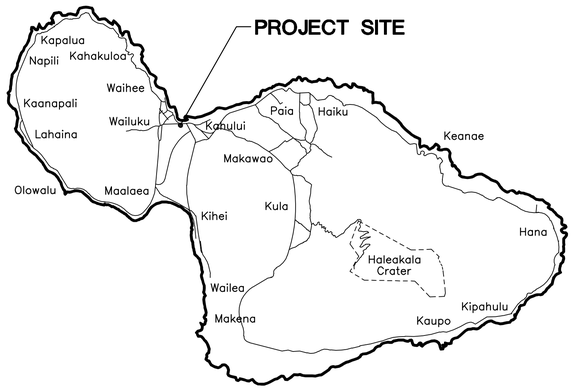
TRANSIT HUB

JOB NO. Q-TR-18-01

TAX MAP KEY: (2) 3-7-004:003

KAHULUI, MAUI, HAWAII



MAP OF MAUI
SCALE IN MILES
NORTH 5 0 5 10 15 20

PREPARED FOR:

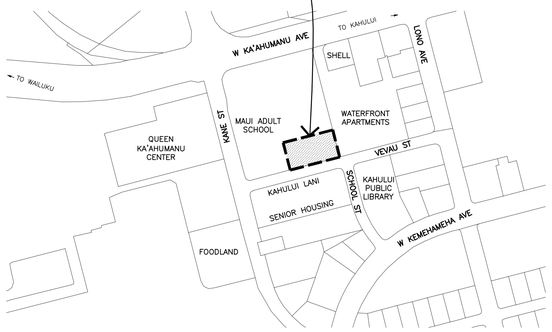
DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

PREPARED BY:

FUKUMOTO ENGINEERING, INC.
Civil Engineering & Land Surveying Consultants
1721 Wili Pa Loop, Suite 203 • Wailuku, Hawaii 96793

INDEX OF DRAWINGS

PROJECT SITE



VICINITY MAP
GRAPHIC SCALE IN FEET
NORTH 0 200 400 600

SUBCONSULTANTS:

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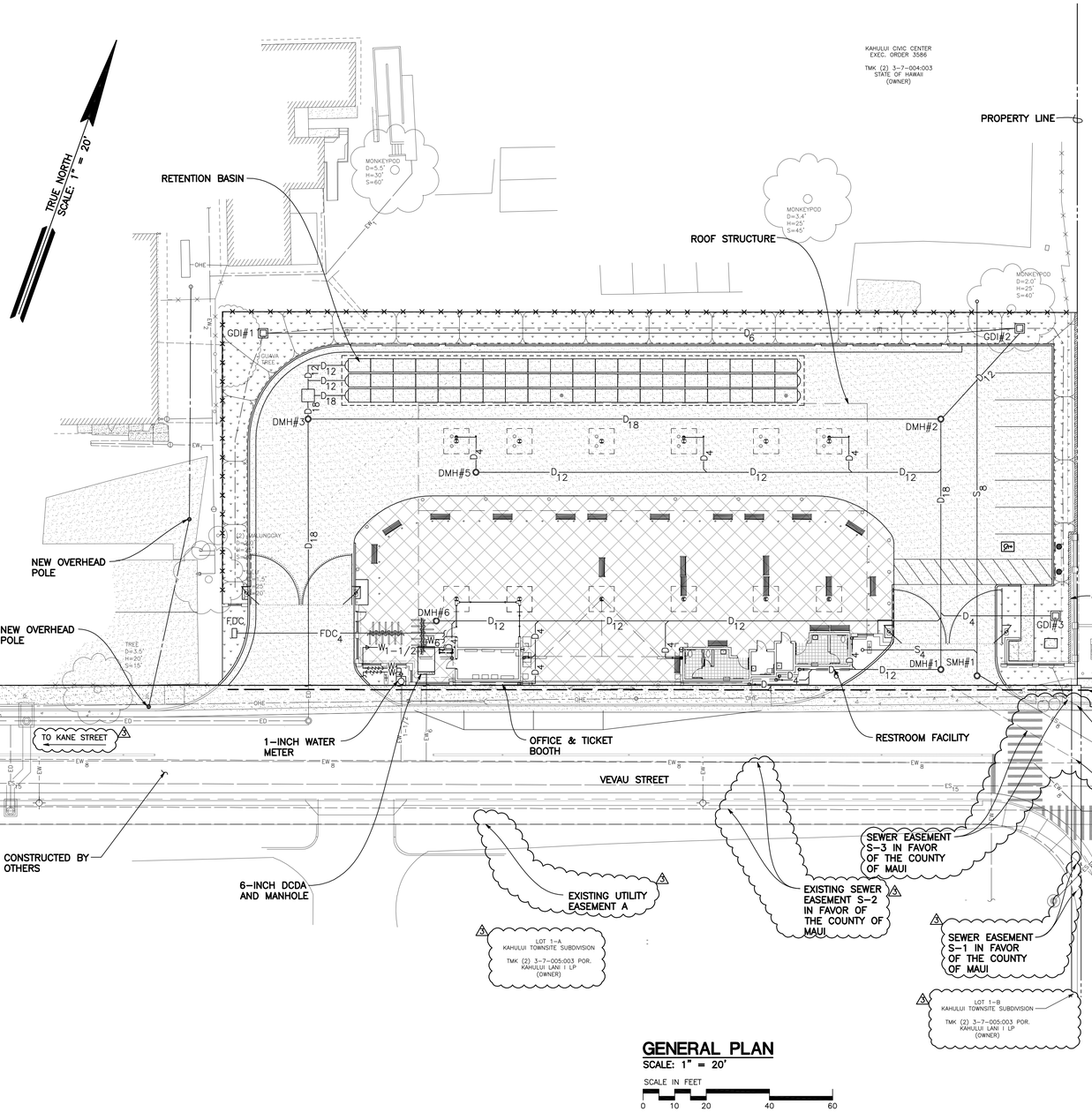
APPROVALS:

DIRECTOR,
DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI

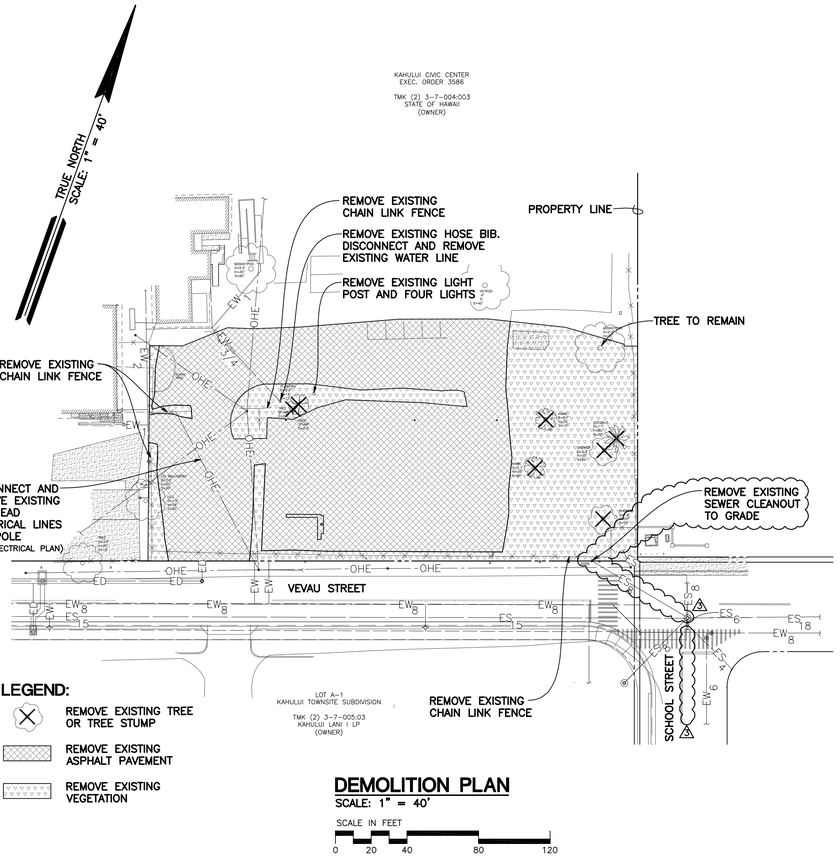
AUG 26 2020
DATE

DIRECTOR, DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
(APPROVAL LIMITED TO OFF-SITE WATER IMPROVEMENTS ONLY WHICH WILL BE DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)

JUN 26 2020
DATE



GENERAL PLAN
SCALE: 1" = 20'



DEMOLITION PLAN
SCALE: 1" = 40'

SCALE IN FEET

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Prepared for:

DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
2145 KAOHU STREET
WAILUKU, HAWAII 96793

TRANSIT HUB

QBS NO. C-TR-18-01

KAHULUI, MAUI, HAWAII

GENERAL PLAN AND DEMOLITION PLAN

MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

LICENSE EXPIRES: 04/30/2020

1 09/30/2020 WWRD REVISIONS

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

SHEET C-1

2 OF

CONSTRUCTION NOTES

GENERAL NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON AVAILABLE "AS-BUILT" OF RECORD CONSTRUCTION PLANS AND ARE APPROXIMATE ONLY AND THEIR ACCURACY IS NOT GUARANTEED.
2. EXISTING CONTOURS AND FEATURES ARE BASED ON "TOPOGRAPHIC SURVEYS" PREPARED BY FUKUMOTO ENGINEERING, INC. DATES OF SURVEY: OCTOBER 5 THROUGH 17, 2018.
3. ELEVATIONS SHOWN ARE BASED ON THE BENCH MARK, TOP OF FIRE HYDRANT, LOCATED ON THE NORTHERLY SIDE OF THE CIVIC CENTER LOT, ALONG THE SOUTHERLY SIDE OF KAAHUMANU AVENUE TAKEN FROM TOPOGRAPHIC SURVEY MAP OF KAHULUI CIVIC CENTER PREPARED BY WARREN S. UNEMORI ENGINEER, INC. DATED MAY 26, 1992.
ELEVATION = 10.47 FEET ABOVE MEAN SEA LEVEL.
4. PROJECT BENCH MARK IS A MAG NAIL (STA. C-3) IN AC PARKING LOT WITHIN THE EASTERLY SIDE OF THE PARCEL. ELEVATION = 8.11 FEET ABOVE MEAN SEA LEVEL.
5. VERIFY EXISTING GRADES BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN THE CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.
6. DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES WITHIN PROJECT LIMITS BEFORE COMMENCING WORK, AND AGREE TO BE FULLY RESPONSIBLE FOR DAMAGES DUE TO FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
7. REPORT ANY INCONSISTENCIES WITH THE PROPOSED PLAN TO THE OWNER'S REPRESENTATIVE AND DEMOLISH, REMOVE, OR RELOCATE ALL EXISTING UTILITIES, IMPROVEMENTS, ETC. INCONSISTENT WITH THE PROPOSED PLAN AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AT THE CONTRACTOR'S EXPENSE.
8. THE LATEST REVISIONS OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984 AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 2005 IS INCLUDED AS PART OF THESE CONSTRUCTION PLANS. OBTAIN THE LATEST REVISIONS BEFORE COMMENCING CONSTRUCTION.
9. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS BE ENCOUNTERED DURING CONSTRUCTION WORK, CEASE WORK IN THE IMMEDIATE VICINITY OF THE FIND, AND PROTECT THE FIND FROM FURTHER DAMAGE. THE CONTRACTOR MUST IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (PH: 243-1285 OR 243-4640), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND MITIGATION MEASURES, IF NECESSARY.
10. PURSUANT TO CHAPTER 6E OF THE HAWAII REVISED STATUTES, IN THE EVENT THAT ANY HUMAN SKELETAL REMAINS ARE INADVERTENTLY DISCOVERED DURING CONSTRUCTION, DO NOT MOVE THE REMAINS, CEASE ANY ACTIVITY IN THE IMMEDIATE AREA THAT COULD DAMAGE THE REMAINS OR THE POTENTIAL HISTORIC SITE, AND CONTACT THE DEPARTMENT OF LAND AND NATURAL RESOURCES' HISTORIC PRESERVATION DIVISION (PH: 243-1285 OR 243-4640), THE APPROPRIATE MEDICAL EXAMINER OR CORONER, AND THE POLICE DEPARTMENT (TELEPHONE: 244-6400).

GRADING NOTES

1. FINISH SPOT ELEVATIONS AND FINISH CONTOURS, AS SHOWN ON PLAN REPRESENTS FINISH GRADING. THE SITE WORK CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE CONTRACTOR THE LOCATION AND DEPTH OF TOPSOIL THE FINISH SUBGRADE SHALL REFLECT THE FINISH GRADE LESS SPECIFIED TOPSOIL DEPTH.
2. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE MEASURES OF THE BEST MANAGEMENT PRACTICE (BMP) PLAN. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS.
3. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.
4. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL REQUIREMENTS OF THE GRADING ORDINANCES.
6. THE CONTRACTOR SHALL NOT DEMOLISH OR CLEAR ANY STRUCTURE, SITE OR VACANT LOT WITHOUT FIRST ASCERTAINING THE PRESENCE OR ABSENCE OF RODENTS WHICH MAY ENDANGER THE PUBLIC HEALTH BY DISPERSAL FROM SUCH PREMISES. SHOULD SUCH INSPECTION REVEAL THE PRESENCE OF SUCH RODENTS, THE CONTRACTOR SHALL ERADICATE SUCH RODENTS BEFORE DEMOLISHING OR CLEARING SAID STRUCTURE, SITE OR VACANT LOT.
7. THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL DUST AND EROSION DURING THE SITE DEVELOPMENT PERIOD:
   - A. MINIMIZE TIME OF CONSTRUCTION.
   - B. RETAIN EXISTING GROUND COVER UNTIL THE LATEST DATE TO COMPLETE CONSTRUCTION.
   - C. CONSTRUCT REMAINING PERMANENT EROSION AND DRAINAGE CONTROL FEATURES AS EARLY AS POSSIBLE.
   - D. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
   - E. STATION WATER TRUCK ON-SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION AREAS (WEEKENDS AND HOLIDAYS INCLUDED).
   - F. USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION. IMPLEMENT AND MAINTAIN THE MEASURES OF THE BMP PLAN.
   - G. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
   - H. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. SIGNS SPACINGS (D), TAPER LENGTHS (T) AND SPACINGS OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
8. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
9. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
10. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (i.e., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
11. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK. LANE CLOSURES FOR CONSTRUCTION WORK SHALL NOT BE ALLOWED DURING THE HOURS OF 6:30 A.M.-8:30 A.M. AND 3:30 P.M.-5:30 P.M. MONDAYS THROUGH FRIDAYS, UNLESS OTHERWISE APPROVED IN WRITING BY THE DIRECTOR OF PUBLIC WORKS OR HIS REPRESENTATIVE.
13. ALTERATIONS OR REVISIONS TO THE TRAFFIC CONTROL PLAN DURING CONSTRUCTION SHALL BE PREPARED AND RESUBMITTED FOR REVIEW/APPROVAL BY THE DESIGN CONSULTANT.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN (CONT.)

WATER SYSTEM

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. IF CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS WILL AFFECT DWS CONSUMERS, CONTRACTOR SHALL NOTIFY CONSUMERS BY RADIO/NEWSPAPER TWO (2) DAYS BEFORE AND ON DAY OF CONNECTION. CONTRACTOR SHALL ALSO NOTIFY CONSUMERS HOUSE-TO-HOUSE ONE (1) DAY BEFORE CONNECTION WORK.
3. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF DWS WATER SYSTEM STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARDS BEFORE COMMENCING CONSTRUCTION.
4. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
5. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE, FEDERAL LAWS, RULES AND REGULATIONS REGARDING THE HANDLING, REMOVAL AND DISPOSAL OF ASBESTOS PIPE.
6. CONTRACTOR SHALL PROTECT EXISTING WATERLINE DURING COURSE OF CONSTRUCTION AND SUPPORT EXPOSED WATERLINE TO PREVENT ANY MOVEMENT.
7. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND APPURTENANCES, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
8. PAVEMENT RESURFACING/RESTORATION:
   - a. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DWS VALVES AND MANHOLES, WHEN AFFECTED BY THE WORK, PRIOR TO START OF CONSTRUCTION.
   - b. ALL WATER VALVE AND WATER MANHOLE CONCRETE COLLARS WITHIN THE PROJECT LIMITS SHALL BE DEMOLISHED AND RECONSTRUCTED PER DWS STANDARD DETAIL V12 AND V23, RESPECTIVELY, AT THE CONTRACTOR'S EXPENSE.
   - c. THE VALVE BOX RISER AND COVER OF ALL WATER VALVES WITHIN THE PROJECT LIMITS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
   - d. CONTRACTOR SHALL ADJUST DWS SLIDING VALVE BOX ASSEMBLY AND MANHOLE FRAME AND COVER TO FINISHED GRADE.
   - e. PRIOR TO PAVEMENT RESURFACING/RESTORATION WORK, THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH DWS.
9. ANY SLIDING VALVE BOX ASSEMBLY, MANHOLE COVER, OR CONCRETE COLLAR, WHETHER DISCOVERED DAMAGED OR NOT SPECIFIED ON THE PLANS TO BE ADJUSTED OR REPLACED, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL UTILITIES (I.E., WATER, SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
11. CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, SHOULDER DRESSING, STRIPING, AND SPEED HUMPS.
12. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
13. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF MANHOLE COVER SHALL BE THREE (3) FEET.
14. CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
15. CONNECTION TO DWS SYSTEM:
   - a. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. CONTRACTOR SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   - b. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   - c. DWS PERSONNEL MAY BE REQUIRED TO BE PRESENT OR ASSIST WITH CONNECTIONS TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST INCURRED BY DWS FOR SAID WORK.
   - d. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
16. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
17. CONTRACTOR SHALL ENSURE INSTALLATION OF WATERLINES, SERVICE LATERALS AND APPURTENANCES HAVE PROPER CLEARANCES FROM EXISTING TREES, WALLS, FENCES, ETC. IN ACCORDANCE WITH CURRENT DWS WATER SYSTEM STANDARDS.
18. CONTRACTOR SHALL VERIFY AND MAINTAIN 18" MINIMUM CLEARANCE WITH WATERLINE OR SERVICE LATERAL CROSSING OVER EXISTING SEWERLINE OR SERVICE LATERAL. INSTALL REINFORCED CONCRETE JACKET AROUND SEWERLINE WHERE SEWER IS ABOVE WATERLINE OR LESS THAN 18" BELOW WATERLINE. THE LENGTH OF JACKET REQUIRED SHALL BE AS SPECIFIED IN TABLE 100-5 OF THE DWS STANDARDS. PROVIDE 6" MINIMUM CLEARANCE FROM OUTSIDE JACKET TO WATERLINE OR SERVICE LATERAL. STANDARD CONCRETE JACKET DETAILS FOR SEWERLINE AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS STANDARDS SHALL BE FOLLOWED.
19. CONTRACTOR SHALL HAVE LICENSED SURVEYOR STAKE OUT WATERLINE BASELINE STATIONING, RIGHT-OF-WAY LIMITS, PROPERTY LINES, AND EASEMENT LINES TO ENSURE PROPER LOCATION OF WATER SYSTEM IMPROVEMENTS.
20. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
   - a. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
   - b. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
   - c. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".

   ALL HOT FORGED STAINLESS STEEL BOLTS ARE REQUIRED TO BE PASSIVATED PER ASTM A380. MANUFACTURER CERTIFICATES ARE REQUIRED FOR PROOF WITH EACH SHIPMENT.
21. CONTRACTOR SHALL FURNISH AND INSTALL DUCTILE IRON NIPPLES FOR COMPLETE INSTALLATION OF THE WATERLINE, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS, AT THE CONTRACTOR'S EXPENSE.
22. CONTRACTOR SHALL FURNISH TEMPORARY CLEANOUTS WHEN NECESSARY TO TEST, FLUSH, AND CHLORINATE THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
23. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PORTIONS OF ABANDONED WATERLINES THAT ARE EXPOSED OR WITHIN 12-INCHES BELOW THE GROUND SURFACE AT THE CONTRACTOR'S EXPENSE.
24. ALL BURIED METALS, INCLUDING COPPER PIPES, SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.

WATER SYSTEMS (CONT.)

25. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
26. CONTRACTOR SHALL PAINT AND NUMBER FIRE HYDRANT(S). NUMBERING TO BE FURNISHED BY DWS.
27. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
28. DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
29. CONTRACTOR SHALL SUBMIT ONE (1) SET OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN PDF FORMAT AT FULL PAGE SIZE (24"x36") SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

REVISION 6/8/2018

CHLORINATION OF WATER SYSTEMS

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

WASTEWATER NOTES

1. ALL WASTEWATER LINES AND APPURTENANCES SHALL CONFORM TO STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI.
2. ALL SEWERLINE AND APPURTENANCES SHALL FOLLOW THE DESIGN STANDARDS OF THE WASTEWATER RECLAMATION DIVISION, CITY AND COUNTY OF HONOLULU, VOLUMES 1 & 2, DATED JULY 1993 AND JULY 1984 RESPECTIVELY, UNLESS OTHERWISE NOTED.
3. ALL WASTEWATER LINES AND APPURTENANCES INSTALLATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986. IF ANY CONFLICTS ARISE BETWEEN THE STANDARD DETAILS, DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS, THE STRICTEST STANDARD SHALL APPLY, UNLESS APPROVED OTHERWISE.
4. BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL SCHEDULE AND DOCUMENT A PRE-CONSTRUCTION MEETING WITH ALL AGENCIES HAVING UTILITIES AFFECTED BY THE WORK.
5. CONTRACTOR MUST HAVE A SITE SPECIFIC SPILL PREVENTION PLAN (SSSPP) APPROVED BY WWRD PRIOR TO SEWER LINE CONSTRUCTION AND/OR SEWER LATERAL CONNECTION TO EXISTING FACILITIES, OR ANY WORK WITHIN FIVE (5) FEET OF WASTEWATER SYSTEM IMPROVEMENTS.
6. THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, WASTEWATER RECLAMATION DIVISION, HAS THE RIGHT TO STOP CONSTRUCTION, SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED PLANS AND SPECIFICATIONS, OR DETRIMENTAL TO THE PUBLIC INTEREST.
7. ALL EXISTING WASTEWATER LINES, WHETHER OR NOT SHOWN ON THE PLANS, IF DAMAGED DURING CONSTRUCTION, SHALL BE REPAIRED BY THE CONTRACTOR AND THE CONTRACTOR SHALL PAY ALL EXPENSES.
8. THE CONTRACTOR SHALL NOTIFY THE WASTEWATER RECLAMATION DIVISION FIVE (5) WORKING DAYS PRIOR TO CONNECTION TO ANY EXISTING WASTEWATER LINES WITHIN THE COUNTY OF MAUI.
9. SHOULD THE CONTRACTOR EXCAVATE BEYOND THE TRENCH PAY-WIDTH, AS SPECIFIED IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, AND SUCH ACTION RESULTS IN A GREATER LOAD TO THE PIPE, THE CONTRACTOR SHALL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HIGHER CLASS OF BEDDING MATERIAL THAT WILL WITHSTAND THE ADDED LOAD.
10. WASTEWATER LATERALS SHALL BE SIX (6) INCHES IN DIAMETER AT A 2% SLOPE, UNLESS APPROVED OTHERWISE.
11. AN ADVANCE RISER CONNECTION SHALL BE INSTALLED AT EACH NEW WASTEWATER LATERAL.
12. WHERE THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING UTILITY LINE IS LESS THAN EIGHTEEN (18) INCHES, THE WASTEWATER LINE SHALL BE PROTECTED WITH A REINFORCED CONCRETE JACKET IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984.
13. WHEN THE WASTEWATER MAINS ARE OF A DIFFERENT MATERIAL THAN THE LATERALS, THE CONTRACTOR SHALL INSTALL APPROVED ADAPTERS.
14. ALL BACKFILL FOR WASTEWATER TRENCHES SHALL BE COMPACTED IN ONE (1) FOOT LIFTS TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY.
15. WHERE CONSTRUCTION IS TO BE DONE IN PHASES OR INCREMENTS, EACH PHASE OR INCREMENT SHALL BE APPROVED BY WASTEWATER RECLAMATION DIVISION BEFORE THE NEXT PHASE OR INCREMENT IS STARTED.
16. ALL WASTEWATER MAINS SHALL PASS A MANDREL TEST AS A CONDITION OF ACCEPTANCE 30 DAYS AFTER COMPLETION AND BACKFILL. THE MANDREL DIAMETER SHALL BE 95% OR MORE OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED.

WASTEWATER NOTES (CONT.)

17. "AS-BUILT" DRAWINGS SHALL BE SUBMITTED AS A CONDITION FOR THE FINAL ACCEPTANCE OF OF THE PROJECT.
18. PRIOR TO INSPECTION BY CLOSED CIRCUIT TELEVISION (CCTV), ALL WASTEWATER LINES INSTALLED, INCLUDING LATERALS, SHALL BE FLUSHED WITH WATER AND ANY ACCUMULATED CONSTRUCTION DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED.
19. ALL MAIN WASTEWATER LINES WHICH WILL BE DEDICATED TO THE COUNTY OF MAUI SHALL BE INSPECTED BY CCTV IN STRICT ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY. CCTV RESULTS SHOULD BE SUBMITTED ON DVD PER MEMO DATED OCTOBER 22, 2015. SHOULD ANY OF THE SEWER LATERALS FAIL TO PASS A VISUAL INSPECTION, THEN A CCTV OF ALL LATERALS WILL ALSO BE REQUIRED.
20. ANY CONNECTION MADE UNDER THE WATER TABLE WILL REQUIRE CCTV AT HIGH TIDE TO DETERMINE WATER TIGHTNESS IN ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON PASSING OF ALL REQUIREMENTS OF THIS POLICY.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING THE GPS COORDINATES OF ALL BURIED AND CONCEALED WORK TO BE DEDICATED TO THE COUNTY, AND PROVIDE THE GPS DATA TO THE COUNTY PRIOR TO THE PROJECT'S FINAL ACCEPTANCE. AN ACCURATE GPS POINT EVERY (50) FEET ALONG THE MAIN LINE, AT UTILITY CROSSINGS, AND AT ANY INSTALLED APPURTENANCE (INCLUDING BUT NOT LIMITED TO MANHOLES, BENDS, CONCRETE JACKET, CLEANOUT, PIPE DEVIATIONS, CHANGE IN PIPE SIZE, CRITICAL JOINTS, ARV. ETC.). GPS DATA SHALL BE IN NAD 1983 STATE PLANE HAWAII ZONE 2 FIPS 5102 GRID, AND SHALL BE ACCURATE TO WITHIN ONE (1) FOOT. ACQUIRED GPS SURVEY DATA SHALL BE QUALITY CHECKED BY THE CONTRACTOR PRIOR TO SUBMISSION IN SHAPEFILE (.SHP) FORMAT, FOR COMPATIBILITY WITH MAINSTREAM GIS SOFTWARE SUCH AS ESRI ARCMAP.

REVISED: OCTOBER, 2015

LEGEND/ABBREVIATIONS:

- PROPERTY LINE
- 290 EXISTING MAJOR CONTO

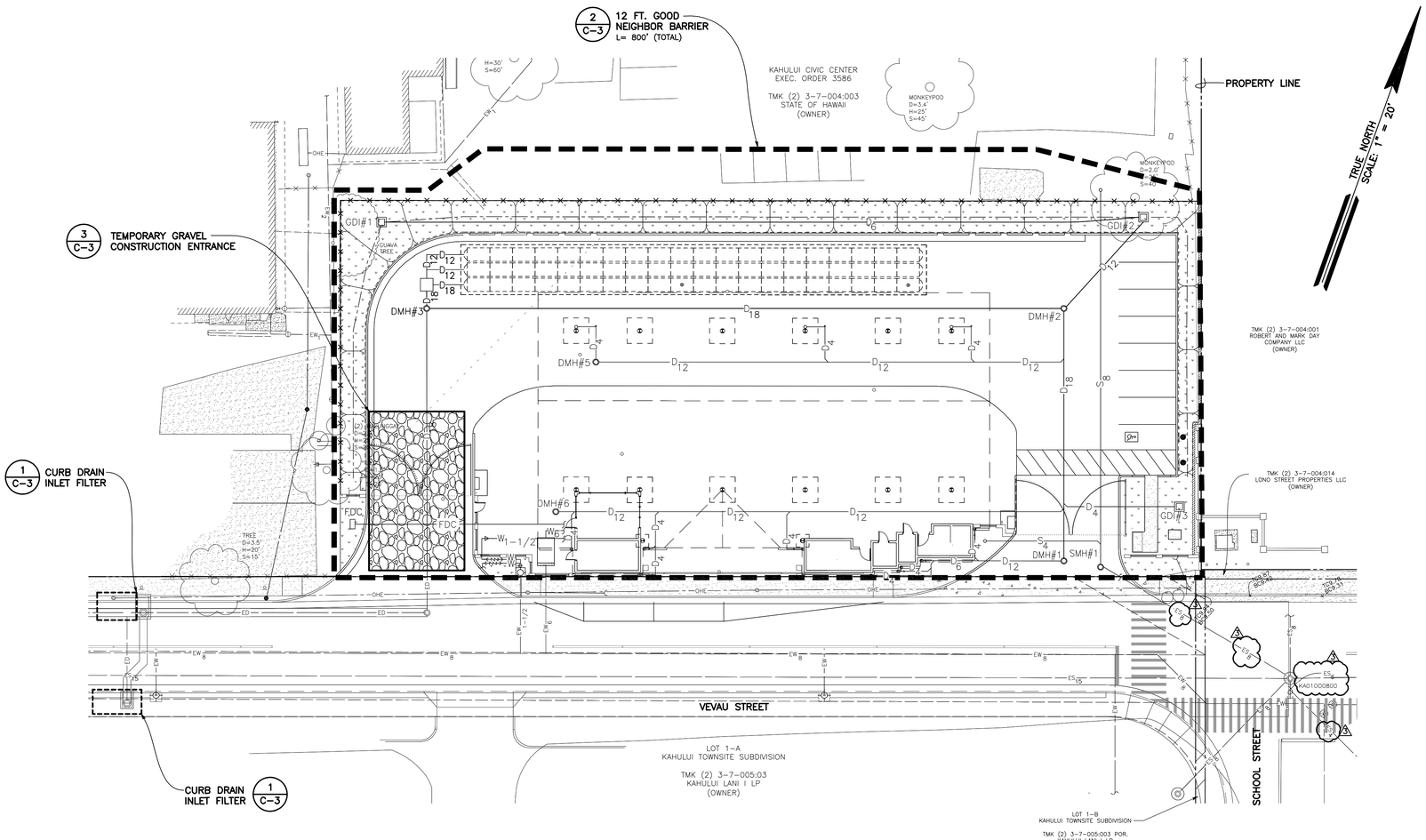
EROSION CONTROL NOTES

IMPLEMENT THE FOLLOWING OUTLINE OF EROSION CONTROL MEASURES DURING CONSTRUCTION.

1. GENERAL EROSION CONTROL MEASURES
   - A. MINIMIZE TIME OF CONSTRUCTION.
   - B. RETAIN EXISTING GROUND COVER UNTIL THE LATEST DATE TO COMPLETE CONSTRUCTION.
   - C. PROVIDE TEMPORARY GRAVEL APRON(S) (APPROXIMATELY 50' LONG BY 30' WIDE) AT POINT OF CONNECTION TO PAVED STREET TO PREVENT TRACKING OF SEDIMENTS ONTO STREET.
   - D. CONTROL DUST BY SPRINKLING WITH WATER WAGONS OR OTHER SUITABLE METHODS. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
   - E. USE TEMPORARY BERMS AND CUT–OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
   - F. CONSTRUCT PERMANENT EROSION AND DRAINAGE CONTROL FEATURES AS EARLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.
   - G. MAINTAIN EROSION CONTROL MEASURES UNTIL ESTABLISHMENT OF GRASS AND LANDSCAPE PLANTING.
2. ADDITIONAL EROSION CONTROL NOTES
   - A. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY WEEKLY IN DRY PERIODS AND WITHIN 24 HOURS AFTER ANY RAINFALL OF 1/2 INCH OR GREATER WITHIN A 24–HOUR PERIOD. DURING PROLONGED PERIODS OF RAINFALL, DAILY CHECKING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF THE DURATION AND ESTIMATED VOLUME OF STORM WATER DISCHARGE(S), CHECKS, AND REPAIRS.
   - B. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
   - C. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT.
   - D. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN 30 CALENDAR DAYS.
   - E. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION OR PAVEMENT SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING. IRRIGATION AND MAINTENANCE OF THE PERENNIAL VEGETATION SHALL BE PROVIDED FOR 30 DAYS OR UNTIL THE VEGETATION TAKES ROOT, WHICHEVER IS SHORTER.

MINIMUM BEST MANAGEMENT PRACTICES

1. DRAINAGE: HANDLE DRAINAGE TO CONTROL EROSION, PREVENT DAMAGE TO DOWNSTREAM PROPERTIES, AND RETURN WATER TO THE NATURAL DRAINAGE COURSE IN A MANNER WHICH MINIMIZES SEDIMENTATION OR OTHER POLLUTION TO THE MAXIMUM EXTENT PRACTICABLE.
2. DUST CONTROL: CONTROL DUST EMISSIONS TO THE MAXIMUM EXTENT PRACTICABLE THROUGH BMPS SUCH AS WATER SPRINKLING, DUST FENCES, LIMITING AREA OF DISTURBANCE, AND TIMELY GRASSING OF FINISHED AREAS.
3. VEGETATION: RETAIN NATURAL VEGETATION, ESPECIALLY GRASSES, WHEREVER FEASIBLE. AVOID STORAGE OF GRUBBED MATERIALS NEAR WATERCOURSES.
4. EROSION CONTROLS: STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MEASURES SUCH AS VEGETATION, RUNOFF DIVERSION, CHECK DAMS, MULCHING, BLANKETS, BONDED FIBER MATRICES, AND VEHICLE WHEEL WASH FACILITIES.
5. SEDIMENT CONTROL: CAPTURE SEDIMENT TRANSPORTED IN RUNOFF TO MINIMIZE THE SEDIMENT FROM LEAVING THE SITE WITH METHODS SUCH AS SEDIMENT BASINS, SEDIMENT TRAPS, SILT FENCES, SAND BAGS, AND VEGETATED FILTER STRIPS.
6. MATERIAL AND WASTE MANAGEMENT: PROPERLY STORE TOXIC MATERIAL AND PREVENT THE DISCHARGE OF POLLUTANTS ASSOCIATED WITH CONSTRUCTION MATERIALS.
7. TIMING OF CONTROL MEASURE IMPLEMENTATION: TIMING OF CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN. DISTURBED AREAS OF CONSTRUCTION SITES THAT WILL NOT BE RE–DISTURBED FOR TWENTY–ONE DAYS OR MORE WILL BE STABILIZED (GRASSES OR GRAVELED) BY NO LATER THAN THE FOURTEENTH DAY AFTER THE LAST DISTURBANCE.
8. EQUIPMENT: ENSURE ALL MATERIALS AND EQUIPMENT ARE FREE OF INVASIVE PLANT AND ANIMAL SPECIES.

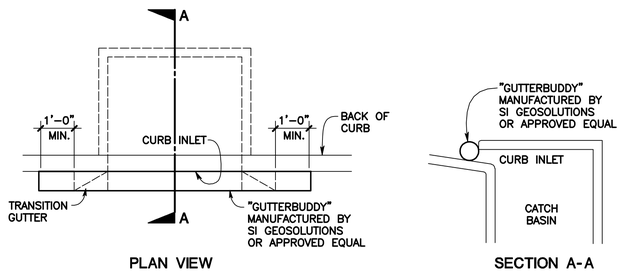


EROSION CONTROL BEST MANAGEMENT PRACTICES PLAN

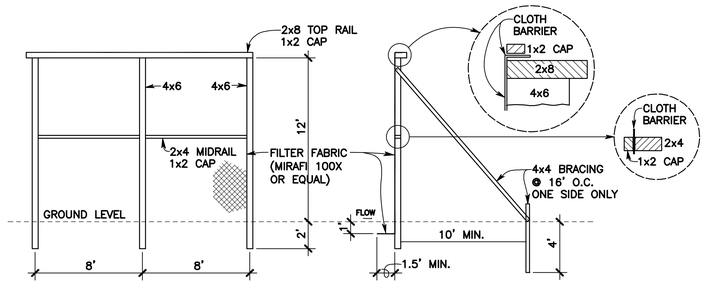
SCALE: 1" = 20'

SCALE IN FEET

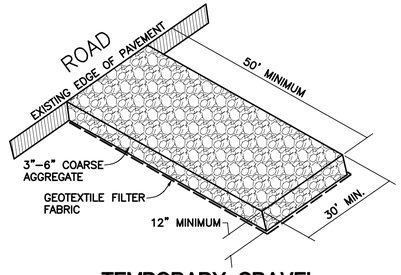
0 10 20 40 60



1 C–3 **CURB DRAIN INLET FILTER**
NOT TO SCALE



2 C–3 **12 FT. GOOD NEIGHBOR BARRIER (TYPICAL SECTION)**
NOT TO SCALE



3 C–3 **TEMPORARY GRAVEL CONSTRUCTION ENTRANCE**
NOT TO SCALE

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Prepared for:

DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
2145 KAOHU STREET
WAILUKU, HAWAII 96793

TRANSIT HUB
QBS NO. Q-TR-18-01
KAHULUI, MAUI, HAWAII

EROSION CONTROL BEST MANAGEMENT PRACTICES PLAN

MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185–C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16–115–2.

LICENSE EXPIRES: 04/30/2020

△3 09/30/2020 WWRD REVISIONS

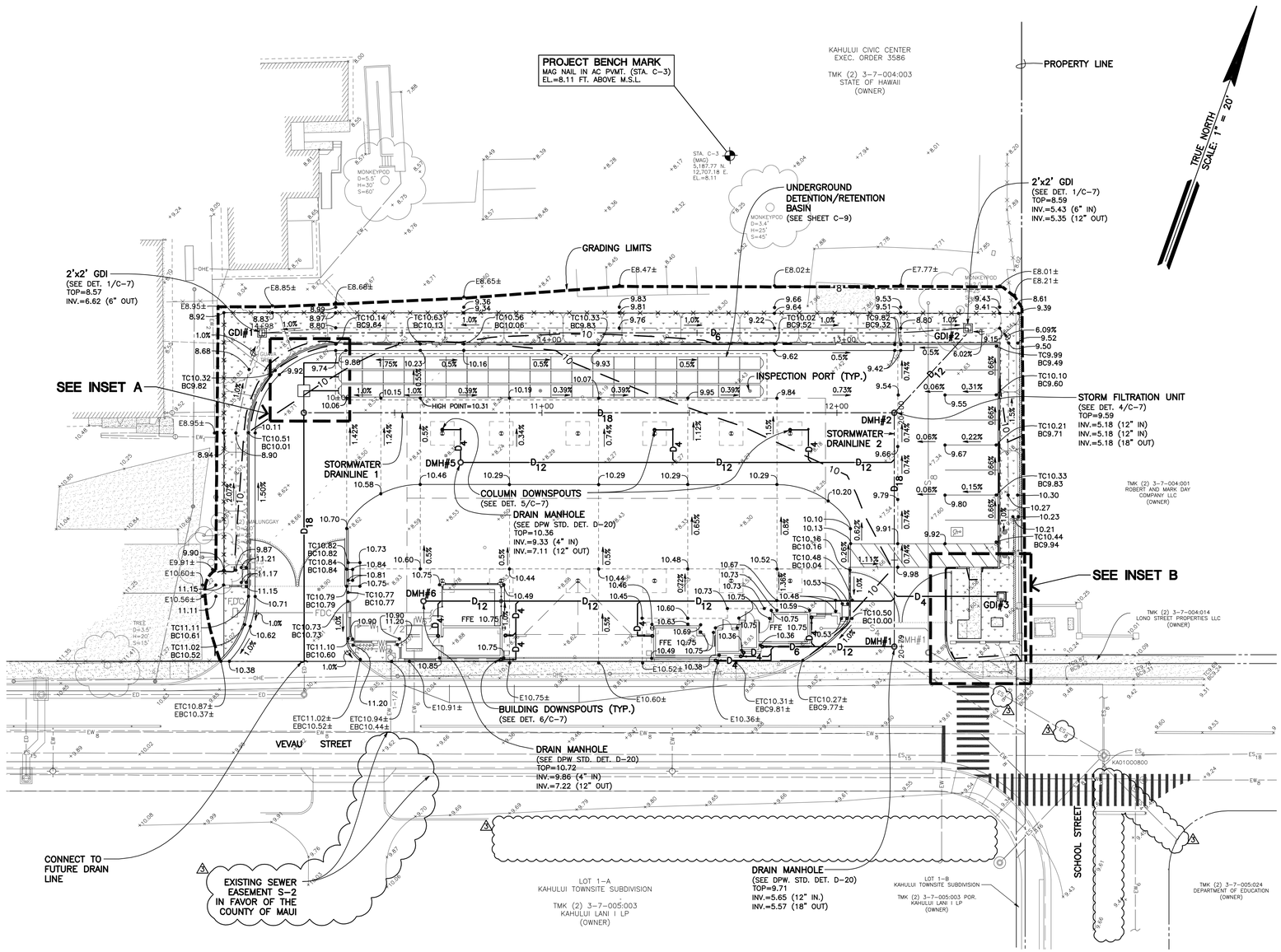
DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

SHEET C-3
4 OF

EARTHWORK QUANTITIES:

EXCAVATION	=	5	CU. YDS.
EMBANKMENT	=	2110	CU. YDS.
AREA OF GRADING	=	0.78	ACRE

EARTHWORK QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES.



LEGEND/ABBREVIATIONS:

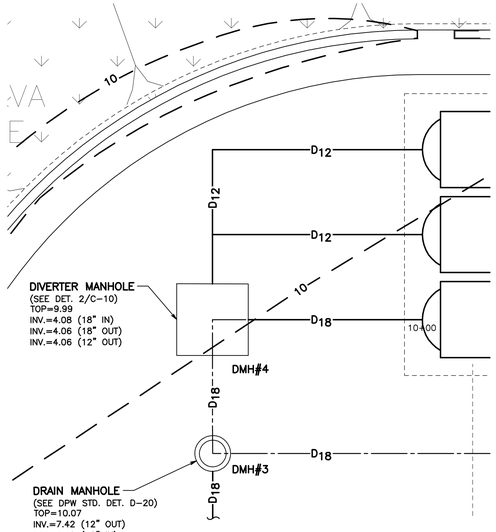
- PROPERTY LINE
- TOP OF SLOPE
- BOTTOM OF SLOPE
- 10.29 NEW SPOT ELEVATION
- TC10.33 / BC9.84 NEW SPOT ELEVATION AT TOP/BOTTOM OF CURB

GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'

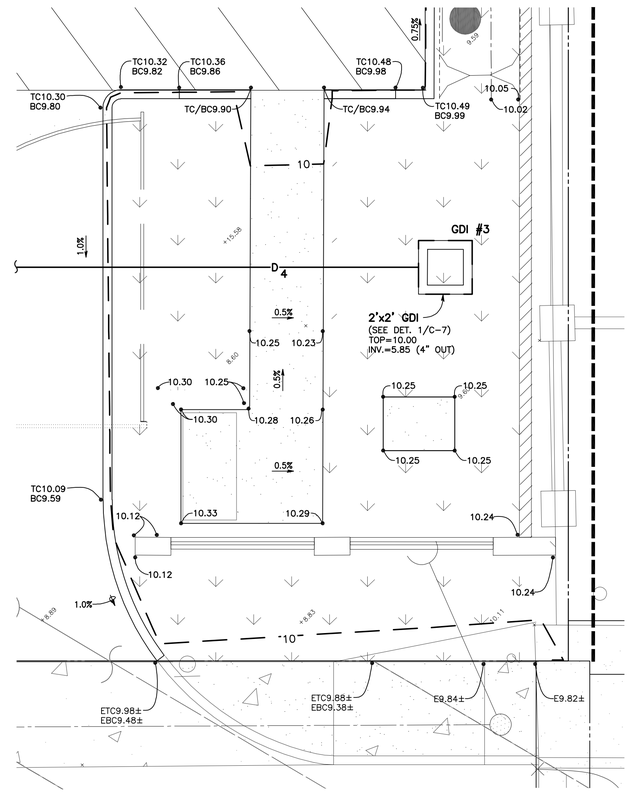
SCALE IN FEET

0 10 20 40 60



INSET A

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



INSET B

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

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WAILUKU, HAWAII 96793

TRANSIT HUB

QBS NO. Q-TR-18-01

KAHULUI, MAUI, HAWAII

GRADING AND DRAINAGE PLAN

MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.

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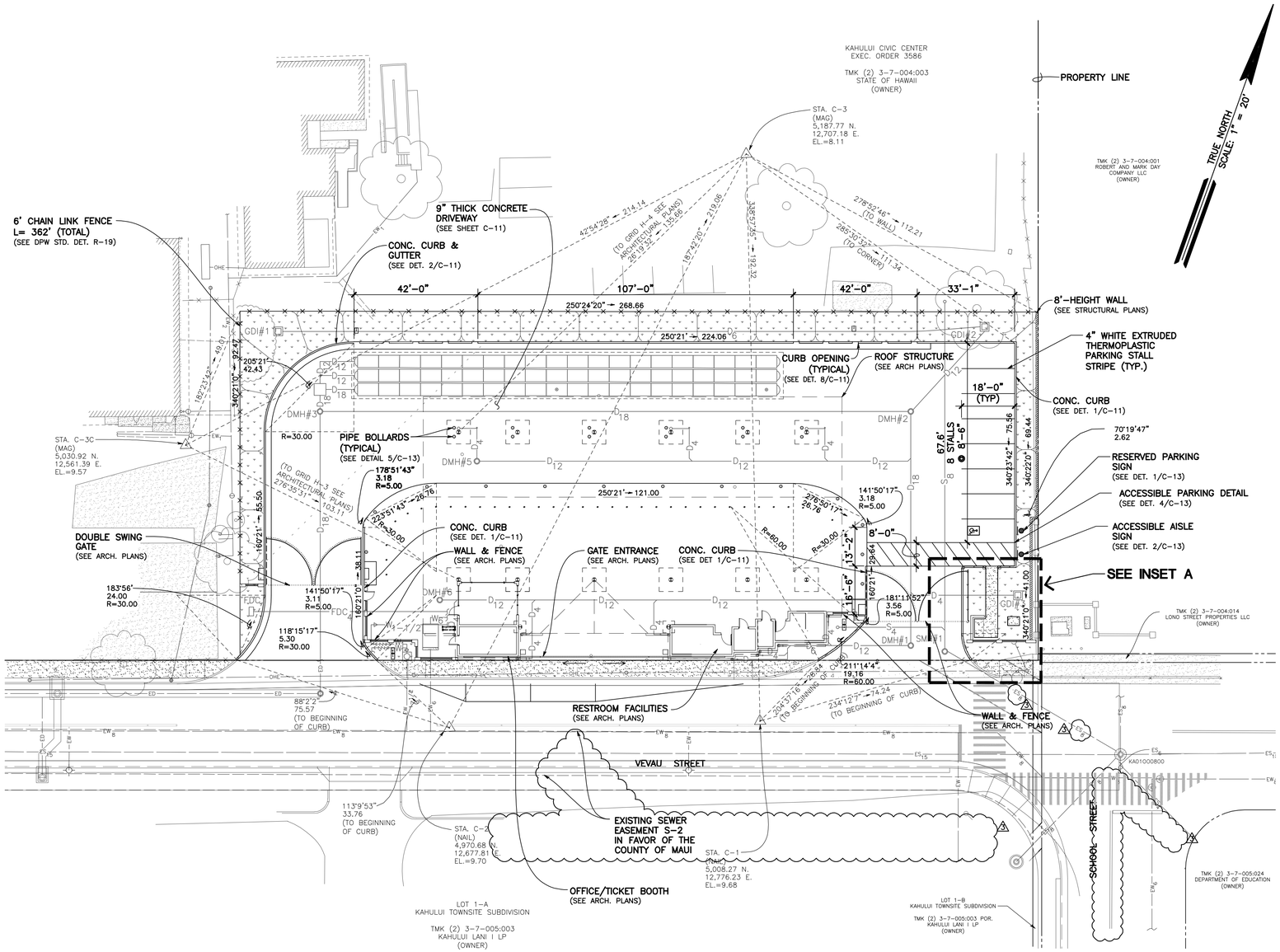
LICENSE EXPIRES: 04/30/2020

1	09/30/2020 WWRD REVISIONS

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

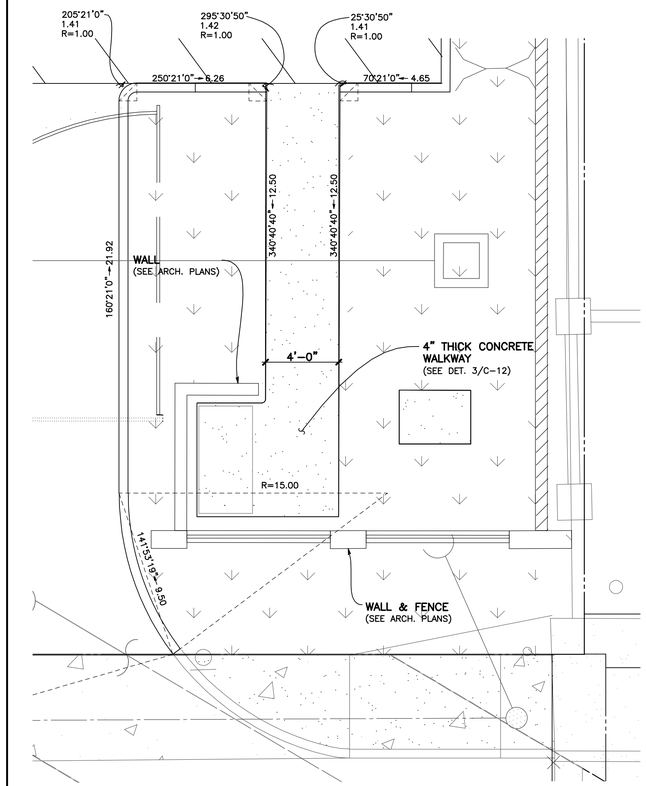
SHEET C-4

5 OF



SITE PLAN
SCALE: 1" = 20'

SCALE IN FEET
0 10 20 40 60



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

TRANSIT HUB
QBS NO. Q-TR-18-01
KAHULUI, MAUI, HAWAII

SITE PLAN

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LICENSE EXPIRES: 04/30/2020

⚠3 09/30/2020 WWRD REVISIONS

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

SHEET C-5
6 OF

BACKFLOW PREVENTER DATA:

TAX MAP KEY: (2) 3-7-004:003
PROJECT NAME: KAHULUI TRANSIT HUB
SERVICE ADDRESS: 153 W KAAHUMANU AVENUE
KAHULUI, HI 96732

FIRE WATERLINE

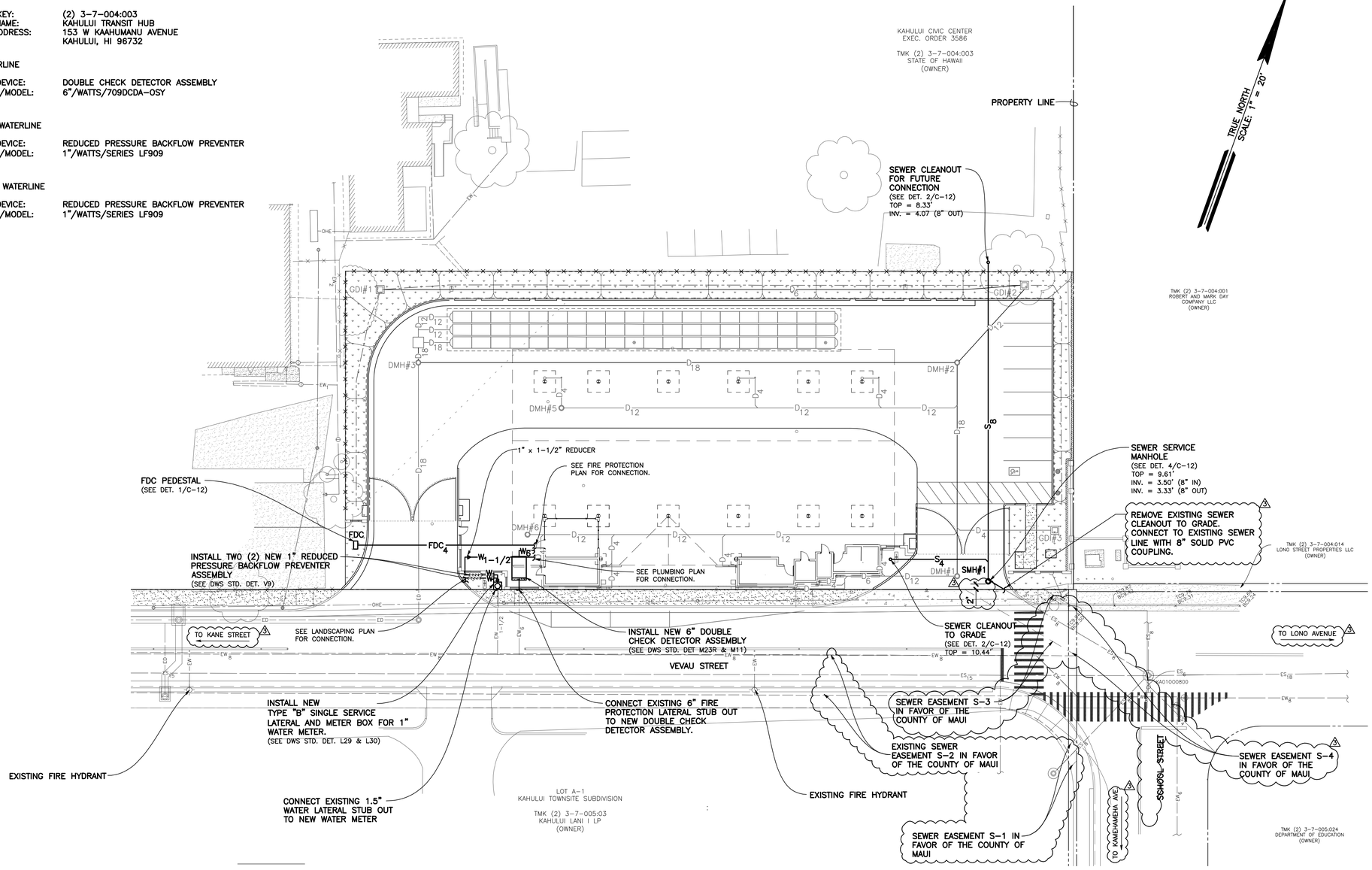
TYPE OF DEVICE: DOUBLE CHECK DETECTOR ASSEMBLY
SIZE/MAKE/MODEL: 6"/WATTS/709DCDA-OSY

DOMESTIC WATERLINE

TYPE OF DEVICE: REDUCED PRESSURE BACKFLOW PREVENTER
SIZE/MAKE/MODEL: 1"/WATTS/SERIES LF909

IRRIGATION WATERLINE

TYPE OF DEVICE: REDUCED PRESSURE BACKFLOW PREVENTER
SIZE/MAKE/MODEL: 1"/WATTS/SERIES LF909



UTILITIES PLAN
SCALE: 1" = 20'

SCALE IN FEET
0 10 20 40 60

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TRANSIT HUB
QBS NO. Q-TR-18-01
KAHULUI, MAUI, HAWAII

UTILITIES PLAN

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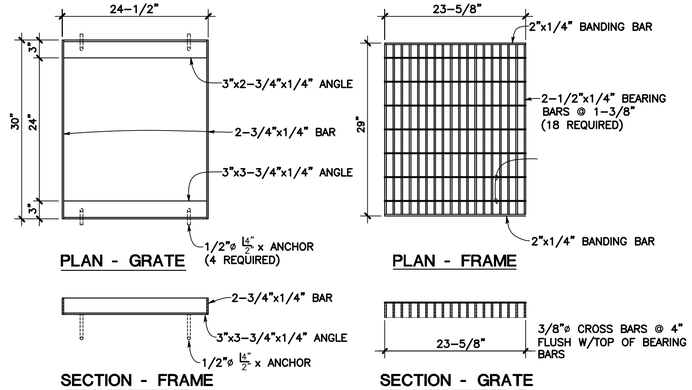
LICENSE EXPIRES: 04/30/2020

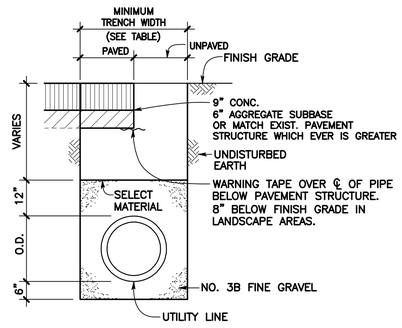
1 07/2020 FIRE PREVENTION REVISIONS
3 09/30/2020 WWRD REVISIONS

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

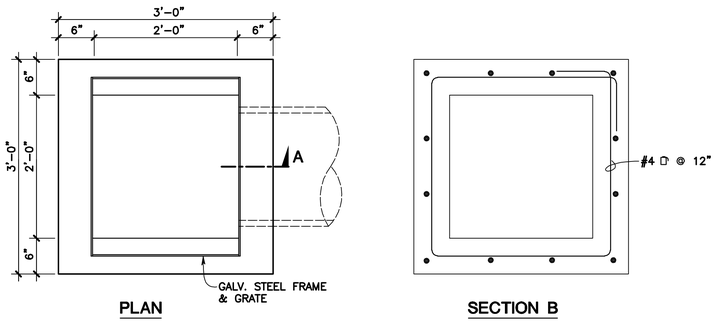
SHEET C-6
7 OF

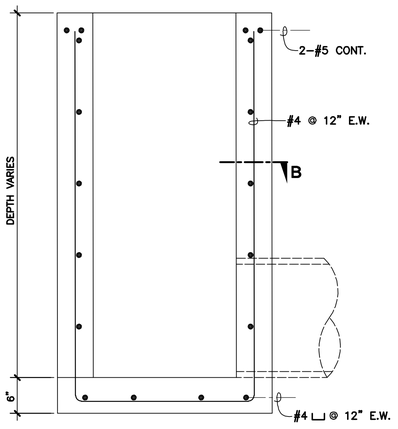


PIPE SIZE	MIN. TRENCH WIDTH
<4"	12"
4"	24"
6"	24"
8"	24"
12"	30"
18"	36"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
84"	138"

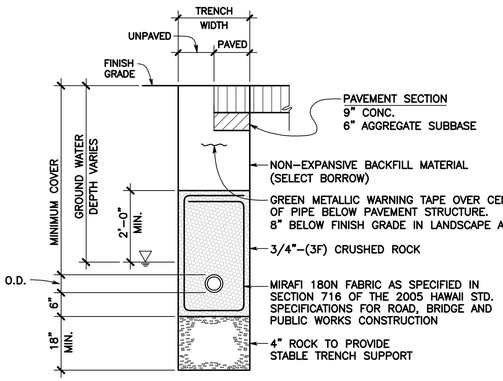


2 / C-7 **TYPICAL UTILITY TRENCH SECTION & PAVEMENT RESTORATION DETAIL**
SCALE: 1/2" = 1'-0"

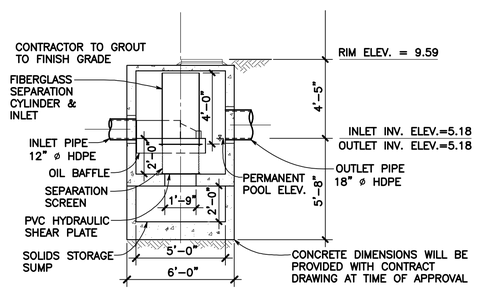


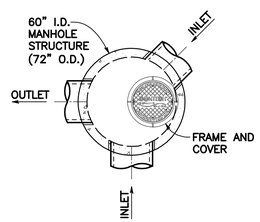


1 / C-7 **2'x2' GRATED DRAIN INLET GDI #1, #2, #3**
SCALE: 1/2" = 1'-0"

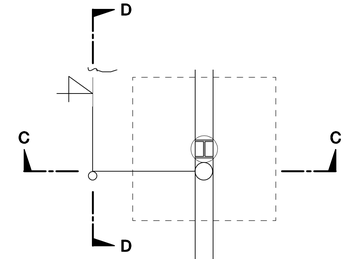


3 / C-7 **TYPICAL TRENCH SECTION BELOW GROUNDWATER**
SCALE: 1/2" = 1'-0"

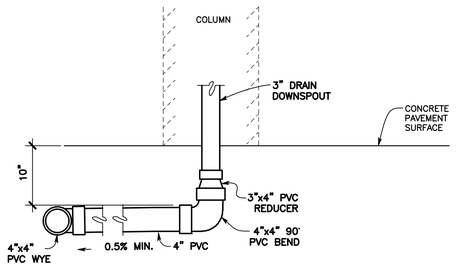




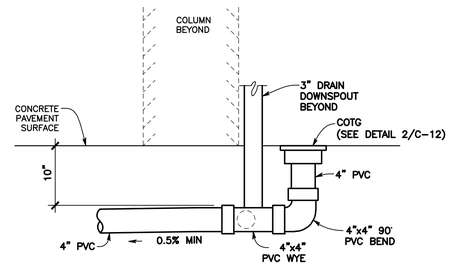
4 / C-7 **MODEL CDS2025-5-C STORM WATER QUALITY SYSTEM (DMH#2)**
SCALE: 1/4" = 1'-0"



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



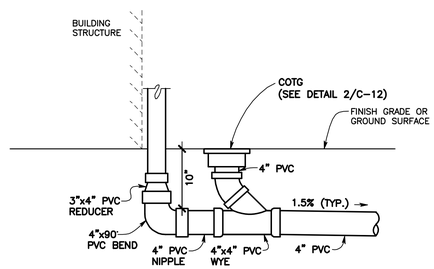
SECTION C-C
SCALE: 1" = 1'-0"



NOTE: PVC FITTINGS & PIPE ASTM 3034 SDR 35

SECTION D-D
SCALE: 1" = 1'-0"

5 / C-7 **DRAIN DOWNSPOUT COLUMN CONNECTION DETAIL**
SCALE: 1" = 1'-0"



NOTE: PVC FITTINGS & PIPE ASTM 3034 SDR 35

6 / C-7 **DRAIN DOWNSPOUT STRUCTURE CONNECTION DETAIL**
SCALE: 1" = 1'-0"

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Phone: (808) 242-8611
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Website: www.femaui.com

Prepared for:
DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
2145 KAOHU STREET
WAILUKU, HAWAII 96793

TRANSIT HUB
QBS NO. Q-TR-18-01
KAHULUI, MAUI, HAWAII

DRAINAGE DETAILS

MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.

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LICENSE EXPIRES: 04/30/2020

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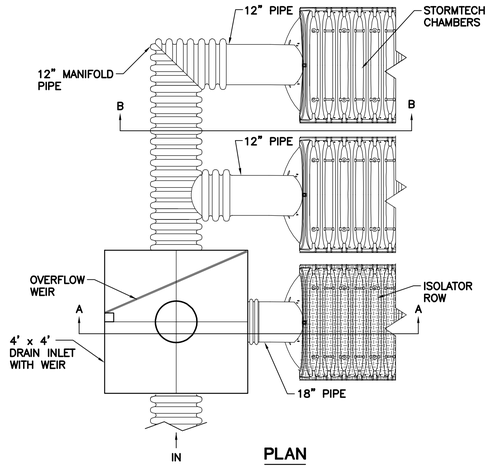
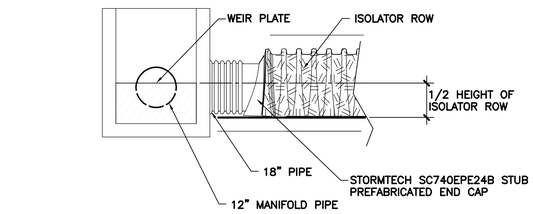
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

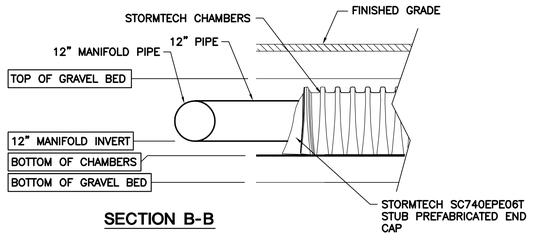
SHEET C-7
8 OF



PLAN



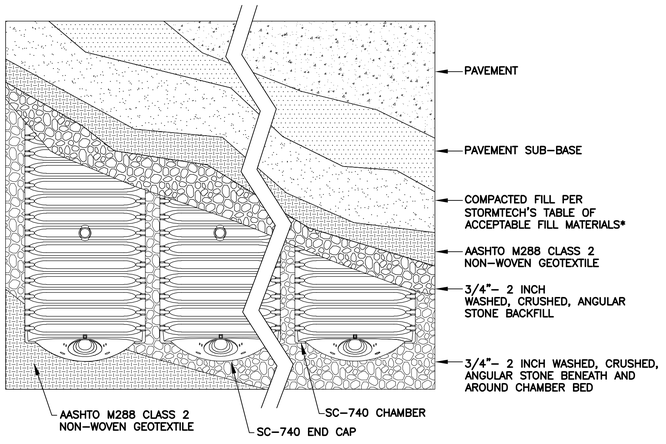
SECTION A-A



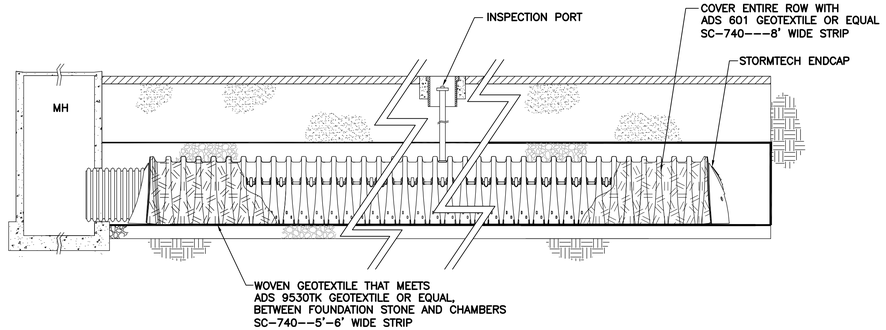
SECTION B-B

DESIGN DATA	BASIN #1
TOP OF GRAVEL BED EL. (FEET)	7.00
12" MANIFOLD INVERT EL. (FEET)	4.00
18" PIPE INVERT EL. (FEET)	4.00
BOTTOM OF CHAMBERS EL. (FEET)	4.00
BOTTOM OF GRAVEL BED EL. (FEET)	3.50
EXISTING WATER TABLE (FEET)	3.15

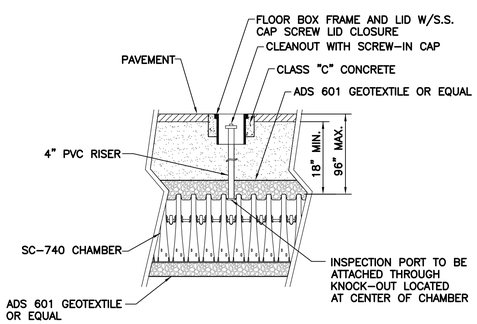
1 / C-8 **DIVERTER DMH - SECTION THRU MANIFOLD PIPE**
SCALE: NOT TO SCALE



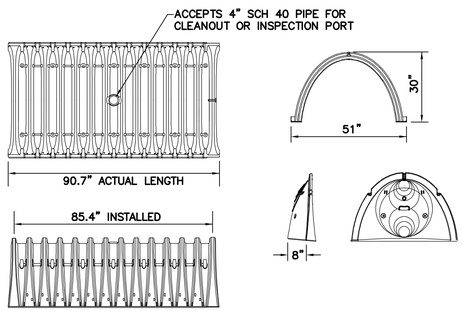
5 / C-8 **STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL**
NOT TO SCALE



2 / C-8 **ISOLATOR ROW DETAIL**
NOT TO SCALE

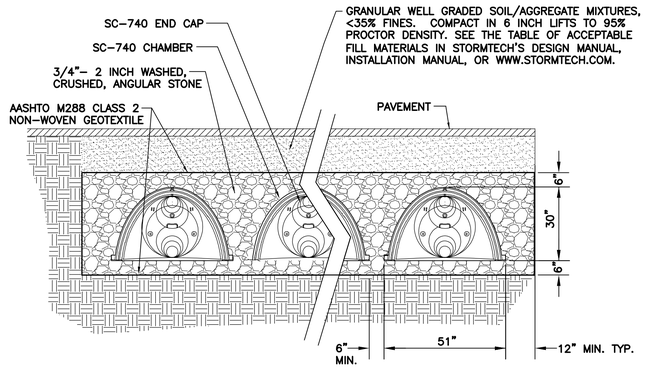


3 / C-8 **INSPECTION PORT DETAIL**
NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS
SIZE (W x H x INSTALLED LENGTH) = 51.0" x 30.0" x 85.4"
CHAMBER STORAGE = 45.9 CUBIC FEET
MINIMUM INSTALLED STORAGE = 74.9 CUBIC FEET
WEIGHT = 75 LBS.

4 / C-8 **STORMTECH CHAMBER DETAIL**
NOT TO SCALE



6 / C-8 **DETENTION-RETENTION BASIN TYPICAL CROSS SECTION DETAIL**
NOT TO SCALE

CHAMBER SYSTEM NOTES

ACCEPTABLE PRODUCTS INCLUDE:
STORMTECH MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC.,
CHAMBERMAXX MANUFACTURED BY CONTECH ENGINEERED SOLUTIONS, INC.,
OR APPROVED EQUAL

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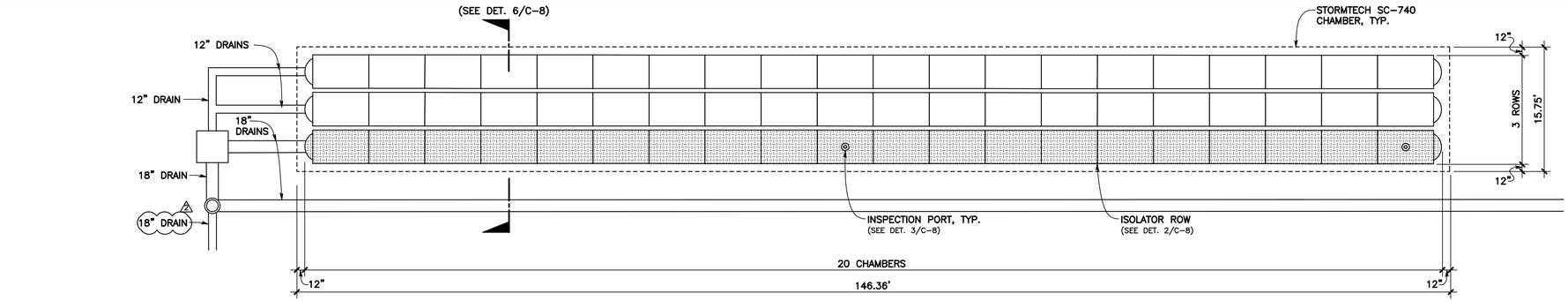
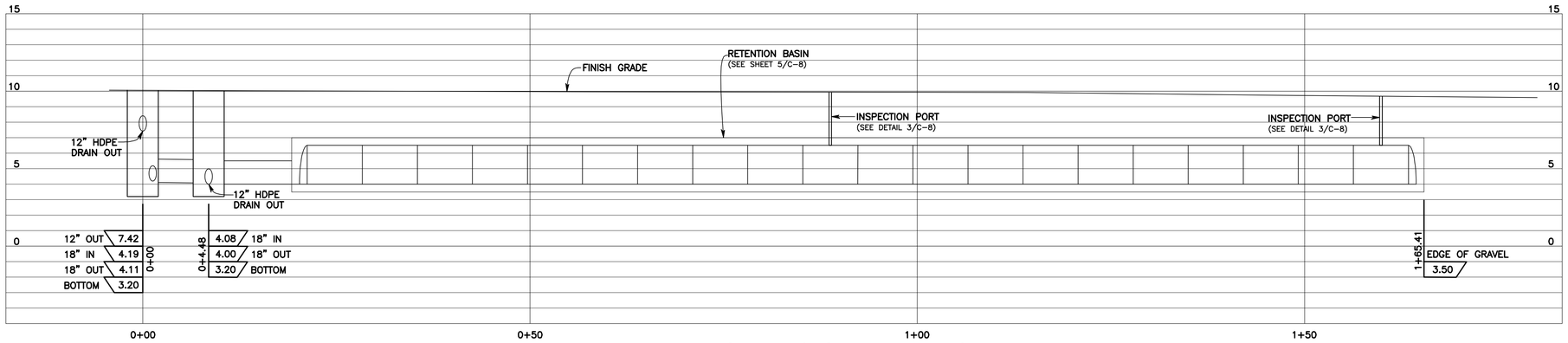
9 OF



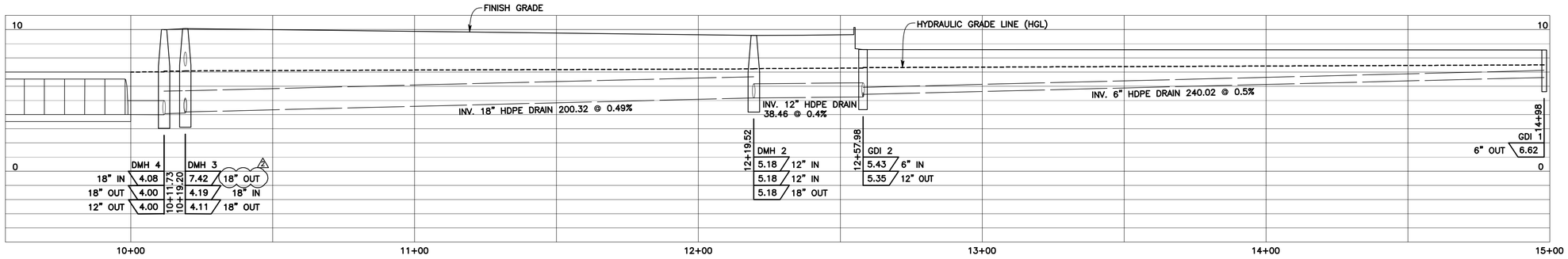
PLAN - STORMWATER BASIN #1

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



PROFILE - STORMWATER BASIN #1

SCALE: HORIZ. 1/8" = 1'-0"
VERT. 1/4" = 1'-0"

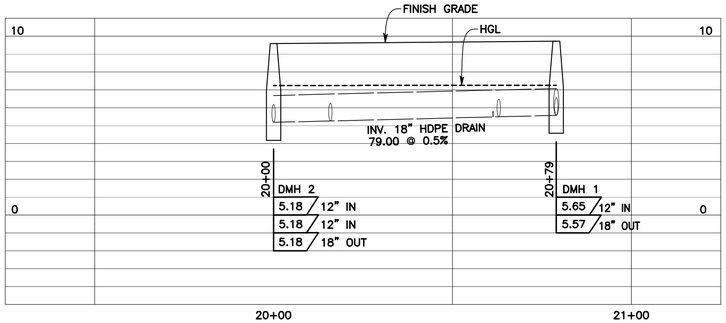


PROFILE - STORMWATER DRAINLINE 1

SCALE: HORIZ. 1" = 20'
VERT. 1/4" = 1'-0"

NOTES:

1. DRAIN LINES SHALL MAINTAIN A 12" MINIMUM VERTICAL CLEARANCE FROM OTHER UTILITIES. NOTIFY PROJECT ENGINEER OF ANY CONFLICT.
2. SEWER MINIMUM COVER SHALL BE 3'-0". WATER MINIMUM COVER SHALL BE 1'-6".



PROFILE - STORMWATER DRAINLINE 2

SCALE: HORIZ. 1" = 20'
VERT. 1/4" = 1'-0"

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DRAINAGE PROFILES

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SHEET C-9

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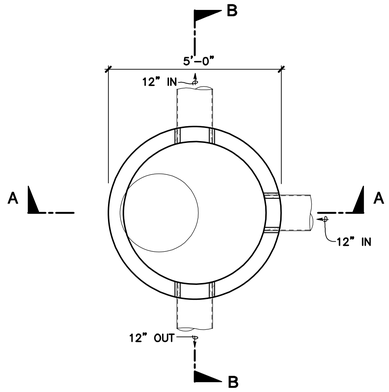
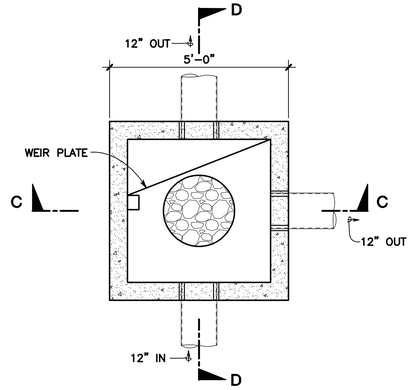
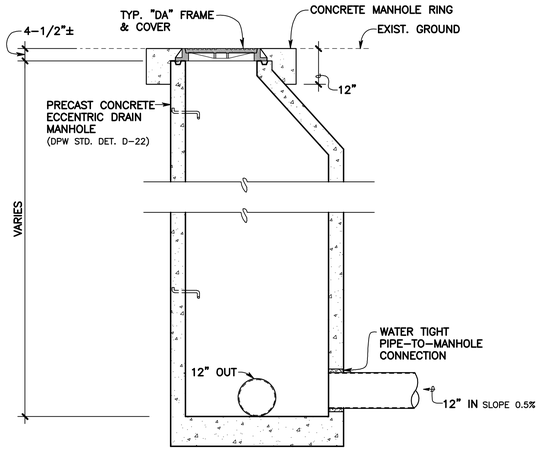


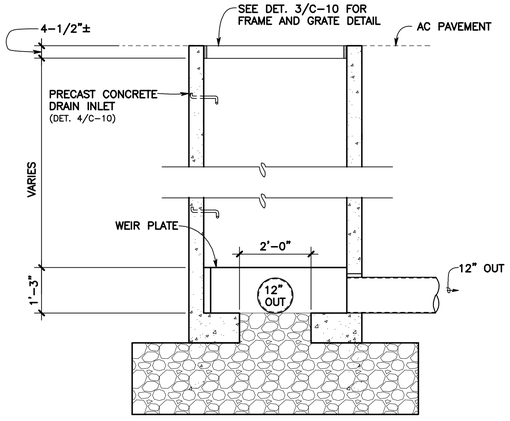
PLAN



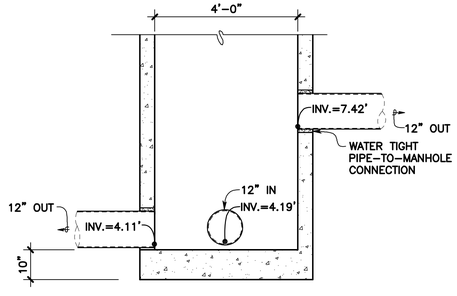
PLAN



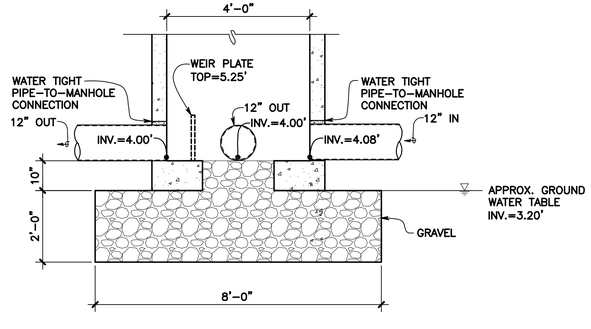
SECTION A-A



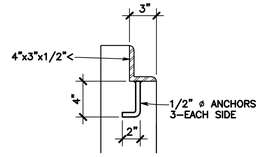
SECTION C-C



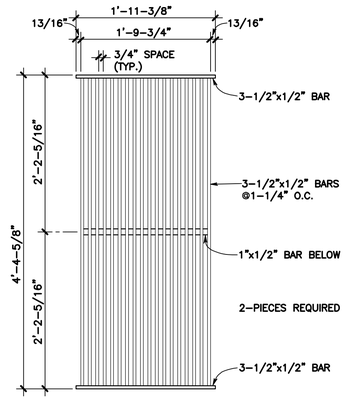
SECTION B-B



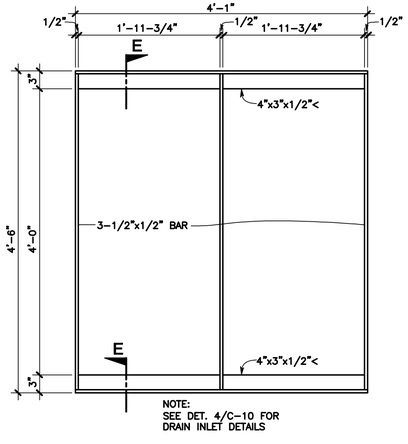
SECTION D-D



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



PLAN - GRATE
SCALE: 1" = 1'-0"

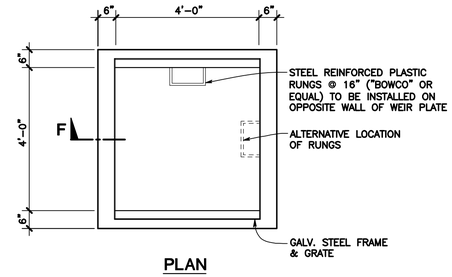


PLAN - FRAME
SCALE: 1" = 1'-0"

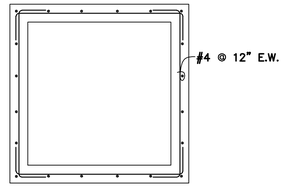
3 / C-10 **FRAME & GRATE FOR 4'x4' DRAIN INLET**
SCALE AS NOTED

DRAIN INLET & MANHOLE NOTES

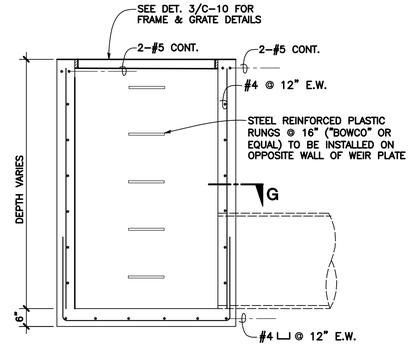
1. FOR DRAIN INLETS AND MANHOLES WITHIN PAVED AREAS, CONSTRUCT TOP OF STRUCTURE TO MATCH. SLOPE OF PAVEMENT.



PLAN



SECTION G



SECTION F

4 / C-10 **4'x4' DRAIN INLET**
SCALE: 1/2" = 1'-0"

1 / C-10 **DMH#3 MANHOLE DETAIL**
SCALE: 1/2" = 1'-0"

2 / C-10 **DIVERTER DMH#4 DETAIL**
SCALE: 1/2" = 1'-0"

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DRAINAGE MANHOLE DETAILS

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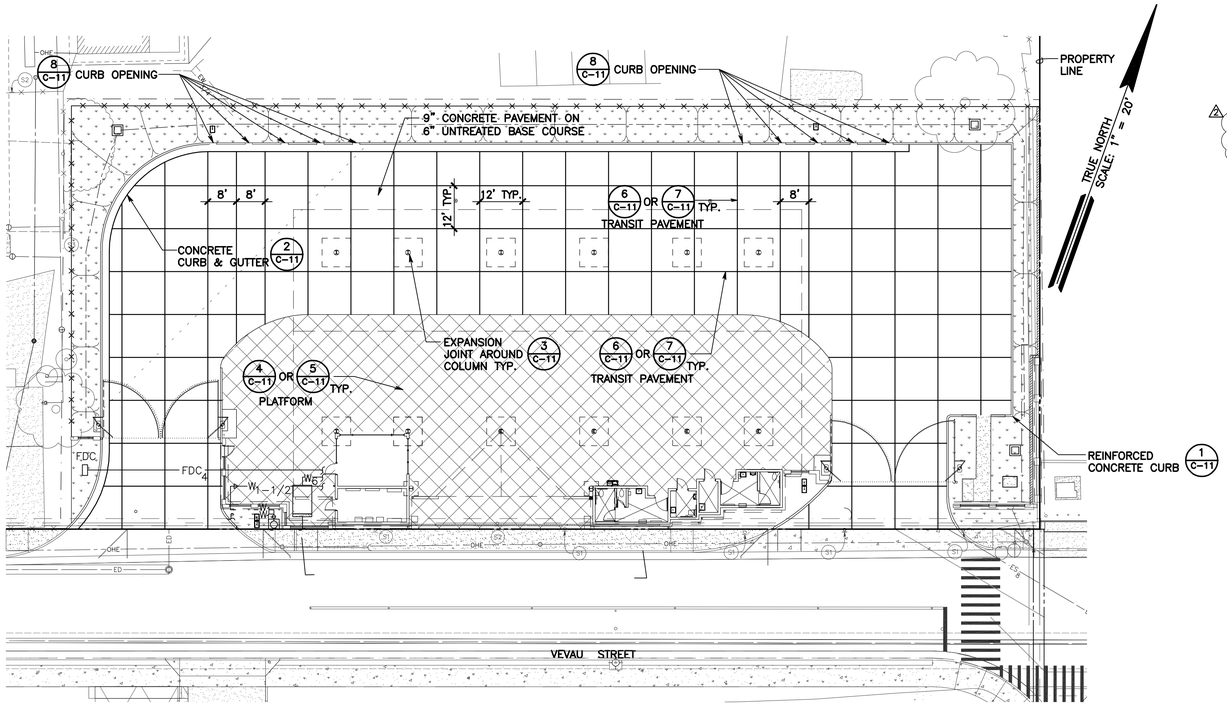
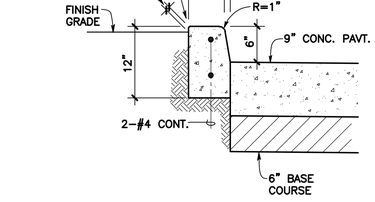
11 OF



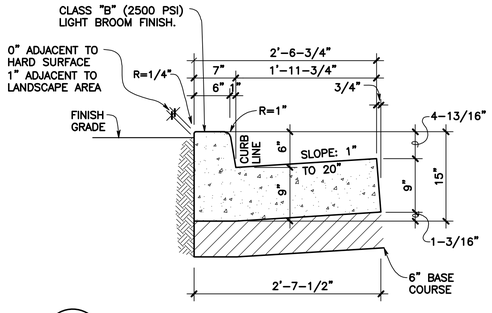
CONCRETE PAVEMENT JOINT DIAGRAM

SCALE: 1" = 20'-0"

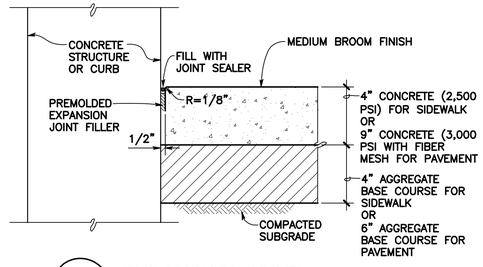
SCALE IN FEET
0 10 20 40 60



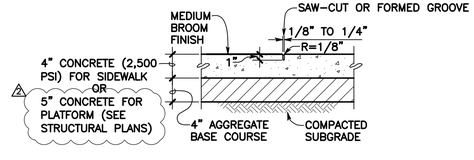
1 C-11 **REINFORCED CONCRETE CURB**
SCALE: 1" = 1'-0"



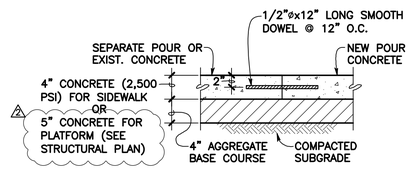
2 C-11 **CONCRETE CURB & GUTTER**
SCALE: 1" = 1'-0"



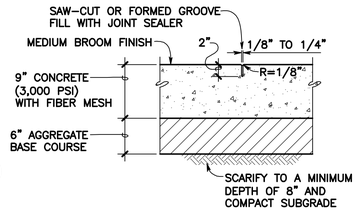
3 C-11 **EXPANSION JOINT**
SCALE: 1" = 1'-0"



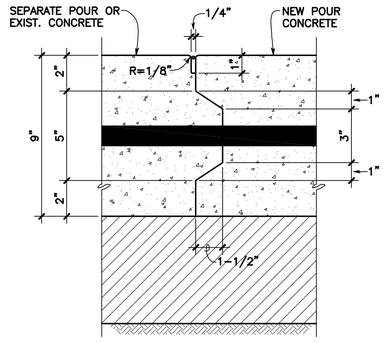
4 C-11 **CONTRACTION JOINT** (FOR SIDEWALK/PLATFORM)
SCALE: 1" = 1'-0"



5 C-11 **CONSTRUCTION JOINT WITH DOWELS** (FOR SIDEWALK/PLATFORM)
SCALE: 1" = 1'-0"

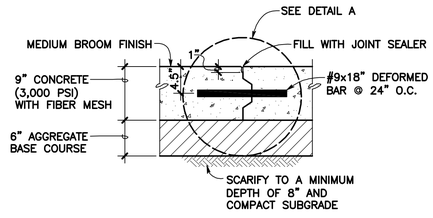


6 C-11 **TRANSVERSE CONTRACTION JOINT** (FOR TRANSIT PAVEMENT)
SCALE: 1" = 1'-0"

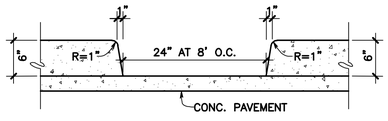


DETAIL A

SCALE: 3" = 1'-0"



7 C-11 **KEYED CONSTRUCTION JOINT WITH TIE BAR** (FOR TRANSIT PAVEMENT)
SCALE: 1" = 1'-0"



8 C-11 **CURB OPENING DETAIL**
SCALE: 1" = 1'-0"

NOTES:
1. TRANSIT PAVEMENT
   A. MEDIUM BROOM FINISHED
2. PLATFORM PAVEMENT
   A. MEDIUM BROOM FINISHED

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PAVEMENT DETAILS

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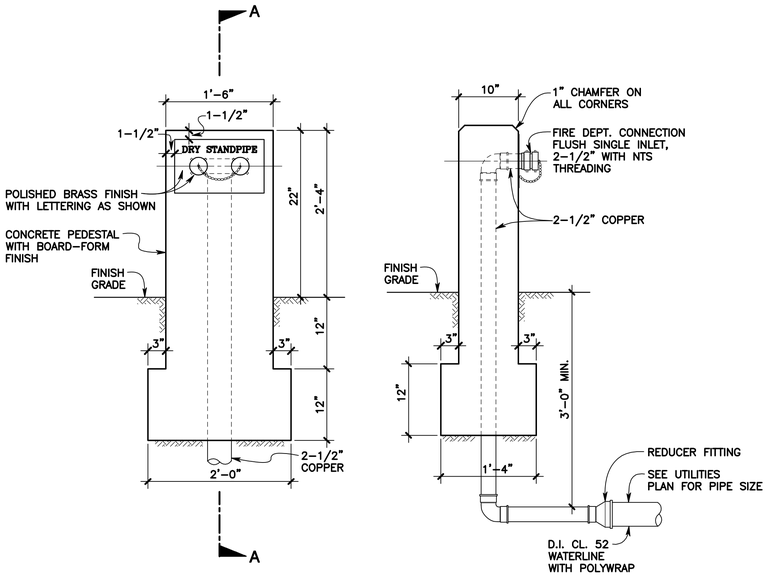
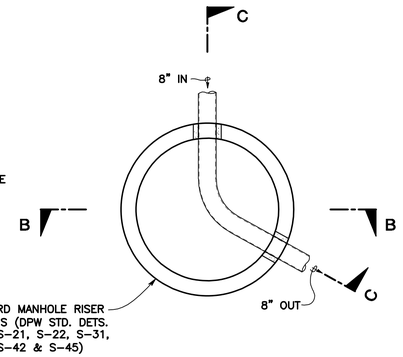
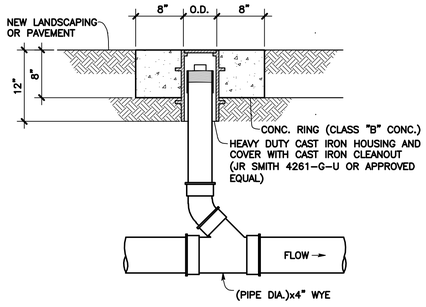
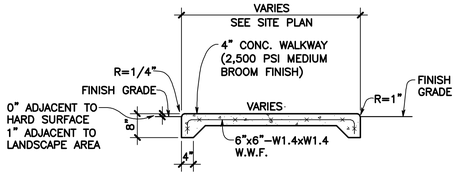


1 C-12 **FDC PEDESTAL**
SCALE: 1" = 1'-0"



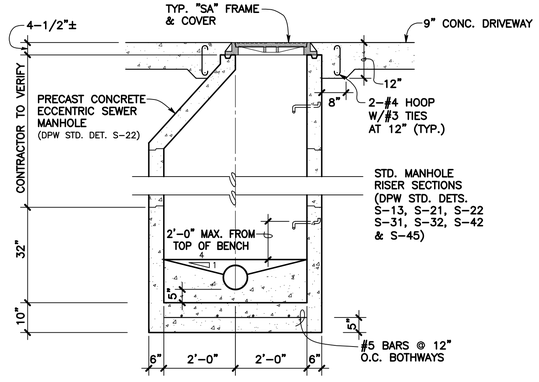


2 C-12 **4" COTG DETAIL**
SCALE: 1" = 1'-0"

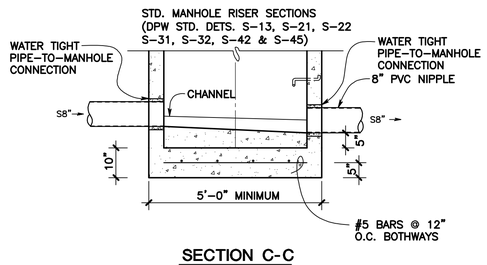


3 C-12 **CONC. SIDEWALK DETAIL**
SCALE: 1/2" = 1'-0"

PLAN



SECTION B-B



SECTION C-C

4 C-12 **SEWER SERVICE MANHOLE**
SCALE: 1/2" = 1'-0"

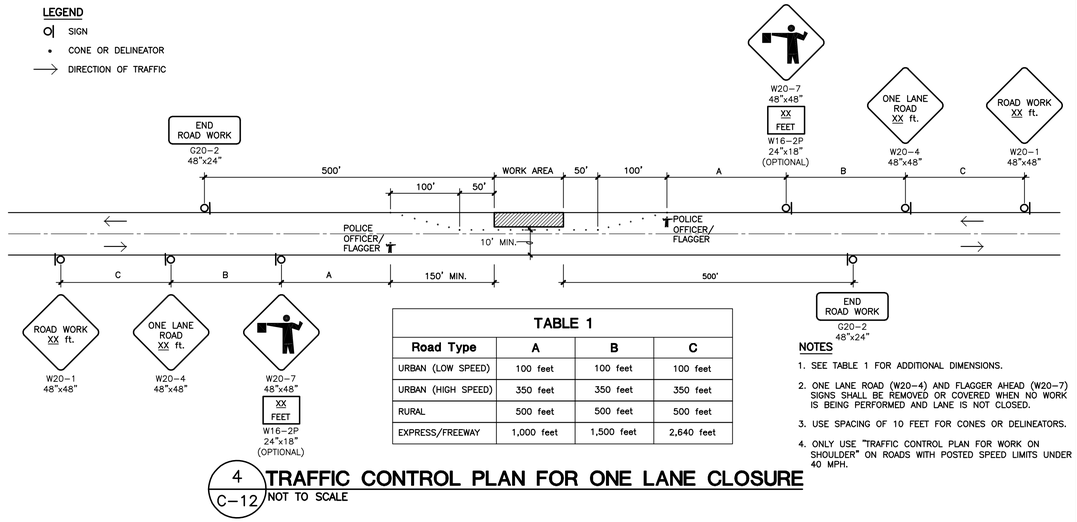
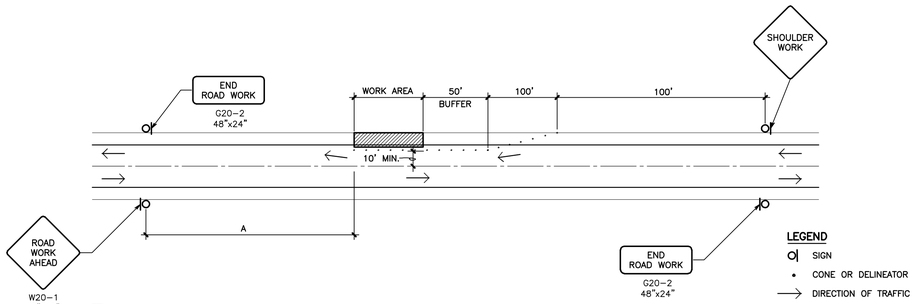


TABLE 1			
Road Type	**A**	**B**	**C**
URBAN (LOW SPEED)	100 feet	100 feet	100 feet
URBAN (HIGH SPEED)	350 feet	350 feet	350 feet
RURAL	500 feet	500 feet	500 feet
EXPRESS/FREEWAY	1,000 feet	1,500 feet	2,640 feet

NOTES

1. SEE TABLE 1 FOR ADDITIONAL DIMENSIONS.
2. ONE LANE ROAD (W20-4) AND FLAGGER AHEAD (W20-7) SIGNS SHALL BE REMOVED OR COVERED WHEN NO WORK IS BEING PERFORMED AND LANE IS NOT CLOSED.
3. USE SPACING OF 10 FEET FOR CONES OR DELINEATORS.
4. ONLY USE "TRAFFIC CONTROL PLAN FOR WORK ON SHOULDER" ON ROADS WITH POSTED SPEED LIMITS UNDER 40 MPH.

4 C-12 **TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURE**
NOT TO SCALE



5 C-12 **TRAFFIC CONTROL PLAN FOR WORK ON SHOULDER**
NOT TO SCALE

FUKUMOTO ENGINEERING, INC.
Civil Engineering & Land Surveying Consultants
1721 Wili Pa Loop, Suite 203
Wailuku, Hawaii 96793
Phone: (808) 242-8611
Email: office@femaui.com
Website: www.femaui.com

Prepared for:
DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
2145 KAOHU STREET
WAILUKU, HAWAII 96793

TRANSIT HUB
QBS NO. Q-TR-18-01
KAHULUI, MAUI, HAWAII

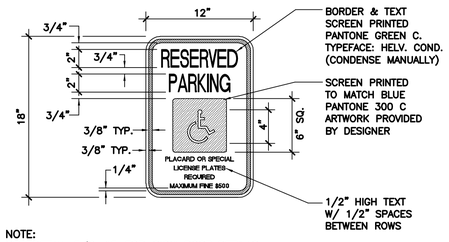
MISCELLANEOUS DETAILS

MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.
M Silva
LICENSE EXPIRES: 04/30/2020

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

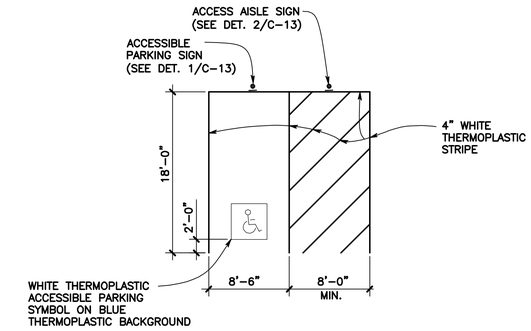
SHEET
C-12
13 OF



NOTE:
SEE DETAIL 3/C-13 FOR SIGN POST DETAILS

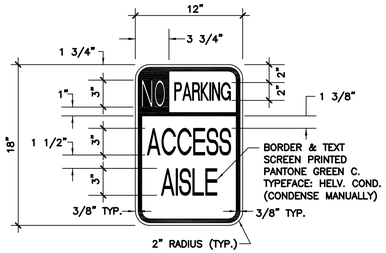
STANDARD ACCESSIBLE

1 C-13 TYPICAL RESERVED PARKING SIGN
NOT TO SCALE



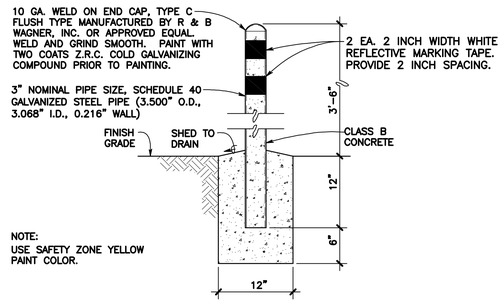
STANDARD ACCESSIBLE STALL WIDTH:
A. 8'-6" PARKING W/ 8'-0" ACCESSIBLE AISLE

4 C-13 ACCESSIBLE PARKING DETAIL
NOT TO SCALE

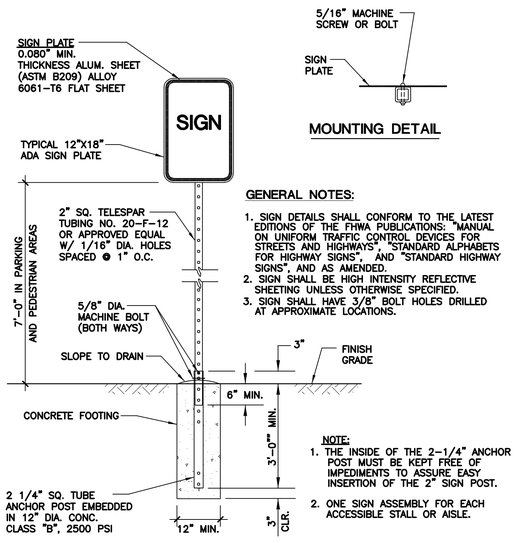


NOTE:
SEE DETAIL 3/C-13 FOR SIGN POST DETAILS

2 C-13 TYPICAL ACCESS AISLE SIGN
NOT TO SCALE



5 C-13 PIPE BOLLARD
SCALE: 1" = 1'-0"



MOUNTING DETAIL

GENERAL NOTES:

1. SIGN DETAILS SHALL CONFORM TO THE LATEST EDITIONS OF THE FHWA PUBLICATIONS: "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", "STANDARD ALPHABETS FOR HIGHWAY SIGNS", AND "STANDARD HIGHWAY SIGNS", AND AS AMENDED.
2. SIGN SHALL BE HIGH INTENSITY REFLECTIVE SHEETING UNLESS OTHERWISE SPECIFIED.
3. SIGN SHALL HAVE 3/8" BOLT HOLES DRILLED AT APPROXIMATE LOCATIONS.

NOTE:

1. THE INSIDE OF THE 2-1/4" ANCHOR POST MUST BE KEPT FREE OF IMPEDIMENTS TO ASSURE EASY INSERTION OF THE 2" SIGN POST.
2. ONE SIGN ASSEMBLY FOR EACH ACCESSIBLE STALL OR AISLE.

3 C-13 ACCESSIBLE SIGN POST DETAIL
NOT TO SCALE

FUKUMOTO ENGINEERING, INC.
Civil Engineering &
Land Surveying Consultants

1721 Wili Pa Loop, Suite 203
Wailuku, Hawaii 96793

Phone: (808) 242-8611
Email: office@femaui.com
Website: www.femaui.com

Prepared for:

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TRANSIT HUB
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MISCELLANEOUS DETAILS

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LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.

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LICENSE EXPIRES: 04/30/2020

DESIGNED BY:	O.M.
DRAWN BY:	O.M.
CHECKED BY:	M.S.
DATE:	AUGUST 7, 2020
FILE NO:	COM81

SHEET C-13
14 OF

PLANTING LEGEND

MILO TREE - Thespesia populnea
(2" Cal., 25 Gal.)

LOULU PALM TREE - Pritchardia hille□randii
(8' Tnk Ht.)

HAU - Hi□iscus tiliaceus (15 Gal.)

RED TI - Cordyline fruticosa (1 Gal.)

CROTON, MIXED - Codiaeum □ariegatum (1 Gal.)

QUEEN EMMA LILY - Crinum augustum (5 Gal.)

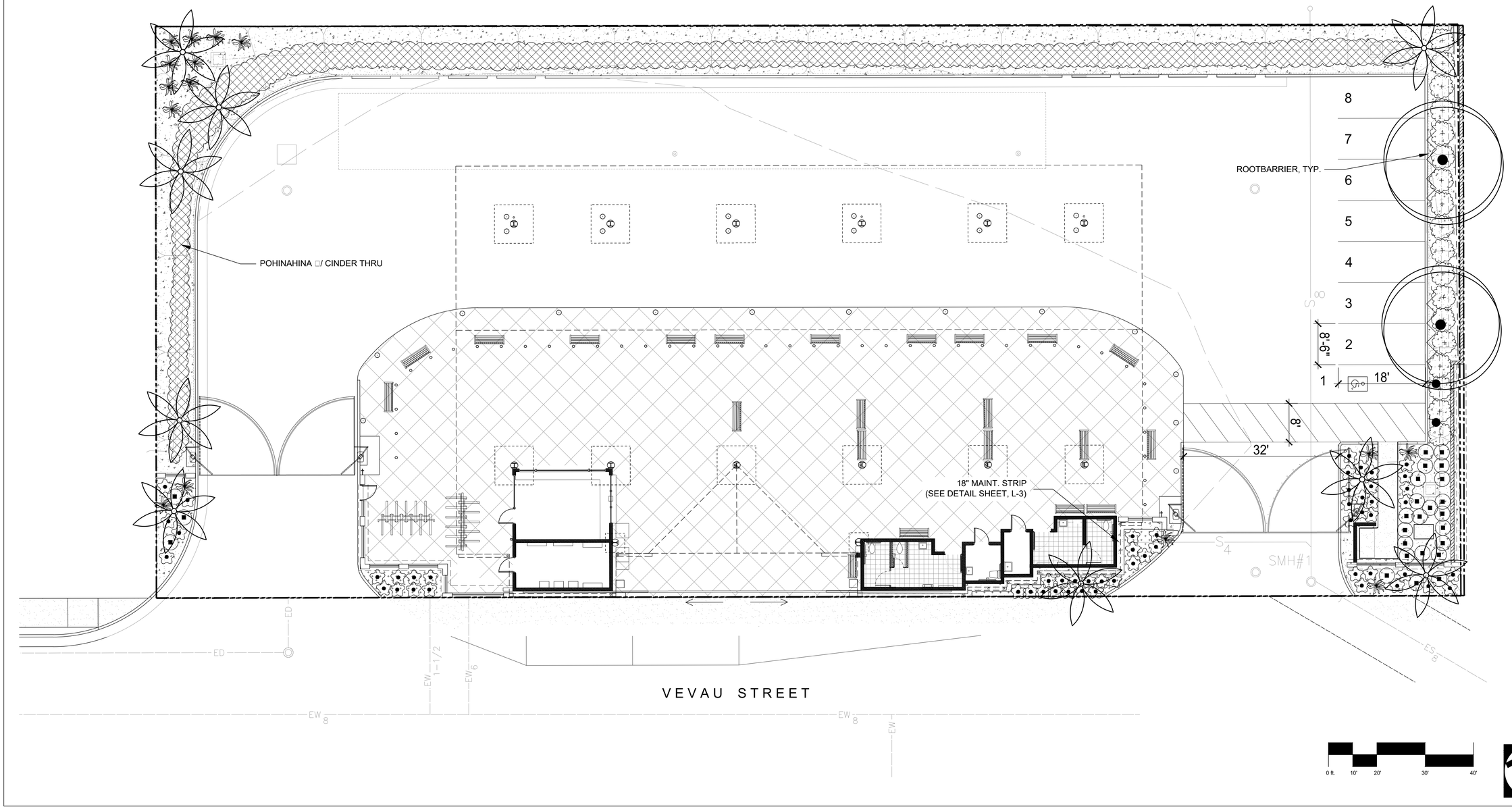
POHINAHINA - Vitex rotundifolia (4" Pots, 18" O.C.)

Crushed La□a Cinder, 3/4" minus, 2" deep

SHEET LEGEND

NOTES:

1 - ALL TREES TO BE LOCATED IN THE R.O.W. WHERE POSSIBLE.
2 - ALL STREET TREE LOCATIONS ARE APPROXIMATE & WILL BE ADJUSTED 'IN-THE-FIELD' BY LANDSCAPE CONTRACTOR TO HAVE A 8'-0" CLEAR ZONE TO ALL UTILITIES INCLUDING WATER MAINS, FIRE HYDRANTS, AND SERVICE LATERALS. (AS PER DEPARTMENT OF WATER SUPPLY REQUIREMENTS)
3 - ALL STREET TREES TO HAVE 10'-0" OF ROOT BARRIER INSTALLED AT BACK OF CURB. ADDITIONAL ROOTBARRIER TO BE INSTALLED WHEN "CLEAR ZONE" CANNOT BE ACCOMMODATED.
4 - ALL LANDSCAPE MATERIAL TO BE WATERED USING AN AUTOMATIC IRRIGATION SYSTEM.
5 - SEE CIVIL PLANS FOR ALL GRADING AND RETAINING WALLS.
6 - 18" MAINTENANCE STRIP WITH CINDER AROUND ALL BUILDINGS.



0 ft. 10' 20' 30' 40'

HAWAII LAND DESIGN
LANDSCAPE ARCHITECTS
LAND PLANNERS, LLC
PO BOX 880479
PUKALANI, HI 96788
TELEPHONE: (808) 385-2859
FACSIMILE:(808) 249-2804

KAHULUI TRANSIT HUB

Kahului, Maui HI 96732
TMK: (2) 3-7-004 : 003

WILLIAM MITCHELL
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 9173
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION

Signature Expires 04-30-22

PERMIT SET

PLANTING PLAN

Scale: 1"= 20'-0"

1	AUGUST 10, 2020
2	-
3	-
4	-
5	-
6	-
7	-

Designed by	WM
Drawn by	-
Checked by	WM
Date	FEB 28, 2020
File No.	18-014

SHEET L-1

1 of 4 sheets

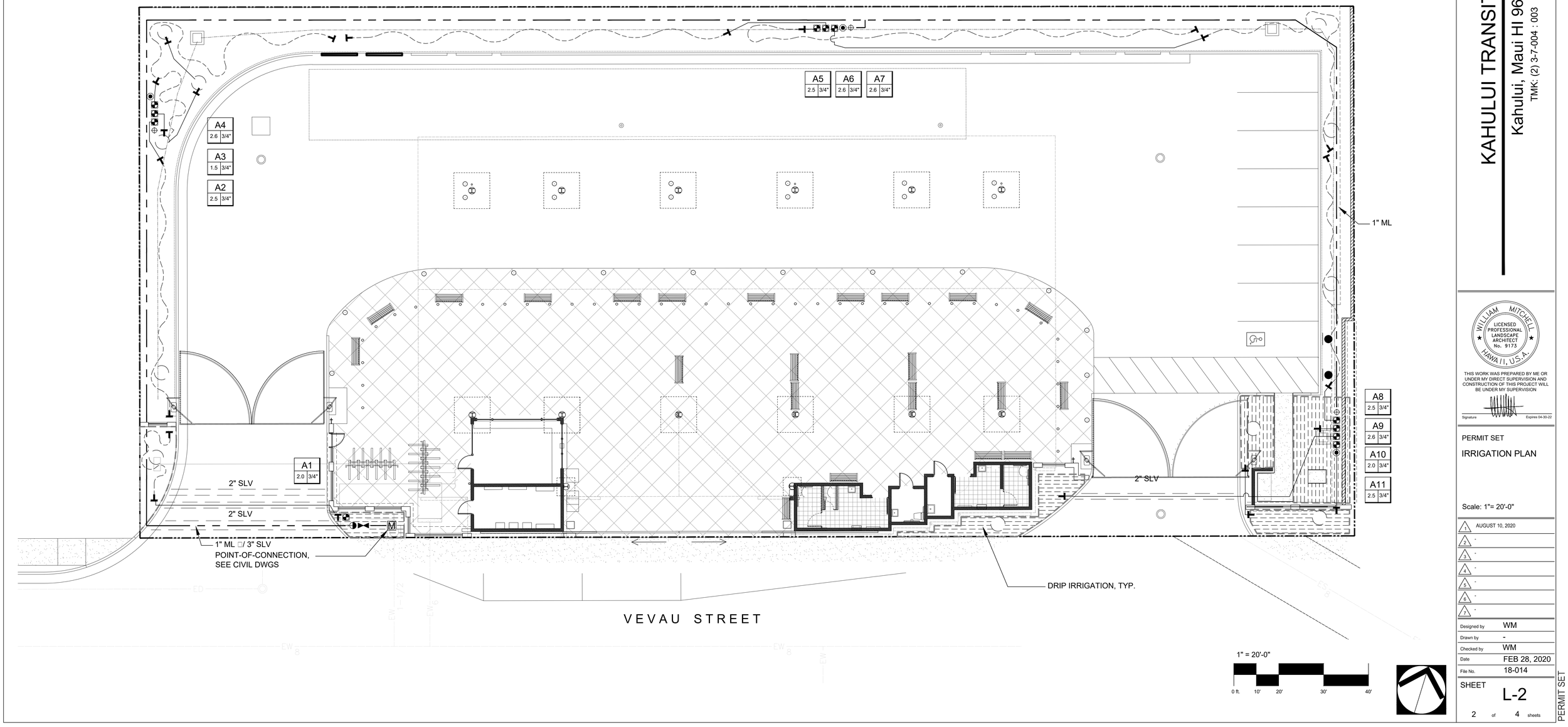
PERMIT SET

IRRIGATION LEGEND:

EQUIPMENT - HEADS

SYMBOL	HEAD	PSI	DETL
	HUNTER CONTROL DRIP KIT	ICZ-101	
	HUNTER DRIP SYSTEM ZONE	EMITTER @ 12" X 12" GRID SPACING SIZE PER PLAN	
	HUNTER PLD-06 DRIP LINE	WITH (PLD-AVR) AIR / VACCUUM RELIEF VALVE	
	TREE RING DRIP SYSTEM	30 | RAINBIRD XFD SERIES 1/4" DRIPLINE	
	HUNTER DRIP END CAP	DRIP ASSEMBLY - 0.6 GPH @ 18" O.C.	
	HUNTER ICV SERIES, 1"	ICV SERIES SIZE PER PLAN	
	NIBCO BRASS GATE VALVE	TI-7 1/4" TO 4" SIZE PER PLAN	
	NIBCO BALL VALVE	4660-S 1/4" TO 4" SIZE PER PLAN	
	RAINBIRD QUICK COUPLER	3/4" 33RC	
	LATERAL SCH. 40 PVC	SIZE PER PLAN	
	SLEEVE SCH. 40 PVC	SIZE PER PLAN	
	MAINLINE SCH. 40 PVC	SIZE PER PLAN	
	FEBCO 825Y BACKFLOW	1" ON (P.O.C.) REFER TO CIVIL PLAN.	
	HUNTER I-CORE CONTROLLER	OUTDOOR PLASTIC ENCLOSURE W/ BUILT IN SOLAR SYNC	
M	WATER METER	FIELD VERIFY FOR LOCATION. SEE CIVIL PLAN.	

STATION
VALVE SIZE
GPM



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Signature Expires 04-30-22

PERMIT SET

IRRIGATION PLAN

Scale: 1"= 20'-0"

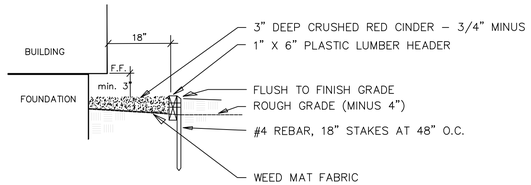
1	AUGUST 10, 2020
2	-
3	-
4	-
5	-
6	-
7	-

Designed by	WM
Drawn by	-
Checked by	WM
Date	FEB 28, 2020
File No.	18-014

SHEET L-2

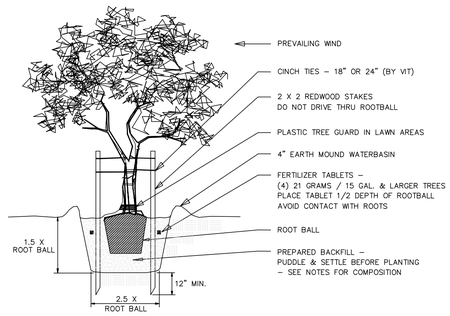
2 of 4 sheets

PERMIT SET



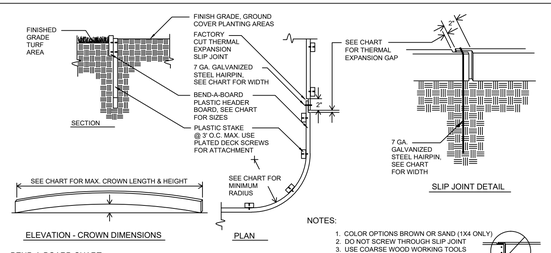
E MAINTENANCE STRIP DETAIL

SECTION SCALE: N.T.S.



A TREE PLANTING DETAIL

SECTION SCALE: N.T.S.



BEND-A-BOARD CHART

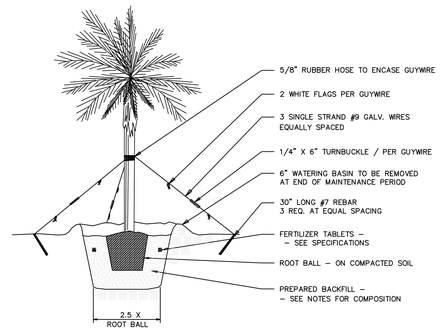
HDR. SIZE	ACTUAL DIMENSIONS	MINIMUM RADIUS POSSIBLE	MAXIMUM CROWN POSSIBLE	THERMAL EXPANSION GAP AT SLIP JOINT	SLIP JOINT HAIRPIN DIMENSIONS
2 X4	3 3/8" X 5/16" X 20'	6"	22" / 20'	N/A	N/A
1X4	3 3/8" x 11/16" x 20'	24"	19" / 20'	1/4" - 1/2"	3/4" ID x 13"
2X4	3 3/8" x 1 3/8" x 20'	36"	16" / 20'	1/2" - 3/4"	1 1/2"ID x 13"
1X6	5 3/8" x 11/16" x 20'	24"	9" / 20'	1/2" - 3/4"	3/4" ID x 13"
2X6	5 3/8" x 1 3/8" x 16'	36"	N/A	3/4" - 1"	N/A

MANUFACTURED BY: EPIC PLASTICS, 104 EAST TURNER RD., LODI CA 95240
URL ADDRESS: www.epicplastics.com

NOTES:
1. COLOR OPTIONS BROWN OR SAND (1X4 ONLY)
2. DO NOT SCREW THROUGH SLIP JOINT
3. USE COARSE WOOD WORKING TOOLS FOR CUTTING & DRILLING
4. USE PLATED SCREWS OR RING SHANK NAILS TO JOIN BOARD TO STAKE
5. ALLOW FOR THERMAL EXPANSION & CONTRACTION BY LEAVING GAPS IN THE SLIP JOINTS OR AT THE END OF THE RUN (SEE CHART)
   WARM WEATHER INSTALL MIN GAP
   COLD WEATHER INSTALL MAX GAP
6. STAKE APPROX 3' 0" OC (MORE FOR STRAIGHT RUNS LESS FOR CURVES)

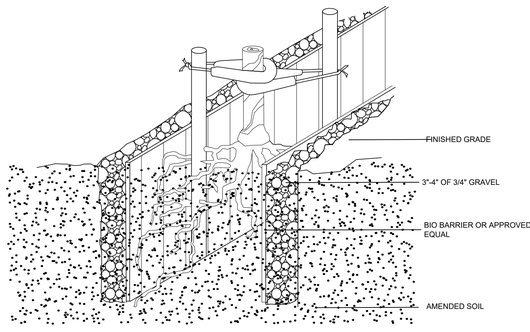
F BEND-A-BOARD PLASTIC HEADER DETAIL

SECTION SCALE: N.T.S.



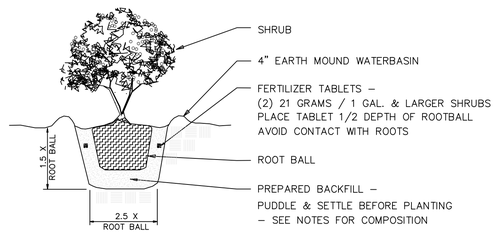
B PALM PLANTING DETAIL

SECTION SCALE: N.T.S.



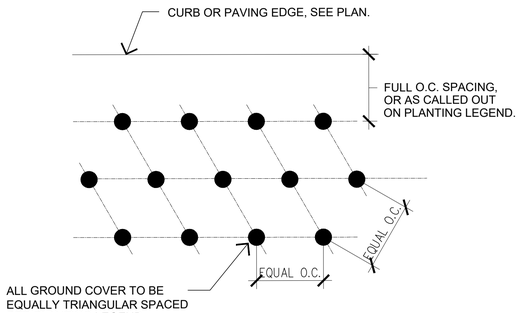
G ROOT BARRIER

SECTION SCALE: N.T.S.



C SHRUB PLANTING DETAIL

SECTION SCALE: N.T.S.



D GROUND COVER SPACING

SECTION SCALE: N.T.S.

GENERAL NOTES

GRADING

1. Landscape Contractor shall maintain a minimum 1% drainage away from all buildings and finish grades shall be smoothed to eliminate ponding or standing water. Fine grade all planting areas prior to commencement of planting operation. The Landscape Contractor shall coordinate with all trades and maintain drainage during construction.
2. Rough grade (i.e. finish grade less 4") to be provided by others in landscape areas.
3. Place Jute Mesh over slope areas 2:1 or greater.

SOIL PREPARATION

1. Evenly spread 4" layer (after settlement) of imported Amended Cinder Topsoil Mix topsoil over all planting areas, unless otherwise specified.
2. Pre-mix AMENDED CINDER TOPSOIL MIX as follows:
   1/3 screened Topsoil: 1/3 Cinder (3/8" minus): 1/3 Organic Compost
3. Uniformly distribute 10-30-10 fertilizer at a rate of 10 lbs. per 1000 sq. ft.

PLANTING:

1. Plant quantities shown in the legend are for the Contractor's reference only. The Contractor shall verify all quantities before bidding. The Contractor is responsible for providing sufficient material to cover all areas shown on the plans.
2. Plant materials shall be in quantities and sizes specified and be spotted approximately as shown on the plans after the site is graded. The Landscape Architect shall approve these locations before plants are removed from containers and any excavation for plant pits begin.
3. Plant material is subject to change by Landscape Architect or Owner based on availability, functional and aesthetic considerations.
4. Contractor shall obtain Landscape Architect's approval prior to any substitutions for material specified on the plans.
5. Contractor shall layout lawn areas for Landscape Architect's approval prior to any installation of planting or irrigation.
6. Shrubs and trees shall have ground cover planted under them as shown by adjacent symbol. Areas not receiving ground cover shall have mulch evenly under shrubs as called for in the materials legend.
7. Ground cover shall be planted using triangular spacing.
8. Vines and espaliers shall be secured to adjacent fences, posts or walls using vine ties. Remove nursery stakes or trellis.
9. Contractor shall guarantee plant longevity as follows: Trees one year; Shrubs and Ground covers for three months. This period to begin at the end of the maintenance period and after final acceptance.
10. All planted and irrigated areas shall be subject to a ninety (90) day maintenance period. Formal maintenance period shall begin when installation is approved by Landscape Architect.
11. Root barriers as shown on plans shall be installed as per the manufacturer's specifications.
12. Contractor shall be aware of all new utility locations prior to excavation. See Civil, Mechanical and Electrical drawings.
13. Large specimen trees and palms shall be guyed as required for healthy plant establishment.
14. Refer to Landscape Specifications for additional information regarding material and installation requirements.

HAWAII LAND DESIGN
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KAHULUI TRANSIT HUB

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TMK: (2) 3-7-004 : 003

WILLIAM MITCHELL
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HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION

Signature Expires 04-30-22

PERMIT SET

LANDSCAPE DETAILS & NOTES

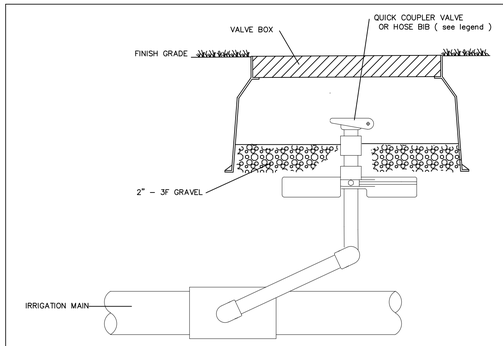
Scale: As Noted

Designed by	WM
Drawn by	-
Checked by	WM
Date	FEB 2020
File No.	18-014

SHEET L-3

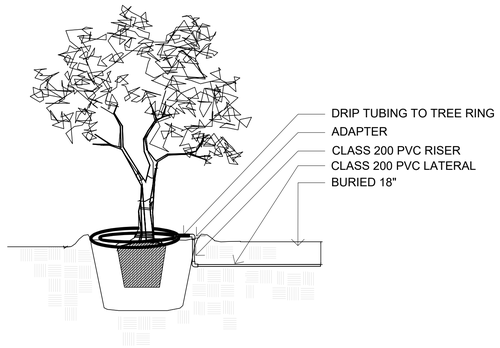
3 of 4 sheets

PERMIT SET



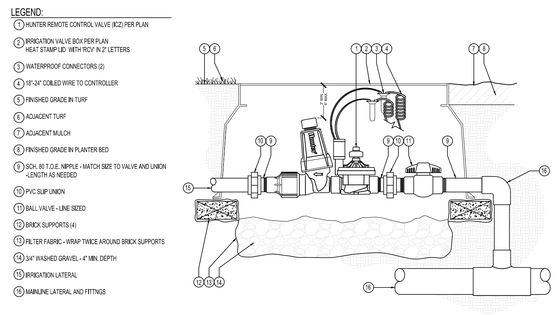
K QUICK COUPLER / HOSE BIB

SECTION SCALE: N.T.S.



G TREE DRIP RING IRRIGATION

SECTION SCALE: N.T.S.



LEGEND:

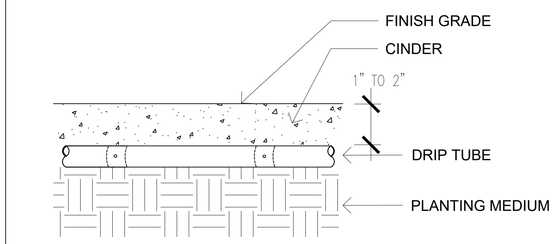
1. HUNTER REMOTE CONTROL VALVE (ICZ) PER PLAN
2. IRRIGATION VALVE BOX PER PLAN
   HEAT STAMP LID WITH 'ROY IN 2" LETTERS
3. WATERPROOF CONNECTORS (2)
4. 18"-24" COILED WIRE TO CONTROLLER
5. FINISHED GRADE IN TURF
6. ADJACENT TURF
7. ADJACENT MULCH
8. FINISHED GRADE IN PLANTER BED
9. SCH. 80 T.O.E. NIPPLE - MATCH SIZE TO VALVE AND UNION
   LENGTH AS NEEDED
10. PVC SLIP UNION
11. BALL VALVE - LINE SIZED
12. BRICK SUPPORTS (4)
13. FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
14. 3/4" WASHED GRAVEL - 4" MIN. DEPTH
15. IRRIGATION LATERAL
16. MAINLINE LATERAL AND FITTINGS

C HUNTER CONTROL DRIP VALVE - ICZ-101-LF

SECTION SCALE: N.T.S.

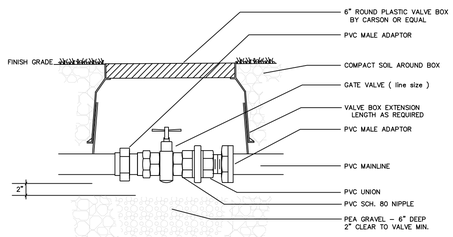
IRRIGATION GENERAL NOTES

1. 110 po□er to controllers to □e pro□ided □y general contractor. Irrigation contractor is responsi□le for coordinating controller placement □ith general contractor.
2. Install lo□ head check □al□es on any heads re□uiring them due to lo□ head drainage.
3. Coordinate irrigation slee□es and conduit placement □ith the general contractor.
4. All pressure pipe and control □ire shall □e placed in sch. 40 p□c slee□es if crossing under pa□ing or through □alls.
5. All irrigation heads to □e placed min. 6" from all □alks and □alls and 18" from any □uildings unless noted other□ise.
6. Val□e □oxes should □e located a□ay from □alks and high □isi□ility areas and □e set flush □ith finished grade.
7. Contractor shall pro□ide t□o spare □ires from the furthest □al□e or manifold to each controller.
8. Rain□ird 'Pen-tite' connectors or e□ual shall □e used at all □ire connections □elo□ grade.
9. Contractor is responsi□le for making any ad□ustments to the system necessary to ensure 100% head to head co□erage □ithout spraying □uildings or □alls.
10. Contractor shall install pressure regulating □al□es if static operating pressure exceeds maximum operating pressure of the head specified.
11. Contractor shall □erify static pressure at P.O.C. necessary to operate system as designed at minimun 75 p.s.i. prior to commencing □ork.
12. Contractor is responsi□le for the □erification of all utility lines. Any utilities damaged as a result of the contractor's operation shall □e repaired at the contractor's expense. The irrigation contractor shall coordinate closely □ith the general contractor to limit damage to ne□ utilities and structures.
13. Contractor to stake alignment of la□n areas in field for appro□al □y Landscape Architect prior to trenching lateral systems.
14. Contractor shall la□el all □al□es □ith □ater proof tags indicating the controller station operating them.
15. All materials and □ork shall □e guaranteed for one year from □ritten acceptance □y the O□ner or his representati□e. Contractor shall repair and/or replace any defecti□e parts or components of the irrigation system immediately □ithin the guarantee period at no cost to the O□ner.
16. The Contractor shall, at the completion of all □ork, pro□ide the O□ner □ith one set of "AS-BUILT" dra□ings.
17. Contractor shall refer to □ritten specifications accompanying these plans for additional information.
18. Install Hunter Rain Sensor and see plan for the location.
19. Drip irrigation tu□ing is to □e co□ered □ith cinder or soil so it is not □isi□le.
20. Contractor shall install riser □ith re□ar-stake on all slopes, and the pop-up shall □e install close to □alk□ay, parking, pedestrian, and planter areas.
21. Val□e station num□ering sho□n are for information only. Final □al□e stationing shall □e ad□usted and coordinated □ith actual construction phasing. Ad□ustments shall □e recorded on as-□uilt documents.
22. Due to county □aterial constraints, maximum single time irrigation flo□ shall not exceed 50 GPM. To minimi□e total irrigation run time, □al□es shall □e paired □here reasona□le such as not to exceed 50 GPM at any scheduled run time.
23. Val□es shall □e paired □ased on similar exposures and plant re□uirements.
24. More than t□o drip systems may □e grouped together at any single scheduled run time, keeping maximum flo□ under 50 GPM.
25. Spray systems shall □e operated during late e□ening through early morning hours so as not to □e intrusi□e on normal acti□ities. Drip systems may □e run at other peak hour times.
26. Pipes, □al□es and slee□es are sho□n diagrammatically. Install □ithin landscaped areas



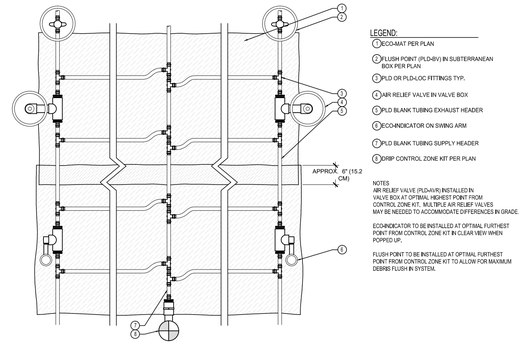
L DRIP TUBING BURIAL DETAIL

SECTION SCALE: N.T.S.



H GATE VALVE (3" OR SMALLER)

SECTION SCALE: N.T.S.



LEGEND:

1. ECO-MAT PER PLAN
2. FLUSH POINT (PLD-MBV) IN SUBTERRANEAN BOX PER PLAN
3. PLD OR PLD-LOC FITTINGS TYP.
4. AIR RELIEF VALVE IN VALVE BOX
5. PLD BLANK TUBING EXHAUST HEADER
6. ECO-INDICATOR ON SWING ARM
7. PLD BLANK TUBING SUPPLY HEADER
8. DRIP CONTROL ZONE KIT PER PLAN

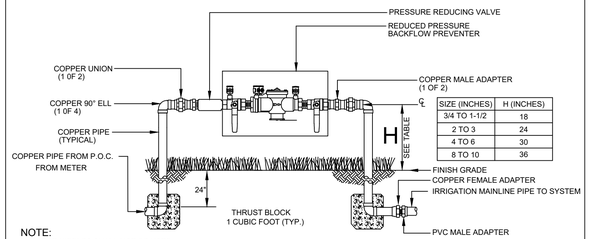
NOTES
AIR RELIEF VALVE (PLD-MVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE.

ECO-INDICATOR TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT IN CLEAR VIEW WHEN POPPED UP.

FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.

D HUNTER ECO-MAT IRRIGATION

SECTION SCALE: N.T.S.



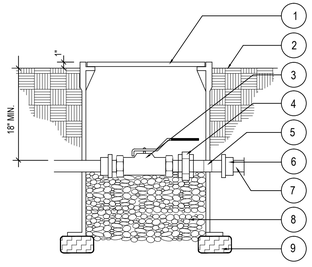
SIZE (INCHES)	H (INCHES)
3/4 TO 1-1/2	18
2 TO 3	24
4 TO 6	30
8 TO 10	36

NOTE:

1. CLOSE NIPPLES SHALL NOT BE USED
2. INSTALL AS PER MANUFACTURERS SPECIFICATIONS.
3. ALL FITTINGS SHALL BE RED BRASS UNLESS OTHERWISE NOTED.
4. BACKFLOW PREVENTER ASSEMBLY SHALL BE TESTED UPON INSTALLATION BY A CERTIFIED BACKFLOW DEVICE TESTER. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN CERTIFIED TEST RESULTS PRIOR TO THE BACKFLOW PREVENTER ASSEMBLY'S ACCEPTANCE BY THE ENGINEER.

M BACKFLOW PREVENTER

SECTION SCALE: N.T.S.



LEGEND

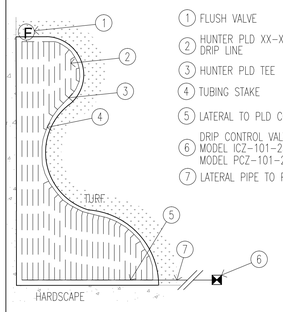
1. ROUND PLASTIC VALVE BOX, W/ LOCKING COVER WITH BRANDING.
2. FINISH GRADE.
3. BRASS BALL VALVE. SEE IRRIGATION LEGEND.
4. BRASS UNION.
5. BRASS NIPPLE, TYP.
6. PVC ADAPTER.
7. PVC MAINLINE.
8. 1 CU. FT. PEA GRAVEL.
9. BRICK BLOCKING FOR SUPPORT.

NOTE

a. COLOR OF VALVE BOX SHALL BE GREEN IN ALL TURF AREAS AND TAN IN ALL AREAS WITH CINDER OR MULCH.

I BALL VALVE

SECTION SCALE: N.T.S.



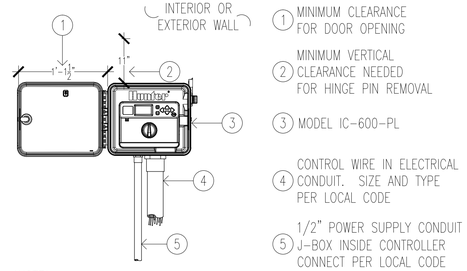
1. FLUSH VALVE
2. HUNTER PLD XX-XX-XX DRIP LINE
3. HUNTER PLD TEE
4. TUBING STAKE
5. LATERAL TO PLD CONNECTION
6. DRIP CONTROL VALVE HUNTER: MODEL ICZ-101-25(40) OR MODEL PCZ-101-25(40)
7. LATERAL PIPE TO PLANTING BED

NOTES:

1. SIZE EMITTER FLOW AND SPACING BASED ON PLANT AND SOIL TYPE.
2. ROW SPACING OF PLD TUBING BASED ON PLANT AND SOIL TYPE.
3. STAKE TUBING DOWN EVERY 5' AND WITHIN 1' OF ALL FITTING OUTLETS.
4. DO NOT EXCEED VELOCITY OF 5 FPS WITHIN TUBING, IF SIZE OF DRIP AREA CREATES VELOCITIES GREATER THAN 5 FPS USE STANDARD LATERAL PIPE TO CREATE SUPPLY HEADER FOR THE DRIP AREA.
5. INSTALL FLUSH VALVE AT POINT FURTHEST FROM SUPPLY POINT.
6. THROUGHLY FLUSH LATERAL AND DRIPLINE PRIOR TO FINAL CONNECTIONS
7. TEST DRIP LINE FOR PROPER OPERATION PRIOR TO COVERING.

E PLD DRIP TUBING SAMPLE LAYOUT

SECTION SCALE: N.T.S.

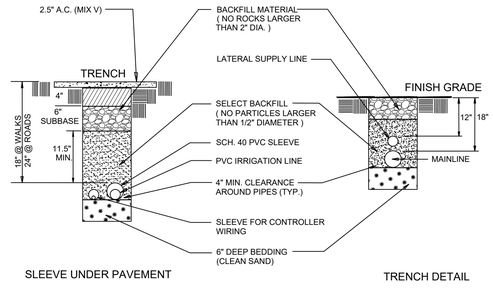


1. MINIMUM CLEARANCE FOR DOOR OPENING
2. MINIMUM VERTICAL CLEARANCE NEEDED FOR HINGE PIN REMOVAL
3. MODEL IC-600-PL
4. CONTROL WIRE IN ELECTRICAL CONDUIT. SIZE AND TYPE PER LOCAL CODE
5. 1/2" POWER SUPPLY CONDUIT J-BOX INSIDE CONTROLLER CONNECT PER LOCAL CODE

NOTE
24 STATION MODEL CONTROLLER. MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL. CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 or 220 VAC SOURCE.

A HUNTER CONTROLLER - I-CORE W/ SOLAR SYNC

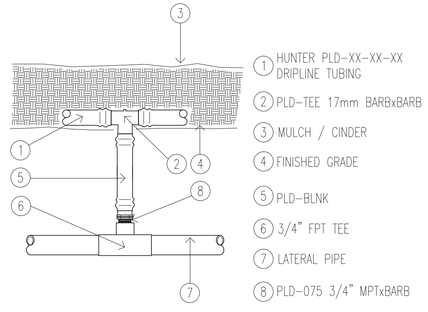
SECTION SCALE: N.T.S.



SLEEVE UNDER PAVEMENT TRENCH DETAIL

J PIPE SLEEVE & TRENCH DETAIL

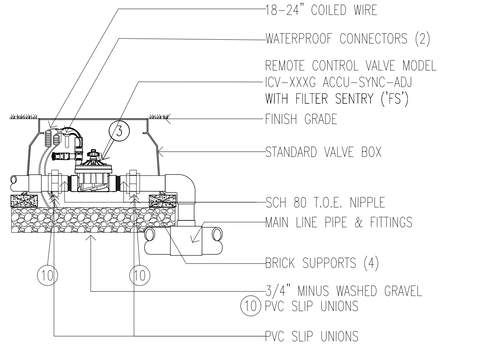
SECTION SCALE: N.T.S.



1. HUNTER PLD-XX-XX-XX DRIPLINE TUBING
2. PLD-TEE 17mm BARBxBARB
3. MULCH / CINDER
4. FINISHED GRADE
5. PLD-BLNK
6. 3/4" FPT TEE
7. LATERAL PIPE
8. PLD-075 3/4" MPTxBARB

F PLD CONNECTION DETAIL

SECTION SCALE: N.T.S.



B HUNTER VALVE - ICV-AS-ADJ

SECTION SCALE: N.T.S.

HAWAII LAND DESIGN
LANDSCAPE ARCHITECTS
LAND PLANNERS, LLC
PO BOX 880479
PUKALANI, HI 96768
TELEPHONE: (808) 385-2859
FACSIMILE:(808) 249-2804

KAHULUI TRANSIT HUB

Kahului, Maui HI 96732

TMK: (2) 3-7-004 : 003

LICENSED PROFESSIONAL LANDSCAPE ARCHITECT No. 9173 WILLIAM MITCHELL HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION

Signature Expires 04-30-22

PERMIT SET

IRRIGATION DETAILS & NOTES

Scale: As Sho□n

1	-
2	-
3	-
4	-
5	-
6	-
7	-

Designed by	WM
Drawn by	-
Checked by	WM
Date	FEB 2020
File No.	18-014

SHEET L-4

4 of 4 sheets

PERMIT SET

2020-07-28 DSA REVISIONS

COMM. ENERGY CODE CERTIFICATE

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
COMMERCIAL PROVISIONS

COMPLIANCE METHOD
CHECK APPLICABLE METHOD

☐	C401.2(1) ANSI/ASHRAE/IESNA 90.1
☒	C401.2(2) SECTIONS C402 THROUGH C406
☐	C401.2(3) SECTIONS C402.5, C403.2, C404, C405.2, 405.3, C405.4, C405.6 & C407
☐	C102.1 ALTERNATIVE

TO THE BEST OF KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE ENERGY CODE.

SIGNATURE: _____ DATE: 6-17-19
NAME: ANTHONY RIECKE GONZALES
TITLE: ARCHITECT
LICENSE NO.: #6471

CODE SUMMARY

Applicable Codes:

1. International Building Code, 2006 Edition
   a. Modified by Ordinance #3928, 2012
2. Uniform Plumbing Code, 2006 Edition
   a. Modified by Ordinance #3923, 2012
3. National Electrical Code, 1999 Edition
   a. Modified by Ordinance #2871, 2000
4. Uniform Fire Code, 1997 Edition
   a. Modified by Ordinance #3354, 2006
5. International Energy Conservation Code, 2006 Edition
   a. Modified by Ordinance #3865, 2009
6. Accessible Means of Egress:
   International Building Code, 2003 Edition, Section 1007
   a. per ADAAG 207.1

Project Description:

COMMERCIAL BUS HUB

OCCUPANCY GROUP:	A3
TYPE OF CONSTRUCTION:	V-B
ALLOWABLE AREA:	5,500 X 2 F.S. =11,000 S.F.
BUILDING AREA:	8,500 S.F.
MAXIMUM HEIGHT:	50 ft./ 2 stories
ACTUAL HEIGHT:	29'-0"
FIRE SPRINKLER SYSTEM:	YES
FIRE EXTINGUISHERS:	YES
OCCUPANCY LOAD REQUIREMENT:	see occupancy load summary
MINIMUM EXITS (3 REQUIRED):	3

Fire Resistive Requirements for Type V-B Construction: (2006 IBC, Table 601)

1. Structural Frame:	0 hr.
2. Bearing walls, Exterior:	0 hr.
3. Bearing walls, Interior:	0 hr.
4. Nonbearing walls and partitions, Exterior:	0 hr.
5. Nonbearing walls and partitions, Interior:	0 hr.
6. Floor Construction:	0 hr.
7. Roof Construction:	0 hr.

Exit Width:

Exit width = total occupant load 513 x 0.15 (2006 IBC, Table 1005.1)
78 inches/ 3 EXIT = 36" MINIMUM EACH EXIT.

Distance to Exits:

The maximum length of exit access travel shall not exceed the distances given in 2006 IBC Table 1016.1. (200 ft.)
The maximum travel distance in this building is 135 feet.

Occupancy Category:

Category II - Buildings and other structures except those listed in Occupancy Categories I, III and IV. (Table 1604.5)

Wind Loads:

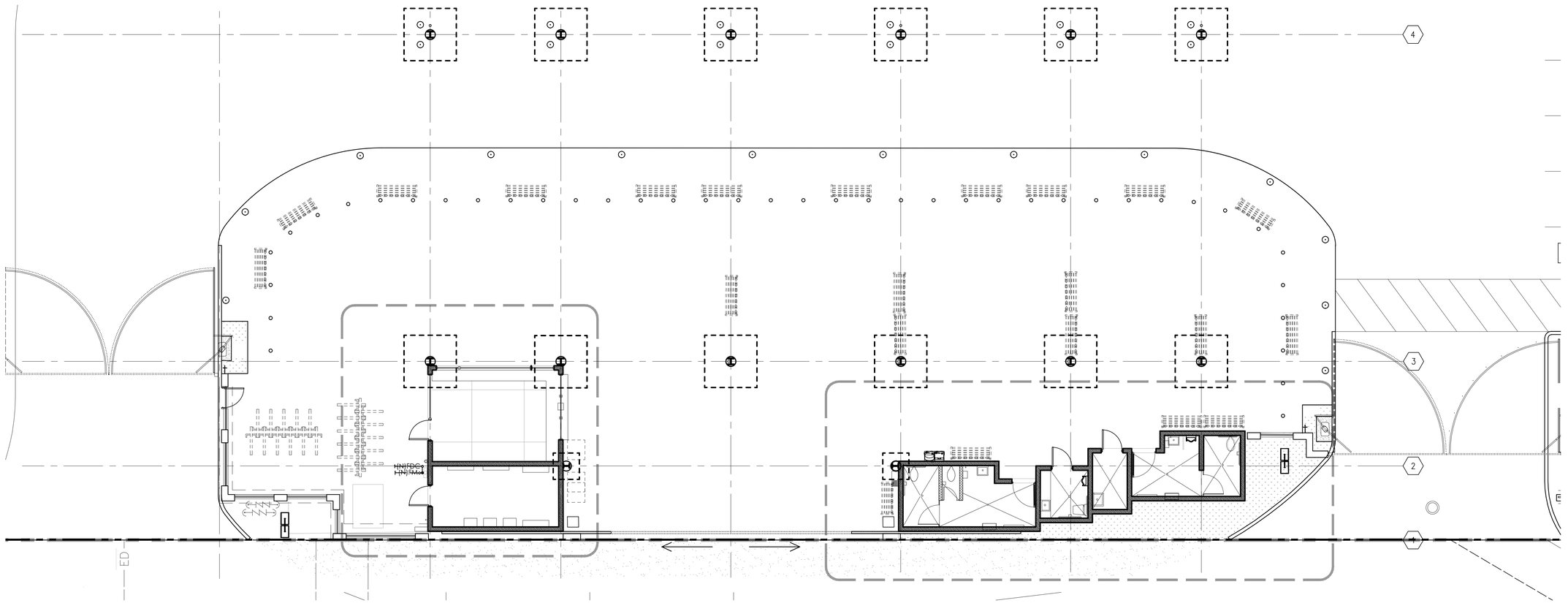
Effective Wind Speed:	90 MPH	(1609.3.2 Effective Basic Wind Speed)
Wind Topographic Factor:	1.0	(1609.3.3 Topographic Effects)
Exposure Category:	B	(1609.4.4 Exposure Category Maps)

PROJECT INFORMATION

BUILDING ADDRESS:	VEVAU STREET WAILUKU, MAUI, HAWAII 96793
TAX MAP KEY: LOT AREA:	(2) 3-7-004:003 5 ACRES (.85 LEASE AREA)
COUNTY ZONING:	B-2 COMMUNITY BUSINESS
STATE LAND USE:	Urban
FLOOD ZONE:	X
SEWER:	SEWER
BUILDING AREA:	8,500 S.F.

OCCUPANCY LOAD SUMMARY

ROOM OCCUPANCY	AREA (SF)	SF PER PERSON	NO. OF PERSONS	NO. OF REQ. EXITS	WIDTH (in.)
WAITING AREA	7,700	15	513	3	0.15
OFFICE	272	100	2	1	0.15
Women's Restroom	172	100	2	1	0.15
Men's Restroom	142	100	2	1	0.15
Janitor	52	300	1	1	0.15
TOTAL OCCUPANT LOAD:			520		



1 EXITING PLAN
1/8"=1'-0"

RIECKE SUNNLAND KONO ARCHITECTS, LTD
33 LONO AVENUE STE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7688

ANTHONY RIECKE GONZALES
LICENSED PROFESSIONAL ARCHITECT
No. 6471
HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

OCCUPANCY & EXITING PLAN

REVISIONS:
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET
2020-07-28 DSA REVISIONS
AUGUST 7, 2020 BID SET

SHEET A0.1 OF
PROJECT NO. 2018-018
DATE MAY, 2018

GENERAL NOTES

1. THE CONTRACT DOCUMENTS ARE ENUMERATED IN THE AGREEMENT BETWEEN THE OWNER AND CONTRACTOR AND CONSIST OF THE AGREEMENT, CONDITIONS OF THE CONTRACT (GENERAL, SUPPLEMENTARY AND OTHER CONDITIONS), DRAWINGS, SPECIFICATIONS, ADDENDA ISSUED PRIOR TO THE EXECUTION OF THE CONTRACT, OTHER DOCUMENTS LISTED IN THE AGREEMENT AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT, THE CONTRACTOR SHALL COMPLY WITH AND GIVE NOTICES REQUIRED BY APPLICABLE LAWS, STATUTES, ORDINANCES, CODES, RULES AND REGULATIONS, AND LAWFUL ORDERS OF THE PUBLIC AUTHORITIES APPLICABLE TO PERFORMANCE OF THE WORK.

2. THE TERMS "GENERAL CONTRACTOR, G.C., CONSTRUCTION MANAGER/MANAGEMENT AND "CONTRACTOR" SHALL BE UNDERSTOOD TO BE THE SAME UNLESS SPECIFICALLY NOTED OTHERWISE.

3. THE TERM "WORK" MEANS THE CONSTRUCTION AND SERVICES REQUIRED BY THE CONTRACT DOCUMENTS, WHETHER COMPLETED OR PARTIALLY COMPLETED, AND INCLUDES ALL OTHER LABOR, MATERIALS, EQUIPMENT AND SERVICES PROVIDED OR TO BE PROVIDED BY THE CONTRACTOR TO FULFILL THE CONTRACTOR'S OBLIGATIONS. THE WORK MAY CONSTITUTE THE WHOLE OR PART OF THE PROJECT. IF THE CONTRACTOR PERFORMS WORK KNOWING TO BE THE CONTRARY TO APPLICABLE LAWS, STATUES, ORDINANCES, CODES, RULES, REGULATIONS, OR LAWFUL ORDERS OF THE PUBLIC AUTHORITIES, THE CONTRACTOR SHALL ASSUME APPROPRIATE RESPONSIBILITY FOR SUCH WORK AND SHALL BEAR THE COSTS ATTRIBUTABLE TO THE CORRECTION. THE GENERAL CONTRACTOR SHALL VERIFY ALL JOB CONDITIONS, DIMENSIONS AND DETAILS PRIOR TO CONSTRUCTION, AND AS ANTICIPATED OR INFERRED PRIOR TO PRICING OR BIDDING.

4. PRIOR TO THE START OF ANY AND ALL WORK. RIECKE SUNNLAND KONO ARCHITECTS LTD SHALL BE NOTIFIED OF ANY DISCREPANCIES OR OMISSIONS WHICH WOULD INTERFERE WITH THE SATISFACTORY COMPLETION OF THE WORK.

5. THE CONTRACTOR SHALL HAVE EXPERIENCE ON AT LEAST TWO PROJECTS OF SIMILAR SIZE, COMPLEXITY AND QUANTITY AT LEAST EQUAL TO THOSE REQUIRED UNDER ALL DIVISIONS DETAILED IN THESE DRAWINGS.

6. ALL CONSTRUCTION LABORERS PERFORMING UNDER THIS WORK SHALL BE SKILLED WORKERS WITH IN THEIR RESPECTIVE TRADES.

7. ALL WORK, WHETHER SHOWN OR IMPLIED, UNLESS SPECIFICALLY QUESTIONED, SHALL BE CONSIDERED FULLY UNDERSTOOD IN ALL RESPECTS BY THE GENERAL CONTRACTOR, AND HE WILL BE RESPONSIBLE FOR ANY MISINTERPRETATIONS OR CONSEQUENCES THEREOF FOR ALL WORK SHOWN ON ALL CONTRACT DOCUMENTS.

8. GENERAL CONTRACTOR SHALL REVIEW AND FAMILIARIZE HIMSELF WITH THE GENERAL NOTES, SPECIFICATIONS, AND DRAWINGS TO DETERMINE WHICH NOTES APPLY DIRECLY TO HIS RESPONSIBILITY. EACH SUB-TRADE WILL BE RESPONSIBLE FOR REVIEWING THE ENTIRE SET OF DRAWINGS AND NOTING THEIR WORK AS APPLICABLE. ALL WORK INDICATED OR INFERRED ON THE DRAWINGS WILL BE ACCOUNTED AND INCLUDED IN ALL CONTRACTORS' COST.

9. UNLESS OTHERWISE PROVIDED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SECURE AND PAY FOR THE BUILDING PERMIT AS WELL AS FOR THE OTHER PERMITS, FEES, LICENSES, AND INSPECTIONS BY GOVERNMENT AGENCIES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK THAT ARE CUSTOMARILY SECURED AFTER EXECUTION OF THE CONTRACT AND LEGALLY REQUIRED AT THE TIME BIDS ARE RECEIVED OR NEGOTIATIONS CONCLUDED.

10. THE CONTRACTOR SHALL PAY SALES, CONSUMER, USE AND SIMILAR TAXES FOR THE WORK PROVIDED BY THE CONTRACTOR THAT ARE LEGALLY ENACTED WHEN BIDS ARE RECEIVED OR NEGOTIATIONS CONCLUDED WHETHER OR NOT YET EFFECTIVE OR MERELY SCHEDULED TO GO INTO EFFECT.

11. THE GENERAL CONTRACTOR SHALL SUBMIT IN WRITING ALL PROPOSALS FOR ADDITIONAL WORK TO THE OWNER'S OFFICE FOR REVIEW AND APPROVAL. NO WORK IS TO PROCEED UNTIL A SIGNED AUTHORIZATION TO PROCEED IS RETURNED TO THE GENERAL CONTRACTOR.

12. THE ARCHITECT AND THE OWNER RESERVES THE RIGHT TO ALLOW OTHER CONTRACTORS TO PERFORM WORK IN CONNECTION WITH THE PROJECT. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORK AND ESTABLISHING SCHEDULES FOR ALL TRADES; THEY SHALL AFFORD OTHER CONTRACTORS REASONABLE OPPORTUNITY FOR THE INTRODUCTION AND STORAGE OF THEIR MATERIALS AND EQUIPMENT FOR THE EXECUTION OF THEIR WORK.

13. CONTRACTOR SHALL PREPARE AND ISSUE ALL WORK TO CONFORM TO THE GENERAL CONSTRUCTION SCHEDULE AND SHALL COOPERATE WITH OTHER CONTRACTORS IN THE REQUIRED SEQUENTIAL INSTALLATION OF OTHER CONSULTANTS' PRODUCTS. SCHEDULE TO BE UPDATED WEEKLY DURING CONSTRUCTION AND ISSUED FOR REVIEW TO ALL PARTIES.

14. DRAWINGS ARE NOT TO BE SCALED; DIMENSIONS GOVERN.

15. ALL WORK IS TO CONFORM TO ARCHITECT'S DRAWINGS AND SPECIFICATIONS AND SHALL BE NEW AND BEST QUALITY OF THE KINDS SPECIFIED.

16. NO MATERIAL SUBSTITUTIONS SHALL BE MADE. THE ARCHITECT WILL CONSIDER MATERIAL CHANGE REQUESTS ON AN INDIVIDUAL BASIS. CONTRACTOR SHALL SUBMIT SAMPLES AND CUTS FOR WRITTEN APPROVAL PRIOR TO THE START OF ANY WORK. IT IS CONTRACTOR'S RESPONSIBILITY TO DEMONSTRATE THAT PROPOSED SUBSTITUTION IS EQUAL TO OR BETTER THAN SPECIFIED PRODUCT.

17. ALL MATERIALS AND EQUIPMENT SPECIFIED SHALL BE SUPPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED AS DIRECTED BY THE SUPPLIER/MANUFACTURER, IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARD PRACTICE AND IN COMPLIANCE WITH PRODUCT WARRANTY.

18. ALL SUBCONTRACTORS' SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL THROUGH THE GENERAL CONTRACTOR PRIOR TO WORK BEING PERFORMED, UNLESS OTHERWISE NOTED.

19. THE CONTRACTOR SHALL IN ALL RESPECTS COMPLY WITH ALL REGULATIONS OF THE BUILDING MANAGEMENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN SUCH REGULATIONS FROM THE BUILDING OWNER. IN THE EVENT OF THE CONFLICT BETWEEN BUILDING REGULATIONS AND OTHER CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE CONSULTED PRIOR TO PROCEEDING.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING WITH BUILDING MANAGEMENT THE USE OF ELEVATOR OR OTHER HOISTING FACILITIES FOR HANDLING THE DELIVERY OF MATERIALS. THE GENERAL CONTRACTOR SHALL SHALL BE RESPONSIBLE FOR NOTIFYING ALL SUBS-TRADES OF CONDITIONS REGARDING ELEVATOR CAB SIZE, DOOR OPENING WIDTHS AND LOADING WEIGHT CAPACITIES.

21. ALL PUBLIC AREAS SUCH AS ELEVATOR LOBBIES, CORRIDORS, TOILETS, AND SERVICE HALLS SHALL BE PROTECTED TO THE SATISFACTION OF THE BUILDING MANAGEMENT, EQUIPMENT AND OTHER PROPERTY BELONGING TO THE BUILDING SHALL ALSO RECEIVE PROTECTION AND REFURBISHING IF DAMAGED IN THE COURSE OF CONSTRUCTION, TO THE SATISFACTION OF BUILDING MANAGEMENT.

22. DEMOLITION AND OTHER WORK WHICH CREATES DISTURBING NOISE MUST BE SCHEDULED WITH BUILDING MANAGEMENT AND PERFORMED DURING PERMITTED HOURS. THE DELIVERY, HANDLING AND INSTALLATION OF MATERIALS, EQUIPMENT, AND DEBRIS MUST BE ARRANGED TO AVOID ANY INCONVENIENCE.

23. THE G.C. SHALL CONFORM TO BUILDING STANDARD PROCEDURES FOR THE SCHEDULING OF DEMOLITION AND CORE DRILLING, AND FOR THE CARTING OF RUBBISH THROUGH THE BUILDING. ANY OVERTIME COST FOR SUCH WORK SHALL BE BORNE BY THE G.C.

24. PRIOR TO REMOVING ANY BUILDING STANDARD MATERIALS, I.E. DOOR BUCKS, METAL PARTITIONS, & LIGHTING FIXTURES, A PROPER RELEASE MUST BE SECURED FROM THE BUILDING.

25. THE GENERAL CONTRACTOR SHALL SUPPLY PORTABLE JOB TOILET & MAINTAIN AND OPERATE AN ON SITE FIELD OFFICE TELEPHONE AND EMAIL. ACCESS AT ALL TIMES DURING THE COURSE OF CONSTRUCTION WORK.

26. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING, MAINTAINING AND UPON COMPLETION OF THE WORK, RESTORING TO ITS ORIGINAL CONDITION.

27. CONSTRUCTION PERSONNEL MUST CARRY PROPER IDENTIFICATION AT ALL TIMES.

28. ON JOB SITE, IT IS RSK'S INTENT TO HAVE JOB SAFETY TAKE PRECEDENCE AT ALL TIMES. THIS MEANS THAT ALL CONSTRUCTION TOOLS AND EQUIPMENT USED N THE PROJECT MUST MEET THE LATEST OSHA STANDARDS, IN ADDITION. ALL LOCAL STATE OR FEDERAL CODES HAVING JURISDICTION AT THE JOB SITE, MUST ALSO BE CONSIDERED PART OF THE SAFETY REQUIREMENTS. ANY DAMAGED TOOLS OR EQUIPMENT MUST BE REPLACED IMMEDIATELY. AT THE TIME OF COMPLETION OF THE PROJECT, PLEASE INSURE THAT ALL EQUIPMENT AND TOOLS ARE REMOVED FROM PROJECT.

29. ANY CONSTRUCTION TOOLS &/OR EQUIPMENT USED ON PROJECT MUST BE PROPERLY GROUNDED & USE ONLY SOURCE OF POWER APPROVED BY BUILDING MANAGEMENT SO AS NOT TO DISRUPT BUILDINGS ELECTRICAL SYSTEMS & MUST ALSO FOLLOW OSHA GUIDELINES OR ANY OTHER CODE REQUIREMENTS HAVING JURISDICTION OVER TOOLS AND EQUIPMENT.

30. THROUGHOUT THE ENTIRE COURSE OF CONSTRUCTION THE G.C. AND ANY OTHER TRADE WORKING ON JOB SITE MUST FOLLOW THE CURRENT OSHA GUIDELINES IN ADDITION TO ALL LOCAL STATE AND FEDERAL CODES HAVING JURISDICTIONS AS IT RELATES TO PROTECTIVE CLOTHING SUCH AS, BUT NOT LIMITED TO: HARD HATS, GLOVES, EYE PROTECTION, SHOES, AND CLOTHING NEEDED FOR A SAFE ENVIRONMENT. ANY PEOPLE WORKING AT THE JOB SITE MUST FOLLOW THESE CODES AND REGULATIONS WITHOUT EXCEPTION.

31. ALL FIRE EXISTS SHALL BE KEPT CLEAR AND ACCESSIBLE AT ALL TIMES.

32. FIRE EXTINGUISHERS MUST BE KEPT ON THE JOB SITE DURING CONSTRUCTION. PLUS, CONTRACTOR TO HAVE PROPER MEDICAL EMERGENCY KIT AVAILABLE AT JOB SITE FOR ALL APPLICABLE CODES AND REGULATIONS.

33. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CLEANLINESS OF THE WORK AREA AND THE AREAS INVOLVED IN THE DELIVERY OF THEIR MATERIALS.

34. GENERAL CONTRACTOR IS RESPONSIBLE TO CLEAN UP AND REMOVE FROM THE PREMISES ALL WASTE MATERIALS, RUBBISH, WRAPPINGS, AND SALVAGES AS GENERATED BY THE CONSTRUCTION, DEMOLITION, AND/OR THE DELIVERY AND INSTALLATION OF ANY PRODUCTS, MATERIALS, OR EQUIPMENT WHICH IS PART OF THEIR CONTRACT.

35. GENERAL CONTRACTOR IS RESPONSIBLE TO THOROUGHLY VACUUM CLEAN ALL CARPETED AREAS. CLEAN ALL FLOORING, MILLWORK, ETC.,. AND UNCOVER AND VACUUM OUT ALL CONVECTOR UNITS AFTER THE INSTALLATION IS COMPLETED, AND MAINTAIN CONDITION THOUGH THE TENANT'S MOVE IN. THE ENTIRE POST-CONSTRUCTION SITE IS TO BE DUST FREE AND ALL STAINS REMOVED FROM ANY FLOORING, WALLS, AND/OR CEILINGS.

36. GENERAL CONTRACTOR IS RESPONSIBLE TO PROTECT AS REQUIRED ALL TENANT OCCUPIED AREAS WHERE FINISH WORK OR GENERAL CONSTRUCTION IS TO BE PERFORMED. GENERAL CONTRACTOR IS TO INSTALL ADEQUATE PROTECTION OF BUILDING PAPER, MASONITE, OR OTHER APPROVED MATERIAL. ON ALL FINISHED SURFACES AS DIRECTED BY THE ARCHITECT PRIOR TO THE OWNER'S MOVING DATE, AND SHALL REMOVE SAME FOLLOWING COMPLETION OF THE MOVE.

37. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS INCURRED FOR DAMAGES CAUSED BY THEIR SUBCONTRACTORS.

38. ALL WORK SHALL CONFORM WITH THE REQUIREMENTS OF THE LOCAL BUILDING AND ZONING CODES, STATE AND FEDERAL BUILDING CODES, NATIONAL ELECTRIC CODE. N.F.P.A., ANSI, ASHRAE, OSHA, A.D.A., AND ALL OTHER APPLICABLE CODES; RULES & REGULATIONS. ALL IN THEIR LATEST EDITION OF ALL AUTHORITIES HAVING JURISDICTION OVER WORK OF THIS TYPE. INCLUDING THE RULES AND REGULATIONS OF THE BUILDING MANAGEMENT.

39. ALL WORK, AS EITHER IMPLIED OR REASONABLY INFERABLE FROM THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DRAWINGS & SPECIFICATIONS ARE DIRECTED TO THE ATTENTION OF THE CONTRACTOR AND THE INCLUSION OF ANY WORK BY MENTION. NOTE, DETAIL, ITEMIZATION OR IMPLICATIONS, HOWEVER BRIEF. ALL WORK PERFORMED SHALL INCLUDE ALL APPURTENANCES AND APPARATUS NORMAL DEEMED TO BE PART OF THE COMPLETED PACKAGE WITH THE DEFINITIONS OF NORMAL INDUSTRY STANDARDS.

40. ALL WORK, COMPLETED OR OTHERWISE, SHALL BE PROPERLY PROTECTED AT ALL TIMES. CONTRACTOR SHALL FOLLOW ALL ACCEPTED METHODS OF SAFETY PRACTICE AND PROVIDE ALL FENCES, BARRICADES, ETC., AS MAY BE NEEDED TO PROTECT LIFE AND PROSPERITY AND AS MAY BE REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER THIS WORK. THEY SHALL REPAIR AT THEIR OWN COST ANY DAMAGES TO THE PREMISES OR ADJACENT WORK CAUSED BY THEIR OPERATION.

41. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT THROUGH INSPECTION OF THE SITE, DRAWINGS, AND SPECIFICATIONS, SO AS TO THOROUGHLY UNDERSTAND THE WORK. ANY AND ALL DISCREPANCIES AND OMISSIONS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO COMMENCEMENT OF ANY WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT DISCREPANCIES OR OMISSIONS ARE REPORTED AND CLARIFICATION OBTAINED FROM THE ARCHITECT PRIOR TO WORK BEING DONE. ANY WORK THAT PROCEEDS OTHERWISE SHALL BE, IF INCORRECTLY PERFORMED, REPLACED OR REPAIRED WITH THE COST FOR THE SAME BEING BORNE BY THE CONTRACTOR. THEY SHALL VERIFY ALL DIMENSIONS FOR COORDINATION.

42. BEFORE COMMENCING ANY WORK, THE CONTRACTOR SHALL FILE WITH THE OWNER AND/OR BUILDING MANAGEMENT CURRENT INSURANCE CERTIFICATES IN THE AMOUNTS REQUESTED BY THE OWNER AND/OR BUILDING MANAGEMENT FOR WORKERS COMPREHENSIVE GENERAL LIABILITY, BODILY INJURY AND PROPERTY DAMAGE. THE OWNER AND/OR BUILDING MANAGEMENT SHALL BE NAMED "ADDITIONAL INSURED" ON ALL CERTIFICATES OF INSURANCE, INCLUDING THE ARCHITECT.

43. THE CONTRACTOR SHALL ENSURE THAT THERE ARE NO TRADE OR JURISDICTIONAL DISPUTES THROUGH USE OF LABOR OR METHODS OF INSTALLATION, INCLUDING THOSE OF CONTRACTORS WHO HAVE BEEN SEPARATELY CONTRACTED BY THE OWNER (TENANT). SHOULD ANY DELAYS OCCUR ON THE JOB SITE THROUGH VIOLATIONS OF THIS CLAUSE, THE CONTRACTOR WILL REIMBURSE THE OWNER (TENANT) FOR ALL COSTS AND DAMAGES.

44. THE CONTRACTOR IS TO PROVIDE A FULL-TIME COMPETENT SUPERINTENDENT ON THE PROJECT TO COORDINATE ALL SUB CONTRACTORS' WORK AND SUPERVISE THE DAILY ACTIVITY OF THE PROJECT AS WELL AS MAINTAIN THE SITE IN A SAFE, CLEAN MANNER.

45. THE CONTRACTOR SHALL ASSUME THE FULL RESPONSIBILITY FOR THE INSTALLATION OF ALL TRADE CONTRACTS ASSIGNED BY THE CLIENT, INCLUDING GENERAL CONDITIONS, OVERHEAD, AND PROFIT.

46. THE CONTRACTOR AND ALL THEIR SUB CONTRACTORS SHALL INDEMNIFY, DEFEND, AND SAVE HARMLESS THE OWNER, ITS EMPLOYEES, AGENTS AND SUBSIDIARIES, AND THE ARCHITECT, THEIR EMPLOYEES, AND AGENTS AGAINST AND FROM ANY AND ALL CLAIMS, DEMANDS, ACTIONS BY LAW, LIABILITIES, PENALTIES, LOSSES, EXPENSES, COSTS (INCLUDING ATTORNEY'S FEES) AND JUDGEMENTS OF EVERY CHARACTER WHATSOEVER FOR OR RESULTING FROM DAMAGE TO PROPERTY (INCLUDING BUT NOT LIMITED TO PROPERTY OF THE CONTRACTOR, THE OWNER, OR THE ARCHITECT) AND THEIR RESPECTIVE AGENTS, SERVANTS, AND EMPLOYEES) AND FOR OR RESULTING FROM PERSONAL INJURIES, SICKNESS, AND DISEASE (INCLUDING DEATH) TO OR SUSTAINED BY ANY PERSON (INCLUDING BUT NOT LIMITED TO THE CONTRACTOR, OWNER, AND THE ARCHITECT AND THEIR RESPECTIVE AGENTS, SERVANTS, AND EMPLOYEES) OCCURRING IN OR ABOUT THE CONSTRUCTION SITE OR ARISING OUT OF OR SUFFERED WHILE ENGAGED IN OR CAUSED IN WHOLE OR IN PART BY THE PERFORMANCE OF OR FAILURE TO PERFORM THE WORK. THE FOREGOING AGREEMENT SHALL NOT EXTEND TO THE OWNER IN THE CASE OF DAMAGE OR INJURIES CAUSED BY OR RESULTING FROM THE SOLE NEGLIGENCE OF THE OWNER, ITS AGENTS, SERVANTS, OR EMPLOYEES AND SHALL NOT EXTEND TO THE ARCHITECT, HIS AGENTS, SERVANTS, OR EMPLOYEES OR CAUSED BY OR ARISING OUT OF DEFECTS IN MAPS, PLANS, DESIGNS, OR SPECIFICATIONS PREPARED, ACQUIRED OR USED BY THE ARCHITECT, THEIR AGENTS, SERVANTS, OR EMPLOYEES. IT BEING UNDERSTOOD AND AGREED THAT FOR THE PURPOSES OF THIS SENTENCE, NEITHER THE CONTRACTOR NOR ANY OF ITS AGENTS, SERVANTS, OR EMPLOYEES SHALL BE DEEMED TO BE AN AGENT, SERVANT OR EMPLOYEE OF EITHER THE OWNER OR THE ARCHITECT AND NEITHER THE ARCHITECT NOR ANY OF THEIR AGENTS, SERVANTS, OR EMPLOYEES SHALL BE DEEMED TO BE AN AGENT, SERVANT, OR EMPLOYEE OF THE OWNER.

47. ALL CONTRACTOR'S WORK SHALL BE PERFORMED IN A FIRST-CLASS, SKILLFUL MANNER, MATCHING & ALIGNING ALL SURFACES WHERE APPLICABLE TO AFFORD A FINISHED NEAT APPEARANCE. CONTRACTOR SHALL CLEAN ALL SURFACES FREE OF ALL DIRT AND REFUSE CAUSED BY DEBRIS FROM ALL INSTALLATION TECHNIQUES OF THE TRADE. ALL ADJACENT SURFACES TO THEIR WORK SHALL BE LEFT AS THEY APPEAR PRIOR TO THE COMMENCEMENT OF THE CONTRACTORS WORK TO BE DONE. CONTRACTOR SHALL PROPERLY PROTECT ALL ADJACENT SURFACES DURING THE COURSE OF THIS INSTALLATION. ALL NEW & EXISTING GLASS, HARDWARE, &/OR CONSTRUCTIONS SHALL BE THOROUGHLY CLEANED IN A MANNER ACCEPTABLE TO THE OWNER.

48. THE GENERAL CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS REGARDING THE LOCATIONS AND EXTENT OF BLOCKING OR GROUNDS, AS WELL AS ANY STRUCTURAL STEEL OR METAL ANGLES AS MAY BE REQUIRED INSIDE WALLS FOR PURPOSES OR SUPPORTING MILLWORK. THE GENERAL CONTRACTOR SHALL ENSURE THAT THE COSTS OF SUCH BLOCKING, GROUNDS, AND/OR STRUCTURAL SUPPORTS ARE CARRIED IN THE CARPENTRY OR MISCELLANEOUS ARCHITECTURAL METALS SUBCONTRACTORS' SCOPE OF WORK.

49. BOTH THE ARCHITECT AND THE OWNER'S REPRESENTATIVE SHALL HAVE ACCESS TO THE DEMISED PREMISES AT ALL TIMES. AND TO THE FACTORY OR SHOP OF ANY OF THE SUBCONTRACTORS.

50. THE CONTRACTOR SHALL LEAVE ALL CHASES, HOLES, OR OPENINGS TRUE AND PROPER SIZE IN THEIR OWN WORK, OR CUT SAME IN EXISTING WORK AS MAY BE NECESSARY FOR THE PROPER INSTALLATION OF THEIR OWN OR OTHER CONTRACTOR WORK, INCLUDING THOSE WHICH HAVE BEEN SEPARATELY CONTRACTED BY THE OWNER, CONSULTING WITH OTHER CONTRACTORS CONCERNED REGARDING PROPER LOCATION AND SIZE OF THE SAME. IN CASE OF THEIR PROPER FAILURE TO LEAVE OR CUT SAME IN THE PROPER PLACE, THEY SHALL CUT THEM AFTERWARDS AT THEIR OWN EXPENSE. NO EXCESSIVE CUTTING WILL BE PERMITTED NOR SHALL ANY STRUCTURAL MEMBERS BE CUT WITHOUT THE CONSENT OF THE ARCHITECT. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE COORDINATION. REPAIR TRADES THAT WILL BE SUBSEQUENTLY LET UNDER SEPARATE CONTRACT BY THE OWNER OR THE ARCHITECT.

51. A COPY OF THE LATEST SET OF CONSTRUCTION DRAWINGS SHALL BE KEPT AT THE JOB SITE FOR REVIEW BY ARCHITECT.

52. THE REQUISITIONS FOR PAYMENTS FROM THE CONTRACTOR TO THE OWNER SHALL BE SUBMITTED TO THE ARCHITECT FOR PRIOR APPROVAL.

53. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OF THEIR OWN SECURITY, TEMPORARY HEAT, WATER, ELECTRICAL POWER, LIGHTING AND HOISTING. IF NEEDED, COORDINATE THESE SERVICES WITH THE BUILDING MANAGEMENT.

54. ALL CONTRACTORS SHALL SUBMIT ALL SHOP DRAWINGS FOR APPROVAL TO THE ARCHITECT PRIOR TO COMMENCEMENT OF WORK. SHOP DRAWING SUBMITTALS SHALL BE IN THE FORM OF (4) BLACK AND WHITE PRINTS OF EACH DRAWING. APPROVAL OF SHOP DRAWING SHALL INDICATE ONLY THAT SUCH DRAWINGS GENERALLY EXPRESS THE INTENT OF THE CONTRACT DOCUMENTS AND SHALL NEITHER BE CONSTRUED AS A COMPLETE CHECK NOR RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUANTITIES AND DIMENSIONS. ALL CONTRACTORS SHALL SUBMIT CUT SAMPLES AND FINISHES FOR WRITTEN APPROVAL PRIOR TO ORDERING OF FABRICATION.

55. THE OWNER RESERVES THE RIGHT TO MAKE CHANGES IN THE DRAWINGS AND SPECIFICATIONS AS THE WORK PROGRESSES. BULLETINS, CHANGE ORDERS, DRAWINGS, SPECIFICATIONS OR INSTRUCTIONS COVERING SUCH CHANGES WILL BE ISSUED TO THE CONTRACTOR WHOSE RESPONSIBILITY IT WILL BE TO DISTRIBUTE THESE IMMEDIATELY AND TO NOTIFY THE FIELD OFFICE AND ALL SUBCONTRACTORS AFFECTED TO TAKE SUCH MEASURES AS MAY BE NECESSARY TO AVOID ERRORS IN THE WORK WHICH MAY OCCUR DUE TO THE USE OF THE SUPERCEDED DRAWINGS. WORK AFFECTED BY CHANGES PROPOSED IN ANY REVISED DRAWINGS OR OTHER DOCUMENTS ISSUED TO THE CONTRACTOR SHALL NOT BE EXECUTED UNLESS CHANGES ARE ACCOMPANIED BY LETTER OF AUTHORIZATION TO PROCEED ACCORDINGLY. IN CASES WHERE INSTRUCTIONS ACCOMPANYING ANY ISSUE OF REVISED DRAWINGS OR SPECIFICATIONS REQUEST ESTIMATES OF COST INVOLVED. SUCH ESTIMATES SHALL BE PREPARED AND SUBMITTED PROMPTLY IN ORDER NOT TO UNDULY EFFECT THE PROGRESS OF WORK.

56. ALL EXTRA WORK MUST BE WRITTEN UP BY THE GENERAL CONTRACTOR IN THE FORM OF THE CHANGE ORDER, INDICATED ON IT MUST BE A FIRM PRICE FOR THE WORK. ALL CHANGE ORDERS MUST BE SUBMITTED TO THE CLIENT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF WORK.

57. THE CONTRACTOR SHALL GUARANTEE IN A WRITTEN FORM AS ACCEPTABLE TO THE OWNER. ALL LABOR AND MATERIALS INSTALLED BY THEM FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER DATE OF ACCEPTANCE OF THE WORK BY THE OWNER EXCEPT AS MODIFIED HEREIN OR ON OTHER DRAWINGS SHOULD DEFECTS OCCUR. ALL WORK SHALL BE REPLACED OR PROPERLY REPAIRED AT NO ADDITIONAL COST TO THE OWNER.

58. UPON COMPLETION OF THE JOB, THE GENERAL CONTRACTOR SHALL SUBMIT CERTIFICATES OF INSPECTION AND A CERTIFICATE OF SUBSTANTIAL COMPLETION INCLUDING ALL AS-BUILT DRAWINGS.

CONSTRUCTION NOTES

1. FINAL PLACEMENT OF ALL PARTITIONS TO BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF ANY WORK.

2. THE GENERAL CONTRACTOR SHALL LAYOUT PARTITIONS STARTING FROM CONDITIONS WHERE ALIGNMENT WITH EXISTING CONSTRUCTION IS SHOWN.

3. ALL PARTITION DIMENSIONS ARE FROM FINISHED SURFACE. UNLESS OTHERWISE NOTED.

4. ALL WOOD SPECIFIED AND/OR USED ON THIS PRODUCT SHALL BE PRESSURE TREATED D.F. OR AS NOTED. MATERIAL IN ACCORDANCE WITH ALL APPLICABLE CODES.

5. ALL EMBEDDED DRYWALL TRIM SHALL BE VINYL.

6. ALL GYPSUM BOARD PARTITIONS, CEILINGS, FASCIAS, AND SOFFITS SHALL BE PROPERLY BRACED. BRACING SHALL INCLUDE THE APPROPRIATE BLOCKING AND STRUCTURAL SUPPORTS NECESSARY TO ACCOMMODATE THE WEIGHT LOAD OF THE SPECIFIED PRODUCT OF DETAIL.

7. WATER RESISTANT PARTITIONS TO BE USED AT ALL RESTROOMS, MOP SINK, WASHER, LAB SINK & STERILIZATION WALL . THE NEW FULL HEIGHT PARTITION TO USE WATER RESISTANT, MOISTURE RESISTANT GYPSUM BOARD AS MFG. BY NATIONAL GYPSUM CO. AND 1/2" THICK DURA ROCK ON WET SIDE OF PARTITION. ALL THE PROPER MOISTURE BARRIERS WITH SOUND ATTENUATION BLANKET WITHIN FULL HEIGHT PARTITION. SLAB TO SLAB.

8. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR TAPING AND SPACKLING ((3) COATS MIN.) ON ALL WALLS GYPSUM BOARD, AS WELL AS PATCHING AND PREPARING ALL WALL, CEILINGS, AND COLUMNS TO REMAIN AS EXISTING.

9. ALIGN PARTITIONS WHERE NEW WALLS ABUT EXISTING COLUMN AND/OR WALLS:

A. DRYWALL TO PLASTER OR DRYWALL: REMOVE EXISTING CORNER BEAD TAPE AND SPACKLE JOINT ((3) COATS MIN.) EXCEPT AT COLUMN WHERE GYPSUM BOARD WILL PASS OVER COLUMN FACE.

B. PLASTER TO PLASTER: REMOVE EXISTING CORNER BEAD. REINFORCE JOINT WITH WIRE MESH AND PLASTER TO FORM A SMOOTH, PLUMB, CONTINUOUS SURFACE.

10. GENERAL CONTRACTOR SHALL CAP ALL EXPOSED EXISTING PIPING NOT BEING USED BEHIND FINISHED SURFACE.

11. G.C. AND ALL SUBCONTRACTORS TO PROVIDE ACCESS DOORS FOR ALL PLUMBING, ELECTRICAL, HVAC, ETC. AS REQUIRED TO ACCESS EQUIPMENT OR CONTROLS. LOCATIONS(S) TO BE APPROVED BY THE ARCHITECT.

12. THE GENERAL CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS ON THE SITE WHICH MIGHT REQUIRE ACCESS DOORS AND SHALL INCLUDE THEIR BID COST OF FURNISHING AND INSTALLING THESE ACCESS DOORS.

13. G.C. TO PATCH ALL FIREPROOFING/FIRESTOPPING ON ANY WALL AND ALL STEEL COLUMNS, BEAMS, EXPOSED STEEL DECKING, FLOORING OPENINGS OR ANY OTHER AREA REQUIRED BY CODE. IN SITUATIONS WHERE THE SPACE IS FULLY DEMOUSHED, PRIOR TO SUBMITTING A BID. THE G.C. WILL OWN ALL RESPONSIBILITY TO REPLACE ANY MISSING FIREPROOFING AND/OR FIRESTOPPING IN ORDER TO PROVIDE A CODE COMPLIANT SPACE.

14. ALL EXISTING DOORS, DOOR FRAMES OR HARDWARE TO REMAIN OR BE REUSED SHALL BE PATCHED, REPAIRED, UNDERCUT OR ADJUSTED AS REQUIRED FOR A PROPER INSTALLATION.

15. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF EXISTING SLAB IN ALL AREAS INDICATED.

16. ALL EXISTING CONSTRUCTION TO REMAIN SHALL BE PATCHED AND REPAIRED AS REQUIRED AND PREPARED TO RECEIVE NEW FINISHES PER FINISH PLAN.

17. ALL SURFACES OR FINISHES TO REMAIN. IF DAMAGED DURING DEMOLITION OR ANY STAGE OF THE WORK. SHALL BE REPAIRED BY THE GENERAL CONTRACTOR AT THEIR OWN EXPENSE TO "LIKE NEW" CONDITIONS. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO DOCUMENT ANY PRE-EXISTING DAMAGE AND RELATIVE TO GENERAL NOTE #3 OF THE GENERAL NOTES, NOTIFY THE ARCHITECT OF ANY SUCH DAMAGE PRIOR TO THE PRICING OR BIDDING.

18. MOUNTING HEIGHTS: ALL STROBES, PULL BOXES, FIRE EXTINGUISHERS, SIGNAGE, INCLUDING ALL ELEVATOR CALL BUTTONS AND INDICATOR LIGHTS, ETC. TO REMAIN ARE TO RAISED OR LOWERED TO SPECIFIED MOUNTING IN AREA'S OF WORK, AS PER CODE.

REFLECTED CEILING NOTES

1. SEE ENGINEER'S DRAWINGS FOR ALL LIGHT FIXTURE CIRCUITING, EMERGENCY LIGHTING AND EXIT LIGHTING, SMOKE DETECTORS, STROBE LIGHTING, ALARM, SPEAKERS, SWITCHING, AND RELATED WORK. LIGHT SWITCHES AND DIMMERS INDICATED ON THE ARCHITECTS PLANS ARE FOR THE LOCATION ONLY. CONTRACTOR IS TO VERIFY ALL LIGHT FIXTURE WATTAGE (MAX.) AND PROVIDE PROPER NUMBER OF SWITCHES AT THAT LOCATION TO THE CIRCUITING OF THOSE ITEMS.

2. SEE ENGINEER'S DRAWIN

LEGEND

Convention	Description
36 / 915	dimension showing English units (in inches unless otherwise specified) above the line and SI units (in millimeters unless otherwise specified) below the line
6 / 150	dimension for small measurements
33-36 / 840-915	dimension showing a range with minimum - maximum
min	minimum
max	maximum
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
	boundary of clear floor space or maneuvering clearance
	centerline
	a permitted element or its extension
	direction of travel or approach
	a wall, floor, ceiling or other element cut in section or plan
	a highlighted element in elevation or plan
	location zone of element, control or feature

ACCESSIBILITY SIGNAGE

SIGNAGE REQUIRED TO BE ACCESSIBLE AND IT SHOULD COMPLY WITH 2010 A.D.A STANDARDS

CHARACTER HEIGHT CHARACTER AND NUMBERS ON SIGNS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE WHICH THEY ARE TO BE READ. THE MINIMUM HEIGHT IS MEASURED USING AN UPPER CASE X. LOWER CASE CHARACTERS ARE PERMITTED.

MOUNTING LOCATION AND HEIGHT WERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR INCLUDING AT DOUBLE LEAF DOORS. SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3" OF THE SIGNAGE WITH ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.

NOTE:

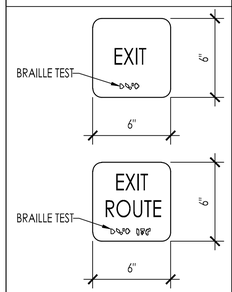
SIGNAGE MUST BE DESIGNED IN COMPLIANCE WITH 2010 A.D.A. STANDARDS (ACCESSIBILITY).
IDENTIFICATION SYMBOLS - SANITARY FACILITIES (GENERAL)
A. UNISEX SANITARY FACILITIES SHALL BE IDENTIFIED BY A CIRCLE 1/4" THK., 12" IN DIAMETER, WITH A 1/4" THK. TRIANGLE SUPERIMPOSED ON THE CIRCLE AND WITHIN THE 12" DIAMETER AS PER 11158.5
B. GEOMETRIC (CIRCLE & TRIANGLE) SYMBOLS ON SANITARY FACILITY DOORS SHALL BE CENTERED ON THE DOOR AT HGT. OF 60" AND THEIR COLOR & CONTRAST SHALL BE DISTINCTLY DIFFERENT FROM THE COLOR AND CONTRAST OF THE DOOR AS PER 11158.5.
C. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, RAISED LETTERS SHALL BE PROVIDED & SHALL BE ACCOMPANIED BY BRAILLE IN CONFORMANCE WITH SECTION 11178.5.6 SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OUTSIDE OF DOOR WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS. SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL. PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE 60" A.F.F. TO CENTERLINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3" OF THE SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR AS PER SECTION 111785.9

1.) DOOR SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGREES AND SHALL BE SO MOUNTED CLEAR WIDTH OF DOORWAY IS NOT AT LEAST 32".

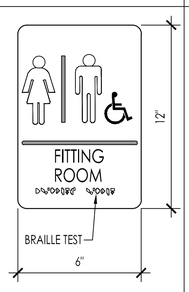
2.) LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE.

3.) MAXIMUM EFFORT TO OPERATE FIRE DOORS SHALL BE 15LBS. AT OTHER INTERIOR DOORS, MAXIMUM EFFORT TO OPERATE SHALL BE 5LBS.

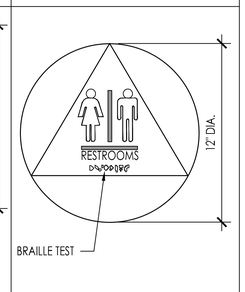
SIGN DETAIL 'A'



SIGN DETAIL 'B'



SIGN DETAIL 'C'

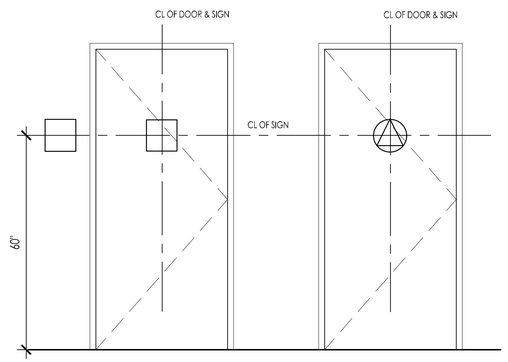


(A)
DISPLAY CONDITIONS INTERNATIONAL SYMBOL OF ACCESSIBILITY

(C)
INTERNATIONAL SYMBOL OF TTY

(B)
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS

(D)
VOLUME CONTROL TELEPHONE

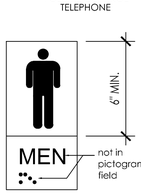


TACTILE EXIT SIGNAGE: CBC SECTION 1011.3 AND SECTION 11178.5.1

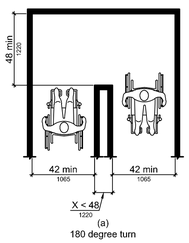
1. A TACTILE EXIT SIGN WITH WORDS 'EXIT', SHALL IDENTIFY EACH GRADE LEVEL EXTERIOR EXIT DOOR.

2. EACH EXIT DOOR THAT LEADS DIRECTLY TO GRADE LEVEL EXTERIOR EXIT BY MEANS OF STAIRWAY OR RAMP SHALL BE IDENTIFIED BY THE TACTILE SIGN WITH THE FOLLOWING APPROPRIATE WORDS: 'EXIT STAIR UP OR DOWN'

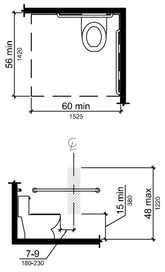
3. A TACTILE EXIT SIGN WITH THE WORDS 'EXIT ROUTE' SHALL IDENTIFY EACH EXIT ACCESS DOOR FROM AN INTERIOR ROOM OR AREA TO A CORRIDOR OR HALLWAY THAT IS REQUIRED TO HAVE A VISUAL EXIT SIGN.



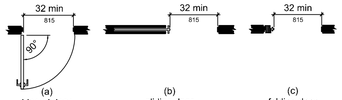
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN - ACCESSIBILITY CLEARANCES



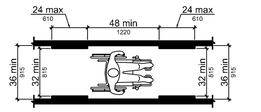
CLEAR WIDTH AT TURN



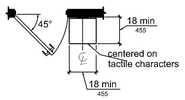
DISPENSER OUTLET LOCATION



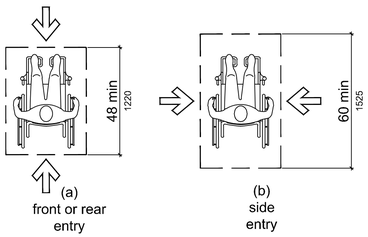
CLEAR WIDTH OF DOORWAYS



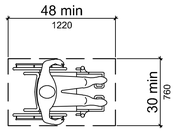
CLEAR WIDTH OF AN ACCESSIBLE ROUTE



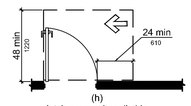
LOCATION OF TACTILE SIGNS @ DOORS

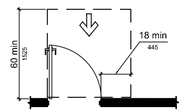


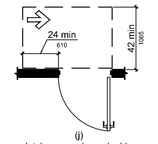
DEPTH OF WHEELCHAIR SPACES

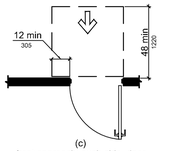


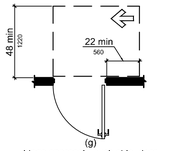
CLEAR FLOOR OR GROUND SPACE

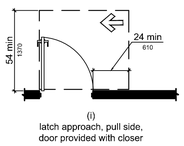


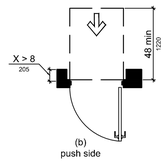


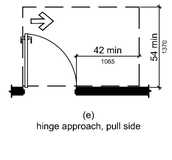


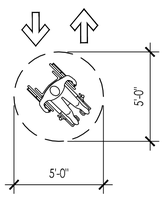




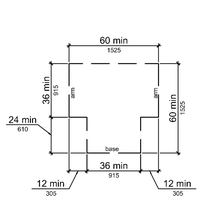




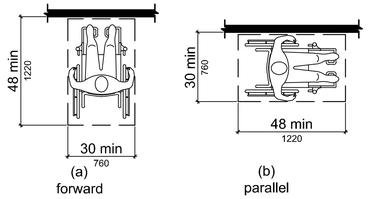




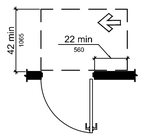
WHEELCHAIR TURNING SPACE

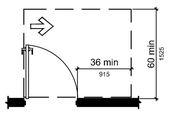


T-SHAPED TURNING SPACE



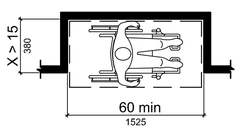
POSITION OF CLEAR FLOOR OR GROUND SPACE



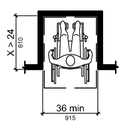


HANDRAIL CLEARANCE

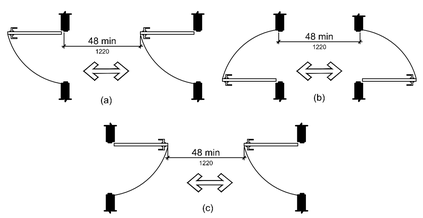
HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE



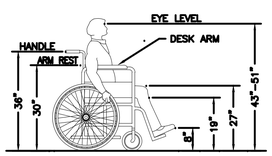
MANEUVERING CLEARANCE IN ALCOVE PARALLEL APPROACH

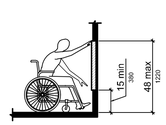


MANEUVERING CLEARANCE IN ALCOVE FORWARD APPROACH

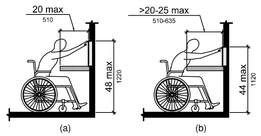


DOORS IN SERIES AND GATES IN SERIES

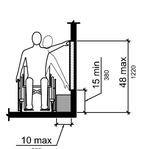




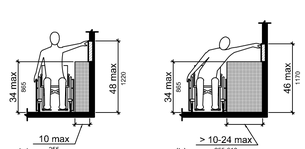
UNOBSTRUCTED FORWARD REACH



OBSTRUCTED HIGH FORWARD REACH



UNOBSTRUCTED SIDE REACH



OBSTRUCTED HIGH SIDE REACH

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AUTHORIZED RIECKE GONZALES LICENSED PROFESSIONAL ARCHITECT No. 6471 HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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TRANSIT HUB

VEVAU ST
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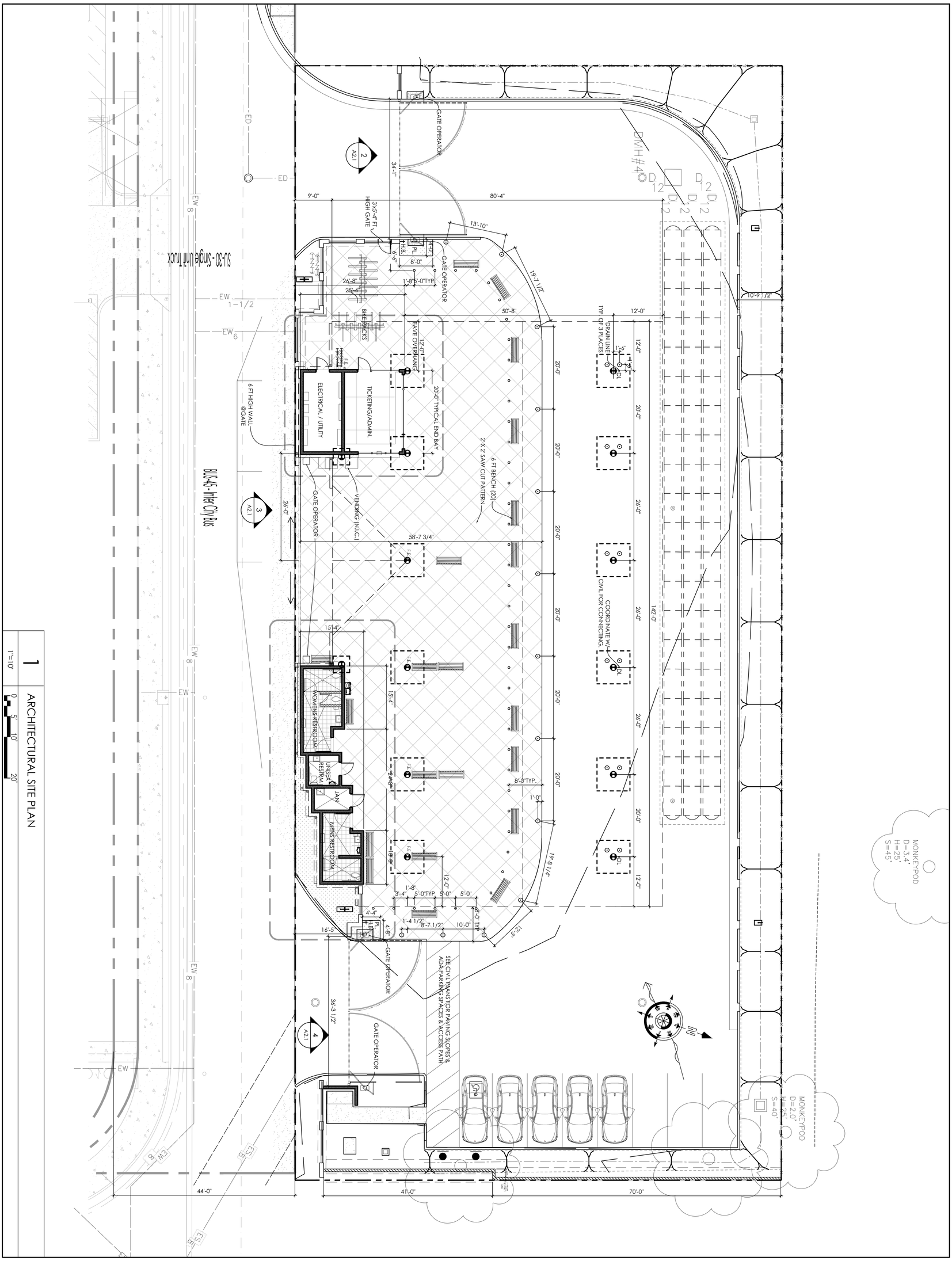
ADA REQUIREMENTS & ACCESSIBILITY CLEARANCES

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

AUGUST 7, 2020 BID SET

SHEET A0.3 OF
PROJECT NO. 2018-018
DATE MAY, 2018



1 ARCHITECTURAL SITE PLAN
1"=10'
0 5' 10' 20'

A-1

SHEET OF

PROJECT NO. 2018-018

DATE: MAY, 2018

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET
2020-06-09 DCAB REVISIONS
AUGUST 7, 2020 BID SET

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ARCHITECTURAL SITE PLAN

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LICENSED PROFESSIONAL ARCHITECT
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HAWAII, U.S.A.

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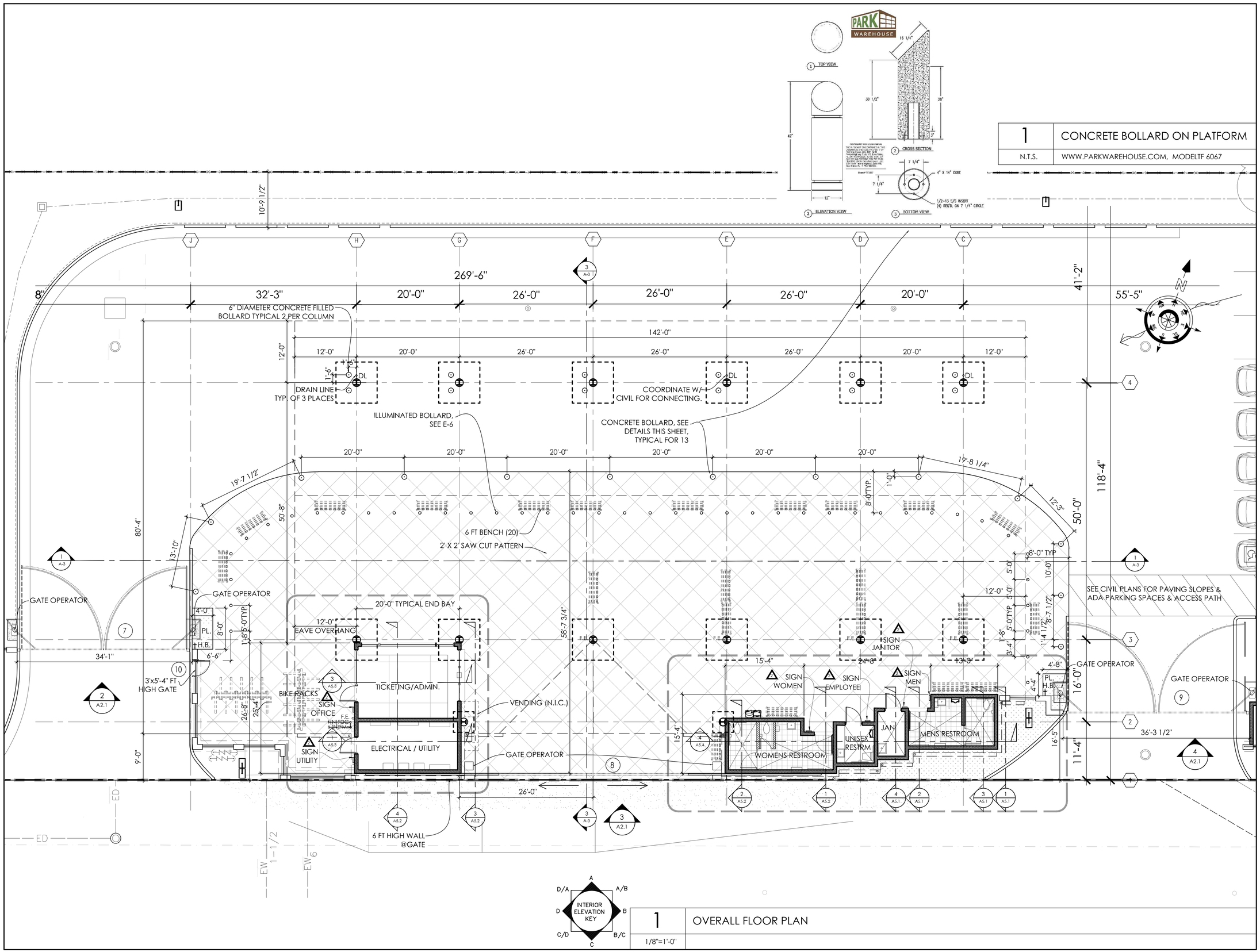

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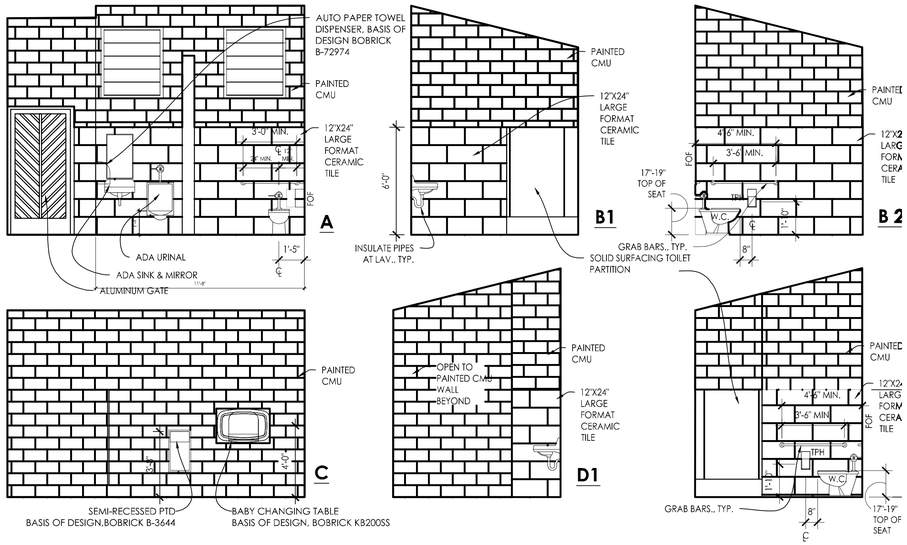
FLOOR PLAN

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

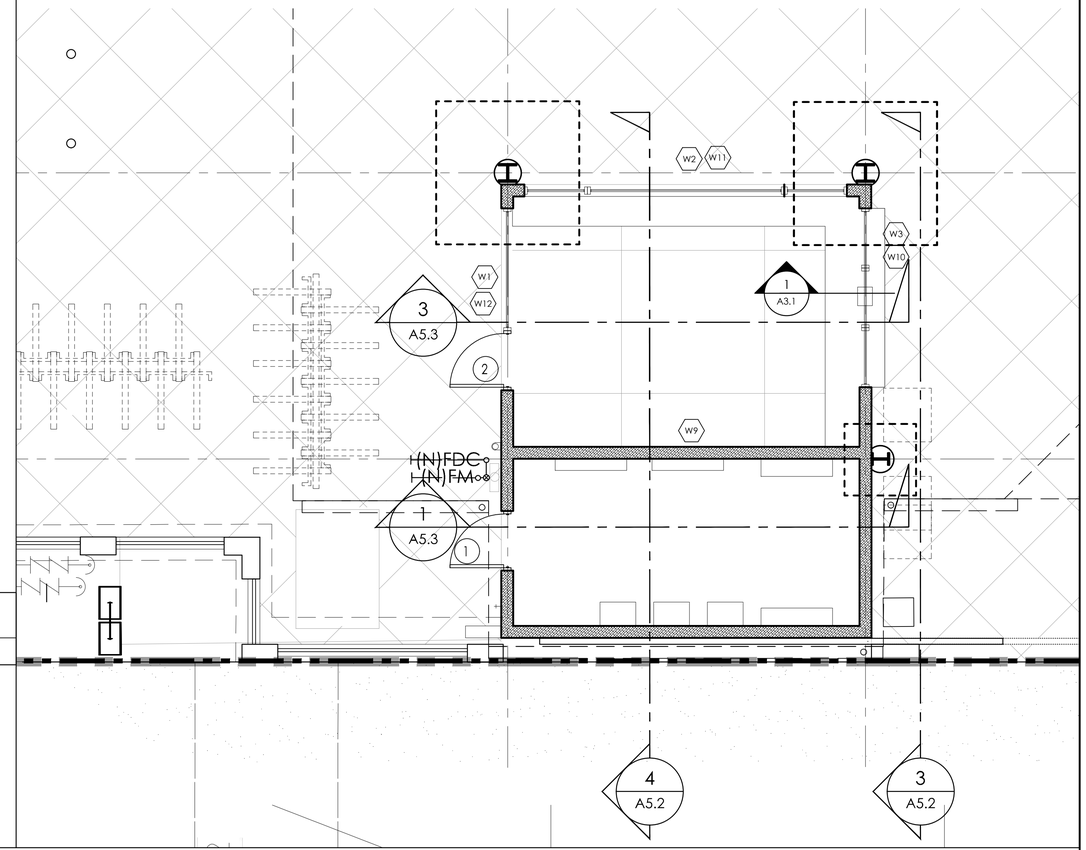
AUGUST 7, 2020 BID SET
△ ADDENDUM #1 2020-09-22

SHEET A-1.1 OF
PROJECT NO. 2018-018
DATE MAY, 2018



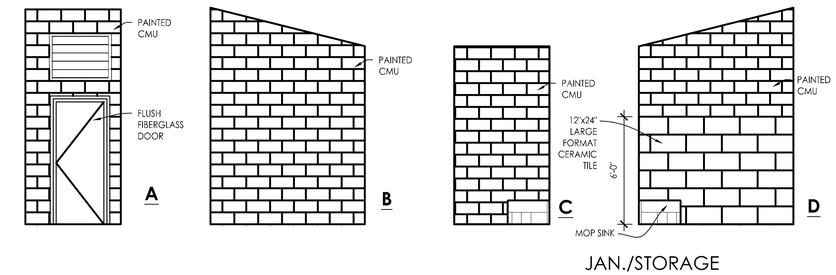
3 MEN'S TOILET INTERIOR ELEVATIONS

1/4"=1'-0"



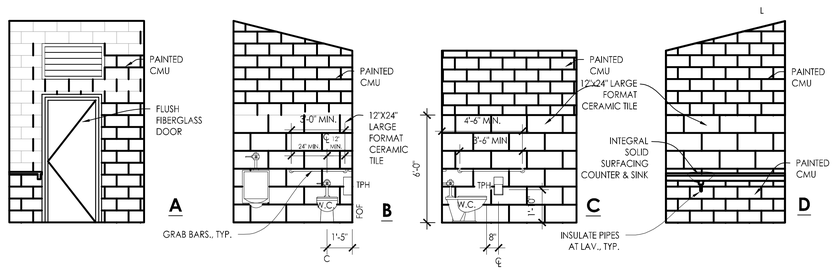
1 ENLARGED OFFICE PLAN

1/4"=1'-0"



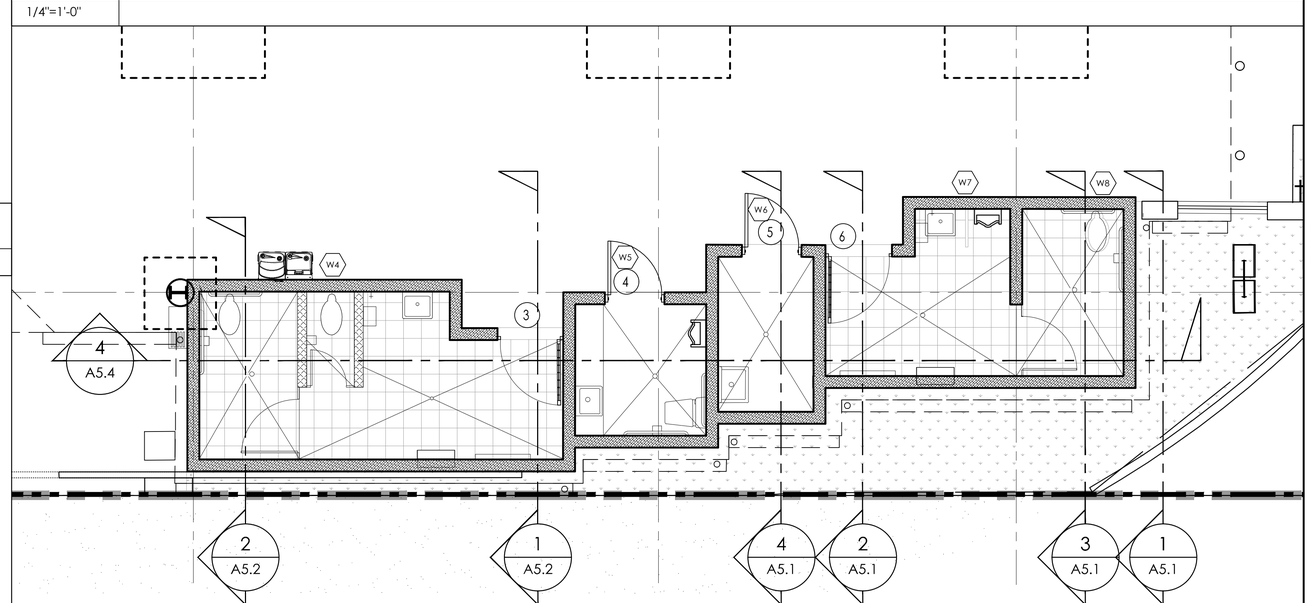
4 JAN/STORAGE INTERIOR ELEVATIONS

1/4"=1'-0"



5 PRIVATE UNISEX TOILET INTERIOR ELEVATIONS

1/4"=1'-0"



2 ENLARGED RESTROOM PLANS

1/4"=1'-0"

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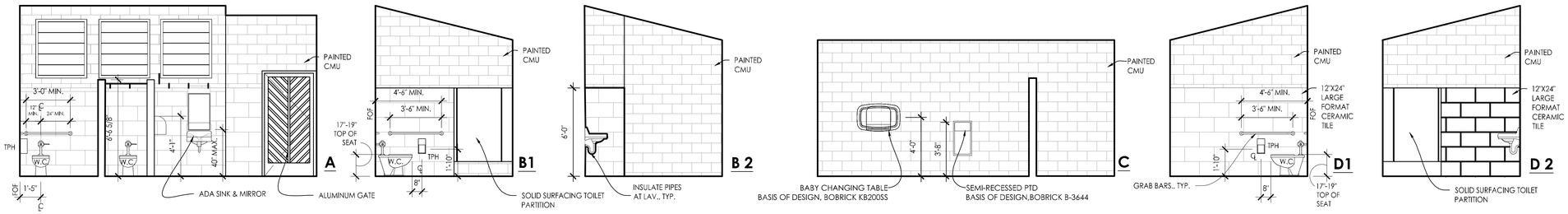
ENLARGED FLOOR PLANS & INTERIOR ELEVATIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET
2020-06-09 DCAB REVISIONS
AUGUST 7, 2020 BID SET

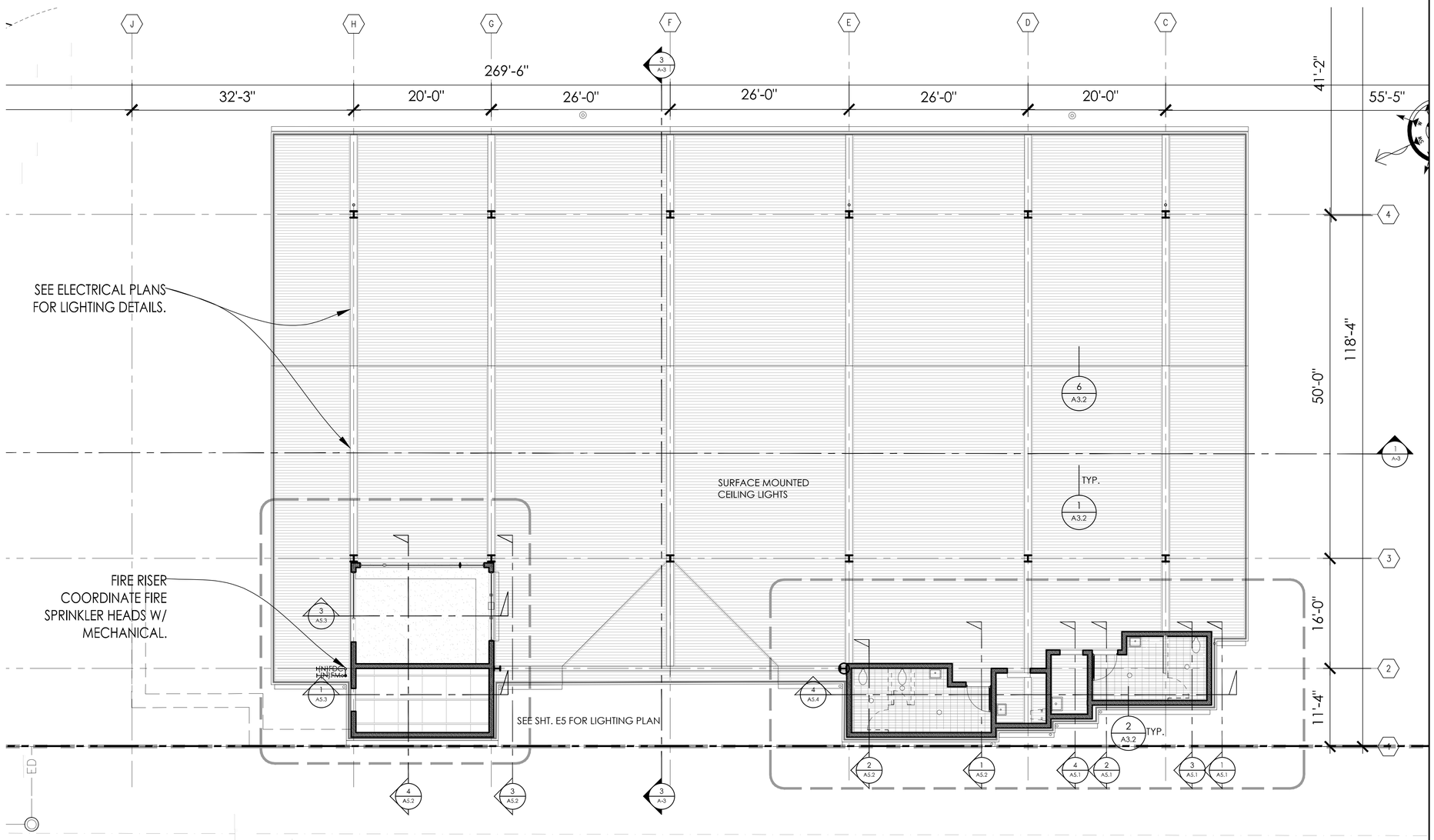
SHEET A-1.2 OF

PROJECT NO. 2018-018

DATE MAY, 2018



3	WOMEN'S TOILET INTERIOR ELEVATIONS
1/4"=1'-0"	



1	REFLECTED CEILING PLAN
1/8"=1'-0"	

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REFLECTED CEILING PLAN & INTERIOR ELEVATIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

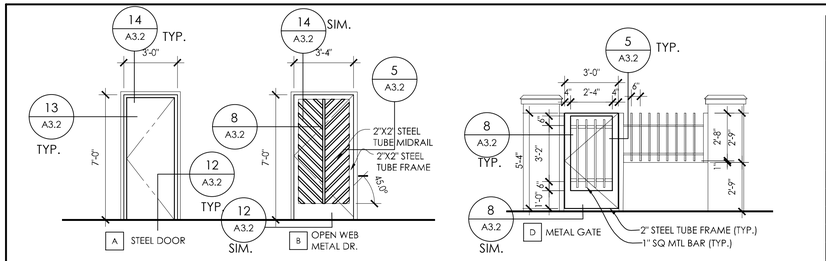
AUGUST 7, 2020 BID SET

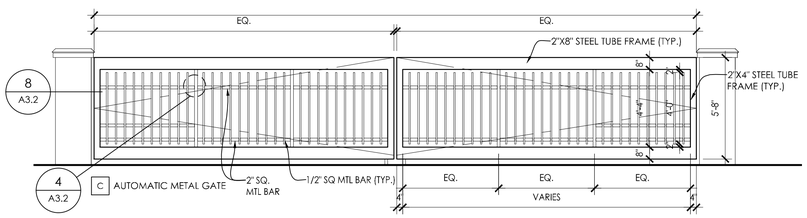
A-1.3

SHEET OF

PROJECT NO. 2018-018

DATE MAY, 2018



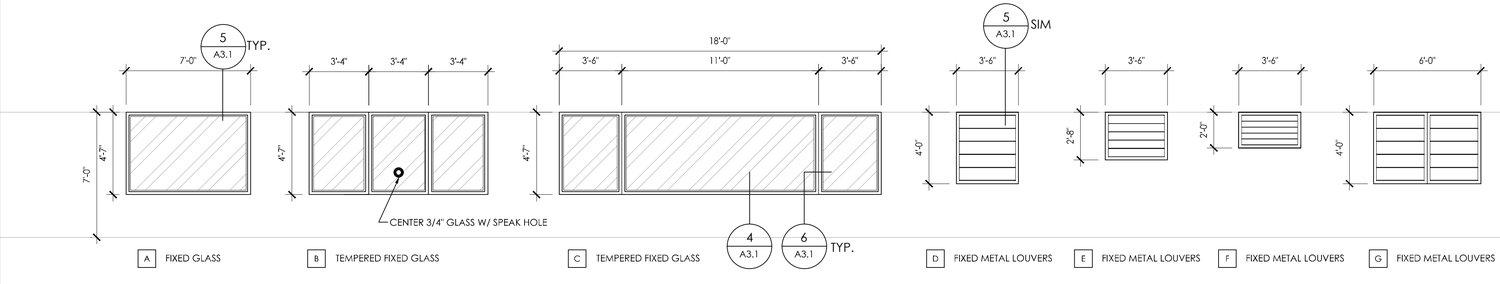


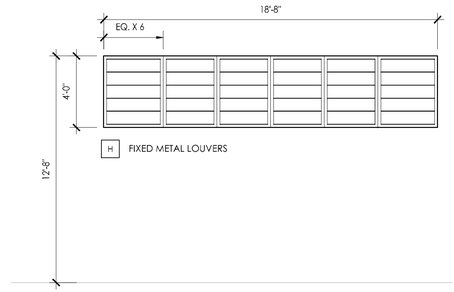
WINDOW SCHEDULE

WINDOW NUMBER / LOCATION	TYPE		WINDOW SIZE (W) x (H) GENERAL SIZE	MATERIAL	THICKNESS	FINISHES	LOUVER	GLASS	SCREEN	REMARKS
W1 TICKETING-ADMIN.	A		7'-0" X 4'-7"	MTL	-	FAC	FIXED			
W2 TICKETING-ADMIN.	B		3'-6" / 11'- 0" / 3'-6" X 4'-7"	MTL	-	FAC	FIXED			
W3 TICKETING-ADMIN.	B		(3) 3'-4" X 4'-7"	MTL	-	FAC	FIXED	3/4"		CENTER GLASS W/ SPEAKER
W4 ~~WOMEN'S RESTROOM~~	D		(3) 2'-0" X 4'-0"	MTL	-	FAC	FIXED			
W5 UNISEX RESTROOM	F		3'-6" X 2'-0"	MTL	-	FAC	FIXED			
W6 JANITOR	E		3'-6" X 2'-8"	MTL	-	FAC	FIXED			
W7 MEN'S RESTROOM	D		3'-6" X 4'-0"	MTL	-	FAC	FIXED			
W8 MEN'S RESTROOM	D		3'-6" X 4'-0"	MTL	-	FAC	FIXED			
W9 TICKETING - ADMIN ATTIC	G		(2) 3'-0" X 4'-0"	MTL		FAC	FIXED		✓	
W10 TICKETING - ADMIN ATTIC	G		(2) 3'-0" X 4'-0"	MTL		FAC	FIXED		✓	
W11 TICKETING - ADMIN ATTIC	G		3'-6" / 11'-0" / 3'-6" X 4'-0"	MTL		FAC	FIXED		✓	
W12 TICKETING - ELECTRICAL RM	G		(2) 3'-0" X 4'-0"	MTL		FAC	FIXED		✓	

DOOR SCHEDULE

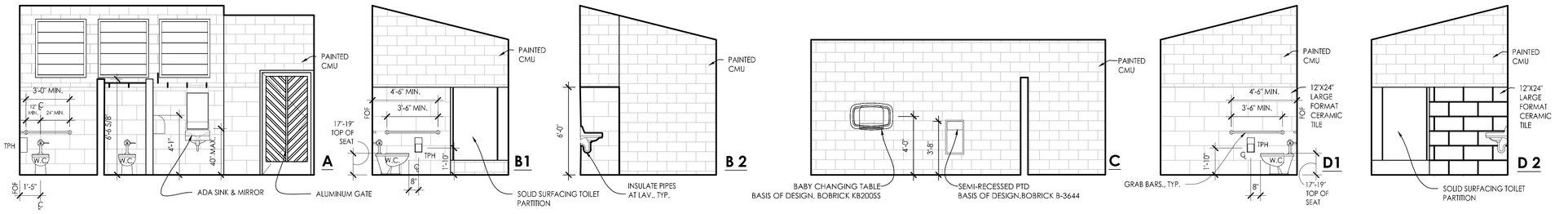
DOOR NUMBER / LOCATION	TYPE		DOOR SIZE (W) x (H)	MATERIAL	THICKNESS	FINISHES	GLASS/ LOUVER	FRAME	REMARKS
1 ELECTRICAL/UTILITY RM	A		3'-0" X 6'-8"	MET	1-3/4"	FAC	-	STL	
2 ADMIN/TICKETING	A		3'-0" X 6'-8"	MET	1-3/4"	FAC	-	STL	
3 WOMEN'S RESTROOM	B		3'-4" X 7'-0"	MET			-	STL	
4 UNISEX RESTROOM	A		3'-0" X 7'-0"	MET	-	FAC	-	STL	
5 JANITOR ROOM	A		3'-0" X 7'-0"	MET	-	FAC	-	STL	
6 MEN'S RESTROOM	B		3'-4" X 7'-0"	MET	-	FAC	-	STL	
7 EAST BUS ENTRY GATE	C		32' - 4 " X 5'-8"	MET		PT	-	STL	AUTOMATIC SWING
8 PEDESTRIAN ENTRY GATE	C		46' - 3" X 5'-8"	MET		PT	-	STL	(SIM.) AUTOMATIC SLIDING
9 WEST BUS ENTRY GATE	C		35' - 0" X 5'-8"	MET		PT	-	STL	AUTOMATIC SWING
10 EAST PEDESTRIAN GATE	D		3'-0" X 5'-4"	MET		PT		STL	





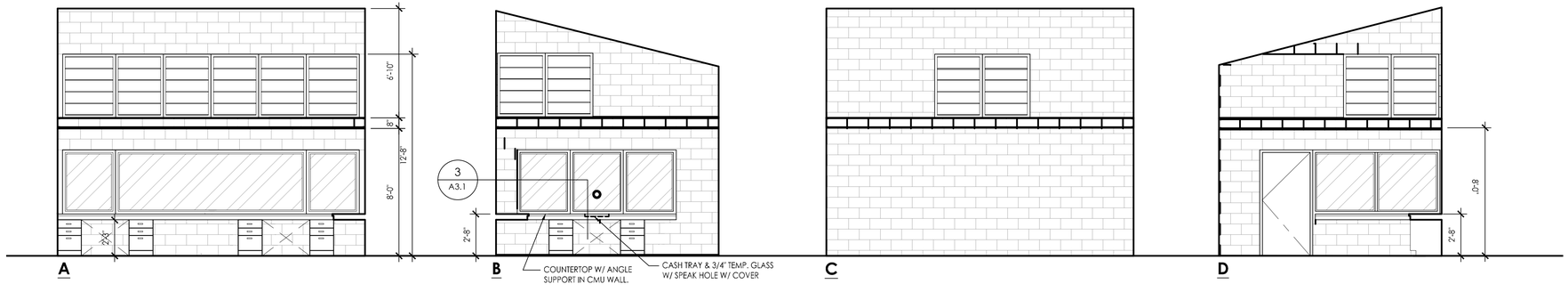
3 WINDOW & DOOR TYPES AND SCHEDULES

1/4"=1'-0"



2 WOMEN'S TOILET INTERIOR ELEVATIONS

1/4"=1'-0"



1 INTERIOR ELEVATIONS - TICKETING / ADMINISTRATION

1/4"=1'-0"

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DOOR/WINDOW TYPES & SCHEDULES & INTERIOR ELEV'S.

REVISIONS
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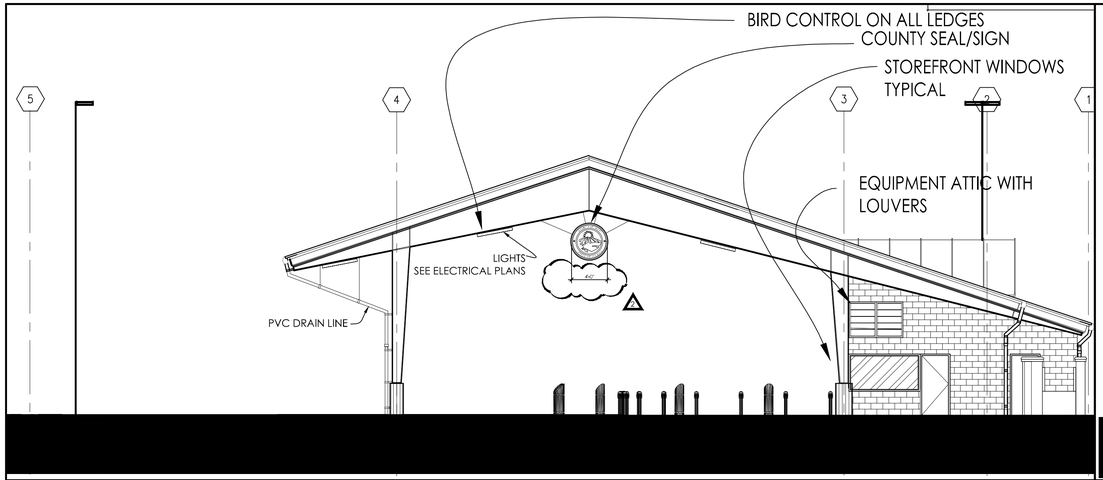
2020-05-05 PERMIT SET
2020-06-09 DCAB REVISIONS
AUGUST 7, 2020 BID SET

A-1.4

SHEET OF

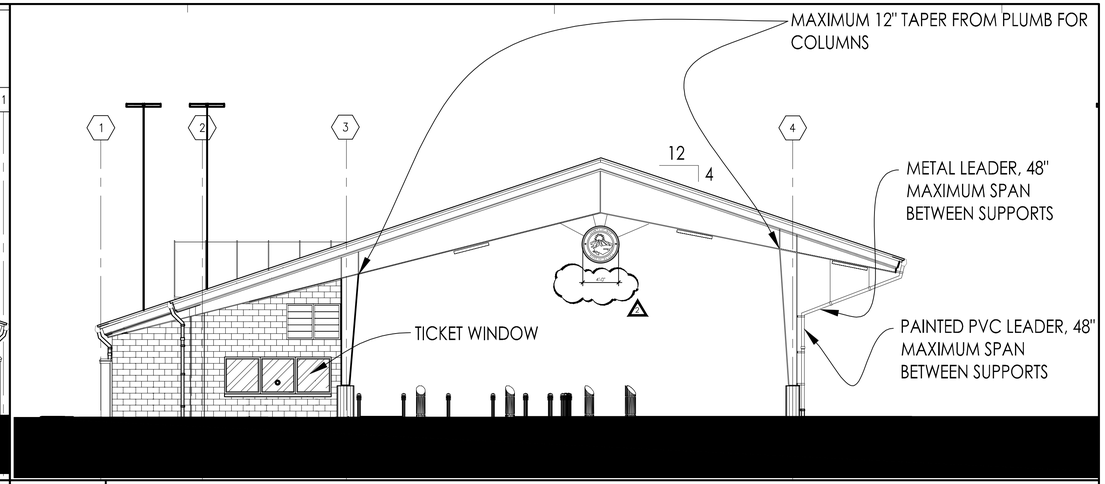
PROJECT NO. 2018-018

DATE MAY, 2018



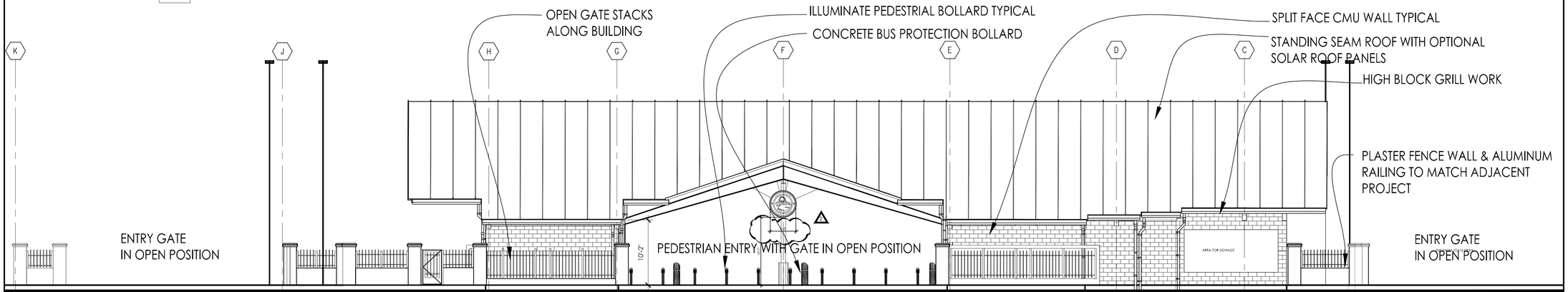
2 WEST ELEVATION

1/8"=1'-0"



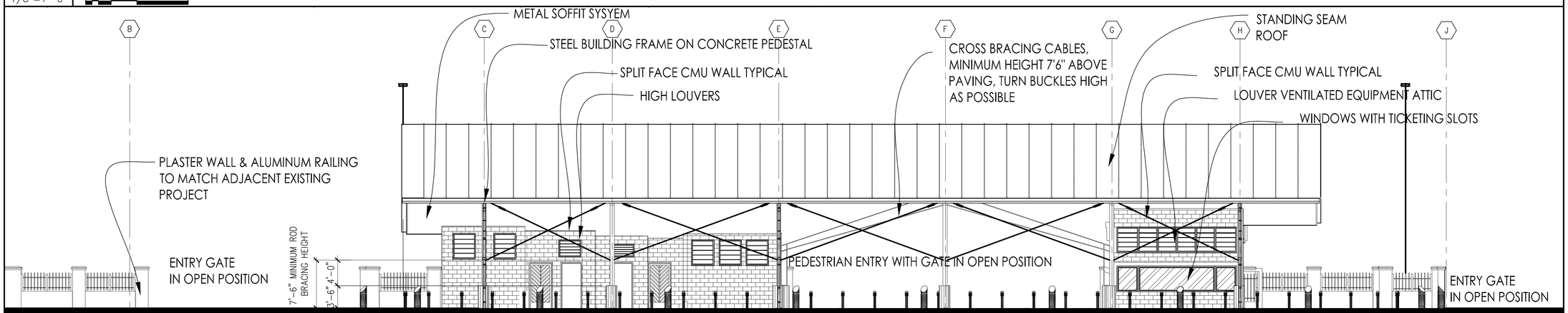
1 EAST ELEVATION

1/8"=1'-0"



3 SOUTH ELEVATION

1/8"=1'-0"



4 NORTH ELEVATION

1/8"=1'-0"

RIECKE SUNNLAND KONO ARCHITECTS, LTD
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PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE: (808) 877-2588

ANTHONY RIECKE GONZALES
LICENSED PROFESSIONAL ARCHITECT
No. 6471
HAWAII, U.S.A.

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EXPIRATION DATE OF LICENSE: APRIL 30, 2022

TRANSIT HUB

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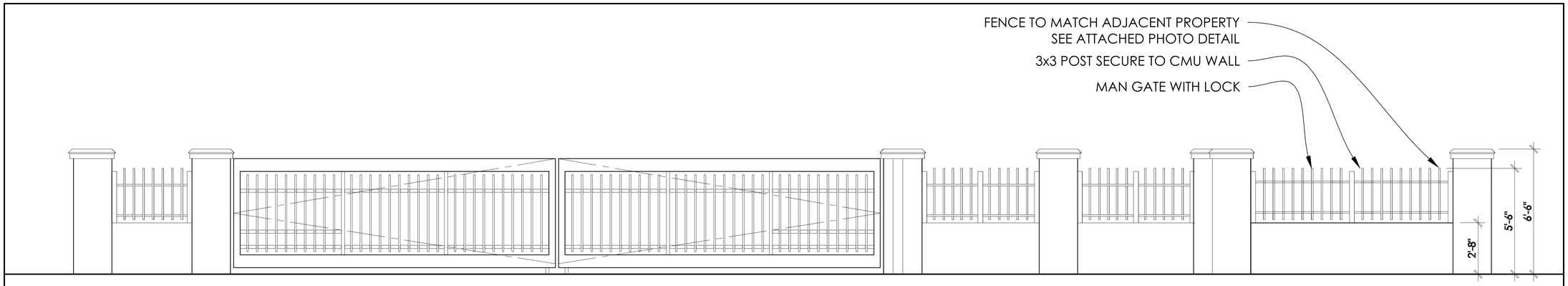
EXTERIOR ELEVATIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET
△ ADDENDUM #1 2020-09-22

SHEET A-2 OF

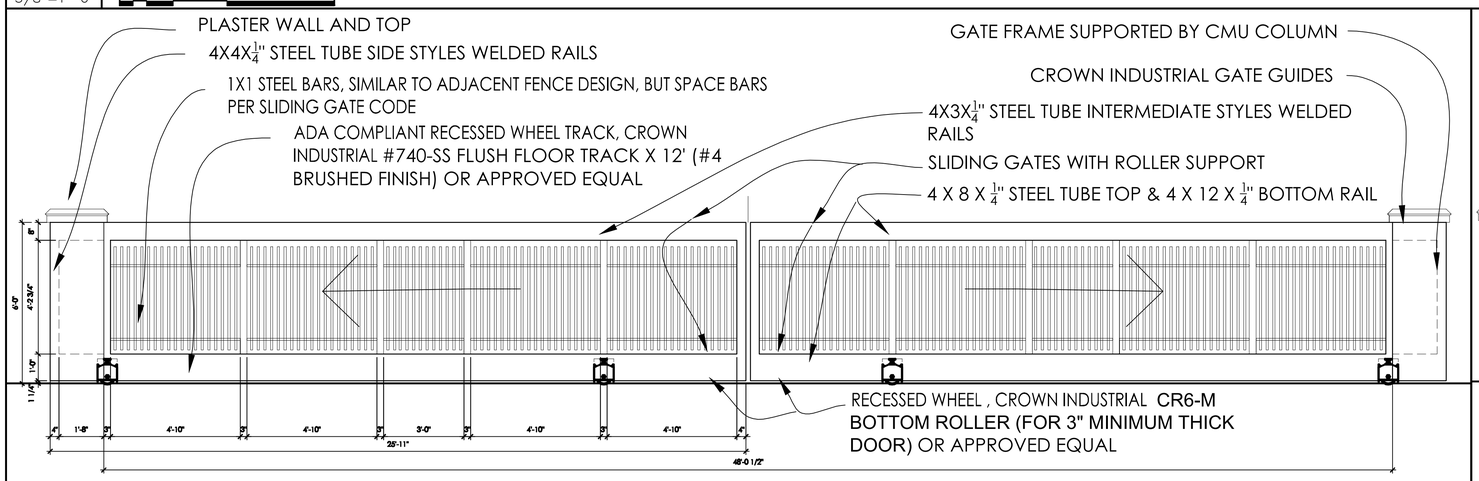
PROJECT NO. 2018-018

DATE: MAY, 2018



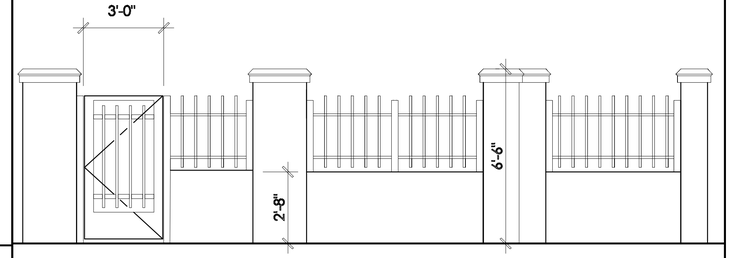
2 SOUTH/WEST WALL & GATE ELEVATION

3/8"=1'-0" 0 2' 4' 8'



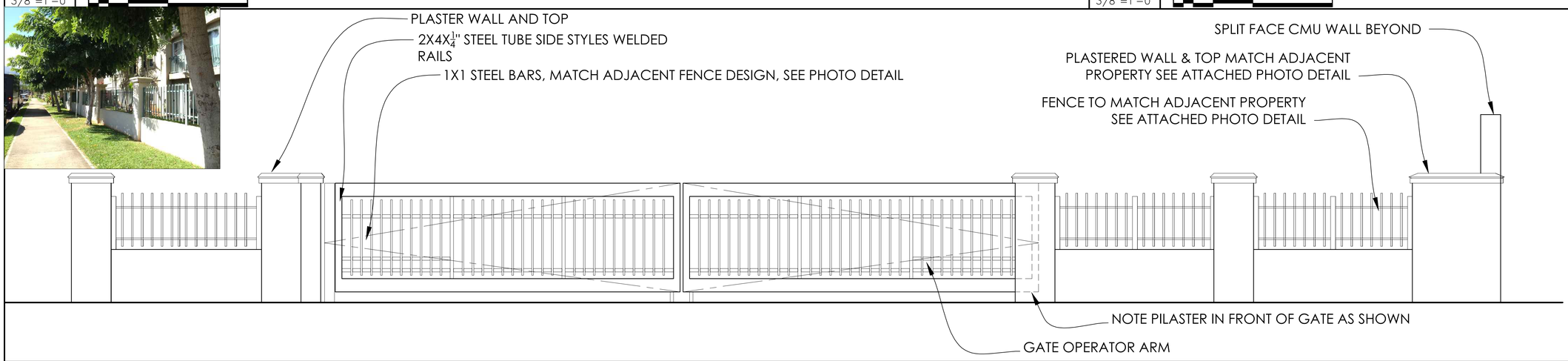
3 SOUTH ENTRY GATE ELEVATION

3/8"=1'-0" 0 2' 4' 8'



1 WEST WALL & GATE ELEVATION

3/8"=1'-0" 0 2' 4' 8'



4 SOUTH/EAST WALL & GATE ELEVATION & EXAMPLE FENCE PHOTO

3/8"=1'-0" 0 2' 4' 8'

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TRANSIT HUB

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MISC. EXTERIOR ELEVATIONS & WALL ELEVATIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

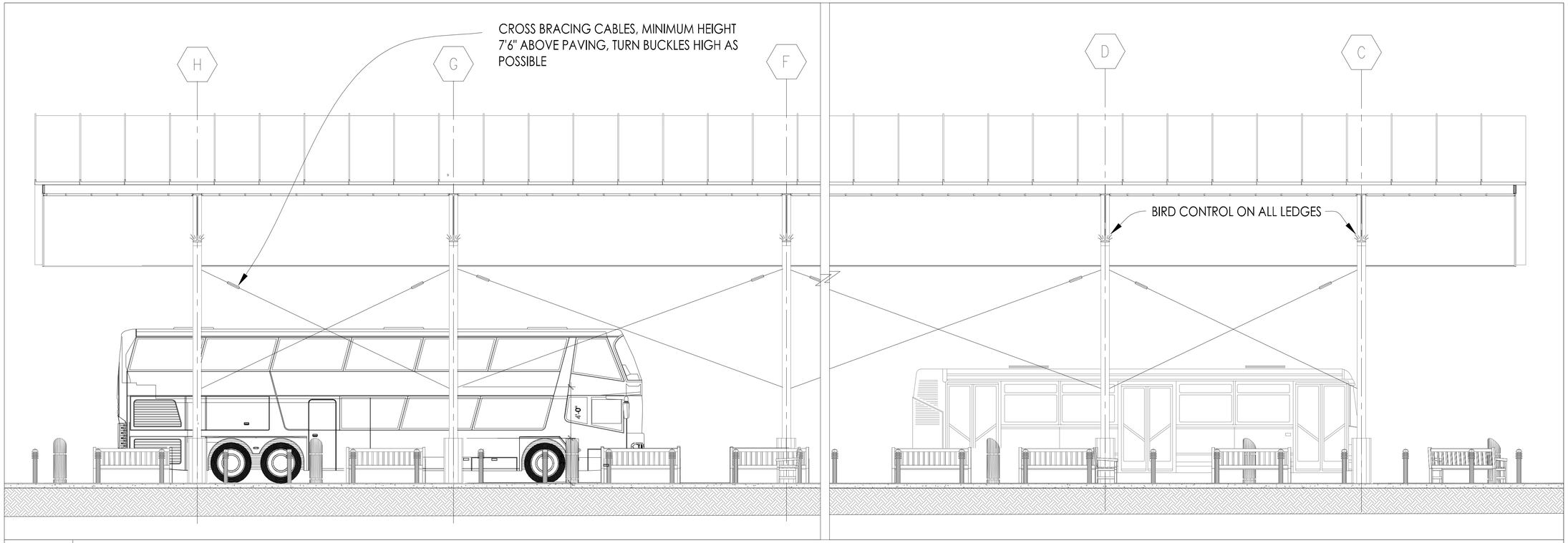
AUGUST 7, 2020 BID SET

A-2.1

SHEET OF

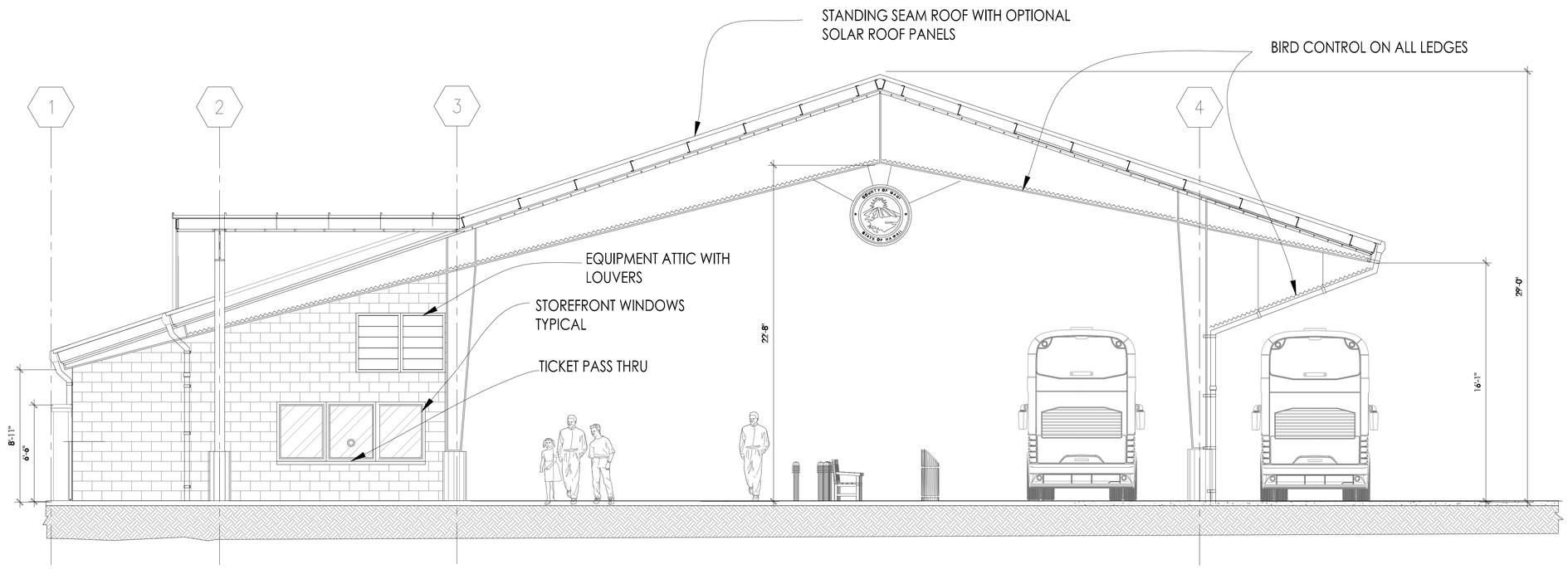
PROJECT NO. 2018-018

DATE MAY, 2018



1 SECTION

1/4"=1'-0"



3 SECTION

1/4"=1'-0"

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BUILDING SECTIONS

REVISIONS:
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

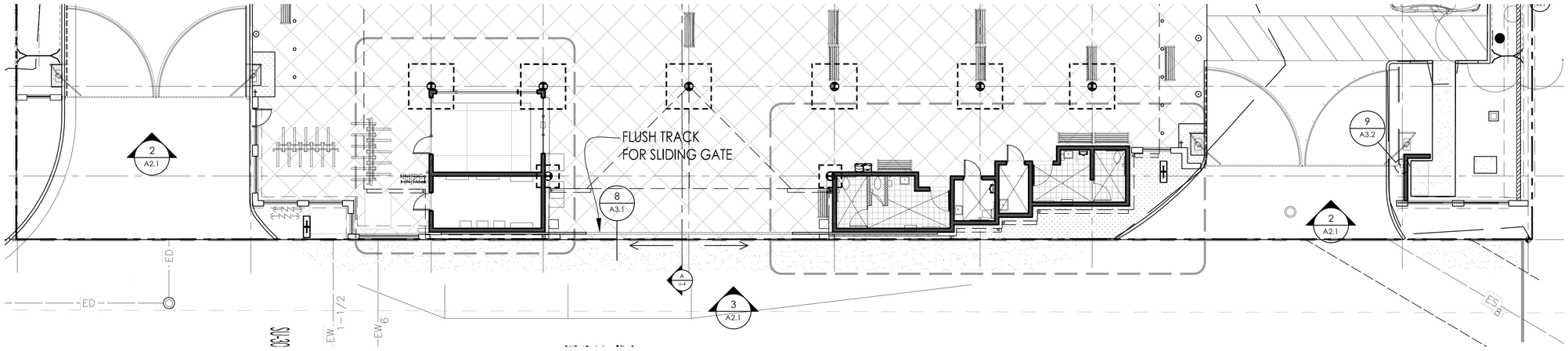
AUGUST 7, 2020 BID SET

A-3

SHEET OF

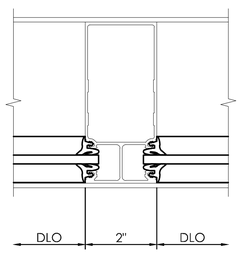
PROJECT NO. 2018-018

DATE MAY, 2018



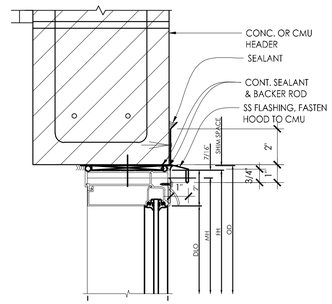
7 FENCE & GATE DIMENSION

1"=10'



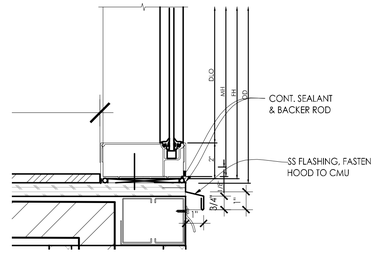
6 TRI FAB CENTER MULLION

3"=1'-0"



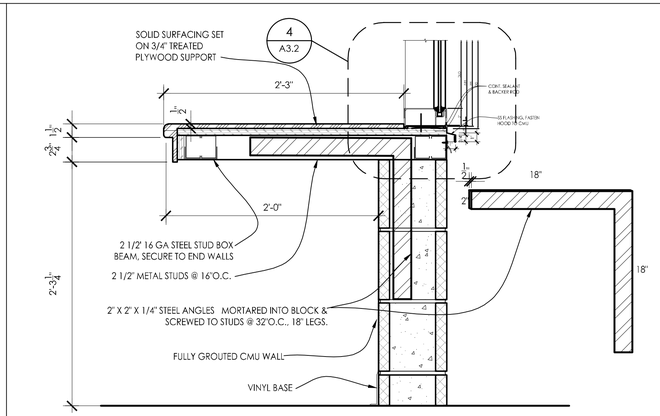
5 WINDOW HDR. DTL.

3"=1'-0"



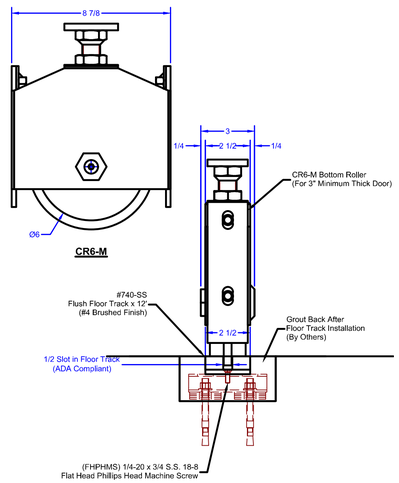
4 COUNTER WINDOW DETAIL

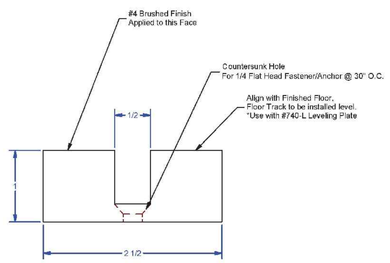
3"=1'-0"



2 TICKET COUNTER W/ CASH TRAY PLAN & SECTION

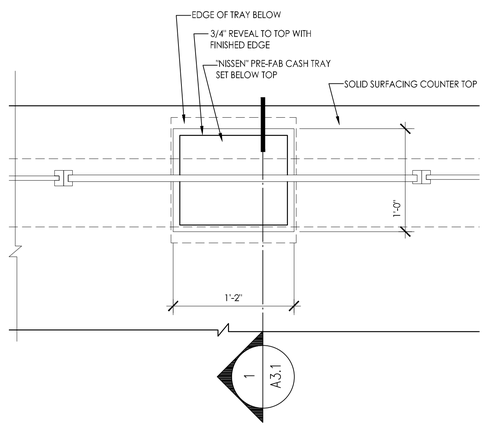
1 1/2"=1'-0"





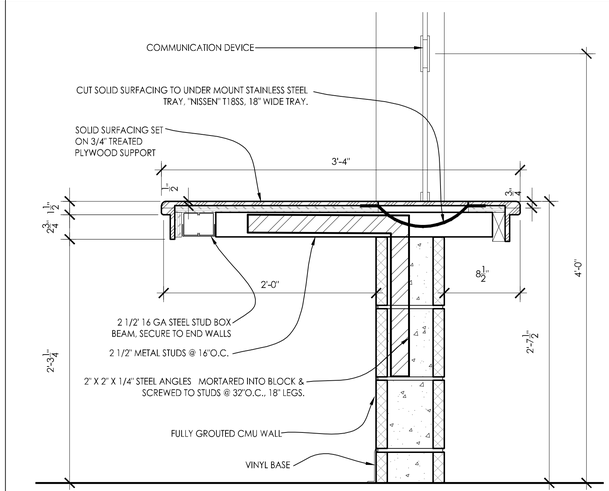
8 SLIDING GATE W/ FLUSH TRACK & WHEEL DETAILS (ADA COMPLIANT)

N.S.



3 TICKET COUNTER W/ CASH TRAY PLAN

1 1/2"=1'-0"



1 TICKET COUNTER W/ CASH TRAY PLAN & SECTION

1 1/2"=1'-0"

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ANTHONY RIECKE GONZALES
LICENSED PROFESSIONAL ARCHITECT
No. 6471
HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE:
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TRANSIT HUB

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FENCE & GATE LAYOUTS

REVISIONS:
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

AUGUST 7, 2020 BID SET

A3.1

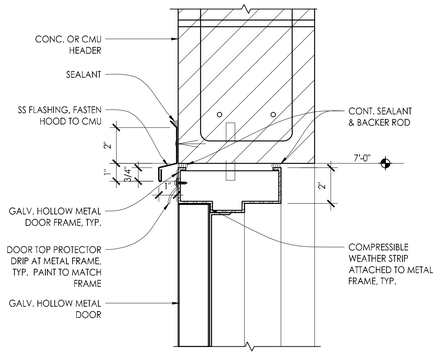
SHEET OF
PROJECT NO. 2018-018
DATE MAY, 2018

FINISH SCHEDULE

KEY	ROOM NAME	MATERIAL DESCRIPTION	MANUFACTURER	STYLE/SIZE	COLOR	HEIGHT	COMMENTS
B-1	ADMIN./TICKETING	RUBBER BASE	JOHNSONITE	TRADITIONAL COVE BASE	-	6"	
B-2	MENS, WOMEN, & UNISEX RESTROOM	PERIMETER TILE BASE	JOHNSONITE	RUBBER COVE	-	4"	1/8" THK. MATERIAL
GR-1	MENS, WOMEN, & UNISEX RESTROOM	RESTROOM GROUT	MAPEI	1/16" W. GROUT	-		
P-1	ADMIN./TICKETING	FIELD COLOR	SHERWIN WILLIAMS	FINISH - EGGSHELL	-		DOORS & JAMBS IN SEMI-GLOSS
P-2	ALL RESTROOMS	PAINT ABOVE TILE	SHERWIN WILLIAMS	FINISH - EGGSHELL	-		
T-1	ALL RESTROOMS	PORCELAIN FIELD FLOORING	SHAW	STRUCTURE 12 X 24	-	GROUT 1/16" W.	
T-2	ALL RESTROOMS	PORCELAIN WAINSCOT TILE	SHAW	STRUCTURE 12 X 24	-	GROUT 1/16" W.	
SS-1	ADMIN./TICKETING	SOLID SURFACING COUNTERTOP	MANNINGTON	SPACIA / 18X36	-		

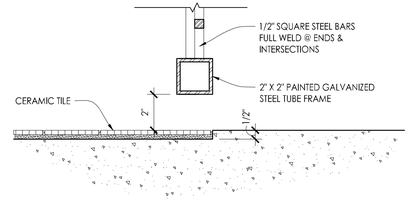
3 FINISH SCHEDULE

3"=1'-0"



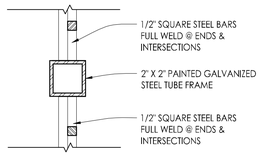
14 DOOR HEADER DETAIL

3"=1'-0"



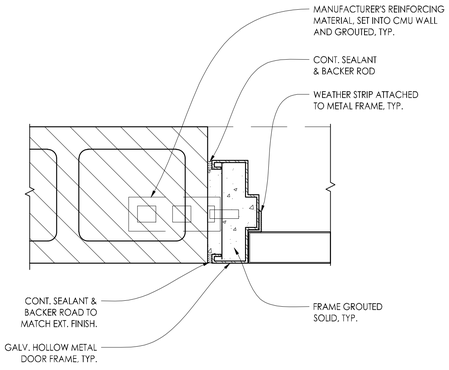
7 THRESHOLD @ RESTROOM GATE DETAIL

3"=1'-0"



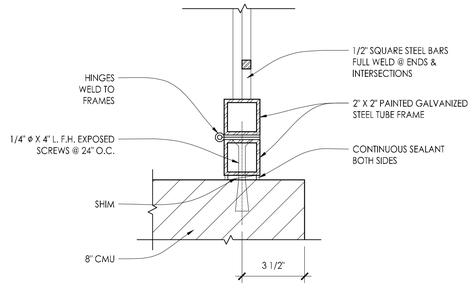
4 GATE MID RAIL DETAIL

3"=1'-0"



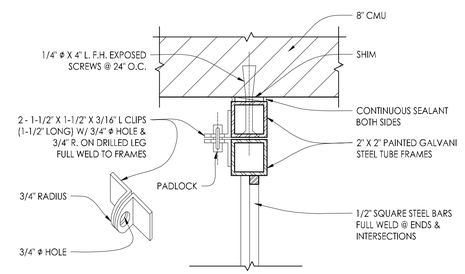
13 DOOR JAMB DETAIL

3"=1'-0"



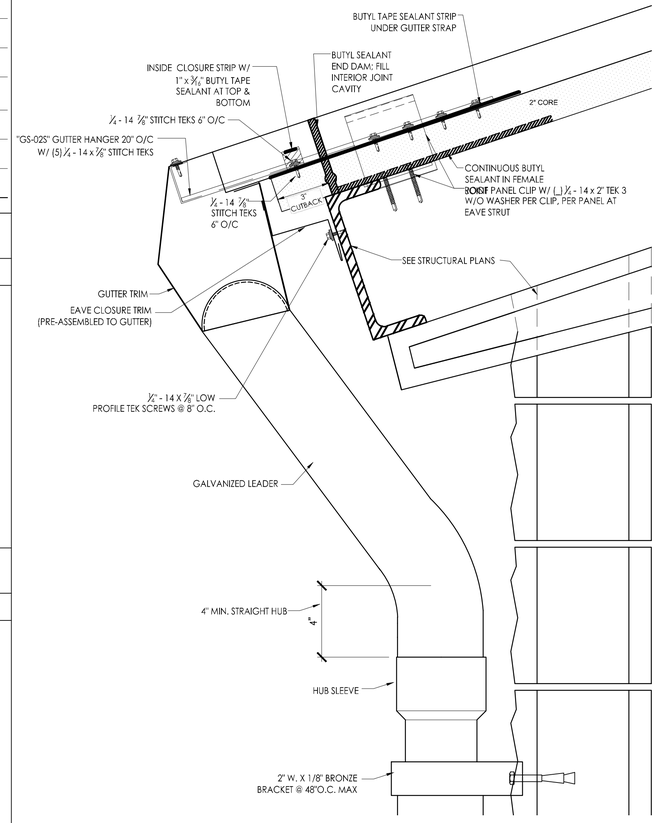
8 GATE JAMB - HINGE DETAIL

3"=1'-0"



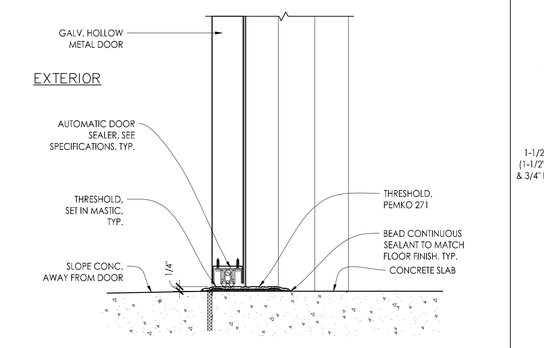
5 GATE JAMB - LOCK DETAIL

3"=1'-0"



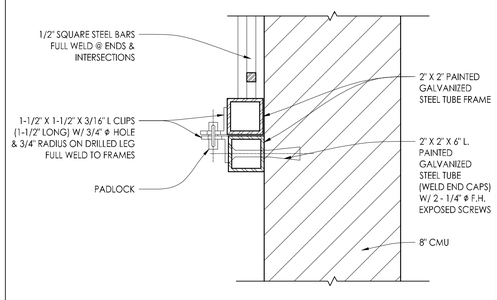
2 TYPICAL ROOF OVERHAND DETAIL

3"=1'-0"



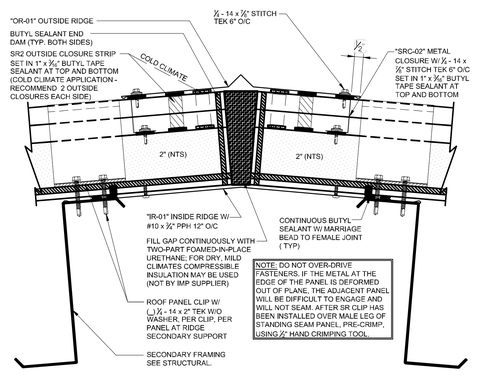
12 DOOR THRESHOLD DETAIL

3"=1'-0"



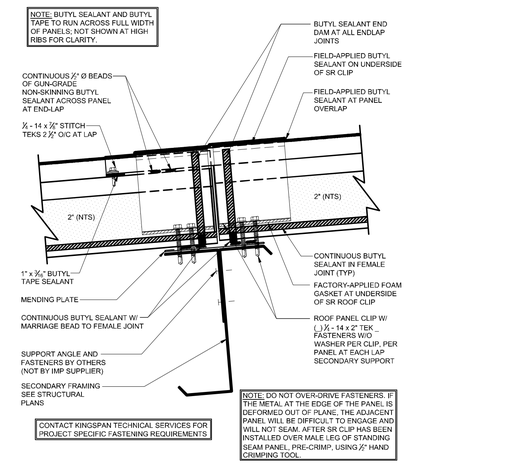
9 GATE DETAIL

3"=1'-0"



6 RIDGE DETAIL

3"=1'-0"



1 ROOF PURLIN DETAIL

3"=1'-0"

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TELEPHONE (808) 877-7688

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EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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MISCELLANEOUS DETAILS.

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

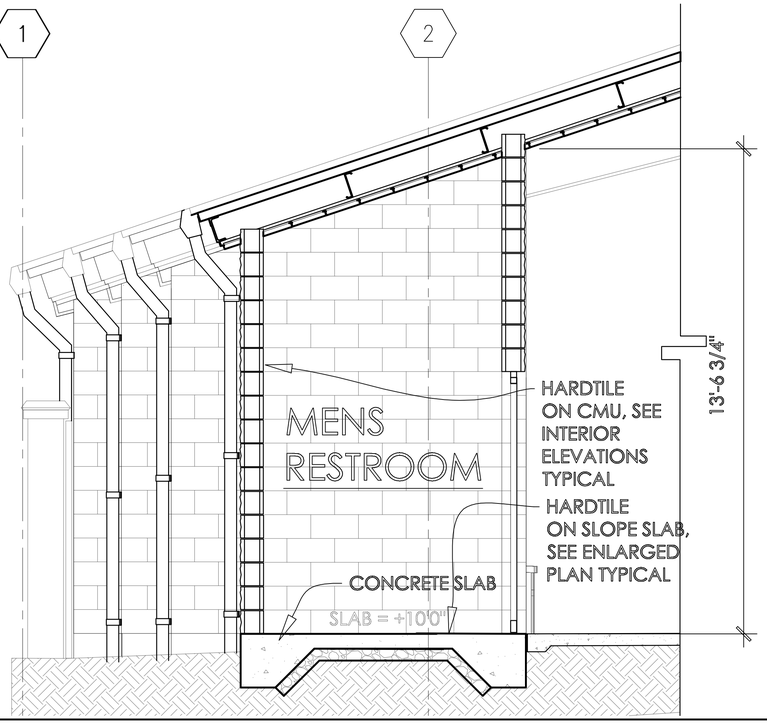
AUGUST 7, 2020 BID SET

A-3.2

SHEET OF

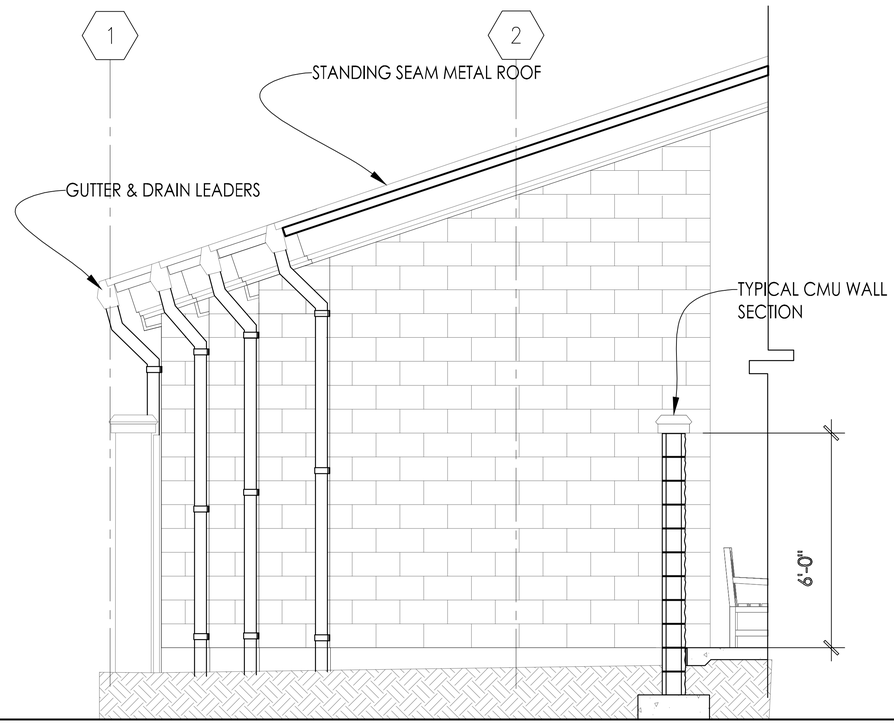
PROJECT NO. 2018-018

DATE MAY, 2018



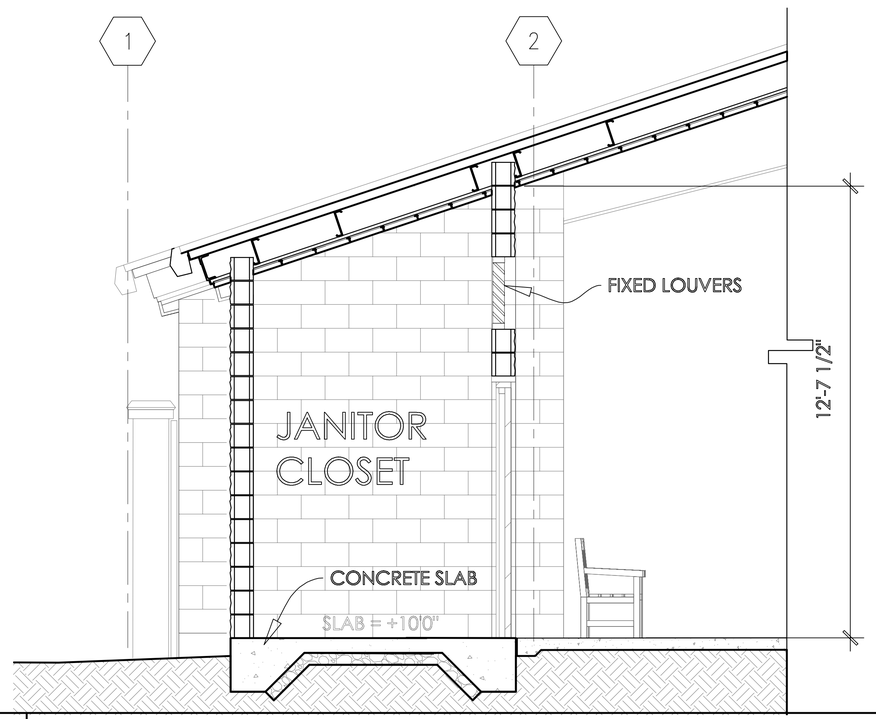
3 WALL SECTION

1/2"=1'-0"



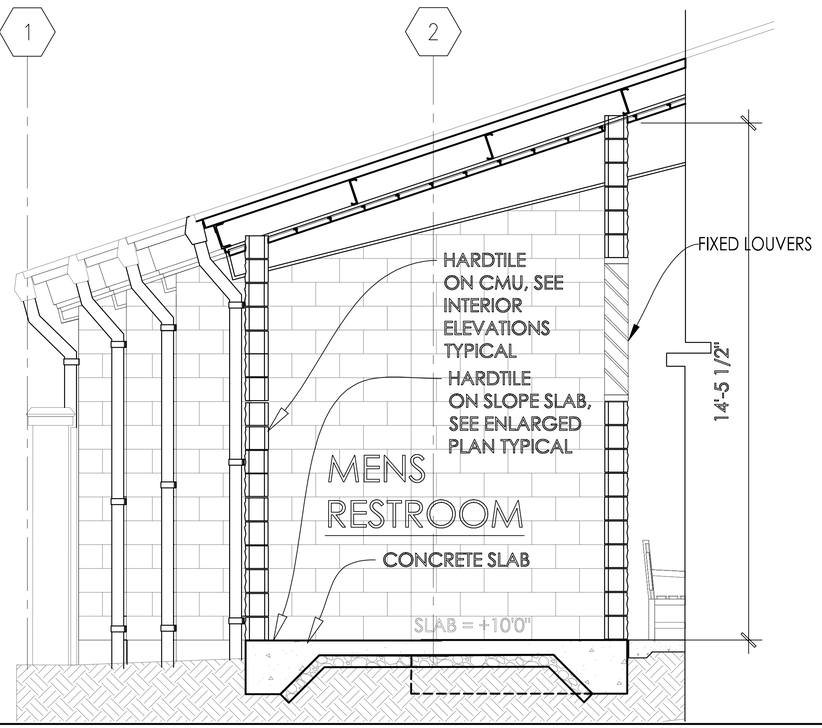
1 WALL SECTION

1/2"=1'-0"



4 WALL SECTION

1/2"=1'-0"



2 WALL SECTION

1/2"=1'-0"

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PO BOX 1627
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TELEPHONE: (808) 877-7688

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EXPIRATION DATE OF LICENSE: APRIL 30, 2022

TRANSIT HUB

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WALL SECTIONS

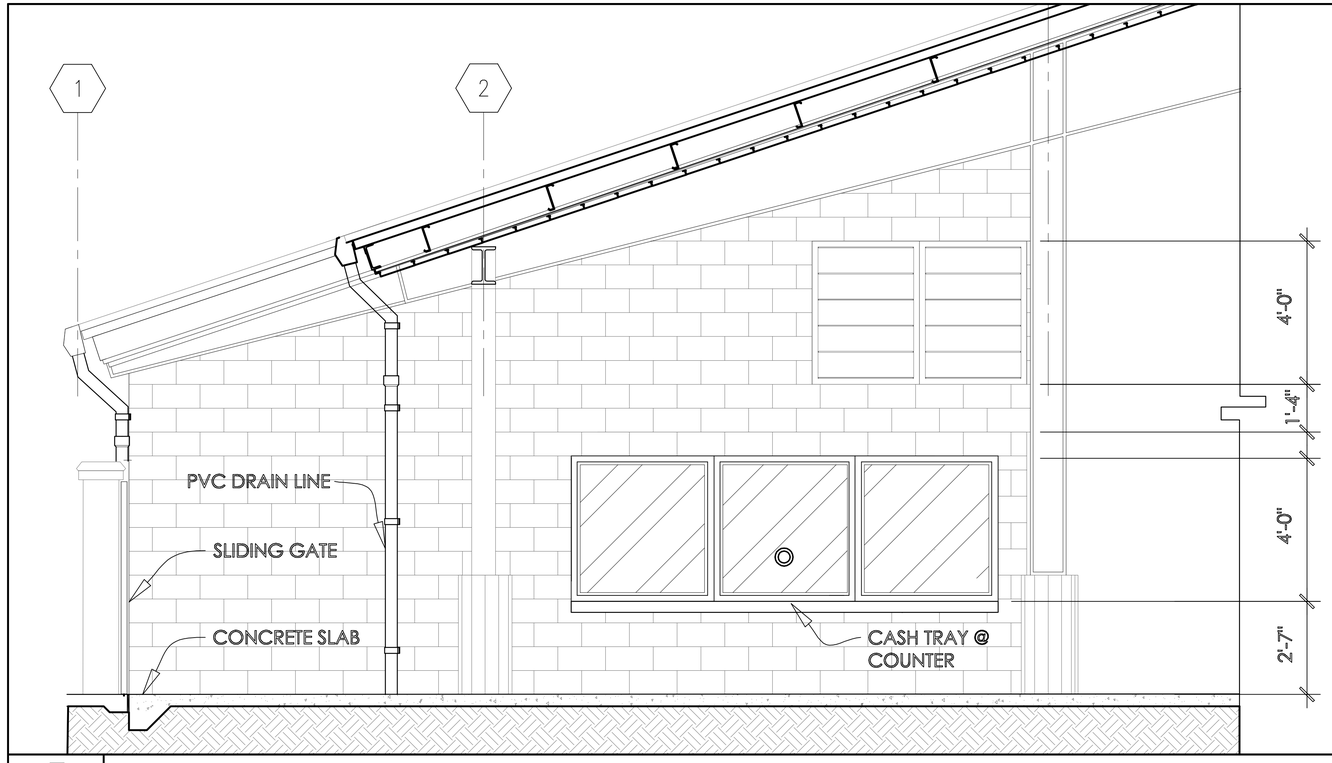
REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

AUGUST 7, 2020 BID SET

SHEET A-5.1 OF

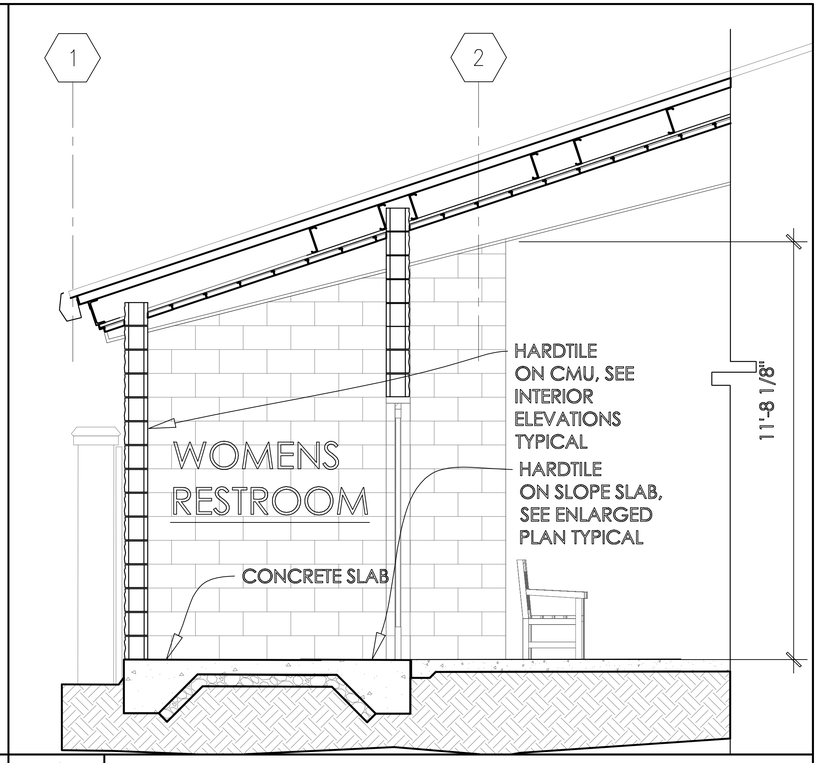
PROJECT NO. 2018-018

DATE MAY, 2018



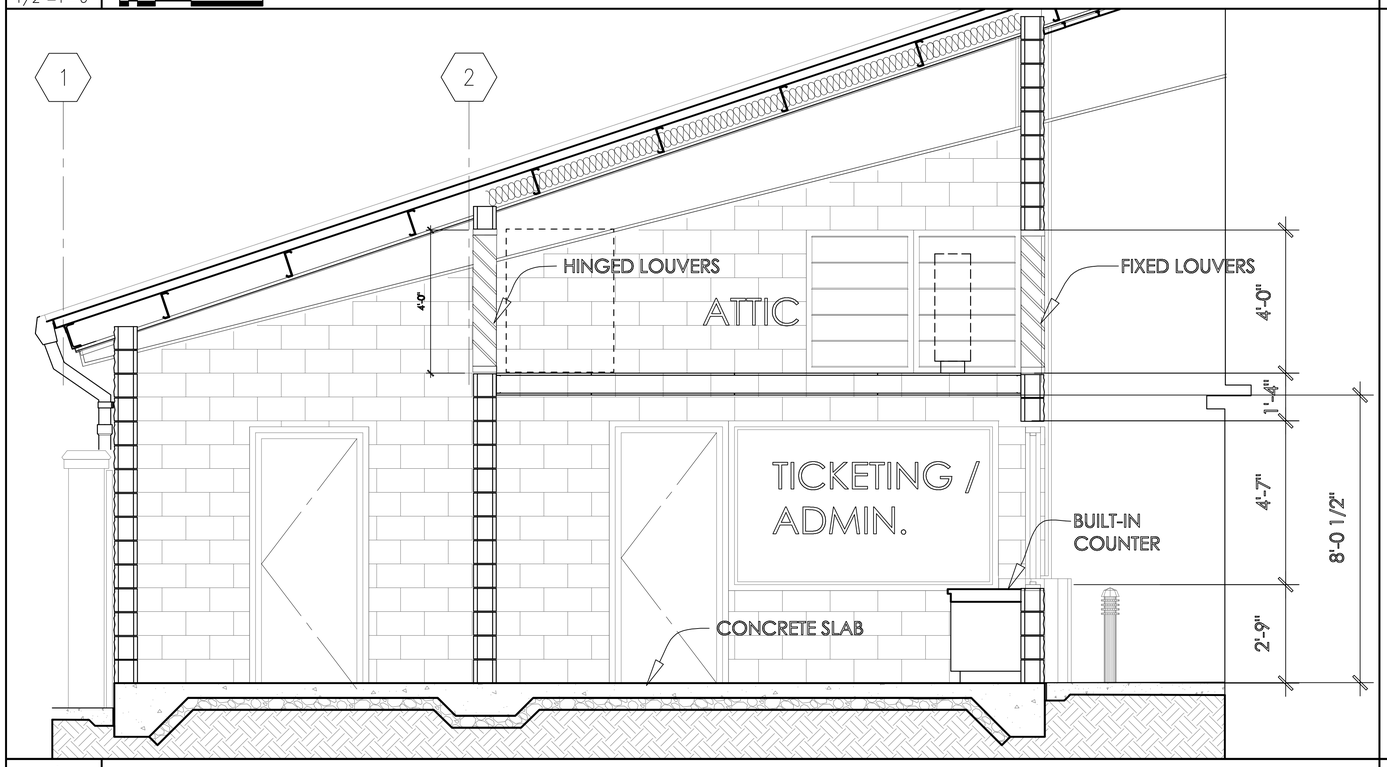
3 WALL SECTION

1/2"=1'-0"



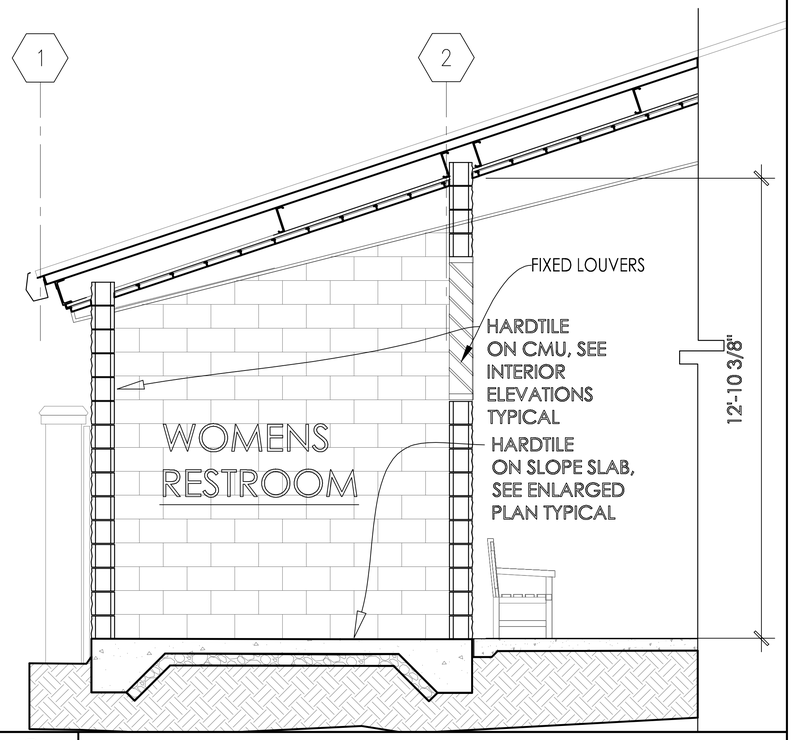
1 WALL SECTION

1/2"=1'-0"



4 WALL SECTION

1/2"=1'-0"



2 WALL SECTION

1/2"=1'-0"

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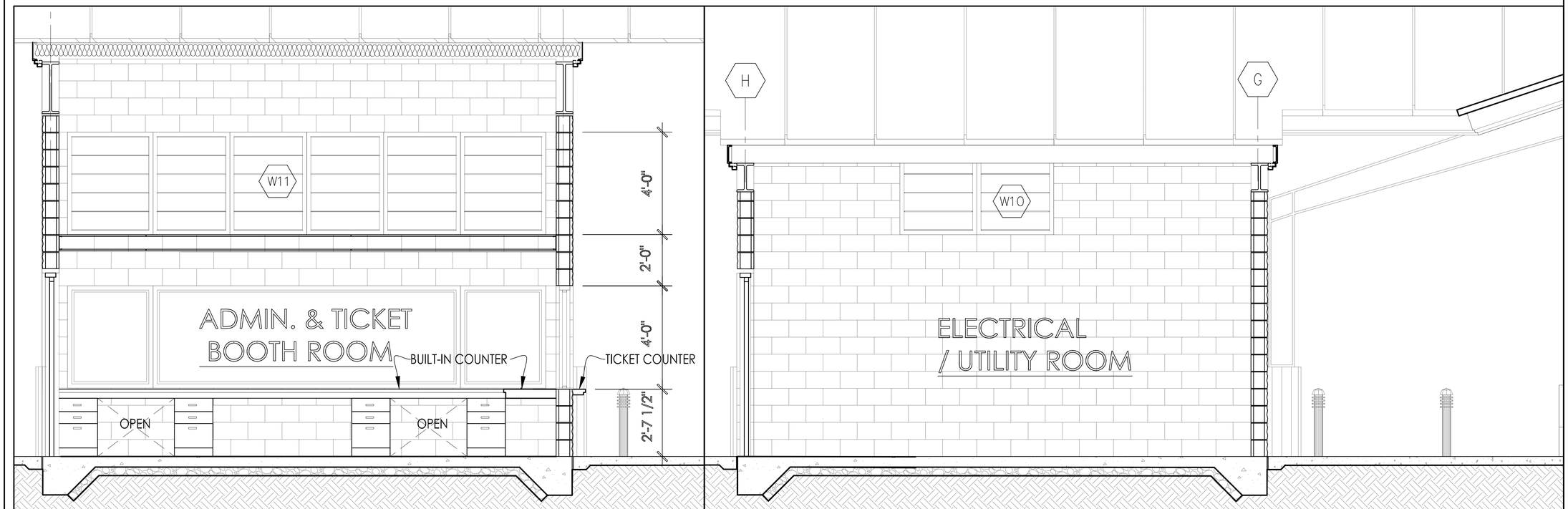
WALL SECTIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

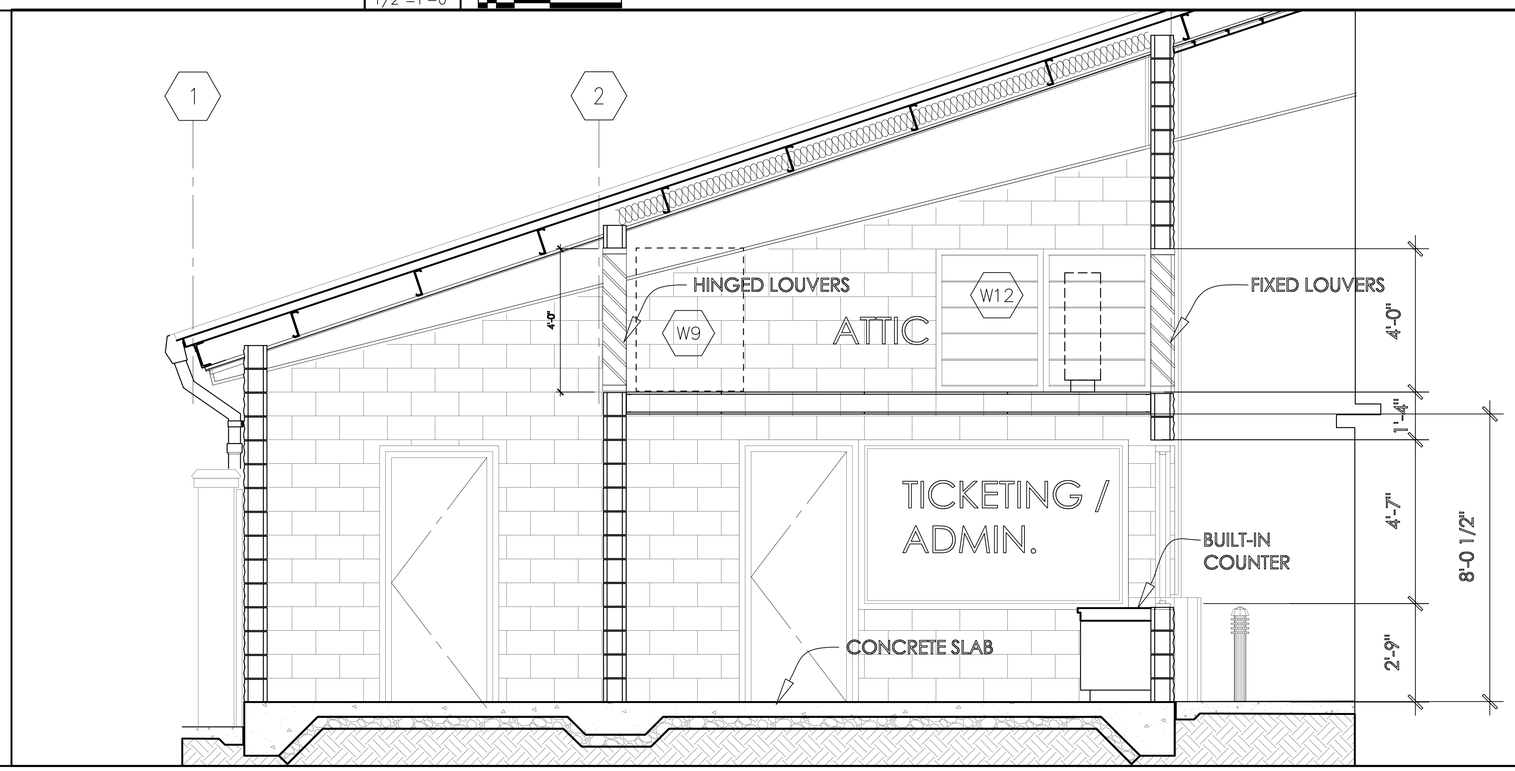
AUGUST 7, 2020 BID SET

SHEET A-5.2
OF
PROJECT NO. 2018-018
DATE MAY, 2018



3 WALL SECTION
1/2"=1'-0"

1 WALL SECTIONS
1/2"=1'-0"



4 WALL SECTION
1/2"=1'-0"

RIECKE SUNNLAND KONO
ARCHITECTS, LTD
33 LONO AVENUE, STE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE: (808) 877-7688

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

ANTHONY R. GONZALES
LICENSED PROFESSIONAL ARCHITECT
No. 6471
HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

WALL SECTIONS

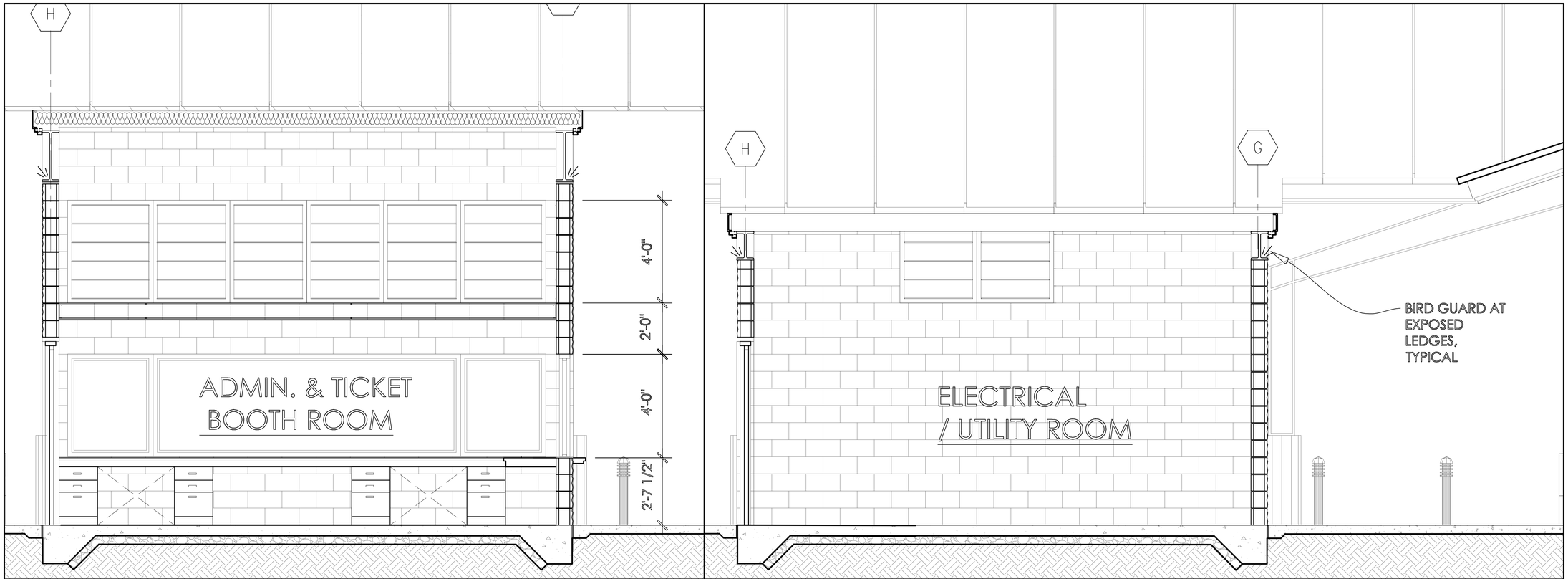
REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

AUGUST 7, 2020 BID SET

SHEET A-5.3 OF

PROJECT NO. 2018-018

DATE MAY, 2018

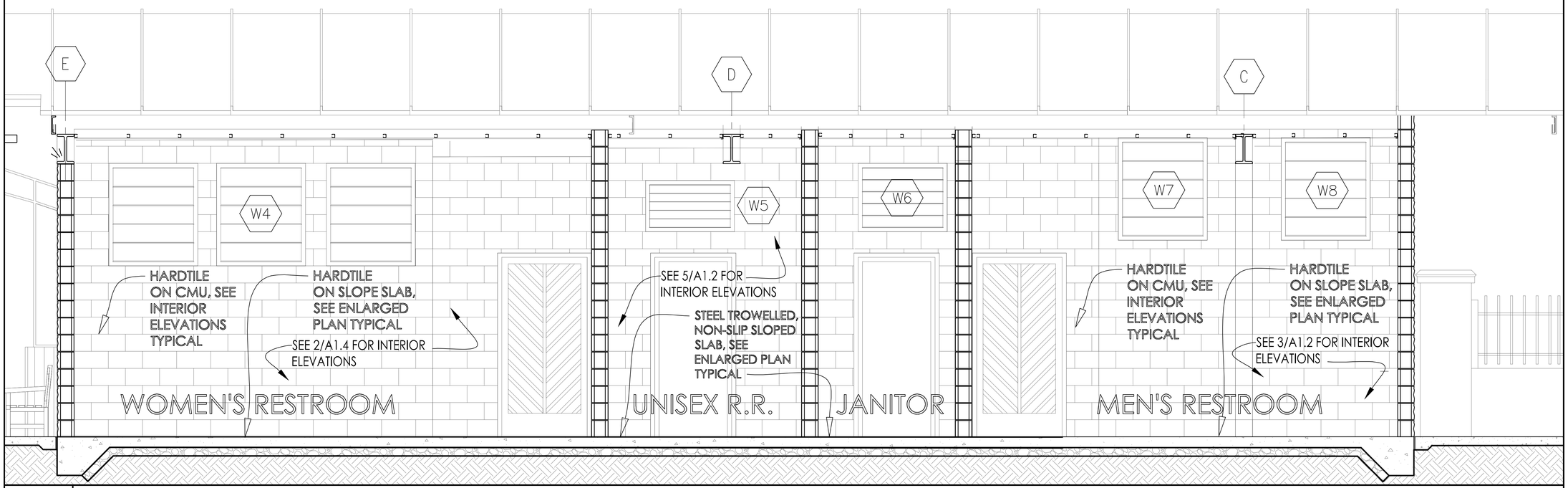


3 WALL SECTION

1/2"=1'-0"

1 WALL SECTIONS

1/2"=1'-0"



4 WALL SECTION

1/2"=1'-0"

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AUTHORITY RIECKE GONZALES LICENSED PROFESSIONAL ARCHITECT No. 6471 HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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TRANSIT HUB

VEVAU ST
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(2) 03-07-004:003

WALL SECTIONS

REVISIONS
2020-01-23 DESIGN DEVELOPMENT PROGRESS PLANS
2020-05-05 PERMIT SET

AUGUST 7, 2020 BID SET

SHEET A-5.4
OF
PROJECT NO. 2018-018
DATE MAY, 2018

GENERAL NOTES:

GENERAL:
Dimensions refer to centerline of aluminum or steel framing, rough concrete surfaces, face of lumber or top of concrete slab, unless noted otherwise. Verify dimensions prior to the start of construction. Notify the Structural Engineer of any discrepancies or inconsistencies.

All Drawings and General Notes are considered part of the contract documents. The contractor shall be responsible for review and coordination of all drawings and General Notes prior to start of construction. Any discrepancy that occurs shall be brought to the attention of the Structural Engineer prior to the start of construction so that a clarification may be issued. Work in conflict with the contract documents or Building Code requirements shall be corrected by the Contractor at his own expense and at no expense to the owner, Architect or Structural Engineer.

Work shall conform to the minimum standards of the 2006 International Building Code as amended by the County of Maui, as well as any other regulating authority over any portion of the work including those additional codes and standards listed in these Structural General Notes.

Refer to the Architectural Drawings for the following:
–Dimensions not shown on the Structural Drawings.
–Size and location of floor and roof openings, except as noted.
–Size and location of all concrete curbs, equipment pads, pits, floor drains, slopes, depressed areas, change in level, chamfers, grooves, inserts.
–Floor, wall and roof finishes.

Refer to the Mechanical, Plumbing, and Electrical Drawings for the following:
–Pipe runs, sleeves, hangers, trenches, wall and slab openings, etc, except as noted.
–Electrical conduit runs, boxes, and outlets in walls and slabs.

Features of construction shown are typical, and they shall apply generally throughout for similar conditions. Modify typical details as directed to meet special conditions. Specific Notes and Details take precedence over General Notes and Typical Details.

Contract Structural Drawings and General Notes represent the finished structure. They do not indicate the method of construction. Provide all measures necessary to protect the structure during construction. Such measures shall include, but are not limited to, bracing and shoring for loads due to construction equipment. Observation visits to the site by the Structural Engineer will not include inspection of the aforementioned items.

Spread out construction materials, if placed on framed roof. Load shall not exceed the design Live Load per square foot. Provide adequate shoring and bracing where the structure has not attained the design strength.

Specifications and detailing of all waterproofing and drainage items, although sometimes indicated on the Structural Drawings for general information purposes only, are solely the design responsibility of others.

Submittals, Special Inspections, Structural Observations, and Material Sampling and Testing, when required, are specified in their respective sections of the General Notes.

DESIGN DATA: Governing Building Code: 2006 International Building code as amended by the County of Maui.

Live Loads: Reducible per Section 1600 Unless Otherwise Noted
–Roofs "Lo": 4:12 Roof Slope= 20 psf (Table 1607.1) Reducible Per 1607.11.2– Lr min = 12 psf
–Mechanical Attic: 50 psf

Wind Analysis–2006 IBC/ASCE 7–05 (with State of Hawaii Amendments):
–Occupancy Category – II (Table 1604.5), Importance Factor I=1.0 –Basic Wind Speed: 105 mph
–Exposure Category: C –Kzt: 1.0
–Kd: Main Wind Force Resisting System = 0.70 Components and Cladding = 0.65
–Enclosure Classification: Partially Enclosed

Seismic Analysis–2006 IBC/ASCE 7–05 (with State of Hawaii Amendments):
–Occupancy Category – II (Table 1604.5), Importance Factor I=1.0
–Site Class – D (Table 1613.5.2)
–Spectral Accelerations
Ss = 0.95 g Fa= 1.1 Sds = 0.70 g
S1 = 0.25 g Fv= 1.90 Sd1 = 0.32 g
–Seismic Design Category – D

Seismic Lateral Force Resisting System (Table 21.2–1, ASCE 7–05:
ROD BRACED GRID LINE 4: Per PEMB Supplier, See S2.2.

Grid Line 2, C, E, G and H –
Special Reinforced Masonry Shear/Bearing Walls (Item A.7): R=5.0, Ω=2.5, Cd=3.5
Seismic Base Shear – 0.147xW LRFD, 0.103xW ASD

–Lateral Forces on elements of structures, nonstructural components and equipment supported by structures are per ASCE 7–05 Equations 13.3

FOUNDATIONS:
Foundation design is based upon the Geotechnical Investigation Report prepared by Hawaii Geolabs, Inc. entitled "Geotechnical Engineering Exploration, Central Maui Transit Hub, Kahului, Maui, Hawaii" Dated July 19, 2019, which is on file with the Architect.

Refer to the Geotechnical Report for additional recommendations not listed below. All site grading, excavations, fills, and soil preparations shall conform to the Geotechnical Report and all work shall be done under the observation of the Geotechnical Engineer.

Maxumum Allowable Soil Pressure: 2500 psf DL+LL 3300 psf DL+LL+Lateral
Passive Earth Pressure: 350 pcf Coefficient of Friction: 0.35

Provide for the design and installation of cribbing, sheathing, and shoring required and be solely responsible for excavation procedures including, but are not limited to, lagging, shoring and protection of adjacent property, structures, streets and utilities in accordance with all national, state and local safety ordinances.

Footings:
Prepare footing excavations in accordance with the Geotechnical Report. All footings shall be founded at a depth at least 18" below the lowest adjacent grade. Footing depths shown on the Structural Drawings are minimum depths. Footings may be poured neat, in excavated trenches.

Excavations for footings shall be observed by the Geotechnical Engineer prior to placing reinforcing and concrete. Notify the Geotechnical Engineer when the excavations are ready for observation.

For modification of foundations at Pipes or Conduit perpendicular to footing, see 6/S3.1.

Backfill:
Properly backfill excavations. Place backfill behind retaining walls only after the concrete or grout has attained full design strength. Brace and protect all building and pit walls below grade from lateral loads until the attaching of floors are completely in place, and have attained full strength. Provide for the design, permits, and installation of such bracing.

Mechanically compact footing backfill and utility trench back fill within the building area in layers in accordance with the Geotechnical Report and observed by the Geotechnical Engineer or Inspector. Flooding soils will not be permitted. For requirements of pipe trench parallel to footing, see 5/S3.1.

Slabs On Grade:
For the sub–capillary break materials under concrete slabs on grade, refer to the Geotechnical Report. Provide a 15 mil vapor barrier over 4" of #3 fine gravel under slabs on grade. Rock course shall be rolled to a smooth surface.

Prepare sub–grade below exterior slabs on grade in accordance with the Geotechnical Report.

VAPOR BARRIER:
Install a 15–mil Vapor Barrier below slab. Use Stego Wrap (15–mil) Vapor Barrier by STEGO INDUSTRIES LLC, San Juan Capistrano, CA; (877) 464–7834 or approved substitution. Alternate Vapor Barriers shall conform to ASTM E 1745, Class A, nylon– or polyester–cord–reinforced three–ply high–density polyethylene sheet or one–ply extruded polyolefin sheet; 15 mil minimum thickness, Permeance Rating: ASTM E96, ASTM E154 not exceeding 0.006 gr/ft2/hr.

Place, protect, and repair vapor barrier sheets according to manufacturer's written instructions. Use the greatest widths and lengths practical to minimize lap joints. Seal laps joints and edges with tape or materials compatible with the vapor barrier. Remove and replace torn, punctured, or damaged vapor barrier materials, except when minor repairs or patches are allowed by manufacturer's instructions. Prevent cutting or puncturing vapor barrier. No penetrations of the vapor barrier allowed except for permanent utilities. Seal all penetrations including pipes and reinforcing. Repair damage and reseal vapor barrier before placing concrete.

Prevent vapor barrier exposure to ultraviolet radiation for more than a few days prior to the concrete placement. Remove standing water from the vapor barrier prior top concrete placement.

REINFORCING STEEL:
Reinforcing steel detailing, fabrication, and placement shall conform to the "2006 International Building Code", Chapter 19; the "Manual of Standard Practice of the Concrete Reinforcing Steel Institute", latest edition; and the "Building Code Requirements for Structural Concrete and Commentary", ACI 318–05; unless otherwise noted. Deformed Steel Reinforcing Bars shall conform to ASTM A615, Grade 60

Securely tie steel reinforcement in place with #16 annealed iron wire so as to maintain the exact position before and during the placement of concrete. Support bars in beams and slabs well cured concrete blocks.

Bars shall be continuous unless noted otherwise. Submit requested rebar lap splices, in locations not shown on the Structural Drawings, to the Structural Engineer for approval. Laps in bars shall be 36 bar diameters, or 24" minimum unless noted otherwise.

Concrete coverage (clear distance between steel and forms) shall be as follows unless noted otherwise:
–Concrete cast against earth: 3"
–Formed surfaces in contact with earth: 2"
–Slabs on Rolled Grade: 2"
–Clear Distance Between Adjacent Bars or between Bars and Inserts: 2"

For typical reinforcing bar bends and hook dimensions, see 1/S3.1.

Clean reinforcement of grease and rust or other materials likely to impair bond.

CONCRETE WORK:
Concrete work shall conform to the "2006 International Building Code", Chapter 19 and the "2006 International Building Code Requirements for Structural Concrete and Commentary", ACI 318–05; unless otherwise noted.

Properly construct formwork conforming to the concrete surfaces as shown on the Structural Drawings, sufficiently tight to prevent leakage, sufficiently strong and braced to maintain their shape and alignment until no longer needed to support the concrete.

Remove debris from forms prior to concrete placement.

Refer to Architectural, Electrical, and Mechanical Drawings for details at door and window openings, floor type hinges, etc., and for location of sleeves, pipes, and other embedded items. Openings through slabs or walls not shown on the Structural Drawings which would interrupt reinforcing bars shall not be made without the approval of the Structural Engineer.

Remove forms and shoring only after the concrete has attained sufficient strength to withstand all loads to be imposed without excessive stress, creep, or deflection.

Concrete shall be ready mixed conforming to ASTM C94. Cement shall be Portland Cement Type II, conforming to ASTM C150. Submit for review of the Structural Engineer the concrete mixes proposed for use, designed by the concrete supplier and reviewed by an approved testing laboratory.

Use maximum size aggregate as noted below. Use 3/8" maximum aggregate where necessary for proper placing, such as thin or congested sections. Superplasticizers may be used to improve workability in thin congested sections. Incorporate superplasticizers into concrete mix designs.

Concrete shall have the following characteristics (2):

Concrete Location	Maximum Aggregate Size	Minimum Strength at 28 days	Maximum Water/Cement Ratio
Footings	1 ½"	3000 psi	0.60
Slab–on–Grade	¾"	3000 psi (1)	0.49 (1)

Notes:
1. Water/Cement Ratio is the critical parameter (minimum strength required is as noted on the schedule)
2. Slumps shall be the consistent with proper placing.

Pipes other than electrical conduits shall not be embedded in structural concrete except where specifically approved the Structural Engineer. Electrical conduits embedded in concrete shall not exceed 1 ¼" outside diameter, without approval of the Structural Engineer. Conduit or sleeves, when embedded in concrete, as approved by the Structural Engineer, shall be spaced with one conduit or sleeve diameter (larger conduit/sleeve) clear between adjacent conduits, sleeves, or rebar, or 1–inch, whichever is greater. Conduit or sleeves can be tied to rebar when oriented perpendicular to them, provided the location of the rebar is not affected by the conduit or sleeves. Conduit or sleeves without clearance noted above shall be submitted to the Structural Engineer for review prior to installation. Added trim reinforcement will be required where clearances cannot be met, such as electrical panel rooms.

Mechanically Vibrate all concrete except slabs on grade 6–inches or less so as to completely fill the forms without causing undue segregation.

Wet or Damp Cure for 7 Days Minimum. Curing Compounds may be used in accordance with the manufacturer's requirements.

The contractor may submit proposed vertical construction joints for the slab on grade. Submit the proposed locations of construction joints to the Structural Engineer for review prior to starting construction. Clean surfaces of construction joints to remove dust, chips or other foreign matter prior to placing the adjacent concrete.

Inform the Architect and Structural Engineer at least 72 hours prior to placing any structural concrete so that the Architect and Structural Engineer may have the opportunity of reviewing the work prior to concrete placement.

CONCRETE UNIT MASONRY:
Concrete Unit Masonry (CMU) work shall conform to the "International Building Code", Chapter 21 and the "Building Code Requirements for Masonry Structures and Commentary", ACI 530–05/ASCE 5–05/TMS 402–05" unless otherwise noted.

–Concrete Block: ASTM C90, Grade N Type II Units made with medium weight aggregates which shall provide full assembly strength of f'm=1500 psi at 28 days.
–Grout: 2000 psi minimum at 28 days
–Mortar: Type S = 2000 psi at 28 days

Provide a minimum of 1" clear between the main reinforcing and the masonry units.

Lay masonry units in running bond. Do not obstruct the vertical continuity of the grout space.

When height of pour exceeds 5'–4", provide cleanouts at the bottom of all cells containing vertical reinforcing. Submit high lift grouting procedures to the Structural Engineer for Review and Approval.

Fill all cells solid with grout unless noted otherwise. Mechanically vibrate grout by electric vibrators, of size to reach the lowest level of the grout pour. Provide a horizontal construction joint between grout pours by stopping all wythes at the same elevation and with the grout stopping 1 ½" below a mortar joint. At bond beams, stop the grout pour ½" below the top of the masonry.

PRE–ENGINEERED METAL BUILDING (PEMB) NOTES: SEE SHEET S2.2

STRUCTURAL STEEL AND MISCELLANEOUS IRON (OTHER THAN AS DEPICTED ON PEMB DRAWINGS):
Fabricate and erect Structural Steel and Miscellaneous Iron according to the American Institute of Steel Constructions's "Specification for Design, Fabrication, and Erection of Structural Steel Buildings," latest edition and the "Code for Standard Practice for Steel Buildings and Bridges," latest edition.

Unless otherwise noted, steel shall conform to ASTM A992 (Fy=50 ksi). Hollow Structural Sections (Circular or Rectangular) shall conform to ASTM A500 Grade B (Fy=46 ksi). All steel plates, bars and other shapes shall conform to ASTM A–36.

All miscellaneous steel to steel bolted connections shall be made with Common (or Machine) bolts conforming to ASTM A307.

Threaded Anchor Bolt Rod Material Shall Conform to Stainless Steel ASTM 193 OR A320, TYPE 304 or 316, Fy = 30 ksi minimum or approved equal.

Weld connections according to the "Structural Welding Code – Steel," AWS–D1.1, latest edition. Welding shall be performed by welders certified for the welds to be made. All welding should be done with E70XX electrodes, unless noted otherwise. Refer the Specifications for the welding process to be used. All welds exposed to the weather shall be grounded smooth and painted with 2 coats of Z.R.C. cold galvanizing compound.

The weld lengths called for on the Structural Drawings are the net effective length required. Where fillet weld symbol is given without indication of size, use the minimum size welds as specified in the AISC Manual of Steel Construction, 13th Edition, Table J2.4.

Additional miscellaneous metal items such as embeds, railings, and supports for interior finishes may be shown on the drawings prepared by others, see Architectural Drawings.

PROTECTION OF STEEL:
Protect all steel including both the PEMB system and miscellaneous structural steel with a high performance protective epoxy paint system. Submit the proposed paint system to the Architect and Structural Engineer for Review and Approval.

COLD FORMED STEEL STRUCTURAL FRAMING:
Cold Formed Steel structural framing shall be fabricated and erected according to manufacturer's recommendations. All members noted on the drawings are designated by the AISI Standard for Cold Formed Steel Framing, General Provisions. All structural properties shall be computed in accordance with the AISI "Specifications for the Design of Cold Formed Steel Structural Members," Latest Edition.

All members shall meet the minimum requirements of ASTM A653 Structural Quality Sheet Steel.

Unless noted otherwise, cold formed steel shall conform to galvanized, 16 gauge (54 mils) and heavier: ASTM A446 Grade D, modified to a minimum yield point of 50 ksi.

All members shall have a minimum protective coating equal to G60 galvanized finish. Touch up field abrasions to the painted and/or galvanized finish.

Fit and seat all members properly to abutting members. Splices in joists are not permitted.

For minimum stud section properties, refer to the SSMA Steel Stud Manufacturers Association Product Technical Information ICBO ESR–3064P.

Welding: Contractors Option–Connections depicted as screwed may be welded. Weld connections in accordance with the "Structural Welding Code – Sheet Steel" (ANSI/AWS D1.3, latest edition) as published by the American Welding Society. All welds shall be done by certified welders who are qualified for each type of weld. Welding of light metal shall be with fillet welds equivalent in thickness to the thinner of the two sections being joined. Grind smooth all weld and coat with 2 coats of a zinc rich primer.

Use standard threaded self drilling screws, with appropriate threads and heads for the intended use, for all screwed fasteners, size as noted on the structural details. For additional fastener notes and data, see 8/S3.2.

Framing hardware shall be by the Simpson "Strong Tie" Company of San Leandro, California, or Dietrich Metal Framing of Pittsburg, PA or approved equivalent. All framing hardware is to be galvanized.

STRUCTURAL FASTENING SYSTEMS:
Submit Alternate fastening systems to those specified below for review and approval by the Structural Engineer. Lower capacity of alternate systems and/or lack of test data may result in either the modification of the structural design of the connections, or the rejection of the alternate system.

Power Driven Fasteners (PDF):
The fastening system used shall be X–DNI or X–EDNI Pins as manufactured by Hilti Inc. and installed per ICC Report No. ESR–1663 (or approved equivalent fastening system). Pins shall have a minimum shank diameter of 0.145", and a minimum embedment length of 9/16–inch into structural steel or 1–inch into concrete unless noted otherwise.

Epoxy:
Epoxy shall be SET–XP as manufactured by Simpson, Strong Tie Inc. and installed in accordance with ICC Report ER–1722 (or approved equal). Size all drilled holes according to the manufacturer's recommendations.

SHOP DRAWING SUBMITTALS:
The Structural Engineer will review, or take other appropriate action, on the Contractor submittals, such as Shop Drawings, product data, samples and other data, which the Contractor is required to submit, but only for the limited purpose of checking for conformance with the design concept and the information shown in the Construction Documents. The following is a summary of the required shop drawing submittals. For specific submittal requirements on the contents of the submittals, refer to specific general notes section.

- CMU and Concrete Reinforcement Shop Drawings.
- Concrete Mix Design, Cement Certificate, Fine and Coarse Aggregate Certificate, and Admixtures
- Pre–Engineered Metal Building Shop Drawings.
- High Performance Protective Paint System for the Structural Steel.

SPECIAL INSPECTION:
CONSTRUCTION REQUIRING SPECIAL INSPECTION BUT PERFORMED WITHOUT THAT SPECIAL INSPECTION WILL BE SUBJECTED TO REJECTION BY THE COUNTY OF MAUI. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SPECIAL INSPECTIONS.

Special Inspections per Section 1701 of the 2006 International Building Code are required for the following types of work:
1. Steel Construction
2. Structural Field Welding
3. High Strength Bolting
4. Concrete Construction
5. Masonry Construction
16. Post Installed Anchors (Anchor Bolts or Rebar installed in holes filled with Epoxy).

Notify the Special Inspector at least 72 hours prior to performing the work for which the Special Inspection is required. Construction performed without required special inspection will be subjected to rejection by the County of Maui.

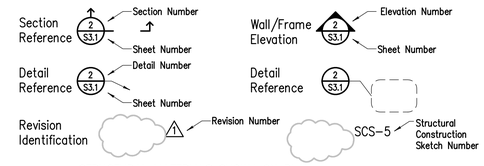
The Inspection/Testing agency shall send copies of all Inspection/Testing reports directly to the Architect, Structural Engineer and Building Department. Any materials which fail to meet the project specifications shall immediately be brought to the attention of the Architect and Structural Engineer.

DRAWING INDEX

No.	TITLE	DESIGN DEV SET	PERMIT SUBMITTAL	BID SUBMITTAL		
S1.1	TITLE SHEET/GENERAL NOTES	√	√	√		
S2.1	FOUNDATION PLAN	√	√	√		
S2.2	CONCEPTUAL PEMB FRAMING PLAN	√	√	√		
S3.1	FOUNDATION DETAILS	√	√	√		
S3.2	CMU WALL DETAILS	√	√	√		
S4.1	ROOF LEVEL DETAILS	√	√	√		
KEY		DATE	01–21–20	04–29–20	08–07–20	
"√"	ISSUED AS PART OF A SET					
"–"	NOT ISSUED AS PART OF A SET					

STRUCTURAL LEGEND

STRUCTURAL REFERENCES



STRUCTURAL MATERIALS SHOWN ON PLAN
Cast–In–Place Concrete
Concrete Masonry Units
Wood or Metal Studs

STRUCTURAL MATERIALS SHOWN ON SECTIONS OR DETAILS

STRUCTURAL ABBREVIATIONS

ABV Above	HGR Hanger	REF Reference
ADDL Additional	HORIZ Horizontal	REINF Reinforcement
ADJ Adjacent	HT Height	REQD Required
APPROX Approximate		REV Revision
ARCH Architectural	INFO Information	RF Roof
BLW Below	KIPS 1000 lbs	SECT Section
BOTT Bottom	KSF Kips per Square Foot	SCHED Schedule
B.O. Bottom of	LBS Pounds	SF Square Foot
C.I.P Cast in Place	LL Live Load	SHT Sheet
CLR Clear	MATL Material	SIM Similar
CONN Connection	MAX Maximum	S.O.G. Slab on Grade
CONTIN Continuous	MIN Minimum	SQ. Square
CTRSNK Countersink	MISC Miscellaneous	S.S. Stainless Steel
d Penny Weight	MTL Metal	STAGG Stagger
DIM Dimension	N/A Not Applicable	STD Standard
DL Dead Load	N.I.C. Not in Contract	STL Steel
DWG Drawing	No. Number	STRUCT Structural
	N.T.S. Not to Scale	SYM Symetrical
EA Each		T&B Top and Bottom
EL Elevation	o.c. On Center	THRU Through
E.O. Edge of	O.H. Opposite Hand	T.O. Top of
EQ Equal		TYP Typical
	P.E.M.B. Pre–Engineered Metal Building	U.N.O. Unless Noted Otherwise
FDN Foundation		VERT Vertical
F.O. Face of	PCF Pounds per Cubic Foot	V.I.F. Verify in Field
FRMG Framing	PLF Pounds per Linear Foot	
FT Feet or Foot	PSF Pounds per Square Foot	w/ With
FTG Footing	PSI Pounds per Square Ince	w/o Without
	P.T. Pressure Treated	
GALV Galvanized		

STRUCTURAL OBSERVATION:
The Structural Engineer of Record, or his designated engineer, shall provide structural observation of the structural system for general conformance to the approved plans and specifications at significant construction stages, and at completion of the structural system, as required by the IBC Section 1700 or as noted elsewhere in the contract documents.

The Structural Observer will submit to the Owner and Architect a written statement that the site visits have been made, and to identify any reported deficiencies which, to the best of the Structural Observer's knowledge, have not been resolved. Notify the Structural Engineer of Record a minimum of 72 hours prior to the date the observation is required.

The following items require Structural Observation:
–Foundation and Masonry Reinforcing
–Roof Connections to Masonry Walls

SCOT LISTAVICH
STRUCTURAL
ENGINEERING, LLC
3681 BALDWIN AVE, Unit 202
MAKAWAO, MAUI, HI 96768
PH–808–878–8967
FAX–866–660–1381
EMAIL: Scot@SLSEMaui.com

SCOT T. LISTAVICH * LICENSED PROFESSIONAL ENGINEER No. 11031–S HAWAII, U.S.A. *
04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER DP DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

TRANSIT HUB
VEVAU ST.
KAHULUI, MAUI, HAWAII
(2) 03–07–004:003

TITLE SHEET/GENERAL NOTES

REVISIONS
2020–01–21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020–04–29 PERMIT SUBMITTAL

AUGUST 7, 2020 BID SET

S1.1

RSK PROJECT NO: 2018–018
SLSE PROJECT NO: 1845
DATE: JANUARY, 2020

Date Plotted: 8/4/2020 4:17 PM
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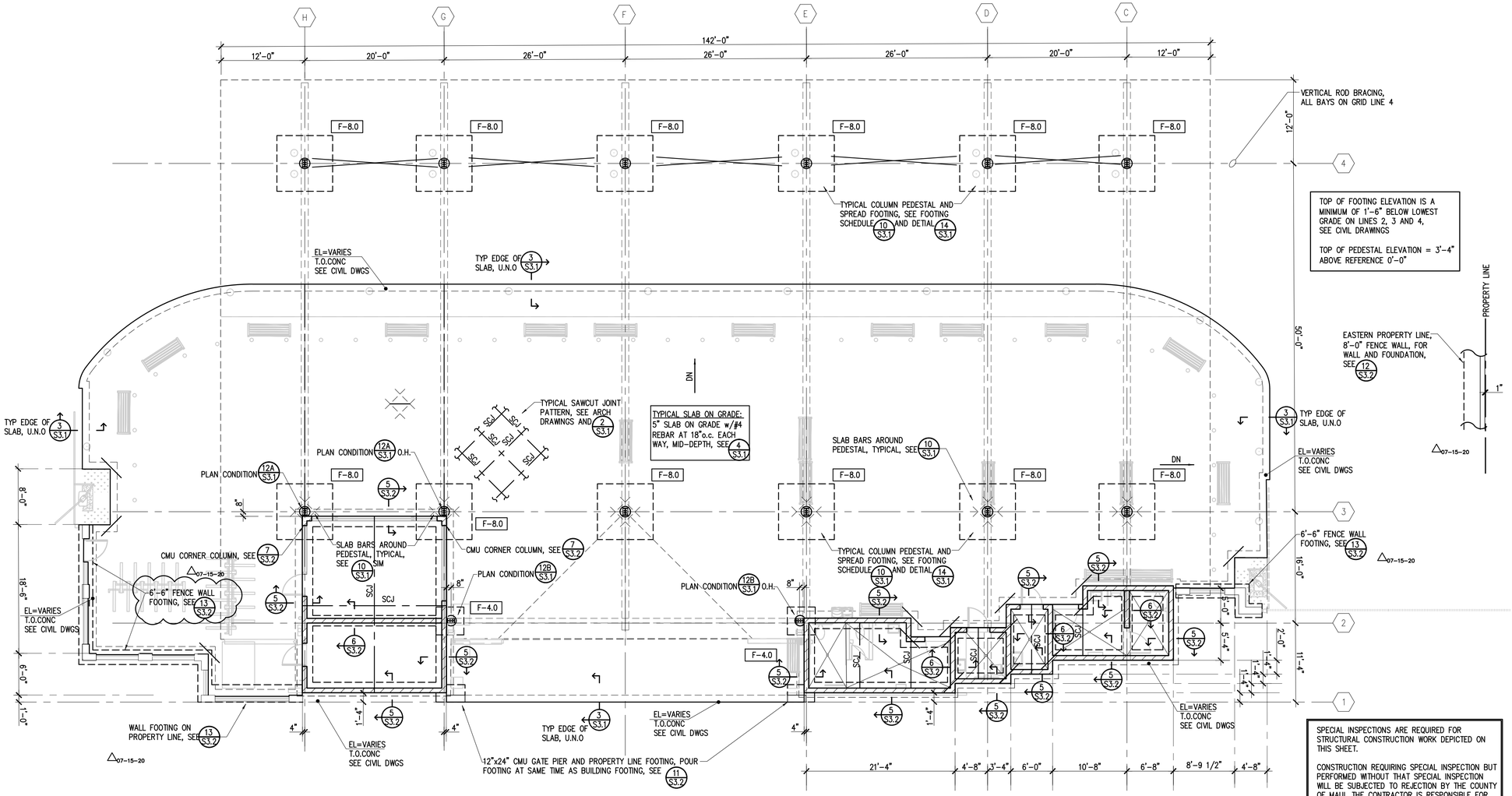

SPECIAL INSPECTIONS ARE REQUIRED FOR STRUCTURAL CONSTRUCTION WORK DEPICTED ON THIS SHEET.

CONSTRUCTION REQUIRING SPECIAL INSPECTION BUT PERFORMED WITHOUT THAT SPECIAL INSPECTION WILL BE SUBJECTED TO REJECTION BY THE COUNTY OF MAUI. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SPECIAL INSPECTIONS.

MECHANICAL PLATFORM:
¾" THICK T&G PLYWOOD (IDENT INDEX 48/24) OVER 1000S162-54 COLD FORMED JOISTS SPACED AT 16"o.c., BOTTOM OF JOIST ELEVATION 8'-0".

NOTES ON THE PEMB LATERAL FORCE RESISTING SYSTEM ON GRID LINES 1 AND 2:
ROD BRACING IS DEPICTED AS THE LATERAL FORCE RESISTING SYSTEM ALONG GRID LINE 4. THIS SYSTEM IS CONCEPTUAL IN NATURE. THE FINAL CONFIGURATION OF THE LATERAL FORCE RESISTING SYSTEM IS THE DESIGN RESPONSIBILITY OF THE PRE-ENGINEERED METAL BUILDING DESIGNER/SUPPLIER. THE SYSTEM CONFIGURATION MUST BE APPROVED BY THE ARCHITECT. THE FINAL SYSTEM CONFIGURATION MAY REQUIRE MODIFICATION OF THE FOUNDATION DESIGN AS DEPICTED.

NOTE TO OWNER:
Cracking of Reinforced Concrete Slabs-On-Grade:
The occurrence of surface cracking is inherent to typical reinforced concrete construction. Concrete develops cracks for a number of reasons. Concrete inherently shrinks while curing, and it expands and contracts as it heats and cools over the course of the day. The restraining effects of walls, frames and foundations often result in cracking as the concrete attempts to expand and contract. Cracking due to shrinkage and temperature effects is typically cosmetic and does not decrease the design strength or serviceability characteristics of the reinforced concrete.

Most cosmetic cracks described above develop within the first three years construction. Bring cracks that may indicate a structural problem and/or cracks that are larger than 1/32-inch to the attention of the Structural Engineer.

FOR PRE-ENGINEERED METAL BUILDING NOTES, SEE S2.2.

NOTES ON THE FOUNDATION DESIGN:
THE FOUNDATION HAS BEEN DESIGNED TO SUPPORT ASSUMED LOADS IMPOSED BY THE PRE-ENGINEERED METAL BUILDING. THE ASSUMED REACTIONS USED IN THE DESIGN ARE BASED ON SIMILAR BUILDING SYSTEMS AND CONFIGURATIONS. MODIFICATIONS OF THE FOUNDATION SYSTEM MAY BE REQUIRED BASED ON THE FINAL PRE-ENGINEERED BUILDING DESIGN.

NOTES ON THE PRE-ENGINEERED METAL BUILDING (PEMB) DESIGN:
THE PEMB DESIGN IS TO COMPLY WITH ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO INFORMATION SHOWN IN THESE STRUCTURAL DRAWINGS. SEE THE ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS FOR ADDITIONAL CRITERIA.

THE PEMB DESIGN IS TO COMPLY WITH ALL THE REQUIREMENTS OF THE 2006 INTERNATIONAL BUILDING CODE AS AMENDED BY THE COUNTY OF MAUI.

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE PEMB STRUCTURAL DESIGN. PROVIDE THE FINAL BUILDING LOADS, IN WRITING, TO THE STRUCTURAL ENGINEER FOR HIS REVIEW AND APPROVAL BEFORE THE FINAL PEMB DESIGN IS APPROVED AND BEFORE BEGINNING FABRICATION.

PLAN NOTES:
1. FOR ABBREVIATIONS AND MATERIAL LEGEND, SEE SHEET S1.1
   FOR GENERAL NOTES, SEE SHEET S1.1
   FOR FOUNDATION DETAILS, SEE S3 SERIES
   FOR PARTITION WALL DETAILS, SEE S4 SERIES
2. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, SLOPES, DRAINS, CURBS, SLAB DEPRESSIONS, ETC., WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
3. FOR TOP OF CONCRETE SLAB ELEVATION IS REFERENCE ELEVATION EL=0'-0" UNLESS OTHERWISE NOTED WHERE ELEVATION EL=0'-0" IS EL=10.75'. SEE CIVIL DRAWINGS.
4. DETAILING OF ALL WATERPROOFING AND DRAINAGE ASSEMBLIES, ALTHOUGH INDICATED ON PLANS FOR INFORMATIONAL PURPOSES, ARE THE DESIGN RESPONSIBILITY OF OTHERS.
5. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND DIMENSIONS NOT NOTED.

PLAN LEGEND:
- SCJ — INDICATES SHRINKAGE CONTROL JOINT, SEE 2/S3.1
- -5" — INDICATES SLAB DEPRESSION AND DEPTH, SEE 9/S3.1
- INDICATES FULLY GROUTED 8-INCH CMU WALL, SEE DETAIL 1/S3.2.
- F-6.0 — INDICATES FOOTING SIZE, SEE SCHEDULE 10/S3.1
- INDICATES #4x4'-0" AT RE-ENTRANT SLAB CORNER, SEE 7/S3.1.
- DN — INDICATES SLOPE DIRECTION, SEE ARCH DRAWINGS.
- INDICATES SLABS SLOPED TO DRAIN, SEE ARCH DRAWINGS

ABBREVIATIONS:
"PEMB" – PRE-ENGINEERED METAL BUILDING

REF. NORTH

1 S2.1 FOUNDATION PLAN
SCALE: 1/8"=1'-0"

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SCOT T. LISTAVICH * LICENSED PROFESSIONAL ENGINEER No. 11031-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER — DATE

TRANSIT HUB
VEVAU ST.
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

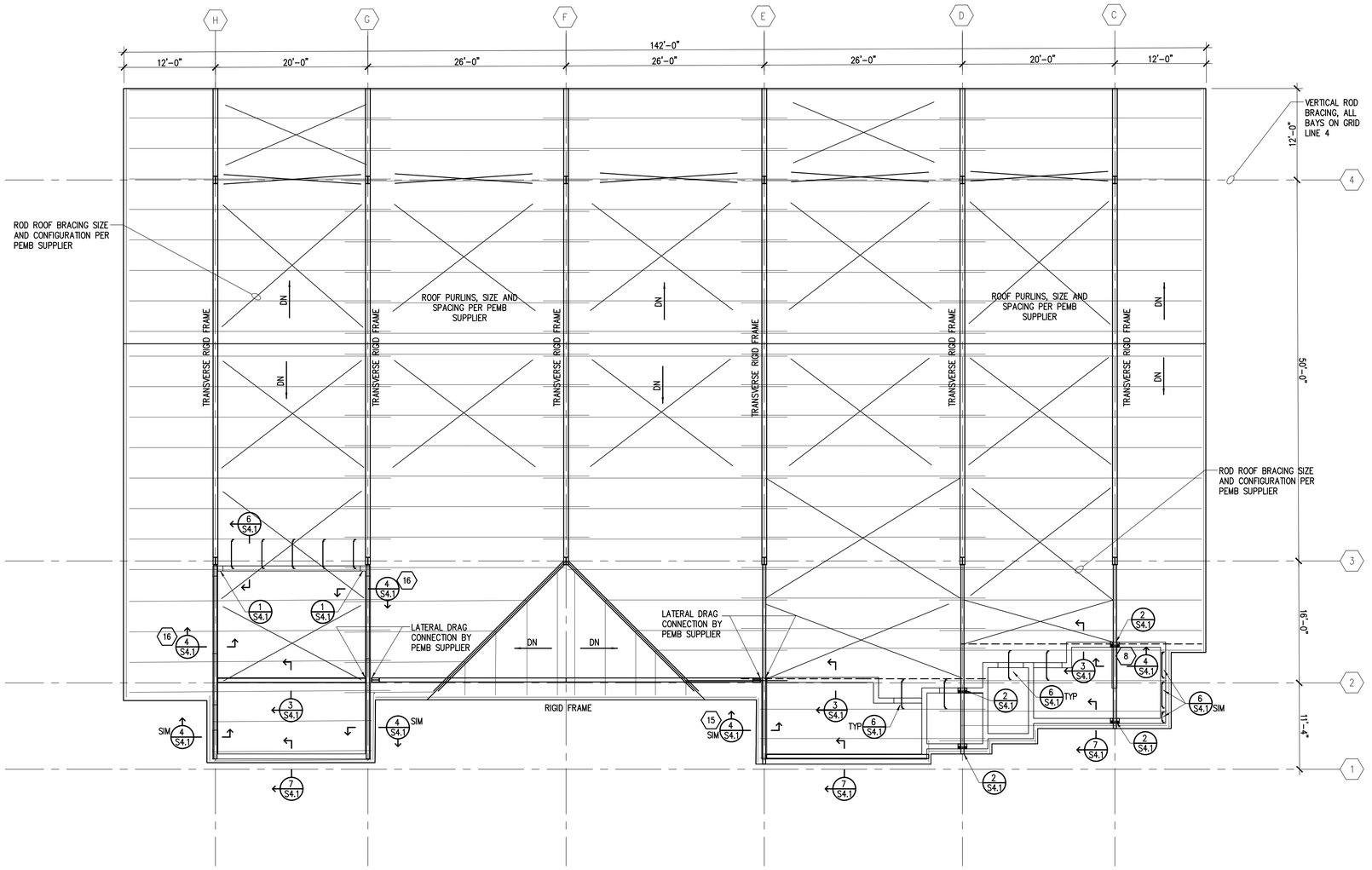
FOUNDATION PLAN

REVISIONS:
2020-01-21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020-04-29 PERMIT SUBMITTAL
△ 2020-07-15 FENCE WALL FOUNDATION REVISIONS
AUGUST 7, 2020 BID SET

S2.1

RSK PROJECT NO: 2018-018
SLSE PROJECT NO: 1845
DATE: JANUARY, 2020

Date Plotted: 8/4/2020 4:17 PM
File Name: C:\Users\SLSE\Dropbox\JOB FILES\1845-Kahului Bus Depot\CAD\Structural\2020-08-07 - Bid Set\1845-S01.DWG



CONCEPTUAL PEMB ROOF FRAMING PLAN

PRE-ENGINEERED METAL BUILDING (PEMB) NOTES
Prefabricated metal building supplier is responsible for the structural design of the PEMB

All work shall conform to the following applicable building codes:
- "Metal Building Manufacturer's Association Codes" (latest edition)
- "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" (AISC)
- "Specifications for the Design of Light Gauge Cold-Formed Steel Structural Members."
- 2006 International Building Code as amended by the County of Maui

The pre-fabricated building package shall include, but not be limited to, all primary and secondary framing, braces, wall and roof coverings, soffits, fasteners, accessories, fascia and all other items necessary to provide a complete building. Prepare Shop Drawings in conformance with the IBC requirements and shall be stamped and signed by a Structural Engineer licenced to practice in the State of Hawaii.

Design all primary and secondary framing to satisfy stress and deflection criteria. The allowable deflection due to Live Load shall not exceed L/240 (Reference 2006 IBC, Section 1604.3.1 and Table 1604.3).

Design Loads:
-Dead Loads:
Downward Gravity Load direction: Actual + 7 psf Collateral Loads.
Uplift Upward direction: Use Actual + 0 psf Collateal when computing the net wind uplift on the
structural elements.
-Live Loads: 20 psf with reductions per the 2006 International Building Code.
-Wind Load per ASCE 7-05 with the following Exposure and Kzt:
105 mph (3 Second gust wind speed)
Exposure C
Kzt : 1.0
-Seismic per ASCE 7-05:
Ss =0.90 g (0.2 Sec Spectral Response Acceleration, 5% of critical damping)
S1=0.25 g (1.0 Sec Spectral Response Acceleration, 5% of critical damping)
Site Class = D
I=1.0 (Importance Factor, Occupancy Category II)

***Foundation Concrete: Base plates and anchor bolts shall be proportioned such that only a MAXIMUM concrete strength of 3000 psi is required at the interface between the metal building and foundation.

Anchor bolts shall be STAINLESS STEEL, Grade 30 minimum. Provide and Install Anchor bolts with steel templates. "J" Bolts are NOT ALLOWED.

The lateral displacement (Delta) due to wind or Seismic Loads shall be as follows:
-Wind: Wind Delta < Frame Height/180
-Seismic: 0.7xRxSeismic Delta < Frame Height/50

SPECIAL INSPECTIONS ARE REQUIRED FOR STRUCTURAL CONSTRUCTION WORK DEPICTED ON THIS SHEET.

CONSTRUCTION REQUIRING SPECIAL INSPECTION BUT PERFORMED WITHOUT THAT SPECIAL INSPECTION WILL BE SUBJECTED TO REJECTION BY THE COUNTY OF MAUI. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SPECIAL INSPECTIONS.

NOTES ON THE PEMB LATERAL FORCE RESISTING SYSTEM ON GRID LINES 1 AND 2:
ROD BRACING IS DEPICTED AS THE LATERAL FORCE RESISTING SYSTEM ALONG GRID LINE 4. THIS SYSTEM IS CONCEPTUAL IN NATURE. THE FINAL CONFIGURATION OF THE LATERAL FORCE RESISTING SYSTEM IS THE DESIGN RESPONSIBILITY OF THE PRE-ENGINEERED METAL BUILDING DESIGNER/SUPPLIER. THE SYSTEM CONFIGURATION MUST BE APPROVED BY THE ARCHITECT. THE FINAL SYSTEM CONFIGURATION MAY REQUIRE MODIFICATION OF THE FOUNDATION DESIGN AS DEPICTED.

NOTES ON THE FOUNDATION DESIGN:
THE FOUNDATION HAS BEEN DESIGNED TO SUPPORT ASSUMED LOADS IMPOSED BY THE PRE-ENGINEERED METAL BUILDING. THE ASSUMED REACTIONS USED IN THE DESIGN ARE BASED ON SIMILAR BUILDING SYSTEMS AND CONFIGURATIONS. MODIFICATIONS OF THE FOUNDATION SYSTEM MAY BE REQUIRED BASED ON THE FINAL PRE-ENGINEERED BUILDING DESIGN.

NOTES ON THE PRE-ENGINEERED METAL BUILDING (PEMB) DESIGN:
THE PEMB DESIGN IS TO COMPLY WITH ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO INFORMATION SHOWN IN THESE STRUCTURAL DRAWINGS. SEE THE ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS FOR ADDITIONAL CRITERIA.

THE PEMB DESIGN IS TO COMPLY WITH ALL THE REQUIREMENTS OF THE 2006 INTERNATIONAL BUILDING CODE AS AMENDED BY THE COUNTY OF MAUI.

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE PEMB STRUCTURAL DESIGN. PROVIDE THE FINAL BUILDING LOADS, IN WRITING, TO THE STRUCTURAL ENGINEER FOR HIS REVIEW AND APPROVAL BEFORE THE FINAL PEMB DESIGN IS APPROVED AND BEFORE BEGINNING FABRICATION.

COORDINATION WITH MECHANICAL DRAWINGS:
The PEMB supplier is to provide additional structural framing to support ANY mechanical units hung from structure.

The PEMB supplier and contractor is responsible for coordinating support for all hung mechanical units indicated on the Mechanical drawings. Design all structural members affected by the hung AC unit including but not limited to the purlins, frames and columns.

Provide revised support for any changes or revisions to the weights or locations of the hung units that occur during construction.

PLAN NOTES:
1. FOR ABBREVIATIONS AND MATERIAL LEGEND, SEE SHEET S1.1
FOR GENERAL NOTES, SEE SHEET S1.1 AND S1.2
2. VERIFY ALL DIMENSIONS, ELEVATIONS, FINISH SURFACES, SLOPES, ETC., WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION.
3. DETAILING OF ALL WATERPROOFING AND DRAINAGE ASSEMBLIES, ALTHOUGH INDICATED ON PLANS FOR INFORMATIONAL PURPOSES, ARE THE DESIGN RESPONSIBILITY OF OTHERS.
4. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND DIMENSIONS NOT NOTED.
5. ABBREVIATIONS:
"PEMB" – PRE-ENGINEERED METAL BUILDING

REF. NORTH

1 S2.2 CONCEPTUAL PEMB FRMG PLAN
SCALE: NONE

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04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER DATE

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(2) 03-07-004:003

CONCEPTUAL PEMB FRAMING PLAN

REVISIONS:
2020-01-21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020-04-29 PERMIT SUBMITTAL

AUGUST 7, 2020 BID SET

S2.2

RSK PROJECT NO.: 2018-018
SLSE PROJECT NO.: 1845
DATE: JANUARY, 2020

Date Plotted: 8/4/2020 4:17 PM
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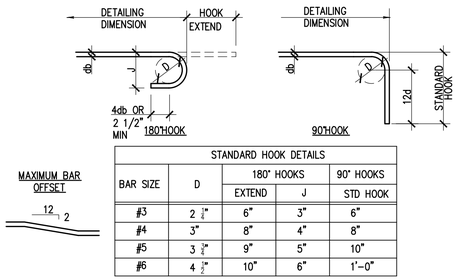
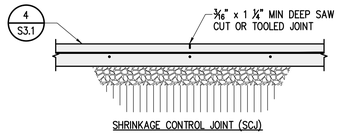


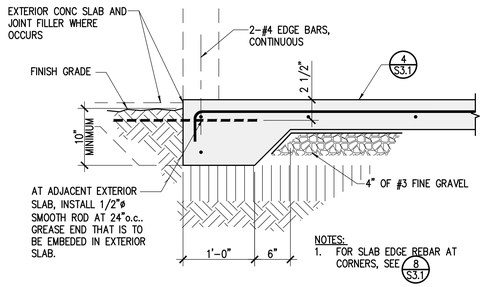
STANDARD HOOK DETAILS				
BAR SIZE	D	180° HOOKS		90° HOOKS
		EXTEND	J	STD HOOK
#3	2 1/4"	6"	3"	6"
#4	3"	8"	4"	8"
#5	3 3/4"	9"	5"	10"
#6	4 1/2"	10"	6"	1'-0"

1 CONC REINF HOOKS
S3.1 SCALE: NONE

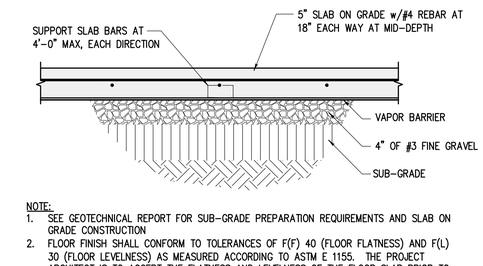
NOTES:
1. FOR SLAB THICKNESS AND REINFORCEMENT, SEE PLANS.
2. REINFORCING SHALL BE CONTINUOUS ACROSS JOINTS UNLESS NOTED OTHERWISE.
3. SAW CUT SHALL BE DONE WITHIN 24 HOURS OF POURING CONCRTE.
4. FOR TOOLED JOINT, USE BURKE ZIP STRIP OR APPROVED EQUAL. FILL WITH SEALANT AS REQ'D.
6. SEE PLANS FOR SLAB JOINT LOCATIONS. UNLESS NOTED OTHERWISE, "SCJ" TO ENCLOSE APPROX. 200 SQ FT MAX (SAW CUTS AT 15'-0" MAX)



2 S.O.G. CONTROL JOINTS
S3.1 SCALE: NONE

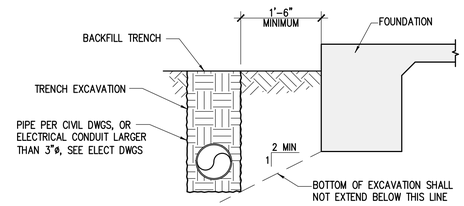


3 TYP EDGE OF SLAB
S3.1 SCALE: 1"=1'-0"



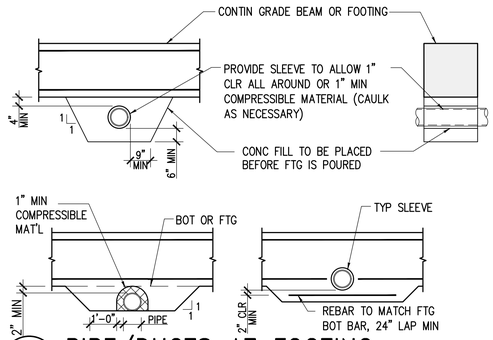
NOTE:
1. SEE GEOTECHNICAL REPORT FOR SUB-GRADE PREPARATION REQUIREMENTS AND SLAB ON GRADE CONSTRUCTION
2. FLOOR FINISH SHALL CONFORM TO TOLERANCES OF F(F) 40 (FLOOR FLATNESS) AND F(L) 30 (FLOOR LEVELNESS) AS MEASURED ACCORDING TO ASTM E 1155. THE PROJECT ARCHITECT IS TO ACCEPT THE FLATNESS AND LEVELNESS OF THE FLOOR SLAB PRIOR TO CLOSE OUT OF THE PROJECT.

4 TYPICAL SLAB ON GRADE
S3.1 SCALE: 1"=1'-0"

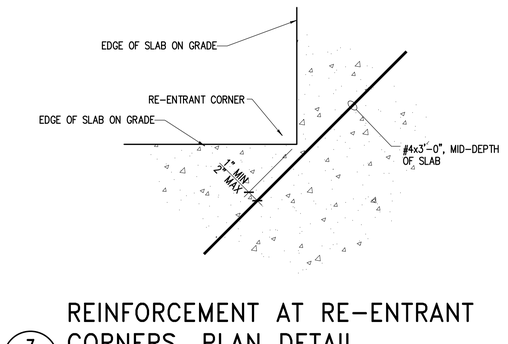


NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING, SHEATHING OR OTHERWISE MAINTAINING THE SIDES OF THE EXCAVATION FROM CAVE-IN AND OTHER HAZARDS UNTIL ALL BACKFILL IS COMPLETED. BACKFILL PER SPECIFICATIONS

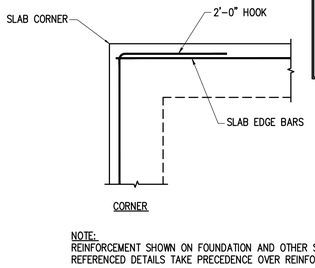
5 PIPE TRENCH AT FOOTING
S3.1 SCALE: 3/4"=1'=0"



6 PIPE/DUCTS AT FOOTING
S3.1 SCALE: NONE



7 REINFORCEMENT AT RE-ENTRANT CORNERS, PLAN DETAIL
S3.1 SCALE: NONE



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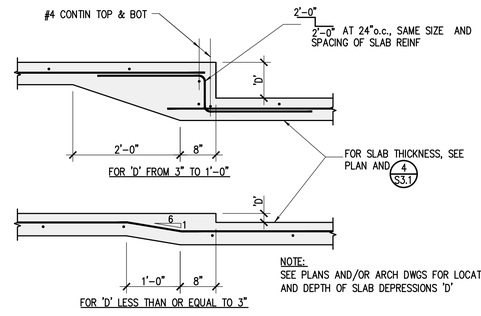
CONSTRUCTION REQUIRING SPECIAL INSPECTION BUT PERFORMED WITHOUT THAT SPECIAL INSPECTION WILL BE SUBJECTED TO REJECTION BY THE COUNTY OF MAUI. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SPECIAL INSPECTIONS.

NOTE:
REINFORCEMENT SHOWN ON FOUNDATION AND OTHER SPECIFICALLY REFERENCED DETAILS TAKE PRECEDENCE OVER REINFORCEMENT SHOWN HERE.

8 TYP SLAB EDGE BAR AT CORNER.
S3.1 SCALE: NONE

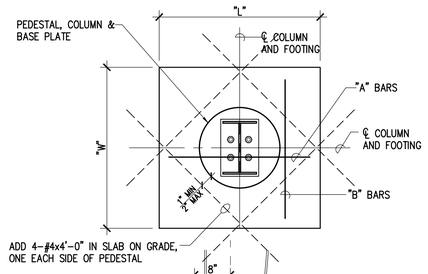


NOTE:
SEE PLANS AND/OR ARCH DWGS FOR LOCATION AND DEPTH OF SLAB DEPRESSIONS 'D'

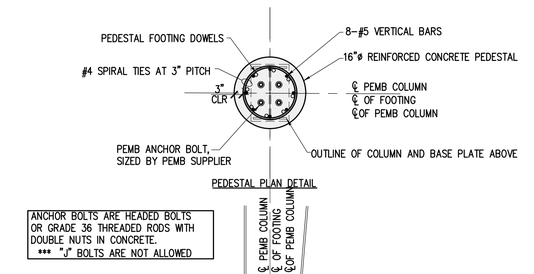
9 TYPICAL SLAB DEPRESSIONS
S3.1 SCALE: NONE

COLUMN FOOTING SCHEDULE					
MARK	SIZE		REINF. T&B		SEE DETAIL
	L x W	T*	'A' BARS	'B' BARS	
F-4.0	4'-0"x4'-0"	18"	4-#5	4-#5	14/S3.1
F-8.0	8'-0"x8'-0"	24"	6-#5	6-#5	14/S3.1

1. * 'T' DENOTES MINIMUM FOOTING THICKNESS.

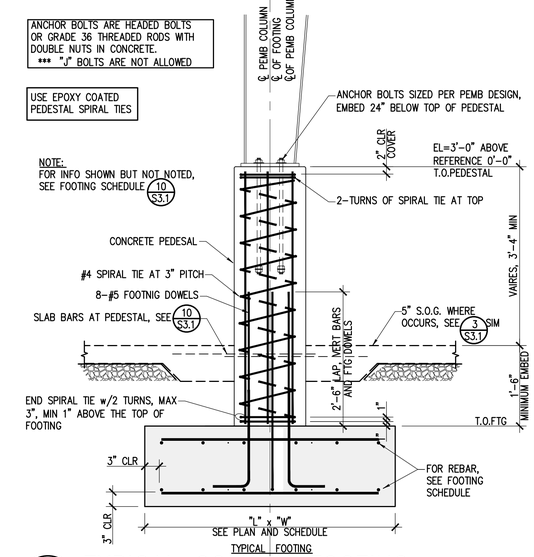


10 FOOTING SCHEDULE
S3.1 SCALE: NONE

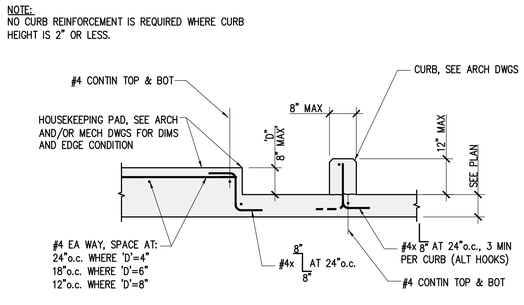


ANCHOR BOLTS ARE HEADED BOLTS OR GRADE 36 THREADED RODS WITH DOUBLE NUTS IN CONCRETE.
*** "J" BOLTS ARE NOT ALLOWED

USE EPOXY COATED PEDESTAL SPIRAL TIES

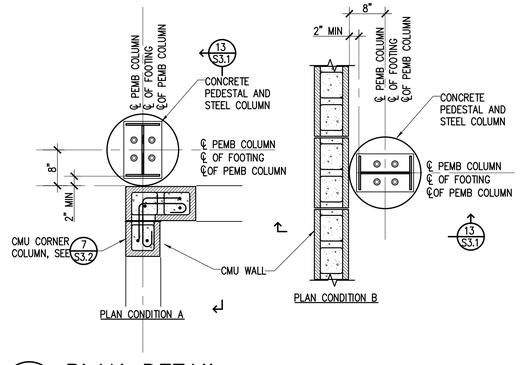


14 TYPICAL COLUMN FOOTING
S3.1 SCALE: 3/4"=1'-0"

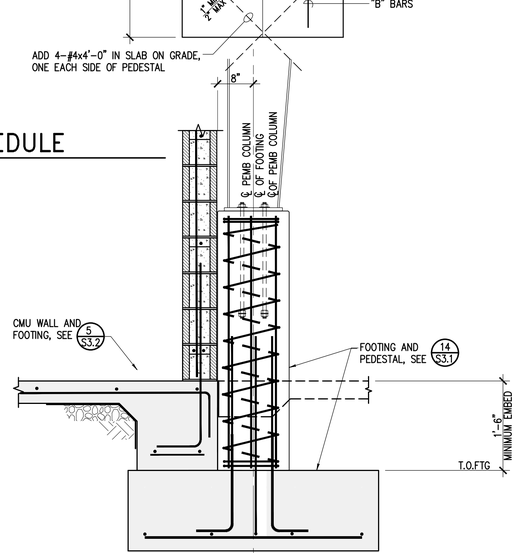


NOTE:
NO CURB REINFORCEMENT IS REQUIRED WHERE CURB HEIGHT IS 2" OR LESS.

11 TYP CURB/HOUSEKEEPING PAD
S3.1 SCALE: NONE



12 PLAN DETAIL
S3.1 SCALE: 3/4"=1'-0"



13 FOUNDATION DETAIL
S3.1 SCALE: 3/4"=1'-0"

Date Plotted: 8/4/2020 4:17 PM
File Name: C:\Users\SLSE\Dropbox\JOB FILES\1845-Kahului Bus Depot\CAD\Structural\2020-08-07 - Bid Set\1845-S01.DWG

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SCOT T. LISTAVICH * LICENSED PROFESSIONAL ENGINEER No. 11031-S HAWAII, U.S.A.
04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER DATE

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TRANSIT HUB
VEVAU ST.
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003
FOUNDATION DETAILS

REVISIONS:
2020-01-21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020-04-29 PERMIT SUBMITTAL

AUGUST 7, 2020 BID SET

S3.1

RSK PROJECT NO. 2018-018
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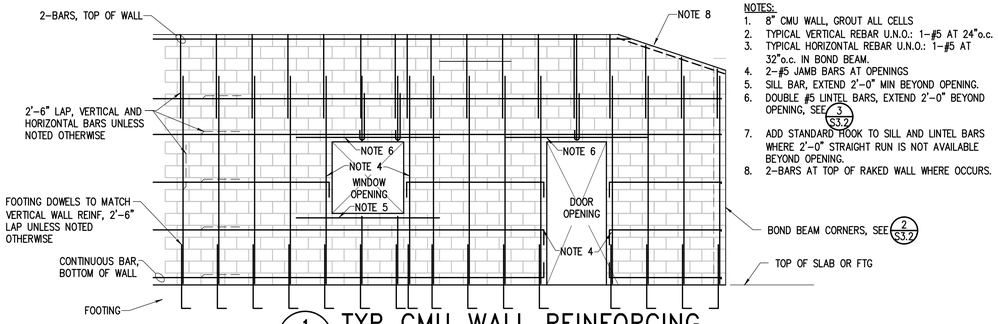
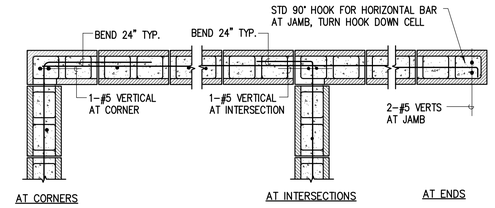
DATE JANUARY, 2020

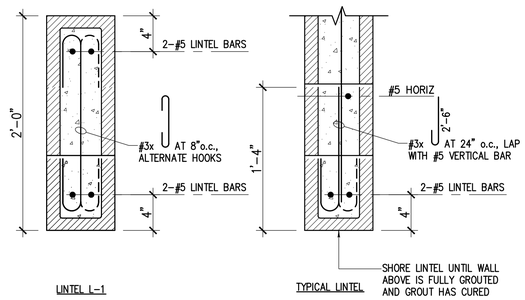


NOTES:
1. 8" CMU WALL, GROUT ALL CELLS
2. TYPICAL VERTICAL REBAR U.N.O.: 1-#5 AT 24"o.c.
3. TYPICAL HORIZONTAL REBAR U.N.O.: 1-#5 AT 32"o.c. IN BOND BEAM.
4. 2-#5 JAMB BARS AT OPENINGS
5. SILL BAR, EXTEND 2'-0" MIN BEYOND OPENING.
6. DOUBLE #5 LINTEL BARS, EXTEND 2'-0" BEYOND OPENING, SEE 3/S3.2
7. ADD STANDARD HOOK TO SILL AND LINTEL BARS WHERE 2'-0" STRAIGHT RUN IS NOT AVAILABLE BEYOND OPENING.
8. 2-BARS AT TOP OF RAKED WALL WHERE OCCURS.

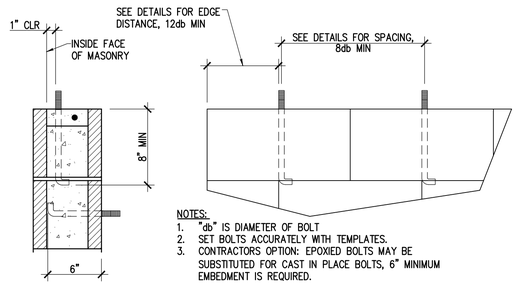
1 S3.2 TYP CMU WALL REINFORCING
SCALE: NONE



2 S3.2 TYP BOND BEAM-8" CMU
SCALE: 3/4" = 1'-0"



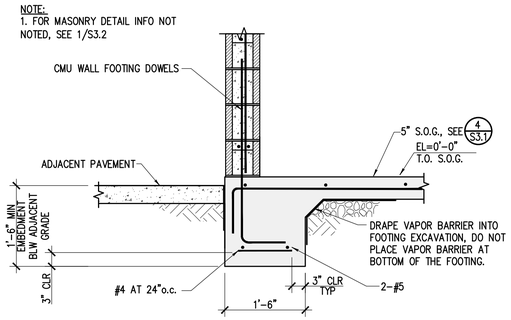
3 S3.2 TYPICAL CMU LINTEL BEAM
SCALE: NONE



NOTES:
1. "db" IS DIAMETER OF BOLT
2. SET BOLTS ACCURATELY WITH TEMPLATES.
3. CONTRACTORS OPTION: EPOXIED BOLTS MAY BE SUBSTITUTED FOR CAST IN PLACE BOLTS, 6" MINIMUM EMBEDMENT IS REQUIRED.

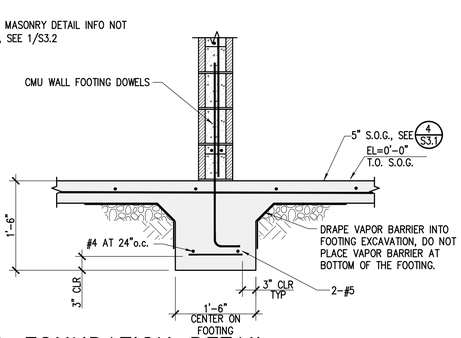
4 S3.2 BOLTS EMBEDDED IN CMU
SCALE: NONE

NOTE:
1. FOR MASONRY DETAIL INFO NOT NOTED, SEE 1/S3.2

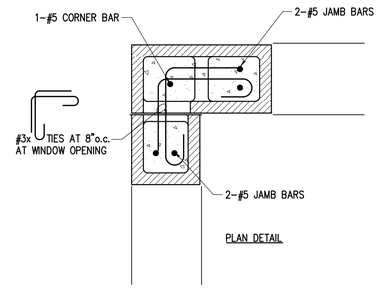


5 S3.2 FOUNDATION DETAIL
SCALE: 3/4"=1'-0"

NOTE:
1. FOR MASONRY DETAIL INFO NOT NOTED, SEE 1/S3.2



6 S3.2 FOUNDATION DETAIL
SCALE: 3/4"=1'-0"



7 S3.2 CMU CORNER COLUMN
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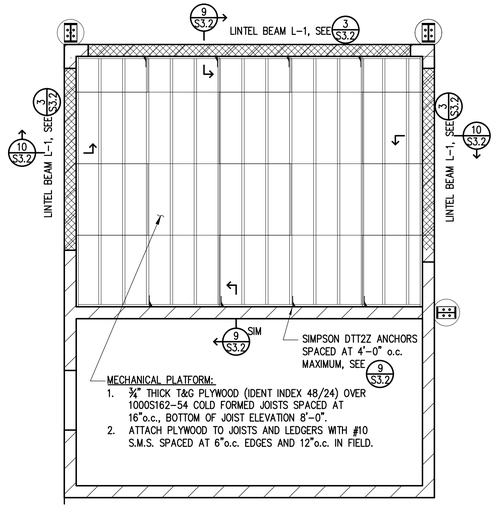
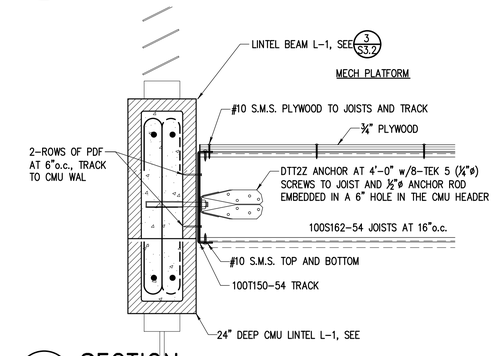


FASTENER NOTES:
1. USE NO. 10 OR LARGER SCREWS. ATTACH COLD FORMED STEEL TO STRUCTURAL STEEL WITH HILTI DNI OR TEK 5 SCREWS (SEE GENERAL NOTES). SUBMIT ALTERNATE FASTENERS TO THE ARCHITECT/STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO USE.
2. COMPLY WITH THE FOLLOWING MINIMUM SPACING AND EDGE DISTANCE FOR FASTENERS:

FASTENER	MIN SPACING/EDGE DISTANCE	REMARK
Hilti DNI	1/2-inch	
#10 Screw	3/4-inch	
#12 Screw	3/4-inch	Incl. Tek 5 (12-24)
1/4-inch ø	3/4"-inch	Incl. Tek 5 (1/4-28)

8 S3.2 MECHANICAL PLATFORM PLAN
SCALE: 1/4"=1'-0"



9 S3.2 SECTION
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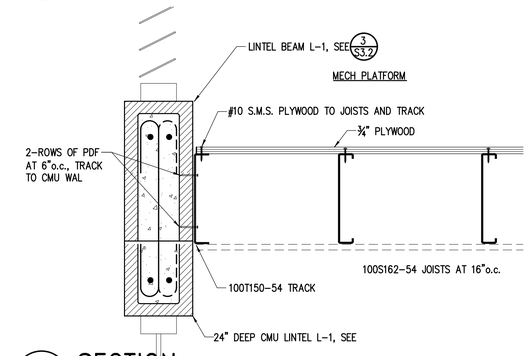

10 S3.2 SECTION
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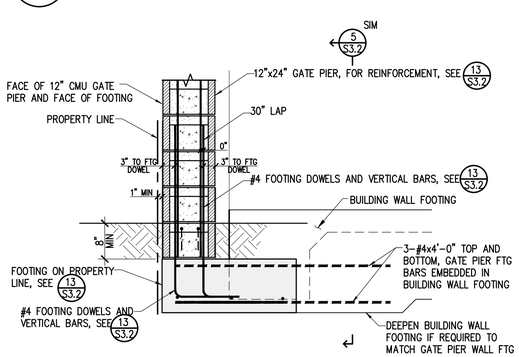
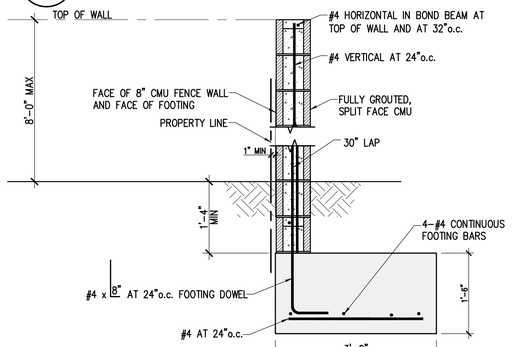
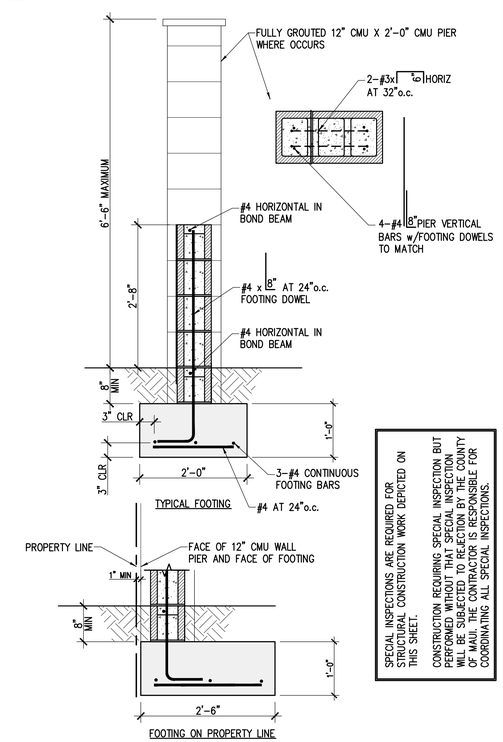


11 S3.2 GATE PIER FOOTING
SCALE: 3/4"=1'-0"



12 S3.2 8-FOOT FENCE FOOTING
SCALE: 3/4"=1'-0"
△07-15-20



SPECIAL INSPECTIONS ARE REQUIRED FOR STRUCTURAL CONSTRUCTION WORK DEPICTED ON THIS SHEET.

CONSTRUCTION REQUIRING SPECIAL INSPECTION BUT PERFORMED WITHOUT THE SPECIAL INSPECTION WILL BE SUBJECTED TO REJECTION BY THE COUNTY OF MAUI. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL SPECIAL INSPECTIONS.

13 S3.2 6'-6" TALL CMU FENCE WALL
SCALE: 3/4"=1'-0"
△07-15-20

Date Plotted: 8/4/2020 4:17 PM
File Name: C:\Users\SLSE\Dropbox\JOB FILES\1845-Kahului Bus Depot\CAD\Structural\2020-08-07 - Bid Set\1845-S01.DWG

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SCOT T. LISTAVICH * LICENSED PROFESSIONAL ENGINEER No. 11031-S HAWAII, U.S.A.

04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

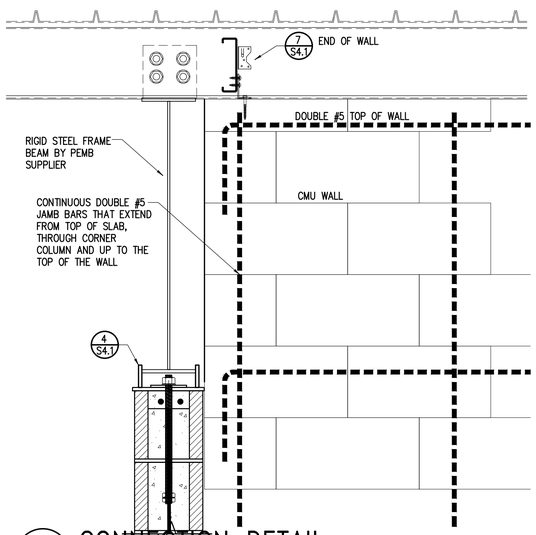
TRANSIT HUB
VEVAU ST.
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

STRUCTURAL DETAILS

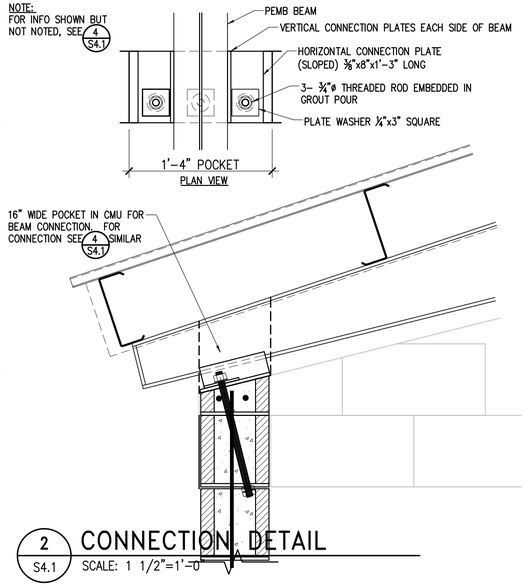
REVISIONS:
2020-01-21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020-04-29 PERMIT SUBMITTAL
△2020-07-15 FENCE WALL FOUNDATION REVISIONS
AUGUST 7, 2020 BID SET

S3.2

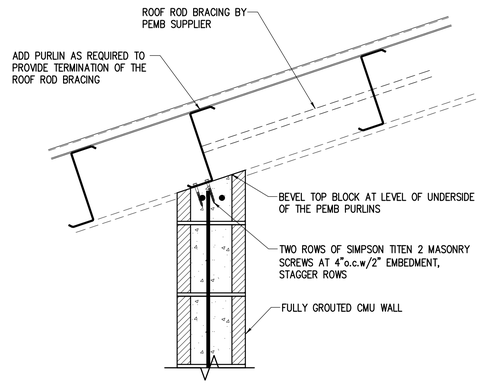
RSK PROJECT NO.: 2018-018
SLSE PROJECT NO.: 1845
DATE: JANUARY, 2020



1 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"

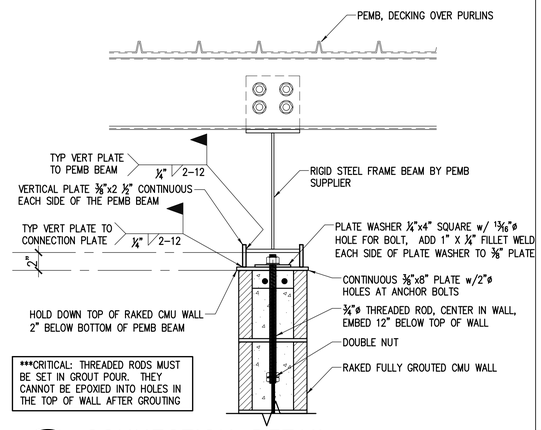


2 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"

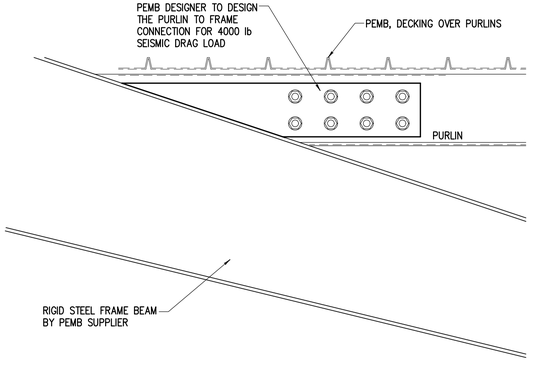


3 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"

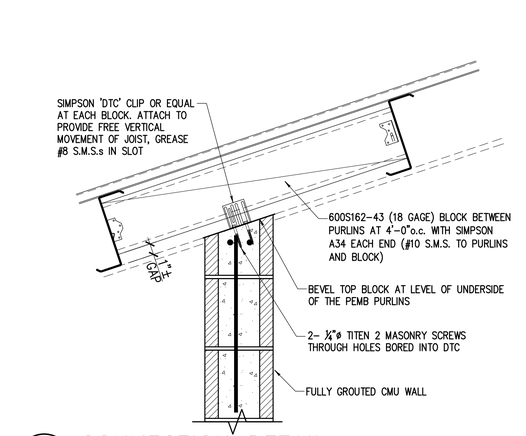
NOTE:
1. SEE PLAN FOR THE NUMBER OF ¾"ø BOLTS ALONG LENGTH OF RAKED CMU WALL DENOTED BY (#) WHERE " # " IS THE TOTAL NUMBER OF BOLTS ALONG WALL.
2. SET THE ¾"ø BOLTS WITH A TEMPLATE. BOLTS MAY NOT BE "WET SET."



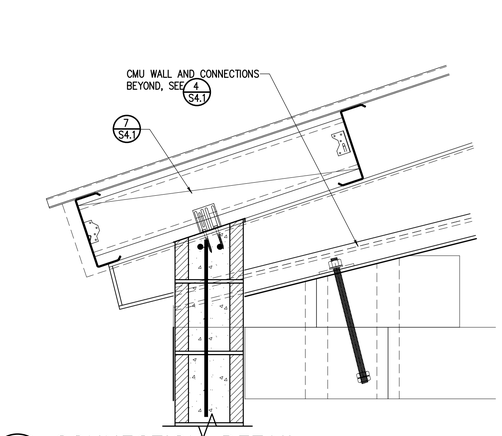
4 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"



5 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"



6 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"



7 S4.1 CONNECTION DETAIL
SCALE: 1 1/2"=1'-0"

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SCOT T. LISTAVICH * LICENSED PROFESSIONAL ENGINEER No. 11031-S HAWAII, U.S.A.
04/30/22
SCOT LISTAVICH, STRUCTURAL ENGINEER DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

TRANSIT HUB

VEVAU ST.
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

ROOF LEVEL DETAILS

REVISIONS
2020-01-21 STRUCTURAL DESIGN DEVLOPEMENT SET
2020-04-29 PERMIT SUBMITTAL

AUGUST 7, 2020 BID SET

S4.1

RSK PROJECT NO. 2018-018
SLSE PROJECT NO. 1845
DATE JANUARY, 2020

Date Plotted: 8/4/2020 4:17 PM
File Name: C:\Users\SLSE\Dropbox\JOB FILES\1845-Kahului Bus Depot\CAD\Structural\2020-08-07 - Bid Set\1845-S01.DWG

MECHANICAL SPECIFICATIONS

PART I - GENERAL

A. CONDITIONS

1. GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, SPECIAL CONDITIONS, AND OTHER RELATED PORTIONS OF DIVISION 1, APPLY TO THIS SECTION.

B. REGULATIONS, CODES, PERMITS AND INSPECTIONS

1. COMPLY WITH NATIONAL, STATE, CURRENT CODES ADOPTED BY THE CITY AND COUNTY OF HONOLULU, ORDINANCES, ETC., HAVING JURISDICTION. THIS INCLUDES RULES AND REQUIREMENTS OF UTILITY SERVING AGENCIES.

2. INCORPORATE CODES, ORDINANCES, ETC., INTO THE BASE BID AND INSTALLATION OF WORK. NO ADDITIONAL FUNDS WILL BE ALLOCATED FOR WORK REQUIRED TO CONFORM TO REGULATIONS AND REQUIREMENTS OR TO OBTAIN APPROVAL OF WORK.
3. OBTAIN AND PAY FOR REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY LOCAL AUTHORITIES.

4. IN ADDITION, THE LATEST ADOPTED EDITION OF THE FOLLOWING CODES AND PUBLISHED STANDARDS SHALL BE ADHERED TO:

   A. 2006 INTERNATIONAL BUILDING CODE (IBC)
   B. NFPA STANDARDS
   C. ASHRAE HANDBOOKS
   D. SMACNA DUCT CONSTRUCTION STANDARDS
   E. 2006 UNIFORM PLUMBING CODE (UPC)
   F. 2015 INTERNATIONAL ENERGY CONSERTVATION CODE

C. DESIGN DRAWINGS

1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. PROVIDE LABOR, MATERIAL, ETC., NECESSARY TO ACCOMPLISH THESE REQUIREMENTS. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED A PART OF THE WORK INCLUDED. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE PERMITTED. DO NOT SCALE THE DESIGN DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
2. IF A CONFLICT OCCURS BETWEEN THE DESIGN DRAWINGS AND SPECIFICATIONS, PROMPTLY NOTIFY THE ARCHITECT AND/OR ENGINEER. AT THAT POINT, AN INTERPRETATION WILL BE MADE BY THE ARCHITECT AND/OR ENGINEER AND SAID DECISION SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

D. BASE BID

1. BASE BID SHALL INCLUDE MATERIALS AND EQUIPMENT SPECIFIED OR SCHEDULED ON THE DRAWINGS. REQUESTS FOR SUBSTITUTION OF MATERIALS AND EQUIPMENT SHALL BE BY ADDITIVE OR DEDUCTIVE ALTERNATE BID ONLY. THE FOLLOWING DATA MUST BE CLEARLY WRITTEN AT THE BEGINNING OF THE ALTERNATE PROPOSAL:

   A. ADDITIVE OR DEDUCTIVE AMOUNT CLEARLY WRITTEN IN WORDS AND NUMERALS.

   B. INCREASED OR REDUCED CONSTRUCTION TIME IN DAYS.

   C. OTHER DEMONSTRABLE BENEFIT, FOR WHICH THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.
2. ONLY THOSE MATERIALS AND EQUIPMENT WHICH ARE SUBMITTED AS AN ALTERNATE BID, WHICH ARE ACCOMPANIED BY THE SUPPORTING DATA INDICATED BELOW WILL BE REVIEWED AND CONSIDERED.

E. SUBSTITUTIONS

1. MATERIALS AND EQUIPMENT THAT ARE A SUBSTITUTE FROM THE LISTED MANUFACTURER MAY BE CONSIDERED. PRIOR TO PROPOSING ANY SUBSTITUTE ITEM, CONTRACTOR SHALL SATISFY HIMSELF THAT THE ITEM PROPOSED IS, IN FACT, EQUAL TO THAT SPECIFIED, THAT SUCH ITEM WILL FIT INTO THE SPACE ALLOCATED, THAT SUCH ITEM AFFORDS COMPARABLE EASE FOR OPERATION, MAINTENANCE AND SERVICE, THAT THE APPEARANCE, LONGEVITY, CAPACITY, SUITABILITY, AND ELECTRICAL CHARACTERISTICS ARE COMPARABLE, THAT BY REASON OF COST SAVINGS, REDUCED CONSTRUCTION TIME, OR SIMILAR DEMONSTRABLE BENEFIT, THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.
2. THE BURDEN OF PROOF OF EQUALITY OF A PROPOSED SUBSTITUTION FOR A SPECIFIED ITEM SHALL BE UPON THE CONTRACTOR. CONTRACTOR SHALL SUPPORT HIS REQUEST WITH SUFFICIENT TEST DATA AND OTHER MEANS TO PERMIT THE ENGINEER TO MAKE A FAIR AND EQUITABLE DECISION ON THE MERITS OF THE PROPOSED SUBSTITUTION. INSUFFICIENT SUBMITTAL DATA WILL RESULT IN REJECTION OF THE PROPOSED SUBSTITUTION. ANY ITEM BY A MANUFACTURER OTHER THAN THOSE SPECIFIED, OR OF BRAND NAME, MODEL NUMBER, OR OF GENERIC SPECIES OTHER THAN THOSE SPECIFIED, WILL BE CONSIDERED A SUBSTITUTION. ENGINEER WILL BE THE SOLE JUDGE OF WHETHER OR NOT THE SUBSTITUTION IS EQUAL IN QUALITY, UTILITY AND ECONOMY TO THAT SPECIFIED.

3. APPROVAL OF A SUBSTITUTION SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT. CONTRACTOR SHALL BEAR THE EXPENSE FOR ANY CHANGES IN OTHER PARTS OF THIS WORK OR OTHER WORK CAUSED BY THE PROPOSED SUBSTITUTION, INCLUDING BUT NOT LIMITED TO STRUCTURAL, ELECTRICAL, PLUMBING, AND ACCESS REQUIREMENTS.
4. IF ENGINEER REJECTS CONTRACTOR'S SUBSTITUTE ITEM ON THE FIRST SUBMITTAL, CONTRACTOR MAY MAKE ONLY ONE ADDITIONAL REQUEST FOR SUBSTITUTION IN THE SAME CATEGORY.

5. ANY EQUIPMENT SUBSTITUTED WITHOUT THE ENGINEER'S WRITTEN APPROVAL WILL BE REMOVED AND REPLACED WITH THE SPECIFIED EQUIPMENT AT THE CONTRACTOR'S EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER.

F. SUBMITTALS

1. EQUIPMENT AND MATERIALS:

   A. CONTRACTOR SHALL HAVE APPROVED SUBMITTALS PRIOR TO FABRICATION OR DELIVERY OF ANY MATERIAL AND/OR EQUIPMENT TO THE JOB SITE. SUBMIT A MINIMUM OF 8 (EIGHT) COPIES, COMPREHENSIVELY INDEXED SUBMITTALS IN A 3-RING BINDER, COMPLETELY DESCRIBING EACH MAJOR SYSTEM, MATERIAL AND EQUIPMENT PROPOSED TO BE USED. ANY PIECE OF EQUIPMENT PLACED ON THE JOB WITHOUT PRIOR APPROVAL WILL BE SUBJECT TO REMOVAL AT THE SOLE EXPENSE OF THE CONTRACTOR.

   B. SUBMITTALS ARE FOR INFORMATION AND COORDINATION ONLY. REVIEW OF MATERIAL AND/OR EQUIPMENT SUBMITTALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS AND SPECIFICATIONS REQUIREMENTS. POINTS OF NON-COMPLIANCE WHICH ARE NOT NOTED SHALL NOT BE CONSTRUED TO BE AN APPROVAL OF THE NON-COMPLIANCE. SUBMITTALS SHALL CLEARLY STATE WHERE EQUIPMENT DOES NOT AGREE WITH THE CONTRACT DOCUMENTS.

   C. SUBMITTALS SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS, PHYSICAL DIMENSIONS, WEIGHTS AND RATINGS OF EQUIPMENT SUBMITTED. INDICATE EQUIPMENT LAYOUTS, ELECTRICAL CHARACTERISTICS, WIRING AND CONTROL DIAGRAMS, SIZES AND LOCATIONS OF PIPING, DUCT, CONDUITS, AND OTHER CONNECTION SIZES AND LOCATIONS.

2. SHOP DRAWINGS:
   CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED 1/4"=1'-0" SCALE DRAWINGS THAT HAVE BEEN PROPERLY COORDINATED WITH OTHER TRADES. INDICATE LOCATION AND SIZES OF ACCESS PANELS IN HARD CEILINGS FOR EQUIPMENT AND DAMPER ACCESS.
3. AS BUILT DRAWINGS:
   MAINTAIN ACCURATE RECORDS OF ANY CHANGES FROM THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. UPON COMPLETION OF THE PROJECT, DELIVER TO THE ENGINEER ONE (1) SET OF LEGIBLE REPRODUCIBLES AND (3) BLUELINE SETS OF THESE RECORD DRAWINGS.
4. WARRANTY:
   UNLESS SPECIFIED OTHERWISE BY ARCHITECT, ENGINEER, OWNER OR OWNER'S REPRESENTATIVE, UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER A WRITTEN ONE (1) YEAR WARRANTY ON THE SYSTEMS, MATERIALS AND ALL WORK PERFORMED. THIS INCLUDES THE ENTIRE COST, INCLUDING MATERIALS AND/OR LABOR, OF CORRECTIVE WORK REQUIRED AND NECESSITATED BY DEFECTS IN MATERIALS AND/OR WORKMANSHIP. CONTRACTOR SHALL ALSO PRESENT THE OWNER WITH A COPY OF ALL MANUFACTURER'S WARRANTIES THAT EXCEED THE WARRANTY PERIOD, SUCH AS AC UNIT COMPRESSORS.

5. OPERATION AND MAINTENANCE INSTRUCTIONS:
   UPON THE COMPLETION OF THE PROJECT, DELIVER TO THE OWNER THE REQUIRED NUMBER OF COPIES OF HARD BOUND O & M MANUALS. INCLUDE IN THE MANUAL INSTRUCTIONS PREPARED SPECIFICALLY FOR THE SYSTEMS PROVIDED, ALONG WITH DESCRIPTIONS, PARTS LIST, INSTRUCTIONS, AND WARRANTIES. START-UP REPORTS FOR ALL EQUIPMENT WILL BE DELIVERED WITH THE MATERIALS AND EQUIPMENT UTILIZED IN THE PROJECT. IDENTIFY EACH ITEM BY THE DESIGNATION APPEARING ON THE DRAWINGS.

6. OWNER TRAINING:
   AT A TIME DESIGNATED BY THE OWNER, PROVIDE A SUITABLE TECHNICIAN, MECHANIC OR ENGINEER TO REVIEW THE SYSTEMS WITH OWNER'S REPRESENTATIVE TO THOROUGHLY FAMILIARIZE HIM WITH THE OPERATIONS AND MAINTENANCE OF THE SYSTEMS. UP TO (8) EIGHT HOURS TOTAL TRAINING TIME SHALL BE REQUIRED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO TRAINING THE OWNER SHALL HAVE TAKEN POSSESSION OF THE O & M MANUALS, AND SHALL HAVE HAD A REASONABLE AMOUNT OF TIME FOR THE PERSONNEL TO FAMILIARIZE THEMSELVES WITH THE CONTENTS OF THE MANUALS.

PART II - PRODUCTS

A. GENERAL PRODUCTS

1. SEISMIC RESTRAINTS:

   A. WHERE REQUIRED BY THE BUILDING OFFICIALS/BUILDING CODES, FURNISH AND INSTALL SEISMIC RESTRAINTS FOR DUCTWORK, PIPING, AND EQUIPMENT. SEISMIC RESTRAINTS SHALL BE DESIGNED TO RESIST SEISMIC FORCES PRESCRIBED IN THE BUILDING CODES FOR THE PROJECT LOCATION.

   B. WHERE REQUIRED BY THE BUILDING OFFICIAL, PROVIDE STRUCTURAL CALCULATIONS SEALED AND SIGNED BY A LICENSED STRUCTURAL ENGINEER.

   C. REFERENCE THE LATEST EDITION OF THE SMACNA SEISMIC RESTRAINT MANUAL FOR GUIDELINES.

2. FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. SEE LIST OF ACCEPTABLE MANUFACTURERS ELSEWHERE IN THESE SPECIFICATIONS. MAKE NO EQUIPMENT SUBSTITUTIONS THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICING SPACE. REFER TO 'SUBSTITUTIONS' SECTION OF THE SPECIFICATION.

3. ACCESSORIES REQUIRED FOR PROPER OPERATION OF THE SYSTEMS, EVEN THOUGH NOT SPECIFICALLY INDICATED, SHALL BE INCLUDED AND INSTALLED. SUCH ACCESSORIES MAY INCLUDE, BUT ARE NOT LIMITED TO, FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION ISOLATORS, ETC. MOTOR STARTERS FOR PREWIRED EQUIPMENT AND OTHER PROTECTION AND CONTROL DEVICES ARE TO BE FURNISHED UNDER THE MECHANICAL CONTRACTOR'S SCOPE OF WORK. STARTERS FOR NON-PREWIRED EQUIPMENT, I.E., FANS, PUMPS ETC., ARE UNDER THE ELECTRICAL CONTRACTOR'S SCOPE OF WORK, UNLESS NOTED OTHERWISE.
4. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE PLANS AND ELSEWHERE IN THESE SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSTRUED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.

B. AIR CONDITIONING UNITS

1. FURNISH AND INSTALL COOLING UNITS WITH CAPACITIES AS SCHEDULED. UNITS SHALL BE COMPLETE WITH HERMETICALLY SEALED COMPRESSOR WITH HIGH AND LOW PRESSURE CUT-OFFS, COILS, HEATING SECTION, BLOWERS, NECESSARY REFRIGERANT PIPING, INSULATED COMPRESSOR COMPARTMENT, AIR COOLED CONDENSER, CONDENSER BLOWER OR FAN, AUTOMATIC CONTROLS, CONTROL PANEL WITH STARTERS, RELAYS, ETC. FOR SINGLE POINT POWER CONNECTION, WITHIN A WEATHERPROOF, INSULATED DECORATIVE CASING. UNITS SHALL BE FURNISHED WITH (1) ONE CONSTRUCTION SET OF FILTERS, INSTALLED PRIOR TO START-UP. REPLACE FILTERS AT SUBSTANTIAL COMPLETION BEFORE TEST AND BALANCE ACTIVITIES COMMENCE. FURNISH ONE COMPLETE SET OF SPARE FILTERS TO OWNER. FURNISH ONE COMPLETE SET OF BELTS.

2. UNITS SHALL BE COMPLETELY FACTORY WIRED FOR TERMINAL CONNECTIONS OF THERMOSTAT WITH A FAN-AUTO/MANUAL SWITCH AND A SYSTEM HEAT/OFF/COOL/AUTO SWITCH. UNITS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS, COMPLETE WITH ALL SCHEDULED AND NECESSARY ACCESSORIES FOR EFFICIENT AND PROPER OPERATION.

C. VENT UNITS

1. FURNISH AND INSTALL FANS WITH CAPACITIES AS SCHEDULED. UNITS SHALL BE COMPLETE WITH HOUSING, CENTRIFUGAL WHEEL, MOTOR, MOTOR ISOLATED ON SHOCK MOUNTS, CORROSION RESISTANT FASTENERS, ETC.

2. UNITS SHALL BE COMPLETELY FACTORY WIRED AND INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS, COMPLETE WITH ALL SCHEDULED AND NESESSARY ACCESSORIES FOR EFFICIENT AND PROPER OPERATION.

D. REFRIGERANT & CONDENSATE PIPING

1. REFRIGERANT PIPING SHALL BE SEAMLESS TYPE L ACR HARD DRAWN WITH LEAD FREE SILVER BRAZED WROT FITTINGS. INSULATE WITH 1" ARMAFLEX INSULATION WITHOUT LONGITUDINAL SLITS. BESIDES ADHESIVES ALL JOINTS SHALL BE WRAPPED WITH RUBBERIZED INSULATION TAPE. INSULATION EXPOSED TO WEATHER SHALL HAVE A STAINLESS STEEL JACKET AND MADE WATERTIGHT. PROVIDE SHEETMETAL SADDLES AT ALL PIPE SUPPORTS.

2. CONDENSATE DRAIN SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT WELD FITTINGS. INSULATE PIPING WITH 3/4" ARMAFLEX INSULATION.

3. INSULATION SHALL HAVE MINIMUM CONDUCTIVITY 0.27 BTU PER IN. / H X FT X °F AND MINIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX OF 25/50 RESPECTIVELY IN ACCORDANCE TO ASTM E84.

PART III - EXECUTION

A. GENERAL

1. INSTALL MATERIALS AND EQUIPMENT IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER.

2. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

3. PERFORM WORK IN ACCORDANCE WITH THE BEST TRADE PRACTICES. INSTALL MATERIALS AND EQUIPMENT SQUARELY WITH THE BUILDING LINES. PROVIDE RIGID PERMANENT BASES AND SUPPORTS FOR WORK.

4. CONSTRUCT AND BRACE EQUIPMENT, PIPING, ETC., SO THAT THERE WILL BE NO VIBRATION AND/OR RATTLING WHEN THE SYSTEM IS IN OPERATION.

5. COVER AND PROTECT EQUIPMENT AND MATERIALS FROM WEATHER, THEFT, ETC., UNTIL DATE OF COMPLETION. PLUG AND/OR CAP OPEN ENDS OF INSTALLED PIPING AND/OR DUCTWORK PENDING EXTENSION OR FINAL CONNECTION.

B. AUTOMATIC TEMPERATURE CONTROLS & AUTOMATIC SHUT-OFF

1. AC UNITS SHALL BE TURNED ON/OFF WITH PROGRAMMABLE 7-DAY CONTROLLER. THERMOSTATS/CONTROLLER SHALL BE SET FOR CONTINUOUS FAN OPERATION.

2. FANS ARE CONTROLLED AS SPECIFIED IN THE FAN SCHEDULE.

3. LOCATION OF THE WALL THEMOSTAT/SWITCHES SHALL BE COORDINATED WITH OTHER TRADES FOR NEAT APPEARANCE. THERMOSTAT SHALL BE MOUNTED TO COMPLY WITH ADAAG 205.1 AND 309 WITH A MAXIMUM HEIGHT OF 48-INCHES TO THE TOP OF THE THERMOSTAT.

D. TESTING AND BALANCING AC SYSTEM

1. TEST AND BALANCING SHALL BE DONE BY AN INDEPENDENT CONTRACTOR. THE TESTS SHALL INCLUDE THOSE COMPONENTS NORMALLY INCLUDED AS PART OF THE AIR DISTRIBUTION AND TRANSMISSION SYSTEM.

2. A COMPLETE BALANCING REPORT SHALL BE SUBMITTED TO THE ENGINEER UPON COMPLETION. THE BALANCING REPORT SHALL INCLUDE DESIGN QUANTITIES AND ACTUAL (MEASURED) QUANTITIES FOLLOWING BALANCING. BALANCING SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER. T.A.B. CONTRACTOR SHALL BE A.A.B.C. OR N.E.E.B. CERTIFIED, OR COMPANY APPROVED BY ENGINEER.

3. INCLUDE IN BID, AS PART OF THE WORK IN THIS CONTRACT, ANY ADJUSTMENTS TO OR REPLACEMENT OF PULLEYS, BELTS, MOTORS, DAMPERS, ETC., REQUIRED FOR CORRECT BALANCING OF SYSTEMS. CONTRACTOR OR EQUIPMENT SUPPLIER TO FURNISH THE ABOVE LISTED ITEMS TO T.A.B. CONTRACTOR TO INSTALL.

4. TEST AND ADJUST AIR DEVICES TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN REQUIREMENTS.

5. T.A.B. CONTRACTOR SHALL ADJUST THE DEFLECTION OF ALL APPLICABLE SUPPLY AIR DISTRIBUTION FOR PROPER AIR FLOW DIRECTION AND CHARACTERISTICS AS RECOMMENDED BY THE MANUFACTURER AND/OR TO THE SATISFACTION OF THE ENGINEER AND OWNER.

MECHANICAL LEGEND AND SYMBOLS:

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED

ABV.	ABOVE
AP	ACCESS PANEL
BEL.	BELOW
BP	BYPASS
BTUH	BRITISH THERMAL UNITS PER HOUR
C.D.	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
C.O.	CLEANOUT
CONC.	CONCRETE
CONN	CONNECTION
CONT	CONTINUATION
COTG	CLEANOUT TO GRADE
C.W.	COLD WATER
C.V.	CHECK VALVE
DET.	DETAIL
DN	DOWN
DR., D.	DRAIN
D.S.	DOWNSPOUT
DWG, DRWG	DRAWINGS
EA.	EACH
EAT	ENTERING AIR TEMPERATURE
E.F.	EXHAUST FAN
EFF.%	EFFICIENCY PERCENT
EXH	EXHAUST
E.R.	EXHAUST REGISTERS
EX.,EXIST.	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
F.D.	FLOOR DRAIN
FDB	FAHRENHEIT DRY BULB
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FFL	FINISH FLOOR LINE
FIN	FINISH
FLA	FULL LOAD AMPERES
FLR	FLOOR SINK
FT.	FEET
F.U.	FIXTURE UNIT
GAL	GALLON
GALV	GALVANIZED
GRD	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
G.V.	GATE VALVE
CO2	CARBON DIOXIDE
H	HEIGHT
H.B.	HOSE BIBB
HP	HORSEPOWER
H, HW	HOT WATER
INSUL.	INSULATION
LRA	LEAVING ROTOR AMPERES
O.A.	OUTSIDE AIR
O.A.R.	OUTSIDE AIR REGISTER
OBVD	OPPOSED BLADE VOLUME DAMPER
P. LAV	PARAPLEGIC LAVATORY
P. SINK	PARAPLEGIC SINK
P. WC	PARAPLEGIC WATER CLOSET
QTY.	QUANTITY
R.D.	ROOF DRAIN
RLA	RUNNING LOAD AMPERES
RPM	REVOLUTIONS PER MINUTE
R.R.	RETURN REGISTER
SBTUH	SENSIBLE BRITISH THERMAL UNITS PER HOUR
SHT.	SHEET
SHT. MTL.	SHEET METAL
SP	STATIC PRESSURE
SQ. FT.	SQUARE FEET
SQ. HD.	SQUARE HEAD
SR	SUPPLY REGISTER
SST	STAINLESS STEEL
TBTUH	TOTAL BRITISH THERMAL UNITS PER HOUR
TC	TIMECLOCK
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VOLTS
VT	VENT
VTR	VENT THRU ROOF
W	WASTE
WCO	WALL CLEANOUT
W/	WITH
(E)	EXISTING
	CHECK VALVE
	GATE VALVE
	PLUG VALVE
	ROUND
	CEILING DIFFUSER
	RETURN REGISTER
	OBVD
	FIREDAMPER

OUTSIDE AIR CALCULATION:

OUTSIDE AIR SOURCE	CFM/ PERSON	PERSONS	OA CFM REQ'D
OAF-1	10	4	40
TOTAL		4	40

* BASED ON ASHRAE STANDARD 62.1

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
COMMERCIAL PROVISIONS

COMPLIANCE METHOD
CHECK APPLICABLE METHOD

☐	C401.2(1) ANSI/ASHRAE/IESNA 90.1
☐	C401.2(2) SECTIONS C402 THROUGH C406
☒	C401.2(3) SECTIONS C402.5, C403.2, C404, C405.2, 405.3, C405.4, C405.6 & C407
☐	C102.1 ALTERNATIVE

TO THE BEST OF KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE ENERGY CODE.

SIGNATURE: _____ DATE: 05-05-20
NAME: ARNALDO E. PREPOSE
TITLE: MECHANICAL ENGINEER
LICENSE NO.: 4764-M

RIECKE SUNNLAND KONO ARCHITECTS, LTD
23 LONO AVENUE, SUITE 200
PO BOX 1427
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7488

ARNALDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4764-M HAWAII, U.S.A.
EXPIRATION DATE OF LICENSE: APRIL 30, 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
I AM RESPONSIBLE FOR CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

MECHANICAL SPECIFICATIONS

REVISIONS	
2020-05-05	PERMIT SET
2020-08-07	BID SET

M-101

PROJECT NO: 2018-0XX
DATE: MAY, 2018

Date Plotted: 8/6/2020 3:57 PM
File Name: C:\Users\arnol\Documents\Clients\RSK\Maui Bus Hub\m11BS-specsac MauiBus 080720.dwg

FIRE SPRINKLER SPECIFICATIONS

PART I - GENERAL

A. CONDITIONS

1. GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, SPECIAL CONDITIONS, AND OTHER RELATED PORTIONS OF DIVISION 1, APPLY TO THIS SECTION.

B. REGULATIONS, CODES, PERMITS AND INSPECTIONS

1. COMPLY WITH NATIONAL, STATE, CURRENT CODES ADOPTED BY THE CITY AND COUNTY OF HONOLULU, ORDINANCES, ETC., HAVING JURISDICTION. THIS INCLUDES RULES AND REQUIREMENTS OF UTILITY SERVING AGENCIES.

2. INCORPORATE CODES, ORDINANCES, ETC., INTO THE BASE BID AND INSTALLATION OF WORK. NO ADDITIONAL FUNDS WILL BE ALLOCATED FOR WORK REQUIRED TO CONFORM TO REGULATIONS AND REQUIREMENTS OR TO OBTAIN APPROVAL OF WORK.
3. OBTAIN AND PAY FOR REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY LOCAL AUTHORITIES.

4. IN ADDITION, THE LATEST ADOPTED EDITION OF THE FOLLOWING CODES AND PUBLISHED STANDARDS SHALL BE ADHERED TO:

   A. 2006 INTERNATIONAL BUILDING CODE (IBC)
   B. 2012 NFPA 1
   C. NFPA 13
   D. 2015 INTERNATIONAL ENERGY CONSERVATION CODE

C. DESIGN DRAWINGS

1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. PROVIDE LABOR, MATERIAL, ETC., NECESSARY TO ACCOMPLISH THESE REQUIREMENTS. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED A PART OF THE WORK INCLUDED. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE PERMITTED. DO NOT SCALE THE DESIGN DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
2. IF A CONFLICT OCCURS BETWEEN THE DESIGN DRAWINGS AND SPECIFICATIONS, PROMPTLY NOTIFY THE ARCHITECT AND/OR ENGINEER. AT THAT POINT, AN INTERPRETATION WILL BE MADE BY THE ARCHITECT AND/OR ENGINEER AND SAID DECISION SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

D. BASE BID

1. BASE BID SHALL INCLUDE MATERIALS AND EQUIPMENT SPECIFIED OR SCHEDULED ON THE DRAWINGS. REQUESTS FOR SUBSTITUTION OF MATERIALS AND EQUIPMENT SHALL BE BY ADDITIVE OR DEDUCTIVE ALTERNATE BID ONLY. THE FOLLOWING DATA MUST BE CLEARLY WRITTEN AT THE BEGINNING OF THE ALTERNATE PROPOSAL:

   A. ADDITIVE OR DEDUCTIVE AMOUNT CLEARLY WRITTEN IN WORDS AND NUMERALS.

   B. INCREASED OR REDUCED CONSTRUCTION TIME IN DAYS.

   C. OTHER DEMONSTRABLE BENEFIT, FOR WHICH THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.
2. ONLY THOSE MATERIALS AND EQUIPMENT WHICH ARE SUBMITTED AS AN ALTERNATE BID, WHICH ARE ACCOMPANIED BY THE SUPPORTING DATA INDICATED BELOW WILL BE REVIEWED AND CONSIDERED.

E. SUBSTITUTIONS

1. MATERIALS AND EQUIPMENT THAT ARE A SUBSTITUTE FROM THE LISTED MANUFACTURER MAY BE CONSIDERED. PRIOR TO PROPOSING ANY SUBSTITUTE ITEM, CONTRACTOR SHALL SATISFY HIMSELF THAT THE ITEM PROPOSED IS, IN FACT, EQUAL TO THAT SPECIFIED, THAT SUCH ITEM WILL FIT INTO THE SPACE ALLOCATED, THAT SUCH ITEM AFFORDS COMPARABLE EASE FOR OPERATION, MAINTENANCE AND SERVICE, THAT THE APPEARANCE, LONGEVITY, CAPACITY, SUITABILITY, AND ELECTRICAL CHARACTERISTICS ARE COMPARABLE, THAT BY REASON OF COST SAVINGS, REDUCED CONSTRUCTION TIME, OR SIMILAR DEMONSTRABLE BENEFIT, THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.
2. THE BURDEN OF PROOF OF EQUALITY OF A PROPOSED SUBSTITUTION FOR A SPECIFIED ITEM SHALL BE UPON THE CONTRACTOR. CONTRACTOR SHALL SUPPORT HIS REQUEST WITH SUFFICIENT TEST DATA AND OTHER MEANS TO PERMIT THE ENGINEER TO MAKE A FAIR AND EQUITABLE DECISION ON THE MERITS OF THE PROPOSED SUBSTITUTION. INSUFFICIENT SUBMITTAL DATA WILL RESULT IN REJECTION OF THE PROPOSED SUBSTITUTION. ANY ITEM BY A MANUFACTURER OTHER THAN THOSE SPECIFIEBED, OR OF BRAND NAME, MODEL NUMBER, OR OF GENERIC SPECIES OTHER THAN THOSE SPECIFIED, WILL BE CONSIDERED A SUBSTITUTION. ENGINEER WILL BE THE SOLE JUDGE OF WHETHER OR NOT THE SUBSTITUTION IS EQUAL IN QUALITY, UTILITY AND ECONOMY TO THAT SPECIFIED.

3. APPROVAL OF A SUBSTITUTION SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT. CONTRACTOR SHALL BEAR THE EXPENSE FOR ANY CHANGES IN OTHER PARTS OF THIS WORK OR OTHER WORK CAUSED BY THE PROPOSED SUBSTITUTION, INCLUDING BUT NOT LIMITED TO STRUCTURAL, ELECTRICAL, PLUMBING, AND ACCESS REQUIREMENTS.
4. IF ENGINEER REJECTS CONTRACTOR'S SUBSTITUTE ITEM ON THE FIRST SUBMITTAL, CONTRACTOR MAY MAKE ONLY ONE ADDITIONAL REQUEST FOR SUBSTITUTION IN THE SAME CATEGORY.

5. ANY EQUIPMENT SUBSTITUTED WITHOUT THE ENGINEER'S WRITTEN APPROVAL WILL BE REMOVED AND REPLACED WITH THE SPECIFIED EQUIPMENT AT THE CONTRACTOR'S EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER.

F. SUBMITTALS

1. EQUIPMENT AND MATERIALS:

   A. CONTRACTOR SHALL HAVE APPROVED SUBMITTALS PRIOR TO FABRICATION OR DELIVERY OF ANY MATERIAL AND/OR EQUIPMENT TO THE JOB SITE. SUBMIT A MINIMUM OF 8 (EIGHT) COPIES, COMPREHENSIVELY INDEXED SUBMITTALS IN A 3-RING BINDER, COMPLETELY DESCRIBING EACH MAJOR SYSTEM, MATERIAL AND EQUIPMENT PROPOSED TO BE USED. ANY PIECE OF EQUIPMENT PLACED ON THE JOB WITHOUT PRIOR APPROVAL WILL BE SUBJECT TO REMOVAL AT THE SOLE EXPENSE OF THE CONTRACTOR.

   B. SUBMITTALS ARE FOR INFORMATION AND COORDINATION ONLY. REVIEW OF MATERIAL AND/OR EQUIPMENT SUBMITTALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS AND SPECIFICATIONS REQUIREMENTS. POINTS OF NON-COMPLIANCE WHICH ARE NOT NOTED SHALL NOT BE CONSTRUED TO BE AN APPROVAL OF THE NON-COMPLIANCE. SUBMITTALS SHALL CLEARLY STATE WHERE EQUIPMENT DOES NOT AGREE WITH THE CONTRACT DOCUMENTS.

   C. SUBMITTALS SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS, PHYSICAL DIMENSIONS, WEIGHTS AND RATINGS OF EQUIPMENT SUBMITTED. INDICATE EQUIPMENT LAYOUTS, ELECTRICAL CHARACTERISTICS, WIRING AND CONTROL DIAGRAMS, SIZES AND LOCATIONS OF PIPING, DUCT, CONDUITS, AND OTHER CONNECTION SIZES AND LOCATIONS.

2. SHOP DRAWINGS:
   CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED 1/4"=1'-0" SCALE DRAWINGS THAT HAVE BEEN PROPERLY COORDINATED WITH OTHER TRADES. INDICATE LOCATION AND SIZES OF ACCESS PANELS IN HARD CEILINGS FOR EQUIPMENT AND VLAVES ACCESS.

3. AS BUILT DRAWINGS:
   MAINTAIN ACCURATE RECORDS OF ANY CHANGES FROM THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. UPON COMPLETION OF THE PROJECT, DELIVER TO THE ENGINEER ONE (1) SET OF LEGIBLE REPRODUCIBLES AND (3) BLUELINE SETS OF THESE RECORD DRAWINGS.

4. WARRANTY:
   UNLESS SPECIFIED OTHERWISE BY ARCHITECT, ENGINEER, OWNER OR OWNER'S REPRESENTATIVE, UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER A WRITTEN ONE (1) YEAR WARRANTY ON THE SYSTEMS, MATERIALS AND ALL WORK PERFORMED. THIS INCLUDES THE ENTIRE COST, INCLUDING MATERIALS AND/OR LABOR, OF CORRECTIVE WORK REQUIRED AND NECESSITATED BY DEFECTS IN MATERIALS AND/OR WORKMANSHIP. CONTRACTOR SHALL ALSO PRESENT THE OWNER WITH A COPY OF ALL MANUFACTURER'S WARRANTIES THAT EXCEED THE WARRANTY PERIOD, SUCH AS AC UNIT COMPRESSORS.

5. OPERATION AND MAINTENANCE INSTRUCTIONS:
   UPON THE COMPLETION OF THE PROJECT, DELIVER TO THE OWNER THE REQUIRED NUMBER OF COPIES OF HARD BOUND O & M MANUALS. INCLUDE IN THE MANUAL INSTRUCTIONS PREPARED SPECIFICALLY FOR THE SYSTEMS PROVIDED, ALONG WITH DESCRIPTIONS, PARTS LIST, INSTRUCTIONS, AND WARRANTIES. START-UP REPORTS FOR ALL EQUIPMENT WILL BE DELIVERED WITH THE MATERIALS AND EQUIPMENT UTILIZED IN THE PROJECT. IDENTIFY EACH ITEM BY THE DESIGNATION APPEARING ON THE DRAWINGS.

6. OWNER TRAINING:
   AT A TIME DESIGNATED BY THE OWNER, PROVIDE A SUITABLE TECHNICIAN, MECHANIC OR ENGINEER TO REVIEW THE SYSTEMS WITH OWNER'S REPRESENTATIVE TO THOROUGHLY FAMILIARIZE HIM WITH THE OPERATIONS AND MAINTENANCE OF THE SYSTEMS. UP TO (8) EIGHT HOURS TOTAL TRAINING TIME SHALL BE REQUIRED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO TRAINING THE OWNER SHALL HAVE TAKEN POSSESSION OF THE O & M MANUALS, AND SHALL HAVE HAD A REASONABLE AMOUNT OF TIME FOR THE PERSONNEL TO FAMILIARIZE THEMSELVES WITH THE CONTENTS OF THE MANUALS.

PART II - PRODUCTS

A. GENERAL PRODUCTS

1. SEISMIC RESTRAINTS:

   A. WHERE REQUIRED BY THE BUILDING OFFICIALS/BUILDING CODES, FURNISH AND INSTALL SEISMIC RESTRAINTS FOR DUCTWORK, PIPING, AND EQUIPMENT. SEISMIC RESTRAINTS SHALL BE DESIGNED TO RESIST SEISMIC FORCES PRESCRIBED IN THE BUILDING CODES FOR THE PROJECT LOCATION.

   B. WHERE REQUIRED BY THE BUILDING OFFICIAL, PROVIDE STRUCTURAL CALCULATIONS SEALED AND SIGNED BY A LICENSED STRUCTURAL ENGINEER.

   C. REFERENCE THE LATEST EDITION OF THE SMACNA SEISMIC RESTRAINT MANUAL FOR GUIDELINES.

2. FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. SEE LIST OF ACCEPTABLE MANUFACTURERS ELSEWHERE IN THESE SPECIFICATIONS. MAKE NO EQUIPMENT SUBSTITUTIONS THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICING SPACE. REFER TO 'SUBSTITUTIONS' SECTION OF THE SPECIFICATION.
3. ACCESSORIES REQUIRED FOR PROPER OPERATION OF THE SYSTEMS, EVEN THOUGH NOT SPECIFICALLY INDICATED, SHALL BE INCLUDED AND INSTALLED. SUCH ACCESSORIES MAY INCLUDE, BUT ARE NOT LIMITED TO, FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION ISOLATORS, ETC. MOTOR STARTERS FOR PREWIRED EQUIPMENT AND OTHER PROTECTION AND CONTROL DEVICES ARE TO BE FURNISHED UNDER THE MECHANICAL CONTRACTOR'S SCOPE OF WORK. STARTERS FOR NON-PREWIRED EQUIPMENT, I.E., FANS, PUMPS ETC., ARE UNDER THE ELECTRICAL CONTRACTOR'S SCOPE OF WORK, UNLESS NOTED OTHERWISE.
4. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE PLANS AND ELSEWHERE IN THESE SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSTRUED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.

B. DESIGN OF SPRINKLER SYSTEM

1. ~~DESIGN OF~~ WET PIPE FIRE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED OR GENERAL PIPE SIZING METHOD. THE DESIGN SHALL CONFORM TO NFPA 13 AND SHALL BE CALCULATED TO THE REQUIREMENTS AS SPECIFIED ON DRAWINGS. CALCULATIONS SHALL BE BASED UPON A CONTRACTOR VERIFIED CURRENT WATER FLOW TEST PROVIDE WRITTEN FLOW TEST TO CONTRACTING OFFICER.

   A. A TEN (10) PER CENT CUSHION SHALL BE MAINTAINED IN CALCULATIONS TO ALLOW FOR VARIATIONS IN SUPPLY.

2. SPRINKLER HEADS: STAINLESS STEEL
   QUICK RESPONSE TYPE ORDINARY TEMPERATURE RATING OR HIGHER AS SUITABLE FOR INDIVIDUAL LOCATION WHERE IT IS INSTALLED PER NFPA 13. OTHER ORIFICE SIZES AND/OR TEMPERATURE RATINGS MAY BE USED AS STIPULATED IN NFPA 13. PROVIDE UPRIGHT HEADS IN AREAS WITHOUT FINISHED CEILINGS. IN AREAS WITH CEILING, PROVIDE CONCEALED PENDENT HEADS. PROVIDE CORROSION PROTECTED HEADS WHERE INDICATED ON DRAWINGS. FOR AREAS WITH SURFACE MOUNTED LIGHTS PROVIDE CHROMIUM PLATED PENDENT HEADS AND ADJUSTABLE CHROMIUM ESCUTCHEON.
3. CABINET: PROVIDE EXTRA SPRINKLER HEADS AND TWO (2) SPRINKLER HEAD WRENCH IN A METAL CABINET ADJACENT TO THE ALARM VALVE WITHIN BUILDING. THE NUMBER AND TYPES OF EXTRA SPRINKLER HEADS SHALL BE SPECIFIED IN NFPA 13.

4. ALARM VALVE: VALVE SHALL BE A MINIMUM 4-INCH AND OF VARIABLE PRESSURE TYPE COMPLETE WITH ACCESSORIES AND APPURTENANCES NECESSARY FOR PROPER OPERATION OF EACH SYSTEM AND TO PREVENT FALSE ALARMS DUE TO SURGES OR OTHER CONDITIONS IN SUPPLY TO EACH SYSTEM.

5. FRICTION LOSSES: CALCULATE LOSSES IN A PIPE IN ACCORDANCE WITH HAZEN-WILLIAMS FORMULA WITH "C" VALUE OF 120 FOR STEEL PIPE, 150 FOR COPPER TUBE, AND 140 FOR BURIED CEMENT LINED DUCTILE IRON PIPE AND ASBESTOS CEMENT PIPE.

6. LOCATION OF SPRINKLER HEADS: HEADS IN RELATION TO CEILING AND SPACING OF SPRINKLER HEADS SHALL NOT EXCEED THAT PERMITTED BY NFPA 13. THE SPACING OF SPRINKLERS ON BRANCH LINES SHALL BE ESSENTIALLY UNIFORM.

7. WATER MOTOR ALARM: ROVIDE WATER MOTOR OPERATE ALARM GONG OF APPROVED WEATHERPROOF AND GUARDED TYPE, TO SOUND LOCALLY ON FLOW OF WATER IN EACH SPRINKLER SYSTEM TO WHICH IT IS CONNECTED. MOUNT ALARM ON OUTSIDE OF OUTER WALLS OF BUILDING, AT A LOCATION AS INDICATED ON DRAWINGS. PROVIDE AN ELECTRIC FLOW SWITCH AT ALARM CHECK FOR CONNECTION TO FIRE ALARM SYSTEM OR CENTRAL MONITORING STATION TO CONFORM TO IBC SECTION 2006.

8. ABOVE GROUND PIPING SYSTEM

   A. MAKE CHANGES IN PIPING SIZES THROUGH STANDARD TAPERED REDUCING PIPE FITTINGS; USE OF BUSHINGS WILL NOT BE PERMITTED. JOINTING COMPOUND FOR PIPE THREADS SHALL BE POLYTETRAFLUOROETHYLENE (PTFE) PIPE THREAD TAPE, PIPE CEMENT AND OIL, OR GRAPHITE AND OIL; APPLY ONLY ON MALE THREADS. PIPE NIPPLES 6-INCHES LONG AND SHORTER SHALL BE SCHEDULE 80 STEEL PIPE. RUN PIPING CONCEALED IN AREAS WITH SUSPENDED CEILINGS.

B. SPRINKLER PIPE AND FITTINGS: SPRINKLER PIPE SHALL BE IN ACCORDANCE WITH NFPA 13. USE OF RESTRICTION ORIFICES, REDUCING FLANGES AND PLAIN-END FITTINGS WITH MECHANICAL COUPLINGS (WHICH UTILIZE STEEL ORIFICE DEVICES TO BITE INTO PIPE WHEN PRESSURE IS APPLIED) WILL NOT BE PERMITTED. NO "PRESS" FIT TYPE FITTINGS TO BE USED. NO PIPE WITH WALL THICKNESS SMALLER THAN SCHEDULE 10 TO BE USED. PLASTIC PIPING (CPVC, PVC, PEX) AND XL PIPING IS NOT ACCEPTABLE.

C. PIPE HANGERS (SUPPORTS): PROVIDE IN ACCORDANCE WITH NFPA 13 AND 13R. PROVIDE SEISMIC BRACING PER NFPA 13.

D. VALVES: PROVIDE VALVES AS REQUIRED BY NFPA 13, AND OF TYPES APPROVED FOR FIRE SERVICE.

E. IDENTIFICATION SIGNS: ATTACH PROPERLY LETTERED APPROVED METAL SIGNS CONFORMING TO NFPA 13 TO EACH VALVE. PERMANENTLY AFFIX DESIGN DATA NAMEPLATES TO RISER OF EACH SYSTEM.

F. INSPECTOR'S TEST CONNECTION: PROVIDE TEST CONNECTIONS ABOUT 6 FEET ABOVE FLOOR FOR EACH PORTION OF SPRINKLER SYSTEM EQUIPPED WITH AN ALARM DEVICE AN LOCATE PER NFPA 13. PROVIDE TEST CONNECTION PIPING TO A LOCATION WHERE DISCHARGE WILL BE READILY VISIBLE AND WHERE WATER MAY BE DISCHARGED WITHOUT DAMAGE.

G. MAIN DRAINS: PROVIDE DRAIN PIPING TO DISCHARGE AT SAFE POINTS OUTSIDE EACH BUILDING. PROVIDE AUXILIARY DRAINS AS REQUIRED BY NFPA 13.

H. PIPE SLEEVES: PROVIDE WHERE PIPING PASSES THROUGH WALLS, FLOORS, ROOFS AND PARTITIONS. SECURE SLEEVES IN PROPER POSITION AND LOCATION DURING CONSTRUCTION. PROVIDE SLEEVES OF SUFFICIENT LENGTH TO PASS THROUGH ENTIRE THICKNESS OF WALLS, FLOORS, ROOFS, AND PARTITIONS. PROVIDE NOT LESS THAN 0.25-INCH SPACE BETWEEN EXTERIOR OF PIPING AND INTERIOR OF SLEEVE. FIRMLY PACK SPACE WITH INSULATION AND CAULK BOTH ENDS OF SLEEVE WITH PLASTIC WATERPROOF CEMENT.

I. SLEEVES IN MASONRY AND CONCRETE WALLS, FLOORS AND ROOFS SCHEDULE 40 OR STANDARD WEIGHT, ZINC COATED STEEL PIPE SLEEVES. SLEEVES IN FLOOR SLABS SHALL EXTEND 3 INCHES ABOVE FINISHED FLOOR.

J. SLEEVES IN PARTITION, AND OTHER THAN MASONRY AND CONCRETE WALLS, FLOORS, AND ROOFS: PROVIDE ZINC COATED STEEL SHEETS HAVING A NOMINAL WEIGHT OF NOT LESS THAN 0.90 POUNDS PER SQUARE FOOT.

K. PIPES PASSING THROUGH FLOORS AND RATED WALLS SHALL BE FIRE STOPPED WITH 3M FIRE PROTECTION PRODUCTS OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S PRINTED INSTRUCTIONS. SYSTEM SHALL BE TESTED AND IN ACCORDANCE TO UL CLASSIFICATION.

L. ESCUTCHEON PLATES: PROVIDE APPROVED ONE PIECE OR SPLIT HINGE TYPE PLATES FOR PIPING PASSING THROUGH FLOORS, WALLS, AND CEILINGS IN BOTH EXPOSED AND CONCEALED AREAS. PROVIDE CHROMIUM PLATED METAL PLATES WHERE PIPE PASSES THROUGH FINISHED CEILINGS. PROVIDE OTHER PLATES OF STEEL OR CAST IRON WITH ALUMINUM PAINT FINISH. SECURELY ANCHOR PLATES IN PLACE WITH SET SCREWS OR OTHER APPROVED POSITIVE MEANS.

9. BURIED PIPING
   A. PIPE AND FITTINGS: PROVIDE OUTSIDE COATED CEMENT LINED DUCTILE IRON PIPE AND FITTINGS CONFORMING TO NFPA 24 FOR PIPING UNDER BUILDINGS AND OUTSIDE OF BUILDING WALLS. ANCHOR JOINTS IN ACCORDANCE WITH NFPA 245 USING PIPE CLAMPS AND STEEL RODS. MINIMUM PIPE SIZE SHALL BE 4 INCHES. MINIMUM DEPTH OF COVER SHALL BE 3 FEET.

PART III - EXECUTION

A. GENERAL

1. INSTALL MATERIALS AND EQUIPMENT IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER.

2. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

3. PERFORM WORK IN ACCORDANCE WITH THE BEST TRADE PRACTICES. INSTALL MATERIALS AND EQUIPMENT SQUARELY WITH THE BUILDING LINES. PROVIDE RIGID PERMANENT BASES AND SUPPORTS FOR WORK.

4. CONSTRUCT AND BRACE EQUIPMENT, PIPING, ETC., SO THAT THERE WILL BE NO VIBRATION AND/OR RATTLING WHEN THE SYSTEM IS IN OPERATION.

5. COVER AND PROTECT EQUIPMENT AND MATERIALS FROM WEATHER, THEFT, ETC., UNTIL DATE OF COMPLETION. PLUG AND/OR CAP OPEN ENDS OF INSTALLED PIPING AND/OR DUCTWORK PENDING EXTENSION OR FINAL CONNECTION.

B. ACCESS TO EQUIPMENT

1. INSTALL ALL CONTROL DEVICES, SPECIALTIES, VALVES AND RELATED ITEMS TO PROVIDE EASY ACCESS FOR OPERATION, REPAIR, INSPECTION AND MAINTENANCE. IF THESE ITEMS ARE CONCEALED BEHIND WALLS OR CEILINGS OF NON-REMOVABLE TYPE CONSTRUCTION, PROVIDE ACCESS PANELS OF PROPER SIZE TO PROVIDE FOR OPERATION, MAINTENANCE, INSPECTION AND REPAIR FOR CONCEALED DEVICE.

C. DISINFECTION

1. DISINFECT NEW WATER PIPING AND EXISTING WATER PIPING AFFECTED BY CONTRACTOR'S OPERATION. FILL PIPING SYSTEMS WITH SOLUTION CONTAINING MINIMUM OF 50 PARTS PER MILLION OF AVAILABLE CHLORINE AND ALLOW SOLUTION TO STAND FOR MINIMUM OF 24 HOURS. FLUSH SOLUTION FROM SYSTEMS WITH CLEAN WATER UNTIL MAXIMUM RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION.

D. FIELD PAINTING

1. CLEAN, PRETREAT, PRIME AND PAINT NEW SPRINKLER SYSTEMS INCLUDING VALVES PIPING, CONDUIT, HANGERS, MISCELLANEOUS METALWORK AND ACCESSORIES. APPLY COATINGS TO CLEAN DRY SURFACES USING CLEAN BRUSHES. CLEAN SURFACES TO REMOVE DUST, DIRT, RUST, AND LOOSE MILL SCALE. IMMEDIATELY AFTER CLEANING, PROVIDE METAL SURFACES WITH ONE COAT OF PRETREATMENT PRIMER AND ONE COAT PRIMER. EXERCISE CARE TO AVOID PAINTING OF SPRINKLER HEADS OR PROTECTIVE DEVICES. REMOVE MATERIALS, WHICH ARE USED TO PROTECT SPRINKLER HEADS, WHILE PAINTING IS IN PROGRESS UPON COMPLETION OF PAINTING. REMOVE SPRINKLER HEADS, WHICH ARE PAINTED AND PROVIDE NEW CLEAN SPRINKLER HEADS OF PROPER TYPE.

2. SPRINKLER SYSTEMS IN UNFINISHED AREAS: DO NOT PAINT PIPES IN UNFINISHED AREAS. UNFINISHED AREAS ARE DEFINED AS ATTIC SPACES, SPACES ABOVE SUSPENDED CEILINGS, AND PIPE CHASES.

3. SPRINKLER SYSTEM IN ALL OTHER OCCUPIED AREAS AND CRAWL SPACE: PROVIDE PRIMED SURFACES WITH TWO COATS OF PAINT TO MATCH ADJACENT SURFACES, EXCEPT PROVIDE VALVES AND OPERATING ACCESSORIES WITH ONE COAT RED ENAMEL PAINT. PROVIDE MAIN PIPING WITH 2-INCH WIDE RED ENAMEL OR SELF-ADHERING RED PLASTIC TAPE BANDS SPACED AT MAXIMUM OF 20-FOOT INTERVALS THROUGHOUT PIPING SYSTEMS, EXCEPT IN FINISHED AREAS SUCH AS OFFICES, RED BANDS MAY BE DELETED.

E. FIELD TESTING AND FLUSHING

1. PRELIMINARY TESTS: HYDROSTATICALLY TESTS EACH SYSTEM AT 200 PSIG FOR A PERIOD OF 2 HOURS. FLUSH PIPING IN ACCORDANCE WITH NFPA 13. PIPING ABOVE SUSPENDED CEILINGS SHALL BE TESTED, INSPECTED AND APPROVED BEFORE INSTALLATION OF CEILINGS. TEST ALARMS AND OTHER DEVICES. TEST WATER FLOW ALARMS BY FLOWING WATER THROUGH INSPECTOR'S TEST CONNECTIONS. TEST ON EQUIPMENT SHALL BE PERFORMED AND INCLUDE FOLLOWING: VISUAL EQUIPMENT CHECKS TO INSURE COMPLIANCE WITH APPROVED SHOP DRAWINGS. WHEN TESTS HAVE BEEN COMPLETED AND CORRECTIONS MADE SUBMIT A SIGNED AND DATED CERTIFICATE, SIMILAR TO THAT SPECIFIED IN NFPA 13 AND 13R, WITH A REQUEST FOR FORMAL INSPECTION AND TESTS.

2. FORMAL INSPECTION AND TESTS: AN EXPERIENCED TECHNICIAN REGULARLY EMPLOYED BY SPRINKLER INSTALLER SHALL BE PRESENT DURING INSPECTION. AT THIS INSPECTION, REPEAT ANY OR ALL OF REQUIRED TESTS AS DIRECTED, CORRECT DEFECTS IN WORK PROVIDED BY CONTRACTOR, AND MAKE ADDITIONAL TESTS UNTIL IT HAS BEEN DEMONSTRATED THAT SYSTEMS COMPLY WITH ALL CONTRACT REQUIREMENTS. FURNISH APPLIANCES, EQUIPMENT, ELECTRICITY, INSTRUMENTS, CONNECTING DEVICES AND PERSONNEL FOR TESTS.

FIRE SPRINKLER NOTES:

1. THESE FIRE SPRINKLER PLANS ARE SUBMITTED FOR CONDITIONAL APPROVAL. CONTRACTOR SHALL SUBMIT TWO (2) SETS OF COMPLETE WORKING PLANS (SHOP DRAWINGS) AND HYDRAULIC CALCULATIONS STAMPED AND SIGNED BY HAWAII LICENSED MECHANICAL ENGINEER TO THE MAUI DEPARTMENT OF FIRE & SAFETY - FIRE PREVENTION BUREAU FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

   MAUI COUNTY DWS HAS STOPPED PERFORMING WATER FLOW TEST. CONTRACTOR SHALL PERFORM A FLOW TEST AT THE EXISTING FIRE HYDRANTS #953 AND #954 ON VEVAU STREET. CURRENT RECORDS AT DWS AT HYDRANT #118 ON KANE STREET HAS A STATIC PRESSURE OF 92 PSI (8/11/16), HYDRANT #953 102 PSI AND #954 100 PSI..

   SUBMIT AS-BUILT DRAWINGS TO MAUI DEPARTMENT OF FIRE & SAFETY - FIRE PREVENTION BUREAU PRIOR TO FIRE DEPARTMENT INSPECTION.

2. DRAWINGS SHOWING PIPE AND HEAD LOCATIONS ARE CONCEPTUAL ONLY, AND DOES NOT SHOW ALL REQUIRED DROPS AND OFFSETS TO AVOID BEAMS, DUCTS, ETC. CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS AND HEADS TO COMPLY WITH NFPA 13 AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SHOWING ALL DROPS, PIPE SIZES, AND OFFSETS. COMPLY TO NFPA 13.
4. CONTRACTOR SHALL VISIT SITE TO FIELD VERIFY EXISTING CONDITIONS BEFORE BIDDING PROJECT.
5. LOCATE PIPES ABOVE CEILING IN AREAS WITH FINISHED CEILINGS.
6. LOCATE PIPES AS HIGH AS ALLOWED BY NFPA STANDARDS TO UNDERSIDE OF STRUCTURE. PROVIDE OFFSETS AROUND STRUCTURE WITH NEW AUXILIARY DRAINS COMPLY TO NFPA 13.
7. COORDINATE WITH ALL TRADES BEFORE INSTALLATION AND FABRICATION. FIELD CONFLICTS WILL BE RESOLVED WITH NO EXTRA COST TO OWNER.
8. SYSTEM SHALL BE DESIGNED FOR SEISMIC. PROVIDE SWAY BRACING AND SWING JOINTS PER NFPA 13.
11. CONTRACTOR SHALL PROVIDE TAMPER AND FLOW SWITCHES FOR ALL VALVES ON THE FIRE SPRINKLER SYSTEM. ALL NEW TAMPER AND FLOW SWITCHES SHALL BE WIRED TO THE FIRE ALARM PANEL. COORDINATE WORK WITH ELECTRICIAN AND ELECTRICAL ENGINEER. SYSTEM SHALL BE CENTRALLY SUPERVISED.
12. SPARE SPRINKLER HEADS SHALL BE PROVIDED AND STORED IN A CABINET IN A LOCATION APPROVED BY THE CHIEF AS FOLLOWS:

    1. 1-300 SPRINKLERS 06 HEADS
    2. 301-1000 SPRINKLERS 12 HEADS
    3. OVER 1000 SPRINKLERS 24 HEADS

    IN ADDITION, THREE SPRINKLER STOPPERS AND A SPECIAL SPRINKLER WRENCH SHALL BE PROVIDED AND KEPT IN THE CABINET TO BE USED IN THE REMOVAL AND INSTALLATION OF SPRINKLER HEADS.
    MOUNT SPARE SPRINKLER CABINET INSIDE NEAR FIRE ALARM PANEL.
13. ALL FIRE SPRINKLER CONTROL VALVES AND WATER FLOW SWITCHES SHALL BE ELECTRICALLY SUPERVISED ON THE ISLAND OF MAUI IN ACCORDANCE WITH 2006 IBC, SECTION 903.4 AS AMENDED.
14. FIRE EXTINGUISHER: ABC MULTI-PURPOSE DRY CHEMICAL FIRE EXTINGUISHER WITH RED GLOSSY POLYESTER COATED STEEL CYLINDER, PRESSURE GAUGE AND HOSE. UL RATING 3A:40B:C. POTTER ROEMER 3006, 6 LB.
15. FIRE EXTINGUISHER CABINET: SEMI-RECESSED COLD ROLLED STEEL WITH ELECTROSTATICALLY APPLIED, THERMALLY-FUSED POLYESTER COATING WITH RECOATABLE WHITE FINISH, CONTINUOUS HINGE, DUO-VERTICAL PANEL W/ LOCK, CLEAR TSG AND BREAK RITE HANDLE, FIRE EXTINGUISHER LETTERING. FOR NON-FIRE RATED CABINET PROVIDE POTTER ROEMER 7022. FOR FIRE RATED CABINET PROVIDE POTTER ROEMER FRC7022.

RIECKE SUNNLAND KONO ARCHITECTS, LTD
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TELEPHONE: (808) 877-7488

ARMANDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4794-H HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

FIRE SPRINKLER SPECIFICATIONS

REVISIONS	
2020-05-05	PERMIT SET
2020-08-07	BID SET
4 2020-10-09	FD COMMENTS

M-102

PROJECT NO. 2018-0XX

DATE MAY, 2018

Date Plotted: 10/19/2020 9:58 AM
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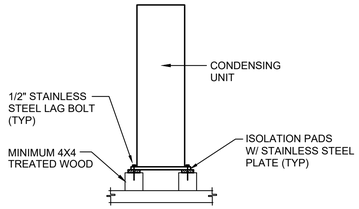


3 | CONDENSING MOUNTING DETAIL

NO SCALE

EQUIPMENT SCHEDULE

VRF AIR CONDITIONING SYSTEM

CASSETTE FAN COIL UNIT:

IN-CEILING DUCTLESS FAN COIL UNITS SHALL BE LOW PROFILE (10.1") WITH DIRECT EXPANSION COPPER TUBE/ALUMINUM FINS COATED COOLING COIL, INSULATED ZINC COATED CABINET WITH FULLY INSULATED DISCHARGE AND INLET GRILLES OF HIGH-IMPACT NON-METALLIC MATERIAL, HINGED INLET GRILLE, AND OUTSIDE AIR INLET, STATICALLY AND DYNAMICALLY BALANCED MULTI-BLADE FAN, DC INVERTER DRIVEN FAN MOTOR WITH MOTOR DRIVEN VERTICAL SWEEP AND LOUVERS, PMV VALVE, PIPING CONNECTORS, WIRED LOCAL ELECTRICAL MICROPROCESSOR CONTROL SYSTEM, INTEGRAL TEMPERATURE SENSING, CONDENSATE PUMP WITH 26" LIFT, HANGING BRACKETS AND RUBBER HANGING ISOLATORS.

FCU NO.	TBTUH	SBTUH	SA CFM	OA CFM	ENT AIR °FDB	ENT AIR °FWB	AMB AIR °F	FAN COIL UNIT FLA	FAN COIL UNIT MCA	FAN COIL UNIT MOCP	VOLT/PH/CYC	FCU MODEL	REMARKS
1	24000	----	750	----	80	67	95	0.8	0.332	----	208-230/1/60	CARRIER MMU-AP024H2UL	CASSETTE, 58 LBS. POWERED BY OUTDOOR UNIT

CONDENSING UNITS:

AIR COOLED VRF CONDENSING UNIT COMPLETE WITH VARIABLE SPEED DC INVERTER SCROLL COMPRESSORS, GALVANIZED STEEL WITH POWDER COAT COATED CABINET, DIRECT DRIVEN PROPELLER HORIZONTAL DISCHARGE CONDENSER FAN, PVC COATED WIRE GUARD, COPPER TUBE WITH ALUMINUM FINS CONDENSER COIL, PURON R-410A REFRIGERANT, INTERNAL OVERLOADS, TXV VALVE, AIR GUIDE AND SUPPORT FEET WITH ISOLATION PADS.
SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

PROVIDE CORROSION PROTECTION FOR CONDENSER COIL. PROTECT FINNED TUBES WITH BLYGOLD POLUAL COATING. CABINET SURFACES FOR AIR CONDITIONING UNIT SHALL BE COATED WITH AMERON PSX 700.

CU NO.	TBTUH	ENT AIR °FDB	ENT AIR °FWB	AMB AIR °F	COMPRESSOR #1,KW	COMPRESSOR #2,KW	*POWER SUP MCA	*POWER SUP MOCP	FAN KW	VOLT/PH/CYC	CU MODEL	REMARKS
CU-1	24000	80	67	95	----	----	20.0	30	----	208-230/1/60	CARRIER 38MAQB24R-3	20.5 SEER 145.5

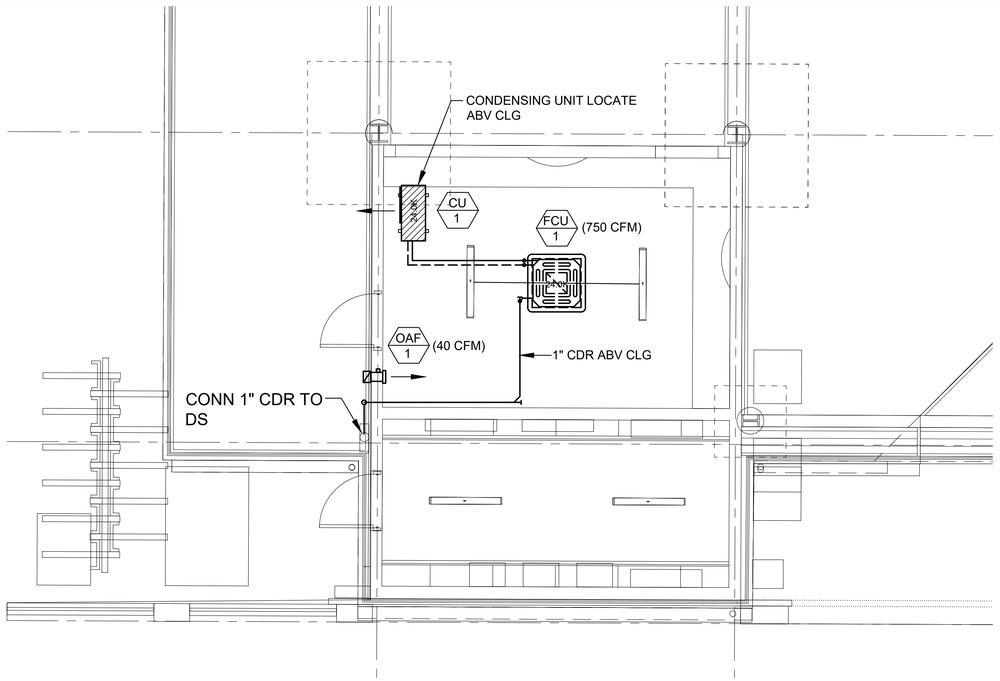
OUTSIDE AIR INTAKE:

FILTERED SUPPLY FAN WITH GALVANIZED SHEET METAL HOUSING, DIRECT DRIVEN FAN, INTERIOR WALL DUCT. EXTERIOR WALL CAP. SPEED CONTROLLER , AND INTERIOR DEFLECTOR AND MERV 8 FILTER.

OAF NO.	CFM	SP	RPM	WATTS	VOLT/PH/CYC	REMARKS
1	40	0.30	2559	8.2	120/1/60	PANASONIC FV-04WS2 INTERLOCK WITH LIGHT SWITCH

2 | EQUIPMENT SCHEDULE

NO SCALE



1 | OFFICE AIR CONDITIONING PLAN

1/4"=1'-0"

0 1 2 3 4 8

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ARNALDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4794-H HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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(2) 03-07-004:003

AIR CONDITIONING PLAN

REVISIONS

2020-05-05	PERMIT SET
2020-08-07	BID SET

M-201

PROJECT NO. 2018-0XX

DATE MAY, 2018

Date Plotted: 8/6/2020 4:02 PM
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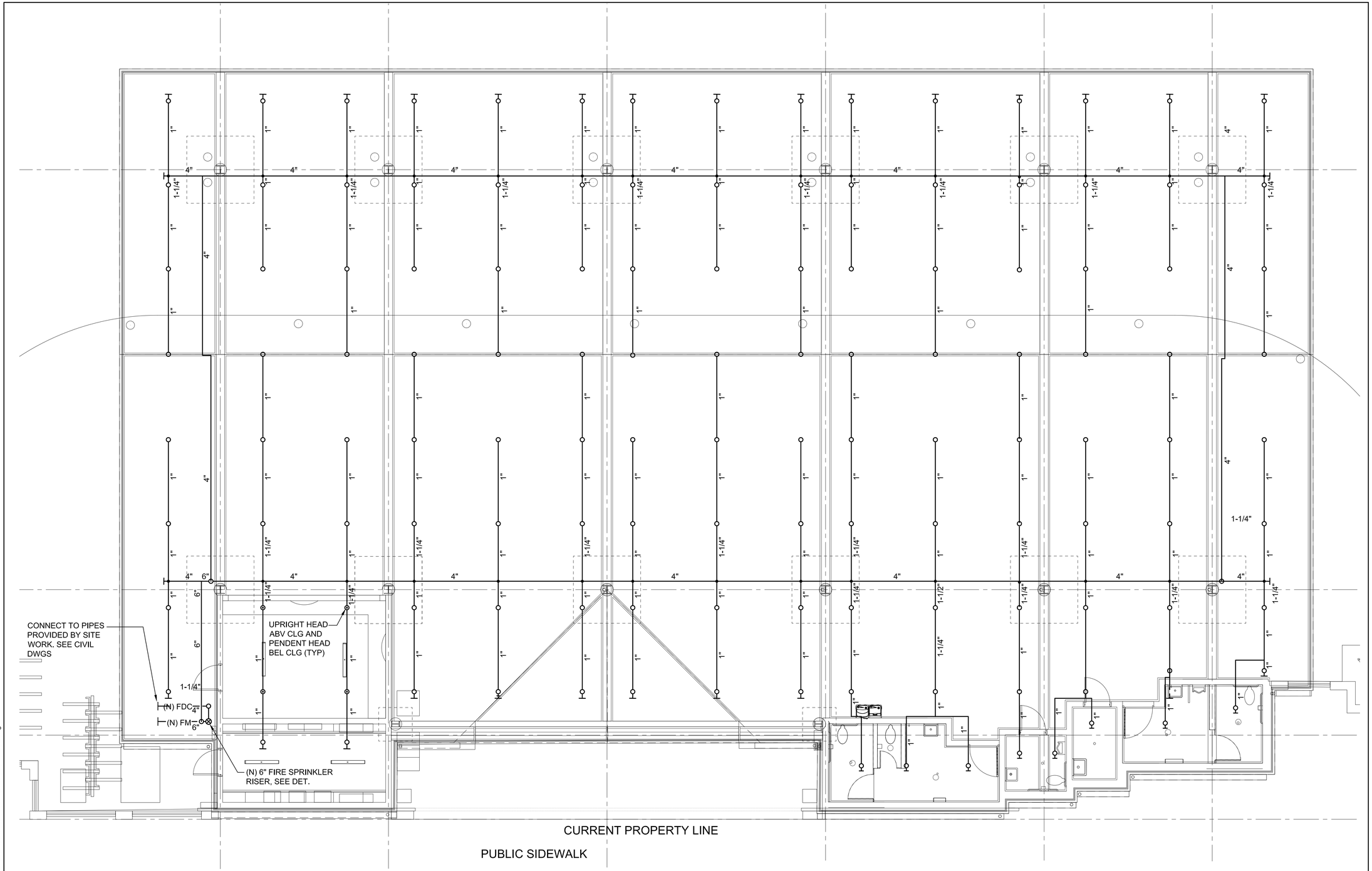

NORTH

DESIGN CRITERIA

4

OCCUPANCY: ORDINARY HAZARD, GROUP 1
AREA / DENSITY: 1500 SF, 0.15 GPM/SF
OUTSIDE HOSE STREAM ALLOWANCE: 250 GPM
SPRINKLER TYPE: STAINLESS STEEL QUICK RESPONSE
SPRINKLER TEMPERATURE: ORDINARY
K-FACTOR: MINIMUM 5.6

LEGEND

STAINLESS STEEL CORROSION PROTECTED UPRIGHT HEAD

STAINLESS STEEL CORROSION PROTECTED UPRIGHT HEAD ABV CLG AND PENDENT HEAD BEL CLG

4

1 FIRE SPRINKLER PLAN

3/16"=1'-0"

4' 0 4' 8'

Date Plotted: 10/19/2020 10:03 AM
File Name: C:\Users\amol\Documents\Clients\RSK\Maui Bus Hub\m22BSadd4-fsMauiBus 100920.dwg

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ANALOO E. PREPOSE
LICENSED PROFESSIONAL ENGINEER
No. 47944
HAWAII, U.S.A.

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CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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FIRE SPRINKLER PLAN

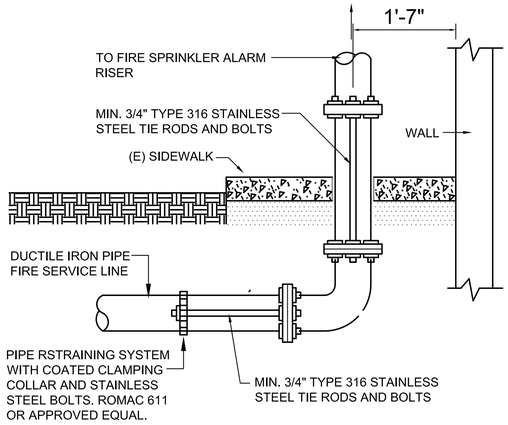
REVISIONS:

2020-05-05	PERMIT SET
2020-08-07	BID SET
4 2020-10-09	FD COMMENTS

M-202

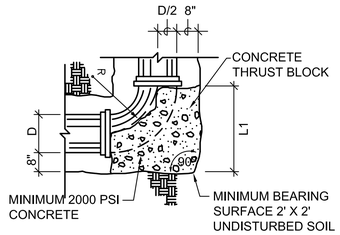
PROJECT NO: 2018-0XX

DATE: MAY, 2018



3 CONNECTION AT RISER DETAIL

NO SCALE



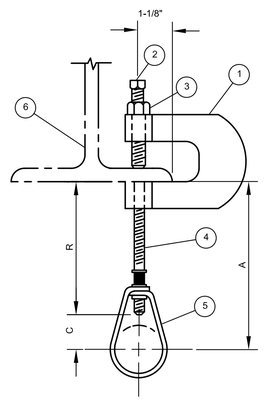
PIPE SIZE	"D"	MIN"L1"
4"	4.8"	6.9"
6"	6.9"	9.5"

NOTES:
1. THRUST BLOCK BEARING FACES SHALL BE PLACED AGAINST UNDISTURBED SOIL OR CLASS 100E-100 SLURRY.
2. CONTRACTOR TO PROVIDE RETAINER GLANDS ON ALL FITTINGS.

4 THRUST BLOCK DETAIL

NO SCALE

COMPONENTS:
1. C-CLAMP
2. SET SCREW
3. LOCK NUT
4. HANGER ROD
5. ADJUSTABLE HANGER RING
6. STEEL BEAM OR BAR JOIST

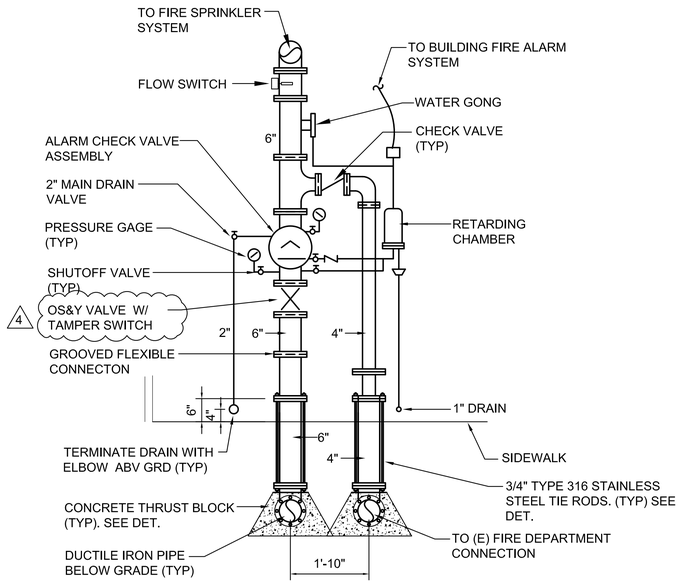


DESIGN DATA FOR C-CLAMP HANGER

NOMINAL PIPE SIZE	MINIMUM A DIMENSION INCHES	HANGER TAKEOUT INCHES	ROD DIAMETER INCHES
1/2	3 1/2	-1 1/4	3/8
3/4	3 1/2	-1 1/4	3/8
1	3 1/2	-1 1/4	3/8
1 1/4	3 3/4	-1 1/2	3/8
1 1/2	4	-1 1/2	3/8
2	4 1/4	-1 3/4	3/8
2 1/2	5	-2 1/4	3/8
3	5 1/2	-2 1/2	3/8
4	6	-3	3/8
5	6 3/4	-3 3/4	1/2
6	7 3/4	-4 1/2	1/2
8	9 1/4	-6	1/2

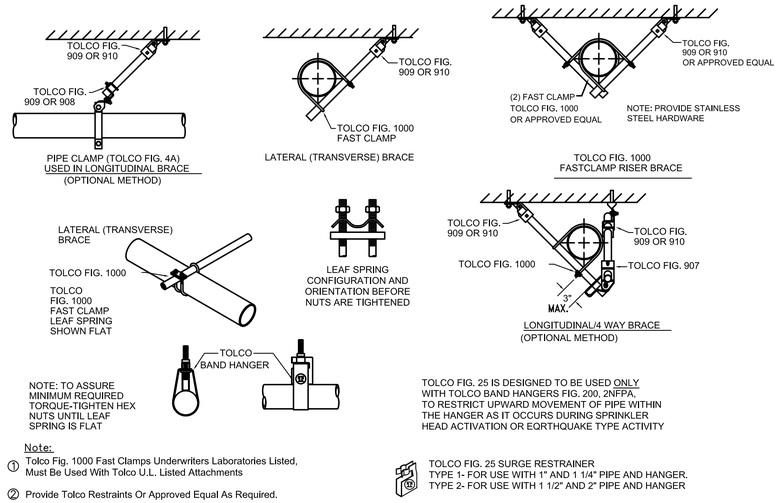
5 C-CLAMP HANGER DETAIL

NO SCALE



2 FIRE SPRINKLER RISER DETAIL

NO SCALE



Note:
① Tolco Fig. 1000 Fast Clamps Underwriters Laboratories Listed, Must Be Used With Tolco U.L. Listed Attachments

② Provide Tolco Restraints Or Approved Equal As Required.

TOLCO FIG. 25 SURGE RESTRAINER
TYPE 1- FOR USE WITH 1" AND 1 1/4" PIPE AND HANGER.
TYPE 2- FOR USE WITH 1 1/2" AND 2" PIPE AND HANGER

1 SEISMIC RESTRAINTS DETAILS

NO SCALE

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ARNALDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4744-H HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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FIRE SPRINKLER DETAILS

REVISIONS:		
2020-05-05	PERMIT SET	
2020-08-07	BID SET	
4 2020-10-09	FD COMMENTS	

M-203

PROJECT NO: 2018-0XX

DATE: MAY, 2018

Date Plotted: 10/19/2020 10:09 AM
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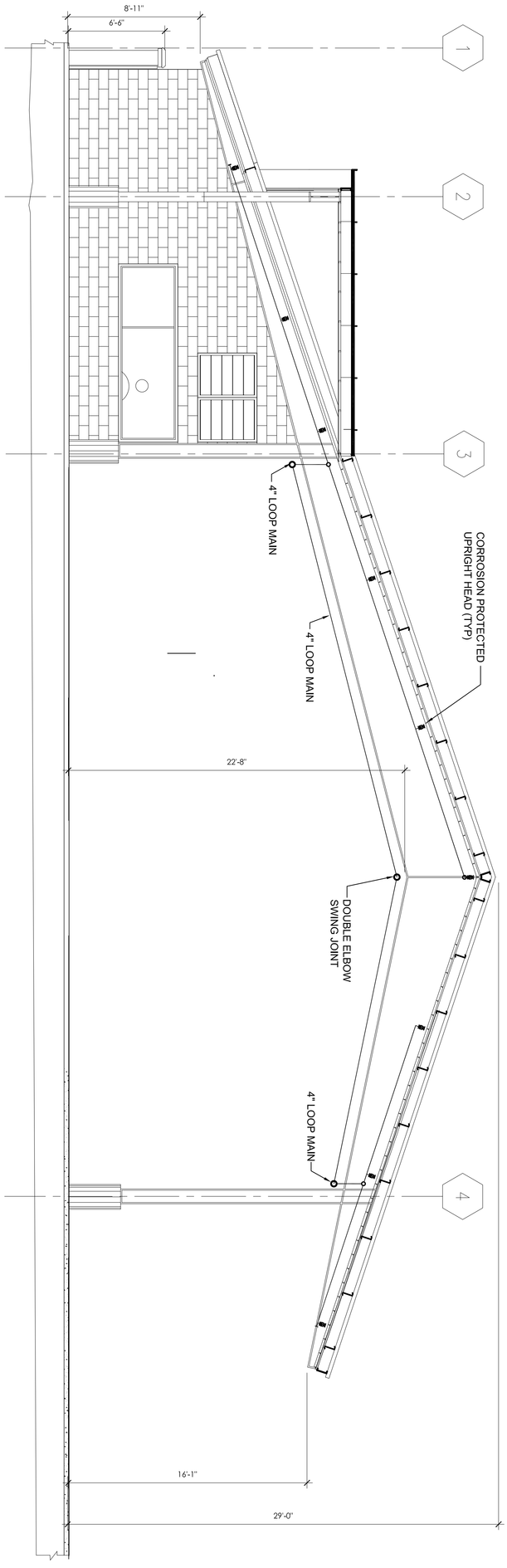
Date Plotted: 8/6/2020 4:07 PM
File Name: C:\Users\arnol\Documents\Clients\RSK\Maui Bus Hub\m24BS-fssect MauiBus 080720.dwg

12

1/4" = 1'-0"

0 1 2 3 4 8

FIRE SPRINKLER SECTION DETAIL



M-204

PROJECT NO.: 2018-0XX

DATE: MAY, 2018

REVISIONS:

2020-05-05	PERMIT SET
2020-08-07	BID SET

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FIRE SPRINKLER SECTION DETAILS

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ARNALDO E. PRESBOSE
LICENSED PROFESSIONAL ENGINEER
No. 4764-M
HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

RIECKE SUNNLAND ARCHITECTS, LTD. KONO

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KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7688

PLUMBING SPECIFICATIONS

PART I - GENERAL

A. CONDITIONS

1. GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, SPECIAL CONDITIONS, AND OTHER RELATED PORTIONS OF DIVISION 1 APPLY TO THIS SECTION.

B. REGULATIONS, CODES, AND PERMITS

1. COMPLY WITH NATIONAL, STATE, COUNTY, AND CITY CODES, ORDINANCES, ETC., HAVING JURISDICTION, INCLUDING RULES AND REQUIREMENTS OF UTILITY SERVING AGENCIES.
2. INCORPORATE CODES, ORDINANCES, ETC., INTO THE BASE BID AND INSTALLATION OF WORK. NO ADDITIONAL FUNDS WILL BE ALLOCATED FOR WORK REQUIRED TO CONFORM TO REGULATIONS AND REQUIREMENTS OR TO OBTAIN APPROVAL OF WORK.
3. OBTAIN AND PAY FOR REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY LOCAL AUTHORITIES.
4. IN ADDITION, THE LATEST ADOPTED EDITION OF THE FOLLOWING CODES AND PUBLISHED STANDARDS SHALL BE ADHERED TO:

   A. 2006 INTERNATIONAL BUILDING CODE. (IBC)
   B. 2006 UNIFORM PLUMBING CODE (UPC)
   C. NFPA STANDARDS.
   D. 2006 NATIONAL ELECTRIC CODE. (NEC)
   E. 2015 INTERNATIONAL ENERGY CONSERVATION CODE

C. DESIGN DRAWINGS

1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED ONLY TO DEFINE THE BASIC FUNCTIONS REQUIRED. PROVIDE LABOR, MATERIAL, ETC., NECESSARY TO ACCOMPLISH THESE REQUIREMENTS. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED A PART OF THE WORK INCLUDED. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE PERMITTED, DO NOT SCALE THE DESIGN DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
2. IF A CONFLICT OCCURS BETWEEN THE DESIGN DRAWINGS AND SPECIFICATIONS, PROMPTLY NOTIFY THE ARCHITECT AND/OR ENGINEER. AT THAT POINT, AN INTERPRETATION WILL BE MADE BY THE ARCHITECT AND/OR ENGINEER AND SAID DECISION SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.

D. BASE BID

1. BASE BID SHALL INCLUDE MATERIALS AND EQUIPMENT SPECIFIED OR SCHEDULED ON THE DRAWINGS. REQUESTS FOR SUBSTITUTION OF MATERIALS AND EQUIPMENT SHALL BE BY ADDITIVE OR DEDUCTIVE ALTERNATE BID ONLY, WITH THE FOLLOWING DATA CLEARLY WRITTEN AT THE BEGINNING OF THE ALTERNATE PROPOSAL:

   A. ADDITIVE OR DEDUCTIVE AMOUNT CLEARLY WRITTEN IN WORDS AND NUMERALS.
   B. INCREASED OR REDUCED CONSTRUCTION TIME IN DAYS.
   C. OTHER DEMONSTRABLE BENEFIT, FOR WHICH THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.

2. ONLY THOSE MATERIALS AND EQUIPMENT WHICH ARE SUBMITTED AS AN ALTERNATE BID AND WHICH ARE ACCOMPANIED BY THE SUPPORTING DATA INDICATED BELOW WILL BE REVIEWED AND CONSIDERED.

E. SUBSTITUTIONS

1. MATERIALS AND EQUIPMENT THAT ARE A SUBSTITUTE FROM THE LISTED MANUFACTURES MAY BE CONSIDERED. PRIOR TO PROPOSING ANY SUBSTITUTE ITEM, CONTRACTOR SHALL SATISFY HIMSELF THAT THE ITEM PROPOSED IS, IN FACT, EQUAL TO THAT SPECIFIED, THAT SUCH ITEM WILL FIT INTO THE SPACE ALLOCATED, THAT SUCH ITEM AFFORDS COMPARABLE EASE OF OPERATION, MAINTENANCE AND SERVICE, THAT THE APPEARANCE, LONGEVITY, CAPACITY, SUITABILITY, AND ELECTRICAL CHARACTERISTICS ARE COMPARABLE, AND THAT BY REASON OF COST SAVINGS, REDUCED CONSTRUCTION TIME, OR SIMILAR DEMONSTRABLE BENEFIT, THE SUBSTITUTION OF SUCH ITEM WILL BE IN THE OWNER'S INTEREST.
2. THE BURDEN OF PROOF OF EQUALITY OF A PROPOSED SUBSTITUTION FOR A SPECIFIED ITEM SHALL BE UPON THE CONTRACTOR. CONTRACTOR SHALL SUPPORT HIS REQUEST WITH SUFFICIENT TEST DATA AND OTHER MEANS TO PERMIT THE ENGINEER TO MAKE A FAIR AND EQUITABLE DECISION ON THE MERITS OF THE PROPOSED SUBSTITUTION. INSUFFICIENT SUBMITTAL DATA WILL RESULT IN REJECTION OF THE PROPOSED SUBSTITUTION. ANY ITEM BY A MANUFACTURER OTHER THAN THOSE SPECIFIED, OR OF BRAND NAME OR MODEL NUMBER, OR OF GENERIC SPECIES OTHER THAN THOSE SPECIFIED, WILL BE CONSIDERED A SUBSTITUTION. ENGINEER WILL BE THE SOLE JUDGE OF WHETHER OR NOT THE SUBSTITUTION IS EQUAL IN QUALITY, UTILITY AND ECONOMY TO THAT SPECIFIED.
3. APPROVAL OF A SUBSTITUTION SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT. CONTRACTOR SHALL BEAR THE EXPENSE FOR ANY CHANGES IN OTHER PARTS OF THIS WORK OR OTHER WORK CAUSED BY THE PROPOSED SUBSTITUTION, INCLUDING BUT NOT LIMITED TO STRUCTURAL, ELECTRICAL, PLUMBING, AND ACCESS REQUIREMENTS.
4. IF ENGINEER REJECTS CONTRACTOR'S SUBSTITUTE ITEM ON THE FIRST SUBMITTAL, CONTRACTOR MAY MAKE ONLY ONE ADDITIONAL REQUEST FOR SUBSTITUTION IN THE SAME CATEGORY.

F. SUBMITTALS

1. EQUIPMENT AND MATERIALS:

   A. CONTRACTOR SHALL HAVE APPROVED SUBMITTALS PRIOR TO FABRICATION OR DELIVERY OF ANY MATERIAL AND/OR EQUIPMENT TO THE JOB SITE. SUBMIT A MINIMUM OF 8 (EIGHT) COPIES, COMPREHENSIVELY INDEXED SUBMITTALS IN A 3-RING BINDER, COMPLETELY DESCRIBING EACH MAJOR SYSTEM, MATERIAL AND EQUIPMENT PROPOSED TO BE USED. ANY PIECE OF EQUIPMENT PLACED ON THE JOB WITHOUT PRIOR APPROVAL WILL BE SUBJECT TO REMOVAL AT THE SOLE EXPENSE OF THE CONTRACTOR.

   B. SUBMITTALS ARE FOR INFORMATION AND COORDINATION ONLY. REVIEW OF MATERIAL AND/OR EQUIPMENT SUBMITTALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO COMPLY WITH PLANS AND SPECIFICATIONS REQUIREMENTS. POINTS OF NON-COMPLIANCE WHICH ARE NOT NOTED SHALL NOT BE CONSTRUED TO BE AN APPROVAL OF THE NON-COMPLIANCE. SUBMITTALS SHALL CLEARLY STATE WHERE EQUIPMENT DOES NOT AGREE WITH THE CONTRACT DOCUMENTS.

   C. ARCHITECTURAL PLANS AND SPECIFICATIONS SHALL BE REVIEWED FOR ADDITIONAL SUBMITTAL REQUIREMENTS.

2. SHOP DRAWINGS:
   INCLUDE DETAILED DRAWINGS WHERE REQUIRED FOR PROPER COORDINATION WITH OTHER TRADES. INDICATE EQUIPMENT LAYOUTS, ELECTRICAL CHARACTERISTICS, WIRING AND CONTROL DIAGRAMS, SIZES AND LOCATIONS OF PIPING, DUCTS, CONDUITS, AND OTHER ITEMS WHICH EFFECT THE SPACE AVAILABLE. SUBMIT ITEMS AT ONE TIME IN A NEAT AND ORDERLY MANNER WITHIN 15 DAYS OF AWARD OF CONTRACT. PARTIAL LIST WILL NOT BE ACCEPTABLE. SUBMITTALS SHALL INCLUDE MANUFACTURER'S SPECIFICATIONS, PHYSICAL DIMENSIONS, WEIGHTS AND RATINGS OF EQUIPMENT SUBMITTED. SUBMITTALS SHALL BE INDEXED AND SECURELY BOUND IN A SUITABLE MANNER. SUBMIT THE FOLLOWING ITEMS FOR APPROVAL: 1) CLEANOUTS 2) PIPING AND FITTINGS 3) VALVES.
3. RECORD DRAWINGS:
   MAINTAIN ACCURATE RECORDS OF ANY CHANGES FROM THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER ONE (1) SET OF LEGIBLE AND REPRODUCIBLE COPIES OF THESE RECORD DRAWINGS.
4. WARRANTY:
   UNLESS SPECIFIED OTHERWISE BY ARCHITECT, ENGINEER, OWNER OR OWNER'S REPRESENTATIVE, UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER A WRITTEN ONE (1) YEAR WARRANTY ON THE SYSTEMS, MATERIALS AND ALL WORK PERFORMED, WHICH INCLUDES THE ENTIRE COST, INCLUDING MATERIALS AND/OR LABOR, OF CORRECTIVE WORK REQUIRED AND NECESSITATED BY DEFECTS IN MATERIALS AND/OR WORKMANSHIP, CONTRACTOR SHALL ALSO PRESENT THE OWNER w/ A COPY OF ALL MANUFACTURER'S WARRANTIES THAT EXCEED THE WARRANTY PERIOD, SUCH AS WATER HEATERS.
5. OPERATION AND MAINTENANCE INSTRUCTIONS:
   UPON THE COMPLETION OF THE PROJECT, DELIVER TO THE OWNER THE REQUIRED NUMBER OF COPIES OF HARD BOUND O & M MANUALS. INCLUDE IN THE MANUAL INSTRUCTIONS PREPARED SPECIFICALLY FOR THE SYSTEMS PROVIDE, ALONG WITH DESCRIPTIONS, PARTS LIST, INSTRUCTIONS, AND WARRANTIES. START-UP REPORTS FOR ALL EQUIPMENT WILL BE DELIVERED WITH THE MATERIALS AND EQUIPMENT WILL BE DELIVERED WITH THE MATERIALS AND EQUIPMENT UTILIZED IN THE PROJECT. IDENTIFY EACH ITEM BY THE DESIGNATION APPEARING ON THE DRAWINGS.
6. OWNER TRAINING:
   AT A TIME DESIGNATED BY THE OWNER, PROVIDE A SUITABLE TECHNICIAN, MECHANIC OR ENGINEER TO REVIEW THE SYSTEMS WITH OWNER'S REPRESENTATIVE TO THOROUGHLY FAMILIARIZE HIM WITH THE OPERATIONS AND MAINTENANCE OF THE SYSTEMS. UP TO (8) EIGHT HOURS TOTAL TRAINING TIME SHALL BE REQUIRED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO TRAINING THE OWNER SHALL HAVE TAKEN POSSESSION OF THE O & M MANUALS, AND SHALL HAVE HAD A REASONABLE AMOUNT OF TIME FOR HIS PERSONNEL TO FAMILIARIZE THEMSELVES WITH THE CONTENTS OF THE MANUAL.

PART II - PRODUCTS

A. GENERAL PRODUCTS

1. SEISMIC RESTRAINTS:

   A. WHERE REQUIRED BY THE BUILDING OFFICIALS/BUILDING CODES, FURNISH AND INSTALL SEISMIC RESTRAINTS FOR PIPING, AND EQUIPMENT. SEISMIC RESTRAINTS SHALL BE DESIGNED TO RESIST SEISMIC FORCES PRESCRIBED IN THE BUILDING CODES FOR THE PROJECT LOCATION.
   B. WHERE REQUIRED BY THE BUILDING OFFICIAL, PROVIDE STRUCTURAL CALCULATIONS SEALED AND SIGNED BY A LICENSED STRUCTURAL ENGINEER.

2. FURNISH AND INSTALL NEW PRODUCTS OF ESTABLISHED AND REPUTABLE MANUFACTURERS. SEE LIST OF ACCEPTABLE MANUFACTURERS ELSEWHERE IN THIS SPECIFICATION. MAKE NO EQUIPMENT SUBSTITUTIONS THAT WOULD LEAVE INADEQUATE OPERATING OR SERVICING SPACE. REFER TO SUBSTITUTION SECTION OF THE SPECIFICATIONS.
3. ACCESSORIES REQUIRED FOR PROPER OPERATION OF THE SYSTEMS, EVEN THOUGH NOT SPECIFICALLY INDICATED, SHALL BE INCLUDED AND INSTALLED. SUCH ACCESSORIES MAY INCLUDE, BUT ARE NOT LIMITED TO, FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, AQUASTATS, VIBRATION ISOLATORS, ETC. STARTERS FOR NON-PREWIRED EQUIPMENT, I.E., FANS, PUMPS ETC., ARE UNDER THE ELECTRICAL CONTRACTOR'S SCOPE OF WORK, UNLESS NOTED OTHERWISE.
4. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE PLANS AND ELSEWHERE IN THESE SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSTRUED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.

B. PIPING MATERIALS

1. SOIL, WASTE, AND VENT PIPING AND FITTINGS SHALL BE:
   A. CAST IRON PIPE AND FITTINGS SHALL CONFORM TO THE CISPI STNDARD 301, ASTM A888 OR ASTM A74, PIPE AND FITTINGS SHALL BE NSF CERTIFIED AND MARKED WITH THE COLLECTIVE TRADE MARKS OF THE CISPI. NO-HUB COULINGS SHALL BE NSF CERIFIED AND CONPLIANT WITH CISPI STADEARD 310 WITH ASSEMBLY OF SERIES 300 STAINLESS STEEL NEOPRENE GASKET AND IN CONPLIANCE WITH ASTM C0564 ABD 1277 AND SHALL BEAR TRADEMARKS OF NSF, UPC AND IAPMO.
2. WATER PIPING ABOVE GRADE:

   A. COPPER TUBING: ASTM B88, TYPE L, HARD DRAWN.
   B. FITTINGS: ANSI/ASME B16.23, CAST BRASS, OR ANSI/ASME B16.29, WROUGHT COPPER.
   C. JOINTS: LEAD FREE 95-5 SOLDER AND FLUXES.

3. CONDENSATE DRAIN PIPING:

   A. COPPER TUBING: ASTM B306, DWV.
   B. FITTINGS: ASME 16.23, CAST BRONZE, OR ASME B16.29, WROUGHT COPPER.
   C. JOINTS: ASTM B32, SOLDER, GRADE 50B. WHERE BRANCH DRAINS ARE SMALLER THAN AVAILABLE SIZES IN DWV, USE ASTM B88, TYPE M COPPER TUBING.

4. WATER VALVES:
   SHALL BE BY THE SAME MANUFACTURER WITH MANUFACTURER'S NAME AND PRESSURE RATING CLEARLY MARKED ON OUTSIDE OF BODY. PROVIDE VALVES SUITABLE TO CONNECT TO ADJOINING PIPE AS SPECIFIED FOR PIPE JOINTS. USE PIPE SIZE BALL VALVES. VALVES SHALL BE 125# CLASS. VALVES SHALL BE LEAD FREE.

5. INSULATION: INSULATION FOR HOT WATER SUPPLY AND RETURN PIPING SHALL BE 1" TICK ARMAFLEX UL LABELED OR FIBERGLASS WITH ASJ/SSL FOIL/VINYL JACKET OR EQUAL WITH MINIMUM 25/50 FLAME SPREAD INDEX/SMOKE DEVELOPED RATING AND MINIMUM INSULATION CONDUCTIVITY 0.21-0.27 BTU PER IN. / H X FT X F. INSULATE ALL PIPING AND FITTINGS.

6. PIPE SLEEVES/ESCUTCHEONS: PROVIDE CHROME-PLATED ESCUTCHEONS ON ALL PIPES PASSING THROUGH WALLS, FLOORS, OR CEILING OF FINISHED ROOMS. ESCUTCHEONS TO BE BEATON & CADWELL, #10, 40, 6A OR EQUIVALENT WITH SET SCREWS. PROVIDE ESCUTCHEONS ON ALL WASTE LINES FROM PLUMBING FIXTURES, WHETHER THROUGH WALLS, FLOOR AND WHETHER CONCEALED BEHIND COUNTERS OR EXPOSED. PIPE SLEEVES SHALL BE PROVIDED WHEN PIPES PENETRATE FOUNDATION AND SHALL BE 1" LARGER THAN PIPE, SEAL SLEEVE WITH CAULKING.

7. PLUMBING FIXTURES: FURNISH AND INSTALL PLUMBING FIXTURES AS SHOWN ON DRAWINGS WITH ALL ACCESSORIES AND TRIM AS LISTED. ALL FIXTURES SHALL BE PROTECTED THROUGH THE COURSE OF THE CONSTRUCTION. ANY FIXTURE DAMAGED SHALL BE REPLACED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

C. PIPE SUPPORTS

1. SEISMIC RESTRAINTS:

   A. ATTACHMENTS FOR PIPING AND EQUIPMENT SUPPORTED BY THE BUILDING STRUCTURE SHALL BE DESIGNED TO RESIST SEISMIC FORCES PRESCRIBED IN ALL APPLICABLE BUILDING CODES AND LOCAL AMENDMENTS ADOPTED BY THE BUILDING DEPT. HAVING JURISDICTION.
   B. WHERE REQUIRED BY THE BUILDING OFFICIAL, PROVIDE STRUCTURAL CALCULATIONS SIGNED BY A LICENSED STRUCTURAL ENGINEER.

2. SOIL, WASTE, AND VENT PIPING: AS REQUIRED BY LOCAL BUILDING CODE HAVING JURISDICTION.
3. WATER PIPING: AS REQUIRED BY LOCAL BUILDING CODE HAVE JURISDICTION.

D. CLEANOUTS

1. INTERIOR FINISHED FLOOR AREAS (FCO): TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, AND ADJUSTABLE NICKEL-BRONZE, ROUND SCORIATED COVER IN SERVICE AREAS AND ROUND OR SQUARE WITH DEPRESSED COVER TO ACCEPT FLOOR FINISH IN FINISHED FLOOR AREAS.

PART III - EXECUTION

A. GENERAL

1. INSTALL MATERIALS AND EQUIPMENT IN AN ARRANGEMENT THAT WILL GIVE THE GREATEST PRACTICAL EASE OF OPERATION AND SERVICE TO THE OWNER.
2. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.
3. PERFORM WORK IN ACCORDANCE WITH THE BEST TRADE PRACTICES. INSTALL MATERIALS AND EQUIPMENT SQUARELY WITH THE BUILDING LINES. PROVIDE RIGID PERMANENT BASES AND SUPPORTS FOR WORK. CONSTRUCT AND BRACE EQUIPMENT, PIPING, ETC, SO THAT THERE WILL BE NO VIBRATION AND/ OR RATTLING WHEN THE SYSTEM IS IN OPERATION.
4. COVER AND PROTECT EQUIPMENT AND MATERIALS FROM WEATHER, THEFT, ETC., UNTIL DATE OF COMPLETION. PLUG AND/OR CAP OPEN ENDS OF INSTALLED PIPING.

B. INSTALLATION

1. CONCEAL PIPING IN WALLS, FURRED SPACES, PIPE SPACES, OR ABOVE SUSPENDED CEILINGS, AS SHOWN ON THE DRAWINGS. GROUP PIPING WHEREVER PRACTICAL AND INSTALL UNIFORMLY IN STRAIGHT PARALLEL LINES, SQUARELY WITH BUILDING LINES.
2. SUPPORT HORIZONTAL PIPING WITH PIPE HANGERS. DO NOT USE PERFORATED METAL TAPE. ARRANGE PIPING SO THAT THERMAL EXPANSION DOES NOT CAUSE STRESS. INSTALL AND SECURE PIPING SO THAT HOT AND COLD LINES, AND LINES OF DISSIMILAR METALS, ARE NOT IN CONTACT.
3. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS FOR ROUGH-IN WORK. BENDING OR OFFSETTING OF FINISHED PIPING CONNECTIONS AND "COCKING" OF FITTINGS OR TRIM WILL NOT BE ACCEPTABLE. DO NOT SUPPORT ANY PIPING WEIGHT FROM EQUIPMENT.
4. SANITARY: LAY PIPING AT A UNIFORM GRADE. MAKE JOINTS CLOSE AND SQUARE. USE FITTINGS FOR TURNS AND OFFSETS. UNIFORMLY GRADE AND COMPACT TRENCHES PRIOR TO LAYING PIPING. PROVIDE CONTINUOUS SUPPORT FOR PIPING.
5. PIPING CONNECTIONS TO PLUMBING FIXTURES, EXPOSED PIPING AND FITTINGS SHALL BE CHROME PLATED.
6. CUTTING AND PATCHING SHALL BE APPROVED BY THE ARCHITECT PRIOR TO PERFORMING THE WORK.
7. INSULATE ALL PIPING CONVEYING FLUIDS ABOVE OR BELOW AMBIENT TEMPERATURES, ALL CONDENSATE PIPING AND THE UNDERSIDE OF ROOF DRAINS/OVERFLOW ROOF DRAINS AND THE UNDERSIDE OF HORIZONTAL RAINWATER PIPING. WHERE EXPOSED, COVER INSULATION WITH ALUMINUM JACKET.

C. TESTING REQUIREMENTS

1. TEST SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, ORDINANCES, ETC. MINIMUM REQUIREMENTS ARE AS FOLLOWS:

   A. SANITARY: STATIC WATER PRESSURE FOR ONE (1) HOUR.
   B. POTABLE WATER: AVAILABLE PRESSURE FOR ONE (1) HOUR.

2. IF ANY TEST SHOWS THE WORK TO BE DEFECTIVE IN ANY WAY OR AT VARIANCE WITH SPECIFICATION REQUIREMENTS, MAKE NECESSARY CHANGES AND REMEDY DEFECTS.
3. TEST PIPING SYSTEMS AFTER INSTALLATION AND PRIOR TO BEING PUT INTO USE, COVERED OR CONCEALED BY INSULATION, BACKFILLING OR BUILDING CONSTRUCTION.

D. DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

1. DISINFECT WATER PIPING IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF THE STATE OF HAWAII AND IN ACCORDANCE TO ALL APPLICABLE PLUMBING CODES AND LOCAL AMENDMENTS ADOPTED BY THE BUILDING DEPT. HAVING JURISDICTION. PROVIDE CERTIFICATE OF DISINFECTION.

MECHANICAL LEGEND

NOTE: NOT ALL SYMBOLS MAY BE USED

—G—	GAS PIPING
— CD —	CONDENSATE DRAIN PIPING
— · —	COLD WATER PIPING
— · · —	HOT WATER PIPING (120 DEG F)
———	SANITARY WASTE PIPING
—FW—	FILTERED WATER PIPING
—140—	140 DEG F HOT WATER PIPING
— GW —	GREASE WASTE PIPING
—— ——	SANITARY VENT PIPING
VTR	VENT THROUGH ROOF
GW	GREASE WASTE PIPING
———o	PIPE TURN DOWN
———o	PIPE TURNING UP
——\/——	CHECK VALVE
——⋈——	BALL VALVE
——||——	UNION
AFF	ABOVE FINISHED FLOOR
——◇——	FLOOR CLEANOUT OR CLEANOUT TO GRADE
COTG	CLEAN OUT TO GRADE
CO	CLEAN OUT
(E)	EXISTING
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
(N)	NEW
POC	POINT OF CONNECTION
POR	POINT OF REMOVAL
TP	TRAP PRIMER
WCO	WALL CLEAN OUT

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
COMMERCIAL PROVISIONS

COMPLIANCE METHOD
CHECK APPLICABLE METHOD

☐	C401.2(1) ANSI/ASHRAE/IESNA 90.1
☐	C401.2(2) SECTIONS C402 THROUGH C406
☒	C401.2(3) SECTIONS C402.5, C403.2, C404, C405.2, 405.3, C405.4, C405.6 & C407
☐	C102.1 ALTERNATIVE

TO THE BEST OF KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE ENERGY CODE.

SIGNATURE _____ DATE: 05-05-20
NAME: ARNALDO E. PREPOSE
TITLE: MECHANICAL ENGINEER
LICENSE NO.: 4764-M

RIECKE SUNNLAND KONO
ARCHITECTS, LTD.
33 LONO AVENUE, SUITE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7488

ARNALDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4764-M HAWAII, U.S.A.
EXPIRATION DATE OF LICENSE: APRIL 30, 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

PLUMBING SPECIFICATIONS AND LEGEND

REVISIONS
2020-05-05 PERMIT SET
2020-08-07 BID SET

P-101

PROJECT NO.: 2018-0XX
DATE: MAY, 2018

Date Plotted: 8/6/2020 4:10 PM
File Name: C:\Users\arnol\Documents\Clients\RSK\Maui Bus Hub\p11BS-specplMauiBus 080720.dwg

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	SAN.	VENT	C.W.	H.W.	REMARKS
WC	WATER CLOSET, AMERICAN STANDARD 3451.001	4"	2"	1"	---	ELONGATED EVERCLEAN VITREOUS CHINA FLUSHOMETER TOILET WITH 15"H AND 1-1/2" TOP SPUD. AMSTAN 5901.100SS EVERCLEAN OPEN FRONT SEAT. SLOAN ECOS 8111-1.6/1.1, 1.6-1.1 GPF DUAL SENSOR FLUSH VALVE WITH BATTERY, VACUUM BREAKER, SCREWDRIVER STOP, SEAT BUMPERS.
AWC	WATER CLOSET, AMERICAN STANDARD 3465.001	4"	2"	1"	---	ELONGATED EVERCLEAN VITREOUS CHINA FLUSHOMETER TOILET WITH 16-1/2"H AND 1-1/2" TOP SPUD. AMSTAN 5901.100SS OPEN EVERCLEAN FRONT SEAT. SLOAN ECOS 8111-1.6/1.1, 1.6-1.1 GPF DUAL SENSOR FLUSH VALVE WITH BATTERY, VACUUM BREAKER, SCREWDRIVER STOP, SEAT BUMPERS, AND ADA COMPLIANT.FLUSHING VALVE ASSEMBLY MOUNTED BELOW GRAB BAR. TOILET MOUNTING HEIGHT FROM FLOOR TO TOP OF SEAT SHALL BE 17-19 INCHES FROM FINISH FLOOR. COMPLY WITH ADAAGS SECTIONS 309.4, 604.2, 604.4 AND 604.6.
UR	WATERLESS URINAL SLOAN WES-1001000	2"	2"	----	---	VITREOUS CHINA WATERFREE URINAL WITH ELONGATED 14" RIM, VANDAL RESISTANT, CARTRIDGE HOUSING ASSEMBLY, AND HARDWARE. PROVIDE TWO (2) REPLACEABLE CARTRIDGE. CARTRIDGE WITH BIODEGRADABLE SEALANT LIQUID AND ENHANCED DESIGN TO PREVENT SEALANT LOSS AND ELIMINATES ODOR. FOR ADA URINAL MOUNTING HEIGHT FROM TOP OF RIM SHALL BE 17 INCHES FROM FINISH FLOOR. COMPLY WITH ADAAGS SECTIONS 309, 605, AND 605.2.
LAV	LAVATORY, AMERICAN STANDARD 0356.421	2"	1-1/2"	1/2"	---	WALL HUNG VITREOUS CHINA LAVATORY, 20-1/2" X 18-1/4", FRONT OVERFLOW, SELF DRAINING DECK AREA, WALL HANGER WITH CONCEALED ARMS SUPPORT, AND SINGLE CENTERED FAUCET HOLE. SLOAN EBF-650-8-BAT-BDT-CP-0.50GPM-MLM-1R-BT-FCT, 0.5 GPM, HANDS FREE INFRA RED SENSOR FAUCET, 4" CENTERSET, BATTERY POWER SUPPLY, THERMOSTATIC MIXING VALVE, SOLENOID ASSEMBLY, FILTER ASSEMBLY AND QUICK CONNECT FITTINGS. PROVIDE 17-GAUGE CHROME BRASS TUBULAR TAILPIECE, TRAP AND TRIMS AND BRASSCRAFT QUARTER TURN SUPPLE VALVES AND CONNECTIONS. FOR ADA LAVATORY PROVIDE PLUMBEREX MAXX HANDY-SHIELD TO INSULATE ALL DRAINAGE PIPING AND HOT AND COLD WATER VALVE AND SUPPLIES UNDER LAVATORY. COMPLY WITH ADAAGS SECTION 309, 606, 606.4 AND 606.5.
WCO	WALL CLEANOUT ZURN Z1446-NH-Z-VP	---	---	---	---	WALL CLEANOUT WITH ROUND WALL ACCESS COVER, NO-HUB, STAINLESS STEEL COVER AND VANDAL RESISTANT SCREWS.
FD	FLOOR DRAIN ZURN Z4115BZ-ZB-P-VP	2"	2"	---	---	DUCO COATED FLOOR DRAIN WITH STRAINER, TRAP PRIMER AND VANDAL RESISTANT SCREWS.
TP	TRAP PRIMER, PRECISION PLUMBING PRODUCTS PR500	---	---	1/2"	---	PROVIDE BALL VALVE AND ACCESS PANEL.
	WATER HAMMER ARRESTER, PRECISION PLUMBING PRODUCTS SC SERIES	---	---	*	---	MAINTENANCE FREE, SOLDERED JOINT * SIZED PER RESPECTIVE FIXTURES
	HOT WATER PIPE INSULATION, ARMAFLEX	---	---	---	---	1" THICK FLEXIBLE ELASTOMERIC THERMAL INSULATION. LONGITUDINAL SLITS ARE NOT ACCEPTABLE AND PIPE SHALL BE PUSHED THROUGH INSULATION. PROVIDE FOAM LAP SEAL AT JOINTS AND SHEETMETAL SADDLES AT PIPE SUPPORTS. EXPOSED INSULATION SHALL HAVE STAINLESS STEEL JACKET. INSULATION SHALL HAVE MINIMUM CONDUCTIVITY OF 0.27 BTU PER IN, / H X FT X F °F. INSULATION SHALL HAVE MINIMU FLAME SPREAD AND SMOKE DEVELOPED INDEX OF 25/50 RESPECTIVELY AS TESTED IN ACCORDANCE TO ASTM E84.
EWC1	ELECTRIC WATER COOLER, WITH BOTTLE FILLER, ADA, ELKAY LZSTL8WSSP.					TWO LEVEL WALL MOUNTED ACCESSIBLE ELECTRIC WATER COOLER, FILTERED WITH BOTTLE FILLING STATION, LEAD FREE BRASS PARTS, STAINLESS STEEL CONSTRUCTION, VANDAL RESISTANT SAFETY BUBBLER, VISUAL FILTER MONITOR, STAINLESS STEEL CABINET AND HFC-134A REFRIGERANT. PROVIDE ADA REQUIRED APRON. BOTTLE FILLING UNIT SHALL INCLUDE AN AUTOMATIC 20-SECOND SHUT-FF TIMER, GREEN TICKER DISPLAYING COUNT OF PLASTIC BOTTLES. 1.1 - 1.5 GPM LAMINAR FLOW RATE. 8.0 GPH, 5.0 FLA, 370 WATTS, 115/1/60.

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	SAN.	VENT	C.W.	H.W.	REMARKS
S/S	SERVICE SINK KOHLERK-6716 KOHLER K-8906	3"	2"	3/4"	---	24"X20-1/4" WALL MOUNTED ENAMELED CAST IRON SERVICE SINK WITH STAINLESS STEEL RIM GUARD AND 3" ENAMELED TRAP STANDARD WITH STRAINER. WALL MOUNTED FAUCET WITH VACUUM BREAKER AND LOOSE KEY STOPS IN SHANK, THREADED HOSE SPOUT, HOSE HOOK WITH HOSE AND CHROME FINISH.
HB	EXTERIOR HOSE BIBB ARROWHEAD BRASS NO. 251	----	----	3/4"	---	ROUGH BRASS FINISH NO-KINK HOSE BIBB, 3/4" IPS MALE INLET, WITH NON-REMOVABLE VACUUM BREAKER, LOOSE KEY AND LEE NO. 807-39 SERVICE COCK.

GENERAL PLUMBING NOTES

1. DRAWINGS ARE DIAGRAMMITICAL ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS, AND PLANS FOR ADDITIONAL REQURIEMENTS TAHT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF CONSTUCTION DOCEMENTS. NOTIFY THE ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

2. FURNISH A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE OWNER REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS PREPARED BY THE ENGINEER-OF-RECORD AFTER FINAL INSPECTION OF INSTALLED PLUMBING SYSTEMS.

3. FURNISH TO THE OWNER A COPY OF INSPECTOIN REPORTS AND APPROVAL CERTIFICATES FROM THE LOCAL AND STATE INSPECTIONS.

4. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.

5. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATON AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.

6. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.

7. VALVES SHALL BE LINE SIZE UNLESS OTHERWISE NOTED.

8. PIPING IN FINISHED AREAS SHALL BE ROUTED CONCEALED; EXPOSED PIPING, WHERE NECESSARY, SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO WALLS.

9. COORDINATE ALL WITH OTHER TRADES AND CONTRACTORS.

10. COORDINATE PIPING INSTALLATION WITH STRUCTURAL GRADE BEAMS, FOOTINGS, COLUMN PIERS, ETC. SLEEVE PIPING THROUGH GRADE BEAMS, FOOTING, ETC. WHERE REQUIRED AND AS NOTED ON PLANS. COORDINATE SLEEVE INSTALLATIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, STRUCTURAL CONTRACTOR, AND GENERAL CONTRACTOR BEFORE CONCRETE IS INSTALLED.

11. CLEAN FAUCET AERATORS AND PIPE STRAINERS PRIOR TO TURNING BUILDING OVER TO THE OWNER.

12. PROVIDE TRAP PRIMERS WHERE REQUIRED BY LOCAL AUTHORITIES.

13. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS.

14. PAINT ALL EXPOSED GAS PIPING USING RUST INHIBITOR PAINT. PAINT AND COLOR SHALL BE COORDINATED WITH THE ARCHITECTS AND/OR OWNER.

1 PLUMBING FIXTURE SCHEDULE AND NOTES

NO SCALE

RIECKE SUNNLAND KONO ARCHITECTS, LTD
33 LONO AVENUE, SUITE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7688

ARNALDO E. PREPOSE LICENSED PROFESSIONAL ENGINEER No. 4744 HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

PLUMBING FIXTURE SCHEDULE AND NOTES

REVISIONS:
2020-05-05 PERMIT SET
2020-08-07 BID SET

P-102

PROJECT NO: 2018-0XX

DATE: MAY, 2018

Date Plotted: 8/6/2020 4:13 PM
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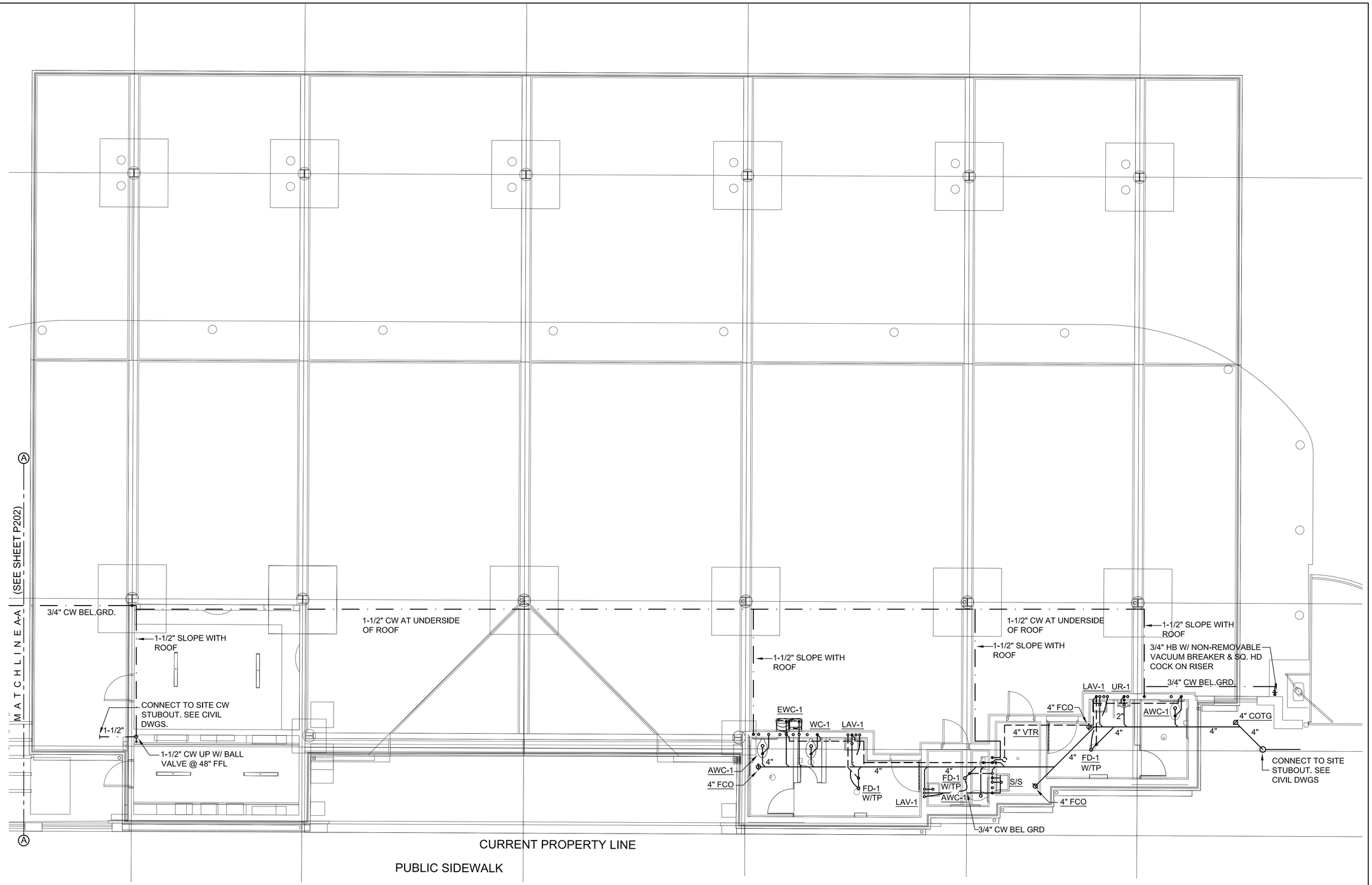


NORTH

1 PLUMBING PLAN

3/16"=1'-0"

4' 0 4' 8'

Date Plotted: 8/6/2020 4:15 PM
File Name: C:\Users\arnol\Documents\Clients\RSK\Maui Bus Hub\P21-22BS-pMauiBus 080720.dwg

TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

PLUMBING PLAN

P-201

PROJECT NO: 2018-0XX

DATE: MAY, 2018

REVISIONS
2020-05-05 PERMIT SET
2020-08-07 BID SET

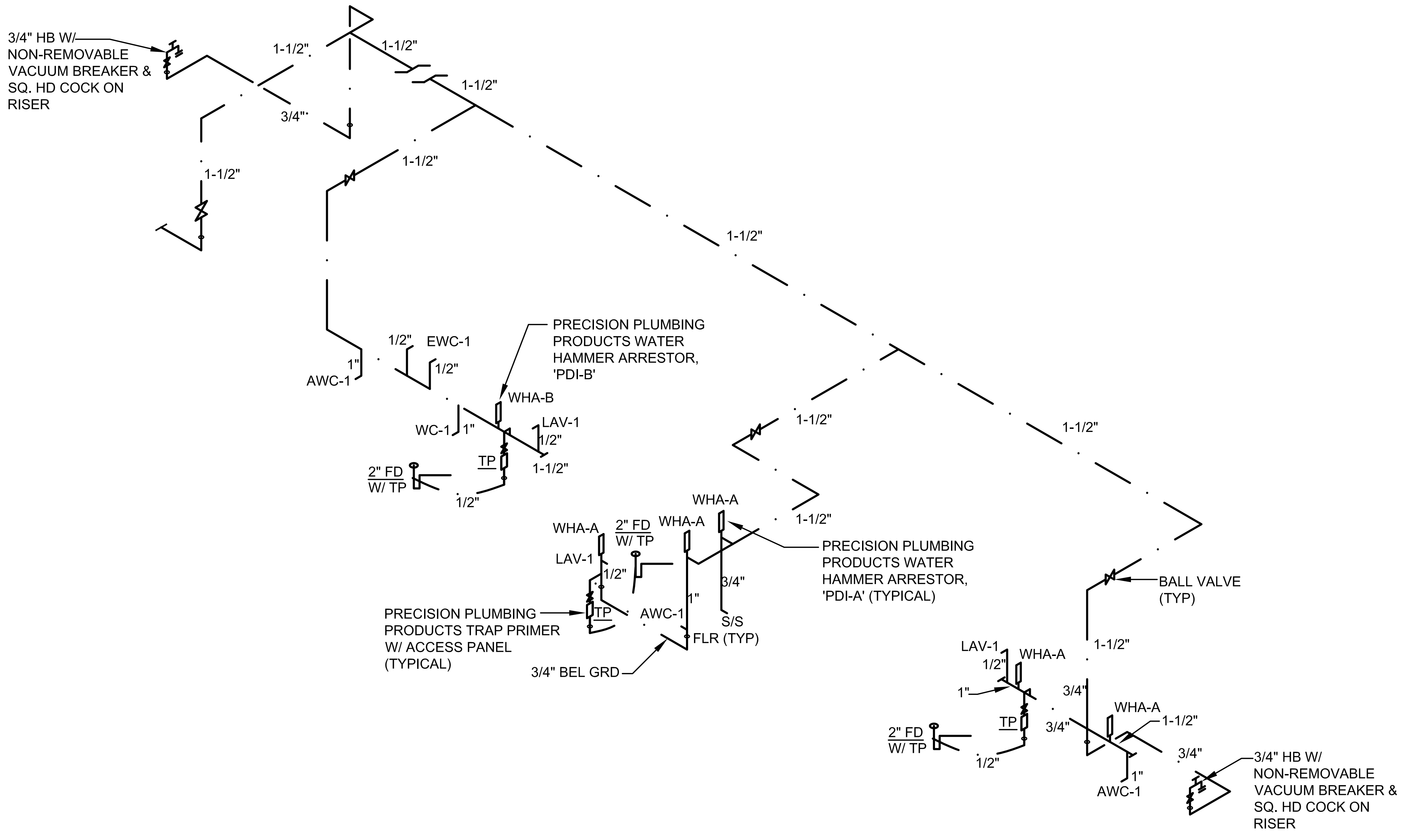
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

ANNALOU E. PREPOSE
LICENSED PROFESSIONAL ENGINEER
No. 47944
HAWAII, U.S.A.

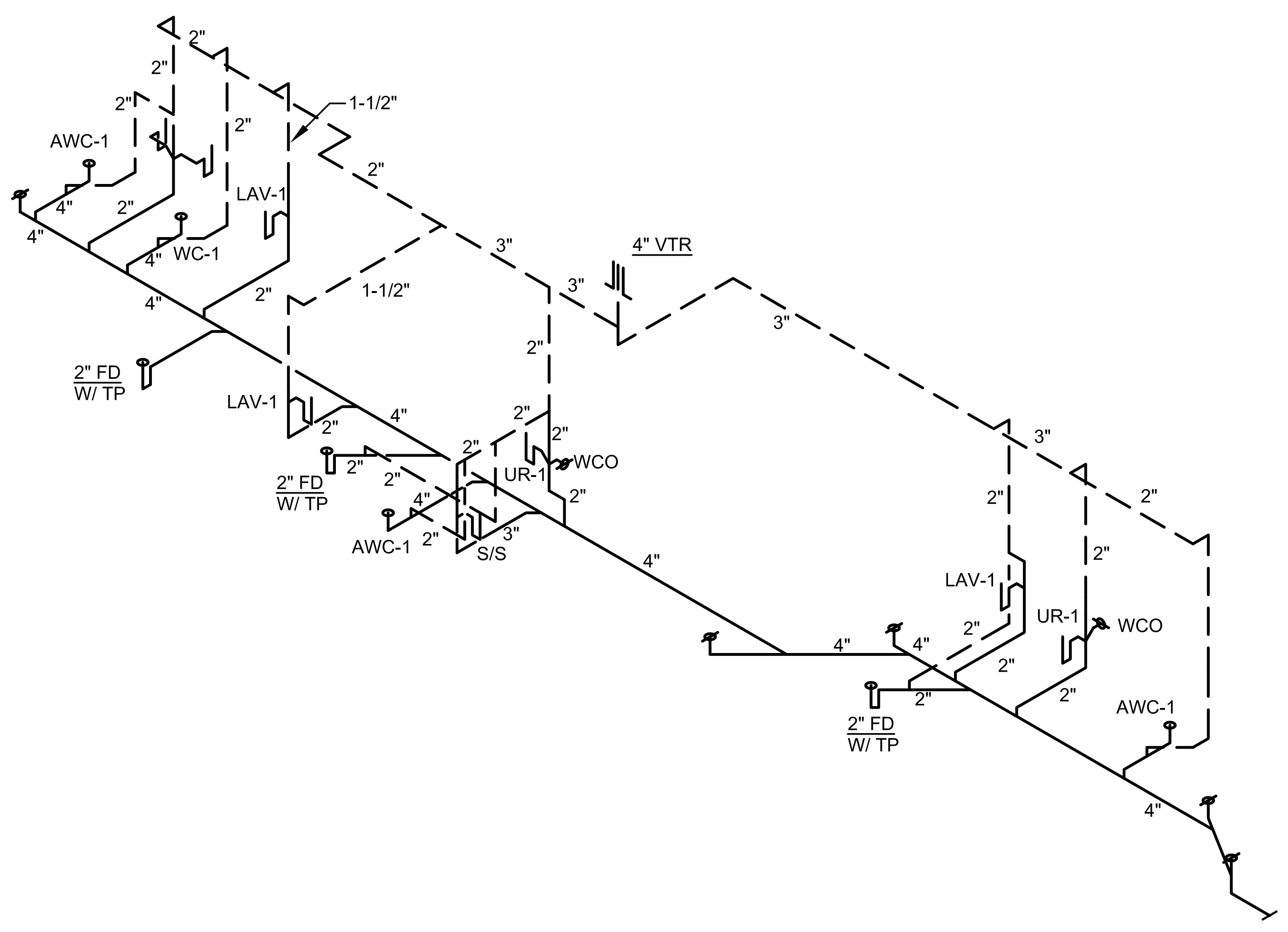
EXPIRATION DATE OF LICENSE:
APRIL 30, 2022

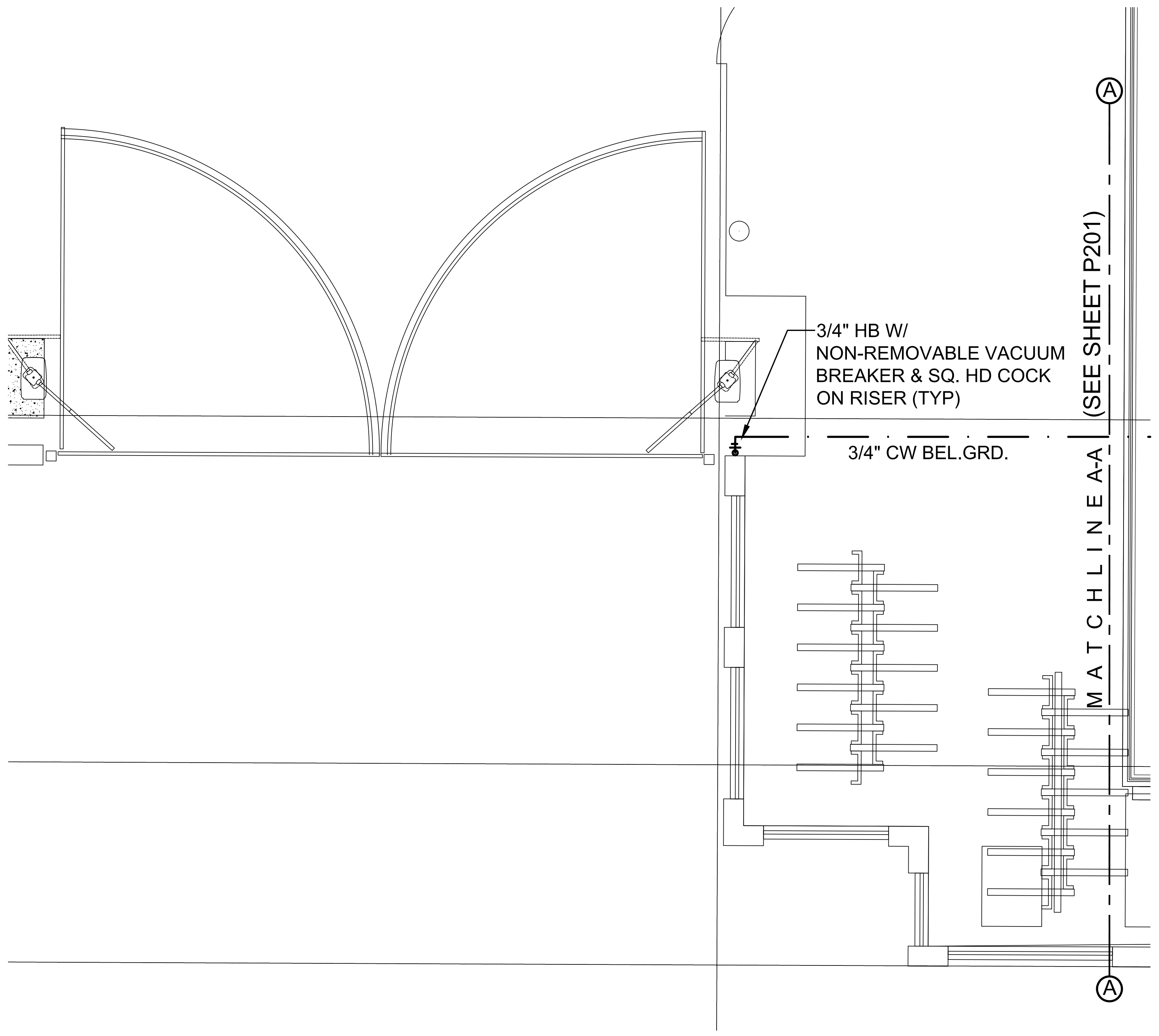
RIECKE SUNNLAND KONO ARCHITECTS, LTD
33 LONO AVENUE, SUITE 200
PO BOX 1427
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE (808) 877-7488



2 WATER PIPING DIAGRAM

NO SCALE





3 PARTIAL PLUMBING PLAN

3/16"=1'-0" 4' 0 4' 8'

1 SANTARY SEWER PIPING DIAGRAM

NO SCALE

Date Plotted: 8/6/2020 4:15 PM
File Name: C:\Users\arnol\Documents\Clients\RSK\Maui Bus Hub\P21-22BS-plMauiBus 080720.dwg

RIECKE SUNNLAND KONO
ARCHITECTS, LTD.

33 LONO AVENUE, SUITE 200
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TELEPHONE (808) 877-7688

ARNALDO E. PREPOSE
LICENSED PROFESSIONAL ENGINEER
No. 4794-M
HAWAII, U.S.A.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

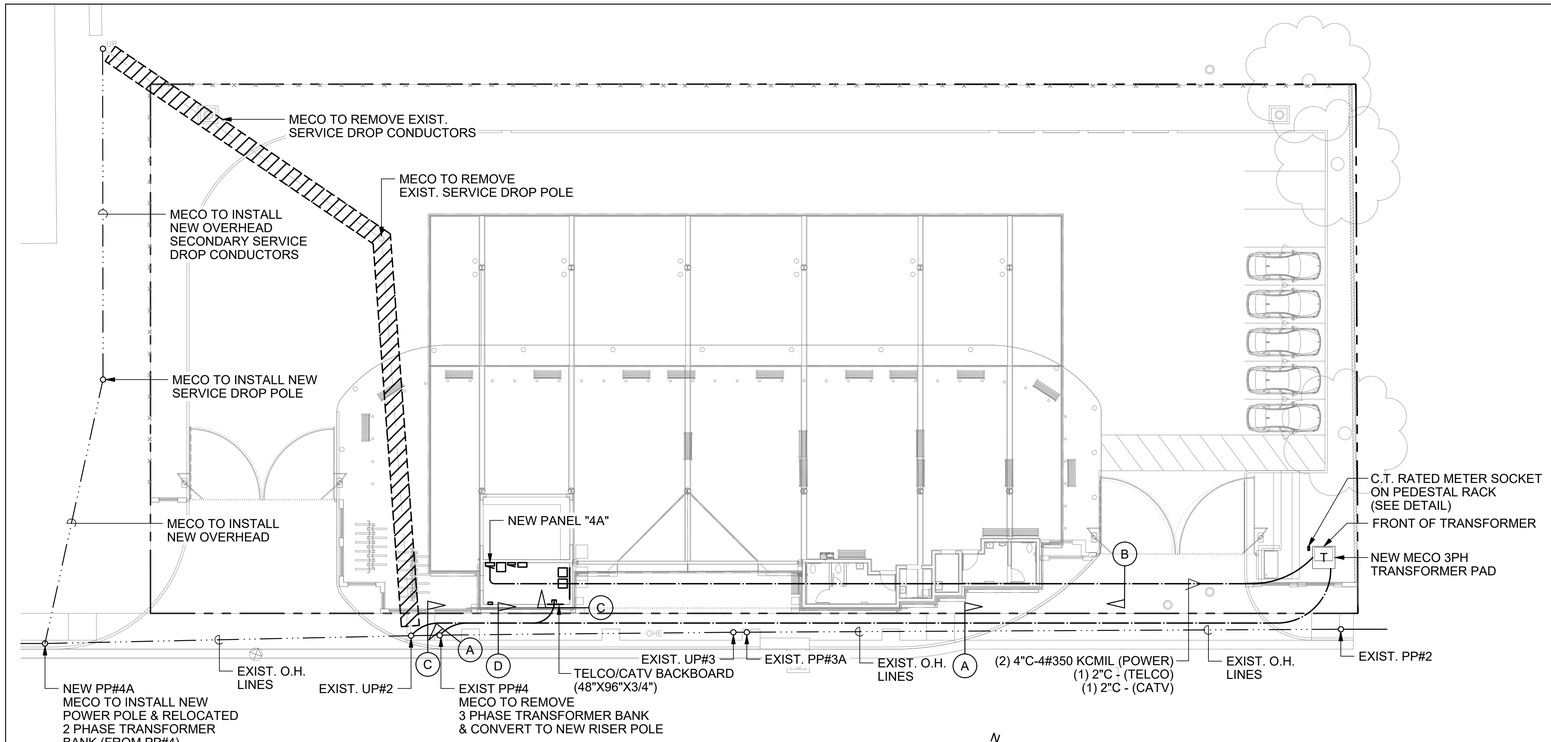
PLUMBING DIAGRAMS

REVISIONS:

2020-05-05	PERMIT SET
2020-08-07	BID SET

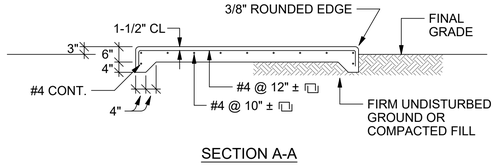
P-202

PROJECT NO. 2018-0XX
DATE: MAY, 2018

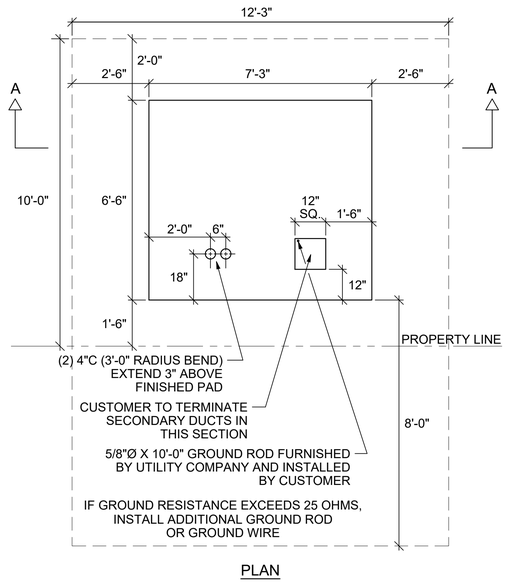


ELECTRICAL UTILITY SITE PLAN

SCALE: 1/16" = 1'-0"



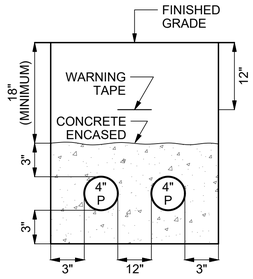
SECTION A-A



PLAN

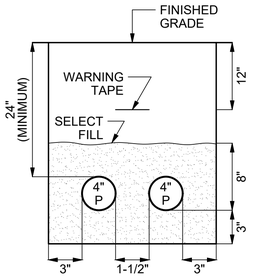
75 TO 750 KVA 3PH TRANSFORMER PAD

NOT TO SCALE



TRENCHING DETAIL "A"

NOT TO SCALE



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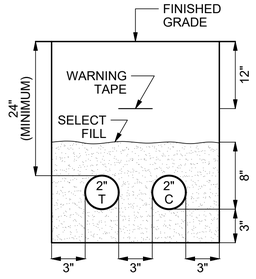
NOT TO SCALE



TRENCHING DETAIL "C"

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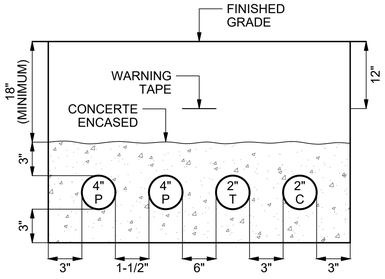

TRENCHING DETAIL "D"

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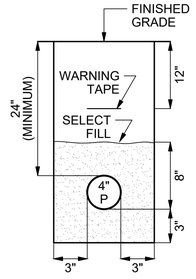


TRENCHING DETAIL "F"

NOT TO SCALE

GENERAL NOTES

1. ALL ELECTRICAL WORK TO BE DONE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE COUNTY OF MAUI, THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE, AND LIFE SAFETY CODE, AND THE AMERICAN ELECTRICIANS HANDBOOK (BY CROFT), AND APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIAL SUPPLIED FOR THIS PROJECT.
2. CONTRACTOR SHALL COMPLY WITH ALL MAUI ELECTRIC COMPANY, HAWAIIAN TELCOM & SPECTRUM CABLE STANDARDS AND REQUIREMENTS TO OBTAIN ELECTRICAL, TELEPHONE & CABLE TELEVISION SERVICES.
3. ALL MATERIALS TO BE NEW AND BE LISTED BY UNDERWRITERS LABORATORIES AS CONFORMING TO ITS STANDARDS WHERE SUCH STANDARDS EXIST.
4. INSTALLATION TO BE COMPLETE IN EVERY DETAIL AND READY FOR USE. ANY ITEM SUPPLIED BY THE CONTRACTOR DEVELOPING DEFECTS WITHIN ONE (1) YEAR OF FINAL ACCEPTANCE BY OWNER, TO BE REPLACED BY MATERIALS, APPARATUS OR PARTS INCLUDING INSTALLATION LABOR TO MAKE THE DEFECTIVE PORTION CONFORM TO THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS, AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO ALSO WARRANTY THEIR WORKMANSHIP FOR THE SAME ONE (1) YEAR PERIOD TO BE FREE OF DEFECTS.
5. THE CIRCUIT ROUTING AND LAYOUT ARE TYPICAL ONLY AND MAY BE VARIED IN A LOGICAL ORDER. PREPARE A RECORD DRAWING REFLECTING ANY DEVIATIONS TO TURN OVER TO THE ENGINEER AT THE COMPLETION OF THE WORK. ANY DEVICE MAY BE RELOCATED WITHIN 10 FEET BEFORE INSTALLATION AT THE DIRECTION OF THE ARCHITECT/ENGINEER WITHOUT ADDITIONAL COST TO THE OWNER.
6. ALL WORK TO BE PERFORMED IN A NEATLY EXECUTED AND WORKMANLIKE MANNER.
7. ANY DEVIATIONS FROM THE PLANS AND SPECIFICATIONS TO BE REFERRED TO THE ENGINEER PRIOR TO IMPLEMENTATION FOR APPROVAL.
8. CONDUCTORS SHALL BE TYPE THHN/THWN COPPER "UNLESS NOTED ON PLANS". MINIMUM POWER CONDUCTOR SIZE TO BE #12 AWG.
9. VERIFY EQUIPMENT LOCATION, MOUNTING HEIGHT, AND ELECTRICAL REQUIREMENT/ CONNECTION WITH OWNER OR EQUIPMENT SUPPLIER PRIOR TO INSTALLATION. CONTRACTOR TO MAKE ADJUSTMENTS TO MEET REQUIREMENT OF ACTUAL EQUIPMENT INSTALLED. ALL CHANGES TO COMPLY WITH ALL APPLICABLE COUNTY CODES, NATIONAL ELECTRICAL CODE, AND LIFE SAFETY CODES. NOTE CHANGES ON "AS-BUILT" DRAWING SET.
10. ALL WIRING SHALL BE CONCEALED IN WALLS, CEILINGS, FLOORS, AND FURRED SPACES UNLESS OTHERWISE NOTED. ALL WIRING TO BE INSTALLED IN CONDUIT. USE EMT AND COMPRESSION CONNECTORS. USE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR ALL EQUIPMENT CONNECTIONS. ALL CONDUITS TO BE INSTALLED PARALLEL AND PERPENDICULAR TO WALLS AND CEILINGS. GROUP RELATED CONDUITS ON A RACK WITH 25% SPARE CAPACITY. SUPPORT CONDUITS PER NATIONAL ELECTRICAL CODE.
11. VERIFY AND CHECK ALL DIMENSIONS AT JOB PRIOR TO PROCEEDING WITH WORK.
12. VERIFY EXISTING ELECTRICAL SYSTEM AND SITE WORKING CONDITIONS PRIOR TO SUBMITTING BID OR PROPOSAL.
13. TORQUE ELECTRICAL CONNECTIONS PER MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
14. BALANCE ELECTRICAL LOAD AT PANEL.
15. REMOVE ANY UN-USED ELECTRICAL WIRING.
16. COORDINATE AND SCHEDULE POWER OUTAGES WITH OWNER.
17. PROVIDE EQUIPMENT GROUNDING AS REQUIRED BY CODE.
18. WIRING DEVICES SHALL BE SPECIFICATION GRADE, GROUNDING TYPE, COLOR TO BE SPECIFIED BY ARCHITECT. RECEPTACLES TO HAVE NEMA CONFIGURATION TO MATCH CORD CAP ON EQUIPMENT SUPPLIED. SWITCHES TO BE ROCKER TYPE.
19. PENETRATIONS OF HORIZONTAL ASSEMBLIES (LISTED IN IBC 2006 SEC. 712.4) AND FIRE-RESISTANCE-RATED WALL ASSEMBLIES (LISTED IN IBC 2006 SEC. 712.3) SHALL BE PROTECTED BY METHODS DESCRIBED IN IBC 2006 SEC. 712.

MAUI COUNTY CODE CHAPTER 20.35
OUTDOOR LIGHTING

THE ELECTRICAL OUTDOOR LIGHTING SYSTEM AND EQUIPMENT HAVE BEEN REVIEWED BY ME AND TO THE BEST OF MY KNOWLEDGE, THIS DESIGN SUBSTANTIALLY CONFORMS TO THE REQUIREMENTS SPECIFIED IN MAUI COUNTY CODE CHAPTER 20.35 OUTDOOR LIGHTING.

SIGNATURE	PRINCIPAL
	TITLE
DON H. SUZUKI	9006-E
PRINTED NAME	STATE OF HAWAII PROFESSIONAL ENGINEER LICENSE NUMBER

COUNTY OF MAUI
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE
COMMERCIAL PROVISIONS

COMPLIANCE METHOD CHECK APLLICABLE METHOD	
☐	C401.2(1) ANSI/ASHRAE/IESNA 90.1
☒	C401.2(2) SECTIONS C402 THROUGH C406
☐	C401.2(3) SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C405.4, C405.6 & C407
☐	C101.2 (ALTERNATIVE)

TO THE BEST OF MY KNOWLEDGE, THIS PROJECT'S DESIGN SUBSTANTIALLY CONFORMS TO THE ENERGY CODE.

SIGNATURE: _____ DATE: 2020-02-14
NAME: DON H. SUZUKI
TITLE: PRINCIPAL
LICENSE NO.: 9006-E

RIECKE SUNNLAND KONO ARCHITECTS, LTD.
33 LONO AVENUE STE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE: (808) 877-7688

DON H. SUZUKI LICENSED PROFESSIONAL ENGINEER NO. 9006-E HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

EXPIRATION DATE OF LICENSE: APRIL 30, 2022

TRANSIT HUB

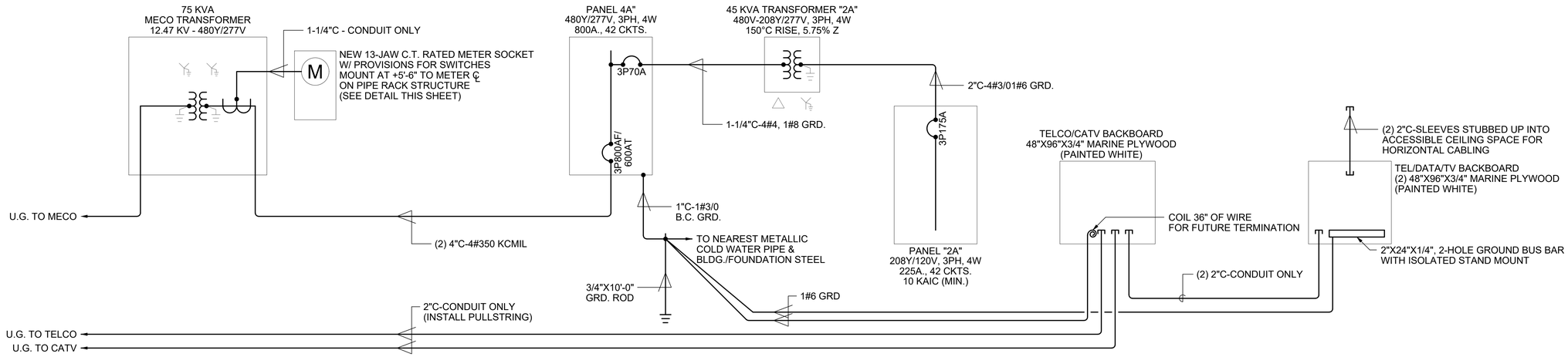
VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

REVISIONS
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

GENERAL NOTES, ELEC. UTILITY SITE PLAN & DETAILS

E-1
SHEET OF

PROJECT NO. 2018-0XX
DATE MAY, 2018



SINGLE LINE DIAGRAM

NOT TO SCALE

PANEL SCHEDULE: PANEL "4A"

Voltage: 480Y/277V Phase: 3 Wire: 4 Bus Amps: 800A W/ 3P600A MAIN BREAKER No. Ckts: 42
Mounting: SURFACE NEMA Config: 1 Breaker Type: Bolt-On - 65,000 AIC Minimum

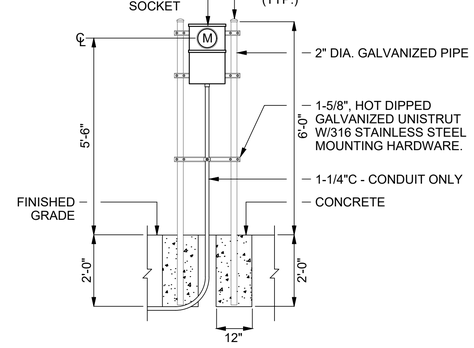
Ckt	Description	Ph A	Ph B	Ph C	Brkr	Wire	Ckt	Description	Ph A	Ph B	Ph C	Brkr	Wire
1	L - POLE LIGHTS	0.5			1P20	12	2						
3	L-EXTERIOR		2.0				4						
5	L-OFFICE/ELEC RM.			0.5			6						
7							8						
9							10						
11							12						
13							14						
15							16						
17							18						
19							20						
21							22						
23							24						
25							26						
27							28						
29							30						
31							32						
33							34						
35							36						
37							38						
39							40	PNL "2A" XFMR				3P70	4
41							42						

PANEL SCHEDULE: PANEL "2A"

Voltage: 208Y/120V Phase: 3 Wire: 4 Bus Amps: 225A W/ 3P175A MAIN BREAKER No. Ckts: 42
Mounting: SURFACE NEMA Config: 1 Breaker Type: Bolt-On - 10,000 AIC Minimum

Ckt	Description	Ph A	Ph B	Ph C	Brkr	Wire	Ckt	Description	Ph A	Ph B	Ph C	Brkr	Wire
1	SPARE				1P20		2	R - EXTERIOR TV	1.0			1P20	12
3							4	R - FURNITURE		1.0			
5							6	R - EXTERIOR			1.0		
7							8	R - TV (TICKET)	1.0				
9							10	R - TICKETBOOTH		1.0			
11							12	R - AMP RACK			1.0		
13							14	R - RESTROOM	1.0				
15							16	R - TV (BATH)		1.0			
17							18	COMM BACKBOARD			1.0		
19							20	OAF-1	0.1				
21							22	IRRIG. CONTROLLER		0.2			
23							24	FACP			0.5		
25							26	R-VENDING MACHINE	1.0				
27							28	R-VENDING MACHINE		1.0			
29							30	R-VENDING MACHINE			1.0		
31							32	SPARE				1P20	
33							34						
35							36						
37							38						
39	CU-1		2.1		2P30	10	40						
41				2.1			42						

GFCI PROTECTED



METER ELEVATION

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

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DON H. SUZUKI LICENSED PROFESSIONAL ENGINEER NO. 6006-E HAWAII, U.S.A.
EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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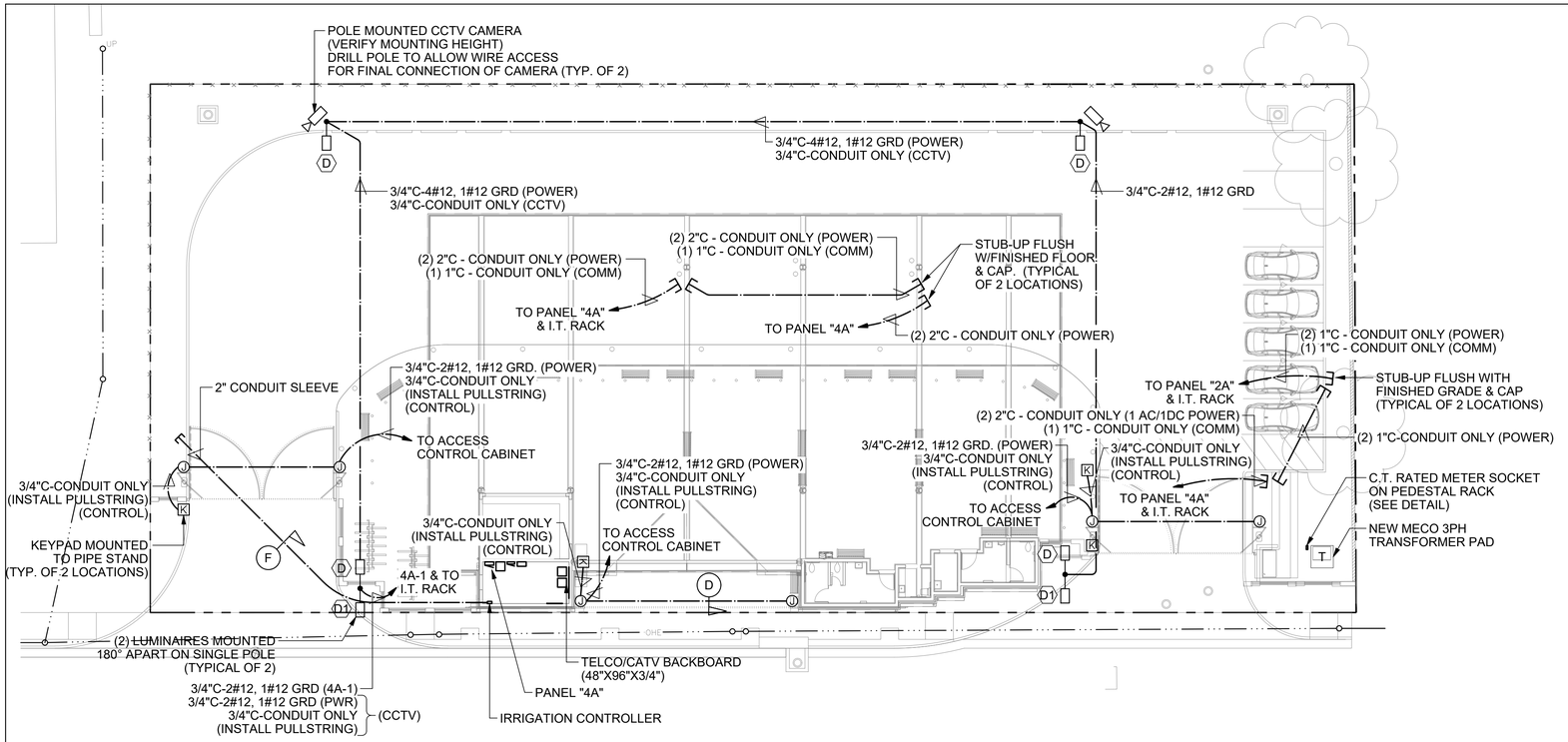
TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

SINGLE LINE DIAGRAM & SCHEDULES

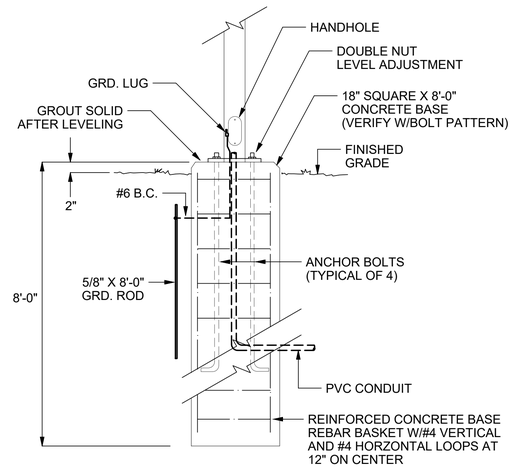
REVISIONS:
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

SHEET E-2 OF
PROJECT NO. 2018-0XX
DATE MAY, 2018



ELECTRICAL SITE PLAN

SCALE: 1/16" = 1'-0"



LIGHT POLE BASE DETAIL

NOT TO SCALE

LUMINAIRE SCHEDULE

A	NEW STAR VIC4N-L2351-RW-UN-WH OR APPROVED EQUAL	4' SURFACE MOUNTED NARROW LED LUMINAIRE WITH 5400 LUMEN, 3500K, 50W, 0-10V DIMMING, 120-277V DRIVER.
A1	NEW STAR VIC4N-L2351-RW-UN-WH-EL2 OR APPROVED EQUAL	SAME AS ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP
B	NEW STAR VIC4N-L1351-RW-UN-WH OR APPROVED EQUAL	4' SURFACE MOUNTED NARROW LED LUMINAIRE WITH 2700 LUMEN, 3500K, 25W, 0-10V DIMMING, 120-277V DRIVER.
B1	NEW STAR VIC4N-L1351-RW-UN-WH-EL1 OR APPROVED EQUAL	SAME AS ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP
C	NEW STAR VIC2N-L1351-RW-UN-LW OR APPROVED EQUAL	2' SURFACE MOUNTED NARROW LED LUMINAIRE WITH 1100 LUMEN, 3500K, 13W, 0-10V DIMMING, 120-277V DRIVER.
D	U.S. ARCHITECTURAL LIGHTING RZRM-PLED-IV-48LED-700MA -WW-277-RAL-8019-T-HS WITH SSA35FJ-4-BM POLE OR APPROVED EQUAL	ARCHITECTURAL LED AREA LUMINAIRE, 12600 LUMEN, 105W, 3000K, 277V WITH HIGH/LOW DIMMING VIA OCCUPANCY SENSOR, ON/OFF PHOTOCEL CONTROL, TYPE IV DISTRIBUTION & HOUSE SIDE SHEILD WITH 35'-0" SQUARE ALUMINUM POLE.
D1	U.S. ARCHITECTURAL LIGHTING RZRM-PLED-II-FR-48LED-700MA -WW-277-RAL-8019-T-HS WITH SSA35FJ-4-BM POLE OR APPROVED EQUAL	ARCHITECTURAL LED AREA LUMINAIRE, 12600 LUMEN, 105W, 3000K, 277V WITHON/OFF PHOTOCEL CONTROL, TYPE II (FRONT ROW) DISTRIBUTION & WITH 35'-0" 6" SQUARE ALUMINUM POLE.
F	HADCO DB30-H-A0-12L-H OR APPROVED EQUAL	5" DIAMETER, 30" TALL LED BOLLARD WITH 9.5W 800 LM., 2700K, WITH SYMMETRICAL DISTRIBUTION AND 277V NON-DIMMABLE DRIVER

SYMBOLS LIST

	BRANCH CIRCUITS CONCEALED IN CEILING OR WALLS, 2 CONDUCTORS WITH CODE SIZE GROUND UNLESS NOTED OTHERWISE. NUMBER NEXT TO LINE INDICATES SIZE OF CONDUCTORS WHEN OTHER THAN #12.	
	DUPLEX RECEPTACLE, 120V, 20A.	+15" TO BOTTOM UNLESS NOTED.
	QUAD RECEPTACLE, 120V, 20A.	+15" TO BOTTOM UNLESS NOTED.
$T	ASTRONOMICAL TIME SWITCH (SEE LIGHTING CONTROLS SHT E7)	+48" TO TOP UNLESS NOTED.
$OS	OCCUPANCY SENSOR SWITCH (SEE LIGHTING CONTROLS SHT E7)	+48" TO TOP UNLESS NOTED.
	250V NON-FUSIBLE DISCONNECT SWITCH. MATCH PER APPLICATION.	
J	JUNCTION BOX.	
	TEL/DATA/TV JACK. INSTALL 4" SQUARE DEEP J-BOX WITH 1" CONDUIT W/BUSHING STUBBED INTO ACCESSIBLE CEILING SPACE. SEE NOTES FOR CABLING AND EQUIPMENT REQUIREMENTS.	+15" TO BOTTOM UNLESS NOTED.
C	TEL/DATA/TV JACK. INSTALL 4" SQUARE DEEP J-BOX WITH 1" CONDUIT W/BUSHING STUBBED INTO ACCESSIBLE CEILING SPACE. SEE NOTES FOR CABLING AND EQUIPMENT REQUIREMENTS.	CEILING MOUNTED
K	KEYPAD - PROVIDE J-BOX TO ALLOW FLUSH/SEMIFLUSH MOUONT OF DEVICE. COORDINATE W/ SECURITY CONTRACTOR.	WALL MOUNTED +48" TO TOP
	CCTV - PROVIDE J-BOX W/ SINGLE GANG RING. COORDINATE W/ SECURITY CONTRACTOR.	WALL MOUNTED (VERIFY HEIGHT)
P	CCTV - PROVIDE J-BOX W/ SINGLE GANG RING. COORDINATE W/ SECURITY CONTRACTOR.	PENDANT MOUNT (VERIFY HEIGHT)
S	SPEAKER - PROVIDE J-BOX. COORDINATE W/ AUDIO CONTRACTOR.	CEILING MOUNTED
	PANELBOARD.	
	SURFACE MOUNTED LED LUMINAIRE.	SEE LUMINAIRE SCHEDULE.
	POLE MOUNTED LED LUMINAIRE.	SEE LUMINAIRE SCHEDULE.
	LED BOLLARD.	SEE LUMINAIRE SCHEDULE.
	EXIT SIGN.	SEE LUMINAIRE SCHEDULE.
S	JUNCTION BOX FOR SPEAKER. COORDINATE WITH A/V CONTRACTOR	CEILING MOUNTED

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DON H. SUZUKI
LICENSED PROFESSIONAL ENGINEER
NO. 6006-E
HAWAII, U.S.A.

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EXPIRATION DATE OF LICENSE: APRIL 30, 2022

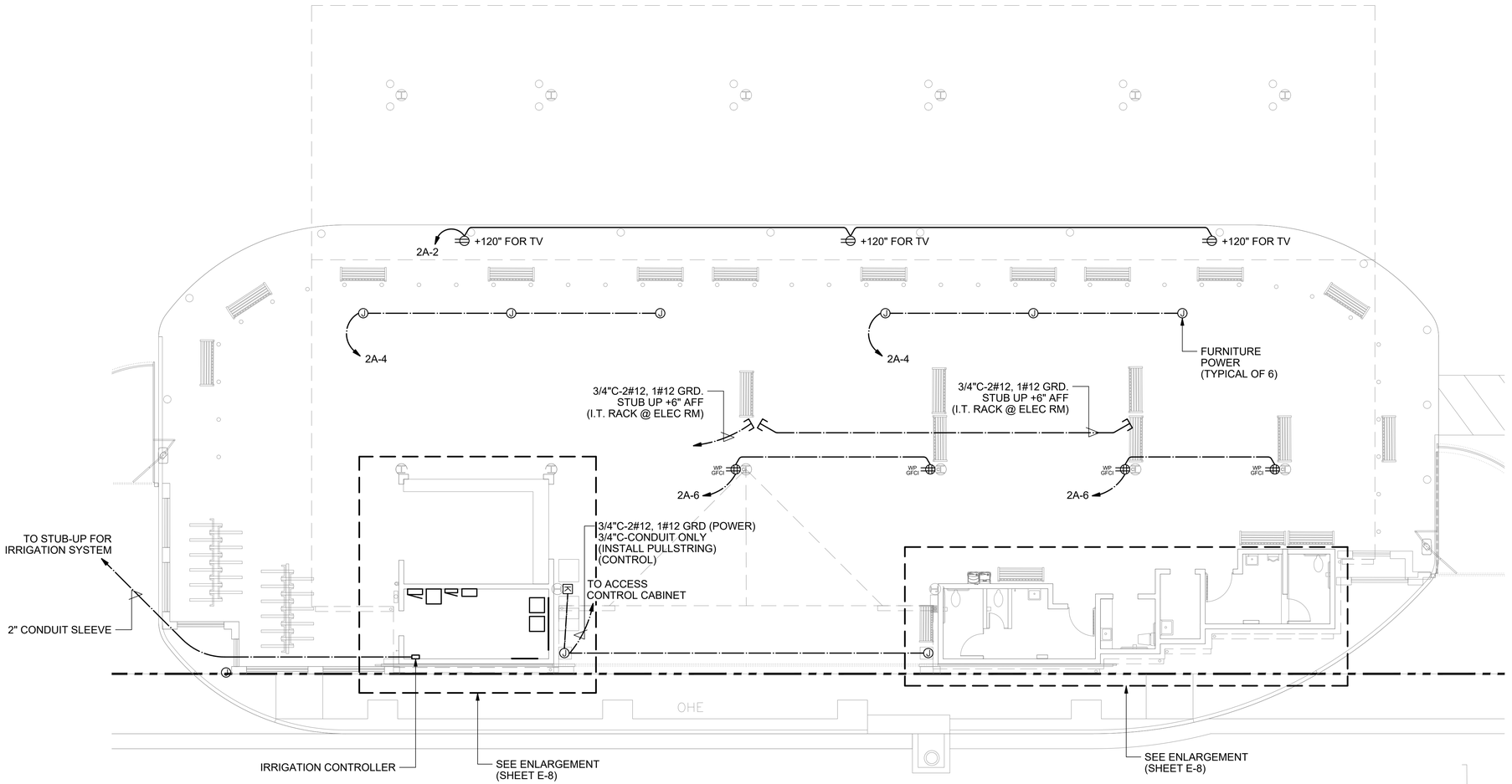
TRANSIT HUB

VEVAU ST
KAHULUI, MAUI, HAWAII
(2) 03-07-004:003

ELECTRICAL SITE PLAN & SCHEDULES

REVISIONS
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

SHEET E-3
OF
PROJECT NO. 2018-0XX
DATE MAY, 2018



OVERALL ELECTRICAL POWER PLAN

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

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DON H. SUZUKI
LICENSED PROFESSIONAL ENGINEER
NO. 9906-E
HAWAII, U.S.A.

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TRANSIT HUB

VEVAU ST
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(2) 03-07-004:003

OVERALL ELECTRICAL POWER PLAN

REVISIONS:
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

E-4
SHEET OF

PROJECT NO. 2018-0XX
DATE: MAY, 2018

INFORMATION TECHNOLOGY (IT) NOTES

CABLE:

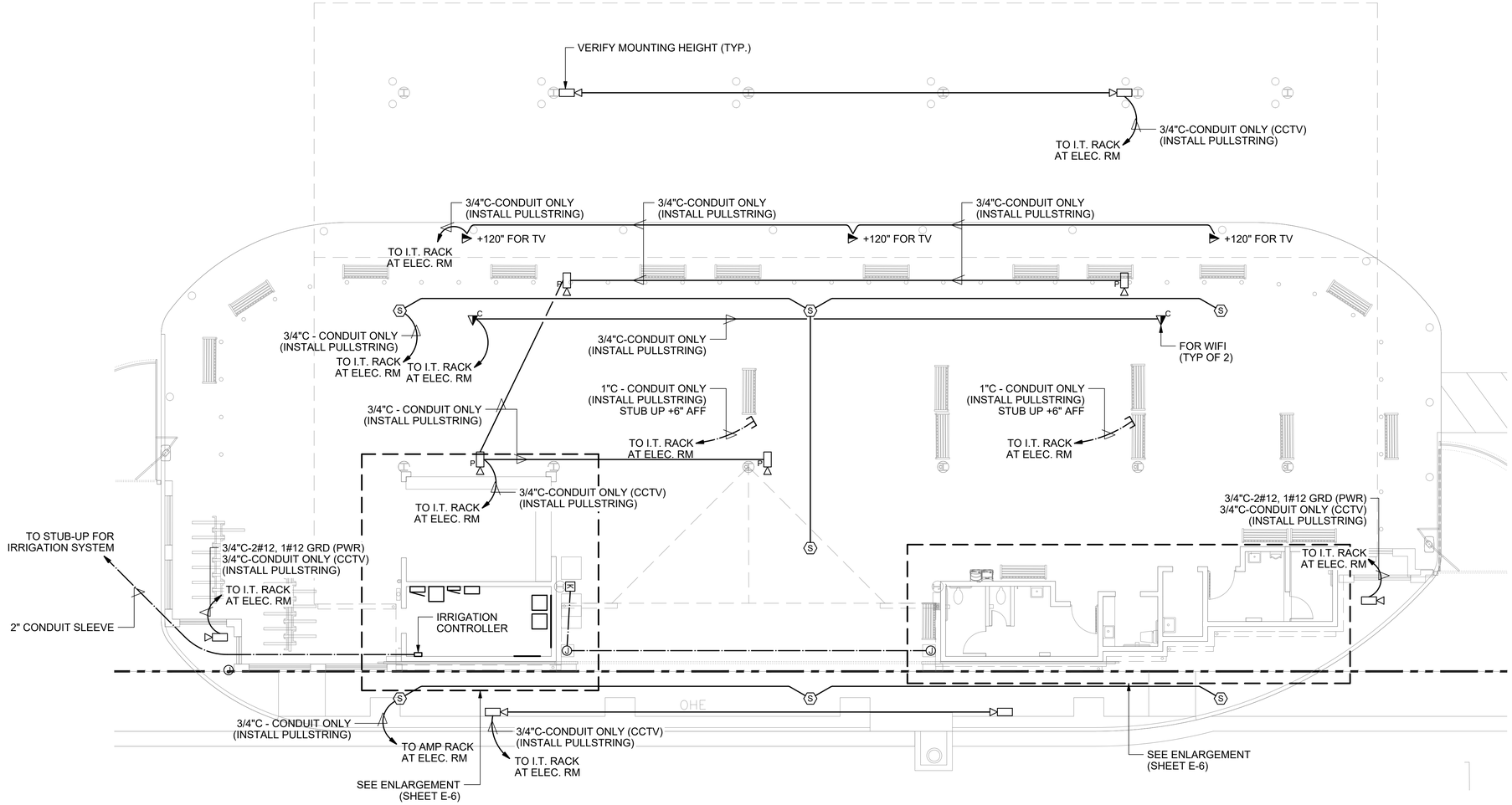
1. ALL CABLES SHALL BE UTP CAT-6 OR BETTER.
2. PLEASE VERIFY IF PLENUM RATED WIRING IS REQUIRED.
3. PLEASE CHECK WITH ITSD STAFF REGARDING WIRE COLOR CONVENTIONS TO BE USED.

OUTLETS:

1. ALL OUTLETS SHALL BE FLUSH 2-GANG DATA DEVICE PLATES.
2. ALL DATA OUTLETS SHALL USE MODULAR CAT-6 RATED JACKS, LEVITON BRAND APPROVED EQUAL.
   a. LEVITON EXTREME CAT6 UTP QUICKPORT CONNECTOR PART #61110-xx6*

TERMINATION:

1. ALL WIRING SHALL BE TERMINATED USING THE 568-B CONNECTION STANDARD.
2. ALL WIRING SHALL BE ID'D ON BOTH TERMINATION ENDS OF THE CABLE.
3. ALL PORTS ON WALL MOUNTED JACKS AND PATCH PANELS SHALL BE MARKED WITH THE CABLE ID.
4. PLEASE CHECK WITH ITSD STAFF FOR THE WIRE ID CONVENTION TO BE USED.
5. IF NO TERMINATION IN DATA CENTER OR COMMUNICATIONS ROOM IS REQUIRED, PLEASE CHECK WITH ITSD STAFF FOR REQUIRED SLACK LENGTH.



OVERALL ELECTRICAL LOW VOLTAGE PLAN

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

RIECKE SUNNLAND KONO ARCHITECTS, LTD.
33 LONO AVENUE STE 200
PO BOX 1627
KAHULUI, MAUI, HAWAII 96733-1627
TELEPHONE: (808) 877-7688

DON H. SUZUKI LICENSED PROFESSIONAL ENGINEER NO. 6906-E HAWAII, U.S.A.

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EXPIRATION DATE OF LICENSE: APRIL 30, 2022

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OVERALL ELECTRICAL LOW-VOLTAGE PLAN

REVISIONS
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

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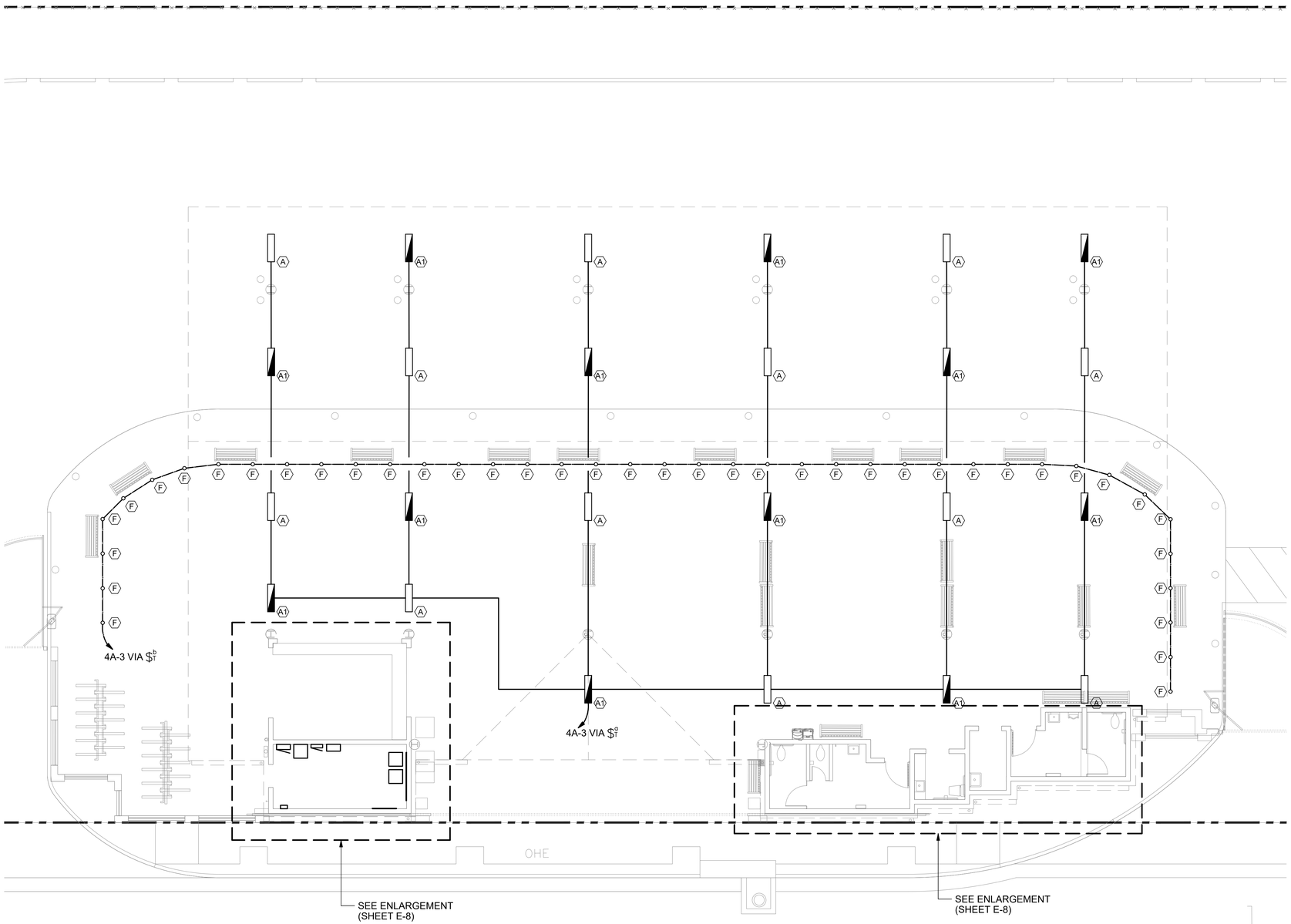
PROJECT NO. 2018-0XX

DATE MAY, 2018



OVERALL ELECTRICAL LIGHTING PLAN

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

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OVERALL ELECTRICAL LIGHTING PLAN

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PROJECT NO. 2018-0XX

DATE: MAY, 2018

FIRE ALARM SYSTEM NOTES

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING & INSTALLING A COMPLETE AND FUNCTIONING F.A. SYSTEM. THIS INCLUDES ALL PARTS AND PROGRAMMING NECESSARY TO INTERFACE ALL DEVICES.
2. WIRING TO BE CONCEALED IN WALL AND CEILINGS. ALL WIRING SHALL BE INSTALLED IN CONDUIT. ALL SPLICING, TERMINATIONS, ETC. TO BE DONE IN JUNCTION BOXES.
3. ALL WORK TO COMPLY WITH NFPA 70 (NATIONAL ELECTRICAL CODE), NFPA 72 (NATIONAL FIRE ALARM CODE), MANUFACTURER'S INSTRUCTIONS, AND ANY OTHER APPLICABLE CODE OR STANDARDS.
4. CONTRACTOR TO PROVIDE 2 HOURS OF TRAINING FOR 4 PEOPLE ON OPERATION AND MAINTENANCE OF THE FIRE ALARM SYSTEM. TRAINER TO BE CERTIFIED TECHNICIAN OR OF EQUAL QUALIFICATION. COORDINATE TRAINING WITH OWNER.
5. F.A. SYSTEM PROGRAMMING AND START-UP TO BE PERFORMED BY CERTIFIED TECHNICIAN. ALL SYSTEM TESTING, INCLUDING ACCEPTANCE AND FIRE DEPARTMENT APPROVAL TO BE PERFORMED BY A CERTIFIED TECHNICIAN.
6. COORDINATE ALL WORK WITH OTHER TRADES (FIRE SPRINKLER, DRY-WALL, ETC.).
7. CONTRACTOR TO FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS.
8. PROVIDE WEATHER-PROOF COVER FOR ALL FIRE ALARM DEVICES INSTALLED OUTDOORS (DEVICES INSTALLED INDOORS DO NOT REQUIRE PROTECTION).
9. EQUIPMENT SUPPLIER TO PROVIDE SHOP DRAWINGS FOR APPROVAL.
10. FIRE ALARM SYSTEM TO BE MONITORED 24/7 BY A CERTIFIED/LICENSED MONITORING COMPANY.

F.A. SYSTEM SYMBOLS LIST

- SIMPLEX 4100ES ADDRESSABILE (INITIATING & NOTIFICATION) FIRE ALARM CONTROL PANEL WITH VOICE EVAC AND BATTERY BACK-UP.
- SIMPLEX 4602 SERIES REMOTE ANNUNCIATOR.
- SIMPLEX SMOKE DETECTOR: CEILING MOUNTED, ADDRESSABLE, PHOTOELECTRIC SMOKE SENSOR AND BASE.
- 4 F — SIMPLEX MANUAL PULL STATION: ADDRESSABLE, ADA ACCESSIBLE, SINGLE ACTION MANUAL STATION. WALL MOUNT AT +48" (TO TOP OF DEVICE) AFF.
- FS — SIMPLEX INDIVIDUAL ADDRESSABLE MODULE: ADDRESSABLE, SUPERVISED. (ATTACH TO FLOW SWITCH).
- TS — SIMPLEX INDIVIDUAL ADDRESSABLE MODULE: ADDRESSABLE, SUPERVISED. (ATTACH TO TAMPER SWITCH).
- 75 cd — SIMPLEX ADDRESSABLE SPEAKER/STROBE: ADDRESSABLE MULTI-WATT SPEAKER ADDRESSABLE SYNCHRONIZED STROBE, INTENSITY AS NOTED. WALL MOUNTED AT +84" (TO BOTTOM OF DEVICE) AFF.
- 15 cd — SIMPLEX ADDRESSABLE STROBE: ADDRESSABLE SYNCHRONIZED STROBE, INTENSITY AS NOTED. WALL MOUNTED AT +84" (TO BOTTOM OF DEVICE) AFF.

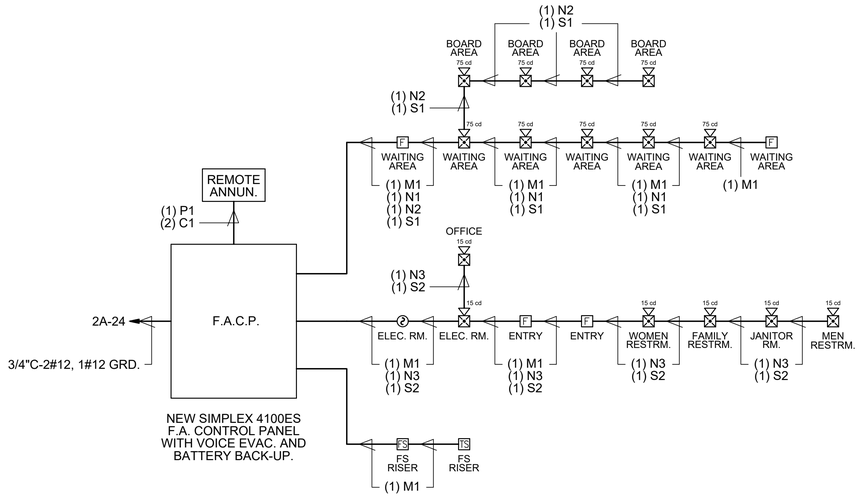
NOTE: PROVIDE UL LISTED WEATHER-PROOF COVER/ENCLOSURE FOR ALL EXTERIOR MOUNTED FIRE ALARM DEVICES.

F.A. SYSTEM WIRING LEGEND

CABLE TYPE / # OF CABLES / CIRCUIT NUMBER

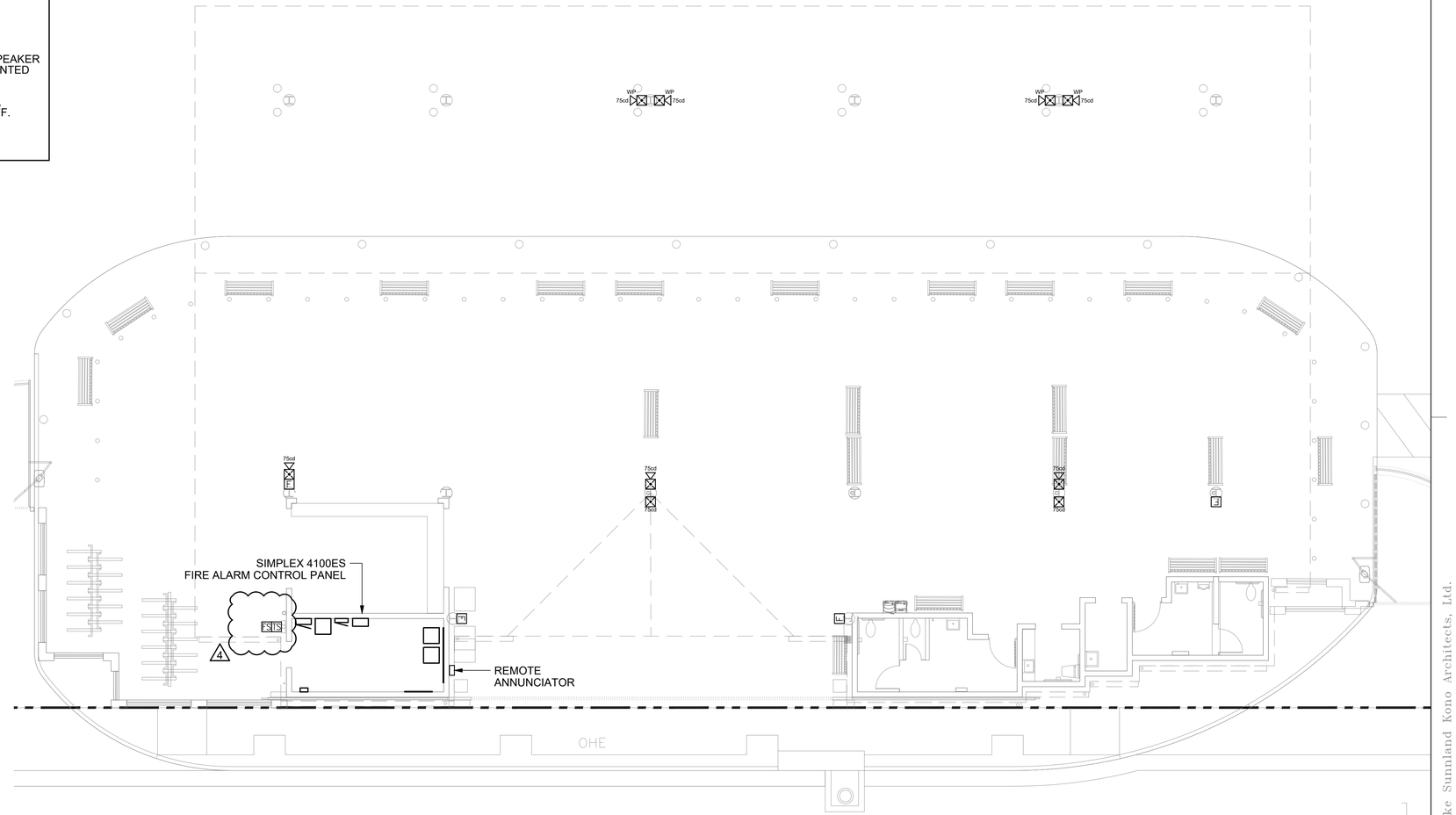
(X) Y Z

- (1) M - MAPNET II CIRCUIT. 1#18 AWG TWISTED SHIELDED PAIR (TSP) CABLE.
- (1) N - NOTIFICATION CIRCUIT. 1#12 AWG UNSHIELDED TWISTED PAIR (UTP) CABLE.
- (1) S - ADDRESSABLE SPEAKER CIRCUIT. 1#12 AWG TWISTED SHIELDED PAIR (TSP) CABLE.
- (1) C - COMMUNICATION CIRCUIT. 1#18 AWG TWISTED SHIELDED PAIR (TSP) CABLE.
- (1) P - POWER SUPPLY CIRCUIT. 2#14 AWG CONDUCTOR CABLE.



FIRE ALARM RISER DIAGRAM

NOT TO SCALE



OVERALL FIRE ALARM PLAN

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

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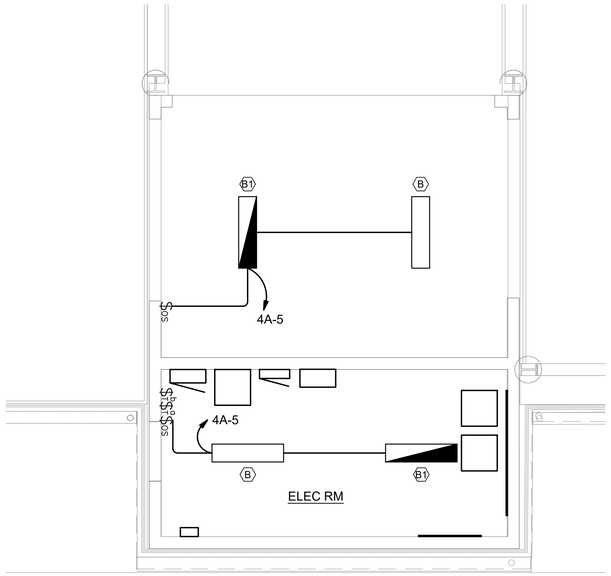
OVERALL ELECTRICAL LOW-VOLTAGE PLAN

REVISIONS:
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET
4 2020-10-09 FD COMMENTS

SHEET E-7 OF

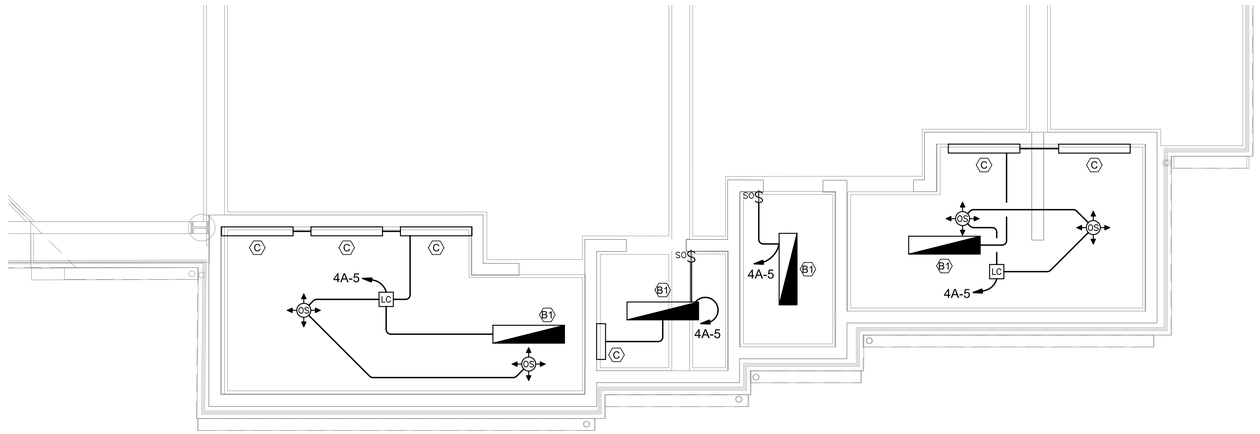
PROJECT NO. 2018-OXX

DATE: MAY, 2018



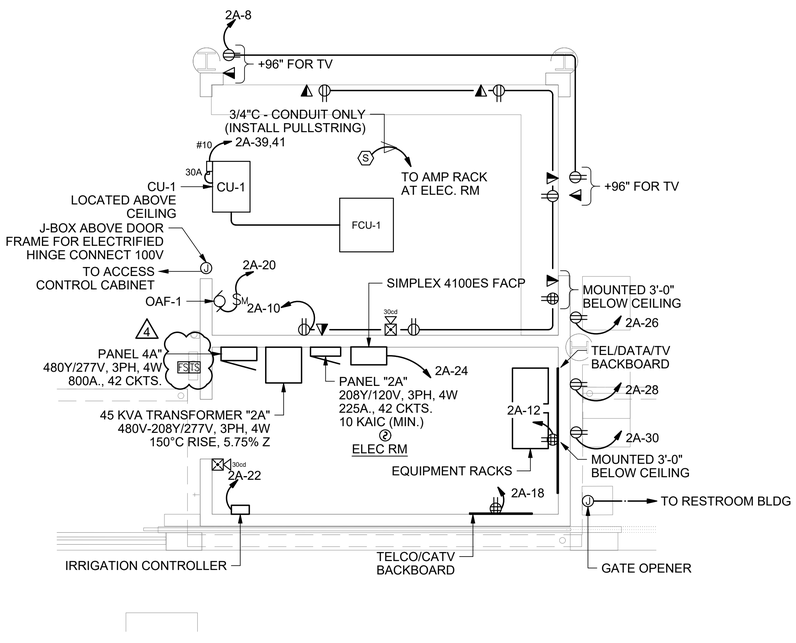
OFFICE
ELECTRICAL LIGHTING PLAN

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



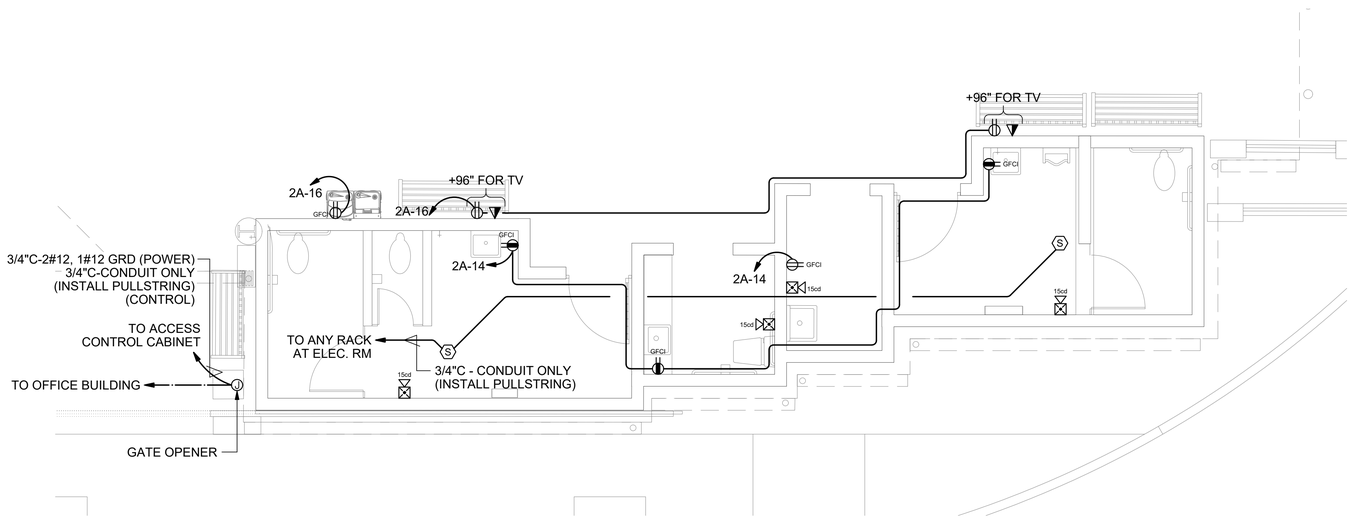
RESTROOM
ELECTRICAL LIGHTING PLAN

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



OFFICE
ELECTRICAL POWER/LOW VOLTAGE PLAN/FIRE ALARM PLAN

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



RESTROOM
ELECTRICAL POWER/LOW VOLTAGE PLAN/FIRE ALARM PLAN

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

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ENLARGED LIGHTING AND LOW-VOLTAGE PLANS

REVISIONS:
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AUGUST 7, 2020 BID SET
4 2020-10-09 FD COMMENTS

SHEET E-8 OF

PROJECT NO. 2018-0XX

DATE MAY, 2018

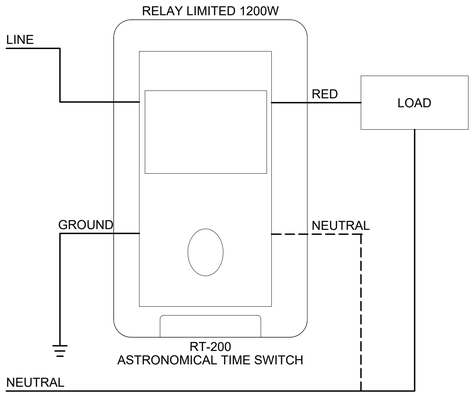
SEQUENCE OF OPERATION:
EXTERIOR POLE LIGHTS - AUTO ON/OFF VIA PHOTOCELL. HIGH/LOW (DIM) AFTER _ TIME (DURING THE NIGHT) VIA OCCUPANCY SENSOR.

RESTROOMS - AUTO ON/OFF VIA SENSORS

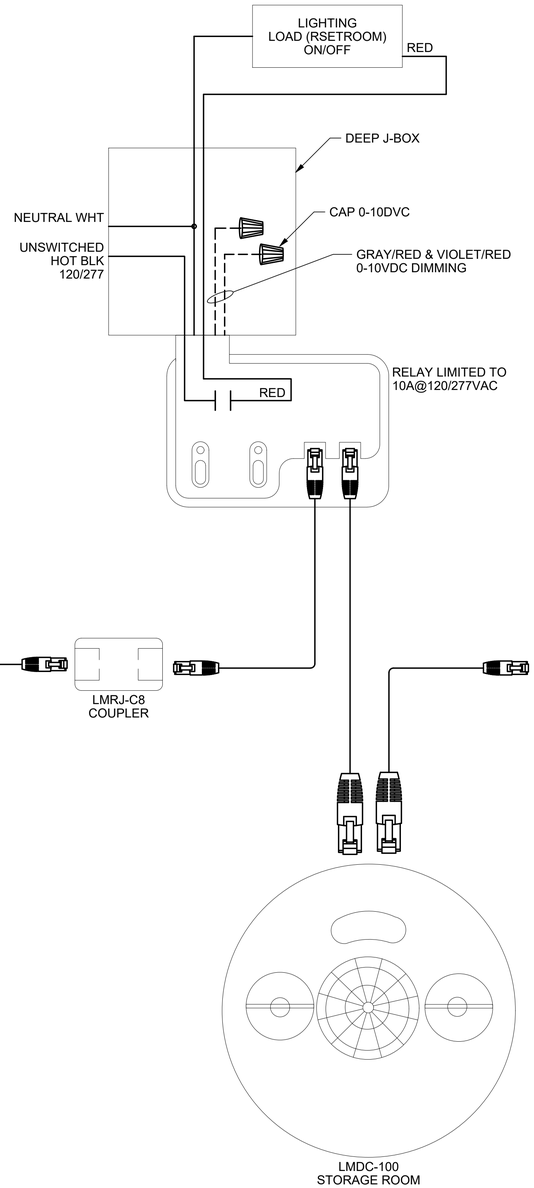
UNDER CANOPY LINEAR LIGHTS/BOLLARD - AUTO ON/OFF VIA ASTRONOMICAL TIMESWITCH (RT-200)

STORAGE ROOM - AUTO ON/OFF VIA SENSOR SWITCH

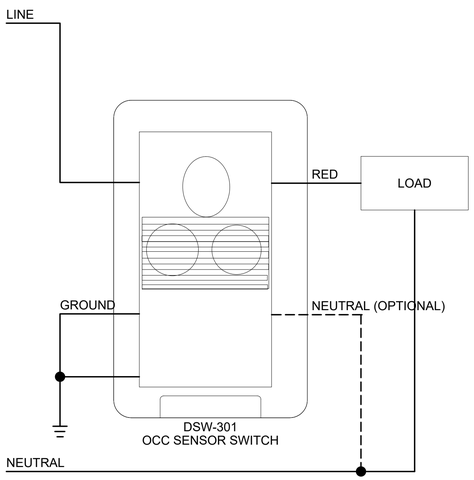
SENSOR TIME DELAY CAN BE SET (1-30 MIN), DEFAULT SETTING IS 20 MIN.



MAIN UNDER CANOPY LIGHTS/BOLLARD



RESTROOMS



STORAGE

LIGHTING CONTROL DIAGRAM

NOT TO SCALE

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LIGHTING CONTROLS DIAGRAM

REVISIONS:
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

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SHEET OF

PROJECT NO. 2018-0XX

DATE MAY, 2018

COMcheck Software Version 4.0.6.0

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title:
Project Type: New Construction

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package

Enhanced Interior Lighting Controls

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Transportation:Terminal - Ticket Counter	270	0.80	216
2-Common Space Types:Restrooms	404	0.98	396
3-Manufacturing:Equipment Room	181	0.74	134
		Total Allowed Watts =	746

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Transportation:Terminal - Ticket Counter				
LED 1: B/B1: Other:	1	2	25	50
2-Common Space Types:Restrooms				
LED 2: B/B1: Other:	1	4	25	100
LED 3: C: Other:	1	5	13	65
3-Manufacturing:Equipment Room				
LED 4: B/B1: Other:	1	2	25	50
			Total Proposed Watts =	265

Interior Lighting PASSES: Design 64% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COM*check* Version 4.0.6.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

COMcheck Software Version 4.0.6.0

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title:
Project Type: New Construction
Exterior Lighting Zone 3 (Other)

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Free standing/attached sales canopy	11360 ft2	0.8	Yes	9088
			Total Tradable Watts (a) =	9088
			Total Allowed Watts =	9088
			Total Allowed Supplemental Watts (b) =	750

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 750 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Free standing/attached sales canopy (11360 ft2): Tradable Wattage				
LED 1: A/A1: Other:	1	13	50	650
LED 2: D/D1: Other:	1	4	105	420
			Total Tradable Proposed Watts =	1070

Exterior Lighting PASSES: Design 89% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2015 IECC requirements in COM*check* Version 4.0.6.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

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LIGHTING CALCULATIONS

REVISIONS
2020-05-05 PERMIT SET
AUGUST 7, 2020 BID SET

E-10 SHEET OF

PROJECT NO. 2018-0XX

DATE MAY, 2018