

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-H-04-99M	2000	17	75

STRUCTURAL GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE 1994 UNIFORM BUILDING CODE AND THE COUNTY OF HAWAII AMENDMENTS.
2. STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE, AND DO NOT SPECIFY THE MEANS AND METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEANS NECESSARY TO PROTECT THE STRUCTURE, AND ANY ADJACENT NEW OR EXISTING STRUCTURES DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING AND SHORING FOR LOADS ACTING ON THE STRUCTURE DURING CONSTRUCTION.
- OBSERVATION BY THE STRUCTURAL ENGINEER DURING CONSTRUCTION WILL NOT INCLUDE INSPECTION OF AFOREMENTIONED BRACING AND SHORING.
3. EXISTING CONDITIONS ARE SHOWN TO THE BEST OF OUR KNOWLEDGE. DISCREPANCIES SHALL PROMPTLY BE REPORTED TO THE ARCHITECT AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
4. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES, WHICH MAY BE AFFECTED BY HIS WORK. INTERFERENCES WITH THE STRUCTURE SHALL PROMPTLY BE REPORTED TO THE ARCHITECT AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND VERIFYING ALL DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL STRUCTURAL DISCREPANCIES, AND THESE DISCREPANCIES SHALL BE RESOLVED PRIOR TO PROCEEDING WITH THE WORK.
6. SHOULD A DISCREPANCY OCCUR ON THE DRAWINGS BETWEEN ANY PROJECT SPECIAL NOTES/SPECIAL DETAILS, AND THE TYPICAL SPECS/TYPICAL DETAILS, SAID SPECIAL NOTES/SPECIAL DETAILS SHALL TAKE PRECEDENCE.
7. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATIONS OF ARCHITECTURAL OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS.
8. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR DIMENSIONS AND LOCATIONS OF ELECTRICAL/MECHANICAL PENETRATIONS SHOWN ON THE STRUCTURAL DRAWINGS.
9. PENETRATIONS AND OPENINGS WITH ANY DIMENSION GREATER THAN 2" THAT ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE PROHIBITED UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
10. ANY CONSTRUCTION MATERIAL THAT IS TEMPORARILY PLACED ON FLOOR AND/OR ROOF FRAMING SHALL BE DISTRIBUTED OVER THE FRAMING SYSTEM SUCH THAT THE CONSTRUCTION LOAD DOES NOT EXCEED THE LOAD THAT THE FRAMING SYSTEM WAS DESIGNED FOR.
11. DESIGN CRITERIA ( NEW CONSTRUCTION ONLY ) -
- A. CODES AND STANDARDS
1. UNIFORM BUILDING CODE, 1994 EDITION
- B. DESIGN LIVE LOADS
1. ROOF = 16 PSF
- C. DESIGN DEAD LOADS (ADDITIONAL TO SELF WEIGHT)
1. FINISH @ ROOF = 2 PSF
- D. WIND
- BASIC WIND SPEED 80 MPH
- EXPOSURE CATEGORY C
- PRIMARY FRAME DESIGN METHOD METHOD 1 (NORMAL FORCE METHOD)
- BUILDING CLASSIFICATION ENCLOSED & UNENCLOSED
- IMPORTANCE FACTOR 1.0 \* 80% (EXIST. BUILDING) = .8
- E. SEISMIC
- LATERAL FORCE PROCEDURE EQUIVALENT STATIC
- ZONE 4
- C 2.75
- Rw 4
- IMPORTANCE FACTOR 1.0 \* 80% (EXIST. BUILDING) = .8
12. SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENTS.

FOUNDATION

1. THE FOUNDATION DESIGN WAS BASED ON THE ASSUMPTIONS PRESENTED BELOW IN THE ABSENCE OF A SOILS REPORT:
- ALLOWABLE SOIL BEARING PRESSURE = 1000 PSF
- ALLOWABLE PASSIVE EARTH RESISTANCE = 150 PCF
- FRICTIONAL RESISTANCE = 0.4 x DEAD LOAD
2. ANY FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS. FLOODING IS PROHIBITED.
3. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER, OR SEEPAGE.

CONCRETE

1. ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150#/CU.FT.).
2. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-95) WITH MODIFICATIONS AS NOTED IN THE DRAWINGS OR SPECIFICATIONS.
3. SCHEDULE OF STRUCTURAL CONCRETE 28-DAY STRENGTH AND TYPES:
- | LOCATION OF STRUCTURE        | STRENGTH |
|------------------------------|----------|
| SLAB ON GRADE, & GRADE BEAMS | 3000 PSI |
| ALL OTHER CONCRETE           | 4000 PSI |
4. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150 TYPE II.
5. AGGREGATE FOR HARDROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C-33 AND PROJECT SPECIFICATIONS.
6. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR HIS REVIEW.
7. CONCRETE MIXING OPERATION, ETC. SHALL CONFORM TO ASTM C-94.
8. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 301 AND PROJECT SPECIFICATIONS.
9. UNLESS OTHERWISE NOTED ON THE PLANS, MINIMUM CLEAR COVERAGE OF NEW CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS:
- A. CONCRETE POURED DIRECTLY AGAINST EARTH.....3" CLEAR TO REINFORCING
- B. WALL FACES:
- EXPOSED TO EARTH WITH FORMED SURFACES OR EXPOSED TO WEATHER.....1-1/2" CLEAR FOR #5 BAR & SMALLER 2" CLEAR FOR #6 BARS & LARGER
- INTERIOR FACES.....3/4" CLEAR
- C. BEAMS AND COLUMNS:
- NOT EXPOSED TO EARTH OR WEATHER.....1-1/2" CLEAR TO STIRRUPS & TIES
- FORMED AND EXPOSED TO EARTH OR WEATHER.....1 1/2" CLEAR TO STIRRUPS & TIES
- D. STRUCTURAL SLABS.....1" CLEAR AT TOP AND BOTTOM
10. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
11. PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, EQUIPMENT PADS, ETC., SHALL BE FORMED WITH 3/4" CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.
12. ALL ROUGHENED SURFACES IN CONCRETE SHALL BE MADE WITH A MINIMUM AMPLITUDE OF 1/4".

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-83), THE CRSI "MANUAL OF STANDARD PRACTICE," AND THE "ACI DETAILING MANUAL - 1988" (SP-66) AS MODIFIED BY THE PROJECT DRAWINGS AND SPECIFICATIONS.
2. REINFORCING BARS SHALL CONFORM TO ASTM A-615 GRADE 60 REQUIREMENTS.
3. ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED.
4. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
5. REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.
6. WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
7. REINFORCING BARS SHALL BE AS LONG AS PRACTICABLE AND AS DETAILED AND SHALL BE LAPPED AT SPLICES AND CORNERS NOT LESS THAN 32 BAR DIAMETER (24" MINIMUM), UNLESS OTHERWISE SHOWN. STAGGER HORIZONTAL WALL BAR SPLICES. IN GENERAL, BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN BEAMS AND SLABS, SPLICE TOP BARS AT MID-SPAN, BOTTOM BARS OVER SUPPORTS, UNLESS OTHERWISE SHOWN.
8. EMBEDDED METAL COMPONENTS MADE UP OF ALLOYS THAT ARE DIS-SIMILAR TO THAT OF THE REINFORCING STEEL SHALL NOT BE ATTACHED DIRECTLY TO REINFORCING. MEASURES SHALL BE TAKEN TO ELECTRICALLY ISOLATE SAID COMPONENTS FROM ANY REINFORCING TO PREVENT CATHODIC EFFECTS.


STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS,"
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION A-36 UNLESS OTHERWISE NOTED.
3. MACHINE BOLTS SHALL CONFORM TO ASTM A-307, GRADE A EXCEPT AS NOTED.
4. BOLT HOLES IN STEEL SHALL BE 1/16" LARGER DIAMETER THAN NOMINAL SIZE OR BOLT USED, EXCEPT AS NOTED.
5. ALL WELDS SHALL BE IN CONFORMITY WITH THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY. SEE SPECIFICATIONS.
6. ALL EXPOSED STRUCTURAL STEEL AND MISCELLANEOUS METAL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

METHOD OF PAYMENT

1. RE-ROOFING OF FUEL STATION SHALL BE PAID FOR UNDER ITEM No. 663.06 OF THE SPECIAL PROVISIONS.
2. ALL OTHER WORK FOR FUEL STATION, AS SHOWN ON SHEETS 17 THROUGH 19, SHALL BE PAID FOR UNDER ITEM No. 501.05 OF THE SPECIAL PROVISIONS.
3. ALL WORK FOR INSTALLATION OF STRUCTURAL FOUNDATION SUPPORTS FOR THE NEW OFFICE TRAILER, AS SHOWN ON SHEETS 17 THROUGH 19, SHALL BE PAID FOR UNDER ITEM No. 636.05 OF THE SPECIAL PROVISIONS.
4. ALL WORK RELATING TO THE DELIVERY AND INSTALLATION OF A NEW OFFICE TRAILER SHALL BE PAID FOR UNDER ITEM No. 636.05 OF THE SPECIAL PROVISIONS.

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



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*Wesley R. Segawa*

WESLEY R. SEGAWA & ASSOC., INC.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**FUEL CANOPY & STORAGE TRAILER PLANS**

**HILO BASEYARD IMPROVEMENTS**

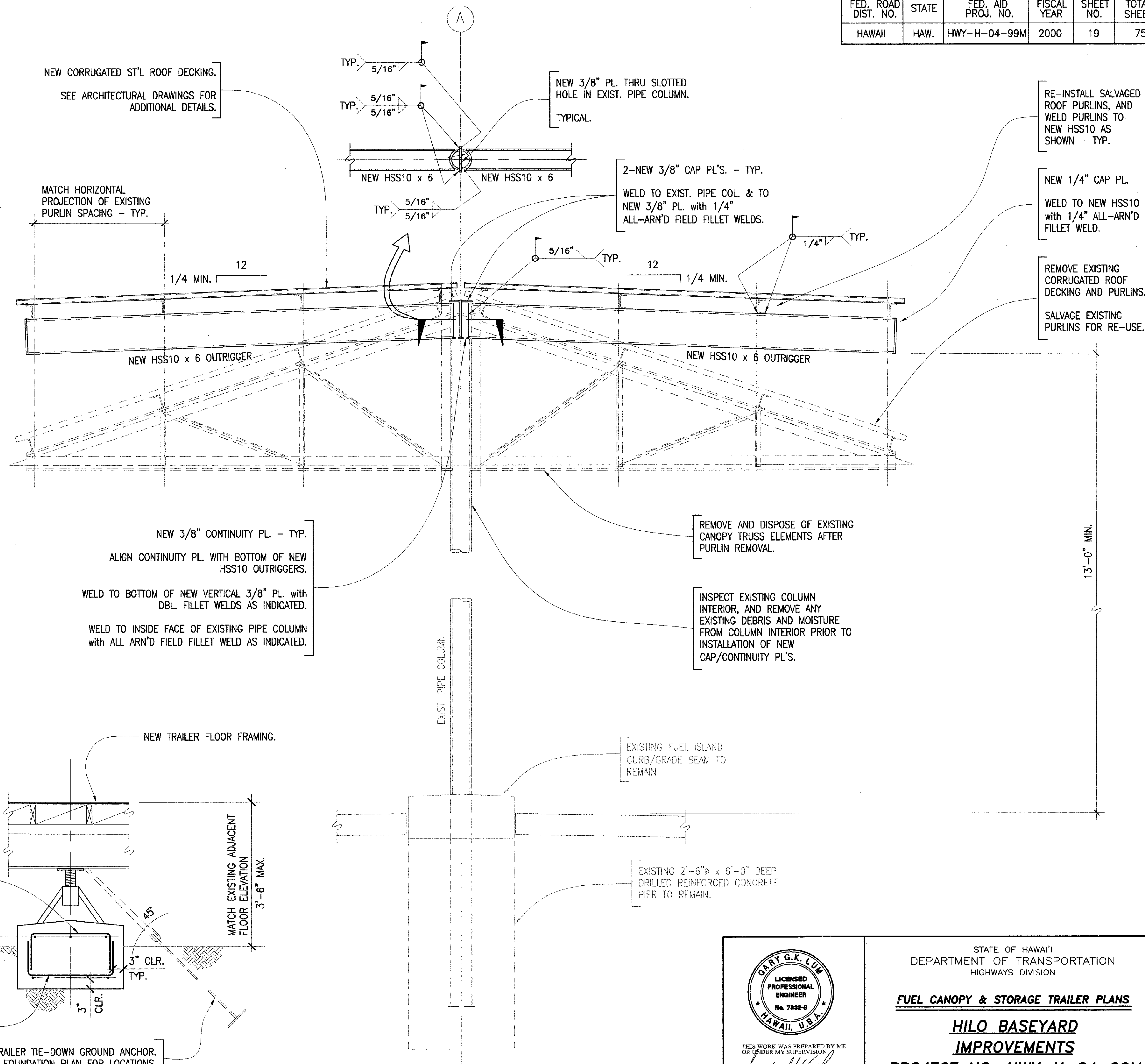
**PROJECT NO. HWY-H-04-99M**

Scale: As Noted Date: April 2000

DWG. No. S1	SHEET No. 1 OF 3 SHEETS
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2 SECTION  
3/4" = 1'-0"

1 SECTION  
3/4" = 1'-0"

DATE	
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NO.	

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*Gary G.K. Lum*

WESLEY R. SEGAWA & ASSOC., INC.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**FUEL CANOPY & STORAGE TRAILER PLANS**

**HILO BASEYARD IMPROVEMENTS**

**PROJECT NO. HWY-H-04-99M**

Scale: As Noted Date: April 2000

DWG. No. S3 SHEET No. 3 OF 3 SHEETS