | 4PMX7 | WSF NETWORK (RM109) | -- | -- | -- | -- | -- | -- | -- | NOTE 4 |
| C124 | 3/4" | 6#12 | 44T1 | GROUND FAULT PANEL | -- | -- | -- | -- | -- | -- | -- | SHORE POWER 1 |
| C125 | 3/4" | CAT6 | GROUND FAULT PANEL | WSF NETWORK (RM109) | -- | -- | -- | -- | -- | -- | -- | NOTE 4 |
| C126 | 3/4" | CAT6 | GEN REMOTE ANNUNCIATOR | WSF NETWORK (RM109) | -- | -- | -- | -- | -- | -- | -- | NOTE 4 |
| C127 | 3/4" | CAT6 | TB-LCP | WSF NETWORK (RM109) | -- | -- | -- | -- | -- | -- | -- | NOTE 4 |
| C128 | 3/4" | CAT6 | TB-INV | WSF NETWORK (RM109) | -- | -- | -- | -- | -- | -- | -- | NOTE 4 |
| C151 | 1" | 12#12 | TP-LCP | CANOPY | RM150 | -- | -- | -- | -- | -- | -- | TP LIGHTING CONTROL |
| C152 | 3/4" | 4#12 | RM156 | RM157 | -- | -- | -- | -- | -- | -- | -- | EXTERIOR WALL MOUNTED LTG CONTROL |
| C153 | 3/4" | CAT6 | TP-LCP | WSF NETWORK (RM150) | -- | -- | -- | -- | -- | -- | -- | NOTE 5 |
| C154 | 3/4" | CAT6 | TP-INV | WSF NETWORK (RM150) | -- | -- | -- | -- | -- | -- | -- | NOTE 5 |
| P080 | 2 1/2" | 3#4/0, 1#4G | 4PX1 | 4PX4 | JB-O1 | JB-O2 | JB-O3 | -- | -- | -- | -- | OHL MAIN POWER FEED. NOTE 7 |
| P101 | (6) 4" | 5 SETS OF 4#600 | SNOPUD XFMR VAULT | 4SB1 | -- | -- | -- | -- | -- | -- | -- | WSF POWER. ONE CONDUIT IS SPARE |
| P102 | (4) 5" | 4 SETS OF 4#600, 1#4/0G | GENERATOR | 4ATS1 | -- | -- | -- | -- | -- | -- | -- | GENERATOR POWER |
| P103 | (4) 4" | 4 SETS OF 4#600, 1#4/0G | 4SB1 | 4ATS1 | PB-4SB1 | PB-4SBX1 | PB-4ATS1 | -- | -- | -- | -- | ATS NORMAL SOURCE |
| P104 | (2) 4" | 2 SETS OF 3#600, 1#1/0G | GENERATOR | 4PX7 | PB-4PX7 | -- | -- | -- | -- | -- | -- | LOAD BANK RECEPTACLE PANEL |
| P105 | (4) 4" | 4 SETS OF 4#600, 1#4/0G | 4ATS1 | 4SBX1 | -- | -- | -- | -- | -- | -- | -- | WSF MAIN DISTRIBUTION |
| P106 | (3) 3" | 3 SETS OF 4#400, 1#2/0G | 4SBX1 | 4PX2 | -- | -- | -- | -- | -- | -- | -- | MB MAIN 480V PANEL |
| P107 | 1" | 4#6, 1#10G | 4SBX1 | 4PX3 | -- | -- | -- | -- | -- | -- | -- | SITE POWER PANEL |
| P108 | (2) 3 1/2" | 2 SETS OF 4#500, 1#1/0G | 4PX2 | 4PX6 | -- | -- | -- | -- | -- | -- | -- | MB MECH 480V PANEL |
| P109 | 3/4" | 3#6, 1#10G | 4PX6 | 42TX4 | -- | -- | -- | -- | -- | -- | -- | MB MECH XFMR |
| P110 | 1 1/2" | 4#1, 1#8G | 42TX4 | 2PX11 | -- | -- | -- | -- | -- | -- | -- | MB MECH 208/120V PANEL |
| P111 | 1" | 3#4, 1#8G | 4PX2 | 42TX5 | -- | -- | -- | -- | -- | -- | -- | MB GENERAL XFMR |
| P112 | 2" | 4#1/0, 1#6G | 42TX5 | 2PX12 | -- | -- | -- | -- | -- | -- | -- | MB GENERAL 208/120V PANEL |
| P113 | 1 1/4" | 4#4, 1#8G | 2PX12 | 10KVA UPS (RM123) | -- | -- | -- | -- | -- | -- | -- | RM123 UPS |
| P114 | 1 1/4" | 4#4, 1#8G | 10KVA UPS (RM123) | 2PX13 | | | | | | | | RM123 UPS PANEL |

NOTES:

1. FOR CONDUIT TAGS P0##, S0##, C0##, AND L0##, SEE UPLANDS ES10 SERIES DWGS FOR CONDUIT AND CABLE SCHEDULE, UON.
2. CAP ALL SPARE CONDUITS AT MINIMUM 1'-0" AFF UON.
3. CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN MAIN EQUIPMENT RM 123. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
4. CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN TERMINAL IT RM 109. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
5. CONDUIT ROUTING NOT SHOWN ON PLAN. ROUTE CONDUIT AND CABLE TO WSF NETWORK SWITCH IN TOLL PLAZA EQUIPMENT RM 150. SEE BUILDING COMMUNICATIONS PLANS FOR WSF NETWORK SWITCH LOCATION.
6. ROUTE AND WIRE P200 AS SHOWN ON DETAIL 2/EB05.00.
SIZE CONDUIT PER NEC.
7. CABLE FOR ENTIRE CONDUIT RUN TO BE PROVIDED UNDER THIS CONTRACT. PART OF CONDUIT RUN TO BE INSTALLED IN THE MARINE STRUCTURES CONSTRUCTION CONTRACT. SEE REFERENCE DWG EP03.00 FOR PART OF CONDUIT RUN INCLUDED IN THIS CONTRACT.

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Page 3/5

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Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
CONDUIT AND CABLE SCHEDULE 1

EB06.00

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|-----------------------------------------------------------------------------|--|------------------------------|--|-----------------|--|------------------|--|---------|--|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb06_00.dwg | | | | | | | | | |
| PRINTED: 1:32:30 PM 1/16/2019 | | LAST PRINTED BY: [signature] | | | | FED.AID PROJ.NO. | | | |
| SUBMITTAL DATE: 1/18/19 | | 1/18/19 | | | | WA-2017-007-00 | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | REGION NO. STATE | | 10 WASH | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | JOB NUMBER | | 18W121 | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | CONTRACT NO. | | 009321 | |
| MAR PROJ ENGR: C. TORRES | | | | CONFORMED PLANS | | 1/18/19 | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | REVISION | | DATE | | BY | |
| ASST SECRETARY: A. SCARTON | | | | | | | | | |

| CONDUIT NUMBER | CONDUIT SIZE | CABLE SIZE | FROM | TO | VIA | NOTES |
|----------------|--------------|------------------------------------------------|-------------------|----------------------------------|----------|-----------------------------------------------|
| P116 | 4" | 3#00, 1#2G | 4PX7 | HVY DUTY 400A RECEPTACLE 2 | PB-4PX7 | FOR LOAD BANK |
| P117 | 3" | 4#350, 1#2G | 4D1 (OPTION A) | 4SB1 | PB-4SB1 | PC AC OUTPUT (APPLIES TO OPTION A ONLY) |
| P118 | 1 1/4" | 4#8, 1#10G | 2PX11 | GEN LOAD CENTER | | GENERATOR LOAD CENTER |
| P119 | 2" | ALL CABLES IN P007, P008 | 2PX11 | JB2018 | | WATER HOT BOXES |
| P120 | 2 1/2" | 3#20, 1#4G | 4PX1 | V-G2 | PB-TD1 | VTS 1 |
| P120A | 4" | 3#20, 1#4G | V-G2 | JB-V2 | | VTS 1 |
| P120B | 2 1/2" | 3#20, 1#4G | JB-V2 | JB-IT02 | | VTS 1 |
| P121 | 1 1/2" | 4#10, 1#5G | 4PX1 | 4PX5 | | MECH 4PX5 FEEDER |
| P122 | 3/4" | 3#6, 1#10G | 4PX5 | 42TX2 | | MECH 2PX7 FEEDER |
| P123 | 1 1/2" | 4#1, 1#5G | 42TX2 | 2PX7 | | MECH 2PX7 FEEDER |
| P124 | 1 1/4" | 3#1, 1#5G | 4PX1 | 42TX3 | | 2PX8 FEEDER |
| P125 | 2 1/2" | 4#250, 1#2G | 42TX3 | 2PX8 | | 2PX9 FEEDER |
| P126 | 1 1/2" | 4#10, 1#5G | 2PX8 | 2PX8 | | RM109 UPS |
| P127 | 1 1/4" | 4#4, 1#10G | 2PX8 | 15KVA UPS (RM109) | | RM109 UPS PANEL |
| P128 | 1 1/4" | 4#4, 1#10G | 15KVA UPS (RM109) | 2PX10 | | PV AC OUTPUT |
| P129 | 3" | 4#350, 1#2G | 4P1 | 4D2 (OPTION A) OR 4D1 (OPTION B) | | PV AC OUTPUT (APPLIES TO OPTION B ONLY) |
| P130 | 3" | 4#350, 1#2G | 4D1 (OPTION B) | 4PX1 | | SHORE POWER 1 XFMR |
| P131 | 3 1/2" | 3#350, 1#4G | 4C81 | 44T1 | | SHORE POWER 1 |
| P132 | 4" | 3#350, 1#4G | 44T1 | JB-V1 | | SHORE POWER 1 |
| P132A | 3 1/2" | 3#350, 1#4G | JB-V1 | JB-IT19 | | ELEV 2/3 CAR CABLE BY MFR. PIT LTG/RECEPT |
| P133 | 4" | CAB CABLES, PIT LTG/REC | RM122 | ELEV 2/3 | JB-ELEV | ELEV 2/3 CAR CABLE BY MFR. PIT LTG/RECEPT |
| P134 | 4" | CAB CABLES, PIT LTG/REC | RM122 | ELEV 2/3 | JB-ELEV | 2PX1 STEPDOWN XFMR |
| P140 | 1 1/2" | 3#10, 1#5G | 4C81 | 42TX1 | | 2PX1 FEEDER |
| P141 | 3 1/2" | 4#500, 1#10G | 42TX1 | 2PX1 | | 2PX2 FEEDER, CONTINUED FROM P010 |
| P142 | 1 1/2" | 4#4, 1#5G | JB-TB1 | 2PX2 | | 2PX3 FEEDER, CONTINUED FROM P011 |
| P143 | 1 1/2" | 4#4, 1#5G | JB-TB2 | 2PX3 | | 2PX4 FEEDER, CONTINUED FROM P012 |
| P144 | 1 1/2" | 4#4, 1#5G | JB-TB3 | 2PX4 | | 2PX5 FEEDER, CONTINUED FROM P013 |
| P145 | 1 1/2" | 4#4, 1#5G | JB-TB4 | 2PX5 | | RM150 UPS |
| P146 | 1 1/2" | 4#4, 1#10G | 2PX1 | 15KVA UPS (RM150) | | RM150 UPS PANEL |
| P149 | 2" | 2#5, 1#5G, 2#10, 8#12 | 2PX1 | SS-1 | | SS-1 POWER |
| P151 | 1" | 4#12, 1#12G | JB-TB4 | RM 157 EQUIPMENT | | 2PX1 CIRCUITS, CONTINUED FROM P015 |
| P152 | 1" | 2#12, 1#12G | TP-RV | RM150 EM LTG, EM EXT LTG | | RM150 AND EXTERIOR EMERGENCY LIGHTS |
| P153 | 3/4" | 2#12, 1#12G | 2PX1 | RM150 RECEPT | | RM150 RECEPT |
| P154 | 1" | 3#12, 1#12G | RM156 | RM157 | | EXTERIOR WALL MOUNTED LTG |
| P170 | 3 1/2" | 3#500, 1#3G | TP-LCP | CANOPY LTG VIA RM150 | | SWITCHED/UNSWITCHED WIRES FOR CANOPY LTG |
| P171 | 2" | 2#8, 1#5G, 12#12, 6#12G | 4PX5 | HP-1 TO HP-8 | | HEAT PUMP SINGLE POINT POWER |
| P172 | 2" | 4#8, 4#10, 6#12, 2#5G, 2#10G, 3#12G, 4#1, 1#5G | 2PX11 | JB-RM132 | | 2PX11 CKTS FOR RMS 130-135 |
| P173 | 2" | 12#12, 6#12G | 2PX12 | JB-RM132 | | 2PX12 CKTS FOR RMS 130-135 |
| P174 | 3/4" | 2#12, 1#12G | MB-LCP | RM132 | | ZONE A,B,C,D,E,F POWER |
| P175 | (2) 2" | CABLES FOR P073, P176 | MB-INV | RM132 | | SOUTH MB EM LTG CKT |
| P176 | 1" | 2#12, 1#12G | 2PX12 | V-G1 | | RE-ENTRY KIOSKS, IDF-13, ONE CONDUIT IS SPARE |
| P177 | 2" | 2#12, 1#12G | 4PX5 | KIOSKS 1, 2, 3, 4 | JB-KIOSK | RE-ENTRY KIOSKS, IDF-13, ONE CONDUIT IS SPARE |
| P200 | NOTE 6 | 2#12, 1#12G | 2PX5 | JB-RM132 | | 4PX5 CKTS FOR RMS 130-135 |
| P201 | 1" | 4#6, 1#10G | RSD1 TO RSD6 | | | RAPID SHUTDOWN CONTROL POWER |
| P202 | 1 1/2" | 4#4, 1#4G | INV1 | 4P1 | | INVERTER 1 OUTPUT |
| S101 | 2" | CO | INV1 | PB-RV1 | | COMBINED PV SOURCE CIRCUITS |
| S102 | 2" | CO | MB ELEC RM | V-G1 | | SPARE |
| | | | 4PX3 | V-G1 | | SPARE |

NOTES:

SEE NOTES ON DWG. EB06.00.

Add conductors to P172

Contract 9321
Change Order 23
Page 11 of 12

FILE NAME: W:\06\11\10\14\121.FerryTermConst\CA00\JAC08\14w12eb06_01.dwg

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| PRINTED: 1/33/17 PM 1/16/2019 | LAST PRINTED BY: | FED. AID PROJ. NO. |
| SUBMITTAL DATE: 1/18/19 | | VA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | REGION, STATE |
| ENTERED BY: C. YUN | 1/18/19 | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | CONTRACT NO. |
| DIR PROJ ENGR: C. TORRES | | 009321 |
| DIR TERM ENGR: N. MCINTOSH | | |
| ASST SECRETARY: A. SCARTON | | |
| CONFORMED PLANS | 1/18/19 | DATE BY |
| REVISION | | |



7/31/19

JACOBS

Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
CONDUIT AND CABLE SCHEDULE 2

EB06.01

SHEET

OF

SHEETS

| CONDUIT NUMBER | CONDUIT SIZE | CABLE SIZE | FROM | TO | VIA | | | | | | | | NOTES |
|-------------------|-----------------|------------|----------|---------------------|--------|---|---|---|---|---|---|---|-----------------------------|
| C129 | 3/4" | CA16 | INV1 | WSF NETWORK (RM109) | - | - | - | - | - | - | - | - | NOTE 4 |
| C130 | 3/4" | CA16 | INV2 | WSF NETWORK (RM109) | - | - | - | - | - | - | - | - | NOTE 4 |
| C131 | 3/4" | CA16 | INV3 | WSF NETWORK (RM109) | - | - | - | - | - | - | - | - | NOTE 4 |
| C132 | 3/4" | CA16 | INV4 | WSF NETWORK (RM109) | - | - | - | - | - | - | - | - | NOTE 4 |
| C133 | 3/4" | CA16 | INV5 | WSF NETWORK (RM109) | - | - | - | - | - | - | - | - | NOTE 4 |
| P203 | 1" | 4R6, 1810G | INV2 | 4P1 | - | - | - | - | - | - | - | - | NOTE 4 |
| P204 | 1 1/2" | 4R4, 184G | INV2 | PB-INV2 | PV-RSD | - | - | - | - | - | - | - | INVERTER 2 OUTPUT |
| P205 | 1" | 4R6, 1810G | INV3 | 4P1 | - | - | - | - | - | - | - | - | COMBINED PV SOURCE CIRCUITS |
| P206 | 1 1/2" | 4R4, 184G | INV3 | PB-INV3 | PV-RSD | - | - | - | - | - | - | - | INVERTER 3 OUTPUT |
| P207 | 1" | 4R6, 1810G | INV4 | 4P1 | - | - | - | - | - | - | - | - | COMBINED PV SOURCE CIRCUITS |
| P208 | 1 1/2" | 4R4, 184G | INV4 | PB-INV4 | PV-RSD | - | - | - | - | - | - | - | INVERTER 4 OUTPUT |
| P209 | 1" | 4R6, 1810G | INV5 | 4P1 | - | - | - | - | - | - | - | - | COMBINED PV SOURCE CIRCUITS |
| P210 | 1 1/2" | 2R2, 182G | INV5 | PB-INV5 | PV-RSD | - | - | - | - | - | - | - | INVERTER 5 OUTPUT |
| P178 | 1 1/2" | 4R3, 188G | JB-RM132 | 2PX14 | - | - | - | - | - | - | - | - | COMBINED PV SOURCE CIRCUITS |
| C160 | 3/4" | 10R12 | 4PX12 | 4PMX7 | - | - | - | - | - | - | - | - | FOOD VENDOR SUBPANEL |
| | | | | | | | | | | | | | FOOD VENDOR METER |

NOTES:

SEE NOTES ON DWG. EB06.00.

FILE NAME: WSF\14w11100\14w121_FerryTermConst\CADD\JACOBS\14w121eb06_02.dwg

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| PRINTED: 1:34:47 PM 1/16/2019 | LIST PRINTED BY: | FED.AID PROJ. NO. |
| SUBMITTAL DATE: 1/18/19 | DATE: | WA-2017-007-DC |
| DESIGNED BY: C. YUN | 1/18/19 | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | JOB NUMBER 18W121 |
| MAR PROJ ENGR: C. TORRES | | CONTRACT NO. 009321 |
| DJR TERM ENGR: N. MCINTOSH | | |
| ASST SECRETARY: A. SCARTON | | |

CONFORMED PLANS
REVISION

1/18/19
DATE BY



7/31/19

JACOBS



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
BUILDING
CONDUIT AND CABLE SCHEDULE 3

EB06.02

SHEET

OF

SHEETS

| LUMINAIRE SCHEDULE | | | | | | | | | | | |
|--------------------|------------------------------------------------------------|-----------------------------------------------------------|-----------------------|-----------------------|----------------|---------------|-------------------|------------|----------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE | BASIS OF DESIGN MANUFACTURER/SERIES | ALTERNATIVES | HOUSING | FINISH | INPUT WATTS | LIGHT TYPE | NOMINAL LUMENS | OPTICS | SHIELDING | MOUNTING | NUMBERED NOTES |
| A | V2-QUBE 300LX SCONCE | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 15 | LED | 2000 | 60 DEG. | DIFFUSION LENS | SURFACE, WALL | 1, 2, 6, 8, 9; MOUNT BOTTOM OF FIXTURE AT 7'-8" AFF. |
| RFI 127 | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 7 | LED | 1000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 2, 6, 8, 9; MOUNT FIXTURE TIGHT TO CEILING. |
| C | IO LIGHTING-LUXRAIL | WAGNER-LUMENRAIL, INTENSE LIGHTING-VRAIL | HANDRAIL OR GUARDRAIL | SATIN STAINLESS STEEL | 6/LF | LED | 180/LF | ASYMMETRIC | | RECESSED, RAIL | 4, 6, 8; ARCHITECT TO CONFIRM HOUSING MATERIAL & DIAMETER OF HANDRAIL. REFERENCE HANDRAIL SPECIFICATION SECTION 05 52 00; HDRL-4. 1, 3, 7; PROVIDE REMOTE TRANSFORMER(S) AS REQUIRED. |
| E | BK LIGHTING-DELTA STAR | HK ZX16, LUMIERE-CAMBRIA | ALUMINUM | SATIN BLACK | 7 | LED | 500 | 36" FL | SOFT FOCUS LENS, HONEYCOMB Baffle | SURFACE, CEILING | 1, 3, 7, 8; PROVIDE (4) 48" LENGTHS/RUN. PROVIDE FEED THROUGH WIRING. |
| F | ELLIPTIPAR-S171 | AMETRIX-ROUNDEL, LUMINI-TEAVA | ALUMINUM | SEMI-GLOSS BLACK | 24/LF | LED | 1180/LF | ASYMMETRIC | CUT OFF VISOR WITH FEED THROUGH WIRING | SURFACE, WALL | 1, 3, 8; MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF BEAMS SO FIXTURE DOES NOT DROP BELOW. |
| G | V2-CORE 200LX PENDANT | INDY-LC4, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 15 | LED | 2000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 4, 8; PROVIDE MOUNTING TRAY, PROVIDE MOUNTING CLIPS AS RECOMMENDED BY MANUFACTURER |
| H | QTRAN IQ20 3.2 VEE EXTRUSION | ILLUMINII LL-ALU45 | ALUMINUM | SATIN ALUMINUM | 4/LF | LED | 267/LF | 125 DEG. | DIFFUSE LENS | SURFACE, DISPLAY BOX | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR |
| J | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 8 | LED | 800 | | | RECESSED, CEILING | 3; PROVIDE LENGTHS AS SHOWN ON DWG. |
| K | LUMENVERX VIA3 PERIMETER, SHALLOW | GAMMALUX GPRD5, FOCAL POINT FWSL | ALUMINUM | MATTE WHITE | 6/LF | LED | 500/LF | LAMBERTIAN | HIGH EFFICIENCY OPTIC | RECESSED, CEILING | 3 |
| L | FOCAL POINT EQUATION 1X4 | PINNACLE CONVERJ, LEDALITE VERSAFORM | STEEL | MATTE SATIN WHITE | 43 | LED | 4000 | SYMMETRIC | MICROGLOW PRISMATIC LENS | SURFACE, CEILING | 1, 3; ALIGN TOP OF FIXTURE WITH TOP OF TILE WALL FINISH |
| M | LUMENVERX VIA3 WALL | LEDALITE TRU-GROOVE, PRUDENTIAL BIO2 | ALUMINUM | MATTE BLACK | 5/LF | LED | 500/LF | SYMMETRIC | HIGH EFFICIENCY OPTIC | SURFACE, WALL | 1, 2, 8; MOUNT VERTICALLY BETWEEN MIRRORS |
| N | PHILIPS DAYBRITE-TABLEAU, 2' | AXIS LIGHTING-PRIME LED PRW | ALUMINUM | BRUSHED ALUMINUM | 15 | LED | 1500 | SYMMETRIC | FROSTED ACRYLIC LENS | SURFACE, WALL | 1, 2, 8; MOUNT HORIZONTALLY, 3" ABOVE MIRROR |
| P | PHILIPS DAYBRITE-TABLEAU, 2' | AXIS LIGHTING-PRIME LED PRW | ALUMINUM | BRUSHED ALUMINUM | 15 | LED | 1500 | SYMMETRIC | FROSTED ACRYLIC LENS | SURFACE, WALL | 1, 3, 8; MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF METAL TRELLIS |
| R | V2-CORE 200SX PENDANT | INDY-LC4, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 8 | LED | 950 | 60 DEG. | DIFFUSION LENS | PENDANT, CABLE | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR, PAINT FLANGE TRIM IN FIELD-SEE ARCHITECTURAL FINISH PNT-5. |
| S | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 8 | LED | 800 | | | RECESSED, CEILING | 1, 2, 6 |
| U | V2-CORE 200LX SCONCE | INDY LC4, GOTHAM-INCITO SCONCE | ALUMINUM | TEXTURED MATTE BLACK | 5 | LED | 700 | 60 DEG. | DIFFUSION LENS | SURFACE, WALL | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. TERMINAL BUILDING: MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. TOLL PLAZA: MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF BEAM. |
| V | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 10 | LED | 1300 | 51 DEG. | | PENDANT, STEM | 3, 6; DEAD FRONT TRIM FOR SHOWER LOCATION |
| W | HALO TL422PS/EL406930/ H457TATE010 | | STEEL | WHITE | 13 | LED | 750 | | POLYMER PRISMATIC LENS | RECESSED, CEILING | 2; MOUNT BOTTOM OF FIXTURE AT 10'-0" AFF MOUNT BELOW EQUIPMENT AS REQUIRED PROVIDE CHAIN HANGER ASSEMBLY |
| X | COLUMBIA-LCL | METALUX-SNLED LENSED, LITHONIA-ZL1D | STEEL | --- | 48/4FT | LED | 5000 | | FROSTED ACRYLIC LENS | PENDANT, CHAIN HUNG | 2; MOUNT BOTTOM OF FIXTURE AT 10'-0" AFF PROVIDE CHAIN HANGER ASSEMBLY |
| Y | COLUMBIA-LCL | METALUX-SNLED LENSED, LITHONIA-ZL1D | STEEL | --- | 55/4FT | LED | 6100 | | FROSTED ACRYLIC LENS | PENDANT, CHAIN HUNG | 2, 6 |
| Z | PHILIPS DAYBRITE-VAPORLUME LED V2 | COLUMBIA LXEM | FIBERGLASS/ POLYESTER | --- | 32 | LED 3500K | 3500 | | ENHANCED LED ACRYLIC | SURFACE, WALL | 2, 6; MOUNT VERTICALLY TO AVOID GUIDE RAILS AND LADDER |
| AA | PHILIPS DAYBRITE VAPORLUME LED DW, 2FT | COLUMBIA LXEM | FIBERGLASS/ POLYESTER | --- | 26 | LED 3500K | 3500 | | ENHANCED LED ACRYLIC | SURFACE, WALL | 1, 2, 6 |
| BB | BEGA-3238LED | LIGMAN UGI-31611, PHILIPS-STONCO LPW7 | ALUMINUM | BLACK | 32 | LED | 1240 | ASYMMETRIC | SAFETY GLASS WITH OPTICAL TEXTURE | SURFACE, WALL | 1, 2, 6, 7; PROVIDE CAP E AND POWER CANOPY |
| CC | BK LIGHTING-DENALI | LIGMAN ODESSA | ALUMINUM | SATIN BLACK | 29 | LED | | 20 DEG. | HONEYCOMB LOUVER | SURFACE, CEILING | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. |
| DD | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 26 | LED | 3000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. |
| EE | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 10 | LED | 1300 | 83 DEG. | DIFFUSION LENS | PENDANT, STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. |
| FF | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 35 | LED | 4000 | 25 DEG. | DIFFUSION LENS | PENDANT, STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. |
| JJ | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 13 | LED | 1300 | | | RECESSED, CEILING | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR |
| XC | LITHONIA/EDG W1RW | DUAL LITE/SESRW, COOPER/ES61SWHRWC | ALUMINUM | | 5 | LED | | | | SURFACE, CEILING | 1; PROVIDE ARROW OPTION AS SHOWN ON PLAN |
| XW | LITHONIA/EDG W1RW OR W2RW (WHERE 2-SIDED IS SHOWN ON PLAN) | DUAL LITE/SESRW OR SEDRW, COOPER/ES61SWHRWW OR ES62SWHRWW | ALUMINUM | | 5 | LED | | | | SURFACE, WALL | 1; PROVIDE ARROW OPTION AS SHOWN ON PLAN |

- NUMBERED NOTES:**
1. FINISH TO BE SELECTED FROM MANUFACTURER'S STANDARD OFFERING.
 2. INTEGRAL LED DRIVER.
 3. INTEGRAL LED DIMMING DRIVER.
 4. REMOTE LED DIMMING DRIVER.
 5. UL LISTED FOR DAMP LOCATION.
 6. UL LISTED FOR WET LOCATION.
 7. FIXTURE TYPE REQUIRES AIMING IN FIELD. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
 8. REFER TO ARCHITECTURAL DWGS. FOR MOUNTING DETAILS.
 9. FIXTURE TYPES A, B, V, DD, EE, & FF TO BE PROVIDED BY THE SAME MANUFACTURER.

- NOTES:**
- A. PROVIDE 3000K CCT U.O.N.
 - B. MOUNTING HEIGHTS ARE MEASURED FROM BOTTOM OF LIGHTING FIXTURE TO FINISHED FLOOR/GRADE.
 - C. PROVIDE 80+ CRI U.O.N.
 - D. FOR REVIEW AND APPROVAL OF ALTERNATIVE LIGHTING FIXTURES, SUBMIT LIGHTING CALCULATIONS IN ACCORDANCE WITH WSF TERMINAL DESIGN MANUAL AND IES LIGHTING HANDBOOK 10TH EDITION.

FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\ 14w121eb07_00.dwg

PRINTED: 1:41:36 PM 1/16/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

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LAST PRINTED BY: staterj

1/18/19

1/18/19

1/18/19

CONFORMED PLANS

REVISION

1/18/19

DATE

BY

FED.AID PROJ.NO.

WA-2017-007-00

REGION NO. STATE

10 WASH

JOB NUMBER

18W121

CONTRACT NO.

009321

Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

BUILDING
LUMINAIRE SCHEDULE

EB07.00

SHEET 1256 OF 1521 SHEETS

| LUMINAIRE SCHEDULE | | | | | | | | | | | |
|---------------------------------|------------------------------------------------------------|-----------------------------------------------------------|-----------------------|-----------------------|----------------|---------------|-------------------|------------|----------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE | BASIS OF DESIGN MANUFACTURER/SERIES | ALTERNATIVES | HOUSING | FINISH | INPUT WATTS | LIGHT TYPE | NOMINAL LUMENS | OPTICS | SHIELDING | MOUNTING | NUMBERED NOTES |
| A | V2-QUBE 300LX SCONCE | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 15 | LED | 2000 | 60 DEG. | DIFFUSION LENS | SURFACE, WALL | 1, 2, 6, 8, 9; MOUNT BOTTOM OF FIXTURE AT 7-8" AFF. |
| RFI 127 - V2-CORE 400LX PENDANT | | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 7 | LED | 1000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 2, 6, 8, 9; MOUNT FIXTURE TIGHT TO CEILING. |
| C | IO LIGHTING-LUXRAIL | WAGNER-LUMENRAIL, INTENSE LIGHTING-VRAIL | HANDRAIL OR GUARDRAIL | SATIN STAINLESS STEEL | 6/LF | LED | 180/LF | ASYMMETRIC | | RECESSED, RAIL | 4, 6, 8; ARCHITECT TO CONFIRM HOUSING MATERIAL & DIAMETER OF HANDRAIL. REFERENCE HANDRAIL SPECIFICATION SECTION 05 52 00; HDRL-4. 1, 3, 7; PROVIDE REMOTE TRANSFORMER(S) AS REQUIRED. |
| E | BK LIGHTING-DELTA STAR | HK ZX16, LUMIERE-CAMBRIA | ALUMINUM | SATIN BLACK | 7 | LED | 500 | 36° FL | SOFT FOCUS LENS, HONEYCOMB Baffle | SURFACE, CEILING | 1, 3, 7, 8; PROVIDE (4) 48" LENGTHS/RUN. PROVIDE FEED THROUGH WIRING. |
| F | ELLIPTIPAR-S171 | AMETRIX-ROUNDEL, LUMINI-TEAVA | ALUMINUM | SEMI-GLOSS BLACK | 24/LF | LED | 1180/LF | ASYMMETRIC | CUT OFF VISOR WITH FEED THROUGH WIRING | SURFACE, WALL | 1, 3, 8; MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF BEAMS SO FIXTURE DOES NOT DROP BELOW. |
| G | V2-CORE 200LX PENDANT | INDY-LC4, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 15 | LED | 2000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 4, 8; PROVIDE MOUNTING TRAY, PROVIDE MOUNTING CLIPS AS RECOMMENDED BY MANUFACTURER |
| H | QTRAN IQ20 3.2 VEE EXTRUSION | ILLUMINII LL-ALU45 | ALUMINUM | SATIN ALUMINUM | 4/LF | LED | 267/LF | 125 DEG. | DIFFUSE LENS | SURFACE, DISPLAY BOX | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR |
| J | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 8 | LED | 800 | | | RECESSED, CEILING | 3; PROVIDE LENGTHS AS SHOWN ON DWG. |
| K | LUMENVERX VIA3 PERIMETER, SHALLOW | GAMMALUX GPRD5, FOCAL POINT FWSL | ALUMINUM | MATTE WHITE | 6/LF | LED | 500/LF | LAMBERTIAN | HIGH EFFICIENCY OPTIC | RECESSED, CEILING | 3 |
| L | FOCAL POINT EQUATION 1X4 | PINNACLE CONVERJ, LEDALITE VERSAFORM | STEEL | MATTE SATIN WHITE | 43 | LED | 4000 | SYMMETRIC | MICROGLOW PRISMATIC LENS | SURFACE, CEILING | 1, 3; ALIGN TOP OF FIXTURE WITH TOP OF TILE WALL FINISH |
| M | LUMENVERX VIA3 WALL | LEDALITE TRU-GROOVE, PRUDENTIAL BIO2 | ALUMINUM | MATTE BLACK | 5/LF | LED | 500/LF | SYMMETRIC | HIGH EFFICIENCY OPTIC | SURFACE, WALL | 1, 2, 8; MOUNT VERTICALLY BETWEEN MIRRORS |
| N | PHILIPS DAYBRITE-TABLEAU, 2' | AXIS LIGHTING-PRIME LED PRW | ALUMINUM | BRUSHED ALUMINUM | 15 | LED | 1500 | SYMMETRIC | FROSTED ACRYLIC LENS | SURFACE, WALL | 1, 2, 8; MOUNT HORIZONTALLY, 3" ABOVE MIRROR |
| P | PHILIPS DAYBRITE-TABLEAU, 2' | AXIS LIGHTING-PRIME LED PRW | ALUMINUM | BRUSHED ALUMINUM | 15 | LED | 1500 | SYMMETRIC | FROSTED ACRYLIC LENS | SURFACE, WALL | 1, 3, 8; MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF METAL TRELLIS |
| R | V2-CORE 200SX PENDANT | INDY-LC4, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 8 | LED | 950 | 60 DEG. | DIFFUSION LENS | PENDANT, CABLE | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR, PAINT FLANGE TRIM IN FIELD-SEE ARCHITECTURAL FINISH PNT-5. |
| S | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 8 | LED | 800 | | | RECESSED, CEILING | 1, 2, 6 |
| U | V2-CORE 200LX SCONCE | INDY LC4, GOTHAM-INCITO SCONCE | ALUMINUM | TEXTURED MATTE BLACK | 5 | LED | 700 | 60 DEG. | DIFFUSION LENS | SURFACE, WALL | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. TERMINAL BUILDING: MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. TOLL PLAZA: MOUNT BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF BEAM. |
| V | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 10 | LED | 1300 | 51 DEG. | | PENDANT, STEM | 3, 6; DEAD FRONT TRIM FOR SHOWER LOCATION |
| W | HALO TL422PS/EL406930/ H457TATE010 | | STEEL | WHITE | 13 | LED | 750 | | POLYMER PRISMATIC LENS | RECESSED, CEILING | 2; MOUNT BOTTOM OF FIXTURE AT 10'-0" AFF MOUNT BELOW EQUIPMENT AS REQUIRED PROVIDE CHAIN HANGER ASSEMBLY |
| X | COLUMBIA-LCL | METALUX-SNLED LENSED, LITHONIA-ZL1D | STEEL | --- | 48/4FT | LED | 5000 | | FROSTED ACRYLIC LENS | PENDANT, CHAIN HUNG | 2; MOUNT BOTTOM OF FIXTURE AT 10'-0" AFF PROVIDE CHAIN HANGER ASSEMBLY |
| Y | COLUMBIA-LCL | METALUX-SNLED LENSED, LITHONIA-ZL1D | STEEL | --- | 55/4FT | LED | 6100 | | FROSTED ACRYLIC LENS | PENDANT, CHAIN HUNG | 2, 6 |
| Z | PHILIPS DAYBRITE-VAPORLUME LED V2 | COLUMBIA LXEM | FIBERGLASS/ POLYESTER | --- | 32 | LED 3500K | 3500 | | ENHANCED LED ACRYLIC | SURFACE, WALL | 2, 6; MOUNT VERTICALLY TO AVOID GUIDE RAILS AND LADDER |
| AA | PHILIPS DAYBRITE VAPORLUME LED DW, 2FT | COLUMBIA LXEM | FIBERGLASS/ POLYESTER | --- | 26 | LED 3500K | 3500 | | ENHANCED LED ACRYLIC | SURFACE, WALL | 1, 2, 6 |
| BB | BEGA-3238LED | LIGMAN UGI-31611, PHILIPS-STONCO LPW7 | ALUMINUM | BLACK | 32 | LED | 1240 | ASYMMETRIC | SAFETY GLASS WITH OPTICAL TEXTURE | SURFACE, WALL | 1, 2, 6, 7; PROVIDE CAP E AND POWER CANOPY |
| CC | BK LIGHTING-DENALI | LIGMAN ODESSA | ALUMINUM | SATIN BLACK | 29 | LED | | 20 DEG. | HONEYCOMB LOUVER | SURFACE, CEILING | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. |
| DD | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 26 | LED | 3000 | 40 DEG. | DIFFUSION LENS | PENDANT, SWIVEL STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. |
| EE | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 10 | LED | 1300 | 83 DEG. | DIFFUSION LENS | PENDANT, STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. |
| FF | V2-CORE 400LX PENDANT | INDY-LC6, GOTHAM-INCITO CYLINDER | ALUMINUM | TEXTURED MATTE BLACK | 35 | LED | 4000 | 25 DEG. | DIFFUSION LENS | PENDANT, STEM | 1, 2, 6, 9; PROVIDE REFLECTOR WITH SATIN FINISH. MOUNT BOTTOM OF FIXTURE TO ALIGN WITH CEILING PANEL SYSTEM. |
| JJ | INDY-L4 | PORTFOLIO-LD4, CREE-ESSENTIA ESA ADR | STEEL | WHITE FLANGE | 13 | LED | 1300 | | | RECESSED, CEILING | 3; PROVIDE CLEAR DIFFUSE PARABOLIC REFLECTOR |
| XC | LITHONIA/EDG W1RW | DUAL LITE/SESRW, COOPER/ES61SWHRWC | ALUMINUM | | 5 | LED | | | | SURFACE, CEILING | 1; PROVIDE ARROW OPTION AS SHOWN ON PLAN |
| XW | LITHONIA/EDG W1RW OR W2RW (WHERE 2-SIDED IS SHOWN ON PLAN) | DUAL LITE/SESRW OR SEDRW, COOPER/ES61SWHRWW OR ES62SWHRWW | ALUMINUM | | 5 | LED | | | | SURFACE, WALL | 1; PROVIDE ARROW OPTION AS SHOWN ON PLAN |

FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\ 14w121eb07_00.dlv

PRINTED: 1:41:36 PM 1/16/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

ENTERED BY: C. YUN

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LAST PRINTED BY: stoterj

1/18/19

1/18/19

1/18/19

CONFORMED PLANS

REVISION

1/18/19

DATE

BY

FED.AID PROJ.NO.

WA-2017-007-00

REGION NO. STATE

10 WASH

JOB NUMBER

18W121

CONTRACT NO.

009321

1/18/19

JACOBS

Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

BUILDING
LUMINAIRE SCHEDULE

EB07.00

SHEET
1256
OF
1521
SHEETS

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9

1. FINISH TO BE SELECTED FROM MANUFACTURER'S STANDARD OFFERING.

2. INTEGRAL LED DRIVER.

3. INTEGRAL LED DIMMING DRIVER.

4. REMOTE LED DIMMING DRIVER.

5. UL LISTED FOR DAMP LOCATION.

6. UL LISTED FOR WET LOCATION.

7. FIXTURE TYPE REQUIRES AIMING IN FIELD. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

8. REFER TO ARCHITECTURAL DWGS. FOR MOUNTING DETAILS.

9. FIXTURE TYPES A, B, V, DD, EE, & FF TO BE PROVIDED BY THE SAME MANUFACTURER.

RFI 127 - Additional Guardrail Questions

Sheets A04.11, A06.17 and A06.18 have been revised as part of the response to this RFI.

1. See 1/SB06.09

2. Center to center dimensions between guardrail knife plates at OHL should be 16'-3". OHL is 14'-10" wide and per detail 5/A06.17 plate is 8 1/2" from edge of OHL. However, detail 5/A06.17 needs to be revised since a knife plate can not be attached to the edge of the OHL threshold. Please send new RFI to track that revision.

3. HDRL-2 is the top pipe in the GDR-1 assembly. It should be nominal 2 1/2" Stainless Steel pipe ASTM A312/A312M, grade TP316L, schedule 40, no. 4 bright directional finish (not painted with HPC). HDRL-2 is welded to a 2" wide stainless steel plate/bar that is then bolted to the guardrail assembly.

4. HDRL-4 is a stainless steel handrail with integrated lighting - see fixture type C in the luminaire schedule on EB07.00 and lighting plans EB08.01, 08.02 and 08.03. Coordinate handrail bracket with fixture and conduit location. Design intent is for bracket to weld to the bottom of the SST bar that supports HNDRL-2. The proposed detail in this RFI is not acceptable. HDRL-2 and HDRL-4 and the bracket for HDRL-4 and the SST bar (2"x8"x1" thick) that supports HDRL-2 (detail 4/A06.18) are the exception to the exposed metal receiving HPC-1 - these elements should remain unpainted no. 4 finish stainless steel.

5. Guardrails must meet code and be min 42" above finished floor. Increase height of guardrail infill panel frame from 2'-8 3/4" to 2'-9" to increase overall height of GDR-1 in detail 3/A06.17 and from 2'-6" to 2'-9" in detail 2/A06.18, with the gap between the top of channel at slab edge and the infill panel reduced to 2 3/4" from 3 1/2". This will create consistently sized infill panels.

6. The connection plates for the DBR at bottom and sst HNDRL-2 support at top are to be installed in accordance with the RFI and 1" thick at stairs and at level 2.

LIGHTING CONTROL STRATEGY

| | | | PHOTOCELL (EXTERIOR)/ DAYLIGHT SENSOR (INTERIOR) | PROGRAMMIN G CAPABILITY | OCCUPANCY SENSOR | VACANCY SENSOR | MOTION SENSOR | LOCAL WALL SWITCH | NOTES |
|----------|-----------------------------------------------------------------------|---|--------------------------------------------------------------|----------------------------|---------------------|-------------------|------------------|-------------------------|--------|
| TERMINAL | RM 101 SPRINKLER | | | | | | | X | 1 |
| | RM 102 ELEV EQUIP 1 | | | | | | | X | 1 |
| | RM 103 MECH | | | | | | | X | 2 |
| | RM 104 ELEC | | | | | | | X | 1 |
| | RM 105/106/108/110 BREAKROOM/LOCKERS/VEHICLE ATTENDANT/CORRIDOR | | X | | X | | | X | 10, 12 |
| | RM 107/107B TOILET/SHOWER | | | | X | | | X | 5, 11 |
| | RM 109 IT | | | | | | | X | 1 |
| | RM 111 TOILET | | | | X | | | X | 4, 11 |
| | RM 112 SELLER SAFE | | | | | X | | X | 3 |
| | RM 113 SUPERVISOR'S ACCOUNTING RM | | | | | X | | X | 3 |
| | RM 114 WSP | | | | | X | | X | 3 |
| | RM 115 CONFERENCE | | | | | X | | X | 7 |
| | RM 116 CORRIDOR | | | | X | | | X | 5, 11 |
| | RM 117 SUPERVISOR | | | | | X | | X | 8 |
| | RM 118 VESSEL STOR | | | | | X | | X | 3 |
| | RM 201 GREAT HALL | X | X | X | | | | X | 13 |
| | RM 202 INVERTERS | | | | | | | X | 1 |
| | RM 203 CORRIDOR | | | | X | | | X | 5, 11 |
| | RM 204 JANITOR CLOSET | | | | | X | | X | 3 |
| | RM 205 MEN RESTROOM | | X | | X | | | X | 5, 11 |
| | RM 206 WOMEN RESTROOM | | X | | X | | | X | 5, 11 |
| | RM 207 CART | | | | | X | | X | 3 |
| | RM 208 STORAGE | | | | | X | | X | 3 |
| | RM 209 VENDING | X | X | X | | | | X | 13 |
| | RM 210 TICKET SALES | | | | | X | | X | 6 |
| | RM 211 LOST FOUND | | | | | X | | X | 3 |
| | RM 212 ELEC | | | | | | | X | 1 |
| | RM 213 CORRIDOR | | | | X | | | X | 5, 11 |
| | RM 214 STORAGE | | | | | X | | X | 3 |
| | ELEVATOR PIT | | | | | | | X | 1 |
| | EXTERIOR LIGHTING | X | X | X | | | X | X | 14 |

| | | | PHOTOCELL (EXTERIOR)/ DAYLIGHT SENSOR (INTERIOR) | PROGRAMMIN G CAPABILITY | OCCUPANCY SENSOR | VACANCY SENSOR | MOTION SENSOR | LOCAL WALL SWITCH | NOTES |
|-------------|---------------------------------------|---|--------------------------------------------------------------|----------------------------|---------------------|-------------------|------------------|-------------------------|--------|
| MAINTENANCE | RM 120 MECH EQUIP | | | | | | | X | 1 |
| | RM 121 VENDOR EQUIPMENT RM | | | | | X | | X | 3 |
| | RM 122 ELEVATOR EQUIPMENT | | | | | | | X | 1 |
| | RM 123 MAIN EQUIPMENT RM | | | | | | | X | 1 |
| | RM 124 ELECTRICAL RM | | | | | | | X | 2 |
| | RM 125 MAINT STORAGE | | | | | X | | X | 3 |
| | RM 126 COVERED CART & BULL STORAGE | | | | | X | | X | 16 |
| | RM 127 TRANSFORMER | | X | | | | | X | 9 |
| | RM 128 MECHANICAL | | | | | | | X | 1 |
| | RM 129 GENERATOR | | | | | | | X | 1 |
| | RM 130 VENDING | X | X | X | X | | | X | 18 |
| | RM 131 MENS RESTROOM | X | X | X | X | | | X | 11, 17 |
| | RM 132 CHASE | | | | | | | X | 1 |
| | RM 133 WOMEN'S RESTROOM | X | X | X | X | | | X | 11, 17 |
| TOLL PLAZA | RM 134 JANITOR | | | | | X | | X | 3 |
| | RM 135 WATER ENTRY | | | | | X | | X | 3 |
| | RM 150 EQUIPMENT RM | | | | | | | X | 1 |
| | RM 151 ELEC | | | | | | | X | 1 |
| | RM 152 STORAGE | | | | | X | | X | 3 |
| | RM 153 TOLL BOOTH 1 | | | | | X | | X | 20 |
| | RM 154 TOLL BOOTH 2 | | | | | X | | X | 20 |
| | RM 155 TOLL BOOTH 3 | | | | | X | | X | 20 |
| | RM 156 TOLL BOOTH 4 | | | | | X | | X | 20 |
| | RM 157 TOILET | | | | | X | | X | 4, 11 |
| | EXTERIOR LIGHTING | X | X | X | X | | X | X | 15 |
| | SITE LIGHTING (POLES) | X | X | X | X | | X | X | 19 |
| | SITE LIGHTING (BOLLARDS) | X | X | X | X | | | X | 19 |
| | | | | | | | | | |

NOTES:

1. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.02**.
2. SEE LIGHTING CONTROL DIAGRAM 2/**EB07.02**.
3. COMBINATION VACANCY SENSOR WALL SWITCH WITH PIR/ULTRASONIC TECHNOLOGY. SEE LIGHTING CONTROL DIAGRAM 3/**EB07.02**.
4. COMBINATION OCCUPANCY SENSOR WALL SWITCH WITH PIR/ULTRASONIC TECHNOLOGY. SEE LIGHTING CONTROL DIAGRAM 3/**EB07.02**.
5. OCCUPANCY SENSOR. WALL SWITCH SHALL PROVIDE MANUAL ON/OFF OVERRIDE. SEE LIGHTING CONTROL DIAGRAM 4/**EB07.02**.
6. COMBINATION VACANCY SENSOR WALL SWITCH WITH PIR/ULTRASONIC TECHNOLOGY AND WITH 0-10V DIMMING. SEE LIGHTING CONTROL DIAGRAM 5/**EB07.02**.
7. MULTI-WAY COMBINATION VACANCY SENSOR WALL SWITCH WITH PIR/ULTRASONIC TECHNOLOGY AND WITH 0-10V DIMMING. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.03**.
8. VACANCY SENSOR. WALL SWITCH SHALL BE PROVIDED FOR EACH FIXTURE AND PROVIDE MANUAL ON/OFF OVERRIDE. SEE LIGHTING CONTROL DIAGRAM 2/**EB07.04**.
9. LIGHT CLOSEST TO WALL SWITCH SHALL BE CONTROLLED BY PHOTOCELL FOR OPERATION BETWEEN DUSK AND DAWN OR DURING OVERCAST CONDITION. SWITCH SHALL OVERRIDE PHOTOCELL. SEE LIGHTING CONTROL DIAGRAM 2/**EB07.03**.
10. OCCUPANCY SENSOR SHALL BE PROGRAMMED TO AUTO 50 PERCENT LIGHT LEVEL ON.
11. OCCUPANCY SENSOR SHALL BE PROGRAMMED TO AUTO 100 PERCENT LIGHT LEVEL ON.
12. CLOSED LOOP DAYLIGHT HARVESTING WITH OCCUPANCY SENSOR CONTROL. WALL SWITCH SHALL PROVIDE MANUAL ON FOR GENERAL LIGHTING ZONE AND MANUAL OFF FOR ALL ZONES. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.04**.
13. CLOSED LOOP DAYLIGHT HARVESTING FOR DAWN TO DUSK OPERATION. TIME CLOCK FOR DUSK TO DAWN OPERATION. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO DAYLIGHT SENSOR OR TIME CLOCK CONTROL (BASED ON TIME OF DAY). SEE LIGHTING CONTROL DIAGRAM 1/**EB07.05** FOR ZONES "A" TO "J" LIGHTS.

14. PHOTOCELL FOR OPERATION DURING OVERCAST CONDITIONS. TIME CLOCK FOR OPERATION FROM DUSK TO FACILITY CLOSING, AND MOTION SENSORS FOR OPERATION WHILE FACILITY IS CLOSED. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.05** FOR ZONES "K" TO "CC" LIGHTS.
15. PHOTOCELL FOR OPERATION DURING OVERCAST CONDITIONS. TIME CLOCK FOR OPERATION FROM DUSK TO FACILITY CLOSING, AND MOTION SENSORS FOR OPERATION WHILE FACILITY IS CLOSED. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL. SEE LIGHTING CONTROL DIAGRAM 3/**EB07.03**.
16. VACANCY SENSOR. WALL SWITCH SHALL PROVIDE MANUAL ON/OFF OVERRIDE. SEE LIGHTING CONTROL DIAGRAM 4/**EB07.02**.
17. CLOSED LOOP DAYLIGHT HARVESTING, TIME CLOCK, AND OCCUPANCY SENSOR CONTROL. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.06** FOR ZONES "C" TO "F" LIGHTS.

18. PHOTOCELL, TIME CLOCK, AND OCCUPANCY SENSOR CONTROL. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.06** FOR ZONES "A" TO "B" LIGHTS.
19. PHOTOCELL AND TIME CLOCK CONTROL. OVERRIDE SWITCHES AS SHOWN ON PLAN TO TURN ALL LIGHTS TO 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL. SEE LIGHTING CONTROL DIAGRAM 1/**EB07.06** FOR ZONES "G" TO "K" LIGHTS. SEE UPLANDS DWGS. FOR ADDITIONAL LIGHTING CONTROL INFORMATION ON COBRAHEAD LIGHTING WITH INTEGRAL MOTION SENSING CONTROL.
20. SEE TOLL BOOTH ELECTRICAL E-SERIES DWGS. FOR LIGHTING CONTROL.

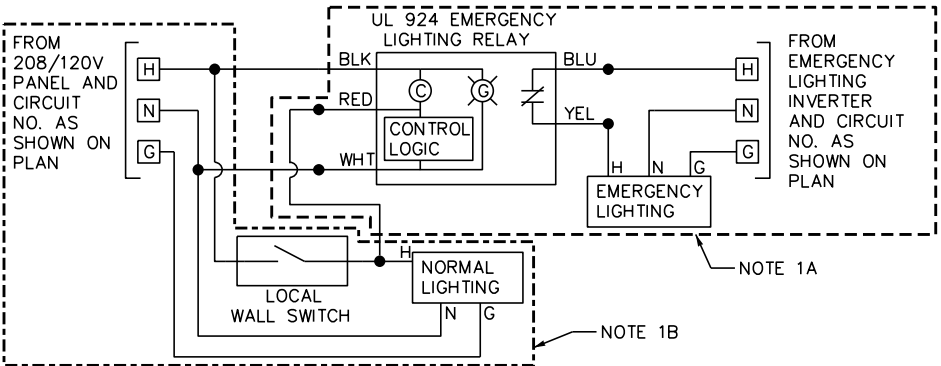
RFI 240 - Luminaires and Luminaire Control Cont':
As per attached EB07.01,
Dusk to Dawn operation for WSF site lighting to be provided by photocell in Lighting Controller MB-LCP

RFI 240 - Luminaires and Luminaire Control

1. Distribution type T2R is required to satisfy site lighting requirements. Remove HSS option from LP2305 (See attached drawing markups)

2. See response to Q1

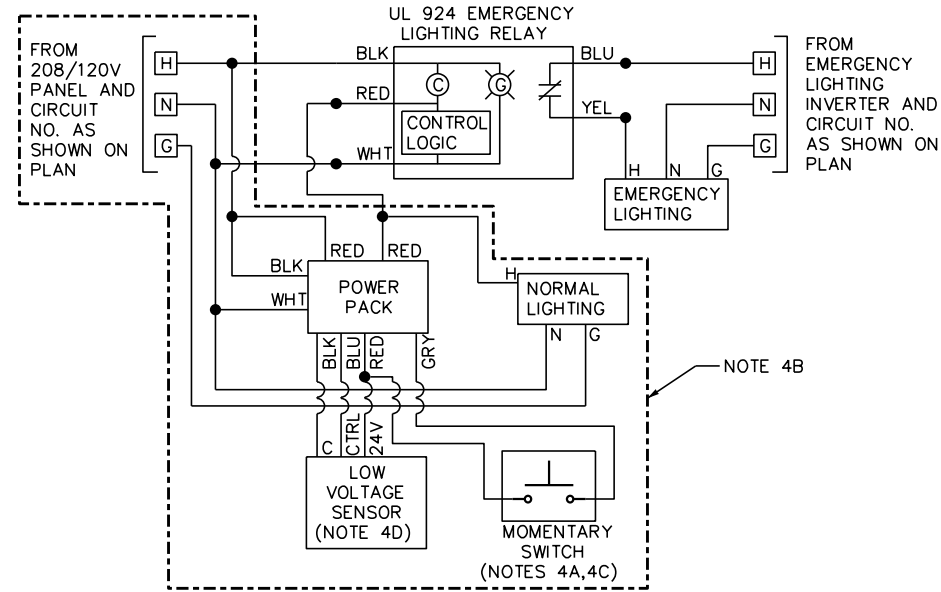
3. Per luminaire schedule on drawing ES07.01, motion sensor option shall be selected for the luminaire. Dusk to Dawn operation for WSF site lighting to be provided by photocell in Lighting Controller MB-LCP per drawings EB07.01 and EB07.06 (See attached drawings)



NOTE 1A: THIS PORTION IS NOT REQUIRED WHERE THERE IS ONLY NORMAL LIGHTING (NO LIGHTS FED FROM EMERGENCY LIGHTING INVERTERS) IN THE ROOM/SPACE.

NOTE 1B: IF THE ROOM/SPACE CONTAINS ONLY LIGHTS FED FROM EMERGENCY LIGHTING INVERTER (NO LIGHTS FED FROM NORMAL PANELBOARD), INSTALL ONLY THIS PORTION OF THE CIRCUIT AND CONNECT TO THE EMERGENCY LIGHTING INVERTER OUTPUT CIRCUIT INDICATED ON PLAN.

1 LIGHTING CONTROL DIAGRAM 1
NTS



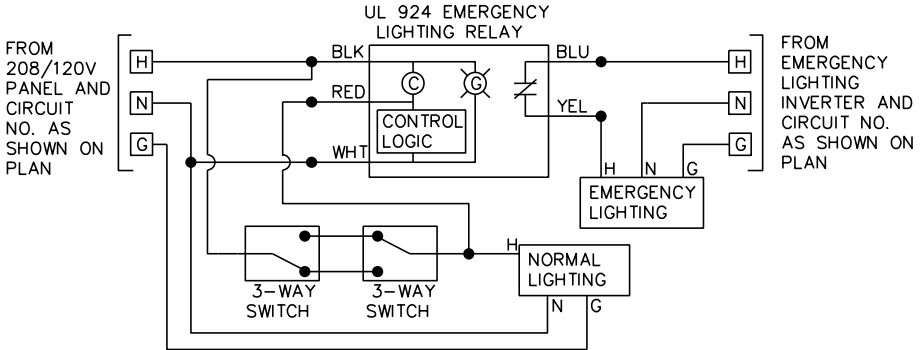
NOTE 4A: CONNECT ALL MOMENTARY SWITCHES IN PARALLEL WHERE THERE ARE MORE THAN ONE SWITCH SHOWN IN A ROOM/SPACE.

NOTE 4B: IF THE ROOM CONTAINS ONLY LIGHTS FED FROM EMERGENCY LIGHTING INVERTER (NO LIGHTS FED FROM NORMAL PANELBOARD), INSTALL ONLY THIS PORTION OF THE CIRCUIT AND CONNECT TO THE EMERGENCY LIGHTING INVERTER OUTPUT CIRCUIT INDICATED ON PLAN.

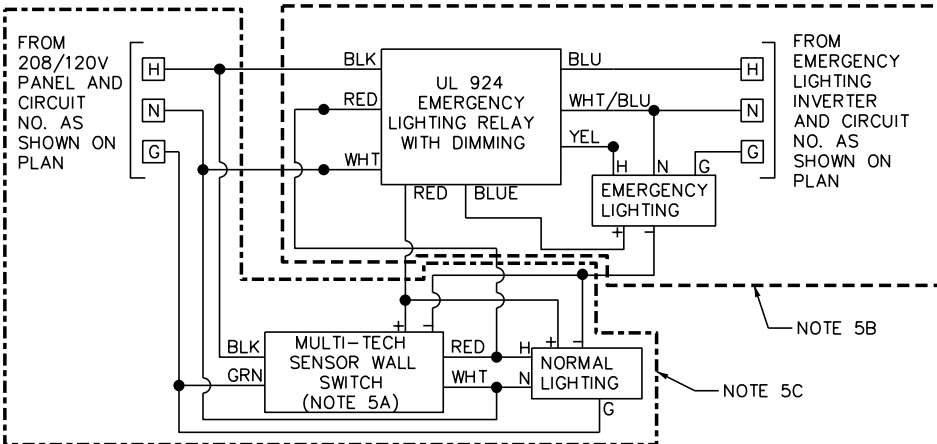
NOTE 4C: WHERE PLANS SHOW A KEY OPERATED SWITCH (PUBLIC RESTROOMS), PROVIDE KEY OPERATED 3-POSITION MAINTAINED SWITCH IN LIEU OF MOMENTARY SWITCH AND CONNECT TO "HOLD ON" AND "HOLD OFF" INPUT TERMINALS AT THE POWER PACK WITH 3 WIRES (COMMON, ON, OFF).

NOTE 4D: OCCUPANCY OR VACANCY SENSOR AS INDICATED IN THE LIGHTING CONTROL STRATEGY TABLE.

4 LIGHTING CONTROL DIAGRAM 4
NTS



2 LIGHTING CONTROL DIAGRAM 2
NTS

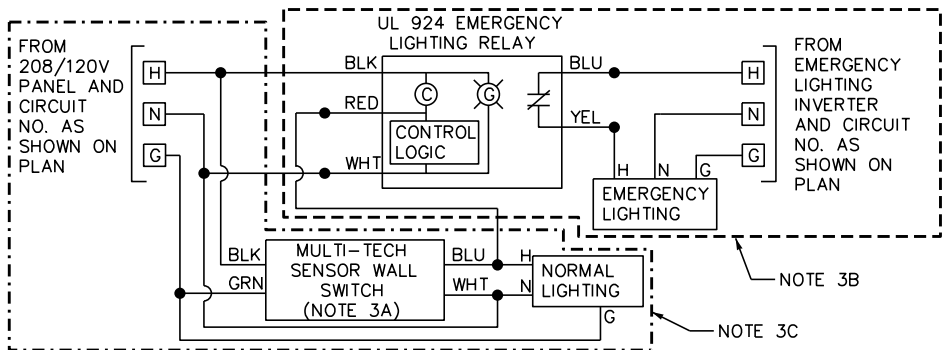


NOTE 5A: OCCUPANCY OR VACANCY SENSOR AS INDICATED IN THE LIGHTING CONTROL STRATEGY TABLE WITH 0-10V DIMMING CONTROL.

NOTE 5B: THIS PORTION IS NOT REQUIRED WHERE THERE IS ONLY NORMAL LIGHTING (NO LIGHTS FED FROM EMERGENCY LIGHTING INVERTERS) IN THE ROOM/SPACE.

NOTE 5C: IF THE ROOM CONTAINS ONLY LIGHTS FED FROM EMERGENCY LIGHTING INVERTER (NO LIGHTS FED FROM NORMAL PANELBOARD), INSTALL ONLY THIS PORTION OF THE CIRCUIT AND CONNECT TO THE EMERGENCY LIGHTING INVERTER OUTPUT CIRCUIT INDICATED ON PLAN.

5 LIGHTING CONTROL DIAGRAM 5
NTS



NOTE 3A: OCCUPANCY OR VACANCY SENSOR AS INDICATED IN THE LIGHTING CONTROL STRATEGY TABLE.

NOTE 3B: THIS PORTION IS NOT REQUIRED WHERE THERE IS ONLY NORMAL LIGHTING (NO LIGHTS FED FROM EMERGENCY LIGHTING INVERTERS) IN THE ROOM/SPACE.

NOTE 3C: IF THE ROOM CONTAINS ONLY LIGHTS FED FROM EMERGENCY LIGHTING INVERTER (NO LIGHTS FED FROM NORMAL PANELBOARD), INSTALL ONLY THIS PORTION OF THE CIRCUIT AND CONNECT TO THE EMERGENCY LIGHTING INVERTER OUTPUT CIRCUIT INDICATED ON PLAN.

3 LIGHTING CONTROL DIAGRAM 3
NTS

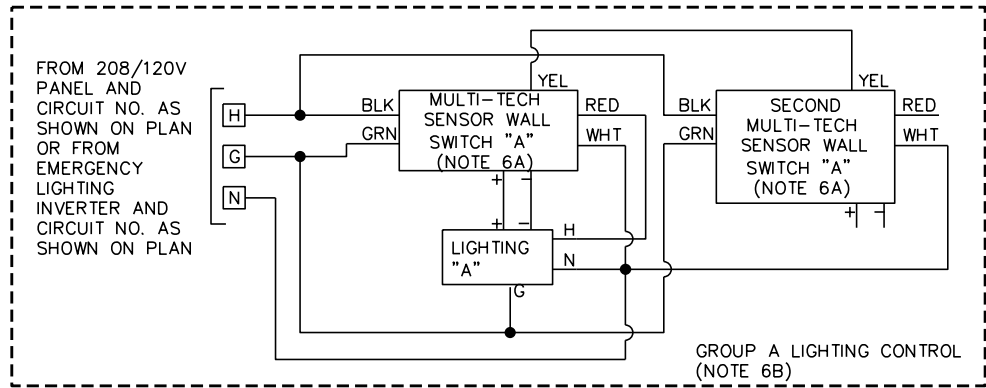
- NOTES:**
- COLOR OF DEVICE LEAD WIRES OR TERMINALS MAY DIFFER AS SHOWN BASED ON MANUFACTURER.
 - ABBREVIATIONS SHOWN ON THIS SHEET ARE AS FOLLOWS:
BLK - BLACK
BLU - BLUE
C - COMMON
CTRL - CONTROL
G - GROUND
GRY - GRAY
H - HOT
N - NEUTRAL
T1 - TRAVELER WIRE 1
T2 - TRAVELER WIRE 2
WHT - WHITE
YEL - YELLOW
 - PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC).
 - EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER, 0-10V CONTROL TO EMERGENCY LIGHTS) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).

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| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
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| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
LIGHTING CONTROL
DIAGRAMS 1

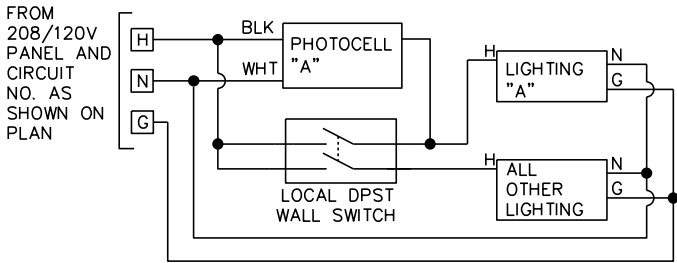
EB07.02
SHEET
1258
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1521
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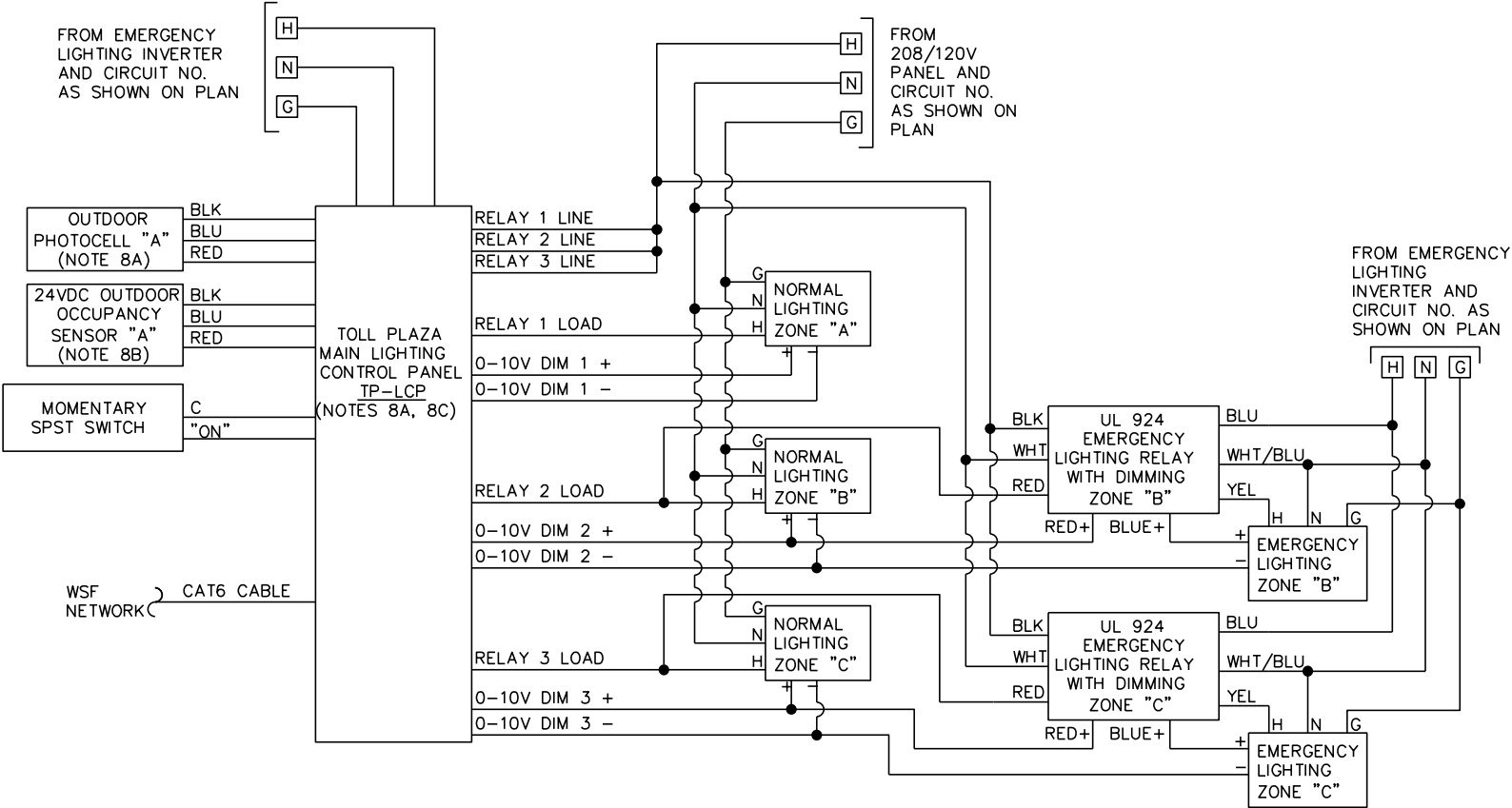
NOTE 6A: OCCUPANCY OR VACANCY SENSOR AS INDICATED IN THE LIGHTING CONTROL STRATEGY TABLE WITH 0-10V DIMMING CONTROL. ONLY ONE SWITCH SHALL CONNECT TO LIGHTING FIXTURES WITH 0-10V AND RED WIRES.

NOTE 6B: CONTROL DIAGRAM SHOWN FOR GROUP A IS APPLICABLE TO OTHER GROUPS (SWITCHES AND LIGHTS INDICATED WITH THE SAME LETTER) IN THE SAME ROOM/SPACE.

1 LIGHTING CONTROL DIAGRAM 6
NTS



2 LIGHTING CONTROL DIAGRAM 7
NTS



NOTE 8A: LIGHTING CONTROL DIAGRAM IS BASED ON INTELLIGENT LIGHTING CONTROLS INC., MODELS SPECIFIED BELOW. SUBMIT SHOP DRAWINGS (CATALOG CUTS, WIRING SCHEMATICS, LAYOUT) FOR REVIEW AND APPROVAL OF ALTERNATIVE LIGHTING CONTROL SYSTEM PROVIDING THE DESIRED LIGHTING CONTROL OPERATION. LIGHTING CONTROL SYSTEM COMPONENTS SHALL BE BY THE SAME MANUFACTURER AND COMPATIBLE WITH THE CONTROLLED LIGHTING FIXTURES.

ROOM CONTROLLER: LL-4RC-1
DAYLIGHT SENSOR: PC OUT (PHOTOCELL CONTROLLER INCORPORATED INTO ROOM CONTROLLER)

NOTE 8B: EACH OUTDOOR OCCUPANCY SENSOR SHALL BE CONNECTED TO A DIFFERENT INPUT IN THE OCCUPANCY SENSOR MODULE.

NOTE 8C: SEQUENCE OF OPERATION SHALL BE AS FOLLOWS:

OUTDOOR PHOTOCELL - WHILE FACILITY IS OPEN, ZONES "A" TO "C" SHALL BE AT 100 PERCENT LIGHT LEVEL WHEN LIGHT LEVEL SENSED BY PHOTOCELL IS BELOW SET LEVEL.

TIME CLOCK (FROM WSF NETWORK) - FROM DUSK TO FACILITY CLOSING - ALL LIGHT ZONES SHALL BE AT 100 PERCENT LIGHT LEVEL. WHILE FACILITY IS CLOSED, ALL LIGHT ZONES SHALL BE AT 50 PERCENT LIGHT LEVEL.

MANUAL WALL SWITCHES - WHEN MANUAL WALL SWITCH IS PRESSED, ALL LIGHT ZONES SHALL BE AT 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO PHOTOCELL OR TIME CLOCK CONTROL (BASED ON TIME OF DAY).

OUTDOOR OCCUPANCY SENSORS - WHEN MOTION IS DETECTED WHILE FACILITY IS CLOSED, OCCUPANCY SENSOR SHALL TURN ALL LIGHTS IN THE DESIGNATED ZONE TO 100 PERCENT LIGHT LEVEL. AFTER 20 MINUTES OF NO MOTION DETECTED, THOSE LIGHTS SHALL RETURN TO 50 PERCENT LIGHT LEVEL.

| OUTDOOR OCCUPANCY SENSORS | LIGHT ZONES |
|---------------------------|-------------|
| B | B |
| C | C |

3 LIGHTING CONTROL DIAGRAM 8
NTS

NOTES:

- COLOR OF DEVICE LEAD WIRES OR TERMINALS MAY DIFFER AS SHOWN BASED ON MANUFACTURER.
- ABBREVIATIONS SHOWN ON THIS SHEET ARE AS FOLLOWS:
BLK - BLACK
BLU - BLUE
C - COMMON
CTRL - CONTROL
G - GROUND
GRY - GRAY
H - HOT
N - NEUTRAL
SPDT - SINGLE POLE DOUBLE THROW
T1 - TRAVELER WIRE 1
T2 - TRAVELER WIRE 2
WHT - WHITE
YEL - YELLOW
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC).
- EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER, 0-10V CONTROL TO EMERGENCY LIGHTS) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).

JACOBS



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

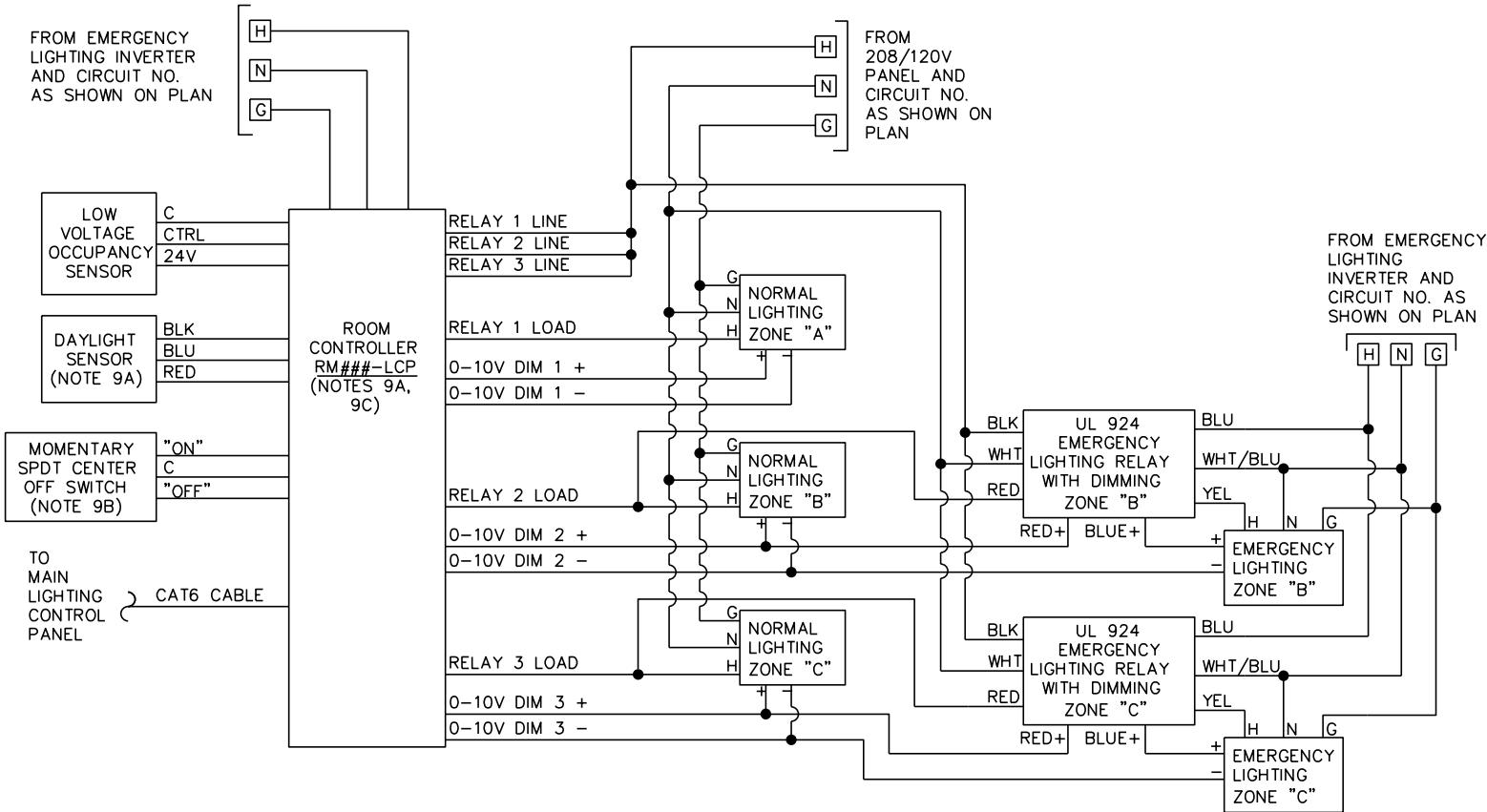
SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
LIGHTING CONTROL
DIAGRAMS 2

EB07.03

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| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | 1/18/19 | 10 WASH |
| ASST SECRETARY: A. SCARTON | CONFORMED PLANS | 1/18/19 | JOB NUMBER 18W121 |
| | REVISION | DATE | CONTRACT NO. 009321 |





NOTE 9A: LIGHTING CONTROL DIAGRAM IS BASED ON INTELLIGENT LIGHTING CONTROLS INC., MODELS SPECIFIED BELOW. SUBMIT SHOP DRAWINGS (CATALOG CUTS, WIRING SCHEMATICS, LAYOUT) FOR REVIEW AND APPROVAL OF ALTERNATIVE LIGHTING CONTROL SYSTEM PROVIDING THE DESIRED LIGHTING CONTROL OPERATION. LIGHTING CONTROL SYSTEM COMPONENTS SHALL BE BY THE SAME MANUFACTURER AND COMPATIBLE WITH THE CONTROLLED LIGHTING FIXTURES.

ROOM CONTROLLER: LL-4RC-IND-1
DAYLIGHT SENSOR: PC IND (PHOTOCELL CONTROLLER INCORPORATED INTO ROOM CONTROLLER)

NOTE 9B: CONNECT ALL MOMENTARY SWITCHES IN PARALLEL (ALL "ON" CONTACTS TOGETHER, ALL "OFF" CONTACTS TOGETHER) WHERE THERE ARE MORE THAN ONE SWITCH SHOWN IN A ROOM/SPACE.

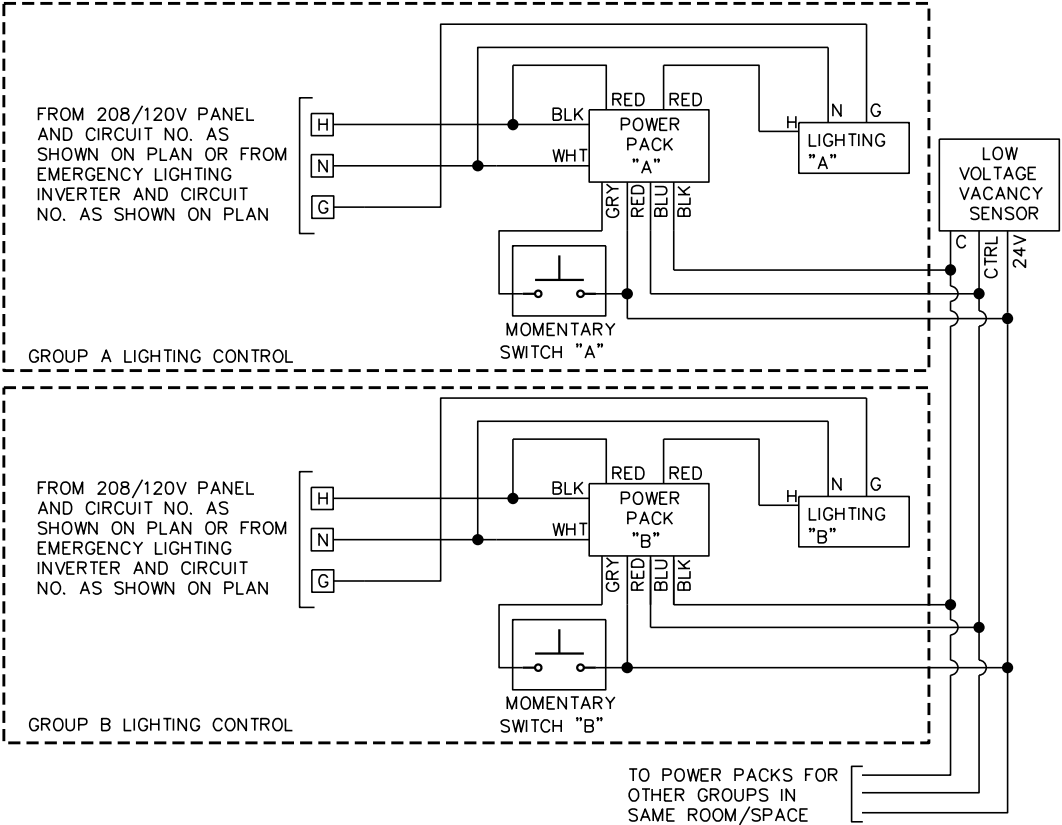
NOTE 9C: SEQUENCE OF OPERATION SHALL BE AS FOLLOWS:

OCCUPANCY SENSOR – WHEN OCCUPANCY IS DETECTED, LIGHTS ON ALL ZONES SHALL AUTOMATICALLY TURN ON AT 50 PERCENT LIGHT LEVEL. AFTER 20 MINUTES OF DETECTING NO OCCUPANCY, LIGHTS WILL AUTOMATICALLY TURN OFF.

DAYLIGHT SENSOR – AFTER LIGHTS ARE TURNED ON BY OCCUPANCY SENSOR OR MANUAL WALL SWITCH, DAYLIGHT SENSOR SHALL CONTINUOUSLY MAINTAIN A 30 FC LIGHT LEVEL IN ZONE A AND ZONE B BY DIMMING THE LIGHTS IN THESE ZONES. DAYLIGHT SENSOR SHALL STOP ADJUSTING LIGHT OUTPUT WHEN LIGHTS ARE TURNED OFF BY THE OCCUPANCY SENSOR OR MANUAL WALL SWITCH.

MANUAL ON/OFF WALL SWITCH – WHEN MANUAL WALL SWITCH IS PRESSED ON WHILE LIGHTS ARE OFF, LIGHTS ON ALL ZONES SHALL AUTOMATICALLY TURN ON AT 50 PERCENT LIGHT LEVEL. WHEN MANUAL WALL SWITCH IS PRESSED ON WHILE LIGHTS ARE ON, LIGHTS ON ZONE C SHALL AUTOMATICALLY TURN ON AT 100 PERCENT LIGHT LEVEL (ZONES A AND B ARE CONTROLLED BY DAYLIGHT SENSOR). WHEN MANUAL WALL SWITCH IS PRESSED OFF, LIGHTS ON ALL ZONES SHALL AUTOMATICALLY TURN OFF.

1 LIGHTING CONTROL DIAGRAM 9
NTS



NOTE 10A: CONTROL DIAGRAMS SHOWN FOR GROUP A AND B ARE APPLICABLE TO OTHER GROUPS (SWITCHES, POWER PACKS, AND LIGHTS INDICATED WITH THE SAME LETTER) IN THE SAME ROOM/SPACE.

2 LIGHTING CONTROL DIAGRAM 10
NTS

NOTES:

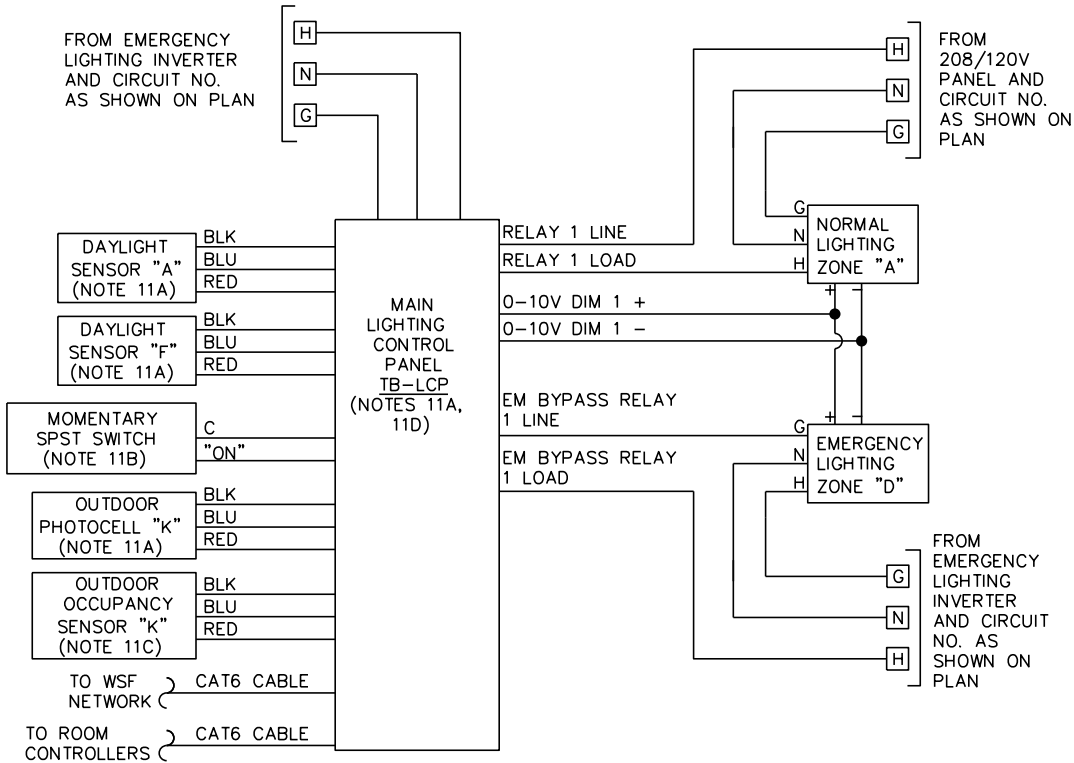
- COLOR OF DEVICE LEAD WIRES OR TERMINALS MAY DIFFER AS SHOWN BASED ON MANUFACTURER.
- ABBREVIATIONS SHOWN ON THIS SHEET ARE AS FOLLOWS:
BLK - BLACK N - NEUTRAL
BLU - BLUE SPDT - SINGLE POLE DOUBLE THROW
C - COMMON T1 - TRAVELER WIRE 1
CTRL - CONTROL T2 - TRAVELER WIRE 2
G - GROUND WHT - WHITE
GRY - GRAY YEL - YELLOW
H - HOT
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC).
- EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER, 0-10V CONTROL TO EMERGENCY LIGHTS) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).

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| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
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SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
LIGHTING CONTROL
DIAGRAMS 3

EB07.04
SHEET
1260
OF
1521
SHEETS



NORMAL LIGHTING ZONES SPECIFIED BELOW ARE WIRED SIMILAR TO ZONE A BUT CONNECTED TO RELAY AND 0-10V DIM SPECIFIED IN TABLE.

| LIGHT ZONE | NORMAL RELAY # | 0-10V DIM # |
|------------|----------------|-------------|
| A | RELAY 1 | DIM 1 |
| B | RELAY 2 | DIM 1 |
| C | RELAY 3 | DIM 1 |
| E | RELAY 4 | DIM 1 |
| F | RELAY 5 | DIM 2 |
| G | RELAY 6 | DIM 2 |
| H-NOT USED | RELAY 7 | NOT USED |
| I | RELAY 8 | DIM 2 |
| J | RELAY 9 | DIM 2 |
| L | RELAY 10 | DIM 3 |
| P | RELAY 11 | DIM 5 |
| T | RELAY 12 | DIM 9 |
| X | RELAY 13 | DIM 11 |
| W | RELAY 14 | DIM 12 |
| AA | RELAY 15 | DIM 13 |
| CC | RELAY 16 | DIM 14 |

EMERGENCY LIGHTING ZONES SPECIFIED BELOW ARE WIRED SIMILAR TO ZONE D BUT CONNECTED TO RELAY AND 0-10V DIM SPECIFIED IN TABLE.

| LIGHT ZONE | EM RELAY # | 0-10V DIM # |
|------------|-------------|-------------|
| D | EM RELAY 1 | DIM 1 |
| K | EM RELAY 2 | DIM 3 |
| M | EM RELAY 3 | DIM 4 |
| N | EM RELAY 4 | DIM 5 |
| Q | EM RELAY 5 | DIM 6 |
| R | EM RELAY 6 | DIM 7 |
| S | EM RELAY 7 | DIM 8 |
| U | EM RELAY 8 | DIM 10 |
| V | EM RELAY 9 | DIM 11 |
| Y | EM RELAY 10 | DIM 12 |
| Z | EM RELAY 11 | DIM 13 |
| BB | EM RELAY 12 | DIM 14 |

| OUTDOOR OCCUPANCY SENSORS | LIGHT ZONES |
|---------------------------|-------------|
| K | K,L,R |
| M | M,U |
| N | N,P,S,Q |
| P | N,P,S |
| R | Q |
| Q | K,L,R,Q |
| S,W | V,X,R |
| T,U,V | W,Y,U |
| X,Y | Z,AA |
| Z,AA | BB,CC,S |

NOTE 11A: LIGHTING CONTROL DIAGRAM IS BASED ON INTELLIGENT LIGHTING CONTROLS INC., MODELS SPECIFIED BELOW. SUBMIT SHOP DRAWINGS (CATALOG CUTS, WIRING SCHEMATICS, LAYOUT) FOR REVIEW AND APPROVAL OF ALTERNATIVE LIGHTING CONTROL SYSTEM PROVIDING THE DESIRED LIGHTING CONTROL OPERATION. LIGHTING CONTROL SYSTEM COMPONENTS SHALL BE BY THE SAME MANUFACTURER AND COMPATIBLE WITH THE CONTROLLED LIGHTING FIXTURES.

MAIN LIGHTING CONTROL PANEL:
LL-48-EM-S-PM-R40-1-32 WITH FOLLOWING ADD-ON MODULES: INPUT MODULE LSM-P-D, ADVANCED NETWORK CONTROLLER LLNC-A, (4) 0-10V DIMMING MODULES LSDM-P, PHOTSENSOR CONTROLLER LSPSC-(SENSOR TYPE INDICATED BELOW)-P, (2) OCCUPANCY SENSOR 8-INPUT MODULE LSOS8I-P
DAYLIGHT SENSORS: PC IND
OUTDOOR PHOTOCELL: PC OUT

NOTE 11B: CONNECT ALL MOMENTARY SWITCHES FOR A SPACE IN PARALLEL WHERE THERE ARE MORE THAN ONE SWITCH SHOWN IN A ROOM/SPACE. MOMENTARY SWITCHES FOR OTHER SPACES SHALL BE TERMINATED AS A SEPARATE INPUT.

NOTE 11C: EACH OUTDOOR OCCUPANCY SENSOR SHALL BE CONNECTED TO A DIFFERENT INPUT IN THE OCCUPANCY SENSOR MODULE. LEVEL 1 CEILING MOUNTED OCCUPANCY SENSOR SHALL BE 24V RATED LOW VOLTAGE SENSOR WITH 24V OUTPUT. LEVEL 2 WALL MOUNTED OCCUPANCY SENSOR SHALL BE 120V RATED WITH ISOLATED RELAY FOR CONNECTION TO 24V INPUT TO OCCUPANCY SENSOR MODULE.

NOTE 11D: SEQUENCE OF OPERATION SHALL BE AS FOLLOWS:

DAYLIGHT SENSORS – FROM DAWN TO DUSK, DAYLIGHT SENSOR SHALL CONTINUOUSLY MAINTAIN A 15 FC LIGHT LEVEL (IN ZONES "A" TO "E" FOR SENSOR "A", IN ZONES "F" TO "J" FOR SENSOR "F") BY DIMMING THE LIGHTS IN THESE ZONES. DAYLIGHT SENSOR SHALL STOP ADJUSTING LIGHT OUTPUT BETWEEN DUSK AND DAWN.

OUTDOOR PHOTOCELL – WHILE FACILITY IS OPEN, ZONES "K" TO "CC" SHALL BE AT 100 PERCENT LIGHT LEVEL WHEN LIGHT LEVEL SENSED BY PHOTOCELL IS BELOW SET LEVEL.

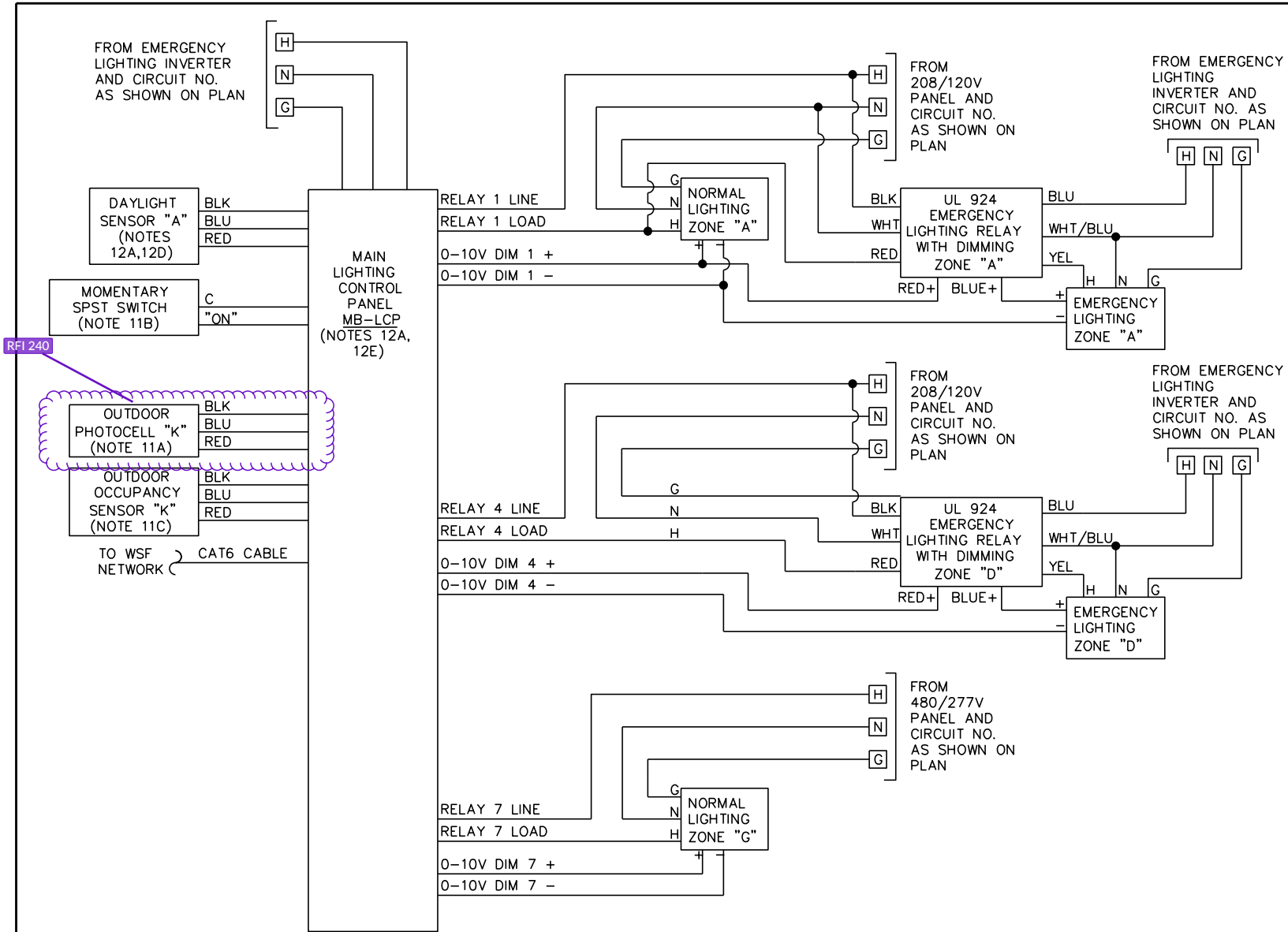
TIME CLOCK – FROM DUSK TO FACILITY CLOSING – ALL LIGHT ZONES SHALL BE AT 100 PERCENT LIGHT LEVEL. WHILE FACILITY IS CLOSED, ZONES "A" TO "J" (INTERIOR) SHALL BE AT 10 PERCENT LIGHT LEVEL AND ZONES "K" TO "CC" (EXTERIOR) SHALL BE AT 50 PERCENT LIGHT LEVEL.

MANUAL WALL SWITCHES – WHEN MANUAL WALL SWITCH IS PRESSED, ALL ZONE "A" TO "J" LIGHTS SHALL BE AT 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO DAYLIGHT SENSOR OR TIME CLOCK CONTROL (BASED ON TIME OF DAY).

OUTDOOR OCCUPANCY SENSORS – WHEN MOTION IS DETECTED WHILE FACILITY IS CLOSED, OCCUPANCY SENSOR SHALL TURN ALL LIGHTS IN THE DESIGNATED ZONE TO 100 PERCENT LIGHT LEVEL. AFTER 20 MINUTES OF NO MOTION DETECTED, THOSE LIGHTS SHALL RETURN TO 50 PERCENT LIGHT LEVEL.

1 LIGHTING CONTROL DIAGRAM 11
NTS

- NOTES:
- COLOR OF DEVICE LEAD WIRES OR TERMINALS MAY DIFFER AS SHOWN BASED ON MANUFACTURER.
 - ABBREVIATIONS SHOWN ON THIS SHEET ARE AS FOLLOWS:
BLK - BLACK N - NEUTRAL
BLU - BLUE SPDT - SINGLE POLE DOUBLE THROW
C - COMMON T1 - TRAVELER WIRE 1
CTRL - CONTROL T2 - TRAVELER WIRE 2
G - GROUND WHT - WHITE
GRY - GRAY YEL - YELLOW
H - HOT
 - PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC).
 - EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER, 0-10V CONTROL TO EMERGENCY LIGHTS) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).



NOTE 12A: LIGHTING CONTROL DIAGRAM IS BASED ON INTELLIGENT LIGHTING CONTROLS INC., MODELS SPECIFIED BELOW. SUBMIT SHOP DRAWINGS (CATALOG CUTS, WIRING SCHEMATICS, LAYOUT) FOR REVIEW AND APPROVAL OF ALTERNATIVE LIGHTING CONTROL SYSTEM PROVIDING THE DESIRED LIGHTING CONTROL OPERATION. LIGHTING CONTROL SYSTEM COMPONENTS SHALL BE BY THE SAME MANUFACTURER AND COMPATIBLE WITH THE CONTROLLED LIGHTING FIXTURES.

MAIN LIGHTING CONTROL PANEL:
LL-32-1-S-R40-1-16 WITH FOLLOWING ADD-ON MODULES: INPUT MODULE LSIM-P-D, ADVANCED NETWORK CONTROLLER LLNC-A, (4) 0-10V DIMMING MODULES LSDM-P, PHOTOSENSOR CONTROLLER LSPSC-(SENSOR TYPE INDICATED BELOW)-P, OCCUPANCY SENSOR 8-INPUT MODULE LSOS8I-P
DAYLIGHT SENSORS: PC IND
OUTDOOR PHOTOCELL: PC OUT

NOTE 12B: CONNECT ALL MOMENTARY SWITCHES FOR A SPACE IN PARALLEL WHERE THERE ARE MORE THAN ONE SWITCH SHOWN IN A ROOM/SPACE. MOMENTARY SWITCHES FOR OTHER SPACES SHALL BE TERMINATED AS A SEPARATE INPUT.

NOTE 12C: EACH OCCUPANCY SENSOR SHALL BE CONNECTED TO A DIFFERENT INPUT IN THE OCCUPANCY SENSOR MODULE.

NOTE 12D: EACH DAYLIGHT SENSOR SHALL BE CONNECTED TO A DIFFERENT INPUT IN THE PHOTOCELL SENSOR MODULE.

NOTE 12D: SEQUENCE OF OPERATION SHALL BE AS FOLLOWS:

DAYLIGHT SENSORS – FROM DAWN TO DUSK, DAYLIGHT SENSOR SHALL CONTINUOUSLY MAINTAIN A 5 FC LIGHT LEVEL AT FLOOR IN ITS DESIGNATED ZONE BY DIMMING THE LIGHTS IN THESE ZONES WHILE AREA IS OCCUPIED. DAYLIGHT SENSOR SHALL STOP ADJUSTING LIGHT OUTPUT FROM DUSK AND DAWN OR WHEN NO OCCUPANCY IS DETECTED.

OUTDOOR PHOTOCELL – WHILE FACILITY IS OPEN, ZONES "G" TO "K" SHALL BE AT 100 PERCENT LIGHT LEVEL WHEN LIGHT LEVEL SENSED BY PHOTOCELL IS BELOW SET LEVEL.

TIME CLOCK – FROM DUSK TO FACILITY CLOSING – ALL LIGHT ZONES SHALL BE AT 100 PERCENT LIGHT LEVEL. WHILE FACILITY IS CLOSED, ZONES "A" AND "B" SHALL BE AT 50 PERCENT LIGHT LEVEL AND SITE LIGHTING POLES WILL BE CONTROLLED BY INTEGRAL MOTION SENSOR.

MANUAL WALL SWITCHES – WHEN MANUAL WALL SWITCH IS PRESSED, ZONES ASSOCIATED WITH THAT WALL SWITCH SHALL BE AT 100 PERCENT LIGHT LEVEL FOR 20 MINUTES BEFORE RETURNING TO SPECIFIED LIGHTING CONTROL (BASED ON TIME OF DAY).

OCCUPANCY SENSORS B,C – WHEN MOTION IS DETECTED, LIGHTS ZONES CONTROLLED BY THESE SENSORS SHALL BE AT 100 PERCENT LEVEL FROM DUSK TO DAWN, AND AT LEVEL DETERMINED BY DAYLIGHT SENSOR FROM DAWN TO DUSK. AFTER 20 MINUTES OF NO MOTION DETECTED, LIGHTS SHALL TURN OFF.

OCCUPANCY SENSORS A – WHEN MOTION IS DETECTED WHILE FACILITY IS CLOSED, OCCUPANCY SENSOR SHALL TURN ALL LIGHTS IN THE DESIGNATED ZONE TO 100 PERCENT LIGHT LEVEL. AFTER 20 MINUTES OF NO MOTION DETECTED, THOSE LIGHTS SHALL RETURN TO 50 PERCENT LIGHT LEVEL.

RFI 240 - Luminaires and Luminaire Control

1. Distribution type T2R is required to satisfy site lighting requirements. Remove HSS option from LP2305 (See attached drawing markups)

2. See response to Q1

3. Per luminaire schedule on drawing ES07.01, motion sensor option shall be selected for the luminaire. Dusk to Dawn operation for WSF site lighting to be provided by photocell in Lighting Controller MB-LCP per drawings EB07.01 and EB07.06 (See attached drawings)

NOTES:

- COLOR OF DEVICE LEAD WIRES OR TERMINALS MAY DIFFER AS SHOWN BASED ON MANUFACTURER.
- ABBREVIATIONS SHOWN ON THIS SHEET ARE AS FOLLOWS:
BLK - BLACK
BLU - BLUE
C - COMMON
CTRL - CONTROL
G - GROUND
GRY - GRAY
H - HOT
N - NEUTRAL
SPDT - SINGLE POLE DOUBLE THROW
T1 - TRAVELER WIRE 1
T2 - TRAVELER WIRE 2
WHT - WHITE
YEL - YELLOW
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWARE INPUTS IN CONDUITS (SIZED PER NEC).
- EMERGENCY CIRCUITS (FROM EMERGENCY INVERTER, 0-10V CONTROL TO EMERGENCY LIGHTS) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL CIRCUITS. EMERGENCY CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).

LIGHTING ZONES SPECIFIED BELOW ARE WIRED SIMILAR TO ZONE A BUT CONNECTED TO RELAY AND 0-10V DIM SPECIFIED IN TABLE.

| LIGHT ZONE | NORMAL RELAY # | 0-10V DIM # |
|------------|----------------|-------------|
| A | RELAY 1 | DIM 1 |
| B | RELAY 2 | DIM 2 |
| C | RELAY 3 | DIM 3 |
| E | RELAY 5 | DIM 5 |

LIGHTING ZONES SPECIFIED BELOW ARE WIRED SIMILAR TO ZONE D BUT CONNECTED TO RELAY AND 0-10V DIM SPECIFIED IN TABLE.

| LIGHT ZONE | NORMAL RELAY # | 0-10V DIM # |
|------------|----------------|-------------|
| D | RELAY 4 | DIM 4 |
| F | RELAY 6 | DIM 6 |

LIGHTING ZONES SPECIFIED BELOW ARE WIRED SIMILAR TO ZONE G BUT CONNECTED TO RELAY AND 0-10V DIM SPECIFIED IN TABLE.

| LIGHT ZONE | NORMAL RELAY # | 0-10V DIM # |
|------------|----------------|-------------|
| G | RELAY 7 | DIM 7 |
| H | RELAY 8 | DIM 8 |
| I | RELAY 9 | DIM 9 |
| J | RELAY 10 | DIM 10 |
| K | RELAY 11 | DIM 11 |

| DAYLIGHT SENSORS | LIGHT ZONES |
|------------------|-------------|
| A | A,B |
| B | C,D |
| C | E,F |

| OCCUPANCY SENSORS | LIGHT ZONES |
|-------------------|-------------|
| A | A,B |
| B | C,D |
| C | E,F |

1 LIGHTING CONTROL DIAGRAM 12
NTS

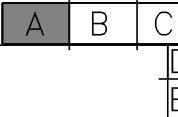
NOTES:

- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE. ROUTE CONDUITS ABOVE ACCESSIBLE CEILING WHERE PROVIDED FOR THOSE SPACES.
- SEE DWG. EB07.00 FOR LUMINAIRE SCHEDULE. SEE DWG. EB07.01 FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

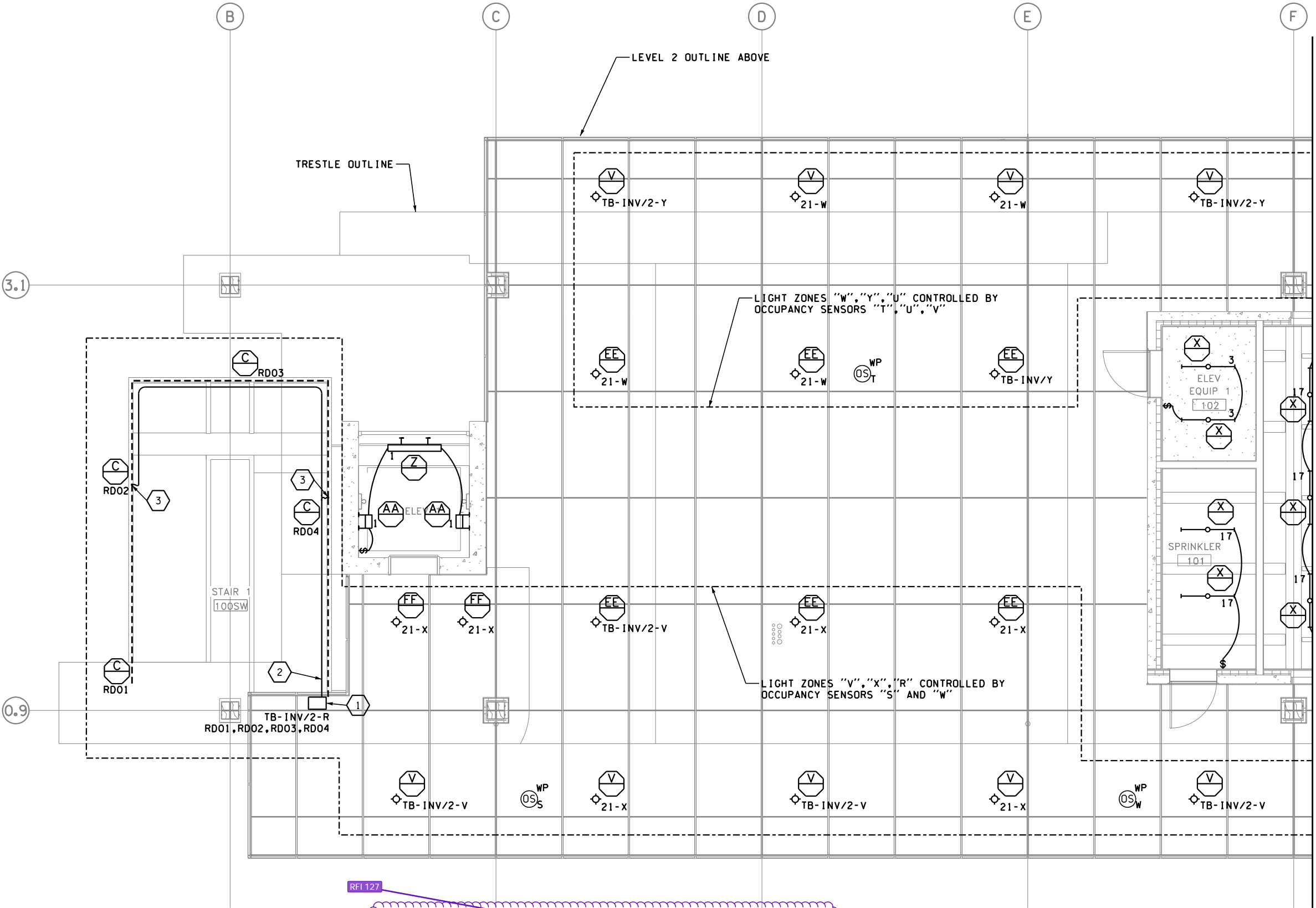
CONSTRUCTION NOTES:

- NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D
- (4) 2/C #14 300V TYPE SJ00W FLEXIBLE CABLE IN 1/4" CONDUIT TO GUARDRAIL POST ABOVE
- (2) 2/C #14 300V TYPE SJ00W FLEXIBLE CABLE IN 1" CONDUIT TO GUARDRAIL POST ABOVE

KEY PLAN



SCALE 1/8" = 1'-0"



RFI 127

1 LEVEL 1 SECTOR A LIGHTING PLAN

EB08.01

JACOBS



Washington State
Department of Transportation
WASHINGTON STATE FERRIES



1/18/19

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| DESIGNED BY: C. YUN | | | | 10 WASH | |
| ENTERED BY: C. YUN | | | | JOB NUMBER | |
| CHECKED BY: M. BAGINSKI | | | | 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | CONTRACT NO. | |
| DIR TERM ENGR: N. MCINTOSH | | | | 009321 | |
| ASST SECRETARY: A. SCARTON | | | | | |
| CONFORMED PLANS | | 1/18/19 | DATE | BY | |
| REVISION | | | | | |

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR A LIGHTING PLAN

EB08.01

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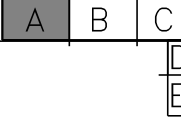
NOTES:

- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
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- SEE DWG. [EB07.00](#) FOR LUMINAIRE SCHEDULE. SEE DWG. [EB07.01](#) FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D
- (4) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1 1/4" CONDUIT TO GUARDRAIL POST ABOVE
- (2) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1" CONDUIT TO GUARDRAIL POST ABOVE

KEY PLAN



0 1 5
SCALE 1/8" = 1'-0"

RFI 127 - Additional Guardrail Questions
Sheets A04.11, A06.17 and A06.18 have been revised as part of the response to this RFI.
1. See 1/SB06.09

2. Center to center dimensions between LIGHT ZONES "W", "Y", "U" CONTROLLED BY OCCUPANCY SENSORS "I", "U", "V"
OHL should be 16'-3". OHL is 14'-10" wide and per detail 5/A06.17 plate is 8 1/2" from edge of OHL. However, detail 5/A06.17 needs to be revised since a knife plate can not be attached to the edge of the OHL threshold. Please send new RFI to track that revision.

3. HDRL-2 is the top pipe in the GDR-1 assembly. It should be nominal 2 1/2" Stainless Steel pipe ASTM A312/A312M, grade TP316L, schedule 40, no. 4 bright directional finish (not painted with HPC). HDRL-2 is welded to a 2" wide stainless steel plate/bar that is then bolted to the guardrail assembly.

4. HDRL-4 is a stainless steel handrail with integrated lighting - see fixture type C in the luminaire schedule on EB07.00 and lighting plans EB08.01, 08.02 and 08.03. Coordinate handrail bracket with fixture and conduit location. Design intent is for bracket to weld to the bottom of the SST bar that supports HDRL-2. The proposed detail in this RFI is not acceptable. HDRL-2 and HDRL-4 and the bracket for HDRL-4 and the SS1 bar (2"x4"x1/4" thick) that supports HDRL-2 (detail 4/A06.18) are the exception to the exposed metal receiving GPC-1 - these elements should remain unpainted no. 4 finish stainless steel.

5. Guardrails must meet code and be min 42" above finished floor. Increase height of guardrail infill from 2'-8 3/4" to 2'-9" to increase overall height of GDR-1 in detail 3/A06.17 and from 2'-6" to 2'-9" in detail 2/A06.18, with the gap between the top of channel at slab edge and the infill panel reduced to 2'-3 3/4" from 3'-1 1/2". This will create consistently sized infill panels.

6. The connection plates (knife plate at bottom and sst HDRL-2 support at top) are typically 1/2" thick at the trestle and 1" thick at the stairs and at level 2.

1 LEVEL 1 SECTOR A LIGHTING PLAN

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| DESIGNED BY: C. YUN | | | | 10 WASH | |
| ENTERED BY: C. YUN | | | | JOB NUMBER | |
| CHECKED BY: M. BAGINSKI | | | | 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | CONTRACT NO. | |
| DIR TERM ENGR: N. MCINTOSH | | | | 009321 | |
| ASST SECRETARY: A. SCARTON | | | | | |
| CONFORMED PLANS | | 1/18/19 | | | |
| REVISION | | DATE | BY | | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR A LIGHTING PLAN

EB08.01
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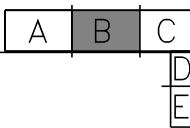
NOTES:

- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE. ROUTE CONDUITS ABOVE ACCESSIBLE CEILING WHERE PROVIDED FOR THOSE SPACES.
- SEE DWG. [EB07.00](#) FOR LUMINAIRE SCHEDULE. SEE DWG. [EB07.01](#) FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWARE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

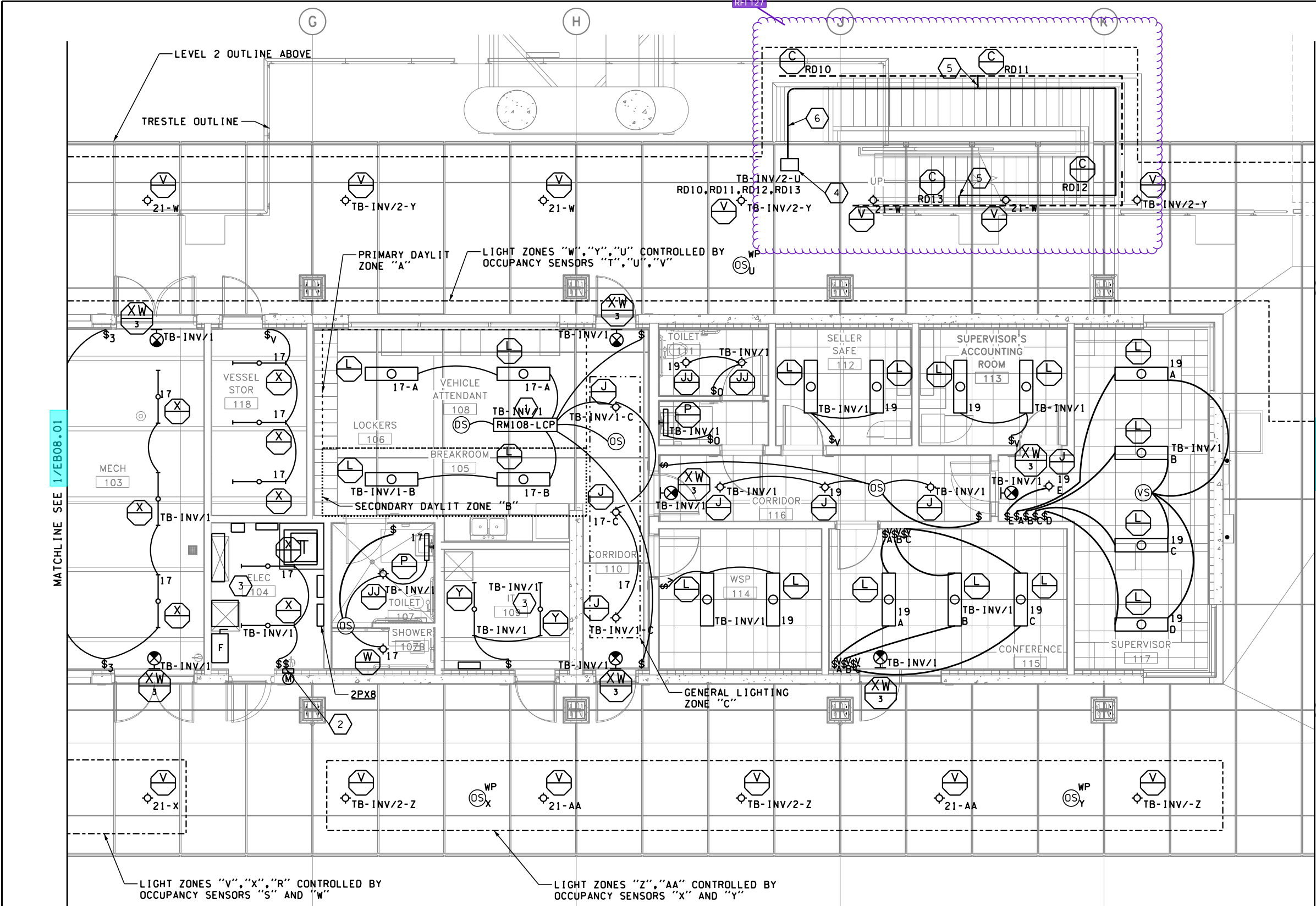
- INSTALL RM108-LCP ABOVE ACCESSIBLE CEILING.
- MANUAL OVERRIDE SWITCH FOR BUILDING EXTERIOR LIGHTING, SEE DETAIL [1/EB07.05](#).
- SHIFT LIGHTS IN ORDER TO AVOID CONFLICT WITH EQUIPMENT IN THESE ROOMS.
- NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D.
- (2) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1" CONDUIT TO RAIL POST ABOVE.
- (4) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1 1/4" CONDUIT TO GUARDRAIL POST ABOVE.

KEY PLAN



SCALE 1/8" = 1'-0"

1 LEVEL 1 SECTOR B LIGHTING PLAN



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| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR B LIGHTING PLAN

EB08.02

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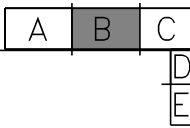
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- SEE DWG. [EB07.00](#) FOR LUMINAIRE SCHEDULE. SEE DWG. [EB07.01](#) FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWARE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- INSTALL RM108-LCP ABOVE ACCESSIBLE CEILING.
- MANUAL OVERRIDE SWITCH FOR BUILDING EXTERIOR LIGHTING, SEE DETAIL [1/EB07.05](#).
- SHIFT LIGHTS IN ORDER TO AVOID CONFLICT WITH EQUIPMENT IN THESE ROOMS.
- NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D.
- (2) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1" CONDUIT TO RAIL POST ABOVE.
- (4) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1 1/4" CONDUIT TO GUARDRAIL POST ABOVE.

KEY PLAN



SCALE 1/8" = 1'-0"

RFI 127 - Additional Guardrail Questions
Sheets A04.11, A06.17 and A06.18 have been revised as part of the response to this RFI.
1- See 1/SB06.09

2. Center to center dimensions between guardrail knife plates at OHL should be 16'-3". OHL is 14'-10" wide and per detail 5/A06.17 is 8'-1/2" from OCCUPANCY SENSOR SVT, detail 5/A06.17 needs to be revised since a knife plate can not be attached to the edge of the OHL threshold. Please send new RFI to track that revision.

3. HDRL-2 is the top pipe in the GDR-1 assembly. It should be nominal 2 1/2" Stainless Steel pipe ASTM A312/A312M, grade TP316L, schedule 40, no. 4 bright directional finish (not painted with HPC). HDRL-2 is welded to a 4" wide stainless steel plate/bar that is then bolted to the guardrail assembly.

4. HDRL-4 is a stainless steel handrail with integrated lighting see fixture type C in the luminaire schedule on EB07.00 and lighting plans EB08.01, 08.02 and 08.03. Coordinate handrail bracket with fixture and conduit location. Design intent is for bracket to be bolted to the bottom of the p-bar that supports HDRL-2. The payment detail for this RFI is not acceptable. HDRL-2 and HDRL-4 and the bracket for HDRL-4 and the SST bar (2"x8"x1" thick) that supports HDRL-2 (detail 4/A06.18) are the exception to the exposed metal receiving HPC-1, these elements should remain unpainted no. 4 finish stainless steel.

5. Guardrails must meet edge and be min 42" above finished floor. Increase height of guardrail on panel frame from 2'-8 3/8" to 2'-9" to increase overall height of GDR-1 by 4 1/8". 3/A06.17 and from 2'-6" to 2'-9" in detail 2/A06.18, with the gap between the top of channel at slab edge and the infill panel reduced to 2 3/4" from 3 1/2". This will create consistently sized infill panels.

6. The connection plates (knife plate at bottom and sst HDRL-2 support at top) are typically 1/2" thick at the trestle/level 1, and 1" thick at the stairs and at level 2.

1 LEVEL 1 SECTOR B LIGHTING PLAN

JACOBS



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

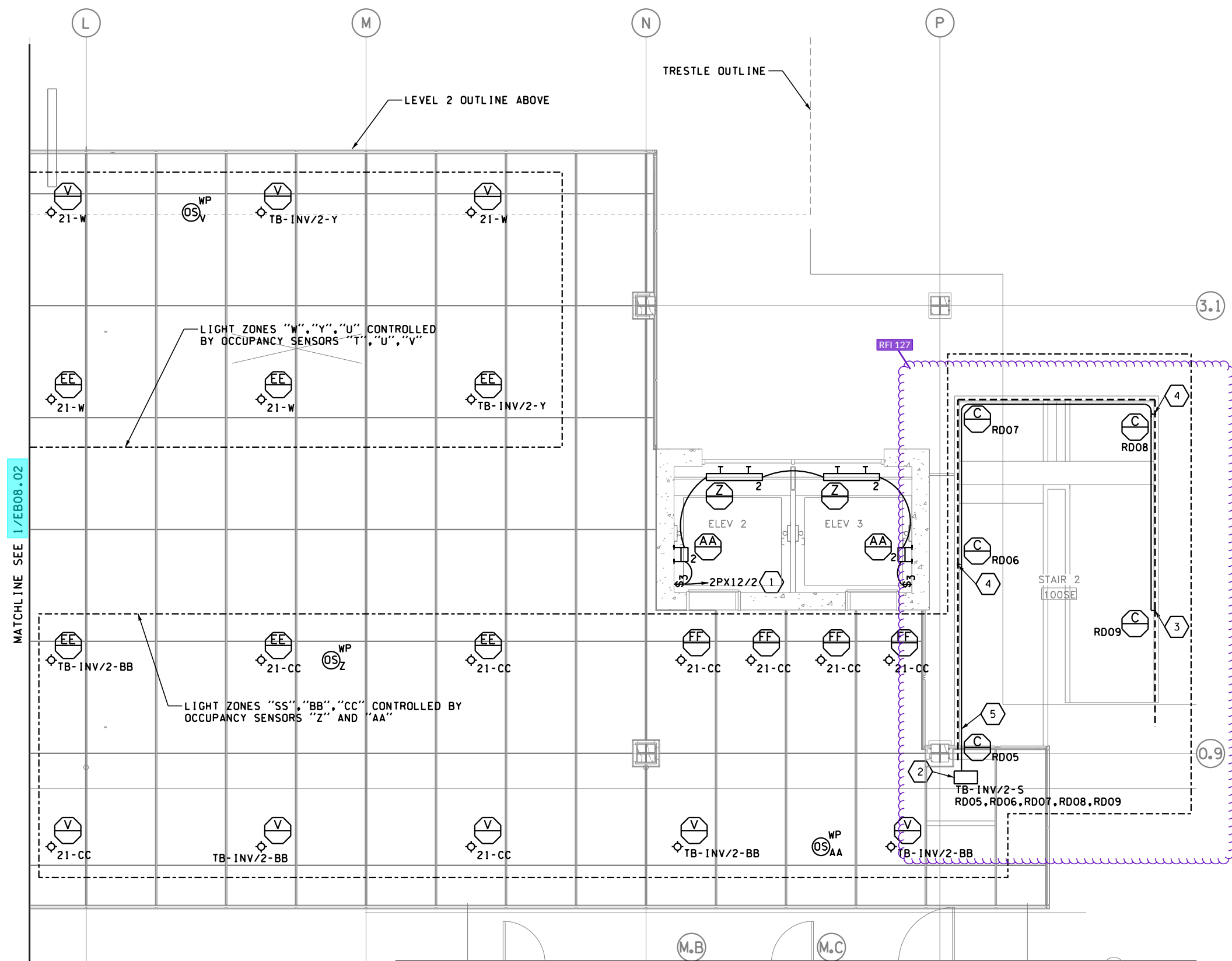
SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR B LIGHTING PLAN

EB08.02

SHEET
1264
OF
1521
SHEETS

| | | | | | |
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| PRINTED: 1:49:23 PM 1/16/2019 | | | | WA-2017-007-00 | |
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| DESIGNED BY: C. YUN | | | | 10 WASH | |
| ENTERED BY: C. YUN | | | | JOB NUMBER | |
| CHECKED BY: M. BAGINSKI | | | | 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | CONTRACT NO. | |
| DIR TERM ENGR: N. MCINTOSH | | | | 009321 | |
| ASST SECRETARY: A. SCARTON | | | | | |
| CONFORMED PLANS | | 1/18/19 | DATE | BY | |
| REVISION | | | | | |

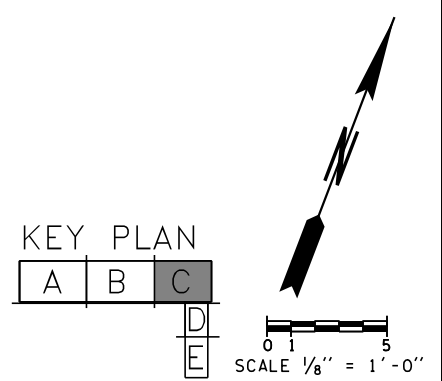




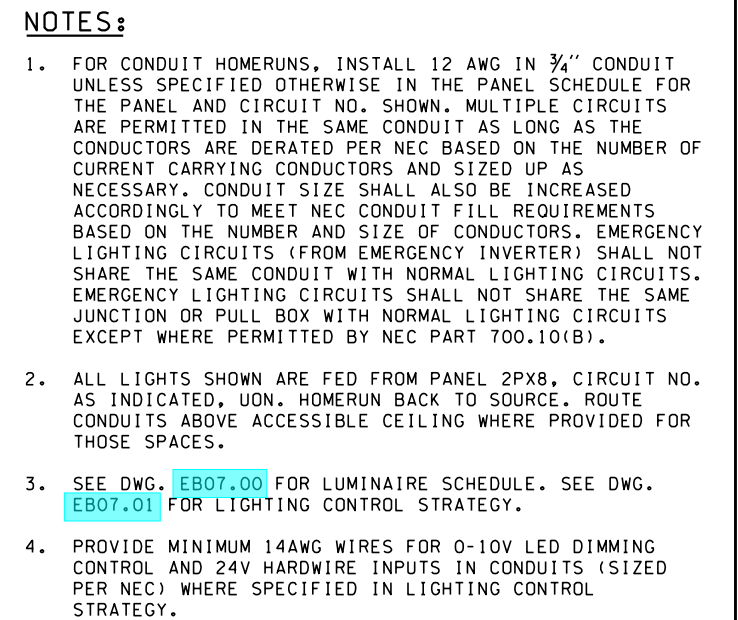
- NOTES:**
- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
 - ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX8, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE. ROUTE CONDUITS ABOVE ACCESSIBLE CEILING WHERE PROVIDED FOR THOSE SPACES.
 - SEE DWG. **EB07.00** FOR LUMINAIRE SCHEDULE. SEE DWG. **EB07.01** FOR LIGHTING CONTROL STRATEGY.
 - PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWARE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

- CONSTRUCTION NOTES:**
- ROUTE ALL CABLES IN ELEV 2/3 PIT BACK TO MB THROUGH CONDUITS P133 AND P134 SHOWN ON DWG. **EB02.00**.
 - NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D.
 - (1) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1/2" CONDUIT TO RAIL POST ABOVE.
 - (2) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1" CONDUIT TO RAIL POST ABOVE.
 - (5) 2/C #14 300V TYPE SJOOW FLEXIBLE CABLE IN 1 1/4" CONDUIT TO RAIL POST ABOVE.

1 LEVEL 1 SECTOR C LIGHTING PLAN
EB08.03



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| PRINTED: 1:50:20 PM 1/16/2019 | | LAST PRINTED BY: | | | | | | FED.AID PROJ.NO. | | | | | | MUKILTEO FERRY TERMINAL (PHASE 2) | | SHEET | |
| SUBMITTAL DATE: 1/18/19 | | slaterj | | | | | | | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | 1265 | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | | | REGION NO. STATE | | | | OF | | | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | | | 10 WASH | | | | 1521 | | | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | | | JOB NUMBER 18W121 | | TERMINAL - LEVEL 1 SECTOR C LIGHTING PLAN | | SHEETS | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | CONTRACT NO. 009321 | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | | |



1) ROUTE ALL CABLES IN ELEV 2/3 PIT BACK TO MB THROUGH CONDUITS P133 AND P134 SHOWN ON DWG. **EB02.00.**

2) NEMA 4X TYPE 316 STAINLESS STEEL ENCLOSURE WITH 96W DIMMABLE REMOTE DRIVER(S) FOR TYPE C FIXTURE, SIZE AS CALCULATED BELOW: 18" W X (6" X # OF REMOTE DRIVERS IN SAME ENCLOSURE) L X 6" D.

3) (1) 2/C #14 300V TYPE SJ00W FLEXIBLE CABLE IN 1/2" CONDUIT TO RAIL POST ABOVE.

4) (2) 2/C #14 300V TYPE SJ00W FLEXIBLE CABLE IN 1" CONDUIT TO RAIL POST ABOVE.

5) (5) 2/C #14 300V TYPE SJ00W FLEXIBLE CABLE IN 1 1/4" CONDUIT TO RAIL POST ABOVE.

| | | |
|---|---|---|
| A | B | C |
| | | D |
| | | E |

SCALE $\frac{1}{8}" = 1'-0"$



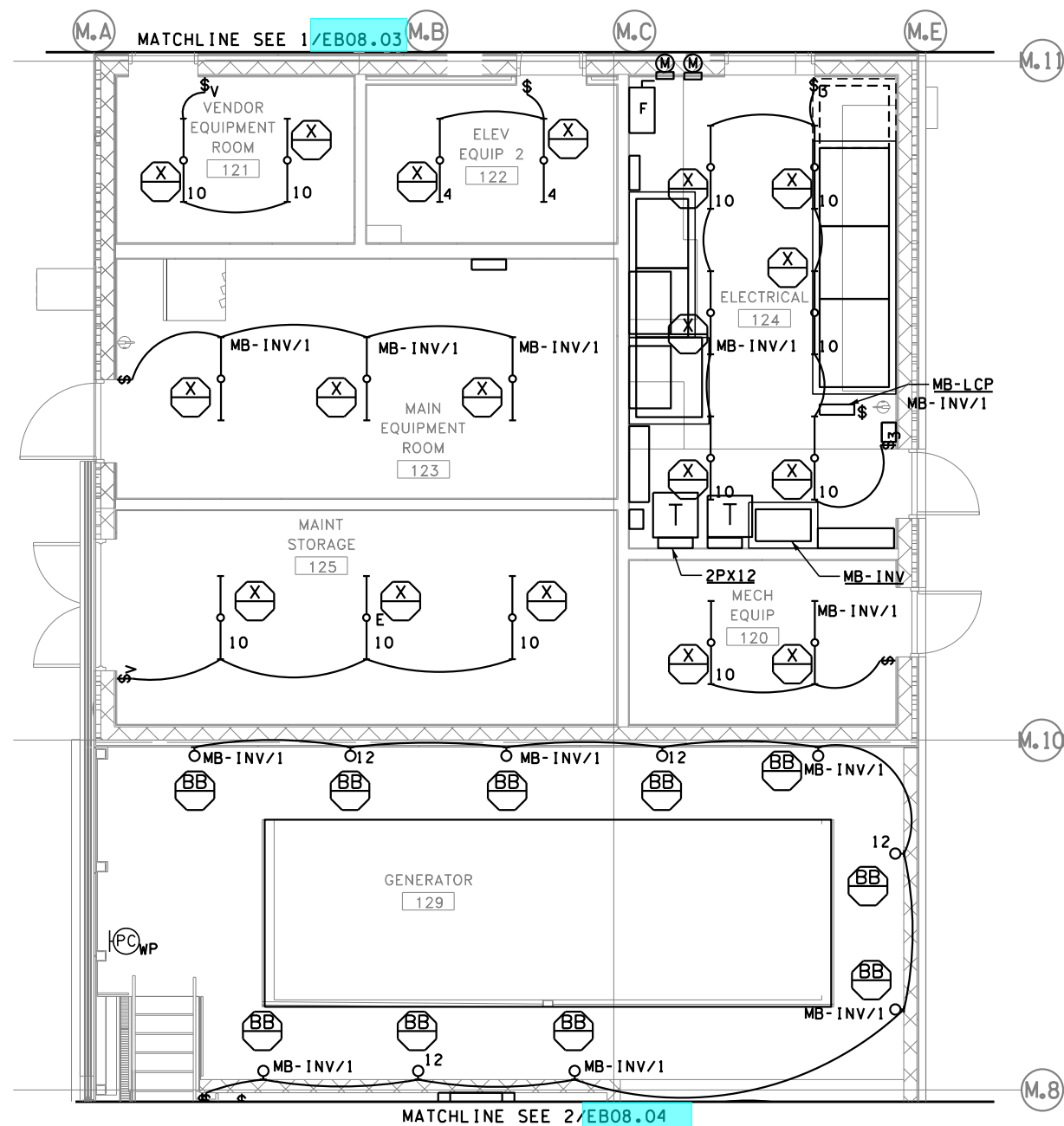
**Washington State
Department of Transportation**
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION

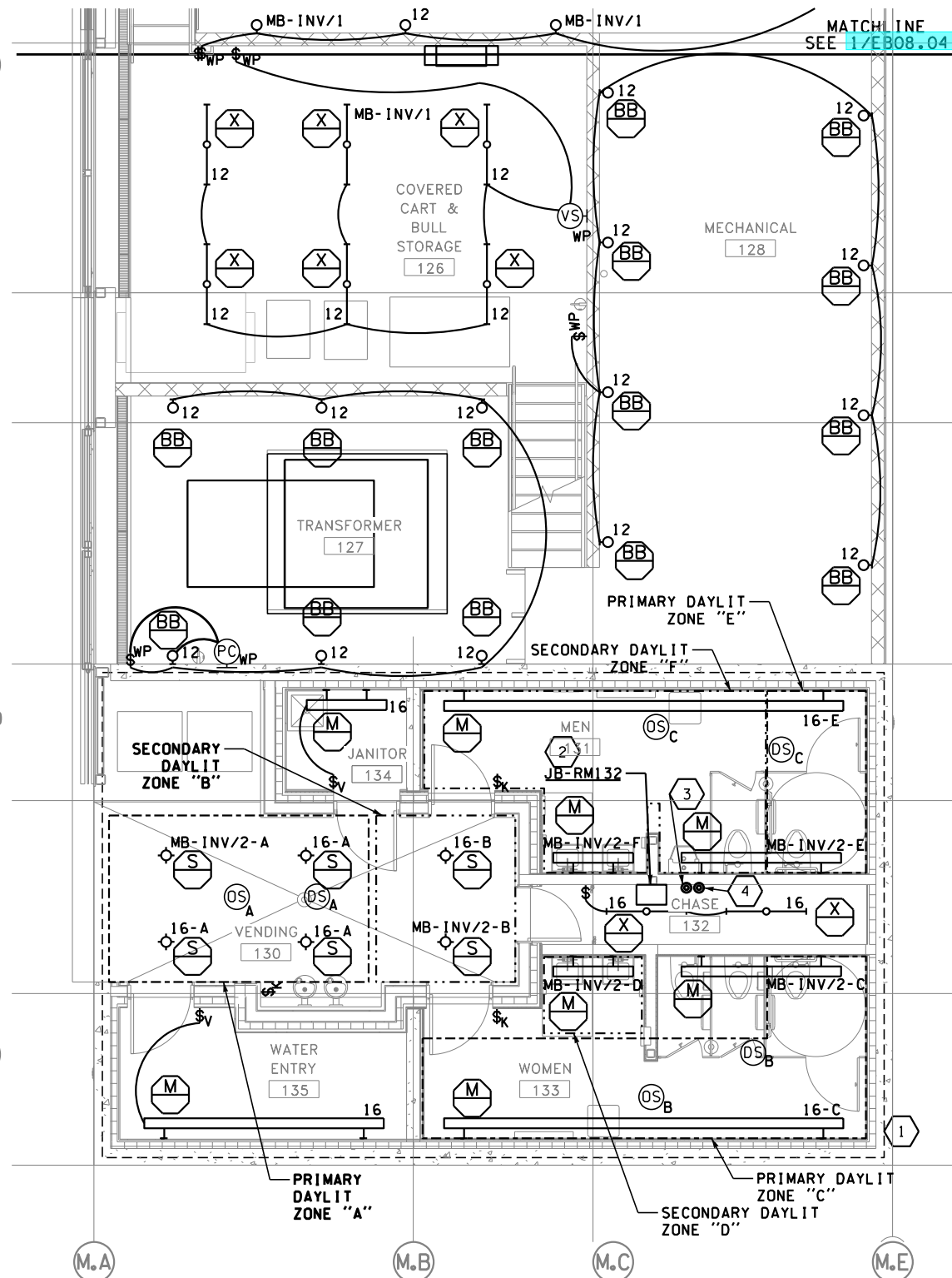
TERMINAL - LEVEL 1
SECTOR C LIGHTING PLAN

E B08.03

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|---------------------------------------|
| SHEET 1265 OF 1521 SHEETS |
|---------------------------------------|



1 LEVEL 1 SECTOR D LIGHTING PLAN
EB08.04



2 LEVEL 1 SECTOR E LIGHTING PLAN
EB08.04

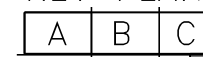
NOTES:

- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX12, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.
- SEE DWG. EB07.00 FOR LUMINAIRE SCHEDULE. SEE DWG. EB07.01 FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- ALL CIRCUITS IN COVERED AREA TO BE ROUTED UNDERGROUND THROUGH RM132 BACK TO ELEC RM.
- JB-RM132 CONNECTED TO CONDUITS P171, P172, P173. SEE DWG. EB02.00 FOR CONTINUATION.
- ROUTE ALL LOW VOLTAGE LIGHTING CONTROL WIRES BACK TO MB-LCP THROUGH CONDUIT C117, SEE DWG. EB02.00 FOR CONTINUATION.
- ROUTE EMERGENCY LIGHTING WIRES IN THIS AREA BACK TO MB-INV THROUGH CONDUIT P174, SEE DWG. EB02.00 FOR CONTINUATION.

KEY PLAN



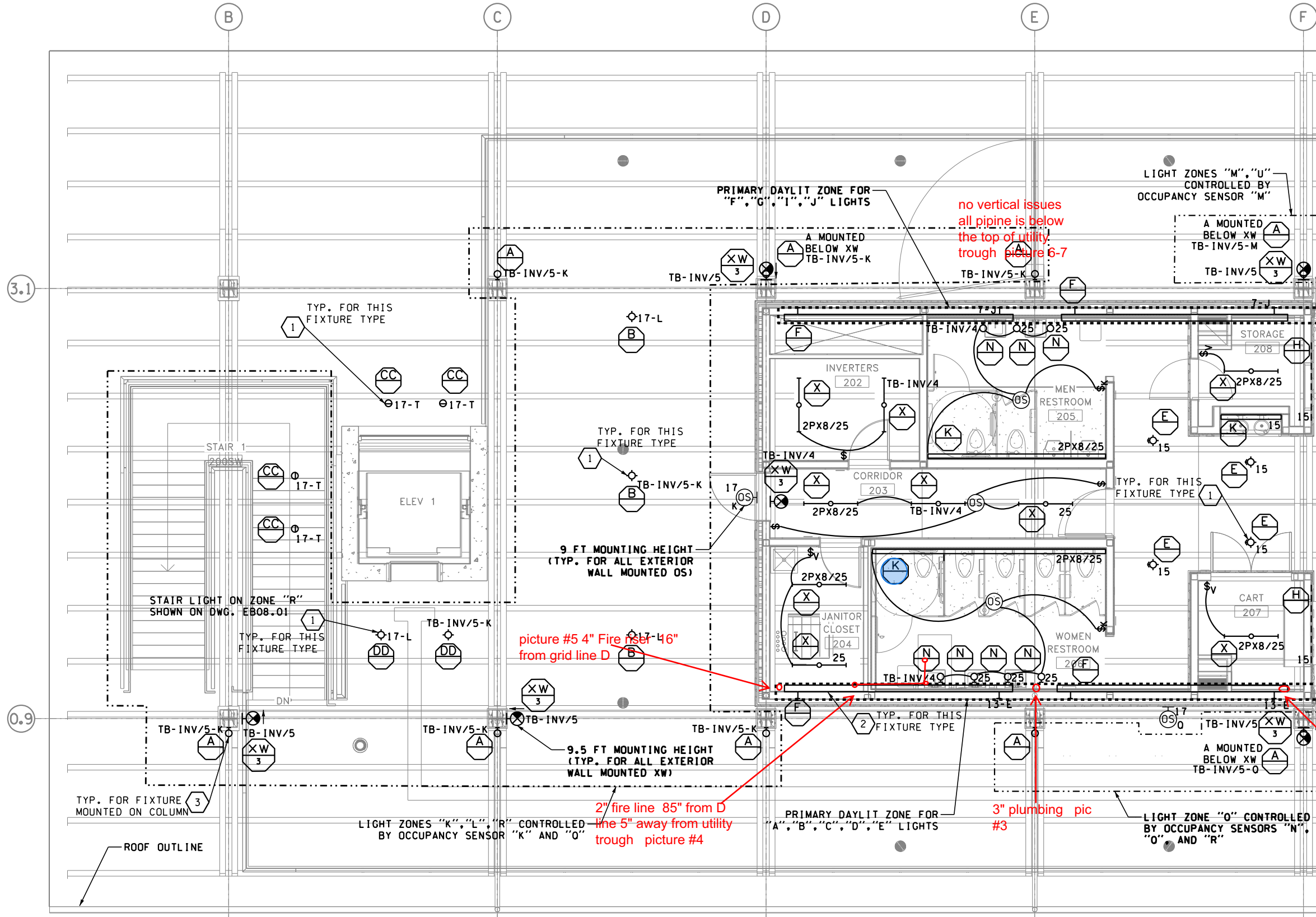
SCALE 1/8" = 1'-0"

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| ENTERED BY: C. YUN | CHECKED BY: M. BAGINSKI | 1/18/19 | REGION NO. STATE |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | 1/18/19 | 10 WASH |
| ASST SECRETARY: A. SCARTON | CONFORMED PLANS | 1/18/19 | JOB NUMBER |
| | REVISION | DATE | 18W121 |
| | | BY | CONTRACT NO. |
| | | | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
SECTOR D & E LIGHTING PLANS

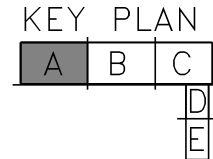
EB08.04
SHEET
1266
OF
1521
SHEETS



- NOTES:**
- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
 - ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX9, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE. ROUTE CONDUITS UNDER LEVEL 2 FLOOR (ABOVE LEVEL 1 ACCESSIBLE CEILING WHERE PROVIDED), UON.
 - SEE DWG. [EB07.00](#) FOR LUMINAIRE SCHEDULE. SEE DWG. [EB07.01](#) FOR LIGHTING CONTROL STRATEGY.
 - PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWARE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

- CONSTRUCTION NOTES:**
- ROUTE CONDUITS ABOVE WOOD BEAM AS SHOWN ON DETAIL [2/A03.65](#) TO CEILING MOUNTED LIGHTS. CONDUITS NORTH OF GRID LINE 0.9 SHALL BE ROUTED IN THE BUILDING NORTH-SOUTH DIRECTION (NO EAST-WEST), PARALLEL TO LETTER GRID LINES. CONDUITS BETWEEN GRID LINES 0.9 AND 3.1 SHALL BE ROUTED IN THE BUILDING NORTH-SOUTH OR EAST-WEST DIRECTION, PERPENDICULAR/PARALLEL TO GRID LINES. CONDUITS TO RUN DOWN TO LEVEL 1 THROUGH RM 204.
 - ROUTE CONDUIT THROUGH UTILITY TROUGH AS SHOWN ON DETAIL [5/A06.25](#) TO WALL MOUNTED FIXTURES FOR THE GREAT HALL. TYPE MC CABLE MAY BE USED IN LIEU OF CONDUIT IN LIEU OF CONDUIT INSIDE UTILITY TROUGH FOR BRANCH CIRCUITS (EXCLUDING LIGHTING CONTROL, CIRCUITS FED FROM EMERGENCY INVERTER).
 - SEE DWG. [A06.34](#) FOR DETAIL ON MOUNTING FIXTURES ON COLUMN.

MATCHLINE SEE 2/EB08.06



SCALE 1/8" = 1'-0"

1 LEVEL 2 SECTOR A LIGHTING PLAN

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|-----------------------------------------------------------------------------|--|------------------|--|---------------------|--|----------------|--|--------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------|--|---------|--|
| FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb08_05.dlv | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | EB08.05 | |
| PRINTED: 1:52:58 PM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | WA-2017-007-00 | | | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | slaterj | | | | | | REGION NO. | | STATE | | SHEET | | | | | |
| DESIGNED BY: C. YUN | | 1/18/19 | | | | | | 10 | | WASH | | 1267 | | | | | |
| ENTERED BY: C. YUN | | 1/18/19 | | | | | | | | | | OF | | | | | |
| CHECKED BY: M. BAGINSKI | | 1/18/19 | | | | | | | | | | 1521 | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | JOB NUMBER | | 18W121 | | TERMINAL - LEVEL 2 SECTOR A LIGHTING PLAN | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | CONTRACT NO. | | 009321 | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | | |

MATCHLINE SEE 1/EB08.05

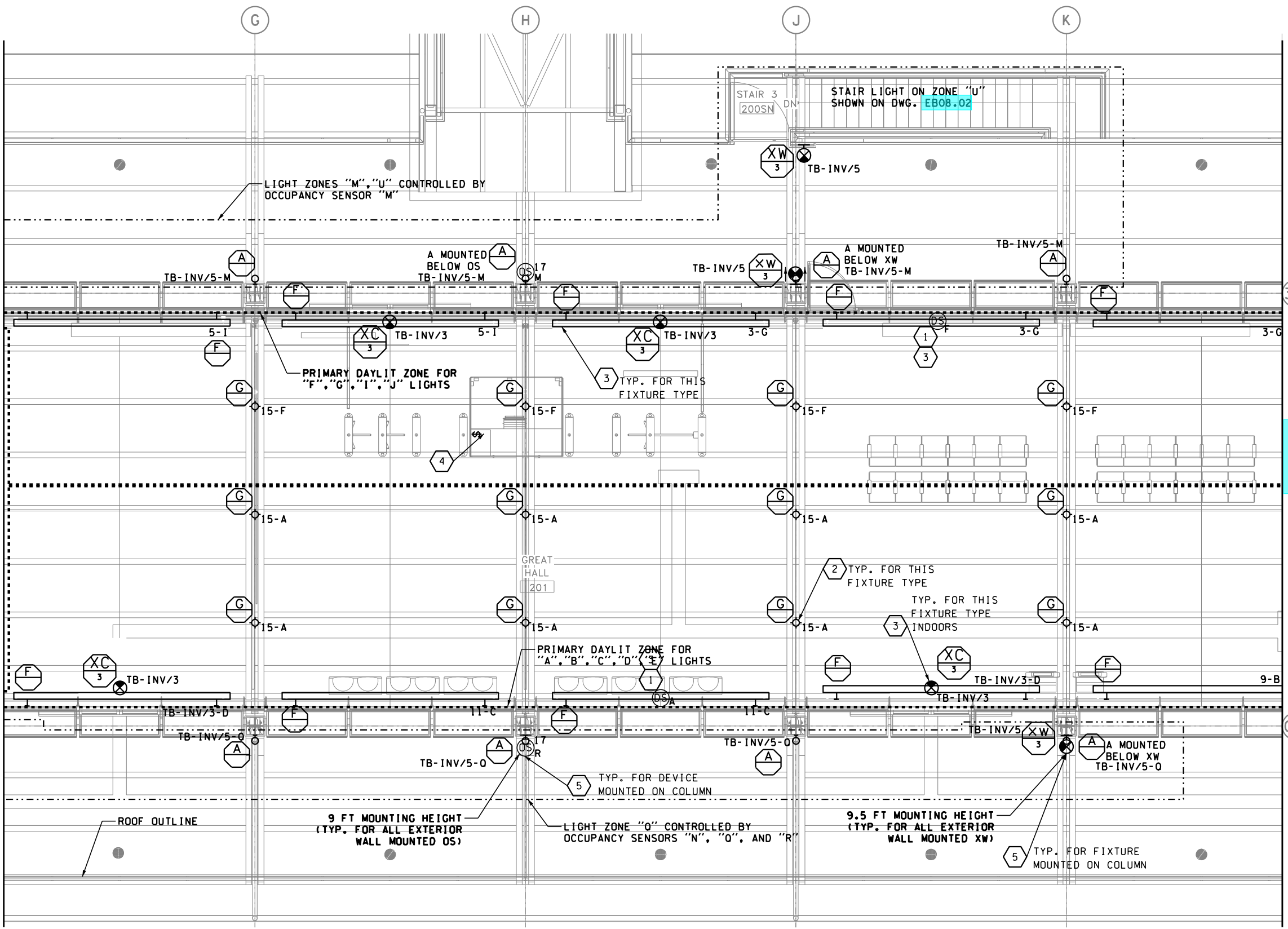
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NOTES:

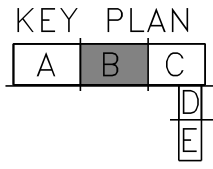
- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX9, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE. ROUTE CONDUITS UNDER LEVEL 2 FLOOR (ABOVE LEVEL 1 ACCESSIBLE CEILING WHERE PROVIDED), UON.
- SEE DWG. EB07.00 FOR LUMINAIRE SCHEDULE. SEE DWG. EB07.01 FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- DAYLIGHT SENSOR MOUNTED UNDER UTILITY TROUGH, FACING DOWN.
- ROUTE CONDUITS ABOVE WOOD BEAM AS SHOWN ON DETAIL 2/A03.65 TO CEILING MOUNTED LIGHTS. CONDUITS NORTH OF GRID LINE 3.1 AND CONDUITS SOUTH OF GRID LINE 0.9 SHALL BE ROUTED IN THE BUILDING NORTH-SOUTH DIRECTION (NO EAST-WEST), PARALLEL TO LETTER GRID LINES. CONDUITS BETWEEN GRID LINES 0.9 AND 3.1 SHALL BE ROUTED IN THE BUILDING NORTH-SOUTH OR EAST-WEST DIRECTION, PERPENDICULAR/PARALLEL TO GRID LINES. CONDUITS TO RUN DOWN TO LEVEL 1 THROUGH RM 204.
- ROUTE CONDUIT THROUGH UTILITY TROUGH AS SHOWN ON DETAIL 5/A06.25 TO WALL MOUNTED FIXTURES FOR THE GREAT HALL. TYPE MC CABLE MAY BE USED IN LIEU OF CONDUIT IN LIEU OF CONDUIT INSIDE UTILITY TROUGH FOR BRANCH CIRCUITS (EXCLUDING LIGHTING CONTROL, CIRCUITS FED FROM EMERGENCY INVERTER).
- MANUAL OVERRIDE SWITCH MOUNTED AT THE DESK FOR GREAT HALL LIGHTING, SEE DETAIL 1/EB07.05.
- SEE DWG. A06.34 FOR DETAIL ON MOUNTING FIXTURES ON COLUMN.



1 LEVEL 2 SECTOR B LIGHTING PLAN
EB08.06

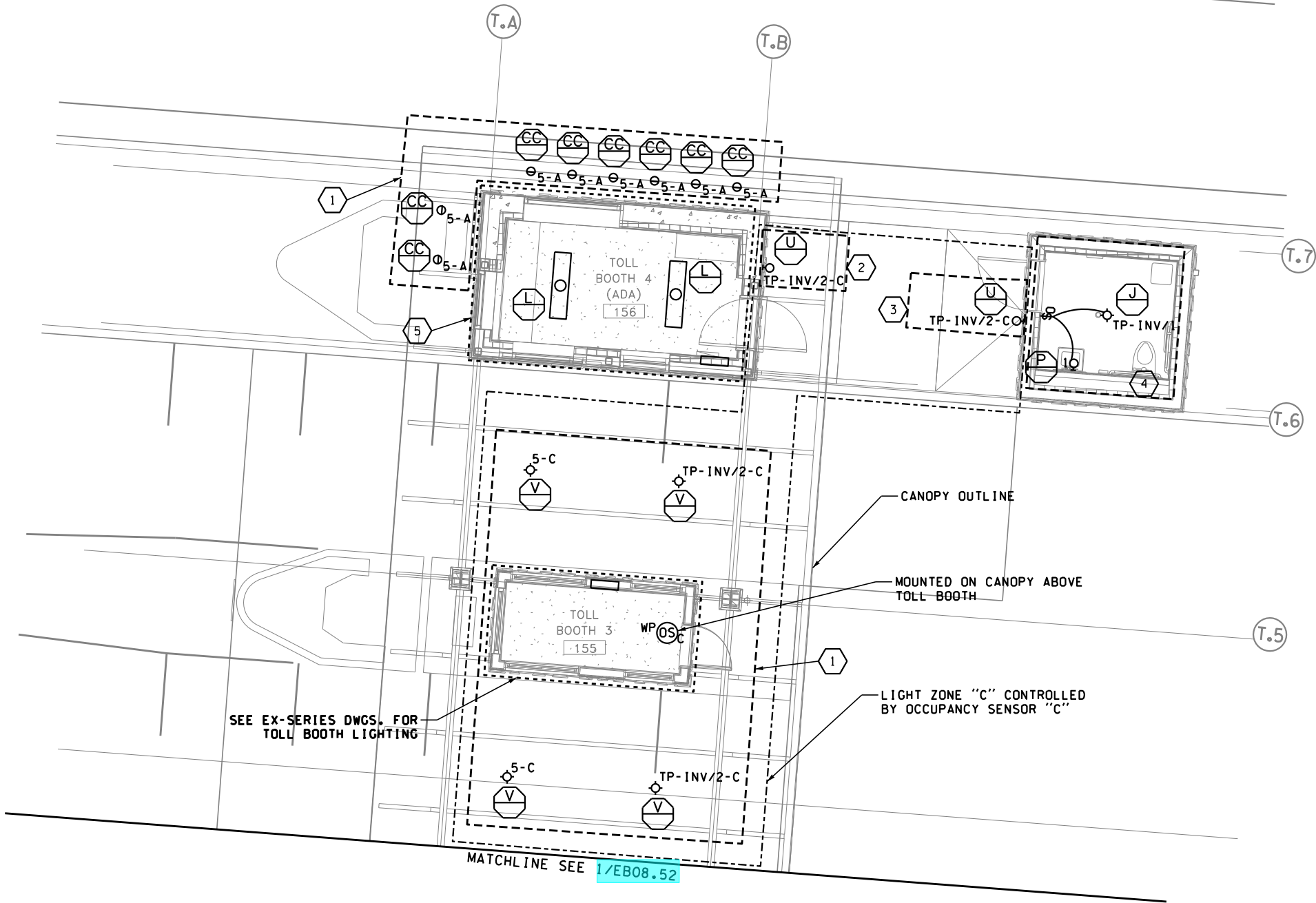


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| SUBMITTAL DATE: 1/18/19 | | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | | | 009321 |
| CONFORMED PLANS | | 1/18/19 | | |
| REVISION | | DATE | BY | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
SECTOR B LIGHTING PLAN

EB08.06
SHEET
1268
OF
1521
SHEETS



1 LEVEL 1 SECTOR F LIGHTING PLAN
EB08.51

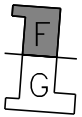
NOTES:

1. FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
2. ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX1, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.
3. LIGHTING INSIDE TOLL BOOTH 3 TO BE BY OTHERS AND FED FROM TOLL BOOTH PANELBOARD.
4. ALL CONDUITS FOR EXTERIOR LIGHTING SHALL BE CONCEALED.
5. SEE DWG. EB07.00 FOR LUMINAIRE SCHEDULE. SEE DWG. EB07.01 FOR LIGHTING CONTROL STRATEGY.
6. PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- 1 ROUTE BRANCH CIRCUITS AND CONTROL WIRES TO RM151 THROUGH CONDUITS P151, P152, AND C151 SHOWN ON DWG. EB02.50
- 2 ROUTE BRANCH CIRCUIT AND CONTROL WIRES TO CANOPY
- 3 ROUTE BRANCH CIRCUIT AND CONTROL WIRES TO RM156 EXTERIOR WALL-MOUNTED LIGHT JB VIA CONDUITS P153 AND C152 SHOWN ON DWG. EB02.50
- 4 ROUTE EMERGENCY LIGHTING CIRCUIT TO RM151 VIA CONDUIT P016 SHOWN ON DWG. EB02.50. ROUTE NORMAL LIGHTING CIRCUIT TO RM151 VIA CONDUITS P149 AND P015 SHOWN ON DWG. EB02.50.
- 5 FOLLOWING LIGHTING CONTROL DEVICE LAYOUT, CONDUIT AND CABLE SIZES, AND CONSTRUCTION NOTES FOR TOLL BOOTHS 1 TO 3 ON EX SERIES DWGS, UNLESS OTHERWISE SHOWN HEREIN. ALL EQUIPMENT AND DEVICES IN TOLL BOOTH 4 SHALL BE CIRCUITED TO PANEL 2PX5 WITH BRANCH CIRCUIT NOS. SHOWN ON EX SERIES DWGS.

KEY PLAN



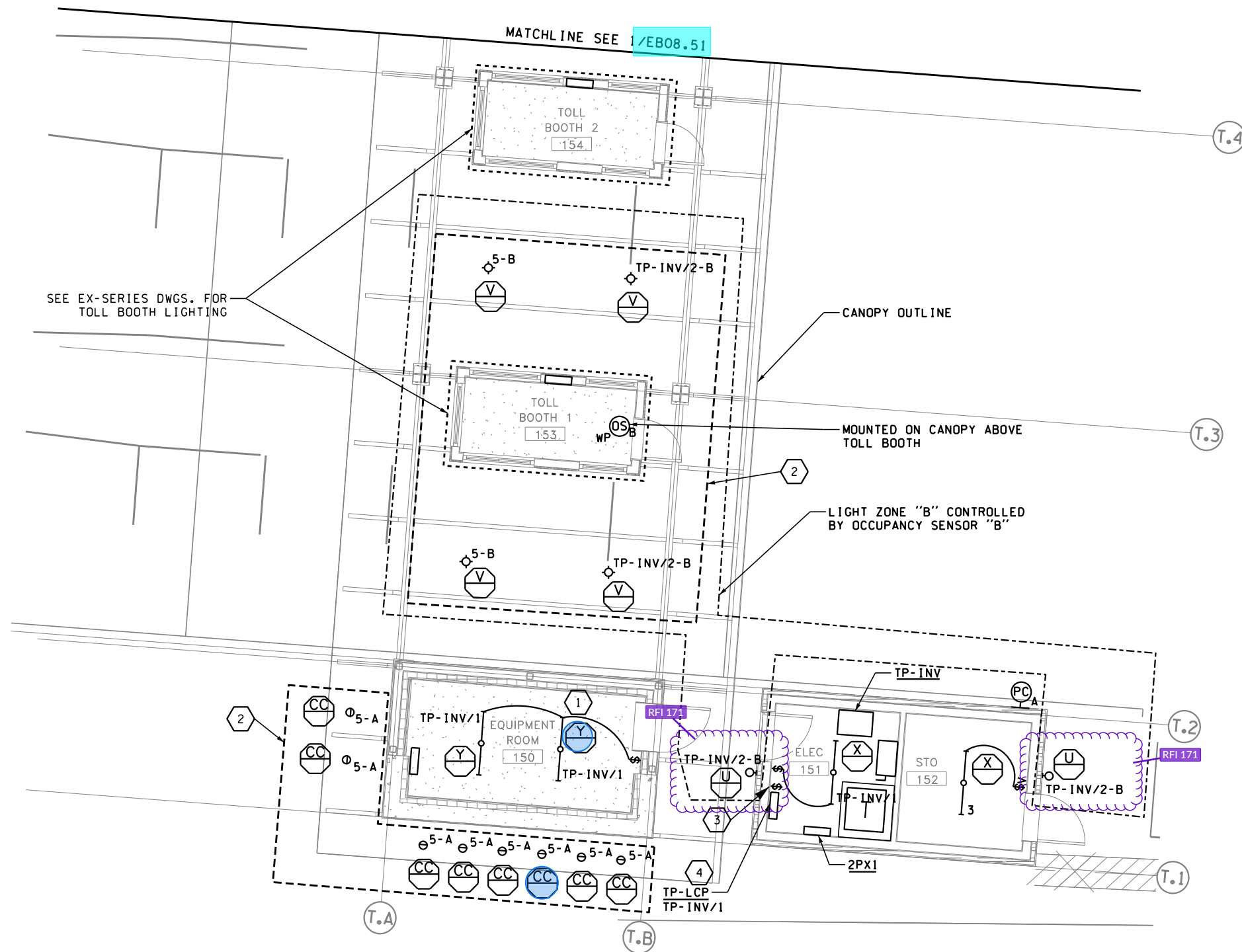
SCALE 1/8" = 1'-0"

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| PRINTED: 1:56:31 PM 1/16/2019 | LAST PRINTED BY: [signature] | | | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | | | | | WA-2017-007-00 |
| DESIGNED BY: C. YUN | 1/18/19 | | | | REGION NO. STATE |
| ENTERED BY: C. YUN | 1/18/19 | | | | 10 WASH |
| CHECKED BY: M. BAGINSKI | 1/18/19 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 009321 |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TOLL PLAZA - LEVEL 1
SECTOR F LIGHTING PLAN

EB08.51
SHEET
1270
OF
1521
SHEETS



1 LEVEL 1 SECTOR G LIGHTING PLAN
EB08.52

NOTES:

- FOR CONDUIT HOMERUNS, INSTALL 12 AWG IN 3/4" CONDUIT UNLESS SPECIFIED OTHERWISE IN THE PANEL SCHEDULE FOR THE PANEL AND CIRCUIT NO. SHOWN. MULTIPLE CIRCUITS ARE PERMITTED IN THE SAME CONDUIT AS LONG AS THE CONDUCTORS ARE DERATED PER NEC BASED ON THE NUMBER OF CURRENT CARRYING CONDUCTORS AND SIZED UP AS NECESSARY. CONDUIT SIZE SHALL ALSO BE INCREASED ACCORDINGLY TO MEET NEC CONDUIT FILL REQUIREMENTS BASED ON THE NUMBER AND SIZE OF CONDUCTORS. EMERGENCY LIGHTING CIRCUITS (FROM EMERGENCY INVERTER) SHALL NOT SHARE THE SAME CONDUIT WITH NORMAL LIGHTING CIRCUITS. EMERGENCY LIGHTING CIRCUITS SHALL NOT SHARE THE SAME JUNCTION OR PULL BOX WITH NORMAL LIGHTING CIRCUITS EXCEPT WHERE PERMITTED BY NEC PART 700.10(B).
- ALL LIGHTS SHOWN ARE FED FROM PANEL 2PX1, CIRCUIT NO. AS INDICATED, UON. HOMERUN BACK TO SOURCE.
- LIGHTING INSIDE TOLL BOOTH TO BE BY OTHERS AND FED FROM TOLL BOOTH PANELBOARD.
- ALL CONDUITS FOR EXTERIOR LIGHTING SHALL BE CONCEALED.
- SEE DWG. EB07.00 FOR LUMINAIRE SCHEDULE. SEE DWG. EB07.01 FOR LIGHTING CONTROL STRATEGY.
- PROVIDE MINIMUM 14AWG WIRES FOR 0-10V LED DIMMING CONTROL AND 24V HARDWIRE INPUTS IN CONDUITS (SIZED PER NEC) WHERE SPECIFIED IN LIGHTING CONTROL STRATEGY.

CONSTRUCTION NOTES:

- ROUTE BRANCH CIRCUIT WIRES TO TP-INV THROUGH CONDUIT P151 SHOWN ON DWG. EB02.50.
- ROUTE BRANCH CIRCUITS AND CONTROL WIRES TO RM151 THROUGH CONDUITS P151, P152, AND C151 SHOWN ON DWG. EB02.50.
- MANUAL OVERRIDE SWITCH FOR TOLL PLAZA EXTERIOR LIGHTING, SEE DETAIL 3/EB07.03.
- TOLL PLAZA LIGHTING CONTROL PANEL, PROVIDE A COMPLETE SYSTEM WITH SPECIFIED CONTROL SHOWN ON DETAIL 3/EB07.03.

RFI 171 - Toll Rm. 150 Light

Yes, the exterior light shown on 5/A05.52 is required and should be fixture type "U". The light shown on 6/A05.52 should be eliminated. On the electrical drawings EB08.52, fixture type "U" outside room 151 should be moved to outside room 150 to match the Architectural elevation. (LMN)

KEY PLAN



SCALE 1/8" = 1'-0"

FILE NAME: WSF\Mukilteo\14W121_FerryTermConst\CADD\JACOBS\14w121eb08.52.dwg

PRINTED: 1:57:51 PM 1/16/2019

SUBMITTAL DATE: 1/18/19

DESIGNED BY: C. YUN

ENTERED BY: C. YUN

CHECKED BY: M. BAGINSKI

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

LAST PRINTED BY:

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NOTES:

1. THE FIRE ALARM SYSTEM AND CONTROLLER SHALL BE FULLY FUNCTIONAL WITHOUT THE USE OF PRIMARY POWER. THE FIRE ALARM SYSTEM SHALL BE PROVIDED WITH A MINIMUM OF 24 HOURS OF STANDBY OPERATION FOLLOWED BY AN ADDITIONAL 15 MINUTES OF ALARM OPERATION.
2. PROVIDE ADDITIONAL POINTS AND EQUIPMENT FOR AN OPERATIONAL FIRE ALARM SYSTEM.
3. FIRE SPRINKLER SYSTEM SWITCHES (TAMPER, WATER FLOW, HI/LOW AIR PRESSURE) SHALL BE PROVIDED AND INSTALLED BY SPRINKLER SYSTEM CONTRACTOR. THE SWITCHES SHALL BE WIRED AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE ELECTRICAL CONTRACTOR. COORDINATE WITH THE FIRE SPRINKLER SYSTEM CONTRACTOR5*32S SHOP DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF ALL FIRE SPRINKLER SWITCHES, WHICH SHALL BE MONITORED BY THE FIRE ALARM.
4. DUCT AND DAMPER SMOKE DETECTORS SHALL BE PROVIDED AS REQUIRED BY CODE BY THE ELECTRICAL CONTRACTOR AND COORDINATED WITH MECHANICAL CONTRACTOR. DUCT DETECTORS SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. WIRING AND CONNECTION OF DETECTORS AND INTELLIGENT WIRING AND CONNECTION OF DETECTORS AND INTELLIGENT MODULE SHALL BE BY THE ELECTRICAL CONTRACTOR. ACCESS PANELS IN DUCT WORK TO ACCESS DUCT SMOKE DETECTOR SAMPLING TUBES TO BE BY THE MECHANICAL CONTRACTOR.
5. PROVIDE NECESSARY ADDRESSABLE MODULES TO SHUT DOWN HVAC EQUIPMENT AND/OR CLOSE FIRE/SMOKE DAMPER UPON ACTIVATION OF THE SMOKE DETECTOR. RELAYS SHALL BE WITHIN 35*32 OF CONTROLLER OR ACTUATOR.
6. WHEN ACTUATED, DUCT-MOUNTED SMOKE DETECTORS AND CONCEALED FIRE DETECTORS SHALL ACTIVATE A STROBE LIGHT. PROVIDE A SEPARATE STROBE LIGHT FOR EACH DETECTOR. LOCATE THE STROBE LIGHT WHERE IT IS READILY SEEN.
7. PROVIDE SYSTEM CABLES (QUANTITIES AND SIZES) FOR A FULLY FUNCTIONAL SYSTEM, AS REQUIRED.
8. INITIATE ELEVATOR RECALL UPON ACTIVATION OF MACHINE ROOM OR LOBBY SMOKE DETECTOR.
9. THE 24 VOLTS DC SPRINKLER SYSTEM ALARM BELL SHALL BE PROVIDED BY THE FIRE PROTECTION SPRINKLER SYSTEM CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL MOUNT, WIRE AND CONNECT THE ALARM BELL TO THE FIRE ALARM SYSTEM CONTROL PANEL (FACP) AND THE FIRE ALARM CONTRACTOR SHALL PROGRAM THE ALARM BELL TO ACTIVATE UPON THE FLOW OF WATER ONLY.
10. PROVIDE SURGE PROTECTION ON ALL INCOMING CIRCUITS SERVING FIRE ALARM SYSTEM PANELS.
11. FIRE ALARM WIRING FOR NOTIFICATION, SIGNALING AND INITIATING CIRCUITS SHALL BE CLASS A IN ACCORDANCE WITH NFPA 72.

FIRE ALARM DEVICES

| | |
|-----------------------------|-----------------------------------------|
| <div>AMP</div> | AMPLIFIER RACK |
| <div>BATT</div> | BATTERY CABINET |
| <div></div> | ALARM BELL |
| <div>BPS</div> | BOOSTER POWER SUPPLY |
| <div>ERS</div> | ELEVATOR STATUS/RECALL |
| <div>FAA</div> | FIRE ALARM ANNUNICATOR |
| <div>FACP</div> | FIRE ALARM CONTROL PANEL |
| <div>FATC</div> | FIRE ALARM TERMINAL CABINET |
| <div>PRE</div> | PRE-ACTION SYSTEM/CONTROL UNIT |
| <div>DH</div> | DOOR HOLDER |
| <div>RL</div> | RELEASING DEVICE |
| <div>AIM</div> | ADDRESSABLE INPUT MONITOR MODULE |
| <div>AIO</div> | ADDRESSABLE INPUT/OUTPUT MODULE |
| <div>ACM</div> | ADDRESSABLE OUTPUT CONTROL MODULE |
| <div></div> | HEAT DETECTOR/SENSOR |
| <div>EOL_{Re}</div> | END OF LINE DEVICE-RESISTOR |
| <div>F</div> | PULL STATION/FIRE ALARM BOX |
| <div>S</div> | SMOKE DETECTOR/SENSOR |
| <div>RTS</div> | REMOTE ALARM INDICATING AND TEST SWITCH |
| <div></div> | COMBINATION SPEAKER/VISIBLE |
| <div>CM</div> | CONTROL MODULE/RELAY |

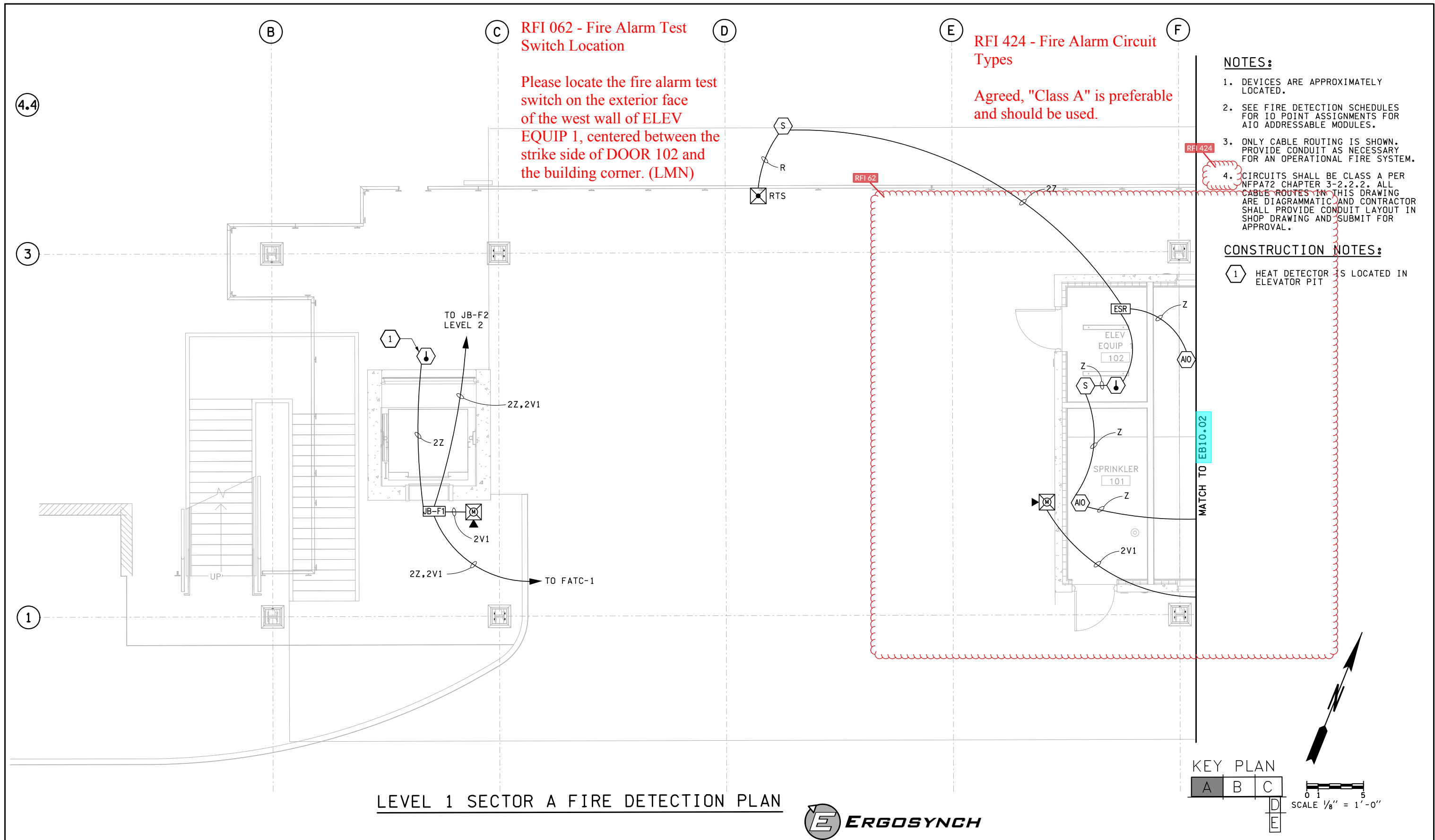
| WIRE CODE | # OF CONDUCTORS | COLOR/ID | FUNCTION | SIZE | NOTE |
|-----------|-----------------|-----------------------------|-----------------------------|-----------------------|------|
| Z | 2 | YEL+ORG TAG CKT # | SLC DATA CLASS A | 18/16 AWG, SOLID ONLY | 2 |
| A | 2 | ADU CKT | SPEAKER CIRCUIT CLASS B | 16 AWG, SOLID ONLY | 2 |
| V | 2 | RED+BLK | HORN/STROBE CIRCUIT | 14 AWG, SOLID ONLY | 1, 2 |
| ANN | 4 + 2 | RED, BLK, YLW, GRN+RED, BLK | CPU DATA + 24VDC PWR | 14 AWG, SOLID ONLY | 2 |
| M | 2 | BLU+WHY | MAGNETIC DOOR HOLDER 24 VDC | 14 AWG, SOLID ONLY | 2 |
| DC | 2 | BRN+GRY | 24 VDC AUXILARY | 14 AWG, SOLID ONLY | 2 |
| X | 2 | RED+BLK | ZONE CKT NON-DATA | 18 AWG, SOLID ONLY | 2 |
| R | 4 | FIELD DETERMINED | REMOTE TEST STATION | 18 AWG | 2 |
| L | 2 | FIELD DETERMINED | REMOTE ALARM LED | 18 AWG | 2 |

CABLE TYPES
TABLE 1

| DEVICE | LOCATION | SUPERVISORY/CONTROL FUNCTION |
|--------|-----------------------|------------------------------------------------|
| 1ESR | ELEV EQUIP RM 102 | ELEVATOR 1 |
| | | CM1:ELEVATOR 1 EQUIPMENT RM EXH FAN ACTIVATION |
| | | CM2:ELEVATOR 1 DE-ENERGIZE POWER PANEL |
| | | CM3:ELEVATOR 1 CAB HAT LIGHT |
| | | CM4:ELEVATOR 1 RECALL |
| | | IM1:ELEVATOR 1 SHUNT TRIP POWER MONITOR |
| | | IM2:ELEVATOR 1 RECALL MONITOR |
| 2ESR | ELEV EQUIP RM 122 | ELEVATOR 2 |
| | | CM1:ELEVATOR 2 EQUIPMENT RM EXH FAN ACTIVATION |
| | | CM2:ELEVATOR 2 DE-ENERGIZE POWER PANEL |
| | | CM3:ELEVATOR 2 CAB HAT LIGHT |
| | | CM4:ELEVATOR 2 RECALL |
| | | IM1:ELEVATOR 2 SHUNT TRIP POWER MONITOR |
| | | IM2:ELEVATOR 2 RECALL MONITOR |
| 3ESR | ELEV EQUIP RM 122 | ELEVATOR 3 |
| | | CM1:ELEVATOR 3 EQUIPMENT RM EXH FAN ACTIVATION |
| | | CM2:ELEVATOR 3 DE-ENERGIZE POWER PANEL |
| | | CM3:ELEVATOR 3 CAB HAT LIGHT |
| | | CM4:ELEVATOR 3 RECALL |
| | | IM1:ELEVATOR 3 SHUNT TRIP POWER MONITOR |
| | | IM2:ELEVATOR 3 RECALL MONITOR |
| 1AIO | GENERATOR RM 129 | GENERATOR |
| | | IM1:ATS ON EMERGENCY POWER |
| | | IM2:ATS ALARM |
| | | IM3:GENERATORS SUMMARY ALARM |
| | | IM4:GENERATOR RUNNING |
| | | IM5:GENERATOR ON NORMAL POWER |
| 2AIO | FIRE SPRINKLER RM 101 | DRY SYSTEM RISER |
| | | IM1:VALVE TAMPER |
| | | IM2:HI/LO AIR |
| | | IM3:WATER FLOW ALARM |
| | | |
| 3AIO | FIRE SPRINKLER RM 101 | WET SYSTEM RISER |
| | | IM1:VALVE TAMPER |
| | | IM2:WATER FLOW ALARM |
| 4AIO | WATER ENTRY RM 135 | OS&Y SUPERVISORY AND CONTROL |
| | | IM1:VALVE TAMPER |
| | | IM2:WATER FLOW ALARM |
| 5AIO | RM TO BE DETERMINED | FIRE DAMPERS |
| | | CM1:CLOSE FIRE DAMPER |
| | | IM1:FIRE DAMPER CLOSED |
| 6AIO | RM TO BE DETERMINED | AIR HANDLER |
| | | CM1:AIR HANDLER STOP (TO DDC) |
| | | CM2:WATER FLOW NOTIFICATION |
| | | CM3:HVAC UNIT STOP (TO DDC) |
| | | |
| 7AIO | WATER FLOW BELL | CM1:WATER FLOW NOTIFICATION |
| 8AIO | HVAC UNIT | CM1:UNIT STOP |
| | | IM1:UNIT RUNNING |

PRELIMINARY FIRE DEVICES
TABLE 2
NOTE 2

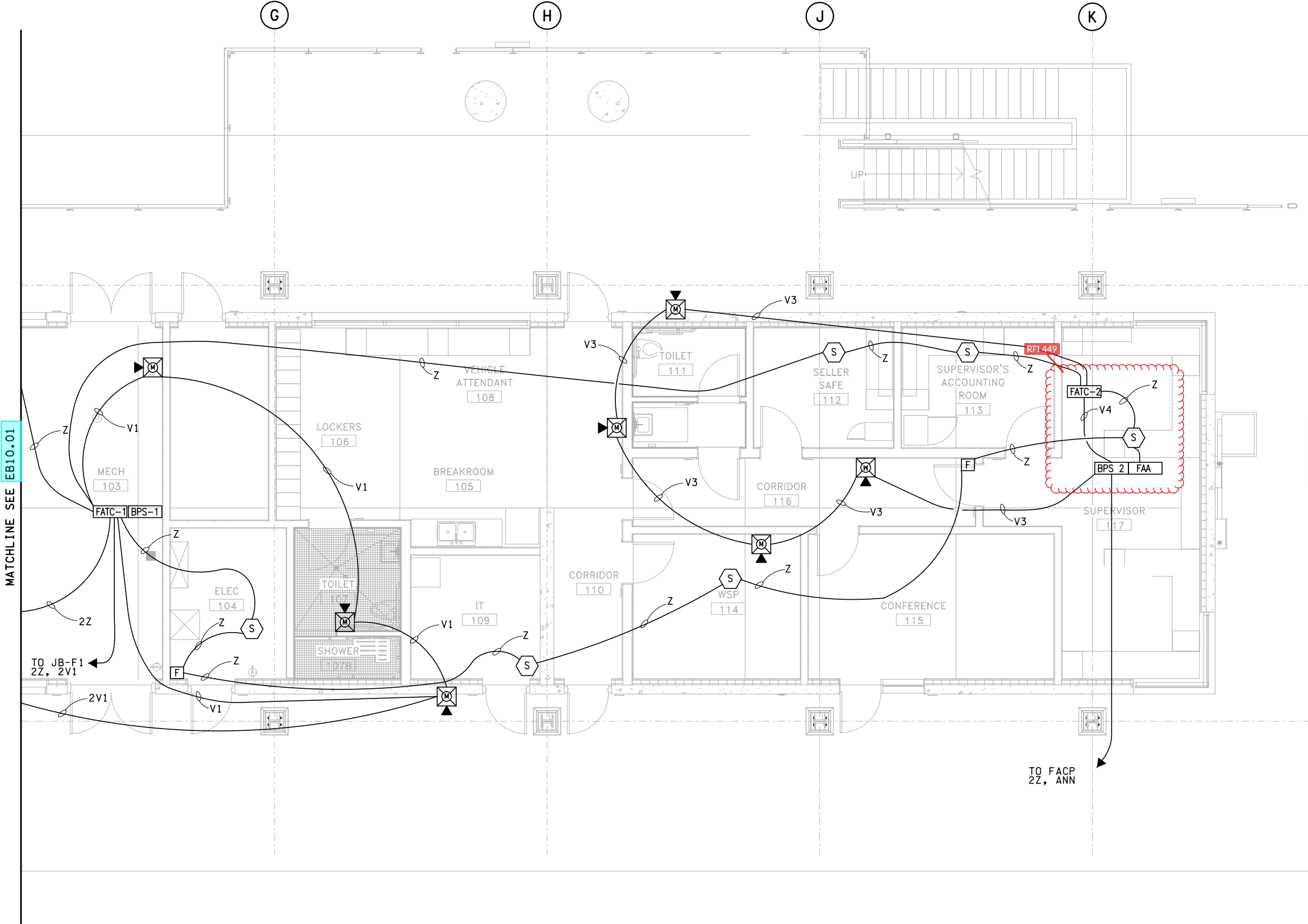




- NOTES:**
1. DEVICES ARE APPROXIMATELY LOCATED.
 2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
 3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
 4. CIRCUITS SHALL BE CLASS A PER NFPA72 CHAPTER 3-2.2.2. ALL CABLE ROUTES IN THIS DRAWING ARE DIAGRAMMATIC AND CONTRACTOR SHALL PROVIDE CONDUIT LAYOUT IN SHOP DRAWING AND SUBMIT FOR APPROVAL.

- CONSTRUCTION NOTES:**
1. HEAT DETECTOR IS LOCATED IN ELEVATOR PIT

| | | | | | | | | | | | | | | | | | |
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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCNST\CADD\ERGOSYNCH\14w121eb10-01.dlv | | | | | | | | | | | | | | SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL - LEVEL 1 - SECTOR A FIRE DETECTION PLAN | | EB10.01 | |
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| SUBMITTAL DATE: 1/18/19 | | DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | | | WA-2017-007-00 | | | | | | | |
| ENTERED BY: J. MCNABB | | CHECKED BY: S. HARRIS | | 1/18/19 | | | | | | REGION NO. STATE | | 10 WASH | | | | | |
| MAR PROJ ENGR: C. TORRES | | DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | JOB NUMBER 18W121 | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | REVISION | | DATE | | BY | | CONTRACT NO. 00***** | | | | | |



MATCHLINE SEE EB10.01

MATCHLINE SEE EB10.03

NOTES:

1. DEVICES ARE APPROXIMATELY LOCATED. FIELD VERIFY ACTUAL INSTALLATION LOCATION.
2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
4. CIRCUITS SHALL BE CLASS A PER NFPA72 CHAPTER 3-2.2.2. ALL CABLE ROUTES IN THIS DRAWING ARE DIAGRAMMATIC AND CONTRACTOR SHALL PROVIDE CONDUIT LAYOUT IN SHOP DRAWING AND SUBMIT FOR APPROVAL.
5. EXACT LOCATION OF FACP, FAA, FATC, AND BPS WILL BE DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER.

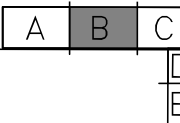
RFI 449 - Fire Alarm Terminal Cabinet and Power Location

Cabinets may be relocated as proposed, complete functionality must be maintained

LEVEL 1 SECTOR B FIRE DETECTION PLAN

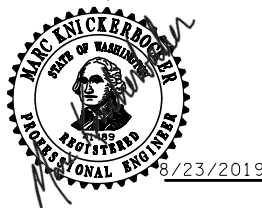


KEY PLAN



SCALE 1/8" = 1'-0"

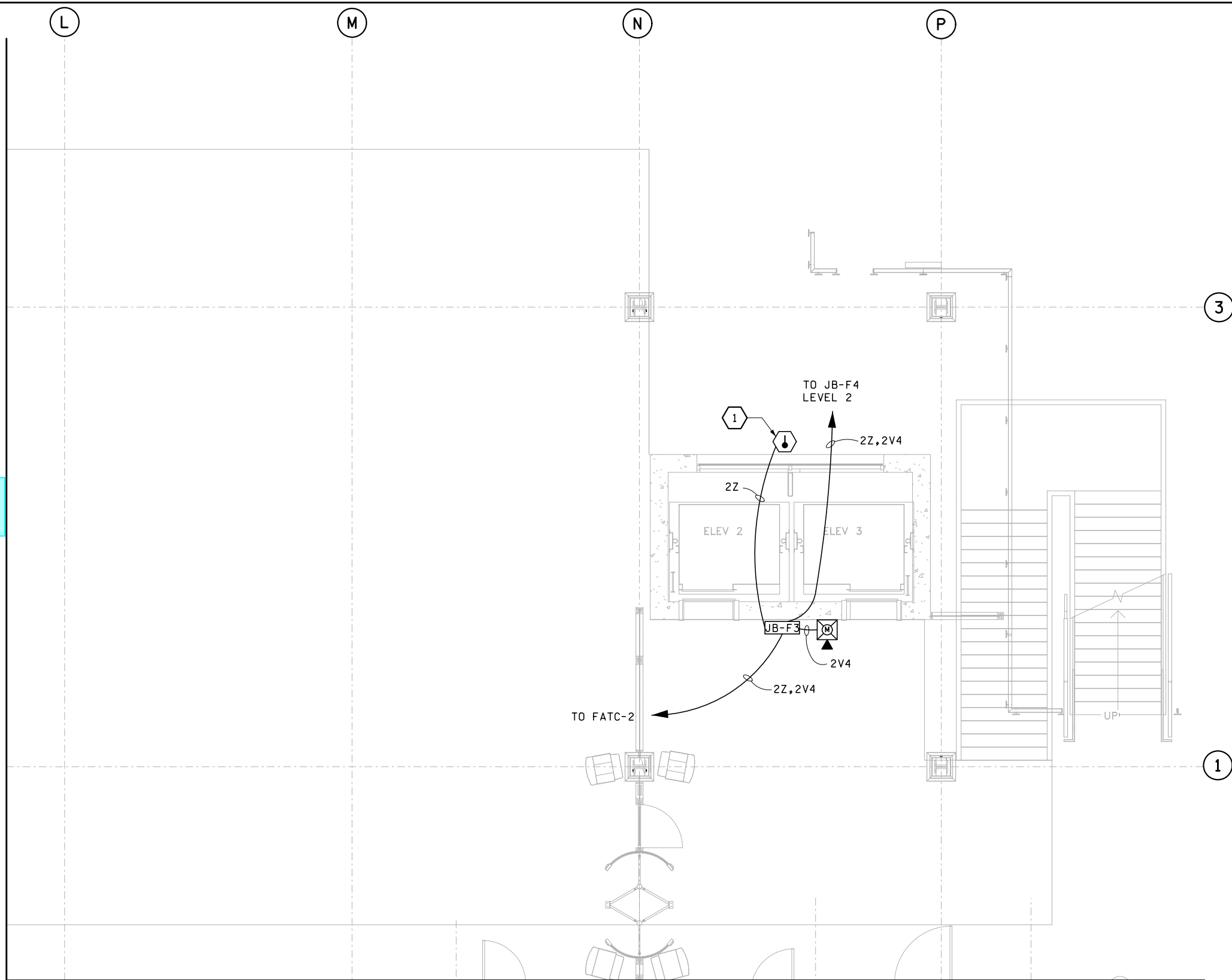
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| SUBMITTAL DATE: 1/18/19 | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | | | CONTRACT NO. 00**** |
| CHECKED BY: S. HARRIS | 1/18/19 | | | |
| MAR PROJ ENGR: C. TORRES | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1- SECTOR B
FIRE DETECTION PLAN

EB10.02
SHEET 1274 OF 1521 SHEETS

MATCHLINE SEE EB10.02



NOTES:

1. DEVICES ARE APPROXIMATELY LOCATED. FIELD VERIFY ACTUAL INSTALLATION LOCATION.
2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.

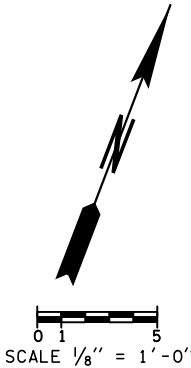
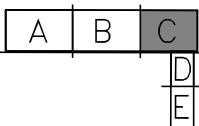
CONSTRUCTION NOTES:

- 1 HEAT DETECTOR IS LOCATED IN THE ELEVATOR PIT.

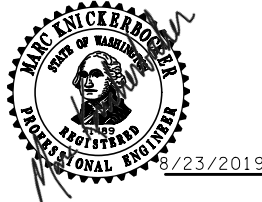
LEVEL 1 SECTOR C FIRE DETECTION PLAN



KEY PLAN

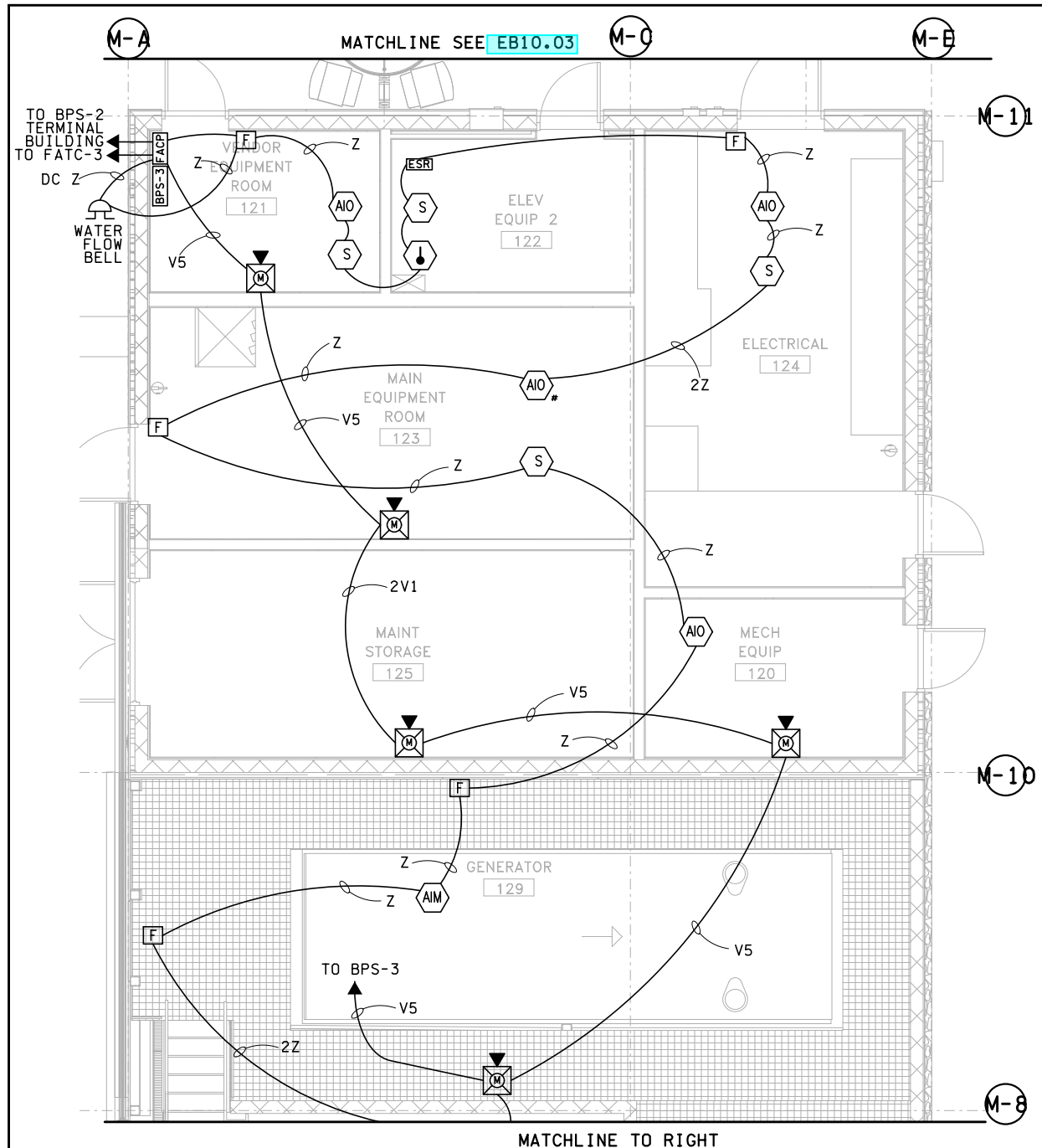


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| PRINTED: 3:27:02 PM 1/16/2019 | LAST PRINTED BY: JMCNABB | | | | WA-2017-007-00 | |
| SUBMITTAL DATE: 1/18/19 | | | | | REGION NO. STATE | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | 10 WASH | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | JOB NUMBER | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | | CONTRACT NO. | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | 00***** | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | |

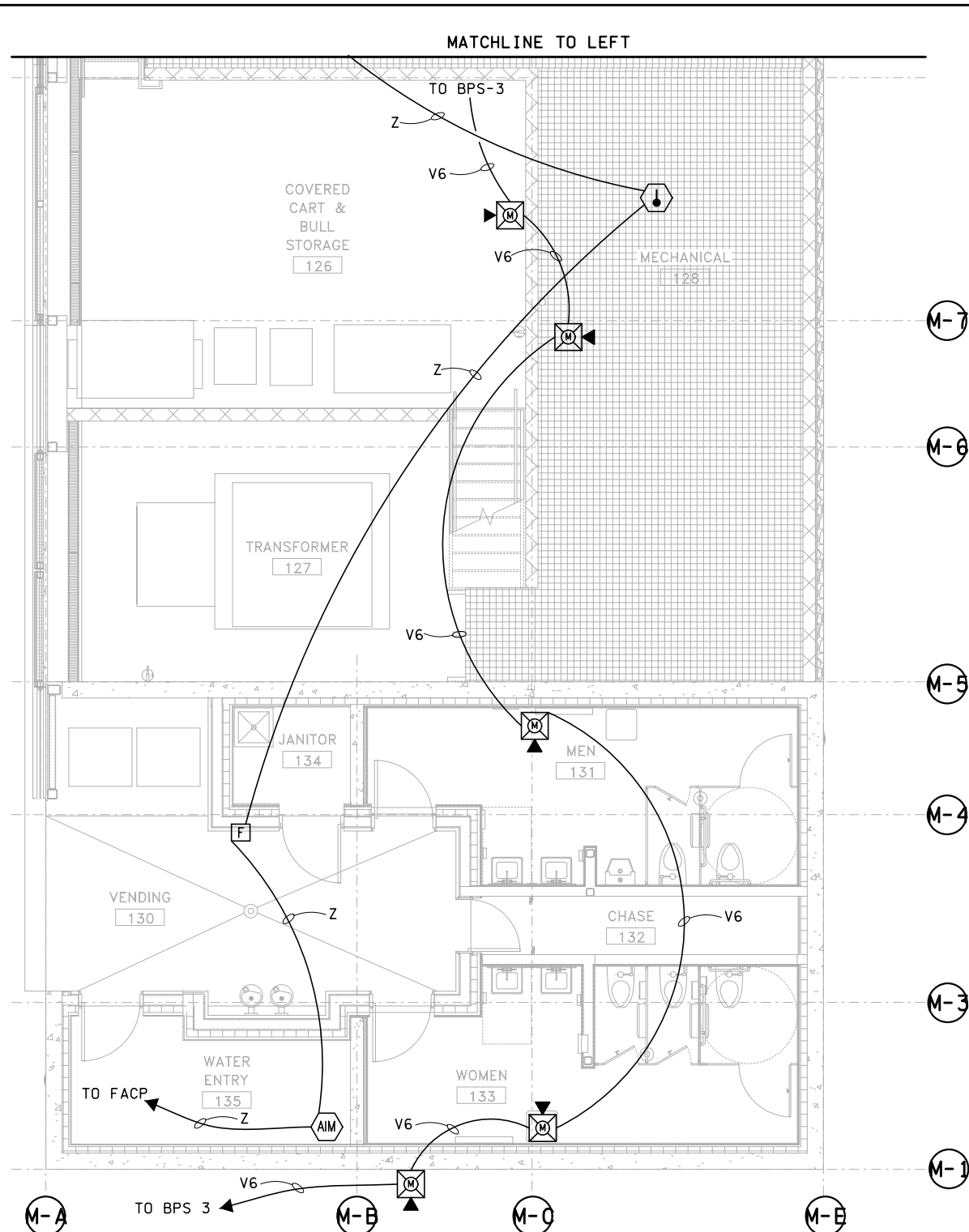


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1 - SECTOR C
FIRE DETECTION PLAN

EB10.03
SHEET
1275
OF
1521
SHEETS



LEVEL 1 SECTOR D FIRE DETECTION PLAN

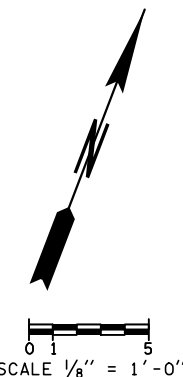
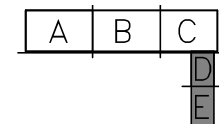


LEVEL 1 SECTOR E FIRE DETECTION PLAN

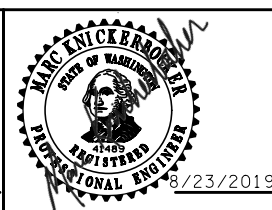
NOTES:

1. DEVICES ARE APPROXIMATELY LOCATED. FIELD VERIFY ACTUAL INSTALLATION LOCATION.
2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
4. CIRCUITS SHALL BE CLASS A PER NFPA72 CHAPTER 3-2.2.2. ALL CABLE ROUTES IN THIS DRAWING ARE DIAGRAMMATIC AND CONTRACTOR SHALL PROVIDE CONDUIT LAYOUT IN SHOP DRAWING AND SUBMIT FOR APPROVAL.
5. EXACT LOCATION OF FACP, FAA, FATC, AND BPS WILL BE DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER.

KEY PLAN

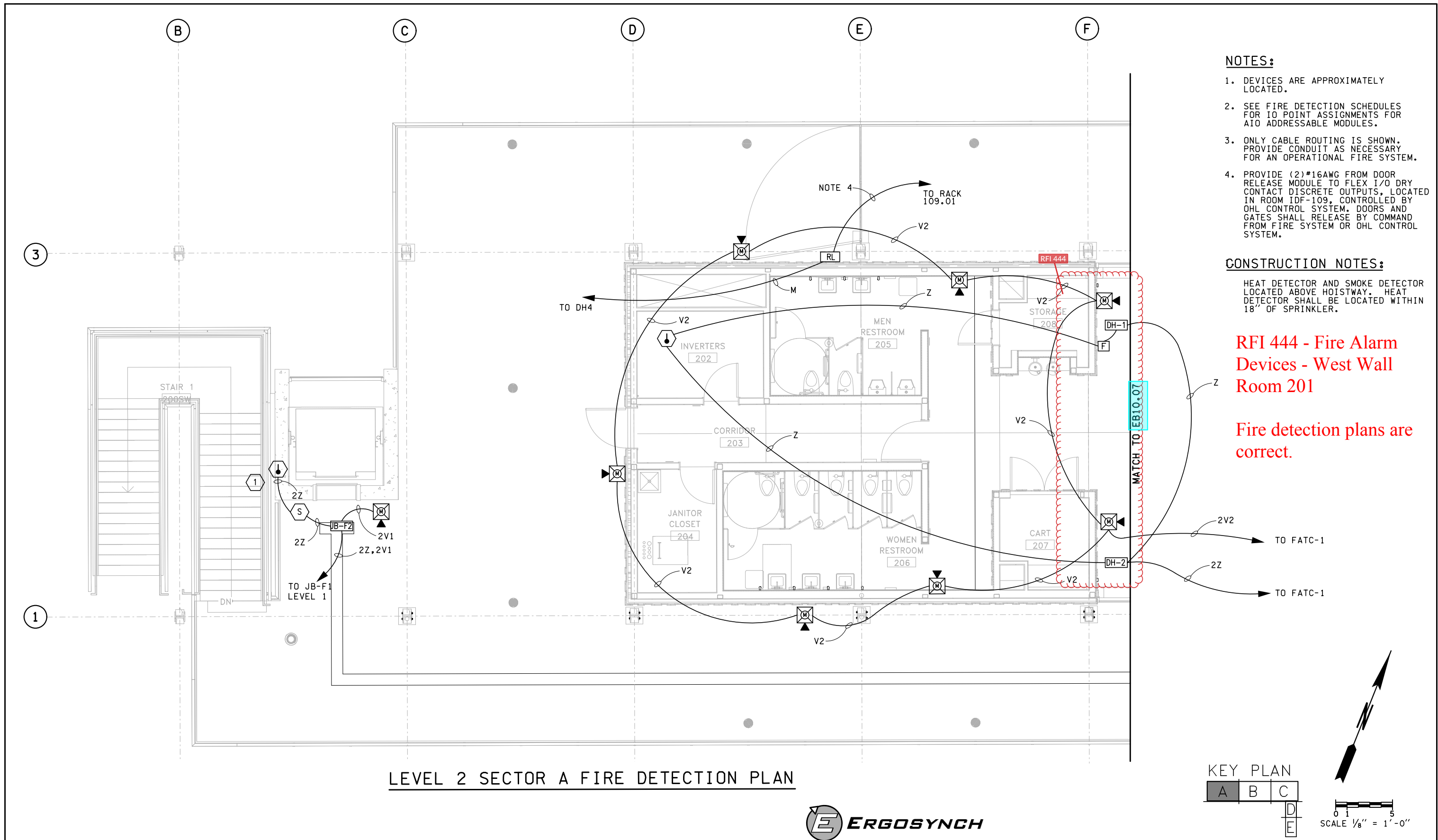


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|------------------------------------------------------------------------------------|--------------------------|---------|---------------------------------|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb10.04.dlv | | | |
| PRINTED: 3:28:08 PM 1/16/2019 | LAST PRINTED BY: JMCNABB | | FED.AID PROJ.NO. WA-2017-007-00 |
| SUBMITTAL DATE: 1/18/19 | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | | CONTRACT NO. 00***** |
| CHECKED BY: S. HARRIS | 1/18/19 | | |
| MAR PROJ ENGR: C. TORRES | | | |
| DIR TERM ENGR: N. MCINTOSH | | | |
| ASST SECRETARY: A. SCARTON | | | |
| CONFORMED PLANS | | 1/18/19 | |
| REVISION | | DATE | BY |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1 - SECTOR D & E
FIRE DETECTION PLANS

EB10.04
SHEET 1276 OF 1521 SHEETS



- NOTES:**
1. DEVICES ARE APPROXIMATELY LOCATED.
 2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
 3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
 4. PROVIDE (2)*16AWG FROM DOOR RELEASE MODULE TO FLEX I/O DRY CONTACT DISCRETE OUTPUTS, LOCATED IN ROOM IDF-109, CONTROLLED BY OHL CONTROL SYSTEM. DOORS AND GATES SHALL RELEASE BY COMMAND FROM FIRE SYSTEM OR OHL CONTROL SYSTEM.

CONSTRUCTION NOTES:

HEAT DETECTOR AND SMOKE DETECTOR LOCATED ABOVE HOISTWAY. HEAT DETECTOR SHALL BE LOCATED WITHIN 18" OF SPRINKLER.

RFI 444 - Fire Alarm Devices - West Wall Room 201

Fire detection plans are correct.



LEVEL 2 SECTOR A FIRE DETECTION PLAN



KEY PLAN

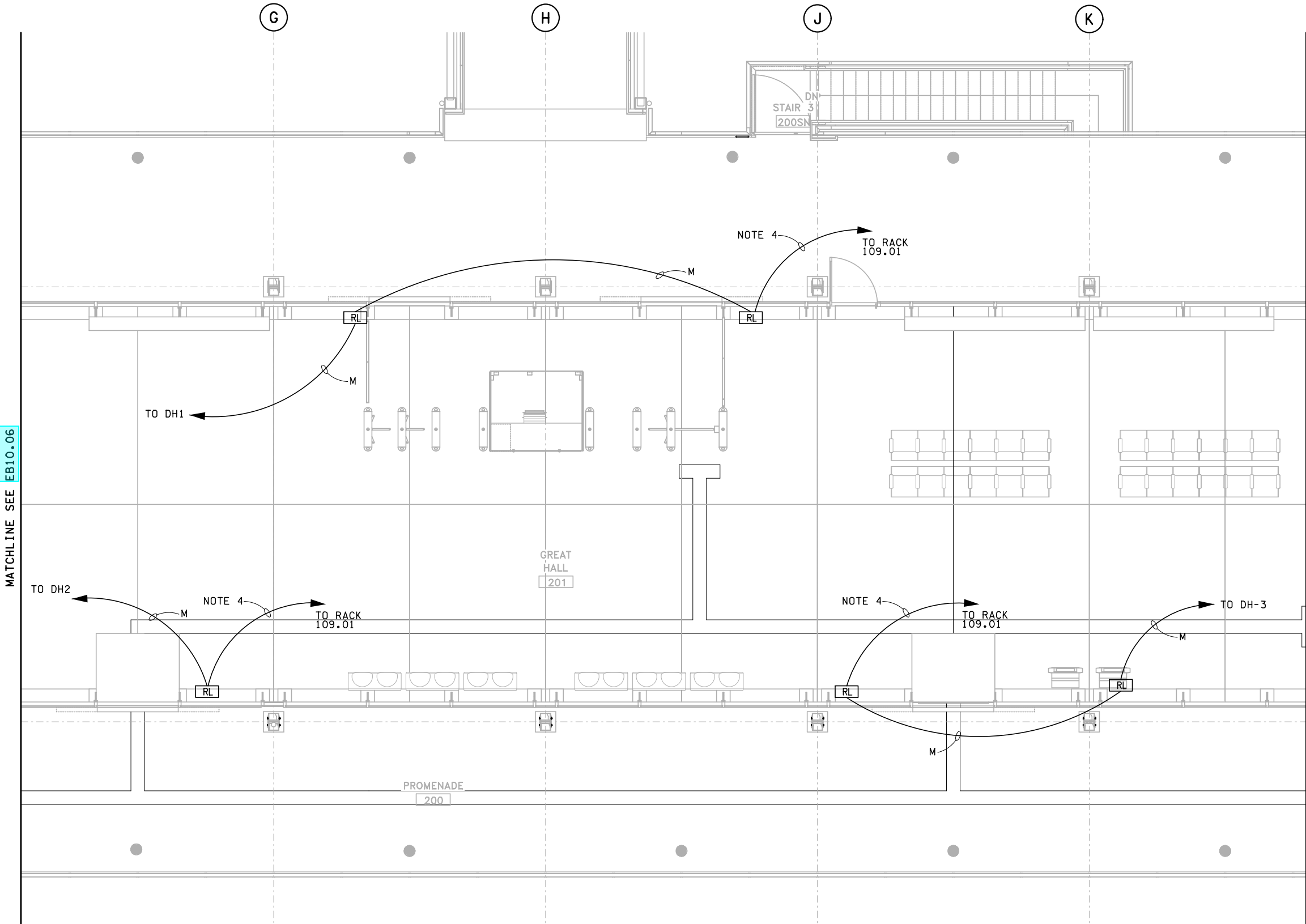
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| A | B | C |
| D | E | |

SCALE 1/8" = 1'-0"

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|------------------------------------------------------------------------------------|--|------------------|--|---------------------|--|-----------------------------------|--|-----------------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|--|---------|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb10-06.dlv | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 | | EB10.06 |
| PRINTED: 3:29:07 PM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | MUKILTEO FERRY TERMINAL (PHASE 2) | | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | SHEET | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | REGION NO. STATE | | | | 1277 | | | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | 10 WASH | | | | OF | | | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | JOB NUMBER | | | | 1521 | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | 18W121 | | | | SHEETS | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE BY | | | | | | | | | | |

MATCHLINE SEE EB10.06

MATCHLINE SEE EB10.08

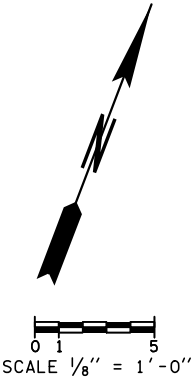
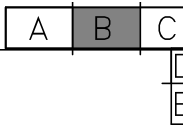


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 2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
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 4. PROVIDE (2)*16AWG FROM DOOR RELEASE MODULE TO FLEX I/O DRY CONTACT DISCRETE OUTPUTS, LOCATED IN ROOM IDF-109, CONTROLLED BY OHL CONTROL SYSTEM. DOORS AND GATES SHALL RELEASE BY COMMAND FROM FIRE SYSTEM OR OHL CONTROL SYSTEM.

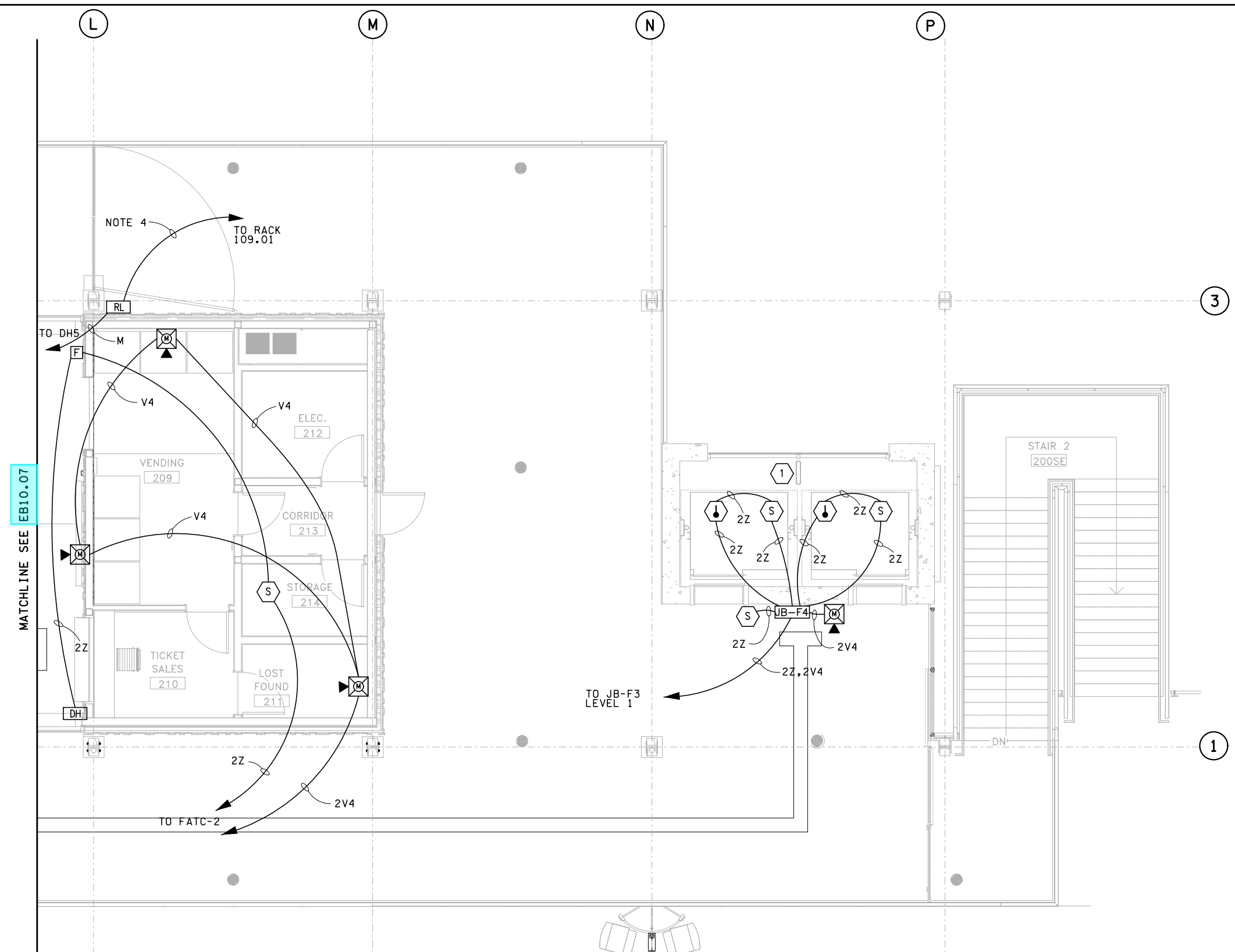
LEVEL 1 SECTOR B FIRE DETECTION PLAN



KEY PLAN



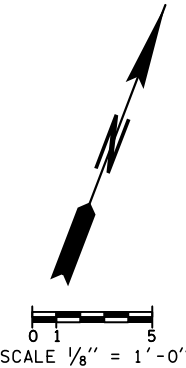
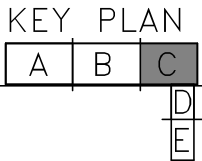
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- NOTES:**
1. DEVICES ARE APPROXIMATELY LOCATED. FIELD VERIFY ACTUAL INSTALLATION LOCATION.
 2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
 3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
 4. PROVIDE (2) #16AWG FROM DOOR RELEASE MODULE TO FLEX I/O DRY CONTACT DISCRETE OUTPUTS, LOCATED IN ROOM IDF-109, CONTROLLED BY OHL CONTROL SYSTEM. DOORS AND GATES SHALL RELEASE BY COMMAND FROM FIRE SYSTEM OR OHL CONTROL SYSTEM.

- CONSTRUCTION NOTES:**
1. HEAT DETECTOR AND SMOKE DETECTOR LOCATED ABOVE HOISTWAY. HEAT DETECTOR SHALL BE LOCATED WITHIN 18" OF SPRINKLER.

LEVEL 2 SECTOR C FIRE DETECTION PLAN



| | | | | | | | | | |
|-----------------------------------------------------------------------------------|--|-------------------------------|--|---------------------------------|--|--------------------------|--|----|--|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCNST\CADD\ERGOSYNCH\14w121eb10-08.dlv | | | | | | | | | |
| PRINTED: 3:31:26 PM 1/16/2019 | | LAST PRINTED BY: JMCNABB | | FED.AID PROJ.NO. WA-2017-007-00 | | | | | |
| SUBMITTAL DATE: 1/18/19 | | DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | REGION NO. STATE 10 WASH | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | JOB NUMBER 18W121 | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | CONTRACT NO. 00***** | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | |



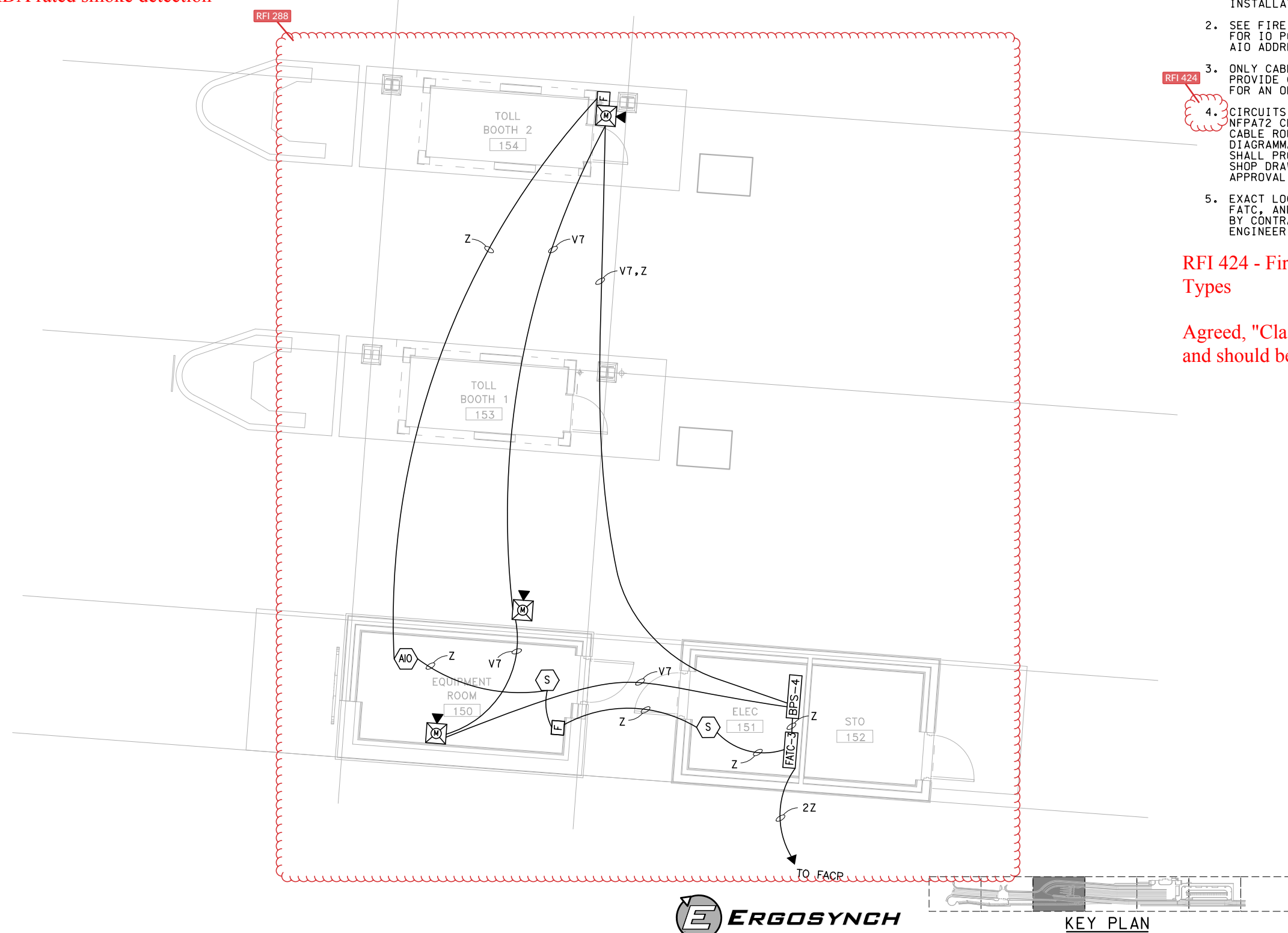
SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2 - SECTOR C
FIRE DETECTION PLAN



EB10.08
SHEET
1279
OF
1521
SHEETS

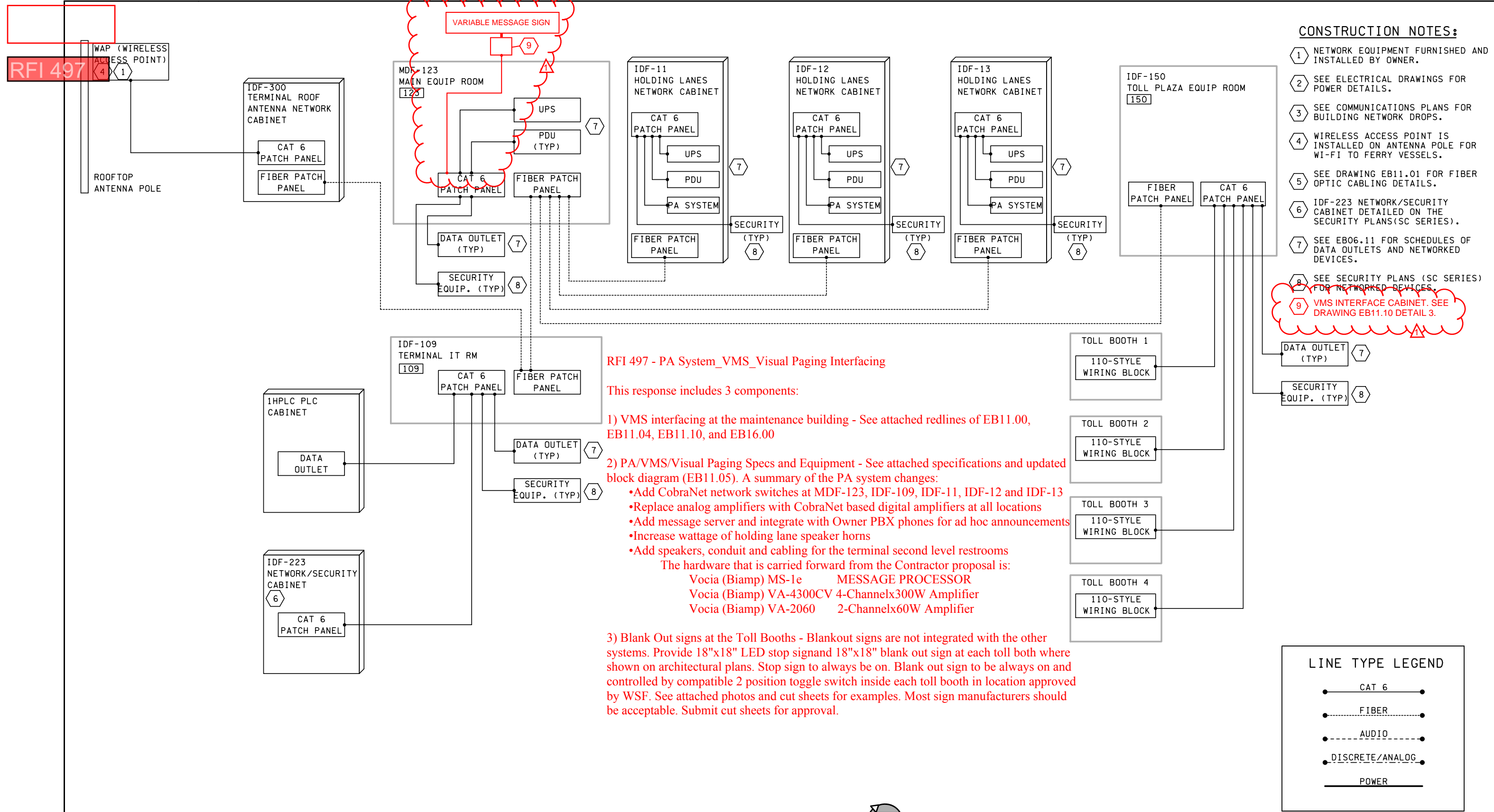
Each toll booth shall have smoke detection and the ADA bathroom shall have ADA rated smoke detection and horn/strobe.

1. DEVICES ARE APPROXIMATELY LOCATED. FIELD VERIFY ACTUAL INSTALLATION LOCATION.
2. SEE FIRE DETECTION SCHEDULES FOR IO POINT ASSIGNMENTS FOR AIO ADDRESSABLE MODULES.
3. ONLY CABLE ROUTING IS SHOWN. PROVIDE CONDUIT AS NECESSARY FOR AN OPERATIONAL FIRE SYSTEM.
4. CIRCUITS SHALL BE CLASS A PER NFPA72 CHAPTER 3-2.2.2. ALL CABLE ROUTES IN THIS DRAWING ARE DIAGRAMMATIC AND CONTRACTOR SHALL PROVIDE CONDUIT LAYOUT IN SHOP DRAWING AND SUBMIT FOR APPROVAL.
5. EXACT LOCATION OF FACP, FAA, FATC, AND BPS WILL BE DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER.

Agreed, "Class A" is preferable and should be used.



| | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--|------------------|--|------------------|--|-----------------------------------|--|---------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|--|---------|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCNST\CADD\ERGOSYNCH\14w121eb10_52.dlv | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 | | EB10.52 |
| PRINTED: 3:32:37 PM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | MUKILTEO FERRY TERMINAL (PHASE 2) | | SHEET | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | | | WA-2017-007-00 | | REGION NO. STATE | | | | 1280 | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | | | 10 WASH | | | | OF | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | | | JOB NUMBER | | TOLL PLAZA - LEVEL 1- SECTOR G | | 1521 | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | | | 18W121 | | FIRE DETECTION PLAN | | SHEETS | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | CONTRACT NO. 00**** | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE BY | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |



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|------------------------------------------------------------------------------------|------------------|---------------------------|-------------|----|------------------|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb11_00.dlv | | | | | |
| PRINTED: 3:33:44 PM 1/16/2019 | LAST PRINTED BY: | | | | FED.AID PROJ.NO. |
| SUBMITTAL DATE: 1/18/19 | JMCNABB | | | | WA-2017-007-00 |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | REGION NO. STATE |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | 10 WASH |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | ADD ROOFTOP VMS INTERFACE | 4 / 22 / 20 | MK | 18W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 00***** |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
NETWORK
SYSTEM BLOCK DIAGRAM

EB11.00
SHEET
1281
OF
1521
SHEETS

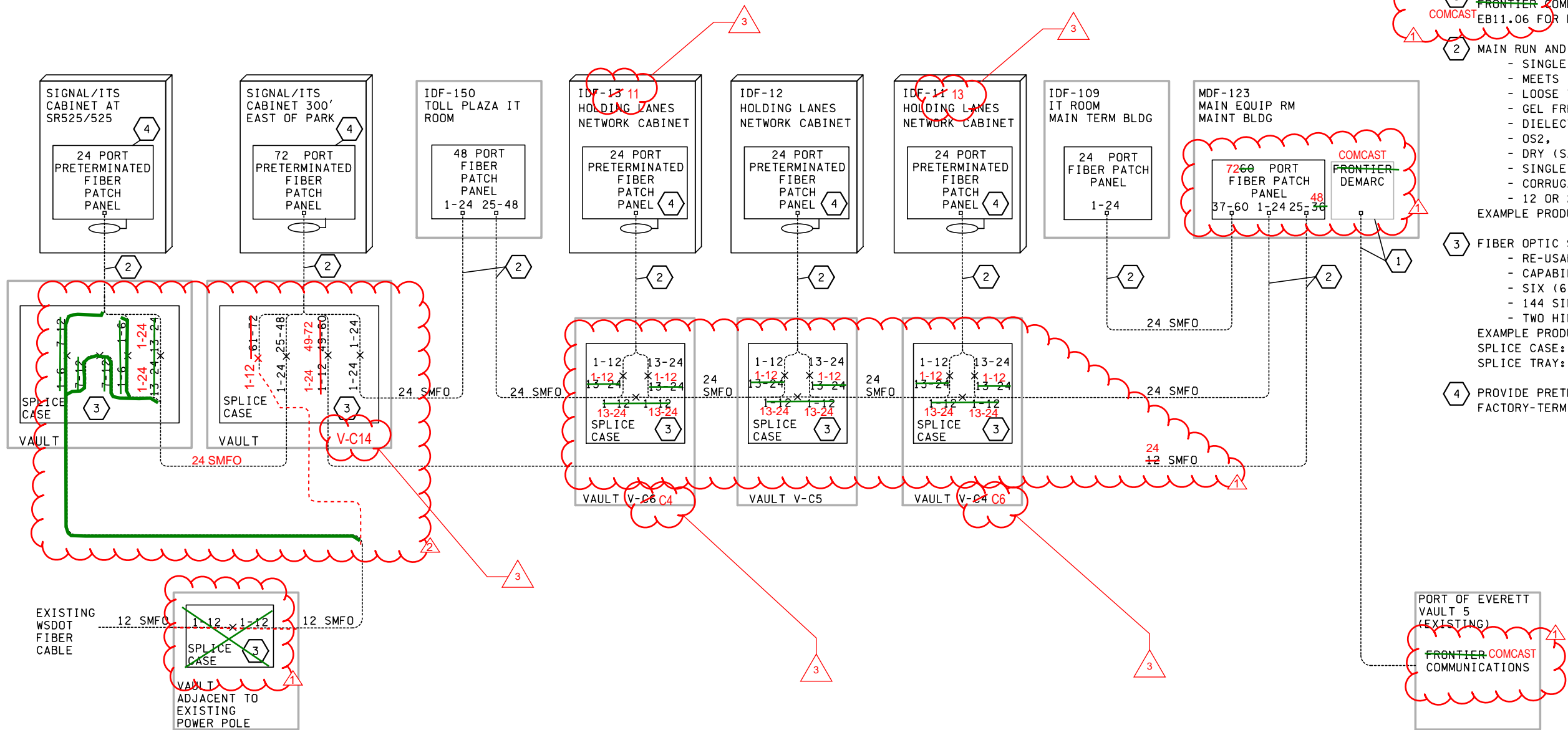
CONSTRUCTION NOTES:

1 CABLEING AND DEMARCATION BY SERVICE PROVIDER, FRONTIER COMMUNICATIONS. SEE DRAWING EB11.06 FOR DETAILS.

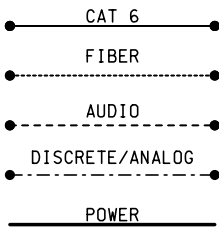
2 MAIN RUN AND PIG TAIL FIBER CABLES SHALL BE:
- SINGLE MODE,
- MEETS ITU G652.D AND G694.2,
- LOOSE TUBE,
- GEL FREE,
- DIELECTRIC WATER-BLOCKING,
- OS2,
- DRY (SAP) CORE STANDARD,
- SINGLE UV RESISTANT JACKET,
- CORRUGATED STEEL ARMORED,
- 12 OR 24 STRANDS AS INDICATED,
EXAMPLE PRODUCT: SUPERIOR ESSEX, SERIES 12D.

3 FIBER OPTIC SPLICE CASES SHALL INCLUDE:
- RE-USABLE COMPRESSED GEL CABLE SEALING,
- CAPABILITY TO ACCOMODATE LOOSE TUBE CABLES,
- SIX (6) CABLE PORTS W/ MULTI-CABLE CAPABILITY,
- 144 SINGLE FIBER /288 MASS SPLICE CAPACITY,
- TWO HINGED SPLICE TRAYS PER ENCLOSURE.
EXAMPLE PRODUCTS:
SPLICE CASE: COMMSCOPE, FOSC450-B6-4-NT-0-B0V
SPLICE TRAY: COMMSCOPE, FOSC-ACC-A/B-TRAY-12-RBN

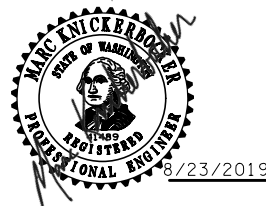
4 PROVIDE PRETERMINATED PATCH PANELS WITH FACTORY-TERMINATED, LC/UPC TYPE CONNECTIONS.



LINE TYPE LEGEND

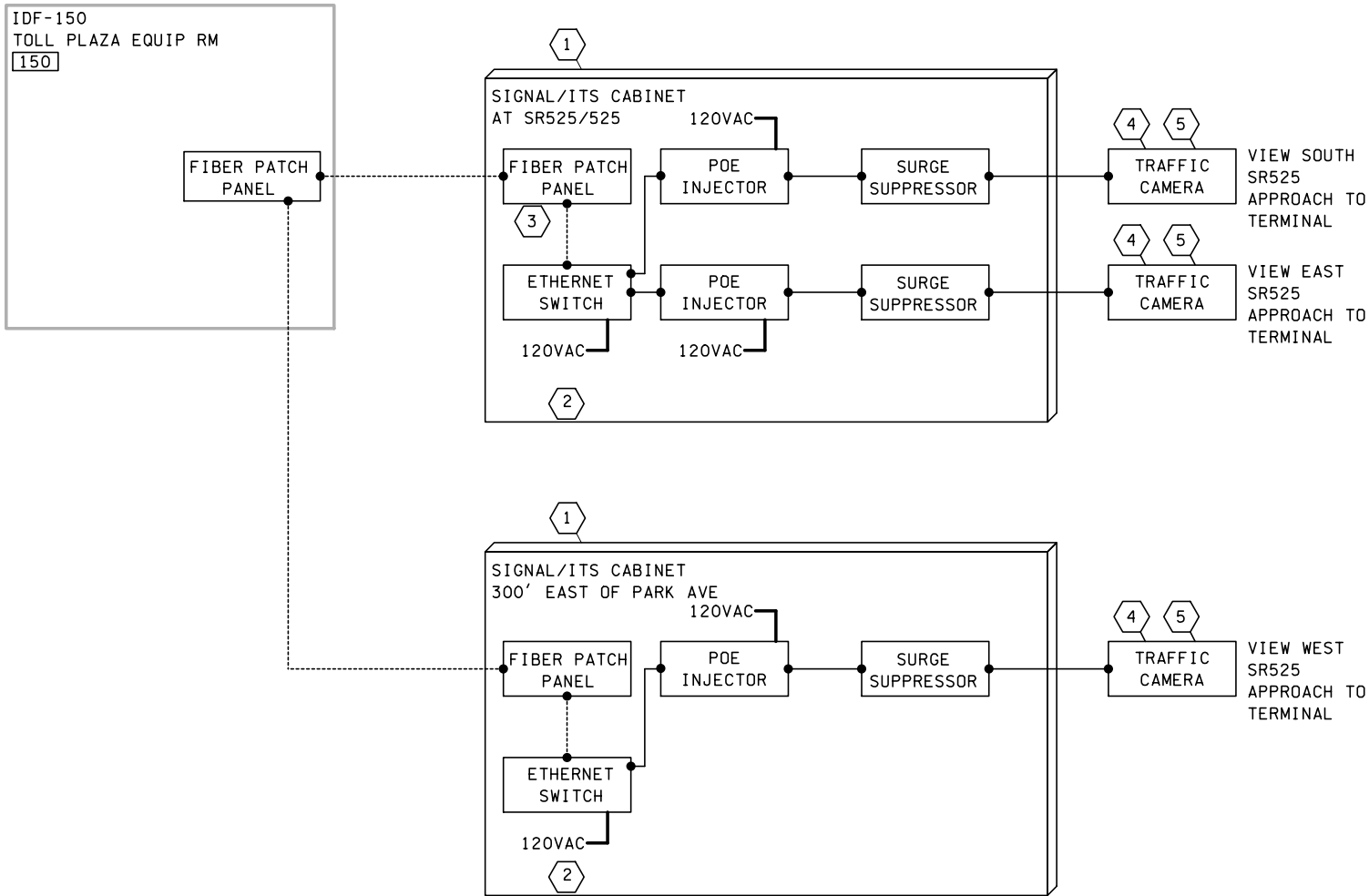


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| SUBMITTAL DATE: 1/18/19 | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | RFI 408 | 06/04/20 JR | CONTRACT NO. 00***** |
| CHECKED BY: S. HARRIS | 1/18/19 | SIGNALIZATION INTERCONNECT | 05/18/20 MK | |
| MAR PROJ ENGR: C. TORRES | | RFI 408 | 02/24/20 JR | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
OUTSIDE PLANT FIBER OPTIC
SYSTEM BLOCK DIAGRAM

EB11.01
SHEET
1282
OF
1521
SHEETS



CONSTRUCTION NOTES:

- 1 SEE DRAWING C16.50 FOR COMBINED SIGNAL/ITS CABINET TYPE 332D DETAILS.
- 2 SEE SIGNALIZATION DRAWINGS FOR POWER DETAILS.
- 3 SEE DRAWING EB11.01 FOR FIBER OPTIC CABLING TO SIGNAL/ITS CABINET
- 4 SEE DRAWINGS C16.51 FOR TRAFFIC CAMERA SIGNAL POLE MOUNTING DETAILS.
- 5 SEE SIGNALIZATION DRAWINGS FOR CAMERA AND CABINET LOCATIONS.

LINE TYPE LEGEND

- CAT 6
- FIBER
- AUDIO
- DISCRETE/ANALOG
- POWER

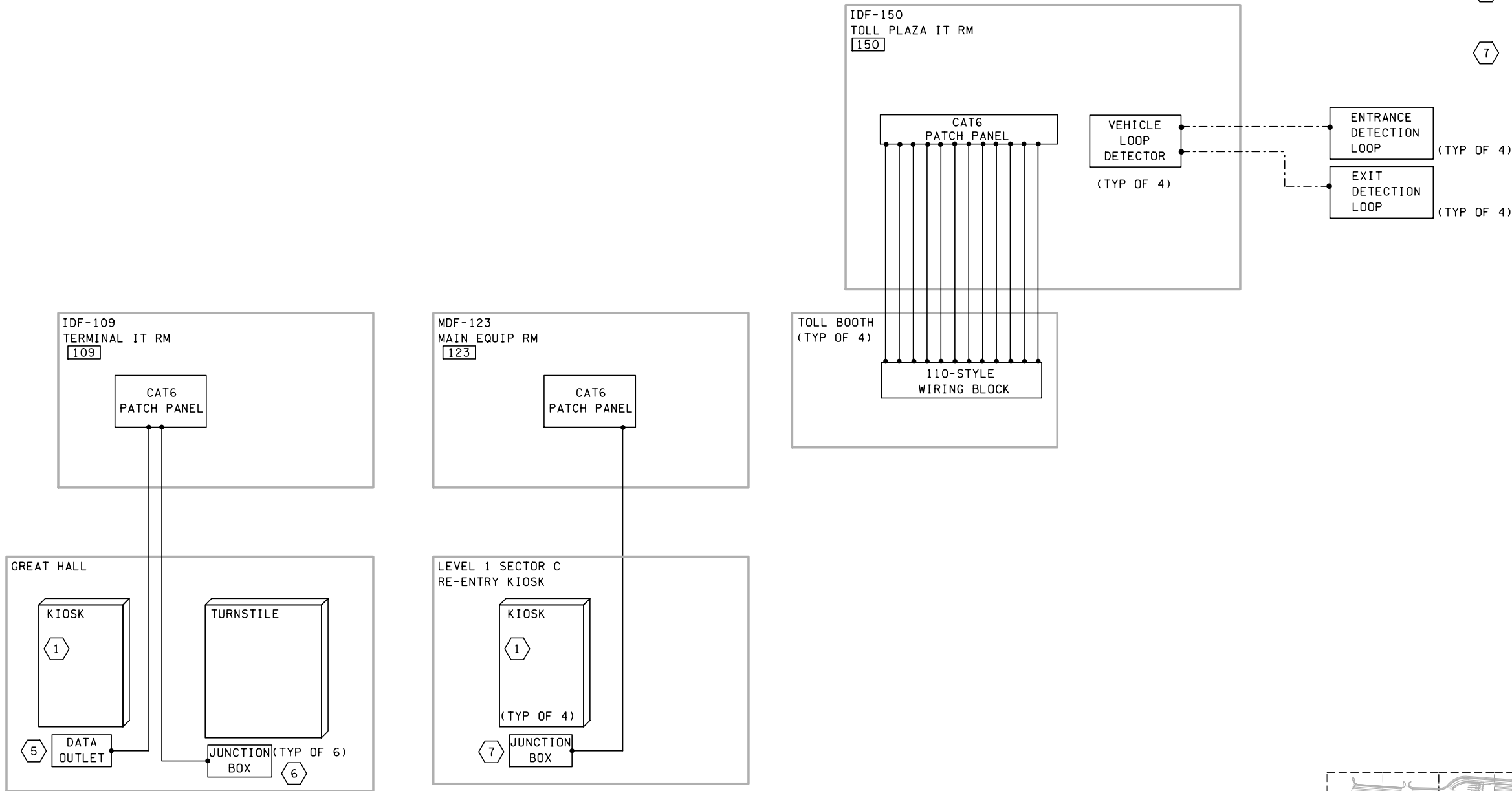
KEY PLAN

| | | |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------|
| <p>Washington State Department of Transportation WASHINGTON STATE FERRIES</p> | SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | EB11.02 SHEET 1283 OF 1521 SHEETS |
| | TRAFFIC CCTV SYSTEM BLOCK DIAGRAM | |
| | | |

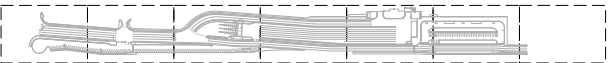
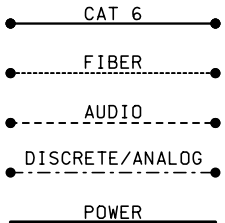
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| SUBMITTAL DATE: 1/18/19 | | | | | | | | REGION NO. STATE 10 WASH | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | | | | JOB NUMBER 18W121 | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | | | | CONTRACT NO. 00**** | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | |

CONSTRUCTION NOTES:

- 1
- KIOSKS FURNISHED AND INSTALLED BY OWNER
- 2
- SEE ELECTRICAL DRAWING E001.09 FOR POWER DETAILS.
- 3
- SEE DRAWING EB11.00 FOR WSF NETWORK.
- 4
- SEE DRAWING EB11.01 FOR FIBER OPTIC CABLING DETAILS.
- 5
- LOCATE DATA OUTLET FOR GREAT HALL KIOSK IN WALL AS LOCATED ON DRAWING EB12.07.
- 6
- SEE DRAWING EB12.07 FOR LOCATION OF JUNCTION BOXES BELOW TURNSTILES. PROVIDE 10 FEET OF ADDITIONAL CABLE SLACK AT JUNCTION BOX.
- 7
- SEE DRAWING EB12.03 FOR LOCATIONS OF JUNCTION BOXES BELOW KIOSKS. PROVIDE 10 FEET OF ADDITIONAL CABLE SLACK AT JUNCTION BOX.



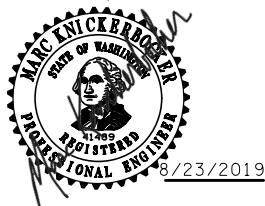
LINE TYPE LEGEND



KEY PLAN

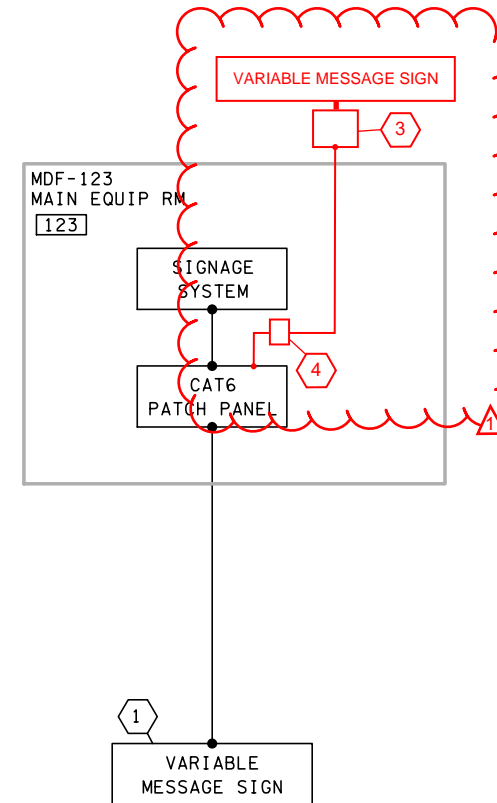


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| ENTERED BY: J. MCNABB | | 1/18/19 | | CHECKED BY: S. HARRIS | | JOB NUMBER 18W121 | | | |
| MAR PROJ ENGR: C. TORRES | | 1/18/19 | | DIR TERM ENGR: N. MCINTOSH | | CONTRACT NO. 00***** | | | |
| ASST SECRETARY: A. SCARTON | | | | CONFORMED PLANS | | 1/18/19 | | | |
| | | REVISION | | DATE | | BY | | | |



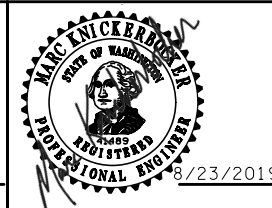
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| SR 525 | |
| MUKILTEO FERRY TERMINAL (PHASE 2) | |
| FERRY TERMINAL CONSTRUCTION | |
| ELECTRONIC FARE | |
| SYSTEM BLOCK DIAGRAM | |

| |
|---------|
| EB11.03 |
| SHEET |
| 1284 |
| OF |
| 1521 |
| SHEETS |



4 FURNISH AND INSTALL SURGE SUPPRESSOR AS RECOMMENDED BY VMS MANUFACTURER.

POWER

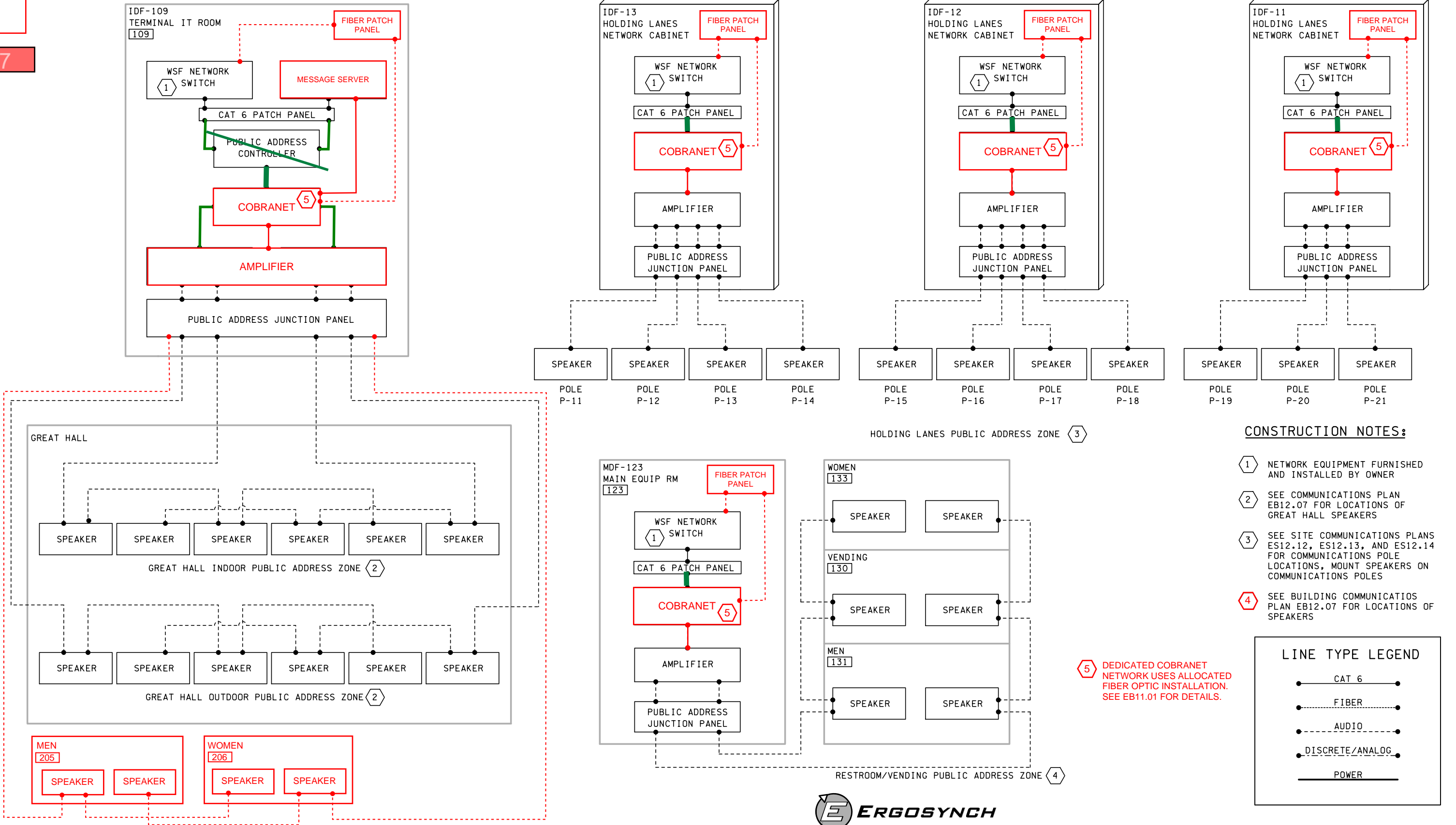


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| SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION |
| MESSAGE SIGNS SYSTEM BLOCK DIAGRAM |

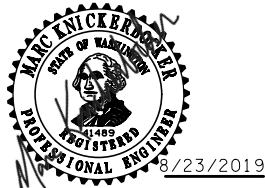
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1285
OF
1521
SHEETS

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| SUBMITTAL DATE: 1/18/19 | | | JMCNAB | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | | 1/18/19 | | | | | WA-2017-007-00 | |
| ENTERED BY: J. MCNABB | | | 1/18/19 | | | | | REGION NO. STATE | |
| CHECKED BY: S. HARRIS | | | 1/18/19 | | | | | 10 WASH | |
| MAR PROJ ENGR: C. TORRES | | | | | ADD ROOFTOP VMS INTERFACE | | 4/22/20 | MK | |
| DIR TERM ENGR: N. MCINTOSH | | | | | CONFORMED PLANS | | 1/18/19 | JOB NUMBER 18W121 | |
| ASST SECRETARY: A. SCARTON | | | | | REVISION | | DATE | BY CONTRACT NO. 00**** | |

RFI 497



| | | | | |
|------------------------------------------------------------------------------------|--------------------------|--------------------------------|---------|---------------------------------|
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| SUBMITTAL DATE: 1/18/19 | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | | | CONTRACT NO. 00**** |
| CHECKED BY: S. HARRIS | 1/18/19 | | | |
| MAR PROJ ENGR: C. TORRES | | INTEGRATION WITH VISUAL PAGING | 6/1/20 | MK |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
PUBLIC ADDRESS
SYSTEM BLOCK DIAGRAM

EB11.05
SHEET
1286
OF
1521
SHEETS

RFI 497

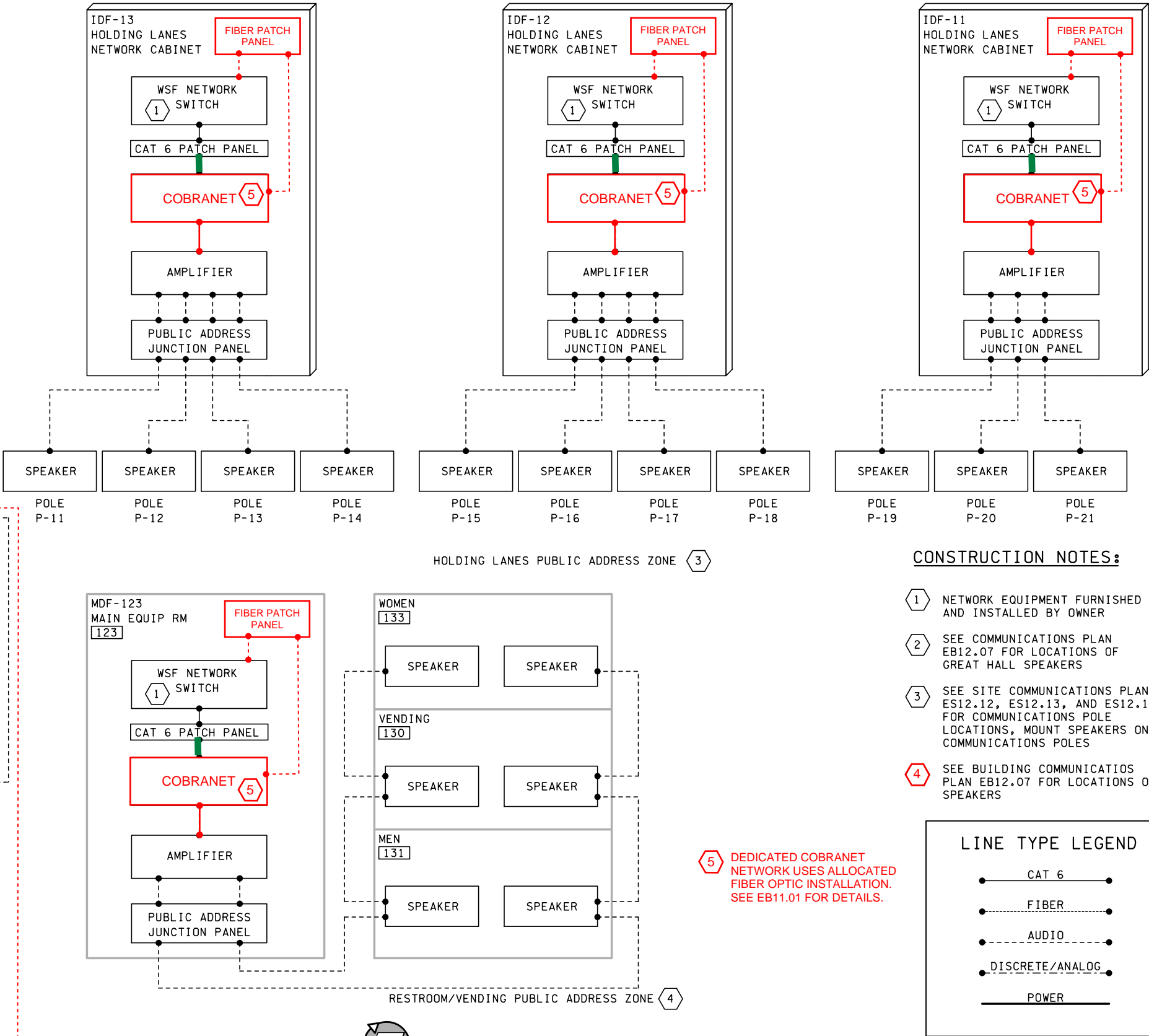
RFI 497 - PA System_VMS_Visual Paging Interfacing

This response includes 3 components:

- 1) VMS interfacing at the maintenance building - See attached redlines of EB11.00, EB11.04, EB11.10, and EB16.00
- 2) PA/VMS/Visual Paging Specs and Equipment - See attached specifications and updated block diagram (EB11.05). A summary of the PA system changes:
 - Add CobraNet network switches at MDF-123, IDF-109, IDF-11, IDF-12 and IDF-13
 - Replace analog amplifiers with CobraNet based digital amplifiers at all locations
 - Add message server and integrate with Owner PBX phones for ad hoc announcements
 - Increase wattage of holding lane speaker horns
 - Add speakers, conduit and cabling for the terminal second level restrooms

The hardware that is carried forward from the Contractor proposal is:
Vocia (Biamp) MS-1e MESSAGE PROCESSOR
Vocia (Biamp) VA-4300CV 4-Channelx300W Amplifier
Vocia (Biamp) VA-2060 2-Channelx60W Amplifier

- 3) Blank Out signs at the Toll Booths - Blankout signs are not integrated with the other systems. Provide 18"x18" LED stop sign and 8"x18" blank out sign at each toll booth where shown on structural plans. Stop signs may be on Blank out signs always and controlled by compatible 2 position toggle switch inside each toll booth in location approved by WSF. See attached photo and cut sheets for blank out sign (manufacturers should be acceptable. Submit cut sheets for approval.



CONSTRUCTION NOTES:

- 1 NETWORK EQUIPMENT FURNISHED AND INSTALLED BY OWNER
- 2 SEE COMMUNICATIONS PLAN EB12.07 FOR LOCATIONS OF GREAT HALL SPEAKERS
- 3 SEE SITE COMMUNICATIONS PLANS ES12.12, ES12.13, AND ES12.14 FOR COMMUNICATIONS POLE LOCATIONS, MOUNT SPEAKERS ON COMMUNICATIONS POLES
- 4 SEE BUILDING COMMUNICATIONS PLAN EB12.07 FOR LOCATIONS OF SPEAKERS

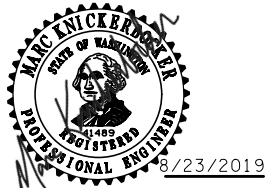
LINE TYPE LEGEND

- CAT 6
- FIBER
- AUDIO
- DISCRETE/ANALOG
- POWER

5 DEDICATED COBRANET NETWORK USES ALLOCATED FIBER OPTIC INSTALLATION. SEE EB11.01 FOR DETAILS.



| | | | | | | | | | |
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| SUBMITTAL DATE: 1/18/19 | | JMCNAB | | WA-2017-007-00 | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | REGION NO. STATE | | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | 10 WASH | | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | JOB NUMBER | | | | | |
| MAR PROJ ENGR: C. TORRES | | INTEGRATION WITH VISUAL PAGING | | 6/1/20 MK | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | | 1/18/19 | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | | DATE BY | | | | | |

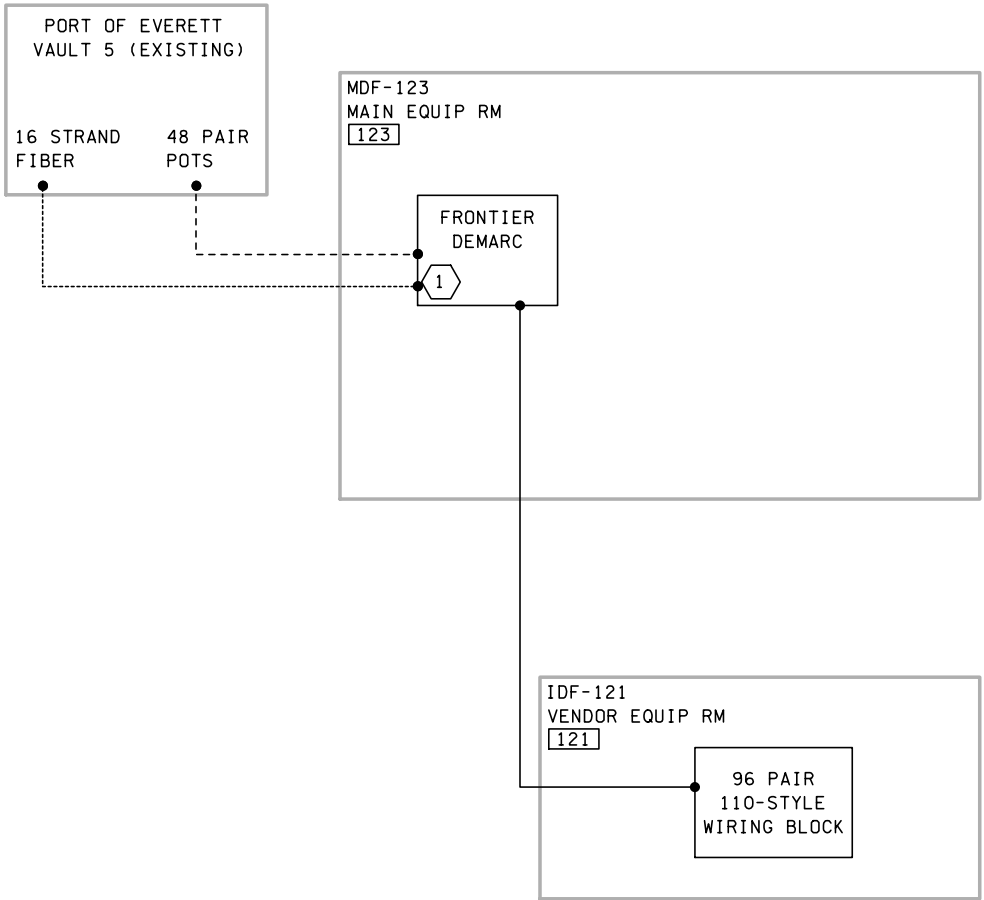


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
PUBLIC ADDRESS
SYSTEM BLOCK DIAGRAM

EB11.05
SHEET
1286
OF
1521
SHEETS

CONSTRUCTION NOTES:



- 1 DEMARCATION TO BE FURNISHED AND INSTALLED BY FRONTIER COMMUNICATIONS. SEE CONTRACT SPECIFICATIONS AND COORDINATE WITH FRONTIER COMMUNICATIONS FOR REQUIREMENTS.
CONTACT: HERB AUTERY,
FRONTIER COMMUNICATIONS,
13923 SMOKEY POINT BLVD,
MARYSVILLE, WA 98271.
PHONE: (360)658-2264



LINE TYPE LEGEND

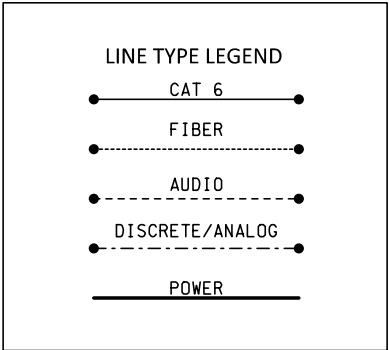
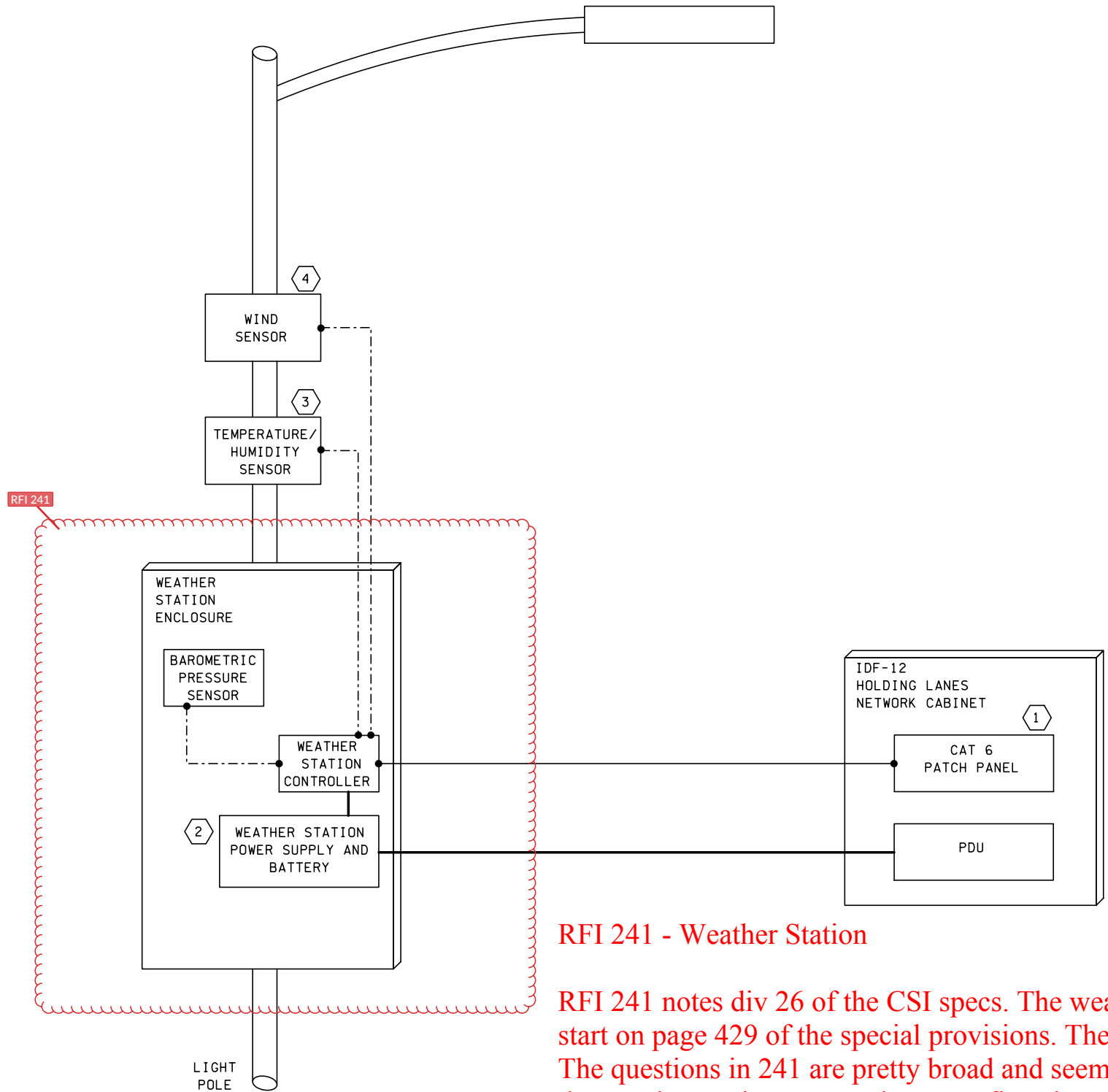
- CAT 6
FIBER
AUDIO
DISCRETE/ANALOG
POWER



| | | | | | | | | | | | | | | | | |
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| PRINTED: 3:41:52 PM 1/16/2019 | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | MUKILTEO FERRY TERMINAL (PHASE 2) | | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | | | | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | REGION NO. STATE | | SHEET | | | | | | | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | 10 WASH | | 1287 | | | | | | | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | JOB NUMBER | | OF | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | 18W121 | | 1521 | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONTRACT NO. | | SHEETS | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | 00**** | | | | | | | | | | | | |

CONSTRUCTION NOTES:

- 1 NETWORK EQUIPMENT FURNISHED AND INSTALLED BY OWNER
- 2 INSTALL POWER SUPPLY AND BATTERY ON RACK MOUNTED SHELF IN CABINET.
- 3 MOUNT TEMPERATURE/HUMIDITY SENSOR AT 10' ABOVE GROUND LEVEL.
- 4 MOUNT WIND SENSOR AT LEAST 33' ABOVE GROUND LEVEL ON A MOUNT THAT EXTENDS AT LEAST THREE POLE DIAMETERS FROM THE POLE.



| | | | | | | | | | |
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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCNST\CADD\ERGOSYNCH\14w121eb11_07.dlv | | | | | | | | | |
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| SUBMITTAL DATE: 1/18/19 | | | | | | WA-2017-007-00 | | | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | | REGION NO. STATE | | | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | | 10 WASH | | | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | | JOB NUMBER | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | 18W121 | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | CONTRACT NO. | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | 00**** | | | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
WEATHER STATION
SYSTEM BLOCK DIAGRAM

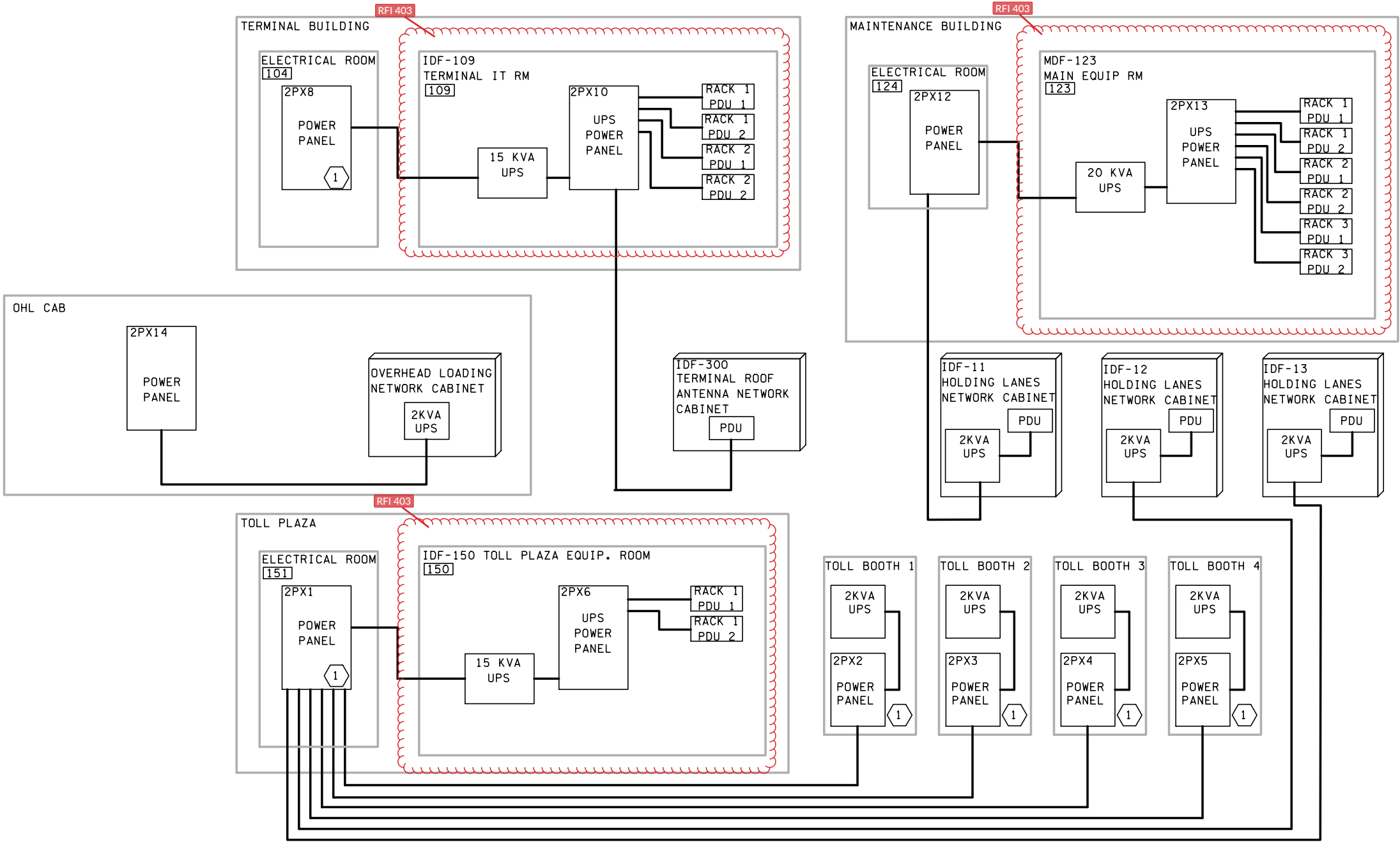
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OF
1521
SHEETS

CONSTRUCTION NOTES:

- 1
- SEE ELECTRICAL DRAWINGS FOR POWER DETAILS
- 2
- SEE DRAWING **EB11.00** FOR NETWORK CONFIGURATION.

RFI 403 - UPS Downsizing

In our recent construction meeting information was shared indicating all systems of EZI (communication subcontractor) scope will be supported with backup generators. The specified battery backups for 20 KVA in MDF-123 and 15 KVA in IDFs 109 & 150 referenced in specification 27 05 27 2.3.A are of significant size that will be problematic to install in the limited available space for them. It is EZI's opinion that the specified UPSs are not just large, they are significantly oversized for the demand since their only function will be to provide power long enough for systems to cut over to the generators in the event of a loss of power. Since even the smallest rack mount UPS takes up 2 rack spaces in a cabinet or rack, the Cyberpower PR2200LCDRTLXL2UTAA UPS should be more than ample (in EZI's opinion) battery backup for all applications of this project and is part of our product submittals for use in toll booths and other IDFs as shown on drawing EB11.09. Please confirm the MDF-123, IDF-109, and IDF-150 can be adequately supported with a 2 KVA UPS and a credit proposal will be prepared for review.



| | | | | | | | | | |
|------------------------------------------------------------------------------------|------------------|-----------------|---------|------|----|------------------|--|--|--|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb11_09.dlv | | | | | | | | | |
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| SUBMITTAL DATE: 1/18/19 | JMCNABB | | | | | WA-2017-007-00 | | | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | | REGION NO. STATE | | | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | | 10 WASH | | | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | | JOB NUMBER | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | 18W121 | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | CONTRACT NO. | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | | DATE | BY | 00**** | | | |

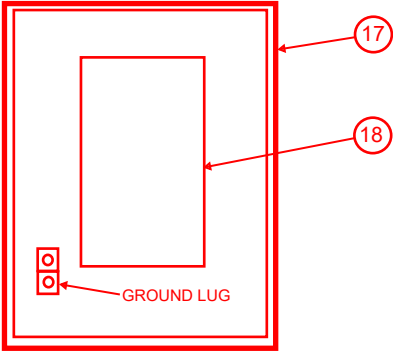


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
UNINTERRUPTIBLE POWER
SUPPLY SYSTEM BLOCK DIAGRAM

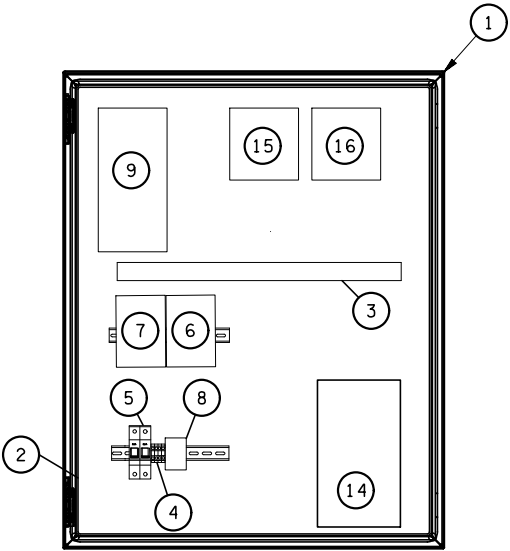
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OF
1521
SHEETS

RFI 497

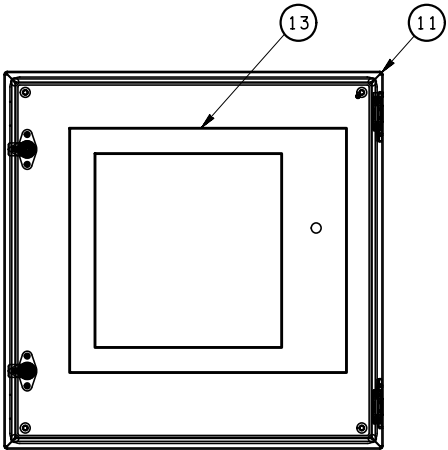
| PC# | DESCRIPTION | MATERIAL |
|-----|------------------------------------------------------------------------------|-----------------------------------|
| 1 | NEMA 4X, 30"x24"x12", 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, CSD302412SS6 |
| 2 | PANEL FOR 30"x24" NEMA 4X ENCLOSURE | HOFFMAN, CP3024 |
| 3 | WIRE DUCT 2X3 INCHES AND COVER(INCHES) | HOFFMAN A-200300CR, A-200CGR |
| 4 | SINGLE CIRCUIT TERMINAL BLOCK WITH MOUNTING, RELAY AND HEAVY DUTY END ANCHOR | ALLEN-BRADLY 1492-W4 |
| 5 | 20A ENERGY LIMITING CIRCUIT BREAKER | SIEMENS C00110 |
| 6 | GFI DUAL UTILITY OUTLET | PHOENIX CONTACT EX-DUO/110/12/GFI |
| 7 | CAT 6 PATCH PANEL | DINSPACE, SNAP-CU-12 |
| 8 | COAX COUPLERS | - |
| 9 | ETHERNET SWITCH | RUGGEDCOM, RS900D-HI-D-L2-L2-00 |
| 10 | NOT USED | - |
| 11 | NEMA 4X, 20"x20"x12", 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, CSD202012SSD |
| 12 | PANEL FOR 20"x20" NEMA 4X ENCLOSURE | HOFFMAN, CP2020 |
| 13 | NEMA 4X, 316 STAINLESS STEEL WINDOW KIT | HOFFMAN, AWDH1418N4SS |
| 14 | THERMOSTATICALLY CONTROLLED, 100 WATT HEATER | HOFFMAN, DAH1001A |
| 15 | PoE++ SURGE PROTECTOR | COHU, 741209-001 |
| 16 | PoE++ INJECTOR | COHU, 7412097-003 |
| 17 | NEMA 4X, 10" X 8" X 4", WATERSHED, 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, WS100804SS |
| 18 | ETHERNET SURGE SUPPRESSION BOARD FOR VMS | DAKTRONICS |



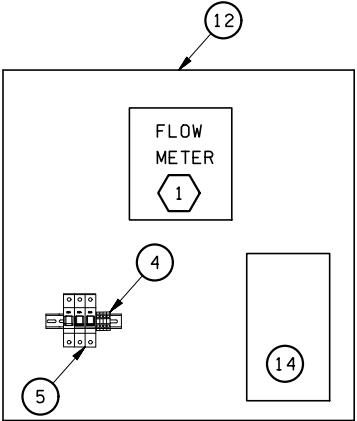
3 VARIABLE MESSAGE SIGN INTERFACE CABINET
EB11.10 NTS



1 TERMINAL ROOF ANTENNA CABINET-IDF-300
EB11.10 NTS



EXTERIOR ELEVATION

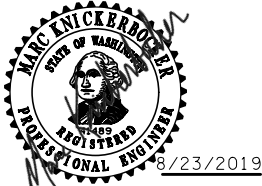


INTERIOR PANEL ELEVATION

2 FLOW METER CABINET
EB11.10 NTS



| | | | | | | | | | |
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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb11.10.dlv | | | | | | | | | |
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| SUBMITTAL DATE: 1/18/19 | | | | | | REGION NO. STATE 10 WASH | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | JOB NUMBER 18W121 | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | CONTRACT NO. 00***** | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | ADD ROOFTOP VMS INTERFACE | | 4 / 22 / 20 MK | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | |

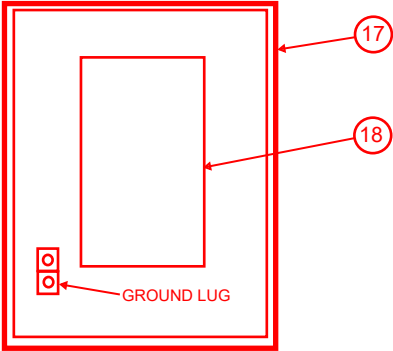


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
COMMUNICATION CABINETS
DETAILS

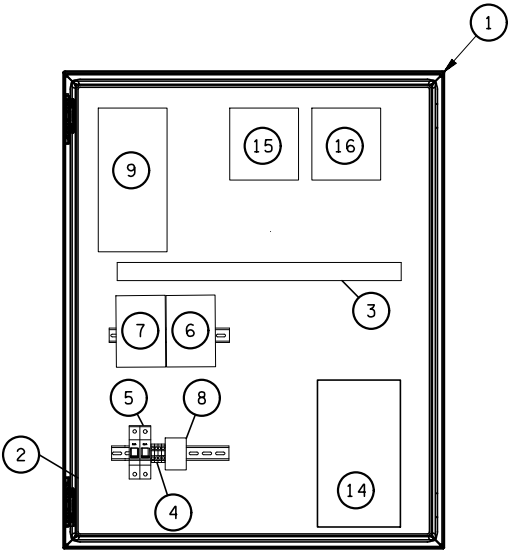
EB11.10
SHEET
1290
OF
1521
SHEETS

RFI 497

| PC# | DESCRIPTION | MATERIAL |
|-----|------------------------------------------------------------------------------|-----------------------------------|
| 1 | NEMA 4X, 30"x24"x12", 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, CSD302412SS6 |
| 2 | PANEL FOR 30"x24" NEMA 4X ENCLOSURE | HOFFMAN, CP3024 |
| 3 | WIRE DUCT 2X3 INCHES AND COVER(INCHES) | HOFFMAN A-200300CR, A-200CGR |
| 4 | SINGLE CIRCUIT TERMINAL BLOCK WITH MOUNTING, RELAY AND HEAVY DUTY END ANCHOR | ALLEN-BRADLY 1492-W4 |
| 5 | 20A ENERGY LIMITING CIRCUIT BREAKER | SIEMENS C00110 |
| 6 | GFI DUAL UTILITY OUTLET | PHOENIX CONTACT EX-DUO/110/12/GFI |
| 7 | CAT 6 PATCH PANEL | DINSPACE, SNAP-CU-12 |
| 8 | COAX COUPLERS | - |
| 9 | ETHERNET SWITCH | RUGGEDCOM, RS900D-HI-D-L2-L2-00 |
| 10 | NOT USED | - |
| 11 | NEMA 4X, 20"x20"x12", 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, CSD202012SSD |
| 12 | PANEL FOR 20"x20" NEMA 4X ENCLOSURE | HOFFMAN, CP2020 |
| 13 | NEMA 4X, 316 STAINLESS STEEL WINDOW KIT | HOFFMAN, AWDH1418N4SS |
| 14 | THERMOSTATICALLY CONTROLLED, 100 WATT HEATER | HOFFMAN, DAH1001A |
| 15 | PoE++ SURGE PROTECTOR | COHU, 741209-001 |
| 16 | PoE++ INJECTOR | COHU, 741209-003 |
| 17 | NEMA 4X, 10" X 8" X 4", WATERSHED, 316 STAINLESS STEEL ENCLOSURE | HOFFMAN, WS100804SS |
| 18 | ETHERNET SURGE SUPPRESSION BOARD FOR VMS | DAKTRONICS |

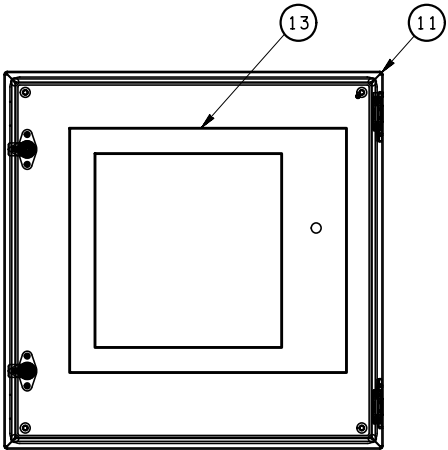


3 VARIABLE MESSAGE SIGN INTERFACE CABINET
EB11.10 NTS



1 TERMINAL ROOF ANTENNA CABINET-IDF-300
EB11.10 NTS

CONSTRUCTION NOTES:
1 SEE FLOW METER REQUIREMENTS IN WATER AND SANITARY SEWER PLANS.

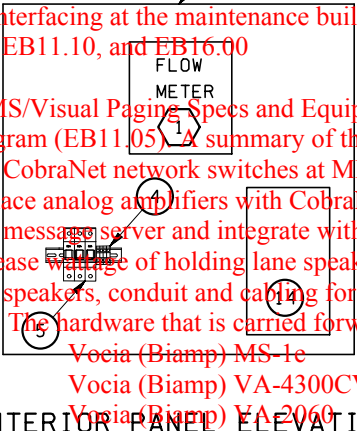


EXTERIOR ELEVATION
2 FLOW METER CABINET
EB11.10 NTS

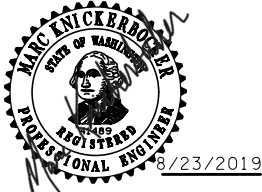
RFI 497 - PA System_VMS_Visual Paging Interfacing

This response includes 3 components:

- 1) VMS interfacing at the maintenance building - See attached redlines of EB11.00, EB11.04, EB11.10, and EB16.00
- 2) PA/VMS/Visual Paging Specs and Equipment - See attached specifications and updated block diagram (EB11.05). A summary of the PA system changes:
 - Add CobraNet network switches at MDF-123, IDF-109, IDF-11, IDF-12 and IDF-13
 - Replace analog amplifiers with CobraNet based digital amplifiers at all locations
 - Add message server and integrate with Owner PBX phones for ad hoc announcements
 - Increase wattage of holding lane speaker horns
 - Add speakers, conduit and cabling for the terminal second level restroomsThe hardware that is carried forward from the Contractor proposal is:
 - Vocia (Biamp) MS-1c MESSAGE PROCESSOR
 - Vocia (Biamp) VA-4300CV 4-Channelx300W Amplifier
 - Vocia (Biamp) VA-2060 2-Channelx60W Amplifier
- 3) Blank Out signs at the Toll Booths - Blankout signs are not integrated with the other systems. Provide 18"x18" LED stop sign and 18"x18" blank out sign at each toll booth where shown on architectural plans. Stop sign to always be on. Blank out sign to be always on and controlled by compatible 2 position toggle switch inside each toll booth in location approved by WSF. See attached photos and cut sheets for examples. Most sign manufacturers should be acceptable. Submit cut sheets for approval.

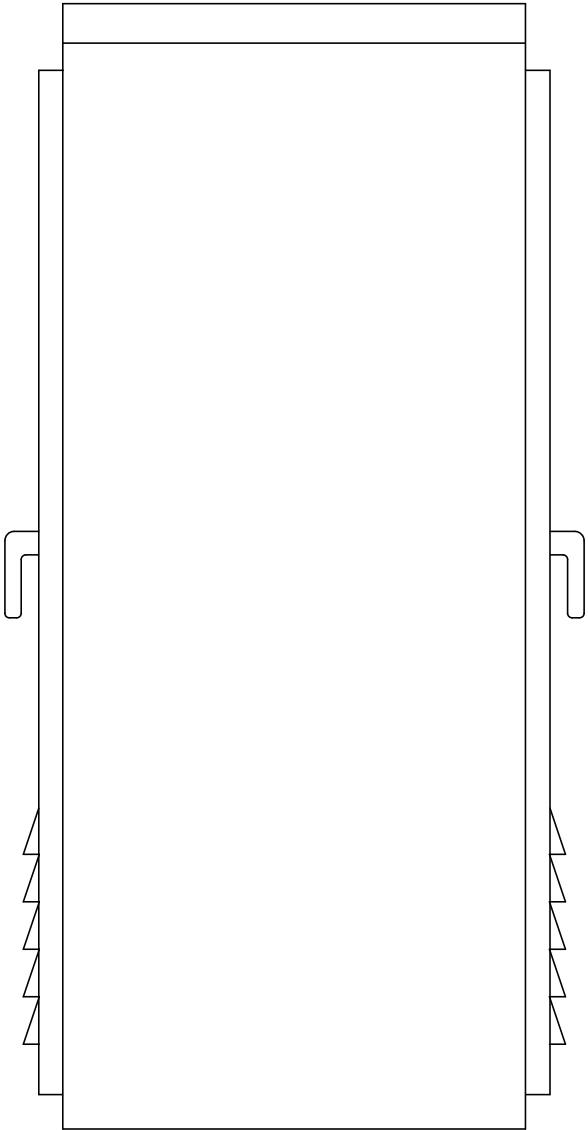
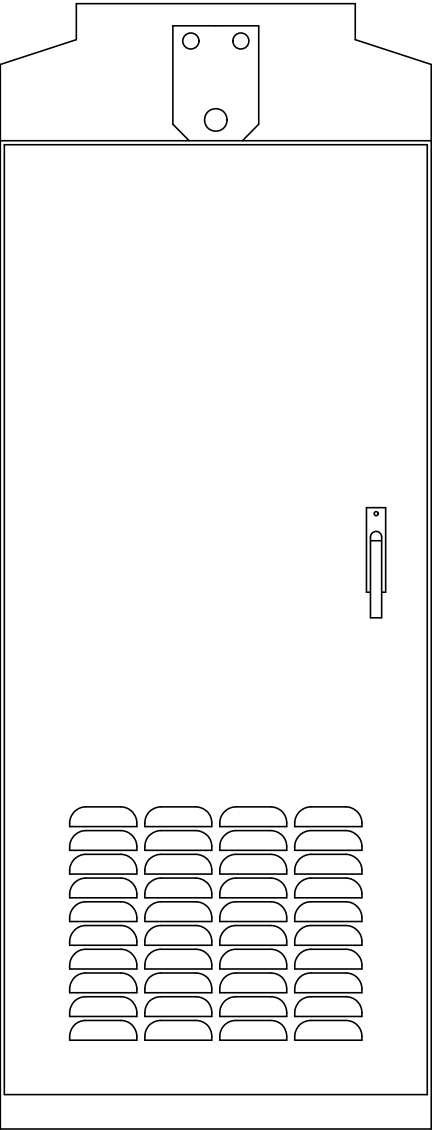
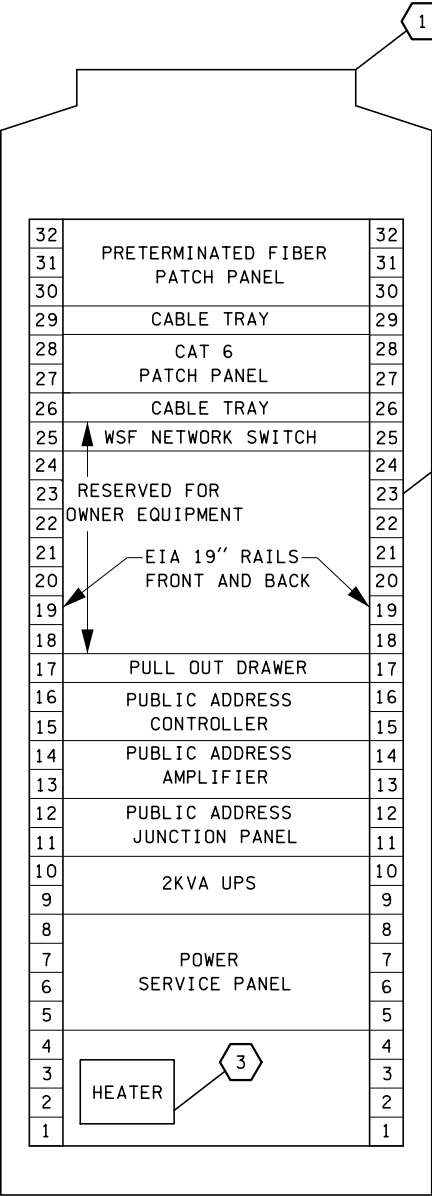


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| SUBMITTAL DATE: 1/18/19 | DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | REGION NO. STATE 10 WASH |
| ENTERED BY: J. MCNABB | CHECKED BY: S. HARRIS | 1/18/19 | JOB NUMBER 18W121 |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | ASST SECRETARY: A. SCARTON | CONTRACT NO. 00***** |
| ADD ROOFTOP VMS INTERFACE | 4 / 22 / 20 | MK | CONFORMED PLANS 1/18/19 |
| REVISION | DATE | BY | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
COMMUNICATION CABINETS
DETAILS

EB11.10
SHEET
1290
OF
1521
SHEETS



CONSTRUCTION NOTES:

- 1 PROVIDE TYPE 322 CABINET INCLUDING:
- 3 POINT LATCHING, FRONT AND REAR DOORS
 - SERVICE PANEL WITH CIRCUIT BREAKERS
 - MAIN,
 - CLEAN POWER,
 - RAW POWER,
 - EQUIPMENT
 - DUPLEX RECEPTACLES,
 - 19" EIA RACK,
 - THERMOSTAT CONTROLLED 100 CFM FAN,
 - DRAWER ASSEMBLY,
 - LED LIGHT WITH DOOR SWITCH.
- EXAMPLE PRODUCT: MCCAIN, 332 CCTV COMMUNICATIONS CABINET.
- 2 PROVIDE TWO (2) VERTICAL POWER DISTRIBUTION UNITS (PDU) PER RACK POWERED FROM UPS POWER PANEL. PDU'S SHALL BE NETWORKED TYPE WITH (24) NEMA 5-20R RECEPTACLES. EACH OUTLET SHALL BE INDIVIDUALLY SWITCHED.
- 3 PROVIDE A THERMOSTATICALLY CONTROLLED 200W CABINET HEATER. EXAMPLE PRODUCT: HOFFMAN DAH2001A.

1 CABINET RACK ELEVATION
NOTE 1

2 FRONT VIEW

3 SIDE VIEW

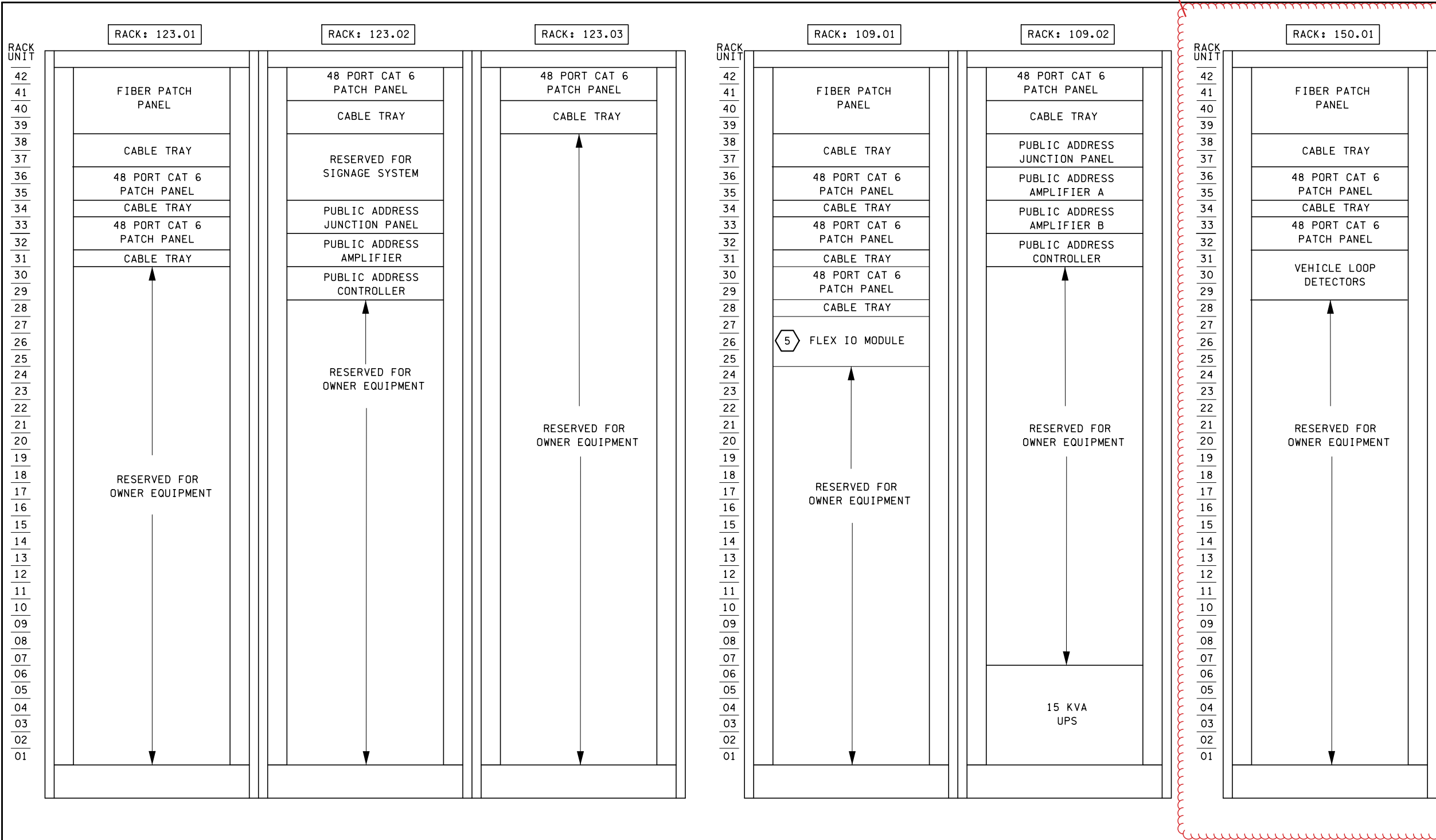


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| SUBMITTAL DATE: 1/18/19 | | DESIGNED BY: M. KNICKERBOCKER | | ENTERED BY: J. MCNABB | | CHECKED BY: S. HARRIS | | MAR PROJ ENGR: C. TORRES | |
| DIR TERM ENGR: N. MCINTOSH | | ASST SECRETARY: A. SCARTON | | CONFORMED PLANS | | 1/18/19 | | CONTRACT NO. 00***** | |
| | | REVISION | | DATE | | BY | | | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
HOLDING LANE NETWORK
CABINET DETAILS

EB11.11
SHEET
1291
OF
1521
SHEETS



- NOTES:**
- 1 PROVIDE PATCH PANELS REQUIRED FOR DATA OUTLETS, SECURITY EQUIPMENTS AND OTHER NETWORK CONNECTIONS ON THE PLANS PLUS ONE SPARE PATCH PER RACK.
 - 2 COORDINATE CABINET LAYOUT WITH OWNER PRIOR TO INSTALLATION.
 - 3 PROVIDE TWO (2) VERTICAL POWER DISTRIBUTION UNITS (PDU) PER RACK POWERED FROM UPS POWER PANEL. PDU'S SHALL BE NETWORKED TYPE WITH (24) NEMA 5-20R RECEPTACLES. EACH OUTLET SHALL BE INDIVIDUALLY SWITCHED.
 - 4 FURNISH SPARE CAT 6 PATCH CABLES: CAT6, XFOOT, QTY XX
CAT6, XFOOT, QTY XX
SMFD, TYPE: XX, XFOOT, QTY XX
 - 5 DOOR AND SWING GATE CONTROL.

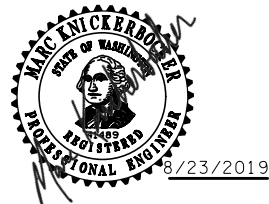
1 MDF-123 RACK ELEVATIONS
EB11.12 NOT TO SCALE

2 IDF-109 RACK ELEVATIONS
EB11.12 NOT TO SCALE

3 IDF-150 RACK ELEVATIONS
EB11.12 NOT TO SCALE

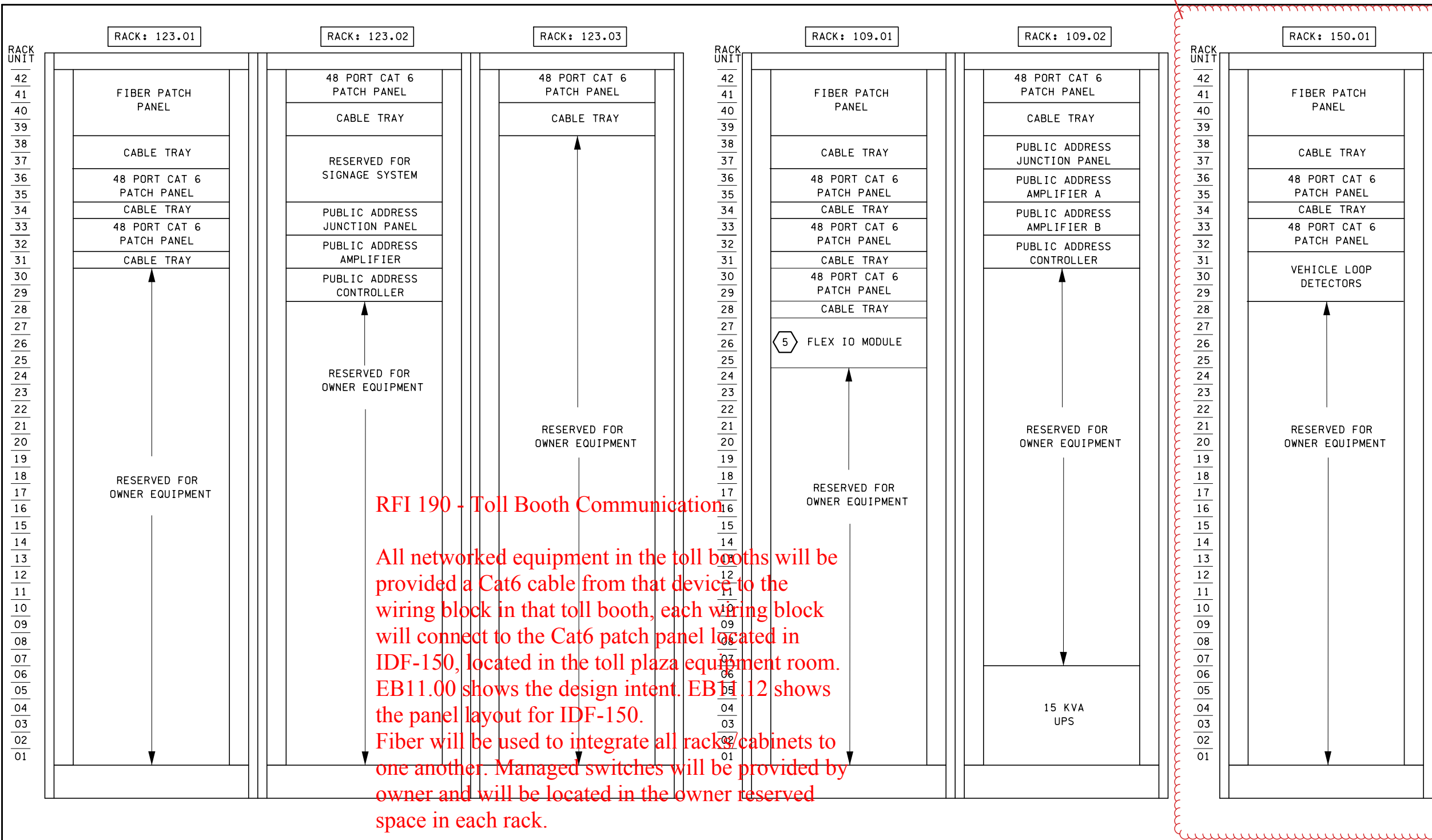


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| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | WA-2017-007-00 | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | REGION NO. STATE | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | 10 WASH | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | JOB NUMBER | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | 18W121 | | | |
| ASST SECRETARY: A. SCARTON | | | | | | CONTRACT NO. | | | |
| | | | | | | 00***** | | | |
| | | CONFORMED PLANS | | 1/18/19 | | | | | |
| | | REVISION | | DATE | | BY | | | |



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|----------------------------------------------------------------------------|--|
| SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | |
| MDF/IDF RACK ELEVATIONS | |

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|---------|
| EB11.12 |
| SHEET |
| 1292 |
| OF |
| 1521 |
| SHEETS |



- NOTES:**
- 1 PROVIDE PATCH PANELS REQUIRED FOR DATA OUTLETS, SECURITY EQUIPMENTS AND OTHER NETWORK CONNECTIONS ON THE PLANS PLUS ONE SPARE PATCH PER RACK.
 - 2 COORDINATE CABINET LAYOUT WITH OWNER PRIOR TO INSTALLATION.
 - 3 PROVIDE TWO (2) VERTICAL POWER DISTRIBUTION UNITS (PDU) PER RACK POWERED FROM UPS POWER PANEL. PDU'S SHALL BE NETWORKED TYPE WITH (24) NEMA 5-20R RECEPTACLES. EACH OUTLET SHALL BE INDIVIDUALLY SWITCHED.
 - 4 FURNISH SPARE CAT 6 PATCH CABLES: CAT6, XFOOT, QTY XX
CAT6, XFOOT, QTY XX
SMFD, TYPE: XX, XFOOT, QTY XX
 - 5 DOOR AND SWING GATE CONTROL.

1 MDF-123 RACK ELEVATIONS
EB11.12 NOT TO SCALE

2 IDF-109 RACK ELEVATIONS
EB11.12 NOT TO SCALE

3 IDF-150 RACK ELEVATIONS
EB11.12 NOT TO SCALE



EQUIPMENT AND DEVICES

- ▽

DATA OUTLET
- JB OR ④

JUNCTION BOX (J-BOX)
- V

VAULT, UTILITY VAULT
- Ⓢ

WALL MOUNTED PAGING SPEAKER
- VMS

VARIABLE MESSAGING SYSTEM
- PANEL OR CABINET

RACEWAY/CIRCUIT DESIGNATIONS

- N###

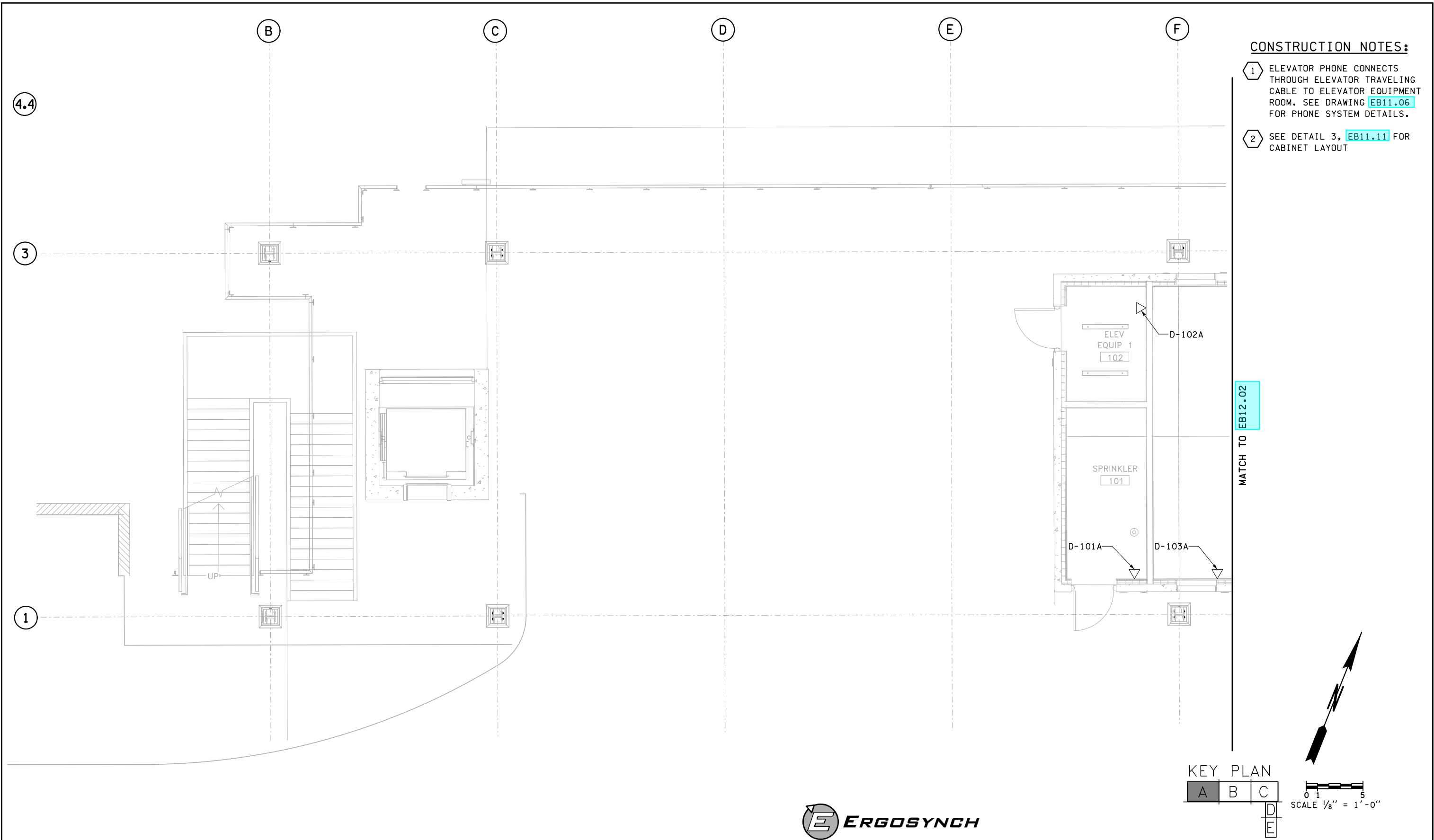
CONDUIT/CIRCUIT TAG, SEE CONDUIT AND CABLE SCHEDULE
- BC--



UNDERGROUND COMMUNICATIONS
- PRETERMINATED FIBER PATCH PANEL
- 13-24 X 13-24

FIBER CABLE SPLICE
NUMBERS INDICATE SPLICED STRANDS

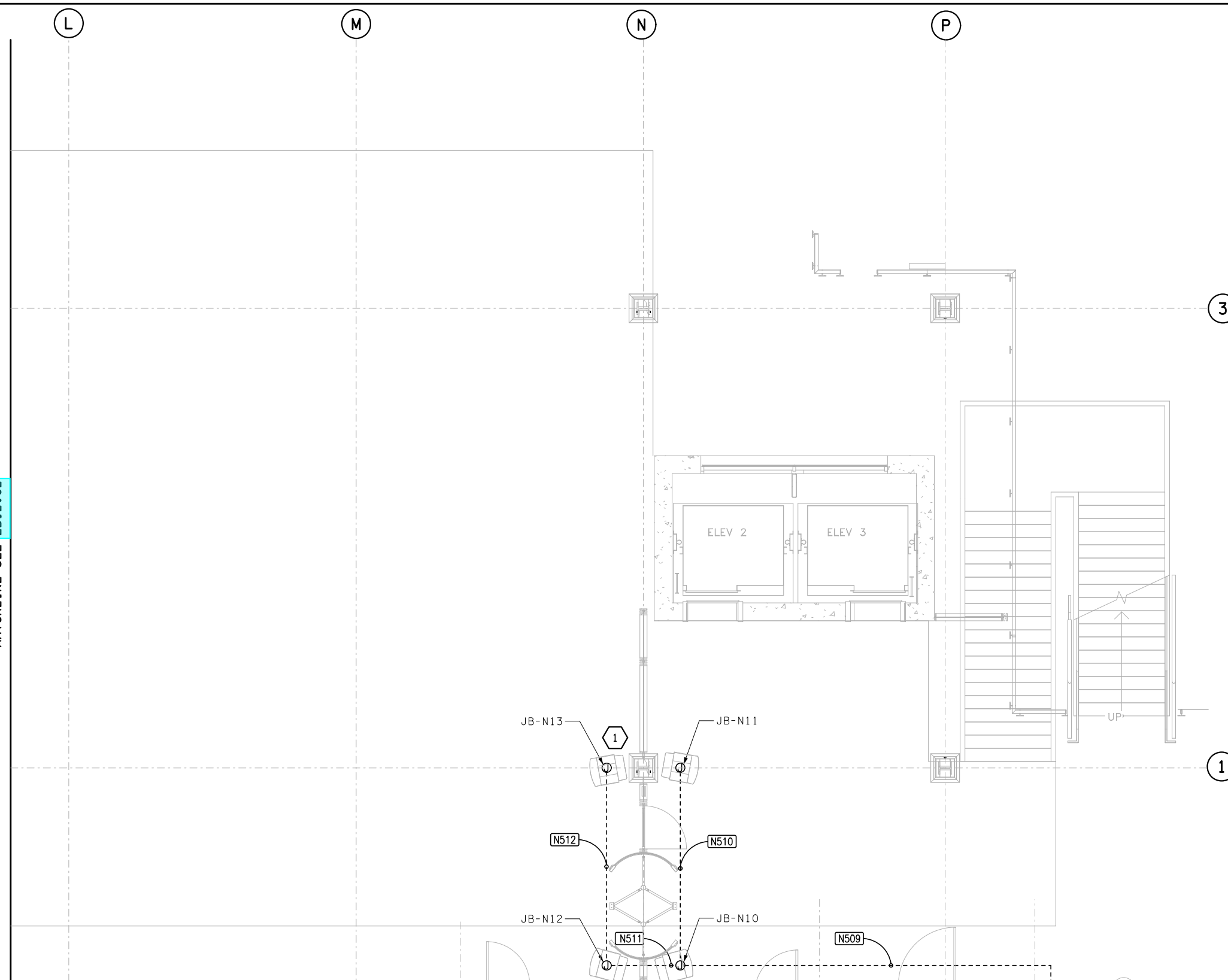


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| SUBMITTAL DATE: 1/18/19 | JMCNABB | | | | | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | | | | | | | WA-2017-007-00 |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | | | | | | | REGION NO. STATE |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | | | | | | | 10 WASH |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | JOB NUMBER |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | | | | | | 18W121 |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | CONTRACT NO. 00**** | | | | | | |



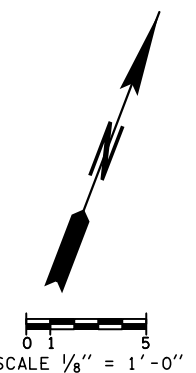
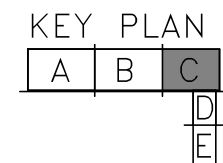
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| PRINTED: 10:00:02 AM 1/17/2019 | | | | | LAST PRINTED BY: | | MUKILTEO FERRY TERMINAL (PHASE 2) | | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | | | | JMCNABB | | FERRY TERMINAL CONSTRUCTION | | | | | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | | | | 1/18/19 | | TERMINAL - LEVEL 1 - SECTOR A | | | | | | | | | | |
| ENTERED BY: J. MCNABB | | | | | 1/18/19 | | COMMUNICATIONS PLAN | | | | | | | | | | |
| CHECKED BY: S. HARRIS | | | | | 1/18/19 | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | | | | | | | | | | | | |
| | | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | |
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MATCHLINE SEE EB12.02



MATCHLINE SEE EB12.04

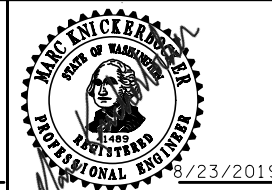
LEVEL 1 SECTOR C COMMUNICATIONS PLAN



CONSTRUCTION NOTES:

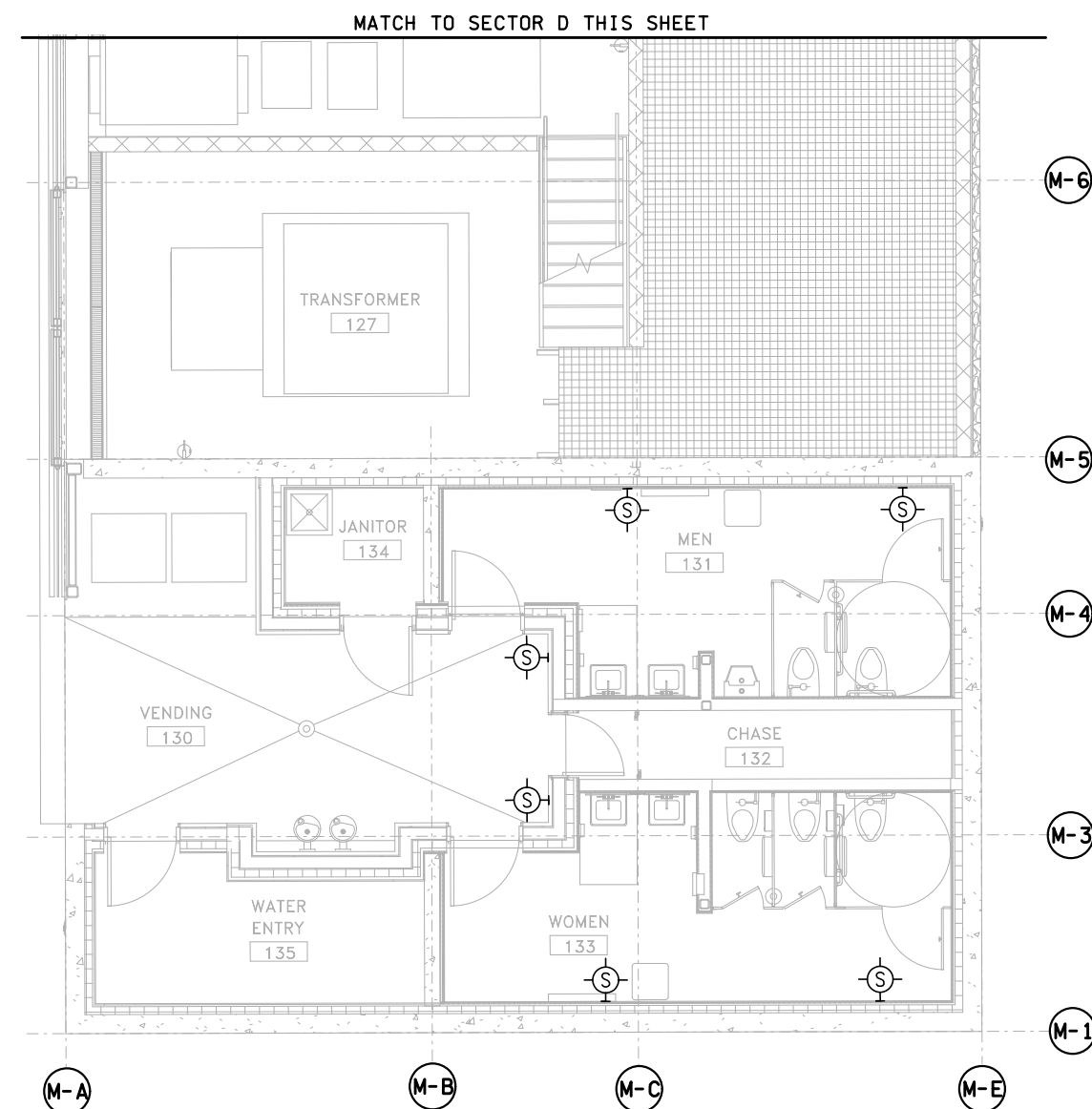
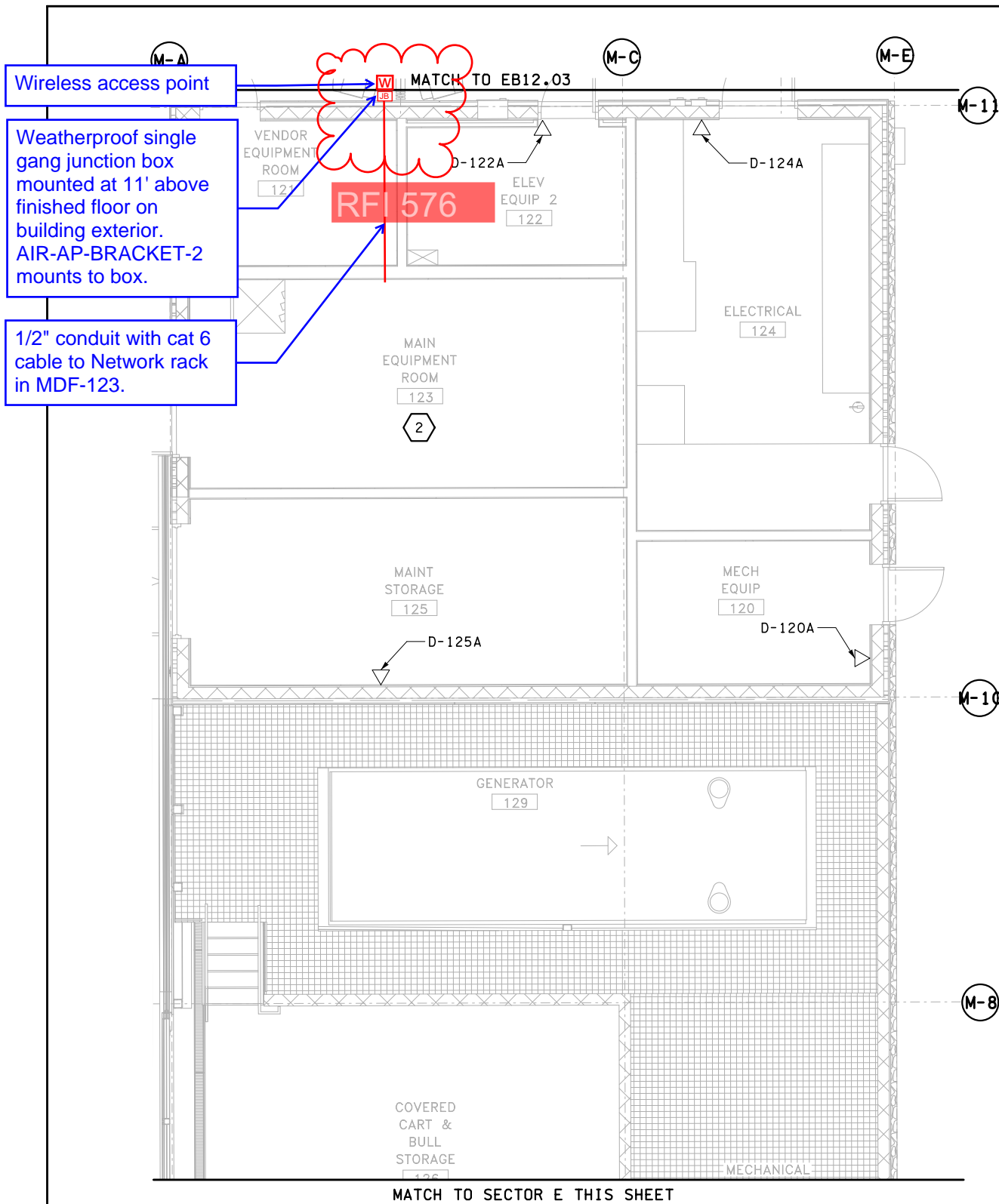
- 1 COORDINATE EXACT LOCATIONS OF JUNCTION BOXES BELOW KIOSKS WITH ENGINEER.

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| SUBMITTAL DATE: 1/18/19 | | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | CONTRACT NO. 00***** |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1 - SECTOR C
COMMUNICATIONS PLAN

EB12.03
SHEET 1296 OF 1521 SHEETS



- CONSTRUCTION NOTES:**
- 1 SEE DETAIL 3, EB11.11 FOR CABINET LAYOUT.
 - 2 SEE EB12.09 FOR ROOM LAYOUT

RFI 576 - Additional WAP Requirements

Provide raceway and cat 6 cabling as shown on the attached drawings for wireless access points to be furnished and installed by Owner.

KEY PLAN

| | | |
|---|---|---|
| A | B | C |
|---|---|---|

SCALE 1/8" = 1'-0"

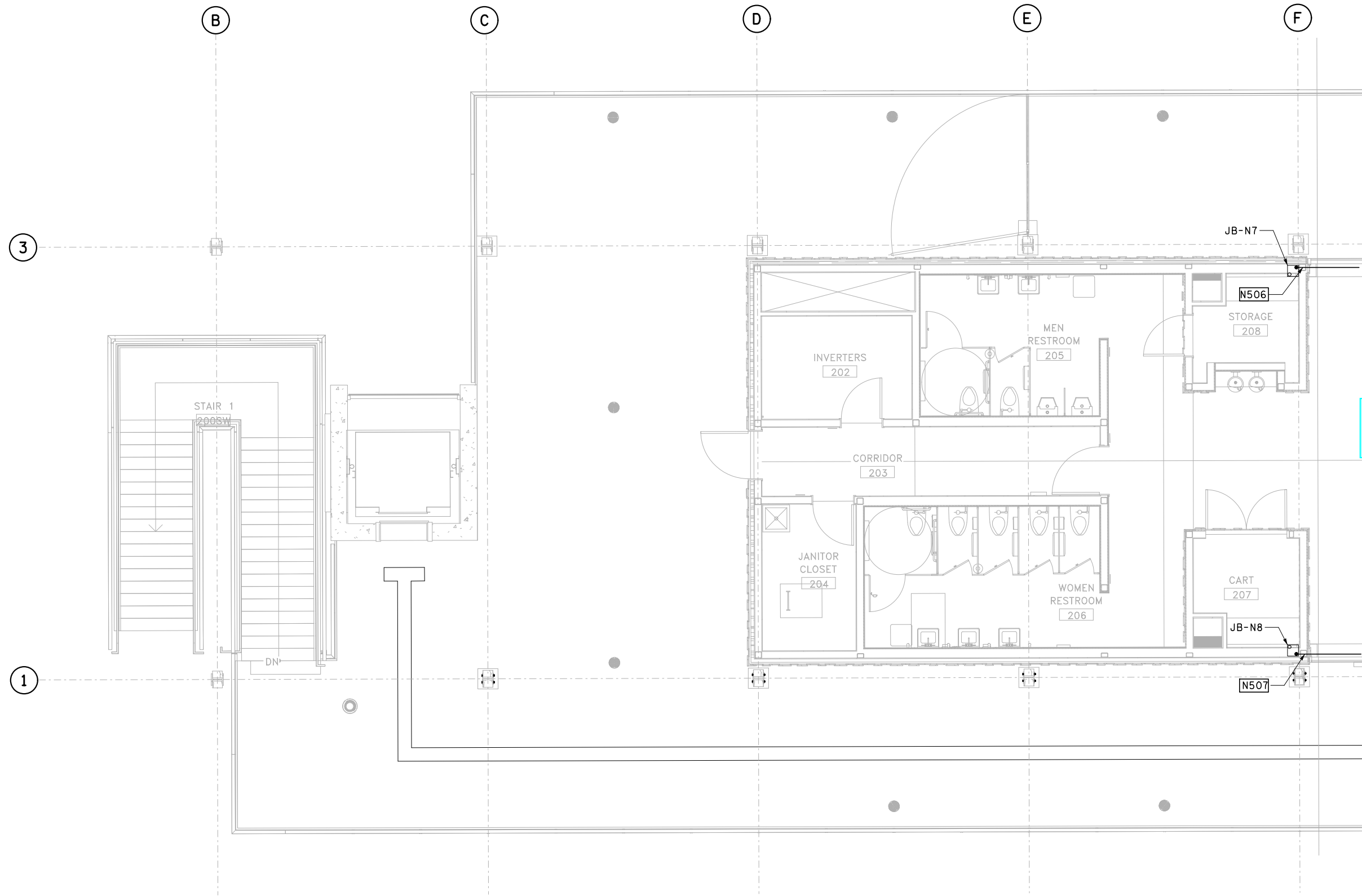


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| PRINTED: 3:55:28 PM 1/16/2019 | | | | | LAST PRINTED BY: JMCNABB | | | | |
| SUBMITTAL DATE: 1/18/19 | | | | | DESIGNED BY: M. KNICKERBOCKER 1/18/19 | | | | |
| ENTERED BY: J. MCNABB 1/18/19 | | | | | CHECKED BY: S. HARRIS 1/18/19 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | DIR TERM ENGR: N. MCINTOSH | | | | |
| ASST SECRETARY: A. SCARTON | | | | | CONFORMED PLANS | | | | |
| | | | | | REVISION | | | | |
| | | | | | DATE | | | | |
| | | | | | BY | | | | |
| | | | | | FED.AID PROJ.NO. WA-2017-007-00 | | | | |
| | | | | | REGION NO. STATE 10 WASH | | | | |
| | | | | | JOB NUMBER 18W121 | | | | |
| | | | | | CONTRACT NO. 00***** | | | | |



SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1 - SECTOR
D & E COMMUNICATIONS PLAN

EB12.04
SHEET
1297
OF
1521
SHEETS



MATCH TO
EB12.07

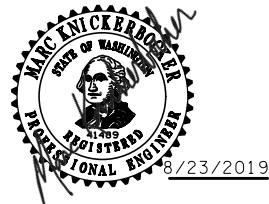
KEY PLAN

| | | |
|---|---|---|
| A | B | C |
| | | D |
| | | E |

SCALE 1/8" = 1'-0"



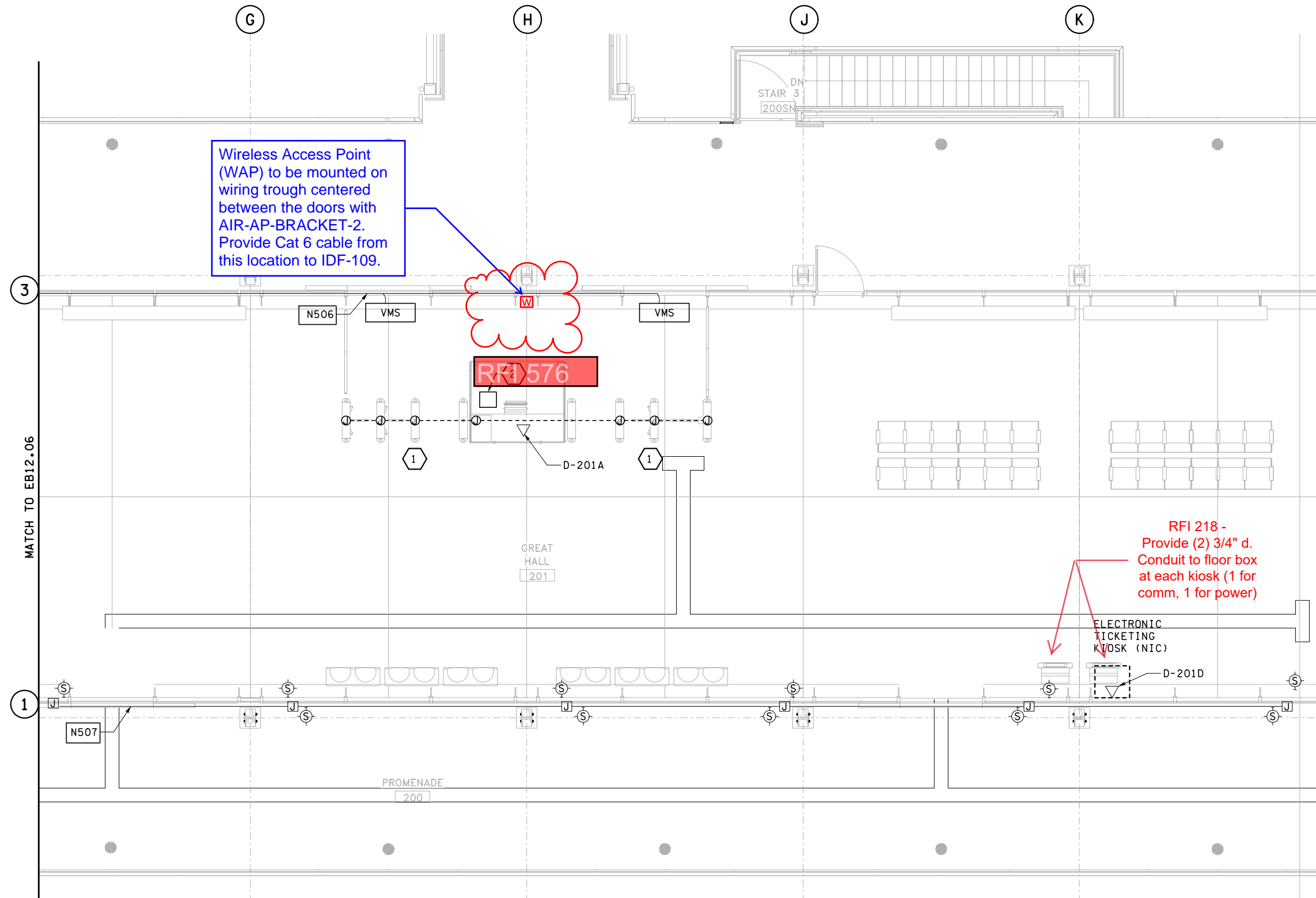
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| SUBMITTAL DATE: 1/18/19 | | | JMCNABB | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | | 1/18/19 | | | | | | WA-2017-007-00 |
| ENTERED BY: J. MCNABB | | | 1/18/19 | | | | | | REGION NO. STATE |
| CHECKED BY: S. HARRIS | | | 1/18/19 | | | | | | 10 WASH |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | JOB NUMBER |
| DIR TERM ENGR: N. MCINTOSH | | | CONFORMED PLANS | | 1/18/19 | | | | 18W121 |
| ASST SECRETARY: A. SCARTON | | | REVISION | | DATE | | BY | | CONTRACT NO. |
| | | | | | | | | | 00**** |



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2 - SECTOR A
COMMUNICATIONS PLAN

EB12.06
SHEET
1298
OF
1521
SHEETS



CONSTRUCTION NOTES:

- 1 COORDINATE EXACT LOCATIONS OF 4"x4" JUNCTION BOXES BELOW TURNSTILES WITH ENGINEER
- 2 PROVIDE OPERATOR CONTROL STATION LOCATED ON ATTENDANT DESK FOR CONTROL OF PASSENGER LOADING DOORS WITH SELECTOR SWITCHES PER DRAWING EP12.01, DETAIL 2. WIRE SELECTOR SWITCHES TO REMOTE I/O INTERFACED TO OVERHEAD LOADING PLC VIA ETHERNET IP FOR OPEN/CLOSE CONTROL OF NORTH DOORS AND OPEN/CLOSE CONTROL OF SOUTH DOORS.

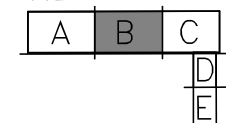
EXAMPLE PRODCETS:

- HOFFMAN, MODEL C8C8SS, STAINLESS STEEL CONSOLE
- ALLEN-BRADLEY, MODEL 1794-PS13, POWER SUPPLY
- ALLEN-BRADLEY, MODEL 1794-AENT, ETHERNET BASE
- ALLEN-BRADLEY, MODEL 1794-TB2, TERMINAL BASE
- ALLEN-BRADLEY, MODEL 1794-IB8, DC INPUT MODULE
- SOLA, MODEL SDP 1-24-100T, 24VDC POWER SUPPLY
- SQUARE D, MODEL 9001K, 30MM WATERTIGHT/OILTIGHT NON-ILLUMINATED SELECTOR-SWITCH, 2-POSITION MAINTAINED, CONTACTS AS REQUIRED

RFI 576 - Additional WAP Requirements

Provide raceway and cat 6 cabling as shown on the attached drawings for wireless access points to be furnished and installed by Owner.

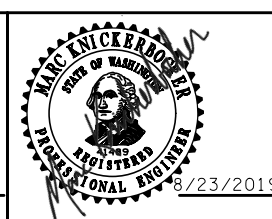
KEY PLAN



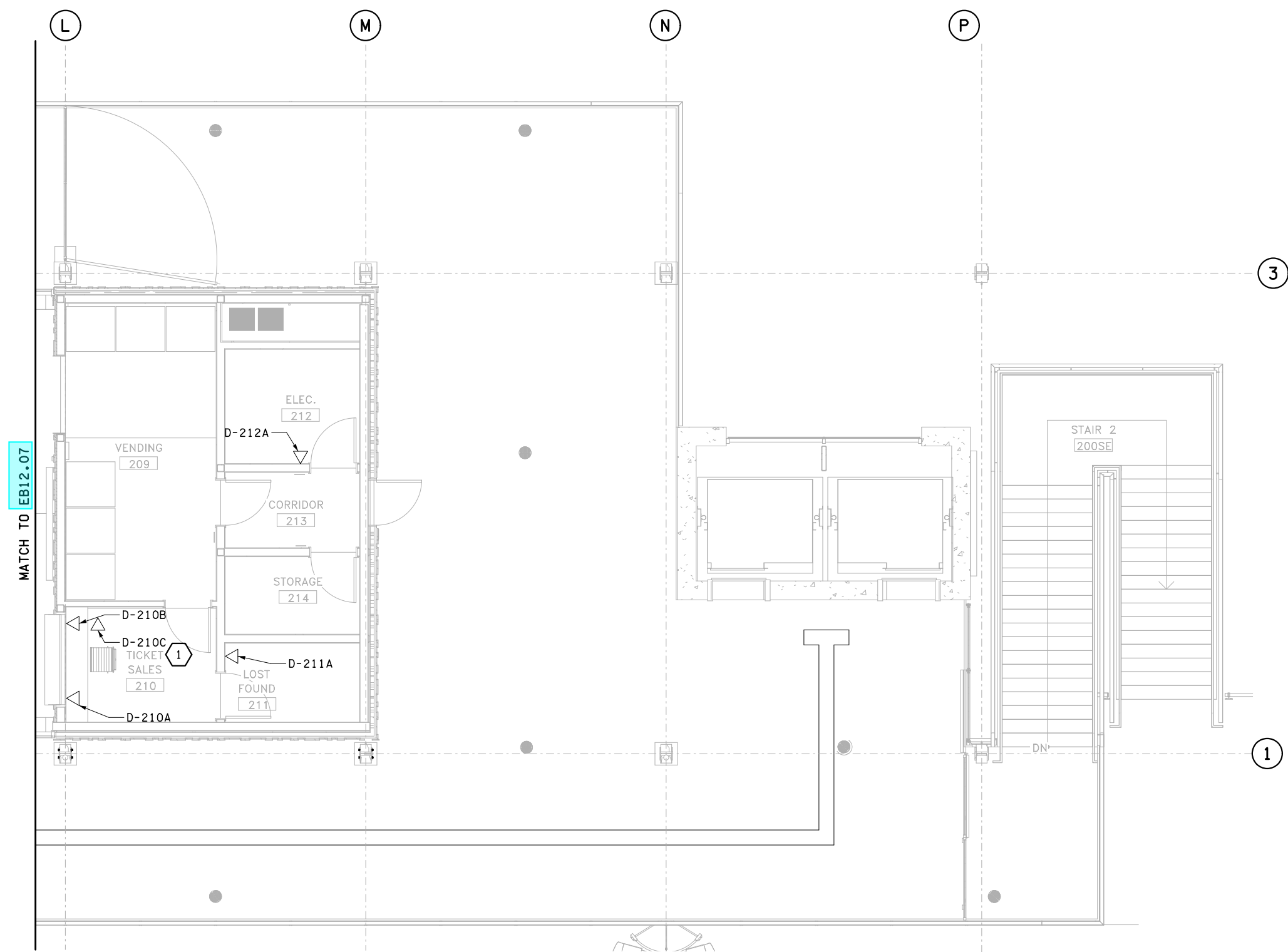
SCALE 1/8" = 1'-0"



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| SUBMITTAL DATE: 1/18/19 | | | | DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | REGION NO. STATE 10 WASH | |
| ENTERED BY: J. MCNABB | | | | 1/18/19 | | CHECKED BY: S. HARRIS | | JOB NUMBER 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | 1/18/19 | | CONTRACT NO. 00***** | | CONFORMED PLANS | |
| DIR TERM ENGR: N. MCINTOSH | | | | 1/18/19 | | DATE | | BY | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | | | | |



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|------------------------------------------------------------------|--|---------------------------------------|
| SR 525 | | EB12.07 |
| MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | |
| TERMINAL - LEVEL 2 - SECTOR B COMMUNICATIONS PLAN | | SHEET 1299 OF 1521 SHEETS |



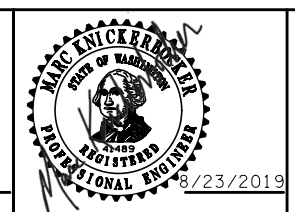
CONSTRUCTION NOTES:
1 LOCATE DATA OUTLET FLUSH MOUNTED IN CEILING.

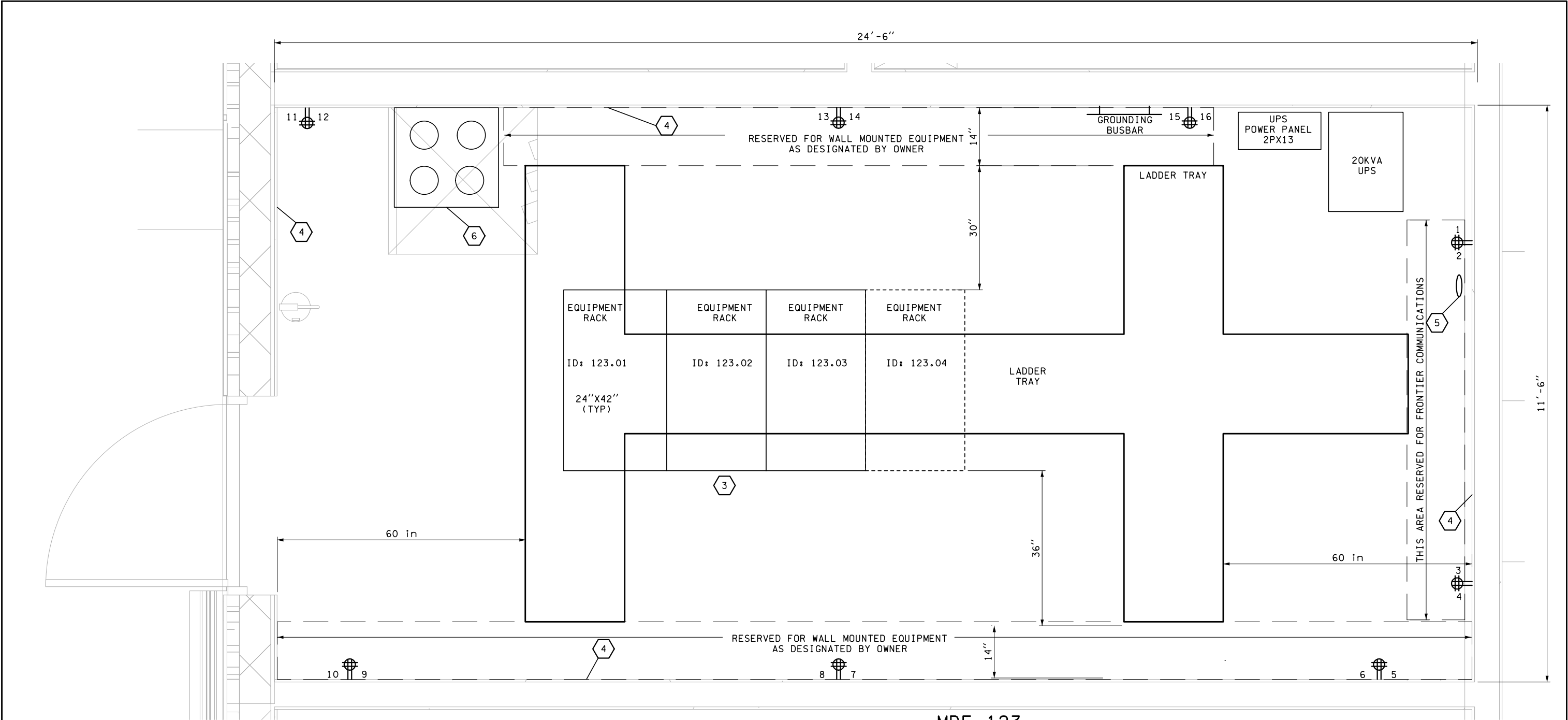
KEY PLAN
A B C
D
E

0 1 5
SCALE 1/8" = 1'-0"



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| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | | | WA-2017-007-00 | | | | | | | | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | REGION NO. STATE | | | | | | | | | | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | 10 WASH | | | | | | | | | | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | JOB NUMBER 18W121 | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | CONTRACT NO. 00**** | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | | | | |





CONSTRUCTION NOTES:

- 1 SEE POWER PLANS AND LIGHTING PLANS FOR ADDITIONAL REQUIREMENTS.

2 PROVIDE EACH FOURPLEX OUTLET WITH TWO INDEPENDENT CIRCUITS FROM UPS POWER PANEL AS SHOWN. UPS POWERED RECEPTACLES SHALL BE ORANGE.

3 SEE **EB11.12 F** FOR RACK ELEVATIONS.
- 4 SHEATH WALLS FROM FLOOR TO 8 FEET ABOVE FINISHED FLOOR WITH 3/4" FIRE RETARDANT PLYWOOD.

5 PROVIDE #6 AWG STRANDED, INSULATED COPPER GROUND WIRE FROM GROUNDING BUS BAR TO FRONTIER COMMUNICATIONS DESIGNATED AREA. LEAVE 8 FEET OF COIL OF WIRE ON THE WALL FOR USE BY FRONTIER COMMUNICATIONS.

6 SEE ES12 SERIES FOR SITE COMMUNICATIONS PLANS. STUB UP CONDUITS A MINIMUM OF 6 INCHES ABOVE FINISHED FLOOR.

MDF-123
MAIN EQUIP. ROOM
ROOM 123



0 1 2
SCALE 1/2" = 1'-0"



| | | | | | | | | | |
|------------------------------------------------------------------------------------|--|------------------|--|-----------------|--|------------------|--|--------------|--|
| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb12-09.dlv | | | | | | | | | |
| PRINTED: 4:00:41 PM 1/16/2019 | | LAST PRINTED BY: | | | | FED.AID PROJ.NO. | | | |
| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | | | WA-2017-007-00 | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | REGION NO. STATE | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | 10 WASH | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | JOB NUMBER | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | 18W121 | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED PLANS | | 1/18/19 | | CONTRACT NO. | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | |
| | | | | | | | | 00***** | |

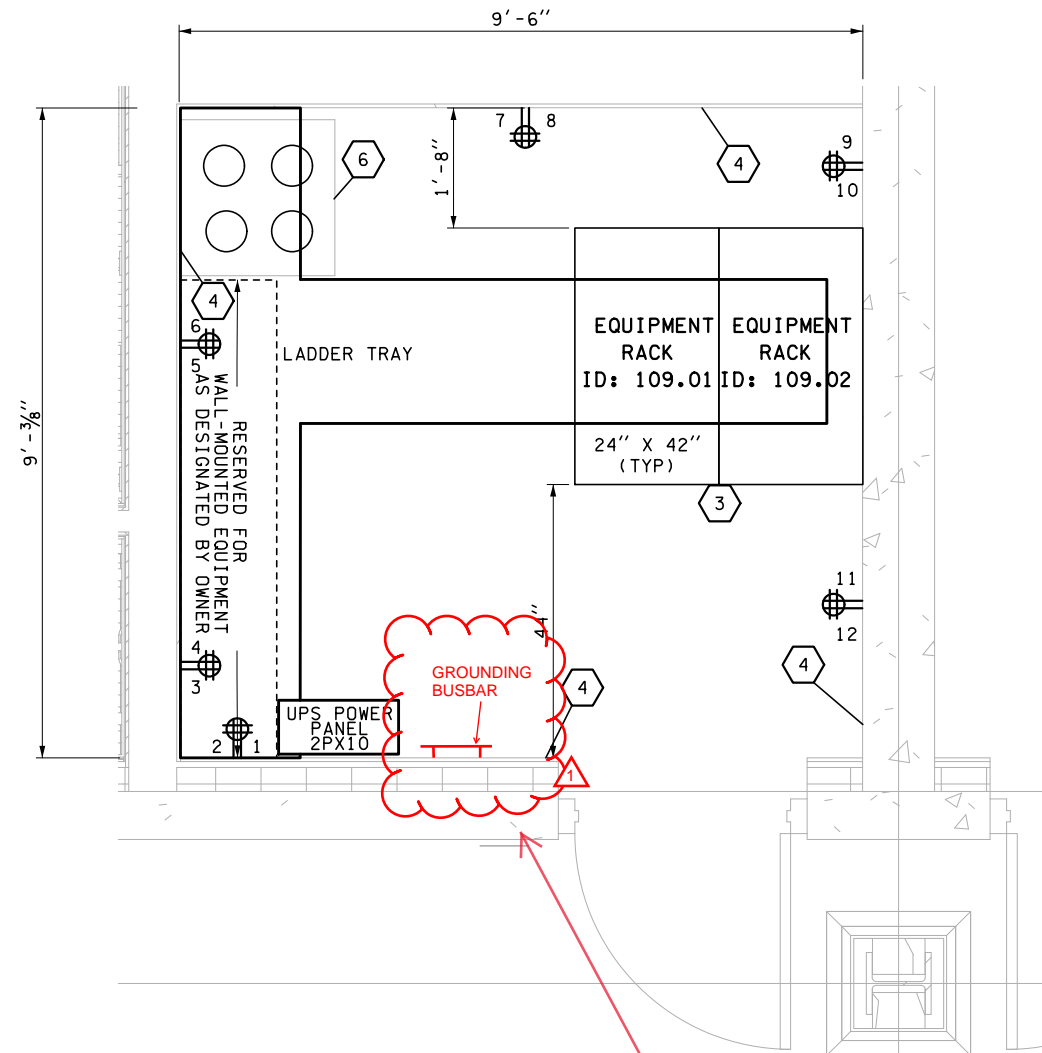


SR 525
MUKILTEO FERRY TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL-MAIN DISTRIBUTION FRAME
SYSTEMS PLAN

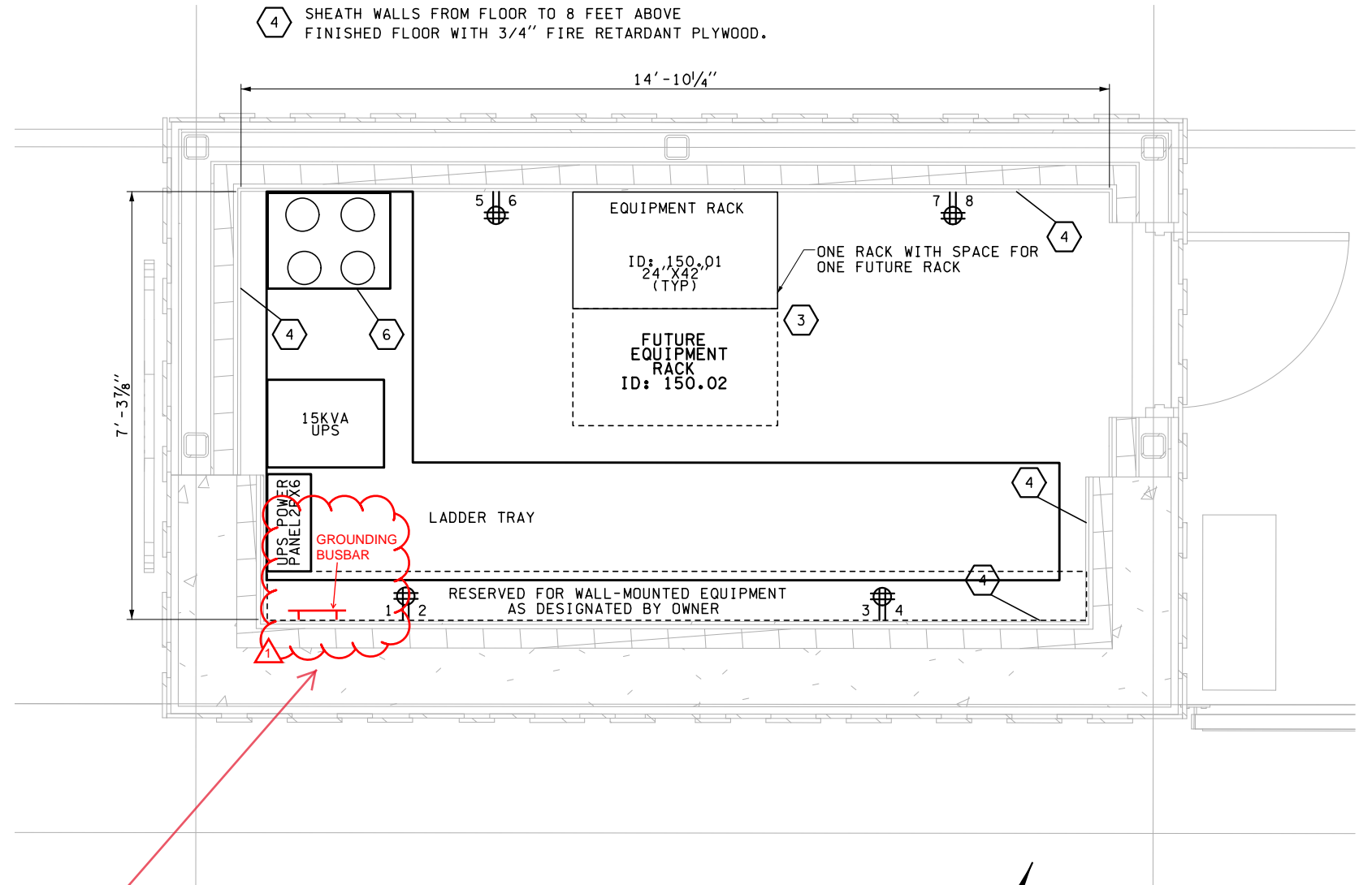
EB12.09
SHEET
1301
OF
1521
SHEETS

CONSTRUCTION NOTES:

- 1 SEE POWER PLANS AND LIGHTING PLANS FOR ADDITIONAL REQUIREMENTS.
- 2 PROVIDE EACH FOURPLEX OUTLET WITH TWO INDEPENDENT CIRCUITS FROM UPS POWER PANEL AS SHOWN. UPS POWERED RECEPTACLES SHALL BE ORANGE.
- 3 SEE EB11.12 FOR RACK ELEVATIONS.
- 4 SHEATH WALLS FROM FLOOR TO 8 FEET ABOVE FINISHED FLOOR WITH 3/4" FIRE RETARDANT PLYWOOD.
- 5 PROVIDE #6 AWG STRANDED, INSULATED COPPER GROUND WIRE FROM GROUNDING BUS BAR TO FRONTIER COMMUNICATIONS DESIGNATED AREA. LEAVE 8 FEET OF COIL OF WIRE ON THE WALL FOR USE BY FRONTIER COMMUNICATIONS.
- 6 SEE ES12 SERIES FOR SITE COMMUNICATIONS PLANS. STUB UP CONDUITS A MINIMUM OF 6 INCHES ABOVE FINISHED FLOOR.



IDF-109
MAIN TERMINAL IT
ROOM 109



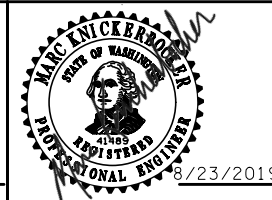
IDF-150
TOLL PLAZA EQUIP. ROOM
ROOM 150

RFI 592



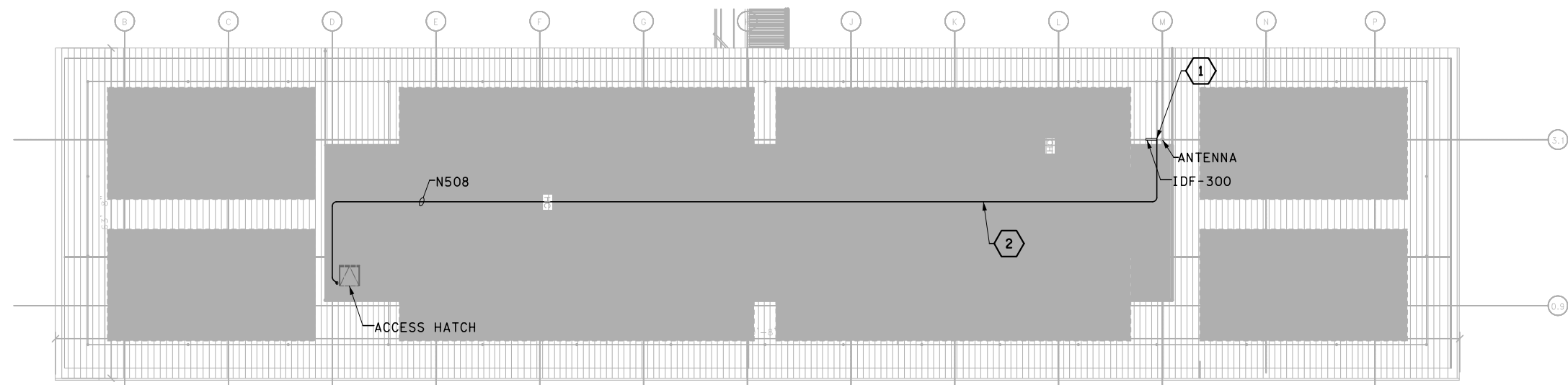
0 1 2
SCALE 3/8" = 1'-0"

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| SUBMITTAL DATE: 1/18/19 | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | JOB NUMBER 18W121 |
| ENTERED BY: J. MCNABB | 1/18/19 | | | CONTRACT NO. 00**** |
| CHECKED BY: S. HARRIS | 1/18/19 | | | |
| MAR PROJ ENGR: C. TORRES | | RFI 592 IDF Grounding | 10/20/2020 | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY |



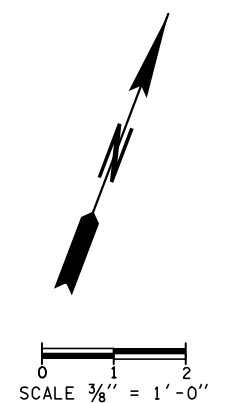
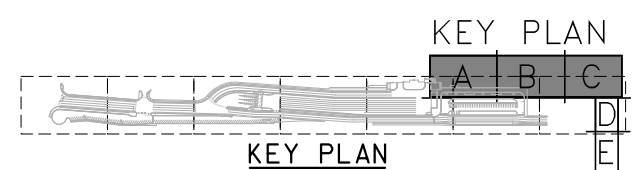
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| SR 525 MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION |
| TERMINAL / TOLL PLAZA IDF PLAN |

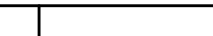

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| EB12.10 |
| SHEET 1302 OF 1521 SHEETS |

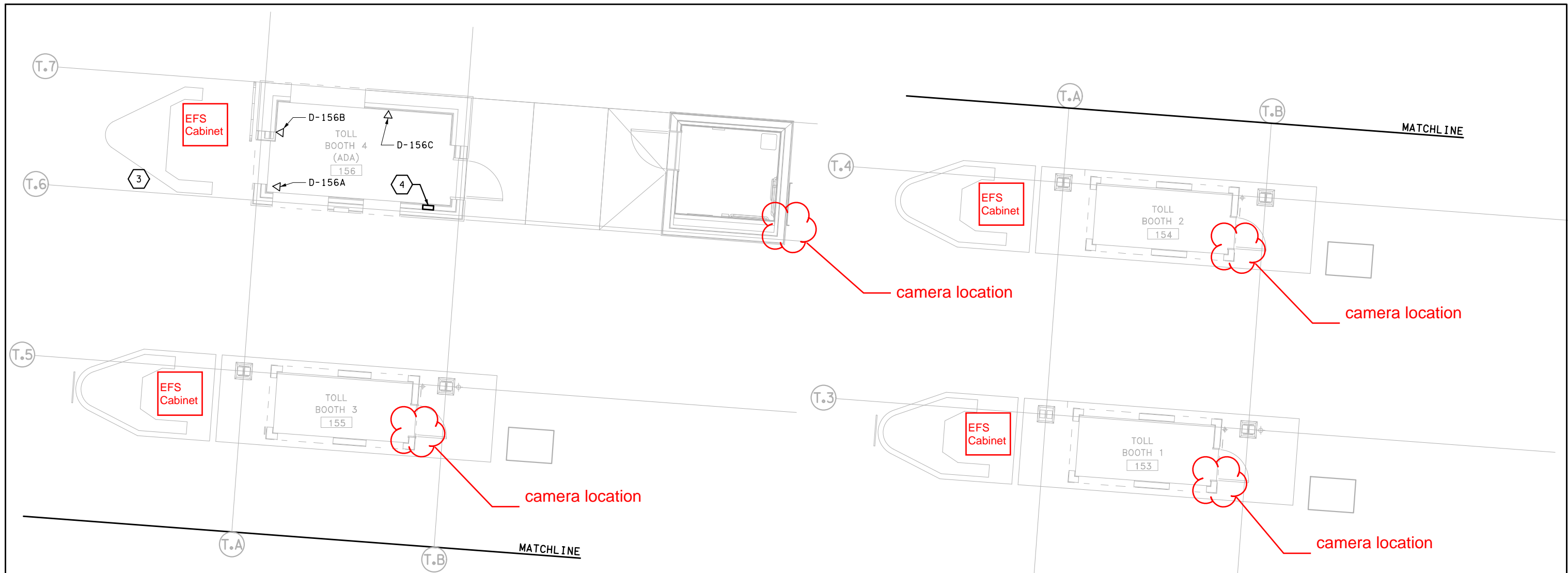


- CONSTRUCTION NOTES:**
- 1 SEE DETAIL 2, EB11.11 FOR CABINET LAYOUT
 - 2 ROUTE CONDUIT IN SAME TROUGH FOR POWER AS SHOWN ON DRAWINGS EB02.10, EB02.11 AND EB02.12

COMMUNICATION PLAN TERMINAL ROOF SECTOR C



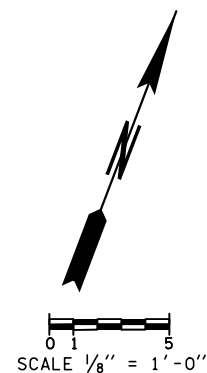
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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb12.12.dlv | | | | | | | | | |  |  | Washington State Department of Transportation WASHINGTON STATE FERRIES | SR 525 | | EB12.12 |
| PRINTED: 4:03:23 PM 1/16/2019 | | LAST PRINTED BY: | | | | MUKILTEO FERRY TERMINAL (PHASE 2) | | | | | | | | | |
| SUBMITTAL DATE: 1/18/19 | | JMCNABB | | | | FERRY TERMINAL CONSTRUCTION | | | | | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | | 1/18/19 | | | | COMMUNICATION PLAN TERMINAL | | | | | | | | | |
| ENTERED BY: J. MCNABB | | 1/18/19 | | | | ROOF SECTOR C | | | | | | | | | |
| CHECKED BY: S. HARRIS | | 1/18/19 | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | | 1/18/19 | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | | DATE | | BY | | | | | | | | | |



TOLL PLAZA - LEVEL 1- SECTOR F PLAN

CONSTRUCTION NOTES:

- 1 PROVIDE MULTIPLE DATA/PHONE PORTS IN EACH TOLL BOOTH PER DRAWING EB 11.03.
- 2 SEE EB12.10 FOR ROOM LAYOUT
- 3 FOLLOW EQUIPMENT AND DEVICE LAYOUT, CONDUIT AND CABLE SIZES, AND CONSTRUCTION NOTES FOR TOLL BOOTHS 1 TO 3 ON EX SERIES DWGS, UNLESS OTHERWISE SHOWN HEREIN.
- 4 SERVICE PULLBOX AND TRANSITION SECTION TO POWER AND COMMUNICATION JUNCTION BOX UNDER FLOOR ACCESS PANEL AS SHOWN ON DWG EX 02.01 EXCEPT LOCATED AT SOUTHEAST CORNER OF TOLL BOOTH.



RFI 501 - Toll Booth Camera Requirements

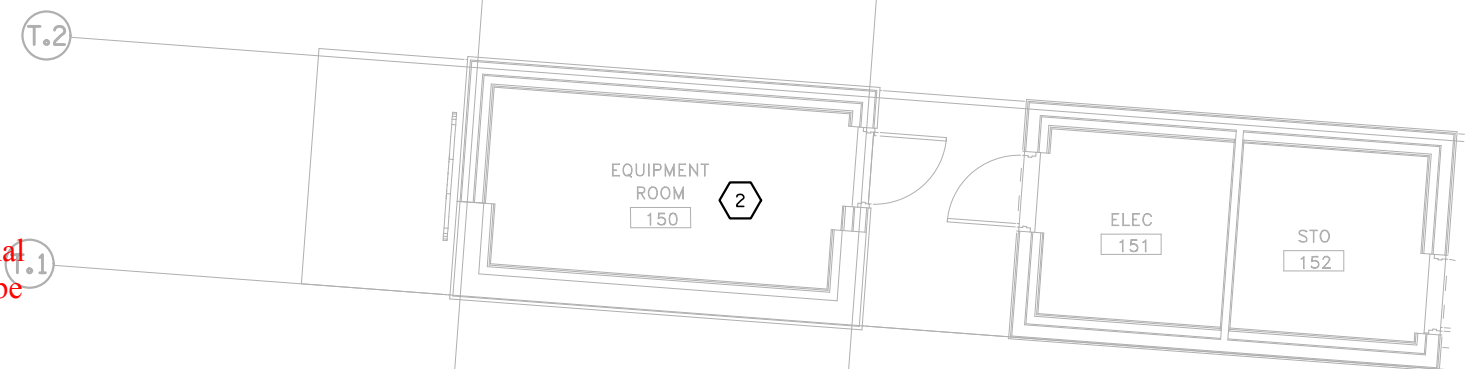
Owner furnished cameras are required at each toll booth as shown on the attached. Each camera location will require (1)

RG59 cable from the camera location to the DVR located in each EFS cabinet. An additional conduit from the restroom to toll booth 4 will be

Provide security camera to view the IT / Equipment entry door at location shown in the attached image.



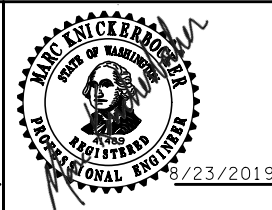
RFI 501



TOLL PLAZA - LEVEL 1- SECTOR G PLAN



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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb12_52.dwg | | | | FED.AID PROJ.NO. | |
| PRINTED: 4:04:38 PM 1/16/2019 | LAST PRINTED BY: JMCNABB | | | WA-2017-007-00 | |
| SUBMITTAL DATE: 1/18/19 | | | | REGION NO. STATE | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | 10 WASH | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | JOB NUMBER | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | 18W121 | |
| MAR PROJ ENGR: C. TORRES | | | | CONTRACT NO. | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | 00***** | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |



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|------------------------------------------------------------------|--|---------------------------------------|
| SR 525 | | EB12.52 |
| MUKILTEO FERRY TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | |
| TOLL PLAZA - LEVEL 1- SECTOR G PLAN | | SHEET 1304 OF 1521 SHEETS |



RFI 497

RFI 497 - PA System_VMS_Visual Paging Interfacing

This response includes 3 components:

1) VMS interfacing at the maintenance building - See attached redlines of EB11.00, EB11.04, EB11.10, and EB16.00

2) PA/VMS/Visual Paging Specs and Equipment - See attached specifications and updated block diagram (EB11.05). A summary of the PA system changes:

- Add CobraNet network switches at MDF-123, IDF-109, IDF-11, IDF-12 and IDF-13
- Replace analog amplifiers with CobraNet based digital amplifiers at all locations
- Add message server and integrate with Owner PBX phones for ad hoc announcements
- Increase wattage of holding lane speaker horns
- Add speakers, conduit and cabling for the terminal second level restrooms

The hardware that is carried forward from the Contractor proposal is:

- Vocia (Biamp) MS-1e MESSAGE PROCESSOR
- Vocia (Biamp) VA-4300CV 4-Channelx300W Amplifier
- Vocia (Biamp) VA-2060 2-Channelx60W Amplifier

3) Blank Out signs at the Toll Booths - Blankout signs are not integrated with the other systems. Provide 18"x18" LED stop signand 18"x18" blank out sign at each toll both where shown on architectural plans. Stop sign to always be on. Blank out sign to be always on and controlled by compatible 2 position toggle switch inside each toll booth in location approved by WSF. See attached photos and cut sheets for examples. Most sign manufacturers should be acceptable. Submit cut sheets for approval.

| RACEWAY NO. | CONDUIT SIZE | CABLE SIZE | FROM | TO | VIA | | | | | | | NOTES |
|-------------|---------------|------------------------|---------|--------------|-------|--|--|--|--|--|--|---------------------------------|
| N500 | (1) 2" | 12 SMFO | IDF-109 | IDF-223 | JB-N1 | | | | | | | |
| N502 | | | | | | | | | | | | NOT USED |
| N503 | (1) 2" GRSC | (5) CAT 6, PULL STRING | JB-N3 | JB-N4 | | | | | | | | PVC COATED GRSC |
| N504 | (1) 2" GRSC | (5) CAT 6, PULL STRING | JB-N4 | JB-1T12D | | | | | | | | PVC COATED GRSC |
| N505 | (1) 3" | (5) CAT 6, PULL STRING | IDF-109 | JB-N3 | | | | | | | | |
| N506 | (1) 3/4" | (1) CAT 6/(4)*18AWG | JB-N7 | VMS | | | | | | | | |
| | (1) 3/4" | (1) CAT 6/(4)*18AWG | JB-N7 | VMS | | | | | | | | |
| | (1) 1/5" | RESERVED FOR POWER | JB-N7 | VMS | | | | | | | | |
| | (1) 1/5" | RESERVED FOR POWER | JB-N7 | VMS | | | | | | | | |
| N507 | (1)1" | XAWG SPEAKER WIRE | JB-N8 | SPEAKERS | | | | | | | | |
| N508 | (1)2" 12 SMFO | (2) CAT 6, (2) COAXIAL | IDF-109 | ROOF ANTENNA | | | | | | | | LMR-400 LLPL-BK TYPE COAX CABLE |
| N509 | (2)2" | (8) CAT 6 | JB-N6 | JB-N10 | | | | | | | | |
| N510 | (1)2" | (2) CAT 6 | JB-N10 | JB-N11 | | | | | | | | |
| N511 | (1)2" | (4) CAT 6 | JB-N10 | JB-N12 | | | | | | | | |
| N512 | (1)2" | (2) CAT 6 | JB-N12 | JB-N13 | | | | | | | | |
| N513 | (1) 1" | (1) CAT 6 | MDF-123 | ROOF VMS | | | | | | | | CONDUIT NOT SHOWN ON PLANS |



| | | | | | | | | | | | |
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| FILE NAME: PW:\WSF\Mukilteo\14w121_FERRYTERMCONST\CADD\ERGOSYNCH\14w121eb16_00.dlv | | | | | | | | | | | |
| PRINTED: 4:05:35 PM 1/16/2019 | LAST PRINTED BY: | | | | | FED.AID PROJ.NO. | | | | | |
| SUBMITTAL DATE: 1/18/19 | JMCNABB | | | | | WA-2017-007-00 | | | | | |
| DESIGNED BY: M. KNICKERBOCKER | 1/18/19 | | | | | REGION NO. STATE | | | | | |
| ENTERED BY: J. MCNABB | 1/18/19 | | | | | 10 WASH | | | | | |
| CHECKED BY: S. HARRIS | 1/18/19 | | | | | JOB NUMBER | | | | | |
| MAR PROJ ENGR: C. TORRES | | ADD ROOFTOP VMS INTERFACE | 4 / 22 / 20 | MK | | 18W121 | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED PLANS | 1/18/19 | | | CONTRACT NO. | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | 00***** | | | | | |





Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525

MUKILTEO FERRY TERMINAL (PHASE 2)

FERRY TERMINAL CONSTRUCTION

BUILDING COMMUNICATIONS

CONDUIT AND CABLE SCHEDULE

| |
|---------------------------|
| EB16.00 |
| SHEET 1305 OF 1521 SHEETS |

GENERAL ABBREVIATIONS

| | | | |
|--------|---------------------------------------------|--------|-------------------------------------|
| ABV | ABOVE | IBC | INTERNATIONAL BUILDING CODE |
| AFF | ABOVE FINISHED FLOOR | ID | INSIDE DIAMETER |
| ALT | ALTERNATE | IFC | INTERNATIONAL FIRE CODE |
| APPROX | APPROXIMATELY | IMC | INTERNATIONAL MECHANICAL CODE |
| ARCH | ARCHITECT; ARCHITECTURAL | IN | INCH |
| | | INSUL | INSULATE; INSULATION |
| BLDG | BUILDING | | |
| BTU | BRITISH THERMAL UNIT | KW | KILOWATT |
| BTUH | BRITISH THERMAL UNITS PER HOUR | KWH | KILOWATT HOUR |
| | | | |
| CAP | CAPACITY | L | LENGTH; LONG (DIM) |
| CL | CENTERLINE | LAB | LABORATORY |
| CLG | CEILING | LAV | LAVATORY |
| CMU | CONCRETE MASONRY UNIT | LB | POUND |
| COND | CONDENSATE | | |
| CONC | CONCRETE | LBS/HR | POUNDS PER HOUR |
| CONN | CONNECT; CONNECTION | LF | LINEAL FEET |
| CONT | CONTINUOUS; CONTINUATION | LVG | LEAVING |
| COORD | COORDINATE | LWT | LEAVING WATER TEMPERATURE |
| | | | |
| D | DEEP (DIM) | MAX | MAXIMUM |
| DEG | DEGREE | MBH | THOUSAND BRITISH THERMAL UNITS/HOUR |
| DIA | DIAMETER | | |
| DIAG | DIAGONAL; DIAGRAM | MCC | MOTOR CONTROL CENTER |
| DIFF | DIFFERENTIAL | MECH | MECHANICAL; MECHANICAL CONTRACTOR |
| DIM | DIMENSION | | |
| DIV | DIVISION | | |
| DN | DOWN | MFG | MANUFACTURING |
| DP | DIFFERENTIAL PRESSURE | MFR | MANUFACTURER |
| DR | DRAIN | MIN | MINIMUM; MINUTE |
| DWG | DRAWING | MISC | MISCELLANEOUS |
| | | | |
| EA | EACH | N | NORTH |
| EFF | EFFICIENCY | NA | NOT APPLICABLE |
| ELEC | ELECTRICAL | NC | NORMALLY CLOSED |
| ELEV | ELEVATION; ELEVATOR | NIC | NOT IN CONTRACT |
| | | NO | NORMALLY OPEN; NUMBER |
| EMCS | ENERGY MANAGEMENT CONTROL SYSTEM | NOM | NOMINAL |
| | | NTS | NOT TO SCALE |
| ENT | ENTERING | | |
| EQ | EQUAL | OC | ON CENTER |
| EQUIP | EQUIPMENT | OD | OUTSIDE DIAMETER; OVERALL DIMENSION |
| ET | EXPANSION TANK | | |
| EWT | ENTERING WATER TEMPERATURE | | |
| EX,(E) | EXISTING | PD | PRESSURE DROP |
| | | PH | PHASE |
| F | FAHRENHEIT | POC | POINT OF CONNECTION |
| FIO | FURNISHED & INSTALLED BY OWNER | PRELIM | PRELIMINARY |
| FLEX | FLEXIBLE | PRESS | PRESSURE |
| FLR | FLOOR | PS | PRESSURE SWITCH |
| FOIC | FURNISHED BY OWNER, INSTALLED BY CONTRACTOR | PSI | POUNDS PER SQUARE INCH |
| | | PSIG | POUNDS PER SQUARE INCH GAGE |
| FP | FIRE PROTECTION; FREEZE PROTECTION | PT | PRESSURE/TEMPERATURE TAP |
| FT | FEET; FOOT; FEET OF WATER(PRESS) | | |
| | | | |
| GA | GAGE; GAUGE | | |
| GAL | GALLON | | |
| GC | GENERAL CONTRACTOR | | |
| GEN | GENERAL | | |
| GPM | GALLONS PER MINUTE | | |
| GWB | GYPSUM WALLBOARD | | |
| | | | |
| H | HEIGHT; HIGH | | |
| HOA | HAND OFF AUTOMATIC | | |
| HP | HORSE POWER | | |
| HR | HOUR | | |
| HZ | HERTZ | | |

| | |
|-------|--------------------------|
| QTY | QUANTITY |
| R | RADIUS; RETURN; RISER |
| REF | REFERENCE |
| REFR | REFRIGERATION |
| REQD | REQUIRED |
| RET | RETURN |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| | |
| S | SOUTH |
| SCHED | SCHEDULE |
| SECT | SECTION |
| SF | SQUARE FEET |
| SHT | SHEET |
| SIM | SIMILAR |
| SQ | SQUARE |
| STD | STANDARD |
| | |
| TD | TEMPERATURE DIFFERENTIAL |
| TEMP | TEMPERATURE |
| TH | TOTAL HEAD |
| THRU | THROUGH |
| TYP | TYPICAL |
| | |
| UBC | UNIFORM BUILDING CODE |
| UL | UNDERWRITER'S LABORATORY |
| UTIL | UTILITY |
| | |
| V | VOLT |
| VAR | VARIABLE |
| VERT | VERTICAL |
| VOL | VOLUME |
| | |
| W | WATER; WIDE(DIM); WATT |
| W/ | WITH |
| W/O | WITHOUT |
| WT | WEIGHT |

HVAC PIPING LEGEND

| | |
|--|-----------------------------------------------------|
| | PIPING IDENTIFIER, SEE ABBREVIATIONS |
| | ELBOW DOWN |
| | ELBOW UP |
| | TEE |
| | TEE DN |
| | TEE UP |
| | ISOLATION OR SHUT-OFF VALVE (NO), TYPE AS SPECIFIED |
| | ISOLATION OR SHUT-OFF VALVE (NC), TYPE AS SPECIFIED |
| | CHECK VALVE |
| | ISOLATION OR SHUT-OFF VALVE (NO), TYPE AS SPECIFIED |
| | ISOLATION OR SHUT-OFF VALVE (NC), TYPE AS SPECIFIED |
| | PRESSURE REDUCING VALVE |
| | CAP |
| | REDUCER |

HVAC ABBREVIATIONS

| | |
|------|-------------------------------|
| AL | ACOUSTIC LINED; ALUMINUM |
| AC | AIR CONDITIONING |
| AD | AUTOMATIC DAMPER |
| AF | AIR FOIL |
| AHU | AIR HANDLING UNIT |
| | |
| BDD | BACKDRAFT DAMPER |
| BHP | BRAKE HORSEPOWER |
| BI | BACKWARD INCLINED |
| BOD | BOTTOM OF DUCT |
| | |
| C | CONDENSATE; COMMON |
| CC | COOLING COIL |
| CFM | CUBIC FEET PER MINUTE |
| CG | CEILING GRILLE |
| CLG | COOLING |
| CLWR | COOLING WATER RETURN |
| CLWS | COOLING WATER SUPPLY |
| COND | CONDENSATE |
| CT | COOLING TOWER |
| CV | CONSTANT VOLUME |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| | |
| DDC | DIRECT DIGITAL CONTROLS |
| DMPR | DAMPER |
| DB | DRY BULB TEMPERATURE(*F) |
| | |
| EA | EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EF | EXHAUST FAN |
| EG | EXHAUST GRILLE |
| EXH | EXHAUST |
| | |
| FA | FACE AREA |
| FC | FAN COIL; FORWARD CURVED |
| FCU | FAN COIL UNIT |
| FD | FIRE DAMPER |
| FF | FINAL FILTER |
| FFM | FEET PER MINUTE |
| FS | FLOW SWITCH |
| FV | FACE VELOCITY |
| | |
| GALV | GALVANIZED |
| GR | GRILLE |
| | |
| H | HUMIDIFIER, HUMIDISTAT |
| HC | HEATING COIL |
| HTG | HEATING |
| HV | HEAT AND VENT UNIT |
| HHWR | HEATING WATER RETURN |
| HHWS | HEATING WATER SUPPLY |
| HX | HEAT EXCHANGER |
| | |
| IMC | INTERNATIONAL MECHANICAL CODE |
| | |
| LAT | LEAVING AIR TEMPERATURE |
| | |
| MA | MIXED AIR |
| | |
| NPSH | NET POSITIVE SUCTION HEAD |
| | |
| OA | OUTSIDE AIR |
| OAT | OUTSIDE AIR TEMPERATURE |
| ODP | OPEN DRIPPROOF |
| OSA | OUTSIDE AIR |
| OV | OUTLET VELOCITY |

GENERAL LEGEND

| | |
|--|-------------------------------------------------------|
| | NORTH ARROW |
| | DETAIL / DRAWING REFERENCE |
| | SECTION REFERENCE |
| | CONSTRUCTION NOTE |
| | REVISION SYMBOL |
| | BOLD LINE WEIGHT INDICATES NEW WORK |
| | LIGHT LINE WEIGHT INDICATES EXISTING WORK |
| | SLASHED LINE INDICATES EXISTING WORK TO BE DEMOLISHED |

GENERAL NOTES

1. PROVIDE POST CONSTRUCTION COMMISSIONING AND COMPLETION REQUIREMENTS IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE 2012 EDITION, SECTION C408 AND ACCORDING TO THE CONTRACT DOCUMENTS. SEE SPECIFICATION SECTIONS 23 05 00, 23 08 00 AND ALL OTHER APPLICABLE SPECIFICATION SECTIONS.
2. BALANCE ALL HVAC SYSTEMS IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE 2012 EDITION, GENERALLY ACCEPTED ENGINEERING STANDARDS AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. SEE SPECIFICATION SECTION 23 05 93 AND ALL OTHER APPLICABLE SPECIFICATION SECTIONS.
3. PROVIDE CONTROLS IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE 2012 EDITION, INCLUDING SECTION C402.3.2.1 FOR LIGHTING, C403.2.4 FOR HVAC CONTROL, C403.2.5 FOR VENTILATION, C403.2.6 FOR ENERGY RECOVERY AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SEE TEMPERATURE CONTROL SPECIFICATION SECTIONS AND ALL OTHER APPLICABLE SPECIFICATION SECTIONS.
4. ALL MECHANICAL EQUIPMENT SHALL BE LISTED AND APPROVED BY A TESTING AGENCY.
5. ALL DUCTWORK SHALL BE CONSTRUCTED AND SEALED PER IMC, C402 LEAKAGE REQUIREMENTS AND IBC VAPOR RETARDER REQUIREMENTS. SEE SPECIFICATIONS FOR MORE INFORMATION.

HVAC DUCTWORK LEGEND

| | |
|--|------------------------------|
| | SUPPLY OR EXHAUST TAKEOFF |
| | SUPPLY DUCT TURNING TOWARD |
| | SUPPLY DUCT TURNING AWAY |
| | EXHAUST DUCT TURNING TOWARD |
| | EXHAUST DUCT TURNING AWAY |
| | ROUND DUCT TURNING TOWARD |
| | ROUND DUCT TURNING AWAY |
| | TRANSITION |
| | SMOKE DAMPER |
| | MOTORIZED DAMPER |
| | VOLUME DAMPER |
| | FIRE DAMPER |
| | FLEXIBLE CONNECTION |
| | TURNING VANES |
| | FLEXIBLE DUCT |
| | 2'x2' SUPPLY DIFFUSER |
| | EXHAUST GRILLE |
| | THERMOSTAT |
| | CO2 SENSOR |
| | EQUIPMENT TAG |
| | DIFFERENTIAL PRESSURE SENSOR |
| | HVAC ZONE TAG |



Washington State
Department of Transportation
WASHINGTON STATE FERRIES

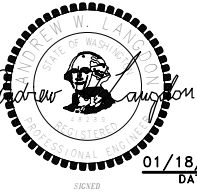
SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
HVAC LEGEND,
ABBREVIATIONS AND GENERAL NOTES

MB00.00
SHEET
1307
OF
1521
SHEETS

FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSI\14w121_BLDG_MECH

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|-------------------------------|-------------------------|--------------------|------------|----|--|
| PRINTED: 1/18/2019 3:43:31 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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| FED.AID PROJ.NO. |
| WA-2017-007-00 |
| REGION NO. STATE |
| 10 WASH |
| JOB NUMBER |
| 14W121 |
| CONTRACT NO. |
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01/18/2019
DATE

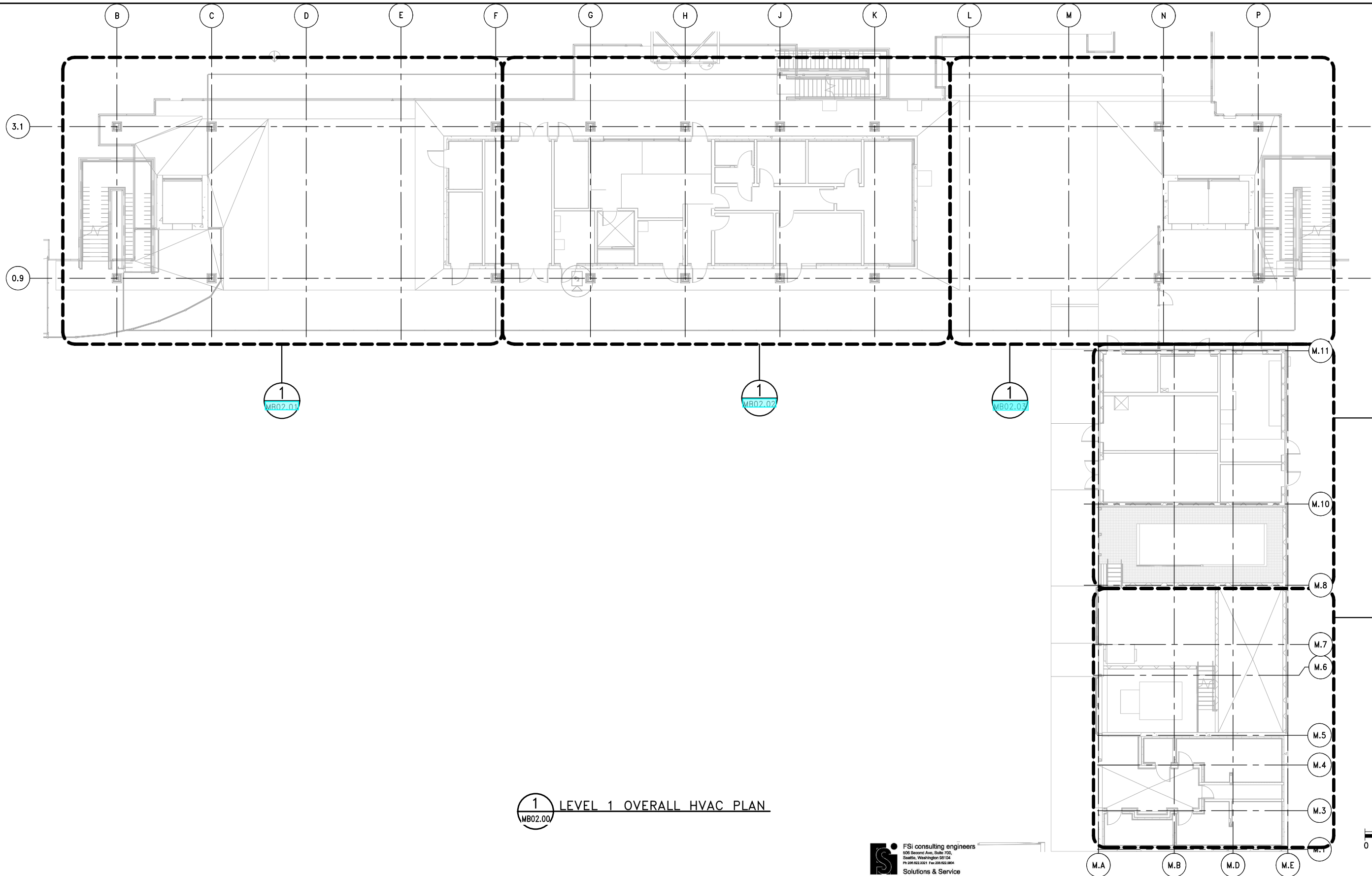
DATE

GENERAL NOTES

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|-----------------------------------------------------------------------------|--|------------------|--|--------------------|--|------------------|--|------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------|--|---------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION HVAC GENERAL NOTES FOR IBC 2015 TOLL PLAZA | | MB00.01 |
| PRINTED: 1/18/2019 3:44:52 PM | | LAST PRINTED BY: | | | | FED.AID PROJ.NO. | | WA-2017-007-00 | | | | | | | | SHEET |
| SUBMITTAL DATE: 01/18/2019 | | ZSMITH | | | | | | REGION NO. STATE | | 10 WASH | | 1308 | | OF | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | JOB NUMBER | | 14W121 | | 1521 | | SHEETS | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | | | CONTRACT NO. | | 00**** | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | REVISION | | DATE | | BY | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | | | | | | | | | | | |



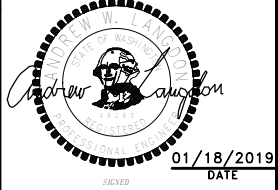
1 LEVEL 1 OVERALL HVAC PLAN

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509 Second Ave, Suite 700,
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Solutions & Service

FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH

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|-----------------|----------------------|--------------------|------------|
| PRINTED: | 1/18/2019 3:45:25 PM | LAST PRINTED BY: | |
| SUBMITTAL DATE: | 01/18/2019 | ZSMITH | |
| DESIGNED BY: | O. JARVEGREN | 01/18/2019 | |
| ENTERED BY: | Z. SMITH | 01/18/2019 | |
| CHECKED BY: | A. LANGDON | 01/18/2019 | |
| MAR PROJ ENGR: | C. TORRES | | |
| DIR TERM ENGR: | N. MCINTOSH | | |
| ASST SECRETARY: | A. SCARTON | | |
| | | CONFORMED DRAWINGS | 01/18/2019 |
| | | REVISION | DATE |
| | | BY | |

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REGION NO. STATE
10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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DATE



SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
OVERALL HVAC PLAN

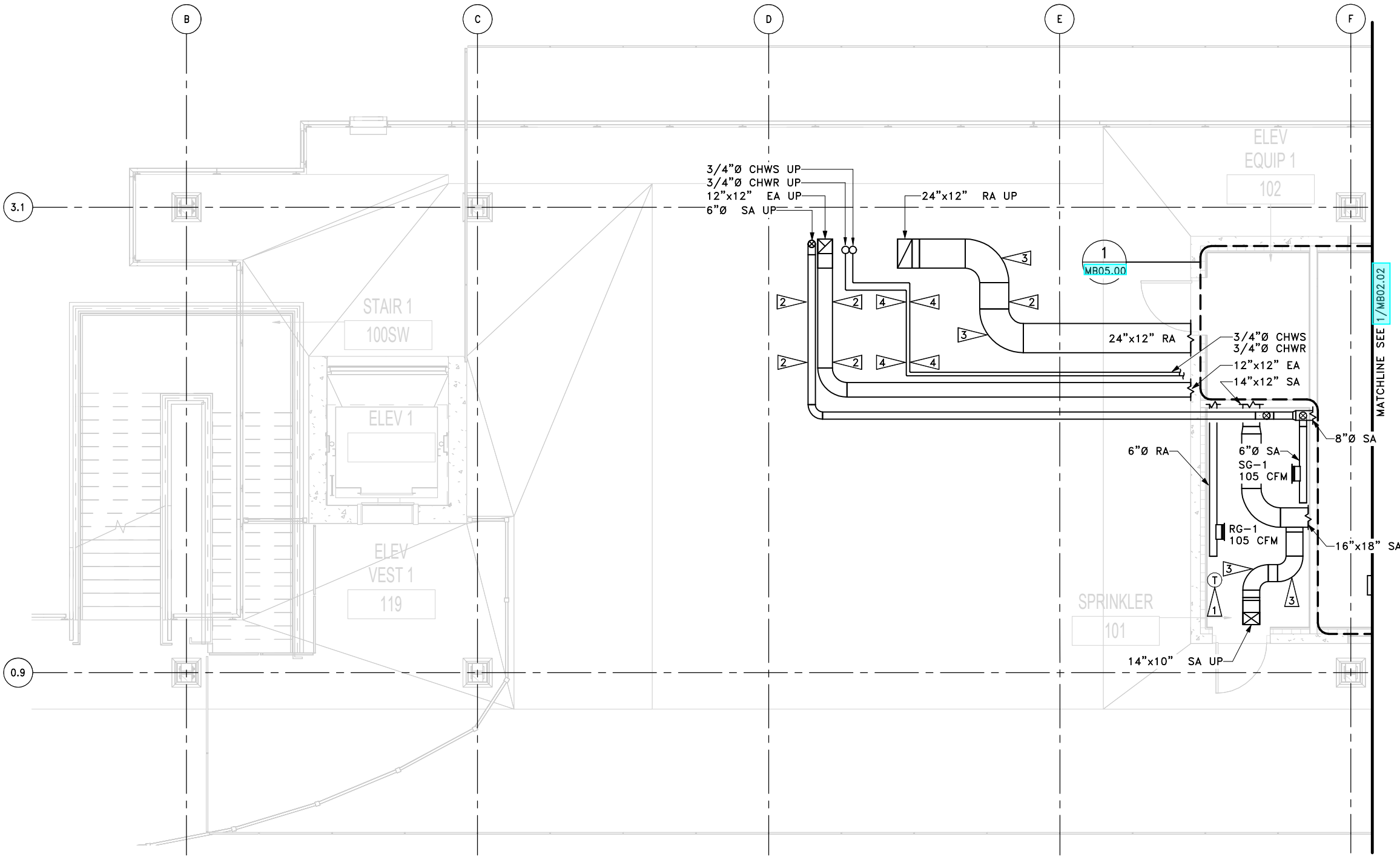
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GENERAL NOTES

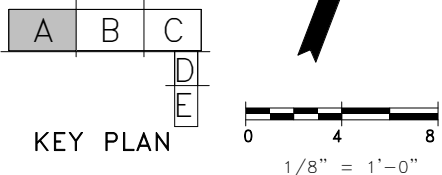
1. ALL WORK IS SHOWN DIAGMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

1. PROVIDE THERMOSTAT AND CONNECT TO VAV-2.
2. ROUTE DUCTWORK THROUGH CENTER OF STRUCTURAL BEAM. SEE STRUCTURAL FOR PENETRATION LOCATION AND DIMENSIONS.
3. PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
4. ROUTE PIPING THROUGH CENTER OF STRUCTURAL BEAM. SEE STRUCTURAL FOR PENETRATION LOCATION AND DIMENSIONS.



1 LEVEL 1 HVAC PLAN SECTOR A
MB02.01



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| SUBMITTAL DATE: 01/18/2019 | DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | REGION NO. STATE 10 WASH |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | JOB NUMBER 14W121 |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | CONTRACT NO. 00**** |
| MAR PROJ ENGR: C. TORRES | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | |
| | CONFORMED DRAWINGS | 01/18/2019 | | | | |
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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
HVAC PLAN - SECTOR A

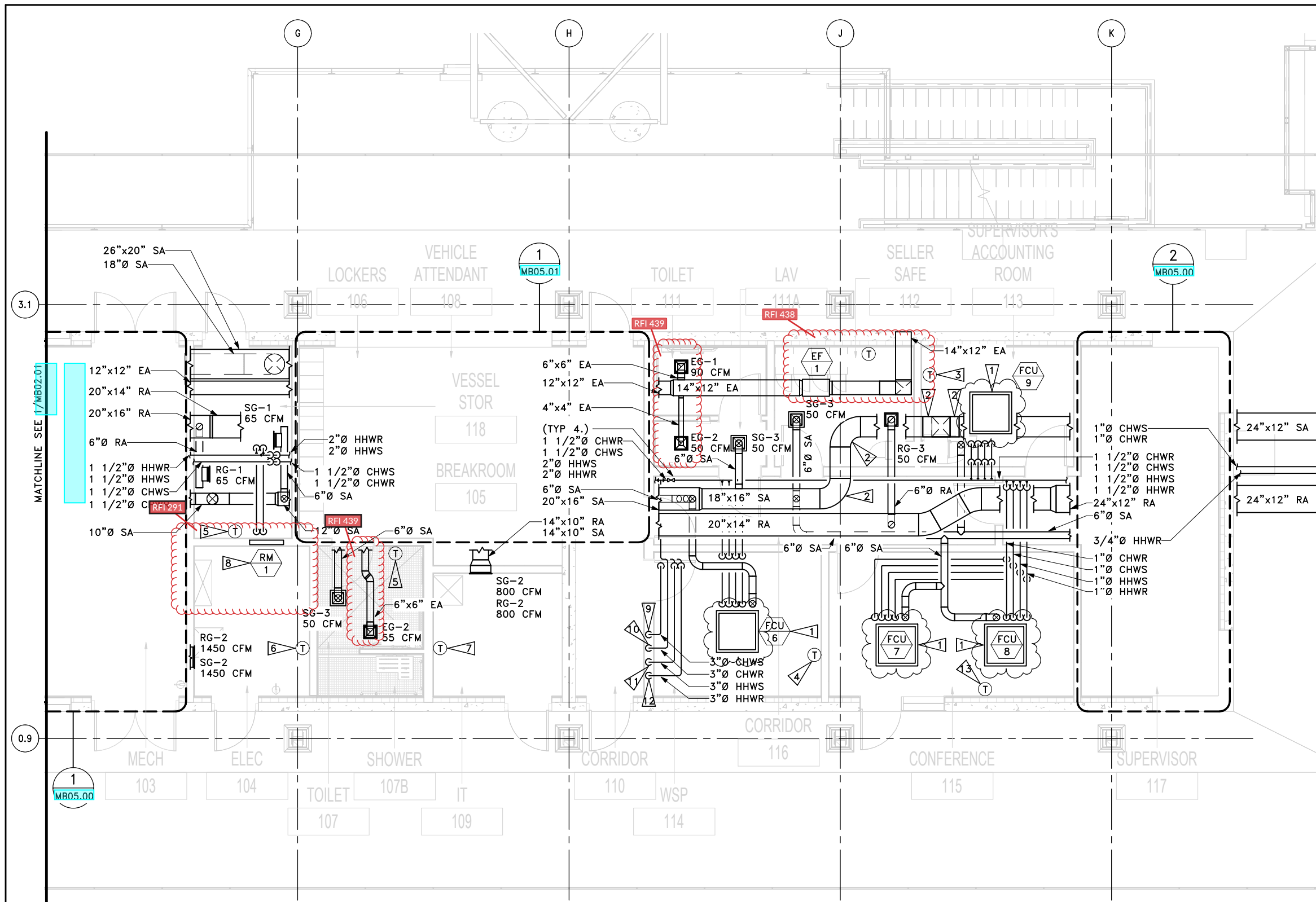
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GENERAL NOTES

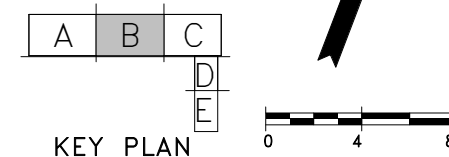
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- SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- ROUTE 1/2"Ø COND TO NEAREST FLOOR DRAIN.
- PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-9.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-6.
- PROVIDE THERMOSTAT AND CONNECT TO VAV-2.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-2.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-5.
- INSTALL RADIANT MANIFOLD 16'-0" AFF. ROUTE RADIANT LOOPS UP WALL TO SECOND FLOOR SLAB.
- CONNECT TO EXISTING 3"Ø CHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 3"Ø CHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 4"Ø HHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 4"Ø HHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-7 AND FCU-8.



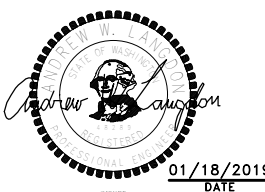
1 LEVEL 1 HVAC PLAN SECTOR B
RFI 502



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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | CHANGE ORDER - 06/13/2019 | 06/13/2019 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE BY |

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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
HVAC PLAN - SECTOR B

MB02.02

SHEET
OF
SHEETS

RFI 438 - Termination of EF-1 duct at north elevation

Provide louver similar to LVR-2 per specification section 089100.2.4.B (Construction Services RS-4700). Louver shall be no larger than 12" in height and shall be located in the framed wall above the expanded metal soffit. Louver shall be sized with a minimum free area of 1.25 square-feet. Louver shall be painted to match PNT-5.

RFI 439 - Spiral Duct Substitution for Exhaust Duct

Round, galvanized spiral duct is acceptable as long as duct fits in ceiling space as provided.

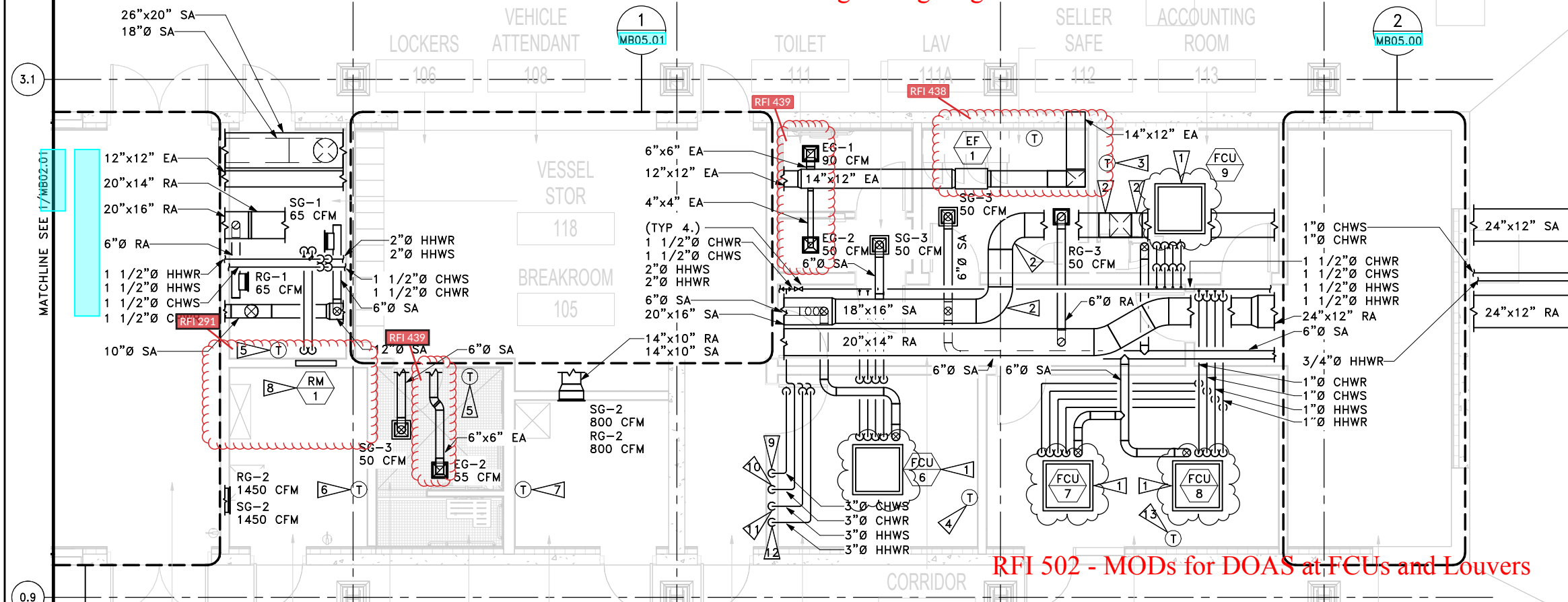
Contractor is responsible for coordinating with other trade to ensure space is available without affecting ceiling heights.

GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- ROUTE 1/2" Ø COND TO NEAREST FLOOR DRAIN.
- PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-9.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-6.
- PROVIDE THERMOSTAT AND CONNECT TO VAV-2.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-2.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-5.
- INSTALL RADIANT MANIFOLD 16'-0" AFF. ROUTE RADIANT LOOPS UP WALL TO SECOND FLOOR SLAB.
- CONNECT TO EXISTING 3" Ø CHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 3" Ø CHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 4" Ø HHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 4" Ø HHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-7 AND FCU-8.



RFI 291 - Radiant Slab Penetrations

It is acceptable to cut 1'-0" x 2'-0" openings. The exact location of the openings may need to be adjusted. Openings are not allowed to occur overtop any of the beams. Also, sides of openings to be minimum 2" away from beam flanges. See attached sketches SK-42A & SK-42B for info relating to the necessary construction at the area in question.

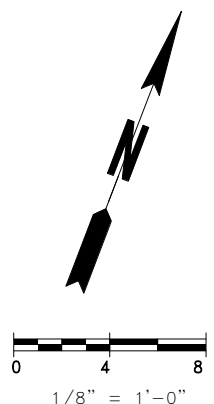
RFI 502 - MODs for DOAS at FCUs and Louvers

Motorized dampers (MOD) or backdraft dampers (BDD) are not required as isolation at each FCU. The DOAS system has a motorized damper per DDC points list.

Per WSEC C402.4.5.2, provide a backdraft damper at the louvers proving OA and EA to Split Systems and exhaust fans. Insulation to be provided per Specifications 23 07 00 paragraph 2.5.

LEVEL 1 HVAC PLAN SECTOR B
RFI 502

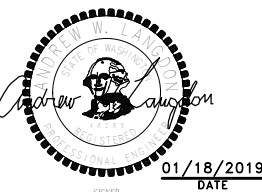
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FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
HVAC PLAN - SECTOR B

MB02.02

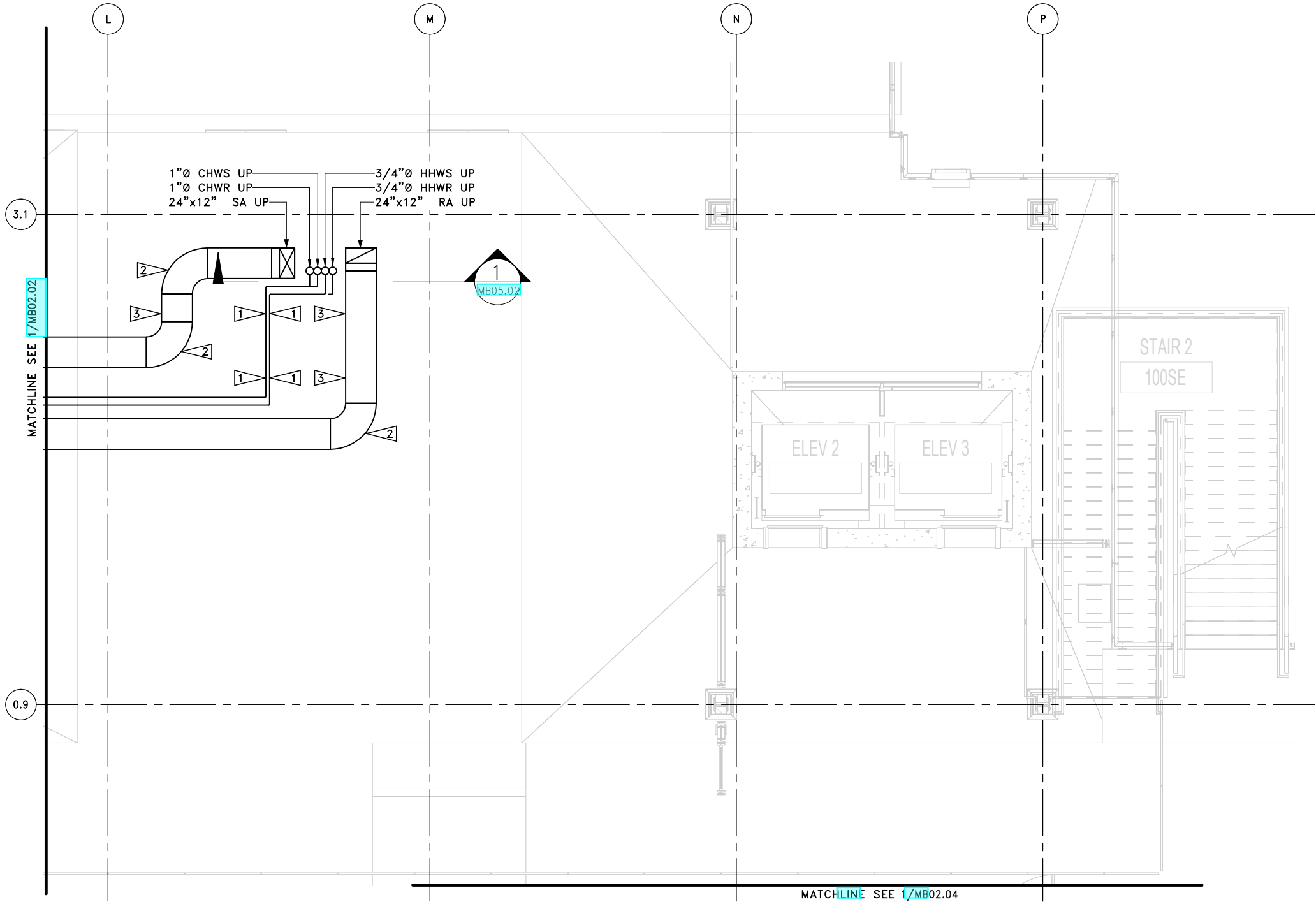
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GENERAL NOTES

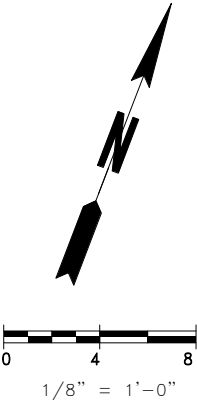
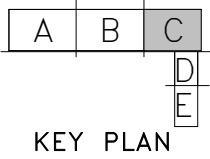
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2. SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

1. ROUTE PIPING THROUGH CENTER OF STRUCTURAL BEAM. SEE STRUCTURAL FOR PENETRATION LOCATION AND DIMENSIONS.
2. PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
3. ROUTE DUCTWORK THROUGH CENTER OF STRUCTURAL BEAM. SEE STRUCTURAL FOR PENETRATION LOCATION AND DIMENSIONS.



1 LEVEL 1 HVAC PLAN SECTOR C
MB02.03

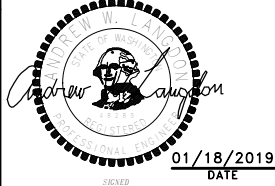


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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | |
| CONFORMED DRAWINGS | | 01/18/2019 | | | |
| REVISION | | DATE | BY | | |

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| FED.AID PROJ.NO. | |
| WA-2017-007-00 | |
| REGION NO. STATE | |
| 10 WASH | |
| JOB NUMBER | |
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| CONTRACT NO. | |
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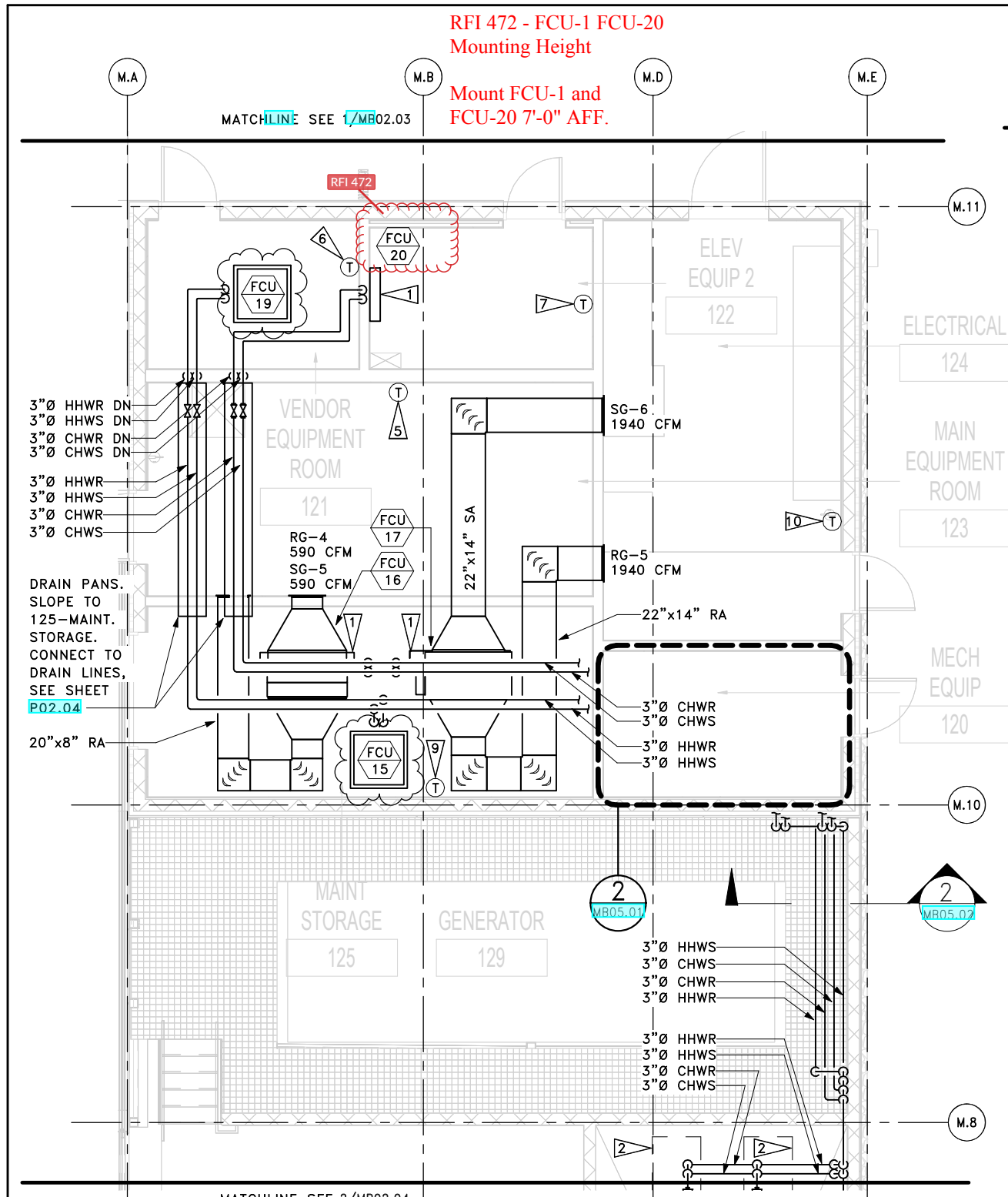


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
HVAC PLAN - SECTOR C

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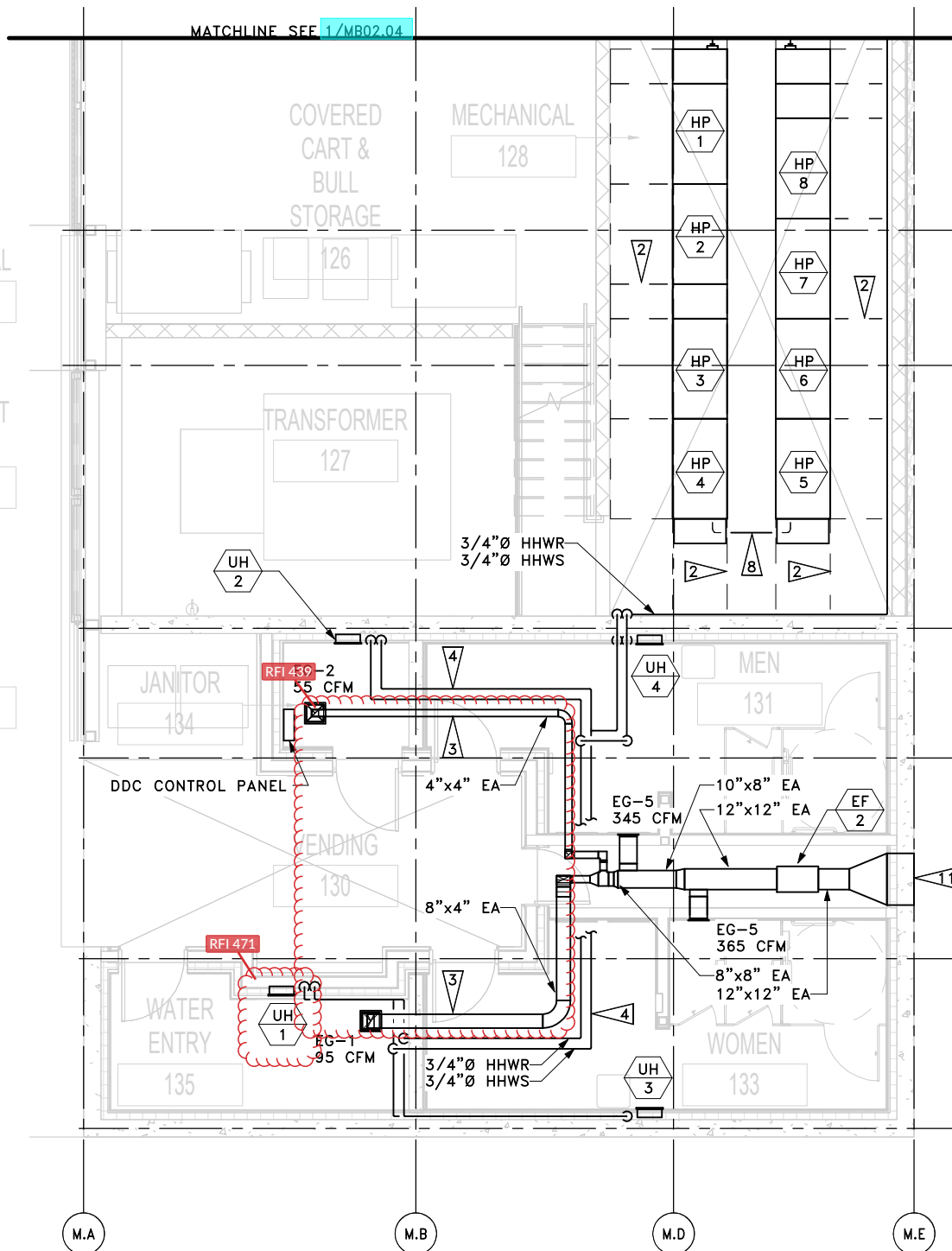
RFI 490 - Room 124 (Elect.) HVAC
See attached sketch after page EB02.16 for details
Part of CO 90.

1
MB02.04
LEVEL 1 HVAC PLAN SECTOR D
RFI 490

RFI 439 - Spiral Duct Substitution for Exhaust Duct

Round, galvanized spiral duct is acceptable as long as duct fits in ceiling space as provided.

Contractor is responsible for coordinating with other trade to ensure space is available without affecting ceiling heights.



2
MB02.04
LEVEL 1 HVAC PLAN SECTOR E

GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- ROUTE 1/2" Ø COND TO NEAREST FLOOR DRAIN.
- MAINTAIN MANUFACTURER'S SUGGESTED CLEARANCES.
- ROUTE DUCT IN SPACE BETWEEN CEILING AND STRUCTURAL BEAM.
- ROUTE PIPING IN SPACE BETWEEN CEILING AND STRUCTURAL BEAM.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-16.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-19.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-20.
- PROVIDE 4" Ø HYDRONIC PIPE BETWEEN MODULES PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-15.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-17.
- CONNECT DUCT TO LOUVER, REFER TO ARCHITECTURAL PLANS FOR SIZE AND LOCATION.

RFI 471 - Unit Heater Valve Location

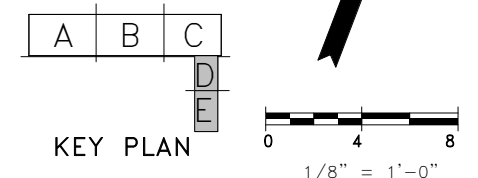
Place control valve and coil connection valving assembly in the following spaces. Clearly label and identify which control valves and their assemblies are related to each particular unit heater. Access shall be on available wall space and not in the ceiling.

UH-1: 135 - WATER ENTRY

UH-2: 134 - JANITOR

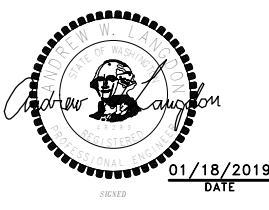
UH-3: 135 - WATER ENTRY

UH-4: 134 - JANITOR



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| ENTERED BY: Z. SMITH | CHECKED BY: A. LANGDON | JOB NUMBER 14W121 |
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| ASST SECRETARY: A. SCARTON | CHANGE ORDER - 06/13/2019 | CONFORMED DRAWINGS |
| | REVISION | DATE |



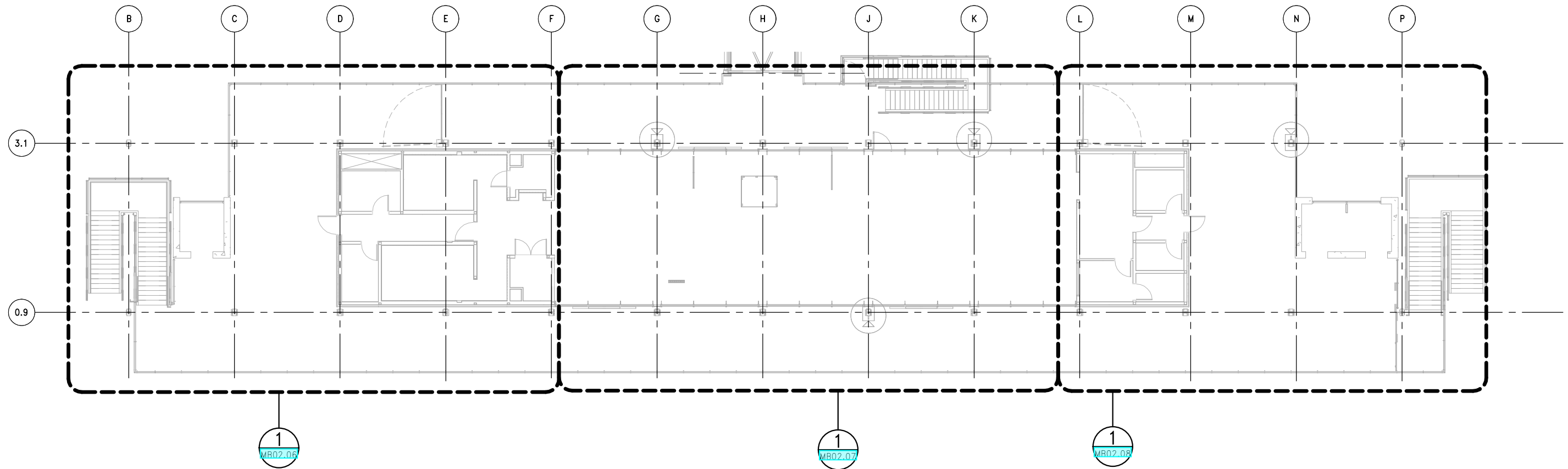
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FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
HVAC PLANS - SECTOR D & E

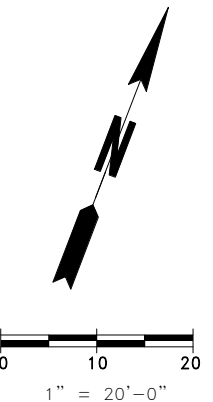
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1 LEVEL 2 OVERALL HVAC PLAN
MB02.05

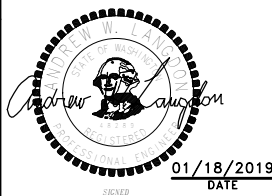
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| SUBMITTAL DATE: 01/18/2019 | | | | | |
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| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
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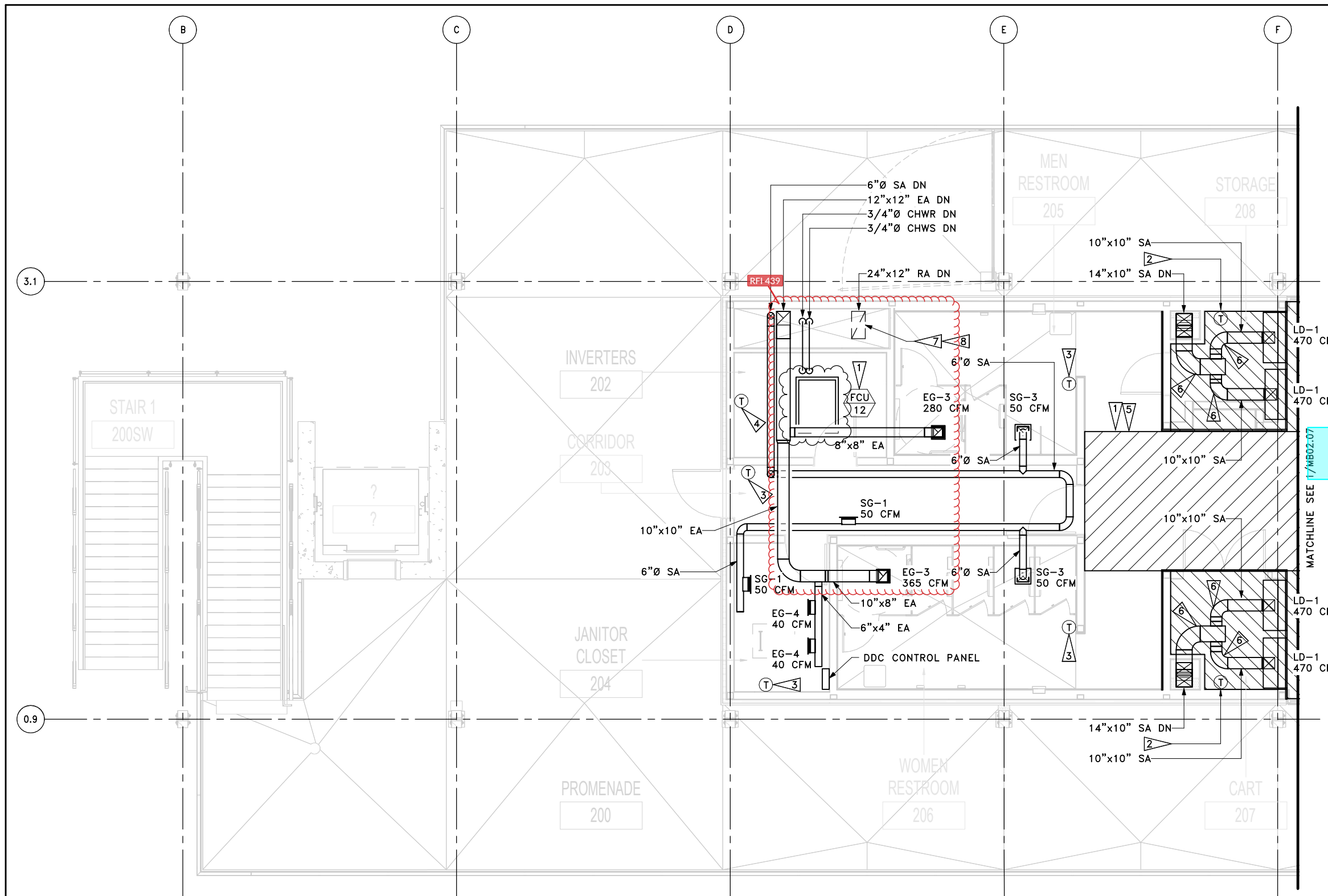


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
OVERALL HVAC PLAN

MB02.05
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OF
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GENERAL NOTES

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RADIANT MANIFOLD LEGEND

- INDICATES INTERIOR ZONE OF RADIANT SLAB.
- INDICATES EXTERIOR ZONE OF RADIANT SLAB.

CONSTRUCTION NOTES

- ROUTE 1/2" Ø COND TO NEAREST FLOOR DRAIN.
- PROVIDE THERMOSTAT AND CONNECT TO VAV-1.
- PROVIDE THERMOSTAT AND CONNECT TO VAV-4.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-12.
- PROVIDE RADIANT FLOOR HEATING IN HATCHED AREAS.
- PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
- PROVIDE BELL MOUTH FITTING AND BIRD SCREEN ON RA DUCT. TERMINATE RA DUCT SUCH THAT THE BIRD SCREEN IS FLUSH WITH THE TOP OF THE SHAFT.
- PROVIDE CO2 SENSOR AND MOUNT IN RETURN DUCTWORK.

RFI 439 - Spiral Duct Substitution for Exhaust Duct

Round, galvanized spiral duct is acceptable as long as duct fits in ceiling space as provided.

Contractor is responsible for coordinating with other trade to ensure space is available without affecting ceiling heights.

1 LEVEL 2 HVAC PLAN SECTOR A

MB02.06

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FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
HVAC PLAN - SECTOR A

MB02.06

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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
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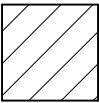
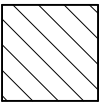
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RADIANT MANIFOLD LEGEND

-  INDICATES INTERIOR ZONE OF RADIANT SLAB.
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CONSTRUCTION NOTES

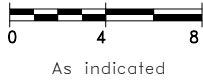
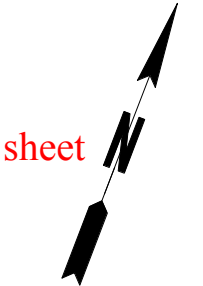
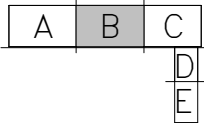
1. PROVIDE RADIANT FLOOR HEATING IN HATCHED AREAS.
2. MOUNT CEILING FAN SUCH THAT TOP OF FAN BLADE IS 2'-0" AWAY FROM NEAREST OBSTRUCTION.

RFI 336 - Ceiling Fan Controller

Per submittal 230000-02 (I&C for HVAC), the controls contractor suggested installing the "Natural Vent Operable Window Switch Override (TC14.3)" in the 212 - ELEC. space. Please locate the ceiling fan controllers in the same space, near the "Natural Vent Operable Window Switch Override (TC14.3)".

RFI 426 - Great Hall
Thermostat Locations

Please refer to marked up sheet A07.03 for acceptable locations.



1 LEVEL 2 HVAC PLAN SECTOR B
MB02.07

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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
HVAC PLAN - SECTOR B

MB02.07
SHEET
1316
OF
1521
SHEETS

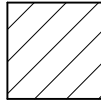
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| DESIGNED BY: | O. JARVEGREN | 01/18/2019 | | | | | | REGION NO. STATE | |
| ENTERED BY: | Z. SMITH | 01/18/2019 | | | | | | 10 WASH | |
| CHECKED BY: | A. LANGDON | 01/18/2019 | | | | | | JOB NUMBER | |
| MAR PROJ ENGR: | C. TORRES | | | | | | | 14W121 | |
| DIR TERM ENGR: | N. MCINTOSH | | | | | | | CONTRACT NO. | |
| ASST SECRETARY: | A. SCARTON | | | | | | | 00**** | |
| | | CONFORMED DRAWINGS | 01/18/2019 | | | | | DATE | |
| | | REVISION | | | | | | BY | |



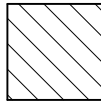
GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

RADIANT MANIFOLD LEGEND



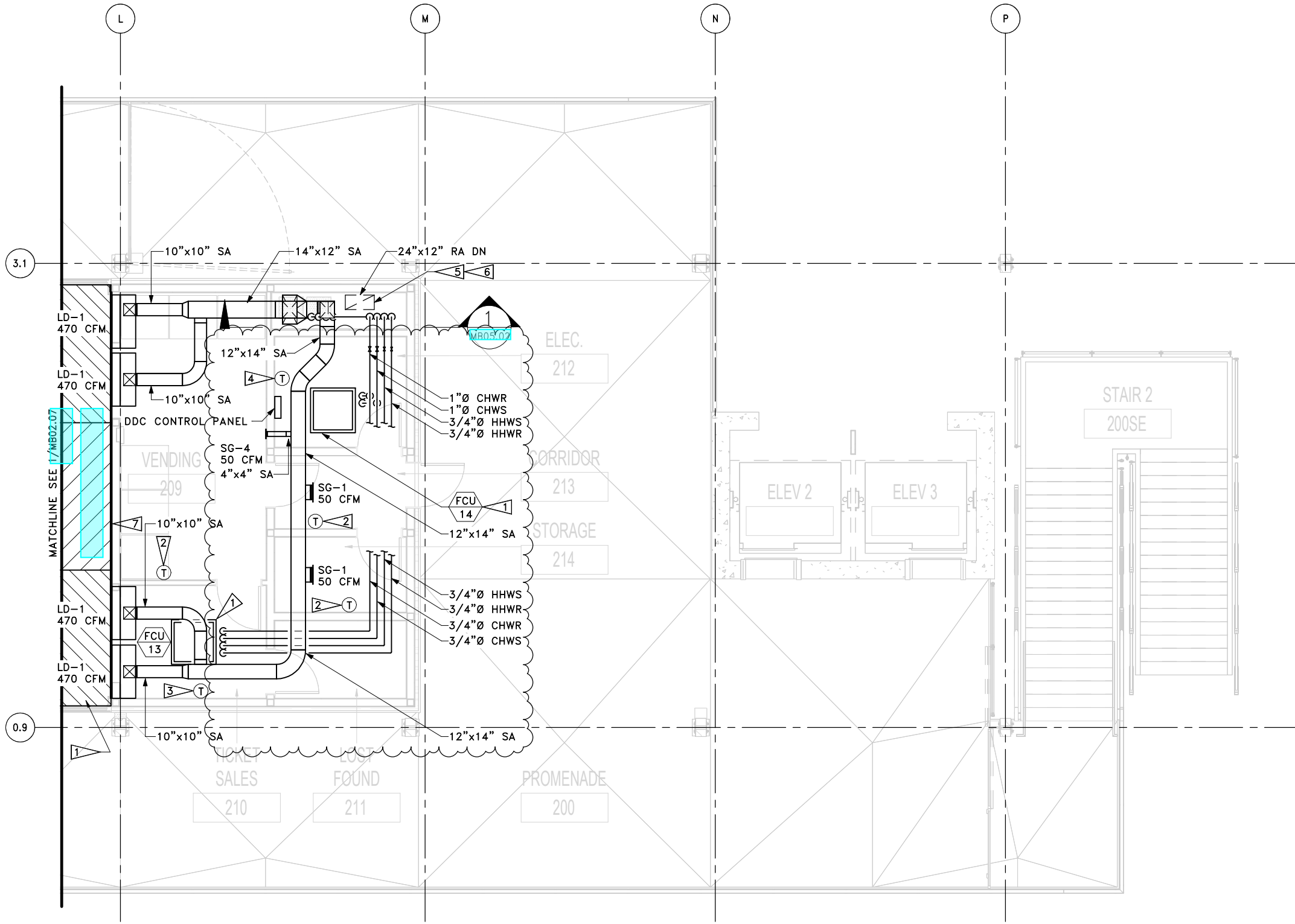
INDICATES INTERIOR ZONE OF RADIANT SLAB.



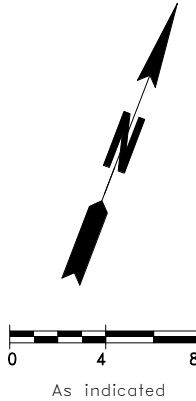
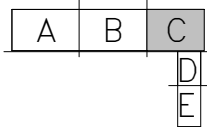
INDICATES EXTERIOR ZONE OF RADIANT SLAB.

CONSTRUCTION NOTES

- ROUTE 1/2"Ø COND TO NEAREST FLOOR DRAIN.
- PROVIDE THERMOSTAT AND CONNECT TO VAV-3.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-13.
- PROVIDE THERMOSTAT AND CONNECT TO FCU-14.
- PROVIDE BELL MOUTH FITTING AND BIRD SCREEN ON RA DUCT. TERMINATE RA DUCT SUCH THAT THE BIRD SCREEN IS FLUSH WITH THE TOP OF THE SHAFT.
- PROVIDE CO2 SENSOR AND MOUNT IN RETURN DUCTWORK.
- PROVIDE RADIANT FLOOR HEATING IN HATCHED AREAS.



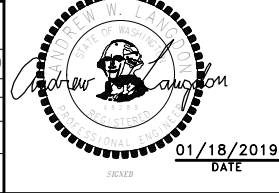
1 LEVEL 2 HVAC PLAN SECTOR C
MB02.08



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| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | | CHANGE ORDER - 06/13/2019 | 06/13/2019 | |
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| | | | REVISION | DATE | BY |

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| REGION NO. STATE 10 WASH |
| JOB NUMBER 14W121 |
| CONTRACT NO. 00**** |

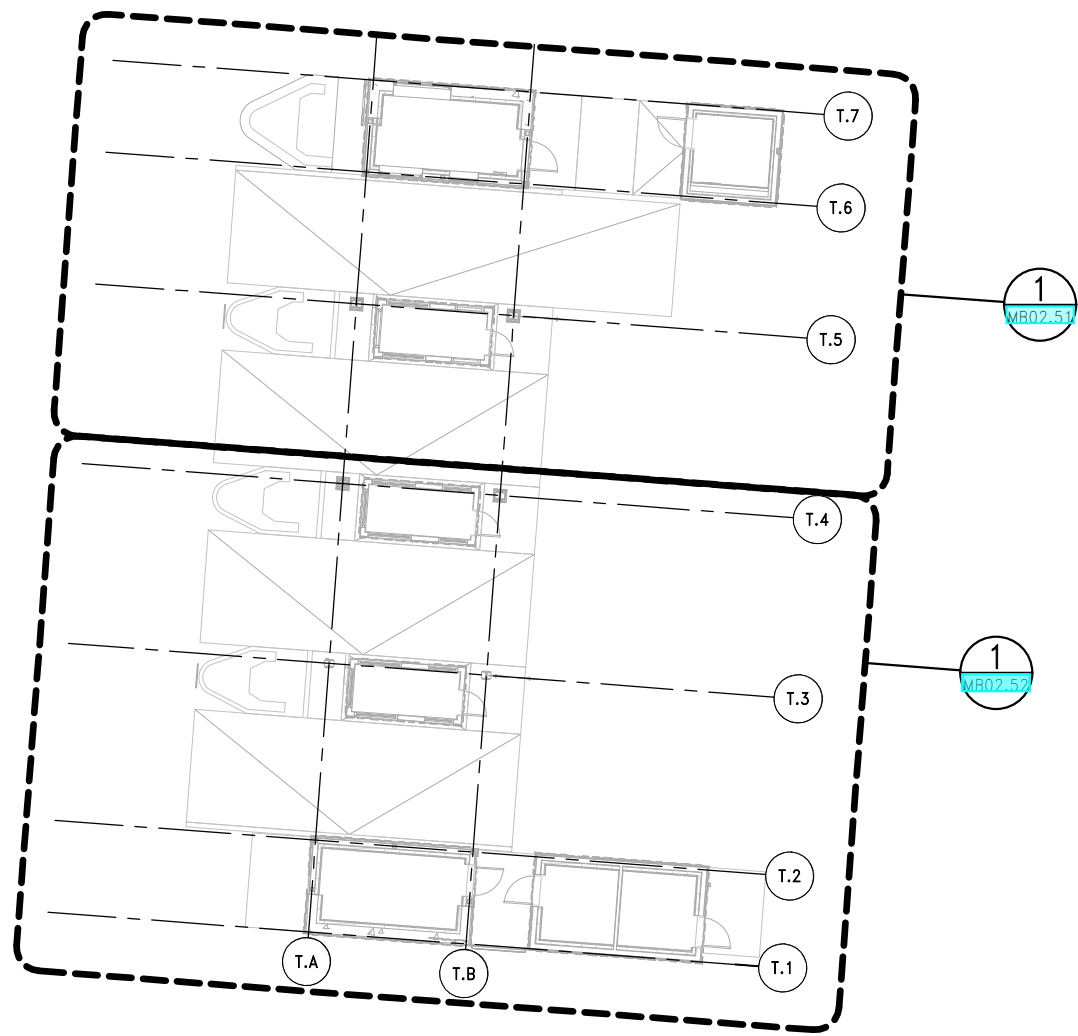


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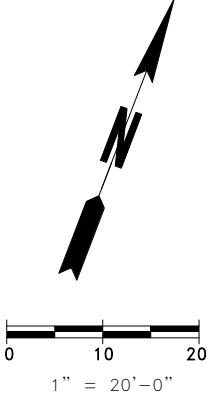


SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
HVAC PLAN - SECTOR C



MB02.08
SHEET
OF
SHEETS



1 LEVEL 1 OVERALL HVAC PLAN
MB02.50

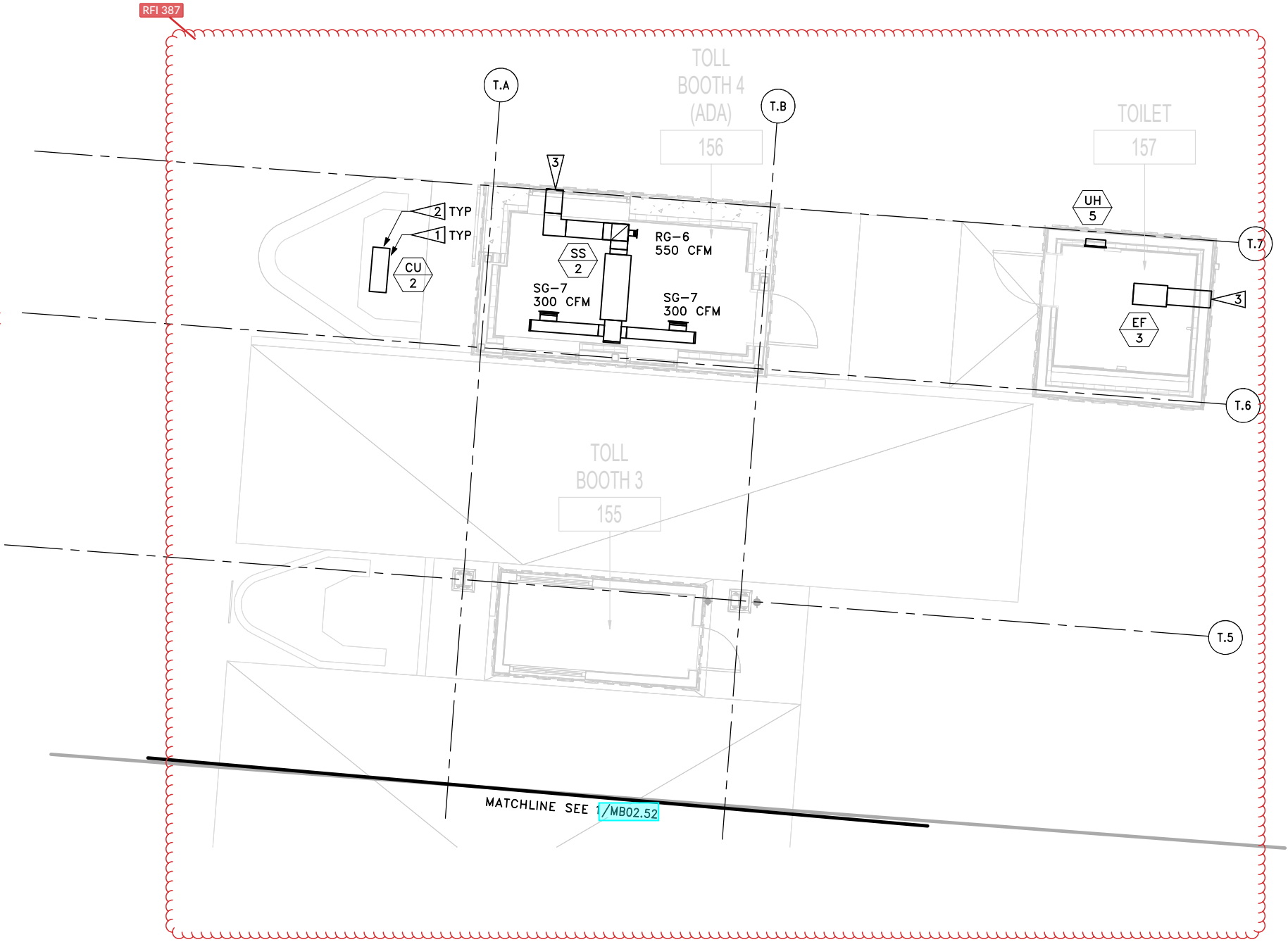


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| SUBMITTAL DATE: 01/18/2019 | | | | | | | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | | | | | | | | | SHEET 1318 OF 1521 SHEETS | | | | | | | | | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | REGION NO. STATE | | TOLL PLAZA – LEVEL 1 | | | | | | | | | | | | | | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | | | 10 WASH | | OVERALL HVAC PLAN | | | | | | | | | | | | | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | JOB NUMBER 14W121 | | | | | | | | | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | CONTRACT NO. 00**** | | | | | | | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | | | | | | | | | | | | | | |
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RFI 387 - HVAC Location

See location for exterior HVAC unit at Toll Booths on revised sheets A02.51 and A02.52. Confirm clearance requirements for equipment is met. Keep equipment 12" clear of wood siding typical and 6" clear of Cultural Element at Toll Booth 4 (LMN)



GENERAL NOTES

- 1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- 2. SEE MB06.01, MB06.02, MB06.03, MB06.04 AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- 1 MOUNT CU ON EQUIPMENT PAD.
- 2 INSTALL REFRIGERANT PIPING SUCH THAT ACCESS BETWEEN THE CU AND TOLL BUILDING IS MAINTAINED.
- 3 CONNECT DUCT TO LOUVER, REFER TO ARCHITECTURAL PLANS FOR SIZE AND LOCATION.

RFI 502 - MODs for DOAS at FCUs and Louvers

Motorized dampers (MOD) or backdraft dampers (BDD) are not required as isolation at each FCU. The DOAS system has a motorized damper per DDC points list.

Per WSEC C402.4.5.2, provide a backdraft damper at the louvers proving OA and EA to Split Systems and exhaust fans. Insulation to be provided per Specifications 23 07 00 paragraph 2.5.

RFI 533 - Toll Exposed Ducting

Mount ductwork in the space above ceiling and provide lay-in style GRDs.

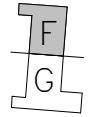
1 LEVEL 1 HVAC PLAN SECTOR F MB02.51



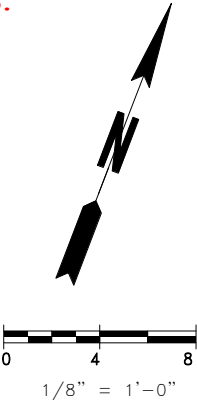
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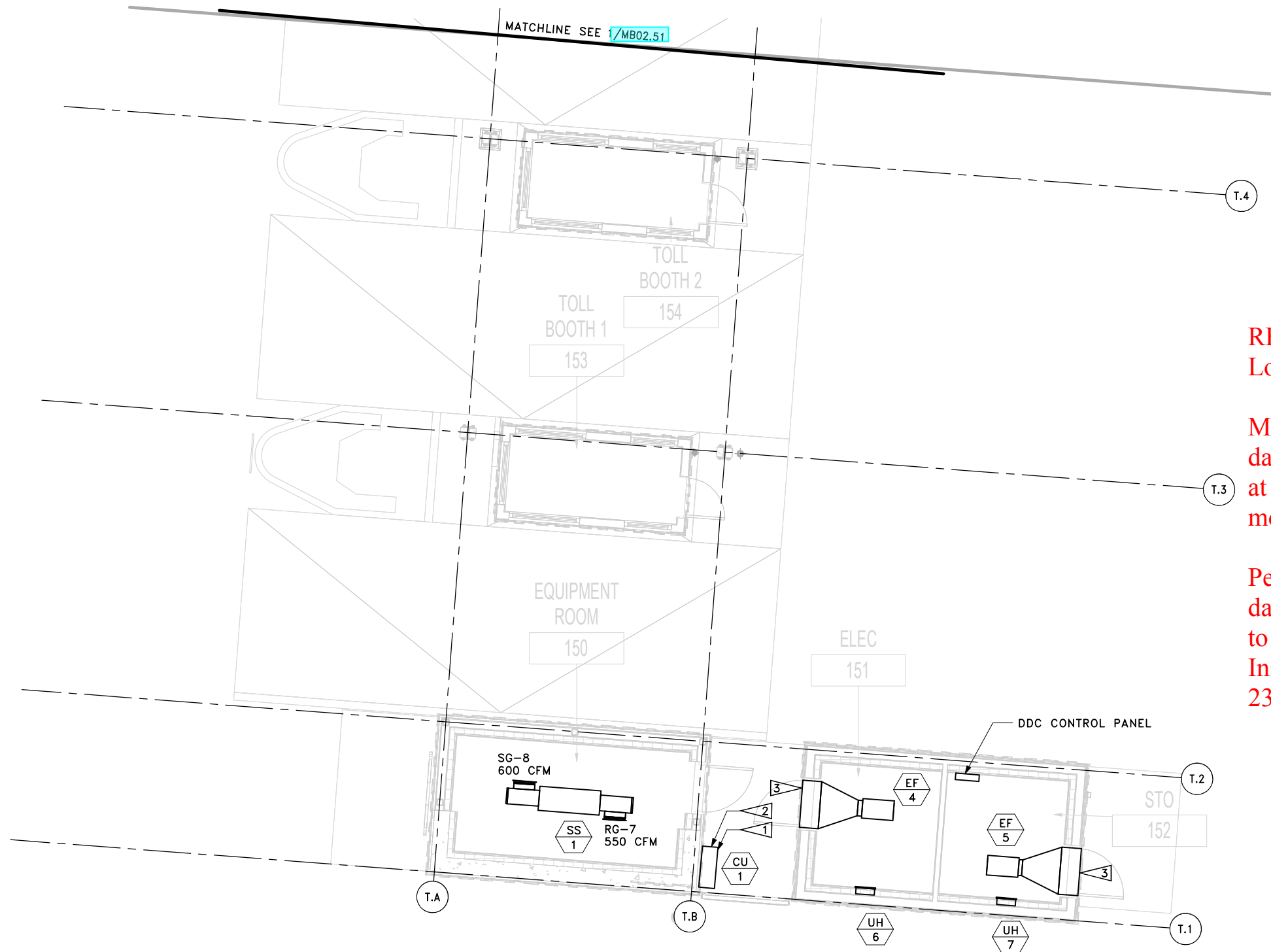
RFI 502



KEY PLAN



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| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | | | | | | | REGION NO. STATE | | 10 WASH | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | | | | | JOB NUMBER | | 14W121 | | | | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | | | CONTRACT NO. | | 00**** | | | | | | | | | | | |
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| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | | | | | | | |
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GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE MB06.01, MB06.02, MB06.03, MB06.04, AND MB06.05 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- 1 MOUNT CU ON EQUIPMENT PAD.
- 2 INSTALL REFRIGERANT PIPING SUCH THAT ACCESS BETWEEN THE CU AND TOLL BUILDING IS MAINTAINED.
- 3 CONNECT DUCT TO LOUVER, REFER TO ARCHITECTURAL PLANS FOR SIZE AND LOCATION.

RFI 502 - MODs for DOAS at FCUs and Louvers

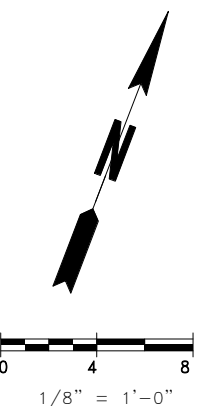
Motorized dampers (MOD) or backdraft dampers (BDD) are not required as isolation at each FCU. The DOAS system has a motorized damper per DDC points list.

Per WSEC C402.4.5.2, provide a backdraft damper at the louvers proving OA and EA to Split Systems and exhaust fans. Insulation to be provided per Specifications 23 07 00 paragraph 2.5.

1 LEVEL 1 HVAC PLAN SECTOR G
MB02.52

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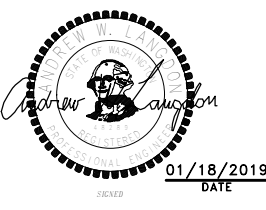
KEY PLAN
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10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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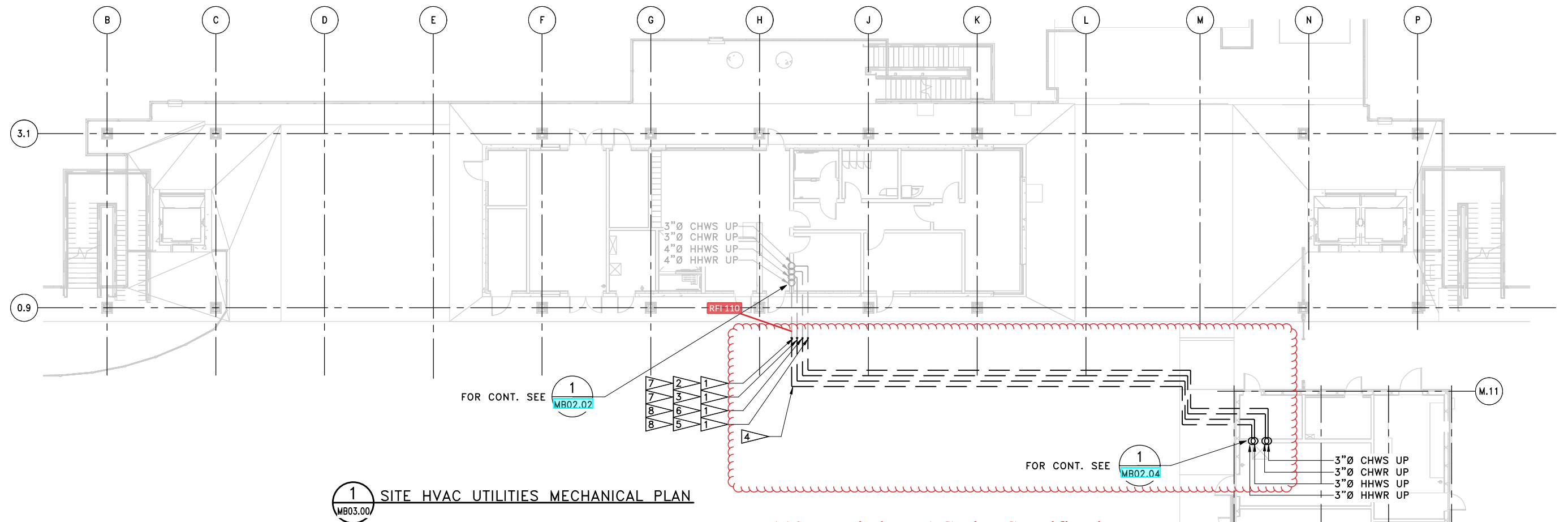


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RFI 502

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TOLL PLAZA – LEVEL 1
HVAC PLAN – SECTOR G

MB02.52
SHEET
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OF
1521
SHEETS



RFI 110 - Buried HVAC Pipe Specification

Please install the product identified in the plans
(per specification 23 20 00, paragraph 3.11).

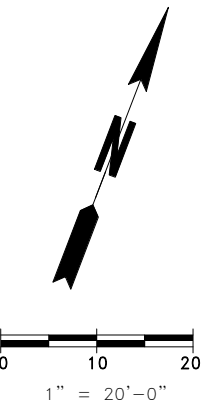
GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE MB06.01, MB06.02, AND MB06.03 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

- PROVIDE EXPANSION JOINT WITH $\pm 2"$ HORIZONTAL AND $\pm 1"$ VERTICAL MOVEMENT. THIS LOCATION.
- CONNECT TO EXISTING 4"Ø HHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 4"Ø HHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- PROVIDE THRUST BLOCKING FOR CHWS, CHWR, HHWS, AND HHWR PER MUKILTEO WATER AND WASTEWATER DISTRICT STANDARD W-D15.
- CONNECT TO EXISTING 3"Ø CHWS. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- CONNECT TO EXISTING 3"Ø CHWR. REFER TO DRAWING P02.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
- ROUTE HHWS/R TO POINT SHOWN. CONNECT TO EXISTING 4"Ø PIPE.
- ROUTE CHWS/R TO POINT SHOWN. CONNECT TO EXISTING 3"Ø PIPE.

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| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
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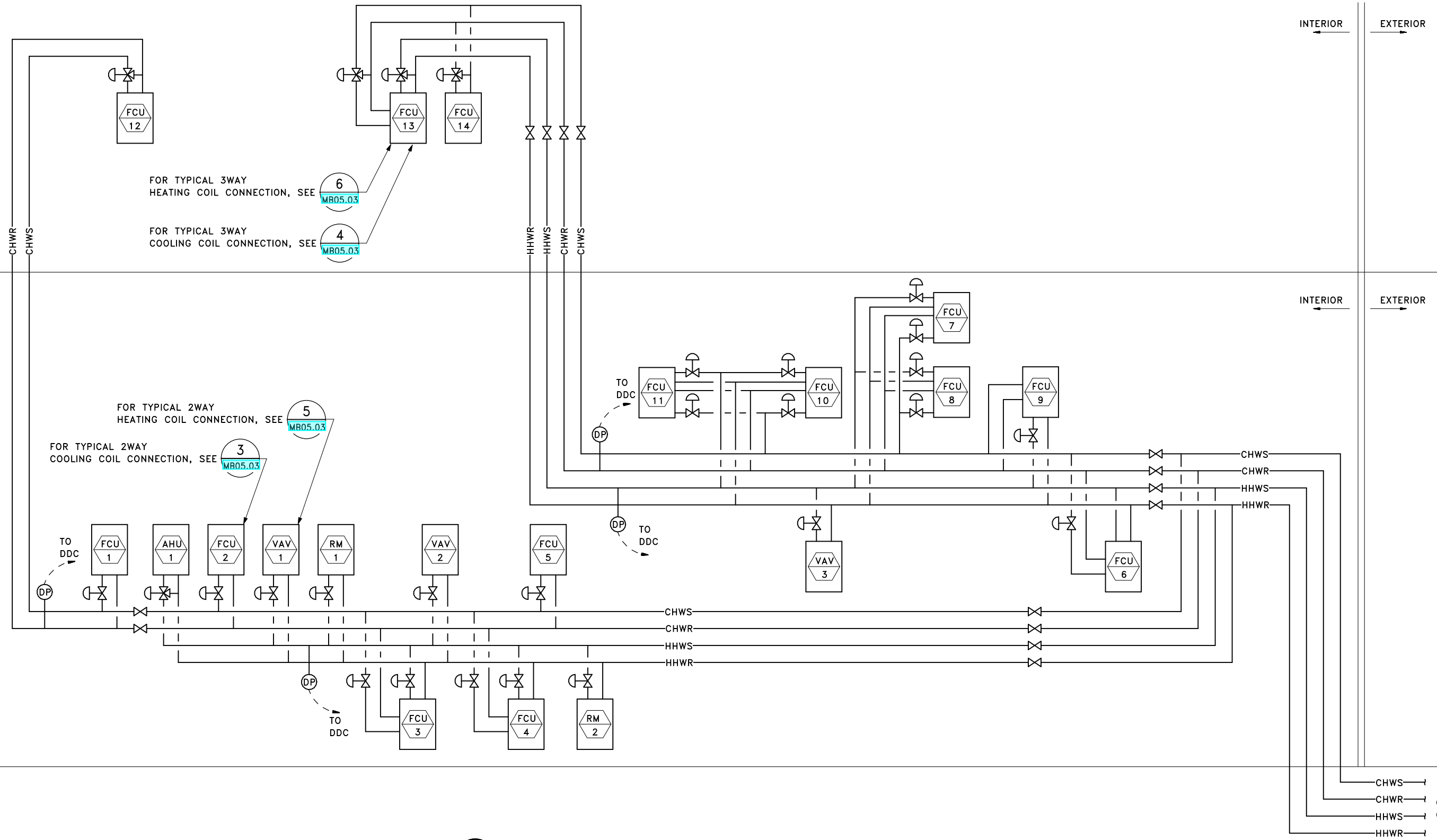


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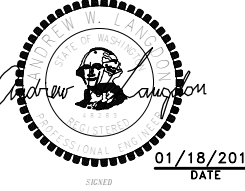

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
SITE HVAC UTILITIES
MECHANICAL PLAN

MB03.00
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OF
1521
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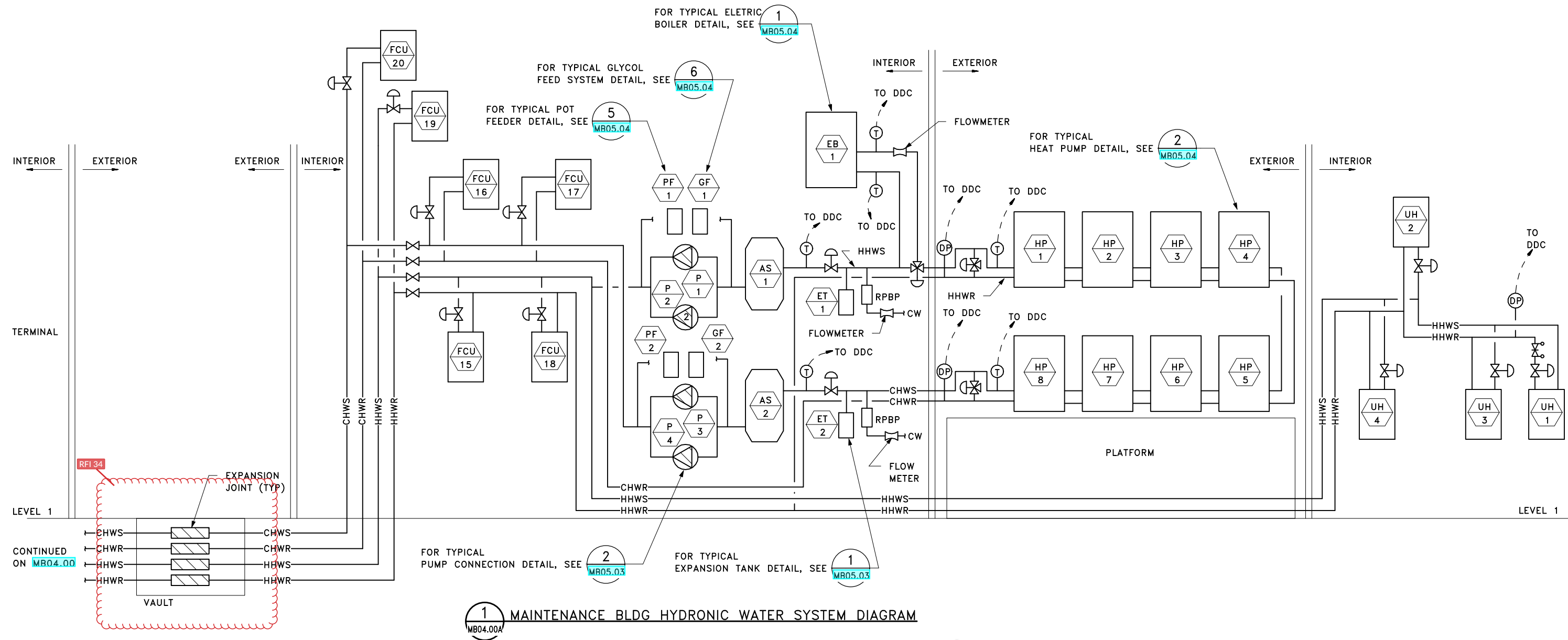
1 TERMINAL HYDRONIC WATER SYSTEM DIAGRAM
MB04.00

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| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | | | |
| | | | | | FED.AID PROJ.NO. WA-2017-007-00 | REGION NO. STATE 10 WASH | JOB NUMBER 14W121 | CONTRACT NO. 00**** | | | |

RFI 034 - Expansion Joint Vault

Drawing MB04.00A incorrectly calls out for a vault to be installed.
Contractor shall refer to drawing MB03.00 and specification section 23 05 00 for design information related to providing direct buried expansion joints.

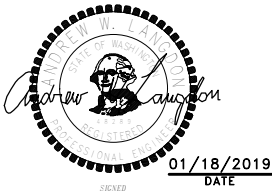


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| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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WA-2017-007-00
REGION NO. STATE
10 WASH
JOB NUMBER
14W121
CONTRACT NO.
00****



DATE



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| SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION HVAC DIAGRAMS | MB04.00A SHEET 1323 OF 1521 SHEETS |
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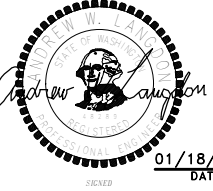

| BUILDING CONTROL SYSTEM POINT SUMMARY | | | | | | |
|---------------------------------------|---------------|----------------|----------------|-----------------|--------|---------------------------------------------------------|
| SYSTEM NAME: | | | | | | |
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| | | | | | | |
| OUTSIDE AIR TEMP | 1 | | | | | |
| PREDICTIVE OUTSIDE AIR TEMPERATURE | 1 | | | | | COLLECT THRU INTERNET |
| WIND SPEED | 1 | | | | | |
| BUILDING OCCUPIED/UNOCCUPIED SCHEDULE | | | | | | 1 SCHEDULE FOR EACH OF THE AIR UNITS |
| ENERGY METER | 8 | | | | | PROVIDED BY DIV 26. PROGRAMMING/TREND BY DDC CONTRACTOR |
| | | | | | | |
| | | | | | | |
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| AIR HANDLING UNIT | | | | | | |
| | | | | | | |
| AHU CONTOLLER | 1 | | | | 1 | MODE, STATUS PLUS ADD'L INFO VIA GATEWAY |
| SUPPLY FAN START/STOP | | | | 1 | | |
| SUPPLY FAN PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| SUPPLY DUCT PRESSURE | 1 | | | | | |
| SUPPLY FAN SPEED | | 1 | | | | SPEED, PLUS ADD'L INFO VIA GATEWAY |
| RETURN FAN START/STOP | | | | 1 | | |
| RETURN FAN PROOF | | | 1 | | 1 | |
| RETURN FAN SPEED | | 1 | | | 1 | SPEED, PLUS ADD'L INFO VIA GATEWAY |
| SUPPLY AIR TEMPERATURE | 1 | | | 1 | 1 | |
| RETURN AIR TEMPERATURE | 1 | | | 1 | 1 | |
| OUTSIDE AIR DAMPER POSITION | | 1 | | | 1 | |
| OUTSIDE AIRFLOW MEASURING STATION | 1 | | | | | |
| RETURN AIR DAMPER POSITION | | 1 | | | 1 | |
| HHW CONTROL VALVE | 1 | 1 | | | | |
| HHW SUPPLY TEMPERATURE | 1 | | | | 1 | |
| HHW RETURN TEMPERATURE | 1 | | | | 1 | |
| FREEZE STAT | | | 1 | | 1 | HARDWIRE SHUTDOWN |
| FILTER DIFFERENTIAL PRESSURE | | 1 | | | 1 | TYPICAL EACH FILTER |
| SMOKE DETECTOR | | | 1 | | 1 | HARDWIRE SHUTDOWN |
| RETURN DUCT C02 | 1 | | | | | |

RFI 231 - Electrical Meter Monitoring by DDC

Per RFI 030, "Option A" shown on drawing EB00.11 has been selected for the solar connection.
The PV meter shown on EB00.13 was part of "Option B" and has been removed from the design.
This meter will not require monitoring.
FSi has agreed that the meters shown on drawing EB00.11 should be monitored by DDC.

| SYSTEM NAME: EF | | | | | | |
|-------------------------------------|---------------|----------------|----------------|-----------------|--------|--------------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| TYPICAL EACH EF | | | | | | |
| | | | | | | |
| EXHAUST FAN START/STOP | | | | 1 | | |
| EXHAUST FAN PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| | | | | | | |
| | | | | | | |
| SYSTEM NAME: VAV BOX/SPACE CONTROL | | | | | | |
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| TYPICAL EACH VAV | | | | | | |
| | | | | | | |
| SPACE TEMPERATURE | 1 | | | 1 | 1 | |
| OCCUPANCY OVERRIDE | | | 1 | | | |
| DAMPER MODULATION | | 1 | | | | |
| AIRFLOW (CFM) | 1 | | | | 1 | |
| HHW CONTROL VALVE | | 1 | | | | |
| HHW SUPPLY TEMPERATURE | 1 | | | | 1 | |
| HHW RETURN TEMPERTATURE | 1 | | | | 1 | |
| SUPPLY AIR TEMPERATURE | 1 | | | | 1 | |
| SPACE C02 | 1 | | | | | WHERE INDICATED ON PLANS |
| | | | | | | |
| | | | | | | |
| SYSTEM NAME: FAN COIL/SPACE CONTROL | | | | | | |
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| TYPICAL EACH FCU | | | | | | |
| | | | | | | |
| | | | | | | |
| SPACE TEMPERATURE | 1 | | 1 | | 1 | |
| SPACE TEMPERATURE ADJUST | | | 1 | | | |
| OCCUPANCY OVERRIDE | | | 1 | | | |
| FAN START/STOP | | | | 1 | | |
| FAN PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| HHW CONTROL VALVE | 1 | 1 | | | | |
| HHW SUPPLY TEMPERATURE | 1 | | | | 1 | |
| HHW RETURN TEMPERTATURE | 1 | | | | 1 | |
| CHW CONTROL VALVE | 1 | 1 | | | | |
| CHW SUPPLY TEMPERATURE | 1 | | | | 1 | |
| CHW RETURN TEMPERTATURE | 1 | | | | 1 | |
| SUPPLY AIR TEMPERATURE | 1 | | | | 1 | |
| | | | | | | |
| | | | | | | |



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|-----------------------------------------------------------------------------|-------------------------|----------------------|------------|----|---------------------------------------------------------------------------------------|--------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | |  | 01/18/2019 DATE | DATE |  Washington State Department of Transportation WASHINGTON STATE FERRIES | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL DDC POINTS LIST | MB04.01 SHEET OF SHEETS |
| PRINTED: 11/26/2019 1:29:57 PM | LAST PRINTED BY: ZSMITH | | | | | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | RFI 357 - 11/26/2019 | 11/26/2019 | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | | |

| SYSTEM NAME: UNIT HEATER/SPACE CONTROL | | | | | | |
|--------------------------------------------|------------------|-------------------|-------------------|--------------------|--------|-----------------------------|
| DESCRIPTION: TYPICAL EACH UH (HYDRONIC) | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| | | | | | | |
| SPACE TEMPERATURE | 1 | | 1 | | 1 | |
| SPACE TEMPERATURE ADJUST | | | 1 | | | |
| OCCUPANCY OVERRIDE | | | 1 | | | |
| FAN START/STOP | | | | 1 | | |
| FAN PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| HHW CONTROL VALVE | 1 | 1 | | | | |
| HHW SUPPLY TEMPERATURE | 1 | | | | 1 | |
| HHW RETURN TEMPERTATURE | 1 | | | | 1 | |
| | | | | | | |
| | | | | | | |
| SYSTEM NAME: UNIT HEATER/SPACE CONTROL | | | | | | |
| DESCRIPTION: TYPICAL EACH UH (ELECTRIC) | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| | | | | | | |
| UH PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| SPACE TEMPERATURE | 1 | | | | 1 | |
| | | | | | | |
| | | | | | | |
| SYSTEM NAME: CEILING FANS | | | | | | |
| DESCRIPTION: TYPICAL EACH CF | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| | | | | | | |
| FAN START/STOP | | | | 1 | | |
| FAN PROOF | | | 1 | | 1 | CURRENT SENSING RELAY |
| | | | | | | |
| | | | | | | |
| SYSTEM NAME: NATURAL VENILATION DAMPER | | | | | | |
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| | | | | | | |
| DAMPER OPEN/CLOSE | | | | 4 | | ONE PER WINDOW OPERATOR |
| DAMPER POSITION | | | 4 | | 4 | ONE PER WINDOW OPERATOR |
| WINDOWN POSITION | | | 10 | | | 5 EACH SIDE OF THE BUILDING |
| WINDOW POSITION OVERRIDE | | | 1 | | | SEE PLANS FOR LOCATION |
| | | | | | | |
| | | | | | | |

| SYSTEM NAME: HEATING HOT WATER/CHILLED WATER SYSTEM | | | | | | |
|-----------------------------------------------------|------------------|-------------------|-------------------|--------------------|--------|-----------------------------------------------------------------------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| HP | | | | | | |
| | | | | | | |
| HEAT PUMP GATEWAY | | 1 | | 1 | | HEAT PUMP COMMUNICATION THRU GATEWAY, PLUS ADDITIONAL AVAILABLE INFO MASTER/SLAVE |
| HEAT PUMP ENABLE | | | | 1 | | MASTER/SLAVE |
| HEAT PUMP STATUS | | | 1 | | 1 | MASTER/SLAVE |
| HEAT PUMP HHW SUPPLY TEMP | 1 | | | 1 | 1 | |
| HEAT PUMP HHW RETUR TEMP | 1 | | | 1 | 1 | |
| HEAT PUMP CHW SUPPLY TEMP | 1 | | | 1 | 1 | |
| HEAT PUMP CHW RETURN TEMP | 1 | | | 1 | 1 | |
| HEAT PUMP SWITCH-OVER VALVE | | | | 1 | | TYPICAL EACH HP – THRU GATEWAY |
| HHW SYSTEM FLOW | 1 | | | | 1 | ALARM ON HIGH AND LOW FLOW |
| HHW BYPASS | | 1 | | | | |
| HHW HEAT PUMP DIFFERENTIAL PRESSURE | 1 | | | | | |
| CHW SYSTEM FLOW | 1 | | | | 1 | ALARM ON HIGH AND LOW FLOW |
| CHW BYPASS | | 1 | | | | |
| CHW HEAT PUMP DIFFERENTIAL PRESSURE | 1 | | | | | |
| | | | | | | |
| HHW PUMP START/STOP | | | | 2 | | |
| HHW PUMP STATUS | | | 2 | | 2 | CURRENT SENSING RELAY |
| HHW PUMP SPEED | | 2 | | | | SPEED, PLUS ADD'L INFO VIA GATEWAY |
| HHW DIFFERENTIAL PRESSURE | 1 | | | | | |
| HHW REMOTE DIFFERENTIAL PRESSURE | 1 | | | | | |
| | | | | | | |
| CHW PUMP START/STOP | | | | 2 | | |
| CHW PUMP STATUS | | | 2 | | 2 | CURRENT SENSING RELAY |
| CHW PUMP SPEED | | 2 | | | | SPEED, PLUS ADD'L INFO VIA GATEWAY |
| CHW DIFFERENTIAL PRESSURE | 1 | | | | | |
| CHW REMOTE DIFFERENTIAL PRESSURE | 1 | | | | 1 | |
| | | | | | | |
| ELECTRIC BOILER ENABLE | | | | 1 | | |
| ELECTRIC BOILER STATUS | | | 1 | | 1 | |
| ELECTRIC FLOW | 1 | | | | 1 | |
| ELECTRIC BOILER SUPPLY TEMP | 1 | | | | | |
| ELECTRIC BOILER LEAVING TEMP | 1 | | | | | |
| ELECTRIC BOILER CONTROL VAVLE | | | | 1 | | |
| | | | | | | |



| | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|-----------------------------|--|---------------------------------|--|--|--|--|--|--|--|--|-----------------------------------------------------------------------------------------------------|---------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | | | | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL DDC POINTS LIST | MB04.02 |
| PRINTED: 1/18/2019 4:23:09 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. WA-2017-007-00 | | | | | | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | DESIGNED BY: O. JARVEGREN | | REGION NO. STATE 10 WASH | | | | | | | | | | |
| ENTERED BY: Z. SMITH | | CHECKED BY: A. LANGDON | | JOB NUMBER 14W121 | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | DIR TERM ENGR: N. MCINTOSH | | CONTRACT NO. 00**** | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | CONFORMED DRAWINGS REVISION | | 01/18/2019 DATE | | | | | | | | | | |
| | | | | | | | | | | | | | | DATE |

RFI 250

| SYSTEM NAME: RADIANT MANIFOLD | | | | | | |
|-------------------------------|---------------|----------------|----------------|-----------------|--------|----------------------------------------------------------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| TYPICAL EACH RM | | | | | | |
| FLOOR SLAB TEMPERATURE | 1 | | | | 1 | ONE PER ZONE, PROVIDE EMPTY PEX PIPE FROM MANIFOLD TO MIDDLE OF ZONE |
| FLOOR SLAB TEMPERATURE RISE | 1 | | | | 1 | |
| HHW SUPPLY TEMPEATURE | 1 | | | | 1 | |
| HHW RETURN TEMPERATURE | 1 | | | | 1 | |
| HHW CONTROL VALVE | 1 | 1 | | | | |

| SYSTEM NAME: RAIN WATER HARVEST | | | | | | |
|---------------------------------|---------------|----------------|----------------|-----------------|--------|------------------------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| BP | | | | | | |
| PUMP START/STOP | | | | 2 | | |
| PUMP STATUS | | | 2 | | 2 | CURRENT SENSING RELAY |
| PUMP SPEED | | 2 | | | | SPEED, PLUS ADD'L INFO VIA GATEWAY |
| BUFFER TANK PRESSURE | 1 | | | | | |
| REMOTE PRESSURE | 1 | | | | 1 | |
| TANK LEVEL | 1 | | | | 1 | |
| MAKE UP WATER FLOW | 1 | | | | 1 | |

| SYSTEM NAME: DOMESTIC HOT WATER SYSTEM | | | | | | |
|----------------------------------------|---------------|----------------|----------------|-----------------|--------|-----------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| DOMESTIC WATER SUPPLY TEMPERATURE | 2 | | | | 2 | |
| DOMESTIC HOT WATER RETURN TEMPERATURE | 2 | | | | 2 | |
| PUMP START/STOP | | | | 2 | | |
| PUMP STATUS | | | 2 | | | CURRENT SENSING RELAY |

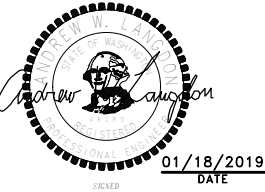
| SYSTEM NAME: DX SPLIT SYSTEM | | | | | | |
|------------------------------|---------------|----------------|----------------|-----------------|--------|-----------------------------|
| DESCRIPTION: | ANALOG INPUTS | ANALOG OUTPUTS | DIGITAL INPUTS | DIGITAL OUTPUTS | ALARMS | REMARKS |
| TYPICAL EACH CU/.SS | | | | | | |
| SPACE TEMPERATURE | 1 | | | | 1 | |
| STATUS | | | 1 | | 1 | PLUS ADD'L INFO VIA GATEWAY |

RFI 250 - Radiant Floor Temp Sensor Location

Radiant supplier/floor loop designer to propose location of t-stats for review and approval.



| | | | | | | |
|-----------------------------------------------------------------------------|-------------------------|--------------------|------------|----|--|---------------------------------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | |
| PRINTED: 1/18/2019 4:23:23 PM | LAST PRINTED BY: ZSMITH | | | | | FED.AID PROJ.NO. WA-2017-007-00 |
| SUBMITTAL DATE: 01/18/2019 | | | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | JOB NUMBER 14W121 |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | CONTRACT NO. 00**** |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | |



DATE



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|----------------------------------------------------------------------|--|---------|
| SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | MB04.03 |
| TERMINAL DDC POINTS LIST | | |

SHEET
1326
OF
1521
SHEETS

GENERAL

ALL PORTIONS OF THE HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEMS SHALL BE CONTROLLED BY THE DIRECT DIGITAL CONTROL (DDC) SYSTEM UNLESS INDICATED OTHERWISE. ALL SETPOINTS, TIME SETTINGS, AND OTHER VALUES SHALL BE ADJUSTABLE UNLESS INDICATED OTHERWISE.

AIR HANDLING UNIT (AHU)

THE AHU IS UNITARY EQUIPMENT; UNIT MANUFACTURER SHALL BE RESPONSIBLE FOR THE HEAT RECOVERY CONTROL AND SEQUENCING AND SHALL INCLUDE THE FOLLOWING HEAT RECOVERY SEQUENCES:

- FREE COOLING
- HEAT RECOVERY
- RE-CIRCULATION (BY-PASS)
- DISABLED (OFF)

THE DDC SYSTEM SHALL BE CAPABLE OF RECEIVING, AT A MINIMUM, THE FOLLOWING INFORMATION FROM THE UNIT CONTROLLER:

- HEAT RECOVERY STATUS (MODE OF OPERATION)
- SWITCH OVER DAMPER POSITION
- SWITCH OVER DAMPER TIME
- UNIT ALARMS
- FREE-COOLING FAILURE, EXCESSIVE OUTSIDE AIR, AND DAMPER MODULATION FAILURE

THE DDC SYSTEM SHALL CONTROL THE FOLLOWING:

UNIT START/STOP

THE DDC SYSTEM SHALL START/STOP AHU ON AN OCCUPIED/UNOCCUPIED SCHEDULE. PROOF OF RUN STATUS SHALL BE MONITORED BY A CURRENT SENSOR. WHEN THE UNIT IS STOPPED (NORMAL OR OTHERWISE), THE ASSOCIATED INTERLOCKED EQUIPMENT SHALL ALSO STOP.

WHEN THE UNIT IS IN DISABLED MODE, THE HEATING COIL VALVES SHALL REMAIN UNDER CONTROL AND SHALL MAINTAIN A MINIMUM UNIT DISCHARGE PLENUM AIR TEMPERATURE OF 50 DEGREES F TO PREVENT NUISANCE LOW TEMPERATURE ALARMS.

VARIABLE FREQUENCY DRIVE FAN MOTOR CONTROL

THE DDC SYSTEM, SHALL MONITOR THE SUPPLY DUCT STATIC PRESSURE SENSOR AND PROVIDE A MODULATING SIGNAL TO THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) TO MAINTAIN DUCT STATIC PRESSURE. THE DDC SHALL ALSO PROVIDE A MODULATING SIGNAL TO THE EXHAUST FAN VARIABLE FREQUENCY DRIVE (VFD) SO THAT THE EXHAUST FAN MAINTAINS FIXED AIR QUANTITY OFFSET FROM THE SUPPLY FAN.

STATIC PRESSURE RESET

THE DDC SYSTEM SHALL "POLL" THE INDIVIDUAL VAV BOXES. ONCE AHU AIR TEMPERATURE HAS RESET FOR THE GREATEST SPACE DEMAND (SEE BELOW), THE DDC SHALL RESET THE AHU UNIT DISCHARGE AIR PRESSURE AS LOW AS POSSIBLE WHILE STILL MEETING THE SPACE NEEDS. THE AHU UNIT DISCHARGE AIR PRESSURE SHALL BE CONTINUOUSLY RESET TO ENSURE THAT AT LEAST ONE (ADJUSTABLE) VAV BOX PRIMARY AIR DAMPER IS FULLY OPEN. THE DDC SYSTEM SHALL MONITOR ZONES AND SHALL AUTOMATICALLY DETECT ANY ZONE THAT EXCESSIVELY DRIVES LOGIC AND SHALL ALARM. THE DDC SYSTEM SHALL ALLOW OPERATOR TO REMOVE ONE OR MORE ZONES FROM THE PRESSURE RESET ALGORITHM.

ECONOMIZER CONTROL

THE DDC SYSTEM SHALL COMPARE THE SIGNAL OF AN OUTSIDE AIR TEMPERATURE SENSOR AND THE EXHAUST AIR TEMPERATURE. AS LONG AS THE OUTSIDE AIR TEMPERATURE IS BELOW THE EXHAUST AIR TEMPERATURE AND THE UNIT IS CALLING FOR COOLING, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE AHU CONTROLLER TO ENABLE FREE COOLING MODE.

AS LONG AS THE OUTSIDE AIR TEMPERATURE IS ABOVE THE EXHAUST AIR TEMPERATURE AND THE UNIT IS CALLING FOR COOLING, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE AHU CONTROLLER TO ENABLE HEAT RECOVERY MODE.

ECONOMIZER CONTROL SHALL BE OVERRIDDEN UPON A DROP IN CO2 LEVELS IN AREAS THAT REQUIRE CO2 SENSORS, TO VERIFY PROPER VENTILATION IS MAINTAINED. MINIMUM OSA SETTING FOR OCCUPIED OPERATION SHALL BE AS SCHEDULED IN THE AHU SCHEDULE AS THE AREA ONLY COMPONENT. UPON A RISE ABOVE CO2 SETPOINT (INITIALLY SET FOR 1000 PPM), THE DDC SYSTEM SHALL SEND A SIGNAL TO THE AHU CONTROLLER TO ENABLE HEAT RECOVERY MODE, TO MAINTAIN CO2 SENSOR SETPOINT. MAXIMUM SETTING SHALL BE EQUAL TO THE SCHEDULED AREA AND PEOPLE BASED LEVELS OF OSA.

TEMPERATURE CONTROL

WHEN THE AHU IS ENABLED, THE DDC SYSTEM SHALL FULLY OPEN THE HEATING CONTROL VALVE FOR COIL WARM-UP. AFTER DISCHARGE TEMPERATURE REACHES 70 DEG F (OR TIME PERIOD EXPIRES), THE DDC SHALL SEND A SIGNAL TO THE AHU CONTROLLER TO ENABLE HEAT RECOVERY MODE. WHEN THE UNIT IS IN HEAT RECOVERY MODE THE HEAT RECOVERY SHALL BE FIRST STAGE OF HEATING AND SHALL BE USED TO MAINTAIN DISCHARGE AIR TEMPERATURE. WHEN THE HEAT RECOVERY TEMPERATURE IS LESS THAN THE DISCHARGE AIR TEMPERATURE, THE DDC SHALL MODULATE THE HEATING CONTROL VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.

SUPPLY AIR TEMPERATURE RESET CONTROL

THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURES SERVED BY THE AHU. THE DDC SYSTEM SHALL RESET THE AHU DISCHARGE TEMPERATURE TO MEET THE GREATEST SPACE HEATING DEMAND.

FREEZE PROTECTION

A FREEZESTAT SHALL STOP THE SUPPLY AND EXHAUST FANS, SEND A SIGNAL TO THE UNIT CONTROLLER TO ENTER THE DISABLE (OFF) MODE AND SHALL INITIATE A LOW TEMPERATURE ALARM (VIA MONITORED AUXILIARY CONTACTS), IF THE TEMPERATURE DROPS BELOW THE FREEZESTAT'S SETPOINT. RETURNING TO NORMAL MODE OF OPERATIONS SHALL REQUIRE MANUAL RESET.

SMOKE DETECTION

SMOKE DETECTOR(S) IN THE AIR STREAM SHALL PROVIDE A "HARD-WIRED" SHUTDOWN OF THE SUPPLY FAN AND THE EXHAUST FAN AND INITIATE A SMOKE ALARM AT THE DDC, IF SMOKE IS DETECTED. RESTARTING THE SUPPLY FAN AND THE EXHAUST FAN SHALL REQUIRE MANUAL RESET AT THE SMOKE DETECTORS.

AIR FILTERS

THE DDC SYSTEM SHALL MONITOR THE DIFFERENTIAL PRESSURE SWITCH ACROSS THE FILTER AND SHALL PROVIDE AN ALARM WHEN THE PRESSURE DROP EXCEEDS THE SETPOINT.

NIGHT SETBACK

WHEN THE UNIT IS IN UNOCCUPIED MODE AND THE SPACE TEMPERATURE REACHES 55 DEGREES F, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE UNIT CONTROL TO ENTER THE BY-PASS MODE AND COMMAND THE HEATING CONTROL VALVE TO FULL OPEN. AS THE SPACE TEMPERATURE REACHES 60 DEGREES F THE DDC SYSTEM SHALL SEND A SIGNAL TO THE AHU UNIT CONTROLLER TO ENTER DISABLED MODE AND RELEASE THE HEATING COMMAND.

MORNING WARM-UP AND OPTIMIZATION

WHEN THE AHU RETURNS TO THE OCCUPIED MODE, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE UNIT CONTROLLER TO ENTER THE BY-PASS MODE AND COMMAND THE HOT WATER CONTROL VALVE TO FULL OPEN. AS THE LAST SPACE TEMPERATURE REACHES 68 DEGREES F, THE DDC SYSTEM SHALL MAINTAIN DISCHARGE TEMPERATURE AND ECONOMIZER CONTROL AS DESCRIBED ABOVE.

THE DDC SYSTEM SHALL "LEARN" THE THERMAL CHARACTERISTICS OF THE BUILDING AND AIR HANDLING SYSTEM TO PROVIDE OPTIMUM START TIMES FOLLOWING NIGHT SETBACKS. THE OPTIMUM STAT TIMES SHALL BE BASED ON LOGGED WARM-UP TIMES, OUTSIDE AIR TEMPERATURE, AND TIME OF DAY. THE DDC SYSTEM SHALL REFINE THE OPTIMUM START TO BE THE LATEST TIME TO HAVE THE SPACES UP TO OCCUPIED TEMPERATURE BY THE BEGINNING OF THE OCCUPIED PERIOD.

AIR TO WATER HEAT PUMP (HP)

THE HP IS UNITARY EQUIPMENT; UNIT MANUFACTURE SHALL BE RESPONSIBLE FOR CONTROLLING EQUIPMENT AND SHALL INCLUDE THE FOLLOWING MODES OF OPERATION:

- HEATING HOT WATER
- CHILLED WATER
- BY-PASS

THE DDC SYSTEM SHALL BE CAPABLE OF RECEIVING, AT A MINIMUM, THE FOLLOWING INFORMATION FROM THE UNIT CONTROLLER:

- MODE OF OPERATION
- NUMBER OF UNITS IN HEATING
- NUMBER OF UNIT IN COOLING
- RETURN HEATING WATER TEMPERATURE
- LEAVING HEATING WATER TEMPERATURE
- RETURN CHILLED WATER TEMPERATURE
- LEAVING CHILLED WATER TEMPERATURE
- HEATING WATER FLOW
- CHILLED WATER FLOW
- DEFROST CYCLE
- ALARMS/FAULTS

THE DDC SYSTEM SHALL CONTROL THE FOLLOWING:

UNIT START/STOP

THE DDC SYSTEM SHALL START/STOP THE HP ON AN OCCUPIED/UNOCCUPIED SCHEDULE. PROOF OF RUN STATUS SHALL BE MONITORED BY A CURRENT SENSOR.

CHILLED WATER SYSTEM

WHEN THERE IS A CALL FOR COOLING, THE DDC SYSTEM SHALL ENABLE THE LEAD CHILLED WATER PUMP AND OPEN 3-WAY VALVES TO ENSURE HP MINIMUM FLOW IS MAINTAINED (PER THE HP EQUIPMENT SCHEDULE). UPON PROOF OF FLOW THRU THE HP, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE HP CONTROLLER TO ENTER COOLING MODE. SHOULD THE FLOW OF WATER FAIL TO PROVE, THE DDC SHALL ENABLE THE LAG PUMP, PROVE FLOW, AND ANNOUNCE AN ALARM CONDITION.

CHILLED WATER PUMPS (P-3 & P-4)

CHILLED WATER PUMPS SHALL BE BALANCED AND CONTROLLED TO MAINTAIN HP MINIMUM FLOW (PER THE HP EQUIPMENT SCHEDULE) AT LOWEST CONTROLLER SETTING.

THE DDC SYSTEM SHALL MONITOR CHILLED WATER DIFFERENTIAL PRESSURE SENSORS AND SEND A SIGNAL TO THE PUMP VFD TO MAINTAIN SETPOINT. IF LEAD PUMP IS AT FULL SPEED AND CHILLED WATER DIFFERENTIAL PRESSURE IS BELOW SETPOINT, ENABLE THE LAG PUMP AND MODULATE VFD SPEED OF BOTH PUMPS TO MAINTAIN DIFFERENTIAL PRESSURE SET POINT.

THE DDC SYSTEM SHALL MONITOR BOTH CHILLED WATER PRESSURE DIFFERENTIAL ACROSS THE HP AND THE SYSTEM DIFFERENTIAL PRESSURE. (SEE DIAGRAM FOR LOCATIONS).

CHILLED WATER DIFFERENTIAL PRESSURE RESET

THE DDC SYSTEM SHALL "POLL" EACH CHILLED WATER CONTROL VALVE. THE DDC SHALL RESET THE CHILLED WATER PUMP PRESSURE AS LOW AS POSSIBLE IN ORDER TO MEET SPACE NEEDS. THE CHILLED WATER PUMP SUPPLY PRESSURE SHALL BE CONTINUOUSLY RESET TO ENSURE THAT AT LEAST ONE (ADJUSTABLE) CHILLED WATER CONTROL VALVE IS FULLY OPEN.

CHILLED WATER TEMPERATURE CONTROL

THE HP INTERNAL CONTROLS SHALL STAGE/MODULATE THE REQUIRED EVENTS TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT. SHOULD THE SYSTEM CHILLED WATER SUPPLY TEMPERATURE RISE ABOVE SETPOINT, THE DDC SHALL ANNOUNCE AN ALARM CONDITION.

LEAD/LAG OPERATION

THE DDC SYSTEM SHALL DESIGNATE A CHILLED WATER PUMP AS THE LEAD, WITH THE REMAINING CHILLED WATER PUMP AS THE LAG. WHEN THE LEAD CHILLED WATER PUMP HAS 300 RUN HOURS TIME LOGGED, THE DDC SYSTEM SHALL DESIGNATE THE LAG CHILLED WATER PUMP AS THE LEAD. ALL UNITS SHALL BE ROTATED EQUALLY THROUGH THE LEAD DESIGNATION.

BYPASS CONTROL (NO LOAD CHILLED WATER BYPASS)

THE DDC SYSTEM SHALL MONITOR ALL 3-WAY CHILLED WATER CONTROL VALVES AND MODULATE THE BYPASS ON THE VALVES TO ENSURE THAT MINIMUM FLOW IS MAINTAINED IN THE SYSTEM.

HOT WATER HEATING SYSTEM

WHEN THERE IS A CALL FOR HEATING, THE DDC SYSTEM SHALL ENABLE THE LEAD HEATING HOT WATER PUMP AND OPEN 3-WAY HEATING CONTROL VALVES TO ENSURE HEAT PUMP MINIMUM FLOW (PER THE HP EQUIPMENT SCHEDULE). UPON PROOF OF FLOW THRU THE HP, THE DDC SYSTEM SHALL SEND A SIGNAL TO THE HP CONTROLLER TO ENTER HEATING MODE. SHOULD THE FLOW OF WATER FAIL TO PROVE, THE DDC SHALL ENABLE THE LAG PUMP, PROVE FLOW, AND ANNOUNCE AN ALARM CONDITION.

HEATING HOT WATER PUMPS (P-1 & P-2)

HEATING HOT WATER PUMPS SHALL BE BALANCED AND CONTROLLED TO MAINTAIN HP MINIMUM FLOW (PER THE HP EQUIPMENT SCHEDULE) AT LOWEST CONTROLLED SETTING.

THE DDC SYSTEM SHALL MONITOR HEATING HOT WATER DIFFERENTIAL PRESSURE SENSORS AND SEND A SIGNAL TO THE PUMP VFD TO MAINTAIN SETPOINT. IF LEAD PUMP IS AT FULL SPEED AND HEATING WATER DIFFERENTIAL PRESSURE IS BELOW SETPOINT, ENABLE THE LAG PUMP AND MODULATE VFD SPEED OF BOTH PUMPS TO MAINTAIN DIFFERENTIAL PRESSURE SET POINT.

SYSTEM SHALL MONITOR BOTH HEATING HOT WATER PRESSURE DIFFERENTIAL ACROSS THE HP AND THE SYSTEM DIFFERENTIAL PRESSURE. (SEE DIAGRAM FOR LOCATIONS).

HEATING HOT WATER DIFFERENTIAL PRESSURE RESET

THE DDC SYSTEM SHALL "POLL" THE INDIVIDUAL HEATING HOT WATER CONTROL VALVES. THE DDC SHALL RESET THE HEATING HOT WATER PUMP PRESSURE AS LOW AS POSSIBLE IN ORDER TO MEET SPACE NEEDS. THE HEATING HOT WATER PUMP SUPPLY PRESSURE SHALL BE CONTINUOUSLY RESET TO ENSURE THAT AT LEAST ONE (ADJUSTABLE) HEATING HOT WATER CONTROL VALVE IS FULLY OPEN. SHOULD THE LEAD HEATING HOT WATER PUMP FAIL TO PROVE, THE DDC SYSTEM SHALL ENABLE THE LAG PUMP, PROVE FLOW, AND ANNOUNCE AN ALARM CONDITION.

HEATING HOT WATER TEMPERATURE CONTROL

THE HP INTERNAL CONTROLS SHALL STAGE/MODULATE THE REQUIRED EVENTS TO MAINTAIN THE HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT. SHOULD THE SYSTEM HEATING HOT WATER SUPPLY TEMPERATURE DROP BELOW SETPOINT, THE DDC SYSTEM SHALL ANNUNCIATE AN ALARM CONDITION.

ELECTRICAL (BACK-UP) BOILER (EB) CONTROL

IF HEATING HOT WATER SUPPLY TEMPERATURE IS BELOW SETPOINT, HP SYSTEM IS IN FULL FLOW AND OUTDOOR TEMPERATURE IS BELOW 32 DEGREES F, THE DDC SYSTEM SHALL OPEN THE EB BYPASS VALVE, CONFIRM FLOW AND ENABLE THE EB.

LEAD/LAG OPERATION

THE DDC SYSTEM SHALL DESIGNATE A HEATING HOT WATER PUMP AS THE LEAD, WITH THE REMAINING HEATING HOT WATER PUMP AS THE LAG. WHEN THE LEAD HEATING HOT WATER PUMP HAS 300 RUN HOURS TIME LOGGED, THE DDC SHALL DESIGNATE THE LAG HEATING HOT WATER PUMP AS THE LEAD. ALL UNITS SHALL BE ROTATED EQUALLY THROUGH THE LEAD DESIGNATION.

BYPASS CONTROL (NO LOAD HEATING HOT WATER BYPASS)

THE DDC SYSTEM SHALL MONITOR ALL 3-WAY HEATING HOT WATER CONTROL VALVES AND MODULATE THE BYPASS ON THE VALVES TO ENSURE THAT MINIMUM FLOW IS MAINTAINED IN THE SYSTEM.

RADIANT MANIFOLD (RM)

THE DDC SYSTEM SHALL MONITOR RADIANT FLOOR SLAB ZONE TEMPERATURE AND ENABLE EACH LOOP HEATING CONTROL VALVE ON CALL FOR HEAT, EACH LOOP HEATING CONTROL VALVE SHALL MODULATE TO INCREASE THE RADIANT SLAB TEMPERATURE. THE CHANGE IN RATE OF THE SURFACE TEMPERATURE SHALL BE LIMITED TO A RATE OF 1 DEG F IN 1 HOUR. THE RADIANT SLAB TEMPERATURE SHALL NOT EXCEED 79 DEGREES F.

FLOOR SLAB TEMPERATURE CONTROL

FLOOR TEMPERATURE SETPOINT SHALL BE BASED ON OUTDOOR AIR TEMPERATURE. OUTDOOR AIR TEMPERATURE SHALL BE BASED ON A ROLLING AVERAGE OF THE CURRENT AND PREVIOUS DAY AND SET TWICE A DAY AT NOON AND MIDNIGHT.

AN OUTDOOR AIR TEMPERATURE RANGE OF 24 DEGREES F TO 45 DEGREES F SHALL CORRESPOND TO FLOOR TEMPERATURE SETPOINT OF 68 DEGREES F TO 79 DEGREES F IN A LINEAR FASHION.

EXHAUST FAN (EF-1)

WHEN THE AHU IS COMMANDED TO "OCCUPIED" BY THE DDC SYSTEM, EF-1 SHALL RUN CONTINUOUSLY. WHEN THE AHU STOPS OR GOES TO "OCCUPIED", THE DDC SYSTEM SHALL DISABLE EF-1. PROOF OF RUN STATUS SHALL BE MONITORED BY A CURRENT SENSOR AND ALARM IN CASE OF FAILURE

EXHAUST FAN (EF-2, EF-3, EF-4, EF-5)

THE DDC SYSTEM SHALL ENABLE AND DISABLE EF-2 ON "OCCUPIED/UNOCCUPIED" SCHEDULE AND SHALL OPERATE TO MAINTAIN SPACE TEMPERATURE. FAN SPEED SHALL BE CONTROLLED TO SPEED UP FAN WHEN SPACE TEMPERATURE EXCEEDS SETPOINT. IF SPACE TEMPERATURE IS BELOW SETPOINT, FAN SHALL RUN AT MINIMUM AIRFLOW (PER THE EXHAUST FAN EQUIPMENT SCHEDULE).

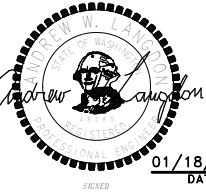


Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
DDC SEQUENCE OF OPERATION

MB04.04
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| SUBMITTAL DATE: 01/18/2019 | | | | | WA-2017-007-00 |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | REGION NO. STATE |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | 10 WASH |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | JOB NUMBER |
| MAR PROJ ENGR: C. TORRES | | | | | 14W121 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | CONTRACT NO. |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | 00**** |



DATE

UNIT HEATERS (UH - HYDRONIC)

THE DDC SYSTEM SHALL ENABLE AND DISABLE UH BASED ON "OCCUPIED/UNOCCUPIED" SCHEDULE. DURING OCCUPIED AND UNOCCUPIED MODE WHEN HEATING HOT WATER SYSTEM IS ENABLED (HP IS IN HEATING) THE FAN SHALL BE ENABLED. PROOF OF RUN STATUS SHALL BE MONITORED BY A CURRENT SENSOR AND ALARM IN CASE OF FAILURE.

WHEN THERE IS A CALL FOR HEATING (SPACE TEMPERATURE IS BELOW SETPOINT), THE DDC SYSTEM SHALL MODULATE THE HEATING CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

DURING COOLING MODE (HP IS NOT IN HEATING), THE FAN SHALL BE DISABLED.

NIGHT SETBACK

WHEN THE UH IS IN UNOCCUPIED MODE AND THE SPACE TEMPERATURE REACHES 55 DEGREES F, THE DDC SYSTEM SHALL OPEN THE HEATING CONTROL VALVE TO FULL OPEN. AS THE SPACE TEMPERATURE REACHES 60 DEGREES F, THE DDC SYSTEM SHALL CLOSE THE HEATING HOT WATER CONTROL VALVE.

UNIT HEATERS (UH - ELECTRIC)

UH SHALL OPERATE OFF INTERNAL CONTROLS.

CEILING FANS (CF)

WHEN THE AHU IS COMMANDED TO "OCCUPIED" BY THE DDC SYSTEM, THE CEILING FANS SHALL RUN CONTINUOUSLY. WHEN THE AHU STOPS OR GOES TO "UNOCCUPIED" MODE, THE DDC SYSTEM SHALL DISABLE THE CEILING FANS.

NATURAL VENTILATION OPERABLE WINDOWS

DAMPER CONTROL

THE DDC SYSTEM SHALL MONITOR OUTDOOR AIR TEMPERATURE AND WIND SPEED. DURING COOLING SEASON (AVERAGE OUTDOOR AIR TEMPERATURE ABOVE 65 DEG F), IF THE RUNNING AVERAGE WIND SPEED OVER A PERIOD OF 6 HOURS IS ABOVE 6 MPH, THE DDC SYSTEM SHALL OPEN THE NATURAL VENTILATION DAMPERS AND KEEP THEM OPEN FOR A PERIOD OF AT LEAST 180 MINUTES. IF THE RUNNING AVERAGE WIND SPEED OVER A 6 HOUR PERIOD IS LESS THAN 5 MPH, THE NATURAL VENTILATION DAMPERS SHALL CLOSE AND REMAIN CLOSED FOR A PERIOD OF AT LEAST 180 MINUTES.

OUTDOOR AIR TEMPERATURE SHALL BE BASED ON A ROLLING AVERAGE OF THE CURRENT AND PREVIOUS DAY. IF THE OUTDOOR AIR TEMPERATURE EXCEEDS 85 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL OPEN DURING UNOCCUPIED HOURS AND REMAIN OPEN FOR A PERIOD OF AT LEAST 180 MINUTES. IF THE OUTDOOR AIR TEMPERATURE IS ABOVE 80 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL CLOSE AND REMAIN CLOSED FOR A PERIOD OF AT LEAST 180 MINUTES. IF THE OUTDOOR AIR TEMPERATURE DROPS BELOW 80 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL OPEN AND REMAIN OPEN FOR A PERIOD OF AT LEAST 180 MINUTES.

NIGHT SETBACK

IF, DURING UNOCCUPIED HOURS, THE OUTDOOR AIR TEMPERATURE EXCEEDS 85 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL OPEN AND REMAIN OPEN FOR A PERIOD OF AT LEAST 180 MINUTES.

OPTIMIZATION

THE DDC SYSTEM SHALL "LEARN" THE CHARACTERISTICS OF THE BUILDING AND DAMPER SYSTEM TO PROVIDE OPTIMUM DAMPER OPEN TIMES FOR FUTURE HOT DAYS. THE DDC SYSTEM SHALL REFIN E THE DAMPER OPENING TIME TO HAVE THE SPACE AS COOL AS POSSIBLE BY THE BEGINNING OF THE OCCUPIED PERIOD.

VAV BOX CONTROL

START/STOP AND MORNING WARMUP

WHEN AHU IS ENABLED, THE DDC SYSTEM SHALL ALSO ENABLE THE VAV BOXES SERVED BY THE AHU. EACH SPACE TEMPERATURE SENSOR SHALL RESET THE BOX DISCHARGE TEMPERATURE TO MAINTAIN THE INDIVIDUAL SPACE SET POINT (68 DEGREES F ADJUSTABLE). AS THE CALL FOR COOLING INCREASES, THE DDC SYSTEM SHALL OPEN THE VAV BOX PRIMARY AIR DAMPER. AS THE CALL FOR COOLING DROPS, THE DDC SHALL CLOSE THE VAV BOX PRIMARY AIR DAMPER. AS THE PRIMARY AIR DAMPER REACHES IT'S MINIMUM SETTING AND THERE IS A CONTINUED DROP IN TEMPERATURE (A CALL FOR HEATING), THE DDC SYSTEM SHALL MODULATE THE HEATING COIL CONTROL VALVE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

DEMAND CONTROL VENTILATION

THE DDC SYSTEM SHALL MONITOR CO2 LEVEL IN SPACES THAT REQUIRE CO2 SENSORS (SHOWN ON PLANS). UPON A RISE IN CO2, THE VAV BOX PRIMARY AIR DAMPER SHALL MODULATE TO INCREASE PRIMARY AIRFLOW. ONCE CO2 DROPS BELOW SETPOINT, THE VAV BOX PRIMARY AIR DAMPER SHALL RETURN TO NORMAL OPERATION.

NIGHT SETBACK

IF, DURING UNOCCUPIED MODE, ANY SPACE TEMPERATURE DROPS TO 55 DEGREES F, THE DDC SYSTEM SHALL INITIATE A CALL FOR HEATING IN THAT ZONE. THE AHU NIGHT SETBACK SEQUENCE SHALL BE INITIATED AND THE HEATING HOT WATER CONTROL VALVE SHALL GO TO FULL OPEN. AS THE INDIVIDUAL SPACE TEMPERATURES REACH 60 DEGREES F, THE AHU SHALL BE DISABLED AND THE HEATING HOT WATER CONTROL VALVE SHALL RETURN TO CLOSED POSITION.

FAN COIL UNIT CONTROL (FCU)

START/STOP AND MORNING WARMUP

WHEN THE AHU IS ENABLED, THE DDC SYSTEM SHALL ALSO ENABLE THE FANS IN ALL OF THE FAN COIL UNITS. DURING OCCUPIED MODE, THE FCU FAN SHALL RUN CONTINUOUSLY. DURING MORNING WARMUP, EACH FCU SHALL GO TO FULL HEATING (HEATING HOT WATER CONTROL VALVE FULL OPEN). AS THE SPACE TEMPERATURE REACHES 68 DEGREES F, THE DDC SYSTEM SHALL RESUME FCU TEMPERATURE CONTROL AS DESCRIBED BELOW.

TEMPERATURE CONTROL

EACH SPACE TEMPERATURE SENSOR SHALL RESET THE FCU SUPPLY AIR TEMPERATURE TO MAINTAIN THE SPACE SETPOINT. AS THE CALL FOR COOLING INCREASES, THE DDC SYSTEM SHALL OPEN THE CHILLED WATER CONTROL VALVE. AS THE CALL FOR COOLING DROPS, THE DDC SYSTEM SHALL CLOSE THE CHILLED WATER CONTROL VALVE. WHEN THE CHILLED WATER CONTROL VALVE IS CLOSED AND THERE IS A CONTINUED DROP SPACE TEMPERATURE (A CALL FOR HEATING), THE DDC SYSTEM SHALL MODULATE THE HEATING HOT WATER CONTROL VALVE MAINTAIN THE SPACE SETPOINT. AS THE CALL FOR HEATING DROPS, THE DDC SYSTEM SHALL CLOSE THE HEATING HOT WATER CONTROL VALVE. WHEN THE HEATING HOT WATER CONTROL VALVE IS CLOSED AND THERE IS A CONTINUED INCREASE IN SPACE TEMPERATURE (A CALL FOR COOLING), THE DDC SYSTEM SHALL MODULATE THE CHILLED WATER CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE.

NIGHT SETBACK

IF, DURING UNOCCUPIED MODE, ANY SPACE TEMPERATURE DROPS TO 55 DEGREES F (ADJUSTABLE), THE DDC SYSTEM SHALL INITIATE A CALL FOR HEATING AND OPEN THE HEATING HOT WATER CONTROL VALVE TO FULL OPEN. AS THE INDIVIDUAL SPACE TEMPERATURES REACH 60 DEGREES F, THE FCU SHALL BE DISABLED AND THE HEATING HOT WATER CONTROL VALVE SHALL RETURN TO CLOSED POSITION.

RAINWATER HARVESTING (BP)

THE DDC SYSTEM SHALL MONITOR BUFFER TANK PRESSURE AND ENABLE LEAD BOOSTER PUMP WHEN BUFFER TANK PRESSURE IS 25 PSI AND RUN UNTIL BUFFER TANK PRESSURE IS 60 PSI. ALARM IF PSI FALLS OUT OF RANGE (ADJUSTABLE).

THE DDC SYSTEM SHALL MONITOR STORAGE TANK LEVEL AND ALARM FOR HIGH LEVEL.

LEAD/LAG OPERATION

THE DDC SYSTEM SHALL DESIGNATE A BP AS THE LEAD, WITH THE REMAINING BP AS THE LAG. WHEN THE LEAD BP HAS 300 RUN HOURS TIME LOGGED, THE DDC SYSTEM SHALL DESIGNATE THE LAG BOOSTER PUMP AS THE LEAD. ALL UNITS SHALL BE ROTATED EQUALLY THROUGH THE LEAD DESIGNATION.

DX SPLIT SYSTEMS(CU/SS)

THE DX SPLIT SYSTEMS ARE UNITARY; UNIT MANUFACTURE SHALL BE RESPONSIBLE FOR CONTROLLING EQUIPMENT. THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURE AND ALARM IF SETPOINT ISN'T MAINTAINED.



DDC SYSTEM SHALL ALARM IF THERE IS FAILURE REPORTED BY THE EQUIPMENT CONTROLLER.

RFI 323 - Natural Ventilation Sequence

1. Second sentence in second paragraph should be disregarded as it pertains to "NIGHT SETBACK". For clarity, the second paragraph becomes:
"OUTDOOR AIR TEMPERATURE SHALL BE BASED ON A ROLLING AVERAGE OF THE CURRENT AND PREVIOUS DAY. IF THE OUTDOOR AIR TEMPERATURE IS ABOVE 80 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL CLOSE AND REMAIN CLOSED FOR A PERIOD OF AT LEAST 180 MINUTES. IF THE OUTDOOR AIR TEMPERATURE DROPS BELOW 80 DEGREES F, THE NATURAL VENTILATION DAMPERS SHALL OPEN AND REMAIN OPEN FOR A PERIOD OF AT LEAST 180 MINUTES. Please note the verbiage on MB04.04:
"...ALL SETPOINTS, TIME SETTINGS, AND OTHER VALUES SHALL BE ADJUSTABLE UNLESS INDICATED OTHERWISE."

2. The design intent is to optimize "NIGHT SETBACK". During the cooling season (summer), we want to minimize indoor air temperature on a daily basis, by the beginning of the occupied period.



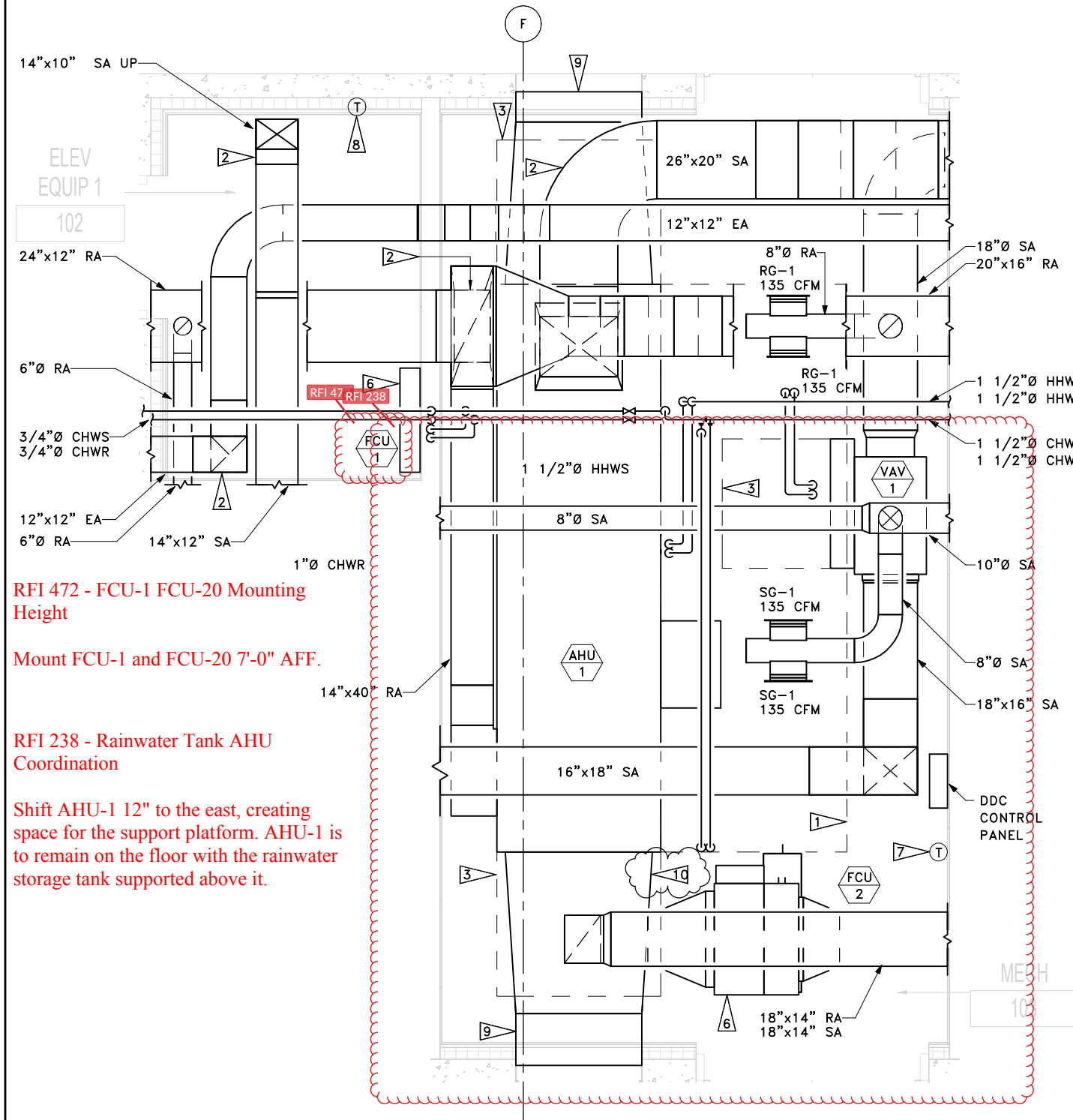
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| SUBMITTAL DATE: 01/18/2019 | | | | | | WA-2017-007-00 | | OF 1521 | | | | | | | | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | REGION NO. STATE 10 WASH | | SHEETS | | | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | JOB NUMBER 14W121 | | | | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | CONTRACT NO. 00**** | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | REVISION | | DATE | | BY | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | | | | | | | | | | | | |

GENERAL NOTES

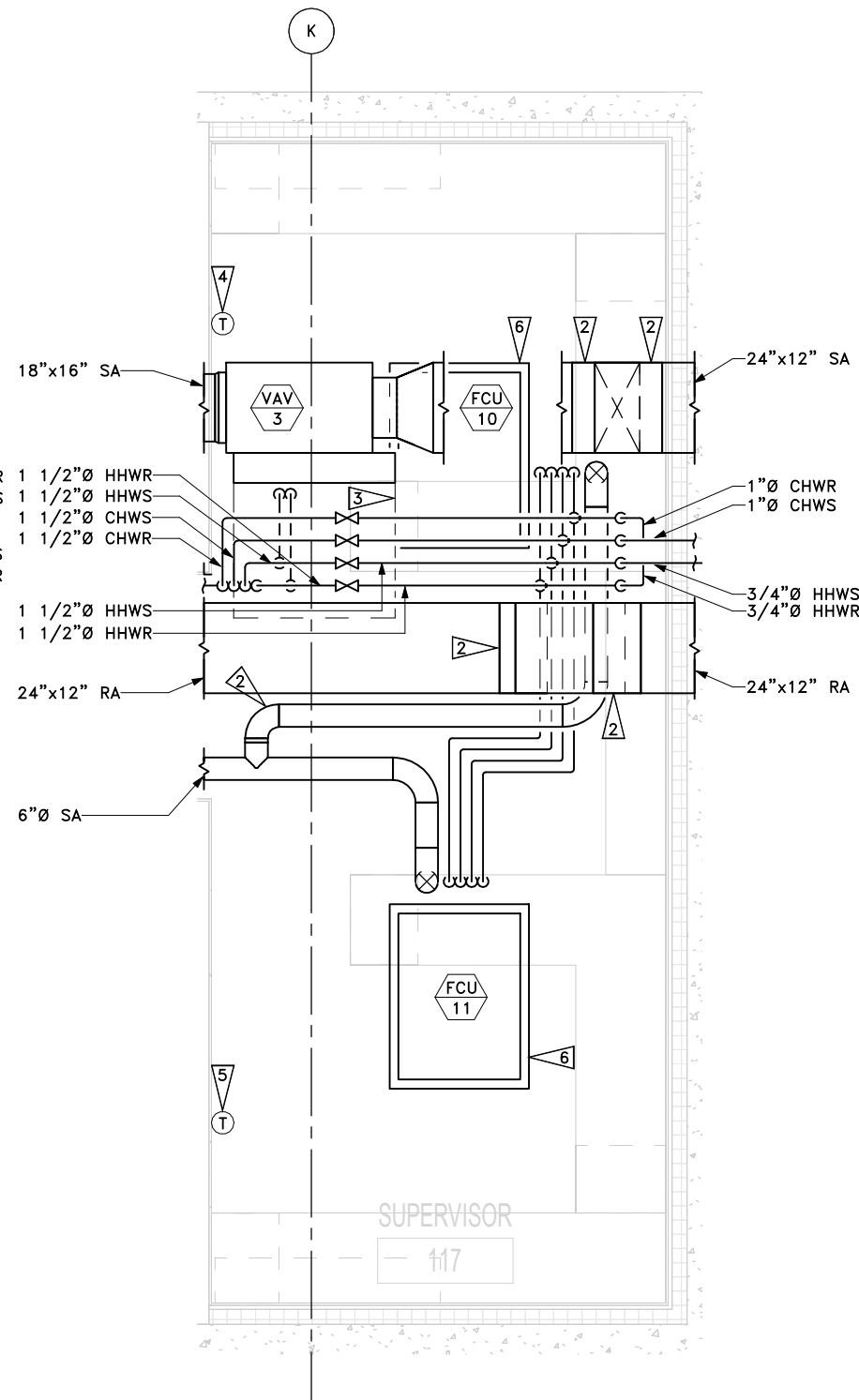
1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE MB06.01, MB06.02, AND MB06.03 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

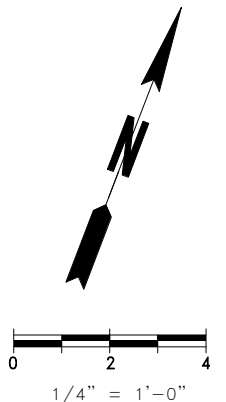
1. PROVIDE THERMOSTAT AND CONNECT TO VAV-3.
2. PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
3. MAINTAIN MANUFACTURER'S SUGGESTED CLEARANCES.
4. PROVIDE THERMOSTAT AND CONNECT TO FCU-10.
5. PROVIDE THERMOSTAT AND CONNECT TO FCU-11.
6. ROUTE 1/2" COND TO NEAREST FLOOR DRAIN.
7. PROVIDE THERMOSTAT AND CONNECT TO VAV-2.
8. PROVIDE THERMOSTAT AND CONNECT TO FCU-1.
9. CONNECT DUCT TO LOUVER, REFER TO ARCHITECTURAL PLANS FOR SIZE AND LOCATION.
10. PROVIDE AIRFLOW MEASURING STATION.



1 ENLARGED HVAC PLAN
MB05.00



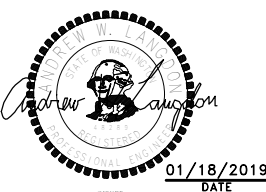
2 ENLARGED HVAC PLAN
MB05.00



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| PRINTED: 11/26/2019 1:29:20 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | RFI 357 - 11/26/2019 | 11/26/2019 | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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WA-2017-007-00
REGION NO. STATE
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JOB NUMBER
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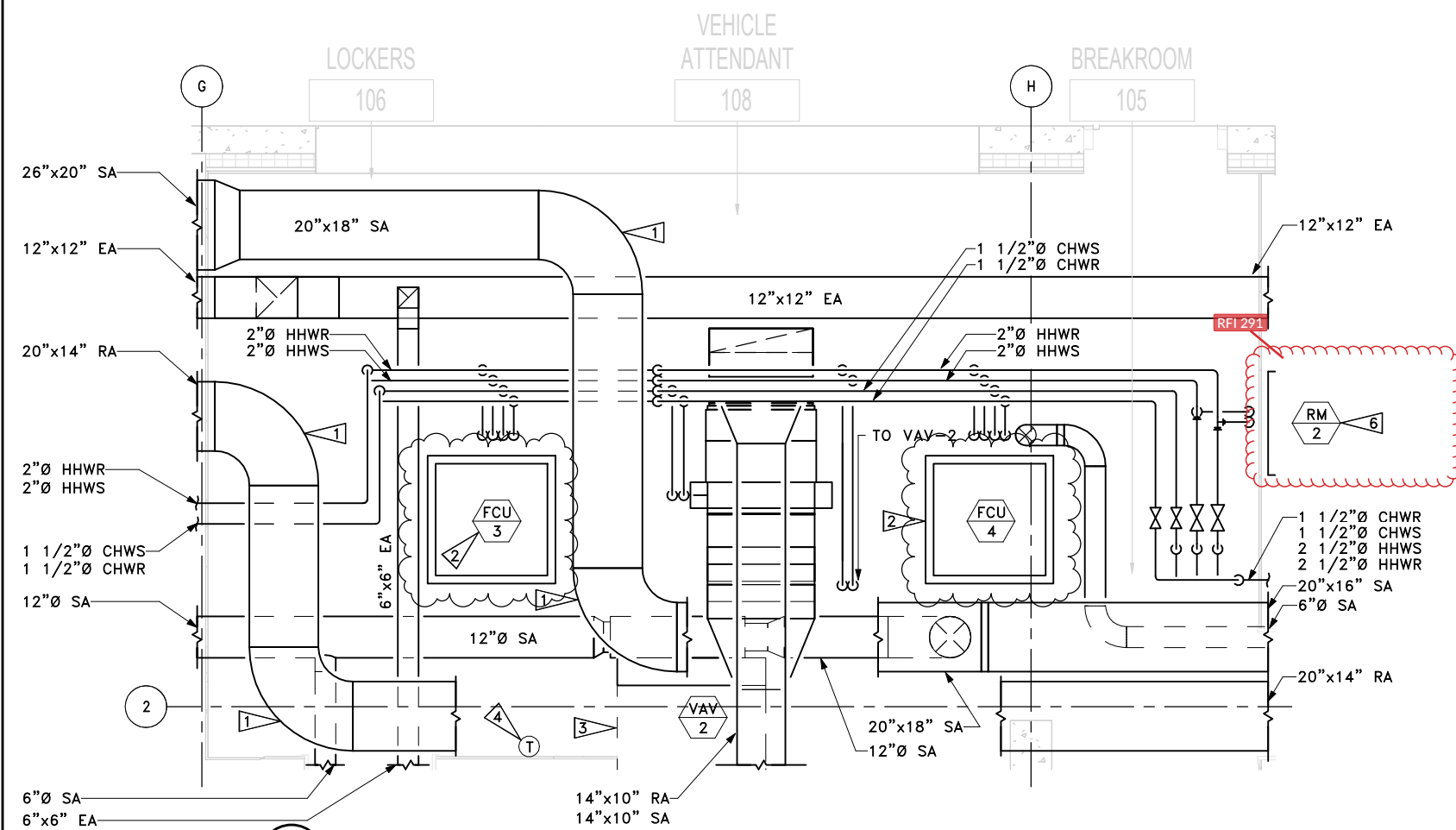
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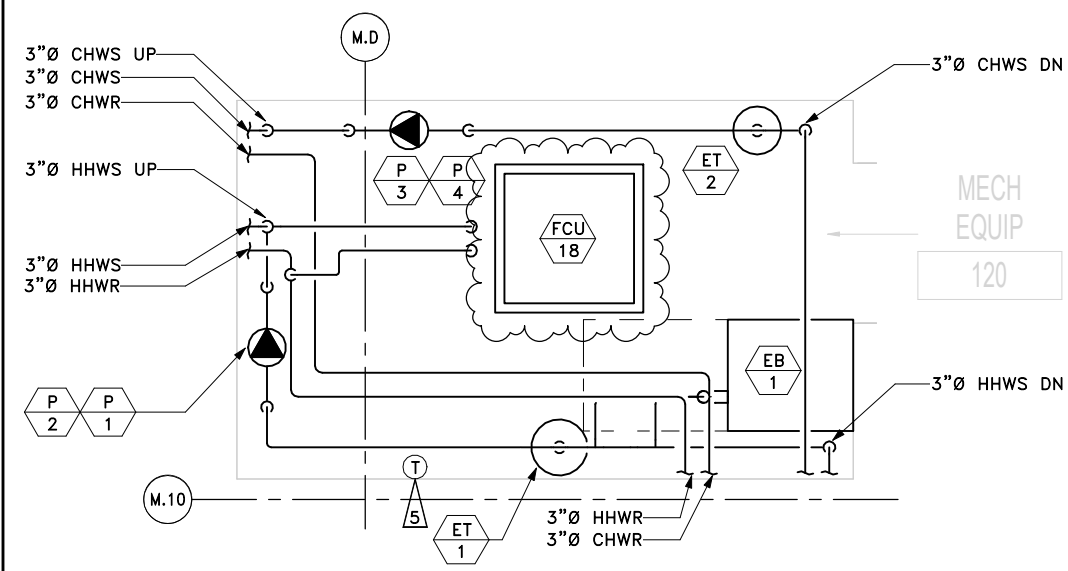
Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
ENLARGED HVAC PLANS

MB05.00
SHEET
OF
SHEETS



1 ENLARGED HVAC PLAN
MB05.01



2 ENLARGED HVAC PLAN
MB05.01

RFI 291 - Radiant Slab Penetrations

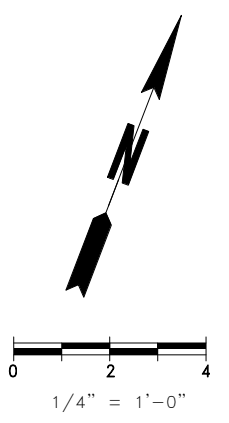
It is acceptable to cut 1'-0" x 2'-0" openings. The exact location of the openings may need to be adjusted. Openings are not allowed to occur ovetop any of the beams. Also, sides of openings to be minimum 2" away from beam flanges. See attached sketches SK-42A & SK-42B for info relating to the necessary construction at the area in question.

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE MB06.01, MB06.02, AND MB06.03 FOR HVAC SCHEDULES.

CONSTRUCTION NOTES

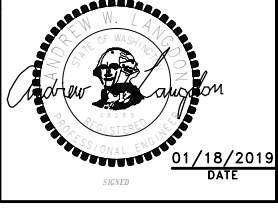
1. PROVIDE SMOOTH 1W RADIUS ELBOW WITH SINGLE SPLITTER VANE.
2. ROUTE 1/2"Ø COND TO NEAREST FLOOR DRAIN.
3. MAINTAIN MANUFACTURER'S SUGGESTED CLEARANCES.
4. PROVIDE THERMOSTAT AND CONNECT TO FCU-3 AND FCU-4.
5. PROVIDE THERMOSTAT AND CONNECT TO FCU-18.
6. INSTALL RADIANT MANIFOLD 16'-0" AFF. ROUTE RADIANT LOOPS UP WALL TO SECOND FLOOR SLAB.



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| SUBMITTAL DATE: 01/18/2019 | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | CHANGE ORDER - 06/13/2019 | 06/13/2019 |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE BY |

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| FED.AID PROJ.NO. | WA-2017-007-00 |
| REGION NO. STATE | 10 WASH |
| JOB NUMBER | 14W121 |
| CONTRACT NO. | 00**** |



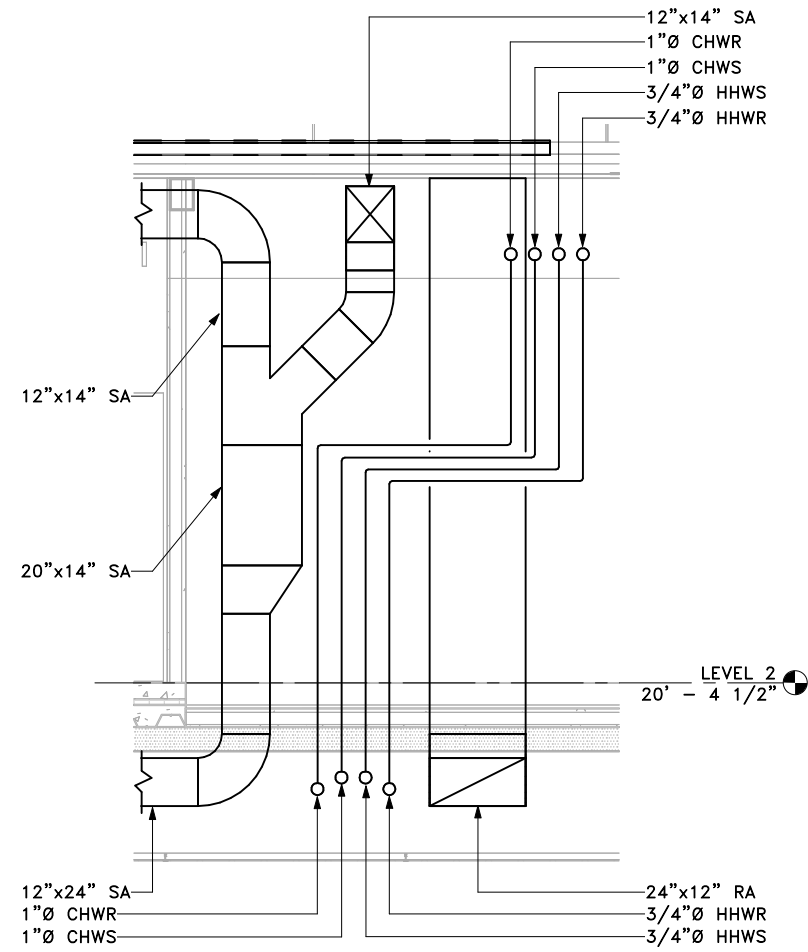
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FSI consulting engineers
509 Second Ave, Suite 700,
Seattle, Washington 98104
PH 206.922.3321 Fax 206.922.3804

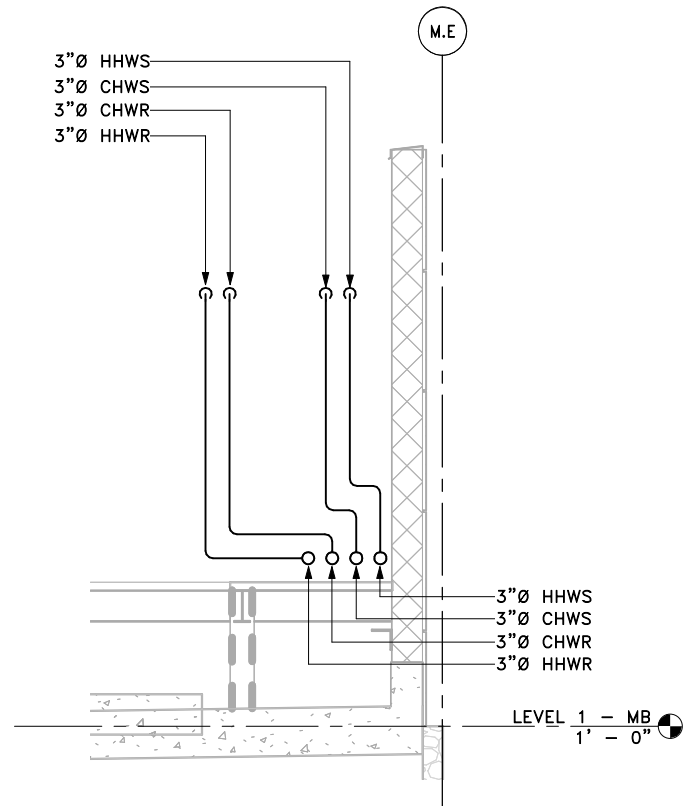


SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
ENLARGED HVAC PLANS

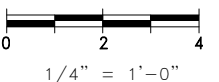
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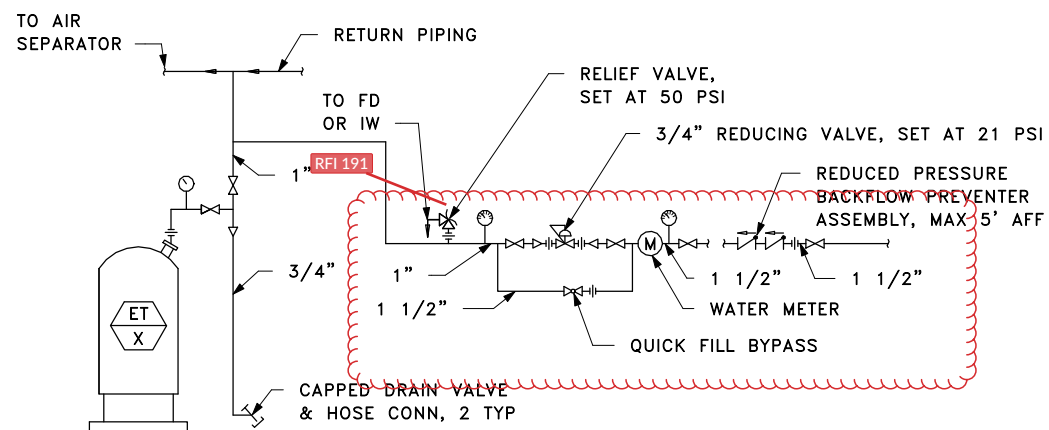
1 HVAC SECTION
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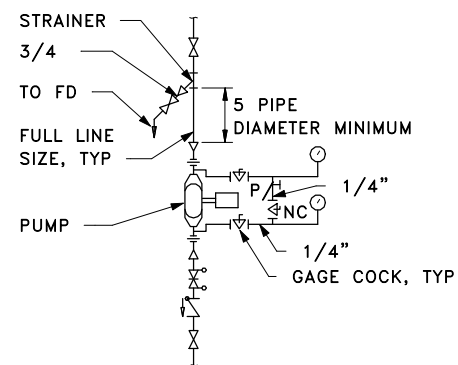
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MB05.02



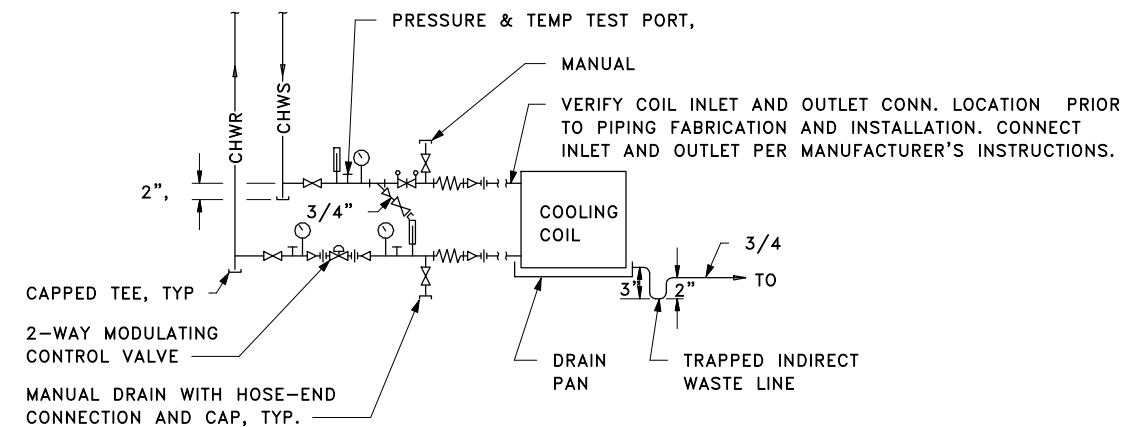
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| PRINTED: 1/18/2019 4:26:10 PM | | | | LAST PRINTED BY: | | | | | | | | FED.AID PROJ.NO. | | MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | | | | | | | | | SHEET | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | ZSMITH | | | | | | | | WA-2017-007-00 | | | | | | | | | | | | 1331 | | | | | |
| DESIGNED BY: O. JARVEGREN | | | | 01/18/2019 | | | | | | | | REGION NO. STATE | | TERMINAL HVAC SECTIONS | | | | | | | | | | OF | | | | | |
| ENTERED BY: Z. SMITH | | | | 01/18/2019 | | | | | | | | 10 WASH | | | | | | | | | | | | 1521 | | | | | |
| CHECKED BY: A. LANGDON | | | | 01/18/2019 | | | | | | | | JOB NUMBER | | Washington State Department of Transportation WASHINGTON STATE FERRIES | | | | | | | | | | 1521 | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | 14W121 | | | | | | | | | | | | SHEETS | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | CONTRACT NO. | | DATE | | | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | REVISION | | DATE | | BY | | 00**** | | | | | | | | | | | | | | | | | |
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| 01/18/2019 | | | | | | | | | | DATE | | | | | | | | | | | | | | | | | | | |



1 FILL & EXPANSION TANK DETAIL
MB05.03



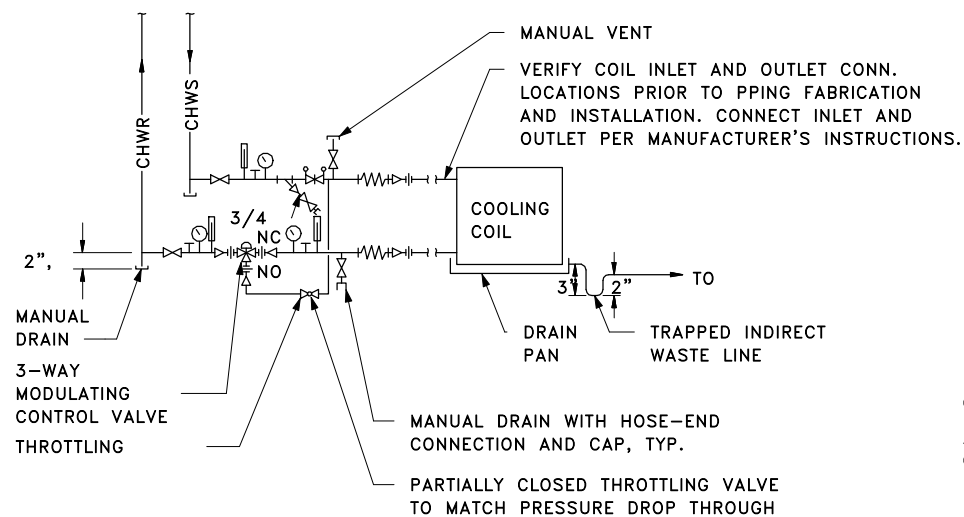
2 INLINE PUMP CONNECTION DETAIL
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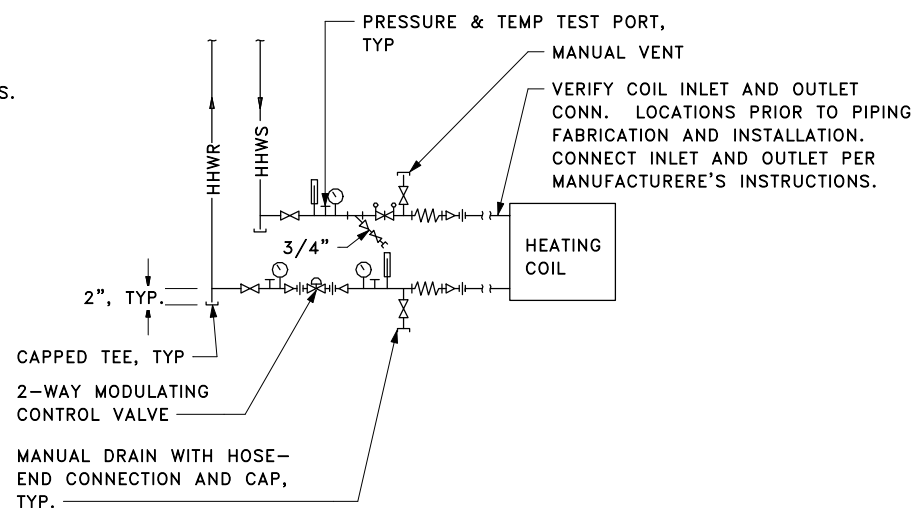
3 TYPICAL COOLING COIL WITH 2-WAY VALVE DETAIL
MB05.03

RFI 191 - HVAC Makeup Water Line

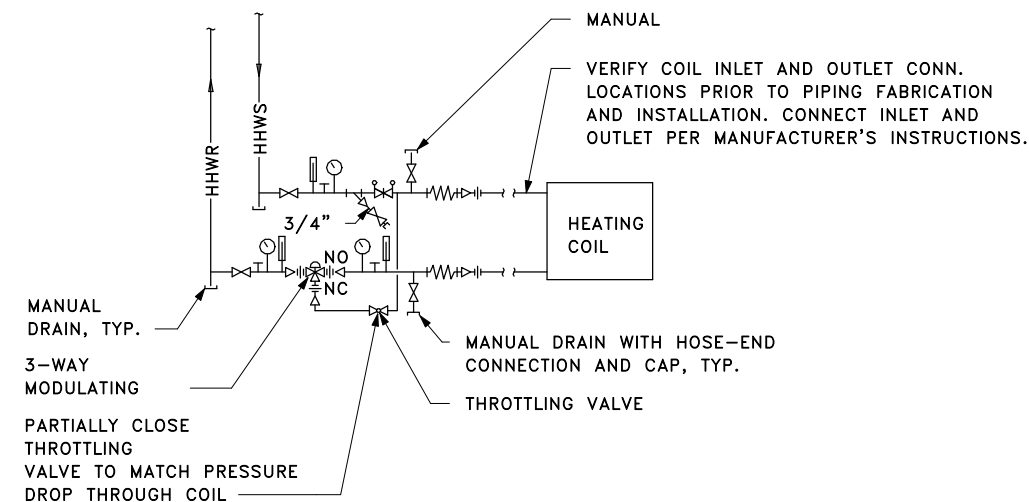
3/4" cold water line for chilled and heating water make up is acceptable.



4 TYPICAL COOLING COIL WITH 3-WAY VALVE DETAIL
MB05.03



5 TYPICAL HEATING COIL WITH 2-WAY VALVE DETAIL
MB05.03



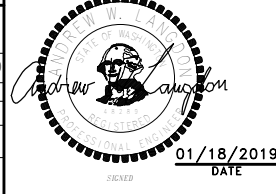
6 TYPICAL HEATING COIL WITH 3-WAY VALVE DETAIL
MB05.03



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| PRINTED: 1/18/2019 4:27:06 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
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| REGION NO. STATE | 10 WASH |
| JOB NUMBER | 14W121 |
| CONTRACT NO. | 00**** |

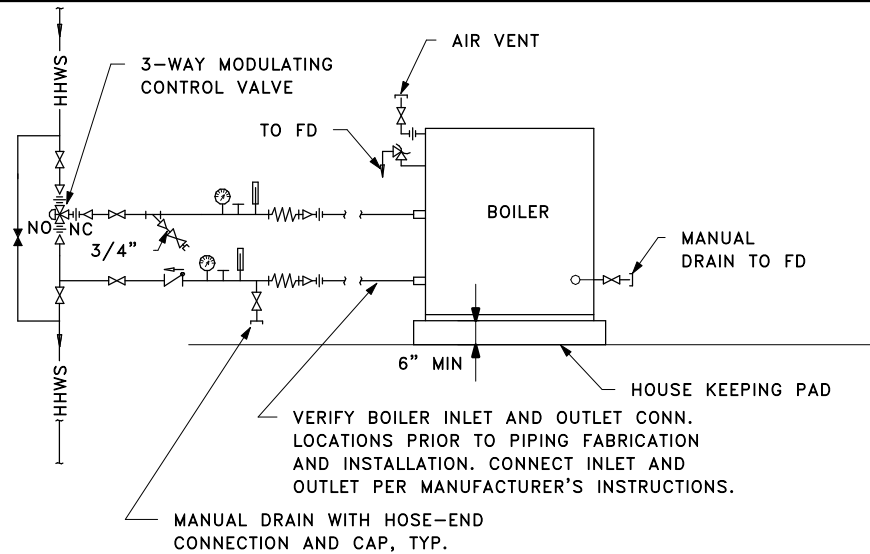


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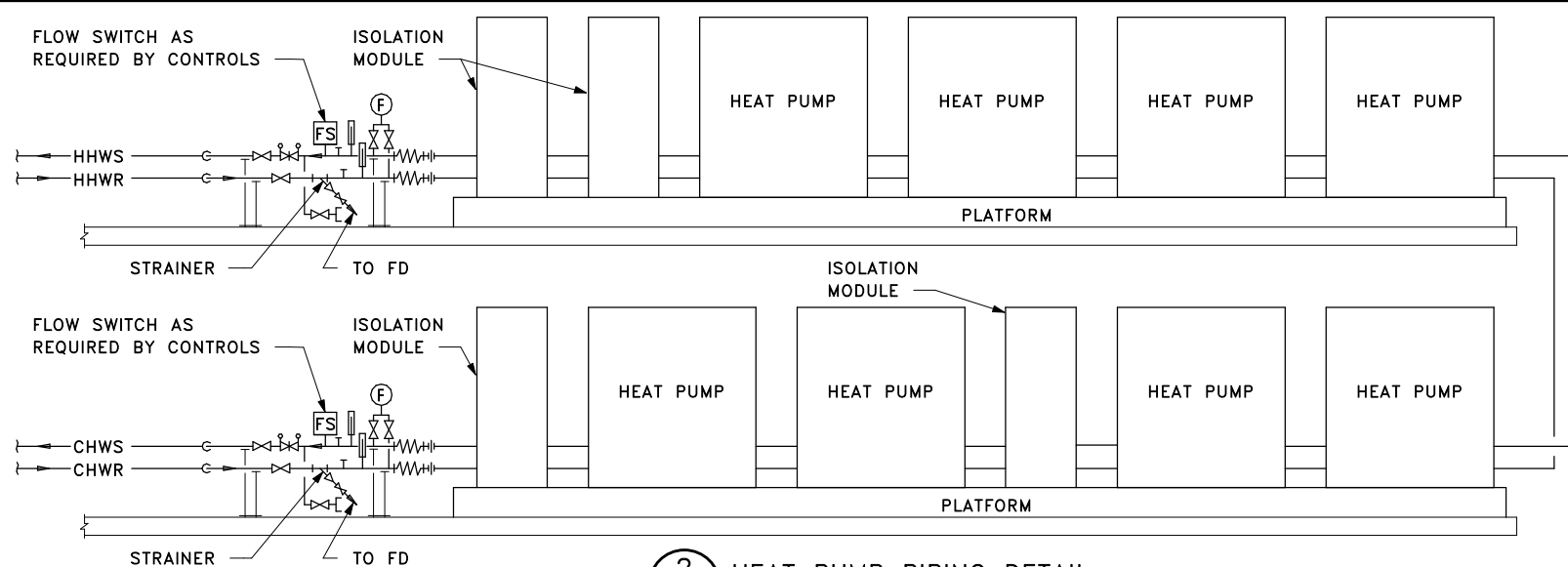


SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
HVAC DETAILS

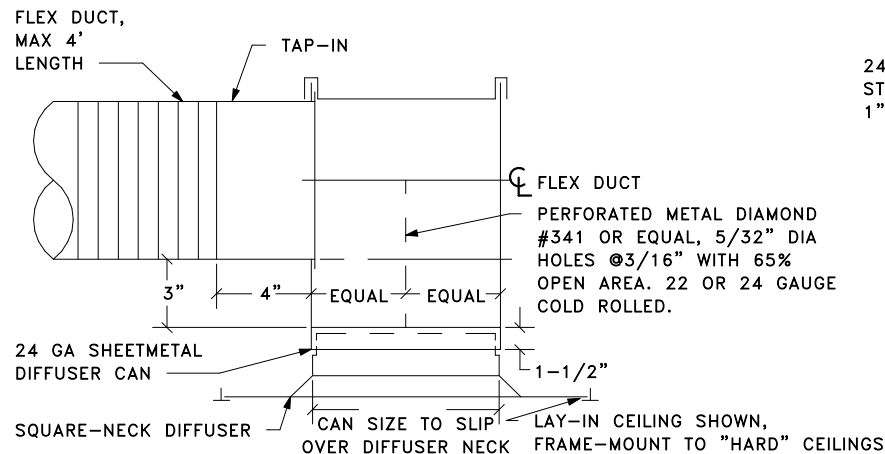
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1332
OF
1521
SHEETS



1 ELECTRIC BOILER DETAIL
MB05.04



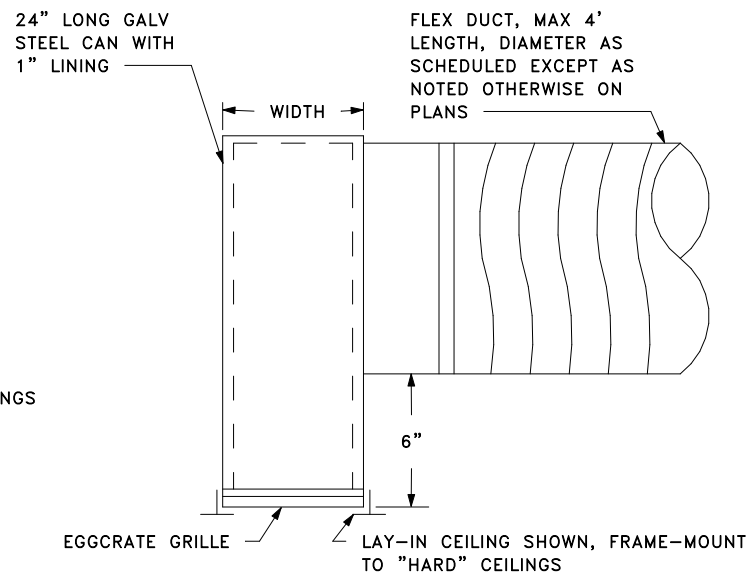
2 HEAT PUMP PIPING DETAIL
MB05.04



| CFM RANGE | DIFFUSER NOMINAL NECK SIZE | TAP-IN | BASIS OF DESIGN | THROW AT 100 FPM (FT) [1] | NC [2] |
|-----------|----------------------------|--------|-----------------|---------------------------|--------|
| 0-125 | 6" x 6" | 8"Ø | TITUS MCD | 7 | <10 |
| 125-225 | 8" x 8" | 8"Ø | TITUS MCD | 9 | 12 |
| 225-350 | 10" x 10" | 10"Ø | TITUS MCD | 12 | 17 |
| 350-475 | 12" x 12" | 12"Ø | TITUS MCD | 14 | 19 |
| 475-675 | 14" x 14" | 14"Ø | TITUS MCD | 16 | 23 |
| 675-850 | 16" x 16" | 14"Ø | TITUS MCD | 19 | 25 |
| 850-1100 | 18" x 18" | 16"Ø | TITUS MCD | 21 | 28 |

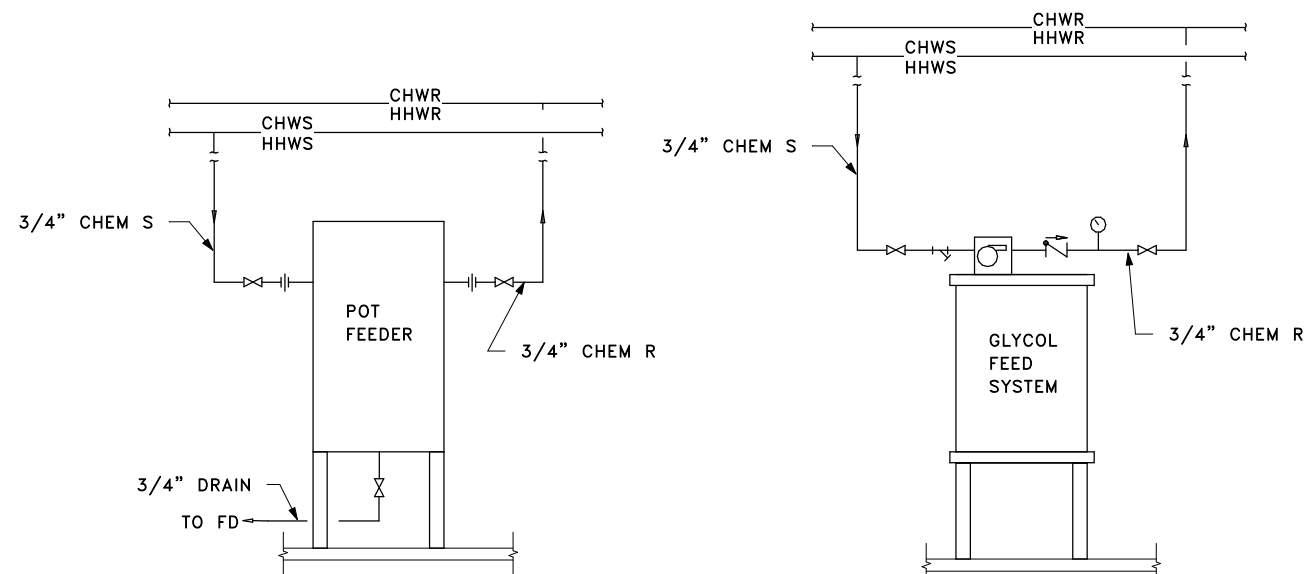
[1] AT ISOTHERMAL CONDITIONS
[2] MAX FOR EACH OCTAVE BAND WITH 10dB ROOM ABSORPTION.

3 SQUARE-NECK SUPPLY DIFFUSER DETAIL
MB05.04

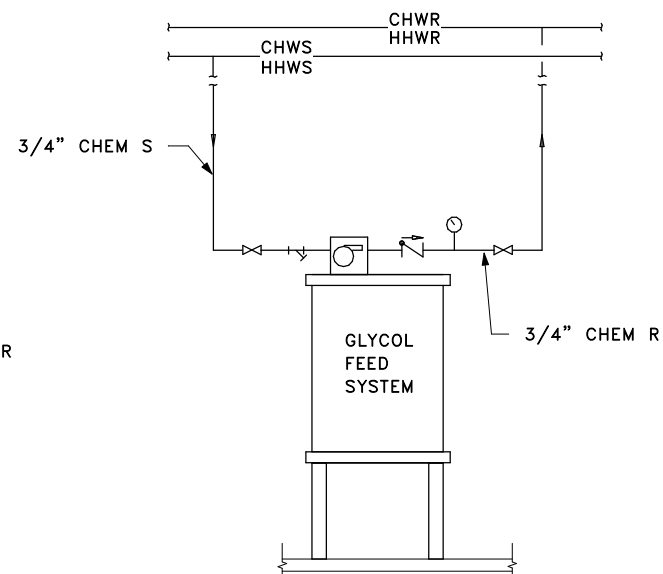


| CFM RANGE | NOMINAL GRILLE SIZE, LENGTH x WIDTH | D | BASIS OF DESIGN |
|-----------|-------------------------------------|-------------|-----------------|
| 0-799 | 24" x 12" | 12"Ø | TITUS 50F |
| 800+ | 24" x 24" | 14"Ø - 20"Ø | TITUS 50F |

4 DUCTED RETURN AIR GRILLE DETAIL
MB05.04



5 POT FEEDER DETAIL
MB05.04



6 GLYCOL FEED SYSTEM DETAIL
MB05.04

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509 Second Ave, Suite 700,
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Department of Transportation
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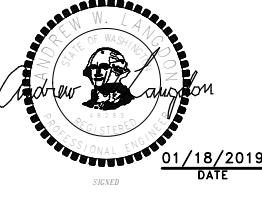
SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
HVAC DETAILS

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OF
1521
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| PRINTED: 1/18/2019 4:27:21 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
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| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
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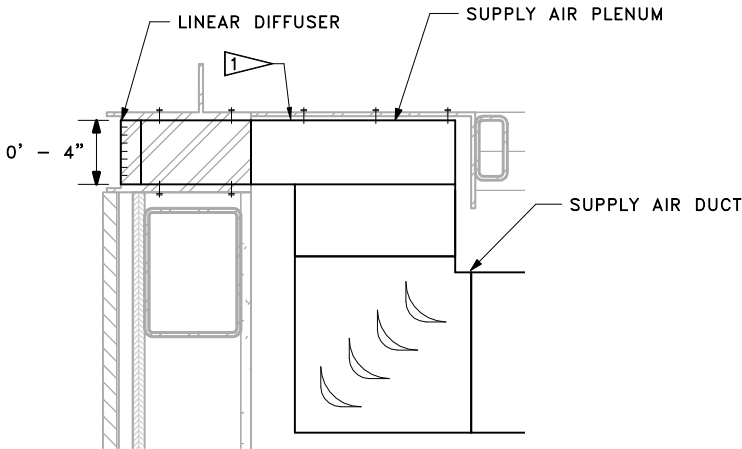
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10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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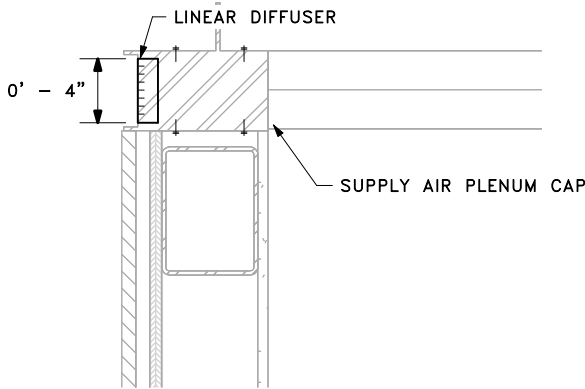
CONSTRUCTION NOTES

1 SUPPORT SUPPLY AIR PLENUM FROM STEEL PLATES.



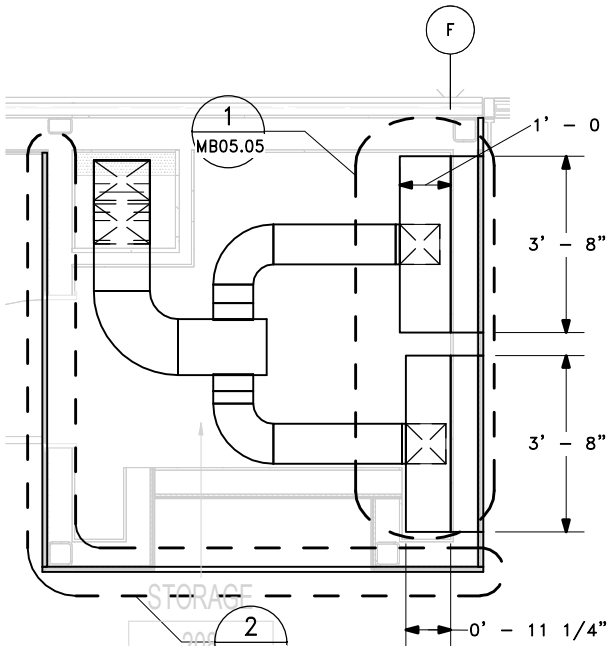
REFER TO ARCHITECTURAL SHEET
A07.21 FOR ADDITIONAL DETAILS

1 ACTIVE LINEAR DIFFUSER SECTION DETAIL
MB05.05

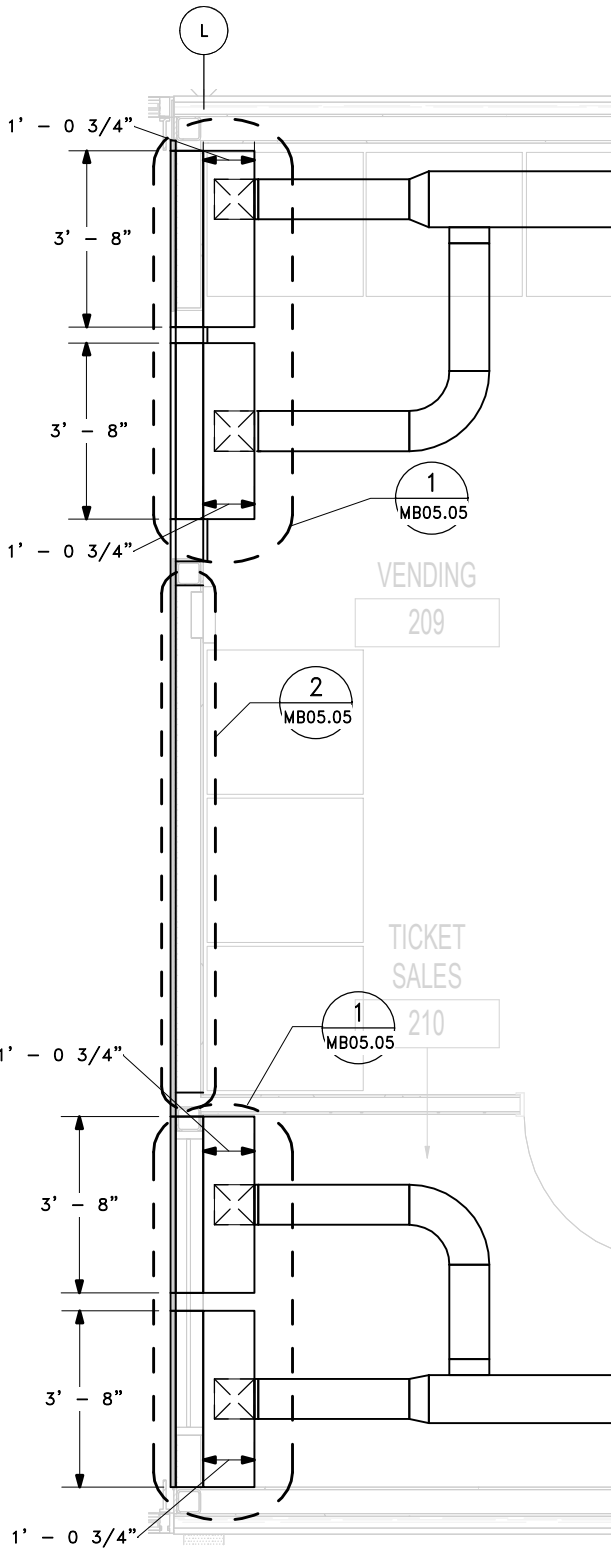


REFER TO ARCHITECTURAL SHEET
A07.21 FOR ADDITIONAL DETAILS

2 INACTIVE LINEAR DIFFUSER SECTION DETAIL
MB05.05



4 LINEAR DIFFUSER DETAIL - WEST
MB05.05



3 LINEAR DIFFUSER DETAIL - EAST
MB05.05

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Washington State
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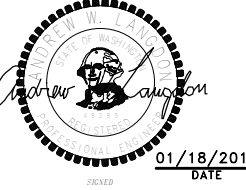
SR 525
MUKILTEO TERMINAL (PHASE 2)
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HVAC DETAILS

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| PRINTED: 1/18/2019 4:29:03 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
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WA-2017-007-00
REGION NO. STATE
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JOB NUMBER
14W121
CONTRACT NO.
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DATE

| TERMINAL AIR HANDLING UNIT SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------|------------|----------|------------------------------|--------------------------------|------------|---------------|------------|---------------------|-----|---------|-------|--------|-------------|--------|---------------|---------|-----------------|-----|---------|-------|----|---------|
| CALLOUT | | LOCATION | SERVICE | MINIMUM OSA "A" (CFM) [2] | MINIMUM OSA "A+P" (CFM) [2] | SUPPLY FAN | | | | | | | | EXHAUST FAN | | | | | | | | | |
| TYPE | MARK | | | | | TYPE | DRIVE TYPE | CFM [1] | ESP (IN) [3] [4] | QTY | RPM [1] | MOTOR | | | TYPE | DRIVE TYPE | CFM [1] | ESP (IN) [3] | QTY | RPM [1] | MOTOR | | |
| | | | | | | | | | | | | RPM | HP [8] | BHP [5] | | | | | | | RPM | HP | BHP [5] |
| AHU | 1 | 103 — MECH | FCU, VAV | 1490 | 4875 | PLENUM | DIRECT | 4875 | 3.75 | 1 | 2101 | 1800 | 7.5 | 5.50 | PLENUM | DIRECT | 4315 | 1.50 | 1 | 1450 | 1800 | 5 | 2.18 |

| Terminal Air Handling Unit Schedule – Continued | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------------------|------|-------------|-------------|-------------|-------------|---------------------|----------------------|----------------------------|----------|----------------------|--------|--------------------|---------------|-------------|-------------|---------------|-------------|-------------|-----------------------------|-----------------|----------------------|---------------|
| Heating Coil | | | | | | | | | | | Filter | | Heat Recovery | | | | | | Max Sound Power Level (dBA) | Basis of Design | | Notes |
| Capacity (BtH) | GPM | EAT (DEG F) | LAT (DEG F) | EWT (DEG F) | LWT (DEG F) | Face Velocity (FPM) | Fin Density per Inch | Max Control Valve PD (PSI) | WPD (FT) | Connection Size (IN) | Type | Max Velocity (FPM) | Summer | | | Winter | | | | | | |
| | | | | | | | | | | | | | Effectiveness | EAT (DEG F) | LAT (DEG F) | Effectiveness | EAT (DEG F) | LAT (DEG F) | | | | |
| 203316 | 20.4 | 24 | 66 | 120 | 100 | 532 | 7 | 0.00 | 6.99 | 1-1/2 | MERV 8 | 500 | 78.45 | 85 | 77 | 88.25 | 24 | 65 | 90 | BKM | EB-4000-ZV-O-AH-C-LT | [6], [7], [8] |

[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] OUTSIDE AIR QUANTITY WITH DAMPER AT MINIMUM POSITION AND UNIT AT MAXIMUM CONDITIONS. "OSA A" REFERS TO ASHRAE 62.1 AREA BASED METHOD, "OSA A+P" REFERS TO ASHRAE 62.1 AREA AND PEOPLE BASE MINIMUM FOR CO2 CONTROL. SEE SEQUENCE OF OPERATIONS.
[3] STATIC PRESSURE EXTERNAL TO UNIT.
[4] INCLUDES ALLOWANCE FOR FILTER LOADING.
[5] MAXIMUM ALLOWABLE MOTOR BRAKEHORSEPOWER AT MAX FLOW AND TSP.
[6] COORDINATE UNIT LENGTH WITH SUPPLY AND RETURN OPENINGS - SEE DWGS.
[7] PROVIDE WITH RETURN/SUPPLY PLENUM.
[8] PROVIDE WITH VFD FOR MOTORS.

| TERMINAL AIR TO WATER HEAT PUMP SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------------|------|----------------|---------|--------|------------|------------------------|-----------|-------------|-------------|------------|---------|-------------------|-------------------------------------|---------|-----------|-------------|-------------|------------|---------|-------------------|--------|-----|------------|---------|--------|-------------|-------------|--------------|--------|-----------------|--|-------|
| CALLOUT | | LOCATION | SERVICE | REFR | DX HEATING | | | | | | | | DX COOLING | | | | | | | | | | COMPRESSOR | | | | | | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | COP [1] | HEATING CAPACITY (MBH) | FLUID [2] | EWT (DEG F) | LWT (DEG F) | DESIGN GPM | MIN GPM | MAX WPD (FT W.G.) | NOMINAL COOLING CAPACITY (TONS) [3] | EER [4] | FLUID [2] | EWT (DEG F) | LWT (DEG F) | DESIGN GPM | MIN GPM | MAX WPD (FT W.C.) | TYPE | QTY | STAGES | FAN QTY | FAN HP | OAT LIMITS | | MANUFACTURER | MODEL | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | MAX (DEG F) | MIN (DEG F) | | | | | |
| HP | 1 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 2 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 3 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 4 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 5 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 6 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 7 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |
| HP | 8 | 128-MECHANICAL | HHW | R-410A | 2.54 | 157 | 30 | 100 | 120 | 126 | 16 | 2.50 | 15 | 11.27 | 30 | 54 | 44 | 79.8 | 10 | 13.4 | SCROLL | 2 | 2 | 2 | 1 | 95 | 24 | MULTISTACK | ARP015 | | | |

[1] COP AT 30 DEG F AMBIENT TEMPERATURE.
[2] WATER WITH PROPYLENE GLYCOL AT THE PERCENTAGE NOTED.
[3] NOMINAL CAPACITY INCLUDED FOR REFERENCE ONLY – DO NOT USE FOR FINAL SIZING OF EQUIPMENT.
[4] IEER AT 95 DEG F AMBIENT TEMPERATURE.
[5] PROVIDE ISOLATION MODULES AS NEEDED TO MEET BUILDING HEATING/COOLING LOADS. OVERALL FOOTPRINT TO MATCH BASIS OF DESIGN SPACE REQUIREMENTS.

| CALLOUT | | LOCATION | SERVICE | FAN TYPE | FAN | | | | MOTOR | | | | MAX RAD NC | BASIS OF DESIGN | | NOTES |
|---------|------|-----------------|---------------------------------------------------------------------------------------------|----------|------------|----------------------|--------------------|-------|-------|------|-----|-----|---------------|-----------------|---------|-------|
| TYPE | MARK | | | | CFM [1] | ESP (IN W.G.) [2] | TIP SPEED (FPM) | RPM | RPM | HP | V | FLA | | MANUFACTURER | MODEL | |
| EF | 1 | 112-SELLER SAFE | 107-TOILET, 111-TOILET, 111A- LAV, 204-JANITOR CLOSET, 205-MEN RESTROOM, 206-WOMEN RESTROOM | INLINE | 920 | 0.5 | 3,608 | 1,026 | 1,030 | 0.50 | 115 | 8.1 | 57 | COOK | SQND-VF | [3] |
| EF | 2 | 133-WOMEN | 134- JANITOR CLOSET, 135-WATER ENTRY, 131-MEN RESTROOM, 133-WOMEN RESTROOM | INLINE | 860 | 0.5 | 3,872 | 1,233 | 1,230 | 0.17 | 115 | 2.9 | 64 | COOK | SQND-VF | [3] |

[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] STATIC PRESSURE EXTERNAL TO UNIT.
[3] PROVIDE WITH ECM MOTOR.

[illegible]

| TERMINAL FAN COIL UNIT SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|------|----------------------------------|----------------------------------|--------------|-------------|-----|-----------------------|------|------|-------------|---------------------------|----------------------|-------------------------|------------------|------------------|------------------|------------------|-----------|-------------|-------------|---------|-----------------|-----------------------------|--|
| CALLOUT | | LOCATION | SERVICE | SUPPLY FAN | | | | | | | | | | COOLING COIL | | | | | | | | | | |
| TYPE | MARK | | | TYPE | MAX CFM [1] | QTY | ESP (IN W.G.) [3] [4] | RPM | HP | OUTSIDE AIR | | TOTAL CAPACITY (BTH) | SENSIBLE CAPACITY (BTH) | EAT – DB (DEG F) | EAT – WB (DEG F) | LAT – DB (DEG F) | LAT – WB (DEG F) | FLUID [5] | EWT (DEG F) | LWT (DEG F) | GPM [1] | MAX PD (FT H2O) | BRANCH CONNECTION SIZE (IN) | |
| | | | | | | | | | | CFM [2] | DUCT CONNECTION SIZE (IN) | | | | | | | | | | | | | |
| FCU | 1 | 102–ELEV EQUIP 1 | 102–ELEV EQUIP 1 | WALL MOUNTED | 270 | 1 | – | – | 1/60 | – | – | 7287 | 5658 | 80 | 67 | 60 | 58 | 30 | 44 | 54 | 2.1 | 3.2 | 3/4 | |
| FCU | 2 | 103–MECH | 104–ELEC | CONCEALED | 1495 | 2 | 0.25 | 1500 | 1/2 | – | – | 30575 | 28575 | 75 | 63 | 57.5 | 56 | 30 | 44 | 54 | 9.0 | 9.86 | 1 | |
| FCU | 3 | 105–BREAKROOM | 105–BREAKROOM | CASSETTE | 460 | 1 | – | – | 1/6 | 25 | 4 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 4 | 105–BREAKROOM | 105–BREAKROOM | CASSETTE | 460 | 1 | – | – | 1/6 | 25 | 4 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 5 | 105–BREAKROOM | 109–IT | CONCEALED | 460 | 2 | 0.25 | 1600 | 1/4 | – | – | 11665 | 9205 | 75 | 63 | 51.7 | 51.6 | 30 | 44 | 54 | 2.6 | 4.18 | 3/4 | |
| FCU | 6 | 114–WSP | 114–WSP | CASSETTE | 460 | 1 | – | – | 1/6 | 55 | 5 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 7 | 115–CONFERENCE | 115–CONFERENCE | CASSETTE | 460 | 1 | – | – | 1/6 | 30 | 4 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 8 | 115–CONFERENCE | 115–CONFERENCE | CASSETTE | 460 | 1 | – | – | 1/6 | 30 | 4 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 9 | 113–SUPERVISOR'S ACCOUNTING ROOM | 113–SUPERVISOR'S ACCOUNTING ROOM | CASSETTE | 460 | 1 | – | – | 1/6 | 45 | 5 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 10 | 117–SUPERVISOR | 117–SUPERVISOR | CASSETTE | 850 | 2 | – | – | 1/6 | 30 | 4 | 14900 | 13300 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.23 | 3/4 | |
| FCU | 11 | 117–SUPERVISOR | 117–SUPERVISOR | CASSETTE | 850 | 2 | – | – | 1/6 | 30 | 4 | 14900 | 13300 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.23 | 3/4 | |
| FCU | 12 | 202–INVERTERS | 202–INVERTERS | CASSETTE | 850 | 2 | – | – | 1/6 | – | – | 14900 | 13300 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.23 | 3/4 | |
| FCU | 13 | 210–TICKET SALES | 210–TICKET SALES, 211–LOST FOUND | CASSETTE | 460 | 1 | – | – | 1/8 | 65 | 5 | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 14 | 212–ELEC | 212–ELEC | CASSETTE | 460 | 1 | – | – | 1/6 | – | – | 10300 | 8400 | 75 | 63 | 53.8 | 52.8 | 30 | 44 | 54 | 2.5 | 2.77 | 3/4 | |
| FCU | 15 | 125–MAINT STORAGE | 125–MAINT STORAGE | CASSETTE | 460 | 1 | – | – | 1/6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |
| FCU | 16 | 125–MAINT STORAGE | 123–MAIN EQUIPMENT ROOM | CONCEALED | 1215 | 4 | 0.25 | 1600 | 1/4 | – | – | 32050 | 27030 | 75 | 63 | 54.7 | 53.9 | 30 | 44 | 54 | 7.1 | 19.37 | 1–1/4 | |
| FCU | 17 | 125–MAINT STORAGE | 124–ELECTRICAL | CONCEALED | 1690 | 2 | 0.25 | 1050 | 1/3 | – | – | 44205 | 37775 | 75 | 63 | 54.6 | 53.9 | 30 | 44 | 54 | 12.6 | 5.18 | 1–1/2 | |
| FCU | 18 | 120–MECH EQUIP | 120–MECH EQUIP | CASSETTE | 460 | 1 | – | – | 1/6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |
| FCU | 19 | 121–VENDOR EQUIPMENT ROOM | 121–VENDOR EQUIPMENT ROOM | CASSETTE | 460 | 1 | – | – | 1/6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | |
| FCU | 20 | 102–ELEV EQUIP 1 | 102–ELEV EQUIP 1 | WALL MOUNTED | 270 | 1 | – | – | 1/60 | – | – | 7827 | 5658 | 80 | 67 | 60 | 58 | 30 | 44 | 54 | 2.1 | 3.2 | 3/4 | |

| TERMINAL FAN COIL UNIT SCHEDULE – CONTINUED | | | | | | | | | | | | | |
|---------------------------------------------|------|----------------|-------------|-------------|-----------|-------------|-------------|---------|-----------------|-----------------------------|-----------------|-------------|-------|
| CALLOUT | | HEATING COIL | | | | | | | | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | CAPACITY (BTH) | EAT (DEG F) | LAT (DEG F) | FLUID [5] | EWT (DEG F) | LWT (DEG F) | GPM [1] | MAX PD (FT H2O) | BRANCH CONNECTION SIZE (IN) | MANUFACTURER | MODEL | |
| FCU | 1 | – | – | – | – | – | – | – | – | – | MULTIAQUA | MHWV-D9-H-1 | |
| FCU | 2 | – | – | – | – | – | – | – | – | – | JCI | FNP12 | |
| FCU | 3 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 4 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 5 | – | – | – | – | – | – | – | – | – | JCI | FHP–D06 | |
| FCU | 6 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 7 | 10240 | 68 | 95 | 30 | 120 | 100 | 2.5 | 2.22 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 8 | 10240 | 68 | 95 | 30 | 120 | 100 | 2.5 | 2.22 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 9 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 10 | 29590 | 68 | 95 | 30 | 120 | 100 | 3.0 | 2.22 | 3/4 | MODINE | SCW33HAEN | |
| FCU | 11 | 29590 | 68 | 95 | 30 | 120 | 100 | 3.0 | 2.22 | 3/4 | MODINE | SCW33HAEN | |
| FCU | 12 | – | – | – | – | – | – | – | – | – | MODINE | SCW33HAEN | |
| FCU | 13 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 14 | – | – | – | – | – | – | – | – | – | MODINE | SCW18HAEB | |
| FCU | 15 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 16 | – | – | – | – | – | – | – | – | – | JCI | FHP–D12 | |
| FCU | 17 | – | – | – | – | – | – | – | – | – | JCI | FNP20 | |
| FCU | 18 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 19 | 10475 | 68 | 95 | 30 | 120 | 100 | 3.0 | 3.07 | 3/4 | MODINE | SCW18HAEB | |
| FCU | 20 | – | – | – | – | – | – | – | – | – | MULTIAQUA | MHWV-D9-H-1 | |

SCHEDULE NOTES:
[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] MINIMUM CFM FOR HEATING AIR FLOW.
[3] STATIC PRESSURE EXTERNAL TO UNIT.
[4] MAXIMUM ALLOWABLE MOTOR ENERGY USE AT MAX FLOW AND TSP.
[5] WATER ENTERING WITH PROPYLENE GLYCOL AT THE PERCENTAGE NOTED.

RFI 531 - Mechanical FCU Voltage Coordination

Agree with rerouting to different panels, however see markups on the next page, prefer no more than 3 FSUs on a circuit, 4 max where needed

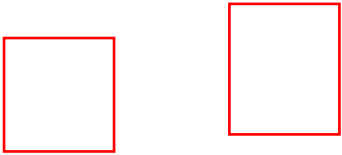
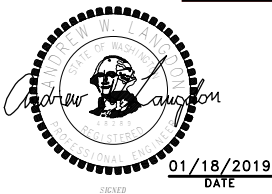
RFI 539 - FCU Elevation in Rooms Open to Structure

Mount FCUs as described below:

- FCU-12: Mount below the open unistrut grid located at 10'-7" AFF. See A03.10 for axonometric view. Mount FCUs no lower than 8'-0" AFF.
 - FCU-13: 210 - TICKET SALES space is not open to structure. Mount in ceiling at 8'-2" AFF.
 - FCU-15, 18, and 19: Mount FCUs such that the bottom face is aligned with the bottom of the suspended light fixtures.
- Coordinate with other items mounted in the space/ceilings.

FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH

| | | | | | | |
|-------------------------------|-------------------------|---------------------------|------------|----|--|---------------------------------|
| PRINTED: 6/12/2019 3:42:47 PM | LAST PRINTED BY: ZSMITH | | | | | FED.AID PROJ.NO. WA-2017-007-00 |
| SUBMITTAL DATE: 01/18/2019 | | | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | JOB NUMBER 14W121 |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | CONTRACT NO. 00**** |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | |
| MAR PROJ ENGR: C. TORRES | | CHANGE ORDER – 06/13/2019 | 06/13/2019 | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | |



SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
HVAC SCHEDULES

MB06.02

SHEET

OF

SHEETS

| TERMINAL CEILING FAN SCHEDULE | | | | | | | | | | | |
|-------------------------------|------|----------------|----------------|---------------|------------------|-----|-----------------|-------------------------|-------------------|-------|-------|
| CALLOUT | | LOCATION | SERVICE | FAN | | | MOTOR HP [1] | MAX SOUND LEVEL (dB) | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | BLADE TYPE | DIAMETER (FT) | RPM | | | MANUFACTURER | MODEL | |
| CF | 1 | 201–GREAT HALL | 201–GREAT HALL | AIRFOIL | 12 | 76 | 1/3 | 35 | BIG ASS SOLUTIONS | ES–12 | [2] |
| CF | 2 | 201–GREAT HALL | 201–GREAT HALL | AIRFOIL | 12 | 76 | 1/3 | 35 | BIG ASS SOLUTIONS | ES–12 | [2] |
| CF | 3 | 201–GREAT HALL | 201–GREAT HALL | AIRFOIL | 12 | 76 | 1/3 | 35 | BIG ASS SOLUTIONS | ES–12 | [2] |

SCHEDULE NOTES:
[1] PROVIDE DIRECT DRIVE PERMANENT MAGNET MOTOR.
[2] PROVIDE WITH 3 FT EXTENSION TUBE.



| TERMINAL VARIABLE AIR VOLUME BOX SCHEDULE | | | | | | | | | | | | | | |
|-------------------------------------------|------|----------------|------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------------------------------|-------------------------------|-------------------|----------------|----------------|----------------|----------------|-----|--------------------------------|
| CALLOUT | | LOCATION | SERVICE | CFM MAX | CFM MIN | AVAILABLE INLET SP (IN W.G.) | MIN OUTLET SP (IN W.G.) | HEATING COIL | | | | | | |
| TYPE | MARK | | | | | | | CAPACITY (MBH) | EAT (DEG F) | LAT (DEG F) | EWT (DEG F) | LWT (DEG F) | GPM | BRANCH CONNECTION SIZE (IN) |
| VAV | 1 | 103—MECH | 201—GREAT HALL | 1880 | 375 | 1.0 | 0.33 | 62.9 | 55 | 85.0 | 120 | 100 | 7.6 | 1 |
| VAV | 2 | 105—BREAKROOM | 101—SPRINKLER, 103—MECH, 107—TOILET, 118—VESSEL STOR, 203—CORRIDOR, 204—JANITOR CLOSET, 205—MEN RESTROOM, 206—WOMEN RESTROOM | 555 | 230 | 1.0 | 0.29 | 14.7 | 55 | 85.0 | 120 | 100 | 1.6 | 3/4 |
| VAV | 3 | 117—SUPERVISOR | 117—SUPERVISOR, 201—GREAT HALL, 209—VENDING, 210—TICKET SALES, 213—CORRIDOR, 214—VENDOR STORAGE | 2155 | 600 | 1.0 | 0.36 | 65.2 | 55 | 85.0 | 120 | 100 | 6.1 | 1 |

| TERMINAL VARIABLE AIR VOLUME BOX SCHEDULE – CONTINUED | | | | | | |
|-------------------------------------------------------|------|------------------------------|---------------------|-----------------|--------|-------|
| CALLOUT | | DUCT CONNECTION SIZE (IN) | MAX DISCHARGE NC | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | MANUFACTURER | MODEL | |
| VAV | 1 | 16 | 15 | ENVIROTEC | SDR–16 | |
| VAV | 2 | 8 | 15 | ENVIROTEC | SDR–8 | |
| VAV | 3 | 16 | 15 | ENVIROTEC | SDR–16 | |

| TERMINAL UNIT HEATER SCHEDULE | | | | | | | | | | | | | | | | | | |
|-------------------------------|------|-----------------|-----------------|------------|-----------------|-------------------|----------------|----------------|-----------|----------------|----------------|---------|------------|------|--------------------------------------|------------------|--------------|--|
| CALLOUT | | | | FAN | | HEATING COIL | | | | | | | ELECTRICAL | | MAX SOUND POWER LEVEL (dBA) | BASIS OF DESIGN | | |
| TYPE | MARK | | | CFM [1] | MOTOR HP (W) | CAPACITY (MBH) | EAT (DEG F) | LAT (DEG F) | FLUID [2] | EWT (DEG F) | LWT (DEG F) | GPM [1] | VOLTAGE | FLA | | MANUFACTU RER | MODEL | |
| UH | 1 | 135—WATER ENTRY | 135—WATER ENTRY | 250 | 3 | 7.5 | 24 | 85 | 30 | 120 | 100 | 2 | 120 | 0.30 | 55 | KING | HM1012—10/13 | |
| UH | 2 | 134—JANITOR | 134—JANITOR | 375 | 3 | 8.8 | 24 | 85 | 30 | 120 | 100 | 2 | 120 | 0.42 | 62 | KING | HM1012—11/15 | |
| UH | 3 | 133—WOMEN | 133—WOMEN | 375 | 3 | 17.0 | 24 | 85 | 30 | 120 | 100 | 2 | 120 | 0.42 | 64 | KING | HL1412—20/25 | |
| UH | 4 | 131—MEN | 131—MEN | 375 | 3 | 17.0 | 24 | 85 | 30 | 120 | 100 | 2 | 120 | 0.42 | 64 | KING | HL1412—20/25 | |

SCHEDULE NOTES:
[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] MINIMUM CFM FOR HEATING AIR FLOW.
[3] STATIC PRESSURE EXTERNAL TO UNIT.
[4] MAXIMUM ALLOWABLE MOTOR ENERGY USE AT MAX FLOW AND TSP.
[5] WATER ENTERING WITH PROPYLENE GLYCOL AT THE PERCENTAGE NOTED.



| | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|-------------------------|--|---------------------|--|-----------------------------|--|--|--------|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------|--|--|---------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\Fsi\14w121_BLDG_MECH | | | | | | | | | |  | |  <div>Washington State Department of Transportation WASHINGTON STATE FERRIES</div> | | SR 525 | | | MB06.03 |
| PRINTED: 1/18/2019 4:29:50 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. | | MUKILTEO TERMINAL (PHASE 2) | | | | | | | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | WA-2017-007-00 | | FERRY TERMINAL CONSTRUCTION | | | SHEET | | | | | | | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | REGION NO. STATE | | TERMINAL | | | 1337 | | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | 10 WASH | | HVAC SCHEDULES | | | OF | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | JOB NUMBER | | | | | 1521 | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | 14W121 | | | | | SHEETS | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONTRACT NO. | | | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | 00**** | | | | | | | | | | | | | |
| | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | | | |
| | | REVISION | | DATE | | | | | | | | | | | | | |
| | | | | BY | | | | | | | | | | | | | |

| Terminal HVAC Pump Schedule | | | | | | | | | | | | | | | | |
|-----------------------------|------|----------------|---------|--------|----------|------|------------|-----------------|----------|--------------|-------|------|-----------------|-------|-------|--|
| Callout | | Location | Service | Pump | | | | | Fluid | | Motor | | Basis of Design | | Notes | |
| Type | Mark | | | Type | Speed | RPM | Flow (GPM) | Total Head (ft) | Type [1] | Temp (deg F) | HP | BHP | Manufacturer | Model | | |
| P | 1 | 120-MECH EQUIP | HHW | INLINE | VARIABLE | 3283 | 60 | 117 | 30 | 120 | 5.00 | 3.48 | ARMSTRONG | 4380 | | |
| P | 2 | 120-MECH EQUIP | HHW | INLINE | VARIABLE | 3283 | 60 | 117 | 30 | 120 | 5.00 | 3.48 | ARMSTRONG | 4380 | | |
| P | 3 | 120-MECH EQUIP | CHW | INLINE | VARIABLE | 2913 | 32 | 104 | 30 | 44 | 5.00 | 1.96 | ARMSTRONG | 4380 | | |
| P | 4 | 120-MECH EQUIP | CHW | INLINE | VARIABLE | 2913 | 32 | 104 | 30 | 44 | 5.00 | 1.96 | ARMSTRONG | 4380 | | |

[1] WATER WITH PROPYLENE GLYCOL AT THE PERCENTAGE NOTED.
[2] PROVIDE WITH INITIAL IMPELLER AS SCHEDULED. FOLLOWING INSTALLATION AND BALANCING, PROVIDE REPLACEMENT OR TRIMMED IMPELLER FOR ACTUAL CONDITIONS.

| TERMINAL BOILER SCHEDULE | | | | | | | | | | | | | | | |
|--------------------------|------|------------|-----|----------|----------|-------------------|----------|------------------------|----------------------------|----------------|-----------------|-----------------------------------|---------|----------------------|------------------------------|
| CALLOUT | | | | BOILER | | | | | | | BASIS OF DESIGN | | | | |
| TYPE | MARK | | | LOCATION | SERVICE | NOMINAL kW [1] | TYPE [2] | WATER FLOW (GPM) | MIN WATER FLOW (GPM) | EWI (DEG F) | LWT (DEG F) | MINIMUM EFFICIENCY (ET) [5] | | WATER PD (FT H2O) | PRESSURE RATING (PSIG) |
| EB | 1 | 103 – MECH | HHW | 60 | ELECTRIC | 40 | 40 | 100 | 120 | 0 | 5.5 | 125 | LATTNER | S60LW-4803 | |

[1] INCLUDED FOR REFERENCE ONLY – DO NOT USE FOR FINAL SIZING OF EQUIPMENT.



| TERMINAL EXPANSION TANK SCHEDULE | | | | | | | | | | | | | | | |
|----------------------------------|------|----------------|---------|--------------|-------------------------|---------------|-------------|------------------------------|-------------------------------|--------------------------|----------------------------------|---------------------------------|-----------------|-------|-------|
| CALLOUT | | LOCATION | SERVICE | VOLUME (GAL) | ACCEPTANCE VOLUME (GAL) | DIMENSIONS | | ASSUMED CW FILL TEMP (DEG F) | OCCUPIED AMBIENT TEMP (DEG F) | EXTREME TEMP (DEG F) [1] | OPERATING TEMP RANGE (DEG F) [2] | OPERATING PRESSURE RANGE (PSIG) | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | | DIAMETER (IN) | HEIGHT (IN) | | | | | | MANUFACTURER | MODEL | |
| ET | 1 | 120-MECH EQUIP | HHW | 23 | 23 | 16 | 37 | 50 | 70 | 120 | 100-120 | 101 | ARMSTRONG | 85-L | |
| ET | 2 | 120-MECH EQUIP | CHW | 10 | 10 | 12 | 25 | 50 | 70 | 44 | 44-54 | 96 | ARMSTRONG | 35-L | |

[1] HIGHEST TEMP FOR HEATING SYSTEMS, LOWEST TEMP FOR COOLING SYSTEMS.
[2] DIFFERENCE BETWEEN (CW FILL TEMP AND EXTREME TEMP) FOR HEATING SYSTEMS, DIFFERENCE BETWEEN (OCCUPIED AMBIENT TEMP AND EXTREME TEMP) FOR COOLING SYSTEMS.

| TERMINAL RADIANT MANIFOLD SCHEDULE | | | | | | | | | | | | | | | | |
|------------------------------------|------|----------------|----------------|---------------|-----------------------------|----------------|----------------------------------|-----------------------|------------------|------------------------|-----------------------|--------------------------|------------------|-----------------|-------|-------|
| TYPE | MARK | LOCATION | SERVICE | MANIFOLD | | | | | | | | | | BASIS OF DESIGN | | NOTES |
| | | | | LOAD (BTH) | HEATED AREA (SQ. FT.) | EWT (DEG F) | WATER TEMP DROP (DEG F) | FLOW RATE (GPM) | WPD (FT W.C.) | HEATING LOOP | | | | MANUFACTURER | MODEL | |
| | | | | | | | | | | LOOP LENGTH (FT) | NUMBER OF LOOPS | TUBE SPACING (IN.) | TUBE MATERIAL | | | |
| RM | 1 | 201—GREAT HALL | 201—GREAT HALL | 55840 | 1,500 | 120 | 20 | 5.6 | 2.7 | 308 | 10 | 6 | HEPEX 5/8" | UPONOR | A272 | |
| RM | 2 | 201—GREAT HALL | 201—GREAT HALL | 55840 | 1,500 | 120 | 20 | 5.6 | 2.7 | 308 | 10 | 6 | HEPEX 5/8" | UPONOR | A272 | |

[1] MANIFOLD TO COME FULLY ASSEMBLED FROM MANUFACTURER.
[2] PROVIDE WITH MOUNTING BRACKETS, ISOLATION VALVES, BALANCING VALVES, FILL/PURGE PORTS, AIR VENTS, BALL VALVES, TEMPERATURE GAUGES, AND END CAPS.
[3] MANIFOLD TO BE STAINLESS STEEL ASSEMBLY.



| | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|-------------------------|--|---------------------------------|--|--------------------------|--|-------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------|--|---------------------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL HVAC SCHEDULES | | MB06.04 |
| PRINTED: 1/18/2019 4:30:01 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. WA-2017-007-00 | | REGION NO. STATE 10 WASH | | JOB NUMBER 14W121 | | | | | | | | CONTRACT NO. 00**** |
| SUBMITTAL DATE: 01/18/2019 | | | | | | | | | | | | | | | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | | | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | | | | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | |



| TERMINAL AIR TERMINAL SCHEDULE | | | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|--|--|
|--------------------------------|--|--|--|--|--|--|--|--|--|

| CALLOUT | AIR TERMINAL DESCRIPTION | AIRFLOW CAPACITY LIMITS (CFM) | | NOMINAL SIZE (IN) | | NECK DIMENSIONS (IN) | | | MAX NC | MAX TSP DROP (IN.W.G.) | MATERIAL | OPD | FINISH | BASIS OF DESIGN | | NOTES |
|---------|---------------------------------|-------------------------------|---------|-------------------|-------|----------------------|-----------------|-------|--------|------------------------|----------|-----|-----------|-----------------|--------|-------|
| | | MAXIMUM | MINIMUM | LENGTH | WIDTH | DIAMETER | FOR RECTANGULAR | | | | | | | MANUFACTURER | MODEL | |
| | | | | | | | LENGTH | WIDTH | | | | | | | | |
| EG-1 | CEILING MOUNTED EXHAUST GRILLE | 95 | 90 | 8 | 8 | — | 8 | 8 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| EG-2 | CEILING MOUNTED EXHAUST GRILLE | 55 | 50 | 6 | 6 | — | 6 | 6 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| EG-3 | CEILING MOUNTED EXHAUST GRILLE | 365 | 280 | 12 | 12 | — | 10 | 8 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| EG-4 | DUCT MOUNTED EXHAUST GRILLE | 40 | 40 | 14 | 6 | — | 14 | 6 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| EG-5 | SIDEWALL MOUNTED EXHAUST GRILLE | 365 | 345 | 12 | 8 | — | 12 | 8 | 20 | 0.02 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| LD-1 | LINEAR BAR DIFFUSER | 740 | 740 | 44 | 4 | — | 44 | 4 | 35 | 0.10 | ALUMINUM | NO | #26 WHITE | TITUS | CT-581 | [1] |
| RG-1 | DUCT MOUNTED RETURN GRILLE | 105 | 105 | 14 | 6 | — | 14 | 6 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| RG-2 | SIDEWALL MOUNTED RETURN GRILLE | 1450 | 800 | 18 | 14 | — | 18 | 14 | 20 | 0.02 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| RG-3 | CEILING MOUNTED RETURN GRILLE | 50 | 50 | 6 | 6 | 6 | — | — | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| RG-4 | SIDEWALL MOUNTED RETURN GRILLE | 590 | 590 | 22 | 10 | — | 20 | 8 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| RG-5 | SIDEWALL MOUNTED RETURN GRILLE | 1940 | 1940 | 24 | 16 | — | 22 | 14 | 35 | 0.04 | STEEL | NO | #26 WHITE | TITUS | 350RL | |
| SG-1 | DUCT MOUNTED SUPPLY GRILLE | 105 | 50 | 14 | 6 | — | 14 | 6 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 300RL | |
| SG-2 | SIDEWALL MOUNTED SUPPLY GRILLE | 1450 | 800 | 18 | 14 | — | 18 | 14 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 300RL | |
| SG-3 | CEILING MOUNTED SUPPLY GRILLE | 50 | 50 | 6 | 6 | 6 | — | — | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 300RL | |
| SG-4 | SIDEWALL MOUNTED SUPPLY GRILLE | 50 | 50 | 6 | 6 | — | 4 | 4 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 300RL | |
| SG-5 | SIDEWALL MOUNTED SUPPLY GRILLE | 590 | 590 | 22 | 10 | — | 20 | 8 | 20 | 0.01 | STEEL | NO | #26 WHITE | TITUS | 300RL | |
| SG-6 | SIDEWALL MOUNTED SUPPLY GRILLE | 1940 | 1940 | 24 | 16 | — | 22 | 14 | 35 | 0.04 | STEEL | NO | #26 WHITE | TITUS | 300RL | |

SCHEDULE NOTES:

[1] PROVIDE WITH 15 DEGREE 1/8" BLADES, CONCEALED FASTENING, BORDER TYPE 7.



| | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|--|------------------|--|--------------------|--|----------------|--|------------------|--|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------|--|---------|--|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL HVAC SCHEDULES | | MB06.05 | |
| PRINTED: 1/18/2019 4:30:12 PM | | LAST PRINTED BY: | | FED.AID PROJ.NO. | | WA-2017-007-00 | | SHEET | | | | | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | ZSMITH | | | | | | REGION NO. STATE | | 10 WASH | | 1339 | | OF | | | |
| DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | JOB NUMBER | | 14W121 | | 1521 | | SHEETS | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | | | | | CONTRACT NO. | | 00**** | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | | DATE | | BY | | | | | | | | | |

| TOLL BOOTH HEAT PUMP SCHEDULE | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------|------------------------|------------------------|-------------------------|-------------|---------------|-----|--------------------------|---------|-------|-----------|-------------------------------------|-----------------------|---------------------------------------------------|---------------------------------------------------|--------|-------------------------------|-------------------------|-------------------------|-------------------------------------|
| CALLOUT | | LOCATION | SERVICE | MINIMUM OSA (CFM) | SUPPLY FAN | | | | | | DX SYSTEM | | | | | | DX COOLING | | | |
| TYPE | MARK | | | | FAN TYPE | DRIVE TYPE | CFM | ESP (IN W.C.) [3] [4] | MOTOR | | | COMPRESSOR | | | | REFER | NOM COOLING TONS [6] | EAT DB/WB (DEG F) | LAT DB/WB (DEG F) | MIN EFFICIENCY (SEER) [11] |
| | | | | | | | | | RPM [1] | SPEED | NOM HP | NO. OF CIRCUITS, COMPRESSORS [9] | TYPE OF COMPRESSOR | NO. OF COOLING STAGES, EACH COMPRESSOR [10] | NO. OF HEATING STAGES, EACH COMPRESSOR [10] | | | | | |
| SS | 1 | 150-EQUIPMENT RM | 150-EQUIPMENT ROOM | 50 | CENT | DIRECT | 600 | 0.5 | VAR | VAR | 1-1/3 | 1 | SCROLL | 2 | - | R-410A | 2 | 75 | 55 | 17 |
| SS | 2 | 156-TOLL BOOTH 4 (ADA) | 156-TOLL BOOTH 4 (ADA) | 50 | CENT | DIRECT | 500 | 0.5 | VAR | VAR | 1-1/3 | 1 | SCROLL | 2 | 2 | R-410A | 2 | 75 | 55 | 17 |

| TOLL BOOTH HEAT PUMP SCHEDULE – CONTINUED | | | | | | | | | | | | |
|-------------------------------------------|------|----------------------------|-------------------|-------------------|----------------------|---------------------|------------------|----------------------|-------------|-----------------|-----------|------------|
| CALLOUT | | DX HEATING | | | | AUX ELEC HEAT | | MAX SOUND LEVELS [8] | FILTER TYPE | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | HEATING CAPACITY (BTH) [6] | EAT DB/WB (DEG F) | LAT DB/WB (DEG F) | MIN EFFICIENCY (COP) | TOTAL CAPACITY (KW) | NO. STEP CONTROL | | | MANUFACTURER | MODEL | |
| | | | | | | | | | | | | |
| SS | 1 | — | — | — | — | 5 | — | 40 | MERV 8 | TRANE | 4TTR7024A | [10], [11] |
| SS | 2 | 24000 | 70 | 80 | 3.8 | 5 | 1 | 40 | MERV 8 | TRANE | 4TWR7024 | [10], [12] |

SCHEDULE NOTES:
[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] OUTSIDE AIR QUANTITY WITH DAMPER AT MINIMUM POSITION AND UNIT AT MAXIMUM CONDITIONS.
[3] STATIC PRESSURE EXTERNAL TO UNIT.
[4] INCLUDES ALLOWANCE FOR FILTER LOADING.
[5] NOMINAL CAPACITY INCLUDED FOR REFERENCE ONLY – DO NOT USE FOR FINAL SIZING OF EQUIPMENT.
[6] UNIT SOUND POWER SHALL NOT EXCEED THE LEVEL INDICATED
[7] NUMBER OF COMPLETE CIRCUITS, EACH SERVED BY A DEDICATED COMPRESSOR.
[8] NUMBER OF STAGES FOR EACH COMPRESSOR.
[9] MINIMUM EFFICIENCY AS SCHEDULED AND AS REQUIRED BY THE WASHINGTON STATE NON-RESIDENTIAL ENERGY CODE.
[10] PROVIDE WITH WHITE GRILLE.
[11] PROVIDE CU-1 – ASSOCIATED CONDENSING UNIT.
[12] PROVIDE CU-2 – ASSOCIATED CONDENSING UNIT.

| TOLL BOOTH EXHAUST FAN SCHEDULE | | | | | | | | | | | | | | |
|---------------------------------|------|-------------|-------------|----------|------------|----------------------|-------|-------|-------|-----|---------------|-----------------|--------|-------|
| CALLOUT | | LOCATION | SERVICE | FAN TYPE | FAN | | | MOTOR | | | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | CFM [1] | ESP (IN W.G.) [2] | RPM | RPM | WATTS | V | MAX RAD NC | MANUFACTURER | MODEL | |
| EF | 3 | 157-TOILET | 157-TOILET | INLINE | 120 | 0.25 | 1,075 | 1,075 | 45 | 115 | 56 | COOK | GC-148 | [3] |
| EF | 4 | 151-ELEC | 151-ELEC | INLINE | 100 | 0.25 | 1,075 | 1,075 | 45 | 115 | 56 | COOK | GC-148 | [3] |
| EF | 5 | 152-STORAGE | 152-STORAGE | INLINE | 100 | 0.25 | 1,075 | 1,075 | 45 | 115 | 56 | COOK | GC-148 | [3] |

SCHEDULE NOTES:
[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] STATIC PRESSURE EXTERNAL TO UNIT.
[3] PROVIDE WITH FAN SPEED CONTROLLER 5 AMP 120 VOLT, WALL CAP (RND) WCR-6, WHITE ALUMINUM GRILLE, AND INTEGRAL BACK DRAFT DAMPER.

| TOLL BOOTH UNIT HEATER SCHEDULE | | | | | | | | | | |
|---------------------------------|------|-------------|-------------|------------|-----------------|------------|-------|-----------------|----------------|-------|
| CALLOUT | | LOCATION | SERVICE | FAN | CAPACITY (W) | ELECTRICAL | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | CFM [1] | | VOLTAGE | FLA | MANUFACTURER | MODEL | |
| UH | 5 | 157-TOILET | 157-TOILET | 185 | 1250.0 | 120 | 10.40 | KING | LPW122T-S2-HRC | [2] |
| UH | 6 | 151-ELEC | 151-ELEC | 185 | 1250.0 | 120 | 10.40 | KING | LPW122T-S2-HRC | [2] |
| UH | 7 | 152-STORAGE | 152-STORAGE | 185 | 1250.0 | 120 | 10.40 | KING | LPW122T-S2-HRC | [2] |

SCHEDULE NOTES:
[1] WITH UNIT AT MAXIMUM CONDITIONS.
[2] PROVIDE WITH WHITE GRILLE.

| TOLL BOOTH AIR TERMINAL SCHEDULE | | | | | | | | | | | | | | | | | |
|----------------------------------|---------------------------------|-------------------------------|---------|-------------------|-------|----------------------|-----------------|-------|--------|---------------------------|----------|-----|-----------|-----------------|-------|-------|--|
| CALLOUT | AIR TERMINAL DESCRIPTION | AIRFLOW CAPACITY LIMITS (CFM) | | NOMINAL SIZE (IN) | | NECK DIMENSIONS (IN) | | | MAX NC | MAX TSP DROP (IN.W.G.) | MATERIAL | OPD | FINISH | BASIS OF DESIGN | | NOTES | |
| | | MAXIMUM | MINIMUM | LENGTH | WIDTH | DIAMETER | FOR RECTANGULAR | | | | | | | MANUFACTURER | MODEL | | |
| | | | | | | | LENGTH | WIDTH | | | | | | | | | |
| RG-6 | SIDEWALL MOUNTED EXHAUST GRILLE | 300 | 150 | 14 | 6 | — | 14 | 6 | 24 | 0.03 | STEEL | NO | #26 WHITE | TITUS | 350RL | | |
| RG-7 | SIDEWALL MOUNTED EXHAUST GRILLE | 600 | 500 | 18 | 6 | — | 18 | 6 | 36 | 0.02 | STEEL | NO | #26 WHITE | TITUS | 350RL | | |
| SG-7 | SIDEWALL MOUNTED EXHAUST GRILLE | 300 | 150 | 14 | 6 | — | 14 | 6 | 24 | 0.03 | STEEL | NO | #26 WHITE | TITUS | 300RL | | |
| SG-8 | SIDEWALL MOUNTED EXHAUST GRILLE | 600 | 500 | 18 | 6 | — | 18 | 6 | 36 | 0.02 | STEEL | NO | #26 WHITE | TITUS | 300RL | | |

RFI 533 - Toll Exposed Ducting

Mount ductwork in the space above ceiling and provide lay-in style GRDs.



FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH

PRINTED: 1/18/2019 4:30:26 PM

LAST PRINTED BY: ZSMITH

SUBMITTAL DATE: 01/18/2019

DESIGNED BY: O. JARVEGREN

ENTERED BY: Z. SMITH

CHECKED BY: A. LANGDON

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

ASST SECRETARY: A. SCARTON

CONFORMED DRAWINGS

REVISION

01/18/2019

DATE

BY

FED.AID PROJ.NO. WA-2017-007-00

REGION NO. STATE 10 WASH

JOB NUMBER 14W121

CONTRACT NO. 00****

01/18/2019

DATE

DATE

Washington State Department of Transportation WASHINGTON STATE FERRIES

SR 525

RFI 533

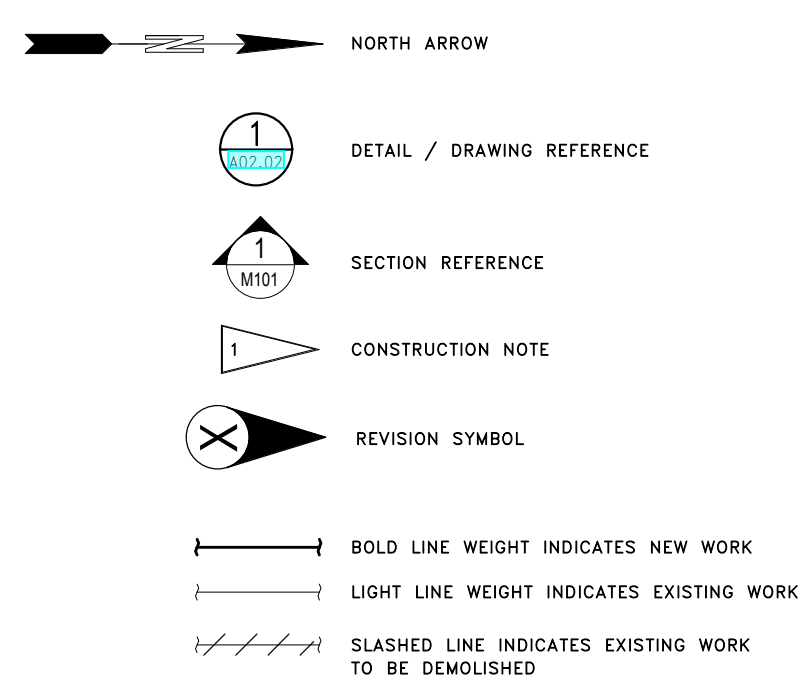
MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION

TOLL PLAZA HVAC SCHEDULES

MB06.06

SHEET 1340 OF 1521 SHEETS

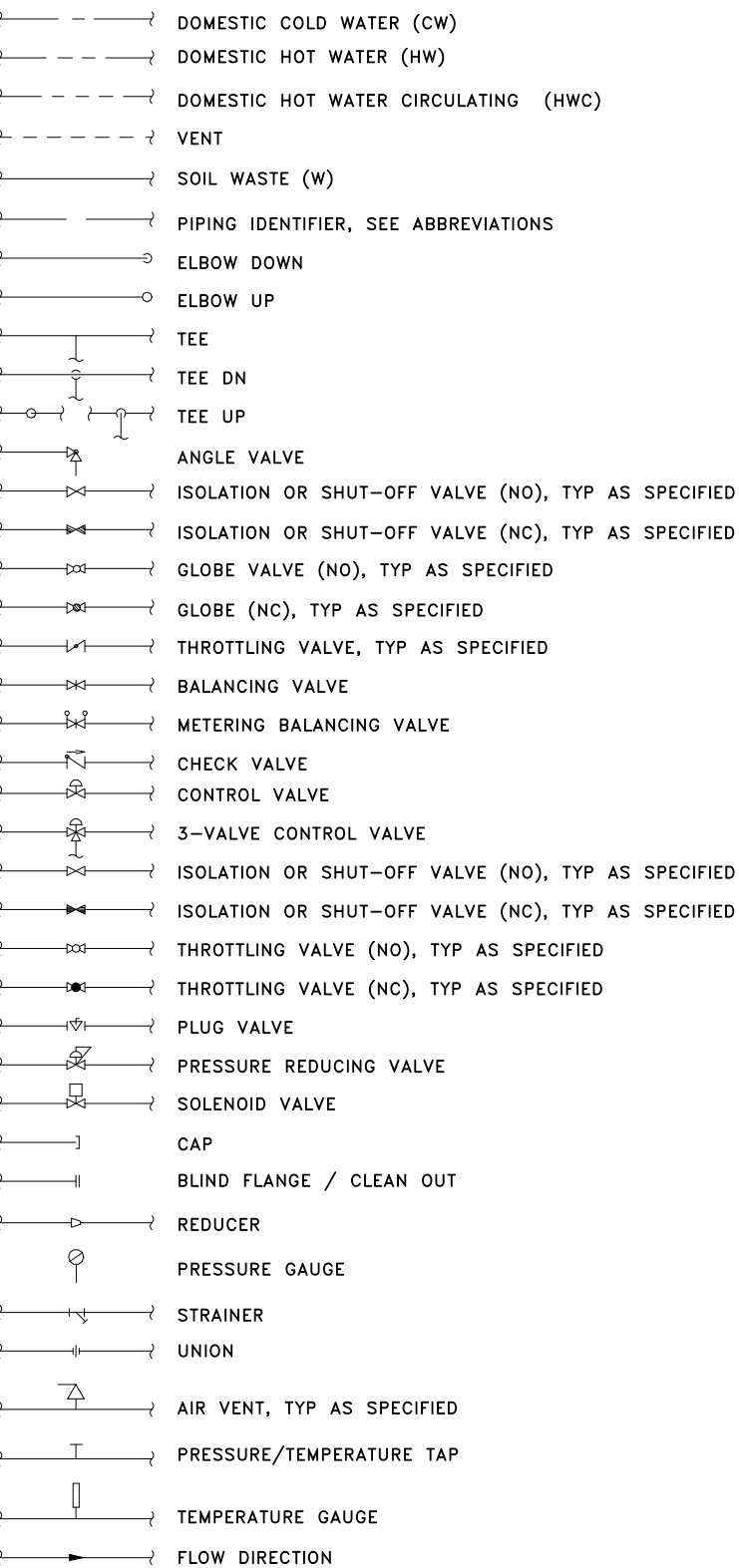
GENERAL LEGEND



PLUMBING ABBREVIATIONS

| | | | |
|------|------------------------------------|--------|-------------------------|
| AFF | ABOVE FINISHED FLOOR | O | OXYGEN |
| BOP | BOTTOM OF PIPE | PC | PUMPED CONDENSATE |
| BP | BOOSTER PUMP | PLBG | PLUMBING |
| BT | BUFFER TANK | PRV | PRESSURE REDUCING VALVE |
| BV | BALANCING VALVE | PRW | PUMPED RAIN WATER |
| CI | CAST IRON | RWL | RAIN WATER LEADER |
| CIRC | CIRCULATING | RECIRC | RECIRCULATING |
| CW | CITY WATER; DOMESTIC COLD WATER | RD | ROOF DRAIN |
| CO | CLEAN OUT | S, SAN | SANITARY |
| DOM | DOMESTIC | ST | STORM |
| DR | DRAIN | SS | SERVICE SINK |
| DF | DRINKING FOUNTAIN | TD | TRENCH DRAIN |
| DN | DOWN | UPC | UNIFORM PLUMBING CODE |
| FCO | FLOOR CLEAN OUT | V | VENT |
| FD | FLOOR DRAIN | VA | VALVE |
| FPHB | FREEZE PROOF HOSE BIBB | VAC | VACUUM |
| GPH | GALLONS PER HOUR | VB | VACUUM BREAKER |
| HB | HOSE BIBB | VTR | VENT THRU ROOF |
| HW | DOMESTIC HOT WATER | W | WASTE; WATER; WIDE(DIM) |
| HWC | DOMESTIC HOT WATER CIRCULATING | WC | WATER CLOSET |
| IPC | INTERNATIONAL PLUMBING CODE | WCO | WALL CLEAN OUT |
| JAN | JANITOR | WFS | WATER FLOW SWITCH |
| KS | KITCHEN SINK | Y | WYE |
| LAV | LAVATORY | | |
| NPW | NON--POTABLE WATER | | |
| NO | NUMBER | | |



PLUMBING LEGEND

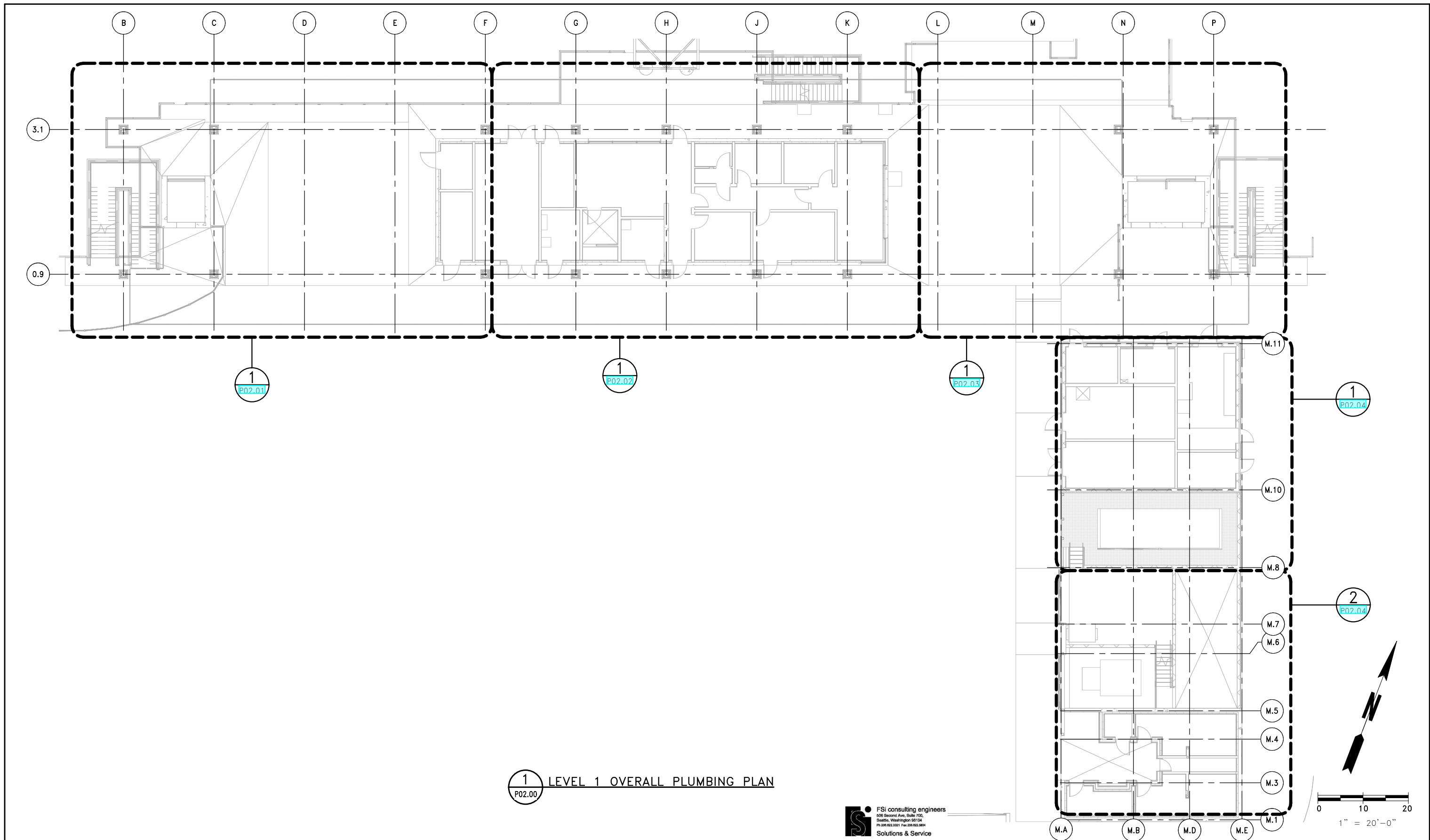




PLUMBING GENERAL NOTES

1. PROVIDE COMPLETE SUPPORTS, SEISMIC AND WIND RESTRAINTS FOR ALL PIPES AND EQUIPMENT PER SPECIFICATIONS, AS REQUIRED, AND AS SHOWN ON THE DRAWINGS.
2. PROVIDE ALL REQUIRED MISCELLANEOUS STRUCTURAL STEEL, SUPPORTS, ATTACHMENTS, AND ANCHORAGES.
3. PROVIDE ANCHOR BOLTS OF SIZE, TYPE, AND LENGTH AS REQUIRED TO SATISFY THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS, THE SPECIFICATIONS, AND AS INDICATED ON DRAWINGS.
4. PROVIDE ADDITIONAL MISCELLANEOUS STRUCTURAL MEMBERS BETWEEN STRUCTURAL ELEMENTS AS REQUIRED TO RESIST FORCES AND MEET DEFLECTION REQUIREMENTS. ALL MISCELLANEOUS STRUCTURAL MEMBERS AND ANCHORAGES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WASHINGTON. NO WELDING, BOLTING, OR OTHER MEANS OF ATTACHMENT FOR SUPPORT OR RESTRAINT SHALL BE MADE ON PORTIONS OF STRUCTURAL MEMBERS AT OR NEAR CONNECTIONS BETWEEN STRUCTURAL MEMBERS OR ON ELEMENTS DESIGNATED IN THE SEISMIC LOAD RESISTING SYSTEM UNLESS APPROVED BY THE CONTRACTING OFFICER.
5. PROVIDE MISCELLANEOUS STRUCTURAL STEEL SHOP DRAWINGS AND CALCULATIONS FOR REVIEW BY THE CONTRACTING OFFICER. ALL REQUIRED MISCELLANEOUS STRUCTURAL MEMBERS, BOLTS, AND WELDS SHALL BE DESIGNED AND MEET REQUIREMENTS OF THE SPECIFICATIONS.



| | | | | | | | | | | | | | | | | |
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| PRINTED: 1/18/2019 4:31:09 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. WA-2017-007-00 | | REGION NO. STATE 10 WASH | | JOB NUMBER 14W121 | | | | | | MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | | |
| SUBMITTAL DATE: 01/18/2019 | | DESIGNED BY: O. JARVEGREN | | ENTERED BY: Z. SMITH | | CHECKED BY: A. LANGDON | | MAR PROJ ENGR: C. TORRES | | DIR TERM ENGR: N. MCINTOSH | | PLUMBING INDEX, LEGEND, ABBREVIATIONS AND GENERAL NOTES | | SHEET 1341 OF 1521 SHEETS | | |
| ASST SECRETARY: A. SCARTON | | | | CONFORMED DRAWINGS | | 01/18/2019 | | REVISION | | DATE | | BY | | | | |



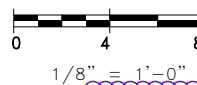
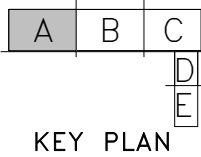
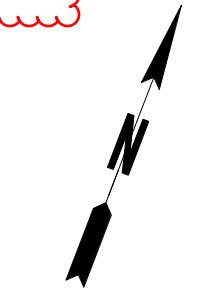
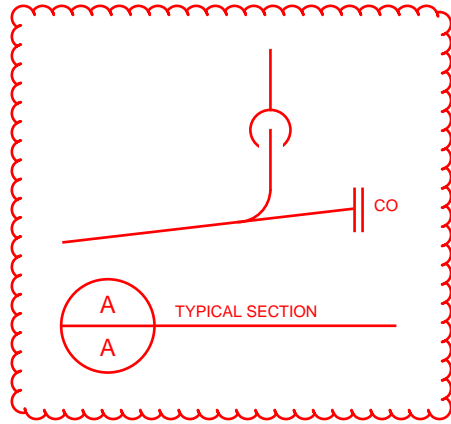
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| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | |  | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL – LEVEL 1 OVERALL PLUMBING PLAN | | P02.00 | |
| PRINTED: 1/18/2019 4:31:46 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. WA-2017-007-00 | | REGION NO. STATE 10 WASH | | JOB NUMBER 14W121 | | | | | | | | CONTRACT NO. 00**** | |
| SUBMITTAL DATE: 01/18/2019 | | DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | CONFORMED DRAWINGS | | 01/18/2019 | | REVISION | | DATE | | BY | | | |

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.
5. PROVIDE HEAT TRACE FOR ALL CW, HW, HWC, RHS PIPING EXPOSED TO OUTSIDE AMBIENT CONDITIONS.

CONSTRUCTION NOTES

1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/AD6.13 WITHIN THE ARCHITECTURAL DRAWINGS.
2. CONNECT TO EXISTING 3"Ø CW. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
3. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 2/AD6.13 WITHIN THE ARCHITECTURAL DRAWINGS.



RFI 078, Rev 2
Page 6 of 8

1 LEVEL 1 PLUMBING PLAN SECTOR A
P02.01

FSI consulting engineers
509 Second Ave, Suite 700,
Seattle, Washington 98104
PH 206.922.3241 Fax 206.922.3804

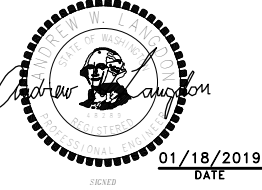
Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
PLUMBING PLAN - SECTOR A

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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | RFI 78 | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | | |
| DIR TERM ENGR: N. MCINTOSH | | | |
| ASST SECRETARY: A. SCARTON | | | |

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| FED.AID PROJ.NO. WA-2017-007-00 |
| REGION NO. STATE 10 WASH |
| JOB NUMBER 14W121 |
| CONTRACT NO. 00**** |



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| REVISION | DATE | BY |
| RFI 078 | 4/12/19 | |
| CONFORMED DRAWINGS | 01/18/2019 | |

RFI 078 - Rain Leader Conflict

The following is in response to the questions on page 1 of this RFI.

1. The angle orientation as shown on page 3 of this RFI is acceptable.

2. At the plate on the L2 topping slab, provide the following:

Use 14" square plates typ uno per details 2/SB06.01, 3/SB06.01, 4/SB06.01, 7/SB06.01 & 8/SB06.01.

At rain leaders, use 14" x 1'-0" plates (5" north of col CL and 7" south of col CL) per these same details.

Note that for 5/SB06.01, 14" x 1'-0" plate (5" north of col CL and 7" south of col CL) is to be used.

The baseplates directly atop & below the wide-flange beams should be as indicted on the drawings.

3. At Grids E & L, the rainwater leader needs to shift to the north ~1" so that it does not conflict with the beam flanges. Verify shift of rainwater leader with Arch.

4. Moving the studs at the proposed locations as indicated on page 5 of this RFI is acceptable.

5. Revising the angle size at the proposed locations as indicated on page 5 of this RFI is acceptable.

Please refer to specification section 22 10 00 for cleanout requirements. For additional clarification, see sample sketches on pages 6-8 of this RFI response (drawings P02.01, P02.02, and P02.03).

Response to item 3 - referencing detail 3/A06.13 rainwater leaders at grid E and L can move 1" north to avoid flange conflict. The wood siding on the wall behind the RWL need to be carefully adjusted so the RWL sits between 2 "battens" (LMN)

RFI 235 - Men Restroom 205 Floor Cleanouts

Confirmed that floor cleanouts in question (clouded and highlighted in yellow on attached pages) can be eliminated. As a general reminder, not all cleanouts are shown on plan. Per specification 221000, we expect cleanouts to be installed in locations dictated by the Uniform Plumbing Code (at the end of chase-ganged fixtures, under urinals, at direction changes exceeding 135°, etc.).

RFI 163 - Water Line Size

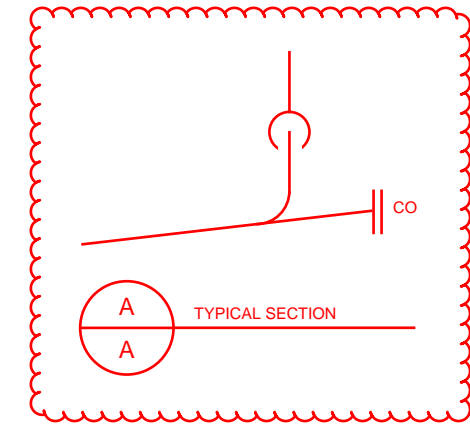
MWWD requires 2-inch diameter buried piping downstream of the 2-inch meter, which is why the HDPE piping between the buildings is that size. Drawing C08.14 shows a 2-inch x 3-inch reducer prior to the connection to the Terminal Building, which is correct. There should also be a 2-inch x 2.5-inch reducer at the connection point on the west side of the Maintenance Building. Stainless steel insert sleeves should be included at the connection points, per the clouded call-out on Drawing C08.14. The piping and fittings within the Maintenance Building should remain as 2.5-inch diameter.

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.
5. PROVIDE HEAT TRACE FOR ALL CW, HW, HWC, RHS PIPING EXPOSED TO OUTSIDE AMBIENT CONDITIONS.

CONSTRUCTION NOTES

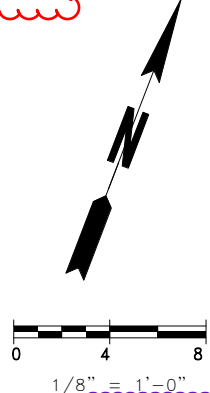
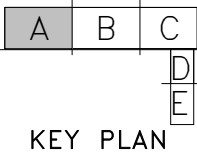
1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.
2. CONNECT TO EXISTING 3"Ø CW. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
3. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 2/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.




1 LEVEL 1 PLUMBING PLAN SECTOR A
P02.01



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Page 6 of 8



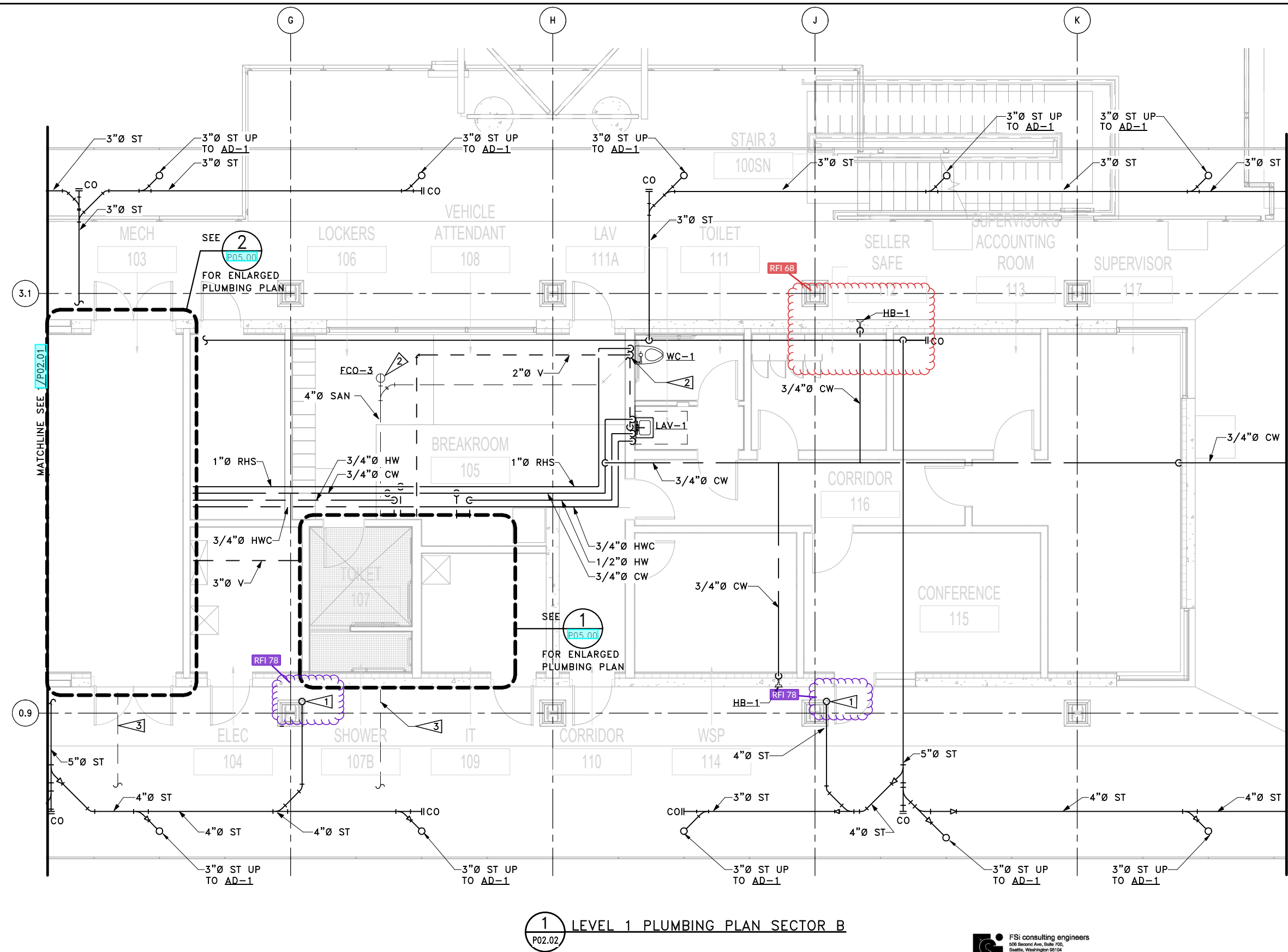
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| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSI\14w121_BLDG_MECH | | | | | | | | | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | <div>SR 525</div> <div>MUKILTEO TERMINAL (PHASE 2)</div> <div>FERRY TERMINAL CONSTRUCTION</div> <div>TERMINAL – LEVEL 1</div> <div>PLUMBING PLAN – SECTOR A</div> | | | RFI 78 | P02.01 |
| PRINTED: 1/18/2019 4:32:39 PM | | LAST PRINTED BY: ZSMITH | | FED.AID PROJ.NO. WA-2017-007-00 | | REGION NO. STATE 10 WASH | JOB NUMBER 14W121 | CONTRACT NO. 00**** | | | | | | | | |
| SUBMITTAL DATE: 01/18/2019 | | DESIGNED BY: O. JARVEGREN | | 01/18/2019 | | | | | | | | | | | | |
| ENTERED BY: Z. SMITH | | 01/18/2019 | | 01/18/2019 | | | | | | | | | | | | |
| CHECKED BY: A. LANGDON | | 01/18/2019 | | 01/18/2019 | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | DIR TERM ENGR: N. MCINTOSH | | ASST SECRETARY: A. SCARTON | | REVISION | | DATE | | BY | | DATE | DATE | SHEET 1343 OF 1521 SHEETS | | |

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

CONSTRUCTION NOTES

1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.
2. CONNECT TO EXISTING 4"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
3. EXISTING 4"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.



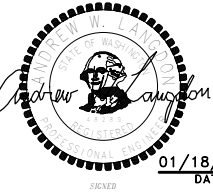
1 LEVEL 1 PLUMBING PLAN SECTOR B
P02.02

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Seattle, Washington 98104
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| ENTERED BY: Z. SMITH | CHECKED BY: A. LANGDON |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH |
| ASST SECRETARY: A. SCARTON | |
| CONFORMED DRAWINGS | REVISION |
| DATE | BY |

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| FED.AID PROJ.NO. WA-2017-007-00 |
| REGION NO. STATE 10 WASH |
| JOB NUMBER 14W121 |
| CONTRACT NO. 00**** |



01/18/2019
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Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
PLUMBING PLAN - SECTOR B

P02.02
SHEET
1344
OF
1521
SHEETS

RFI 078 - Rain Leader Conflict

The following is in response to the questions on page 1 of this RFI.

1. The angle orientation as shown on page 3 of this RFI is acceptable.

2. At the plate on the L2 topping slab, provide the following:
Use 14" square plates typuno per details 2/SB06.01, 3/SB06.01, 4/SB06.01, 7/SB06.01 & 8/SB06.01.
At rain leaders, use 14" x 1'-0" plates (5" north of col CL and 7" south of col CL) per these same details.
Note that for 5/SB06.01, 12" x 1'-0" plate (5" north of col CL and 7" south of col CL) is to be used.
The baseplates directly atop & below the wide-flange beams should be as indicted on the drawings.

3. At Grids E & L, the rainwater leader needs to shift to the north ~1" so that it does not conflict with the beam flanges. Verify shift of rainwater leader with Arch.

4. Moving the studs at the proposed locations as indicated on page 5 of this RFI is acceptable.

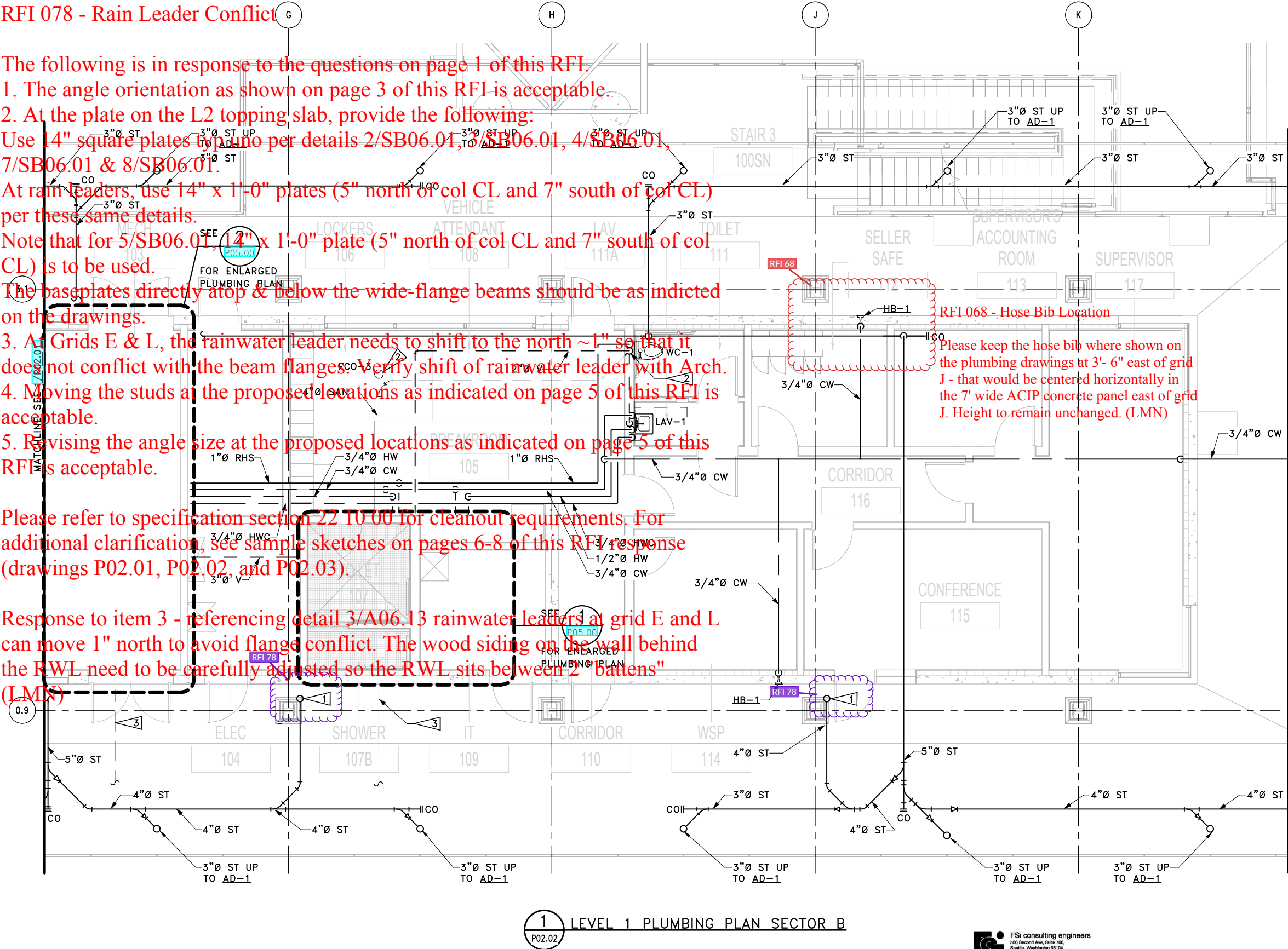
5. Revising the angle size at the proposed locations as indicated on page 5 of this RFI is acceptable.

Please refer to specification section 22 10 00 for cleanout requirements. For additional clarification, see sample sketches on pages 6-8 of this RFI response (drawings P02.01, P02.02, and P02.03).

Response to item 3 - referencing detail 3/A06.13 rainwater leaders at grid E and L can move 1" north to avoid flange conflict. The wood siding on the wall behind the RWL need to be carefully adjusted so the RWL sits between 2" battens" (LMN)

- GENERAL NOTES
- 1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
 - 2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
 - 3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
 - 4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

- CONSTRUCTION NOTES
- 1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.
 - 2. CONNECT TO EXISTING 4"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
 - 3. EXISTING 4"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.



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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 1
PLUMBING PLAN – SECTOR B

P02.02
SHEET
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| SUBMITTAL DATE: 01/18/2019 | | REGION NO. STATE 10 WASH | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | JOB NUMBER 14W121 | |
| ENTERED BY: Z. SMITH | 01/18/2019 | CONTRACT NO. 00**** | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | | |
| DIR TERM ENGR: N. MCINTOSH | | | |
| ASST SECRETARY: A. SCARTON | | | |
| | CONFORMED DRAWINGS | 01/18/2019 | |
| | REVISION | DATE | BY |



GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

CONSTRUCTION NOTES

1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.
2. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 2/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.
3. ROUTE PIPING THROUGH CENTER OF STRUCTURAL BEAM. SEE STRUCTURAL FOR PENETRATION LOCATION AND DIMENSIONS.

RFI 078 - Rain Leader Conflict

The following is in response to the questions on page 1 of this RFI.

1. The angle orientation as shown on page 3 of this RFI is acceptable.

2. At the plate on the L2 topping slab, provide the following:

Use 14" square plates typ uno per details 2/SB06.01, 3/SB06.01, 4/SB06.01, 7/SB06.01 & 8/SB06.01.

At rain leaders, use 14" x 1'-0" plates (5" north of col CL and 7" south of col CL) per these same details.

Note that for 5/SB06.01, 14" x 1'-0" plate (5" north of col CL and 7" south of col CL) is to be used.

The baseplates directly atop & below the wide-flange beams should be as indicted on the drawings.

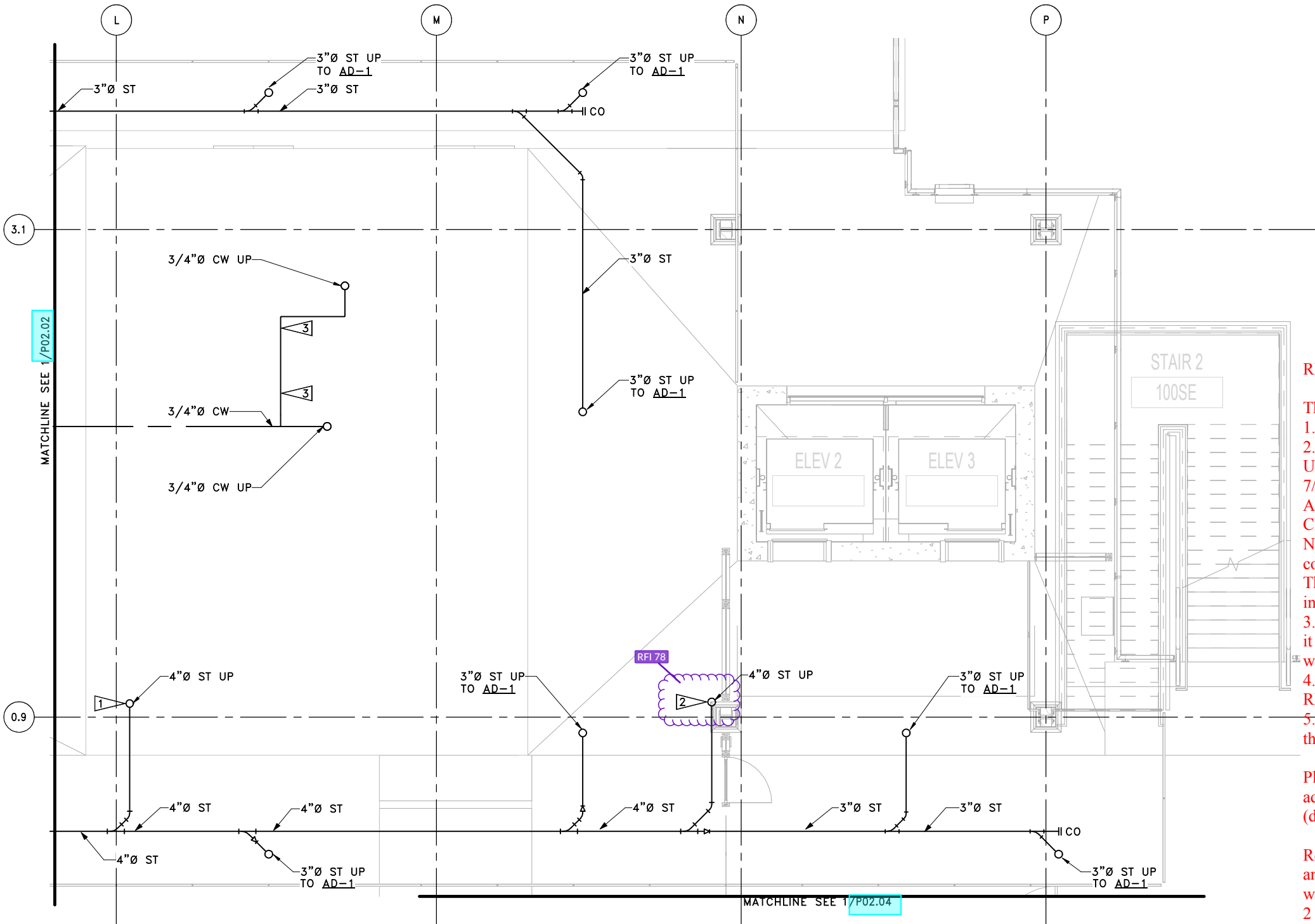
3. At Grids E & L, the rainwater leader needs to shift to the north ~1" so that it does not conflict with the beam flanges. Verify shift of rainwater leader with Arch.

4. Moving the studs at the proposed locations as indicated on page 5 of this RFI is acceptable.

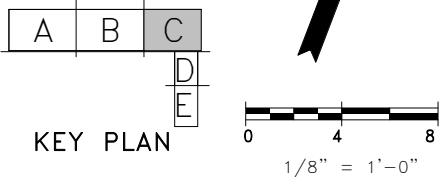
5. Revising the angle size at the proposed locations as indicated on page 5 of this RFI is acceptable.

Please refer to specification section 22 10 00 for cleanout requirements. For additional clarification, see sample sketches on pages 6-8 of this RFI response (drawings P02.01, P02.02, and P02.03).

Response to item 3 - referencing detail 3/A06.13 rainwater leaders at grid E and L can move 1" north to avoid flange conflict. The wood siding on the wall behind the RWL need to be carefully adjusted so the RWL sits between 2 "battens" (LMN)



1 LEVEL 1 PLUMBING PLAN SECTOR C
P02.03



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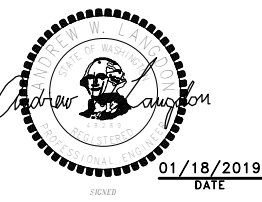
SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 1
PLUMBING PLAN – SECTOR C

P02.03
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OF
1521
SHEETS

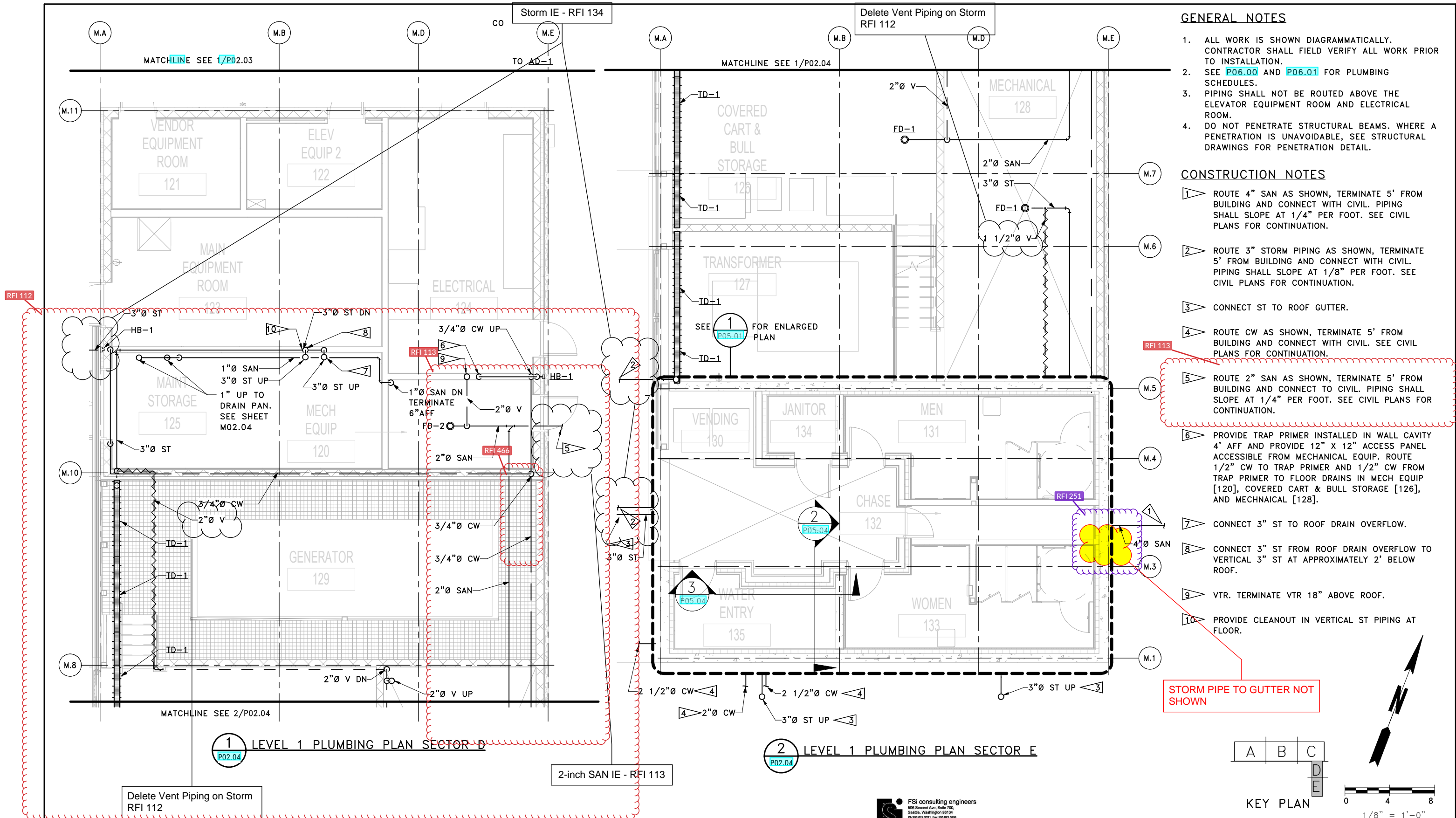
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| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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REGION NO. STATE
10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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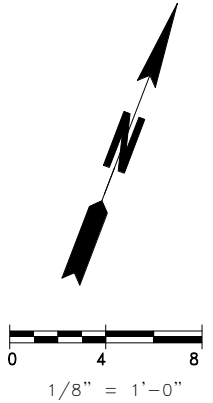
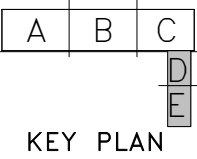
GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE **P06.00** AND **P06.01** FOR PLUMBING SCHEDULES.
- PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
- DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

CONSTRUCTION NOTES

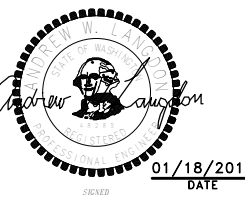
- ROUTE 4" SAN AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. PIPING SHALL SLOPE AT 1/4" PER FOOT. SEE CIVIL PLANS FOR CONTINUATION.
- ROUTE 3" STORM PIPING AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. PIPING SHALL SLOPE AT 1/8" PER FOOT. SEE CIVIL PLANS FOR CONTINUATION.
- CONNECT ST TO ROOF GUTTER.
- ROUTE CW AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. SEE CIVIL PLANS FOR CONTINUATION.
- ROUTE 2" SAN AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT TO CIVIL. PIPING SHALL SLOPE AT 1/4" PER FOOT. SEE CIVIL PLANS FOR CONTINUATION.
- PROVIDE TRAP PRIMER INSTALLED IN WALL CAVITY 4' AFF AND PROVIDE 12" X 12" ACCESS PANEL ACCESSIBLE FROM MECHANICAL EQUIP. ROUTE 1/2" CW TO TRAP PRIMER AND 1/2" CW FROM TRAP PRIMER TO FLOOR DRAINS IN MECH EQUIP [120], COVERED CART & BULL STORAGE [126], AND MECHANICAL [128].
- CONNECT 3" ST TO ROOF DRAIN OVERFLOW.
- CONNECT 3" ST FROM ROOF DRAIN OVERFLOW TO VERTICAL 3" ST AT APPROXIMATELY 2' BELOW ROOF.
- VTR. TERMINATE VTR 18" ABOVE ROOF.
- PROVIDE CLEANOUT IN VERTICAL ST PIPING AT FLOOR.

STORM PIPE TO GUTTER NOT SHOWN



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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | | |
| DIR TERM ENGR: N. MCINTOSH | | | |
| ASST SECRETARY: A. SCARTON | | | |

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| FED.AID PROJ.NO. | WA-2017-007-00 |
| REGION NO. STATE | 10 WASH |
| JOB NUMBER | 14W121 |
| CONTRACT NO. | 00**** |

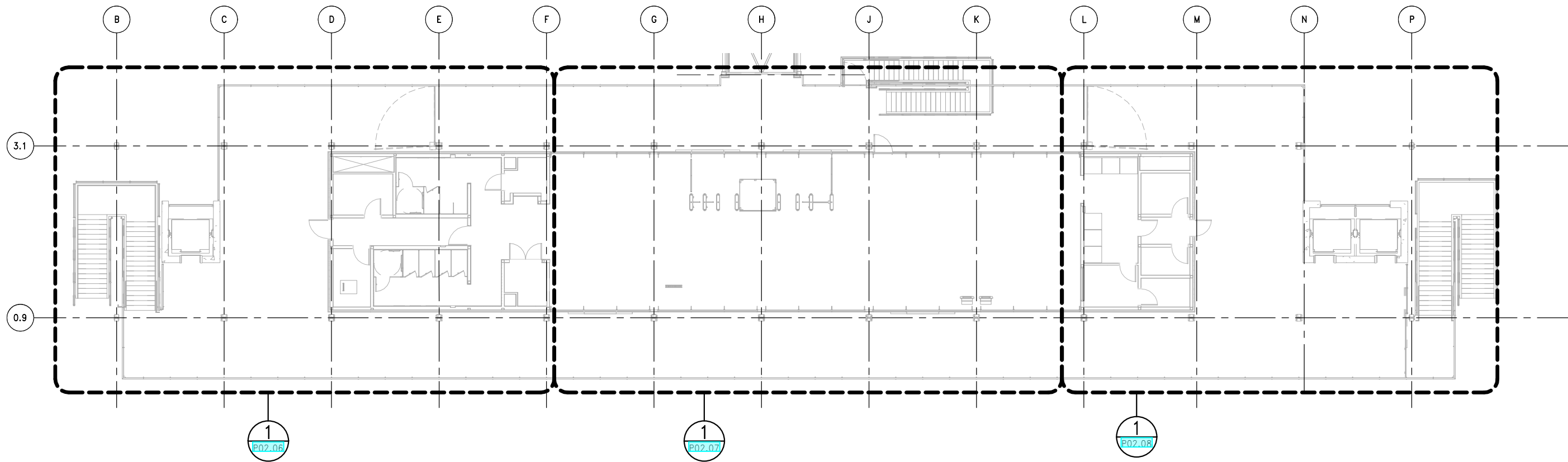


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
PLUMBING PLANS - SECTOR D & E

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| P02.04 |
| SHEET 1346 OF 1521 SHEETS |



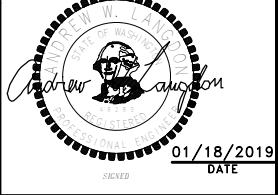
1 LEVEL 2 OVERALL PLUMBING PLAN
P02.05

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Seattle, Washington 98104
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| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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PROJ.NO.
WA-2017-007-00
REGION NO. STATE
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JOB NUMBER
14W121
CONTRACT NO.
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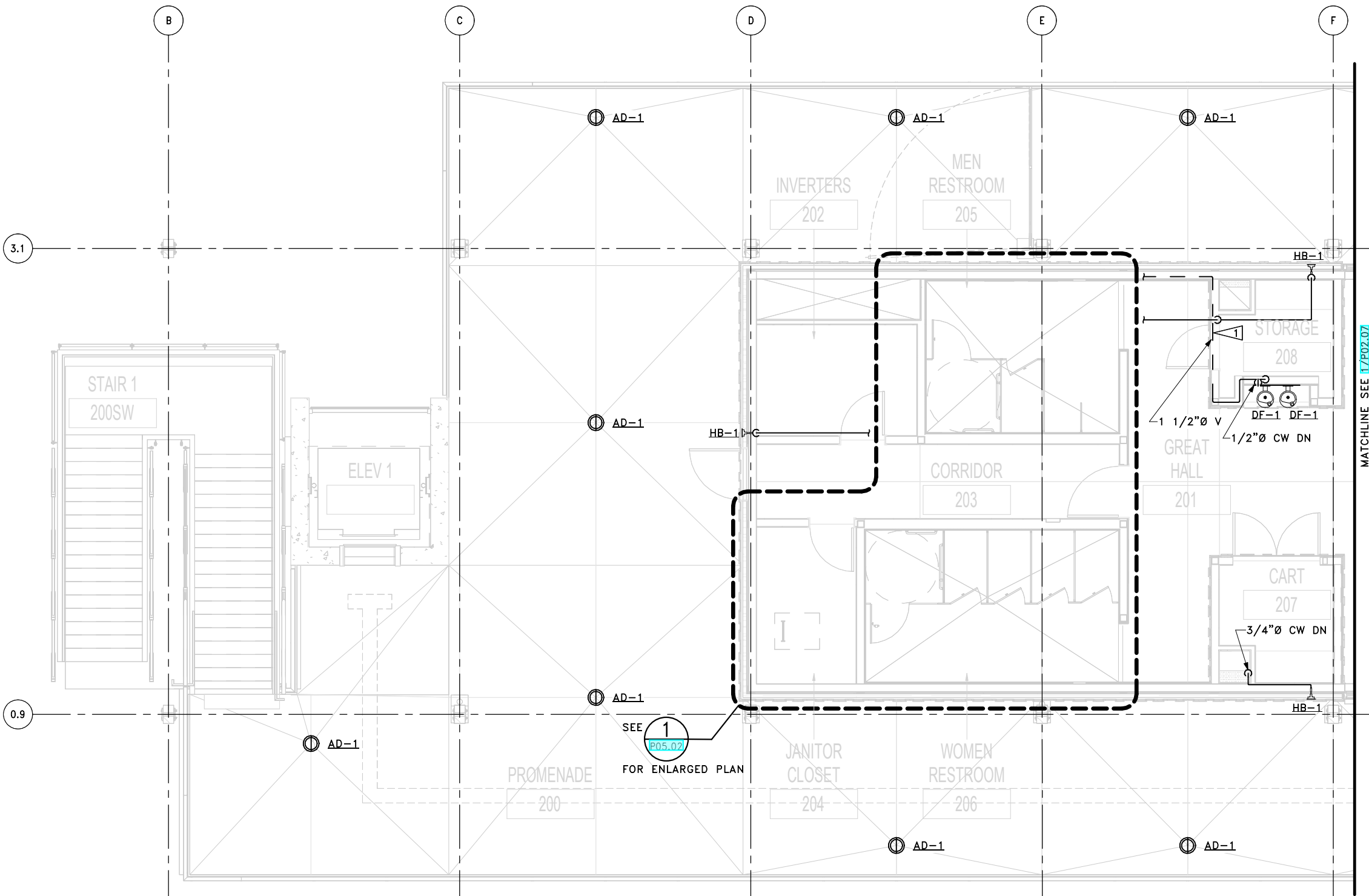


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
OVERALL PLUMBING PLAN

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OF
1521
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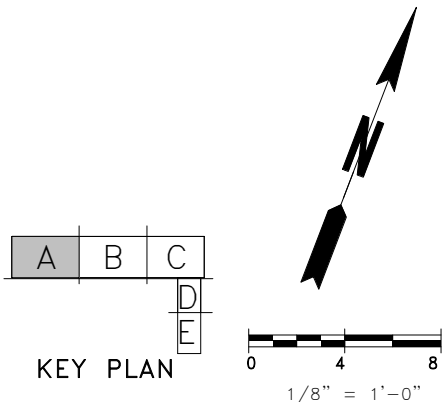
GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

CONSTRUCTION NOTES

1. COORDINATE ROUTING LOCATION IN WALL TO AVOID TUBE STEEL LOCATED IN THE WALL.

1 LEVEL 2 PLUMBING PLAN SECTOR A
P02.06



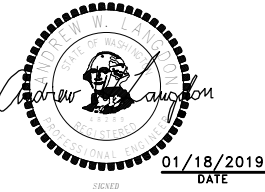
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| MAR PROJ ENGR: C. TORRES | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | |
| ASST SECRETARY: A. SCARTON | | | | |

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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
PLUMBING PLAN – SECTOR A

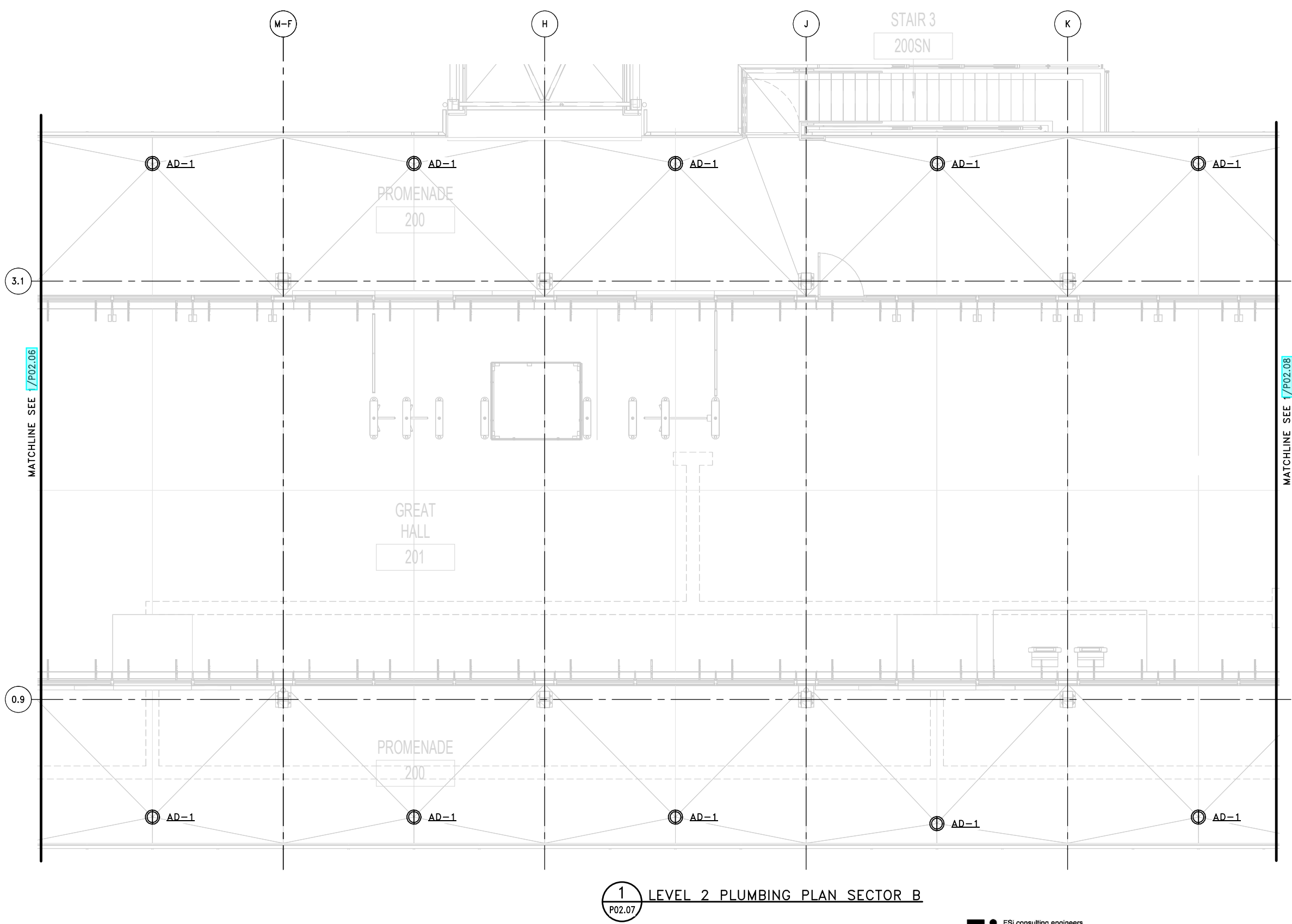
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SHEETS

GENERAL NOTES

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3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
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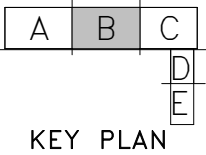
CONSTRUCTION NOTES

1. ROUTE 4"Ø ST UP AND CONNECT TO GUTTER PIPING. REFER TO DETAIL 5/A06.13 WITHIN THE ARCHITECTURAL DRAWINGS.



1 LEVEL 2 PLUMBING PLAN SECTOR B
P02.07

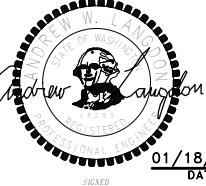
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Seattle, Washington 98104
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| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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REGION NO. STATE
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CONTRACT NO.
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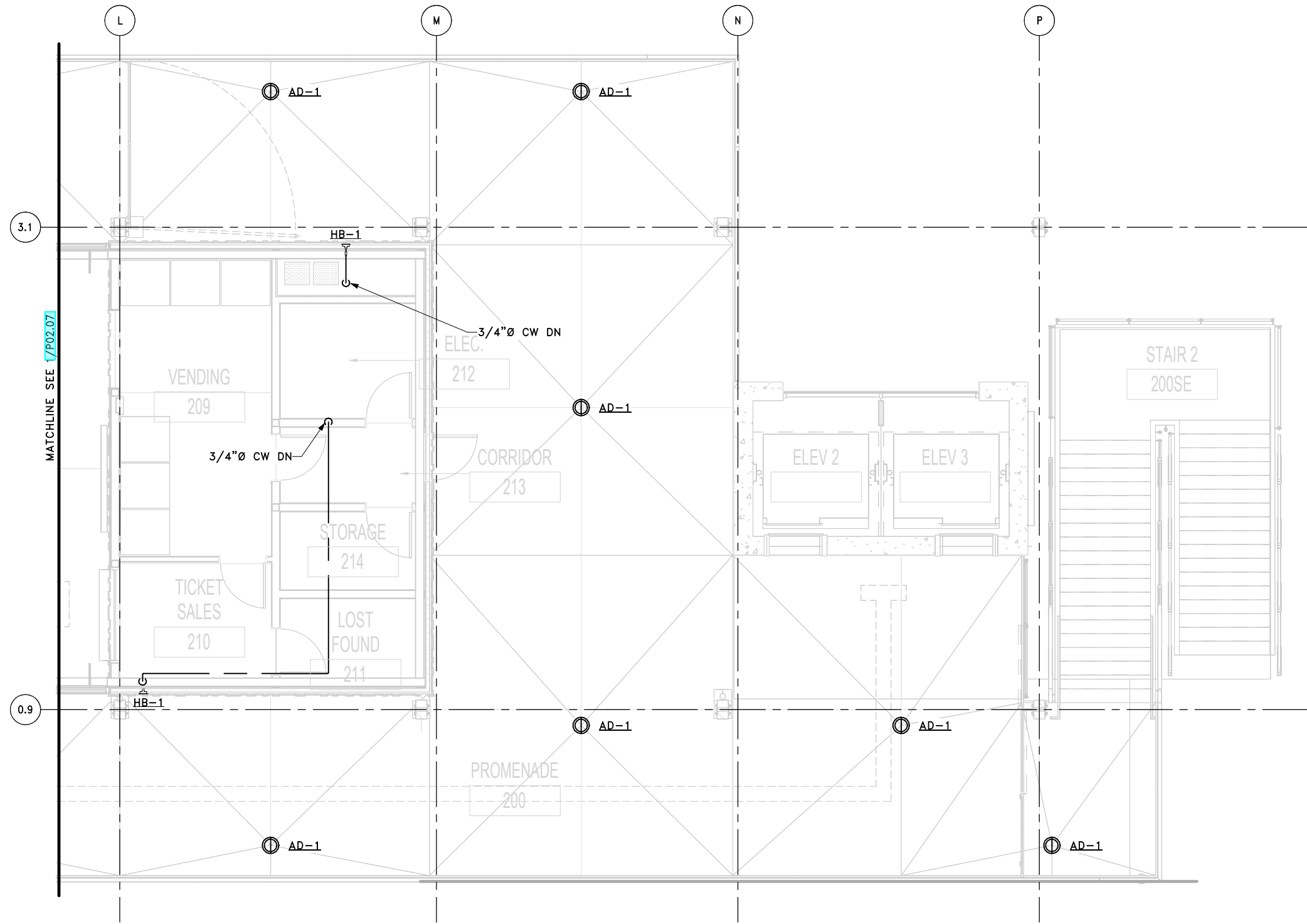


SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
PLUMBING PLAN – SECTOR B

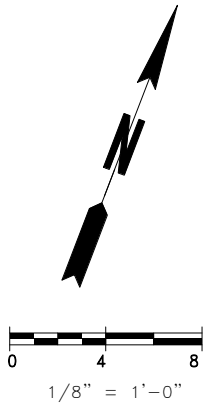
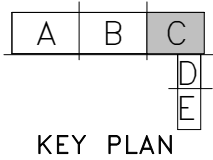
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OF
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SHEETS

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
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3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
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1 LEVEL 2 PLUMBING PLAN SECTOR C
P02.08

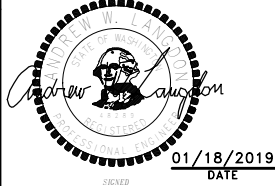


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| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
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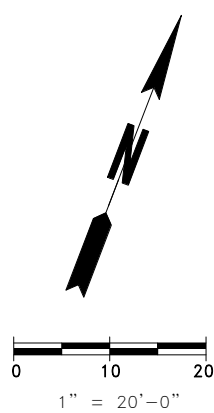
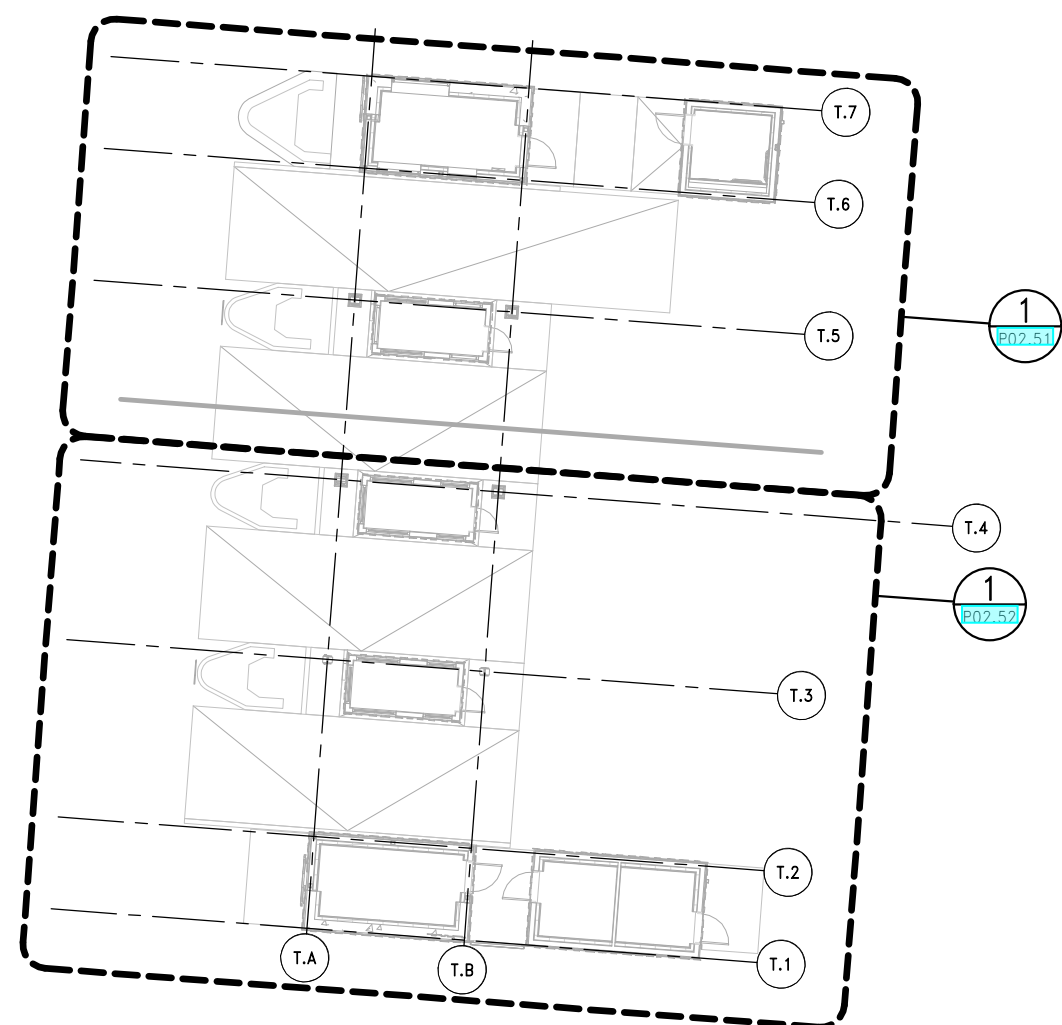


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
PLUMBING PLAN – SECTOR C

P02.08
SHEET
1350
OF
1521
SHEETS



1 LEVEL 1 OVERALL PLUMBING PLAN
P02.50

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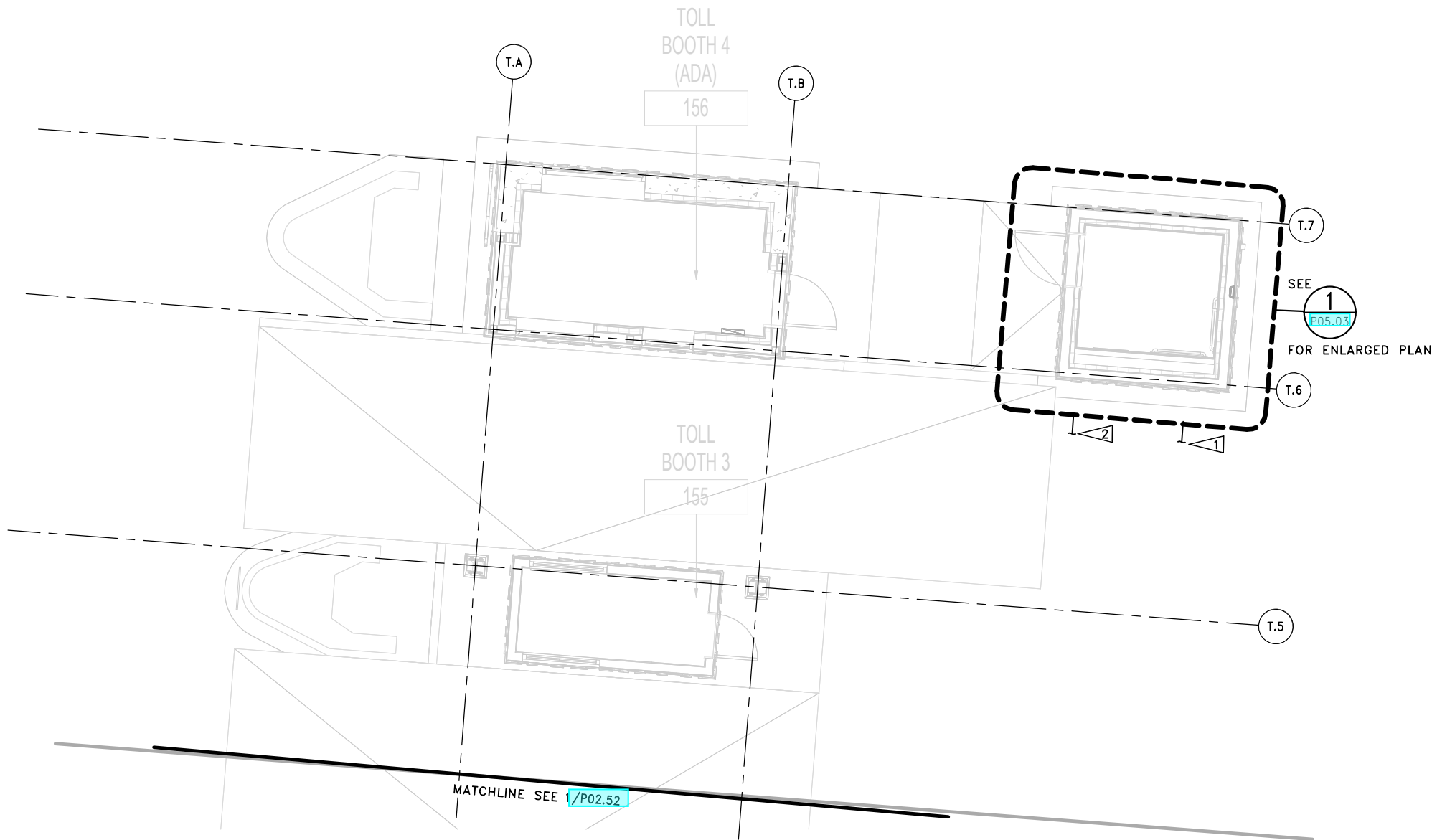
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| CHECKED BY: A. LANGDON | | 01/18/2019 | | | | | | JOB NUMBER 14W121 | | | | | | | | | | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | CONTRACT NO. 00**** | | | | | | | | | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | | 01/18/2019 | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | TOLL PLAZA – LEVEL 1 OVERALL PLUMBING PLAN | | | | | | | | | | |

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

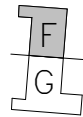
CONSTRUCTION NOTES

1. ROUTE 4" SAN AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. PIPING SHALL SLOPE AT 1/4" PER FOOT. SEE CIVIL PLANS FOR CONTINUATION.
2. ROUTE CW AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. SEE CIVIL PLANS FOR CONTINUATION.

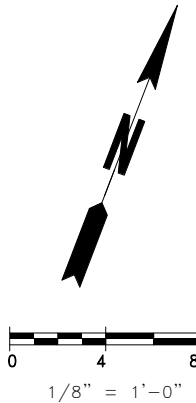


1 LEVEL 1 PLUMBING PLAN SECTOR F
P02.51

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| CHECKED BY: | A. LANGDON | 01/18/2019 | |
| MAR PROJ ENGR: | C. TORRES | | |
| DIR TERM ENGR: | N. MCINTOSH | | |
| ASST SECRETARY: | A. SCARTON | | |
| | | CONFORMED DRAWINGS | 01/18/2019 |
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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TOLL PLAZA – LEVEL 1
PLUMBING PLAN – SECTOR F

P02.51
SHEET
1352
OF
1521
SHEETS

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.00 AND P06.01 FOR PLUMBING SCHEDULES.
3. PIPING SHALL NOT BE ROUTED ABOVE THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOM.
4. DO NOT PENETRATE STRUCTURAL BEAMS. WHERE A PENETRATION IS UNAVOIDABLE, SEE STRUCTURAL DRAWINGS FOR PENETRATION DETAIL.

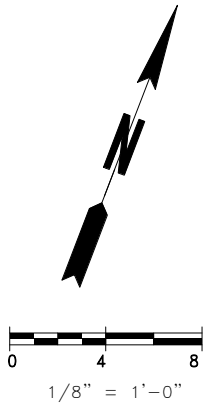


1 LEVEL 1 PLUMBING PLAN SECTOR G
P02.52

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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TOLL PLAZA – LEVEL 1
PLUMBING PLAN – SECTOR G

P02.52
SHEET
1353
OF
1521
SHEETS

RFI 277 - Shower Trench Drain

1. Per sheets P05.00 and P06.00, submitted as part of RFI-225, shower trench drain is FD-4. See additional clarification on attached sheet that no drain runs along east wall.
as per attached sheet,
"NO DRAIN THIS EDGE"

Please reference response to RFI-225 for answers

RFI 303 - RFI 225 Drains FD-3 and FD-4

1. Please submit complete system. Per section 09 30 13 2.4 A the waterproofing membrane and the drain should be from the same manufacturer to assure compatibility. (LMN)
2. Yes, install the linear drain centered along the length of the shower in the east west direction (LMN)

RFI 318 - Drain FD#4 Waterproofing Membrane

It will be acceptable to use the Sioux Chief drain for FD-4. Please confirm compatibility with the selected waterproofing membrane.

RFI 318 - Drain FD#4 Waterproofing Membrane

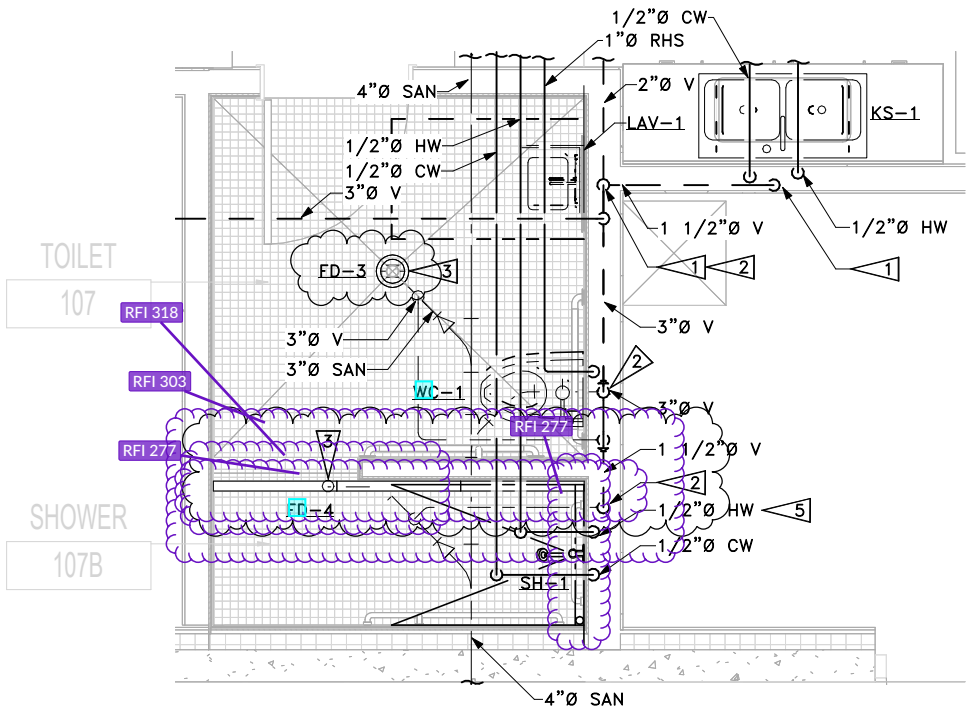
It will be acceptable to use the Sioux Chief drain for FD-4. Please confirm compatibility with the selected waterproofing membrane.

RFI 436 - Rainwater Overflow Piping

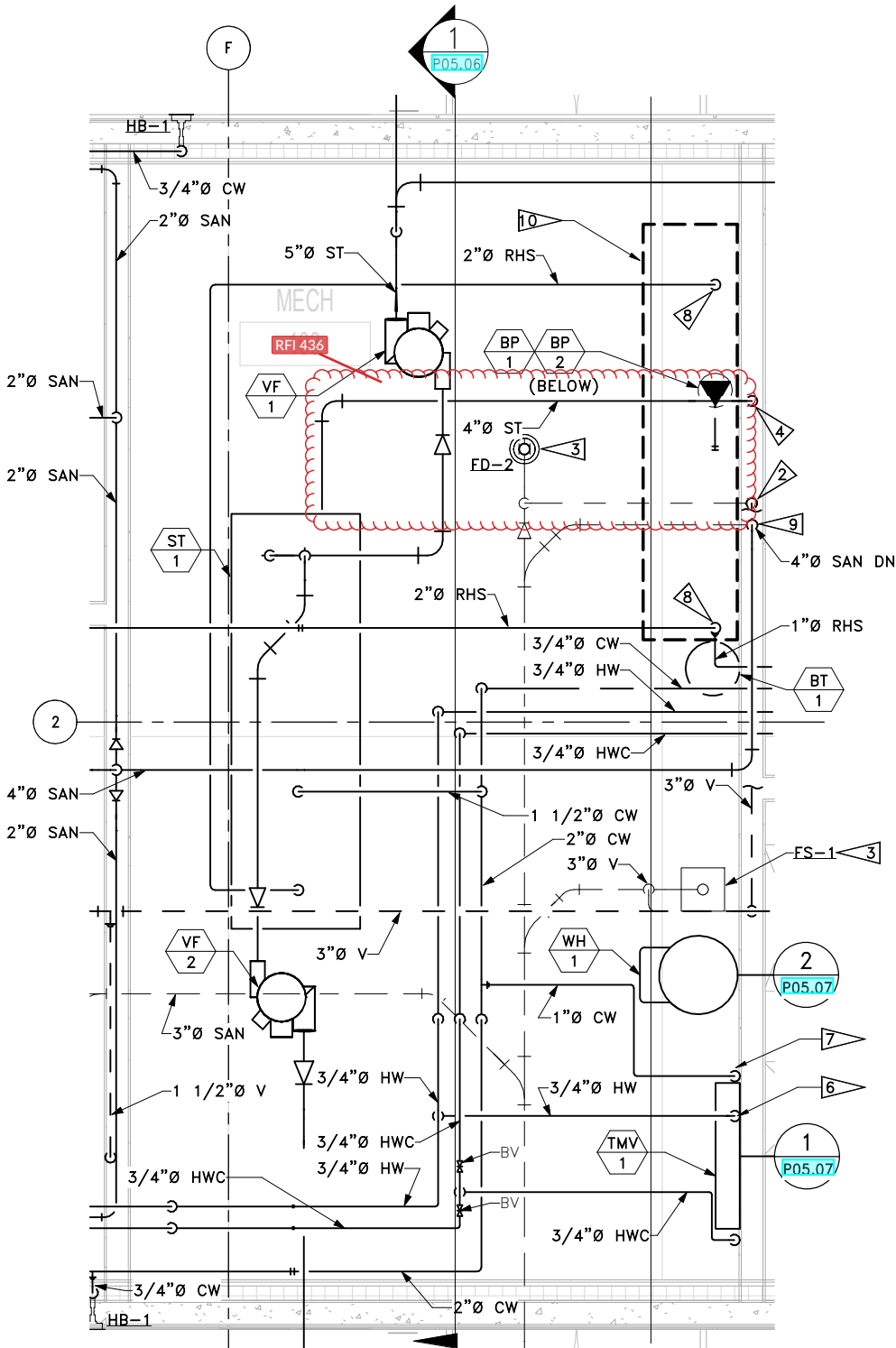
2015 Uniform Plumbing Code (UPC) provides direction on sizing of storm water drains for buildings.

Table 1101.12 provides sizing for roof drains, leaders, and vertical rainwater piping. Sizing is based on roof area and rainfall in in/h (inches per hour). Table 1.1 in appendix D provide maximum rain fall rates (100 year storm - 60 min duration), for western Washington (Seattle) the rain fall rate is 1 in/h.

Based on this rain fall rate, table 1101.12 allows for a maximum roof area of 18,400 ft2 for a 4 in vertical drain. Roof area for project is 17,364 ft2. Therefore a 4" overflow drain is acceptable per



1 ENLARGED PLUMBING PLAN
P05.00



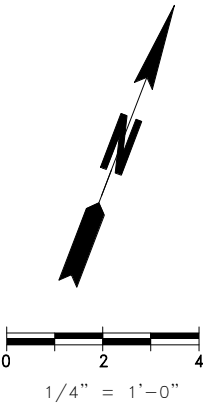
2 ENLARGED MECH ROOM PLUMBING PLAN
P05.00

GENERAL NOTES

1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
2. SEE P06.01 FOR PLUMBING SCHEDULES
3. PROVIDE RAINWATER HARVEST SYSTEM SIGNS IN MECH [103]. THE SIGNE SHALL HAVE 1 INCH LETTERS AND SHALL READ: "CAUTION NONPOTABLE RAINWATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: COONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM." THESE SIGNS SHALL BE POSTED ON ENTRANCES AND IN A LOCATION TO ANYONE WORKING ON OR NEAR RAINWATER HARVEST SYSTEM EQUIPMENT.

CONSTRUCTION NOTES

1. ROUTE SAN PIPING FROM KS-1 AND LAV-1 IN WALL AND CONNECT IN THE WALL CAVITY TO SAN PIPE SERVING WC-1 IN TOILET 107.
2. CONNECT TO EXISTING 3"Ø V. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
3. CONNECT TO EXISTING 3"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
4. ROUTE 4"ST (RAINWATER TANK OVERFLOW) DOWN AND CONNECT TO EXISTING 4"ST. REFER TO DRAWING 2.01 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
5. ROUTE HW IN WALL TO LAV-1 AND KS-1.
6. DN TO THERMOSTATIC MIXING VALVE.
7. DN TO DOMESTIC HOT WATER HEATER.
8. DN TO RAINWATER HARVEST SYSTEM BOOSTER PUMPS [BP-1] & [BP-2].
9. CONNECT TO EXISTING 4"Ø SAN. REFER TO DRAWING P02.00 WITHIN THE 16W125 TRESTLE & BRIDGE SEAT CONSTRUCTION PACKAGE.
10. PROVIDE BACKFLOW PREVENTER.

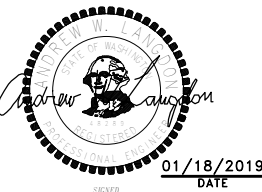


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| DIR TERM ENGR: N. MCINTOSH | | | | |
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| RFI 225 - 07/23/2019 | 07/23/2019 |
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| CONTRACT NO. | 00**** |



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| SR 525 | P05.00 |
| MUKILTEO TERMINAL (PHASE 2) | SHEET |
| FERRY TERMINAL CONSTRUCTION | OF |
| TERMINAL | |
| ENLARGED PLUMBING PLAN | SHEETS |

GENERAL NOTES

- ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- SEE [P06.01](#) FOR PLUMBING SCHEDULES

CONSTRUCTION NOTES

- CONNECT ST TO ROOF GUTTER.
- VTR. TERMINATE 18" ABOVE ROOF. SEE DETAIL [1/A03.67](#)
- PROVIDE TRAP PRIMER INSTALLED IN WALL CAVITY 4' AFF AND PROVIDE 12" X 12" ACCESS PANEL ACCESSIBLE FROM INSIDE CHASE. ROUTE 1/2" CW TO TRAP PRIMER AND 1/2" CW FROM TRAP PRIMER TO FLOOR DRAINS IN MEN, WOMEN, WATER ENTRY, AND VENDING.
- PROVIDE AND INSTALL WALL HYDRANT BELOW LAVATORY.
- PROVIDE CLEANOUT IN VERTICAL ST PIPING AT FLOOR.

RFI 251
7/29/19
Z. Smith

RFI 112 - Storm Vent Piping

The storm system vent piping indicated in this RFI is not required.

Provide FCO-3 at exterior - RFI 120

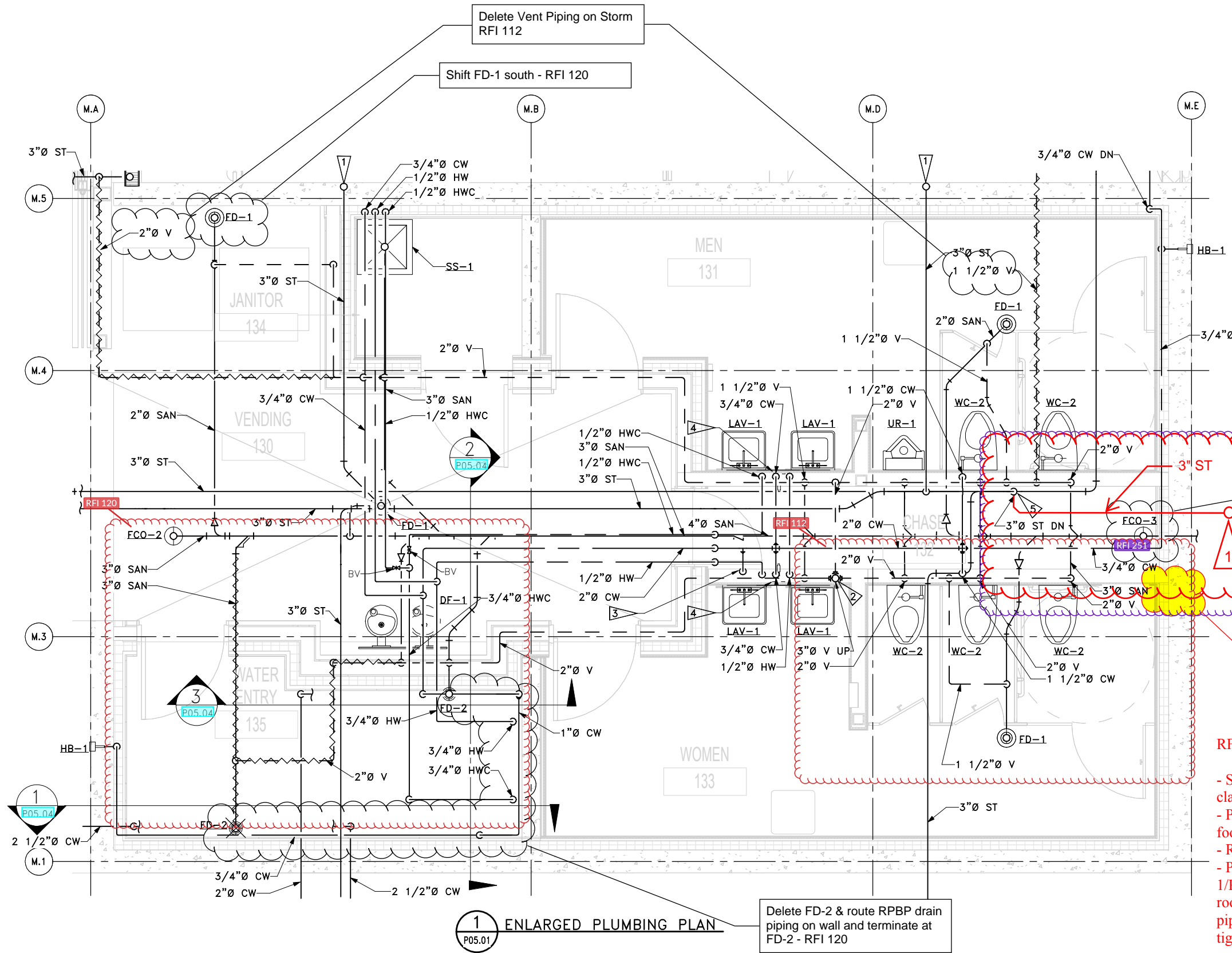
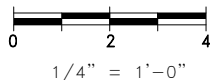
RFI 251 - Storm Pipe to Gutter at Maint. Bldg

Confirmed gutter connection and storm piping routed to location in question. Please see the mark-up Page 4 of this RFI

STORM PIPE TO GUTTER NOT SHOWN

RFI 120 - Sanitary Invert Elevation Conflict

- Shift FD-1 south such that vertical pipe does not clash with building footer.
- Provide FCO-3 at building exterior to avoid footing. Provide with lock.
- Route piping tight to wall and terminate at FD-2.
- Provide 3" drain piping from RBPB (see 1/P05.04) to FD-2 located at northeast corner of room. Provide air gap between RBPB and 3" piping. Slope piping at 1/8" per 1'-0" and route tight to wall.



1 ENLARGED PLUMBING PLAN

P05.01

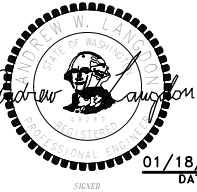
Delete FD-2 & route RBPB drain piping on wall and terminate at FD-2 - RFI 120



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SR 525
MUKILTEO TERMINAL (PHASE 2)
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P05.01

SHEET
1355
OF
1521
SHEETS

GENERAL NOTES

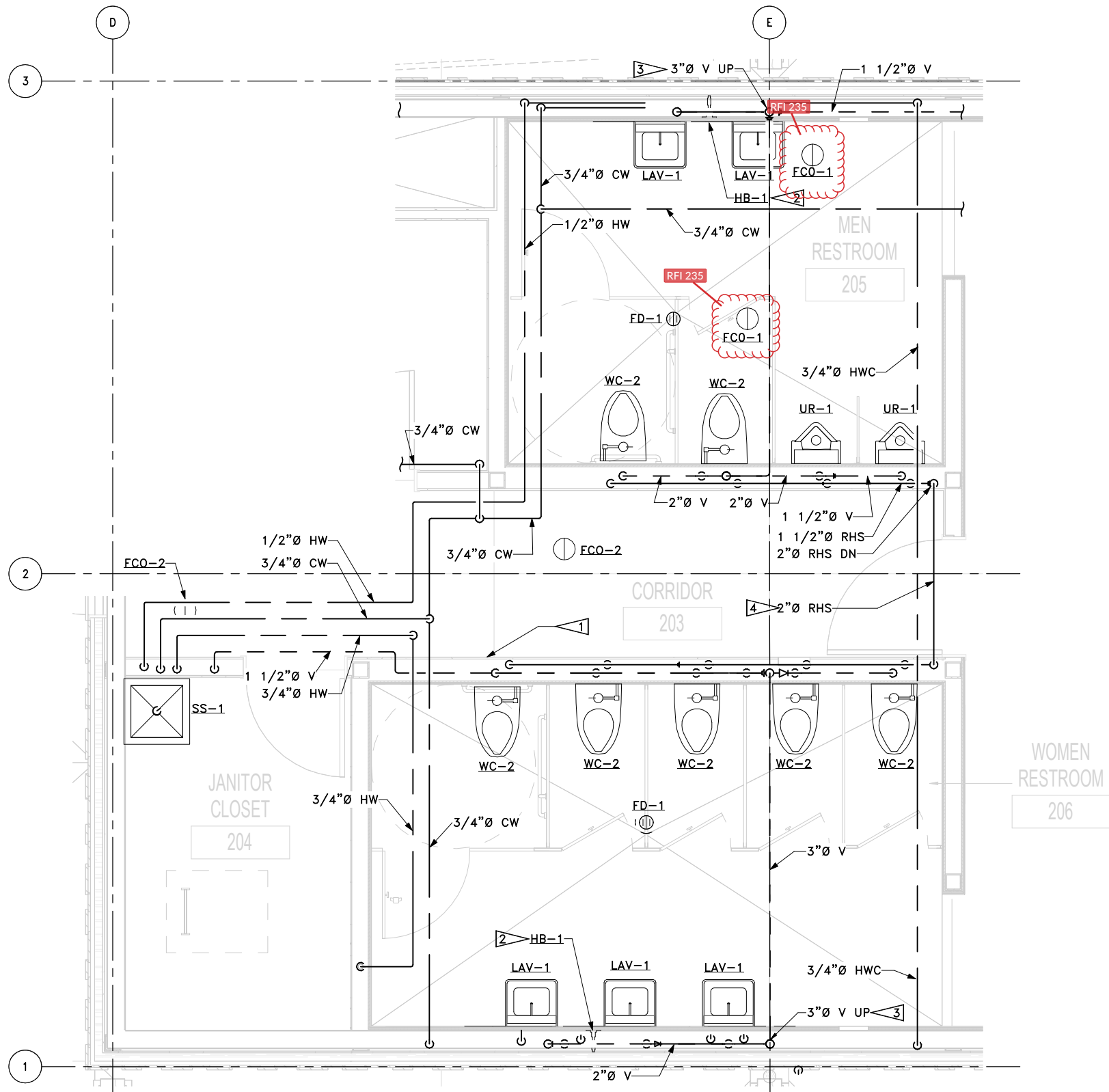
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2. SEE [P06.01](#) FOR PLUMBING SCHEDULES

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1. PROVIDE TRAP PRIMER INSTALLED IN WALL CAVITY 4' AFF AND PROVIDE 12" X 12" ACCESS PANEL ACCESSIBLE FROM INSIDE CORRIDOR. ROUTE 1/2" CW TO TRAP PRIMER AND 1/2" CW FROM TRAP PRIMER TO FLOOR DRAINS IN MEN & WOMEN RESTROOMS
2. PROVIDE AND INSTALL WALL HYDRANT BELOW LAVATORY.
3. VTR. TERMINATE 18" ABOVE ROOF. SEE DETAIL [1/A03.67](#)
4. ROUTE RHS TO FLUSH VALVES IN MEN RESTROOM AND WOMEN RESTROOM.

RFI 235 - Men Restroom 205 Floor Cleanouts

Confirmed that floor cleanouts in question (clouded and highlighted in yellow on attached pages) can be eliminated. As a general reminder, not all cleanouts are shown on plan. Per specification 221000, we expect cleanouts to be installed in locations dictated by the Uniform Plumbing Code (at the end of chase-ganged fixtures, under urinals, at direction changes exceeding 135°, etc.).



1 ENLARGED PLUMBING PLAN
P05.02

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Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
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ENLARGED PLUMBING PLAN

P05.02

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OF
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01/18/2019

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01/18/2019

CHECKED BY: A. LANGDON

01/18/2019

MAR PROJ ENGR: C. TORRES

DIR TERM ENGR: N. MCINTOSH

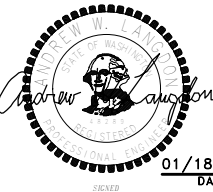
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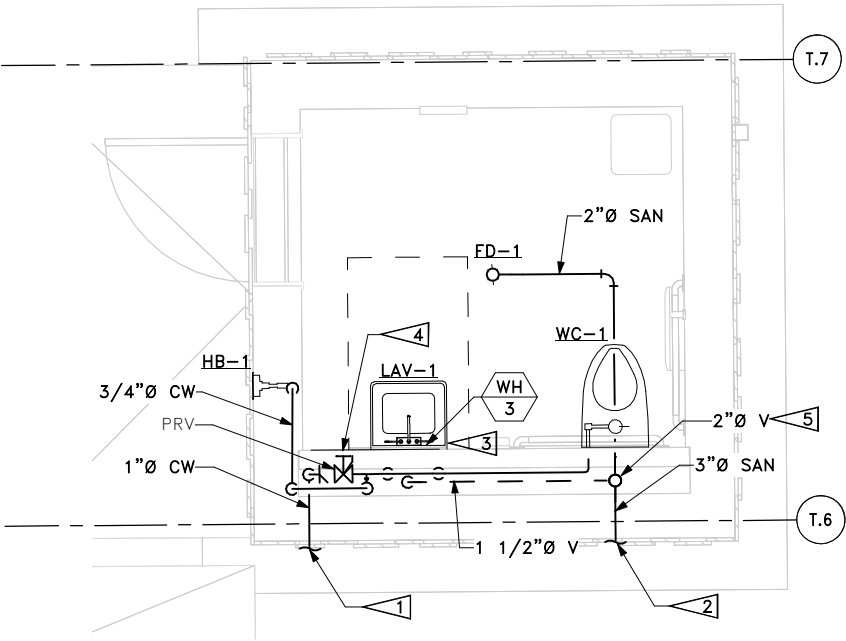
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GENERAL NOTES

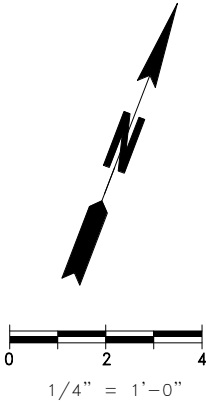
- 1. ALL WORK IS SHOWN DIAGRAMMATICALLY. CONTRACTOR SHALL FIELD VERIFY ALL WORK PRIOR TO INSTALLATION.
- 2. SEE P06.01 FOR PLUMBING SCHEDULES
- 3. ALL PIPING ROUTED IN FLOOR UNLESS OTHERWISE NOTED

CONSTRUCTION NOTES

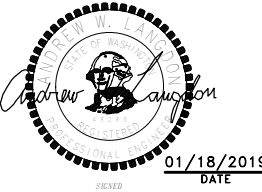

- 1. ROUTE CW AS SHOWN, TERMINATE 5' FROM BUILDING AND CONNECT WITH CIVIL. SEE CIVIL PLANS FOR CONTINUATION.
- 2. ROUTE 4" SAN TO POINT OF CONNECTION WITH CIVIL. SEE CIVIL PLANS FOR CONTINUATION.
- 3. INSTALL INSTANT WATER HEATER BELOW LAV.
- 4. PROVIDE 12x12 ACCESS PANEL FOR PRV.
- 5. VTR. TERMINATE 18" ABOVE ROOF. SEE DETAIL 1/A03.67

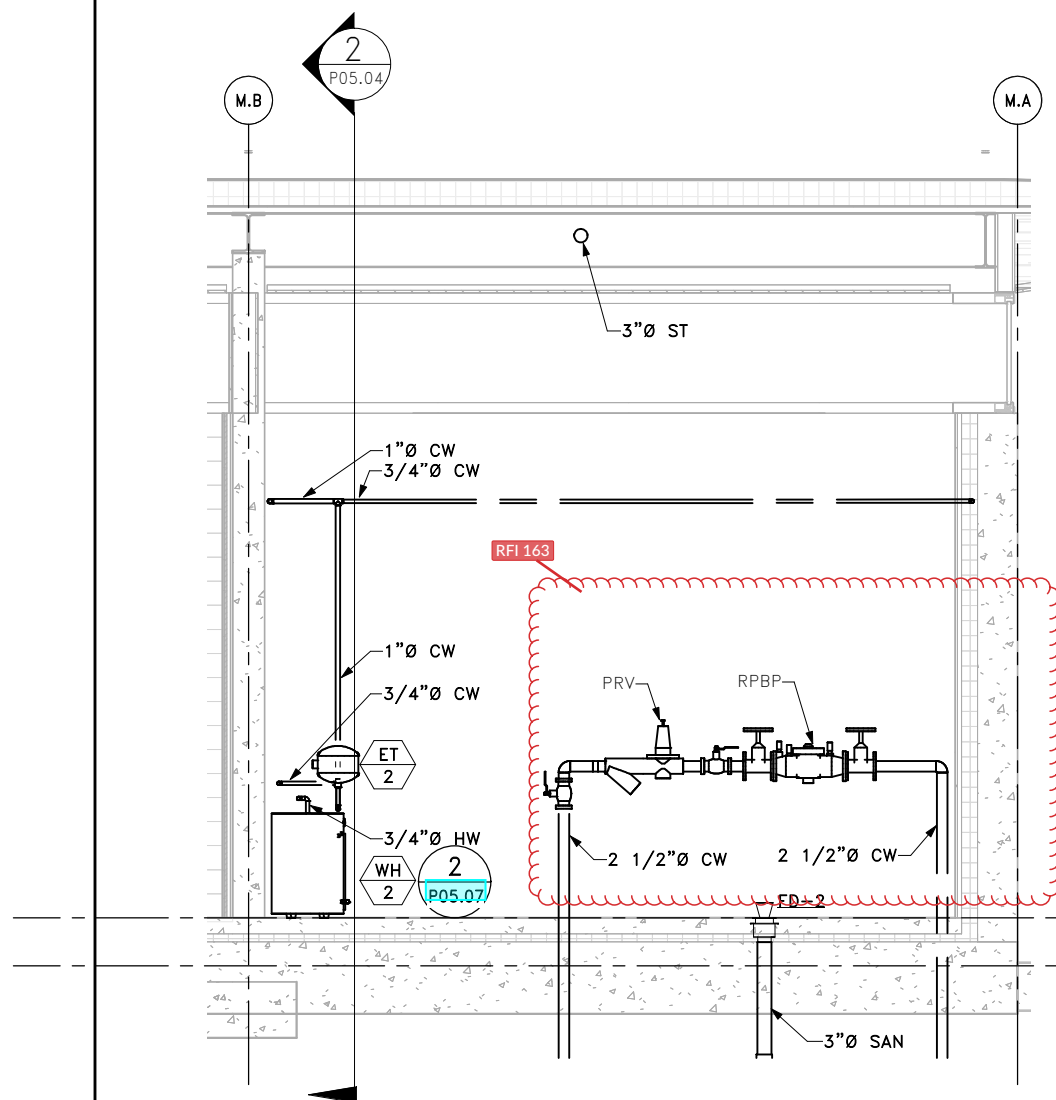


1 ENLARGED PLUMBING PLAN
P05.03

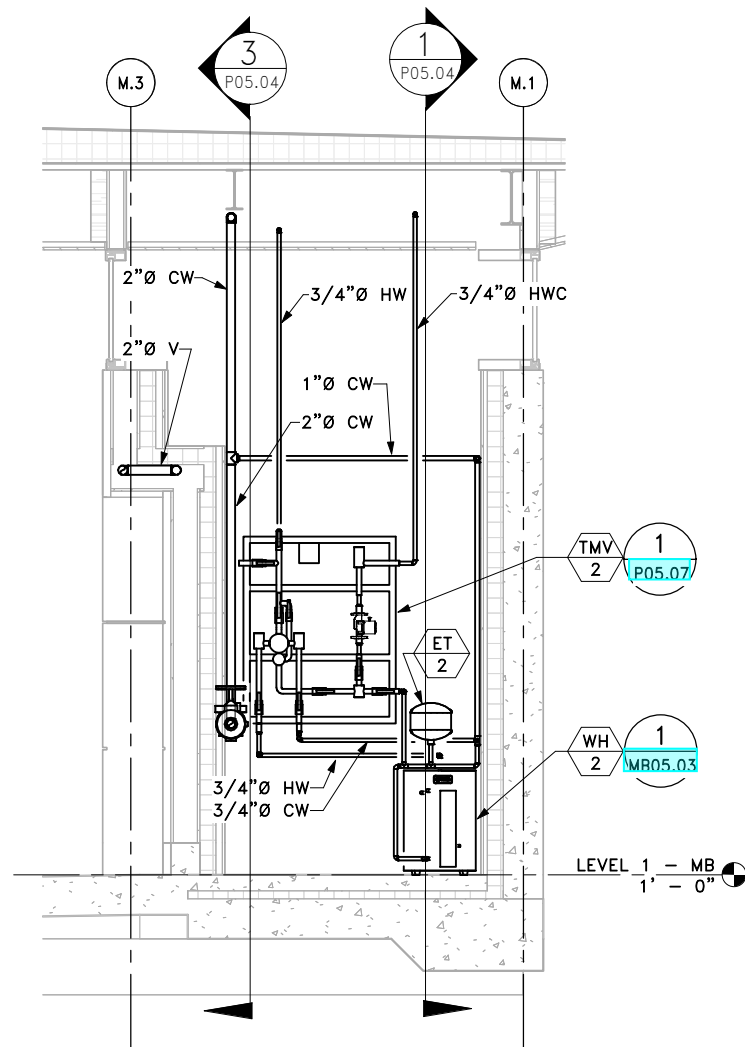


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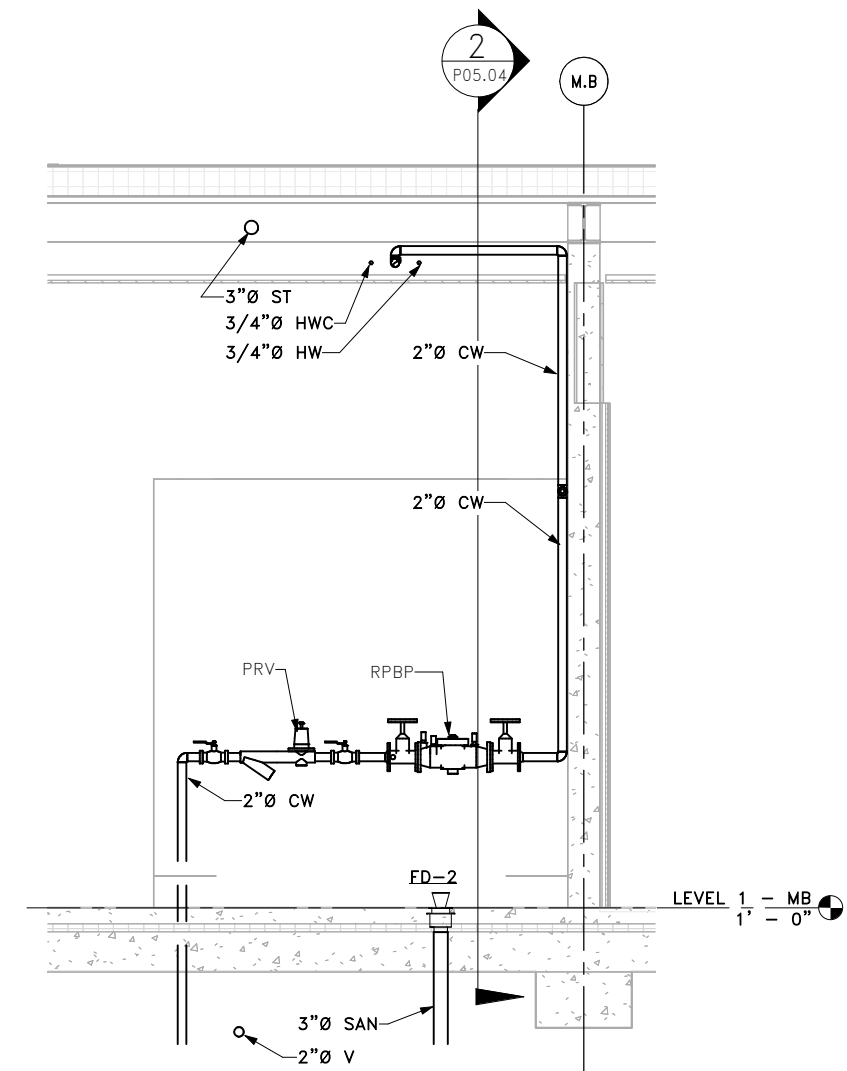
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| PRINTED: 1/18/2019 4:46:18 PM | LAST PRINTED BY: ZSMITH | | | | | FED.AID PROJ.NO. WA-2017-007-00 |  |  Washington State Department of Transportation WASHINGTON STATE FERRIES | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION | P05.03 |
| SUBMITTAL DATE: 01/18/2019 | | | | | | REGION NO. STATE 10 WASH | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | JOB NUMBER 14W121 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | CONTRACT NO. 00**** | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | TOLL PLAZA ENLARGED PLUMBING PLAN | SHEET 1357 OF 1521 SHEETS |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | | | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | | | | | |



1 PLUMBING SECTION
P05.04



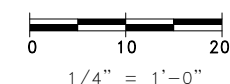
2 PLUMBING SECTION
P05.04



3 PLUMBING SECTION
P05.04

RFI 163 - Water Line Size

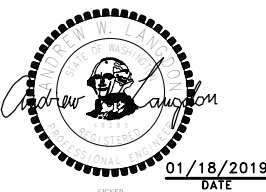
MWWD requires 2-inch diameter buried piping downstream of the 2-inch meter, which is why the HDPE piping between the buildings is that size. Drawing C08.14 shows a 2-inch x 3-inch reducer prior to the connection to the Terminal Building, which is correct. There should also be a 2-inch x 2.5-inch reducer at the connection point on the west side of the Maintenance Building. Stainless steel insert sleeves should be included at the connection points, per the clouded call-out on Drawing C08.14. The piping and fittings within the Maintenance Building should remain as 2.5-inch diameter.



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| PRINTED: 1/18/2019 4:46:52 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | |
| | CONFORMED DRAWINGS | 01/18/2019 | | | |
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10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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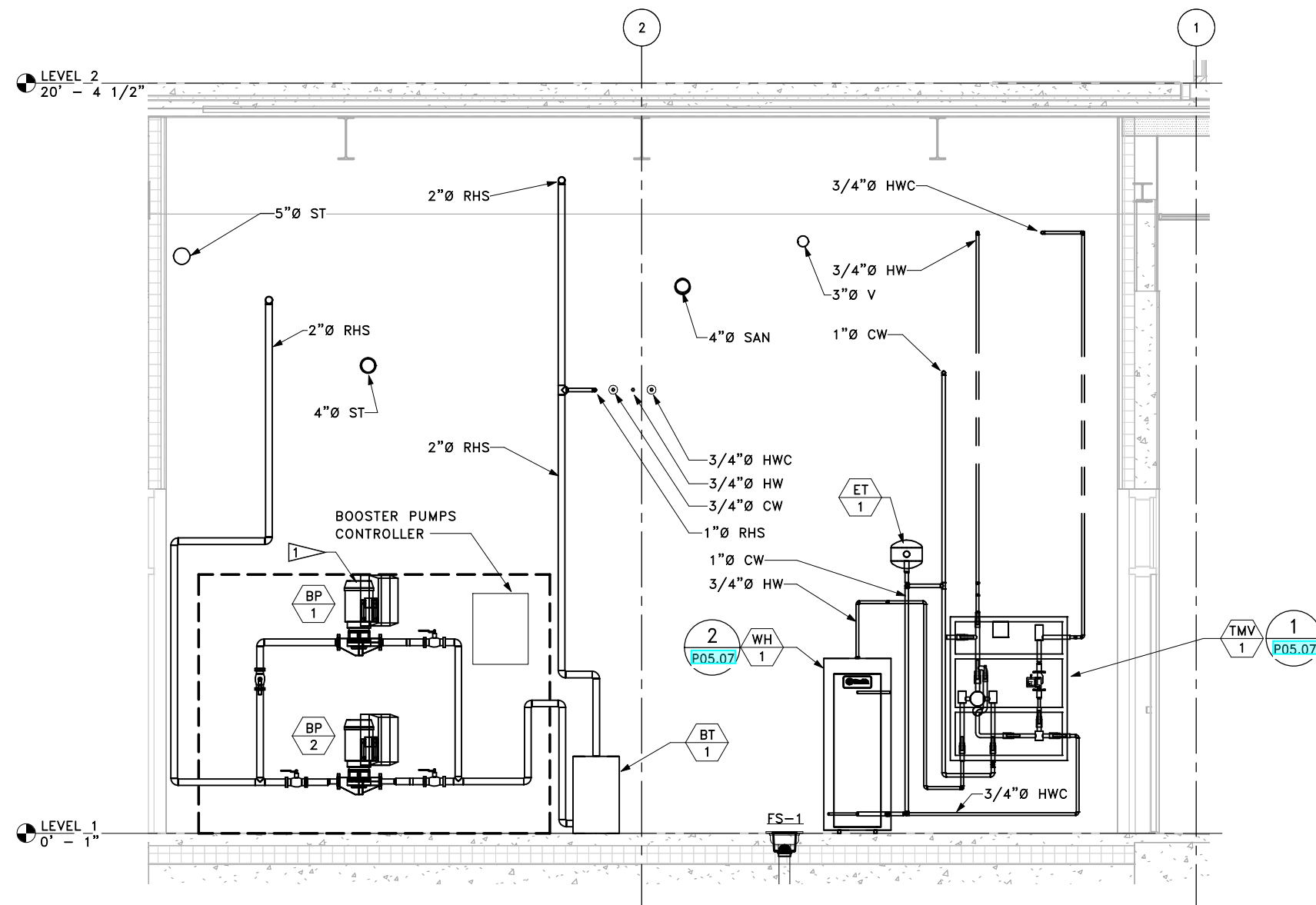


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
PLUMBING SECTIONS

P05.04
SHEET
1358
OF
1521
SHEETS



CONSTRUCTION NOTES

1 PIPING, FITTINGS, VALVES, PUMPS, PUMP CONTROLLER WITHIN DASHED LINE ARE TO BE PROVIDED AS A PACKAGED PUMPING SYSTEM. FOR CLARITY NOT ALL FITTINGS AND ACCESSORIES SHOWN.

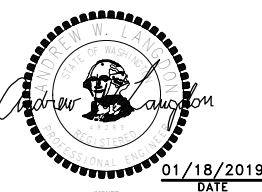
1 PLUMBING SECTION P05.05

0 10 20
1/4" = 1'-0"

FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH

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| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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14W121
CONTRACT NO.
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FSI consulting engineers
509 Second Ave, Suite 700,
Seattle, Washington 98104
PH 206.922.3321 Fax 206.922.3804
Solutions & Service

Washington State
Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
PLUMBING SECTIONS

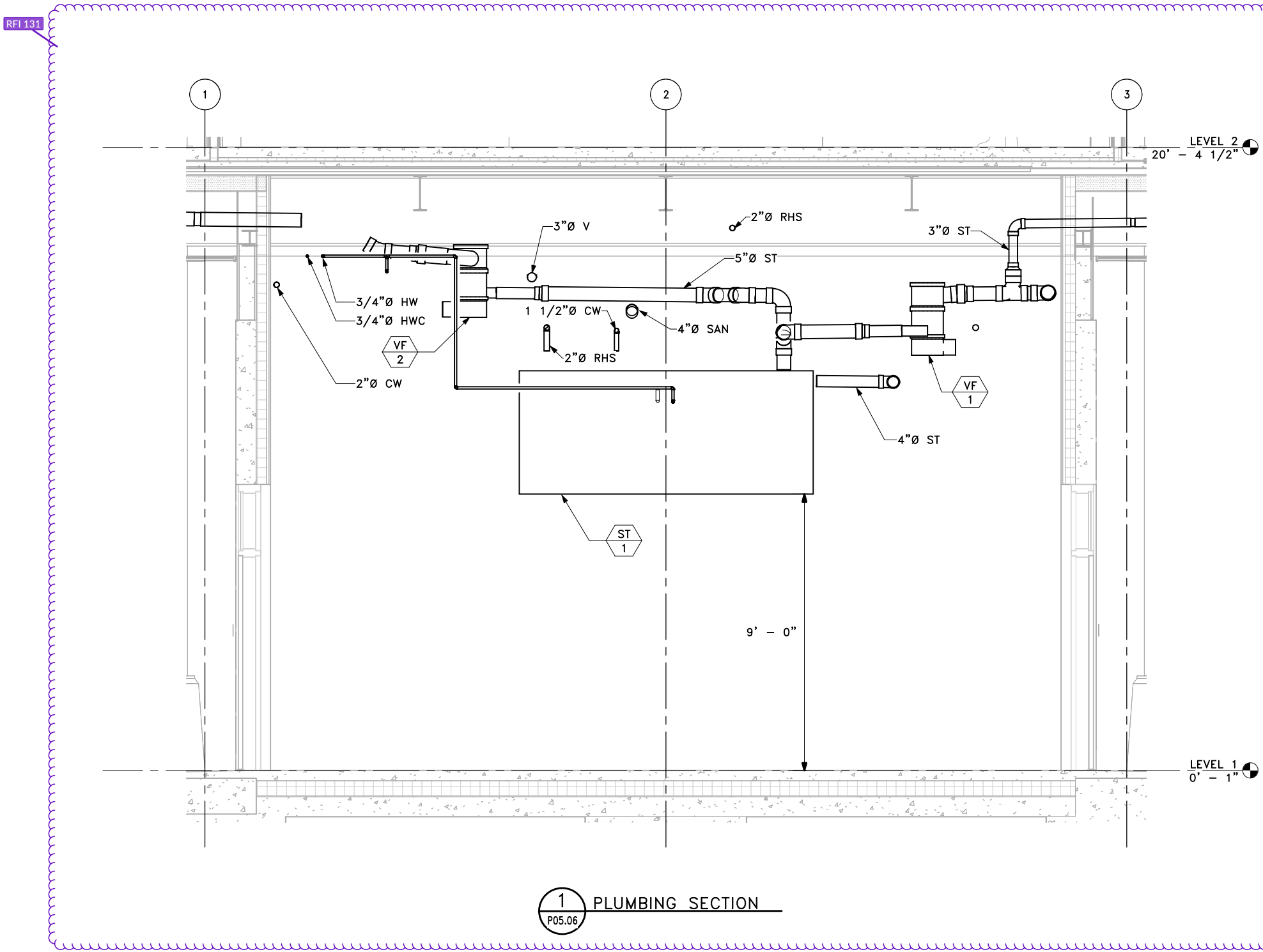
P05.05
SHEET
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OF
1521
SHEETS

RFI 131 - Rainwater Filter Installation Guide

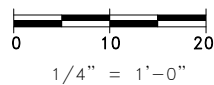
1. Contract documents are diagrammatic. Contractor to determine final configuration. Per cut sheet provided, filter can be installed above ground using custom stand or bracket. Contractor to review and provide proposed support for filter per specification section 22 05 29.



2. Contract documents are diagrammatic. Contractor to determine final configuration. Reviewing the plumbing section, relocating the filter to allow for 10' of straight pipe prior to filter seems feasible and is acceptable. 10' of piping is recommendation based on max flow. The design flow of 130 GPM flow is much lower than filter max. An RH9520-6 requires only 24" of straight pipe prior to filter. Therefore suggested straight run of pipe is to be 6' or 72". Provide eccentric reducer and 12" pipe prior to filter.

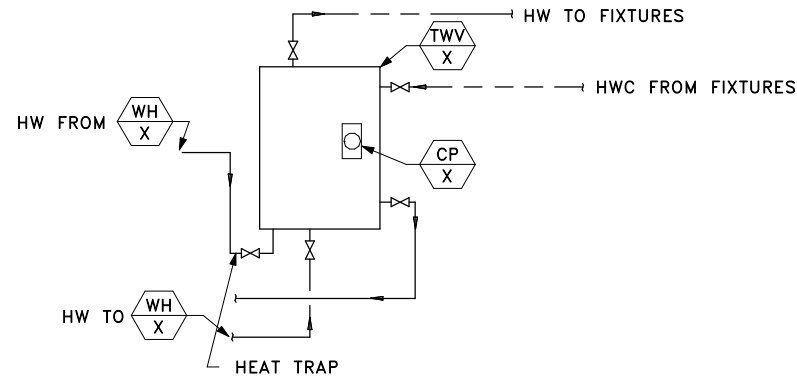
3. Maintenance and location of equipment has been discussed with owner. Contractor to provide shop drawings for review per 22 05 00 and 23 05 00. If clearances can't be achieved please submit RFI for review and coordination



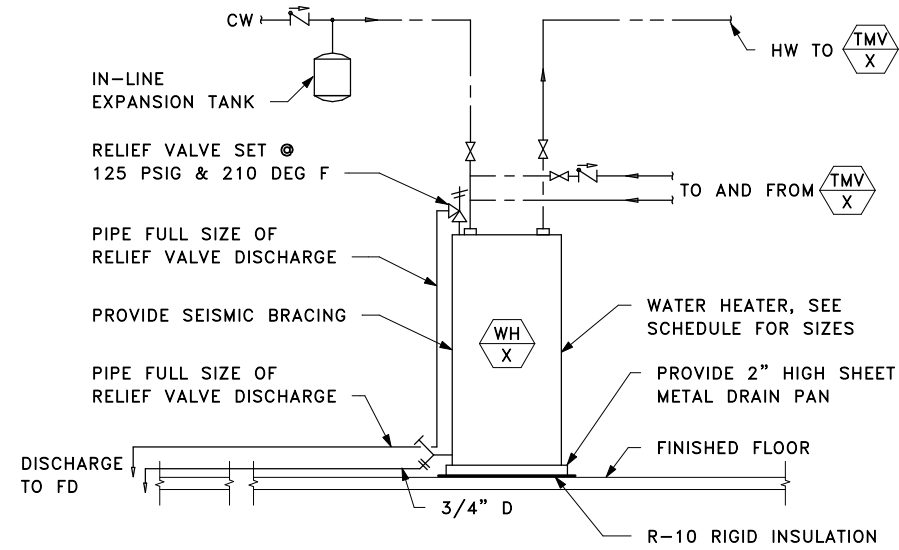
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509 Second Ave, Suite 700,
Seattle, Washington 98104
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|-----------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------|--------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------|--------|--------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSI\14w121_BLDG_MECH | | | | | | | | | |  | <div>01/18/2019 DATE</div> | <div>DATE</div> |  <div>Washington State Department of Transportation WASHINGTON STATE FERRIES</div> | SR 525 | | | P05.06 |
| PRINTED: 1/18/2019 4:47:53 PM | | | | | | | | | | | | | | FED.AID PROJ.NO. | MUKILTEO TERMINAL (PHASE 2) | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | | | | | | ZSMITH | WA-2017-007-00 | REGION NO. STATE | FERRY TERMINAL CONSTRUCTION | | | SHEET | |
| DESIGNED BY: O. JARVEGREN | | | | | | | | | | 01/18/2019 | | 10 WASH | | | | 1360 | |
| ENTERED BY: Z. SMITH | | | | | | | | | | 01/18/2019 | | JOB NUMBER | TERMINAL PLUMBING SECTIONS | | | OF | |
| CHECKED BY: A. LANGDON | | | | | | | | | | 01/18/2019 | | 14W121 | | | | 1521 | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | CONTRACT NO. | | | | SHEETS | |
| DIR TERM ENGR: N. MCINTOSH | | | | | | | | | | | CONFORMED DRAWINGS | 01/18/2019 | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | | | | | | | REVISION | DATE | BY | | | | |



1 THERMOSTATIC MIXING VALVE
P05.07



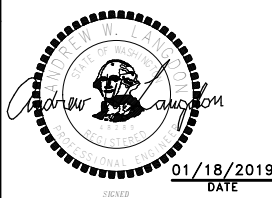
2 WATER HEATER DETAIL
P05.07

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Seattle, Washington 98104
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| PRINTED: 1/18/2019 4:48:05 PM | LAST PRINTED BY: ZSMITH | | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
PLUMBING DETAILS

P05.07
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1361
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TERMINAL PLUMBING FIXTURE SCHEDULE

| MARK | FIXTURE DESCRIPTION | BRANCH PIPE SIZE (IN) | | | | ADDITIONAL COMPONENTS | BASIS OF DESIGN | | NOTES |
|-------|--------------------------------------------------------------------------------------|-----------------------|-----|-------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|-------|
| | | CW | HW | W | V | | MANUFACTURER | MODEL | |
| AD-1 | AREA DRAIN | - | - | 3 | 1-1/2 | 6" ROUND STAINLESS STEEL STRAINER, NO HUB OUTLET, AND 2010X EXTENSION ADAPTER | JAY R. SMITH | 2005Y | |
| DF-1 | DRINKING FOUNTAIN | 1/2 | - | 1-1/4 | 1-1/4 | IN-WALL MOUNTING PLATE CARRIER MPW101, IN-WALL SUPPORT LEGS ML100 | ELKAY | EDFBM114K | |
| FCO-2 | FLOOR CLEAN OUT | - | - | 3 | - | VANDAL PROOF TOP | JAY R. SMITH | 4021S | |
| FCO-3 | FLOOR CLEAN OUT | - | - | 4 | - | VANDAL PROOF TOP | JAY R. SMITH | 4021S | |
| FD-1 | ROUND FLOOR DRAIN | - | - | 2 | 1-1/2 | 5" ROUND NICKEL-BRONZE STRAINER, NO-HUB OUTLET AND 1/2" TRAP PRIMER CONNECTION | JAY R. SMITH | 2005Y | |
| FD-2 | ROUND FLOOR DRAIN | - | - | 3 | 1-1/2 | 6" ROUND NICKEL-BRONZE STRAINER, NO-HUB OUTLET AND 1/2" TRAP PRIMER CONNECTION | JAY R. SMITH | 2005Y | |
| FD-3 | ROUND FLOOR DRAIN | - | - | 3 | 1-1/2 | STAINLESS STEEL STRAINER, NO-HUB OUTLET AND 1/2" TRAP PRIMER CONNECTION | SCHLUTER | KERDI-DRAIN | |
| FD-4 | LINEAR FLOOR DRAIN | - | - | 3 | 1-1/2 | PERFORATED STAINLESS STEEL STRAINER, NO-HUB OUTLET AND 1/2" TRAP PRIMER CONNECTION | SCHLUTER | KERDI-LINE | |
| FS-1 | FLOOR SINK | - | - | 3 | 1-1/2 | ACID-RESISTANT ENAMEL COATING, 8-1/2" SQUARE NICKEL-BRONZE TOP, NO-HUB OUTLET AND DOME BOTTOM STRAINER | JAY R. SMITH | 3100Y | |
| HB-1 | WALL HYDRANT, ENCASED NON-FREEZE ANTI-SIPHON, AUTOMATIC DRAINING | | | | | 3/4" VACUUM BREAKER | JAY R. SMITH | FIG. 5560QT | |
| KS-1 | KITCHEN SINK | 1/2 | 1/2 | 1 1/2 | 1-1/2 | FAUCET: ELKAY 1.5 GPM #LKD2439BHC; DRAIN: ELKAY LK35 | ELKAY | LR2522 | |
| LAV-1 | WALL-MOUNTED LAVATORY WITH ELECTRONIC FAUCET | 1/2 | 1/2 | 1-1/4 | 1-1/4 | FAUCET: CHICAGO FAUCETS 0.5 GPM #116.111.AB.1, 12v AC TRANSFORMER | KOHLER | PINOIR | |
| SH-1 | INDIVIDUAL SHOWER | 1/2 | 1/2 | 2 | 1-1/2 | SHOWER ASSEMBLY: CHICAGO FAUCETS 1.5 GPM #SH-PB1-13-010 | CHICAGO FAUCETS | SH-PB1-13-010 | |
| SS-1 | SERVICE SINK | 3/4 | 1/2 | 3 | 1-1/2 | FAUCET: CHICAGO FAUCETS #445-VBRRCF; DRAIN: AMERICAN STANDARD #7721.038 | AMERICAN STANDARD | FLORWELL SERVICE SINK 7741.000 | |
| TD-1 | 6.25" WIDE HDPE TRENCH DRAIN IN 80" SECTION | - | - | 3 | 2 | BLACK ACID RESISTANT EPOXY COATED DUCTILE GRATE-CLASS E, BOTTOM DOME STRAINER | ZURN | Z886 | |
| UR-1 | FLOOR MOUNTED STALL, VITREOUS CHINA, 1.0 GPF, INTEGRAL FLUSH SPREADER, 3/4" TOP SPUD | 3/4 | - | 3-1/2 | 1-1/2 | FLUSH VALVE: AMERICAN STANDARD BATTERY OPERATED SELECTRONIC EXPOSED URINAL FLUSH VALVE, PWPX LONG-LIFE BATTERY 0.5 GPF #6064.051.002, POLISHED BRASS | AMERICAN STANDARD | STALLBROOK | |
| WC-1 | WALL-HUNG BLOWOUT WATER CLOSET WITH 1.6 GPM ELECTRONIC FLUSH VALVE | 1 | - | 3 | 2 | FLUSH VALVE: AMERICAN STANDARD SELECTRONIC EXPOSED TOILET DUAL FLUSH VALVE, PWPX LONG-LIFE BATTERY 1.6/1.1 GPF #6066.761.002, POLISHED BRASS; SEAT: OLSONITE #95 | AMERICAN STANDARD | RAPIDWAY 3445J.101 | |
| WC-2 | WALL-HUNG BLOWOUT WATER CLOSET WITH 1.6 GPM ELECTRONIC FLUSH VALVE | 1 | - | 3 | 2 | FLUSH VALVE: AMERICAN STANDARD SELECTRONIC EXPOSED TOILET FLUSH VALVE, PWPX LONG-LIFE BATTERY 1.6 GPF #6066.161.002, POLISHED BRASS; SEAT: OLSONITE #95 | AMERICAN STANDARD | RAPIDWAY 3445J.101 | |

SCHEDULE NOTES:
[1] FIELD PAINT HINGED LOCKING COVER BLACK WHERE INSTALLED IN BLACK EXTERIOR TRIM.

RFI 107 - Hose Bibb Supply

Hot water piping is not required for the HB-1 fixtures.

TERMINAL WATER HEATER SCHEDULE

| CALLOUT | | LOCATION | SERVICE | ELECTRICAL | | | STORAGE CAPACITY (GAL) | SERVICE CONDITIONS | | RECOVERY CONDITIONS | | BASIS OF DESIGN | | NOTES |
|---------|------|------------------|---------|------------|-------|-------------|------------------------|--------------------|-------------|---------------------|-------------------|-----------------|---------|-------|
| TYPE | MARK | | | VOLTAGE | PHASE | ELEMENT (W) | | EWT (DEG F) | LWT (DEG F) | CAPACITY (GPH) | TEMP RISE (DEG F) | MANUFACTURER | MODEL | |
| WH | 1 | 103-MECH | DHW | 480 | 3 | 18000 | 50.0 | 50 | 140 | 4200 | 90 | A.O. Smith | DRE-52A | |
| WH | 2 | 135-WATER ENTRY | DHW | 480 | 3 | 4000 | 15.0 | 50 | 140 | 1080 | 90 | A.O. Smith | DEL-15 | |
| WH | 3 | TOLL BOOTH PLAZA | DHW | 208 | 1 | 4100 | 0.0 | 50 | 110 | 0 | 60 | EEMAX INC. | EX4208 | |

RFI 225 - Floor Types and Elevations

THERMOSTATIC MIXING VALVE SCHEDULE

| CALLOUT | | LOCATION | SERVICE | FLOW (GPM) | | DISCHARGE | | MOUNTING | VALVE PRESSURE DROP (PSI) | TMV ASSOCIATED PUMP | BASIS OF DESIGN | | NOTES |
|---------|------|-----------------|---------|------------|-----|------------------|------------------------|----------|---------------------------|---------------------|-----------------|---------------------|-------|
| TYPE | MARK | | | MIN | MAX | SINGLE OR DOUBLE | DISCHARGE TEMP (DEG F) | | | | MANUFACTURER | MODEL | |
| TMV | 1 | 103-MECH | DHW | 1 | 27 | DOUBLE | 120 | WALL | 10.00 | CP-1 | LEONARD | MEGATRON 1N-LF-BMSI | |
| TMV | 2 | 135-WATER ENTRY | DHW | 1 | 27 | DOUBLE | 120 | WALL | 10.00 | CP-2 | LEONARD | MEGATRON 1N-LF-BMSI | |

FA-2 - Add insulation to get top of slab elevation of 40'-7 1/2"
FA-2 - Slope topping slab for drainage, minimum concrete topping slab should be no less than 3" thick.
FA-4 - Do not taper insulation
FA-1 - Keep 6" of insulation.
Eliminate the 2" recess at Toilet 107 and Shower 107B and slope topping to drain per revised A01.02 and 1/AD04.07. See Plumbing P05.00 and P06.00 for updated drain information to coordinate w/ tile specification.

TERMINAL DOMESTIC WATER EXPANSION TANK SCHEDULE

| CALLOUT | | LOCATION | SERVICE | VOLUME (GAL) | ACCEPTANCE VOLUME (GAL) | DIMENSIONS | | ASSUMED CW FILL TEMP (DEG F) | EXTREME TEMP (DEG F) | MAX OPERATING PRESSURE (PSIG) | BASIS OF DESIGN | BASIS OF DESIGN | NOTES |
|---------|------|-----------------|---------|--------------|-------------------------|---------------|-------------|------------------------------|----------------------|-------------------------------|-----------------|-----------------|-------|
| TYPE | MARK | | | | | DIAMETER (IN) | HEIGHT (IN) | | | | MANUFACTURER | MODEL | |
| ET | 1 | 103-MECH | DHW | 6.4 | 3.2 | 8 | 14 | 50 | 200 | 150 | AMTROL | ST-12-C | |
| ET | 2 | 135-WATER ENTRY | DHW | 6.4 | 0.9 | 12 | 18 | 50 | 200 | 150 | AMTROL | ST-5-C | |

SCHEDULE NOTES:
[1] PROVIDE EXPANSION TANK WITH FACTORY PRECHARGE = 55 PSI.



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| PRINTED: 7/22/2019 3:51:39 PM | LAST PRINTED BY: ZSMITH | | | | | FED.AID PROJ.NO. WA-2017-007-00 |
| SUBMITTAL DATE: 01/18/2019 | | | | | | REGION NO. STATE 10 WASH |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | JOB NUMBER 14W121 |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | CONTRACT NO. 00**** |
| CHECKED BY: A. LANGDON | 01/18/2019 | RFI 225 - 07/23/2019 | 07/23/2019 | | | |
| MAR PROJ ENGR: C. TORRES | | CHANGE ORDER 06/13/2019 | 06/13/2019 | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | | |



01/18/2019
DATE

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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL
PLUMBING SCHEDULES

P06.00
SHEET
OF
SHEETS

| TERMINAL STORAGE TANK SCHEDULE | | | | | | | | | |
|--------------------------------|------|----------|---------|-----------------|------------------|----------------|------------------|-----------|-------|
| CALLOUT | | LOCATION | SERVICE | VOLUME (GAL) | DIMENSIONS | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | DIAMETER (IN) | HEIGHT (IN) | MANUFACTURER | MODEL | |
| ST | 1 | 103-MECH | RW | 1800 | 66 | 145.5 | NILES STEEL TANK | BH-72-168 | |

| TERMINAL BOOSTER PUMP SCHEDULE | | | | | | | | | | | | | | |
|--------------------------------|------|----------------|---------|--------|----------|------|------------|-----------------|--------------|-------|------|-----------------|-------------|-------|
| CALLOUT | | LOCATION | SERVICE | PUMP | | | | | FLUID | MOTOR | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | TYPE | SPEED | RPM | FLOW (GPM) | TOTAL HEAD (FT) | TEMP (DEG F) | HP | BHP | MANUFACTURER | MODEL | |
| BP | 1 | 120—MECH EQUIP | RWH | INLINE | VARIABLE | 3600 | 18 | 163 | 50 | 1.50 | 1.18 | GOULDS | 3SV6GD4F20N | [1] |
| BP | 2 | 120—MECH EQUIP | RWH | INLINE | VARIABLE | 3600 | 18 | 163 | 50 | 1.50 | 1.18 | GOULDS | 3SV6GD4F20N | [1] |

NOTES:
[1] PUMP IS PART OF A PACKAGED SYSTEM COMPLETE WITH PIPING, FITTINGS, VALVES & PUMP CONTROLLER. SEE SPECIFICATIONS.

| TERMINAL BUFFER TANK SCHEDULE | | | | | | | | | | |
|-------------------------------|------|----------|---------|-----------------|-----------------|------------------|----------------|-----------------|-------|-------|
| CALLOUT | | LOCATION | SERVICE | VOLUME (GAL) | VOLUME (GAL) | DIMENSIONS | | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | | DIAMETER (IN) | HEIGHT (IN) | MANUFACTURER | MODEL | |
| BT | 1 | 103-MECH | RWH | 34 | 34 | 22 | 30 | AMTROL | WF-34 | |


| TERMINAL CIRCULATION PUMP SCHEDULE | | | | | | | | | | | |
|------------------------------------|------|-----------------|---------|--------|---------------|--------------------|-----------------|-------|-----------------|------------------|-------|
| CALLOUT | | LOCATION | SERVICE | PUMP | | | | MOTOR | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | TYPE | FLOW (GPM) | TOTAL HEAD (FT) | TEMP (DEG F) | | MANUFACTURER | MODEL | |
| CP | 1 | 103-MECH | DHW | INLINE | 1.5 | 1.2 | 118 | 33 | ARMSTRONG | ASTRO 250CI-115V | |
| CP | 2 | 135-WATER ENTRY | DHW | INLINE | 0.8 | 1.2 | 118 | 33 | ARMSTRONG | ASTRO 250CI-115V | |

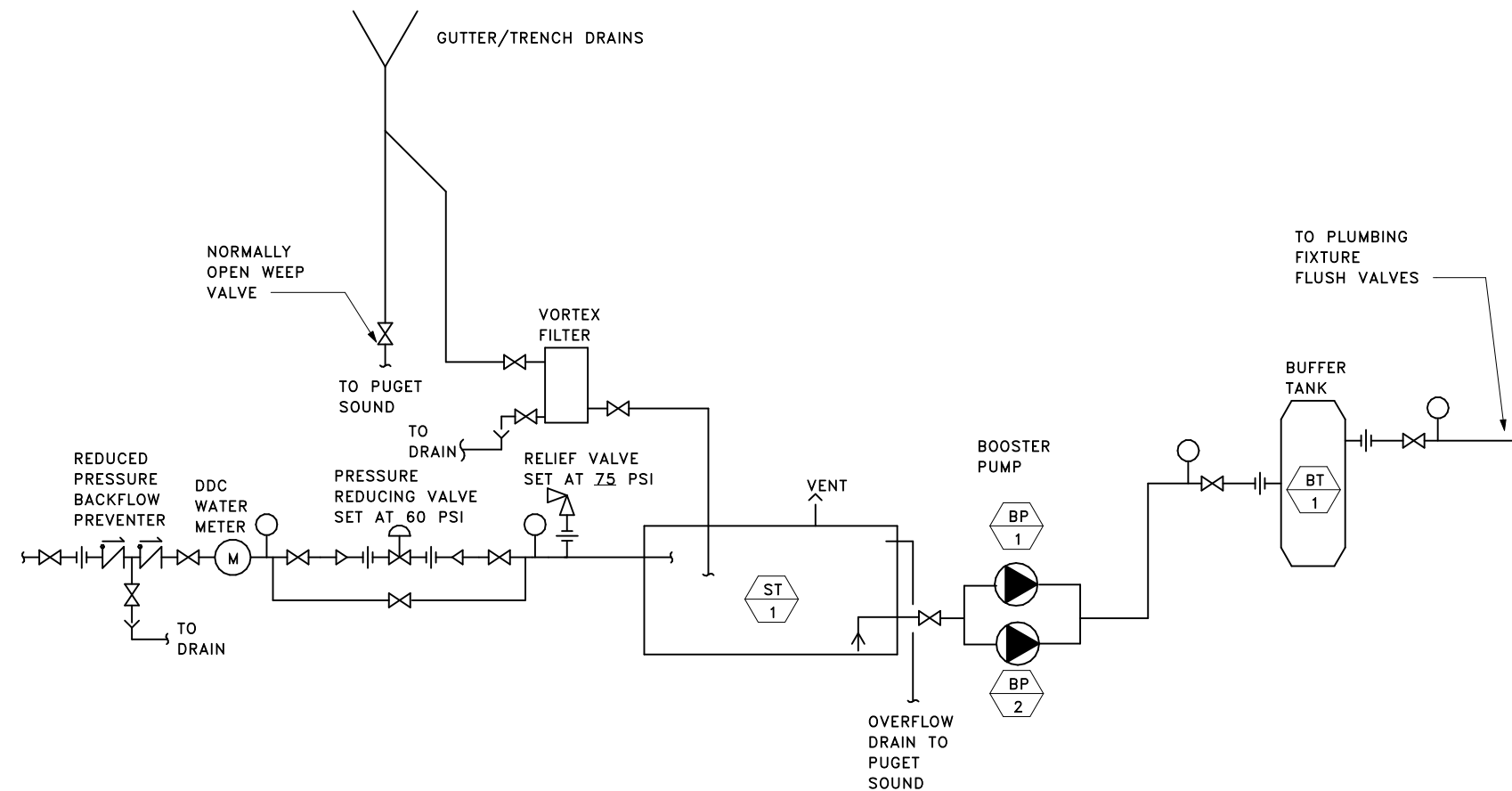
SCHEDULE NOTES:
[1] PROVIDE WITH INITIAL IMPELLER AS SCHEDULED. FOLLOWING INSTALLATION AND BALANCING, PROVIDE REPLACEMENT OR TRIMMED IMPELLER FOR ACTUAL CONDITIONS.
[2] PROVIDE WITH VFD. ELECTRICAL TO PROVIDE CONNECTION.

| TERMINAL RAINWATER FILTER | | | | | | | |
|---------------------------|------|----------|---------|---------------------------|-----------------|-----------|-------|
| CALLOUT | | LOCATION | SERVICE | FILTER FLOW RATE (GPM) | BASIS OF DESIGN | | NOTES |
| TYPE | MARK | | | | MANUFACTURER | MODEL | |
| VF | 1 | MECH 103 | RWH | 130 | JAY R. SMITH | RH9521-12 | [1] |
| VF | 2 | MECH 103 | RWH | 130 | JAY R. SMITH | RH9521-12 | [1] |

NOTES:
[1] FILTERED FLOW RATE BASED ON 90% EFFICIENCY



| | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------|-------------------------|--|--|--------------------|------------|---------------------------------|------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------|--|---------------------------|
| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH | | | | | | | | | |  Washington State Department of Transportation WASHINGTON STATE FERRIES | | SR 525 MUKILTEO TERMINAL (PHASE 2) FERRY TERMINAL CONSTRUCTION TERMINAL PLUMBING SCHEDULES | | P06.01 |
| PRINTED: 1/18/2019 4:48:41 PM | LAST PRINTED BY: ZSMITH | | | | | FED.AID PROJ.NO. WA-2017-007-00 | | | | | | | | SHEET 1363 OF 1521 SHEETS |
| SUBMITTAL DATE: 01/18/2019 | | | | | | REGION NO. 10 | STATE WASH | | | | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | | JOB NUMBER 14W121 | | | | | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | | CONTRACT NO. 00**** | | | | | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | | | | | | | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | | | | | | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | CONFORMED DRAWINGS | 01/18/2019 | | | | | | | | | |
| ASST SECRETARY: A. SCARTON | | | | REVISION | DATE | BY | | | | | | | | |



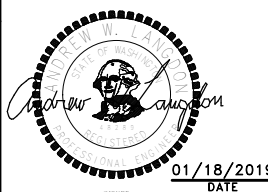
1 RW HARVEST DIAGRAM
P06.02

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| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
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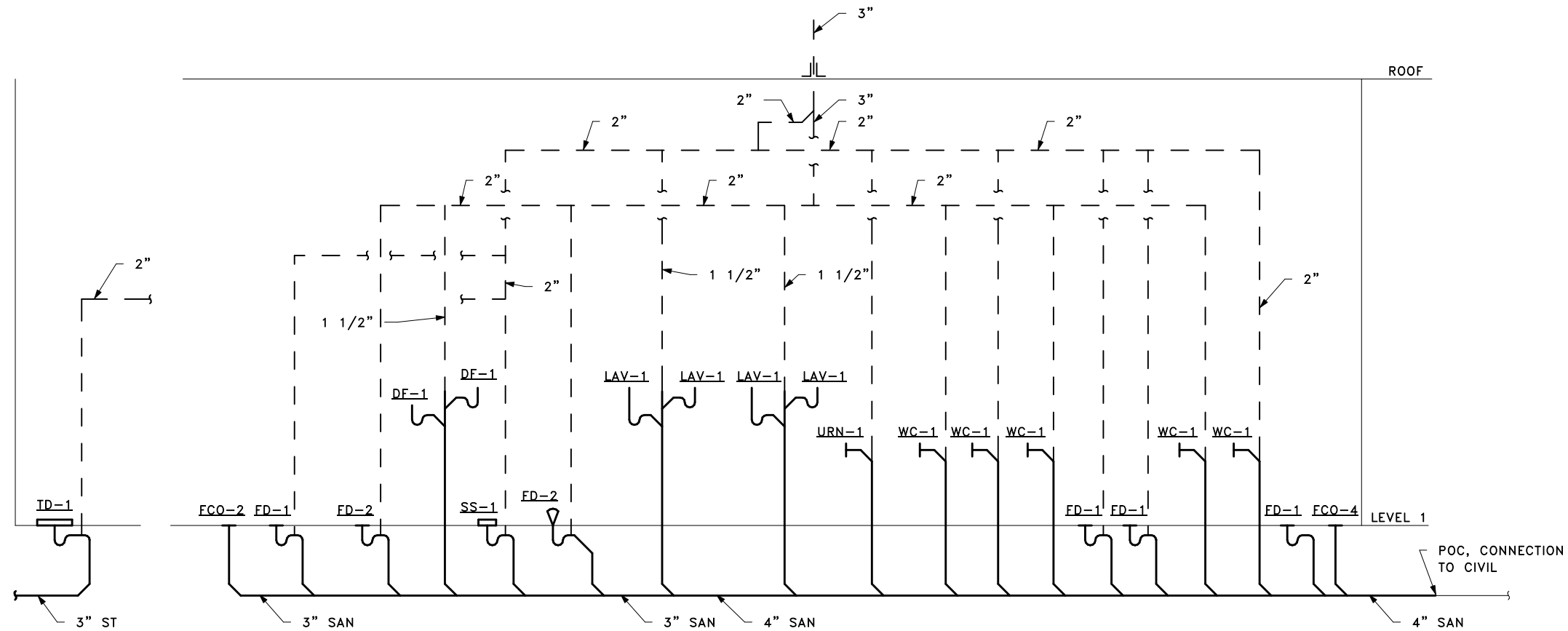
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PROJ.NO.
WA-2017-007-00
REGION NO. STATE
10 WASH
JOB NUMBER
14W121
CONTRACT NO.
00****



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Department of Transportation
WASHINGTON STATE FERRIES

SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
PLUMBING DIAGRAMS

P06.02
SHEET
1364
OF
1521
SHEETS



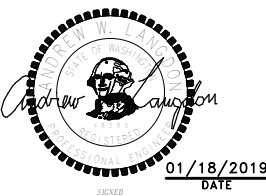
1 MAINTENANCE BLDG SECTOR D WASTE & VENT DIAGRAM
P06.03



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| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
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| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

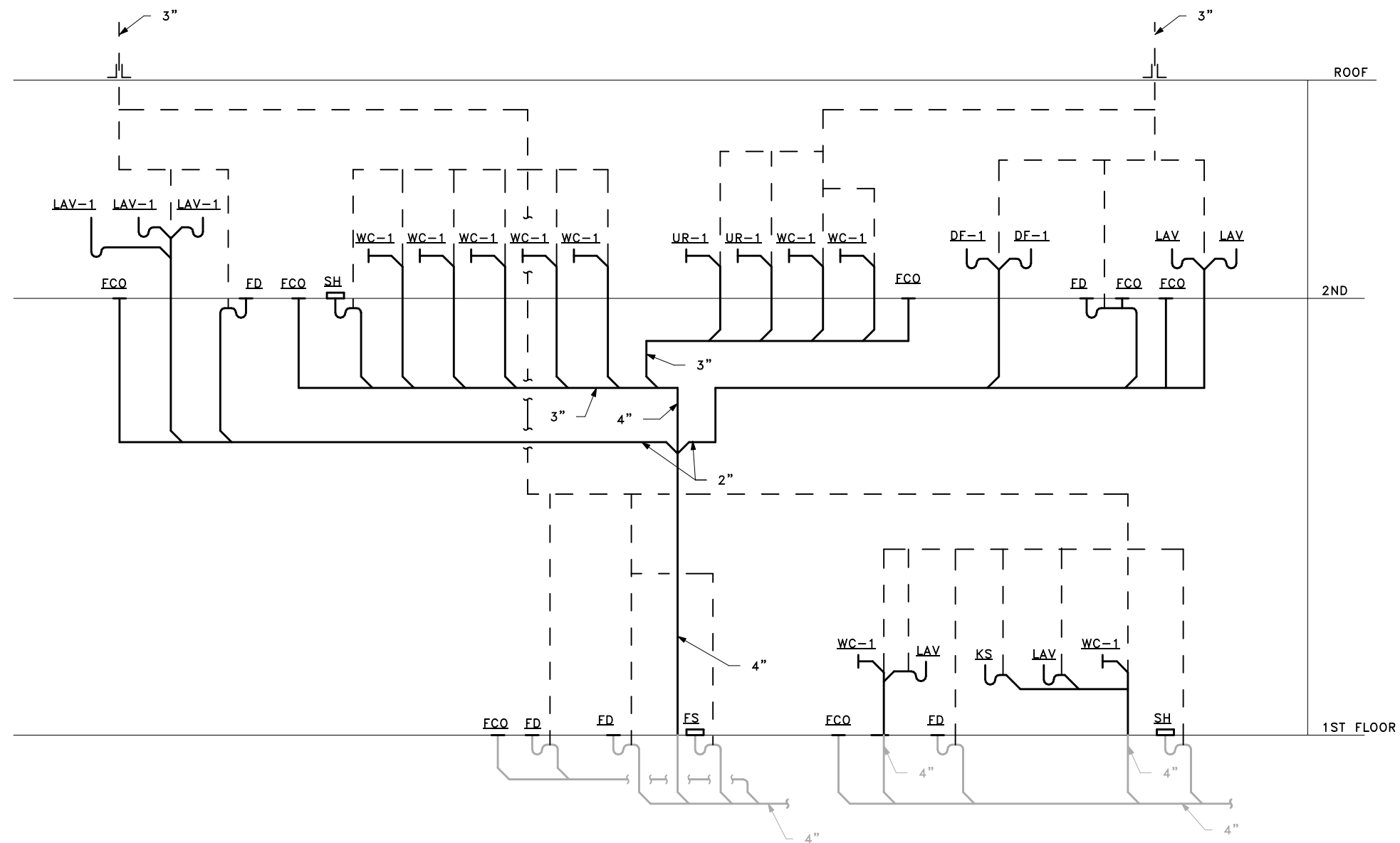
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| FED.AID PROJ.NO. WA-2017-007-00 |
| REGION NO. STATE 10 WASH |
| JOB NUMBER 14W121 |
| CONTRACT NO. 00**** |



SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
PLUMBING DIAGRAMS

P06.03

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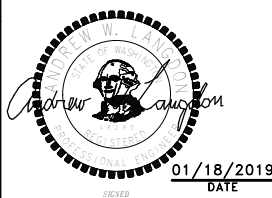
1 TERMINAL BLDG WASTE & VENT DIAGRAM
P06.04

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| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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REGION NO. STATE
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CONTRACT NO.
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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
PLUMBING DIAGRAMS

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OF
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FIRE PROTECTION ABBREVIATIONS

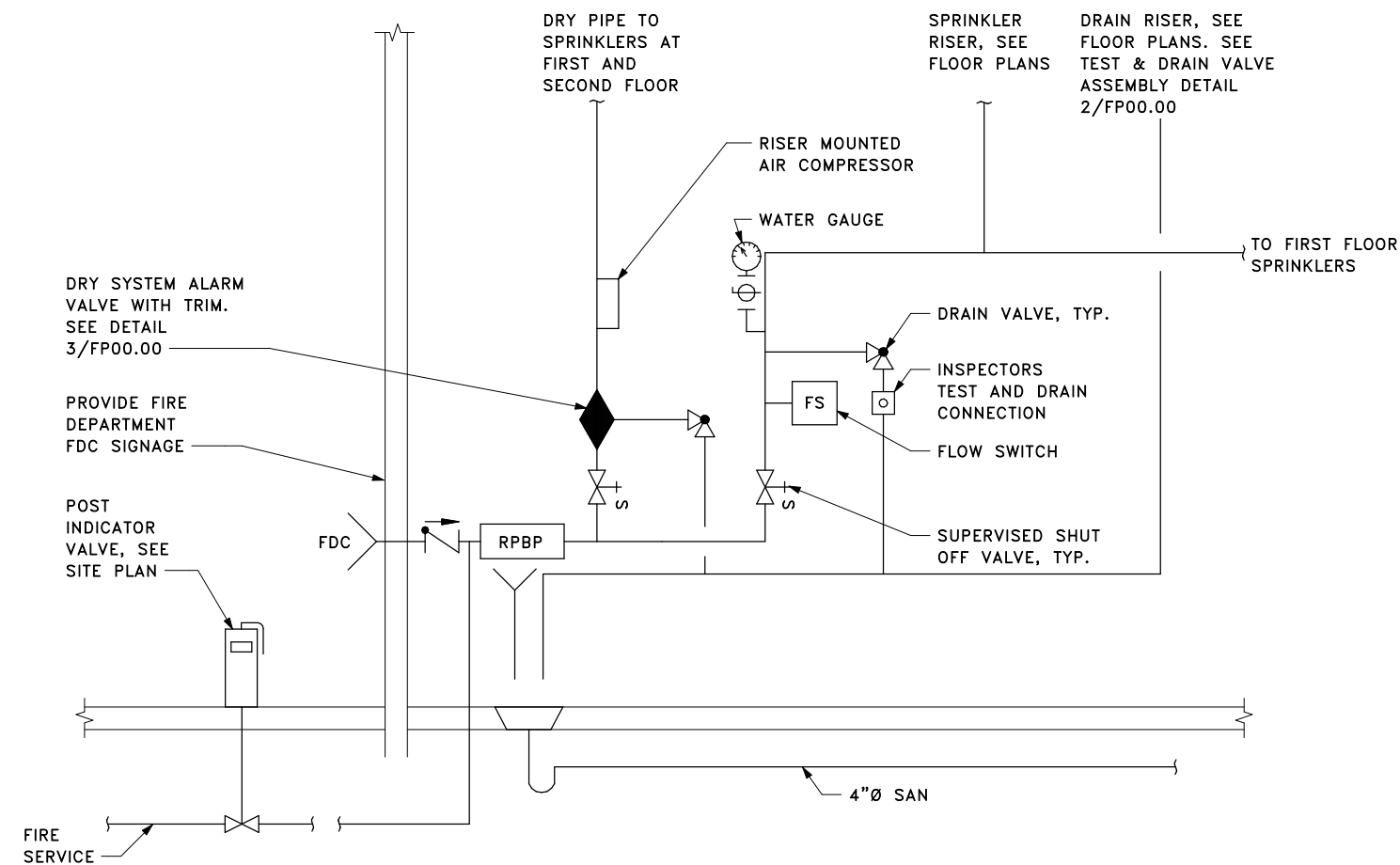
| | |
|------|--------------------------------------|
| AS | AUTOMATIC SPRINKLER |
| FP | FIRE PROTECTION |
| FDC | FIRE DEPARTMENT CONNECTION |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| SPR | SPRINKLER |
| UFC | UNIFORM FIRE CODE |

FIRE PROTECTION LEGEND

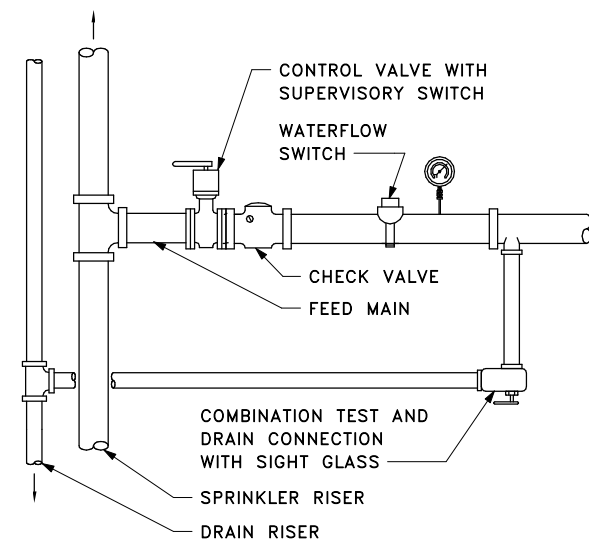
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|------|------------------------------------------|
| | OS & Y VALVE |
| | VALVE IN RISER |
| -XX- | PIPING IDENTIFIER, SEE ABBREVIATIONS |
| | FIRE DEPARTMENT CONNECTION |
| | FLOW SWITCH |
| | DRY PIPE VALVE |
| | GAUGE, AIR OR WATER AS NOTED ON DRAWINGS |

FIRE PROTECTION GENERAL NOTES

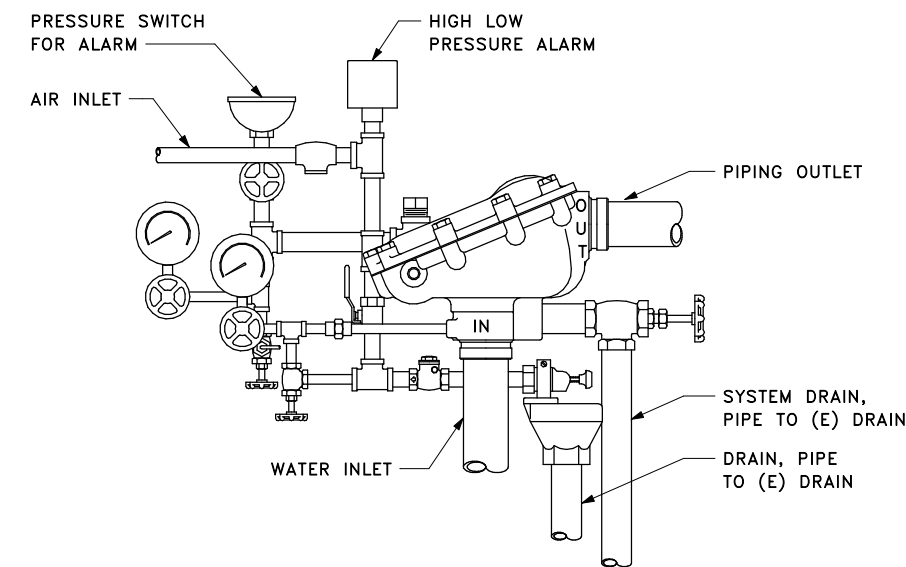
1. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. PROVIDE 10% SAFETY FACTOR ALLOWANCE IN HYDRAULIC CALCULATION WHERE MAKING MODIFICATIONS.
2. THE BUILDING FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AS ORDINARY HAZARD.
3. DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13 AND AS APPROVED BY THE AHJ.
4. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL COMPLY WITH IBC, IFC AND NFPA. THE AHJ SHALL BE CONSULTED FOR INTERPRETATION OF THE FIRE CODES.
5. ALL EQUIPMENT AND MATERIALS, INCLUDING BUT NOT LIMITED TO PIPING, FITTINGS, VALVES AND ACCESSORIES SHALL BE FM APPROVED AND/OR UL LISTED.
6. SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE WITH ORDINARY TEMPERATURE RATING.
7. DESIGN, COORDINATION, AND ENGINEERING OF THE FIRE PROTECTION SYSTEM BY THE CONTRACTOR. THE CONTRACTOR WILL BE THE ENGINEER OF RECORD FOR THE DESIGN OF THE SYSTEM.
8. CONTRACTOR SHALL SUBMIT PERMIT DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL, NICET LEVEL III OR HIGHER.
9. COORDINATE PIPE ROUTING AND SPRINKLER HEAD LOCATIONS WITH LIGHTS, DIFFUSERS/GRILLES, DUCTS, BEAMS, STRUCTURE AND/OR OTHER POSSIBLE OBSTRUCTIONS. ALL SPRINKLER PIPING AND OFFSETS ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE REVISIONS TO THE PIPE LAYOUT AND OFFSETS TO INSTALL THE SYSTEM PER APPLICABLE CODES AND SPECIFICATIONS.
10. PROVIDE UL CLASSIFIED FIRE STOPPING ON ALL NEW PIPING PENETRATIONS OF THE RATED WALLS (SUCH AS CORRIDORS, STAIRS, MECHANICAL AND ELECTRICAL ROOMS).



1 FIRE RISER DIAGRAM
FP00.00



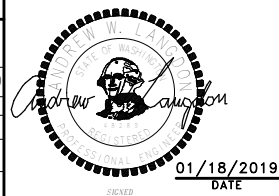
2 TEST AND DRAIN VALVE ASSEMBLY DETAIL
FP00.00



3 DRY SYSTEM ALARM VALVE DETAIL
FP00.00

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| SUBMITTAL DATE: 01/18/2019 | DESIGNED BY: O. JARVEGREN | REGION NO. STATE 10 WASH |
| ENTERED BY: Z. SMITH | CHECKED BY: A. LANGDON | JOB NUMBER 14W121 |
| MAR PROJ ENGR: C. TORRES | DIR TERM ENGR: N. MCINTOSH | CONTRACT NO. 00**** |
| ASST SECRETARY: A. SCARTON | CONFORMED DRAWINGS | REVISION |
| | DATE | BY |

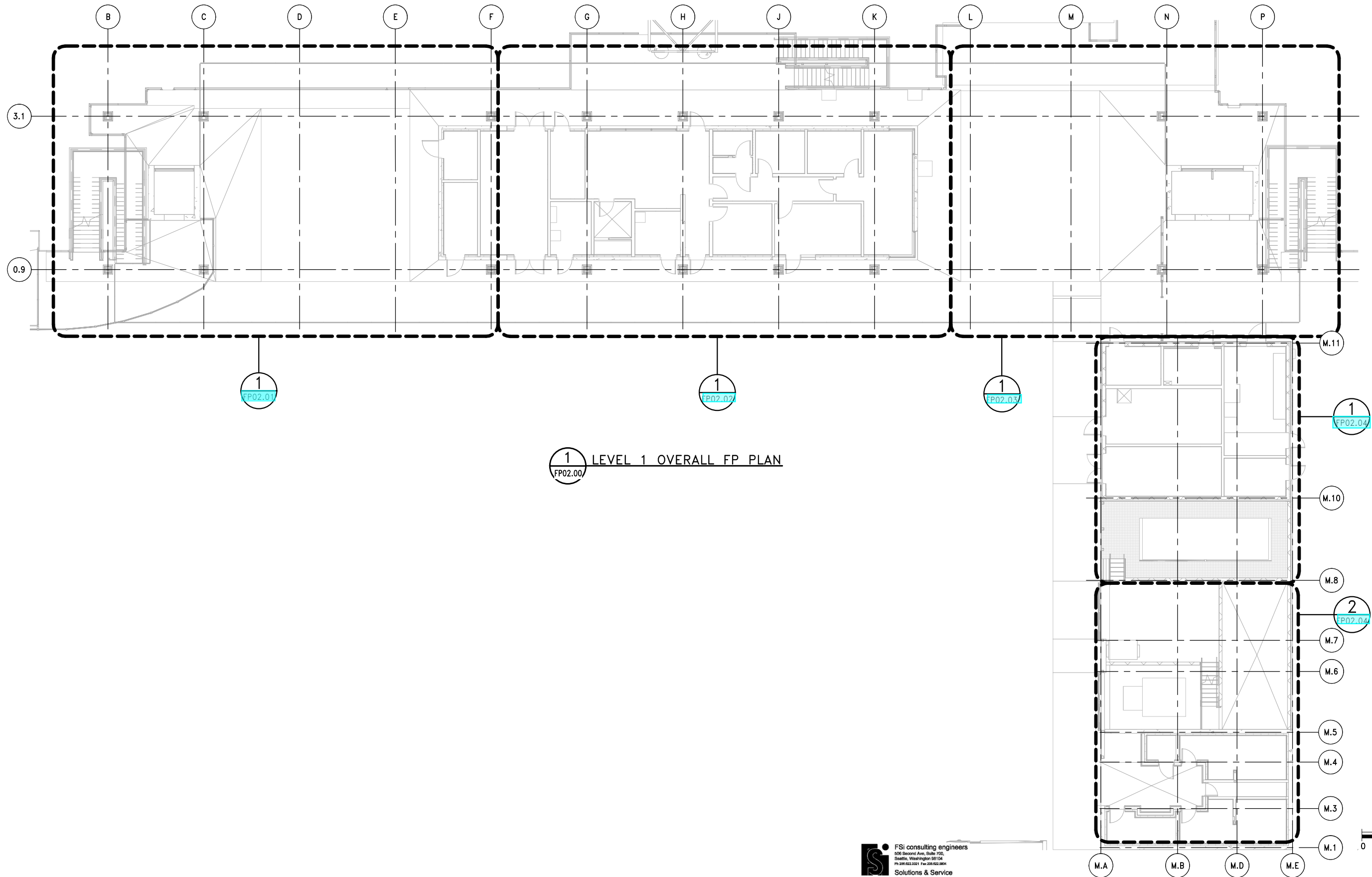


DATE



SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
FIRE PROTECTION INDEX, LEGEND,
ABBREVIATIONS AND GENERAL NOTES

FP00.00
SHEET
1367
OF
1521
SHEETS

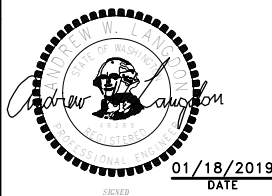


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FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSI\14w121_BLDG_MECH

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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | CONFORMED DRAWINGS | 01/18/2019 | | |
| ASST SECRETARY: A. SCARTON | | REVISION | DATE | BY | |

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CONTRACT NO.
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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
OVERALL FIRE PROT. PLAN

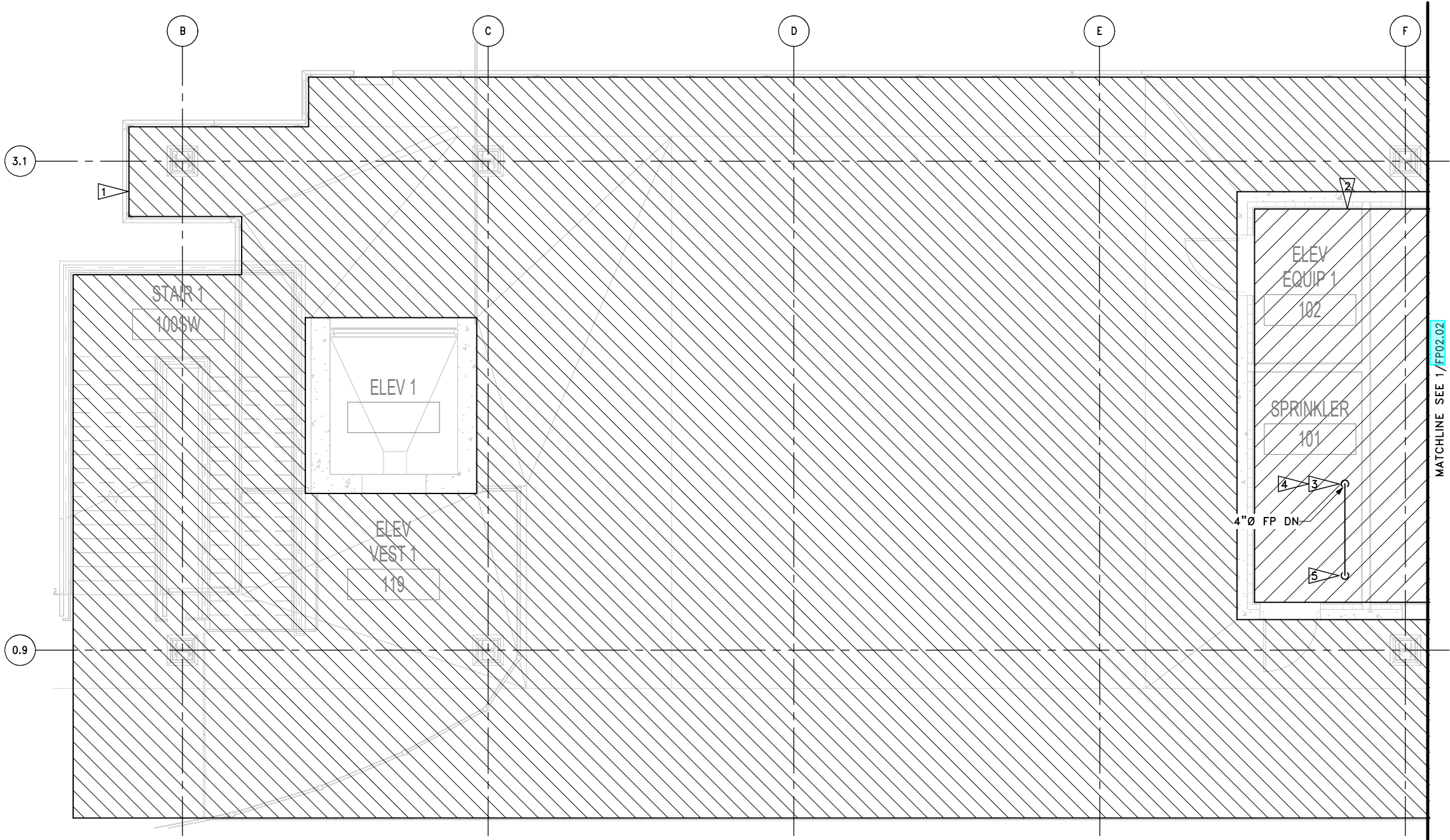
FP02.00
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OF
1521
SHEETS

GENERAL NOTES

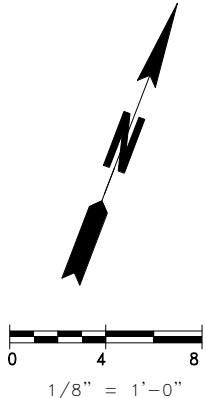
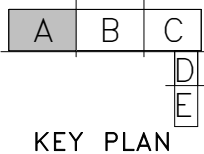
- 1. SEE [FP00.00](#) FOR GENERAL NOTES.
- 2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

CONSTRUCTION NOTES

- 1. PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
- 2. PROVIDE WET PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13. THE SYSTEM SHALL BE CAPABLE OF PRODUCING A DISCHARGE DENSITY OF 0.15 GPM OVER THE MOST REMOTE 1500 SQFT.
- 3. FIRE RISER, SEE DETAIL [1/FP00.00](#).
- 4. CONNECT TO EXISTING 4"Ø FDC. REFER TO DRAWING [FP02.00](#) WITHIN THE 16W125 TRESTLE & BRIDGE SEAT PACKAGE.
- 5. CONNECT TO EXISTING 4"Ø FP. REFER TO DRAWING [FP02.00](#) WITHIN THE 16W125 TRESTLE & BRIDGE SEAT PACKAGE.



1 LEVEL 1 FP PLAN SECTOR A
FP02.01

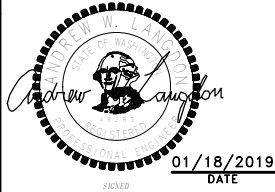


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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
| MAR PROJ ENGR: C. TORRES | | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | | |
| ASST SECRETARY: A. SCARTON | | | | | |
| | | CONFORMED DRAWINGS | 01/18/2019 | | |
| | | REVISION | DATE | BY | |

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| FED.AID PROJ.NO. WA-2017-007-00 |
| REGION NO. STATE 10 WASH |
| JOB NUMBER 14W121 |
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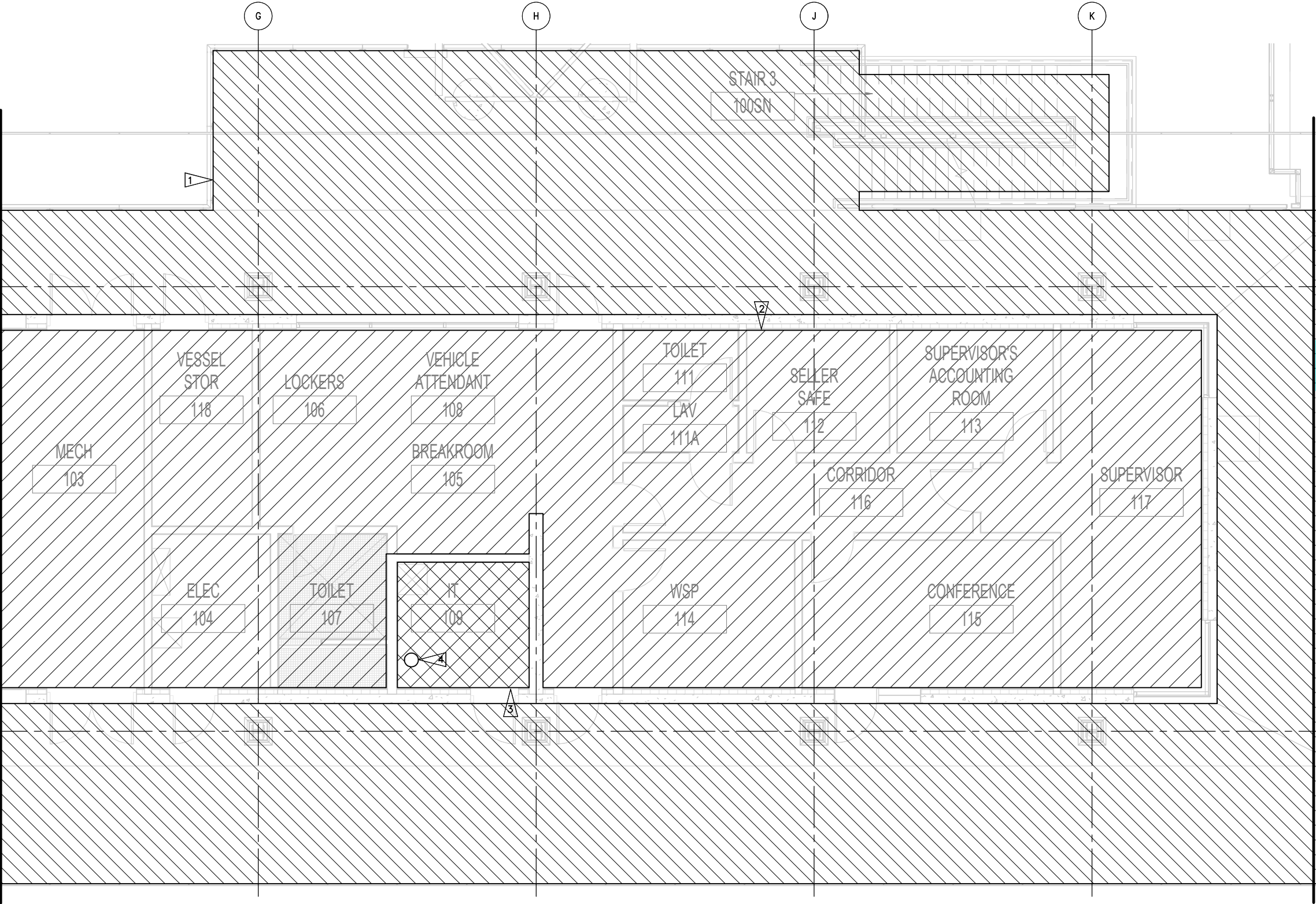


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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 1
FIRE PROT. PLAN – SECTOR A

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| FP02.01 |
| SHEET 1369 OF 1521 SHEETS |



MATCHLINE SEE 1/FP02.01

MATCHLINE SEE 1/FP02.03

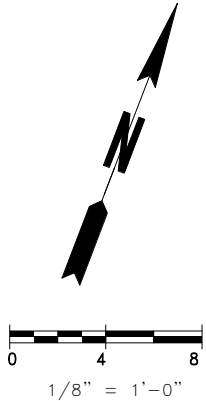
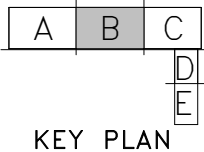
1 LEVEL 1 FP PLAN SECTOR B
FP02.02

GENERAL NOTES

1. SEE FP00.00 FOR GENERAL NOTES.
2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

CONSTRUCTION NOTES

1. PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
2. PROVIDE WET PIPE FIRE SUPPRESSION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13. THE SYSTEM SHALL BE CAPABLE OF PRODUCING A DISCHARGE DENSITY OF 0.15 GPM OVER THE MOST REMOTE 1500 SQFT.
3. PROVIDE CLEAN AGENT FIRE PROTECTION IN THIS AREA, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
4. PROVIDE FM200 AGENT CYLINDER WITH PRESURE GAUGE AND LOW PRESSURE SWITCH TO PROVIDE VISUAL AND ELECTRICAL SUPERVISION OF THE CONTAINER PRESSURE.



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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | |
| MAR PROJ ENGR: C. TORRES | | | |
| DIR TERM ENGR: N. MCINTOSH | | | |
| ASST SECRETARY: A. SCARTON | | | |
| | CONFORMED DRAWINGS | 01/18/2019 | |
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| FED.AID PROJ.NO. |
| WA-2017-007-00 |
| REGION NO. STATE |
| 10 WASH |
| JOB NUMBER |
| 14W121 |
| CONTRACT NO. |
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MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 1
FIRE PROT. PLAN – SECTOR B

FP02.02
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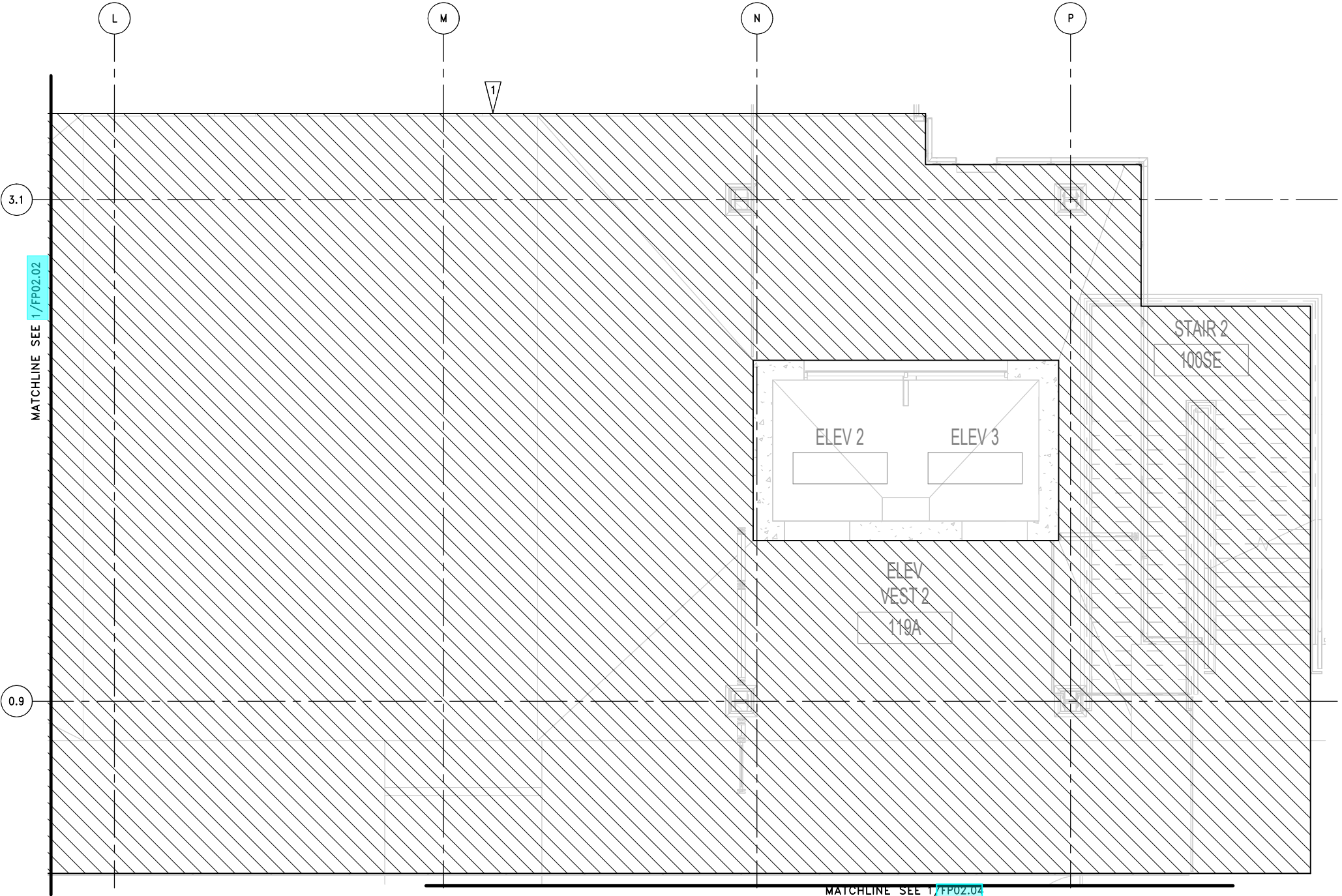
GENERAL NOTES

1. SEE **FP00.00** FOR GENERAL NOTES.
2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

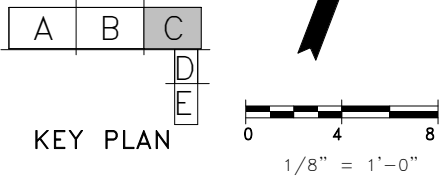
CONSTRUCTION NOTES

- 1

 PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.



1 LEVEL 1 FP PLAN SECTOR C



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| PRINTED: 1/18/2019 3:34:19 PM | | | | | LAST PRINTED BY: ZSMITH | | | | | | | | | | | | | | | | | | | | FED.AID PROJ.NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 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GENERAL NOTES

1. SEE FP00.00 FOR GENERAL NOTES.
2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

CONSTRUCTION NOTES

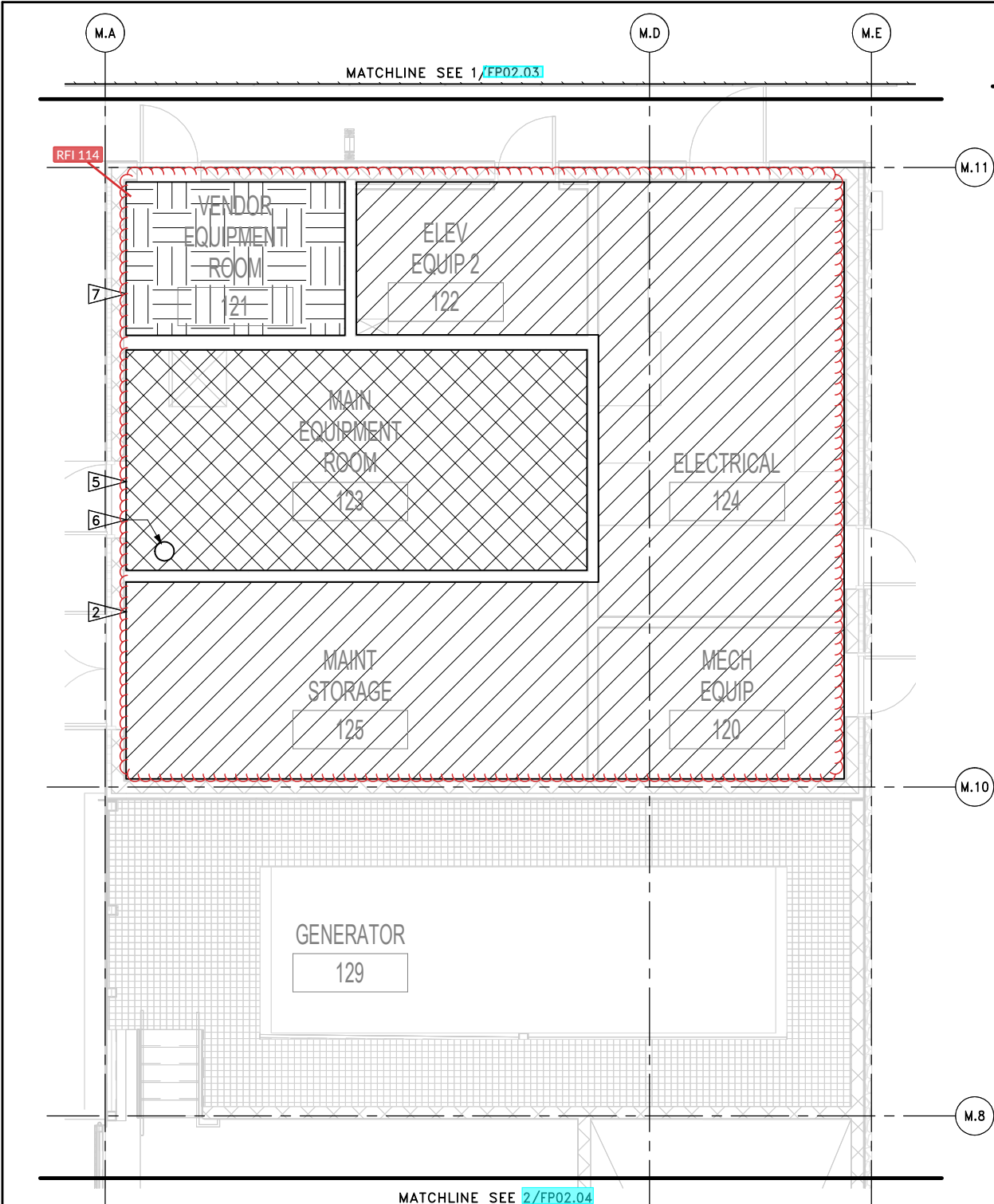
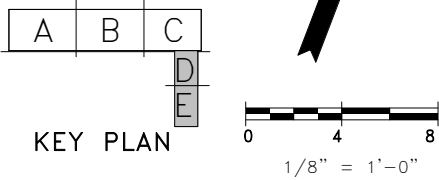
- 1 PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
- 2 PROVIDE WET PIPE FIRE SUPPRESSION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13. THE SYSTEM SHALL BE CAPABLE OF PRODUCING A DISCHARGE DENSITY OF 0.15 GPM OVER THE MOST REMOTE 1500 SQFT.
- 3 4"Ø FIRE WATER, SEE CIVIL FOR CONTINUATION.
- 4 FIRE RISER, SEE DETAIL 1/FP00.00.
- 5 PROVIDE CLEAN-AGENT FIRE PROTECTION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
- 6 PROVIDE FM200 AGENT CYLINDER WITH PRESURE GAUGE AND LOW PRESSURE SWITCH TO PROVIDE VISUAL AND ELECTRICAL SUPERVISION OF THE CONTAINER PRESSURE.
- 7 PROVIDE PREAGENT FIRE PROTECTION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.

RFI 175 - Preagent Fire System

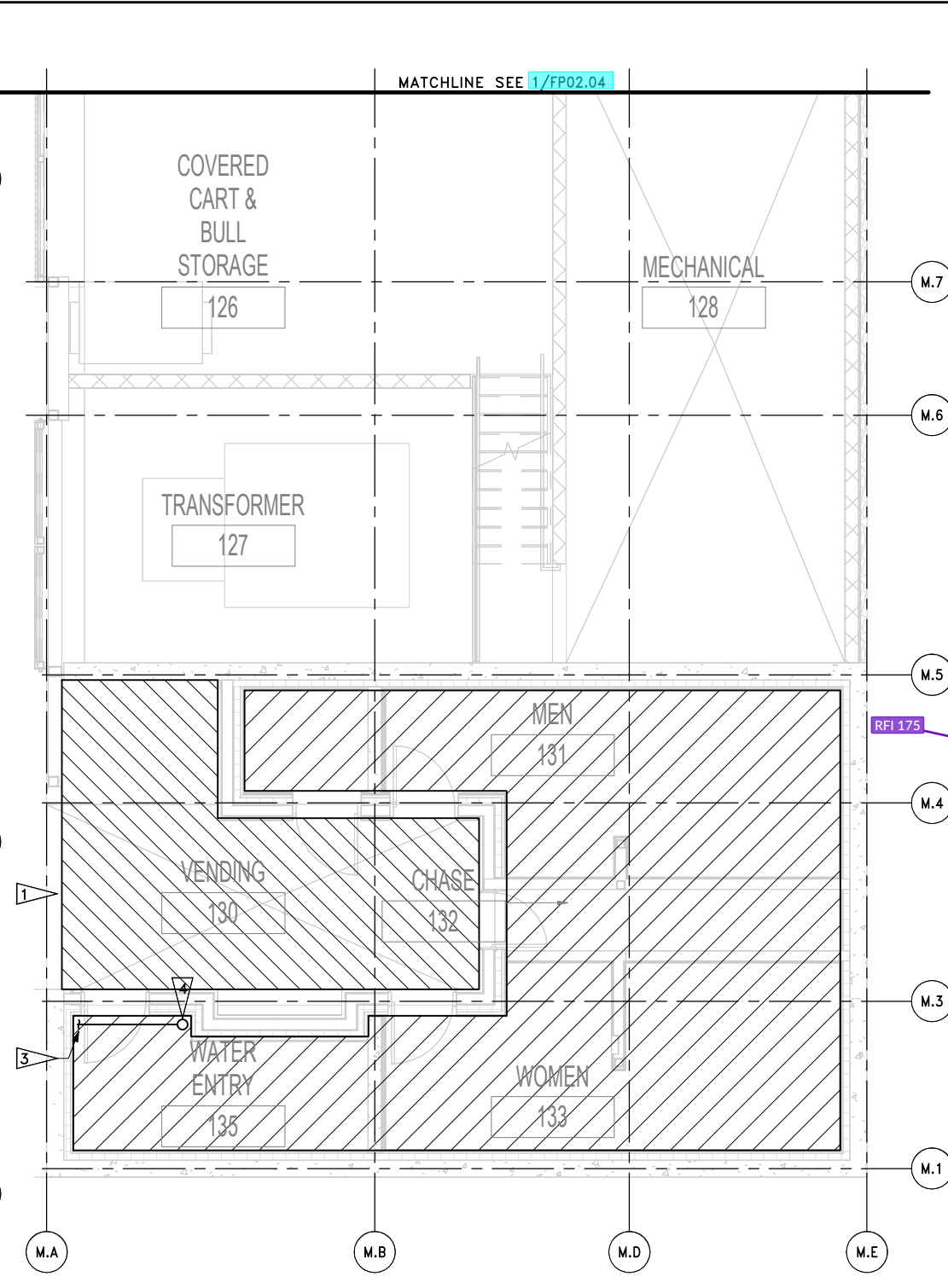
Preagent meaning preaction

RFI 114 - Sector D Fire Protection

Provide a dry fire protection system all areas shown as wet (MECH EQUIP - 120, ELEV EQUIP 2 - 122, ELECTRICAL - 124, and MAINT STORAGE - 125, as required) in Sector D on drawing FP02.04. Provide clean agent fire protection system for MAIN EQUIPMENT ROOM - 123. Provide preagent fire protection system for VENDOR EQUIPMENT ROOM - 121.



1 LEVEL 1 FP PLAN SECTOR D
FP02.04



2 LEVEL 1 FP PLAN SECTOR E
FP02.04

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| FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSI\14w121_BLDG_MECH | | | | |
| PRINTED: 1/18/2019 3:34:55 PM | LAST PRINTED BY: ZSMITH | | | |
| SUBMITTAL DATE: 01/18/2019 | | | | |
| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | |
| MAR PROJ ENGR: C. TORRES | | | | |
| DIR TERM ENGR: N. MCINTOSH | | | | |
| ASST SECRETARY: A. SCARTON | | | | |
| | CONFORMED DRAWINGS | 01/18/2019 | | |
| | REVISION | DATE | BY | |

FED.AID
PROJ.NO.

WA-2017-007-00

REGION NO. STATE

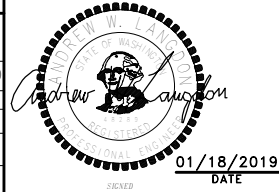
10 WASH

JOB NUMBER

14W121

CONTRACT NO.

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DATE

FSI consulting engineers
509 Second Ave, Suite 700,
Seattle, Washington 98104
PH 206.922.3211 Fax 206.922.3864



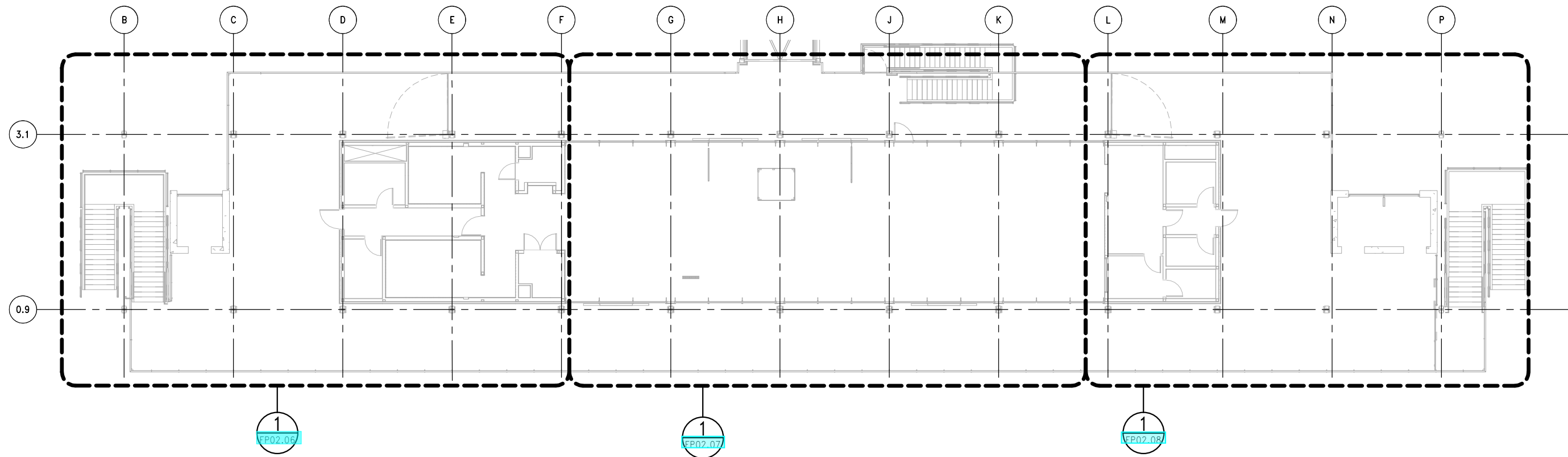
Solutions & Service

Washington State
Department of Transportation
WASHINGTON STATE FERRIES



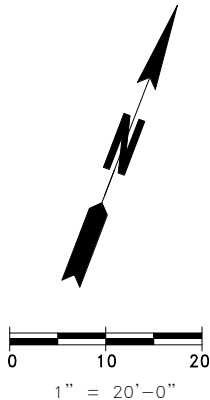
SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 1
FIRE PROT. PLANS - SECTOR D & E

FP02.04
SHEET
1372
OF
1521
SHEETS



1 LEVEL 2 OVERALL FP PLAN
FP02.05

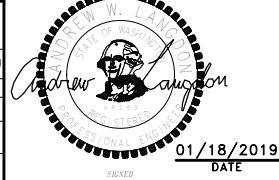
FSI consulting engineers
509 Second Ave, Suite 700,
Seattle, Washington 98104
PH 206.922.3321 Fax 206.922.3804
Solutions & Service



FILE NAME: PW:\WSF\Mukilteo\14W121_FerryTermConst\CADD\FSi\14w121_BLDG_MECH

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| PRINTED: | 1/18/2019 3:35:40 PM | LAST PRINTED BY: | ZSMITH | | |
| SUBMITTAL DATE: | 01/18/2019 | | | | |
| DESIGNED BY: | O. JARVEGREN | 01/18/2019 | | | |
| ENTERED BY: | Z. SMITH | 01/18/2019 | | | |
| CHECKED BY: | A. LANGDON | 01/18/2019 | | | |
| MAR PROJ ENGR: | C. TORRES | | | | |
| DIR TERM ENGR: | N. MCINTOSH | | | | |
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| | | CONFORMED DRAWINGS | 01/18/2019 | | |
| | | REVISION | DATE | BY | |

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REGION NO. STATE
10 WASH
JOB NUMBER
14W121
CONTRACT NO.
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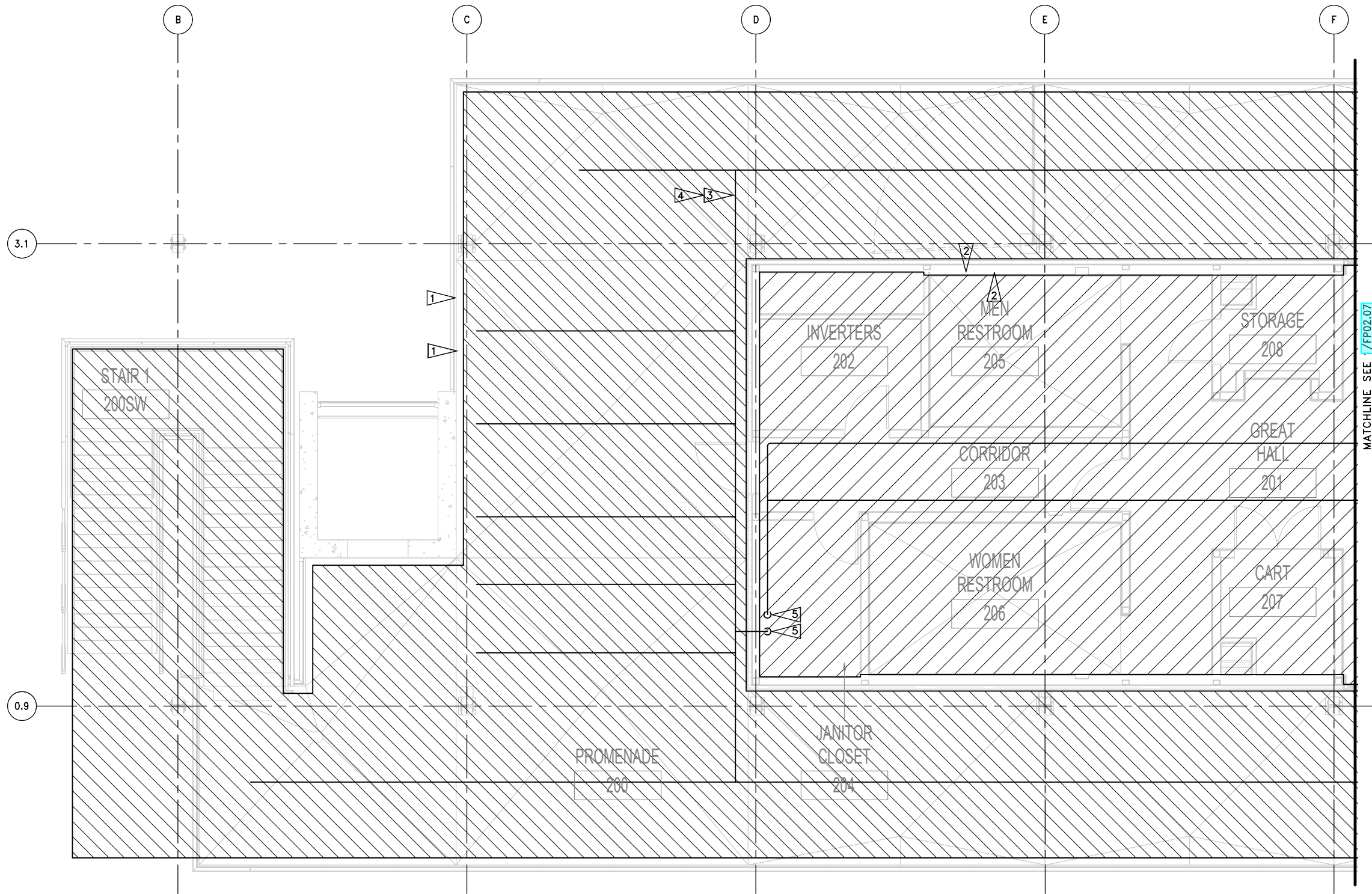
DATE



SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
OVERALL FIRE PROT. PLAN

FP02.05

SHEET
1373
OF
1521
SHEETS



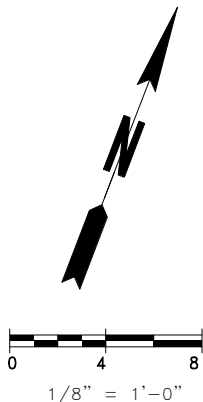
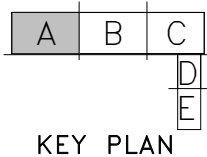
GENERAL NOTES

1. SEE **FP00.00** FOR GENERAL NOTES.
2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

CONSTRUCTION NOTES

1. PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
2. PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13. THE SYSTEM SHALL BE CAPABLE OF PRODUCING A DISCHARGE DENSITY OF 0.15 GPM OVER THE MOST REMOTE 1500 SQFT.
3. FIRE PROTECTION PIPE ROUTING SHOWN FOR COORDINATION ONLY. COORDINATE EXACT ROUTING AND SPRINKLER HEAD LAYOUT WITH ARCHITECT AND REFLECTED CEILING PLANS.
4. MAINS AND BRANCHES TO BE ROUTED PARALLEL TO STRUCTURAL ELEMENTS AND CENTERED BETWEEN THEM.
5. PROPOSED 2ND LEVEL FIRE PROTECTION RISER.

1 LEVEL 2 FP PLAN SECTOR A
FP02.06



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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL – LEVEL 2
FIRE PROT. PLAN – SECTOR A

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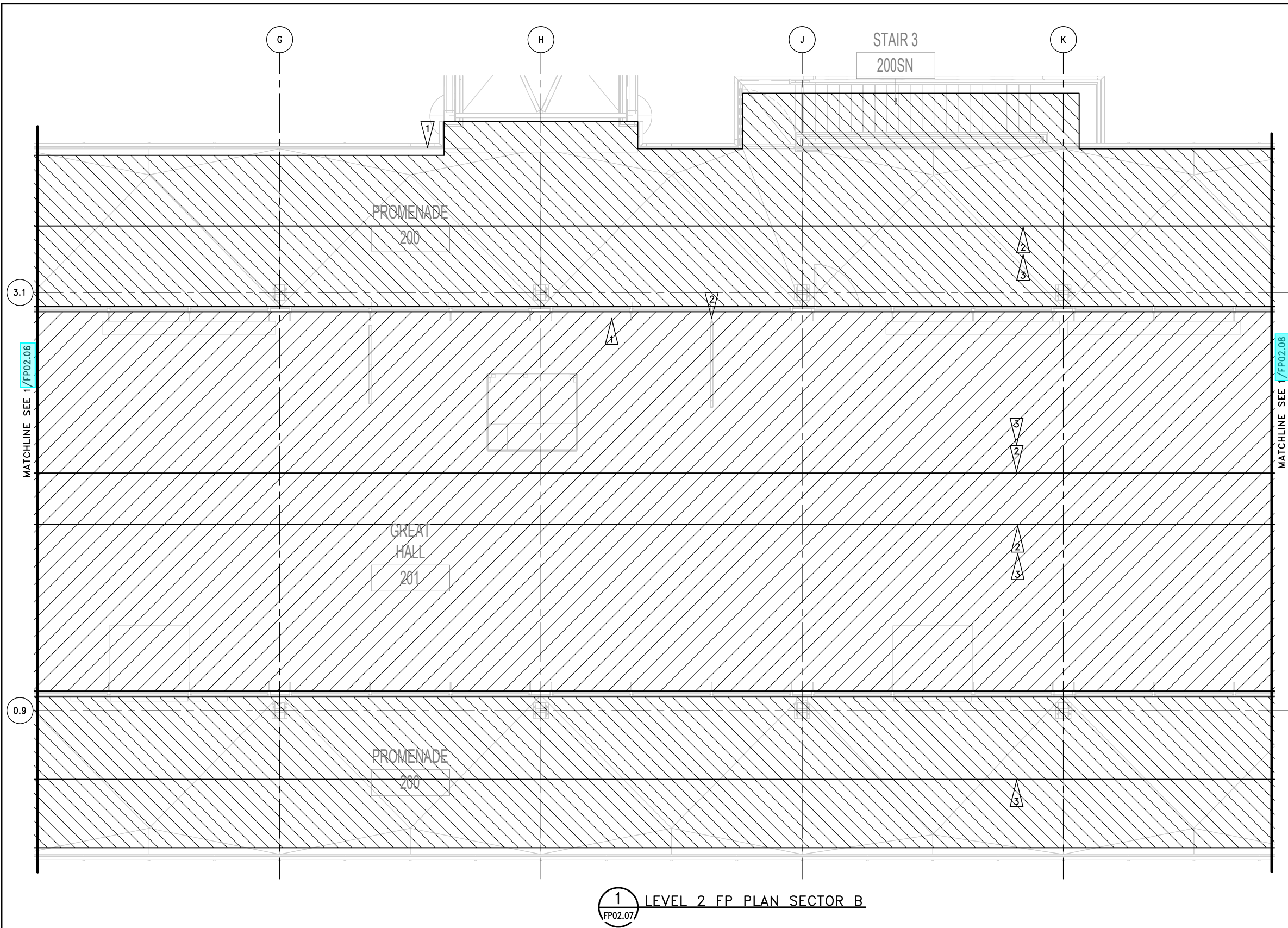
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| PRINTED: 1/18/2019 3:36:38 PM | LAST PRINTED BY: ZSMITH | | | | |
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| DESIGNED BY: O. JARVEGREN | 01/18/2019 | | | | |
| ENTERED BY: Z. SMITH | 01/18/2019 | | | | |
| CHECKED BY: A. LANGDON | 01/18/2019 | | | | |
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| DIR TERM ENGR: N. MCINTOSH | | | | | |
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WA-2017-007-00
REGION NO. STATE
10 WASH
JOB NUMBER
14W121
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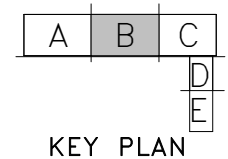


GENERAL NOTES

1. SEE [FP00.00](#) FOR GENERAL NOTES.
2. FIRE PROTECTION CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWING AND COORDINATE ALL ROUTING AND HEAD LOCATIONS WITH ARCHITECT PRIOR TO FINALIZING DESIGN.

CONSTRUCTION NOTES

1. PROVIDE DRY PIPE FIRE SUPPRESSION SYSTEM FOR COVERED WALK WAYS AND TRESTLE DECK BELOW MAIN TERMINAL, CONFORMING TO ALL REQUIREMENTS FOR A TYPICAL ORDINARY HAZARD GROUP 1 OCCUPANCY AS DEFINED BY NFPA 13.
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3. FIRE PROTECTION PIPE ROUTING SHOWN FOR COORDINATION ONLY. COORDINATE EXACT ROUTING AND SPRINKLER HEAD LAYOUT WITH ARCHITECT AND REFLECTED CEILING PLANS.
4. MAINS AND BRANCHES TO BE ROUTED PARALLEL TO STRUCTURAL ELEMENTS AND CENTERED BETWEEN THEM.



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SR 525
MUKILTEO TERMINAL (PHASE 2)
FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
FIRE PROT. PLAN - SECTOR B

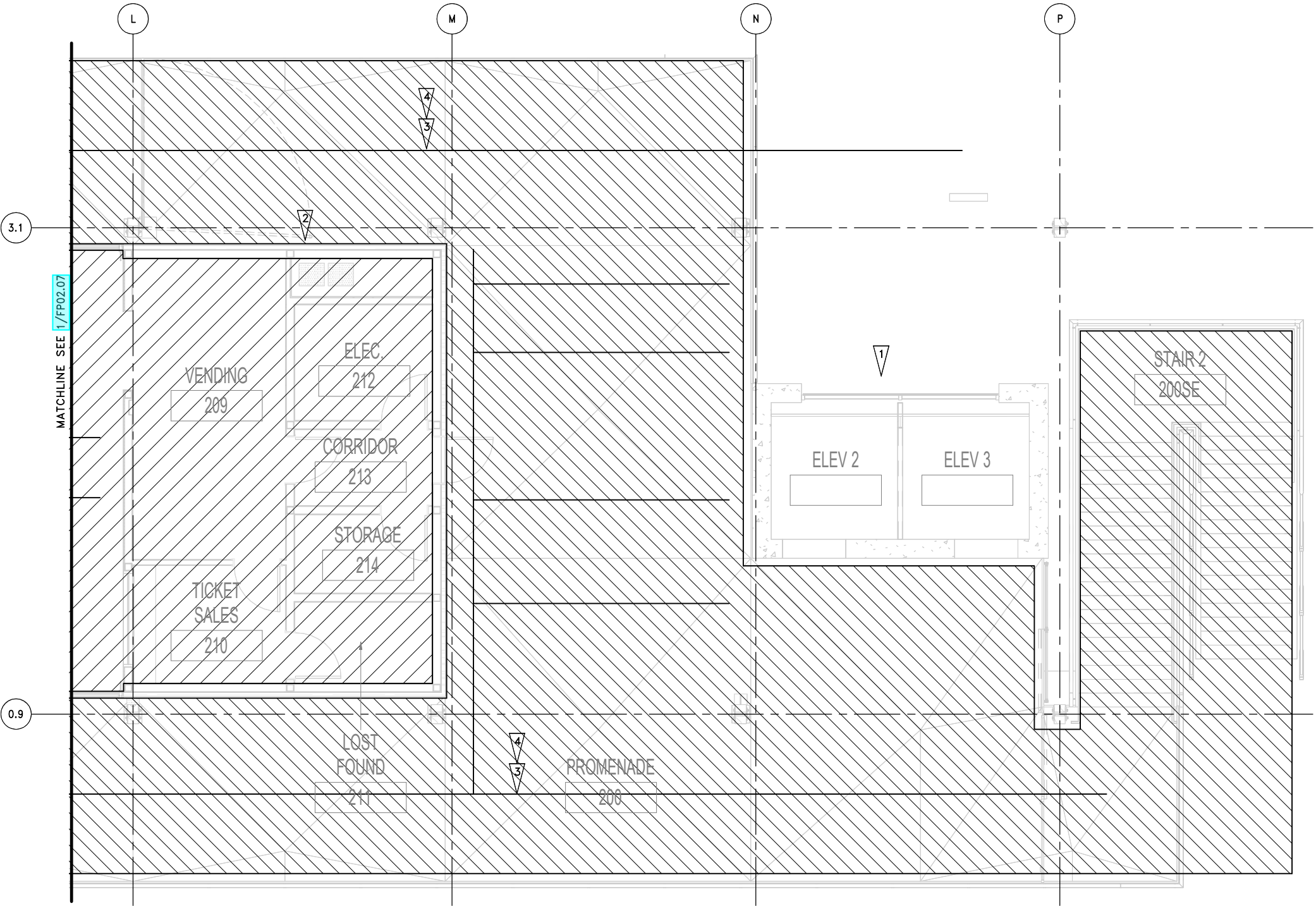
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GENERAL NOTES

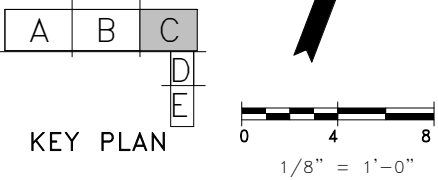
- 1. SEE FP00.00 FOR GENERAL NOTES.
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1 LEVEL 2 FP PLAN SECTOR C
FP02.08



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| PRINTED: 1/18/2019 3:38:26 PM | LAST PRINTED BY: ZSMITH | | | | |
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SR 525
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FERRY TERMINAL CONSTRUCTION
TERMINAL - LEVEL 2
FIRE PROT. PLAN - SECTOR C

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