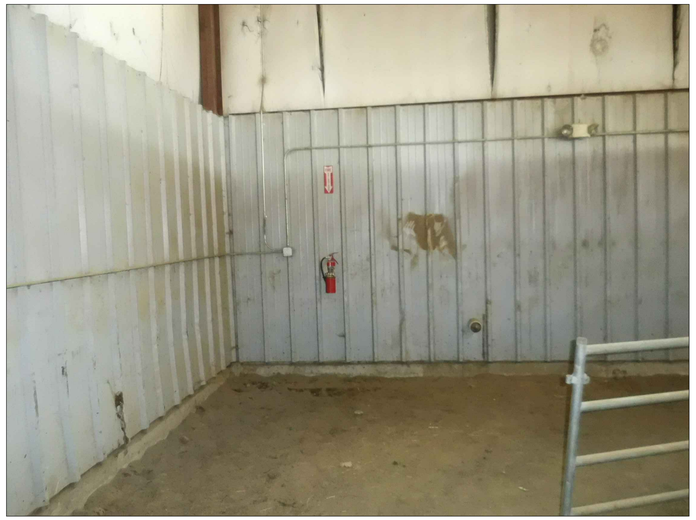
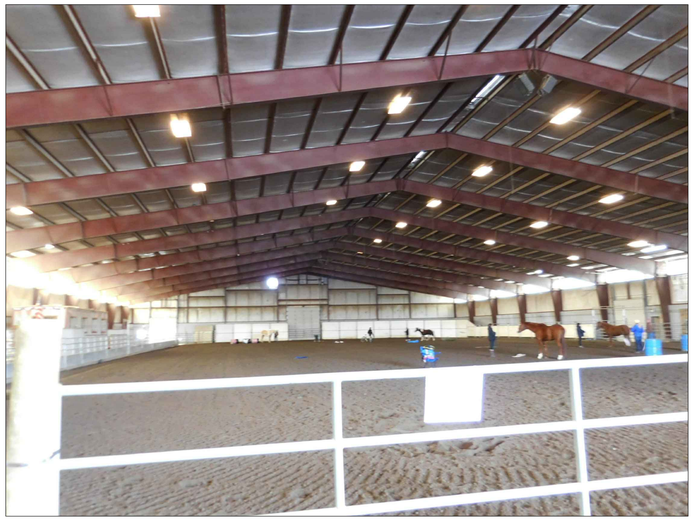
Ardell Pavilion Upgrades

INTERIOR - LOOKING EAST - BOOTH 105

EXTERIOR - LOOKING AT NORTHEAST CORNER



INTERIOR - SOUTHWEST CORNER - AREA OF FIRE RISER - 107



INTERIOR - LOOKING SOUTH - ARENA - 100

EXISTING IMAGES ARE FOR REFERENCE ONLY AND MAY NOT ACCURATELY DESCRIBE THE EXTENT OF WORK UNDER CONTRACT.

Sheet Index:

6297 REGISTERED ARCHITECT ROBERT F. PACE STATE OF WASHINGTON

Ardell Pavilion Upgrades
Grant County Fairgrounds
Moses Lake, WA
Cover sheet

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Project No: 19-01-002A
Drawn by:
Date: MAY 30, 2019

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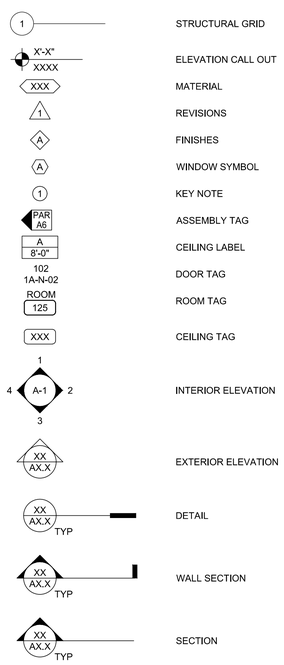
1 of: 18 Sheets

Abbreviations:

&	AND
∠	ANGLE
℄	AT CENTERLINE
Ø	DIAMETER OR ROUND
⊥	PERPENDICULAR
#	POUND OR NUMBER
A.B.	ANCHOR BOLT
ABV.	ABOVE
AC.B.	ACOUSTICAL BOARD
ACOUS.	ACOUSTICAL
A.F.F.	ABOVE FINISH FLOOR
AGGR.	AGGREGATE
ALUM.	ALUMINUM
ANOD.	ANODIZED
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ASPH.	ASPHALT
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BLK'G.	BLOCKING
BM.	BEAM
B.U.R.	BUILT UP ROOF
CAB.	CABINET
C.B.	CATCH BASIN
CEM	CEMENT
CH.	CHANNEL
C.J.	CONTROL JOINT
CLG.	CEILING
CLR.	CLEAR
C.O.	CLEAN OUT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUE
C.T.	CERAMIC TILE
CTR.	COUNTER
CT.SK.	COUNTER SUNK
DBL.	DOUBLE
DEPT.	DEPARTMENT
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
DR.	DOOR
D.S.	DOWNSPOUT
DWG.	DRAWING
E	EAST
EA.	EACH
E.I.F.S.	EXT. INSUL. & FINISH SYSTEM
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
ENCL.	ENCLOSURE
E.P.	ELECTRICAL PANEL
EQ.	EQUAL
EQP.	EQUIPMENT
EXIST.	EXISTING
EXPO.	EXPOSED
EXT.	EXTERIOR
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.H.	FIRE HYDRANT
FIN.	FINISH
FLASH.	FLASHING
FLR.	FLOOR
FLUOR.	FLUORESCENT
FOUND.	FOUNDATION
FRM'G.	FRAMING
FT.	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
GA.	GAUGE
G.C.	GENERAL CONSTRUCTION
GL.	GLASS
GND.	GROUND
GP.	GROUP
GR.	GRADE
GV.	GALVANIZED
GYP.	GYPSUM
H.C.	HOLLOW CORE
H.B.	HOSE BIB
HDCP.	HANDICAP
HDWD.	HARDWOOD
HDWR.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HR.	HOUR
HT.	HEIGHT
IBC	INTERNATIONAL BUILDING CODE
INST.	INSTALLATION
INSUL.	INSULATION
INT.	INTERIOR
LAM.	LAMINATED
LB.	POUND
LOC.	LOCATION
MAT.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
M.H.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTD.	MOUNTED
MTL.	METAL
N	NORTH
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NO TO SCALE
O.C.	ON CENTER
O/	OVER
OH.	OPPOSITE HAND
PL.	PLATE
PLYWD.	PLYWOOD
P.P.	POWER POLE
P.T.	PRESSURE TREATED
R.	RADIUS OR RISER
R.C.P.	REFLECTED CEILING PLAN
R.D.	ROOF DRAIN
REC.	RECOMMENDED
REF.	REFERENCE
REINF.	REINFORCED
REQ'D.	REQUIRED
RM.	ROOM
S	SOUTH
S.C.	SOLID CORE
SCHED.	SCHEDULE
SHT.	SHEET
SHT'G.	SHEATHING
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
S & V	STAIN & VARNISH
SVC.	SERVICE
S.W.	SIDEWALK
SYM.	SYMMETRICAL
T.	TREAD
T.C.	TOP OF CURB
TEL.	TELEPHONE
T & G	TONGUE & GROVE
THK.	THICK
T.O.P.	TOP OF PLATE
T.P.	TOP OF PAVEMENT
T.W.	TOP OF WALL
TYP.	TYPICAL
UNF.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W	WEST
W/	WITH
WD.	WOOD
WDW.	WINDOW
W/O	WITHOUT
W.P.	WATERPROOF
W.R.	WATER RESISTANT
WRB	WEATHER RESISTANT BARRIER
WSCT.	WAINSCOT
WT.	WEIGHT

Symbols:



General Project Notes:

1. THE SCOPE OF WORK SHALL BE DETERMINED BY ALL CONSTRUCTION DOCUMENTS, PERMIT DOCUMENTS AND CONTRACTS NEGOTIATED WITH THE OWNER.
2. DRAWINGS AND ASSOCIATED CONSTRUCTION DOCUMENTS ARE SUBJECT TO CHANGE PENDING PERMIT REVIEW BY GOVERNING MUNICIPALITY.
3. ALL CONSTRUCTION SHALL BE CONSTRUCTED FROM APPROVED PERMIT DRAWINGS ISSUED BY THE GOVERNMENTAL AGENCY HAVING JURISDICTION.
4. ALL NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES LISTED IN THE BUILDING CODE SUMMARY AS WELL AS ALL RULES AND REGULATIONS SET FORTH BY THE GOVERNMENTAL AGENCY HAVING JURISDICTION.
5. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR FOR THE DURATION OF CONSTRUCTION TO MAINTAIN THE CONSTRUCTION SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL HEALTH AND SAFETY STANDARDS AT ALL TIMES.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL INFORMATION ON THE CONSTRUCTION DOCUMENTS, PERMIT DOCUMENTS, CHANGE ORDERS, AND SUPPLEMENTAL INFORMATION TO ALL SUBCONTRACTORS AND TRADES. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK. FULLY COORDINATE WITH OTHER PARTIES THE INSTALLATION REQUIREMENTS OF ALL ITEMS OR MATERIALS TO BE FURNISHED AND/OR INSTALLED BY OTHERS PRIOR TO INSTALLATION.
7. ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, SPECIFICATIONS, AND GENERAL CONSTRUCTION PRACTICES.
8. ALL WORK SHALL BE ERECTED AND INSTALLED PLUMB, LEVEL, SQUARE AND TRUE, UNLESS NOTED OTHERWISE.
9. FURNISH AND INSTALL BLOCKING OR BACKING FOR WALL OR CEILING MOUNTED MATERIALS IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS OR REQUIREMENTS PRIOR TO INSTALLATION.
10. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND INSPECTION APPROVALS FOR SUBSTANTIAL COMPLETION.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AFFECTING THE WORK PRIOR TO THE COMMENCEMENT OF ANY WORK. THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED OF EXISTING CONDITIONS DIFFER FROM THE CONSTRUCTION DOCUMENTS.
12. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SHORING, BRACING SAFETY AND INSURANCE IN CONNECTION WITH ALL WORK. ALL NECESSARY TEMPORARY CONSTRUCTION REQUIRED TO COMPLETE THE PROJECT SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.
13. REPETITIVE FEATURE(S) NOT NOTED ON THE DRAWINGS SHALL BE COMPLETELY FURNISHED AND INSTALLED AS IF NOTED IN FULL.
14. DIMENSIONS IDENTIFIED "CLEAR" OR "CLR" SHALL BE MAINTAINED AND SHALL ACCOMMODATE FOR THICKNESS OF ALL FINISHES INCLUDING CARPET, CERAMIC TILE, VCT, GYPSUM BOARD, ETC.
15. GRID LINES INDICATE THE CENTER OF PRIMARY COLUMNS OR FACE OF CORE WALL ASSEMBLY U.N.O.
16. ALL WALLS ARE TO INTERSECT AT 45° OR 90° U.N.O.
17. ELECTRICAL INFORMATION SHOWN ON ARCHITECTURAL DRAWINGS IS PROVIDED FOR CLARITY AND/OR GENERAL LOCATION PURPOSES ONLY.
18. ALL INTERRUPTIONS OF MECHANICAL, ELECTRICAL OR OTHER BUILDING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR TENANT A MINIMUM OF 24 HOURS PRIOR TO INTERRUPTION.
19. ROOM AND DOOR NUMBERS SHOWN ON DRAWINGS ARE FOR CONSTRUCTION PURPOSES ONLY.
20. ALL WOOD IN CONTACT WITH CONCRETE, MASONRY OR EARTH SHALL BE PRESERVATIVE TREATED WOOD.
21. DOORS JAMBS ARE LOCATED 3" OFF OF ADJACENT WALL U.O.N.
22. ALL MATERIALS STORED ON THE SITE, EXISTING CONSTRUCTION AND FINISHED CONSTRUCTION SHALL BE PROTECTED FROM WEATHER, VANDALISM, AND OTHER CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE AND DETERIORATION UNTIL SUBSTANTIAL COMPLETION. FAILURE TO PROTECT MAY BE CAUSE FOR REJECTION OF WORK.
23. ANY BRAND NAMES OR MANUFACTURERS SHOWN IN THE DRAWINGS REPRESENT THE BASIS OF DESIGN AND THE STANDARD OF QUALITY. APPROVED EQUALS WILL BE ACCEPTED UPON REVIEW AND APPROVAL OF THE ARCHITECT OR OWNER.

Project Summary

PROJECT INFORMATION:

PROJECT: ARDELL PAVILION UPGRADES
FIRE SUPPRESSION & FIRE ALARM SYSTEMS
GRANT COUNTY FAIRGROUNDS
3953 AIRWAY DRIVE NE
MOSES LAKE, WA 98837

PARCEL NO.:

PROJECT DESCRIPTION: PROVIDE A COMPLETE FIRE SUPPRESSION SYSTEM AND FIRE ALARM SYSTEM TO THE EXISTING ARDELL PAVILION, ALONG WITH RELATED BUILDING IMPROVEMENTS & UTILITY CONNECTIONS.

BUILDING CODE INFORMATION:

BUILDING CODE(S): 2015 INTERNATIONAL BUILDING CODE (IBC),
ICC/ANSI A117.1-2003
2015 WASHINGTON STATE ENERGY CODE (WSEC)
2015 UNIFORM PLUMBING CODE (UPC)
2015 INTERNATIONAL MECHANICAL CODE CHAPTER 51-52 WAC
2015 NATIONAL ELECTRIC CODE
2015 INTERNATIONAL FIRE CODE (IFC) CHAPTER 51-54 WAC

BUILDING OCCUPANCY: A-4

BUILDING FULLY SPRINKLED: YES - AS PART OF THIS PROJECT

EXISTING BUILDING AREA: 47,400 SF

* NOTE: BUILDING IS EXISTING AND THE USE WILL REMAIN THE SAME. NO CHANGE TO PARKING OR ANY SITE WORK IS INCLUDED IN THIS PROJECT, OTHER THAN UTILITY CONNECTION SHOWN.

Project Team:

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don@e2engineers.com

FIRE PROTECTION: FP ENGINEERING
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CONTACT: GLEN SATRE
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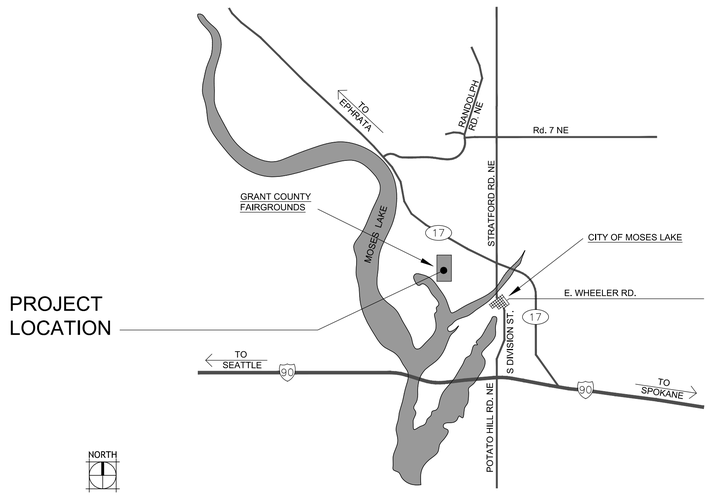
Vicinity Map:



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B W A BERNARDO | WILLS ARCHITECTS PC

6297 REGISTERED ARCHITECT ROBERT F. PACE STATE OF WASHINGTON

Bid Drawings

GENERAL INFORMATION

Ardell Pavillion Upgrades
Fire Suppression/Alarm Systems
Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

Proj. No: 19-01-009A
Drawn by: CKS
Date: MAY 30, 2019

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GENERAL NOTES

1. WORK AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS AND STANDARDS OF THE AUTHORITIES HAVING JURISDICTION. IF STANDARDS ARE NOT PROVIDED BY THE AUTHORITIES HAVING JURISDICTION, WORK AND MATERIALS SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS JOINTLY PROMULGATED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND THE WASHINGTON STATE CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA).
2. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF GRANT COUNTY GENERAL CONSTRUCTION REQUIREMENTS.
3. THE CONTRACTOR SHALL CALL THE UNDERGROUND SERVICE ALERT ONE-CALL NUMBER 811 TWO BUSINESS DAYS PRIOR TO EXCAVATION.
4. INFORMATION ON EXISTING CONDITIONS SHOWN ON THESE PLANS WAS OBTAINED FROM RECORD DRAWINGS NOT PREPARED BY COFFMAN ENGINEERS. NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND REQUIRED ELEVATIONS AT THE SUBJECT SITE. VERIFY THE LOCATION AND SIZE OF EXISTING UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION ACTIVITIES, INCLUDING UNDERGROUND AND OVERHEAD UTILITIES, UTILITY STRUCTURES, POINTS OF CONNECTION, AND UTILITY CROSSINGS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR EXCEPTIONS ENCOUNTERED PRIOR TO PROCEEDING. ANY COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S FAILURE TO VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF APPROVED PLANS ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. THE DRAWINGS INDICATE LOCATIONS, DIMENSIONS, REFERENCES, AND TYPICAL DETAILS OF CONSTRUCTION. THE DRAWINGS DO NOT INDICATE EVERY CONDITION. WORK NOT FULLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE FULLY DETAILED.
7. THE CONTRACTOR SHALL OBTAIN THE APPROPRIATE APPROVALS AND PERMITS FROM THE AUTHORITIES HAVING JURISDICTION PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE WITH THE AUTHORITIES HAVING JURISDICTION TO CONFIRM INSPECTION, TESTING, AND CERTIFICATION REQUIREMENTS.
8. CONSTRUCTION SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).
9. EXISTING PROPERTY CORNERS AND SURVEY MONUMENTS SHALL BE PROTECTED DURING CONSTRUCTION. ANY DAMAGED OR OBLITERATED CORNERS OR MONUMENTS SHALL BE RE-ESTABLISHED BY A PROFESSIONAL SURVEYOR AT THE CONTRACTOR'S EXPENSE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS. COORDINATE REQUIREMENTS WITH THE AUTHORITIES HAVING JURISDICTION.
11. SAFETY STANDARDS AND REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COMPLIED WITH AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
12. THE CONTRACTOR SHALL HAVE THE APPROPRIATE LICENSES TO PERFORM THE SPECIFIED WORK IN CONFORMANCE WITH THE AUTHORITIES HAVING JURISDICTION.
13. REFER TO ARCHITECTURAL AND STRUCTURAL DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING CONSTRUCTION OF STRUCTURES, ENCLOSURES, STAIRS, SIDEWALKS/PATHS, LANDINGS/PATIOS, FENCING, RAILING, AND GATES.
14. RECORD DRAWINGS IDENTIFYING AND ACCURATELY LOCATING SUBSURFACE UTILITIES AND IMPROVEMENTS AND NOTING AS-CONSTRUCTED CONDITIONS SHALL BE PROVIDED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.

EROSION & SEDIMENT CONTROL NOTES

1. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED IN ORDER TO BEST MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION CONTROL (ESC) PROBLEMS:
   a) CLEAR AND GRUB SUFFICIENTLY FOR INSTALLATION OF TEMPORARY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MEASURES (BMPS);
   b) INSTALL TEMPORARY ESC BMPS, CONSTRUCTING SEDIMENT TRAPPING BMPS AS ONE OF THE FIRST STEPS PRIOR TO GRADING;
   c) CLEAR, GRUB AND ROUGH GRADE FOR ROADS, TEMPORARY ACCESS POINTS AND UTILITY LOCATIONS;
   d) STABILIZE ROADWAY APPROACHES AND TEMPORARY ACCESS POINTS WITH THE APPROPRIATE CONSTRUCTION ENTRY BMP;
   e) CLEAR, GRUB AND GRADE SUBJECT SITE;
   f) TEMPORARILY STABILIZE, THROUGH RE-VEGETATION OR OTHER APPROPRIATE BMPS, SUBJECT SITE IN SITUATIONS WHERE SUBSTANTIAL CUT OR FILL SLOPES ARE A RESULT OF THE SITE GRADING;
   g) CONSTRUCT ROADS, BUILDINGS, PERMANENT STORMWATER FACILITIES (SUCH AS INLETS, PONDS, UNDERGROUND INJECTION CONTROL (UIC) FACILITIES, ETC.);
   h) PROTECT ALL PERMANENT STORMWATER FACILITIES UTILIZING THE APPROPRIATE BMPS;
   i) INSTALL PERMANENT ESC CONTROLS, WHEN APPLICABLE; AND,
   j) REMOVE TEMPORARY ESC CONTROLS WHEN:
      i. PERMANENT ESC CONTROLS, WHEN APPLICABLE, HAVE BEEN COMPLETELY INSTALLED;
      ii. ALL LAND-DISTURBING ACTIVITIES THAT HAVE THE POTENTIAL TO CAUSE EROSION OR SEDIMENTATION PROBLEMS HAVE CEASED; AND,
      iii. VEGETATION HAS BEEN ESTABLISHED IN THE AREAS NOTED AS REQUIRING VEGETATION ON THE ACCEPTED ESC PLAN ON FILE WITH THE LOCAL JURISDICTION.
2. INSPECT ALL ROADWAYS, AT THE END OF EACH DAY, ADJACENT TO THE CONSTRUCTION ACCESS ROUTE. IF IT IS EVIDENT THAT SEDIMENT HAS BEEN TRACKED OFF SITE AND/OR BEYOND THE ROADWAY APPROACH, CLEANING IS REQUIRED.
3. IF SEDIMENT REMOVAL IS NECESSARY PRIOR TO STREET WASHING, IT SHALL BE REMOVED BY SHOVELING OR PICKUP SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
4. IF STREET WASHING IS REQUIRED TO CLEAN SEDIMENT TRACKED OFF SITE, ONCE SEDIMENT HAS BEEN REMOVED, STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON-SITE OR OTHERWISE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.
5. RESTORE CONSTRUCTION ACCESS ROUTE EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITION.
6. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
7. INSPECT SEDIMENT CONTROL BMPS WEEKLY AT A MINIMUM, DAILY DURING A STORM EVENT, AND AFTER ANY DISCHARGE FROM THE SITE (STORMWATER OR NON-STORMWATER). THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE A MONTH IF THE SITE IS STABILIZED AND INACTIVE.
8. CONTROL FUGITIVE DUST FROM CONSTRUCTION ACTIVITY IN ACCORDANCE WITH THE STATE AND/OR LOCAL AIR QUALITY CONTROL AUTHORITIES WITH JURISDICTION OVER THE PROJECT AREA. DO NOT USE WATER WHEN IT MAY DAMAGE ADJACENT CONSTRUCTION OR CREATE HAZARDOUS OR OBJECTIONABLE CONDITIONS, SUCH AS ICE, FLOODING, AND POLLUTION.
9. STABILIZE EXPOSED UNWORKED SOILS (INCLUDING STOCKPILES), WHETHER AT FINAL GRADE OR NOT, WITHIN 10 DAYS DURING THE REGIONAL DRY SEASON (JULY 1 THROUGH SEPTEMBER 30) AND WITHIN 5 DAYS DURING THE REGIONAL WET SEASON (OCTOBER 1 THROUGH JUNE 30). SOILS MUST BE STABILIZED AT THE END OF A SHIFT BEFORE A HOLIDAY WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. THIS TIME LIMIT MAY ONLY BE ADJUSTED BY A LOCAL JURISDICTION WITH A "QUALIFIED LOCAL PROGRAM," IF IT CAN BE DEMONSTRATED THAT THE RECENT PRECIPITATION JUSTIFIES A DIFFERENT STANDARD AND MEETS THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STORMWATER GENERAL PERMIT.
10. PROTECT INLETS, DRYWELLS, CATCH BASINS AND OTHER STORMWATER MANAGEMENT FACILITIES FROM SEDIMENT, WHETHER OR NOT FACILITIES ARE OPERABLE.
11. KEEP ROADS ADJACENT TO INLETS CLEAN.
12. INSPECT INLETS WEEKLY AT A MINIMUM AND DAILY DURING STORM EVENTS.
13. CONSTRUCT STORMWATER CONTROL FACILITIES (DETENTION/RETENTION STORAGE POND OR SWALES) BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERATIONAL BEFORE THE CONSTRUCTION OF IMPERVIOUS SITE IMPROVEMENTS.
14. STOCKPILE MATERIALS (SUCH AS TOPSOIL) ON SITE, KEEPING OFF OF ROADWAY AND SIDEWALKS.
15. COVER, CONTAIN AND PROTECT ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCT, AND NONINERT WASTES PRESENT ON SITE FROM VANDALISM (SEE CHAPTER 173-304 OF THE WASHINGTON ADMINISTRATIVE CODE (WAC) FOR THE DEFINITION OF INERT WASTE), USE SECONDARY CONTAINMENT FOR ON-SITE FUELING TANKS.
16. CONDUCT MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM REPAIRS, SOLVENT AND DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CLEAN ALL CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. IF RAINING OVER EQUIPMENT OR VEHICLE, PERFORM EMERGENCY REPAIRS ON SITE USING TEMPORARY PLASTIC BENEATH THE VEHICLE.
17. CONDUCT APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, IN SUCH A MANNER, AND AT APPLICATION RATES, THAT INHIBITS THE LOSS OF CHEMICALS INTO STORMWATER RUNOFF FACILITIES. AMEND MANUFACTURER'S RECOMMENDED APPLICATION RATES AND PROCEDURES TO MEET THIS REQUIREMENT, IF NECESSARY.
18. INSPECT ON A REGULAR BASIS (AT A MINIMUM WEEKLY, AND DAILY DURING/AFTER A RUNOFF PRODUCING STORM EVENT) AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO ENSURE SUCCESSFUL PERFORMANCE OF THE BMPS. NOTE THAT INLET PROTECTION DEVICES SHALL BE CLEANED OR REMOVED AND REPLACED BEFORE SIX INCHES OF SEDIMENT CAN ACCUMULATE.
19. REMOVE TEMPORARY ESC BMPS WITHIN 30 DAYS AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. PERMANENTLY STABILIZE AREAS THAT ARE DISTURBED DURING THE REMOVAL PROCESS.
20. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES, ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY, INCLUDING OBTAINING THE APPROPRIATE PERMITS AND APPROVALS.
21. EROSION CONTROL MEASURES IN ADDITION TO THOSE INDICATED AS PART OF THIS PLAN MAY BE REQUIRED DUE TO UNFORESEEN CONDITIONS, IF THE MEASURES DO NOT FUNCTION AS INTENDED, OR IF THE AUTHORITIES HAVING JURISDICTION DETERMINE INDICATED MEASURES ARE INADEQUATE.
22. FILTER FENCE SHALL BE USED TO AID IN CONTAINING ANY SEDIMENT ON THE SITE DURING CONSTRUCTION. STABILIZED CONSTRUCTION ENTRANCES SHALL BE USED AT POINTS OF INGRESS AND EGRESS FOR CONSTRUCTION VEHICLES. STORM DRAIN INLET PROTECTION SHALL BE USED ON ALL STORM DRAIN STRUCTURES, INCLUDING CATCH BASINS AND DRYWELLS. THE CONTRACTOR SHALL KEEP THE AREAS ADJACENT TO THE SITE INCLUDING ROADWAYS AND PARKING LOTS FREE FROM DEBRIS. REFER TO THE EROSION AND SEDIMENT CONTROL MEASURE DETAILS FOR ADDITIONAL INFORMATION.
23. PROVIDE A DESIGNATED, POSTED CONCRETE WASHOUT AREA. THE CONCRETE WASHOUT SHALL NOT BE ALLOWED TO DRAIN OFF THE SITE OR INTO ANY EXISTING OR FUTURE STORM DRAINAGE FACILITIES. HARDENED CONCRETE WASHOUT SHALL BE BROKEN UP AND REMOVED FROM THE SITE.
24. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORMWATER DISCHARGES.

DEMOLITION NOTES

1. MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING ADJACENT OCCUPIED OR OPERATING FACILITIES UNLESS AUTHORIZED IN WRITING BY OWNER AND AUTHORITIES HAVING JURISDICTION. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES, AS ACCEPTABLE TO OWNER AND AUTHORITIES HAVING JURISDICTION.
2. COORDINATE DEMOLITION OPERATIONS AND ANY REQUIRED UTILITY RELOCATIONS WITH THE OWNER AND APPROPRIATE UTILITY PURVEYOR, INCLUDING REQUIREMENTS AND SCHEDULING.
3. COORDINATE EXTENT OF DEMOLITION WITH PROPOSED IMPROVEMENTS. CONTRACTOR SHALL REVIEW THE PROJECT LIMITS TO DETERMINE THE QUANTITY AND TYPE OF DEMOLITION WASTE MATERIAL AND DEBRIS TO BE INCLUDED IN THEIR BID. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING, AND RELOCATING IF NECESSARY, ANY ITEMS NOT OTHERWISE NOTED THAT CONFLICT WITH THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTING ITEMS NOT SHOWN ON THE PLANS THAT MUST BE REMOVED OR RELOCATED. FAILURE TO NOTIFY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF COST RESPONSIBILITY FOR REMOVING REQUIRED ITEMS.
4. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
5. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER AND OWNER.
6. CONDUCT DEMOLITION ACTIVITIES AND DEBRIS REMOVAL OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, WALKWAYS, AND OTHER ADJACENT FACILITIES.
7. REMOVE OBSTRUCTIONS, TREES, SHRUBS, GRASS, AND OTHER VEGETATION TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REFER TO LANDSCAPE PLANS FOR TREE PROTECTION AND TREE REMOVAL PROCEDURES TO PRESERVE HEALTH OF ADJACENT TREES.
8. AREAS DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE CONSTRUCTED OR RESTORED TO ORIGINAL CONDITIONS OR BETTER, TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING CONDITIONS PRIOR TO CONSTRUCTION ACTIVITIES AND ANY DAMAGE THAT MAY OCCUR.
9. REMOVE DEMOLITION WASTE MATERIALS AND DEBRIS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

UTILITY & DRAINAGE NOTES

1. DRAWING PLANS AND DETAILS INDICATE GENERAL LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITY AND STORM DRAIN PIPING. LOCATION AND ARRANGEMENT OF PIPING LAYOUT TAKE DESIGN CONSIDERATIONS INTO ACCOUNT. INSTALL PIPING AS INDICATED, TO EXTENT PRACTICAL. WHERE SPECIFIC INSTALLATION IS NOT INDICATED, FOLLOW PIPING MANUFACTURER'S WRITTEN INSTRUCTIONS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
2. UTILITIES SHALL BE STUBBED FIVE (5) FEET OUTSIDE OF THE BUILDING. THE SITE CONTRACTOR SHALL COORDINATE CONTINUATION OF UTILITY SERVICES AND UTILITY CONNECTIONS TO THE BUILDING WITH THE BUILDING CONTRACTOR AND BUILDING PLANS. A PLUG SHALL BE INSTALLED AT THE END OF SERVICE LINES UNTIL SUCH TIME THAT SERVICE IS EXTENDED TO THE BUILDING FOR CONNECTION.
3. REFER TO ELECTRICAL PLANS FOR INFORMATION REGARDING SITE LIGHTING, POWER, AND COMMUNICATIONS. COORDINATE REQUIREMENTS AND SCHEDULING FOR POWER AND UTILITY INSTALLATIONS WITH UTILITY PURVEYOR, INCLUDING TRENCH EXCAVATION, BEDDING, AND BACKFILL REQUIREMENTS.
4. REFER TO FIRE PROTECTION PLANS FOR ADDITIONAL INFORMATION REGARDING FIRE SUPPRESSION IMPROVEMENTS.
5. FOR EACH TYPE OF PIPE, USE JOINING MATERIALS RECOMMENDED BY PIPING SYSTEM MANUFACTURER, UNLESS OTHERWISE INDICATED.
6. CONNECT UTILITY PIPING TO EXISTING SYSTEM ACCORDING TO REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. ARRANGE WITH THE GOVERNING REGULATORY AGENCY OR UTILITY COMPANY FOR TAP OF SIZE AND IN LOCATION INDICATED. COORDINATE REQUIREMENTS AND SCHEDULING WITH AUTHORITIES HAVING JURISDICTION.
7. COMPLY WITH THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 24 REQUIREMENTS FOR EXTERIOR FIRE SUPPRESSION SYSTEM PIPING MATERIALS AND INSTALLATION.
8. BURY PIPING WITH DEPTH OF COVER IN COMPLIANCE WITH REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE WITH THE AUTHORITIES HAVING JURISDICTION FOR ALL REQUIREMENTS AND TO CONFIRM THAT AN ADEQUATE DEPTH OF COVER IS MAINTAINED OVER THE UTILITIES, INCLUDING CLEARANCES BETWEEN THE VARIOUS UTILITIES.
9. INSTALL UNDERGROUND PIPING WITH RESTRAINED JOINTS AT HORIZONTAL AND VERTICAL CHANGES IN DIRECTION. RESTRAINMENT SHALL COMPLY WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
10. CONTRACTOR SHALL MAINTAIN A MINIMUM TEN (10) FEET OF HORIZONTAL SEPARATION BETWEEN WATER PIPE AND PIPE CARRYING NON-POTABLE WATER. AT CROSSINGS, PROVIDE A MINIMUM VERTICAL CLEARANCE OF 24 INCHES BETWEEN WATER PIPE (ABOVE) AND PIPE CARRYING NON-POTABLE WATER (BELOW). INSTALLATIONS FOR PIPE CARRYING NON-POTABLE WATER MAY BE INSTALLED AT A CLEARANCE LESS THAN THOSE STATED ABOVE IF THE NON-POTABLE LINE IS SLEEVED. THE SLEEVE PIPE SHALL BE ONE (1) SIZE LARGER THAN THE CONSTRUCTION PIPE. THE SLEEVE SHALL BE AT LEAST TWENTY (20) FEET IN LENGTH AND CENTERED ON THE CROSSING TO PROVIDE FOR A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET EACH SIDE OF THE CROSSING, MEASURED PERPENDICULAR TO THE CROSSED LINE. EACH END OF THE SLEEVE SHALL BE SEALED WITH A FERNCO RUBBER COUPLER.
11. UTILITY PIPE AND CONDUITS SHALL BE INSTALLED WITH CONTINUOUS WARNING TAPE DIRECTLY OVER PIPING AT DEPTHS IN COMPLIANCE WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND AT OUTSIDE EDGE OF UNDERGROUND STRUCTURES. USE DETECTABLE WARNING TAPE OVER NONFERROUS PIPING.
12. FIELD QUALITY CONTROL SHALL COMPLY WITH THE AUTHORITIES HAVING JURISDICTION. INSPECT, TEST, DISINFECT, AND CLEAN UTILITY LINES IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

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Bid Drawings

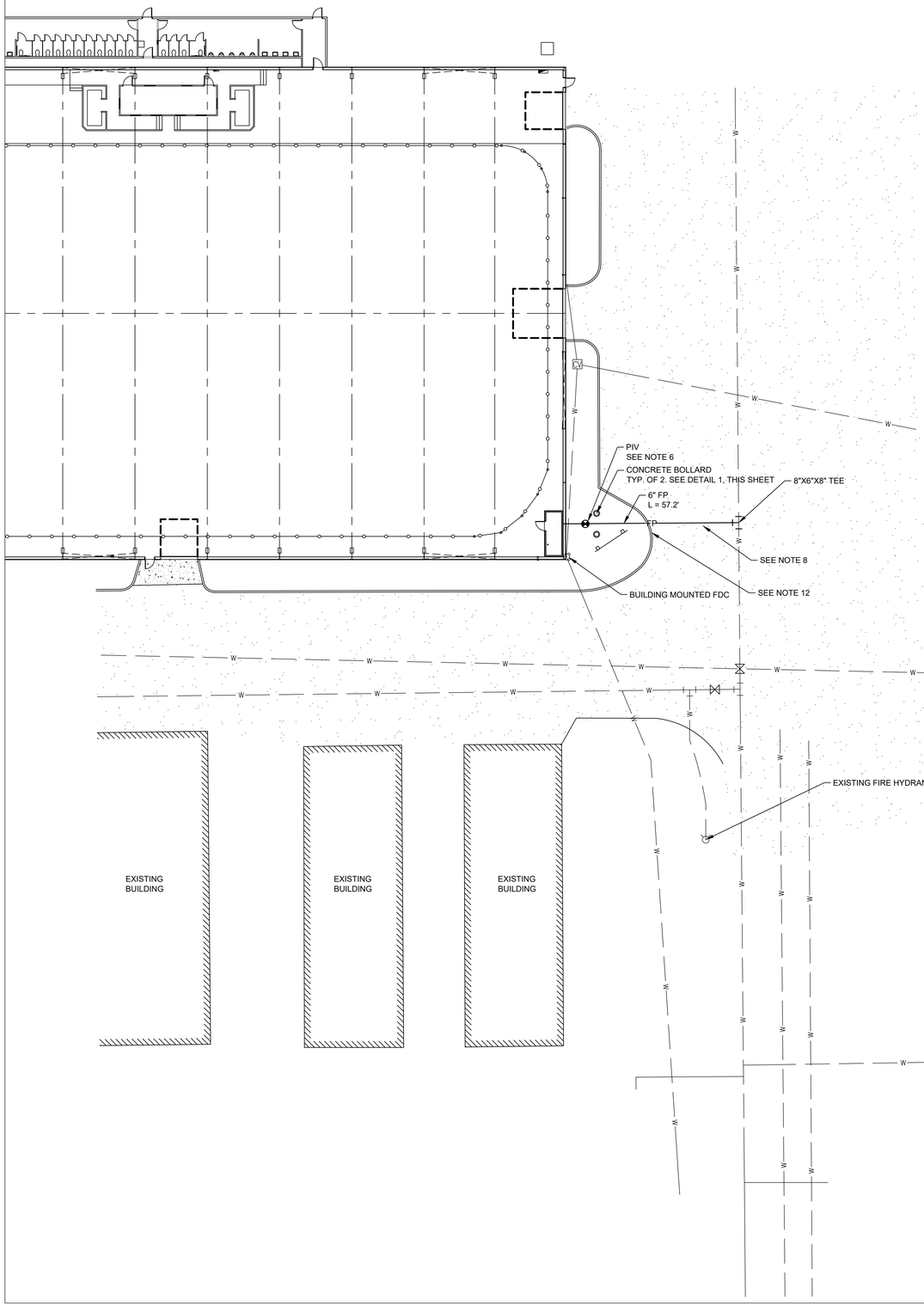
GENERAL NOTES

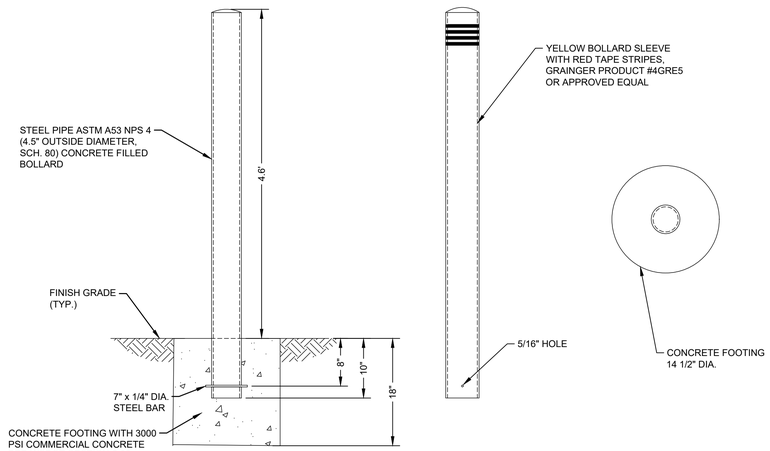
Ardell Pavillion Upgrades
Fire Suppression System
Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

B W A | B E R N A R D O | W I L L S
ARCHITECTS PC

Proj. No: 19-01-009A
Drawn by: TJW
Date: MAY 30, 2019

C1.0





1 C1.0 CONCRETE BOLLARD
SCALE: NTS

LEGEND

- EXISTING GRAVEL
- EXISTING CONCRETE PAVEMENT
- EXISTING CURB
- W — EXISTING WATER PIPE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- POST INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION
- BOLLARD
- FP — FIRE PROTECTION PIPE

NOTES

1. REFER TO SHEET C1.0 FOR GENERAL NOTES.
2. REFER TO SHEET C1.0, UTILITY & DRAINAGE NOTE 11 FOR ADDITIONAL INFORMATION REGARDING UTILITY SEPARATION AND SLEEVE REQUIREMENTS.
3. WATER PIPE SHALL BE RESTRAINED WITH MECHANICAL RESTRAINED JOINTS COMPLYING WITH CITY OF MOSES LAKE REQUIREMENTS AND PIPING MANUFACTURER'S RECOMMENDATIONS.
4. FIELD VERIFY EXACT LOCATION OF EXISTING WATER SERVICE.
5. WATER PIPE TRENCHING, BEDDING, AND BACKFILL SHALL COMPLY WITH CITY OF MOSES LAKE STANDARD PLAN B-3.
6. PROVIDE POST INDICATOR VALVE ON FIRE WATER LINE OUTSIDE OF BUILDING. REFER TO FIRE PROTECTION PLANS FOR LOCATION OF BUILDING-MOUNTED FIRE DEPARTMENT CONNECTION AND BACKFLOW PREVENTION.
7. REFER TO FIRE PROTECTION PLANS FOR CONTINUATION OF FIRE SERVICE, ADDITIONAL INFORMATION REGARDING FIRE SUPPRESSION IMPROVEMENTS, AND FOR ALL REQUIREMENTS. COMPLY WITH NFPA 24 FOR FIRE SUPPRESSION SYSTEM PIPING MATERIALS AND INSTALLATION.
8. SAWCUT EXISTING PAVEMENT AS NECESSARY TO INSTALL NEW UTILITIES. REPLACE WITH SIMILAR GRAVEL OR ASPHALT PAVEMENT SECTION. REFER TO CITY OF MOSES LAKE STANDARD PLAN B-2.
9. FIRE WATER MAIN PIPE SHALL BE C905 PVC UNLESS OTHERWISE SHOWN. FIRE WATER SERVICE SHALL BE INSTALLED WITH DETECTABLE MARKING TAPE. MAINTAIN AT LEAST 4 FEET OF COVER OVER FIRE WATER LINE.
10. CONCRETE BOLLARDS SHALL COMPLY WITH DETAIL 1, THIS SHEET.
11. PLAN BACKGROUND INFORMATION DERIVED FROM EXISTING PLANS PROVIDED BY THE OWNER. NO SURVEY WAS PERFORMED FOR THIS PROJECT. LOCATIONS OF EXISTING SITE FEATURES ARE APPROXIMATE. FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
12. REMOVE AND REPLACE CONCRETE CURB IN COORDINATION WITH WATER LINE INSTALLATION. CONCRETE CURB SHALL COMPLY WITH CITY OF MOSES LAKE STANDARD PLAN A-4.

811 Know what's below. Call before you dig.

20 10 0 20 40
SCALE: 1 INCH = 20 FEET

UTILITY STATEMENT
LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM DRAWINGS AND FIELD LOCATES SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES. UTILITY LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EACH UTILITY.

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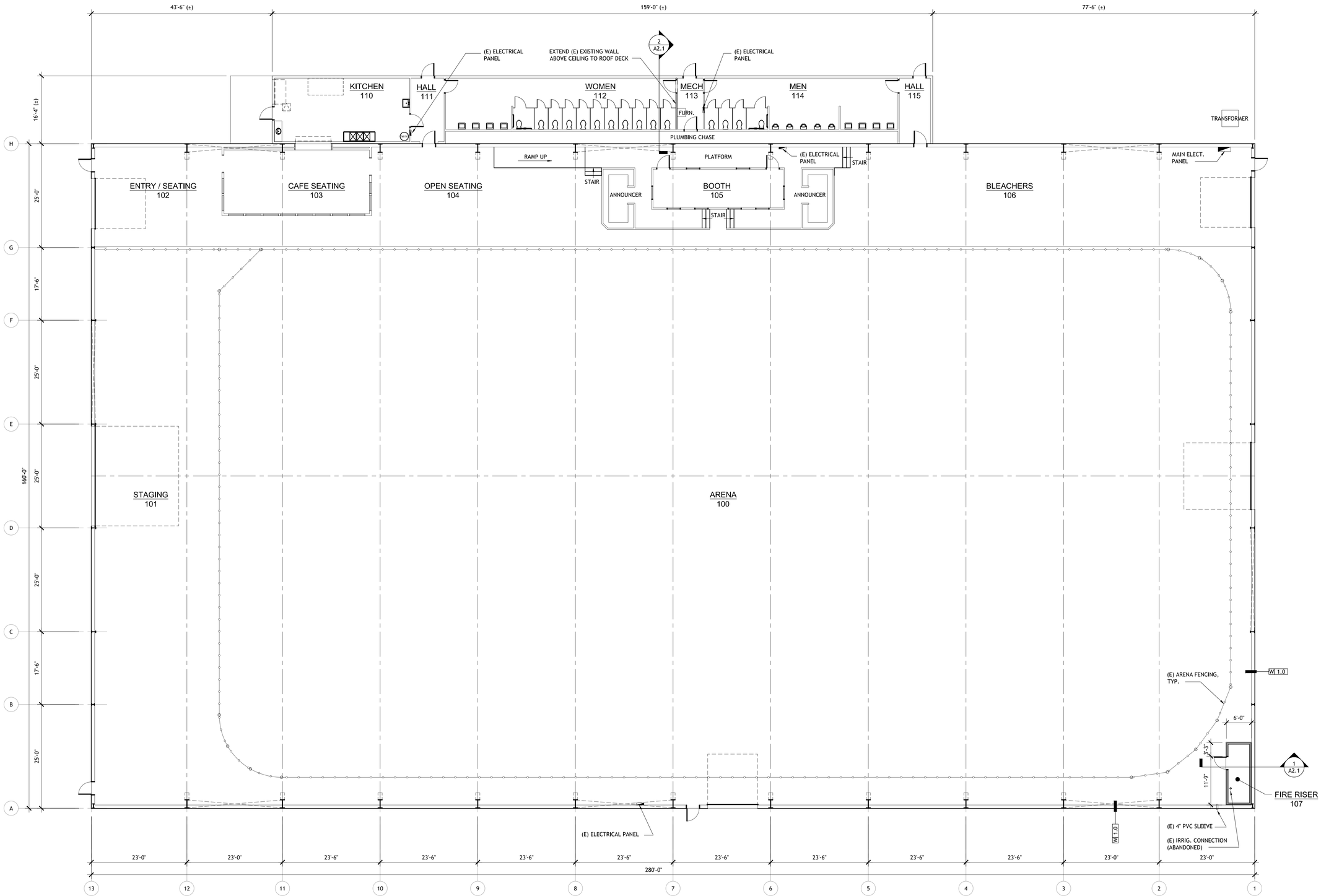
Bid Drawings
SITE PLAN

Ardell Pavillion Upgrades
Fire Suppression System

Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

Proj. No: 19-01-009A
Drawn by: TJW
Date: MAY 30, 2019

C2.0



1 Overall Floor Plan

SCALE: 3/32" = 1'-0"

NORTH

General Plan Notes

1. ALL DIMENSIONS ARE TO FACE OF (E) WALL, CENTER OF (E) COLUMN OR CENTER OF WALL, UNLESS NOTED OTHERWISE.
2. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING WORK.

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Bid Drawings

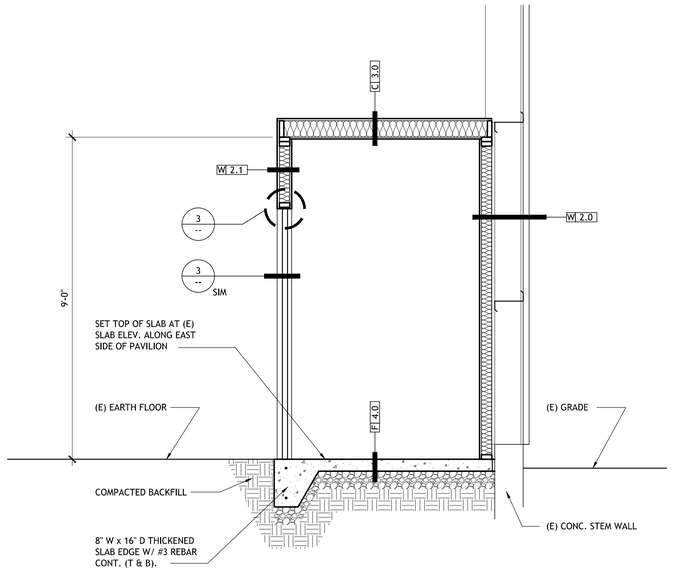
Ardell Pavillion Upgrades Fire Suppression/Alarm Systems

Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

Proj. No: 19-01-009A
Drawn by:
Date: MAY 30, 2019

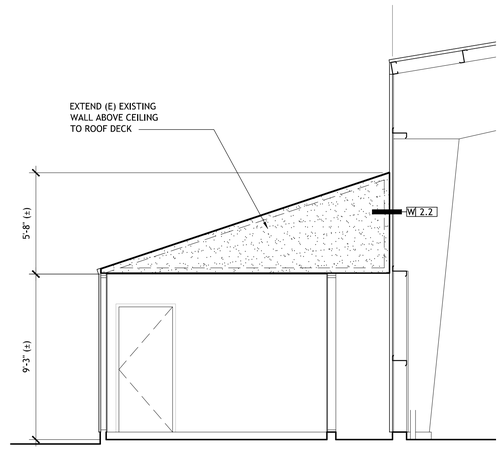
Overall Floor Plan

A2.0



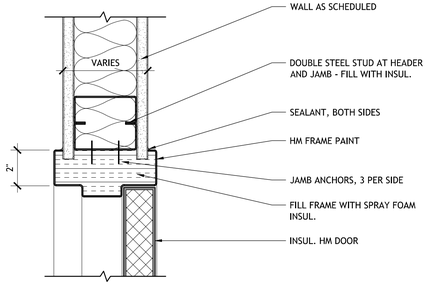
1 Riser Room Section

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



2 Attic Partition Section

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



3 Int. HM Door Head (Jamb Sim)

SCALE: 3" = 1'-0"

General Finish Notes

A. CONTRACTOR TO FOLLOW MANUFACTURER'S ASSEMBLY AND INSTALLATION SPECIFICATIONS FOR ALL MATERIALS. ALERT OWNER OF ANY DISCREPANCIES PRIOR TO ORDER PLACEMENT.
B. PROVIDE TWO COATS OF EGGSHELL LATEX ACRYLIC PAINT OVER ONE COAT OF PRIMER AT ALL SURFACES INDICATED WITH PAINT (PNT), U.O.N.
C. NEW HOLLOW METAL DOORS & FRAMES TO BE PAINTED, TYP. MATCH FACILITY STANDARD COLOR.
D. ALL SWITCH PLATES/OUTLET COVERS/RECEPTACLES TO MATCH EXISTING.

Assemblies Legend

TAG PER PLAN — W| #
GROUP NUMBER

NOTE:
1. PROVIDE SEALANT AT ENTIRE PERIMETER OF (N) WALL TO FLOOR, & WALL TO CEILING / DECK INTERSECTIONS.
2. PROVIDE SEALANT AT PENETRATIONS / GAPS AT WALL, FLOOR AND ROOF ASSEMBLIES.
3. ALL WALLS TO EXTEND TO BOTTOM OF DECK ABOVE, UNLESS OTHERWISE NOTED.
4. INSTALL ALL GWB PER ASTM C 840.
5. PROVIDE BLOCKING AS REQUIRED AND NOTED. CONFIRM LOCATIONS PRIOR TO SHEATHING FINISHED SURFACES.
6. PROVIDE "SLIP TRACK" STUD TOP PLATES AT WALLS FASTENED TO STRUCTURE ABOVE.

ASSSEMBLIES:

TYPES
W = WALL ASSEMBLY
C = CEILING ASSEMBLY
F = FLOOR ASSEMBLY

W| 1.0
- (E) METAL PANEL (EXTERIOR)
- (E) WALL CONSTUCTION
- (E) LINER PANEL (WHERE OCCURS)

W| 2.0
- (E) METAL PANEL (EXTERIOR)
- (E) WALL CONSTUCTION
- (E) LINER PANEL (WHERE OCCURS)
- 1" AIR GAP
- 3-5/8"x18 GA. MTL STUDS AT 16" O.C.
- R-13 BATT INSULATION - FILL CAVITY
- 5/8" A-C PLYWOOD - SANDED - SEAL JOINTS
- PAINT

W| 2.1
- PAINT
- 5/8" A-C PLYWOOD - SANDED - SEAL JOINTS
- 3-5/8"x18 GA. MTL STUDS AT 16" O.C.
- R-13 BATT INSULATION - FILL CAVITY
- 5/8" A-C PLYWOOD - SANDED - SEAL JOINTS
- PAINT

W| 2.2
- 5\8" GWB-X
- 3 5\8" METAL STUDS AT 16" O.C.
- 3 1\2" SOUND ATTENUATION BLANKETS
- 5\8" GWB-X
- MUD & TAPE ALL JOINTS

C| 3.0
- PAINT
- 5/8" A-C PLYWOOD - SANDED - SEAL JOINTS
- 6"x16 GA. MTL STUDS AT 16" O.C.
- R-19 BATT INSULATION - FILL CAVITY
- 5/8" A-C PLYWOOD - SANDED - SEAL JOINTS
- PAINT

F| 4.0
- CONCRETE SEALER
- 4" MIN. CONCRETE SLAB REINFORCED W/ 6x6 W1.4 X W1.4 WWF
- 6" MIN. CRUSHED SURFACE TOP COURSE
- COMPACTED SUBGRADE

Typ. SOG Interior

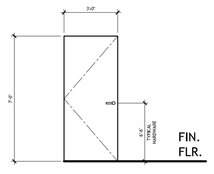
Hardware Schedule

NOTE:
1. VERIFY ALL HARDWARE WITH OWNER PRIOR TO ORDER
2. VERIFY EXISTING DOOR HARDWARE IN FACILITY. MATCH NEW HARDWARE WITH BUILDING STANDARD.
3. FOLLOWING PROVIDED FOR BASIS OF DESIGN

DT-1 (FIRE RISER)
3EA HINGES
1EA STORAGE FUNCTION LOCKSET
1EA WALL STOP
SET PERIMETER SEALS

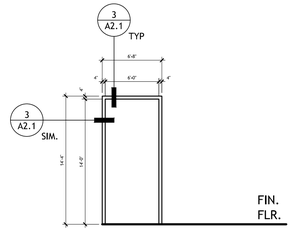
General Door Notes

1. INTERIOR DOORS TO BE 1¾" THICK, INSULATED, UNLESS NOTED OTHERWISE.
2. COORDINATE ALL KEYING WITH OWNER.
3. 2" DOOR / RELITE FRAME, 2" AT SILLS TYP. U.N.O.
4. PAINT HOLLOW METAL DOOR AND FRAME.



DT-1
FLUSH PANEL
INSUL. HM DOOR

DOOR TYPES



FT-1
HOLLOW METAL

FRAME TYPES

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6297 REGISTERED ARCHITECT
ROBERT F. PAGE
STATE OF WASHINGTON

Bid Drawings
Partial Sections

Ardell Pavillion Upgrades Fire Suppression/Alarm Systems

Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

Proj. No: 19-01-009A
Drawn by:
Date: MAY 30, 2019

A2.1

SECTION 024119 - SELECTIVE DEMOLITION

SELECTIVE DEMOLITION, GENERAL

General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the work within limitations of governing regulations and as follows:

Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed

for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations.

Maintain portable fire-suppression devices during flame-cutting operations.

Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

Dispose of demolished items and materials promptly, in accordance with authorities having jurisdiction.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

CONCRETE MIXTURES

Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

Admixtures: Use admixtures according to manufacturer's written instructions.

Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability and in accordance with manufacturer.

Proportion normal-weight concrete mixture as follows:

Minimum Compressive Strength; Air content; Maximum Water-Cementitious Materials Ratio; Slump:

a. Slabs subject to freeze thaw: 4,000 psi minimum at 28 days; air 6%; water cement ratio 0.45; slump, 1".

END OF SECTION 033000

SECTION 072100 - BUILDING INSULATION

GLASS-FIBER BLANKET, UNFACED

Glass-Fiber Blanket, Unfaced ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

END OF SECTION 072100

SECTION 081113 - INTERIOR INSULATED HOLLOW METAL DOORS

DOORS

1 3/4" thick; Insulated core (U-factor of 0.37 or less); primed, hollow-metal doors.

Provide ANSI/SDI 100 - Level 2, Model 1, heavy-duty doors; minimum 0.042 inch thick cold-rolled steel faces.

END OF SECTION 081113

1 Architectural Product Information

SCALE: N.T.S.

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ROBERT F. PACE
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Architectural Product Information

Ardell Pavillion Upgrades
Fire Suppression/Alarm Systems

Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

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A7.1

ELECTRICAL LEGENDS

ELECTRICAL SYMBOLS

- NEMA 5-20R DUPLEX RECEPTACLE, +18" AFF UON
  - 'A' MOUNTED +4" ABOVE COUNTER BACKSPLASH, TO CENTER OTHERWISE +48" AFF TO CENTER WHERE NO COUNTER
  - 'C' CONTROLLED VIA TIMECLOCK/OCCUPANCY SENSOR
  - 'DW' DISHWASHER CONNECTION BELOW COUNTER, GFCI PROTECTED
  - 'EM' RECEPTACLE ON EMERGENCY POWER
  - 'G' GFCI RECEPTACLE
  - 'GD' RECEPTACLE FOR GARBAGE DISPOSAL. INCLUDING ABOVE COUNTER ON/OFF SWITCH
  - 'IG' ISOLATED GROUND RECEPTACLE, +18" AFF UON
  - 'M' MICROWAVE RECEPTACLE, +66" AFF UON
  - 'R' REFRIGERATOR RECEPTACLE, +48" AFF
  - 'V' VENDING MACHINE RECEPTACLE, +48" AFF
  - 'TR' TAMPER RESISTANT RECEPTACLE
  - 'WC' WATER COOLER CONNECTION BEHIND COOLER, GFCI PROTECTED
  - 'WP' GFCI RECEPTACLE WITH WEATHERPROOF COVER
- NEMA 5-20R CONTROLLED DUPLEX RECEPTACLE
- NEMA 5-20R CONTROLLED QUADRAPLEX RECEPTACLE
- NEMA 5-20R CEILING MOUNTED RECEPTACLE
- J OR J — JUNCTION BOX, RECESSED OR SURFACE, 4" UON
- NEMA 5-20R QUADRAPLEX RECEPTACLE, +18" AFF UON
- CIRCUIT X / CIRCUIT Y — DUPLEX RECEPTACLE, SPLIT WIRED, +18" AFF UON
- NEMA 5-20R SWITCHED RECEPTACLE AND CALLOUT
- 6-30R — SPECIAL RECEPTACLE, NEMA CONFIGURATION AS INDICATED
- FLUSH FLOOR BOX WITH NEMA 5-20R DUPLEX RECEPTACLE
- P — POWER AND/OR DATA DISTRIBUTION POLE
- R — RELAY, VOLTAGE AS INDICATED
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH, SIZE, RATINGS AND FUSING AS INDICATED
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH
- S_M — MANUAL MOTOR STARTER
- MOTOR CONNECTION
- GENERATOR CONNECTION, (KW SHOWN)
- POWER PANEL WITH NEC REQD CLEARANCE
- SWITCHBOARD CABINET SECTION(S) WITH NEC REQD CLEARANCE
- T — DRY-TYPE TRANSFORMER
- TAG ID — ELECTRICAL EQUIPMENT IDENTIFIER, REFERENCE THE APPROPRIATE SCHEDULE FOR DISCONNECT, STARTER, AND CIRCUIT REQUIREMENTS
- ELECTRICAL EQUIPMENT, FIELD VERIFY EXACT LOCATION
- FB1 — FLOOR BOX. NUMBER INDICATES TYPICAL CONFIGURATION
  - 'C' CONTROLLED VIA TIMECLOCK/OCCUPANCY SENSOR
- HE — COMBINATION HEAT LAMP AND EXHAUST FAN
- EBB — ELECTRIC BASEBOARD HEATER DIV16/DIV26
- H — ELECTRIC WALL HEATER, HEATER BY MECHANICAL CONTRACTOR
- IWH — INSTANTANEOUS HOT WATER HEATER
- D — ELECTRIC HAND DRYER, +48" AFF UON
- HT — HEAT TAPE IN ROOF DRAIN DIV16/DIV26 INSTALLED TO 12" BELOW GRADE.
- P — LOW VOLTAGE POWER SUPPLY

GENERAL DRAWING SYMBOLS

- DRAWING KEYNOTE INDICATOR. NUMBER INDICATES KEYNOTE REFERENCED ON EACH DRAWING
- DETAIL IDENTIFIER, TOP NUMBER INDICATES THE DETAIL NUMBER, THE BOTTOM NUMBER INDICATES THE DRAWING NUMBER
- N / S / E / W, EX.X — ELEVATION IDENTIFIER, CENTER NUMBER INDICATES THE REFERENCE DRAWING, LETTERS INDICATE NORTH, SOUTH, EAST, OR WEST ELEVATION.
- EX.X / EY.Y — MATCHLINE, TRIANGLE INDICATES VIEW CONTINUED DRAWING SHEET, OTHER INDICATES CURRENT DRAWING SHEET
- A / B — MATCHLINE UNDERLINE INDICATES CURRENT DRAWING VIEW OTHER INDICATES CONTINUED DRAWING VIEW SAME SHEET
- CONNECTION TO EXISTING ELECTRICAL SYSTEMS
- ELECTRICAL DEVICE, EXISTING TO REMAIN
- ELECTRICAL DEVICE, TO BE REMOVED (DEMOLISHED)
- AREA OF ELECTRICAL REVISION, ADDENDA, RFI, OR OTHER CHANGE
- RFI — INDICATES ELECTRICAL CHANGE NUMBER
  - "ADD" INDICATES ADDENDA
  - "RFI" REQUEST FOR INFORMATION REFERENCE
  - "F" FIELD CHANGE

DIAGRAMMATIC SYMBOLS

- CIRCUIT BREAKER, SIZE AS INDICATED
- ENCLOSED CIRCUIT BREAKER, SIZE AS INDICATED
- SWITCH, SIZE AS INDICATED
- FUSE, SIZE AS INDICATED
- FUSIBLE SWITCH, FUSE AND SWITCH SIZE AS INDICATED
- GROUND ELECTRODE, GROUND BUS, GROUND CONNECTION
- NORMALLY CLOSED CONTACT OR RELAY
- NORMALLY OPEN CONTACT OR RELAY
- CURRENT TRANSFORMER, CT OR METER CONNECTION
- PT — POTENTIAL TRANSFORMER
- M — KWH/KW METER
- V — VOLTMETER
- A — AMMETER
- 200N — FEEDER IDENTIFIER, REFERENCE THE FEEDER SCHEDULE CONDUIT AND CONDUCTOR REQUIREMENTS
- LOCKABLE DISCONNECT SWITCH WITH SEPARATE MOTOR STARTER
- LOCKABLE, UNFUSED, DISCONNECT SWITCH
- LOCKABLE, FUSED, DISCONNECT SWITCH
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH, LOCKABLE
- MAGNETIC MOTOR STARTER
- CIRCUIT BREAKER WITH DRAWOUT FEATURE
- MOTOR CONNECTION
- TRANSFORMER
- CONTROL TRANSFORMER
- THERMAL OVERLOAD
- INLINE FUSE, SIZE AS INDICATED
- MANUAL PUSHBUTTON, NORMALLY CLOSED
- MANUAL PUSHBUTTON, NORMALLY OPEN
- N / E — TRANSFER SWITCH, AUTOMATIC OR MANUAL
- CONNECTION TO REMOTE DEVICE
- WIRING CONNECTION

WIRING DEFINITIONS

- CONDUIT, FEEDER OR EQUIPMENT CIRCUITING STUB-UP
- CONDUIT, FEEDER OR EQUIPMENT CIRCUITING STUB-DOWN
- CONDUIT AND CONDUCTORS SIZE AS REQUIRED. NUMBER OF TICK MARKS INDICATES NUMBER OF PHASE, NEUTRAL, GROUND AND ISOLATED GROUND CONDUCTORS; SHORT TICK MARKS INDICATES NUMBER OF PHASE CONDUCTORS, LONG TICK MARKS INDICATES NUMBER OF NEUTRAL CONDUCTORS, LAST SHORT TICK MARK INDICATES GROUND CONDUCTOR(S), DOTS INDICATE NUMBER OF IG GROUND CONDUCTORS. REFERENCE EXAMPLE SHOWN 3/4"C-2#12 PHASE, 2#12 NEUTRAL, 1#12 GROUND, 1#12 ISOLATED GROUND.
- CONDUIT STUB, SIZE AS INDICATED OR NOTED
- FA — FIRE ALARM WIRING, REFERENCE THE SPECIFICATIONS FOR NUMBER OF CONDUCTORS AND TYPE, MINIMUM OF 3/4"C
- PA — PUBLIC ADDRESS SYSTEM WIRING, REFERENCE THE SPECIFICATIONS FOR NUMBER OF CONDUCTORS AND TYPE, MINIMUM OF 3/4"C
- NC — NURSE CALL SYSTEM WIRING, REFERENCE THE SPECIFICATIONS FOR NUMBER OF CONDUCTORS AND TYPE, MINIMUM OF 3/4"C
- ELECTRICAL SYSTEM WIRING, REFERENCE THE SPECIFICATIONS FOR NUMBER OF CONDUCTORS AND TYPE, MINIMUM 3/4"C, UON
- OHP — OVERHEAD POWER WIRING
- UGP — UNDERGROUND POWER WIRING OR DUCTBANK
- UGC — UNDERGROUND COMMUNICATIONS WIRING OR DUCTBANK
- FO — FIBER OPTIC COMMUNICATIONS WIRING OR DUCTBANK
- FD — FENCE DETECTION SYSTEM
- PCS — PORTED COAX SYSTEM
- SMR — SURFACE MOUNT RACEWAY
- CENTERLINE
- CABLE TRAY, SIZE AS INDICATED ON THE DRAWINGS

NOTE: NOT ALL LEGEND SYMBOLS OR ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT.

DATA SYMBOLS

- DATA/TELEPHONE OUTLET, MOUNTED +18" AFF, UON.
  - "#T" INDICATES NUMBER OF TELEPHONE INSERTS REQUIRED
  - "#D" INDICATES NUMBER OF DATA INSERTS REQUIRED
  - "#SP" INDICATES NUMBER OF SPARE UTP CABLES REQUIRED
  - "A" MOUNTED 4" ABOVE COUNTER ELSE +48" AFF
- WAP — WIRELESS ACCESS POINT, MOUNTED ABOVE ACCESSIBLE CEILING, UON
- TELEPHONE OUTLET, MOUNTED +18" AFF
  - "W" INDICATES WALL OUTLET, MOUNTED +48" AFF
  - "P" INDICATES PAY PHONE OUTLET, MOUNTED +48" AFF
- TP — TELEPHONE POLE
- FLOOR MOUNTED DATA/TELEPHONE OUTLET
- RFID — ANTENNA / ANTENNA OR EXCITER FOR RFID
- DATA RACK

NOTE: WHERE DATA OR TELEPHONE OUTLET IS SHOWN ADJACENT TO A RECEPTACLE ON THE DRAWINGS, THE OUTLET IS TO BE MOUNTED NEXT TO THE RECEPTACLE AND AT THE SAME MOUNTING HEIGHT.

FIRE ALARM SYMBOLS

- FACP — FIRE ALARM CONTROL PANEL
- FAA — FIRE ALARM ANNUNCIATOR PANEL
- F — MANUAL PULL STATION, MOUNTED +48" TO HANDLE, UON
- F_K — KEYED MANUAL PULL STATION, MOUNTED +48" TO HANDLE, UON
- S — SMOKE DETECTOR
- S_G — SMOKE DETECTOR WITH VANDAL RESISTANT GUARD
- S_D — DUCT SMOKE DETECTOR
- DUCT SMOKE DETECTOR BY MECHANICAL CONTRACTOR INTERCONNECT WIRING BY ELECTRICAL CONTRACTOR
- H — HEAT DETECTOR
- FIRE ALARM HORN-STROBE MOUNTED +90" AFF TO CENTER, UON — # CANDELA RATING
- FIRE ALARM STROBE MOUNTED +90" AFF TO CENTER, UON — # CANDELA RATING
- FIRE ALARM SPEAKER-STROBE MOUNTED +90" AFF TO CENTER, UON — # CANDELA RATING
- FIRE ALARM HORN-SPEAKER MOUNTED +90" AFF TO CENTER, UON
- FIRE ALARM CHIME MOUNTED +90" AFF TO CENTER, UON
- FIRE ALARM CHIME-STROBE MOUNTED +90" AFF TO CENTER, UON — # CANDELA RATING
- H — CEILING MOUNTED HORN-STROBE — # CANDELA RATING
- S — CEILING MOUNTED STROBE — # CANDELA RATING
- C — CEILING MOUNTED CHIME-STROBE — # CANDELA RATING
- FLOW SWITCH
- TAMPER SWITCH
- LOW AIR SWITCH
- PRESSURE SWITCH
- FIRE ALARM INTERFACE RELAY
- E — FIRE ALARM ELEVATOR INTERFACE RELAY
- MAGNETIC HOLD OPEN, MOUNTED AT TOP OF DOOR
- D — AUTOMATIC DOOR CLOSER CONNECTION, CLOSER BY OTHERS
- T/R — PHOTOELECTRIC BEAM DETECTOR, TRANSMITTER OR RECEIVER
- FIRE-SMOKE DAMPER CONNECTION, DAMPER BY MECHANICAL CONTRACTOR
- FIRE DAMPER CONNECTION, DAMPER BY MECHANICAL CONTRACTOR
- POST INDICATOR VALVE
- FB — FIRE ALARM BELL, MOUNTED +90" TO CENTER, UON

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERES
AF	AMP FUSE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTION CURRENT
ANN	ANNUNCIATOR
AR	AS REQUIRED
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BPI	BYPASS ISOLATION
C	CONDUIT
CATV	CABLE TV
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CLG	CEILING
CO	CONDUIT ONLY
COM	COMMON
COMM	COMMUNICATIONS
DAS	DISTRIBUTED ANTENNA SYSTEM
DDC	DIRECT DIGITAL CONTROL (BY MECHANICAL CONTRACTOR)
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DPIS	DOOR POSITION INDICATION SWITCH
DVR	DIGITAL VIDEO RECORDER
EA	EACH
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WATER HEATER
F	FRACTIONAL HORSEPOWER
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPERES
FO	FIBER OPTIC
FPS	FRAMES PER SECOND
FS	FUSED SWITCH
FSD	FIRE/SMOKE DAMPER
FVNR	FULL VOLTAGE NON-REVERSING
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPT
GRC	GALVANIZED RIGID CONDUIT
HZ	HERTZ
HOA	HAND-OFF-AUTOMATIC
IC	INTERCOM SYSTEM
ID	INNERDUCT OR INNER DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
IP-GSM	INTERNET/CELLULAR FIRE ALARM COMMUNICATOR
IMC	INTERMEDIATE METAL CONDUIT
ISC	SHORT CIRCUIT AMPERES
JB	JUNCTION BOX
K	KEY OPERATED SWITCH OR LOCK
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LTG	LIGHTING
LV	LOW VOLTAGE
LVE	LOW VOLTAGE ELECTRONICS
LVSE	LOW VOLTAGE SECURITY ELECTRONICS
LSI	LONG TIME, SHORT TIME, INSTANTANEOUS PICK UP AND TIME DELAY
LSIG	LSI FUNCTION AND GROUND FAULT PROTECTION WITH ALARM
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MES	MEDICAL EMERGENCY SYSTEM
MIN	MINIMUM
MLO	MAIN LUG ONLY
MMS	MANUAL MOTOR STARTER
MOV	METAL OXIDE VARISTOR
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NF	NON-FUSIBLE OR NON-FUSED
NL	NIGHTLIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OCP	OVERCURRENT PROTECTION
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	OVERHEAD
OHP	OVERHEAD POWER
OL	OVERLOADS
P	POLE OR ø PHASE
PNC	PATIENT NURSE CALL
PNL	PANEL
PH	PHASE ø
PVC	POLY VINYL CHLORIDE
REQD	REQUIRED
REX	REQUEST-TO-EXIT
RGS	RIGID GALVANIZED STEEL
RVNR	REDUCED VOLTAGE NON-REVERSING
SASD	SILICONE AVALANCHE SURGE SUPPRESSION
SC	SHORT CIRCUIT
SCCR	SHORT CIRCUIT CURRENT RATING
SCA	SHORT CIRCUIT AMPERES
SP	SPARE
SPD	SURGE PROTECTION DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SPST	SINGLE POLE, SINGLE THROW
SPKR	SPEAKER
SSRV	SOLID STATE REDUCED VOLTAGE
ST	SHUNT TRIP
SW	SWITCH
SWBD	SWITCHBOARD
TBD	TO BE DETERMINED
TFCI	TENANT FURNISHED CONTRACTOR INSTALLED
TBB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UFER	CONCRETE ENCASED GROUNDING ELECTRODE
UG	UNDERGROUND
UGP	UNDERGROUND POWER
UGT	UNDERGROUND TELEPHONE
UON	UNLESS OTHERWISE NOTED
VA	VOLT AMPERES
VFD	VARIABLE FREQUENCY DRIVE
VFSC	VARIABLE FREQUENCY SPEED CONTROLLER
W	WATTS OR WIRE
WP	WEATHERPROOF
W/	WITH
W/O	WITHOUT
WS	WORKSTATION
WSR	WITHSTAND RATING
XFMR	TRANSFORMER
(D)	(DEMOLISHED) EXISTING TO BE REMOVED
(E)	(EXISTING) EXISTING TO REMAIN
(R)	(RELOCATED) EXISTING TO BE RELOCATED
1P	SINGLE POLE
2P	TWO POLE
2W	TWO WIRE
3P	THREE POLE
3W	THREE WIRE
4W	FOUR WIRE

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Bid
Drawings

Electrical
Legends & Abbreviations

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Date: MAY 30, 2019

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GENERAL PROJECT NOTES

1. COORDINATE THE LOCATION OF WALL MOUNTED DEVICES AND OUTLETS WITH ARCHITECTURAL PLANS AND ELEVATIONS.
2. COORDINATE THE EXACT LOCATION OF ALL CEILING MOUNTED DEVICES AND FIXTURES WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. REFERENCE THE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.
3. COORDINATE THE LOCATION OF WALL OUTLETS.
4. ALL FLOOR PENETRATIONS AND PENETRATIONS THROUGH FIRE OR SMOKE PARTITIONS SHALL BE FIRE–STOPPED. REFERENCE THE ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE AND SMOKE PARTITIONS.
5. IN FIRE–RESISTIVE WALLS, BOXES THAT EXCEED 16 SQUARE INCHES OR ARE SEPARATED BY LESS THE 24 INCHES ON OPPOSITE SIDES OF THE WALLS SHALL BE PROTECTED WITH FIRE–RESISTIVE INTUMESCENT COMPOUND MEMBRANE PADS.
6. INSTALLATION OF PANELBOARDS OR OTHER LARGE BOXES THAT ARE FLUSH MOUNTED IN WALLS SHALL BE COORDINATED WITH OTHER TRADES AS REQUIRED TO MAINTAIN THE INTEGRITY OF FIRE–RESISTIVE WALLS. WHERE THE WALL IS REQUIRED TO BE FIRE–RATED, THE WALL OPENING SHALL BE LINED WITH A 5/8 INCH FIRE–RATED GYPSUM BOARD AND ALL GAPS SHALL BE FILLED WITH FIRE–RESISTIVE INTUMESCENT SEALANT.
7. IN ALL CONDUITS THAT PASS THROUGH SEISMIC JOINTS, PROVIDE SUITABLE FITTINGS TO ALLOW FOR SEISMIC MOVEMENT. REFERENCE THE STRUCTURAL DRAWINGS FOR LOCATION OF SEISMIC JOINTS.
8. ALL CONDUIT PENETRATIONS OF STRUCTURAL ELEMENTS OR CONDUITS THAT RUN WITHIN MASONRY WALLS OR FLOOR SLABS SHALL REQUIRE APPROVAL BY THE ARCHITECT PRIOR TO INSTALLATION.
9. PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING FOR THE LATERAL, LONGITUDINAL, AND VERTICAL SUPPORT OF ALL CONDUIT AND ELECTRICAL EQUIPMENT. LATERAL BRACING SHALL BE IN ACCORDANCE WITH IBC. VERTICAL SUPPORTS SHALL BE CAPABLE OF SUPPORTING FOUR TIMES THE LOAD.
10. SUPPORT ALL CONDUCTORS IN VERTICAL RACEWAYS IN ACCORDANCE WITH CURRENT NEC REQUIREMENTS.
11. UNLESS OTHERWISE IDENTIFIED ON THE SYMBOL LEGEND, NUMBERS ADJACENT TO ELECTRICAL RECEPTACLES OR LUMINAIRES INDICATE THE CIRCUIT TO WHICH THE RECEPTACLE OR LUMINAIRE IS TO BE CONNECTED. NUMBERS THAT ARE PRECEDED BY THE + SIGN INDICATE MOUNTING HEIGHTS.
12. PROVIDE EQUIPMENT GROUNDING CONDUCTORS TOGETHER WITH ALL FEEDER AND BRANCH CIRCUIT RUNS. ONLY BRANCH CIRCUITS ON DIFFERENT PHASES SUPPLIED BY THE SAME PANEL SHALL SHARE THE SAME EQUIPMENT GROUNDING CONDUCTOR.
13. RECEPTACLES ONLY ARE SHOWN ON THE PLANS FOR CERTAIN SIGNAL AND COMMUNICATIONS SYSTEMS. REFER TO THE APPLICABLE WIRING DIAGRAMS AND TO THE SPECIFICATIONS FOR RACEWAYS AND CABLE TO BE PROVIDED FOR SIGNAL AND COMMUNICATION WIRING.
14. FOR CLARITY, EXISTING CONDITIONS HAVE BEEN SHOWN ONLY TO THE EXTENT NECESSARY TO SHOW CONNECTION WITH NEW WORK. IT IS THE RESPONSIBILITY OF THE TRADE CONTRACTOR TO COORDINATE ALL WORK AND VERIFY ALL EXISTING CONDITIONS INVOLVED PRIOR TO INSTALLATION AND/OR CONNECTION TO EXISTING SYSTEMS. ANY DISCREPANCIES IN THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY.
15. REFERENCE DRAWINGS ARE AVAILABLE FROM THE OWNER FOR SOME EXISTING SERVICE TIES. IT SHALL BE THE RESPONSIBILITY OF THE TRADE CONTRACTOR TO VISIT THE SITE AND VERIFY THE ACCURACY OF ANY DRAWINGS UTILIZED.
16. CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO RUN CIRCUITS OR CONDUIT.

FEEDER / BRANCH SCHEDULE

Circuit Ampacity (Amps)	Circuit No.	Circuit Designator								AWG Phase (PH) & Neutral (N)	AWG Ground (G)
		S=(1)PH+(1)N+(1)G 1 Phase, 1 Pole	SG=(1)PH+(1)N+(2)G 1 Phase, 1 Pole W/ISOLATED GROUND	P=(2)PH+(1)G 1 Phase, 2 Pole, 2W	PN=(2)PH+(1)N+(1)G 1 Phase, 2 Pole, 3W	PG=(1)PH+(1)N+(2)G 1 Phase, 2 Pole, 3W W/ISOLATED GROUND	=(3)PH+(1)G 3 Phase, 3 Wire	N=(3)PH+(1)N+(1)G 3 Phase, 4 Wire	IG=(3)PH+(1)N+(2)G 3 Phase, 4 Wire W/ISOLATED GROUND		
		Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)	Conduit Size, (Sets)		
20	20	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	#12	#12
30	30	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	#10	#10
40	40	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	3/4", (1)	#8	#10
50	50	1", (1)	1", (1)	1", (1)	1", (1)	1", (1)	1", (1)	1", (1)	1", (1)	#6	#10
60	60	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	#4	#10
70	70	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	#4	#8
80	80	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	1 1/4", (1)	#3	#8
90	90	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	#2	#8
100	100	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	1 1/2", (1)	#1	#8
125	125			2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	#1	#6
150	150			2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	#1/0	#6
175	175			2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	2", (1)	#2/0	#6
200	200			2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	#3/0	#6
225	225			2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	2 1/2", (1)	#4/0	#4
250	250			3", (1)	3", (1)	3", (1)	3", (1)	3", (1)	3", (1)	#250	#4
300	300			3 1/2", (1)	3 1/2", (1)	3 1/2", (1)	3 1/2", (1)	3 1/2", (1)	3 1/2", (1)	#350	#4
350	350			4", (1)	4", (1)	4", (1)	4", (1)	4", (1)	4", (1)	#500	#3
400	400			4", (1)	4", (1)	4", (1)	4", (1)	4", (1)	4", (1)	#600	#3
450	450						2 1/2", (2)	2 1/2", (2)	2 1/2", (2)	#4/0	#2
500	500						3", (2)	3", (2)	3", (2)	#250	#2
600	600						3 1/2", (2)	3 1/2", (2)	3 1/2", (2)	#350	#1
700	700						4", (2)	4", (2)	4", (2)	#500	#1/0
800	800						4", (2)	4", (2)	4", (2)	#600	#1/0
1000	1000						3 1/2", (3)	3 1/2", (3)		#400	#2/0
1200	1200						4", (3)	4", (3)		#600	#3/0
1600	1600						4", (4)	4", (4)		#600	#4/0
2000	2000						4", (5)	4", (5)		#600	#250
2500	2500						4", (6)	4", (6)		#600	#350
3000	3000						4", (8)	4", (8)		#500	#400
4000	4000						4", (10)	4", (10)		#600	#500

Notes:
1. EXAMPLE: 500IG = (2) Sets of 3" conduit, each with (3) #250 Phase conductors, (1) #250 Neutral conductor, and (2) #2 Ground conductors.
2. Conduit sizes are based on THWN insulation for all conductors and RGS conduit.
3. Ground Conductors can be omitted from Service Entrance Feeders if applicable.
4. Reference NEC for metric conduit requirements.
5. If aluminum conductors are allowed for feeders, increase conductor sizing to match ampacity rating of copper conductors shown, and adjust conduit size appropriately.
6. To avoid voltage drop, increase conductor size and conduit for feeders over 150 ft in length.

106B

ROOM: 113
MOUNTING: FLUSH
FED FROM:UTILITY
NOTE: EXIST PNL

VOLTS: 208/120V 2P 3W
BUS AMPS: 200
NEUTRAL: 100%

AIC: 10,000
MAIN BKR: 200
LUGS: STANDARD

CKT #	CKT BKR	NOTES	CIRCUIT DESCRIPTION	KVA LOAD A	KVA LOAD B	KVA LOAD C	CKT #	CKT BKR	NOTES	CIRCUIT DESCRIPTION	KVA LOAD A	KVA LOAD B	KVA LOAD C
1	15/1	1	LIGHTS	0.4			2	15/1	1	LIGHTS	0.3		
3	15/1	1	EXT LIGHTS		0.7		4	20/1	1	RECEPT CHASE		0.54	
5	15/1	1	SEPTIC FLOAT	0.1			6	20/1	1	GFCI WOMANS	0.36		
7	20/2	2	COMPRESSOR		1.4		8	20/1	1	EXT FANS		0.4	
9	|			1.4			10	20/1	1	GFCI MENS	0.36		
11	20/1	2	ELEC HEATER		1.5		12	20/1	1	OUTSIDE LTS		0.6	
13	20/1	2	FACP	0			14	30/2	1	WATER HTR WOMEN	1.7		
15	20/1		SPARE		0		16	|				1.7	
17	20/1		SPARE	0			18	30/2	1	WATER HTR MENS	1.7		
19	20/1		SPARE		0		20	|				1.7	
21	20/1		SPARE	0			22	50/2	1	FURNACE	3.4		
23	20/1		SPARE		0		24	|				3.4	
25	20/1		SPARE	0			26	50/2	1	FURNACE	3.4		
27	20/1		SPARE		0		28	|				3.4	
29	20/1		SPARE	0			30	20/1	2	FIRE ALARM BELL	0.1		
										TOTAL CONNECTED KVA BY PHASE	13	15	0
										TOTAL CONNECTED AMPS BY PHASE	120	140	0

NOTES
1. EXISTING LOAD TO REMAIN.
2. LOAD ADDED. PROVIDE CIRCUIT BREAKER SIZE AS INDICATED.

LOAD TYPE	CONN. KVA	CALC. KVA	
LIGHTING	2	2.5	(125%)
LARGEST MOTOR	2.8	3.5	(125%)
OTHER MOTORS	0.4	0.4	(100%)
RECEPTACLES	1.3	1.3	(50%>10)
CONTINUOUS	0	0	(125%)
HEATING	22	22	(100%)
NONCONTINUOUS	0.2	0.2	(100%)
KITCHEN EQUIP	0	0	(N/A)
NONCOIN/DIVERSE	0	0	(N/A)
METERED	0	0	(125%)
TOTAL KVA	28	30	
BALANCED THREE PHASE AMPS		140	

DONALD RAY EVANS JR.
STATE OF WASHINGTON
48330
REGISTERED PROFESSIONAL ENGINEER
05-31-19

E2C EVANS ENGINEERING AND CONSULTING, PLLC

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Bid Drawings

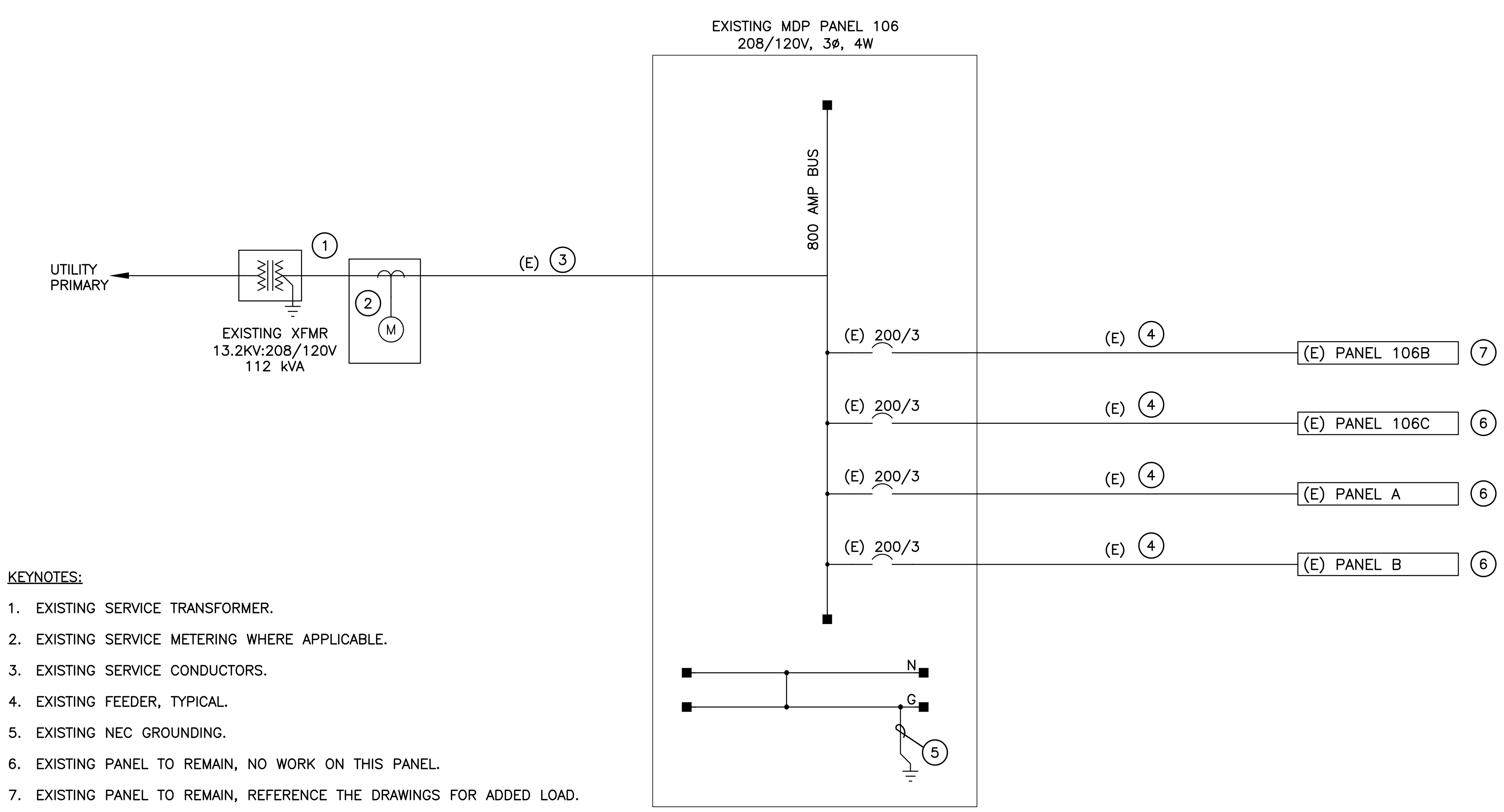
Schedules & Project Notes

Ardell Pavillion Upgrades
Fire Suppression/Alarm Systems
Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

B W A | BERNARDO | WILLS ARCHITECTS PC

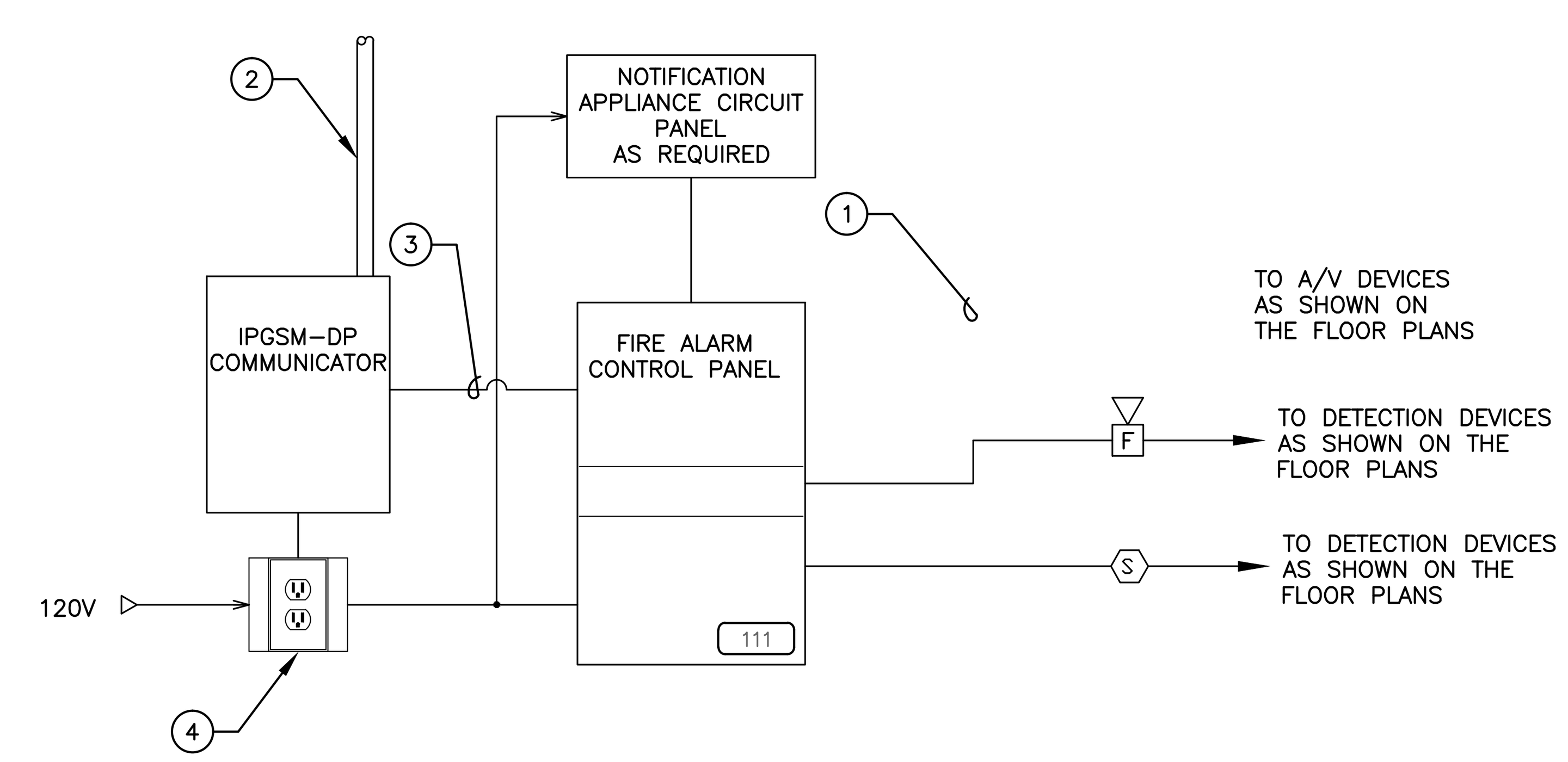
Proj. No: 19-01-009A
Drawn by: DRE
Date: MAY 30, 2019

E0.2



KEYNOTES:

1. EXISTING SERVICE TRANSFORMER.
2. EXISTING SERVICE METERING WHERE APPLICABLE.
3. EXISTING SERVICE CONDUCTORS.
4. EXISTING FEEDER, TYPICAL.
5. EXISTING NEC GROUNDING.
6. EXISTING PANEL TO REMAIN, NO WORK ON THIS PANEL.
7. EXISTING PANEL TO REMAIN, REFERENCE THE DRAWINGS FOR ADDED LOAD.
8. COORDINATE WITH LOCAL UTILITY FOR INSTALLATION OF SERVICE TRANSFORMER.



KEYNOTES:

1. PROVIDE CONDUIT AND WIRING AS REQUIRED, TYP.
2. PROVIDE 3/4" CONDUIT AND CAT 6 CABLING TO COMMUNICATIONS EQUIPMENT.
3. PROVIDE 3/4" CONDUIT AND CAT 6 CABLING.
4. DEDICATED CIRCUIT TO RECEPTACLE AND FIRE ALARM CONTROL PANEL. PROVIDE RECEPTACLE BOX AND COVER PER MANUFACTURER FOR IPGSM-DP COMMUNICATOR TRANSFORMER.

1 POWER DISTRIBUTION ONE LINE DIAGRAM

SCALE: NO SCALE

XREF: x-oneline

2 FIRE ALARM RISER DIAGRAM

SCALE: NO SCALE

XREF: X-FA_RISER.DWG

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Bid Drawings

Electrical Diagrams

Ardell Pavillion Upgrades
Fire Suppression/Alarm Systems
Grant County Fairgrounds
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Moses Lake, WA 98837

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E0.3

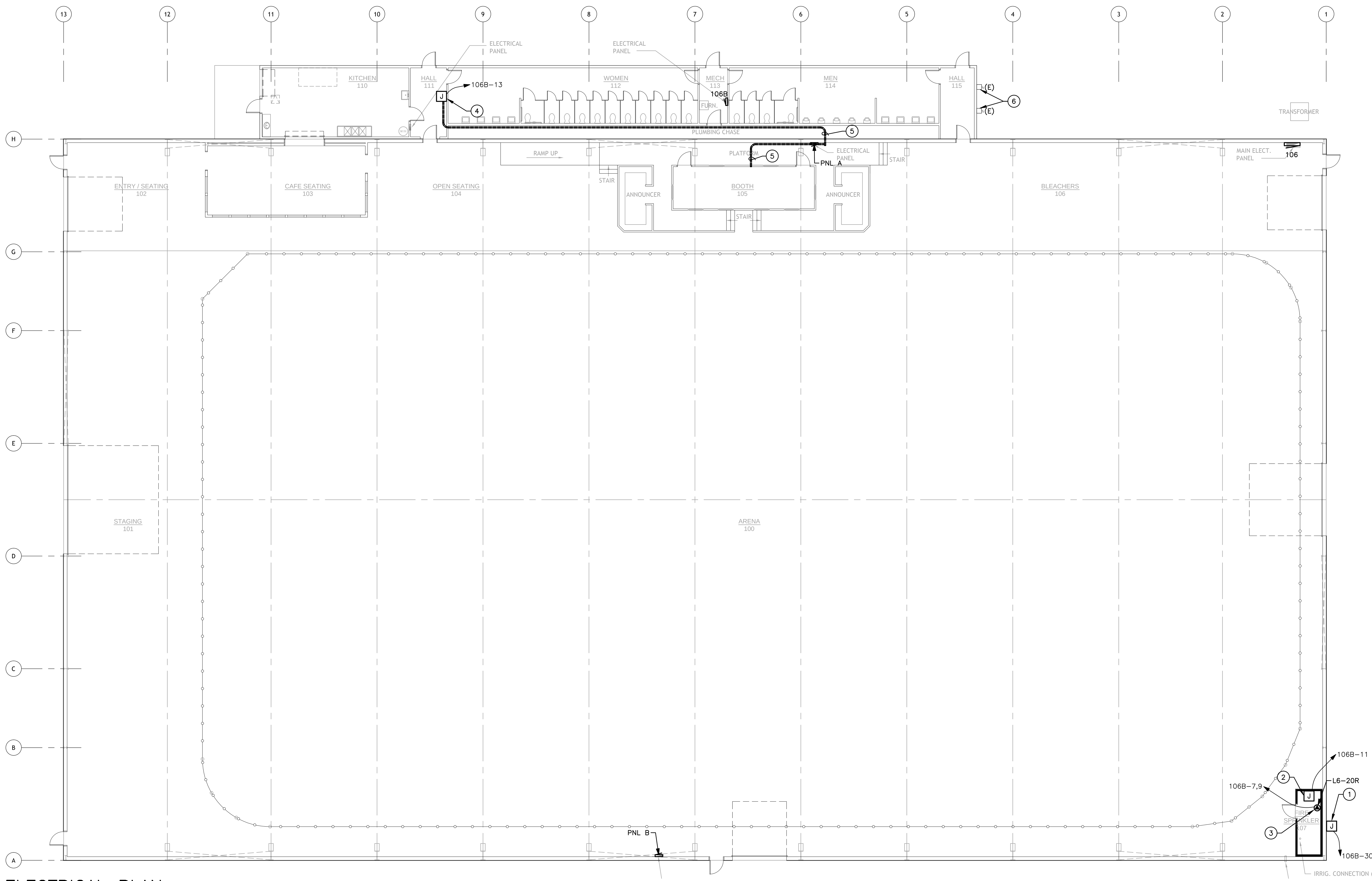
GENERAL NOTES

A. INSERT GENERAL NOTES HERE.

B. INSERT GENERAL NOTES HERE.

KEYNOTES

1. PROVIDE CONNECTION TO FIRE ALARM BELL.
2. PROVIDE ELECTRIC HEATER WITH INTEGRAL THERMOSTAT CONTROL AND CONNECTION. ELECTRIC HEATER SHALL BE EQUAL TO BERKO MODEL #FRA1512F.
3. PROVIDE CONNECTION TO AIR COMPRESSOR. VERIFY LOCATION AND CONNECTION REQUIREMENTS.
4. PROVIDE CONNECTION TO FIRE ALARM CONTROL PANEL.
5. PROVIDE CONDUIT AND CAT 6 CABLING FROM FIRE ALARM CONTROL PANEL TO OWNERS NETWORK EQUIPMENT. FIELD VERIFY AND COORDINATE LOCATION WITH OWNER.
6. EXISTING EXTERIOR DISCONNECT.



NORTH 1 ELECTRICAL PLAN
SCALE: 3/32"=1'-0"

DONALD RAY EVANS JR. STATE OF WASHINGTON 48330 REGISTERED PROFESSIONAL ENGINEER
05-31-19

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Bid Drawings

Electrical Plan

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E1.1

GENERAL NOTES

A. DETECTION DEVICES SHALL MAINTAIN A MINIMUM OF 36" SPACING FROM ANY HVAC SUPPLY OR RETURN DUCT OR DIFFUSER. FIELD ADJUST DETECTION DEVICES AS REQUIRED.

B. THE CONTRACTOR SHALL VERIFY THE TYPE OF WALL PENETRATION REQUIRED FOR EACH CONDUIT. PROVIDE CONCRETE DRILLING AS REQUIRED TO ROUTE CONDUITS.

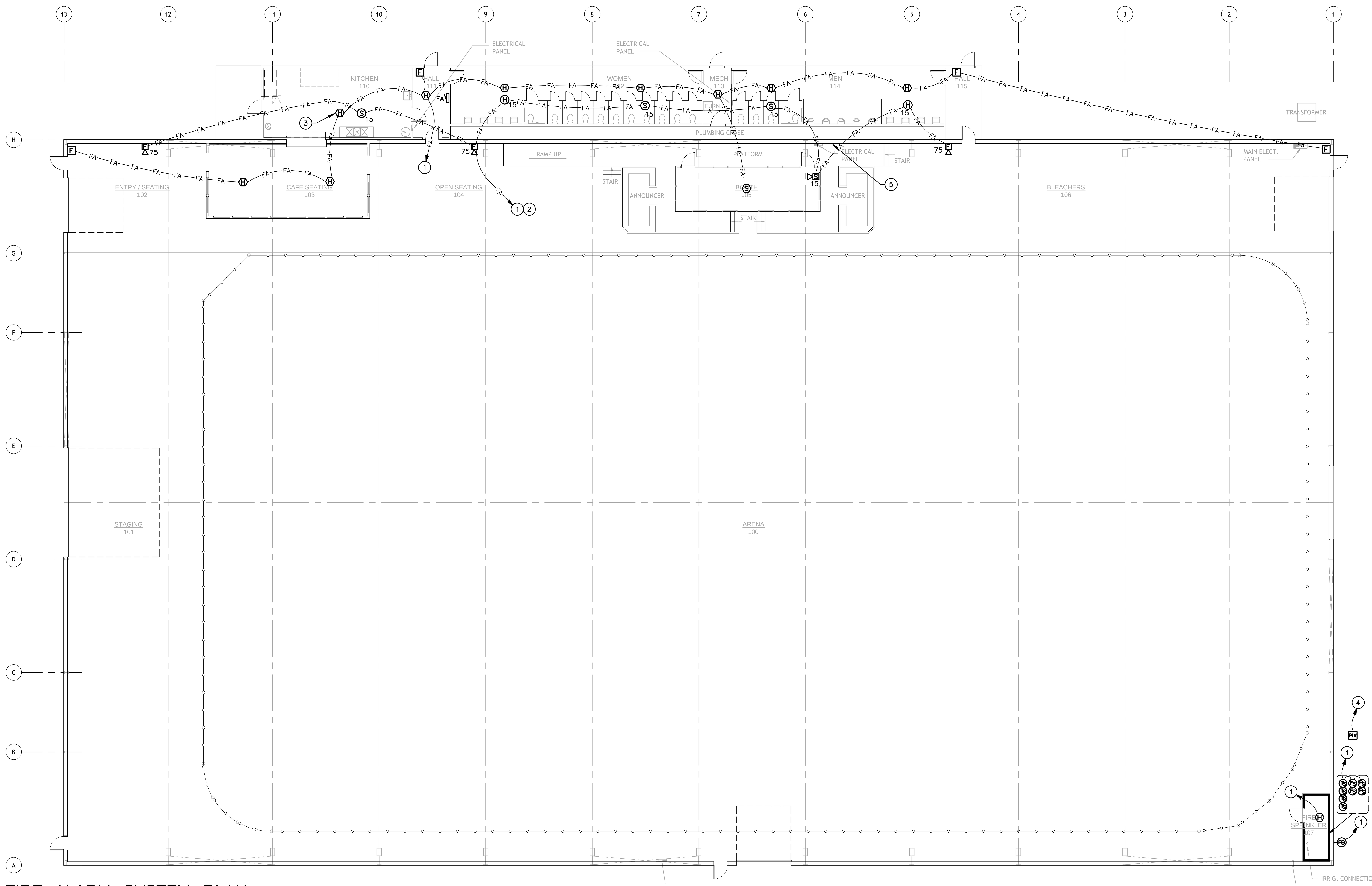
C. COORDINATE EXACT LOCATION OF ALL NOTIFICATION DEVICES WITH THE ARCHITECT TO AVOID CONFLICT WITH INTERIOR FINISHES.

D. ALL CABLING SHALL BE IN CONDUIT , 3/4" MINIMUM.

E. ALL CABLING REQUIRED TO BE RUN IN EXPOSED FINISHED LOCATIONS SHALL BE APPROVED BY THE ENGINEER OR ARCHITECT, AND SHALL BE INSTALLED IN METAL DECOR SURFACE MOUNT RACEWAY, COLOR BY ARCHITECT.

KEYNOTES

1. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO THE FACP OR NAC POWER EXTENDER.
2. AUDIBLE/VISIBLE DEVICES SHALL BE SYNCHRONIZED WITH OTHER DEVICES WITHIN THE SAME ROOM OR ADJACENT SPACE.
3. PROVIDE 135° RATE-OF-RISE HEAT DETECTOR.
4. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO THE PIV TAMPER SWITCH. VERIFY PIV LOCATION.
5. PROVIDE 3/4" CONDUIT WITH CAT 6 CABLING FROM THE FACP TO THE COMMUNICATIONS EQUIPMENT LOCATION.



1 FIRE ALARM SYSTEM PLAN
SCALE: 3/32"=1'-0"
NORTH

DONALD RAY EVANS, STATE OF WASHINGTON, 48330, REGISTERED PROFESSIONAL ENGINEER
05-31-19

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Bid Drawings

Fire Alarm System Plan

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Proj. No: 19-01-009A
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E2.1

ELECTRICAL SPECIFICATIONS

ELECTRICAL SPECIFICATIONS:

1.1 SCOPE

A. ELECTRICAL WORK SHALL INCLUDE FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO CONSTRUCT AND INSTALL THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THESE DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS.

1.2 CODES, PERMITS AND FEES:

A. THE INSTALLATION OF THIS WORK SHALL COMPLY IN EVERY WAY WITH THE REQUIREMENTS OF ALL APPLICABLE LAWS, ORDINANCES AND RULES OF THE STATE OF WASHINGTON, WISHA, AND THE NATIONAL ELECTRICAL CODE.

B. IF ANY CONFLICT OCCURS BETWEEN THESE RULES AND THIS SPECIFICATION, THE RULES SHALL GOVERN. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING WITH GOVERNING CODES. THIS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLYING WITH ANY REQUIREMENTS OF THE PLANS OR SPECIFICATIONS WHICH MAY BE IN EXCESS OF REQUIREMENTS OF HEREINBEFORE MENTIONED RULES AND NOT CONTRARY TO SAME.

C. OBTAIN AND PAY FOR ALL REQUIRED STATE AND LOCAL INSTALLATION INSPECTIONS. DELIVER ORIGINALS OF THESE CERTIFICATES TO THE OWNER'S PROJECT REPRESENTATIVE. INCLUDE COPIES OF THE CERTIFICATES IN THE OPERATING AND MAINTENANCE INSTRUCTIONS.

D. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL POWER, TELEPHONE AND CABLE TELEVISION UTILITY COMPANY FEES FOR ANY SERVICE WORK RELATED TO THE BUILDING IN THEIR BID. IF THESE FEES ARE UNATTAINABLE PRIOR TO BID, CONTACT THE ARCHITECT OR ENGINEER FOR INSTRUCTIONS.

1.3 ALL MATERIALS SHALL BE UL LISTED AND LABELED.

1.4 SUBMITTALS

A. PROVIDE DATA FOR ALL ITEMS INDICATED BELOW AND INCLUDE WIRING DIAGRAMS FOR EXTERIOR LIGHTING CONTROL. PROVIDE ONLY ONE (1) COPY TO THE ELECTRICAL ENGINEER FOR REVIEW. SUBMITTAL COMMENTS WILL BE DISTRIBUTED IN A LETTER FORMAT. SHOULD MORE THAN ONE COPY BE DELIVERED, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PICK UP REMAINING COPIES FROM THE ENGINEER'S OFFICE.

1.5 SALVAGE

A. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS TO ALL REMOVED FIXTURES AND EQUIPMENT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR DELIVERY OF ALL SALVAGED MATERIALS.

B. THE CONTRACTOR SHALL TRANSPORT AND DISPOSE OF ALL MATERIALS RESULTING FROM THE DEMOLISHED EQUIPMENT NOT BEING SALVAGED. ALL DISPOSALS SHALL BE OFF SITE.

1.6 CONTINUITY OF EXISTING SERVICES AND SYSTEMS

A. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. IN PARTICULAR, ALL SECURITY AND SAFETY SYSTEMS, AND ESSENTIAL OR EMERGENCY POWER SYSTEMS MUST BE MAINTAINED IN OPERATION AT ALL TIMES AS REQUIRED BY THE OWNER. THIS INCLUDES SECURITY AND SAFETY LIGHTING.

1.7 RACEWAY AND FITTINGS

A. RIGID STEEL CONDUIT (RGS) AND INTERMEDIATE METALLIC CONDUIT (IMC): HEAVY WALL, GALVANIZED STEEL, SCHEDULE 40, THREADED. FITTINGS: THREADED GALVANIZED OR CADMIUM PLATED STEEL FITTINGS.

B. ELECTRIC METALLIC TUBING (EMT): GALVANIZED TUBING. FITTINGS: STEEL, RAIN TIGHT COMPRESSION TYPE WITH NYLON INSULATED THROATS ON CONNECTORS.

C. FLEXIBLE METAL CONDUIT: FLEXIBLE, INTERLOCKED, GALVANIZED STEEL CONSTRUCTION, SPIRAL STRIP. FITTINGS AND CONDUIT BODIES: ANSI/NEMA FB 1. ALL STEEL, GALVANIZED, COMPRESSION TYPE. SPECIFICALLY DESIGNED FOR THE PURPOSE.

D. LIQUID TIGHT FLEXIBLE CONDUIT: FLEXIBLE, INTERLOCKED, GALVANIZED STEEL, SPIRAL STRIP WITH AN OUTER LIQUIDTIGHT, NONMETALLIC, SUNLIGHT-RESISTANT JACKET. FITTINGS: COMPRESSION TYPE.

E. PLASTIC CONDUIT: SCHEDULE 40 PVC MINIMUM, LISTED, SUNLIGHT RESISTANT, RATED FOR 90 DEGREES C CONDUCTORS.

F. USE RACEWAY TYPES AS INDICATED BELOW:

a. UNDERGROUND INSTALLATIONS MORE THAN 5 FT FROM FOUNDATION WALL: PLASTIC CONDUIT.

b. INSTALLATIONS IN OR UNDER CONCRETE SLAB: PLASTIC CONDUIT, EXCEPT WITHIN 5 FT FROM FOUNDATION WALL: RIGID STEEL CONDUIT. CONDUITS SHALL NOT BE INSTALLED IN CONCRETE WHICH IS LESS THAN THREE INCHES THICK.

c. IN POURED CONCRETE OR MASONRY WALLS: RIGID STEEL CONDUIT OR IMC.

d. EXPOSED OUTDOOR LOCATIONS: RIGID STEEL CONDUIT.

e. WET INTERIOR LOCATIONS: RIGID STEEL CONDUIT.

f. CONCEALED DRY INTERIOR LOCATIONS: ELECTRICAL METALLIC TUBING.

g. EXPOSED DRY INTERIOR LOCATIONS: RIGID STEEL CONDUIT. INTERMEDIATE METAL CONDUIT. ELECTRICAL METALLIC TUBING. FLEXIBLE METAL CONDUIT (MOTOR, LIGHT FIXTURE AND EQUIPMENT CONNECTIONS ONLY).

h. FOR CONNECTIONS TO MECHANICAL EQUIPMENT, VIBRATING EQUIPMENT, MOTORS OR TRANSFORMERS: FLEXIBLE METAL CONDUIT. WHERE INSTALLED IN EXTERIOR LOCATIONS, LIQUID TIGHT FLEXIBLE CONDUIT. MAXIMUM LENGTH SHALL BE THREE FEET (900 MM).

G. PROVIDE NO. 12 AWG INSULATED CONDUCTOR OR 1/8 INCH (3 MM) NYLON PULL STRING IN EMPTY CONDUITS, EXCEPT SLEEVES AND NIPPLES.

H. ALL CONDUIT INSTALLED UNDERGROUND (EXTERIOR TO THE BUILDING) SHALL BE BURIED A MINIMUM OF 24” BELOW FINISHED GRADE, WHETHER OR NOT THE CONDUIT IS CONCRETE ENCASED.

I. WHERE CONDUIT PENETRATES ROOF, ROUTE CONDUIT THROUGH OPENINGS FOR PIPING AND DUCTWORK WHERE POSSIBLE; OTHERWISE, ROUTE THROUGH ROOF JACK WITH PITCH POCKET. THE NECK OF THE FLASHING AND THE CONDUIT SHALL BE SEALED WITH WATERPROOFING COMPOUND AS RECOMMENDED BY THE MANUFACTURER OF THE ASSEMBLY.

J. INTERIOR DATA/TELECOM CONDUITS SHALL BE METALLIC, AND SHALL BE ¾” MINIMUM. PROVIDE NYLON THROAT BUSHINGS ON ALL CONDUIT ENDS.

1.8 ELECTRICAL BOXES

A. SHEET METAL OUTLET BOXES: GALVANIZED STEEL, WITH 3/8 IN MALE FIXTURE STUDS WHERE REQUIRED.

B. PULL AND JUNCTION BOXES: GALVANIZED STEEL.

C. CAST METAL BOXES FOR OUTDOOR AND WET LOCATION INSTALLATIONS: FLAT FLANGED, SURFACE MOUNTED RAIN TIGHT JUNCTION BOX. GALVANIZED CAST IRON BOX AND COVER WITH GROUND FLANGE, NEOPRENE GASKET, AND STAINLESS STEEL COVER SCREWS. UL LISTED RAIN TIGHT.

D. OUTLET, PULL BOXES AND JUNCTION BOXES SHALL BE MINIMUM 4 INCH SQUARE BY 2 1/8 INCHES DEEP FOR USE WITH 1 INCH CONDUIT AND SMALLER. ON CONDUIT SYSTEMS USING 1 1/4 INCH CONDUIT OR LARGER, PULL AND JUNCTION BOXES SHALL BE SIZED PER NEC BUT NOT LESS THAN 4 11/16 INCH SQUARE. WHERE BOXES ARE INSTALLED IN MASONRY WALLS, PROVIDE MASONRY BOXES 3 ½ INCHES DEEP. PROVIDE DEVICE RINGS, SIZE AS REQUIRED.

1.9 WIRE AND CABLE

A. SINGLE CONDUCTOR, TYPE THW, THHN/THWN OR XHHW INSULATION, RATED 600 VOLTS. NO CONDUCTOR LESS THAN 10 AWG SHALL BE INSTALLED IN EXTERIOR UNDERGROUND CONDUIT. ALL CONDUCTOR SHALL BE COPPER UNLESS OTHERWISE NOTED.

1.10 DEVICES

A. HUBBELL, PASS AND SEYMOUR, BRYANT, LEVITON, ARROW-HART, OR APPROVED EQUAL. ALL WIRING DEVICES SHALL COMPLY WITH NEMA STANDARD WD-1, “HEAVY DUTY WIRING DEVICES” AND UL 20 STANDARDS.

a. 15A DUPLEX RECEPTACLE: HUBBELL #8200, HOSPITAL GRADE.

b. 20A DUPLEX RECEPTACLE: HUBBELL #8300, HOSPITAL GRADE.

c. GFCI RECEPTACLE: HUBBELL: #GF-8300, HOSPITAL GRADE.

d. 250V, 20A RECEPTACLE: HUBBELL #8400, HOSPITAL GRADE, PROVIDE #8464V MATCHING PLUG AND CONNECT TO CTI/SIEMENS PROVIDED POWER DISTRIBUTION STRIP.

e. 15A DUPLEX RECEPTACLE: HUBBELL #5252.

f. 20A DUPLEX RECEPTACLE: HUBBELL #5352.

g. GFCI RECEPTACLE: HUBBELL: #GF-5252.

h. 15A ISOLATED GROUND RECEPTACLE: HUBBELL #IG5251.

i. L5-20R RECEPTACLE: HUBBELL #2310.

j. L5-30R RECEPTACLE: HUBBELL #2610.

k. 30A, 125V RECEPTACLE: HUBBELL #9308.

l. 30A, 250V RECEPTACLE: HUBBELL #9330.

m. 50A, 250V RECEPTACLE: HUBBELL #9367.

1.11 WALL PLATES: COVER PLATE, RAISED GALVANIZED STEEL.

1.12 STEEL CHANNEL SUPPORTS: GALVANIZED OR PAINTED STEEL. DESIGN SUPPORTS TO CARRY WEIGHT OF EQUIPMENT AND CONDUIT, INCLUDING WIRING.

1.13 FIRE AND/OR SMOKE RATED PENETRATIONS: 3M, STI/SPECSEAL, TREMCO, OR EQUAL. ALL FIRESTOPPING SYSTEMS SHALL BE PROVIDED BY THE SAME MANUFACTURER.

1.14 CIRCUIT BREAKERS SHALL BE EQUAL TO EXISTING MAKE, MODEL, AND RATING.

1.15 FUSIBLE SWITCH ASSEMBLIES: NEMA TYPE HD; QUICK-MAKE, QUICK-BREAK, LOAD INTERRUPTER, ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. FUSE CLIPS: DESIGNED TO ACCOMMODATE CLASS R CARTRIDGE TYPE FUSES. FUSES SHALL BE BUSSMAN OR EQUAL.

1.16 COMBINATION FUSIBLE SWITCH AND MOTOR STARTER ASSEMBLIES: NON-REVERSING MOTOR STARTERS ASSEMBLIES SHALL BE EQUAL TO SQUARE D CLASS 8538, NEMA RATED, CONFIGURATION AS INDICATED ON THE DRAWINGS WITH NEMA TYPE HD; QUICK-MAKE, QUICK-BREAK, LOAD INTERRUPTER, ENCLOSED KNIFE SWITCH WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE LOCKABLE IN OFF POSITION. FUSE CLIPS: DESIGNED TO ACCOMMODATE CLASS R CARTRIDGE TYPE FUSES. FUSES SHALL BE BUSSMAN OR EQUAL.

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05-31-19

Ardell Pavillion Upgrades
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3953 Airway Dr NE
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Bid Drawings

Electrical Specifications

B W A BERNARDO | WILLS ARCHITECTS PC

Proj. No: 19-01-009A
Drawn by: DRE
Date: MAY 30, 2019

E3.1

ELECTRICAL SPECIFICATIONS

SECTION 283100 - ADDRESSABLE FIRE ALARM SYSTEM

GENERAL

SCOPE

A. Applicable provisions of Division 01 shall govern all work under this Section.

B. The work covered by the Section of the specification shall include all labor, equipment, materials, programming and services to furnish and install a complete addressable intelligent fire alarm system and network. It shall be complete with all necessary hardware, software and memory. It shall be possible to permanently modify the software on site by using the integral programmer. The system shall consist of, but not be limited to, the following:

1. Fire alarm control panel.
2. Remote Trouble Unit.
3. Manual fire alarm stations.
4. Area smoke detectors.
5. Duct smoke detectors.
6. Heat detectors.
7. Audible/Visible Notification Appliances.
8. Central station alarm connection control.
9. Battery back-up.

C. The Contractor shall coordinate work in this Section with all related trades. Work and/or equipment provided in other Sections and related to the fire alarm system shall include, but not be limited to:

1. The HVAC contractor shall provide necessary duct opening and install the duct smoke detection devices. The electrical contractor shall supply duct smoke detectors and equipment connections. Coordinate with the HVAC contractor for switch location(s) and connection requirements.
2. Air handling and smoke exhaust system control circuits and status contacts to be furnished by the HVAC control equipment contractor. Coordinate with the HVAC contractor for additional electrical requirements.

SUBMITTALS

A. Submit all product data listed below under the provisions of Division 01 and Section 260010.

B. Product Data: Indicate the type, size, rating, style, catalog number, manufacturer's names, photos, and/or catalog data sheets for all items proposed to meet these specifications.

C. Shop Drawings: Submit a complete set of Shop Drawings Including and subject to:

1. Recommendations and requirements in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
2. Plans, elevations, sections, details, and attachments to other work.
3. Details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
4. System matrix identifying the relationships of all inputs to all outputs. This shall include all connected detection devices and addressable field modules.
5. Standby battery size calculations showing current draws for each device and module during standby, alarm and trouble conditions.
6. Voltage drop calculations for notification-appliance circuits.
7. All drawings shall be provided in CAD supplied in standard .DXF or DWG. format. PDF's may be acceptable with Engineer approval. Plots of each sheet shall be provided, same size as the contract documents.
8. Detail and Section drawings of heating, ventilating, and air-conditioning ducts, requiring Fire Alarm equipment; coordinate location of duct smoke detectors and access to them.
   a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
   b. Show field wiring required for HVAC unit shut down on alarm.
   c. Locate detectors according to manufacturer's written recommendations.
9. Shop drawings that reflect conduit and wiring routing, or that show different or additional devices locations than those shown on the contract documents shall at the contractors expense and shall not constitute a reason for a change order.

D. General Submittal Requirements:

1. In addition to routine submission of the above material, make an identical submission to the authority having jurisdiction. Include copies of shop drawings as required to depict component locations to facilitate review. Upon receipt of comments from the Authority Having Jurisdiction, make resubmissions as required to obtain approval.
2. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.

E. Prior to programming the system, submit a list of all device addresses with location labeling as they will appear in the display of the fire alarm panel and annunciator panel(s). This list will be modified as needed by the Owner and returned to the contractor for final programming in to the system.

OPERATION AND MAINTENANCE DOCUMENTATION

A. Submit all product data listed below under the provisions of Division 01 and Section 26 00 10.

B. Operations and maintenance data: Two (2) copies of the following Manual shall be delivered to the Owner's representative at the time of system acceptance. The manual shall include and comply with:

1. The "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
2. The "Fire Alarm and Emergency Communications System Record of Completion Documents" according to the "Completion Documents" article in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
3. Complete wiring diagrams showing connections between all devices and equipment.
4. Riser diagram.
5. Record copy of site-specific software.
6. The "Inspection and Testing Form" according to the "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:
   a. Equipment tested.
   b. Frequency of testing of installed components.
   c. Frequency of inspection of installed components.
   d. Requirements and recommendations related to results of maintenance.
   e. Manufacturer's user training manuals.
7. Abbreviated operating instructions for mounting at fire-alarm control unit and each annunciator unit.
8. Name, address and telephone of the authorized factory representative.
9. Application program listing for the system as installed at the time of acceptance by the building owner and/or Local Authority Having Jurisdiction. Above indicated shall be on DVD data disc or USB storage drive, and Hard copy printout.

C. As-built documents: Two (2) copies of the following data shall be delivered to the Owner's representative at the time of system acceptance. The close out documents shall include:

1. Provide point to point diagrams of the entire fire alarm system as installed. Include location and end-of-line devices, cable counts, color coding, circuit and terminal designations.
2. All drawings must reflect device address and programmed characteristics as verified in the presence of the engineer and/or the end user or electronically generated device addressing, and printed graphics.

QUALITY ASSURANCE

A. Installer Qualifications: The installing contractor shall provide proof of their qualifications as Factory Authorization and Factory Training for the product(s) specified herein. These qualification credentials shall not be more than two years old, to ensure up-to-date product and application knowledge on the part of the installing contractor.

B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level II technician, or higher as approved by local city, county, or state requirements.

C. Installation Shop Drawings and Documentation: Construction shop drawings shall be approved by personnel certified as NICET Level III, or higher as approved by local city, county, or state requirements.

D. NFPA Certification: Obtain certification according to NFPA 72 by an NRTL (nationally recognized testing laboratory).

E. The system vendor must employ factory trained technicians and maintain a service organization within 100 miles of the project and be capable of responding to service calls within 24 hours. This organization must have a minimum of 10 years' experience in servicing systems of the type specified above.

WARRANTY

A. Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail in materials or workmanship within specified warranty period.

1. Warranty Extent: All equipment and components not covered in the Maintenance Service Agreement.
2. Warranty Period: 3 years from the date of Substantial Completion.

REGULATORY REQUIREMENTS

A. All equipment shall be UL listed and labeled for the intended use.

B. The equipment and installation shall comply with the provisions of the following standards: (Most recent edition accepted by Local and State Authorities Having Jurisdiction)

1. NFPA 70 National Electric Code, Article 760
2. ANSI S3.41 Audible Emergency Evacuation Signal
3. ASCE/SEI 7 Minimum Design Loads for Buildings and Other Structures
4. 47 CFR 90 Telecommunications, Chapter I - Federal Communications Commission, Part 90 - "Private Land Mobile Radio Services."
5. IEEE 1100 Recommended Practice for Powering and Grounding Sensitive Electronic Equipment (the Emerald Book)
6. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum)
7. NFPA 72 National Fire Alarm Code
8. NFPA 90A Installation of Air-Conditioning and Ventilating Systems
9. NFPA 101 Life Safety Code
10. Local and State Building Codes.
11. Americans with Disabilities Act (ADA)
12. UL 38 Manual Signaling Boxes for Fire Alarm Systems
13. UL 217 Single and Multiple Station Smoke Alarms
14. UL 268 Smoke Detectors for Fire Alarm Signaling
15. UL 268A Smoke Detectors for Duct Application
16. UL 346 Waterflow indicators for Fire Protective Signaling systems
17. UL 464 Audible Signal Appliances
18. UL 521 Heat Detectors for Fire Protective Signaling Systems
19. UL 864 Control Units and Accessories for Fire Alarm Systems
20. UL 1481 Power Supplies for Fire Protective Signaling systems.
21. UL 1638 Visual Signaling appliances
22. UL 2075 Gas and Vapor Detectors and Sensors

PRODUCTS

SYSTEM DESCRIPTION

A. Source Limitations for Fire-Alarm System and Components: Components shall be compatible with and operate as an extension of existing system. Provide system manufacturer's certification that all components provided have been tested as, and will operate as, a system.

B. Analog addressable system dedicated to fire-alarm service only.

C. All components provided shall be listed for use with the selected system.

SYSTEMS OPERATIONAL DESCRIPTION

A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:

1. Manual stations.
2. Heat detectors.
3. Smoke detectors.
4. Duct smoke detectors.

B. Fire-alarm signal shall initiate the following actions within 3 seconds:

1. Continuously operate alarm notification appliances.
2. Identify alarm zone at fire-alarm control unit and remote annunciators.
3. Transmit an alarm signal to the remote alarm receiving station.
4. Turn on all fire alarm strobe and horns throughout the building.
5. Turn on system alarm notifications at the fire alarm control panel.
6. Start the reset / alarm silence disable timer to guarantee that alarm signals will sound for a minimum period of 10 minutes.
7. Operate alarm relay contacts to release all magnetically or electrically held doors secured thru the access control system. Note: only the doors within the zone in alarm shall be released; other doors outside of the alarmed zone shall remain secure until a detector within the same zone is in alarm.
8. Release fire and smoke doors held open by magnetic door holders.
9. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
10. Close smoke dampers in air ducts of designated air-conditioning duct systems. The mechanical controls shall activate or deactivate the air handling systems in accordance with NFPA-90A.
11. Transmit signals to building elevator control panel to initiate return to main floor or alternate floor. Upon reset of the fire alarm control panel, the elevators shall automatically resume normal operations.
12. Transmit signals to the elevator shunt trip device to disconnect power to the elevator equipment prior to sprinkler release.
13. Operate the DACT.
14. Transmit/receive signal of pre-action fire suppression sprinkler systems.
15. Transmit/receive signal of kitchen equipment fire suppression systems.
16. Activate emergency lighting control.
17. Activate emergency shutoffs for gas and fuel supplies.
18. Record events in the system memory.

C. Supervisory signal initiation shall be by one or more of the following devices and systems:

1. Valve supervisory switch.
2. Elevator shunt-trip supervision.
3. Loss of communication with any panel on the network.

D. System trouble signal initiation shall be by one or more of the following devices and actions:

1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of primary power at fire-alarm control unit.
4. Ground or a single break in internal circuits of fire-alarm control unit.
5. Abnormal ac voltage at fire-alarm control unit.
6. Break in standby battery circuitry.
7. Failure of battery charging.
8. Abnormal position of any switch at fire-alarm control unit or annunciator.

E. System Trouble and Supervisory Signal Actions:

1. Initiate notification appliances.
2. Annunciate at fire-alarm control unit and remote annunciators.
3. After a time delay of 200 seconds, transmit a trouble or supervisory signal to the remote alarm receiving station.
4. Operate the DACT.

F. Alarm Reset: Key accessible RESET function resets alarm system out of ALARM mode if alarm initiating circuits have cleared.

G. Drill Sequence of Operation: Manual DRILL function causes ALARM mode operation to:

1. Sound and display local fire alarm signaling devices.
2. Indicate location of alarm zone on fire alarm control panel and on remote annunciator panel.

BASIS OF DESIGN

A. The basis of design for this system is Silent Knight Farenhyt IFP series and Silent Knight compatible products. These constitute the type and quality of equipment to be furnished. Provide Silent Knight Farenhyt IFP series and Silent Knight compatible products or comparable product by one of the following manufactures:

1. Simplex Grinnell
2. Edwards
3. Honeywell
4. Approved equal.

FIRE ALARM CONTROL PANEL (FACP)

A. For system designs with less than 100 detectors, the fire alarm control panel (FACP) shall be the Silent Knight IFP-100 analog addressable control panel. The FACP must have a 6 amp power supply and be capable of expansion to a maximum of 54 total amps via bus connected expander modules that supervise low battery, loss of AC power and loss of communication.

B. For system designs with 100 to 750 detectors, the fire alarm control panel (FACP) shall be the Silent Knight IFP-1000 analog addressable control panel. The FACP must have a 6 amp power supply and be capable of expansion to a maximum of 54 total amps via bus connected expander modules that supervise low battery, loss of AC power and loss of communication.

C. The FACP shall have a single button operation for the reset and silence functions. No user code shall be required to perform these functions.

D. The FACP shall automatically test the smoke detectors in compliance with NFPA standards to ensure that they are within listed sensitivity parameters and be listed with Underwriters Laboratories for this purpose.

E. The FACP shall have a built in UL approved digital communicator. The digital communicator must be an integral part of the control panel and be capable of reporting all zones or points of alarm, supervisory, and trouble conditions as well as all system status information such as loss of AC, low battery, ground fault, and loss of supervision to any remote devices with individual and distinct messages to a central station or remote station. The communicator must also be capable of up/downloading of all system programming options, Event history and Sensitivity compliance information to a PC on site or at a remote location.

F. The digital communicator shall have an answering machine bypass feature that will allow the panel to respond to communication even on phone lines that have other communication equipment present. The communicator shall be capable of reporting via SIA and Contact ID formats. The communicator shall have a delayed AC loss report function which will provide a programmable report delay plus a 10-25 min random component to help ease traffic to the central station during a power outage. No controls that use External modems for remote programming and diagnostics shall be accepted.

G. The FACP shall compensate for the accumulation of contaminants that affect detector sensitivity. The FACP shall have day/night sensitivity adjustments, maintenance alert feature (differentiated from trouble condition), detector sensitivity selection, auto-programming mode (Jumpstart).

H. The main communication bus (S-Bus RS485) shall be a class B configuration with a total Bus length of 6,000 feet.

I. The Signaling Line Circuit (SLC) shall be capable of a wiring distance of 10,000 feet from the panel and shall be capable of supporting 127 devices. The communication protocol to SLC devices must be digital. Any SLC loop device, which goes into alarm, must interrupt the polling cycle for priority response from the FACP. The FACP must respond consistently to a device that goes into alarm on an SLC in under 3 seconds. The SLC shall be capable of functioning in a class A or class B configuration.

J. The FACP shall have the ability to set three different sensitivity levels. A zone can be programmed to a day and a night sensitivity value. The day/night schedule shall allow for 16 holiday dates that are user programmable to allow the FACP to respond at the night level on those days.

K. The FACP shall support four programmable notification circuits that are capable of being programmed as supervised reverse polarity notification circuits or supervised auxiliary power circuits that can be programmed as continuous, resettable or door holder power. These circuits shall be programmable for Class A or Class B operation.

L. The FACP shall have a built in annunciator with a LCD display having a minimum of 80 characters with the capability of having an additional eight supervised remote annunciators connected in the field.

M. The FACP built in annunciator shall include LED indicators for General alarm, Supervisory, System trouble, System Silence and Power. When in the normal condition the LCD shall display time and date based on a 200 year clock which is capable of automatic daylight savings time adjustments. All controls and programming keys shall be silicone mechanical type with tactile and audible feedback. The annunciators shall have two levels of user codes that will allow the limitation of operating system programming to authorized individuals.

N. The FACP shall include an audible system trouble sounder as an integral part of the control unit. Provisions shall also be provided for an optional supervised remote trouble signal.

O. The FACP shall have three form "C" dry contacts, one will be dedicated to trouble conditions, the other two will be programmable for alarm, trouble, sprinkler supervisory, notification, pre-alarm, water flow, manual pull, aux. 1 or aux. 2. The trouble contact shall be normal in an electrically energized state so that any total power loss (AC and Backup) will cause a trouble condition. In the event that the microprocessor on the FACP fails the trouble contacts shall also indicate a trouble condition.

P. The FACP shall include a ground fault detection circuit, to detect positive and negative grounds on all field wiring. The ground fault detector shall operate the general trouble devices as specified but shall not cause an alarm to be sounded. Ground fault will not interfere with the normal operation, such as alarm, or other trouble conditions

Q. All low voltage circuits shall be protected by microprocessor controlled power limiting or have self -restoring poly-switches for the following: smoke detector power, main power supply, indicating appliance circuits, battery standby power and auxiliary output.

R. All notification circuits and modules shall be programmable via a mapping structure that allows for a maximum of 125 output groups. Each of these groups shall have the ability to be triggered by any of the panels 125 Zones. A group may be triggered from zones individually, or may contain a global trigger for manual pull stations, fire drills and two different system alarms. Additionally each zone will individually control the cadence pattern of each of the groups that it is "Mapped" to so that sounders can indicate a variety of conditions. The zone shall be capable of issuing a different cadence pattern for each of the groups under its control. The mapping structure must also allow a group to be designated to "ignore cadence" for use with strobes and other continuous input devices. Zones shall have eight different output categories; Detector alarm, Trouble, Supervisory, Pre-alarm, Water-flow, Manual Pull, Zone Auxiliary one and Zone Auxiliary two. Each of the categories shall have the ability to control from 1 to 8 output groups with a cadence pattern. The patterns are; March code, ANSI 3.41, Single Stroke Bell Temporal, California code, Zone 1 coded, Zone 2 coded, Zone 3 coded, Zone 4 coded, Zone 5 coded, Zone 6 coded, Zone 7 coded, Zone 8 coded, Custom output pattern 1, Custom output pattern 2, Custom output pattern 3, Custom output pattern 4, and Constant. This mapping/cadence pattern shall be supported by all system power supplies and Notification Expander Modules.

S. The FACP shall have an on board programmer which will allow for all system functions and options to be programmed via the on board annunciator keypad. Any panel that does not have this capability will not be accepted.

T. The FACP shall support up/downloading of system programming from a PC under Windows 7 or 8 platforms. The FACP must also be able to download the detector sensitivity test results and a 1000 event system event buffer to the PC. Communication shall take place over a direct connection to the PC and/or via the same telephone lines as the built in digital communicator and shall not require an external modem to be connected to the panel. The downloading software shall contain a code that will block unauthorized persons from accessing the panel via direct connection or over the phone lines.

POWER SUPPLY AND BATTERY CHARGER

A. The entire system shall operate on 24 VDC, filtered switch mode power supply with 6 Amps rated current.

B. The FACP shall have a battery charging circuit with automatic charger that shall maintain standby gel-cell batteries in a fully charged condition. The battery capacity shall be capable of complying with the following requirements:

1. Twenty-four (24) hours of battery standby with five (5) minutes of alarm signaling at the end of this twenty-four (24) hour period. This capacity shall include a 20 percent safety margin to the calculated amp-hour rating.

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E3.2

ELECTRICAL SPECIFICATIONS

Continued:

The power supply shall comply with U.L. Standard 864 and NFPA 70 Article 760 for power limiting.

A. The FACP will indicate a trouble condition if there is a loss of AC power or if the batteries are missing or of insufficient capacity to support proper system operation in the event of AC failure. A "Battery Test" will be performed automatically every minute to check the integrity of the batteries. The test must disconnect the batteries from the charging circuit and place a load on the battery to verify the battery condition

B. In the event that it is necessary to provide additional power in excess of the capabilities of the FACP power supply, Distributed Power Module(s) shall be added to the system design to achieve the requirements of 2.6.B.

REMOTE POWER SUPPLY AND BATTERY CHARGER

A. Include a remote power supply and battery charger as needed to meet the requirements of 2.6.B.

B. The remote power supply shall be the Silent Knight 5496 or RPS-1000 Intelligent Power Supply as required by the design.

C. The remote power supply shall be connected to the main system bus at a distance of up to 6000 feet and be programmed through the FACP control unit.

D. The remote power supply shall deliver 6amps of 24 volt DC power and (RPS-1000 Intelligent Power Supply only) provide 6 flexible, programmable I/O circuits, rated at 3amps each.

E. The flexible, programmable I/O circuits can be configured for:

1. Notification appliance circuits (Class B/Style Y.
2. Conventional initiation circuits (Class B/Style B both 2- and 4-wire.
3. Auxiliary power (for door holders, continuous power, or resettable power).

F. The remote power supply shall provide a minimum of 35 Ah of battery charging capability.

SIGNALING LINE CIRCUIT EXPANDER

A. For use on systems with greater than 100 detectors and in conjunction with the IFP-1000 FACP.

B. The Signaling Line Circuit Expander shall add support for up to an additional 159 detectors.

C. The Signaling Line Circuit Expander shall communicate with the FACP via the system bus

D. The Signaling Line Circuit Expander shall be UL 864 listed and compliant to NFPA 72 and 101.

ADDRESSABLE INPUT MODULE

A. The addressable input module shall be Silent Knight IDP-Monitor-10.

B. The addressable input module shall install in the SLC circuit as an intelligent, addressable module to monitor contact based devices such as water flow switches and pull stations as dictated by the design.

C. The addressable input module shall have provisions to monitor ten (10) Class B supervised contact inputs or five (5) Class A supervised contact inputs.

ADDRESSABLE OUTPUT MODULE

A. The addressable output module shall be Silent Knight IDP-Relay-6.

B. The addressable output module shall install in the SLC circuit as an intelligent, addressable module to provide form-C contact outputs as dictated by the design.

C. The addressable output module shall provide a minimum of six Form-C relay outputs with a minimum UL contact rating of 0.9 Amps at 110VDC and 0.9 Amps at 125VAC.

PRINTER INTERFACE / DATA GATEWAY MODULE

A. The printer interface / data gateway module shall be Silent Knight model 5824.

B. The printer interface / data gateway module shall provide a connection to a standard PC-compatible printer.

C. The printer interface / data gateway module shall provide a minimum of one (1) serial, RS232 interface port and one (1) parallel IEEE 1284 interface port.

D. The printer interface / data gateway module shall provide a two-way interface to other systems in the building including but not limited to building control systems, elevator controls systems and HVAC systems.

IP COMMUNICATOR

A. The IP Communicator shall be Honeywell model IPGSM-4G.

B. The IP Communicator shall be connected to any FACP DACT telephone ports, the system shall be capable of transmitting Contact ID formatted alarms, supervisory or troubles to a system Network Control Center via Ethernet over a private or public WAN/LAN, Intranet or Ethernet.

C. The IP Communicator shall include connections to the Fire Alarm Control Panel's phone outputs and shall convert the contact ID protocol into Ethernet Packets.

D. The IP Communicator shall be completely field programmable by the installer.

E. The IP Communicator shall provide the following system information and test signals:

1. Independent Zone (Alarm, trouble, non-alarm, supervisory). Including information to enable the central station to have details concerning the location for response.
2. Independent Addressable Device Status.
3. AC (Mains) Power Loss.
4. Low Battery and Earth Fault.
5. System Off Normal.
6. 24 Hour Test Signal.
7. Abnormal Test Signal.

F. The IP Communicator shall include connections to the Fire Alarm Control Panel's phone outputs and shall convert the contact ID protocol into Ethernet Packets.

G. The IP Communicator shall be capable of providing simulated phone lines to the FACP. The IP Communicator shall communicate over IP or GSM primary and shall be transparent to the FACP normal operation over phone lines.

H. The IP Communicator shall operate from 120 VAC, 60Hz power with a maintenance free battery backup capable of providing the required standby time of 24 hours followed by 5 minutes of alarm.

REMOTE ANNUNCIATORS

A. Remote annunciators shall match the layout and functionality of the annunciator on the FACP. For system designs with less than 100 detectors the Remote Annunciator shall be Silent Knight RA-100. For system designs with 100 to 750 detectors the Remote Annunciator shall be Silent Knight RA-1000.

B. The fire system shall be capable of supporting up to eight Remote Annunciators in any combination.

C. The Remote Annunciator shall be able to acknowledge, silence and reset alarms without the use of a code.

D. The Remote Annunciator shall silence and reset alarms with the user of a code or firefighter's key.

E. The Remote Annunciator shall have 20 programmable user codes that will limit the operating system programming to authorized individuals.

F. The FACP shall allow all annunciators to accommodate multiple users input simultaneously.

G. The Remote Annunciator shall be capable of operating at a distance of 6000 feet from the main control panel on unshielded non-twisted cable.

DETECTORS

A. The combination detector head and twist lock base shall be U.L. listed compatible with the Silent Knight FACP as required by the design documentation.

B. Photoelectric Smoke Detectors:

1. Photoelectric Smoke Detectors shall be Silent Knight IDP-Photo.
2. Photoelectric Smoke Detectors (with thermal detection) shall be Silent Knight IDP-Photo-T.
3. Multi-criteria Photoelectric Smoke Detectors (photoelectric/thermal/microprocessor) shall be Silent Knight IDP-Acclimate.

C. Ionization Smoke Detectors:

1. Ionization Smoke Detectors shall be Silent Knight IDP-Ion.

D. Duct Smoke Detectors:

1. Duct Smoke Detectors shall be Silent Knight DNR or Silent Knight DNRW (water tight) as indicated on the construction drawings.

E. Fixed Temperature/Rate of Rise Heat Detectors:

1. Fixed Temperature/Rate of Rise Heat Detectors shall be Silent Knight IDP-Heat-ROR.

F. Fixed Temperature Heat Detectors:

1. Fixed Temperature Heat Detectors shall be Silent Knight IDP-Heat (135 °F) or Silent Knight IDP-Heat-HT (135°F - 190°F) as indicated on the construction drawings.

G. Carbon Monoxide Detectors:

1. Carbon Monoxide Detectors shall be Silent Knight IPD-FIRE-CO.
2. Carbon Monoxide Detectors shall include a CO cell end-of-life indication at the detector and at the FACP.

H. Detectors shall have a flashing status LED for visual supervision. When the detector is actuated, the LED will produce quick flashes or latch on steady at full brilliance. The detector may be reset by actuating the control panel's reset switch. The sensitivity of the detector shall be capable of being selected and measured by the control panel without the need for external test equipment.

I. Detectors and Detector bases shall provide a vandal security-locking feature that shall be used in those areas as indicated on the construction drawings. The locking feature shall be field selectable when required and will prevent Detector removal without the use of a removal key device.

J. It shall be possible to perform a sensitivity test of Smoke Detectors without the need of generating smoke. The test method shall simulate the effects of products of combustion in the chamber to ensure testing of the detector circuits.

K. Detectors shall have completely closed back to restrict entry of dust and air turbulence and have a 30 mesh insect screen. Electronics of the unit shall be shielded to protect against false alarms from E.M.I. and R.F.I

L. Standard sensor bases shall be Silent Knight IDP-6AB. Provide standard detector mounting bases suitable for mounting on 6" square box.

M. Sounder bases shall be Silent Knight B200S. Provide standard detector mounting bases suitable for mounting on 6" square box.

N. Low frequency 520 Hz sounder bases shall be Silent Knight B200S-LF. Provide standard detector mounting bases suitable for mounting on 6" square box.

PULL STATIONS

A. Single Action Pull Stations shall be Silent Knight IDP-Pull_SA with a single acting mechanism of the pull-lever type.

B. Dual Action Pull Stations shall be Silent Knight IDP-Pull-DA with a double-action mechanism of the pull-lever type requiring two actions to initiate an alarm.

C. Pull Stations shall provide a dual-color LED visible through handle of station that blinks green to indicate normal operation and remains steady red in an alarm condition.

D. Pull Stations shall provide key operated test and reset lock using lock plate actuator. Keys shall be compatible with and matching FACP locks.

E. Pull Stations shall be of die-cast metal or Lexan construction.

NOTIFICATION APPLIANCES

A. Multiple Tone Notification Appliances shall be Wheelock Series MT 24MCW-FR audible/visual appliance.

B. Single Tone Notification Appliances shall be Wheelock Series HS4 24MCW-FR audible/visual appliance.

C. Strobe only notification appliance shall be Wheelock Series HS-24-R visual appliance.

D. Notification Appliances shall be listed for indoor use and shall meet the requirement of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision circuit wiring by the FACP. Notification Appliances shall be electronic and use solid-state circuitry.

E. The Horn and the audible portion of Single Tone Notification Appliances shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

F. The Horn and the audible portion of the Multiple Tone Notification Appliances shall provide eight (8) fields selectable alarm tones. The tones shall consist of: HORN, BELL, MARCH TIME HORN, CODE-3 HORN, CODE-3 TONE, SLOW WHOOP, SIREN and HI/LO. Tone selection shall be by durable dip switch assembly and not clips or jumpers. The Multi-tone Audible appliance shall be UL Listed under Standard 464 for Audible Signal Appliances. The audible and the strobe shall be able to operate from a single notification appliance circuit while producing any of these tones. The appliance shall provide two output sound levels: STANDARD and HIGH dBA. The HIGH dBA setting shall provide a minimum 5 dBA increase in sound output at nominal voltage. The HIGH anechoic dBA measurement at 10 feet at the alarm HORN SETTING shall be 90 dBA minimum.

G. The strobe portion of the Notification Appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan lens. Where wall mount, Notification Appliances are indicated on the design drawings, the strobe intensity shall have field selectable settings for: 15/30/75/110cd or 135/185cd. The selector switch for selecting the candela setting shall be tamper resistant. Where ceiling mount, Notification Appliances are indicated on the design drawings, the strobe intensity shall have field selectable settings for 15/30/75/95cd or 115/177cd.

H. Synchronization of the strobe portion of the Notification Appliance shall be compatible with the FACP and not require additional synchronization modules.

I. Remote Power Supplies for Notification appliances shall be the Silent Knight ModelS 5496 and/or RPS-1000. The Remote Power Supplies for Notification appliances shall connect to the FACP main system communications bus and be programmed through the FACP.

AUXILIARY DEVICES

A. Electromagnetic Door holder units are equipped for wall or floor mounting as indicated on the design documents and are complete with matching doorplate.

1. Surface Floor-mount Electromagnetic Door holder unit shall be Notifier FM980.
2. Flush Wall-mount Electromagnetic Door holder unit shall be Notifier FM998.
3. Electromagnetic door holder/releases shall require no more than 3Watts to develop a 25lb holding force.
4. Wall-Mounted Units: Flush mounted unless otherwise indicated.
5. Rated at 24 VAC/DC, 120VAC.

B. Relays outputs (Elevator systems, HVAC systems, Sprinkler Systems, etc): See Addressable Output Module.

C. System interface inputs (Elevator systems, HVAC systems, Sprinkler Systems, etc): See Addressable Input Module.

D. A metal enclosure or junction box shall be provided for each relay and/or module.

ENCLOSURES

A. The system cabinet shall be red and can be either surface or flush mounted. The cabinet door shall be easily removable to facilitate installation and service.

B. Enclosure for Remote Annunciators

1. For designs using the RA1000 Remote Annunciator: STI-USA model SF-7521 for use in dusty, humid, or damaging environments.
2. For designs using the RA100 Remote Annunciator: STI-USA model SF-7531 for use in dusty, humid, or damaging environments.

WIRE AND CABLE

A. All wire and cable conform to NEC 760 compliant wiring and must be approved for Fire Protective Signaling Circuit use. All system wiring shall conform to NFPA 70 requirements.

B. Addressable loop cable: #18 AWG Twisted pair cable with overall shield, Equal to West Penn #D975 (FPL), #975 (FPLR), or West Penn #D991 (FPL), #991(FPLR).

C. Horn/Strobe : Minimum #14 AWG, #12 AWG for distances with creating greater than 3% drop in voltage.

D. Power Circuits: Minimum #12 AWG.

E. Cables for RS-232 devices shall be dual pair twisted, shielded.

F. Cables for RS-485 devices (remote annunciators) shall be twisted-shielded pair, Belden #9841 or equal, for the data signal.

G. CAT 6 Riser Cable - General Cable 7133940, Blue jacket.

H. CAT 6 Plenum Cable - General Cable 7131941, White jacket.

EXTRA MATERIALS

A. Provide spare parts under provisions of Section 01.

B. Provide 5 spare manual pull stations of each type indicated on the design drawings.

C. Provide 3 spare keys coded for the FACP and 3 spare keys coded for manual pull stations.

D. Provide 5% spare Smoke Detectors of the same type and model utilized in the design.

EXECUTION

INSTALLATION

A. The System Installation shall comply with NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install all electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

B. The entire system shall be installed in accordance with approved manufacturer's wiring diagram. The contractor shall furnish all conduit, wiring, outlet boxes, junction boxes, cabinets and similar devices necessary for the complete installation. All wiring shall be of the type recommended by the manufacturer, approved by the local Fire Department, and shall be installed in conduit throughout.

C. Make conduit and wiring connections to door release devices, sprinkler flow switches, sprinkler valve tamper switches, fire suppression system control panels, duct smoke detectors, and kitchen hood control panels.

1. Duct smoke detectors: Arrange sampling tubes and duct detectors as required to monitor the entire duct. Seal tightly at point of duct penetration and repair insulation as required. Detectors concealed above ceilings shall be connected to activate a remote indicator when smoke is detected.
2. Fire/smoke damper interface: Provide one interface relay for each duct smoke detector.
3. Provide interface relays, proper programming, associated wiring and connections to interface with smoke control panels, ventilation equipment, red cell annunciator LEDs, over door annunciators and light bars as described herein.

D. Provide necessary equipment to ensure compliance with 520 Hz sounder requirements meeting NFPA guidelines in all sleeping or other spaces required, whether or not such locations are indicated on the drawings.

E. All penetration of floor slabs and fire walls shall be fire stopped in accordance with all local fire codes.

RACEWAY

A. All wiring shall be in a conduit system separate from other building wiring. See Section 26 05 33 "Conduit and Raceways" for specifications.

B. All wiring shall be in minimum ¾" rigid (non-flexible) metallic raceway.

C. Surface access to existing alarm initiating circuits in public areas shall be via UL listed surface metal raceways (minimum equivalent to ¾" conduit) and box extensions.

D. There shall be no sharp edges with installed materials.

E. Provide red colored fittings, conduit bodies and junction boxes for all fire alarm circuits. All junction boxes shall be labeled "Fire Alarm".

WIRING

A. All cable shall be installed in conduit as per NEC Article 760.

B. All wiring shall be completely supervised. In the event of a primary power failure, disconnected standby battery, disarrangement of any components, any open circuits or grounds in the system, an audible and visual trouble signal shall be activated until the system is restored to normal.

C. All conductors shall be color-coded. Coding shall be consistent throughout the facility. Green wire shall be used only for equipment ground.

D. Fire Alarm Control Panel shall be connected to separate dedicated branch circuit from the building emergency panel, maximum 20 amps AT 120VAC.

E. Provide isolated loop circuit protectors on each circuit extending beyond the building line with copper conductors.

F. Leave 8-inch wire tails at each device box and 36-inch wire tails at the Fire Alarm Control Panel and Remote Annunciator Panel(s).

G. All splices or connections shall be made within approved junction boxes and with approved fittings. Boxes shall be red and/or labeled "FIRE ALARM SYSTEM" by decal or other approved markings.

H. Remote Status and Alarm Indicators: Install in a visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.

I. Audible and visible signals of each alarm notification device shall be on separate circuits to allow the audible signal to be controlled separately from the visible signal. All visible signals shall be synchronized as shown on the drawings and as directed by the Code Enforcing Authority.

DEVICE MOUNTING

A. Unless otherwise noted on the drawings, plans, specifications or by the Architect or Engineer; the recommended mounting heights, and requirements are as follows:

1. Fire Alarm Control Panels: Mount control panels so all visual indicators and controls at 60 inches above floor level.
2. Comply with requirements for seismic-restraint devices specified in Section 260548.16 "Seismic Controls for Electrical Systems."
3. Remote Annunciators: Install annunciators 54 inches (1370 mm) above floor to bottom.
4. Audio-Visual Devices: Install audible and visual devices 90 inches (2286 mm) to center above floor.
5. Manual Stations: Install manual station with operating handle 48 inches (1220 mm) above floor.
6. Heat and Smoke Detectors: The location of detectors shown on the plans is schematic only. Smoke- or Heat-Detector Spacing shall comply with NFPA 72.
7. Detectors should be located on the highest part of a smooth ceiling so that the edge of the detector is no closer than 4 inches from a sidewall. Ceilings with beams, joists or soffits that exceed 8 inches in depth require special planning and closer spacing. Verify with manufacturer.
8. If it is necessary to mount a detector upon a sidewall, the top of the detector shall be located no closer than 4 inches from the ceiling and no further away than 12 inches.
9. Smoke detectors should be installed to favor the air flow towards return openings and not located closer than 3 feet from air supply diffusers which could dilute smoke before it reaches the detector. No detectors shall be installed in direct airflow.
10. Heat and smoke detectors should be located near the center of the open area which they are protecting, thus providing coverage generally for 15 foot radius for smoke detectors and a 25 foot radius for heat detectors. Verify location with Architect or Engineer.
11. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct. Tubes more than 36 inches (9100mm) long shall be supported at both ends.
12. Duct smoke detector mounting: Field verify locations of round ducts and provide round duct adapter on all round ducts.
13. Install remote test stations flush on the ceiling. Where the ceiling is higher than 12 feet above floor, install station flush on wall at 10 feet above the floor to center.
14. Mount end-of-line device in box with last device or separate box adjacent to last device in circuit.
15. Mount outlet box for electric door holder to withstand 80 lbs (36 kg) pulling force.

IDENTIFICATION

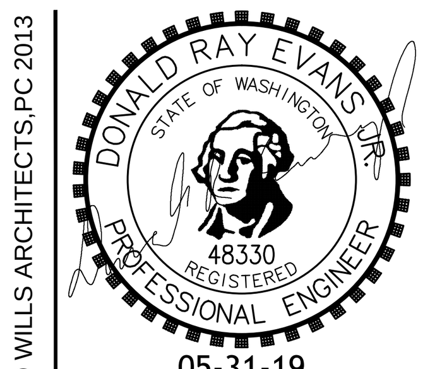
A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Electrical Identification."

B. Install framed instructions in a location visible from fire-alarm control unit.

GROUNDING

A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

B. Ground shielded cables at the control panel location only. Insulate shield at device location.



05-31-19

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Bid Drawings

Electrical Specifications

Ardell Pavillion Upgrades
Fire Suppression/Alarm Systems
Grant County Fairgrounds
3953 Airway Dr NE
Moses Lake, WA 98837

BERNARDO | WILLS ARCHITECTS PC
BWA

Proj. No: 19-01-009A
Drawn by: DRE
Date: MAY 30, 2019

E3.3

ELECTRICAL SPECIFICATIONS

CONTINUED:

FIELD QUALITY CONTROL AND TESTING

A. Test to NFPA 72 and local fire department requirements.

B. The system shall be installed and fully tested under the supervision of trained manufacturer's representative. The system shall be demonstrated to perform all the functions as specified.

C. Each individual system operation on a circuit by circuit basis shall be tested for its complete operation. The procedure for testing the entire fire alarm system shall be set forth with the consent of the code enforcement official, the Engineer and the manufacturer.

D. Visual Inspection: Conduct the visual inspection prior to testing:

   1. Inspection shall be based on completed record Drawings and system documentation that is required by the "Completion Documents, Preparation" table in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.

   2. Comply with the "Visual Inspection Frequencies" table in the "Inspection" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.

E. System Testing: Comply with the "Test Methods" table in the "Testing" section of the "Inspection, Testing, and Maintenance" chapter in NFPA 72.

F. Provide testing of each of the following items:

   1. Verification of operation of each device including all pull stations, smoke detectors, heat detectors, flow, and tamper switches.

   2. Horn/speaker decibel levels in all areas.

   3. Test all addressable cabling. Ensure the cabling is capable of handling the maximum polling rate of the addressable devices plus 20%.

   4. Alpha-numeric display panels at the control panel and each annunciator.

   5. Strobe lights.

   6. Spot checks of trouble indication.

G. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" section of the "Fundamentals" chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.

H. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.

I. Fire-alarm system will be considered defective if it does not pass tests and inspections.

J. Prepare test and inspection reports.

DEMONSTRATION

A. Each of the intended operations of the installed Fire Alarm / Life Safety System shall be demonstrated to the Owners' Representative and the Local Authority Having Jurisdiction (AHJ) by the installing contractor.

B. The system shall be reprogrammed as directed by the AHJ after completion of testing, and a representative of the manufacturer shall meet with the AHJ for a final demonstration of the system, and to obtain field approval.

MAINTENANCE CONTRACT

A. The Factory Trained and Authorized Engineered Systems Distributor who designed and installed this system shall provide a separate maintenance contract for a period of 2 Years from the date of system commissioning. The maintenance contract shall include the following:

   1. Yr 1:
      a. Perform system checkout and verify operation of system.
      b. Perform any necessary code required systems testing including annual testing indicated in NFPA 72, Chapter 7.
      c. Check detector sensitivity; clean all detectors exceeding original calibrations.

   2. Yr 2:
      a. Perform system checkout and verify operation of system.
      b. Perform any necessary code required systems testing including annual testing indicated in NFPA 72, Chapter 7.
      c. Check detector sensitivity; clean all detectors exceeding original calibrations.
      d. Replace batteries, if necessary.

ADJUSTING AND CLEANING

A. Cleaning: Remove paint splatters and other spots, dirt, and debris. Clean unit internally using methods and materials recommended by manufacturer.

B. Occupancy Adjustments: When requested within one year of date of Substantial Completion, provide on-site assistance in adjusting sound levels and adjusting controls and sensitivities to suit actual occupied conditions. Provide up to two visits to the site for this purpose.

DOCUMENTATION AND TRAINING

A. The contractor shall compile and provide to the owners three (3) complete manuals on the completed system to include operating and maintenance instruction, catalog cuts of all equipment and components, as-built wiring diagrams and a manufacturer's suggested spare parts list.

B. In addition to the above manuals, the contractor shall provide the services of the manufacturer's trained representative for a period of four (4) hours to instruct the owners' designated personnel on the operation and maintenance of the entire system.

DONALD RAY EVANS JR. STATE OF WASHINGTON 48330 REGISTERED PROFESSIONAL ENGINEER
05-31-19

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E3.4

1 PART 1 GENERAL

1.01 SCOPE OF WORK

A. Work Included: Provide all material, labor, equipment, design and services necessary to perform the installation of the fire sprinkler system as shown on the drawings and as described herein.

B. The system shall be designed to the following criteria:

1. This system shall be designed for an ordinary hazard group 1 density.
2. Concealed spaces above ceilings, restrooms, and similar areas shall be designed for a light hazard density.

C. This installation will consist of two dry pipe systems.

D. The water supply to be used in the calculations is 60 psi static, and 30 psi residual with 784 gpm flowing at the connection of the new 6-inch site water main to the existing water main south of the building. A margin of 10% between all demand points and the water supply is required.

1.02 QUALITY ASSURANCE

A. Codes and Standards: This installation shall conform to each of the following:

1. NFPA 13, 2013 Edition, Installation of Sprinkler Systems,
2. International Building Code, 20015 Edition
3. International Fire Code, 20015 Edition
4. International Mechanical Code, 20015 Edition
5. Underwriters Laboratories Fire Protection Equipment Directory, 2019 Edition

B. All work shall comply fully with all applicable codes and standards. Nothing in the contract documents shall be construed to permit non-compliance with any code or standard.

C. Warrantee: The contractor shall guarantee all materials, equipment and workmanship in this installation for a period of one year from the date of completion. Any system failure during that time shall be repaired at the contractor's expense. Contractor shall respond on site to system problems within 24 hours.

D. Qualifications of Contractor: All work shall be performed by a Contractor with a valid Idaho state Contractor's license for the installation of fire sprinkler systems.

1.03 APPROVALS

A. Authority Having Jurisdiction: For purposes of code compliance the Authority Having Jurisdiction (AHJ) for this installation will be the Grant County fire marshal. Where there are conflicts between the AHJ and the referenced codes and standards, the more stringent shall apply.

1.04 SUBMITTALS

A. Material Submittals: At least 10 working days prior to submitting shop drawings, furnish to the A/E in pdf format a complete list of equipment and products, and a manufacturer's catalog sheet for each item to be included in the project.

B. All material submittals shall include all items listed in the product section of this specification and all additional items necessary to provide a complete installation. Where more than one item appears on a manufacture's catalog sheet, the item or items to be used shall be indicated.

C. Shop Drawings: At least 15 working days prior to any installation or fabrication of the system components, the Contractor shall submit in pdf format shop drawings and hydraulic calculations to the A/E for review by the A/E. The A/E will review the submittals and make any pertinent comments. The contractor will then make any necessary corrections and resubmit for approval.

D. Shop drawings shall conform to, and include all items as set forth in NFPA 13.

E. After approval is received from the A/E, submit shop drawings to the AHJ for approval. Submit evidence of final drawing approval by the AHJ to the A/E prior to the start of fabrication or installation.

1.05 DRAWINGS OF RECORD

A. Updating Drawings: Provide and keep up to date, a complete record set of approved shop drawings, corrected daily to show every change from the approved shop drawings. Keep this set of prints on the job site and use only as a record set. At the conclusion of the project, provide two sets of as-built drawings and two copies of drawings on CD in pdf and AutoCAD format to the A/E for turning over to the owner..

2 PART 2 - PRODUCTS

2.01 GENERAL

A. Materials and Equipment: All materials and equipment in the system shall be new and current products of a manufacturer regularly engaged in the production of such materials and equipment. Where two or more pieces of equipment are required to perform interrelated functions, they shall be products of one manufacturer.

B. Approval Guides: Unless otherwise indicated, all products shall be listed in the latest publication of the Underwriters Laboratory Fire Protection Directory or the Factory Mutual Approval Guide.

2.02 PIPE

A. Schedule of Pipe: All pipe shall meet the requirements of NFPA 13. All threaded pipe shall be schedule 40. All pipe shall be no less than schedule 10.

2.03 FITTINGS AND COUPLINGS

A. Threaded Fittings: Threaded fittings shall be cast iron class 125, rated for 175 psi. cold water working pressure and shall conform to ANSI B16.4, ASTM 126 and ANSI B2.1 NPT.

B. Grooved Fittings: Tees, and reducers shall be ductile iron. In applicable sizes, fittings shall be short-pattern with flow equal to standard pattern fittings. The fittings shall be Victaulic FireLock or approved equal.

C. Adapter Flanges: Adapter flanges (fittings) shall be ductile iron/class 125 conforming to ANSI B 16.1, with a rust inhibiting coating. The adapter flanges shall be Victaulic Style 744 and 741, or approved equal.

D. Grooved Couplings: Grooved couplings and reducers shall be malleable or ductile iron conforming to ASTM A-536.

2.04 HANGERS AND SUPPORTS

A. Hangers: Provide hangers to support all piping in perfect alignment without sagging or interference, to permit free expansion and contraction, and meet the requirements of NFPA 13.

B. Pipe Rings: Pipe rings to be zinc coated Grinnell figure 69 or equal.

2.05 EARTHQUAKE BRACING

A. Earthquake bracing shall be with a pipe clamp and pipe with a swivel type anchor or similar to those illustrated in NFPA 13. Other types of bracing may be used when UL-listed or FM approved.

2.06 VALVES

A. Butterfly Valves: Butterfly valves shall be rated to 300-psig, with grooved-end ductile iron body, pressure responsive elastomer seat, and stainless steel stem. Victaulic Series 705 with weatherproof actuator housing and integral tamper switches, or approved equal.

B. Drain Valves: Drain valves shall be screw-in bonnet bronze globe valves, rated to 175 psi non-shock cold water working pressure by Nibco, United or approved equal. Low point drain valves shall have, in addition, a 3/4" brass nipple with 3/4" male hose threads and cap.

2.07 DRY PIPE VALVE

A. Dry-Pipe Valves: : UL 260; low-differential type 300-psig working pressure; with ductile-iron body and grooved ends or cast-iron flanged inlet and outlet, bronze seat with O-ring seals, and single-hinge pin and latch design. Required air pressure shall be no higher than 13-psi. Valve internal components shall be replaceable without removal of valve from installed position. Valve shall be externally re-settable. Include UL 1486, quick-opening devices, trim sets for air supply, drain, priming level, alarm connections, ball drip valves, pressure gages, priming chamber attachment, and fill-line attachment. Include low air pressure alarm switch, waterflow switch, and tank-mounted air compressor. Victaulic Series 768N or approved equal Compressor shall be 208 volt, single-phase.

2.08 CHECK VALVES

A. Check valves shall be grooved, ductile iron body, elastomer seat with stainless steel clapper, or elastomer coated ductile iron disc with welded-in nickel seat, 250 psi non shock cold water working pressure. Spring assisted for vertical or horizontal installation. Victaulic Series 717 or approved equal.

2.09 SPRINKLERS

A. Provide quick response sprinklers throughout. Temperature ratings shall be in accordance with NFPA 13.

B. Spare Sprinklers: Provide spare sprinklers and escutcheons for each type and style of sprinkler used in accordance with NFPA 13 and proportioned based upon the number of each type and style of sprinkler used on the project.

2.10 SPARE SPRINKLER CABINET

A. Provide a spare sprinkler cabinet to accommodate the required number of spare sprinklers and escutcheons. Include a wrench for each type of sprinkler in the cabinet.

2.11 SPRINKLER HEADGUARD

A. Provide UL Listed sprinkler headguards for sprinkler heads subject to mechanical damage or for any sprinkler lower than 7'-0" above the floor.

2.12 PRESSURE GAUGE

A. Provide a 3-1/2" diameter, bourdon type pressure gauge, 0-200 lbs, 1/4" soft metal seat globe valve with arrangements for draining pipe between gage and valve.

2.13 WALL ESCUTCHEON

A. Provide plastic split ring type escutcheons. Escutcheons are only required where wall penetrations are exposed.

2.14 FIRE ALARM AND RELATED EQUIPMENT

A. Equipment in this section shall be provided, installed, and adjusted by the sprinkler Contractor. Conduit, wiring, and terminations, shall be by others.

B. Pressure flow switch: Potter PS10-2 or approved equal. Provide for the dry system.

C. Low air pressure switch: Potter PS40-2 or approved equal. Provide for the dry system.

D. Electric Bell: Potter 8", 120 VAC, Model PBA-1208 or approved equal.

2.15 SIGNS

A. Provide all control, drain and test valves with signs identifying the type of valve and the area affected by the valve. Signs shall be three layer etched plastic with red letters on a white background to identify valves above ceilings or behind access doors. Lithographed metal plates may be used in unfinished spaces or above ceilings. Provide hydraulic design information plates as required by NFPA 13.

2.16 FIRESTOPPING MATERIAL

A. Firestopping material is to be UL classified Bio Fireshield BFS100, 200 caulk or approved equal.

3 PART 3 - EXECUTION

3.01 GENERAL

A. Requirements Prior to Installation: Do not order, fabricate, or install any material prior to receipt of all approvals as stipulated in Part 1 of this Section.

B. The most current architectural backgrounds shall be used to produce shop drawings. Obtain these from the architect prior to starting design.

C. Standards and Requirements: All installation work shall be performed in accordance with the reference standards without exception, and as required by the AHJ. All piping shall be installed straight, true and plumb.

D. Changes to the Work: Install all piping as shown on the approved shop drawings. Minor deviations shall be carefully noted on the record drawings as outlined in Part 1 of this Section. Before making significant deviations from the approved drawings, written approval must be obtained from the Owner and the AHJ.

E. Coordination of Work: Carefully coordinate work with other trades so that unnecessary offsets and revisions to the approved drawings are avoided. Failure to coordinate does not relieve Contractor from meeting the performance standards herein. The contractor is responsible for completely coordinating with all other trades and building conditions, providing all offsets as necessary for a completely coordinated installation. No extras will be allowed for resolving conflicts with other trades.

3.02 PENETRATIONS

A. Required Clearance Around Pipe: Piping passing through fire rated assemblies, including fire rated GWB assemblies shall be provided with clearance around the entire circumference of the pipe. Penetrations shall be made in a neat manner using properly sized hole saw or masonry/concrete coring as necessary.

B. Fire Rated Assemblies: The annular spaces around sprinkler pipes which penetrate fire rated assemblies shall be filled with UL classified firestopping material in accordance with the manufacturer's recommendations. Penetrations of all fire-rated assemblies shall be protected. The shop drawings or material submittals shall clearly depict the firestopping assembly proposed by the contractor.

C. Escutcheons: Split wall plates or escutcheons shall be installed where exposed piping or hangers pass through a finished floor, wall or ceiling and shall fit snugly, securely and cover the opening.

3.03 CONTROL VALVES

A. Install all control valves and test valves in locations indicated on the plans. Auxiliary drain valves shall be installed in easily accessible locations.

3.04 INSPECTOR'S TEST AND DRAINS

A. Main Drains: Provide main drains for all systems as shown on the drawings. Main drains shall discharge to a safe location outside of the building.

B. Auxiliary Drains: Provide auxiliary drains at all low points of the system. The drain shall consist of, as a minimum: a valve, a 3/4" brass nipple with 3/4" male hose threads, and cap.

C. Provide remote inspectors test drains in accordance with AHJ requirements.

3.05 GAUGES

A. Provide gauges on all risers.

3.06 INSPECTION, PUNCH LIST AND HYDROSTATIC TESTS

A. Hydrostatic tests shall be performed in the presence of the AHJ. Any leaks or drips shall be promptly repaired. Evidence of the completed tests shall be conveyed to the A/E by submitting a completed contractor's Material and Test Certificate.

B. Punch List: Deficiencies found in the installation will be recorded on a punch list and delivered to Contractor. All items on the punch list shall be promptly corrected. Notify the A/E in writing once all punch list items have been corrected.

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REGISTERED
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5/30/19

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Bid Drawings
Fire Protection Specifications

Ardell Pavillion Upgrades Fire Suppression System

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Project No:19-01-009A
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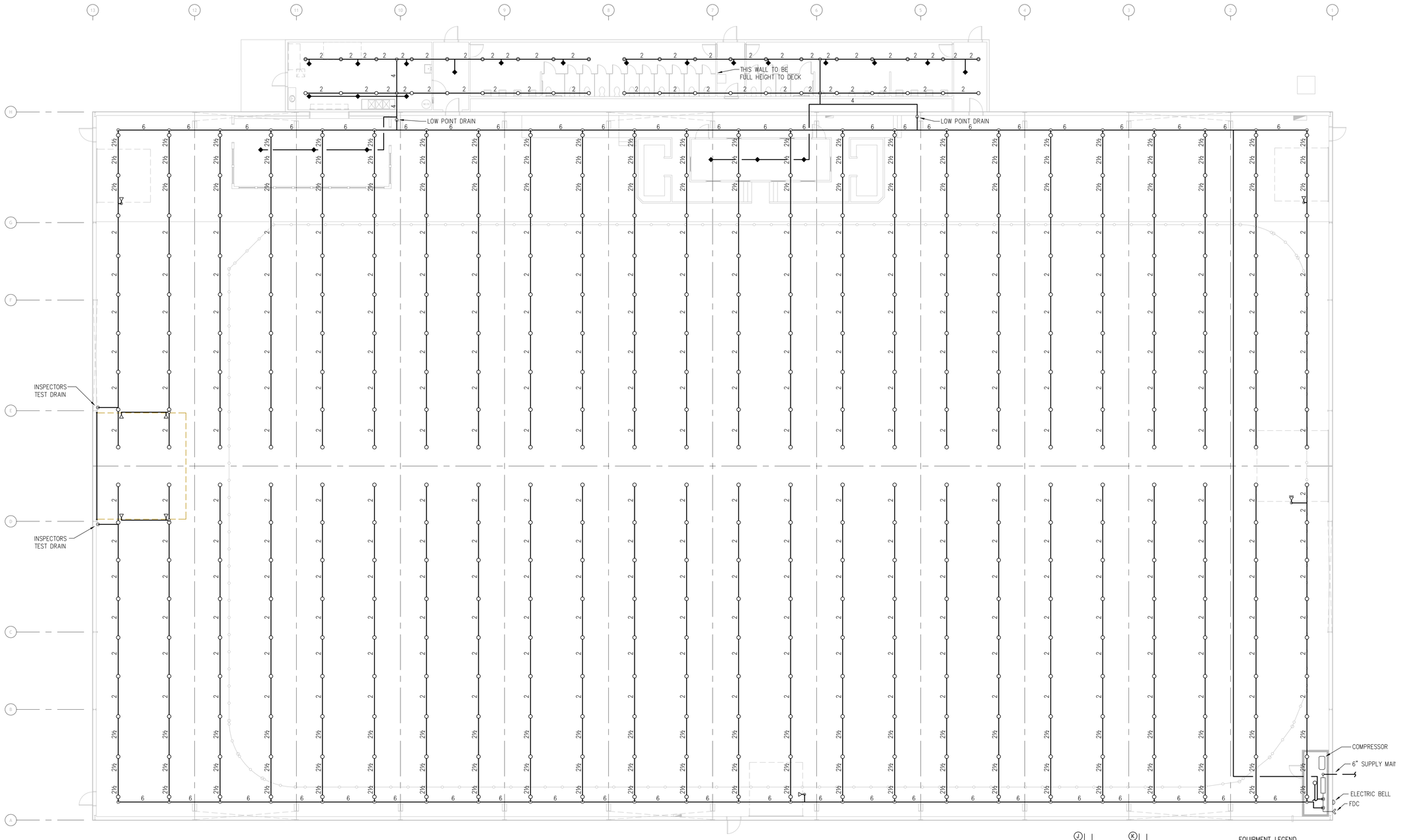
F1.1



1 Fire Protection Plan
3/32" = 1'-0"

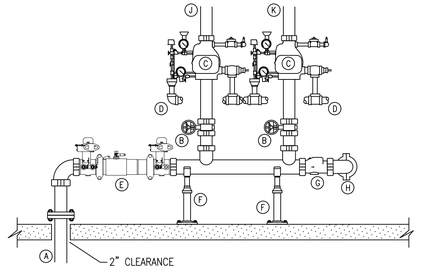
NORTH

GENERAL NOTES

1. THIS DRAWING IS INTENDED TO SHOW GENERAL INFORMATION FOR PIPE ROUTING AND SIZING. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SHOP DRAWINGS, SPRINKLERS, PIPE, FITTINGS, OFFSETS, HANGERS, EARTHQUAKE BRACING, DEVICES AND APPURTENANCES NECESSARY FOR A COMPLETE SYSTEM AS COORDINATED WITH ALL OTHER TRADES AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
2. SYSTEM DESIGN IS FOR ORDINARY HAZARD GROUP 1.
3. SLOPE ALL PIPING, INCLUDING MAIN PIPING, AT LEAST ½" PER 10 FEET.

SPRINKLER LEGEND

○ = 1/2" QR BRASS UPRIGHT SPRINKLER
◆ = 1/2" QR DRY PENDENT 2–PIECE CANOPY
▷ = 1/2" QR SIDEWALL, BRASS
|▷ = EC QR SIDEWALL, BRASS



2 Riser Detail
No Scale

EQUIPMENT LEGEND

A 6" FROM SUPPLY MAIN
B 6" BUTTERFLY VALVE WITH TAMPER SWITCH
C 6" DRY PIPE VALVE
D MAIN DRAIN, PIPE TO EXTERIOR
E BACKFLOW PREVENTER
F PIPE STAND
G FDC CHECK VALVE
H OUT TO FDC
J TO EAST SYSTEM
K TO WEST SYSTEM
L TANK MOUNTED COMPRESSOR (NOT SHOWN)

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