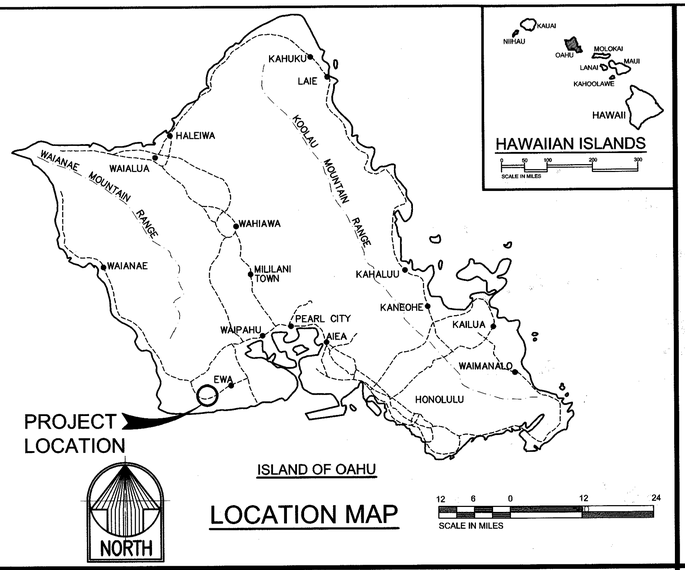
SITE AMENITIES IMPROVEMENTS

KALAELOA RENTAL HOMES SITE

LOCATED AT:
4285 INDEPENDENCE ROAD
KAPOLEI, OAHU, HAWAII, 96707
TMK: FIRST DIVISION, 9-1-013:014

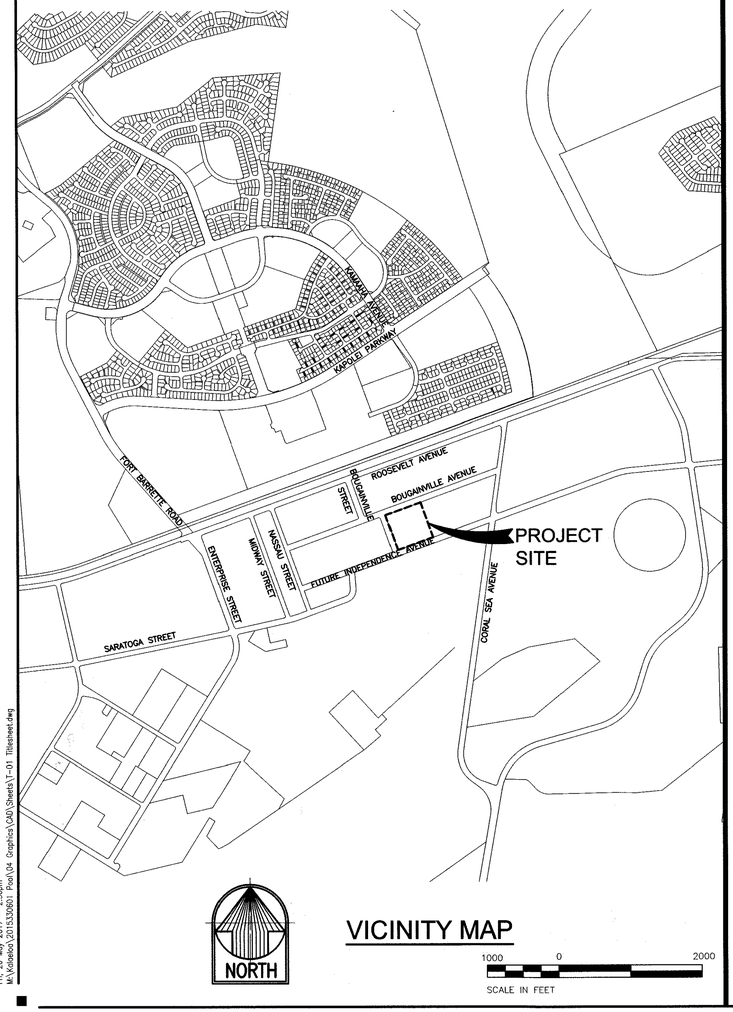
PREPARED FOR:

DINAPOLI CAPITAL PARTNERS
5532 LILLEHAMMER LANE, SUITE 200
PARK CITY, UT 84098



LOCATION MAP

HAWAIIAN ISLANDS



VICINITY MAP

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ABBREVIATIONS

AC	ASPHALT CONCRETE
AC	ACRE
ADA	AMERICAN DISABILITY ACT
BC	BOTTOM OF CURB
BL	BASE LINE
BWS	BOARD OF WATER SUPPLY
CL	CENTERLINE
CONC	CONCRETE
COTG	CLEANOUT TO GRADE
CY	CUBIC YARDS
D	DRAIN
DI	DRAIN INLET
DPW	DEPARTMENT OF PUBLIC WORKS (CITY)
DS	DOWNSPOUT
DTL	DETAIL
DWGS	DRAWINGS
EG	EXISTING GRADE
ELECT	ELECTRICAL
EL, ELEV	ELEVATION
EXIST	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
G	GAS LINE
GPM	GALLONS PER MINUTE
GV	GATE VALVE
INV	INVERT
IRR	IRRIGATION
MIN	MINIMUM
OC	ON CENTER
o/s	OFFSET
PAVT	PAVEMENT
PSI	POUNDS PER SQUARE INCH
S	SEWER
SB	SPLASH BLOCK
SHT	SHEET
STA	STATION
STD	STANDARD
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TS	TOP OF SIDEWALK
TYP	TYPICAL
W	WATER
W/	WITH
V	VAN

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2 APPROVED: M. Tom 6/5/2017
for DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING Date
CITY AND COUNTY OF HONOLULU
(FOR GRADING ONLY)

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CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-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.
APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions
1 REVISED SHEET NUMBERS AND ABBREVIATIONS
2 CITY COMMENTS

Sheet
TITLE SHEET, PROJECT LOCATION MAP, DRAWING INDEX AND ABBREVIATIONS

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

T-1

1 of 54

2017/CP-91

Fri, 26 May 2017 - 2:56pm
M:\Kalaeloa\2015320601 Pool\04 Graphics\CAD\Sheets\T-01 Titlesheet.dwg

GENERAL CIVIL NOTES:

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE.
2. NOTIFY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION ACTIVITY.
3. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
4. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
5. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE OWNER OR GOVERNMENT SHALL BE PAYABLE BY THE CONTRACTOR.
6. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON THE LATEST AVAILABLE DATA. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE EXISTING UTILITIES SHOWN AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA.
7. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. IF UTILITIES NOT SHOWN ARE ENCOUNTERED, OR IF POTENTIAL UTILITY CONFLICTS ARISE, NOTIFY THE ENGINEER IMMEDIATELY. THE CONTRACTOR SHALL PROVIDE STRUCTURAL SUPPORT FOR ALL EXISTING UTILITY LINES UNCOVERED IN THE TRENCHES.
8. PRIOR TO COMMENCING EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL COORDINATE, BE HELD RESPONSIBLE AND SHALL PAY FOR ALL DAMAGE TO EXISTING UTILITIES AND STRUCTURES. PERSONAL INJURY RESULTING FROM CONTACT WITH THE EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
9. UTILITIES SHALL REMAIN IN-SERVICE AND IN PLACE UNLESS NOTED OTHERWISE. INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION SHORING PLAN PREPARED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER COMPETENT IN STRUCTURAL ENGINEERING AND A LICENSED CIVIL ENGINEER COMPETENT IN GEOTECHNICAL ENGINEERING.
11. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS TO AND FROM ALL PARKING LOTS, SIDEWALKS, DRIVEWAYS, AND STREETS.
12. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC.
13. THE CONTRACTOR SHALL ENSURE THAT THE SEWER LINES AND DRAIN LINES ARE FREE OF DEBRIS OR OTHER OBSTRUCTIONS PRIOR TO MAKING ANY ON-LINE FLOW CONNECTION.
14. FINISHED GRADE INDICATED IS INCLUSIVE OF TOPSOIL.
15. HYDROSEED ALL CUT AND FILL SLOPES 3 HORIZONTAL TO 1 VERTICAL (AND GREATER) AS AN EROSION CONTROL MEASURE.
16. THE CONTRACTOR SHALL EXPOSE ALL UTILITY CROSSINGS TO VERIFY THE EXISTING UTILITY LOCATION, SIZE, ELEVATION, AND DIMENSIONS.
17. WHEN WORK ON EXISTING SEWER LINES AND MANHOLES IS REQUIRED, THE CONTRACTOR SHALL PROVIDE EQUIPMENT NECESSARY TO REDIRECT SEWAGE AROUND THESE SEWER LINES AND MANHOLES.
18. THE CONTRACTOR SHALL PLAN OPERATIONS TO MINIMIZE THE AMOUNT OF EXCAVATED TRENCHES LEFT WITHOUT BACKFILL AT THE END OF EACH WORK DAY WITH THE TOTAL LENGTH OF TRENCHES WITHOUT BACKFILL NOT TO EXCEED 300 FEET. TRENCHES WITHOUT BACKFILL SHALL BE COVERED BY NONSKID STEEL PLATES CAPABLE OF CARRYING H-20 VEHICLES IN TRAFFIC AREAS AND 100 LBS/SF IN NONTRAFFIC AREAS. PROVIDE ANCHORING OF THE PLATES IN NONTRAFFIC AREAS. PROVIDE FLASHING BARRICADES TO DELINEATE COVERED TRENCHES IN NONTRAFFIC AREAS AND ALL STOCK/SPOIL PILES.
19. IN PAVED AREAS, THE TOP OF MANHOLES SHALL MATCH THE FINISHED PAVEMENT GRADE.
20. ALL GRADING WORK SHALL CONFORM TO THE REQUIREMENTS OF THE "PRELIMINARY RECOMMENDATIONS FOR KALAELOA RENTAL HOMES MEMORANDUM, DATED MARCH 20, 2017, PREPARED BY GEOLABS, INC."

TRAFFIC NOTES:

1. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM TO THE "HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITE ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS."
2. DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
3. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
4. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.

EROSION/TEMPORARY DUST CONTROL NOTES

1. DRAINAGE SYSTEMS AS SHOWN ON THE CONSTRUCTION PLANS SHALL BE CONSTRUCTED AS EARLY AS PRACTICALLY POSSIBLE.
2. ALL FILL, SUBBASE AND BASE MATERIAL PLACED WITHIN THE ROAD PAVEMENT PRISM SHALL BE SUBSTANTIALLY COMPACTED BY THE END OF THE DAY.
3. THE CONTRACTOR SHALL CONDUCT HIS GRADING OPERATIONS SO THAT EXCAVATION, EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING HIS GRADING OPERATIONS AT ALL TIMES.
4. WATER TRUCK AND/OR TEMPORARY SPRINKLERS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES TO ENSURE BARE EARTH DOES NOT CREATE A DUST PROBLEM.
5. FUGITIVE DUST AND SOLID WASTE DISPOSAL DURING GRUBBING AND GRADING ACTIVITIES SHALL MEET REQUIREMENTS OF ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60, AIR POLLUTION CONTROL, AND CHAPTER 58, SOLID WASTE MANAGEMENT CONTROL.

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PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES

1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF THE PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR, AT HIS OWN EXPENSE SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE CITY MAY REQUIRE SUPPLEMENTARY MEASURES AS NECESSARY.
3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION ACTIVITY SO AS TO CAUSE FALLING ROCK, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
4. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.

EROSION CONTROL AND BEST MANAGEMENT PRACTICE (BMP) NOTES:

1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY DEMOLITION OR EARTH MOVING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
2. INSTALL PERIMETER PROTECTION (COMPOST FILTER SOCK) AS SHOWN ON THE EROSION CONTROL PLAN. PERIMETER PROTECTION MAY BE ADJUSTED TO FIT THE CONTRACTOR'S OPERATIONS.
3. CONSTRUCT TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/EXIT AT LOCATION SHOWN ON THE EROSION CONTROL PLAN. ALL VEHICLES EXITING THE SITE ARE TO BE SUFFICIENTLY CLEANED OFF SO THAT DIRT OR DEBRIS IS NOT TRACKED OFF THE CONSTRUCTION SITE. CONSTRUCTION ENTRANCE/EXIT MAY BE ADJUSTED TO FIT THE CONTRACTOR'S OPERATIONS.
4. LOCATE STOCKPILES, INCLUDING WASTE AND SOIL, AWAY FROM CONCENTRATED DRAINAGE FLOWS, DRAINAGE SWALES AND INLETS. INSTALL PERIMETER PROTECTION (SILT FENCE, FIBER ROLLS, COMPOST FILTER SOCK, OR SNAKE BAG), BERMS OR TRENCHES AROUND ERODIBLE MATERIAL STOCKPILES.
5. ALL EROSION CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY, FOR EXAMPLE, WEEKLY IN DRY PERIODS AND WITHIN 24-HOURS AFTER ANY RAINFALL OF 0.5 INCHES OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.
6. IF HEAVY RAINS ARE PREDICTED DURING A WORKDAY, ALL CONTROL MEASURES WILL BE INSPECTED IMMEDIATELY AND REINFORCED AS NECESSARY.
7. CONTRACTOR SHALL REMOVE SEDIMENT FILTERS DURING ABOVE-NORMAL RAINFALL EVENTS AND REPLACE FILTER AFTER THE EVENT HAS PASSED.
8. CLEARING, GRUBBING AND GRADING SHALL BE HELD TO THE MINIMUM NECESSARY. GRADING AND GRUBBING SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF THE CLEARED SURFACE AREA.
9. THE FINAL LIFT OF EACH DAY'S WORK SHALL BE COMPACTED TO PREVENT EROSION OF FILL MATERIAL.
10. DUST CONTROL WITH WATER SPRAY (BY TRUCK OR TEMPORARY SPRINKLERS) SHALL BE APPLIED AS NEEDED. DO NOT OVERWATER.
11. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE.
12. GOOD HOUSE KEEPING BEST MANAGEMENT PRACTICES:
    A. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.
    B. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER COVER OR IN AN ENCLOSURE.
    C. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
    D. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
    E. WHENEVER POSSIBLE, THE ENTIRE CONTAINER CONTENTS WILL BE USED UP PRIOR TO DISPOSAL OF THE CONTAINER.
    F. MANUFACTURER'S RECOMMENDATION FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
    G. ALL HAZARDOUS MATERIALS, FUEL, OIL AND CHEMICAL SPILLS SHALL BE STOPPED AND CLEANED UP WITH PROPER ABSORBENT MATERIALS. ABSORBENT MATERIAL SPILL KITS SHALL BE MAINTAINED ON-SITE.
    H. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
    I. CONCRETE TRUCK CHUTE WASH WATER WILL BE DISCHARGED TO A DESIGNATED AREA WHERE COMMINGLING WITH STORM WATER WILL BE PREVENTED BY LOCATING OUTSIDE OF DRAINAGEWAYS, CUT-OFF DITCH OR PERIMETER BERM. WATER SHALL NOT BE DISCHARGED INTO DRAINAGE SYSTEMS OR WATERS OF THE UNITED STATES. THE CONTRACTOR SHALL CLEAN THE DISPOSAL SITE AS REQUIRED.
14. SANITARY AND SEPTIC WASTES SHALL BE COLLECTED FROM ON-SITE FACILITIES ON A REGULAR BASIS BY A LICENSED HAULER. SANITARY AND SEPTIC FACILITIES SHALL NOT BE LOCATED IN OR NEAR WATERCOURSES.
15. VEHICLE AND EQUIPMENT MAINTENANCE AND FUELING SHALL BE DONE OFF-SITE (WHERE AT ALL POSSIBLE).
16. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE TRAINED ON THE BEST MANAGEMENT PRACTICES.
17. PERIMETER PROTECTION (COMPOST FILTER SOCK,) SHALL BE CLEARED OF SILT IMMEDIATELY FOLLOWING THE END OF ANY RAINFALL THAT CAUSES SILT BUILDUP OR WHEN DEPTH REACHES 1/3 OF PERIMETER PROTECTION HEIGHT.
18. STABILIZATION SHALL BE ACCOMPLISHED BY PROTECTING THE DISTURBED SOIL SURFACE FROM RAINFALL IMPACTS AND RUNOFF WITH PLANTING, PAVING ON CONCRETE. FOR STABILIZATION WITH PLANTING, IRRIGATION SHALL BE INSTALLED TO FACILITATE GROWTH. DO NOT OVERWATER.
19. FERTILIZER AND PESTICIDE APPLICATION SHALL NOT OCCUR IF HEAVY RAINS ARE ANTICIPATED DURING THE WORKDAY, OR DURING HEAVY RAINS.
20. EROSION CONTROL AND BMPS ARE THE MINIMUM REQUIREMENTS FOR THE PROJECT. CONTRACTOR MAY INSTALL AND IMPLEMENT NEW/BETTER PRODUCTS TO CONTROL AND PREVENT EROSION AND POLLUTANTS FROM THE SITE. CONTRACTOR CHANGES TO BMPS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL.
21. STOCKPILING OF MATERIALS WITHIN ROADWAY PAVEMENT IS NOT PERMITTED.
22. INSTALL INLET PROTECT AT NEW DRAIN INLETS AFTER CONSTRUCTED.

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GRADING NOTES

1. ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED.
2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".
4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6. ALL SLOPES AND EXPOSED AREAS SHALL BE STABILIZED USING SODDING, PLANTING, GRAVEL, GEOTEXTILE FABRICS, OR COMPOST BLANKETS AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
7. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
8. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P., PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL".
10. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
11. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR ALL GRADING OPERATIONS TO BE PERFORMED IN CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS;" AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

    THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

    I. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND

    II. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

    IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT http://health.hawaii.gov/cwb. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.
12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
13. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
14. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.
15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
17. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, D.P.P. (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
18. FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM. ALSO, FOR NON-CITY AND OTHER NON-GOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, D.P.P., AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.
19. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
20. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
21. FOR BENCHMARK SEE SHEET C-3.

1

2 1

APPROVED:
for [signature] 5/30/17
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
Date

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Kalaeloa, Oahu, Hawaii

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No. 4575-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.
APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1	ADDED GRADING NOTES, REVISED NOTES
2	CITY COMMENTS

Sheet

CONSTRUCTION NOTES

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-1

2 of 54

UTILITY NOTES:

1. CONSTRUCTION SHALL CONFORM TO THE NAVFAC HAWAII UTILITY STANDARD CONTAINED IN THE NAVAL FACILITIES ENGINEERING COMMAND, HAWAII PUBLIC WORKS UTILITIES CRITERIA FOR DESIGN AND CONSTRUCTION: ELECTRICAL, SEWER AND WATER.

2. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, APPURTENANCES AND STRUCTURES SHOWN ARE BASED ON THE TOPOGRAPHIC SURVEY INDICATED AND APPLICABLE UTILITY MAPS, VERIFIED WHENEVER POSSIBLE BY FIELD SURVEYS. THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE AND INVERTS OF ALL EXISTING UTILITIES (BY TONING & STAKING PRIOR TO EXCAVATION) AND SHALL PROTECT ALL SUCH UTILITIES AT ALL TIMES. EXISTING UTILITIES WHETHER SHOWN OR NOT, WHICH HAVE BEEN DAMAGED AS A RESULT OF THE CONSTRUCTION WORK, SHALL BE RESTORED IMMEDIATELY TO ITS ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.

3. WHENEVER NEW UTILITIES CONNECT TO OR CROSS EXISTING UTILITIES, THE CONTRACTOR SHALL CAREFULLY EXPOSE THE UTILITY BY HAND EXCAVATION TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATING TRENCHES FOR THE NEW UTILITY LINES.

4. THE CONTRACTOR SHALL SCHEDULE HIS WORK TO MINIMIZE UTILITY OUTAGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING 30 DAYS PRIOR TO ANY OUTAGES. THE CONTRACTOR SHALL ALSO COORDINATE ALL UTILITY OUTAGES WITH NAVFAC AND NATIONAL PARK SERVICE (NPS), AND GIVE NAVFAC AND NPS ADEQUATE ADVANCE NOTICE PRIOR TO ALL OUTAGES. THE CONTRACTOR SHALL COORDINATE WATER OUTAGES WITH THE FIRE DEPARTMENT.

5. UTILITY PROFILES SHALL BE USED TO DETERMINE WATER AND SEWER LINE ELEVATIONS. ANY EXISTING UTILITY LINES OR LINES NOT SHOWN ON THE UTILITY PROFILES THAT PROHIBITS THE INSTALLATION OF THESE LINES AS INDICATED SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER FOR RESOLUTION. ALL NEW ELECTRICAL/COMMUNICATION LINES/MECHANICAL LINES SHALL BE ADJUSTED ABOVE OR BELOW THE NEW WATER/SEWER LINE PROFILE PROVIDED ALL REQUIREMENTS SHOWN ON TRENCH RESTORATION DETAILS AND ALL ELECTRICAL, COMMUNICATION AND MECHANICAL UTILITY REQUIREMENTS ARE MET AND SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER OR GOVERNMENT.

6. ALL PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE DONE BY CAREFULLY CHIPPING & REMOVING SUFFICIENT AREA FOR PIPE CONNECTION. BEND REBARS MIN 2 INCHES AWAY FROM PIPE CONNECTION. GROUT WITH 3650 PSI MORTAR. PROVIDE SMOOTH FINISH.

7. THE CONTRACTOR SHALL SAWCUT & REMOVE EXISTING UTILITY LINES AS INDICATED ON DEMOLITION PLANS. CONTRACTOR SHALL ENSURE ALL LINES TO REMAIN (THOSE NOT INDICATED TO BE REMOVED) SHALL BE CAPPED OR PLUGGED TO ENSURE CONTINUATION OF SERVICE. REMOVED SEWER LINES CONNECTED TO EXISTING SEWER MANHOLES SHALL BE PLUGGED AT THE SMH AFTER SEWER LINE IS REMOVED. ALL ABANDONED UTILITIES SHALL BE REMOVED.

WATER NOTES (NAVY)

1. THE NAVFAC HAWAII WATER UTILITIES BRANCH (CODE OPC61, PHONE NO. 473-0037) SHALL BE INFORMED 60 DAYS IN ADVANCE OF ANY WORK ON THE NAVY'S WATER LINE.

2. THE CONTRACTOR SHALL NOTIFY THE NAVFAC HAWAII WATER UTILITIES BRANCH IN WRITING ANY REQUEST FOR WATER OUTAGE AT LEAST 30 CALENDAR DAYS PRIOR TO THE PLANNED OUTAGE. SUCH REQUEST SHALL BE SUBJECT TO THE APPROVAL OF THE NAVY. THE CONTRACTOR SHALL ALSO NOTIFY THE NAVFAC HAWAII WATER UTILITIES BRANCH (CODE 652, PHONE 473-0037) 3 DAYS IN ADVANCE OF CONNECTIONS INTO THE EXISTING WATER SYSTEM AND PRIOR TO PERFORMING ANY TESTS ON THE NEW NAVY LINE.

3. WATER OUTAGES SHALL BE LIMITED TO A 1-DAY DURATION. CONTRACTOR SHALL ENSURE ADEQUATE THRUST RESTRAINT AT FITTINGS THROUGH USE OF STRUCTURAL STRUTS, SATISFACTORILY CURED CONCRETE THRUST BLOCKS, OR OTHER MEANS PRIOR TO RESUMING SERVICE. CONTRACTOR SHALL HAVE ALL MATERIALS ON HAND FOR THE CONNECTION PRIOR TO THE OUTAGE PERIOD.

4. OUTAGES ON AND TAPS TO THE EXISTING NAVY LINE WILL NOT BE GRANTED UNTIL THE NEW LINE HAS BEEN CONSTRUCTED, TESTED, AND DISINFECTED, WITH LETTER REQUEST FOR SHUT-DOWN PROVIDED IN ADVANCE TO NAVFAC HAWAII WATER UTILITIES BRANCH (CODE PW652, PHONE NO. 473-0037). BOTH DISINFECTION AND HYDROTEST RESULTS SHALL BE SUBMITTED TO NAVFAC HAWAII WATER UTILITIES AT LEAST 24 HOURS IN ADVANCE OF THE TAP OR TIE-IN TO THE EXISTING NAVY WATER SYSTEM.

5. OUTAGES AND TAPS ON THE EXISTING NAVY WATER SYSTEM WILL BE DONE ONLY BY NAVY PW652 PERSONNEL. THE WORK WILL BE DONE ON A COST REIMBURSABLE BASIS. THE GENERAL CONTRACTOR WILL SET UP AN ACCOUNT WITH THE NAVFAC HI COMPTROLLER'S OFFICE (PHONE 471-1587).

6. THE CONTRACTOR SHALL TONE TO DETERMINE THE EXACT LOCATION OF THE NAVY LINE PRIOR TO PERFORMING EXCAVATION WORK IN THE AREA.

7. ALL NAVY VALVE BOX FRAMES AND COVERS SHALL BE PAINTED YELLOW.

8. PROVIDE VALVE ID TAG SIMILAR TO BWS DETAILS V17 FOR ALL VALVES INSTALLED.

9. THE CONTRACTOR SHALL MEASURE THE OUTSIDE DIAMETER OF THE EXISTING NAVY LINE AT BOTH CONNECTION POINTS BEFORE ORDERING THE CONNECTION PIECES.

10. ALL GATE VALVES SHALL CONFORM TO AWWA C-509 AND BE EPOXY COATED ON THE INTERIOR AND EXTERIOR. INTERIOR COATING SHALL BE SUITABLE FOR POTABLE WATER USAGE.

11. TEST PRESSURE SHALL BE 200 PSI FOR 2 HOUR DURATION.

12. CHLORINATION SHALL BE BY THE CONTINUOUS FEED METHOD, PER AWAA C651, AS AMENDED.

13. RECORD DRAWINGS OF WATER LINE SHALL BE PROVIDED TO NAVFAC HAWAII; ONE COPY TO CODE CI41 (PHONE NO. 474-2253), AND ONE (1) COPY TO CODE PW652 (PHONE NO. 473-0037).

14. DISINFECTION OF WATER LINES, INCLUDING FLUSHING AND BACTERIOLOGICAL TESTING, SHALL BE IN ACCORDANCE WITH AWWA C651 (LATEST EDITION) EXCEPT AS OTHERWISE INDICATED BELOW.

A. ALL CONNECTIONS TO EXISTING WATER LINES SHALL BE DONE IN THE "DRY". WHEN THE EXISTING WATER LINE HAS TO BE DEWATERED, THE CONTRACTOR SHALL ACCOMPLISH THE DEWATERING OF THE LINE IN A MANNER SUCH THAT THE CONNECTION TO THE EXISTING SYSTEM CAN BE DONE IN THE "DRY". THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN FOR APPROVAL.

B. FOR NEW PIPE SECTIONS, CHLORINE SHALL BE APPLIED BY THE CONTINUOUS FEED METHOD UNLESS PRIOR APPROVAL HAS BEEN OBTAINED TO USE A DIFFERENT METHOD.

1) CALCIUM HYPOCHLORITE GRANULES SHALL BE PLACED IN NEW PIPE SECTIONS (EXCEPT SOLVENT-WELDED PLASTIC AND SCREWED JOINT STEEL PIPE) DURING CONSTRUCTION AS SPECIFIED IN AWWA C651.

2) WHEN THE LINE IS CHLORINATED, WATER ENTERING THE LINE SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 50 MG/l OF FREE CHLORINE.

3) AT THE END OF A 24-HOUR PERIOD THE TREATED WATER SHALL HAVE A RESIDUAL OF NOT LESS THAN 25 MG/l FREE CHLORINE.

4) DURING THE CHLORINATION PERIOD ALL VALVES AND HYDRANTS IN THE SECTION BEING TREATED SHALL BE OPERATED A SUFFICIENT NUMBER OF TIMES TO THOROUGHLY DISINFECT THE APPURTENANCES.

C. DISINFECTION PROCEDURES FOR REPAIRS/CONNECTION WORK SHALL BE AS INDICATED IN AWWA C651 UNDER THE PARAGRAPH TITLED "DISINFECTION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS" EXCEPT THAT 5% HYPOCHLORITE SOLUTION SHALL BE USED.

D. ALL TAPPING SLEEVES SHALL BE DISINFECTED AS FOLLOWS:

1) THOROUGHLY CLEAN THE EXTERIOR SURFACE OF THE MAIN TO BE TAPPED, THE SURFACES OF THE TAPPING SLEEVE AND THE SURFACE OF THE TAPPING EQUIPMENT THAT WILL COME INTO CONTACT WITH THE WATER.

2) THROUGHLY SWAB THE MAIN, THE TAPPING SLEEVE AND THE TAPPING EQUIPMENT WITH A 5% SODIUM HYPOCHLORITE SOLUTION.

3) ANY SURFACE THAT BECOMES CONTAMINATED AFTER BEING DISINFECTED, SHALL BE RECLEANED AND RESWABBED AS INDICATED ABOVE.

E. AFTER FINAL FLUSHING AND PRIOR TO PLACING NEW LINES IN SERVICE, BACTERIOLOGICAL TESTS SHALL BE PERFORMED AS INDICATED IN AWWA C651 AND AS FOLLOWS:

1) STANDARD CONDITIONS: AT LEAST ONE SAMPLE SHALL BE COLLECTED FROM THE END OF EACH NEW MAIN AND ONE FROM THE END OF EACH NEW BRANCH LINE. IN ADDITION, ONE ADDITIONAL SAMPLE SHALL BE COLLECTED FOR EACH 4,000 FEET OF MAIN OR BRANCH LINE. FOR EXAMPLE: FOR A 9,000 FEET MAIN, 3 SAMPLES ARE REQUIRED (I.E. 2 ADDITIONAL SAMPLES AND ONE SAMPLE AT THE END). THE LOCATION OF THE ADDITIONAL SAMPLES SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE NAVY INSPECTOR (CODE PW352, PHONE NO. 473-0037).

2) SPECIAL CONDITIONS: IF DURING CONSTRUCTION, TRENCH WATER HAS ENTERED THE LINE OR IF IN THE OPINION OF THE NAVY INSPECTOR EXCESSIVE QUANTITIES OF DIRT OR DEBRIS HAVE ENTERED THE LINE, SAMPLES SHALL BE TAKEN AT INTERVAL OF APPROXIMATELY 200 FEET AND SHALL BE IDENTIFIED BY LOCATION.

F. DISINFECTION OF MAINS AND BRANCH LINES SHALL BE REPEATED UNTIL SAMPLES SHOW THE ABSENCE OF COLIFORM ORGANISMS.

G. FINAL BACTERIOLOGICAL TEST RESULTS, THAT SHOW THE ABSENCE OF COLIFORM ORGANISMS, SHALL BE PROVIDED TO THE PWC UTILITIES DEPARTMENT REPRESENTATIVE AT THE FINAL INSPECTION OF THE PROJECT OR PRIOR TO PLACING THE LINE IN SERVICE WHICHEVER OCCURS FIRST. THE LOCATION WHERE THE BACTERIOLOGICAL SAMPLES WERE TAKEN SHALL BE IDENTIFIED.

SEWER NOTES

1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI AND HAWAII, CURRENT CITY PRACTICES, THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND THE DESIGN STANDARDS OF THE DEPARTMENT OF WASTEWATER MANAGEMENT, VOL. 1, JULY 1993.

2. THE NAVFAC HAWAII WASTEWATER BRANCH (CODE PW64, PHONE NO. 473-0037) SHALL BE INFORMED 60 DAYS IN ADVANCE OF ANY WORK ON THE NAVY'S SEWER LINE.

3. IN THE EVENT THAT ANY CHANGE IN ALIGNMENT OR GRADE FOR THE PROPOSED SEWERS IS REQUIRED DUE TO UNFORESEEN CONFLICT WITH OTHER UTILITIES, THE ENGINEER IN CHARGE OR THE MAKER OF THE PLANS SHALL BE RESPONSIBLE FOR THE REQUIRED CHANGES.

4. CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.

5. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES, AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.

6. SEWER LATERAL LOCATION MEASURED ALONG THE FRONT PROPERTY LINE SHALL BE SIX (6) FEET FROM THE PROPERTY CORNER UNLESS OTHERWISE NOTED ON THE PLANS AND SHOULD NOT STRADDLE ELECTRICAL TRANSFORMER PAD.

7. MINIMUM SLOPE FOR SEWER LATERALS SHALL BE 1.00% UNLESS OTHERWISE NOTED.

8. BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DIVERTING SEWAGE IF NECESSARY, INCLUDING THE PROVISION OF ALL LABOR, TANK TRUCKS, PUMPS, TEMPORARY PIPING, HOSES AND ANY OTHER ITEMS REQUIRED FOR PROVIDING UNINTERRUPTED SERVICE.

10. UPON COMPLETION OF THE SEWER CONSTRUCTION, MAKE ADVANCE ARRANGEMENTS (3 WORKING DAYS MINIMUM), WITH NAVFAC HAWAII PW64 FOR FINAL ACCEPTANCE INSPECTION OF THE NEW SEWER CONSTRUCTION.

11. UPON COMPLETION OF THE CONSTRUCTION, NAVFAC HAWAII PW64 WILL REQUIRE SEWER SYSTEM AS-BUILT DRAWINGS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.

13. ALL SEWER PIPE JOINTS WITHIN EASEMENTS SHALL BE WRAPPED WITH GEOTEXTILE ROOT BARRIER.

14. GEOTEXTILE FABRIC TO ENVELOP THE PIPE CRADLE AND SELECT BACKFILL MATERIAL SHALL BE PROVIDED WHERE WATER OR UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED.

15. POTENTIALLY LETHAL LEVELS OF HYDROGEN SULFIDE (H2S) GAS MAY DEVELOP IN THE GRAVITY SEWER COLLECTION SYSTEM.

16. ALL SEWER LINES SHALL BE PLACED ON A UNIFORM STRAIGHT GRADE. ALL SEWER PIPES SHALL BE PROVIDED WITH METALLIC-BACKED WARNING TAPE OR NON-METALLIC-BACKED WARNING TAPE WITH TRACER WIRE.

17. CONSTRUCTION DEWATERING INTO THE NAVY'S SEWER COLLECTION SYSTEM IS PROHIBITED.

18. ANY SEWER MANHOLE TO BE ABONDONED SHALL HAVE ITS CONE SECTION REMOVED AND DISPOSED OF, PIPE PENETRATIONS PLUGGED WITH CLASS "C" CONCRETE AND THE REMAINING RISER STRUCTURE BACKFILLED AND COMPACTED TO FINISH GRADE.

19. CLEANOUTS ON ANY ABANDONED SERVICE LATERAL SHALL BE PLUGGED AND TERMINATED A MINIMUM OF 12 INCHES BELOW FINISH GRADE.

20. PRIOR TO ABANDONMENT, PIPE SHALL BE FILLED WITH FLOWABLE FILL AS NOTED.

21. ADJUST ALL MANHOLE FRAMES AND COVERS TO THE NEW FINISH GRADE.

22. THE CONTRACTOR SHALL ENSURE THAT LOOSE MATERIAL, TOOLS AND EQUIPMENT FROM CONSTRUCTION OPERATIONS ARE APPROPRIATELY REMOVED FROM THE SEWER COLLECTION SYSTEM. ANY DAMAGE TO DOWNSTREAM LIFT STATION EQUIPMENT RESULTING FROM NEGLIGENCE WILL BE ASSESSED TO THE CONTRACTOR.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1	ADDED SHEET, MOVED NOTES

Sheet

CONSTRUCTION NOTES - 1a

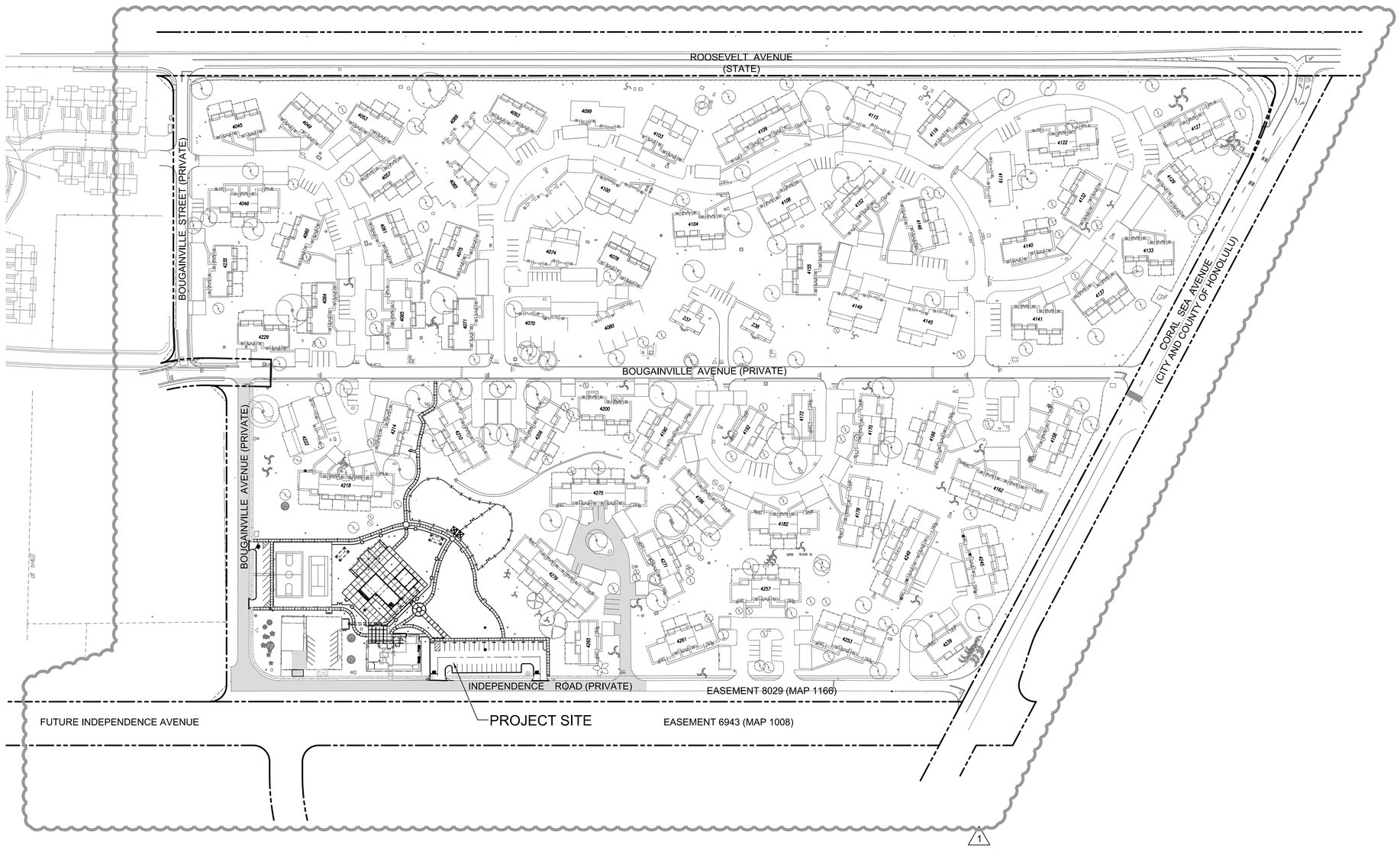
Project No.
2015.33.0601

Designed by:
CKK

Drawn by:
BHK

Date:
MAY 2017

C-1a 1



NORTH

GENERAL SITE PLAN

SCALE:1"=100'

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1	ADDED EASEMENT AND PROPERTY LINES

Sheet

GENERAL SITE PLAN

Project No.
2015.33.0601

Designed by:
CKK

Drawn by:
BHK

Date:
MAY 2017

C-2

NOTES:

1. CONSTRUCTION FENCE SHALL BE 6' HIGH CHAIN LINK FENCE W/GEOTEXTILE FABRIC.
2. FOR EROSION CONTROL AND BMP, ENVIRONMENTAL CONTROL, AND EROSION/DUST CONTROL NOTES, SEE SHEET C-1
3. FOR TEMPORARY BMP DETAILS, SEE SHEET C-11.
4. FOLLOW MUTCD GUIDELINES FOR ALL CONSTRUCTION SIGNAGE.

LEGEND

- COMPOST FILTER SOCK
- LIMITS OF DISTURBED AREA/PROJECT LIMITS/GRADING LIMITS
- LIMITS OF AREA TO REMAIN
- COMPOST FILTER SOCK
- CONSTRUCTION FENCE
- TEMPORARY CONSTRUCTION INGRESS/EGRESS
- TEMPORARY TIRE WASH AREA
- DRAINAGE FLOW ARROW
- TEMPORARY TIRE WASH BERM
- AREA TO BE SELECTIVELY DEMOLISHED

MATCH LINE - SEE INSET THIS SHEET

INSTALL DRAIN INLET PROTECTION

COMPOST FILTER SOCK

CONSTRUCTION FENCE 6' HIGH CHAIN LINK FENCE W/ GEOTEXTILE FABRIC

EXISTING LAWN TO REMAIN

COMPOST FILTER SOCK

CONSTRUCTION FENCE

REMOVE EXIST TREE

REMOVE EXIST SIDEWALK

EXISTING COURTS TO REMAIN

DEMOLISH AND REMOVE EXIST CONC BENCH

REMOVE EXIST SIDEWALK

REMOVE AND RELOCATE EXISTING WATER FOUNTAIN

RELOCATE EXIST TREES

REMOVE EXIST DUGOUT

REMOVE EXIST CHAIN LINK FENCE AND SIGNS

REMOVE EXIST CONC PAD

INSTALL DRAIN INLET PROTECTION

COMPOST FILTER SOCK

EXISTING MAINTENANCE YARD, BUILDINGS, AND FENCES TO REMAIN

SELECTIVE REMOVAL OF EXIST SHRUB/GROUND COVER SEE LANDSCAPE PLANS

INSTALL DRAIN INLET PROTECTION

CONSTRUCTION FENCE

RELOCATE EXIST TREE

REMOVE EXIST PLANTING, GRAVEL

REMOVE EXIST RCP

REMOVE EXIST CONC WALKWAY, STEPS AND STOOPS

REMOVE SIGN BOARD AND CONC PAD

REMOVE AND SALVAGE EXIST WHEEL STOPS

RELOCATE EXIST TREE

INSTALL DRAIN INLET PROTECTION

TEMPORARY TIRE WASH BERM

TIRE WASH AREA

CONSTRUCTION FENCE

EXISTING BUILDING TO REMAIN

REMOVE EXIST AC PAVEMENT

REMOVE EXIST STRIPING

REMOVE EXIST AC CURB

RELOCATE EXIST TREES

RELOCATE EXIST TREE

SAWCUT

TEMPORARY CONSTRUCTION INGRESS/EGRESS

GATE

MAINTAIN EXIST PARKING AS LONG AS POSSIBLE

REMOVE EXIST SIDEWALK

REMOVE EXIST AC PAVEMENT

REMOVE EXIST GRAVEL

REMOVE EXIST CONC

REMOVE EXIST CONC WALKWAY

LIMIT OF GRADING/PROJECT LIMITS/LIMITS OF DISTURBANCE

LIMIT OF GRADING/PROJECT LIMITS/LIMITS OF DISTURBANCE

MATCH LINE

INSET
SCALE:1"=20'

BENCHMARK:
"Y" CUT
ELEV.=53.55

PROPERTY LINE

BOUGAINVILLE AVENUE (PRIVATE DRIVEWAY)

INDEPENDENCE ROAD (PRIVATE DRIVEWAY)

Dog Park

4218

4214

4279

Warehouse

Community Center

NORTH

DEMOLITION AND EROSION CONTROL PLAN
SCALE:1"=20'

APPROVED:
for CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
5/30/17
Date

Fri., 26 May 2017 - 2:57pm
W:\Kolaleloa\2015330601 Proj\04 Graphics\CAD\Sheets\C-03-Demo-Erosion Control.dwg

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

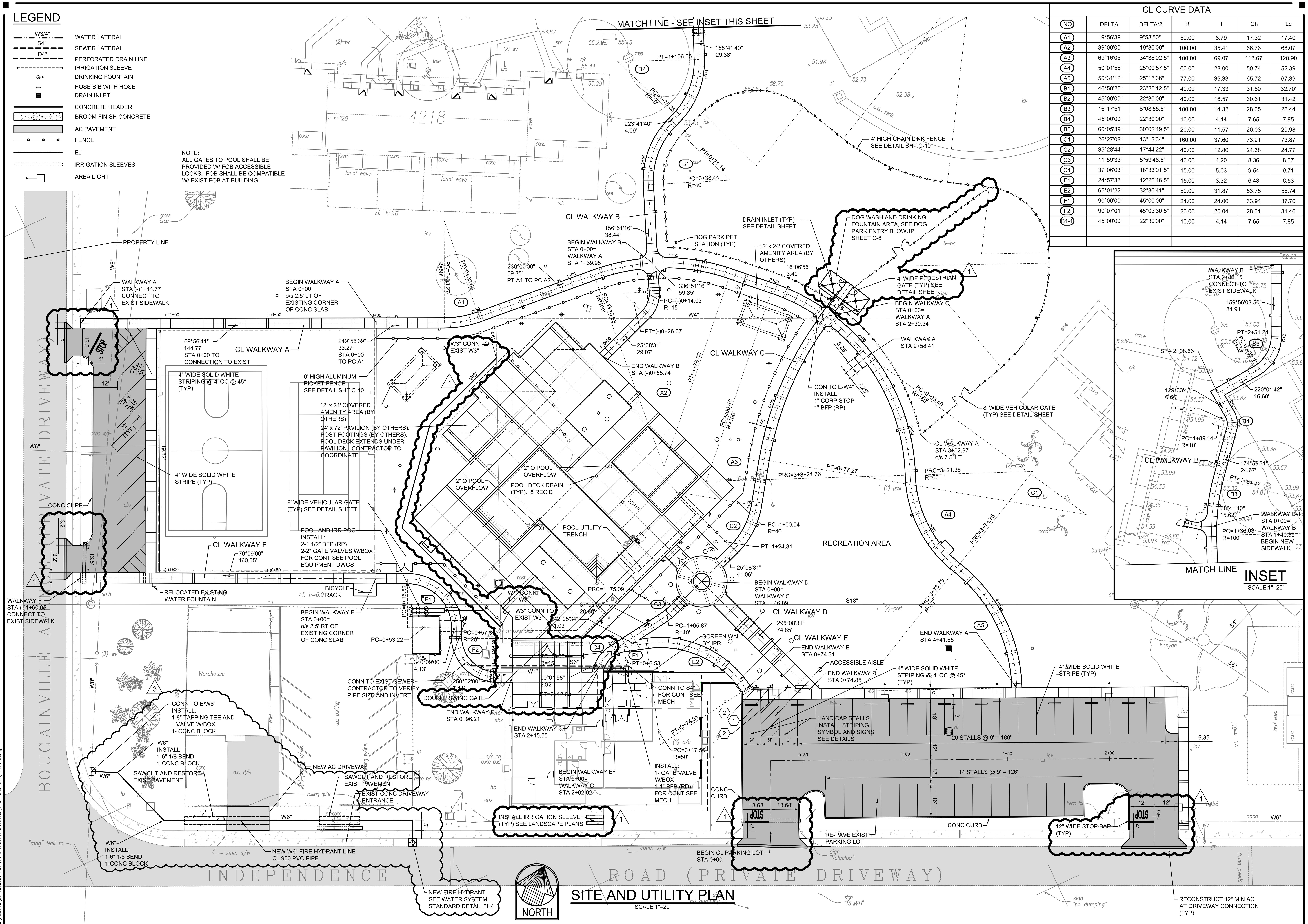
1	REVISED CONSTRUCTION FENCE AND ENTRANCE
2	CITY COMMENTS

Sheet

DEMOLITION AND EROSION CONTROL PLAN

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-3



CL CURVE DATA

NO	DELTA	DELTA/2	R	T	Ch	Lc
A1	19°56'39"	9°58'50"	50.00	8.79	17.32	17.40
A2	39°00'00"	19°30'00"	100.00	35.41	66.76	68.07
A3	69°16'05"	34°38'02.5"	100.00	69.07	113.67	120.90
A4	50°01'55"	25°00'57.5"	60.00	28.00	50.74	52.39
A5	50°31'12"	25°15'36"	77.00	36.33	65.72	67.89
B1	46°50'25"	23°25'12.5"	40.00	17.33	31.80	32.70'
B2	45°00'00"	22°30'00"	40.00	16.57	30.61	31.42
B3	16°17'51"	8°08'55.5"	100.00	14.32	28.35	28.44
B4	45°00'00"	22°30'00"	10.00	4.14	7.65	7.85
B5	60°05'39"	30°02'49.5"	20.00	11.57	20.03	20.98
C1	26°27'08"	13°13'34"	160.00	37.60	73.21	73.87
C2	35°28'44"	17°44'22"	40.00	12.80	24.38	24.77
C3	11°59'33"	5°59'46.5"	40.00	4.20	8.36	8.37
C4	37°06'03"	18°33'01.5"	15.00	5.03	9.54	9.71
E1	24°57'33"	12°28'46.5"	15.00	3.32	6.48	6.53
E2	65°01'22"	32°30'41"	50.00	31.87	53.75	56.74
F1	90°00'00"	45°00'00"	24.00	24.00	33.94	37.70
F2	90°07'01"	45°03'30.5"	20.00	20.04	28.31	31.46
B1-1	45°00'00"	22°30'00"	10.00	4.14	7.65	7.85

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Kalaeloa Partners

Site Amenities Improvements

Kalaeloa Rental Homes Site
Kalaeloa, Oahu, Hawaii

CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No.4575-C
HAWAII, U.S.A.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

Rev.	Description
1	REVISED DOG PARK, WATERLINE, AND CONNECTION TO EXISTING ROADS

Sheet

SITE AND UTILITY PLAN

Project No.
2015.33.0601

Designed by:
CKK

Drawn by:
BHK

Date:
MAY 2017

C-4

NOTES:

1. WATER SERVICE LATERALS SHALL BE COPPER TUBING PER BWS WATER SYSTEM STANDARDS SECTION 208.
2. FOR ALL CONNECTIONS TO EXISTING WATER LINES, LOCATE THE GATE VALVE AS CLOSE TO THE POINT OF CONNECTION AS POSSIBLE.
3. PROVIDE 5' DIAMETER BY 5' DEEP TREE PITS FOR ALL NEW AND RELOCATED TREES AND PALMS. SEE LANDSCAPE PLANTING PLANS FOR LOCATIONS.

SUMMARY OF EARTHWORK CALCULATIONS

(FOR PERMITTING PURPOSES ONLY)
ESTIMATED EXCAVATION: 1,540 CY
ESTIMATED EMBANKMENT: 144 CY
AREA TO BE GRADED: 3.00 AC
AREA TO BE DISTURBED: 3.00 AC
AREA OF PROJECT: 3.79 AC

MATCH LINE - SEE INSET THIS SHEET

LEGEND
- DRAIN INLET
- DOWN SPOUT
- BIO SWALE
- S6" SEWER LINE
- W2-1/2" WATER LINE
- D8" DRAIN LINE
- ELECTRICAL LINE
- TEL/CATV LINE
- SWALE LINE
- CHAIN LINK FENCE
- PROJECT LIMITS/LIMITS OF DISTURBANCE/GRADING LIMITS
- IRRIGATION SLEEVES
- PICKET FENCE
- INTERIOR LIMIT OF GRADING & DISTURBANCE
- NEW AC
- CONCRETE SCORE LINE
- 54.40 FINISHED GRADE CONTOUR
- 54 EXISTING GRADE CONTOUR
- 52.56 EXISTING GRADE SPOT ELEVATION

CONN TO EXIST DRYWELL

PROJECT LIMITS/ GRADING LIMITS/ LIMITS OF DISTURBANCE

EXIST LAWN TO REMAIN

INTERIOR LIMITS OF GRADING & DISTURBANCE

SEE TYPICAL SWALE SECTION SHT C-8

CONNECT TO EXIST SIDEWALK

PROVIDE SMOOTH RIDING CONNECTION TO EXIST PAVEMENT

EXISTING COURTS TO REMAIN

SIDEWALK CULVERT TOP=54.60 INV=54.10

EXISTING MAINTENANCE YARD, BUILDINGS, AND FENCES TO REMAIN

INSTALL DMH COVER OVER EXISTING DRYWELL

DRYWELL COVER OVER EXIST DRY WELL TOP=51.30

DECK DRAIN TOP=53.80 (TYP)

CONN TO POOL OVERFLOW

COTG

CONNECT TO EXIST SIDEWALK

PROVIDE SMOOTH RIDING CONNECTION TO EXIST PAVEMENT

EXIST DRYWELL TOP=52.75

PROPERTY LINE

BOUGAINVILLE AVENUE (PRIVATE DRIVEWAY)

INDEPENDENCE ROAD (PRIVATE DRIVEWAY)

NORTH

GRADING AND DRAINAGE PLAN

SCALE:1"=20'

MATCH LINE
INSET
SCALE:1"=20'

APPROVED:
Melvin Takahara 5/30/17
FOR CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
Date

2

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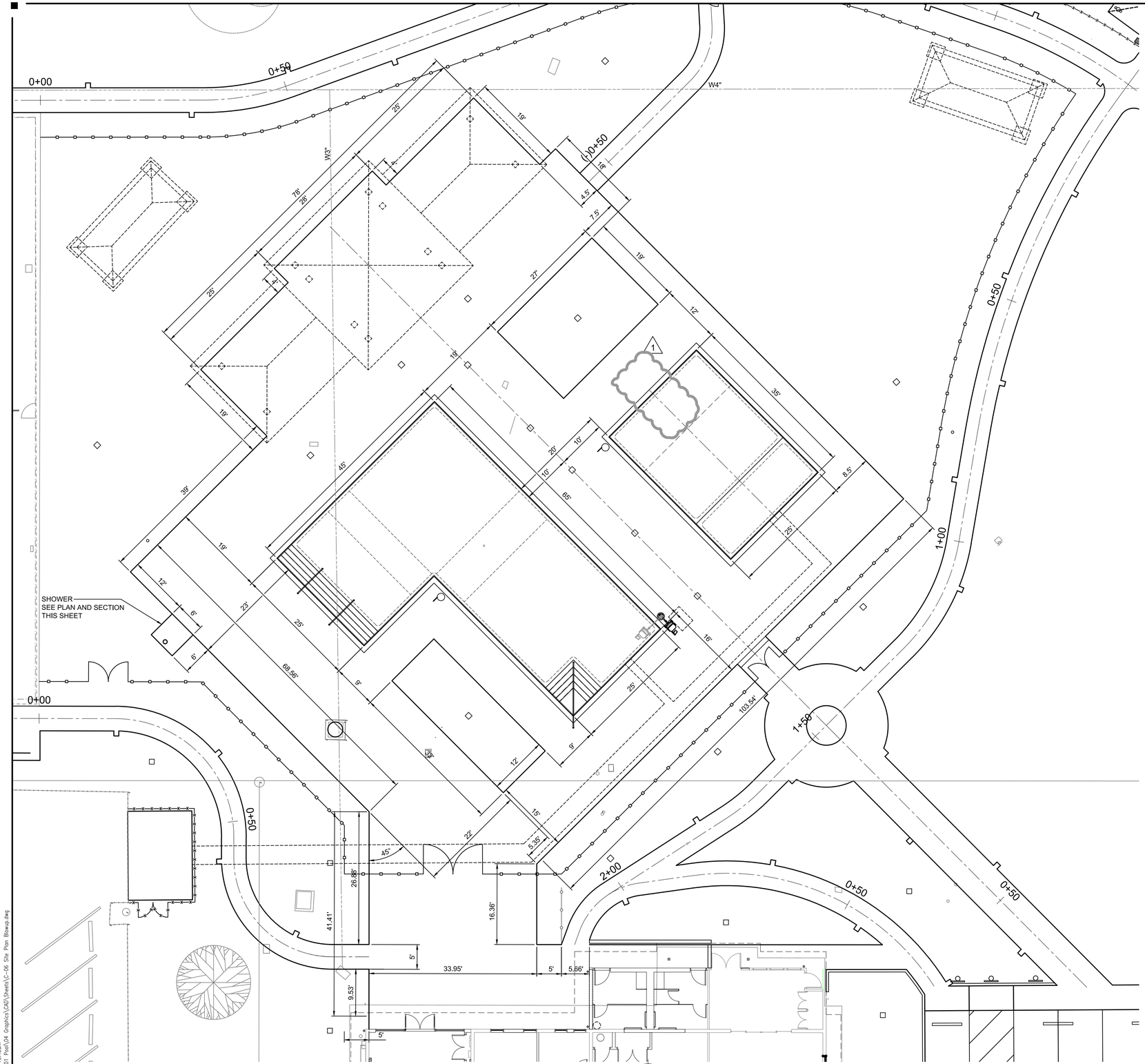
APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions
1 ADDED NOTES, DS CONNECTIONS, REVISED GRADING LIMITS
2 CITY COMMENTS

Sheet
GRADING AND DRAINAGE PLAN

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-5



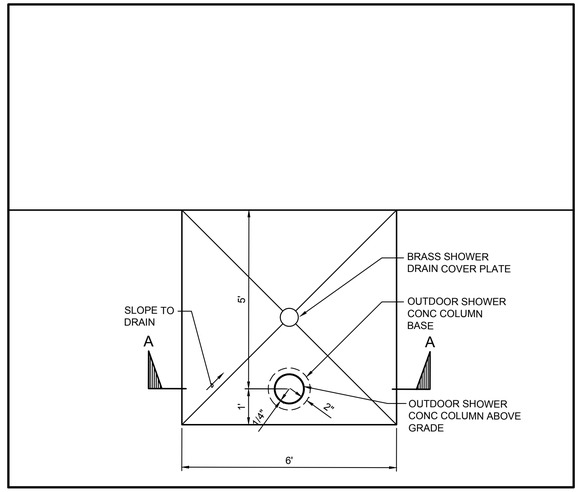
POOL DECK ENLARGEMENT

SCALE:1"=10'

NORTH

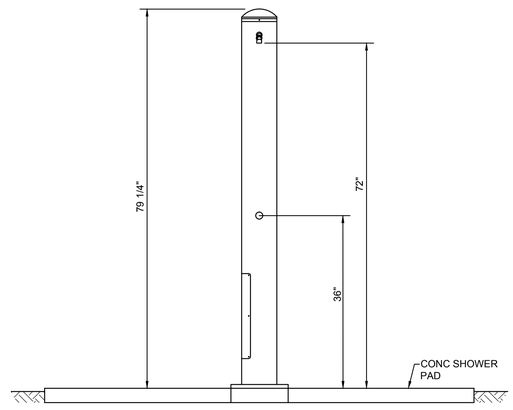
LEGEND

- W3/4" — WATER LATERAL
- S4" — SEWER LATERAL
- D4" — PERFORATED DRAIN LINE
- IRRIGATION SLEEVE
- DRINKING FOUNTAIN
- HOSE BIB WITH HOSE
- DRAIN INLET
- CONCRETE HEADER
- BROOM FINISH CONCRETE
- AC PAVEMENT
- FENCE
- EJ
- IRRIGATION SLEEVES
- AREA LIGHT



SHOWER PLAN

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



SECTION "A-A"

NOT TO SCALE

SHOWER TOWER NOTES:

1. SHOWER SHALL HAVE ONE SHOWER HEAD.
2. SHOWER SHALL BE 316 SS BODY.
3. SHOWER SHALL BE MANUFACTURED BY WILLOUGHBY INDUSTRIES OR APPROVED EQUAL.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 REMOVED CHILD SLIDE

Sheet

POOL DECK ENLARGEMENT

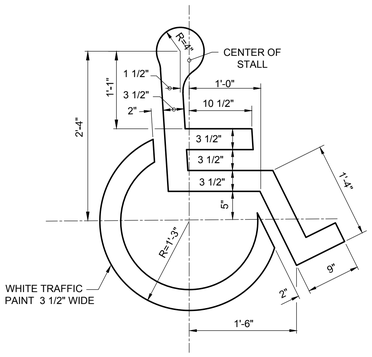
Project No.
2015.33.0601

Designed by:
CKK

Drawn by:
BHK

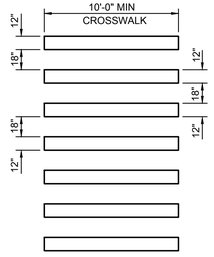
Date:
MAY 2017

C-6



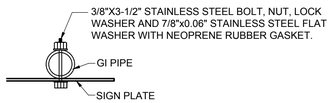
HANDICAP PARKING STALL LOGO DETAIL

SCALE: 1"=1'-0"



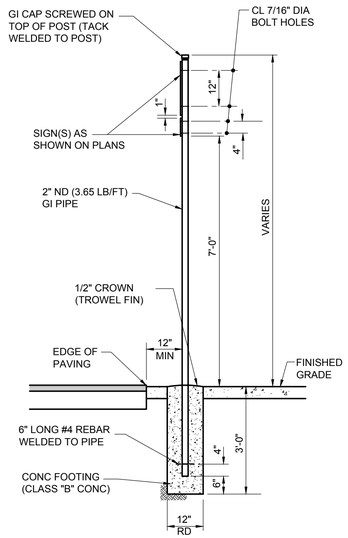
CROSSWALK DETAIL

NOT TO SCALE



TYPICAL MOUNTING DETAIL

NOT TO SCALE



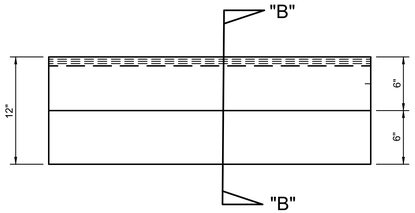
SIGNS AND POST DETAIL

NOT TO SCALE

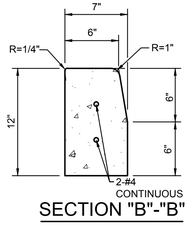
PARKING SIGN SCHEDULE

1	NEW HANDICAP ACCESS AISLE SIGNS AND POST NO PARKING / ACCESS AISLE — ACCESSIBLE AISLE 12"x18" R7-201a-E 12"x6"
2	NEW HANDICAP SIGNS AND POST RESERVED PARKING / PLACARD OR SPECIAL LICENSE PLATE REQUIRED MAXIMUM FINE $500 — R7-8a 12"x18" VAN ACCESSIBLE — R7-8p-E 12"x6" R7-201a 12"x6" NOTE: CENTER POST WITH STALL
3	NEW HANDICAP SIGNS AND POST RESERVED PARKING / PLACARD OR SPECIAL LICENSE PLATE REQUIRED MAXIMUM FINE $500 — R7-8a 12"x18" R7-201a 12"x6" NOTE: CENTER POST WITH STALL

NOTE: SEE SIGNS AND POST DETAIL THIS SHEET



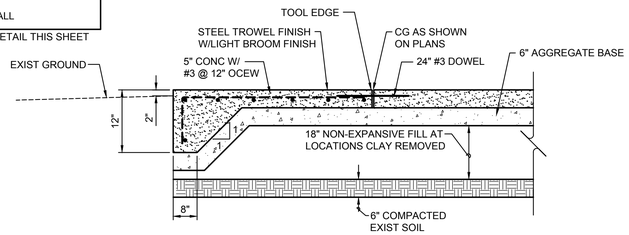
ELEVATION



SECTION "B"-"B"

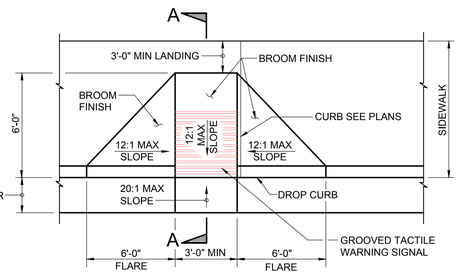
CONCRETE CURB DETAIL

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

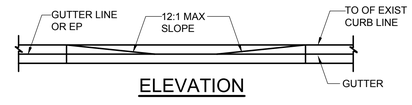


WALKWAY DETAIL

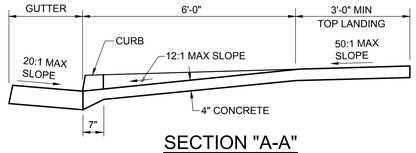
NOT TO SCALE



PLAN



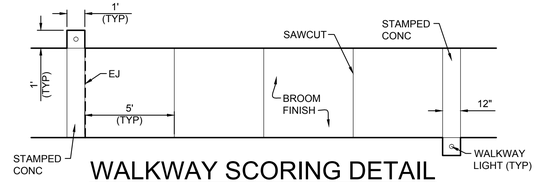
ELEVATION



SECTION "A-A"

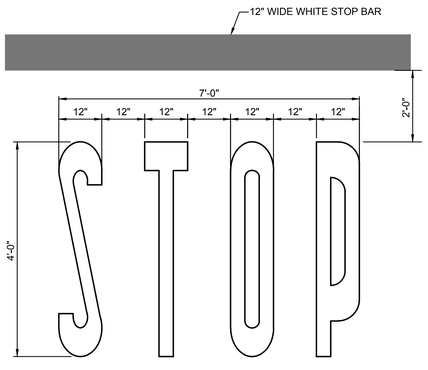
CURB RAMP

NOT TO SCALE



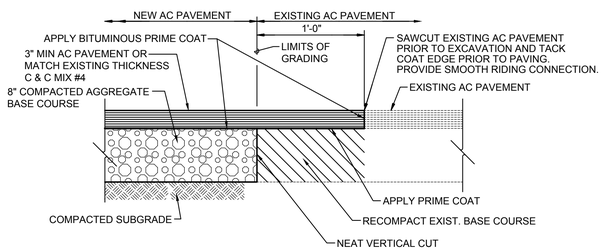
WALKWAY SCORING DETAIL

NOT TO SCALE



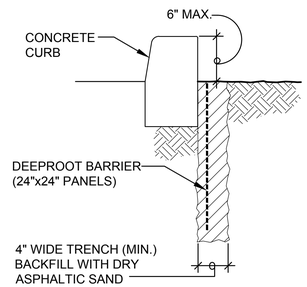
"STOP" PAVEMENT MARKING DETAIL

NOT TO SCALE



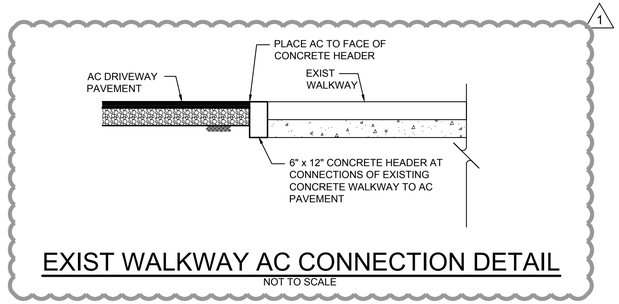
CONNECTION TO EXIST AC PAVEMENT DETAIL

NOT TO SCALE



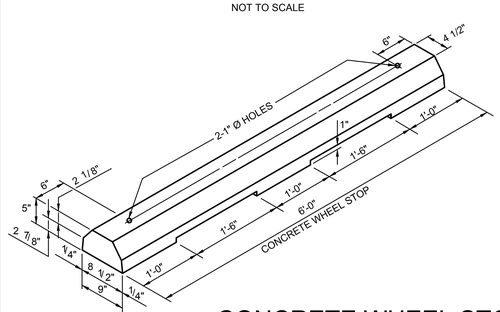
ROOT BARRIER DETAIL

NOT TO SCALE



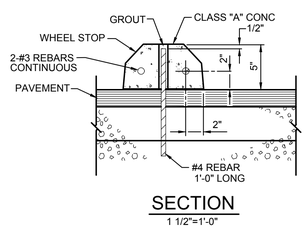
EXIST WALKWAY AC CONNECTION DETAIL

NOT TO SCALE



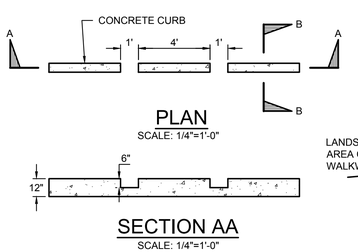
CONCRETE WHEEL STOP DETAIL

SCALE: 3/4"=1'-0"



SECTION

1 1/2"=1'-0"

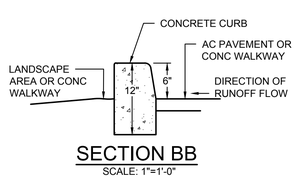


PLAN

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

SECTION AA

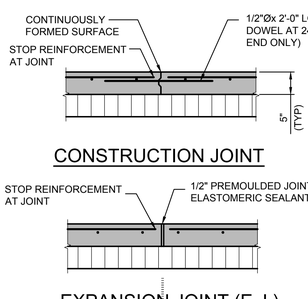
SCALE: 1/4"=1'-0"



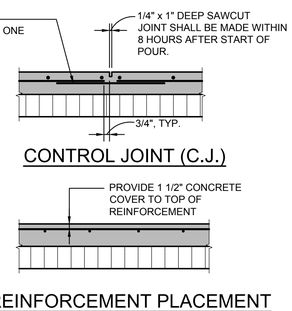
SECTION BB

SCALE: 1"=1'-0"

CURB CUT DETAIL



EXPANSION JOINT (E.J.)



CONSTRUCTION JOINT

CONTROL JOINT (C.J.)

REINFORCEMENT PLACEMENT

TYPICAL CONCRETE SLAB-ON-GRADE DETAILS

NOT TO SCALE

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

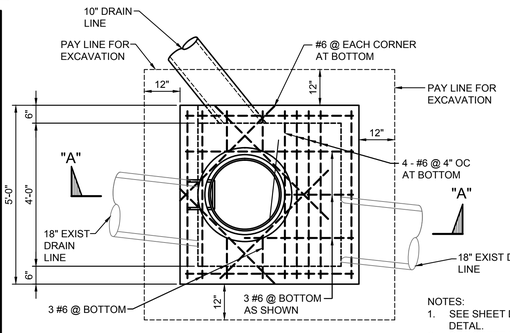
1	ADDED AC WALKWAY CONNECTION DETAIL

Sheet

PARKING LOT AND WALKWAY DETAILS

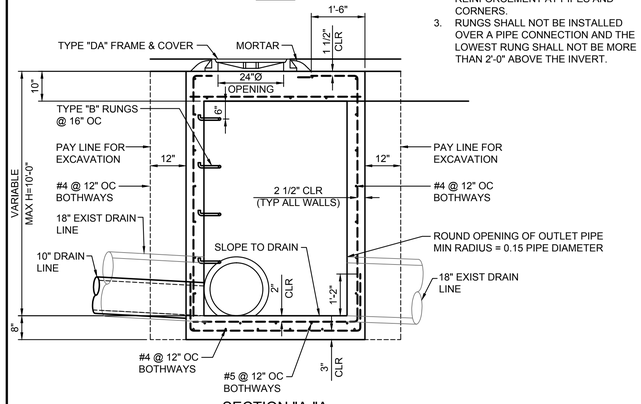
Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-7



PLAN

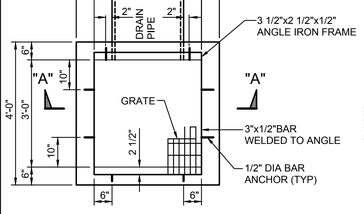
NOTES:
1. SEE SHEET D-26 FOR CHANNELIZING DETAL.
2. SEE SHEET D-13 FOR REINFORCEMENT AT PIPES AND CORNERS.
3. RUNGS SHALL NOT BE INSTALLED OVER A PIPE CONNECTION AND THE LOWEST RUNG SHALL NOT BE MORE THAN 2'-0" ABOVE THE INVERT.



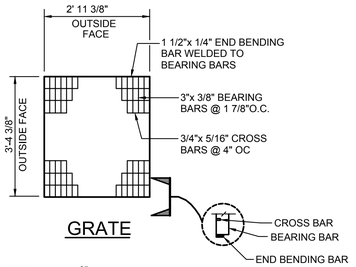
SECTION "A"-"A"

SHALLOW DRAIN MANHOLE FOR PAVEMENT AREA

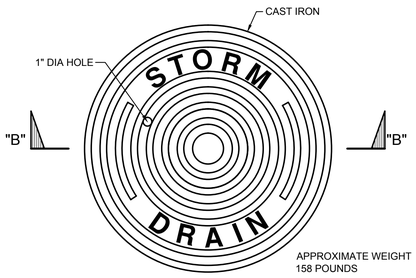
SCALE: 1/2"=1'-0"



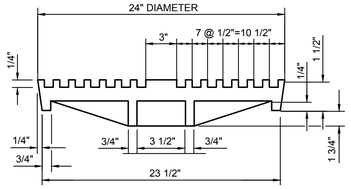
PLAN



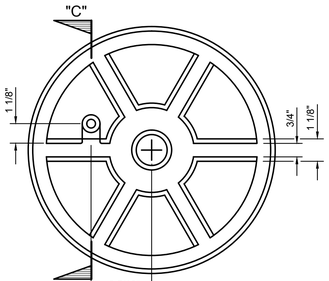
GRATE



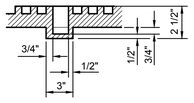
PLAN



SECTION "B"-"B"



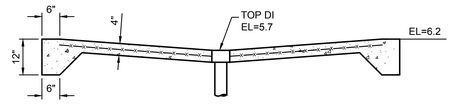
BOTTOM VIEW OF COVER



SECTION "C"-"C"

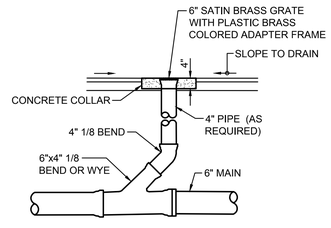
DRAIN MANHOLE COVER

NOT TO SCALE



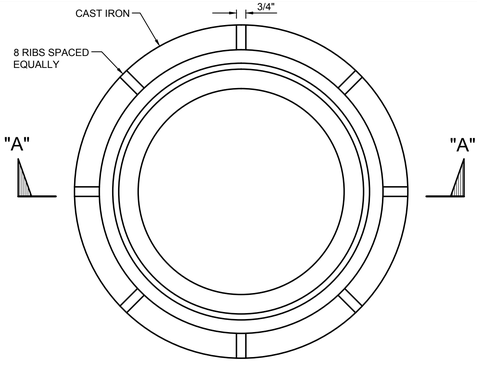
SECTION "A"-"A"

NOT TO SCALE

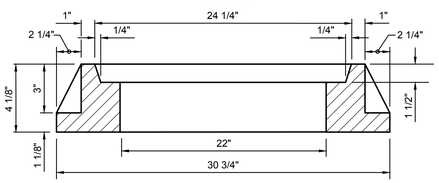


6" DRAIN INLET DETAIL

NOT TO SCALE



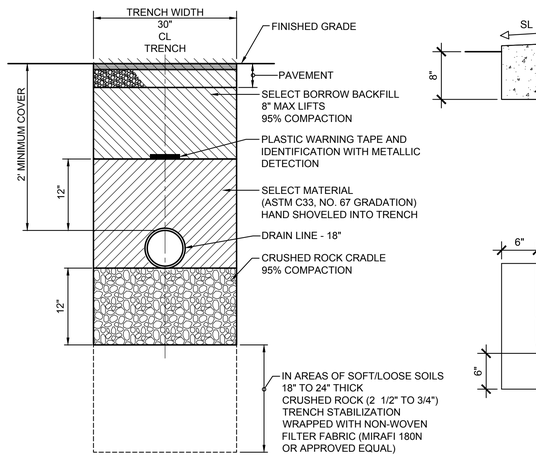
PLAN



SECTION "A-A"

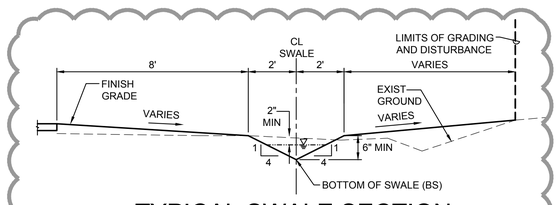
FRAME FOR DRAIN MANHOLE COVER

NOT TO SCALE



DRAIN LINE TRENCH DETAIL

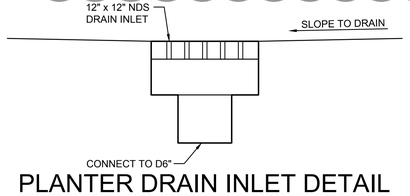
NOT TO SCALE



TYPICAL SWALE SECTION

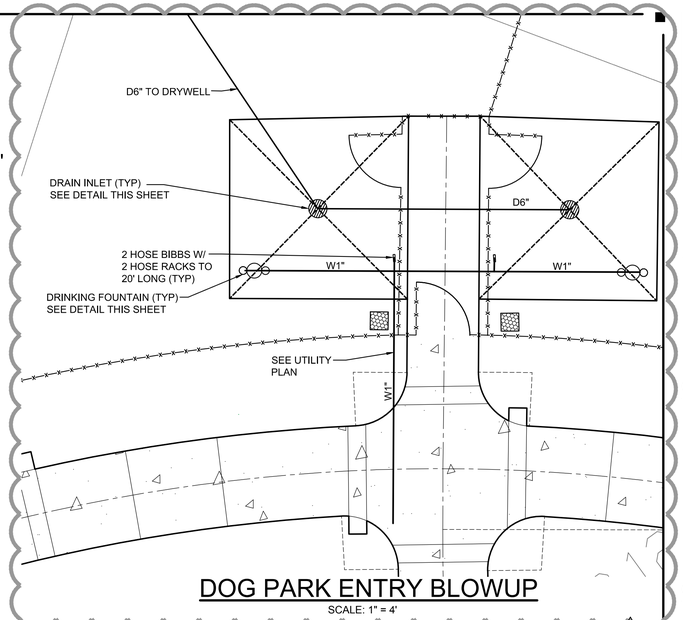
NOT TO SCALE

1



PLANTER DRAIN INLET DETAIL

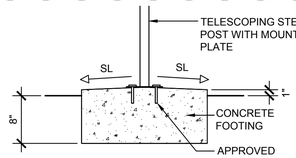
NOT TO SCALE



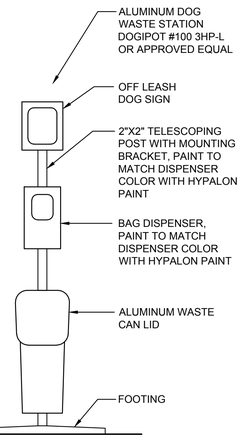
DOG PARK ENTRY BLOWUP

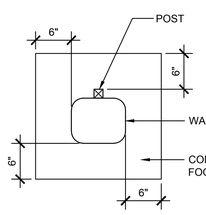
SCALE: 1" = 4'

1



FOOTING





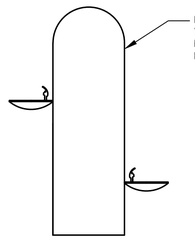
PLAN

ELEVATION

NOTE: PROVIDE 2 ROLLS OF 200 COUNT '0X0' TRASH BAGS PER STATION.

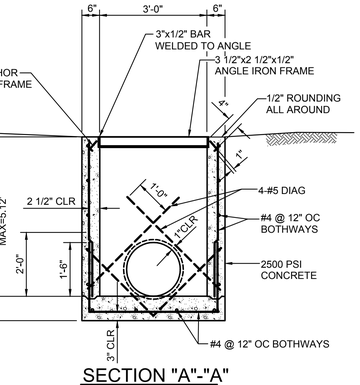
PET STATION DETAILS

SCALE: 1" = 1'-0"



DRINKING FOUNTAIN DETAIL

NOT TO SCALE



SECTION "A"-"A"

DRAIN INLET

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

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Site Amenities Improvements

Kalaeloa Rental Homes Site

Kalaeloa, Oahu, Hawaii

CARY K. KONDO LICENSED PROFESSIONAL ENGINEER No.4575-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.
APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

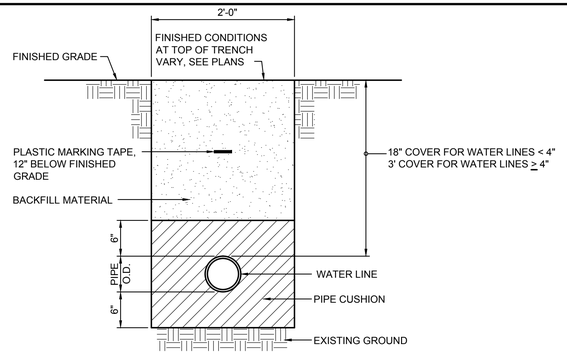
1	ADDED TYPICAL SWALE SECTION, REVISED DOG PARK ENTRY BLOWUP

Sheet

DRAINAGE AND DOG PARK DETAILS

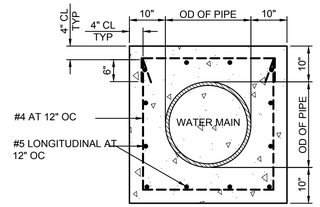
Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-8

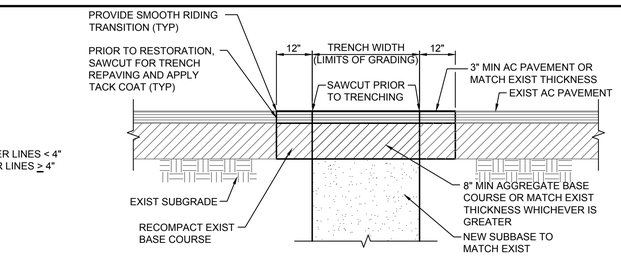


WATER LINE TRENCHING DETAIL

NOT TO SCALE

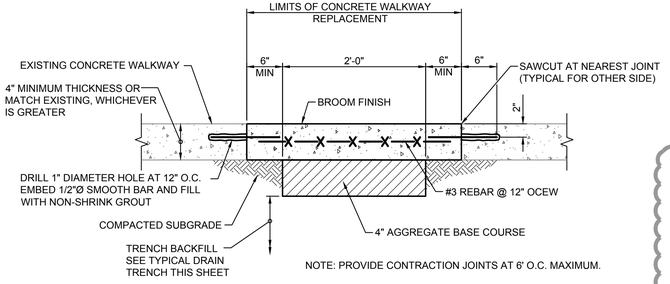


SECTION A-A



TRENCH RESTORATION DETAIL

NOT TO SCALE



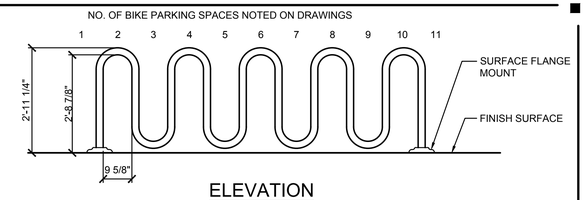
NOTE: PROVIDE CONTRACTION JOINTS AT 6' O.C. MAXIMUM.

CONCRETE WALKWAY RESTORATION DETAIL

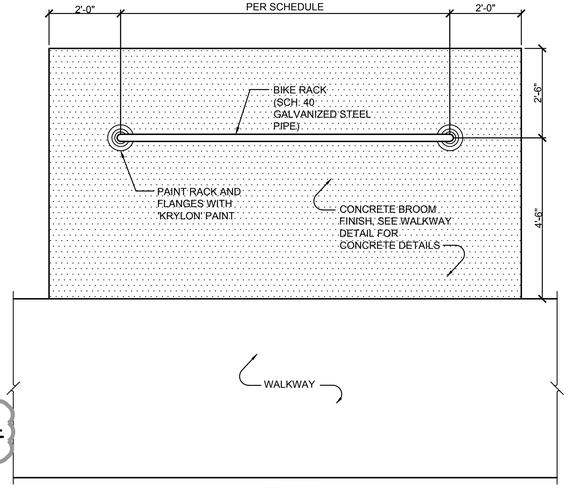
NOT TO SCALE

BIKE RACK SCHEDULE	
MODEL NO.	LENGTH
RB05	36"
RB07	60"
RB09	84"
RB11	108"

RIBBON RACK MANUFACTURED BY AAA RIBBON BIKE RACK COMPANY OR APPROVED EQUAL

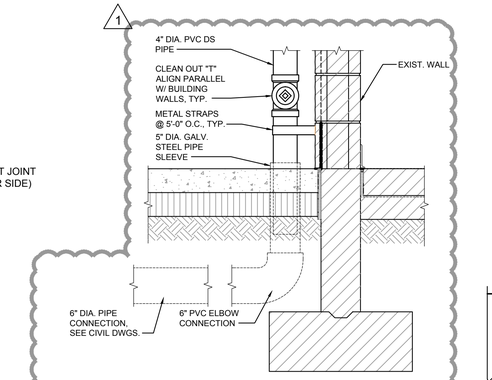


ELEVATION



PLAN

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

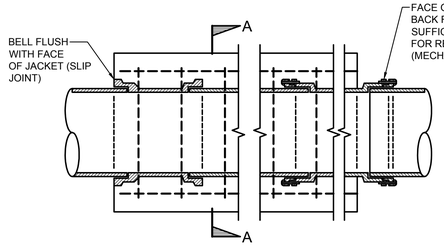


DOWNSPOUT CONNECTION DETAIL

NOT TO SCALE

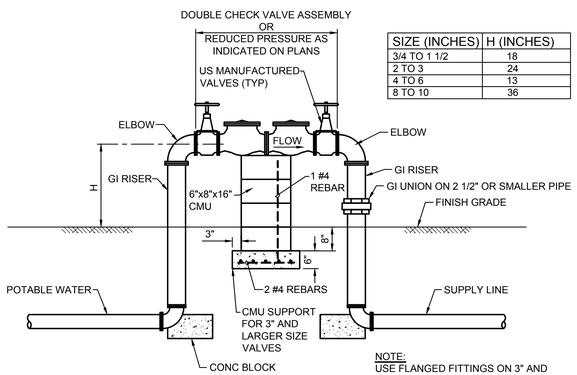
NOTES:

1. WHEREVER CONSTRUCTION JOINTS ARE REQUIRED, DWS APPROVED 6" RUBBER OR NEOPRENE WATERSTOPS OR CONCRETE BONDING AGENT APPROVED BY THE MANAGER SHALL BE INSTALLED.
2. CONCRETE SHALL BE DWS 2500.
3. REINFORCING DESIGN APPLICABLE FOR STRAIGHT PIPE JACKETED SEGMENT.
4. PRECAST JACKETED WATERLINE SEGEMENT SHALL BE DESIGNED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER AND APPROVED BY MANAGER.



REINFORCED CONCRETE JACKET DETAIL

NOT TO SCALE



SIZE (INCHES)	H (INCHES)
3/4 TO 1 1/2	18
2 TO 3	24
4 TO 6	13
8 TO 10	36

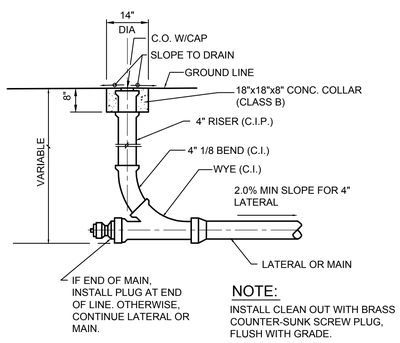
NOTE:
USE FLANGED FITTINGS ON 3" AND LARGER PIPE. ADAPT INLET AND OUTLET FITTINGS TO MAIN LINE AS REQUIRED

BACKFLOW PREVENTION UNIT

NOT TO SCALE

SEWER LINE TRENCH DETAIL

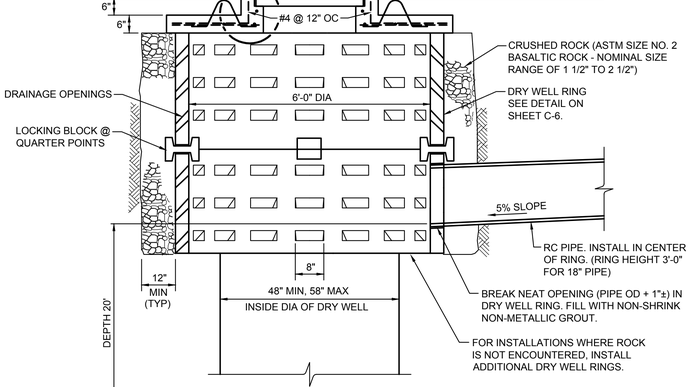
NOT TO SCALE



NOTE:
INSTALL CLEAN OUT WITH BRASS COUNTER-SUNK SCREW PLUG, FLUSH WITH GRADE.

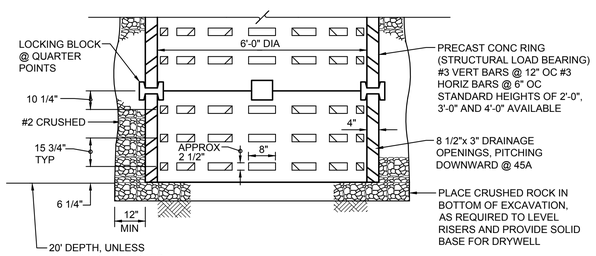
COTG DETAIL (PRIVATE)

NOT TO SCALE



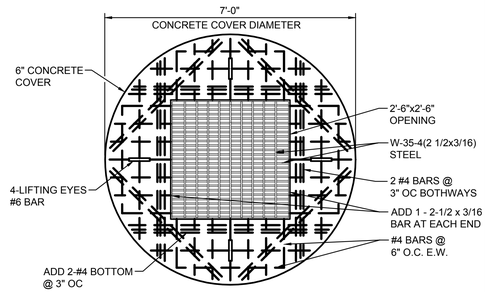
DRY WELL DETAIL

NOT TO SCALE



DRY WELL RING DETAIL

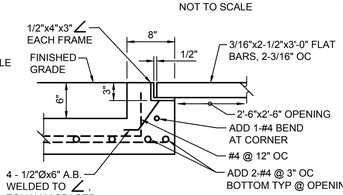
NOT TO SCALE



DRY WELL COVER PLAN

NOT TO SCALE

NOTE:
REPLACE GRATE WITH MANHOLE COVER, AS INDICATED ON DRAWINGS.



NOTES:

1. ALL WELD 5/16"
2. ALL STEEL SHALL BE STRUCTURAL GRADE.
3. GRATES AND FRAME ∠'S SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A 123.

DRY WELL FRAME AND SUPPORT

SCALE: 1"=1'-0"

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Revisions

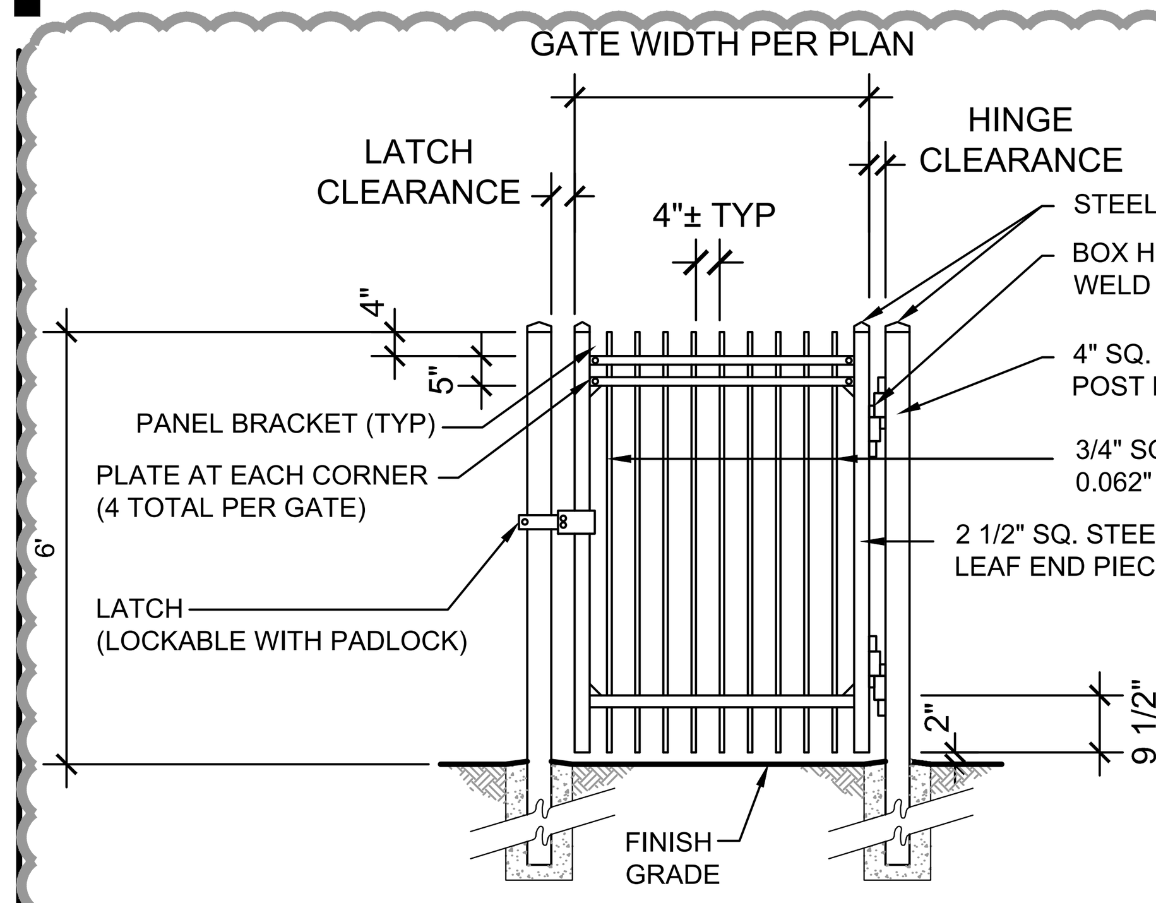
1	ADDED DOWNSPOUT CONNECTION DETAIL

Sheet

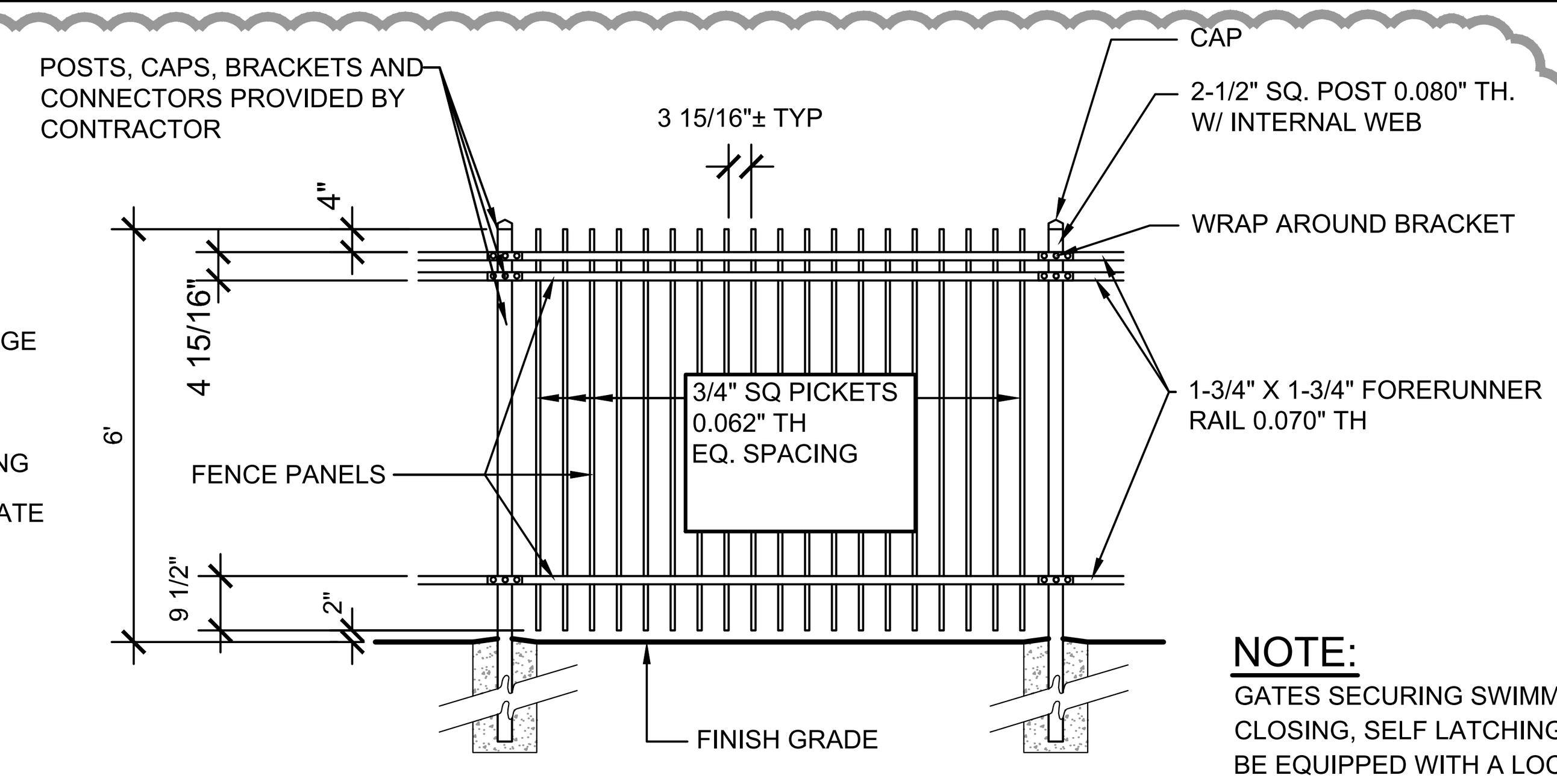
WATER AND SEWER DETAILS

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-9



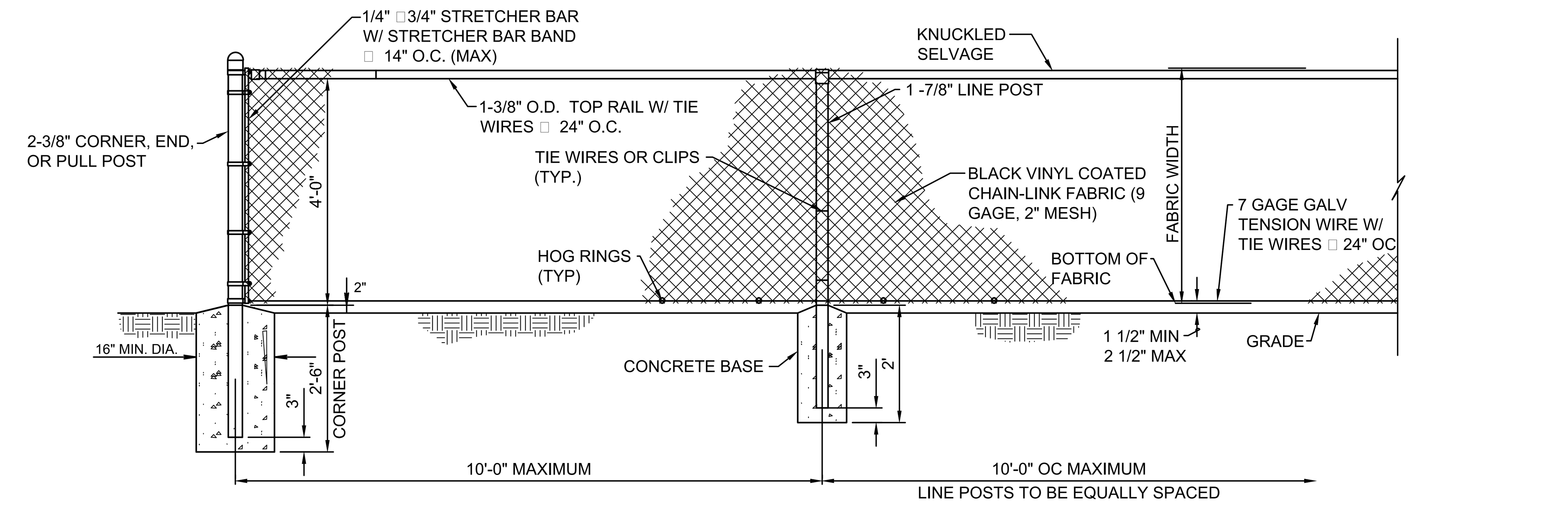
PEDESTRIAN GATE
SCALE: NTS



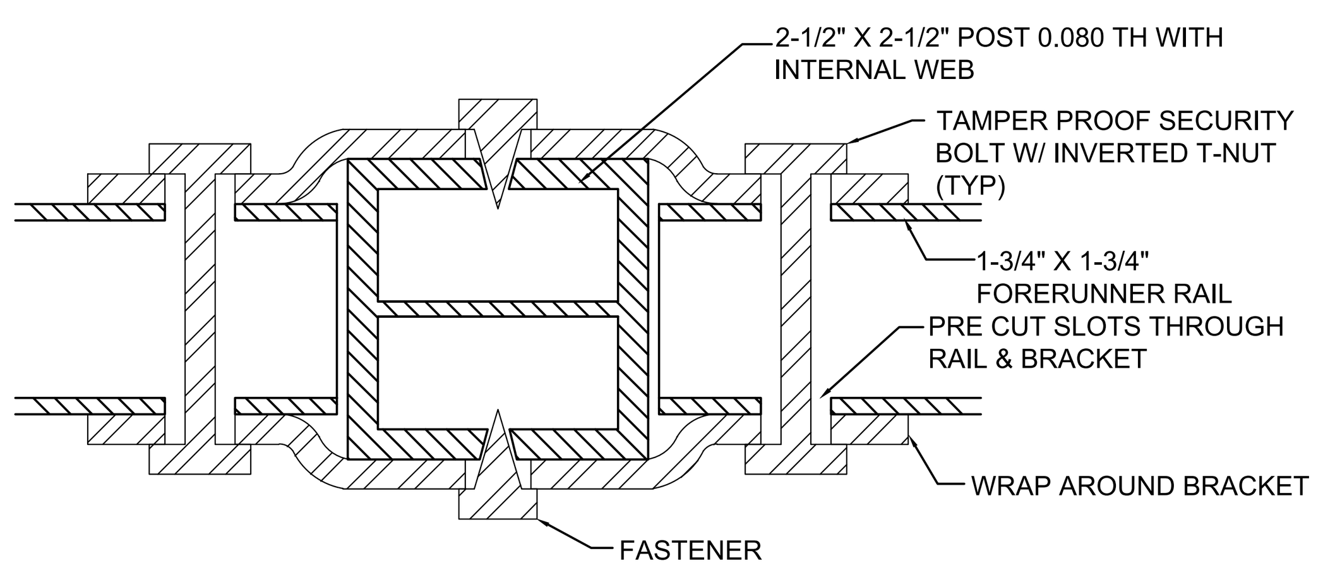
FENCE DETAIL
SCALE: NTS

2

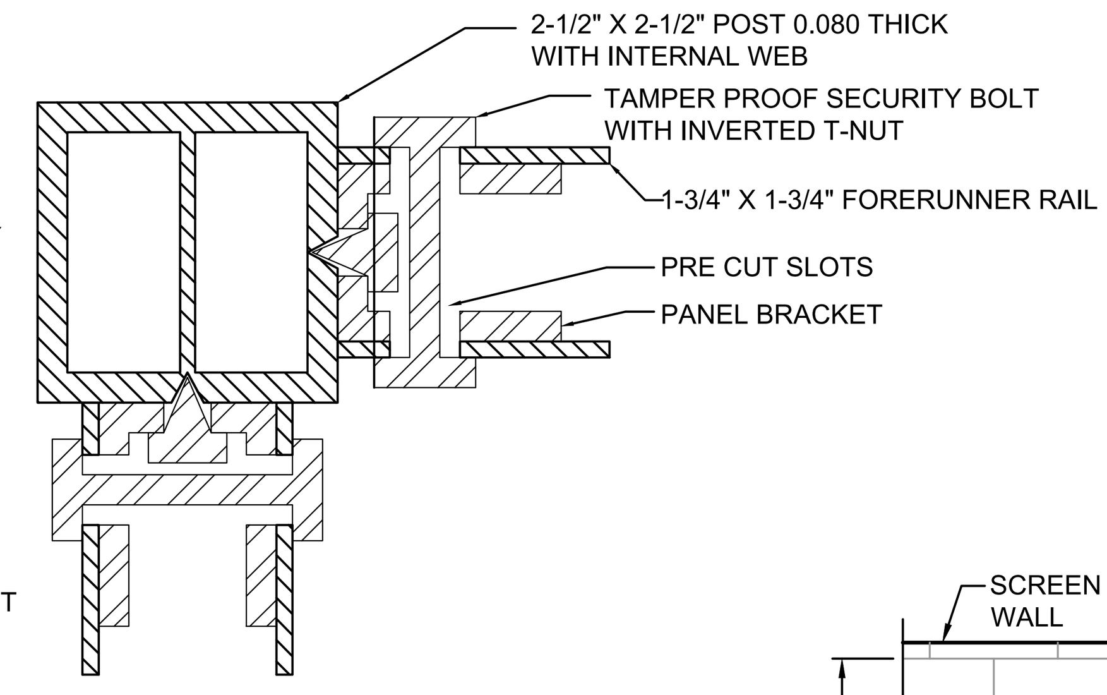
NOTE:
GATES SECURING SWIMMING POOLS SHALL BE SELF CLOSING, SELF LATCHING, OPEN OUTWARD, AND SHALL BE EQUIPPED WITH A LOCKING DEVICE IN ACCORDANCE WITH IBC 3109.4.1.7.



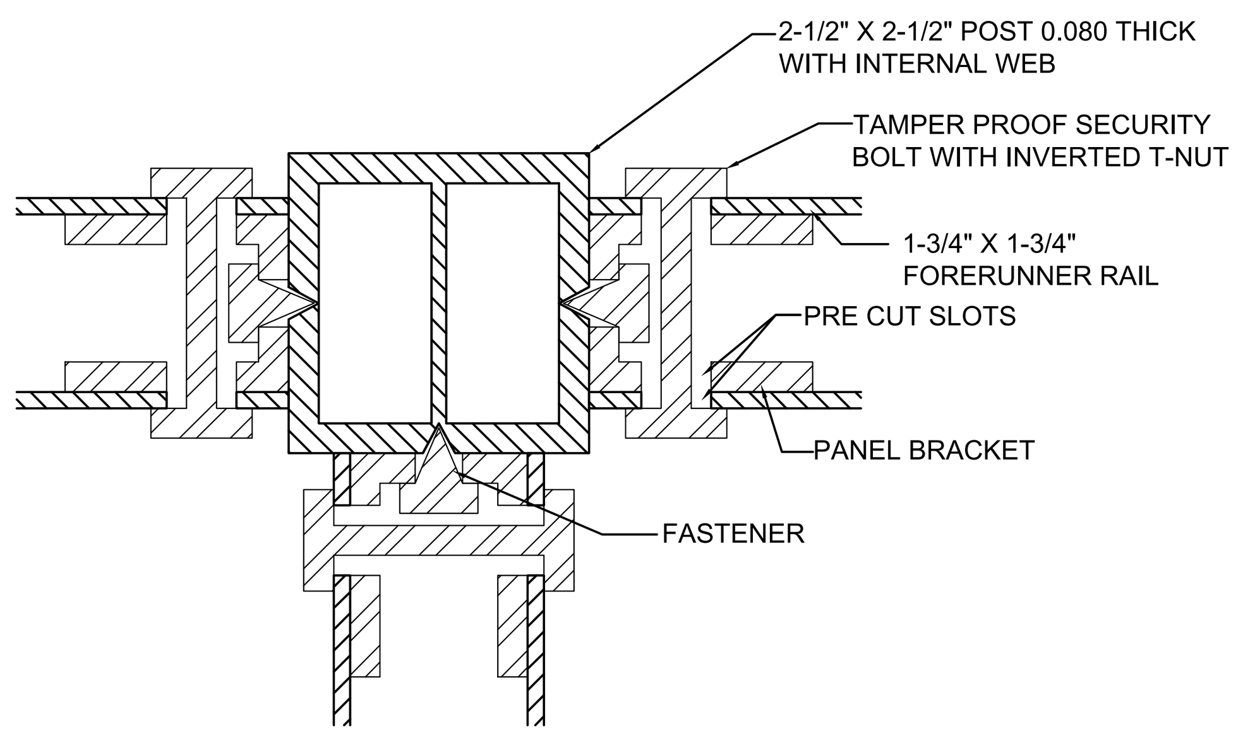
4' CHAIN-LINK SECURITY FENCE DETAIL
NOT TO SCALE



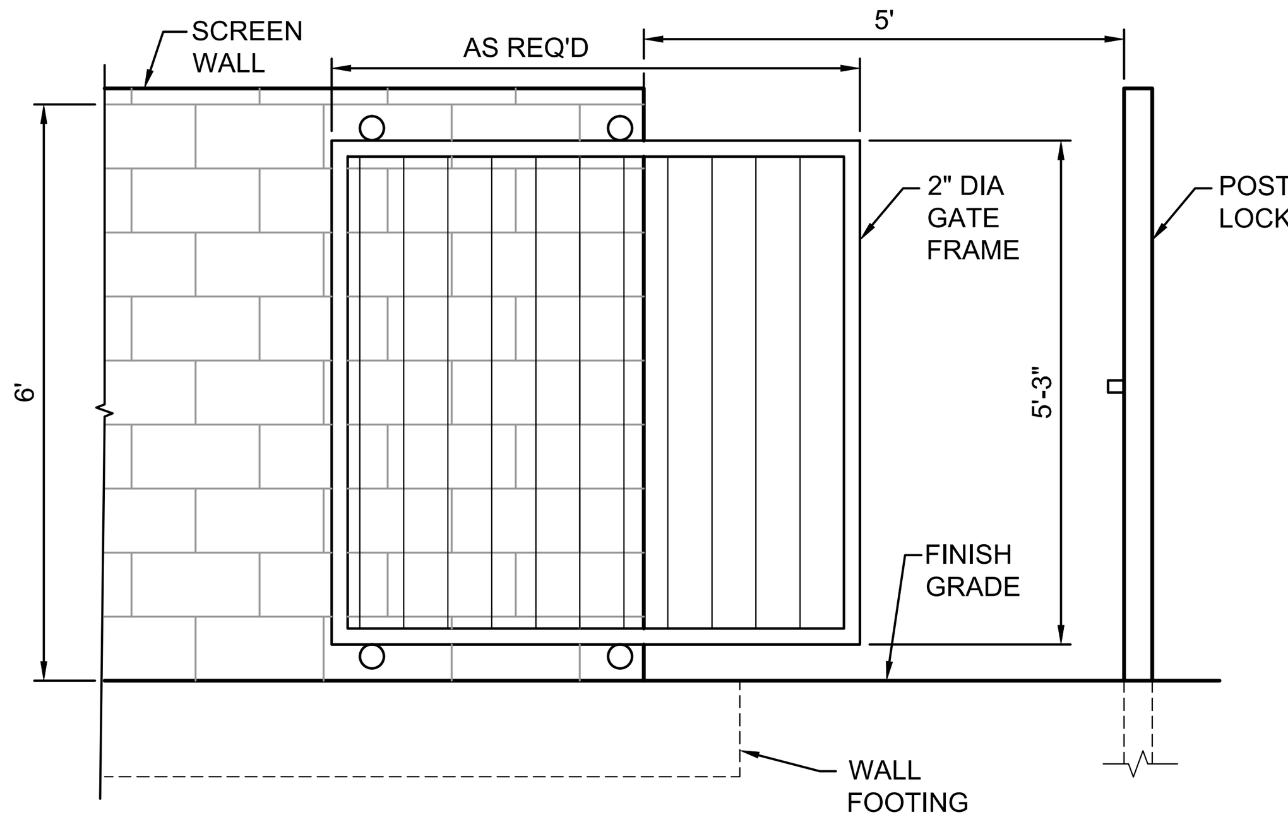
TYPICAL CONNECTION DETAIL
NOT TO SCALE



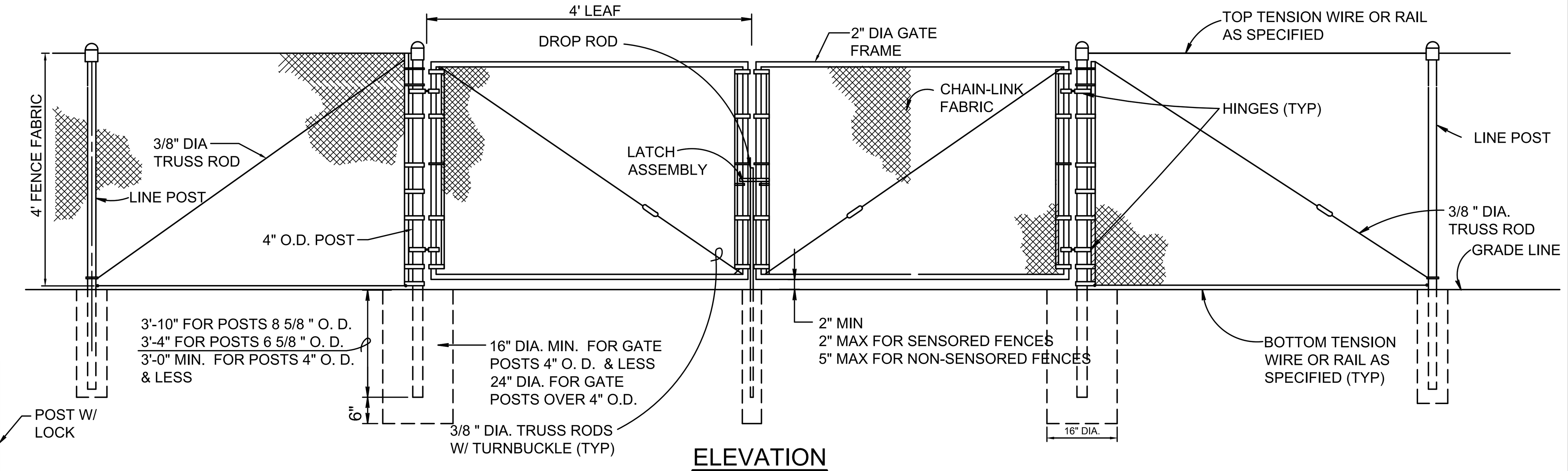
TYPICAL CORNER CONNECTION DETAIL
NOT TO SCALE



TYPICAL THREE PANEL CONNECTION DETAIL
NOT TO SCALE



CANTILEVERED SLIDING GATE DETAIL
NOT TO SCALE



ELEVATION

DOUBLE SWING GATE (TYPE FE-6 FENCE)
NOT TO SCALE

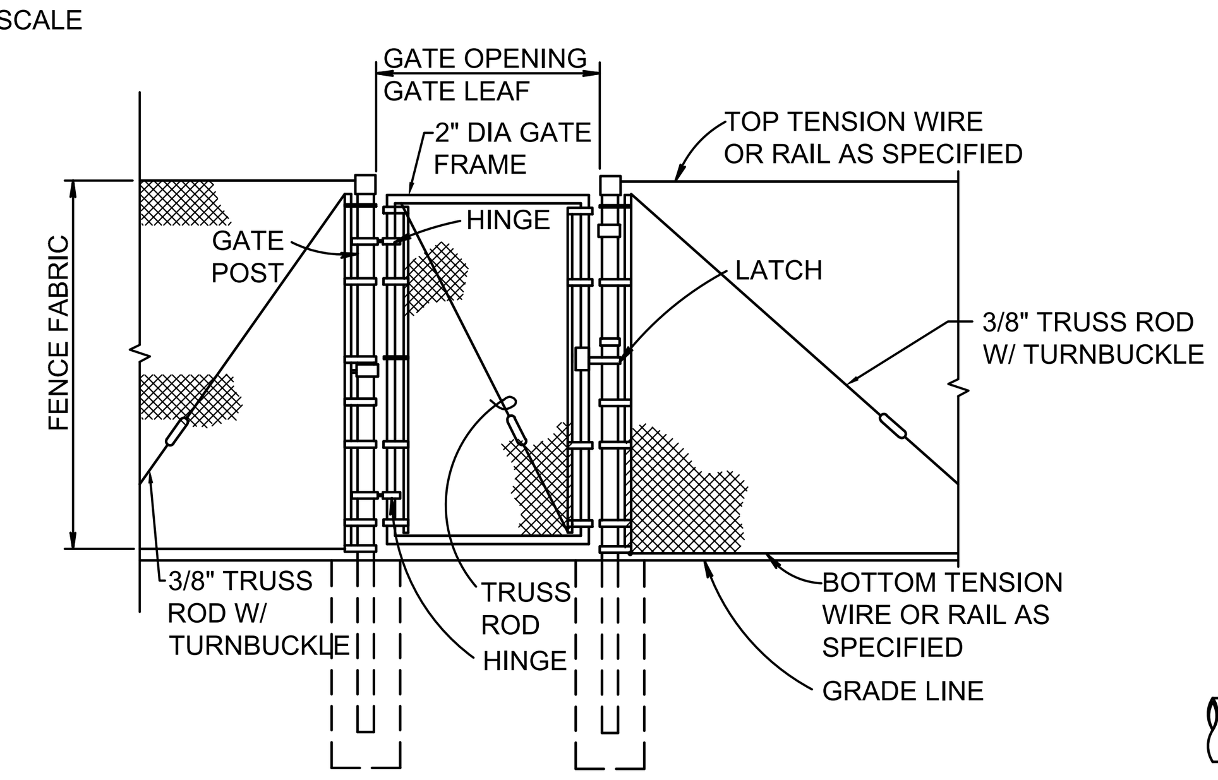
NOTES:

1. FOR NON-SENSORED FENCES, DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.
2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F900 1.90" NOMINAL (ROUND). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL-WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.
4. GATES SHALL BE DESIGNATED AS FOLLOWS:

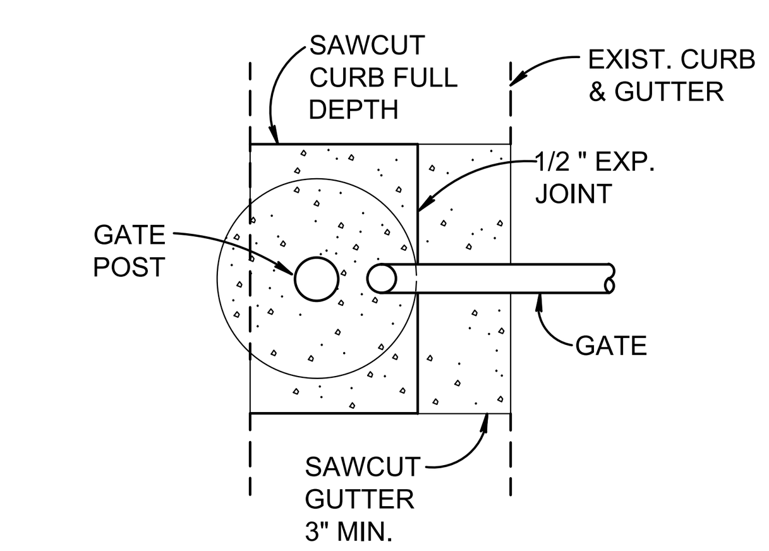
FENCE TYPE -		FE5, FE6, ETC.
FENCE HEIGHT	-	INCHES
TYPE OPENING	-	SO (SINGLE)
	-	DO (DOUBLE)
HINGE	-	RA (STANDARD)
	-	HO (OFFSET)
OPENING	-	FEET (CLEAR OPENING BETWEEN GATE POSTS)
EXAMPLES:		FE6-84-DO-RA-24
		FE5-48-SO-HO-6

GATE POST SCHEDULE

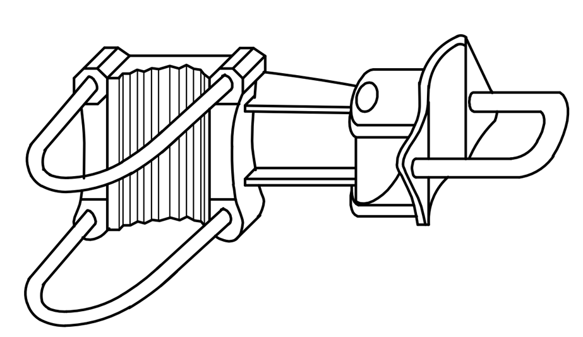
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' OR LESS	3.5" OD
GREATER THAN 6' TO 12'	4.0" OD
GREATER THAN 12' TO 18'	6.625" OD
MORE THAN 18'	8.625" OD



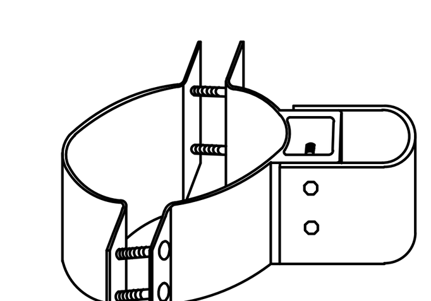
PERSONNEL GATE TYPE FE-6 FENCE
NOT TO SCALE



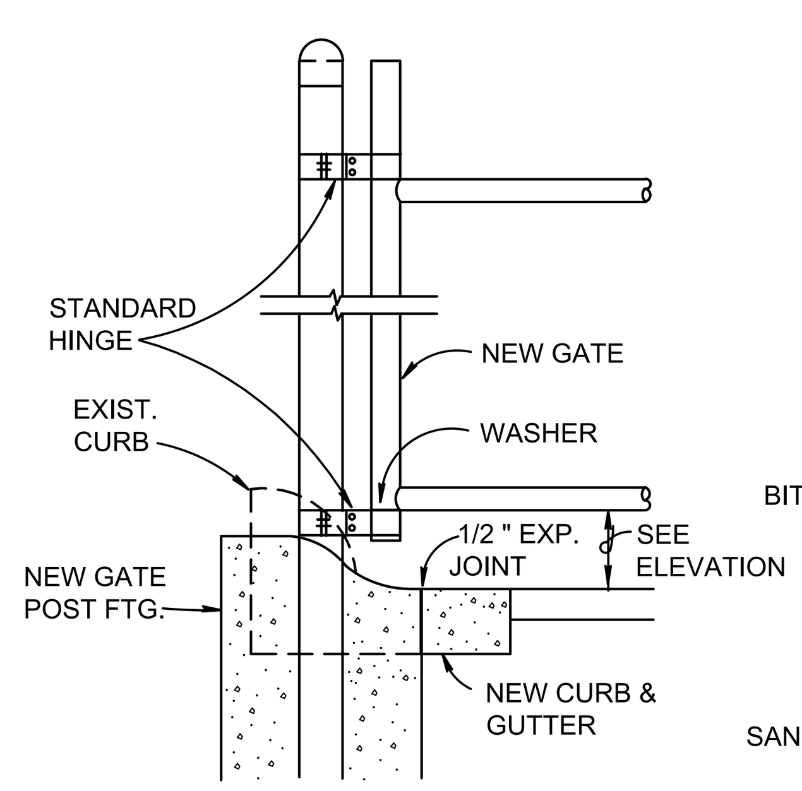
PLAN



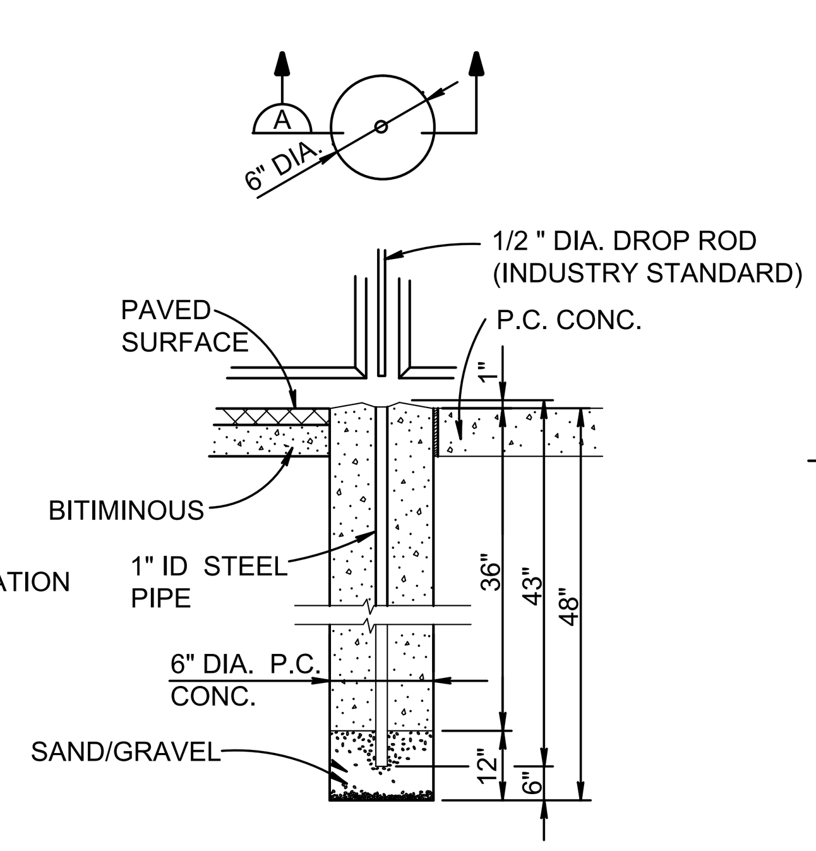
OFFSET HINGE



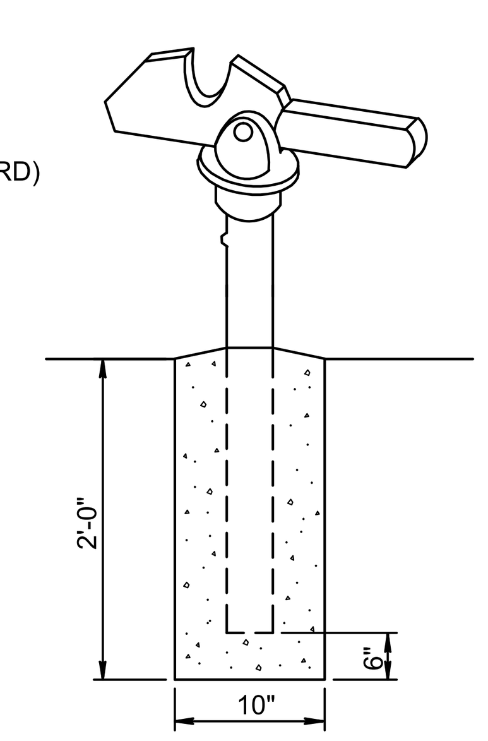
STANDARD HINGE



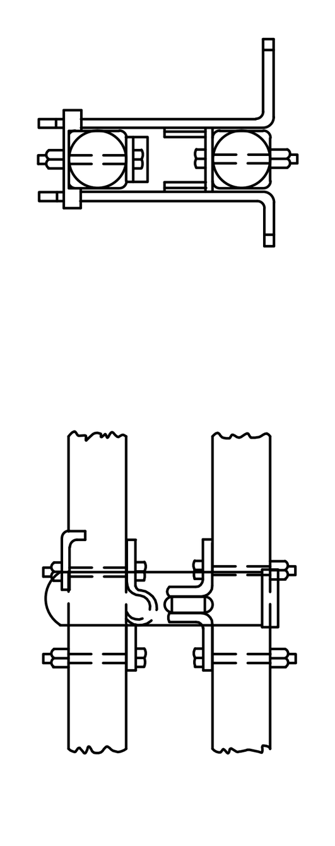
GATE POST SECTION AT CURB AND GUTTER
NO SCALE



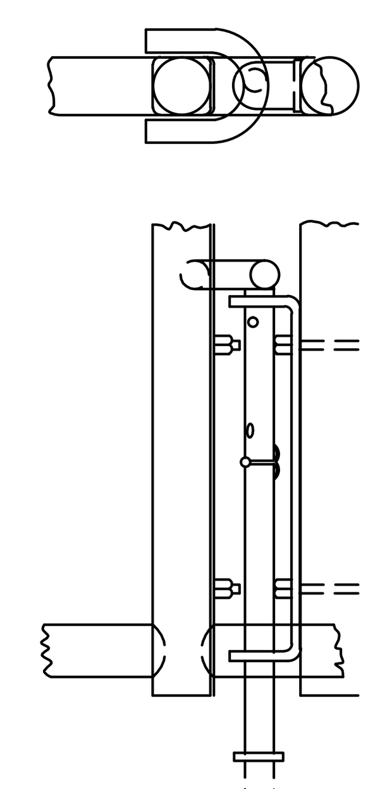
DROP ROD FOUNDATION



GATE KEEPER
(TO HOLD GATE OPEN)

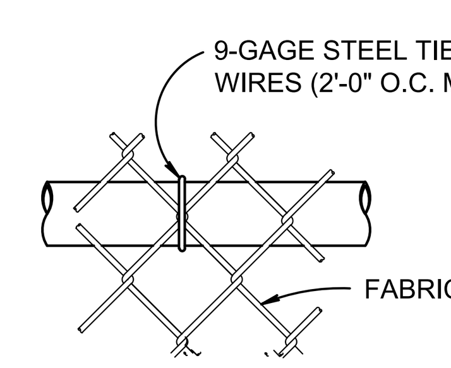


LATCH ASSEMBLY

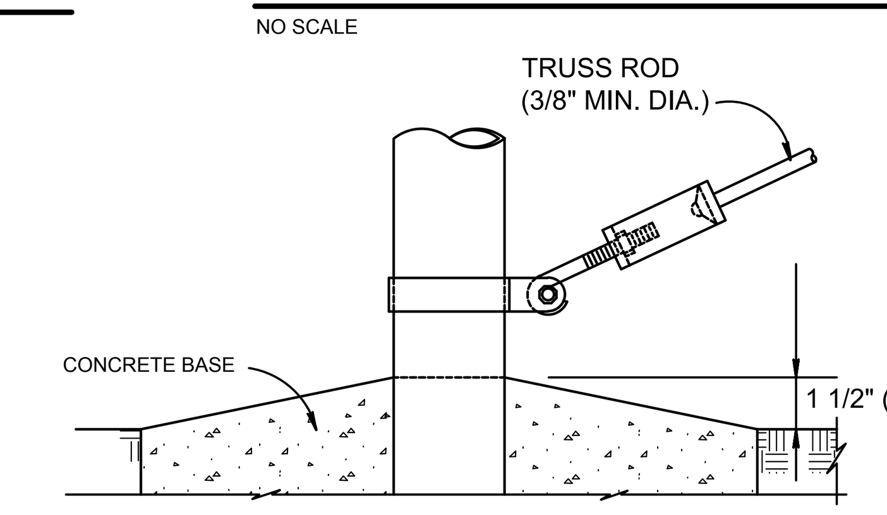


DROP ROD ASSEMBLY

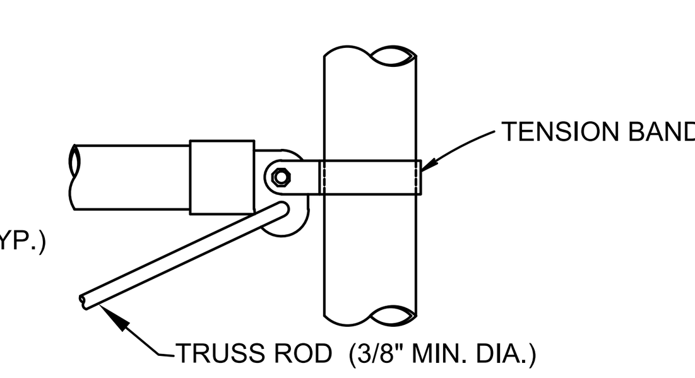
SWING GATE DETAILS
NO SCALE



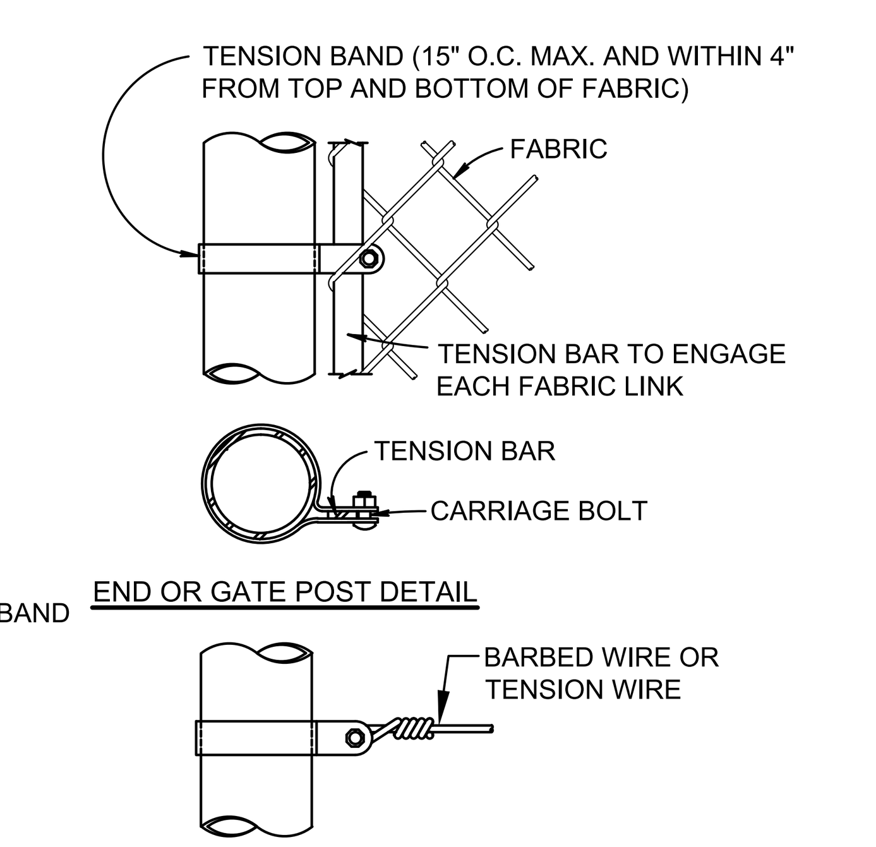
TOP OR BRACE RAIL ATTACHMENT
NO SCALE



TRUSS ROD AND BAND



ROUND POST



TENSION BAND DETAIL

FASTENING DETAILS
NO SCALE

NOTES:
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.

2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.

Wed, 26 Jul 2017 - 9:46am
M:\Valoeko\2015330601 Pool\04 Graphics\CAD\Sheets\C-10 Fence Details.dwg

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CARY K. KONDO
LICENSED PROFESSIONAL ENGINEER
No.4575-C
HAWAII, U.S.A.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

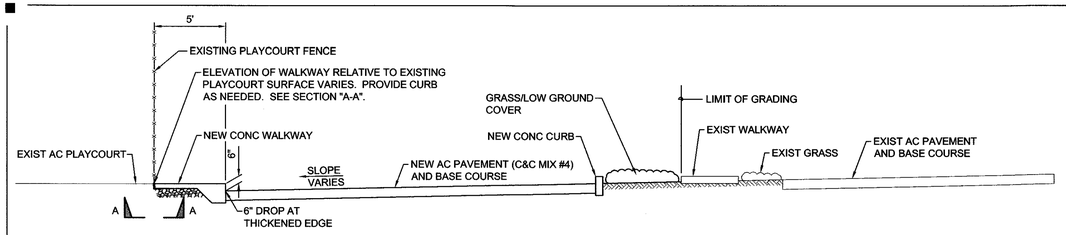
2	REVISED POOL GATE DETAILS, ADDED NOTE

Sheet

FENCE DETAILS

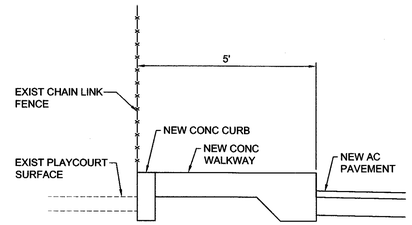
Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-10

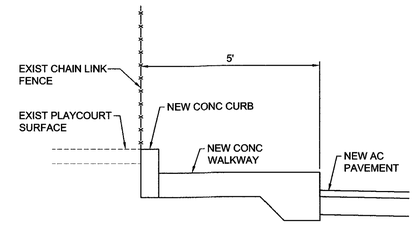


TYPICAL SECTION-BOUGAINVILLE AVE PLAYCOURT PARKING LOT

SCALE: 1"=5'



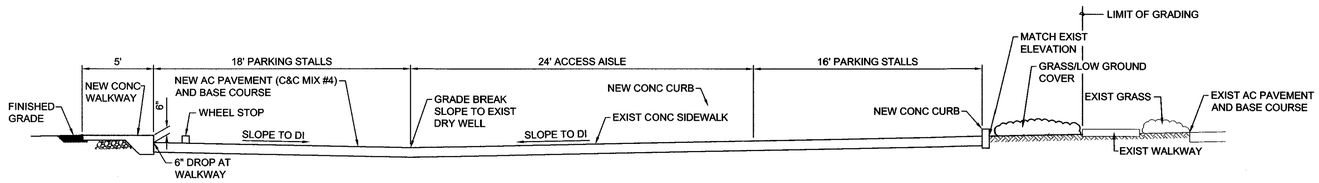
WALKWAY HIGHER THAN EXIST PLAYCOURT



WALKWAY LOWER THAN EXIST PLAYCOURT

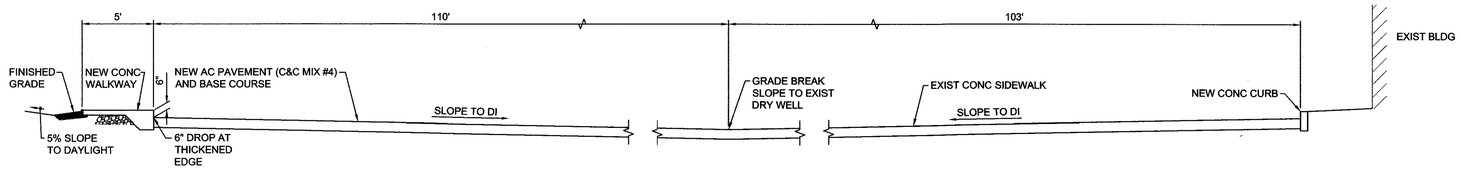
SECTION "A-A"

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



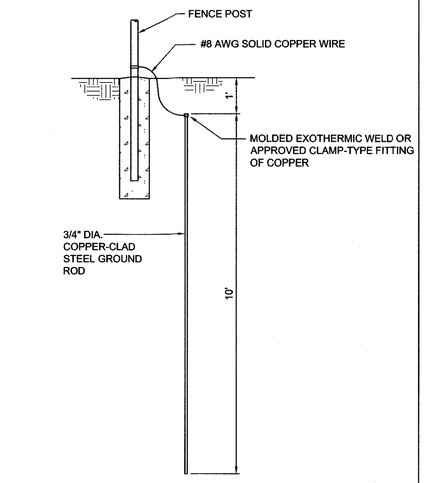
TYPICAL SECTION-INDEPENDENCE ROAD POOL PARKING LOT

SCALE: 1"=5'



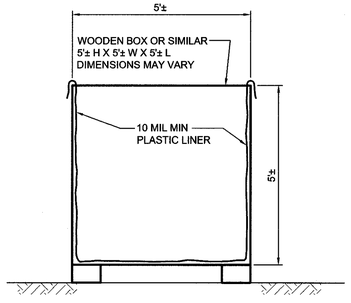
TYPICAL SECTION-CENTERLINE INDEPENDENCE ROAD PARKING LOT

SCALE: 1"=5'



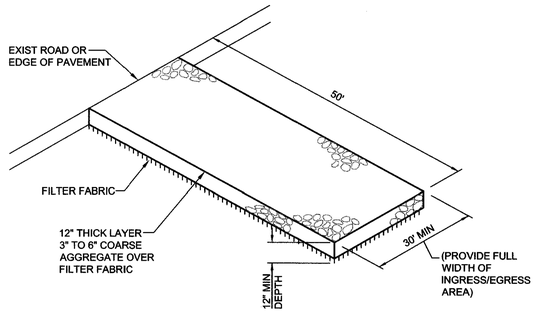
GROUNDING DETAIL

NO SCALE



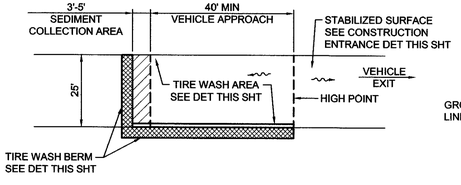
CONCRETE TRUCK WASH BOX

NOT TO SCALE



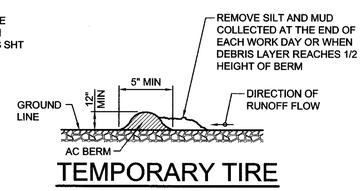
STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT TO SCALE



TIRE WASH AREA PLAN

NOT TO SCALE

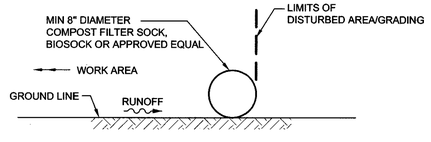


TEMPORARY TIRE WASH BERM

NOT TO SCALE

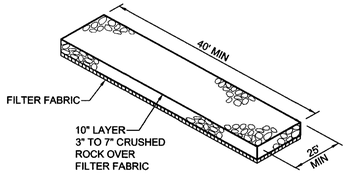
1

NOTES:
1. NO STAKING REQUIRED.
2. COMPOST SHALL NOT CONTAIN BIOSOLIDS AND SHALL COMPLY WITH EPA GUIDELINES.



TEMPORARY COMPOST FILTER SOCK DETAIL

NOT TO SCALE

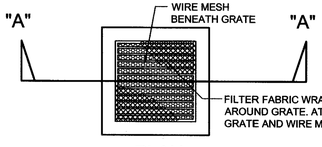


NOTES:
1. MONITOR VOIDS IN ROCK SURFACE. REPLACE/CLEAN AREAS WHERE SILT BUILD-UP IS WITHIN 2-INCHES OF SURFACE.
2. INSTALL TEMPORARY TIRE WASH BERM, SEE PLAN AND DETAIL THIS SHEET.

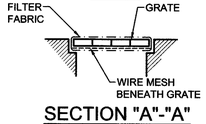
TIRE WASH AREA

NOT TO SCALE

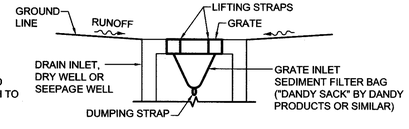
1



PLAN



SECTION "A"-"A"



ALTERNATE INLET PROTECTION

NOTE:
THE CONTRACTOR SHALL REMOVE THE INLET FILTER DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND SHALL REPLACE THEM WHEN THE EVENT HAS PASSED.

DRAIN INLET PROTECTION DETAIL

NOT TO SCALE

2

APPROVED:
For Mahmi Takahara 5/30/17
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
Date

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No. 4575-C
HAWAII, U.S.A.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

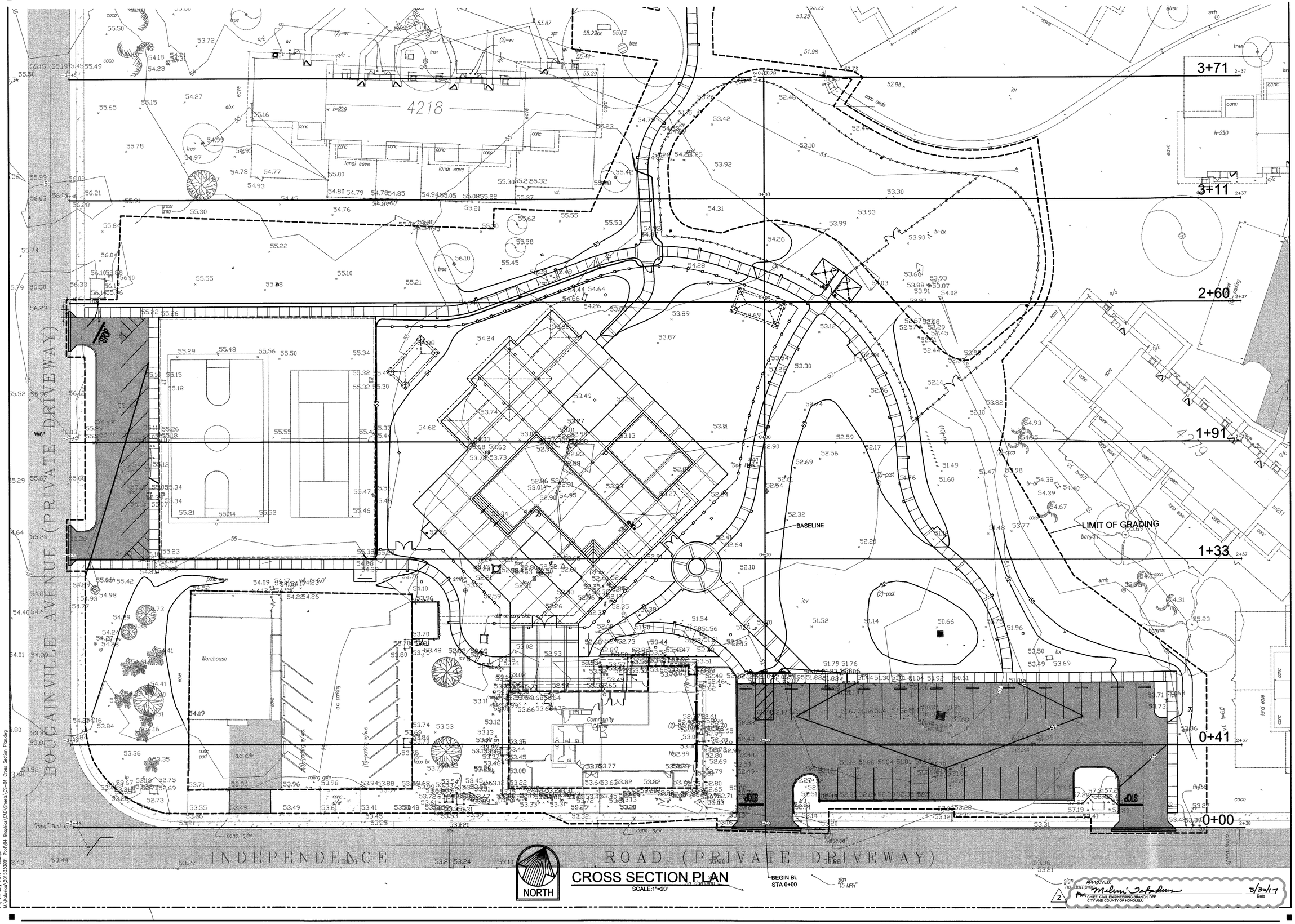
Revisions
1 ADDED TEMP TIRE WASH BERM DETAIL, REVISED TIRE WASH AREA DETAIL
2 CITY COMMENTS

Sheet
EROSION CONTROL AND MISCELLANEOUS DETAILS

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

C-11

12 of 54



CROSS SECTION PLAN

SCALE:1"=20'

APPROVED:
for CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
5/30/17 Date

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Revisions

1 ADDED SHEET
2 CITY COMMENTS

Sheet

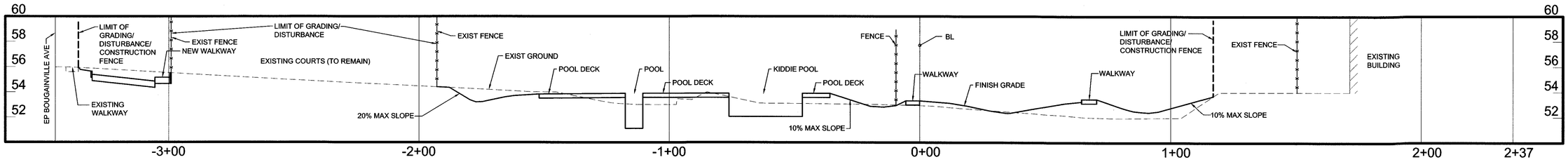
CROSS SECTION PLAN

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

CS-1

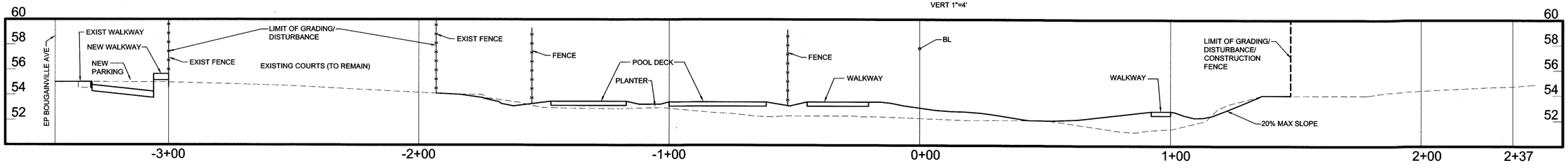
12a of 54

Fri, 26 May 2017 - 3:06pm
M:\Kalaeloa\2015\33\0601 Pool\04 Graphics\CAD\Sheets\CS-01 Cross Section Plan.dwg



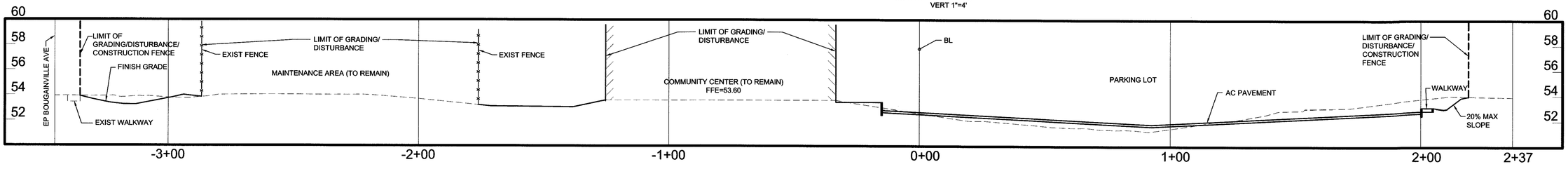
BASELINE SECTION-STA 1+91

SCALES: HORIZ 1"=20'
VERT 1"=4'



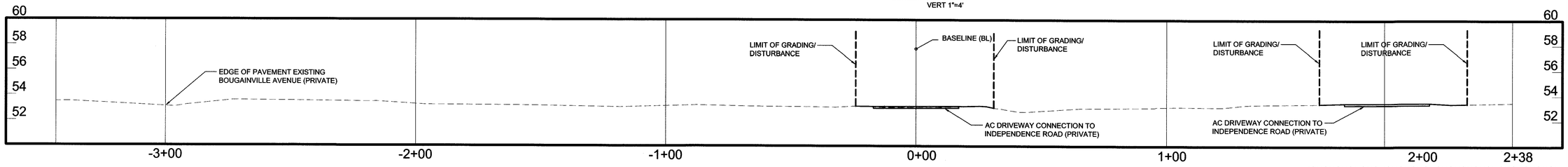
BASELINE SECTION-STA 1+33

SCALES: HORIZ 1"=20'
VERT 1"=4'



BASELINE SECTION-STA 0+41

SCALES: HORIZ 1"=20'
VERT 1"=4'



BASELINE SECTION-STA 0+00

SCALES: HORIZ 1"=20'
VERT 1"=4'

APPROVED:
Melvin Ishikawa 5/30/17
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
Date

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 ADDED SHEET
2 CITY COMMENTS

Sheet

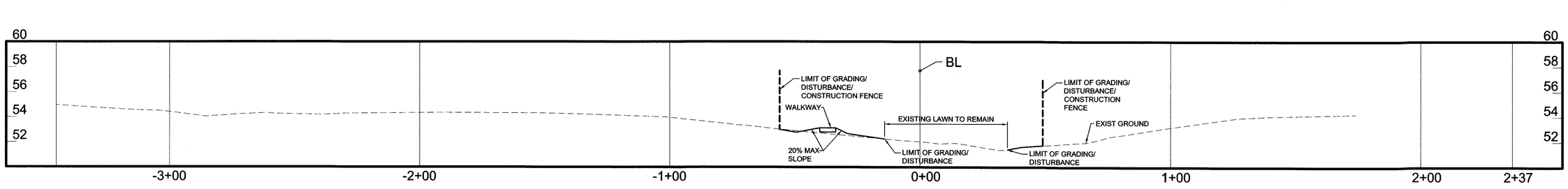
SITE SECTIONS-1

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

CS-2

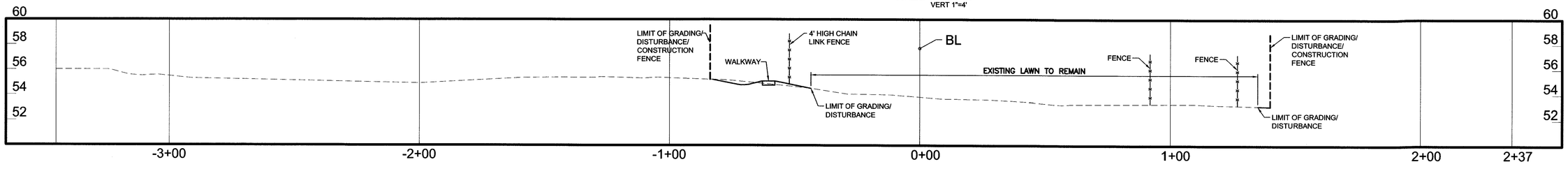
12b of 54

Fri, 26 May 2017 - 3:01pm
M:\Kalaeloa\2015.33.0601 Pool\04 Graphics\2A0\Sheets\CS-02 Site Sections-1.dwg



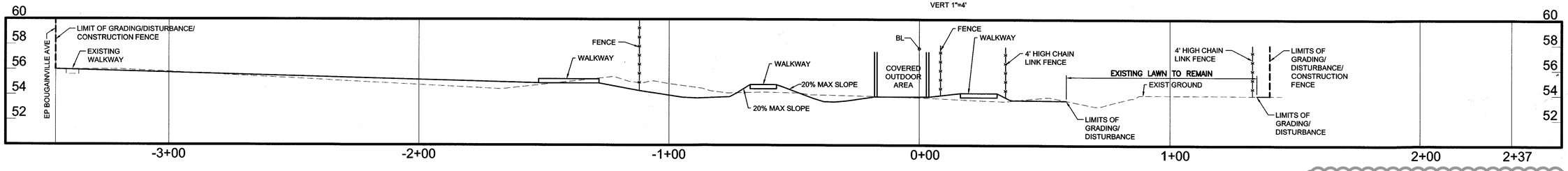
BASELINE SECTION-STA 3+71

SCALES: HORIZ 1"=20'
VERT 1"=4'



BASELINE SECTION-STA 3+11

SCALES: HORIZ 1"=20'
VERT 1"=4'



BASELINE SECTION-STA 2+60

SCALES: HORIZ 1"=20'
VERT 1"=4'

APPROVED:
For Milani Takahara 5/30/17
CHIEF, CIVIL ENGINEERING BRANCH, DPP
CITY AND COUNTY OF HONOLULU
Date

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 ADDED SHEET
2 CITY COMMENTS

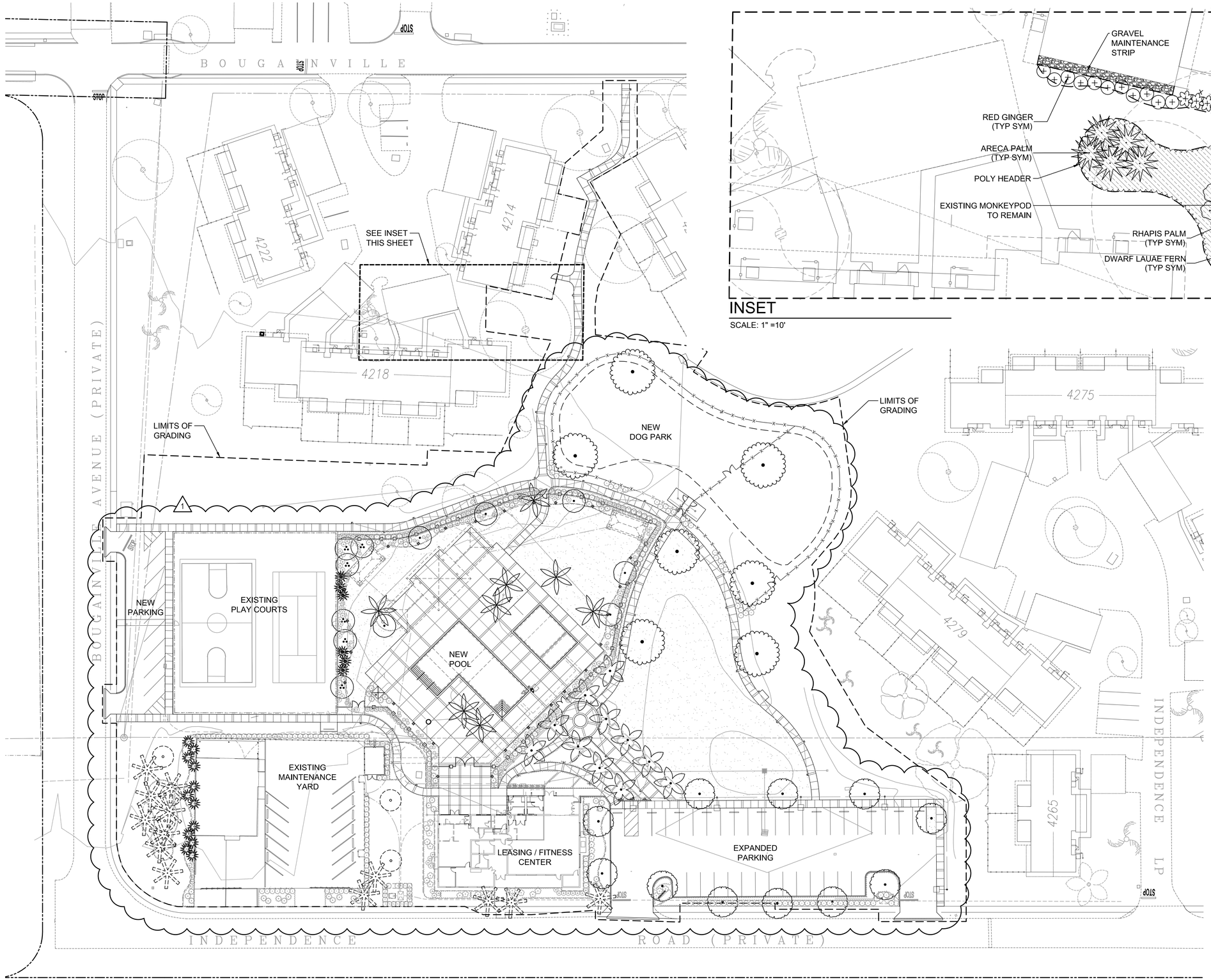
Sheet

SITE SECTIONS-2

Project No.
2015.33.0601
Designed by:
CKK
Drawn by:
BHK
Date:
MAY 2017

CS-3

12c of 54



INSET

SCALE: 1" =10'

OVERALL LANDSCAPE PLAN

SCALE: 1" =30'

NORTH

GRAPHIC SCALE

30' 0' 30' 60'

Scale: 1"=30'

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 REVISED LANDSCAPE

Sheet

OVERALL LANDSCAPE PLAN

Project No.
2015.33.0601

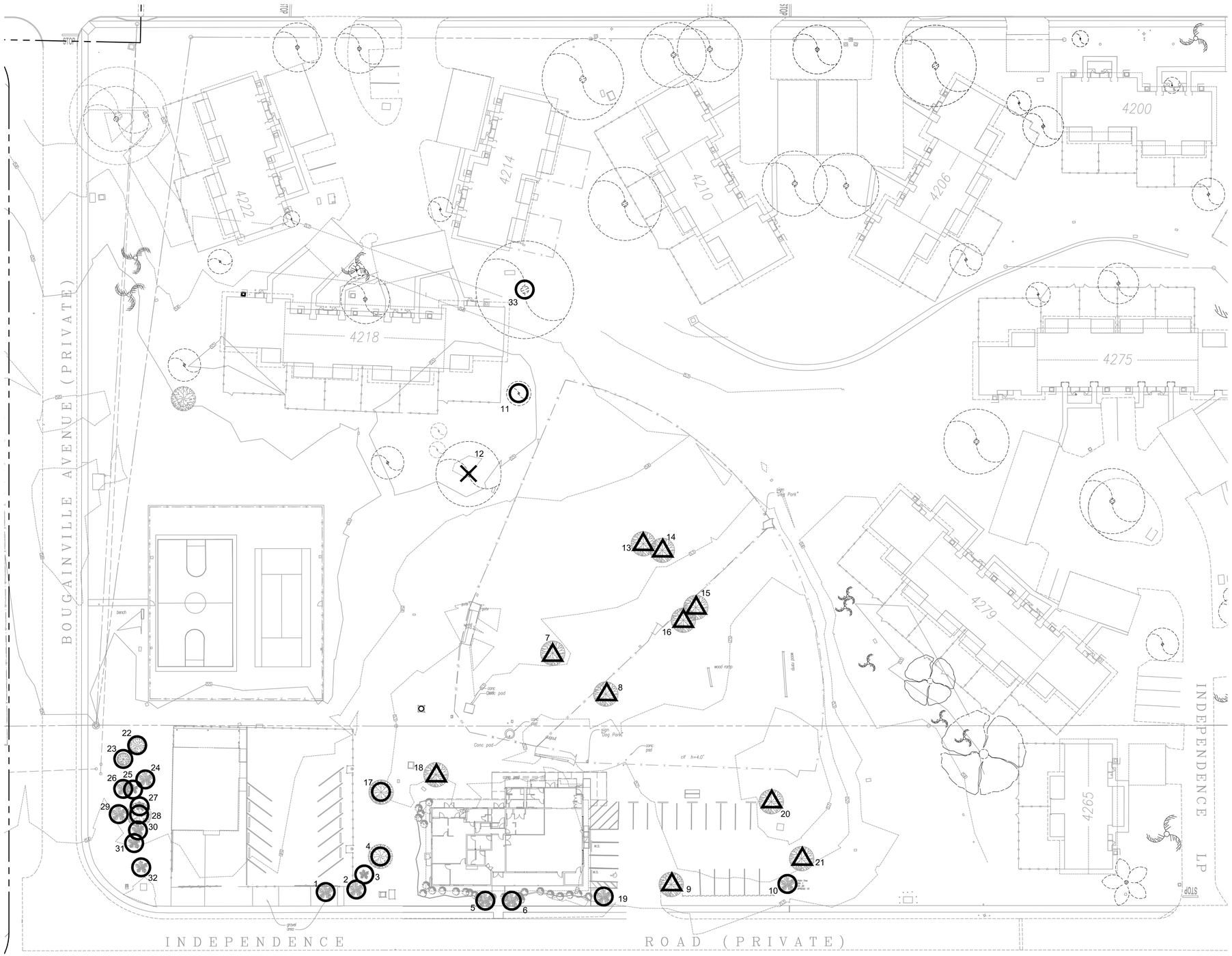
Designed by:
AA

Drawn by:
CS, RS, CH

Date:
APRIL 2017

L100

Thu, 18. May. 2017 - 10:57am
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L100 Overall Landscape Plan.dwg



TREE DISPOSITION LEGEND

SYMBOL	DESCRIPTION
○	PROTECT IN PLACE (SEE TREE PROTECTION NOTES AND DETAILS)
1 △	SALVAGE AND RELOCATE. OWNER TO DIRECT NEW LOCATION WITHIN MAKAI NEIGHBORHOOD (SEE TREE RELOCATION NOTES AND DETAILS)
✕	REMOVE / DEMOLISH

TREE DISPOSITION SCHEDULE

TREE ID #	COMMON NAME	REMARK
1	PALM	PROTECT IN PLACE
2	PALM	PROTECT IN PLACE
3	MANILA PALM	PROTECT IN PLACE
4	TRUE KOU	PROTECT IN PLACE
5	FOXTAIL PALM	PROTECT IN PLACE
6	FOXTAIL PALM	PROTECT IN PLACE
7	TRUE KOU	SALVAGE AND RELOCATE
8	TRUE KOU	SALVAGE AND RELOCATE
9	HONG KONG ORCHID	SALVAGE AND RELOCATE
10	PALM	PROTECT IN PLACE
11	PLUMERIA	PROTECT IN PLACE
12	MANGO	REMOVE / DEMOLISH
13	TRUE KOU	SALVAGE AND RELOCATE
14	TRUE KOU	SALVAGE AND RELOCATE
15	TRUE KOU	SALVAGE AND RELOCATE
16	TRUE KOU	SALVAGE AND RELOCATE
17	TRUE KOU	PROTECT IN PLACE
18	TRUE KOU	SALVAGE AND RELOCATE
19	FOXTAIL PALM	PROTECT IN PLACE
20	HONG KONG ORCHID	SALVAGE AND RELOCATE
21	HONG KONG ORCHID	SALVAGE AND RELOCATE
22	TRUE KOU	PROTECT IN PLACE
23	TRUE KOU	PROTECT IN PLACE
24	MANILA PALM	PROTECT IN PLACE
25	PALM	PROTECT IN PLACE
26	PALM	PROTECT IN PLACE
27	PALM	PROTECT IN PLACE
28	TRUE KOU	PROTECT IN PLACE
29	PALM	PROTECT IN PLACE
30	PALM	PROTECT IN PLACE
31	PALM	PROTECT IN PLACE
32	PALM	PROTECT IN PLACE
33	MONKEYPOD	PROTECT IN PLACE

TREE DISPOSITION PLAN

SCALE: 1" =30'

NORTH

GRAPHIC SCALE

30' 0' 30' 60'

Scale: 1"=30'

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1	REVISED TREE DISPOSITION LEGEND
△	
△	
△	

Sheet

TREE DISPOSITION PLAN AND SCHEDULE

Project No.
2015.33.0601

Designed by:
AA

Drawn by:
CS, RS, CH

Date:
APRIL 2017

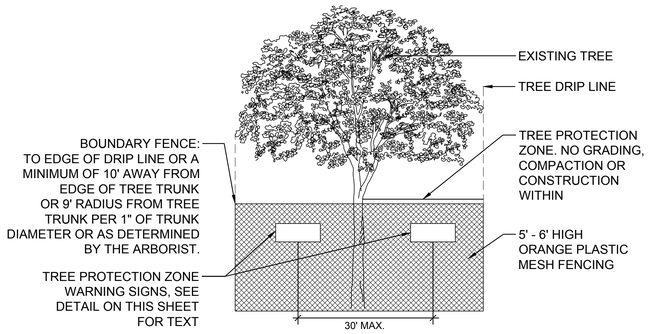
L201

14 of 54

Thu, 18 May 2017 - 9:30am
L:\2015\33\0601_Kalaeloa Pool Improvements\CAD\Sheets\L201 Tree Disposition Plan.dwg

NOTES:

1. FOR TREES THAT ARE IN NARROW PLANTING STRIPS, THE ENTIRE PLANTING STRIP SHALL BE ENCLOSED.
2. FOR TREE WELLS AND SMALL PLANTER AREAS THAT ARE FULL OF ROOTS, USE PLASTIC TRAFFIC BARRICADES (WATER FILLABLE) MINIMUM (3) EACH, OR TYPE 1 OR TYPE 2 TRAFFIC BARRICADES, MINIMUM FOUR (4) EACH, OR AS DETERMINED BY THE OWNERS REPRESENTATIVE.
3. IF THE FENCE IS INSIDE THE DRIP LINE, LAY PLYWOOD SHEETS, STEEL PLATES OR HEAVY DUTY GROUND PROTECTION MATS OVER AN 8" MULCH LAYER TO PROTECT THE TREE ROOTS AND GROUND FROM DAMAGE, SOIL COMPACTION AND EROSION FROM CONSTRUCTION EQUIPMENT AND VEHICLES. AVOID DAMAGING ROOTS DURING FENCE POST INSTALLATION.
4. POSTS: 2" SQUARE GALVANIZED STEEL POSTS, DRIVEN INTO THE GROUND TO MIN. 2' DEPTH, AT NO MORE THAN 10' SPACING.
5. SCHEDULE AN ON SITE MEETING WITH THE OWNERS REPRESENTATIVE TO DISCUSS THE INSTALLATION AND LAYOUT OF THE TREE PROTECTION FENCING.



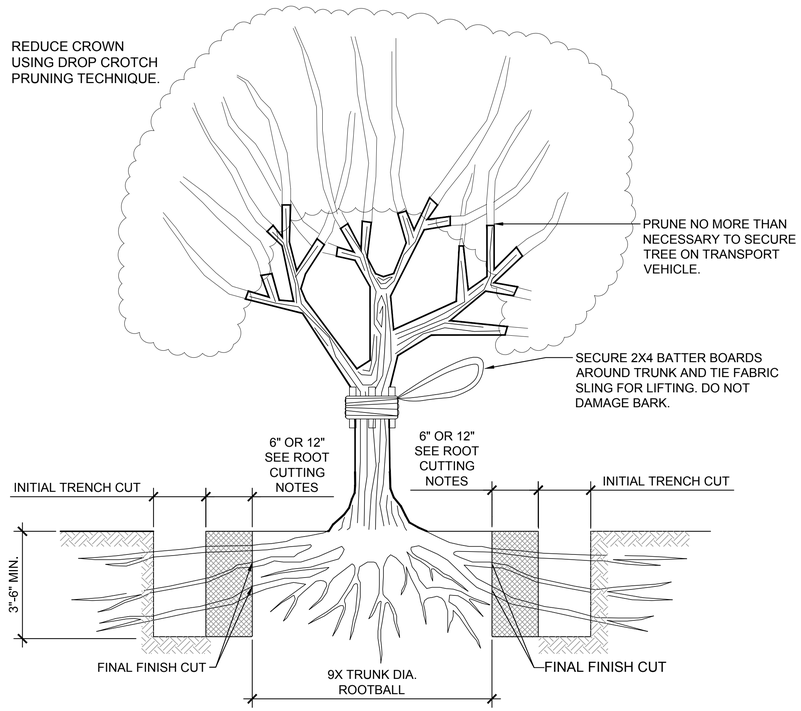
1 TREE PROTECTION ZONE FENCING DETAIL

NOT TO SCALE

NOTES:

1. MINIMUM SIZE OF SIGNS: 8-1/2" X 11".
2. SECURELY FASTEN TO FENCE.
3. PROVIDE SIGNAGE 30' O.C. SPACING MAX.
4. SIGNS TO BE LAMINATED WITH HEAVY PLASTIC.

TREE PROTECTION ZONE WARNING SIGN



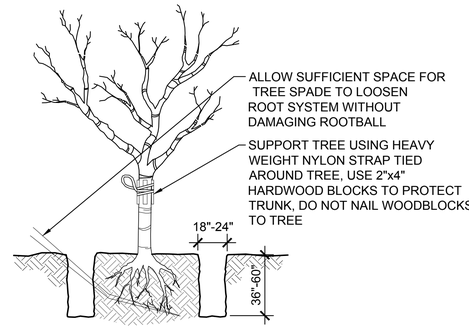
NOTE: TREE RELOCATION SHALL BE DONE UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.

ROOT CUTTING NOTES:

1. MAKE INITIAL TRENCH CUTS 6" BEYOND THE FINAL FINISH CUT WHEN USING A TRENCHER.
2. MAKE INITIAL TRENCH CUTS 12" BEYOND THE FINAL FINISH CUTS WHEN USING A BACKHOE.
3. HAND EXCAVATE AROUND ROOTS TO THE SIZE OF DESIRED ROOTBALL AND THEN TRIM OFF PROTRUDING ROOTS BY HAND OR CHAINSAW.
4. ANY ROOT PRUNING SHALL BE DONE BY THE CERTIFIED ARBORIST. ALL SEVERED ROOTS IRRESPECTIVE OF SIZE SHOULD BE CUT CLEAN WITH A CHAINSAW, LOPPER, PRUNING SHEARS AND/OR HANDSAW. A CLEAN CUT ALLOWS SEVERED ROOTS TO ABSORB WATER AND NUTRIENTS, AND FACILITATES ROOT REGENERATION AND COMPARTMENTALIZATION.

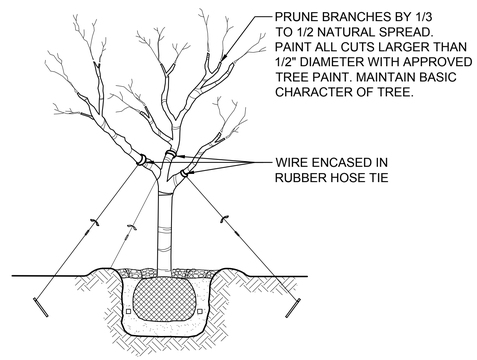
2 LARGE TREE RELOCATION & ROOT CUTTING DETAIL

NOT TO SCALE



3 TREE RELOCATION PREPARATION DETAIL

NOT TO SCALE



4 TREE RELOCATION PLANTING DETAIL

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TREE DISPOSITION DETAILS

Project No.
2015.33.0601
Designed by:
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Drawn by:
CS, RS, CH
Date:
APRIL 2017

L202

15 of 54

Wed, 17 May 2017 - 1:48pm
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L202 Tree Disposition Details.dwg

BOUGAINVILLE AVENUE (PRIVATE)

BOUGAINVILLE AVE.

INDEPENDENCE ROAD (PRIVATE)

INDEPENDENCE LP

4222 4214 4210 4206 4200 4218 4275 4279 4265

POINT OF CONNECTION CONNECT NEW 2-1/2" PVC SCH 40 MAIN TO EXISTING STUBOUT (PROVIDED BY CIVIL).

WIRELESS RAIN SENSOR, MOUNT TO CORNER ROOF

WALL MOUNT IRRIGATION CONTROLLER. (POWER PROVIDED BY ELECTRICAL).

OVERALL IRRIGATION PLAN

SCALE: 1" =30'

NORTH

GRAPHIC SCALE

30' 0' 30' 60'

Scale: 1"=30'

Thu, 18. May. 2017 - 9:32pm
L:\2015\330601_Kolaleloa_Pool_Improvements\CAD\Sheets\L301_IrrigationPlan.dwg

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1 REVISED IRRIGATION

Sheet

OVERALL IRRIGATION PLAN

Project No.
2015.33.0601
Designed by:
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Date:
APRIL 2017

L301

IRRIGATION NOTES:

1. IRRIGATION SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND ARE SUBJECT TO ADJUSTMENTS DUE TO UNANTICIPATED FIELD CONDITIONS. UNLESS OTHERWISE NOTED, LOCATE ALL SPRINKLER HEADS, VALVES, AND PIPES WITHIN PLANTING AREAS.

2. THE IRRIGATION SYSTEM DESIGN IS BASED ON A MINIMUM STATIC WATER PRESSURE OF 55 PSI AT THE POINT OF CONNECTION. NOTIFY PROJECT ENGINEER IF PRESSURE IS LESS THAN 55 PSI OR GREATER THAN 100 PSI..

3. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE INSTALLATION OF ALL SLEEVES, CONDUITS, MAINS AND LATERALS UNDER PAVEMENT AND THROUGH WALLS AND SHALL ASSURE THAT THESE ITEMS ARE LAID PRIOR TO THE PLACEMENT OF PAVEMENT/WALL. STUB-OUTS AND CONDUITS RUNNING THROUGH THE BUILDING STRUCTURE WILL BE DONE BY OTHERS. ALL IRRIGATION WIRES SHALL BE BUNDLED AND INSTALLED UNDER THE IRRIGATION MAIN FOR IN-GRADE INSTALLATION. INSTALL IRRIGATION WIRES IN CONDUITS WHERE WIRES ARE NOT FOLLOWING THE IRRIGATION MAIN AND ALL ABOVE-GRADE INSTALLATIONS. VERIFY UTILITY LOCATIONS BEFORE TRENCHING. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND EXISTING PLANTING TO REMAIN.

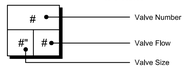
4. INSTALL SPRINKLER HEADS 6" AWAY FROM WALKWAYS, DRIVEWAYS AND 24" FROM STRUCTURES. FLEX RISERS SHALL BE USED ON ALL SHRUB HEADS ON RISERS INSTALLED ALONG WALKWAYS, DRIVEWAYS AND PARKING SPACES. ADJUST ALL SPRINKLER HEADS TO OBTAIN BEST COVERAGE. ADJUST FLOW CONTROL OF CONTROL VALVES TO MINIMIZE MISTING.

5. THE CONTRACTOR, TOGETHER WITH THE OWNER'S MAINTENANCE REPRESENTATIVE SHALL PROGRAM THE IRRIGATION CONTROLLER TO ACCOMMODATE THE LANDSCAPE AND SITE REQUIREMENTS, AND SHALL INSTRUCT THE REPRESENTATIVE ON THE OPERATION OF THE COMPLETE SYSTEM. ALL IRRIGATION OPERATION SHALL BE DURING "OFF PEAK" HOURS. OPERATION DURING OTHER TIMES SHALL BE WITH THE APPROVAL OF THE OWNER.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	PSI	GPM	RADIUS
●	TORO 570Z-4P-PRX-COM 15 SERIES	30	3.60	15'
◓	TORO 570Z-4P-PRX-COM 15 SERIES	30	1.65	15'
◔	TORO 570Z-4P-PRX-COM 15 SERIES	30	0.85	15'
▲	TORO 570Z-4P-PRX-COM TURF STRIP SPRAY	30	0.45	4'x15'
△	TORO 570Z-4P-PRX-COM TURF STRIP SPRAY	30	0.90	4'x30'
◓	TORO 570Z-12P-PRX-COM 15 SERIES	30	1.65	15'
◔	TORO 570Z-12P-PRX-COM 15 SERIES	30	0.85	15'
◉	TORO 570Z-12P-PRX-COM 15 SERIES	30	1.10	15'
◉	TORO 570Z-12P-PRX-COM 15 SERIES	30	2.60	15'
◎	TORO 570Z-12P-PRX-COM 15 SERIES VAN	30		15'
▲	TORO 570Z-12P-PRX-COM SHRUB STRIP SPRAY	30	0.45	4'x15'
△	TORO 570Z-12P-PRX-COM SHRUB STRIP SPRAY	30	0.90	4'x30'
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS
ⓥ	TORO T5-P-CK-LA TURF ROTOR, 5" POP-UP, LOW ANGLE NOZZLES, PLASTIC RISER. ADJUSTABLE ARC PATTERNS 40-360, 25`-50` RADIUS WITH CHECK VALVE	45	1.52	31'
ⓥ	TORO T5-P-CK-LA TURF ROTOR, 5" POP-UP, LOW ANGLE NOZZLES, PLASTIC RISER. ADJUSTABLE ARC PATTERNS 40-360, 25`-50` RADIUS WITH CHECK VALVE	45	3.05	34'
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION			
◒	TORO 220-26-0 BRASS 1", 1-1/4", 1-1/2", 2", 2-1/2", AND 3" ELECTRIC REMOTE CONTROL VALVE, WITH SPIKE GUARD SOLENOID. 1"-2" HAVE IN-LINE GLOBE BODY STYLE, AND 2-1/2" - 3" ARE ANGLE VALVE BODY STYLES			
◪	TORO 100-2SLVC TWO-PIECE, 1" SINGLE LUG QUICK COUPLER VALVE WITH VINYL COVER			
⋈	NIBCO T-113 CLASS 125 BRONZE GATE SHUT OFF VALVE WITH WHEEL HANDLE			
BF	ZURN 975XL 1-1/2" REDUCED PRESSURE BACKFLOW PREVENTER			
□	RAIN MASTER CONTROLLER RME36EGI-ST			
◈	IRRITROL RS1000 WIRELESS RAIN SENSOR			
———	IRRIGATION LATERAL: PVC CLASS 200 SDR 21 PIPE			
— — — —	IRRIGATION MAINLINE: PVC SCHEDULE 40 PIPE			
– – – – – –	PIPE SLEEVE: PVC SCHEDULE 40 PIPE			
⊢ · — · — · ⊣	PIPE CONDUIT: PVC SCHEDULE 40 PIPE			

Valve Callout



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IRRIGATION EQUIPMENT SCHEDULE, DETAILS AND NOTES

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Date:
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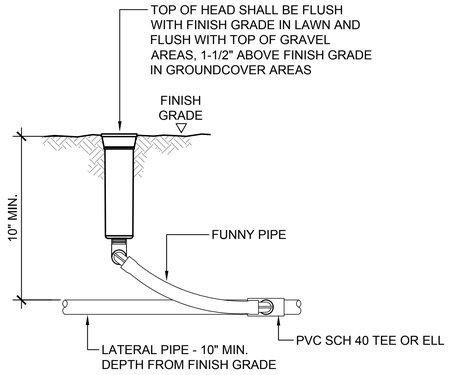
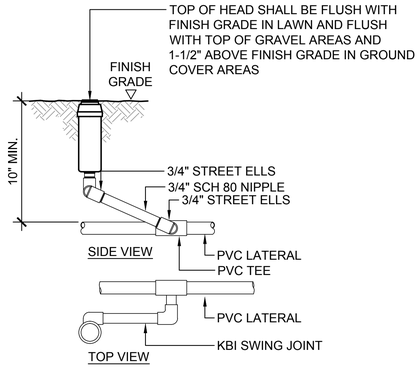
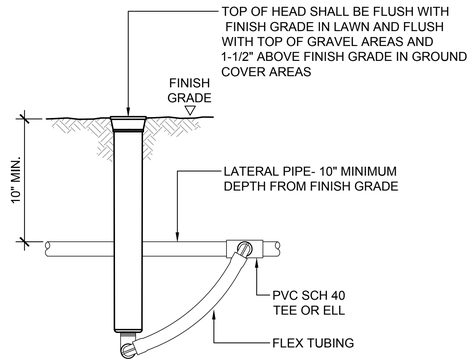
L302



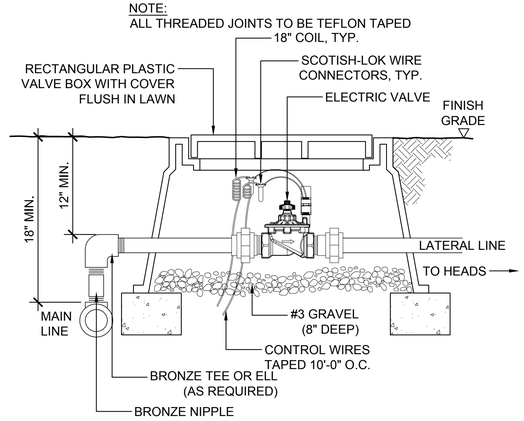
1 4" POP-UP SPRAY DETAIL
NOT TO SCALE



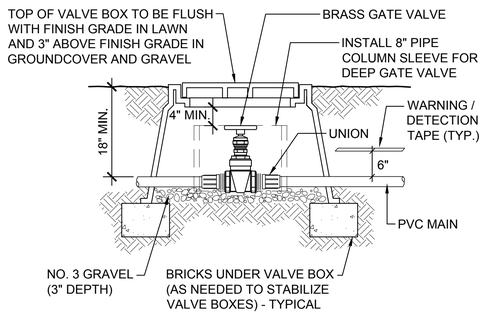
2 4" POP-UP ROTOR DETAIL
NOT TO SCALE



3 12" POP-UP SPRAY DETAIL
NOT TO SCALE



4 REMOTE CONTROL VALVE DETAIL
NOT TO SCALE



5 GATE VALVE DETAIL
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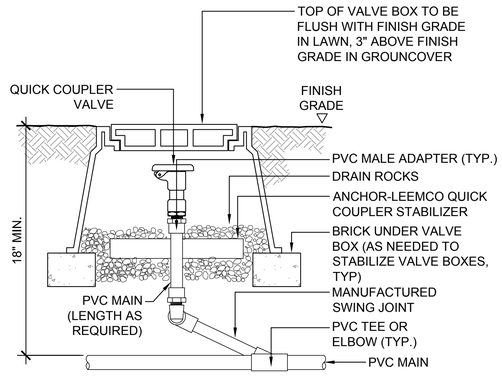
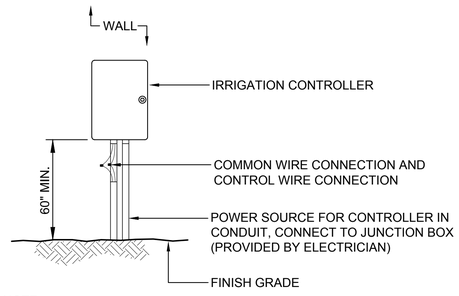


6 QUICK COUPLER VALVE DETAIL
NOT TO SCALE

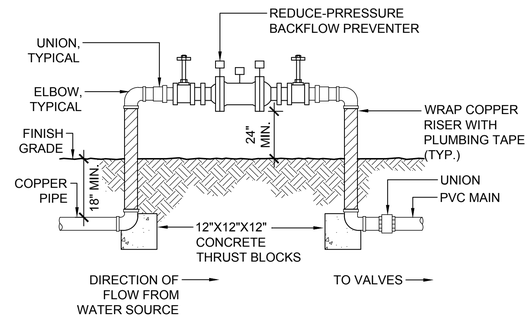


NOTE:

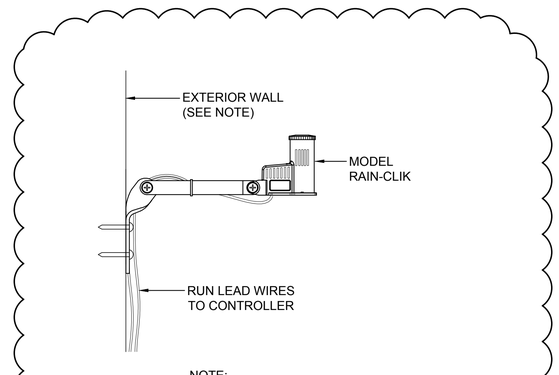
1. MOUNT CONTROLLER 60" MIN. FROM FINISH GRADE TO BOTTOM OF CONTROLLER.
2. ALL WIRING TO BE INSTALLED AS PER LOCAL CODE.
3. SEE MANUFACTURER'S RECOMMENDATIONS FOR MOUNTING.

7 IRRIGATION CONTROLLER DETAIL
NOT TO SCALE

NOTE:
1. USE FLANGED FITTINGS ON 3" AND LARGER PIPE.
2 ADAPT INLET AND OUTLET FITTINGS TO MAINLINE AS REQUIRED.
3. ALL PIPE AND FITTINGS INSTALLED ABOVE GRADE SHALL BE EITHER COPPER OR BRONZE ONLY.



8 BACKFLOW PREVENTER DETAIL
NOT TO SCALE



NOTE:
MOUNT ON ANY SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN THE PATH OF SPRINKLER SPRAY.

1

9 RAIN SENSOR DETAIL
NOT TO SCALE

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IRRIGATION DETAILS

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Date:
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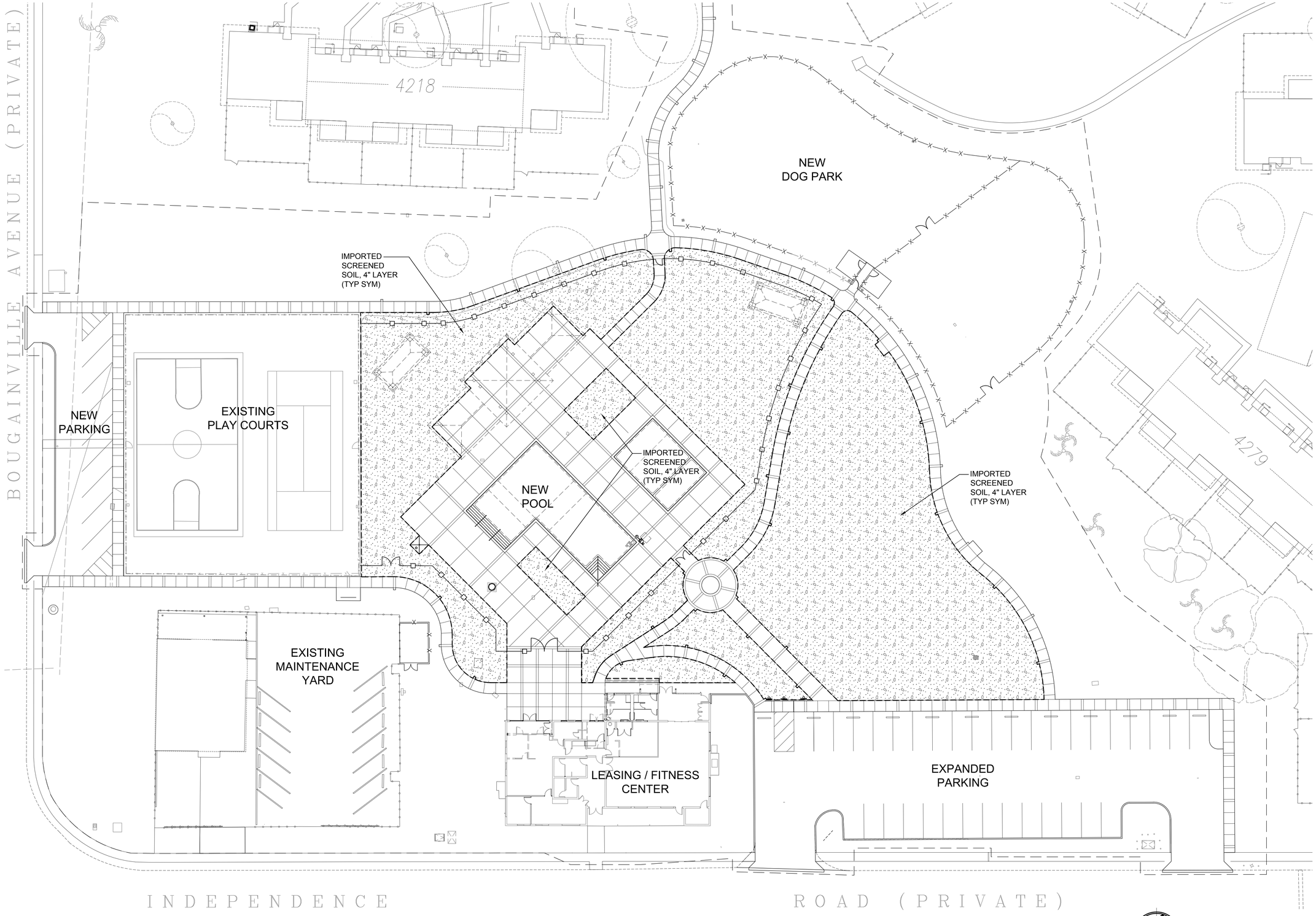
L303



LANDSCAPE SOIL PLACEMENT PLAN

SCALE: 1" =20'

NORTH

GRAPHIC SCALE

20' 0' 20' 40'

Scale: 1"=20'

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LANDSCAPE SOIL PLACEMENT PLAN

Project No.
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Date:
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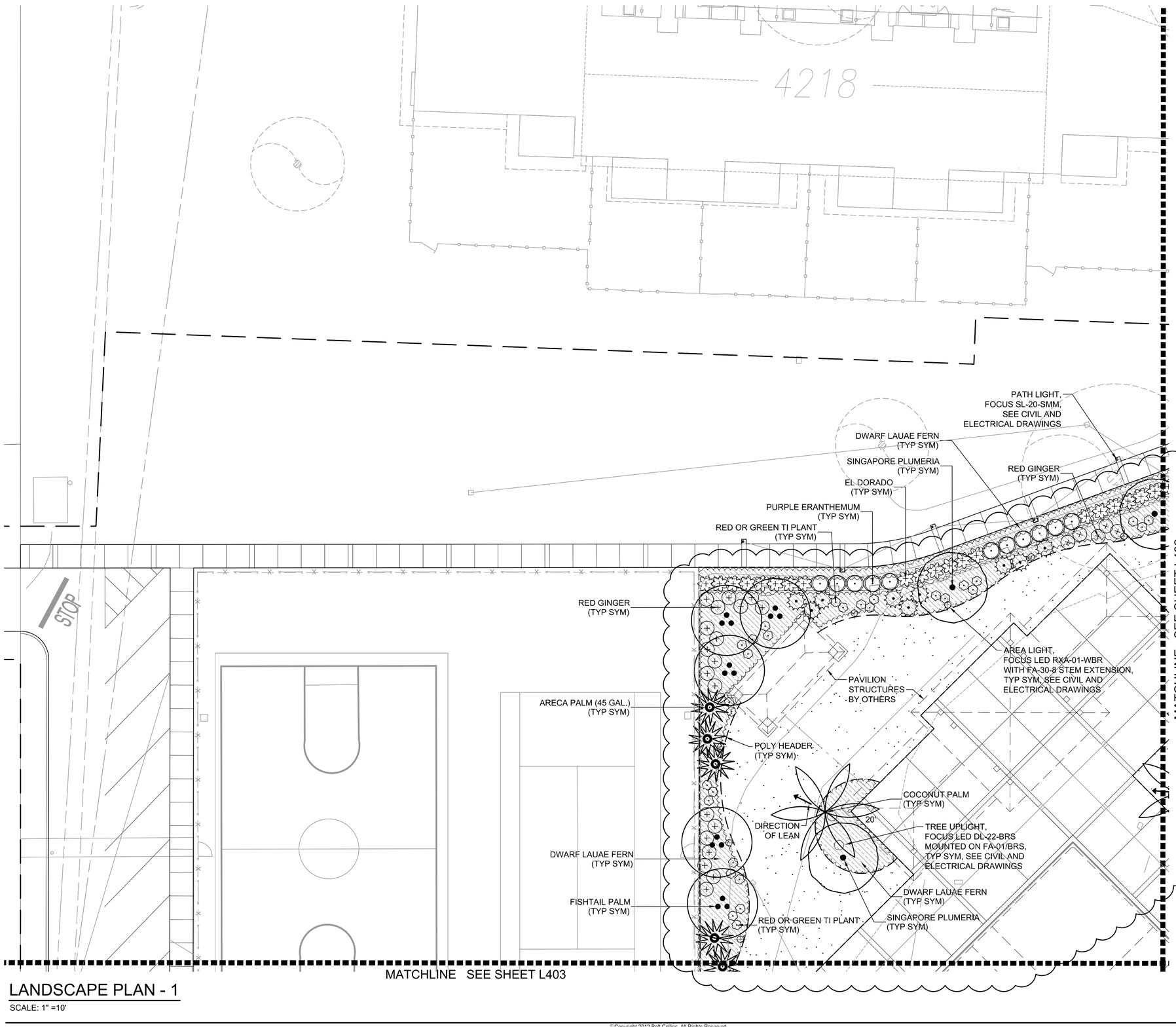
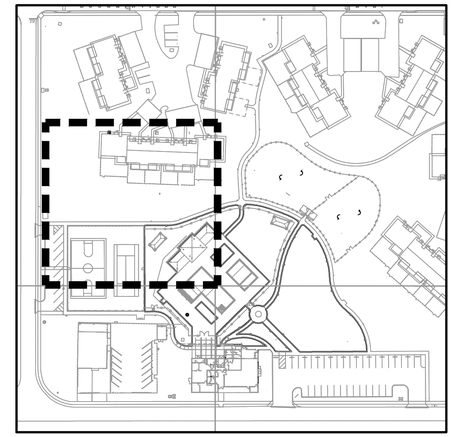
1 L400

Wed, 17 May 2017 - 1:45pm
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L400 Landscape Soil Placement Plan.dwg



LANDSCAPE PLAN - 1

SCALE: 1" =10'



KEY PLAN

NORTH

GRAPHIC SCALE

10' 0' 10' 20'

Scale: 1"=10'

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1 REVISED LANDSCAPE

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LANDSCAPE PLAN - 1

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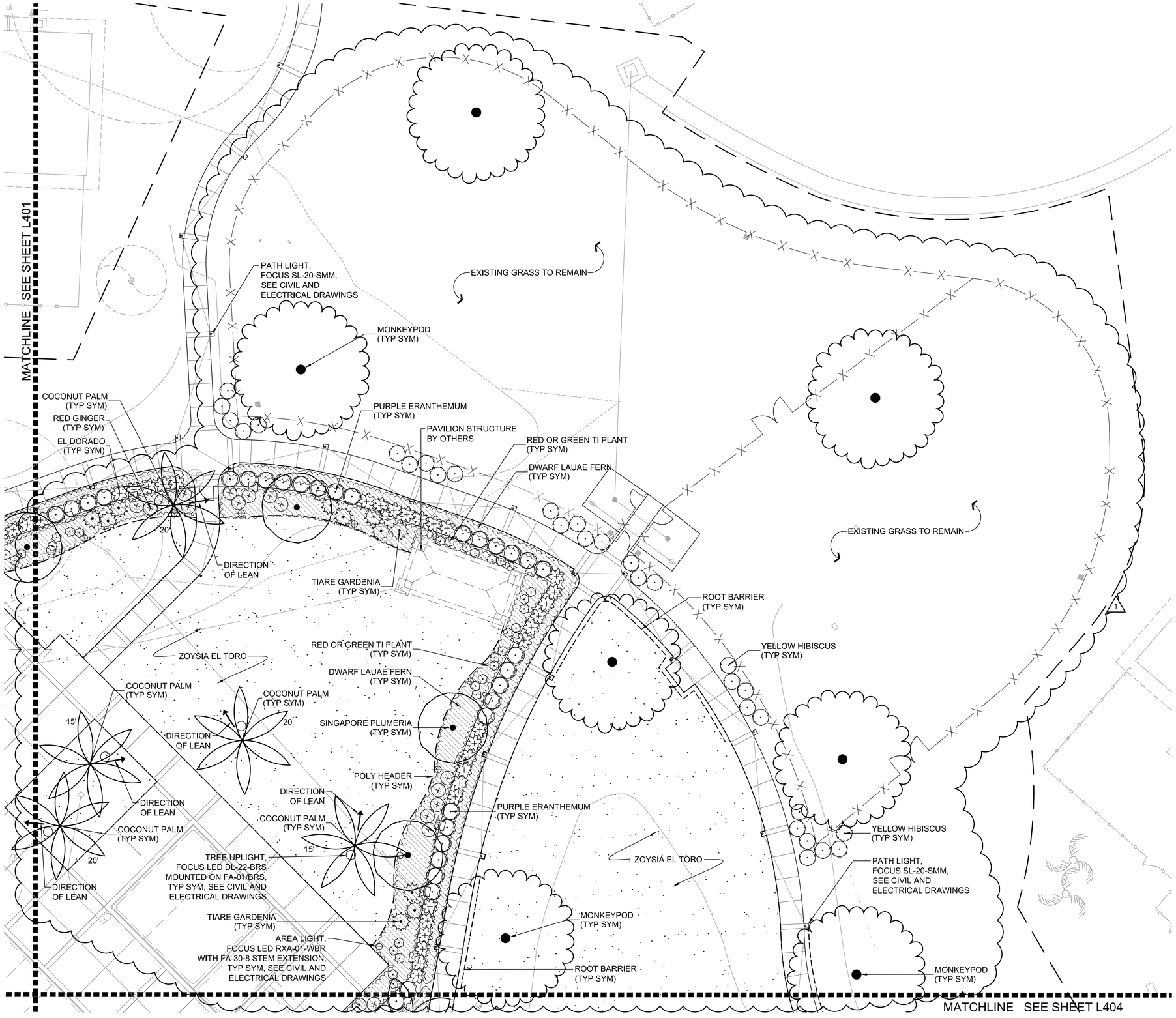
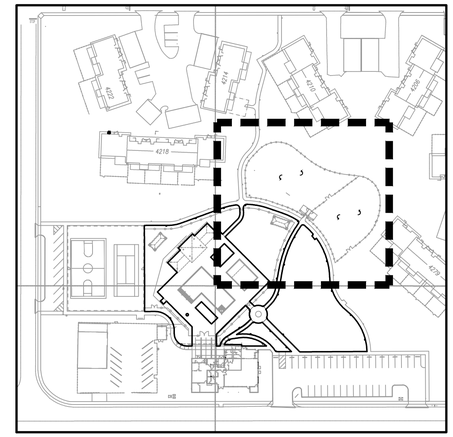
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L401 Landscape Plan-1.dwg



LANDSCAPE PLAN - 2

SCALE: 1" =10'



KEY PLAN

1 NOTE:
RESTORE GRASS WITHIN DOG PARK AREA AFFECTED BY CONSTRUCTION. MATCH EXISTING GRASS.

NORTH

GRAPHIC SCALE
10' 0' 10' 20'
Scale: 1"=10'

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LANDSCAPE PLAN - 2

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L402

20 of 54

MATCHLINE SEE SHEET L401

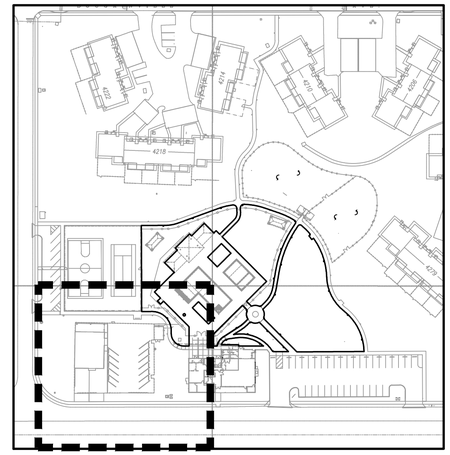
ARECA PALM (45 GAL.) (TYP SYM)
TIARE GARDENIA (TYP SYM)
FISHTAIL PALM (TYP SYM)
RED OR GREEN TI PLANT (TYP SYM)
AREA LIGHT, FOCUS LED RXA-01-WBR WITH FA-30-8 STEM EXTENSION, TYP SYM, SEE CIVIL AND ELECTRICAL DRAWINGS
NEW POOL
COCONUT PALM (TYP SYM)
TIARE GARDENIA (TYP SYM)
EL DORADO (TYP SYM)
TREE UPLIGHT, FOCUS LED DL-22-BRS MOUNTED ON FA-01/BRS, TYP SYM, SEE CIVIL AND ELECTRICAL DRAWINGS
20'
15'
DIRECTION OF LEAN
RED OR GREEN TI PLANT (TYP SYM)
COCONUT PALM (TYP SYM)
DIRECTION OF LEAN
VARIEGATED HAU (TYP SYM)
2" DEPTH WOOD MULCH
DWARF LAUAE FERN (TYP SYM)
EXISTING TRUE KOU TO REMAIN (TYP SYM)
EXISTING PALM TO REMAIN (TYP SYM)
DWARF LAUAE FERN (TYP SYM)
ADDITIONAL PLANTING TO BE FIELD DIRECTED BY LANDSCAPE ARCHITECT
POLY HEADER
REMOVE ALL BOUGAINVILLEA
ARECA PALM (15 GAL.) (TYP SYM)
RED GINGER (TYP SYM)
TIARE GARDENIA (TYP SYM)
EXISTING GRASS TO REMAIN
EXISTING MAINTENANCE YARD
PATH LIGHT, FOCUS SL-20-SMM, SEE CIVIL AND ELECTRICAL DRAWINGS
DWARF LAUAE FERN (TYP SYM)
EXISTING TRUE KOU TO REMAIN (TYP SYM)
EXISTING GRASS TO REMAIN
EXISTING TRUE KOU TO REMAIN (TYP SYM)
VARIEGATED HAU (TYP SYM)
2" DEPTH WOOD MULCH
EXISTING PALM TO REMAIN (TYP SYM)
PURPLE ERANTHEMUM (TYP SYM)
TIARE GARDENIA (TYP SYM)
SPIDER LILY (TYP SYM)
DWARF LAUAE FERN (TYP SYM)
POLY HEADER
RED GINGER (TYP SYM)
2" DEPTH WOOD MULCH
GRAVEL MAINTENANCE STRIP
MATCHLINE SEE SHEET L404
TIARE GARDENIA (TYP SYM)
DWARF LAUAE FERN (TYP SYM)
VARIEGATED HAU (TYP SYM)
HELICONIA PARROT'S BEAK (TYP SYM)
SPIDER LILY (TYP SYM)
EXISTING PALM TO REMAIN (TYP SYM)

LANDSCAPE PLAN - 3

SCALE: 1" =10'

NORTH

GRAPHIC SCALE
10' 0' 10' 20'
Scale: 1"=10'



KEY PLAN

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LANDSCAPE PLAN - 3

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Wed, 17 May 2017 - 2:21pm
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L403 Landscape Plan-3.dwg

MATCHLINE SEE SHEET L402

MATCHLINE SEE SHEET L403

NEW POOL

RED OR GREEN TI PLANT (TYP SYM)

RED GINGER (TYP SYM)

EL DORADO (TYP SYM)

AREA LIGHT, FOCUS LED RXA-01-WBR WITH FA-30-8 STEM EXTENSION, TYP SYM, SEE CIVIL AND ELECTRICAL DRAWINGS

DWARF LAUAE FERN (TYP SYM)

PURPLE ERANTHEMUM (TYP SYM)

PATH LIGHT, FOCUS SL-20-SMM, SEE CIVIL AND ELECTRICAL DRAWINGS

PURPLE ERANTHEMUM (TYP SYM)

HELICONIA PARROT'S BEAK (TYP SYM)

`AKIA (TYP SYM)

LOULU PALM (TYP SYM)

UKI`UKI COMPACT (TYP SYM)

TREE UPLIGHT, FOCUS LED SL-20-MDGMR16NLBRS, TYP SYM, SEE CIVIL AND ELECTRICAL DRAWINGS

ZOYSIA EL TORO

HELICONIA PARROT'S BEAK (TYP SYM)

LOULU PALM (TYP SYM)

TRUE KOU (TYP SYM)

HELICONIA PARROT'S BEAK (TYP SYM)

`AKIA (TYP SYM)

TRUE KOU (TYP SYM)

GRAVEL MAINTENANCE STRIP

TIARE GARDENIA (TYP SYM)

ROOT BARRIER (TYP SYM)

ROOT BARRIER (TYP SYM)

TRUE KOU (TYP SYM)

TRUE KOU (TYP SYM)

LEASING / FITNESS CENTER

SPIDER LILY (TYP SYM)

DWARF LAUAE FERN (TYP SYM)

BLACK CINDER (TYP SYM)

POLY HEADER (TYP SYM)

YELLOW HIBISCUS (TYP SYM)

TRUE KOU (TYP SYM)

ROOT BARRIER (TYP SYM)

EXTENDED PARKING

TRUE KOU (TYP SYM)

SPIDER LILY (TYP SYM)

ROOT BARRIER (TYP SYM)

ROOT BARRIER (TYP SYM)

TRUE KOU (TYP SYM)

`AKIA (TYP SYM)

SPIDER LILY (TYP SYM)

TIARE GARDENIA (TYP SYM)

STOP

STOP

`AKIA (TYP SYM)

`AKIA (TYP SYM)

TRUE KOU (TYP SYM)

YELLOW HIBISCUS (TYP SYM)

EXISTING PALM TO REMAIN (TYP SYM)

RED GINGER (TYP SYM)

EXISTING PALM TO REMAIN (TYP SYM)

1

KEY PLAN

LANDSCAPE PLAN - 4

SCALE: 1" =10'

NORTH

GRAPHIC SCALE

10' 0' 10' 20'

Scale: 1"=10'

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Site Amenities Improvements

Kalaeloa Rental Homes Site

Kalaeloa, Oahu, Hawaii

AARON A. AKAU
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 10370
HAWAII, U.S.A.

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

APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 REVISED LANDSCAPE

Sheet

LANDSCAPE PLAN - 4

Project No.
2015.33.0601

Designed by:
AA

Drawn by:
CS, RS, CH

Date:
APRIL 2017

L404

22 of 54

Wed, 17 May 2017 - 2:22pm
L:\2015\33601_Kalaeloa Pool Improvements\CAD\Sheets\L404 Landscape Plan-4.dwg

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	GAL	SIZE	TYP SYM		REMARKS
	6	CARYOTA MITIS	FISHTAIL PALM	F.S.	8`-10` BRN. TRK. HT.			8` TRUNK HT.
	17	CHRYSALIDOCARPUS LUTESCENS	ARECA PALM	15 GAL	4`-6` HT. MIN.			4-5 CANES
	6	CHRYSALIDOCARPUS LUTESCENS	ARECA PALM	45 GAL	8` HT. MIN.			4-5 CANES
	8	COCOS NUCIFERA	COCONUT PALM	F.S.	15` - 20` BRN. TRK. HT. SEE PLAN			NO SCARRING ON TRK.
	11	CORDIA SUBCORDATA	TRUE KOU	25 GAL	6` - 8` HT.			STRAIGHT TRUNK
	5	CORDIA SUBCORDATA	EXISTING TRUE KOU TO REMAIN	F.S.				
	6	PLUMERIA OBTUSA	SINGAPORE PLUMERIA	25 GAL	6` - 8` HT.			
	11	PRITCHARDIA HILLEBRANDII	LOULU PALM	F.S.	8` BROWN TRUNK HEIGHT			
	11	RHAPIS EXCELSA	RHAPIS PALM	15 GAL	4`-6` HT.			
	7	SAMANEA SAMAN	MONKEYPOD	F.S.	8` - 10` HT.			STRAIGHT, ROUND CANOPY
	13	VEITCHIA MERRILLII	EXISTING PALM TO REMAIN	EX		TO REMAIN		
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	GAL				REMARKS
	88	ALPINIA PURPURATA	RED GINGER	7 GAL				
	10	CORDYLINE FRUTICOSA	RED TI	3 GAL				
	91	CORDYLINE FRUTICOSA	RED OR GREEN TI PLANT	3 GAL				
	28	CRINUM ASIATICUM	SPIDER LILY	5 GAL				RUST FREE
	57	GARDENIA TAITENSIS	TIARE GARDENIA	5 GAL				
	78	HIBISCUS SPP.	YELLOW HIBISCUS	5 GAL				
	101	HIBISCUS TILIACEUS VARIEGATUM	VARIEGATED HAU	5 GAL				36" O.C.
	62	PSEUDERANTHEMUM ATROPURPUREUM	PURPLE ERANTHEMUM	3 GAL				36" O.C.
	104	PSEUDERANTHEMUM RETICULATUM	EL DORADO	3 GAL				36" O.C.
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	POT			SPACING	REMARKS
	283	DIANELLA SANDWICENSIS	`UKI`UKI COMPACT	6" POT			18" o.c.	
	224	HELICONIA PSITTACORUM	HELICONIA PARROT'S BEAK	1 GAL			24" o.c.	
	2,600	MICROSORTIUM SCOLOPENDRIUM LAUAE IKI	DWARF LAUAE FERN	6" POT			24" o.c.	
	432	WIKSTROEMIA UVA-URSI	`AKIA	1 GAL			24" o.c.	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	POT			SPACING	REMARKS
	21,594 SF	ZOYSIA JAPONICA	ZOYSIA EL TORO	STOLONS				

FIELD DIRECTED PLANTING SCHEDULE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	GAL				REMARKS
	15	CODIAEUM VARIEGATUM	CROTON PETRA	5 GAL				FIELD DIRECTED BY LANDSCAPE ARCHITECT
	25	CORDYLINE FRUTICOSA	GREEN TI	1 GAL				FIELD DIRECTED BY LANDSCAPE ARCHITECT
	25	CORDYLINE FRUTICOSA	RED TI	3 GAL				FIELD DIRECT BY LANDSCAOE ARCHITECT
	15	CRINUM ASIATICUM	SPIDER LILY	5 GAL				FIELD DIRECTED BY LANDSCAPE ARCHITECT
	15	DODONAEA VISCOSA	'A'ALI'I	5 GAL				FIELD DIRECTED BY LANDSCAPE ARCHITECT
	15	GARDENIA TAITENSIS	TIARE GARDENIA	5 GAL				FIELD DIRECTED BY LANDSCAPE ARCHITECT

MISCELLANEOUS	
405 CY	IMPORTED SCREENED SOIL (4" LAYER) POOL ENCLOSURE AREA ONLY
17,302 SF	SOIL PREPARATION (1" LAYER HAWAIIAN EARTH PRODUCTS ORGANIC SOIL CONDITIONER / COMPOST, ROTO-TILL 6" DEEP INTO SOIL) FOR SHRUB AND GROUND COVER AREAS
106.93 CY	MULCH (2" LAYER) FOR ALL SHRUB/GROUNDCOVER BEDS
1,732 LF	POLY HEADER
422 LF	ROOT BARRIER
3.67 CY	NO. 3B FINE BLUE ROCK GRAVEL MAINTENANCE STRIP (3" LAYER)
397 SF	WEED CONTROL FABRIC
2.5 CY	BLACK CINDER (3" LAYER)

PLANTING NOTES:

1. CONTRACTOR SHALL RESTORE ALL GRASS DAMAGED BY CONSTRUCTION AND MATCH EXISTING.
2. CONTRACTOR SHALL STORE AND MAINTAIN EXISTING TREES TO BE RELOCATED FROM THE BEGINNING OF CONSTRUCTION UNTIL THE TIME OF PLANTING.
3. PROVIDE 4" OF PLANTING SOIL OVER ALL PLANTING AREAS.
4. PROVIDE 2" COVER OF MULCH OVER ALL PLANTING AREAS.
5. BACKFILL MIX SHALL CONSIST OF FOUR (4) PARTS OF AMENDED IMPORTED PLANTING SOIL TO ONE (1) PART ORGANIC SOIL CONDITIONER (SEE SPECIFICATIONS). ADD ONE (1) POUND OF 10-30-10 FERTILIZER TO ONE (1) CUBIC YARD OF BACKFILL MIX. MIX THOROUGHLY ON PROJECT SITE PRIOR TO ANY PLANTING OPERATIONS.
6. INDICATED BACKFILL MIX IS FOR BIDDING PURPOSES ONLY. A SOIL ANALYSIS WITH RECOMMENDATIONS WILL BE REQUIRED AND TAKE PRECEDENCE OVER THE INDICATED MIXTURE.
7. PLANTING TABLETS FOR TREES AND SHRUBS SHALL BE AS FOLLOWS:

FIELD SPECIMEN	12 TABLETS
25 GALLON	8 TABLETS
15 GALLON	5 TABLETS
5 GALLON	3 TABLETS
3 GALLON	2 TABLETS
1 GALLON	1 TABLET

   USE SLOW RELEASE FERTILIZER TABLETS 20-10-5, 21 GRAM SIZE.
8. GROUNDCOVER SHALL BE PLANTED UNDER ALL TREES, PALMS AND SHRUBS (UNLESS OTHERWISE NOTED ON PLANS).
9. QUANTITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL PERFORM ITS OWN QUANTITY ESTIMATES FOR THE PURPOSES OF BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE PLANTS AND OTHER MATERIALS IN THE QUANTITIES NECESSARY TO COMPLETE THE INSTALLATION AS SHOWN ON THE DRAWINGS.
10. NEW ZOYSIA GRASS WITHIN POOL ENCLOSURE AREA AND NEW OPEN PARK AREA ONLY. ALL OTHER GRASS AREA TO REMAIN.
11. IMPORTED SCREENED SOIL FOR POOL ENCLOSURE AND NEW OPEN PARK AREA ONLY. SEE SHEET L400.

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APRIL 30, 2018
EXPIRATION DATE OF THE LICENSE

Revisions

1 REVISED LIST AND NOTES

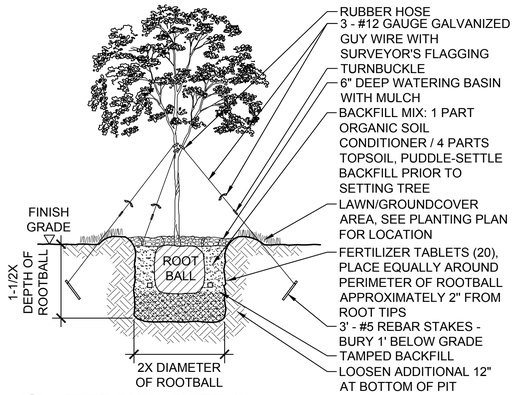
Sheet

PLANT MATERIAL SCHEDULE AND NOTES

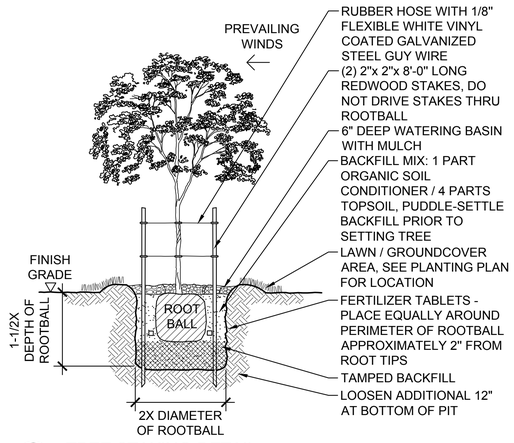
Project No.
2015.33.0601
Designed by:
AA
Drawn by:
CS, RS, CH
Date:
APRIL 2017

L405

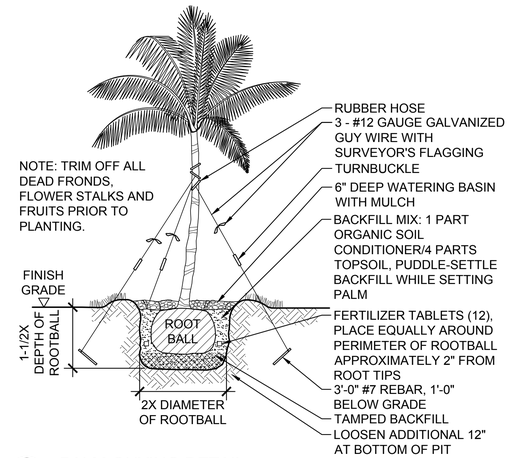
23 of 54



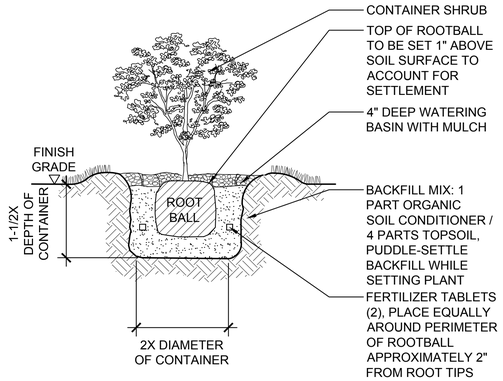
1 TREE GUYING DETAIL
NOT TO SCALE



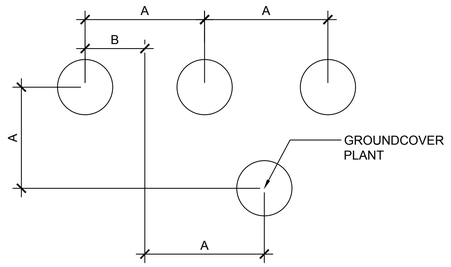
2 TREE STAKING DETAIL
NOT TO SCALE



3 PALM GUYING DETAIL
NOT TO SCALE

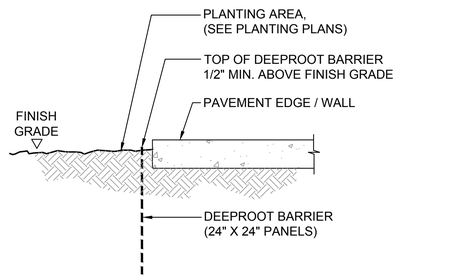


4 SHRUB PLANTING DETAIL
NOT TO SCALE



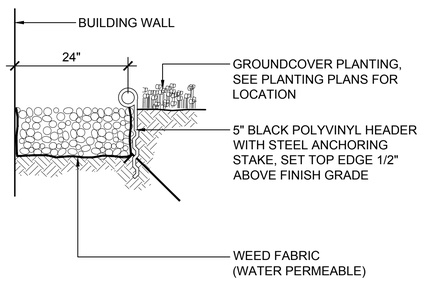
A = SPECIFIED DIMENSION ON CENTER 'O.C.'
B = STAGGER PLANTING WITH ADJACENT ROW(S) DIMENSION 'A' DIVIDED BY 2

5 STAGGERED GROUNDCOVER
NOT TO SCALE



NOTE:
INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.

6 ROOT BARRIER DETAIL
NOT TO SCALE



7 POLY HEADER / GRAVEL DETAIL
NOT TO SCALE

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Sheet
PLANTING DETAILS

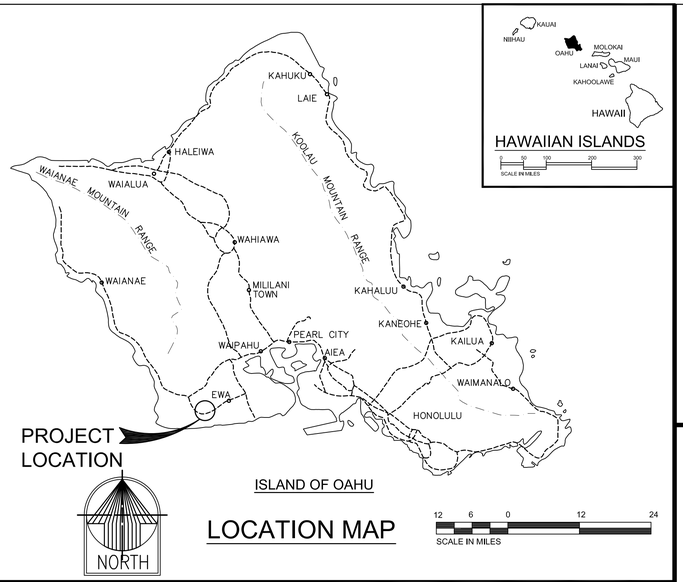
Project No.
2015.33.0601
Designed by:
AA
Drawn by:
CS, RS, CH
Date:
APRIL 2017

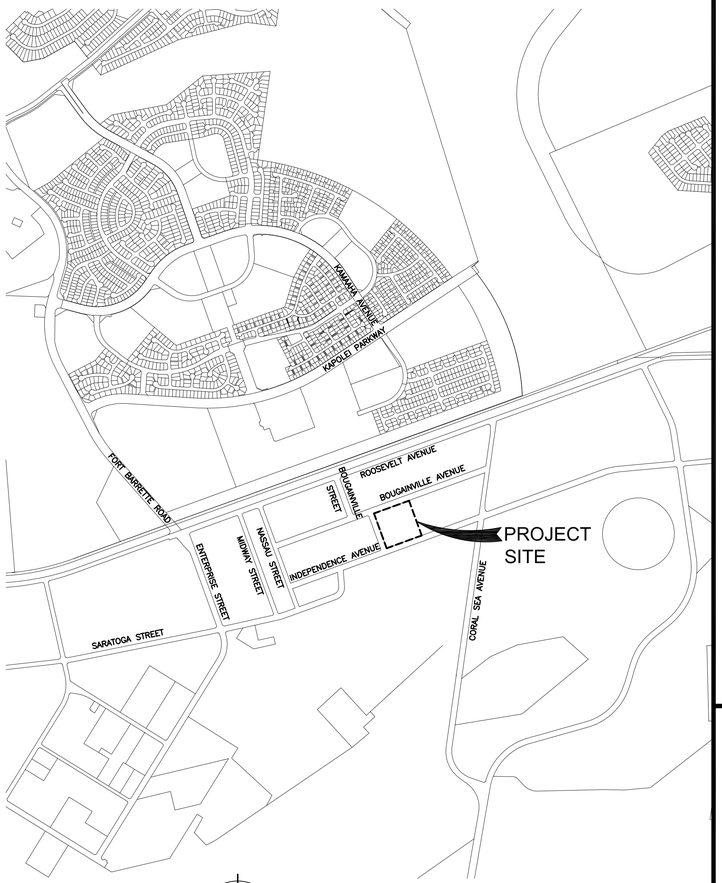
L406

SITE AMENITIES IMPROVEMENTS
SWIMMING POOL
KALAELOA RENTAL HOMES SITE

LOCATED AT:
KALAELOA, OAHU, HAWAII
TMK: FIRST DIVISION, 9-1-013:014

PREPARED FOR:
DINAPOLI CAPITAL PARTNERS
5532 LILLEHAMMER LANE, SUITE 200
PARK CITY, UT 84098





DRAWING INDEX

DWG. No.	SHT. No.	DESCRIPTION
1.	WF001	GENERAL NOTES & DRAWING INDEX
2.	WF002	OVERALL SITE PLAN
3.	WF101	SWIMMING POOL PLAN
4.	WF102	SWIMMING POOL SHELL PLAN
5.	WF103	SWIMMING POOL DEPTH MARKER PLAN
6.	WF104	CHILDREN'S POOL PLAN
7.	WF105	CHILDREN'S POOL SHELL PLAN
8.	WF106	CHILDREN'S POOL DEPTH MARKER PLAN
9.	WF201	SECTIONS
10.	WF202	SECTIONS
11.	~~WF203~~	~~SECTIONS~~ 1 DELETED
12.	WF204	SECTIONS
13.	WF300	SWIMMING POOLS PIPE RUNS PLAN
14.	WF301	SWIMMING POOL FITTINGS PLAN
15.	WF302	SWIMMING POOL PIPING SCHEMATIC
16.	WF303	CHILDREN'S POOL FITTINGS PLAN
17.	WF304	CHILDREN'S POOL PIPING SCHEMATIC
18.	WF401	EQUIPMENT LAYOUT, LIST AND SYSTEM ANALYSIS
19.	WF501	TYPICAL DETAILS
20.	WF502	TYPICAL DETAILS
21.	WF503	TYPICAL DETAILS
22.	WF504	TYPICAL DETAILS
23.	WF601	SWIMMING POOL LIGHTING PLAN
24.	WF602	CHILDREN'S POOL LIGHTING PLAN
25.	WF701	EQUIPMENT PAD ELECTRICAL PLAN, SINGLE LINE DIAGRAM PANEL SCHEDULE, ENERGY BUDGET

PLUMBING STANDARDS

1. CROSS–CONNECTION SHALL BE PREVENTED BY:
   X APPROVED PRESSURE VACUUM BREAKER FEBCO #765
   INSTALLED AT 12" ABOVE FLOOD LEVEL.
2. BACKWASH OF FILTER SHALL BE PIPED TO:
   ____ IRRIGATION ON SITE.
   X SANITARY SEWER THROUGH AN APPROVED AIR–GAP.
   ____ DRYWELL
3. TO EMPTY POOL, DRAIN TO DRYWELL VIA FILTRATION BACKWASH OR PORTABLE PUMP.

ELECTRICAL STANDARDS FOR SWIMMING POOLS

1. THE FOLLOWING IS A BRIEF SUMMARY OF THE REQUIREMENTS FOR SWIMMING POOLS.
   FOR SPECIFIC DETAILS AND EXCEPTIONS, REFER TO ARTICLE 680A–E, NATIONAL ELECTRICAL CODE, 2008 EDITION.
2. ALL ELECTRICAL EQUIPMENT TO BE U/L APPROVED FOR THE PURPOSE.
3. BONDING CONDUCTOR FOR WATER FEATURE REINFORCING STEEL AND OTHER METALLIC EQUIPMENT TO BE #8 AWG SOLID COPPER CONDUCTOR.
4. NO ATTACHMENT PLUG RECEPTACLES SHALL BE INSTALLED WITHIN 10 FEET OF THE INSIDE WALLS OF POOLS. ALL 125–VOLT RECEPTACLES LOCATED WITHIN 20 FEET FROM THE WATER FEATURE SHALL BE PROTECTED BY A GROUND–FAULT CIRCUIT INTERRUPTER (GFCI).
5. IF LIGHTING FIXTURES AND LIGHTING OUTLETS ARE LOCATED:
   A.) WITHIN 5 FEET OF POOLS, FIXTURES AND OUTLETS SHALL BE AT 12 FEET ABOVE THE MAXIMUM WATER LEVEL.
   B.) WITHIN 10 FEET AND NOT LESS THAN 5 FEET OF POOLS, FIXTURES AND OUTLETS SHALL BE PROTECTED BY A GFCI UNLESS INSTALLED 5 FEET ABOVE THE MAXIMUM WATER LEVEL AND RIGIDLY ATTACHED TO THE STRUCTURE ADJACENT TO OR ENCLOSING THE POOLS.
   C.) SEE ARTICLE 680 FOR EXCEPTIONS TO (A) AND (B) ABOVE.
6. SWITCHING DEVICES ON THE PROPERTY MUST BE LOCATED AT LEAST 5 FEET FROM POOL.
7. OVERHEAD WIRING SHALL NOT BE INSTALLED WITHIN 10 FEET OF POOL AREA.
8. UNDERGROUND WIRING SHALL NOT BE PERMITTED UNDER THE POOL OR UNDER THE AREA EXTENDING 5 FEET HORIZONTALLY FROM THE INSIDE WALL OF THE POOL.
9. ANY UNDERWATER LIGHTING FIXTURE OVER 15 VOLTS SHALL BE PROTECTED BY A GFCI.
10. FOUNTAINS, FOUNTAIN POOLS, ORNAMENTAL DISPLAY POOLS AND REFLECTOR POOLS:
    LIGHTING FIXTURES, SUBMERSIBLE PUMPS AND OTHER SUBMERSIBLE EQUIPMENT, CORD AND PLUG–CONNECTED EQUIPMENT SHALL BE PROTECTED BY A GFCI.
11. CONDUIT REQUIREMENTS:
    A.) MINIMUM SIZE: 3/4 INCH UNLESS OTHERWISE SPECIFIED.
    B.) UNDERGROUND INSTALLATIONS AT POOL ENVELOPE – SCHEDULE 40 PVC CONDUIT.
    C.) IN OR UNDER SLAB ON GRADE – 40 PVC CONDUIT OR PLASTIC COATED RIGID STEEL CONDUIT.
    D.) IN SLAB ABOVE GRADE – 40 PVC CONDUIT.
    E.) WET AND DAMP LOCATIONS – GALVANIZED RIGID STEEL CONDUIT .
    F.) DRY LOCATIONS – CONCEALED: ELECTRICAL METALLIC TUBING.
    – EXPOSED: GALVANIZED RIGID STEEL CONDUIT.
12. WIRING METHODS:
    A.) USE SOLID CONDUCTOR FOR FEEDERS AND BRANCH CIRCUITS 10 AWG AND SMALLER.
    B.) USE STRANDED CONDUCTORS FOR CONTROL CIRCUITS.
    C.) USE CONDUCTORS NO SMALLER THAN 12 AWG FOR POWER AND LIGHTING CIRCUITS.
    D.) USE CONDUCTORS NO SMALLER THAN 14 AWG FOR CONTROL CIRCUITS.
    E.) USE 10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET.
    F.) USE 10 AWG CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS LONGER THAN 200 FEET.
    G.) COMBINE UP TO THREE 1 POLE – 20 AMP CIRCUITS IN ONE CONDUIT USING OPPOSITE PHASE LEGS ONLY.
    H.) USE ONLY SERVICE–ENTRANCE CABLE FOR UNDERGROUND INSTALLATION IN CONDUIT.

GENERAL SPECIFICATIONS

1. ALL MATERIALS AND ALL WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES AND REGULATIONS.
2. ALL GUNITE SHALL BE 3500 PSI MINIMUM AT 28 DAYS.
3. ALL REINFORCING SHALL CONFORM TO ASTM–A615, GRADE 40.
4. ALL PIPING SHALL BE PVC, SCHEDULE 40/80 WITH EXCEPTIONS AS NOTED.
5. SUPPORTING SOIL SHALL BE UNDISTURBED, UNIFORM, NATURAL SOIL CAPABLE OF SUPPORTING 1000 POUNDS PER SQUARE FOOT. IF ANY OTHER CONDITIONS ARE ENCOUNTERED, BUILDER SHALL NOTIFY ENGINEER.

Pacific AquaTech, Inc.
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fax: (808) 682-7269
www.pacificaquagroup.com

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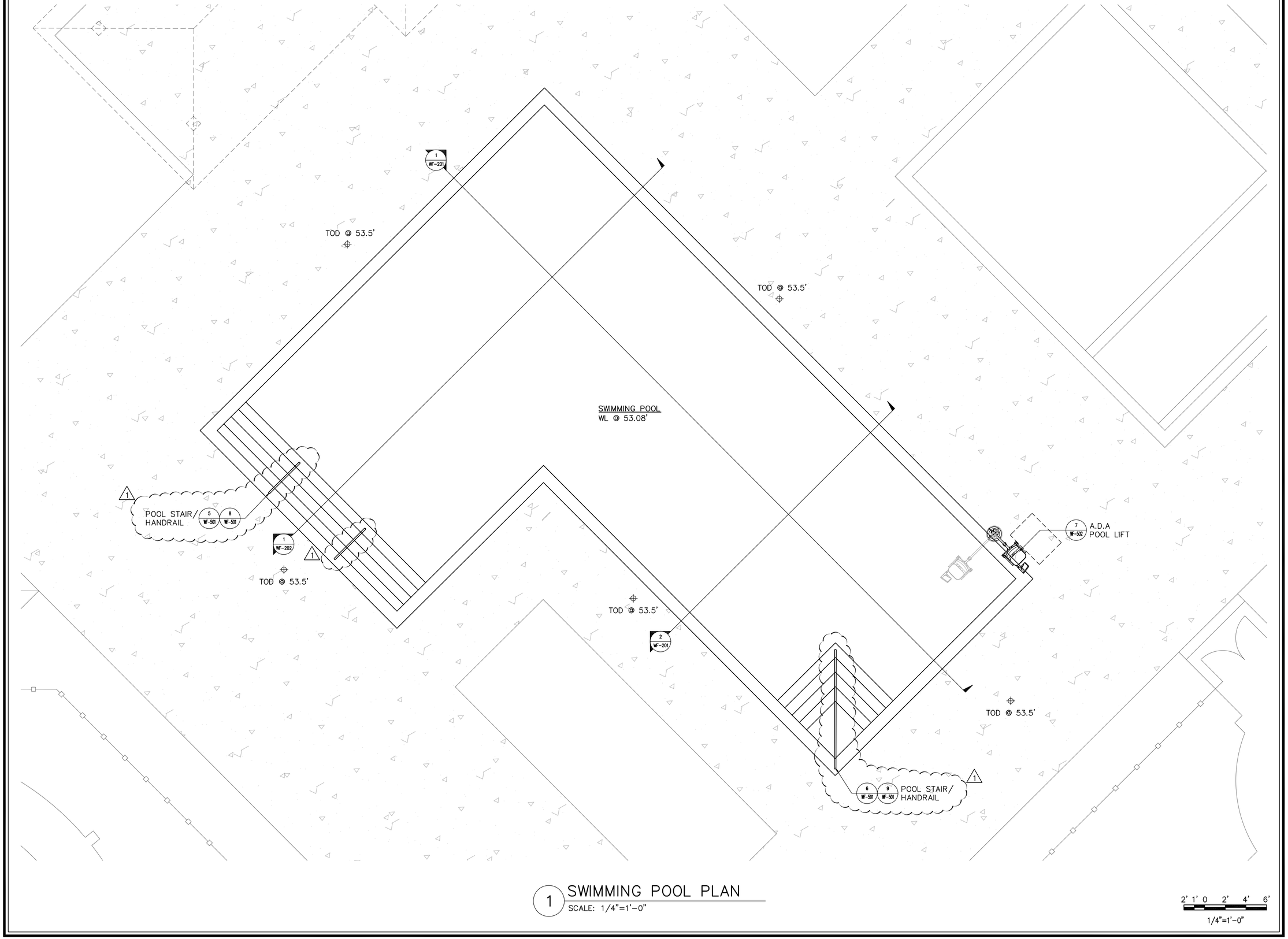
LICENSE EXP. DATE– 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05–19–17	DELETED SHEET WF203 FROM INDEX

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
GENERAL NOTES AND DRAWING INDEX

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-001
SHEET OF SHEET(S)



1 SWIMMING POOL PLAN
SCALE: 1/4"=1'-0"

2' 1' 0 2' 4' 6'
1/4"=1'-0"

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△	DATE	DESCRIPTION
1	05-19-17	REVISED STAIR HANDRAIL

PROJECT NAME:

KALAELOA RENTAL HOMES SITE

KALAELOA, OAHU, HAWAII

SHEET TITLE:

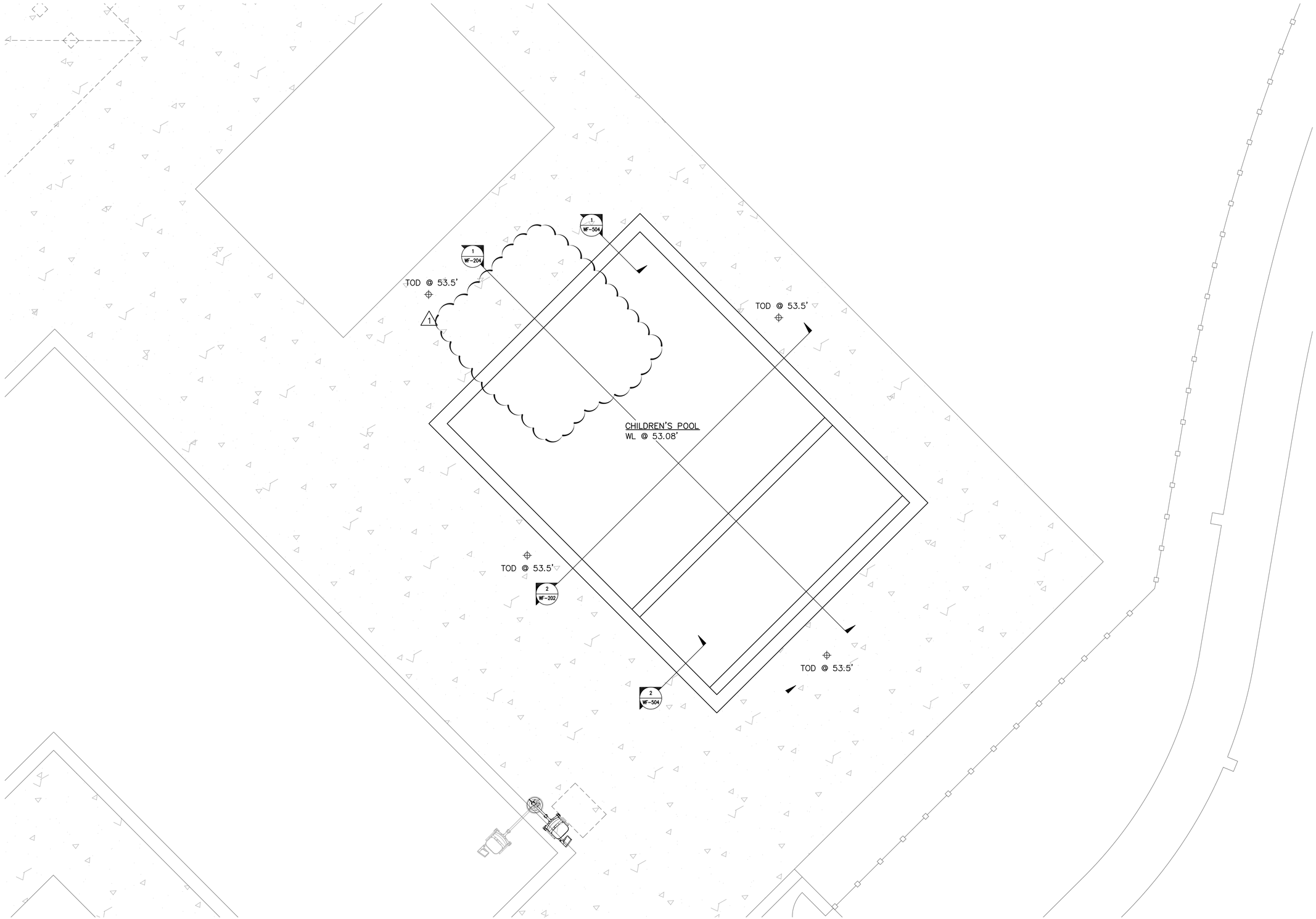
SWIMMING POOL PLAN

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:

WF-101

SHEET OF SHEET(S)



1 CHILDREN'S POOL PLAN
SCALE: 1/4"=1'-0"

2' 1' 0 2' 4' 6'
1/4"=1'-0"

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△	DATE	DESCRIPTION
1	05-19-17	DELETED SLIDE

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
CHILDREN'S POOL PLAN

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:
WF-104

SHEET OF SHEET(S)

1 CHILDREN'S POOL SHELL PLAN

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

2' 1' 0 2' 4' 6'

1/4"=1'-0"

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PROJECT NAME:

KALAELOA RENTAL HOMES SITE

KALAELOA, OAHU, HAWAII

SHEET TITLE:

CHILDREN'S POOL SHELL PLAN

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:

WF-105

SHEET OF SHEET(S)

1 CHILDREN'S POOL DEPTH MARKER PLAN

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

2' 1' 0 2' 4' 6'

1/4"=1'-0"

Pacific AquaTech, Inc.

91-170 Olai St., Kapolei, Hawaii 96707
ph: (808) 682-1020
fax: (808) 682-7269
www.pacificaquagroup.com

SCOTT J. SANDERS
LICENSED PROFESSIONAL ENGINEER
No. 8453-S
HAWAII U.S.A.

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LICENSE EXP. DATE- 04/30/18

SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETED SLIDE

PROJECT NAME:

KALAELOA RENTAL HOMES SITE

KALAELOA, OAHU, HAWAII

SHEET TITLE:

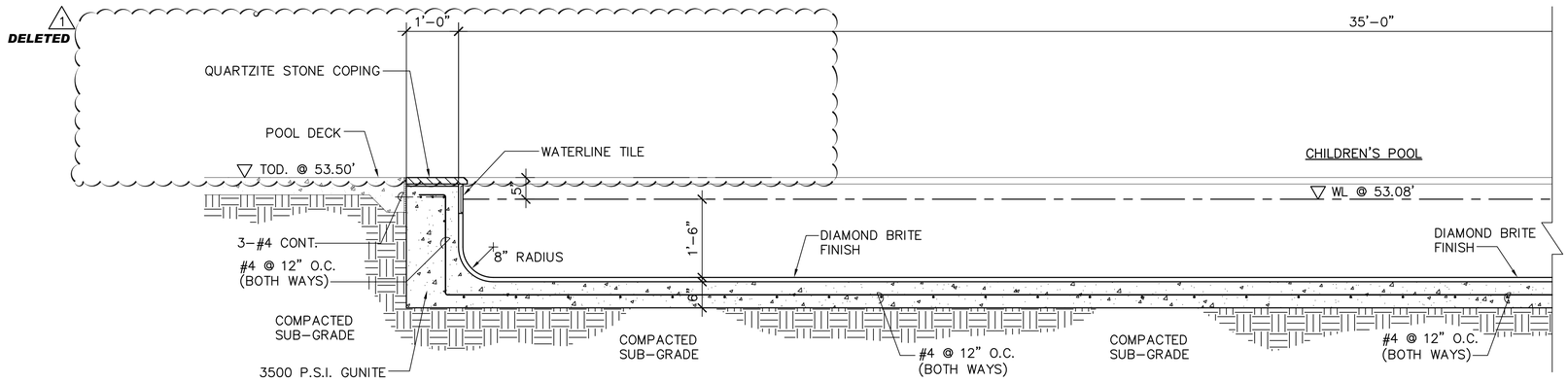
CHILDREN'S POOL DEPTH MARKER PLAN

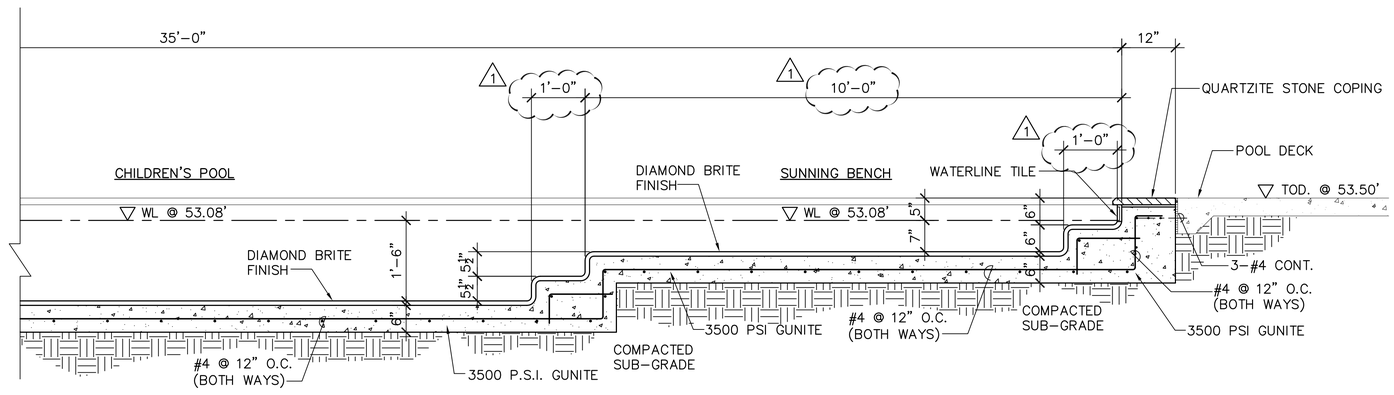
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:

WF-106

SHEET OF SHEET(S)





1 CHILDREN'S POOL SECTION

SCALE: 3/4"=1'–0"

1' 0 1' 2' 3'

3/4"=1'–0"

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LICENSE EXP. DATE– 04/30/18

SIGNATURE

△	DATE	DESCRIPTION
1	05–19–17	DELETED SLIDE

PROJECT NAME:

KALAELOA RENTAL HOMES SITE

KALAELOA, OAHU, HAWAII

SHEET TITLE:

SECTIONS

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:

WF-204

SHEET OF SHEET(S)

PIPE CALLOUT INDEX

A – SWIMMING POOL FILTRATION INLET JET RETURN 'A'
3"ø @ 107 GPM

B – SWIMMING POOL FILTRATION INLET JET RETURN 'B'
3"ø @ 107 GPM

C – SWIMMING POOL FILTRATION SKIMMER SUCTION
3"ø @ 100 GPM

D – SWIMMING POOL FILTRATION MAIN DRAIN SUCTION
4"ø @ 114 GPM

E – CHILDREN'S POOL ARCH JET RECIRCULATION MAIN DRAIN SUCTION
2"ø @ 60 GPM

F – CHILDREN'S POOL ARCH JET RECIRCULATION RETURN
2"ø @ 30 GPM

G – CHILDREN'S POOL ARCH JET RECIRCULATION BY–PASS RETURN
2"ø @ 30 GPM

~~H – CHILDREN'S POOL SLIDE RECIRCULATION MAIN DRAIN SUCTION 6"ø @ 350 GPM~~ 1 DELETED

~~J – CHILDREN'S POOL SLIDE RECIRCULATION INLET RETURN 6"ø @ 350 GPM~~ 1 DELETED

K – CHILDREN'S POOL FILTRATION MAIN DRAIN SUCTION
3"ø @ 64 GPM

L – CHILDREN'S POOL FILTRATION SKIMMER SUCTION
2"ø @ 40 GPM

M – CHILDREN'S POOL FILTRATION INLET JET RETURN
2"ø @ 40 GPM

N – CHILDREN'S POOL FILTRATION FLOOR INLET RETURN
2"ø @ 64 GPM

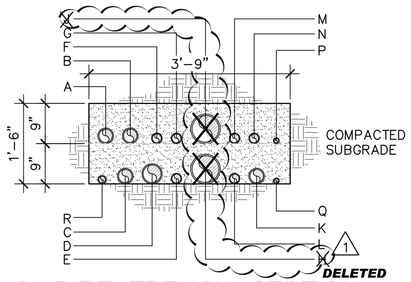
P – CHILDREN'S POOL GROUND CONDUIT (1"ø)

Q – SWIMMING POOL GROUND CONDUIT (1"ø)

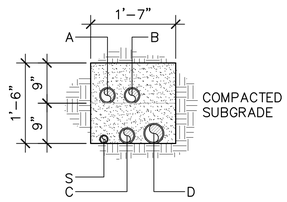
R – WATER MAKE–UP SUPPLY LINE (MAIN) (1½"ø)

S – WATER MAKE–UP SUPPLY LINE TO POOL (¾"ø)

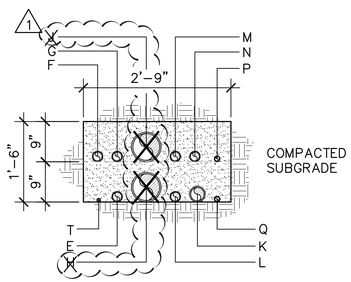
T – WATER MAKE–UP SUPPLY LINE TO CHILDREN'S POOL (1"ø)



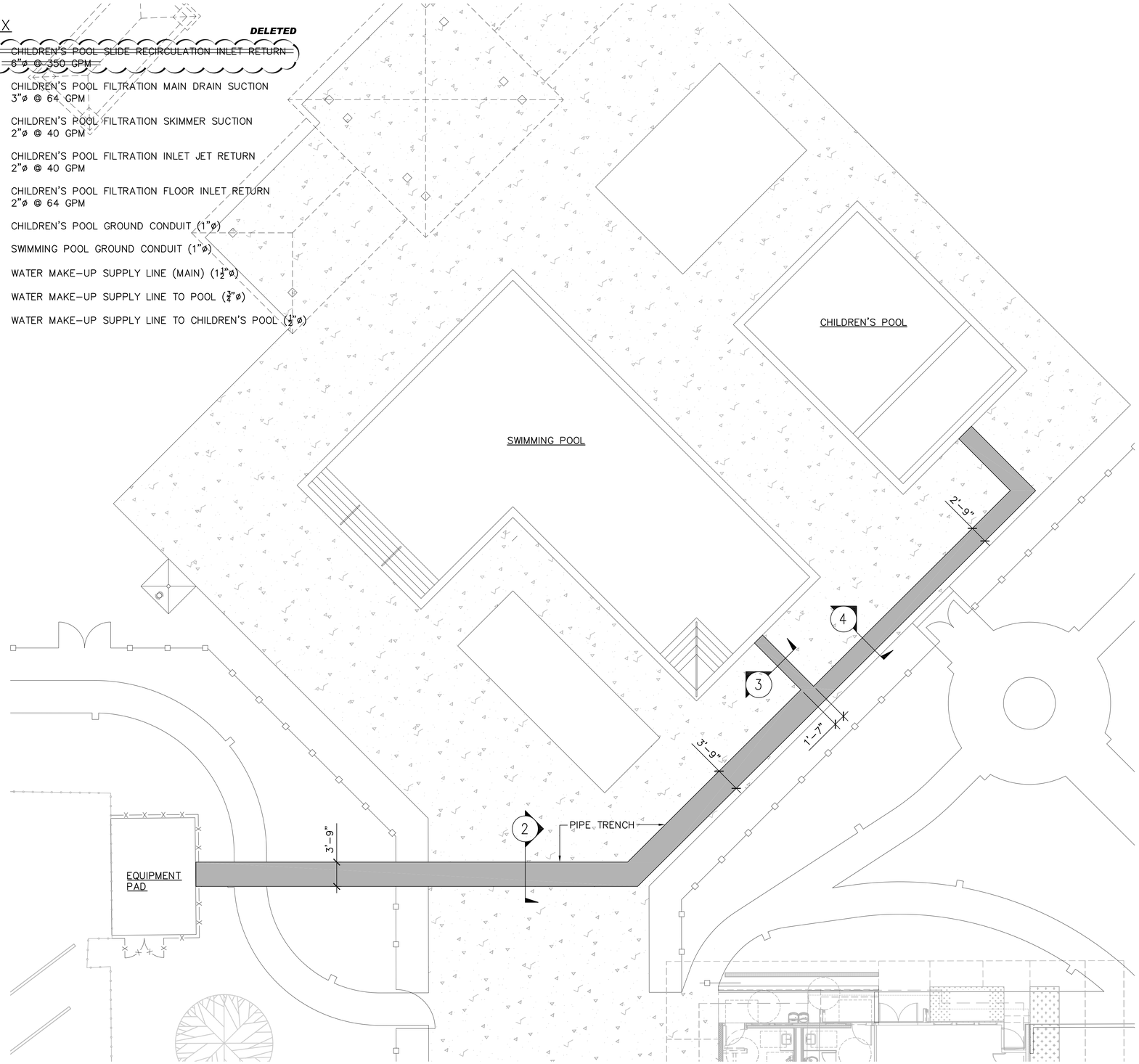
2 PIPE TRENCH SECTION
SCALE: 3/4"=1'–0"



3 PIPE TRENCH SECTION (POOL)
SCALE: 3/4"=1'–0"



4 PIPE TRENCH SECTION (CHILDREN'S POOL)
SCALE: 3/4"=1'–0"



1 SWIMMING POOLS PIPE RUNS PLAN
SCALE: 1/8"=1'–0"

1' 0 1' 2' 3'
3/4"=1'–0"
4' 2' 0 4' 8' 12'
1/8"=1'–0"

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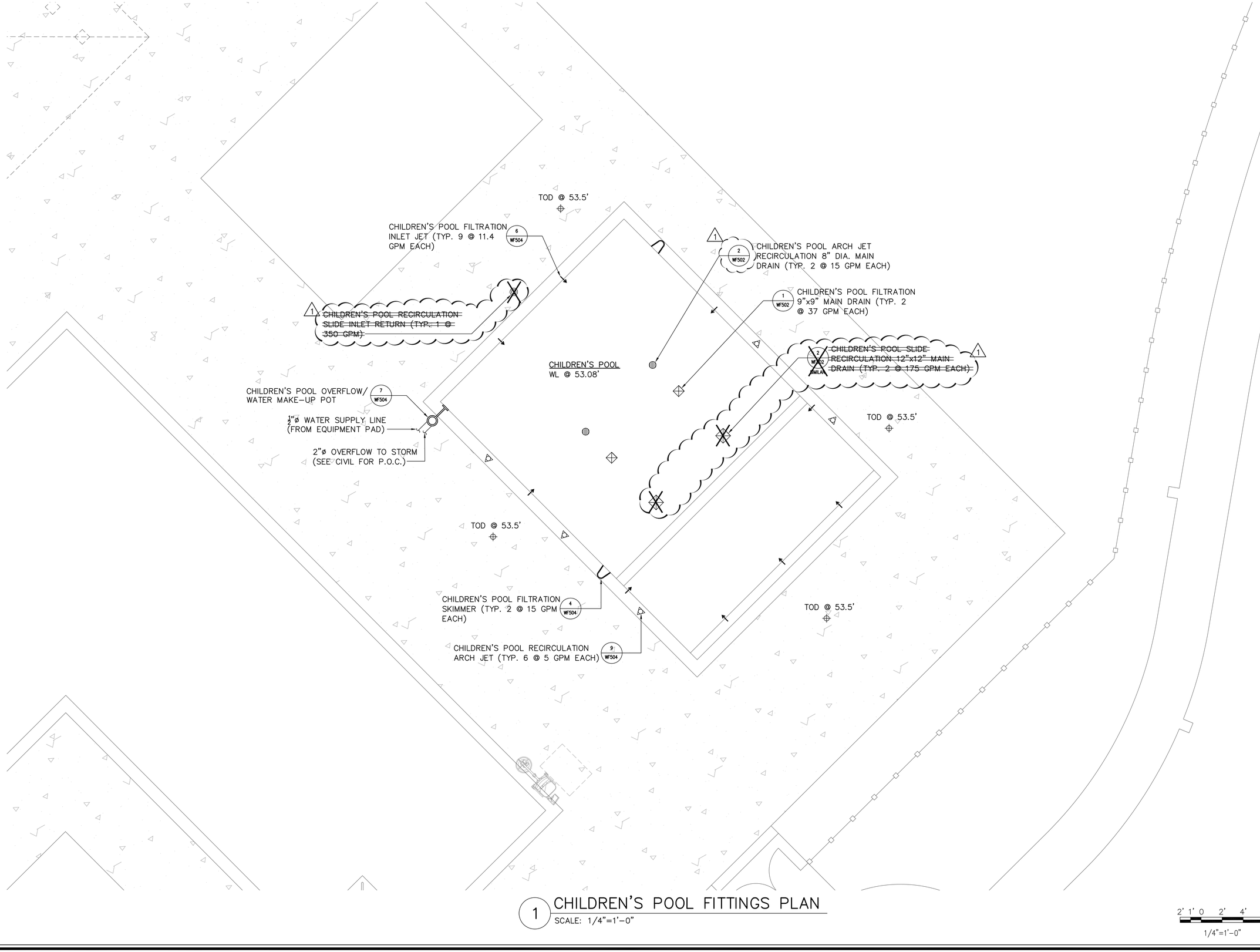
LICENSE EXP. DATE– 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05–19–17	DELETED SLIDE PIPING

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
SWIMMING POOLS PIPE RUNS PLAN

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-300
SHEET OF SHEET(S)



1 CHILDREN'S POOL FITTINGS PLAN
SCALE: 1/4"=1'-0"

2' 1' 0 2' 4' 6'
1/4"=1'-0"

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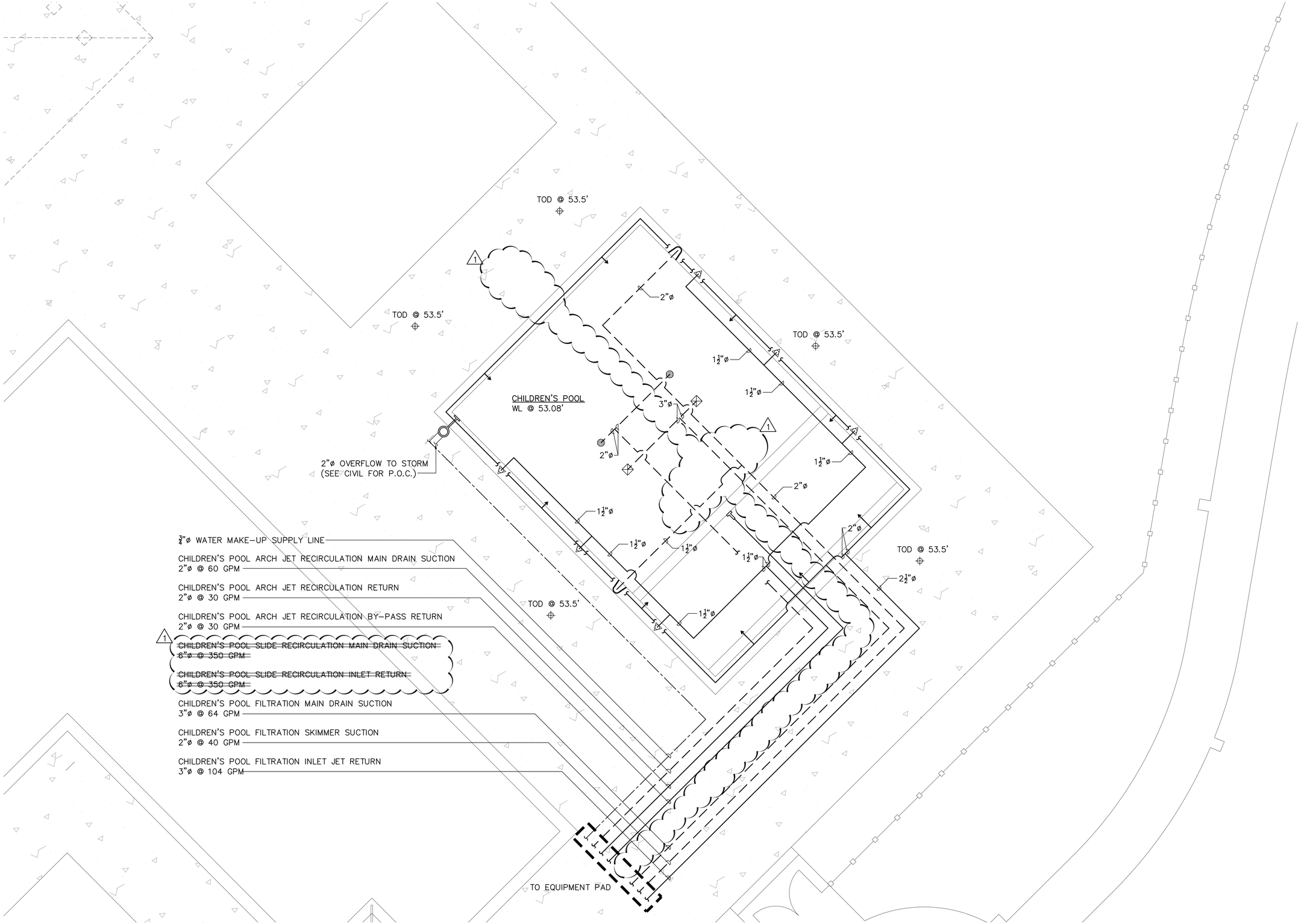
LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETED SLIDE FITTINGS

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
CHILDREN'S POOL FITTINGS PLAN

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-303
SHEET OF SHEET(S)



1 CHILDREN'S POOL PIPING SCHEMATIC
SCALE: 1/4"=1'-0"

2' 1' 0 2' 4' 6'
1/4"=1'-0"

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LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETED SLIDE
		PIPING

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
CHILDREN'S POOL PIPING SCHEMATIC

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-304
SHEET OF SHEET(S)

SYSTEM ANALYSIS

SWIMMING POOL

SURFACE AREA:	2,105 SQ. FT.
DEPTH:	3.0 TO 4.0 FT.
VOLUME:	55,110 GAL.
FILTRATION RATE:	214 GPM @ 54' TDH/198 GPM @ 62' TDH
TURNOVER RATE:	4 HRS, 18 MIN (NORMAL)/4 HRS, 38 MIN. (HIGH HEAD)
BACKWASH RATE:	107 GPM (PER FILTER)
BACKWASH LOAD:	535 GAL. (PER FILTER)
TOTAL BACKWASH LOAD:	1,070 GAL
~~HEATING REQUIREMENTS (82 DEGREES F):~~	~~320,000 BTUH~~
SYSTEM TYPE:	TREATED
TREATMENT:	SALINE
TIE-IN REQ'S:	2" OVERFLOW TO STORM WITHIN 5' OF POOL

CHILDREN'S POOL

SURFACE AREA:	875 SQ. FT.
DEPTH:	1'-6"
VOLUME:	8,180 GAL
FILTRATION RATE:	104 GPM @ 54' TDH/92 GPM @ 62' TDH
TURNOVER RATE:	1 HR, 19 MIN (NORMAL)/1 HR, 29 MIN (HIGH HEAD)
BACKWASH RATE:	104 GPM
TOTAL BACKWASH LOAD:	520 GAL
SYSTEM TYPE:	TREATED
TREATMENT:	SALINE
TIE-IN REQ'S:	2" OVERFLOW TO STORM WITHIN 5' OF POOL

REQUIREMENTS @ EQUIPMENT PAD

BACKWASH DRAIN SUMP:	2' X 4' X 2' COVERED SUMP WITH SOLID STAINLESS STEEL COVER AND CONNECTION TO SANITARY SEWER (BY OTHERS).
WATER:	1½" POTABLE WATER LINE WITH REDUCED PRESSURE BACKFLOW PREVENTER/HOSE BIB CONNECTION FOR WASHDOWN (BY OTHERS).
DRAINS:	FLOOR DRAINAGE SYSTEM (BY OTHERS).

EQUIPMENT LIST

ITEM QTY. DESCRIPTION

A. PUMPS

1. 1 SWIMMING POOL FILTRATION PUMP
PENTAIR WHISPERFLOXF
MODEL XFE-20
214 GPM @ 54' TDH/198 GPM @ 62' TDH

5 HP/230 V/1 PH/60 HZ/3450 RPM

2. 1 CHILDREN'S POOL FILTRATION PUMP
PENTAIR WHISPERFLO
MODEL WFE-4
104 GPM @ 54' TDH/92 GPM @ 62' TDH

1.5 HP/230 V/1 PH/60 HZ/3450 RPM

1 ~~3. 1 CHILDREN'S POOL SLIDE RECIRCULATION PUMP
PENTAIR EQ SERIES PUMP
MODEL EQ-500
350 GPM @ 30' TDH

5 HP/230 V/1 PH/60 HZ/3450 RPM~~ **DELETED**

4. 1 CHILDREN'S POOL ARCH JET RECIRCULATION PUMP
PENTAIR WHISPERFLO
MODEL WFE-2
60 GPM @ 44' TDH

½ HP/230 V/1 PH/60 HZ/3450 RPM

B. FILTERS

5. 2 SWIMMING POOL FILTRATION SYSTEM
PENTAIR TRITION II TR-140 - 7.06 SQ. FT.
FILTER AREA W/SIDE MOUNT MULTIPORT VALVE

6. 1 CHILDREN'S POOL FILTRATION SYSTEM
PENTAIR TRITION II TR-140 - 7.06 SQ. FT.
FILTER AREA W/SIDE MOUNT MULTIPORT VALVE

C. HEATING

1 ~~7. 1 SWIMMING POOL HEATER
PENTAIR STA-RITE MAX-E-THERM HEATER
MODEL R400K ASME #460764 W/STACKLESS
OUTDOOR TOP
400,000 BTUH INPUT

120 V/1 PH/60 HZ/4 A~~ **DELETED**

D. LIFE SUPPORT/SANITATION

8. 1 SANITATION SYSTEM
CHLORKING ON-SITE CHLORINE GENERATOR
MODEL NEX-GEN 20 AT 20 LB./DAY

240 V/1 PH/60 HZ/40 A

WITH

KITXGENMP2 VENTURI FEEDERS

EQUIPMENT LIST (CONT.)

ITEM QTY. DESCRIPTION

D. LIFE SUPPORT/SANITATION

9. 1 SWIMMING POOL CHLORINE GENERATOR BOOSTER PUMP
PENTAIR WHISPERFLO
MODEL WFE-4

1 HP/230 V/1 PH/60 HZ/3450 RPM

10. 1 SWIMMING POOL PH/ORP CONTROLLER
CHEMTROL ORP/PH CONTROLLER
MODEL 250

110 V/1 PH/60 HZ/1.0 A

11. 1 SWIMMING POOL METERING PUMP
LMI SERIES C ELECTRONIC METERING PUMP
MODEL C712, 0 TO 4.0 GPH

110 V/1 PH/60 HZ/1.0 A

12. 1 CHILDREN'S POOL CHLORINE GENERATOR BOOSTER PUMP
PENTAIR WHISPERFLO
MODEL WFE-2

½ HP/230 V/1 PH/60 HZ/3450 RPM

13. 1 CHILDREN'S POOL PH/ORP CONTROLLER
CHEMTROL ORP/PH CONTROLLER
MODEL 250

110 V/1 PH/60 HZ/1.0 A

14. 1 CHILDREN'S POOL METERING PUMP
LMI SERIES C ELECTRONIC METERING PUMP
MODEL C711, 0 TO 2.5 GPH

110 V/1 PH/60 HZ/1.0 A

15. 1 ACID TANK
LMI SOLUTION TANK
50 GALLON CAPACITY (23" DIA. X 42¾" HIGH)

F. PIPING/FITTINGS

16. BUTTERFLY VALVE
PVC BODY W/POLYPROPLENE DISC.,
WAFER STYLE, LEVER OR GEAR OPERATED
W/LOCKING DEVICE. MADE BY ASAHI
AMERICA, R & G SLOANE, O.A.E.

17. BALL VALVE
PVC BODY CONSTRUCTION, TRUE UNION
WITH VITON SEALS. SIZE TO PIPE.
MADE BY DUO BLOC, TRUE BLUE, O.A.E.

18. SEATLESS CHECK VALVE
CHEMLINE PLASTICS PW SERIES
FLANGED CONNECTIONS (100 PSI RATING)

PIPE CALLOUT INDEX

A - SWIMMING POOL FILTRATION INLET JET RETURN 'A'
3"ø @ 107 GPM

B - SWIMMING POOL FILTRATION INLET JET RETURN 'B'
3"ø @ 107 GPM

C - SWIMMING POOL FILTRATION SKIMMER SUCTION
3"ø @ 100 GPM

D - SWIMMING POOL FILTRATION MAIN DRAIN SUCTION
4"ø @ 114 GPM

E - CHILDREN'S POOL ARCH JET RECIRCULATION MAIN DRAIN SUCTION
2"ø @ 60 GPM

F - CHILDREN'S POOL ARCH JET RECIRCULATION RETURN
2"ø @ 30 GPM

G - CHILDREN'S POOL ARCH JET RECIRCULATION BY-PASS RETURN
2"ø @ 30 GPM

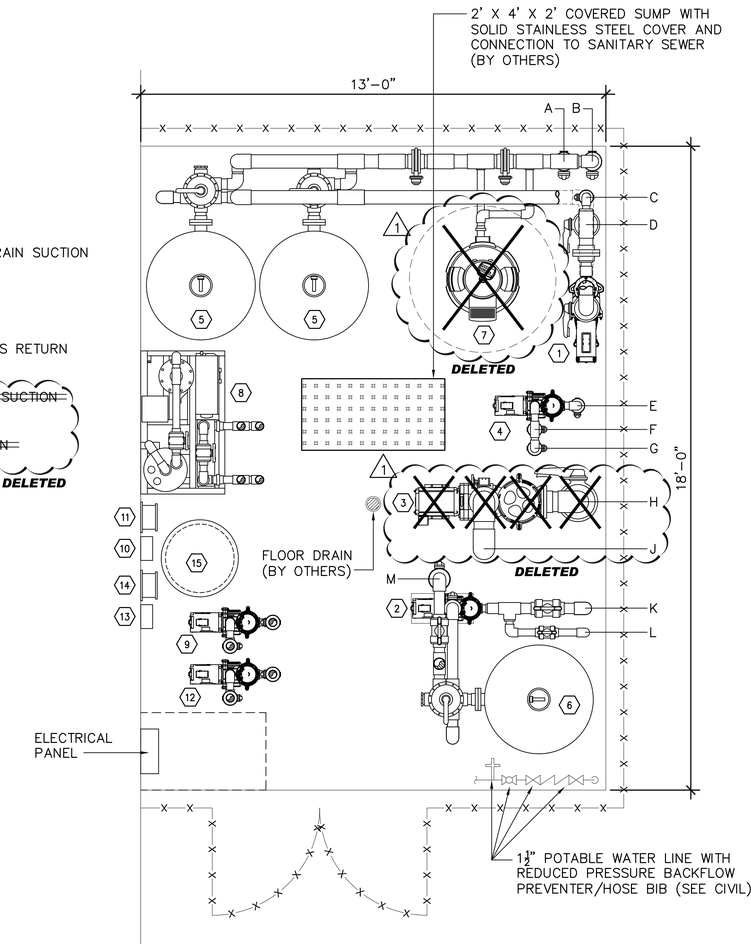
1 ~~H - CHILDREN'S POOL SLIDE RECIRCULATION MAIN DRAIN SUCTION
6"ø @ 350 GPM~~

~~J - CHILDREN'S POOL SLIDE RECIRCULATION INLET RETURN
6"ø @ 350 GPM~~ **DELETED**

K - CHILDREN'S POOL FILTRATION MAIN DRAIN SUCTION
3"ø @ 64 GPM

L - CHILDREN'S POOL FILTRATION SKIMMER SUCTION
2"ø @ 40 GPM

M - CHILDREN'S POOL FILTRATION INLET JET RETURN
2½"ø @ 104 GPM



1 EQUIPMENT PAD LAYOUT
SCALE: ½"=1'-0"

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

EQUIPMENT LIST (CONT.)

ITEM QTY. DESCRIPTION

G. ACCESSORIES

19. VACUUM GAUGE
2½" DIAMETER FACE, RANGE 0-30 IN. HG.
INSTALL W/ ¼" BRASS PETCOCKS ON PVC
SADDLES. MADE BY ASHCROFT, O.A.E.

20. PRESSURE GAUGE
2½" DIAMETER FACE, RANGE 0-60 IN. HG.
INSTALL W/ ¼" BRASS PETCOCKS ON PVC
SADDLES. MADE BY ASHCROFT, O.A.E.

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LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETED EQUIPMENT

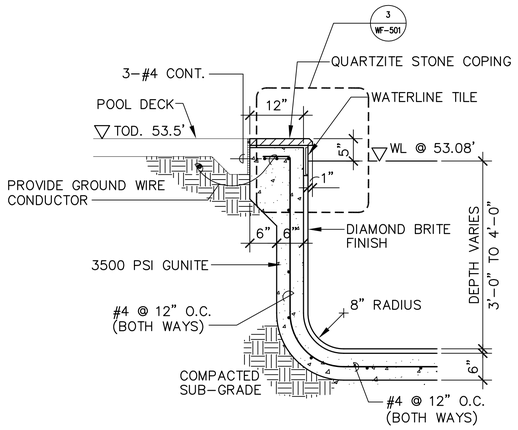
PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
EQUIPMENT LAYOUT, LIST AND SYSTEM ANALYSIS

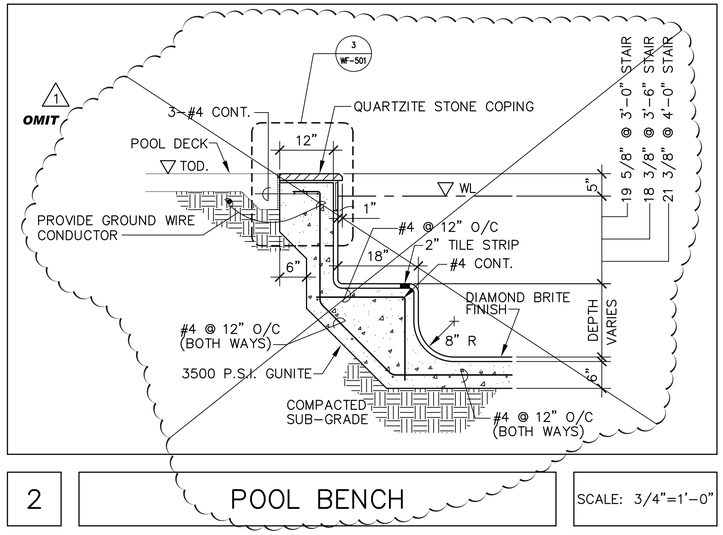
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:
WF-401

SHEET OF SHEET(S)



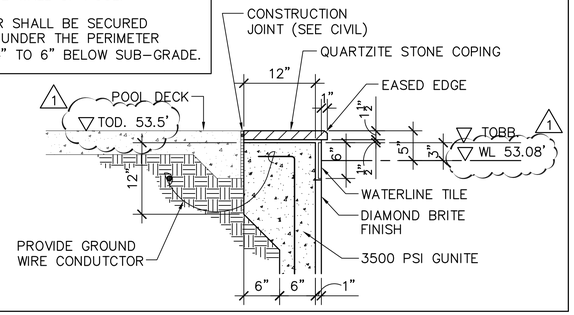
1 POOL EDGE SCALE: 3/4"=1'-0"



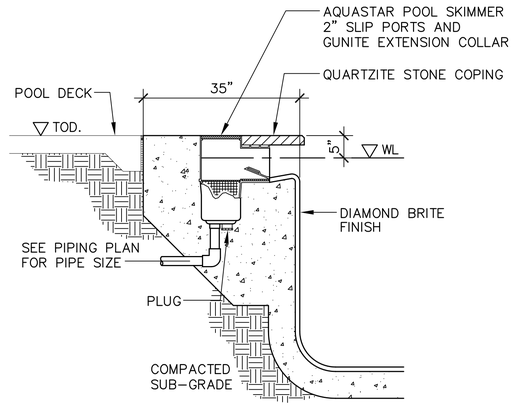
2 POOL BENCH SCALE: 3/4"=1'-0"

NOTES:

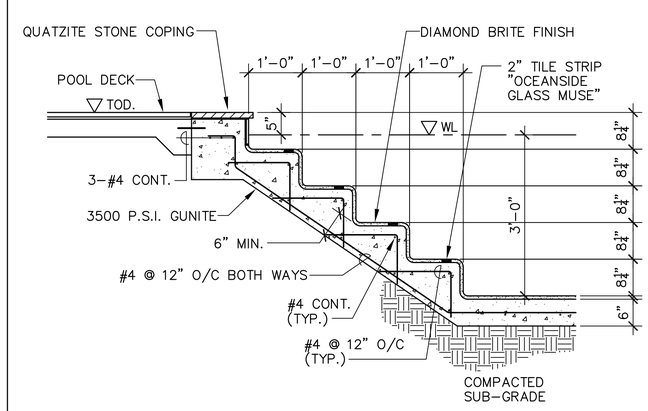
1. CONDUCTOR SHALL FOLLOW CONTOUR OF POOL PERIMETER SURFACE.
2. CONDUCTOR SHALL BE 18" TO 24" FROM INSIDE WALL OF POOL.
3. CONDUCTOR SHALL BE SECURED WITHIN OR UNDER THE PERIMETER SURFACE 4" TO 6" BELOW SUB-GRADE.



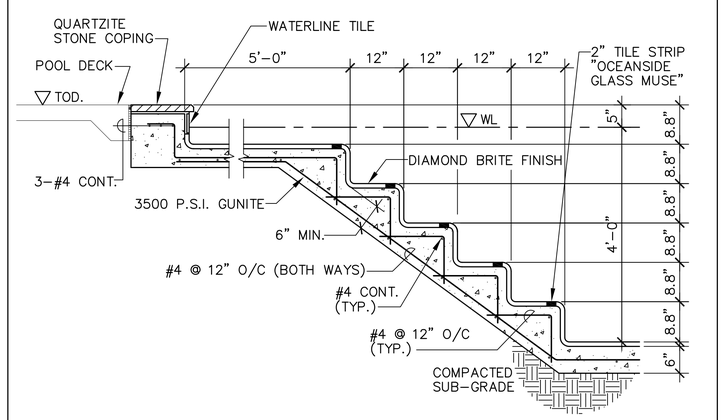
3 TYPICAL EDGE SCALE: 1"=1'-0"



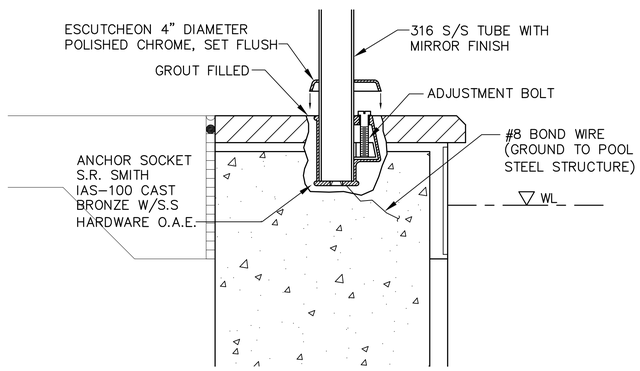
4 POOL SKIMMER SCALE: 3/4"=1'-0"



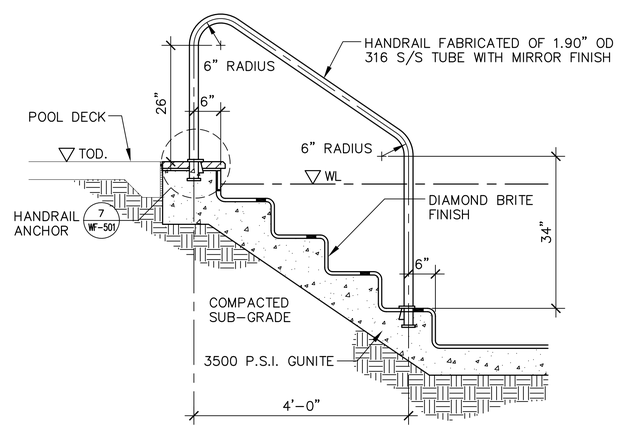
1 5 POOL STAIRS AT 3'-0" DEPTH SCALE: 3/4"=1'-0"



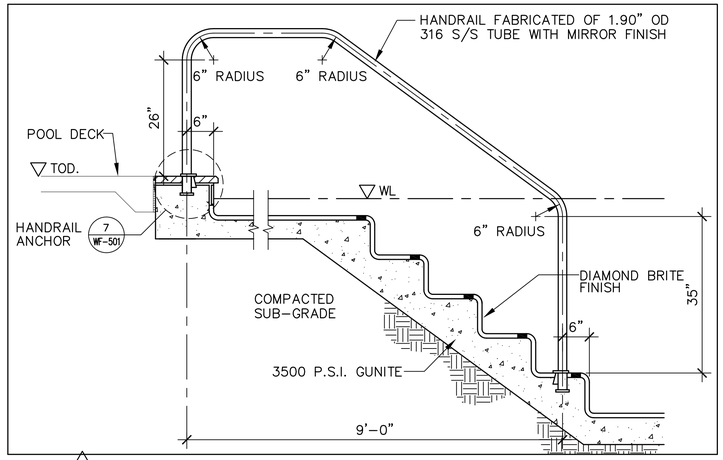
1 6 POOL STAIRS AT 4'-0" DEPTH SCALE: 3/4"=1'-0"



7 POOL HANDRAIL ANCHOR SCALE: 3"=1'-0"



1 8 POOL HANDRAIL AT 3'-0" DEPTH SCALE: 3/4"=1'-0"



1 9 POOL HANDRAIL AT 4'-0" DEPTH SCALE: 3/4"=1'-0"

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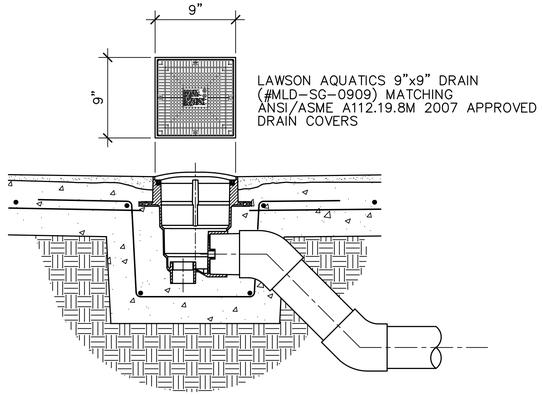
LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	REVISED DETAILS

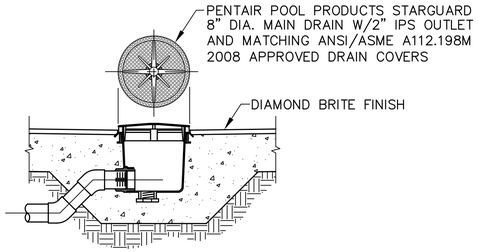
PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
TYPICAL DETAILS

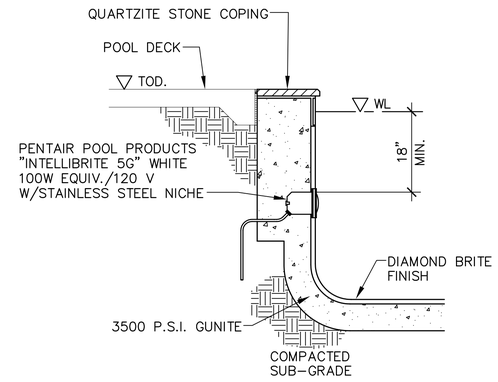
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-501
SHEET OF SHEET(S)



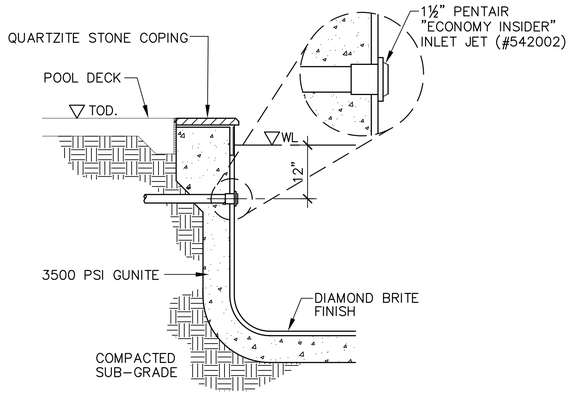
1 | 9"X9" MAIN DRAIN | SCALE: 1 1/2"=1'-0"



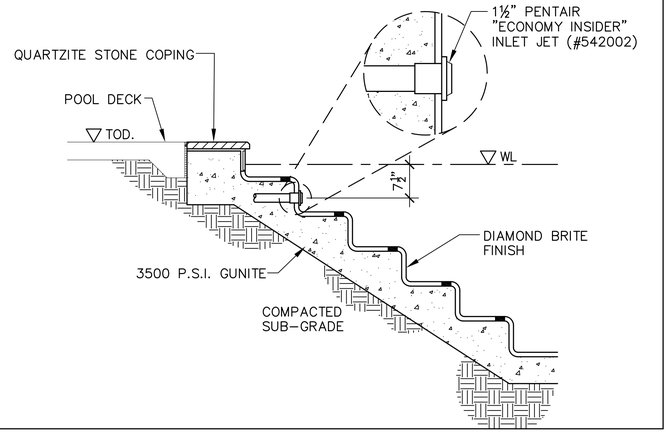
2 | 1 8" DIA. FLOOR DRAIN | SCALE: 1 1/2"=1'-0"



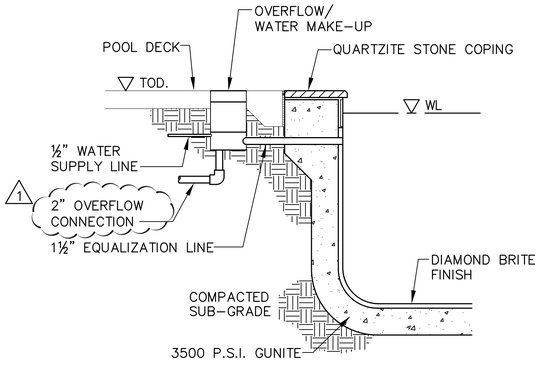
3 | POOL LIGHT | SCALE: 3/4"=1'-0"



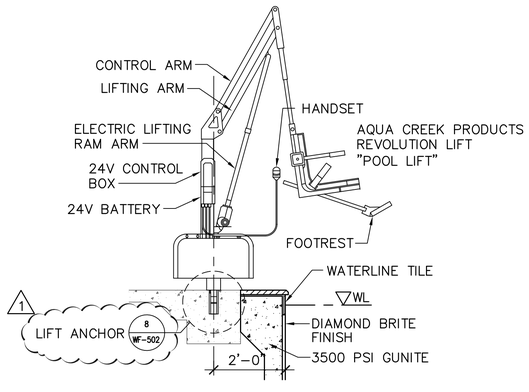
4 | POOL INLET JET | SCALE: 3/4"=1'-0"



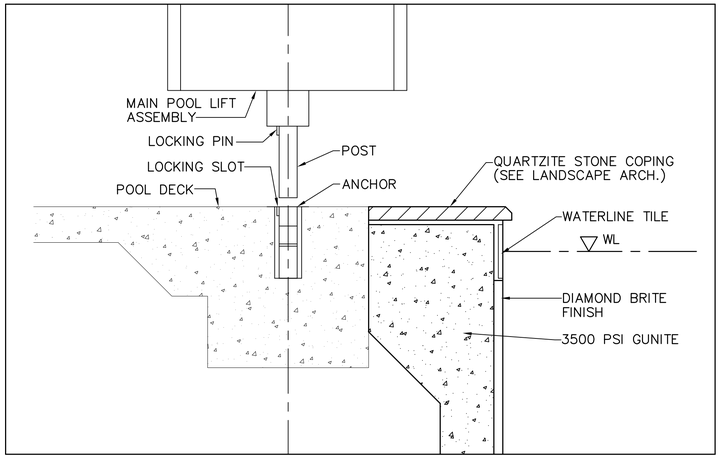
5 | INLET JET @ STAIRS | SCALE: 3/4"=1'-0"



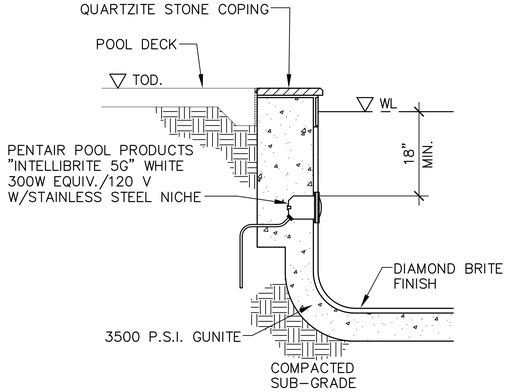
6 | POOL WATER MAKE-UP HOUSING | SCALE: 3/4"=1'-0"



7 | A.D.A. POOL LIFT | SCALE: 1/2"=1'-0"



8 | A.D.A. POOL LIFT | SCALE: 1 1/2"=1'-0"



9 | POOL LIGHT | SCALE: 3/4"=1'-0"

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www.pacificaquagroup.com

SCOTT J. SANDERS
LICENSED PROFESSIONAL ENGINEER
No. 8453-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
LICENSE EXP. DATE- 04/30/18
SIGNATURE

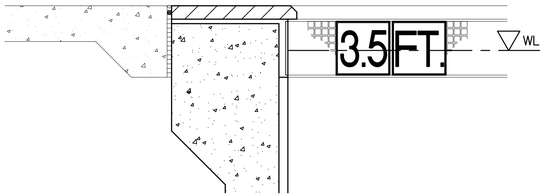
Δ	DATE	DESCRIPTION
1	05-19-17	REVISED DETAILS

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
TYPICAL DETAILS

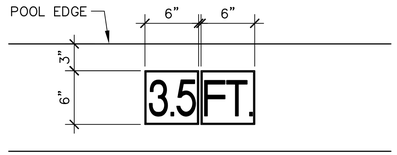
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-502
SHEET OF SHEET(S)

6"x6" WATER DEPTH MARKER TILE. NUMERALS OF 4" MINIMUM HEIGHT AND OF COLOR CONTRASTING BACKGROUND. DEPTH MARKERS LOCATED AT MAXIMUM AND MINIMUM POINTS AND AT THE POINTS OF BREAK BETWEEN THE DEEP AND SHALLOW PORTIONS AND AT INTERMEDIATE INCREMENTS OF DEPTH, SPACED AT NO MORE THAN 25 FT. INTERVALS.



1 DEPTH MARKER @ WATERLINE TILE SCALE: 1 1/2"=1'-0"

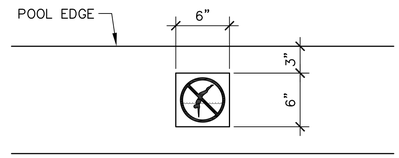
6"x6" WATER DEPTH MARKER TILE. NUMERALS OF 4" MINIMUM HEIGHT AND OF COLOR CONTRASTING BACKGROUND. DEPTH MARKERS LOCATED AT MAXIMUM AND MINIMUM POINTS AND AT THE POINTS OF BREAK BETWEEN THE DEEP AND SHALLOW PORTIONS AND AT INTERMEDIATE INCREMENTS OF DEPTH, SPACED AT NO MORE THAN 25 FT. INTERVALS.



PLAN

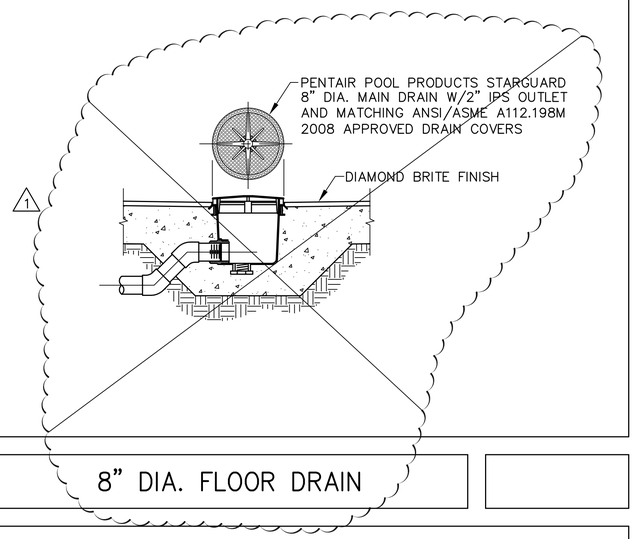
2 DEPTH MARKER @ COPING SCALE: 1 1/2"=1'-0"

6"x6" CERAMIC TILE "NO DIVING" MARKER. LETTERS SHALL BE 4" MINIMUM HEIGHT AND OF COLOR CONTRASTING BACKGROUND. "NO DIVING" MARKERS SPACED AT NO MORE THAN 25 FT. INTERVALS.



PLAN

3 "NO-DIVING" SIGN SCALE: 1 1/2"=1'-0"



4 8" DIA. FLOOR DRAIN

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LICENSE EXP. DATE- 04/30/18

SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETE DETAIL

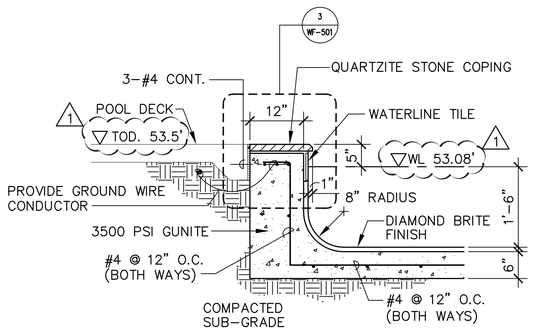
PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
TYPICAL DETAILS

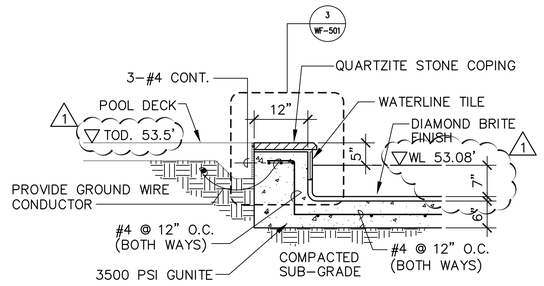
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:
WF-503

SHEET OF SHEET(S)



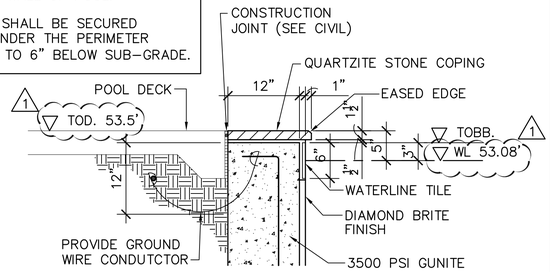
1 CHILDREN'S POOL EDGE SCALE: 3/4"=1'-0"



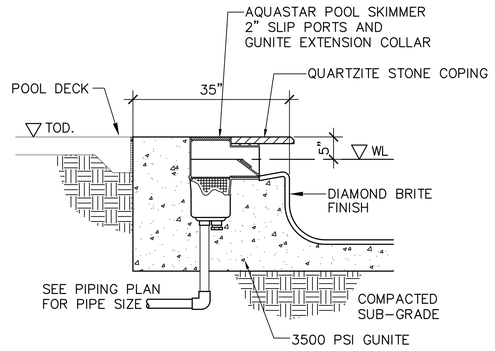
2 CHILDREN'S POOL SUNNING BENCH EDGE SCALE: 3/4"=1'-0"

NOTES:

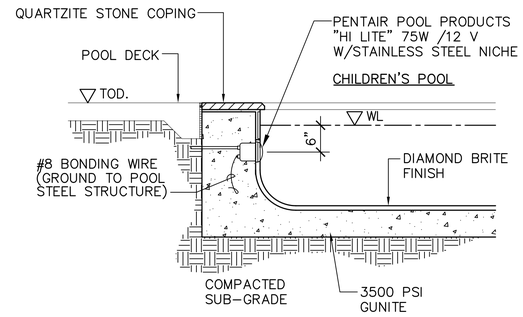
1. CONDUCTOR SHALL FOLLOW CONTOUR OF POOL PERIMETER SURFACE.
2. CONDUCTOR SHALL BE 18" TO 24" FROM INSIDE WALL OF POOL.
3. CONDUCTOR SHALL BE SECURED WITHIN OR UNDER THE PERIMETER SURFACE 4" TO 6" BELOW SUB-GRADE.



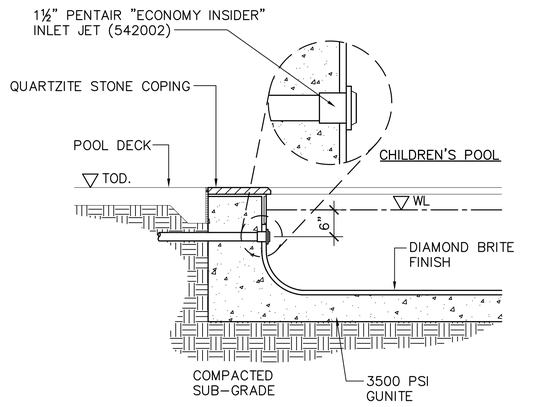
3 CHILDREN'S POOL TYPICAL EDGE SCALE: 1"=1'-0"



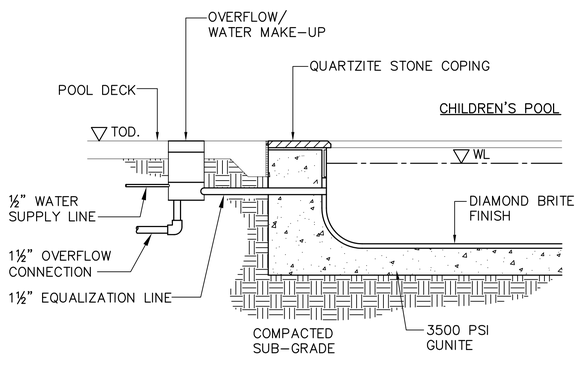
4 CHILDREN'S POOL SKIMMER SCALE: 3/4"=1'-0"



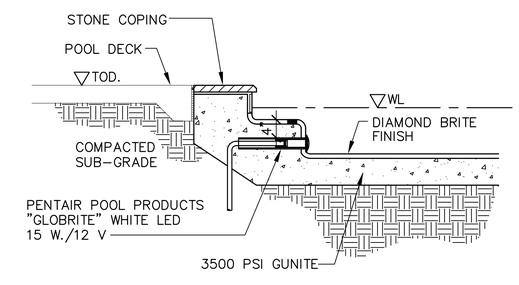
5 CHILDREN'S POOL LIGHT SCALE: 3/4"=1'-0"



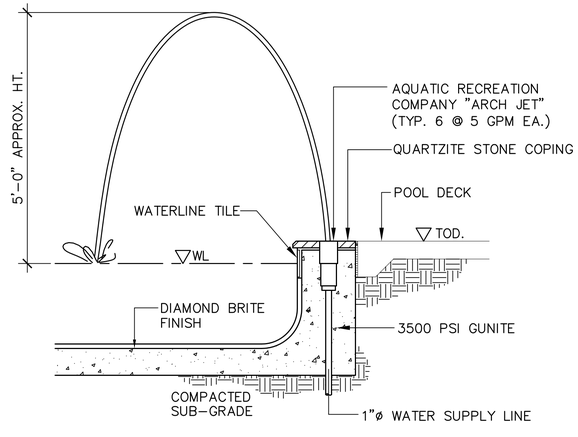
6 CHILDREN'S POOL INLET JET SCALE: 3/4"=1'-0"



7 CHILDREN'S POOL WATER MAKE-UP/OVERFLOW SCALE: 3/4"=1'-0"



8 CHILDREN'S POOL PEN LIGHT SCALE: 3/4"=1'-0"



9 CHILDREN'S POOL ARC JET SCALE: 3/4"=1'-0"

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SCOTT J. SANDERS LICENSED PROFESSIONAL ENGINEER No. 8453-S HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	REVISED DETAILS

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
TYPICAL DETAILS

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-504
SHEET OF SHEET(S)

NOTE:
ALL DECORATIVE/AESTHETIC FLOODLIGHT, UPLIGHT, OR SPOTLIGHT FIXTURES SHALL BE DESIGNED/SHIELDED:

*TO PREVENT DIRECT ILLUMINATION ONTO ADJACENT LOTS AND/OR RIGHT-OF-WAYS AND,

*SO THERE IS NO DIRECT ILLUMINATION OF THE SHORELINE AND OCEAN WATERS AND,

*NOT DIRECTED TO TRAVEL ACROSS PROPERTY BOUNDARIES TOWARD THE SHORELINE AND OCEAN WATERS.

8 AWG BARE COPPER CONDUCTOR AROUND ENTIRE PERIMETER OF POOL:

1. CONDUCTOR SHALL FOLLOW CONTOUR OF POOL PERIMETER SURFACE.
2. CONDUCTOR SHALL BE 18" TO 24" FROM INSIDE WALL OF POOL.
3. CONDUCTOR SHALL BE SECURED WITHIN OR UNDER THE PERIMETER SURFACE 4" TO 6" BELOW SUBGRADE.

TOD @ 53.5'

5 WF-504 CHILDREN'S POOL LIGHT (TYP. 4 @ 75W EACH)

TOD @ 53.5'

CHILDREN'S POOL
WL @ 53.08'

TOD @ 53.5'

CHILDREN'S POOL PEN LIGHT (TYP. 3 @ 15W EACH) 8 WF-504

T J J

SEE ELECTRICAL FOR HOMERUN AND CONTROL

TOD @ 53.5'

8 AWG GROUNDING CONDUCTOR CONNECTED TO POOL REINFORCING STEEL AT A MINIMUM OF FOUR (4) POINTS UNIFORMLY SPACED AROUND PERIMETER OF POOL

LIGHTING SCHEDULE

SYMBOL	DESCRIPTION	QTY.
	CHILDREN'S POOL – PENTAIR "HI-LITE" 75W/12V	4
	CHILDREN'S POOL PEN LIGHT-PENTAIR GLOBRITE WHITE LED-15W/12V	3
J	JUNCTION BOX	2
T	TRANSFORMER	1

NOTE:
ALL ELECTRICAL CONDUIT AND WIRING ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. INSTALLATION OF WIRE IN CONDUIT TO MEET STATE, COUNTY, AND NATIONAL CODE AND REGULATIONS.

1 CHILDREN'S POOL LIGHTING PLAN
SCALE: 1/4"=1'-0"

2' 1' 0 2' 4' 6'
1/4"=1'-0"

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HAWAII U.S.A.

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LICENSE EXP. DATE- 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05-19-17	DELETED SLIDE

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

SHEET TITLE:
CHILDREN'S POOL LIGHTING PLAN

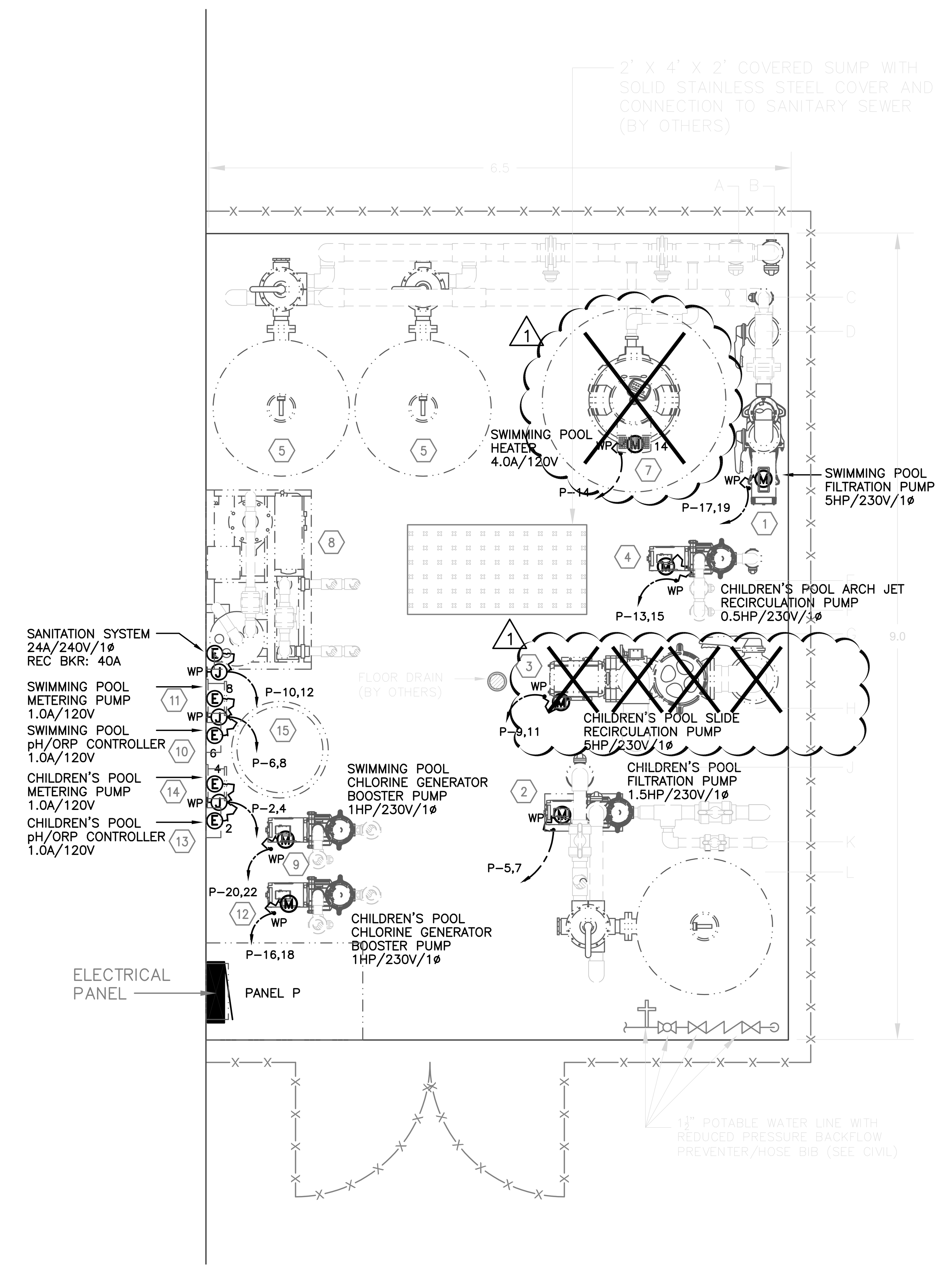
JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM

DRAWING NO.:
WF-602

SHEET OF SHEET(S)

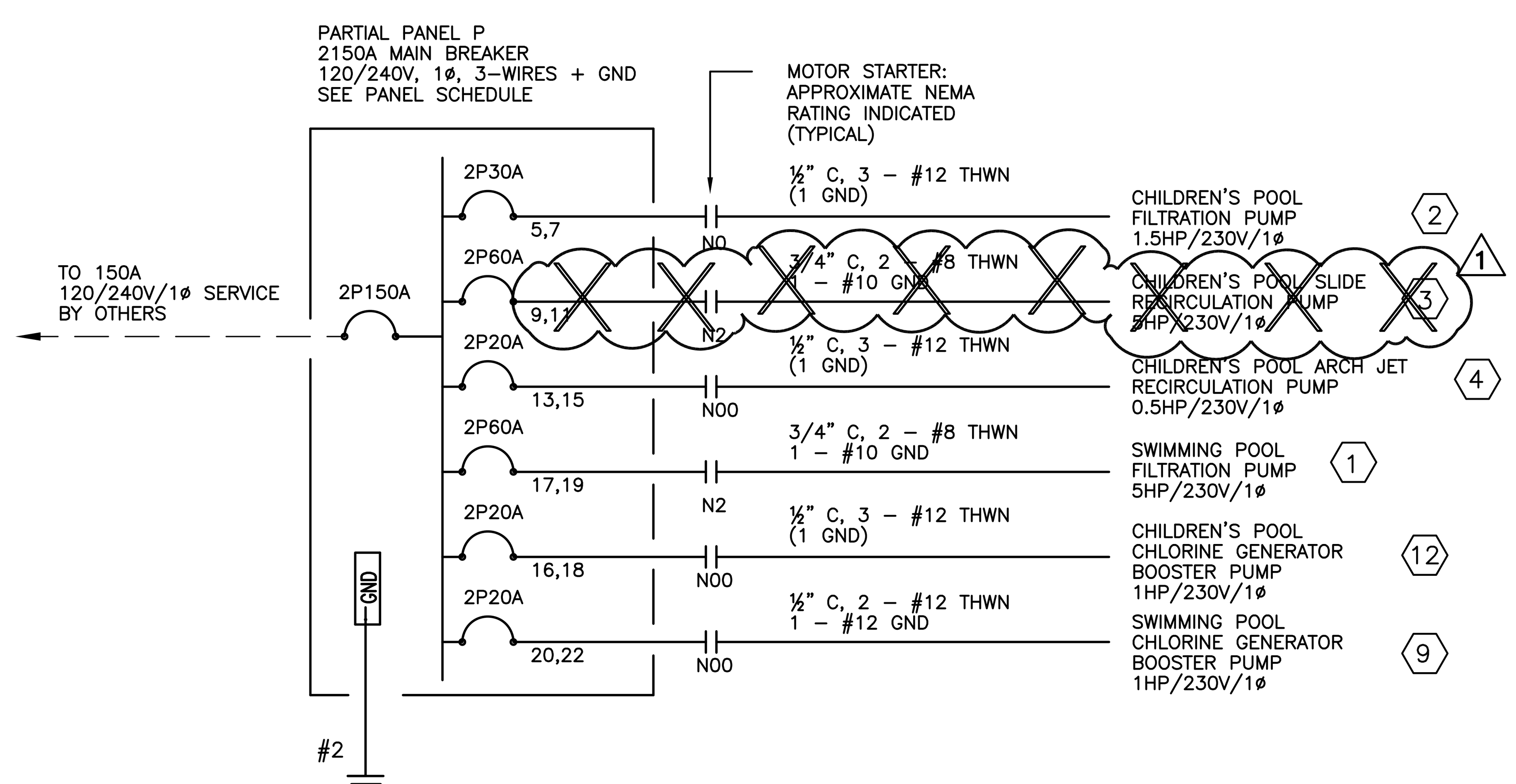
PANEL P	120 / 240 VOLTS	1 PHASE	3 WIRE
TYPE INDUSTRIAL BOLTED			10 KAIC, MIN. BREAKERS
	X GROUND KIT		FLUSH MOUNTING
225A BUS			X SURFACE
2P150A MAIN BREAKER	NOTES: NEMA 4X (STAINLESS STEEL) ENCLOSURE		

CKT	LOAD	BKR	WIRE SIZE	L1		L2	WIRE SIZE	BKR	LOAD	CKT
1	POOL LIGHTS	20A GFI	10	0.1 / 0.1			12	20A	CHILDREN'S POOL pH/ORP CONTROLLER	2
3	SPARE	20A GFI				0.1	12	20A	CHILDREN'S POOL METERING PUMP	4
5	CHILDREN'S POOL FILTRATION PUMP 1.5HP/230V/1ø	2 P 20A	12	1.2 / 0.1			12	20A	SWIMMING POOL pH/ORP CONTROLLER	6
7			12			1.2 / 0.1	12	20A	SWIMMING POOL METERING PUMP	8
9	~~CHILDREN'S POOL SLIDE RECIRCULATION PUMP 5HP/230V/1ø~~ (1)	2 P 60A	~~8~~	3.4 / 3.0			8	2 P 40A	SANITATION SYSTEM 24A/240V/1ø REC BKR: 40A	10
11			~~8~~			3.4 / 3.0	8			12
13	CHILDREN'S POOL ARCH JET RECIRCULATION PUMP 0.5HP/230V/1ø	2 P 20A	12	0.6 / 0.5			~~12~~	20A	~~SWIMMING POOL HEATER~~ (1)	14
15			12			0.6 / 1.0	12	2 P 20A	CHILDREN'S POOL CHLORINE GENERATOR BOOSTER PUMP 1HP/230V/1ø	16
17	SWIMMING POOL FILTRATION PUMP 5HP/230V/1ø	2 P 60A	8	3.4 / 1.0			12			18
19			8			3.4 / 1.0	12	2 P 20A	SWIMMING POOL CHLORINE GENERATOR BOOSTER PUMP 1HP/230V/1ø	20
21	P F B	1 P		1.0			12			22
23	P F B	1 P						1 P	P F B	24
	TOTAL KVA/PHASE			14.4		13.8	CONN LOAD 28.2 DEM FAC 0.9 DEM LOAD 25.4			



1 EQUIPMENT PAD ELECTRICAL PLAN
SCALE: ½"=1'-0"

1/2"=1'-0"



2 SINGLE LINE DIAGRAM
SCALE: NONE

NOTE:
NO INTERIOR LIGHTING WORK

CITY AND COUNTY OF HONOLULU
REVISED ORDINANCE CHAPTER 32
HONOLULU COUNTY CODE, 1990, AS AMENDED

To the best of my knowledge, this project's design substantially conforms to the Building Energy code for:

____ Building Component Systems
X Electrical Component Systems
____ Mechanical Component Systems

Signature: [signature]
Name: Darrel Itano
Title: President, Itano & Associates, Inc.
License No.: 4367–E
Date: 03/31/2017

Pacific AquaTech, Inc.
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fax: (808) 682-7269
www.pacificaquagroup.com

DARREL T. ITANO LICENSED PROFESSIONAL ENGINEER No. 4367–E HAWAII, U.S.A.

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LICENSE EXP. DATE– 04/30/18
SIGNATURE

△	DATE	DESCRIPTION
1	05–19–17	DELETED EQUIPMENT

PROJECT NAME:
KALAELOA RENTAL HOMES SITE
KALAELOA, OAHU, HAWAII

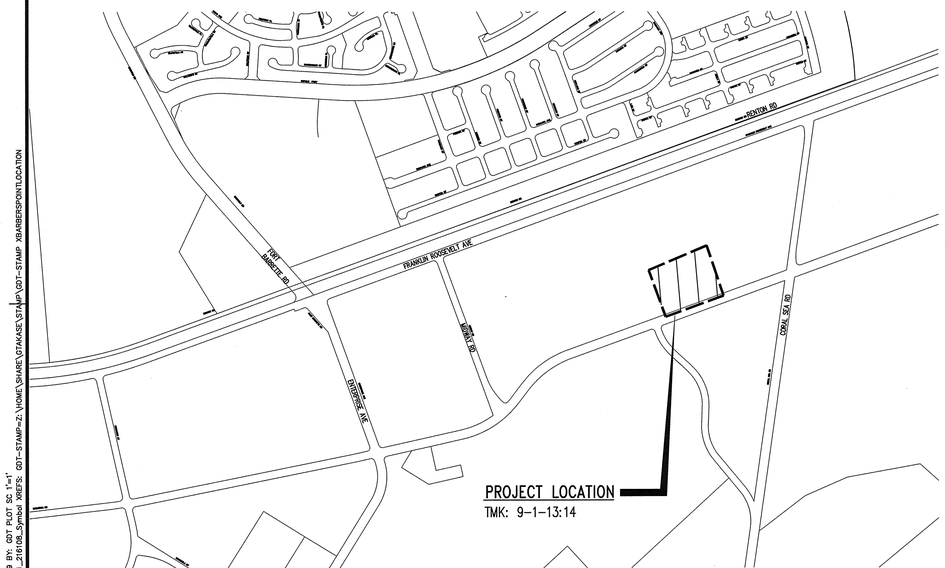
SHEET TITLE:
EQUIPMENT PAD ELECTRICAL PLAN, SINGLE LINE DIAGRAM, PANEL SCHEDULE, ENERGY BUDGET

JOB NO.:
DATE: 04/07/17
DRAWN BY: PAT TEAM
DRAWING NO.:
WF-701
SHEET OF SHEET(S)

NORTH

OAHU ISLAND MAP

NOT TO SCALE



NORTH

VICINITY MAP

NOT TO SCALE

ELECTRICAL SYMBOLS

ITEM	DESCRIPTION
	EXST. HECO HANDHOLE
LV	EXST. HECO TRANSFORMER
	METER PEDESTAL, SEE SHEET ES003
—S—	SECURITY/KEY ENTRY DUCTLINE
—L—	LIGHT DUCTLINE
	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A"
A 3E	DUCT SECTION WITH "3E" DUCTS. SEE SHEET ES003 FOR DUCT SECTIONS AND CONDUIT SCHEDULES
1 —LV—	LOW VOLTAGE, DIRECT BURIED RATED CABLE, 2#12, 6" MIN DEPTH.
T	DIRECT BURIAL – 12V TRANSFORMER, FOCUS INDUSTRIES: DB–12–75E
	UPLIGHT, 12V, SEE LANDSCAPE PLANS FOR LOCATION AND TYPE
	LANDSCAPE LIGHT, 12V, SEE LANDSCAPE PLANS FOR LOCATION AND TYPE
	AREA LIGHT, SEE SHEET ES004
	WALKWAY LIGHT, BEACHSIDE LIGHTING L–017–B–120V–5W–A–NFL–HS17–2
	PRIVATE 17"X30" POLYMER HANDHOLE
—e—	EXST. ELECTRICAL DUCTLINE
—x—e—x—	REMOVE CABLES FROM EXST. ELECTRICAL DUCTLINE, ABANDON IN PLACE.
X	DEMOLISH OR ABANDON IN PLACE WHEN NOTED.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date _____ By _____

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant or anyone acting in the Customer's behalf from the responsibility for engineering design, materials and any other liability associated with this project.

R1M ARCHITECTS
HAWAII | GUAM CALIFORNIA ALASKA
851 FORT STREET, SUITE 200
HONOLULU, HAWAII 96813
Phone: 808.550.0844
Fax: 808.585.9445
www.rimarchitects.com

Ronald N.S. Ho & Associates, Inc.
Electrical Engineers
2153 North King Street, Suite 201
Honolulu, Hawaii 96819

GEORGE D. TAKASE
LICENSED PROFESSIONAL ENGINEER
No. 13741-E
HAWAII, U.S.A.

EXP. DATE: APRIL 30, 2018
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION

PERMIT SET

PROJECT TITLE: **KALAELOA HOUSING OFFICE RENOVATION**
4285 INDEPENDENCE RD, KAPOLEI, HI 96707

OWNER: GREYSTAR

SHEET TITLE: SYMBOL LIST, ISLAND AND VICINITY MAP

MARK	DATE	DESCRIPTION
1	5/17/17	ADDED LANDSCAPE LIGHTING

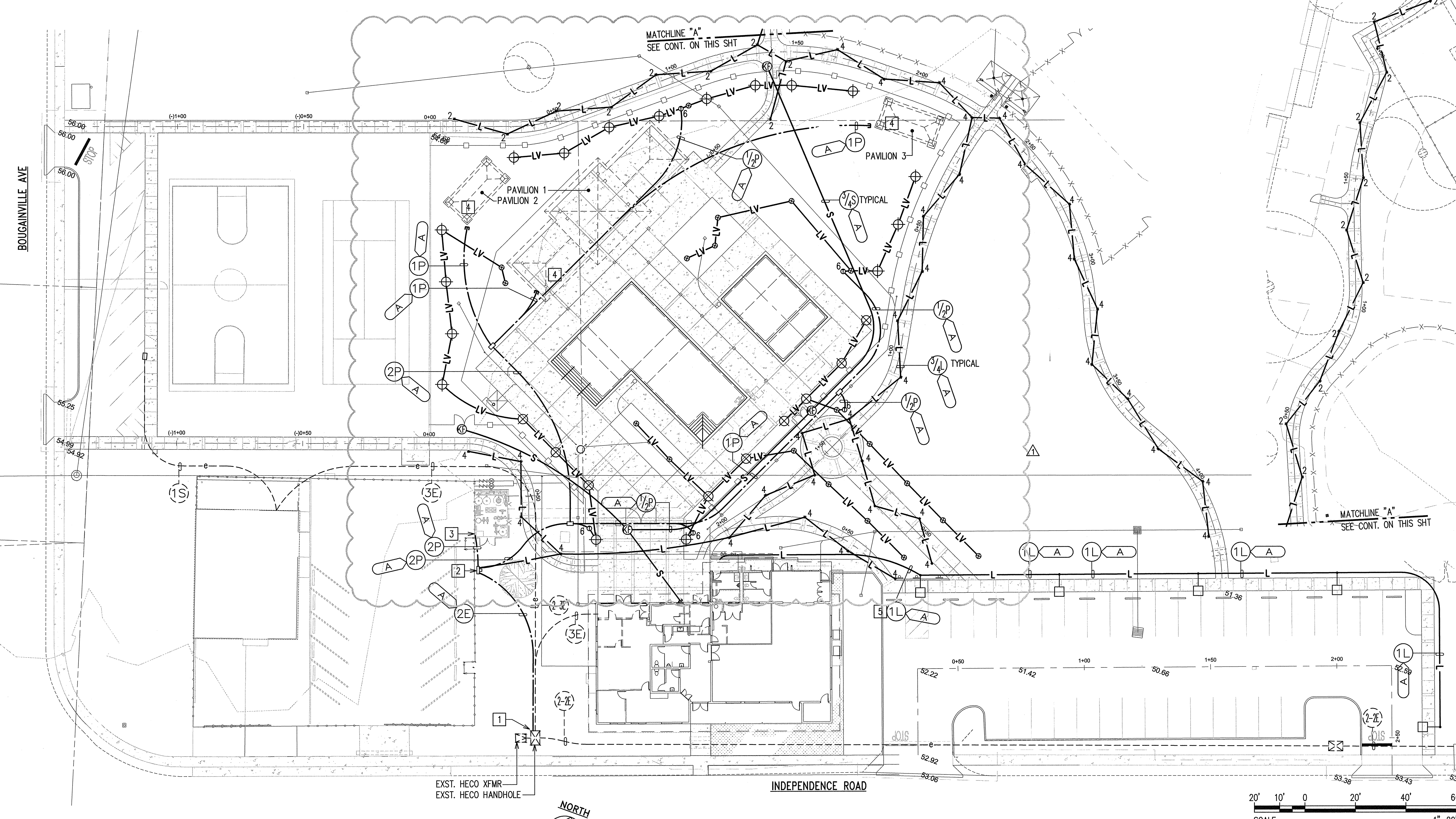
DATE	2017.05.18
PROJECT NO	163042
DRAWN BY	CAD
CHECKED BY	GDT
COPYRIGHT	2017 R1M Architects

DWG NO: ES001
SHEET OF

LAST SAVE: 05/17/17 @ 16:35:49 BY: GDT PLOT SZ: 1"=1'
Z:\Acad\PROJECTS\216108\ES001_216108_Symbol XREFS: @DT-STAMP=Z:\HOME\SHARE\GTAKASE\STAMP\@DT-STAMP XBARBERSPOINTLOCATION

NOTE(S):

1. PENETRATE EXST. HECO HANDHOLE FOR CONDUIT INSTALLATION.
2. METER PEDESTAL, SEE SHEET ES003
3. CONNECTION TO POOL EQUIPMENT PANEL. SEE POOL DESIGN.
4. CONTRACTOR TO PICK UP STUB TO FEED LIGHTS AND RECEPTACLES UNDER PAVILION. CONTRACTOR TO COORDINATE WITH PAVILION CONTRACTOR.
5. PARKING LOT LIGHTS POWERED THROUGH LEASING CENTER.
6. PENETRATE EXST. HECO HANDHOLE FOR CONDUIT INSTALLATION.



ELECTRICAL DISTRIBUTION PLAN

SCALE: 1"=20'

GRAPHIC SCALE

SCALE: 1"=20'

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EXP. DATE: APRIL 30, 2018
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION

PERMIT SET

PROJECT TITLE: **KALAELOA HOUSING OFFICE RENOVATION**
4285 INDEPENDENCE RD, KAPOLEI, HI 96707

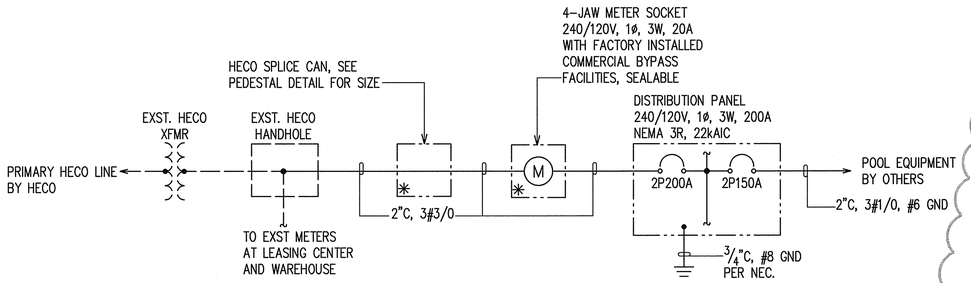
OWNER: GREYSTAR

SHEET TITLE: ELECTRICAL DISTRIBUTION PLAN

MARK	DATE	DESCRIPTION
1	5/17/17	ADDED LANDSCAPE LIGHTING

DATE	:	2017.05.18
PROJECT NO	:	163042
DRAWN BY	:	CAD
CHECKED BY	:	GDT
COPYRIGHT	:	

DWG NO:
ES002
SHEET OF

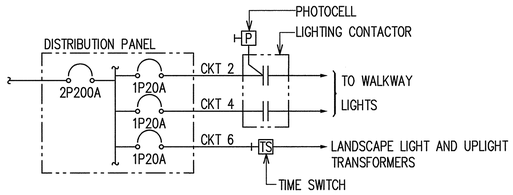


*HECO SEALABLE

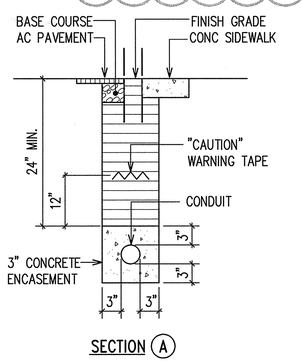
NOTE(S):

1. CUSTOMER TO COMPLY WITH ALL OF APPLICABLE EUSERC DRAWINGS REQUIREMENTS AND HECO'S ESIM REQUIREMENTS.
2. AT TIME OF INSTALLATION, PROVIDE AND INSTALL METER SOCKET COVERS (PLASTIC) AND BANDS FOR ALL BLANK METER SOCKETS. IDENTIFY COVERS SO COVERS CAN BE RETURNED.

A ONELINE
ES003 NOT TO SCALE



C LIGHTING DIAGRAM
ES003 NOT TO SCALE



SECTION (A)

CONDUIT SCHEDULE	
ITEM	DESCRIPTION
2E	HECO 1-2"C
2P	POWER 1-2"C
1P	POWER 1-1"C
1L	LIGHTING 1-1"C
3/4L	LIGHTING 1-3/4"C
3/4S	SECURITY 1-3/4"C, WITH PULL LINE

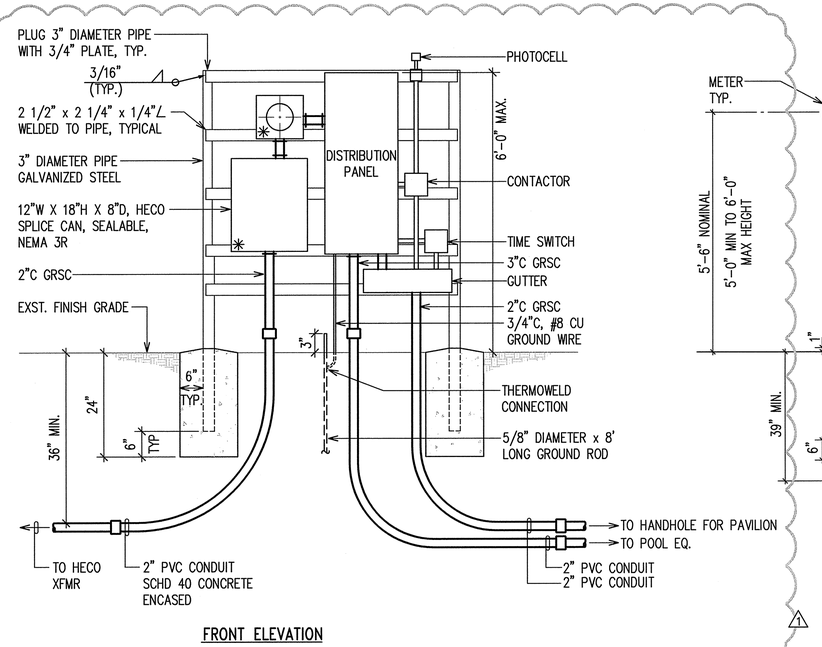
BACKFILL NOTES:

TYPE "A" BACKFILL – EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.

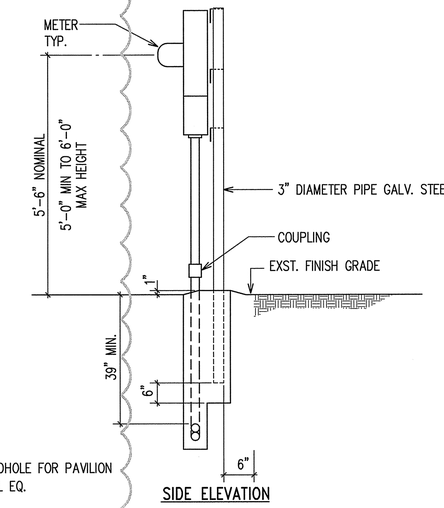
TYPE "B" BACKFILL – EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.

CONCRETE – 3" ENCASEMENT, 2800 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

TYPICAL DUCT SECTIONS
NOT TO SCALE



FRONT ELEVATION



SIDE ELEVATION

NOTE(S):

1. ALL CONDUITS TO CONTAIN A POLYOLEFIN PULL LINE. (JET LINE CAT #232 OR EQUIV)
2. PEDESTAL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
3. ALL FASTENING BOLTS, NUTS & WASHERS SHALL BE 316 STAINLESS STEEL.
4. PROVIDE 4 FT CLEARANCE IN FRONT OF METER.
5. SEE ONELINE DIAGRAM ON THIS SHEET.
6. CONCRETE BASE 3000 PSI @ 28 DAYS

B METER PEDESTAL DETAIL
ES003 NOT TO SCALE

DISTRIBUTION PANEL — 200A MAIN LUGS ONLY, 240/120V, 1 PHASE, 3 WIRE, 10,000 A.I.C. LOADCENTER TYPE, PLUG-IN BREAKERS, FLUSH MOUNTED, NEMA 1 ENCLOSURE

CKT. NO.	USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	BREAKER POLE	BREAKER AMPS	WIRE SIZE	KVA ON BUSSES L1	KVA ON BUSSES L2	WIRE SIZE	BREAKER POLE	BREAKER AMPS	USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	CKT. NO.
1,3	POOL EQUIPMENT	2	150	1/0	14.4 / 0.3		12	1	20	L - WALKWAY	2
						13.8 / 0.3	12	1	20	L - WALKWAY	4
5	R - PAVILION 1	1	20	12	0.3 / 0.3		12	1	20	L - LANDSCAPE AND UPLIGHTS	6
7	L - PAVILION 1	1	20	12		0.3 / 0.2		1	20	SPARE	8
9	R - PAVILION 2	1	20	12	0.3 / 0.2			1	20	SPARE	10
11	L - PAVILION 2	1	20	12		0.3 / 0.2		1	20	SPARE	12
13	R - PAVILION 3	1	20	12	0.3 / 0.0			1		PFB	14
15	L - PAVILION 3	1	20	12		0.3 / 0.0		1		PFB	16
17	PFB	1			0.0 / 0.0			1		PFB	18
19	PFB	1				0.0 / 0.0		1		PFB	20
21	PFB	1			0.0 / 0.0			1		PFB	22
23	PFB	1				0.0 / 0.0		1		PFB	24
	CONNECTED LOAD PER PHASE				16.1	15.4					

TOTAL CONNECTED LOAD (KVA)	31.5
DEMAND FACTOR	90%
TOTAL DEMAND LOAD (KVA)	28.3
TOTAL DEMAND LOAD (AMPS)	136.1

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PROJECT TITLE: **KALAELOA HOUSING OFFICE RENOVATION**
4285 INDEPENDENCE RD, KAPOLEI, HI 96707

OWNER: GREYSTAR

SHEET TITLE: ONELINE DIAGRAM, DETAILS AND PANEL SCHEDULE

MARK	DATE	DESCRIPTION
1	5/17/17	MOD FOR LANDSCAPE LIGHTING

DATE	2017.05.18
PROJECT NO	163042
DRAWN BY	CAD
CHECKED BY	GDT
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LAST SAVE: 05/17/17 @ 16:25:44 BY: GDT PLOT SC: 1"=1"
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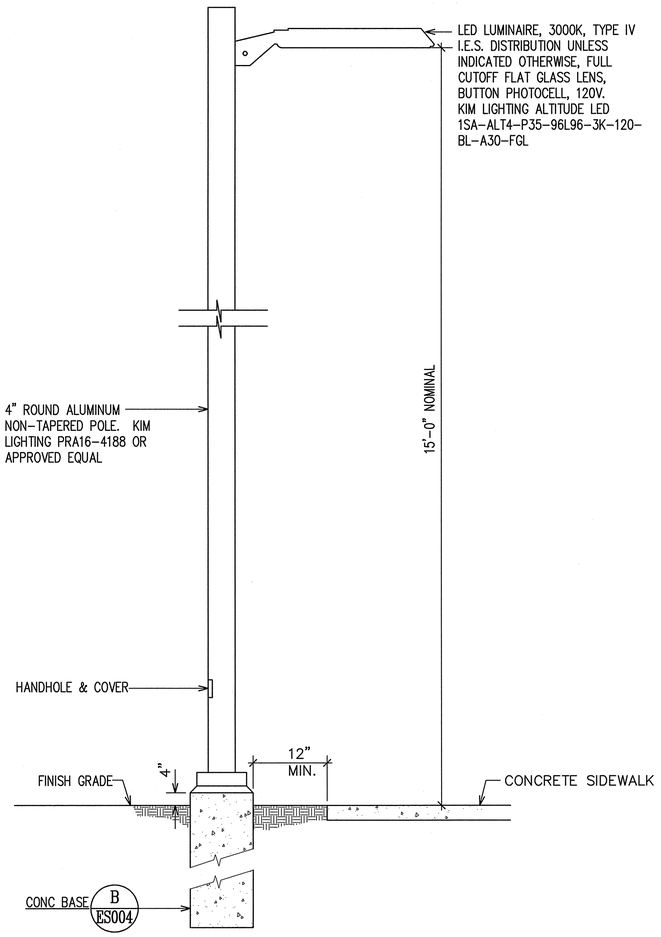
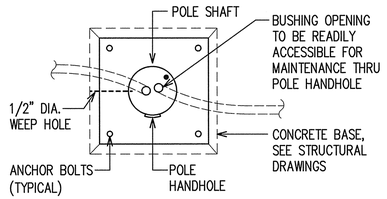


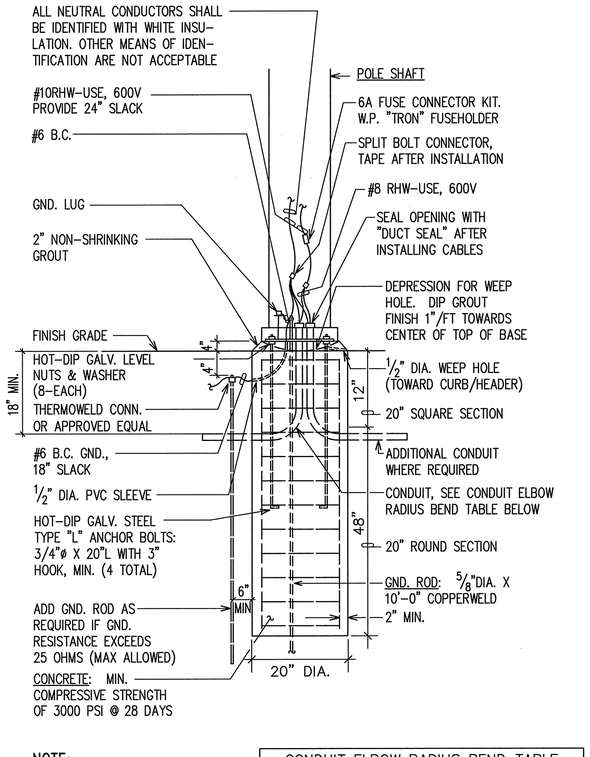
ELEVATION



NOTES:

1. POLE: ALUMINUM, 4" MINIMUM SHAFT, WITHSTAND 100MPH WINDS W/O PERMANENT DEFORMATION. CLEAR ANODIZED UNDERCOAT WITH RAL CUSTOM POWDER COAT FINISH TO MATCH RAB LIGHTING CR BRONZE FINISH.
2. LUMINAIRE & MOUNTING ARM FINISH: CORROSION RESISTANT BRONZE POLYESTER POWDER COAT FINISH.

A ES004 AREA LIGHT STANDARD
NOT TO SCALE



NOTE:
SEE STRUCTURAL DRAWINGS FOR CONCRETE BASE REQUIREMENTS/DETAILS

CONDUIT ELBOW RADIUS BEND TABLE			
PVC SCHEDULE 40 OR 80 ELBOW			
NOMINAL CONDUIT SIZE	1 1/4"	1 1/2"	2"
MINIMUM RADIUS BEND	8"	10"	12"

B ES004 CONCRETE BASE ELEVATION
NOT TO SCALE

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