

SPECIAL INSPECTION NOTES:

1. ALL GRADING, FOUNDATION, AND BACKFILLING OPERATIONS SHALL BE DONE UNDER THE SUPERVISION OF THE SOILS ENGINEER. CONTRACTORS TO EXAMINE THE SOILS ENGINEER'S REPORT AND TO COMPLY WITH ALL RECOMMENDATIONS OF EACH PHASE OF WORK. ALL DAM WALLS SUBJECT TO SPECIAL INSPECTION PER UNLESS NOTED OTHERWISE SHALL BE INSPECTED BY THE SOILS ENGINEER AND IN ACCORDANCE WITH THE FOLLOWING:
 - a) CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER FOR:
 - i) INSPECTION PRIOR TO GRADING OF CELLS
 - ii) INSPECTION PRIOR TO GRADING OF CELLS
 - iii) INSPECTION DURING GRADING OF CELLS
2. ALL CMU CELLS SHALL BE GROUTED SOLID.
3. DAM-O-WALL #16" O.C.
4. ALL REINFORCING STEEL SHALL BE GRADE 40 AND SHALL CONFORM TO ASTM SPEC. A-615.
5. MASONRY BLOCKS SHALL BE GRADE N AND SHALL CONFORM TO ASTM SPEC. C-90.
6. THE CONTRACTOR SHALL PROVIDE ALL OPENINGS AND INSTALL ALL PIPE SLEEVES, ANCHOR BOLTS, WALL PIERES, INSERTS, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE TO ENSURE PROPER INSTALLATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SPECIAL INSPECTION OF PORTIONS OF THE WORK AS REQUIRED BY THE BUILDING CODE OF THE CITY AND COUNTY OF HONOLULUI BE MADE AT THE APPROPRIATE TIME. THE CONTRACTOR SHALL GIVE TIMELY NOTICE OF WHEN AND WHERE INSPECTIONS ARE TO BE MADE AND PROVIDE ACCESS FOR THE INSPECTOR. THE CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE OWNER AND PAY FOR REDEMPTION.
8. THE FOLLOWING STRUCTURAL WORK REQUIRES SPECIAL INSPECTION:
 - a. CONCRETE WITH STRENGTH $f'_{c} \geq 5000$ PSI OR GREATER
 - b. SIMULTANEOUS MASONRY

GENERAL:

- A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE BUILDING CODE OF THE CITY AND COUNTY OF HONOLULUI (AMENDED USC, 1994 EDITION). HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE COMPARING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
- B. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ARCHITECT ALL INCONSISTENCIES AND OMISSIONS.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP, AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURES, SHORING AND SYSTEMS.
- D. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
- E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS, AND UTILITIES DURING THE CONSTRUCTION PERIOD.
- F. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.

FOUNDATION

- A. FOUNDATION DESIGN IS BASED ON FIELD GEOTECHNICAL ENGINEERING SURFACE INVESTIGATION REPORT, " COSTCO WHOLESALE WAREHOUSE AND GAS STATION, ENTRY WARD BUSINESS PARK, WARDI SHAH, HAWAII," DATED AUGUST 13 1999.
- B. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL DRIBBLING, SHEETING, AND SHORING NECESSARY TO PRESERVE EXCAVATIONS AND EARTH BANKS.
- C. EXCAVATING FOR FOOTINGS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING. GEOTECHNICAL ENGINEER SHALL SUBMIT LETTER OF COMPLIANCE TO THE ARCHITECT.
- D. PRIOR TO BACKFILL CONTRACTOR SHALL INSTALL PRESENT ON FRONT SIDE OF WALL AND WALLS HAVE ATTAINED THEIR FULL DESIGN STRENGTH. EXCAVATIONS SHALL BE PROPERLY BACKFILLED.

CONCRETE:

- A. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE AC 308R-93.
- B. CONCRETE SHALL BE REGULAR WEIGHT (HARD ROCK) CONCRETE AND SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS:
 - a. RETAINING WALL FOOTINGS: 2500 PSI
 - b. STRUCTURAL MASONRY: 3000 PSI
 - c. ALL OTHER CONCRETE: 3000 PSI
- C. CONCRETE QUANTITY TICKETS SHALL BE SUBMITTED TO THE ARCHITECT BY THE CONTRACTOR FOR CONFORMANCE BY THE DESIGNER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IS PERMITTED BY THE DESIGNER.
- D. ALL WEDGES, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT-DIPPED GALVANIZED UNLESS OTHERWISE NOTED.
- E. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SCORED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
- F. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO WEAR THE STRENGTH OF THE STRUCTURE AND TO DEVELOP FULL DESIGN STRENGTH. SHOWN LOCATION OF CONSTRUCTION JOINTS TO THE ARCHITECT FOR APPROVAL UNLESS OTHERWISE NOTED.
- G. NON-SHRINK GROUT SHALL BE A PREPARED NON-METALLIC FORMULA CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 1 DAY AND 5000 PSI IN 28 DAYS.

REINFORCING STEEL:

- A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
- B. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 - a. CONCRETE CAST AGAINST EARTH: 2"
 - b. WALL FACES EXPOSED TO EARTH OR WEATHER: 2"
 - c. CLEAR DISTANCE BETWEEN THE SURFACE OF A BAR AND ANY SURFACE OF A MASONRY UNIT SHALL BE NOT LESS THAN 1/2" MIN. UNLESS OTHERWISE NOTED.
- D. REINFORCING STEEL SHALL BE SPLICED WHERE INDICATED ON PLANS. PROVIDE LAP SPICE LENGTH PER TYPICAL DETAILS AND SCHEDULES UNLESS OTHERWISE NOTED.
- E. MECHANICAL SPlice CONNECTORS SHALL DEVELOP TENSIONS IN 125 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF REINFORCING BARS.
- F. BAR BENDS AND HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318.

CONCRETE MASONRY UNITS (CMU):

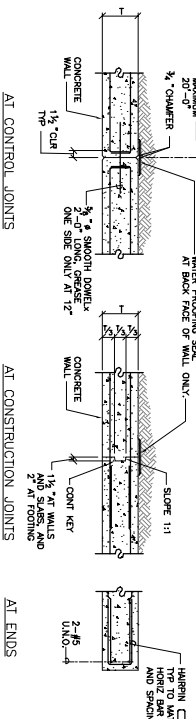
- A. CONCRETE MASONRY UNITS SHALL BE TYPE 1 NORMAL WEIGHT HOLLOW LOAD BEARING UNITS CONFORMING TO ASTM C-90 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.
- B. UNITS SHALL BE TYPE "N" CONFORMING TO ASTM C-90 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
- C. GROUT SHALL CONFORM TO ASTM C-970 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
- D. ALL CELLS SHALL BE SOLID GROUTED. CLEANOUTS SHALL BE PROVIDED FOR ALL GROUT POUCHES OVER 5'-4" IN HEIGHT.
- E. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, VERTICAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT FROM 1-1/2" WEDGES BELOW THE TOP OF THE SPREADS (UNIT).
- F. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO WEAR THE STRENGTH OF THE STRUCTURE AND TO DEVELOP FULL DESIGN STRENGTH. SHOWN LOCATION OF CONSTRUCTION JOINTS SHALL BE 20 FEET UNLESS OTHERWISE NOTED. MAXIMUM SPACING BETWEEN CONSTRUCTION JOINTS SHALL BE 20 FEET.
- G. WALLS SHALL BE CONSTRUCTED IN CONVENTIONAL RUNNING BOND UNLESS OTHERWISE NOTED.
- H. OPEN-DRAINED BLOCKS MAY BE SUBSTITUTED FOR STANDARD CONCRETE MASONRY UNITS.

STRUCTURAL STEEL:

- A. STRUCTURAL STEEL SHALL CONFORM TO ASTM A588 UNLESS OTHERWISE NOTED.
- B. BOLTS SHALL CONFORM TO ASTM A307, GRADE A UNLESS OTHERWISE NOTED.
- C. WELDING AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODES AND D11.1 OF THE AMERICAN WELDING SOCIETY.
- D. WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED FOR WELDING PROCEDURES TO BE USED.
- E. WELDING ELECTRODES SHALL BE E70X8.
- F. EXPOSED STEEL SHALL BE HOT-DIPPED GALVANIZED.

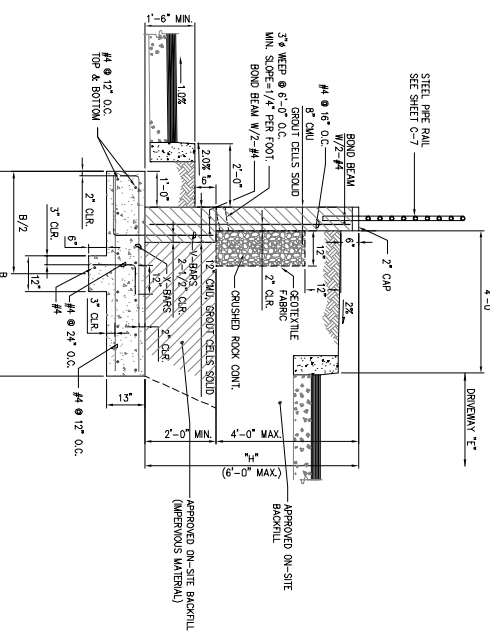
SOIL CRITERIA:

HORIZONTAL FLUID PRESSURE = 45 PSF (L2)
 HORIZONTAL FLUID PRESSURE = 60 PSF (L2)
 ALLOWABLE BEARING = 4500 PSF
 ALLOWABLE TENSION = 0.45
 PASSIVE PRESSURE = 275 PSF

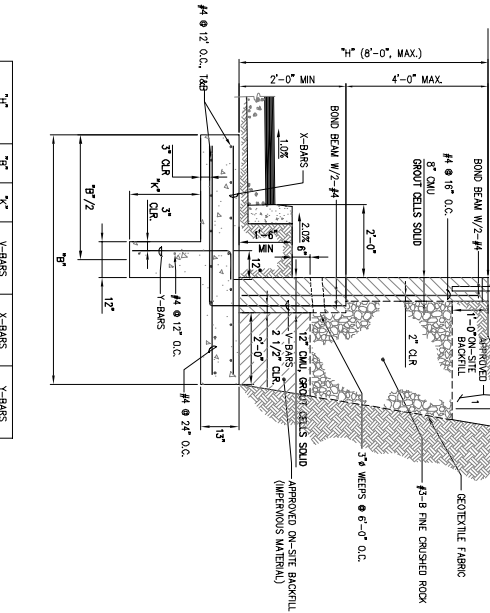


11 CONCRETE WALL DETAILS
 SCALE: 1"=1'-0"

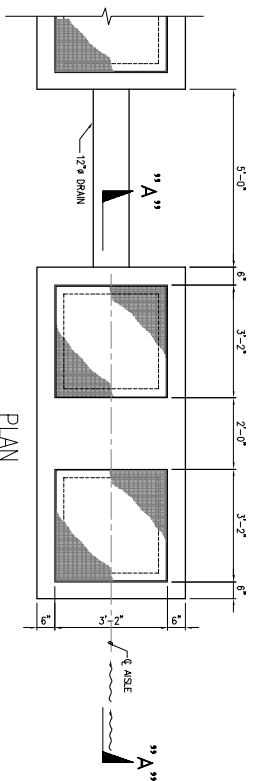
7 TYPICAL FLASHING COMPOUND WATERPROOFING DETAIL
 SCALE: 1"=1'-0"



2 TYPE "B" WALL
 SCALE: 1/2"=1'-0"



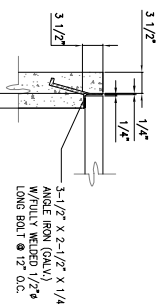
1 TYPE "A" WALL
 SCALE: 1/2"=1'-0"



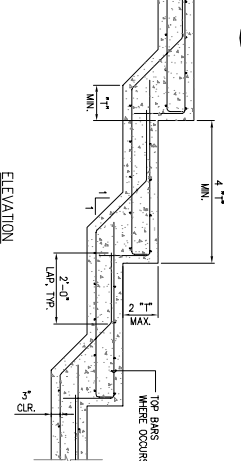
SECTION "A-A"

10 SETTLING INLET
 SCALE: 1/2"=1'-0"

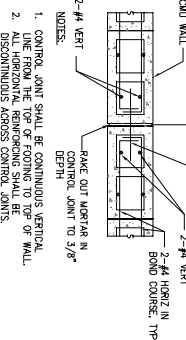
8 ANCHOR BOLT DETAIL
 SCALE: 1"=1'-0"



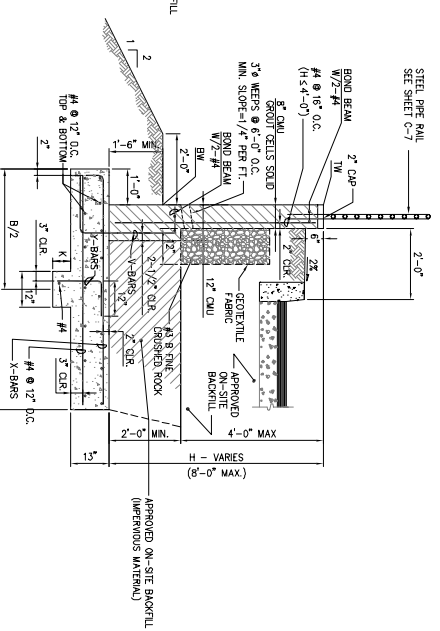
9 CONCRETE SWALE
 SCALE: 1/2"=1'-0"



6 CONTROL JOINT FOR CMU WALLS
 SCALE: 1"=1'-0"



4 STEPPED FOOTING DETAIL
 SCALE: 1/2"=1'-0"



5 TYPE "D" WALL
 SCALE: 1/2"=1'-0"

WALL TYPE	B	K	V-BARS	X-BARS	Y-BARS
0'-0" x 4'-0"	5'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
4'-0" x 4'-0"	7'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
6'-0" x 4'-0"	9'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.

3 TYPE "C" WALL
 SCALE: 1/2"=1'-0"

WALL TYPE	B	K	V-BARS	X-BARS	Y-BARS
0'-0" x 4'-0"	5'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
4'-0" x 4'-0"	7'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
6'-0" x 4'-0"	9'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.

2 TYPE "B" WALL
 SCALE: 1/2"=1'-0"

WALL TYPE	B	K	V-BARS	X-BARS	Y-BARS
0'-0" x 4'-0"	5'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
4'-0" x 4'-0"	7'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
6'-0" x 4'-0"	9'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.

1 TYPE "A" WALL
 SCALE: 1/2"=1'-0"

WALL TYPE	B	K	V-BARS	X-BARS	Y-BARS
0'-0" x 4'-0"	5'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
4'-0" x 4'-0"	7'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.
6'-0" x 4'-0"	9'-0"	6"	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 24" O.C.