FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	ADD.38	60

General:

A. Workmanship and materials shall conform to the building code of the City and County of Honolulu (amended UBC, 1994 Edition). However, where reference is made to performance conforming to other standards the more stringent shall apply.
B. The contractor shall compare all the contract documents with each other and report in writing to the engineer all inconsistencies and omissions.
C. 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 engineer all inconsistencies and omissions.
D. The contractor shall be responsible for coordinating the work of all trades.
E. 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 structural members and systems.
F. The contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period.
G. Details noted as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.

Design criteria:

A. Seismic ——— Zone 2a
B. Basic wind speed and exposure ——— 80 mph, Exposure D
C. Design live loads
   a. Roof ——— 20 psf
   b. Offices ——— 50 psf
   c. Light storage ——— 125 psf
   d. Heavy storage ——— 250 psf
   e. Parking garage ——— HS20
D. Allowable foundation bearing capacities
   a. Dead load + live load ——— 3,000 psf
   b. Dead load + live load + lateral load ——— 4,000 psf
E. Retaining walls
   a. Active lateral pressure ——— 40 pcf
   b. Restrained lateral pressure ——— 55 pcf

Foundation:

A. Foundation design is based on geotechnical investigation by Ernest k. Hirata & Associates, Inc. and report dated November 20, 1998.
B. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.
C. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.
D. Excavations for footings shall be observed by the geotechnical engineer prior to placement of concrete and reinforcing.
E. Footings shall bear directly on the medium stiff to stiff silty clay. The bottom of footing excavations shall be thoroughly tamped and cleaned of loose material prior to placement of reinforcing steel and concrete.
F. Footings located on or near the top of slopes shall be embedded such that a minimum horizontal distance of 5 feet is maintained between the bottom edge of the footing and the slope face.
G. Building slabs-on-grade shall be underlain by at least 12 inches of imported granular fill. Prior to placement of the granular structural fill, the silty clay subgrade shall be scarified, moistened to slightly above the optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D1557. The upper 4 inches shall consist of compacted #3 fine gravel (ASTM C33, size no. 67).
H. The parking garage shall be underlain by at least 12 inches of imported granular fill. Prior to placement of the granular structural fill, the silty clay subgrade shall be scarified, moistened to slightly above the optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D1557. The upper 6 inches shall consist of base course compacted to a minimum 95 percent compaction as determined by ASTM D1557.
I. Imported granular structural fill shall be placed in lifts restricted to 8 inches in loose thickness and compacted to 95 percent compaction as determined by ASTM D1557.

Concrete:

A. Concrete construction shall conform to American Concrete Institute ACI 318R-89.
B. Concrete shall be regular weight hard rock concrete and shall be Class "A", 3,000 psi
C. Concrete delivery tickets shall record all free water in the mix: at batching by plant, for consistency by driver, and any additional request by contractor if permitted by the mix design.
D. All inserts, 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 secured in position prior to placement of concrete.
F. Conduits, pipes, and sleeves passing through a slab or footing and not conforming to typical details shall be located and submitted to the engineer for approval.
G. Conduits, pipes, and sleeves embedded within a slab or wall (other than those merely passing through) shall be:
   a. No larger in outside dimensions than one third the overall slab or wall thickness in which they are embedded.
   b. Placed in the middle one third of slab or wall thickness
   c. Spaced no closer than three diameters or widths on center.
H. The contractor shall locate construction joints so as not to impair the strength of the structure and to minimize shrinkage stresses. Submit location of construction joints to the engineer for approval, unless otherwise noted.
I. See architectural drawings for chamfers, edge radii, drips, reglets, finishes and other non-structural items not shown or specified on the structural drawings.
J. Non-shrink grout shall be a premixed non-metallic formula, capable of developing a minimum compressive strength of 3,000 psi in 1 day and 5,000 psi in 28 days.

Reinforcing steel:

A. Reinforcing steel shall be deformed bars conforming to ASTM A615, Grade 60.
B. Welded wire fabric shall conform to ASTM A185, galvanized.
C. Clear concrete cover for reinforcing bars shall be as follows, unless otherwise noted:
   a. Footings, grade beams, etc. cast against earth ——— 3"
   b. Footings, grade beams, etc. formed and exposed to earth or weather ——— 2"
D. Clear distance between the surface of a bar and any surface of a masonry unit shall be not less than 1/2 inch, unless otherwise noted.
E. Reinforcing steel shall be spliced where indicated on plans. Provide lap splice length per typical details and schedule, unless otherwise noted.
F. Mechanical splice connectors shall develop in tension 125 percent of the specified minimum yield strength of reinforcing bars.
G. Bar bends and hooks shall be "standard hooks" in accordance with ACI 318.

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

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DATE	REVISION
5-30-00	Revised General Notes

S1.0

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S1.0 OF 60 SHEETS

ADD. 38

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	39	60

Concrete masonry units (cmu):

A. *Concrete masonry units shall be type II, normal weight hollow load-bearing units conforming to ASTM C90 and have a minimum compressive strength of 1,900 psi.*
B. *Mortar shall be type "m" conforming to ASTM C270 and have a minimum compressive strength of 2,500 psi at 28 days.*
C. *Grout shall conform to ASTM C476 and have a minimum compressive strength of 2,500 psi at 28 days.*
D. *All cells and bond courses with reinforcement and inserts shall be solid grouted. Cleanouts shall be provided for all grout pours over 5'-4" in height.*
E. *When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the grout pour 1 1/2 inches below the top of the uppermost unit.*
F. *The contractor shall locate construction joints so as not to impair the strength of the structure and to minimize shrinkage stresses. Submit location of construction joints to the engineer for approval, unless otherwise noted. Maximum spacing between construction joints shall be 25 feet.*
G. *Walls shall be constructed in conventional running bond, unless otherwise noted.*
H. *See architectural drawings for laying pattern, height of units, surface texture, and joint type.*
I. *Open-ended blocks may be substituted for standard concrete masonry units.*

Metal roofing:

A. *Roofing shall be 22 gage galvanized ribbed steel, prefinished on the top.*
B. *Roofing and all accessories shall be formed from steel sheets having minimum yield strength of 33 ksi and conforming to ASTM A653, SQ33, G90.*
C. *Provide all closures as required to complete the work and make watertight. Open ends of all ribs shall be closed with neoprene or rubber filler strips.*
D. *Metal roofing, including its attachments and accessories shall be capable of resisting a 32 psf wind uplift force.*
E. *Submit structural calculations certified by a structural engineer licensed to practice in the State of Hawaii.*

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY ____ DATE
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QUANTITIES BY "
CHECKED BY "

KEN KAZUO HAYASHIDA
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No. 6818-S
HAWAII, U.S.A.

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S1.1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

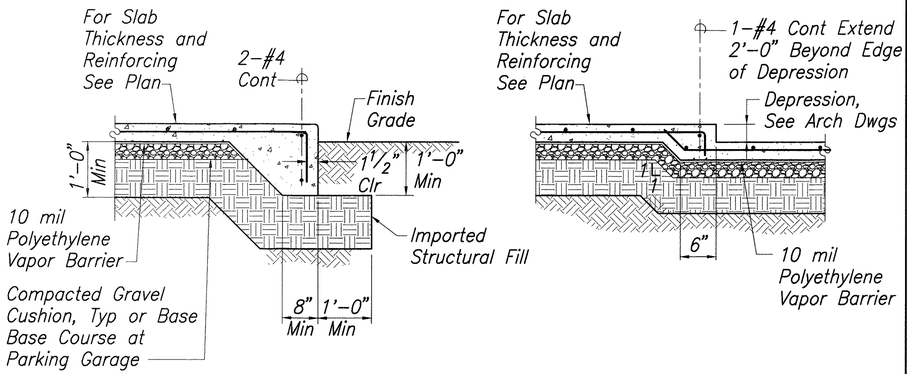
GENERAL NOTES

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

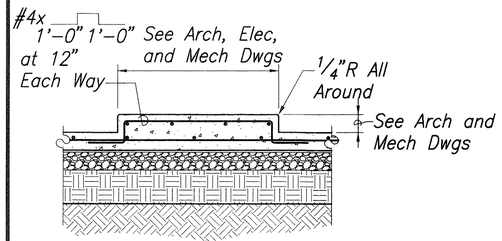
SHEET No. S1.1 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	40	60

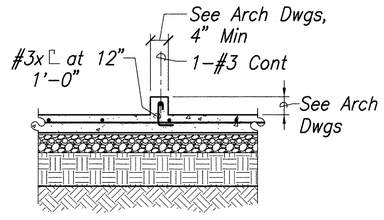


At Slab Edge

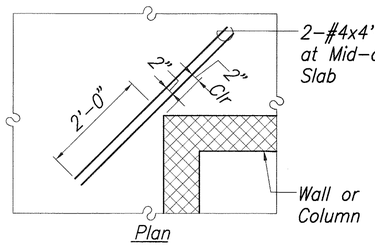
At Depressed Slab



At Interior Equipment Pad

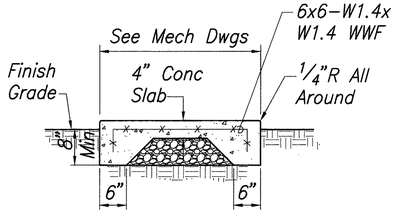


At Curb



Plan

Reinforcing at Reentrant Corner

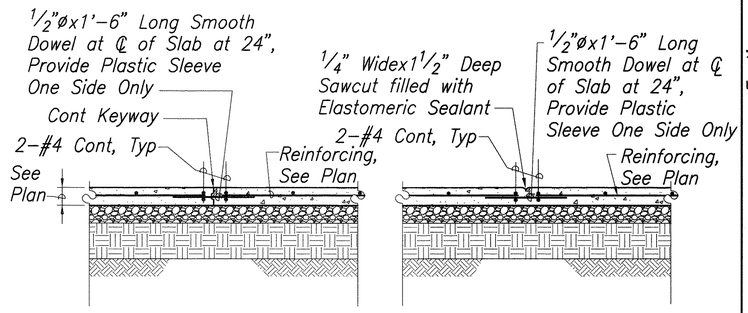


At Exterior Equipment Pad

TYPICAL SLAB-ON-GRADE DETAILS

Not To Scale

A | S2 | S2



Construction Joint, Cj-1

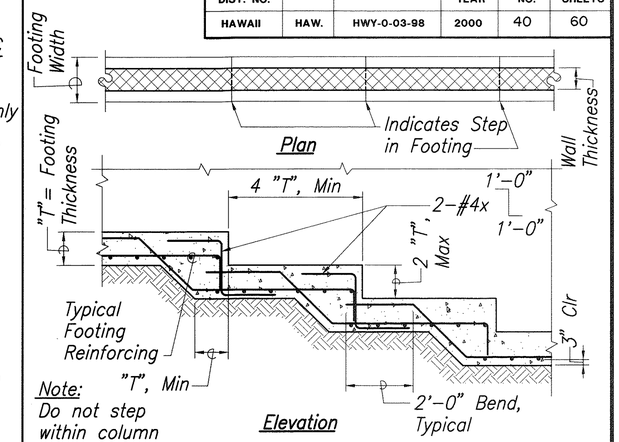
Control Joint, Cj-2

Note:
Saw Cutting Shall Occur as Soon as Concrete Surface is Firm Enough not be Torn by Cutting Blade and Before Shrinkage Cracking Occurs, But no Later Than 12 Hours After Concrete Has Been Poured.

TYPICAL SLAB JOINT DETAILS

Not To Scale

B | S2 | S2

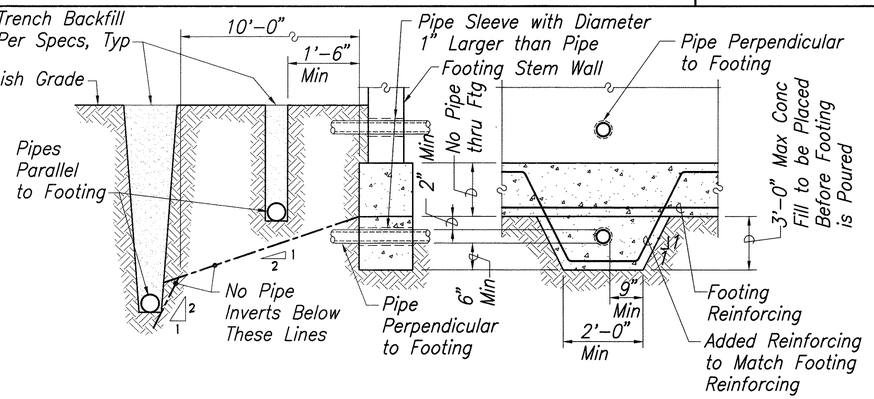


Note:
Do not step within column footings.

STEP FOOTING DETAILS

Not To Scale

C | S2 | S2



Section

Elevation

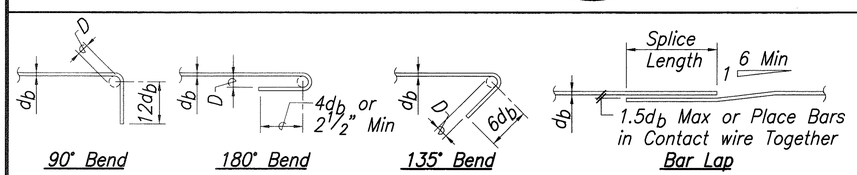
Note:

1. For pipe perpendicular to footing more than 3'-0" below bottom of footing, trench may be backfilled with compacted fill. See Specifications.
2. Depth of footing may be affected by location of pipes. General Contractor shall determine exact deth and location of pipes prior to excavation for footings.

TYPICAL PIPE AT FOOTING DETAIL

Not To Scale

D | S2 | S2



90° Bend

180° Bend

135° Bend

Bar Lap

$D = 6d_b$ for #8 and Smaller
$D = 8d_b$ for #9 to #11

Notes:

1. Length are concrete with rebar spaced 6 bar diameters min oc. Increase bar length 25% for bars spaced less than 6 bar diameters.
2. "Top Bars" are horizontal bars with 12" or more of concrete cast below.

TYPICAL REBAR SPLICE AND EMBEDMENT LENGTH SCHEDULE

Not To Scale

E | S2 | S2

MINIMUM SPLICE and EMBEDMENT LENGTHS

	Concrete Strength = 3,000 psi					Concrete Strength = 2,500 psi				
	Lap Splice		Embedment			Lap Splice		Embedment		
			Straight					Straight		
Bar Size	Bottom Bar or Wall Bar	Top Bar	Bottom Bar or Wall Bar	Top Bar	with Std Hook	Bottom Bar or Wall Bar	Top Bar	Bottom Bar or Wall Bar	Top Bar	with Std Hook
#3	24"	28"	17"	22"	8"	24"	32"	18"	24"	9"
#4	24"	28"	17"	22"	8"	32"	42"	24"	32"	12"
#5	28"	36"	21"	27"	10"	39"	51"	30"	39"	15"
#6	32"	42"	25"	32"	12"	47"	62"	36"	47"	18"
#7	38"	50"	29"	38"	14"	55"	72"	42"	55"	21"
#8	44"	56"	33"	43"	16"	63"	82"	48"	63"	24"
#9	48"	64"	37"	48"	18"	72"	94"	55"	71"	28"
#10	58"	76"	45"	58"	20"	80"	104"	61"	80"	31"
#11	72"	93"	55"	71"	22"	89"	115"	68"	88"	34"

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

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S2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

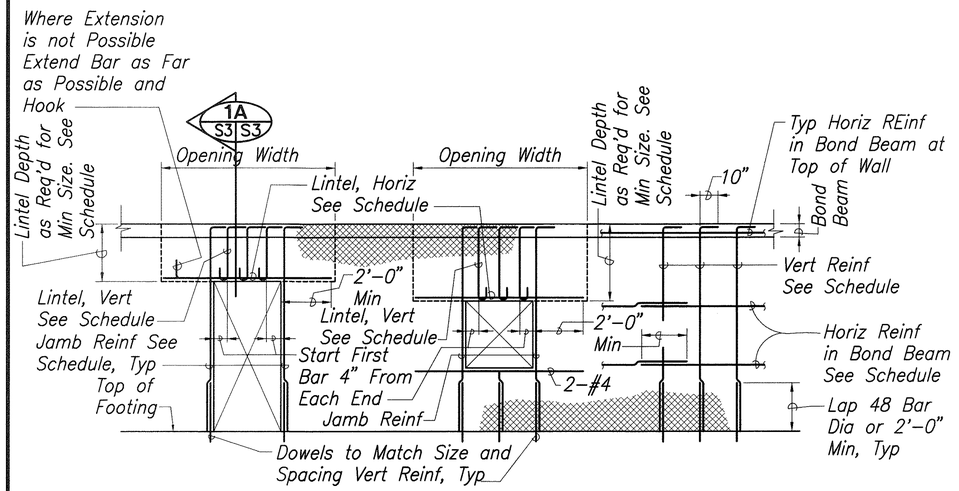
HAUULA BASEYARD IMPROVEMENTS

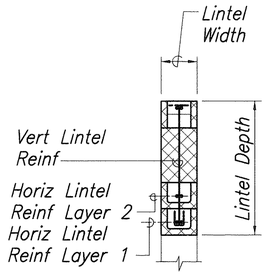
Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S2 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	41	60





SECTION 1A (S3 S3)
Not To Scale

OPENING SCHEDULE

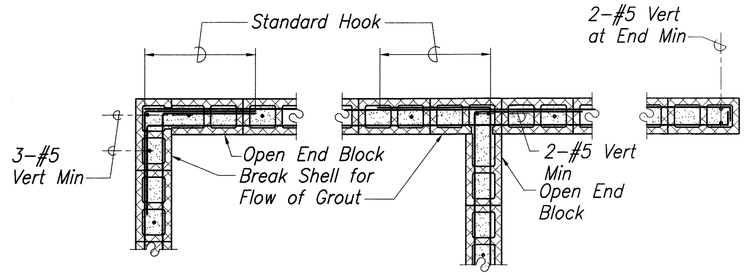
Opening Width	Lintel Width	Lintel Depth	Reinforcing				Remarks
			Jamb	Lintel Horiz Layer 1	Lintel Horiz Layer 2	Lintel Vert	
W < 4'-0"	8"	1'-4"	2-#5	2-#4	–	#4 at 8"	
4'-1" < W < 8'-0"	8"	2'-8"	2-#5	2-#5	–	#4 at 8"	

CMU WALL REINFORCING SCHEDULE

Mark	Wall Thickness	Bar Size and Spacing		
		Horiz	Vert	Remarks
Cmu-1	8"	2-#4 at 48"	#4 at 24"	
Cmu-2	8"	2-#4 at 48"	#4 at 8"	
Cmu-3	6"	2-#4 at 48"	#4 at 24"	

TYPICAL CMU WALL ELEVATION DETAIL A (S3 S3)
Not To Scale

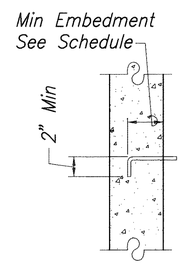
Note:
All walls shall be solid grouted.

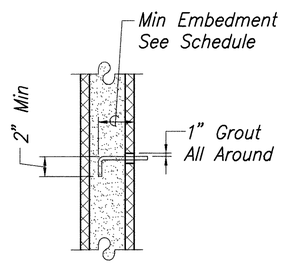


At Corner *At Intersection* *At End*

Note:
Provide horizontal joint reinforcement at 16"

TYPICAL CMU WALL REINFORCING B (S3 S3)
Not To Scale

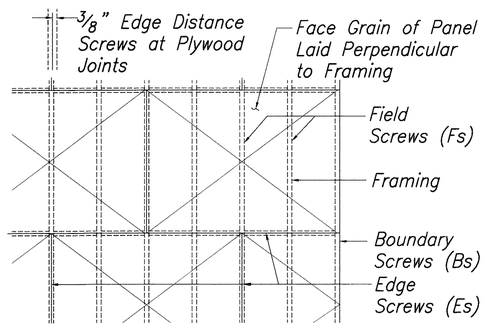




At Concrete *At Masonry*

Bolt Diameter	Minimum Embedment
1/2"	4"
5/8"	5"
3/4"	6"
7/8"	7"
1"	7"

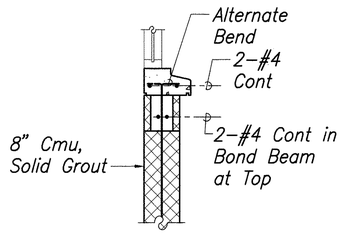
TYPICAL ANCHOR BOLT DETAIL D (S3 S3)
Not To Scale



ROOF SHEATHING

Type	Boundary Screws	Edge Screws	Field Screws	Remarks
Roof	#10 at 6"	#10 at 6"	#10 at 12"	

PLYWOOD ROOF SHEATHING E (S3 S3)
Not To Scale



Note:
See Architectural Drawings for Size, Reveal, Drip, Etc of Sill

TYPICAL CAST IN PLACE CONCRETE SILL DETAIL F (S3 S3)
Not To Scale

SURVEY PLOTTED BY ____ DATE
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TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____
ORIGINAL PLAN
NOTE BOOK ____ No. ____

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S3

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

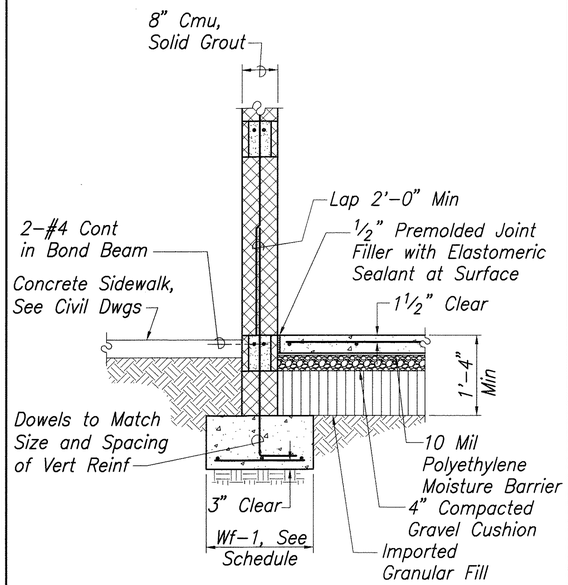
SCALE: *AS NOTED* DATE: *APRIL 2000*
SHEET No. S3 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	42	60

FOOTING SCHEDULE

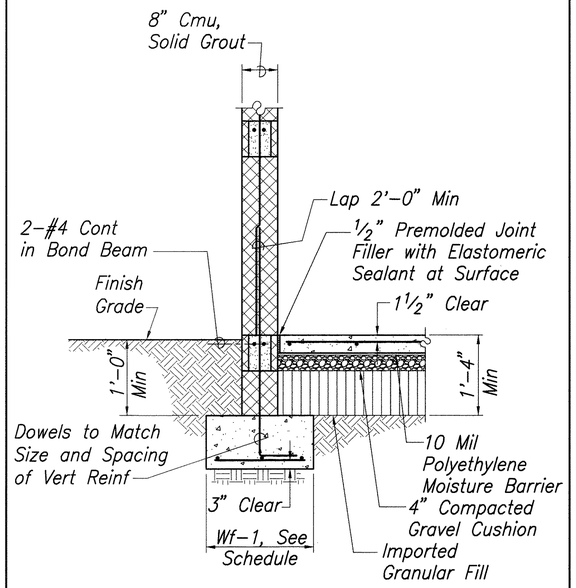
Mark	Size	Reinforcement
Wf-1	2'-0"x1'-0" Thick	3-#4 Bottom Cont with #4 at 12"
Wf-2	3'-0"x6'-0" x1'-0" Thick	4-#4 Bottom Long Way 8-#4 Bottom Short Way
Wf-3	4'-6" Cont x1'-0" Thick	6-#4 Top and Bottom Cont with #4 Top and Bottom at 12"
Wf-4	2'-3" Cont x1'-0" Thick	3-#4 Top and Bottom Cont with #4 Top and Bottom at 12"
F-1	2-0"x2'-8" x1'-0" Thick	3-#4 Bottom Long Way 4-#4 Bottom Short Way
RW-1	3'-8" Cont x1'-0" Thick	5-#4 Top Cont with #5 Top at 12"

FOOTING SCHEDULE — A (S4|S4)
No Scale



Note:
See A/S3 for Cmu Wall Reinforcing.

SECTION — B (S7|S4)
Scale: 3/4" = 1'-0"



SECTION — C (S7|S4)
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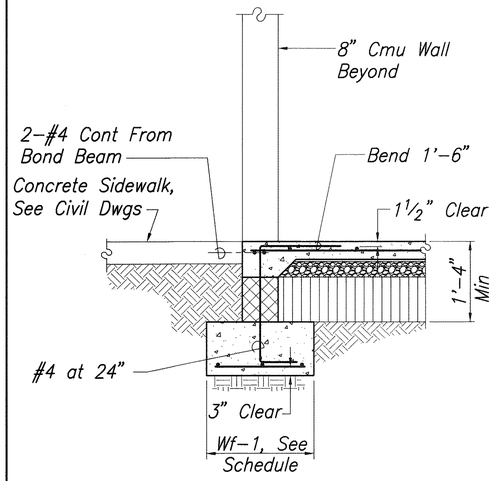

SECTION — D (S7|S4)
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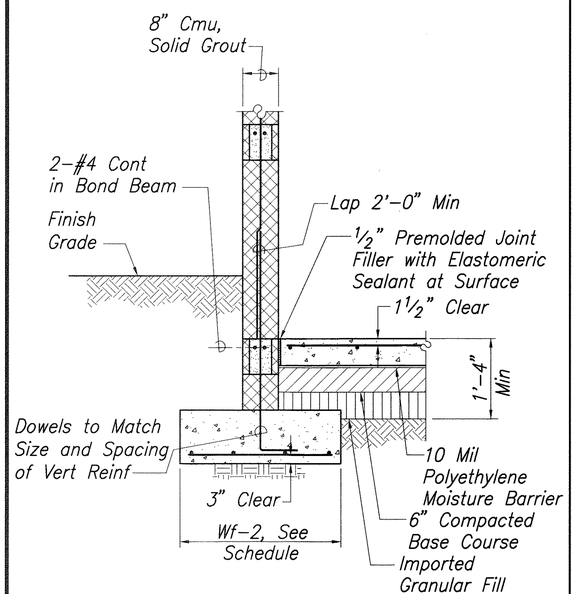

SECTION — E (S7|S4)
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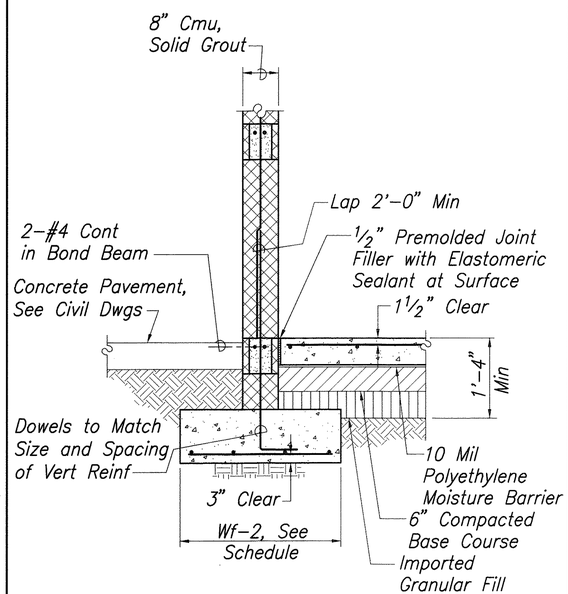

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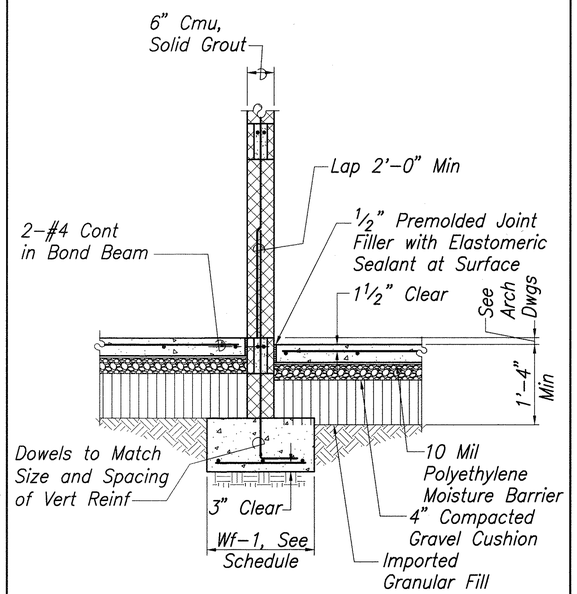
Scale: 3/4" = 1'-0"



SECTION — G (S7|S4)
Scale: 3/4" = 1'-0"

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S4

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

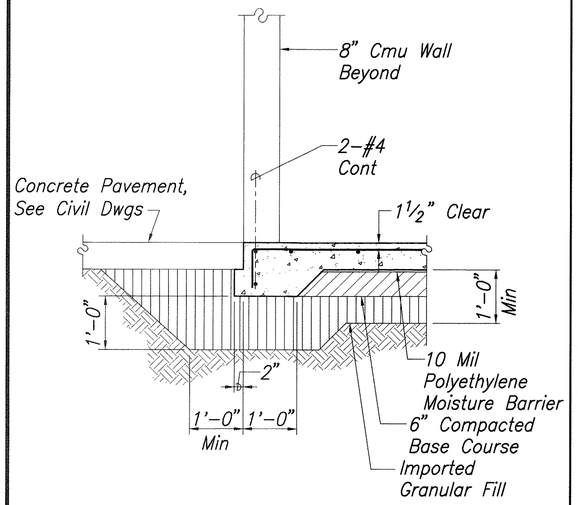
FOUNDATION SECTIONS AND DETAILS

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

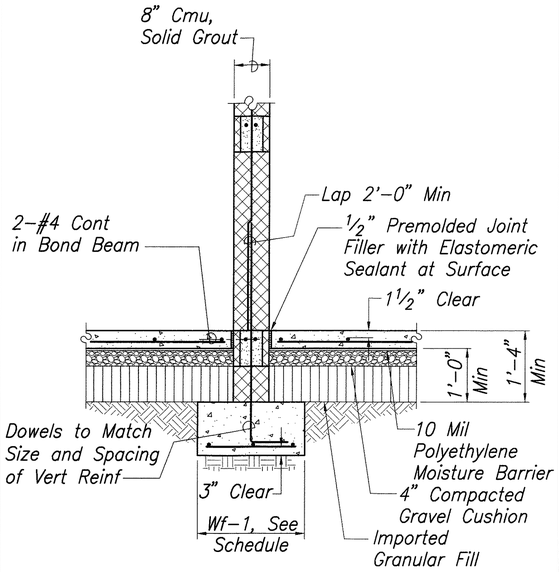
SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S4 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	43	60

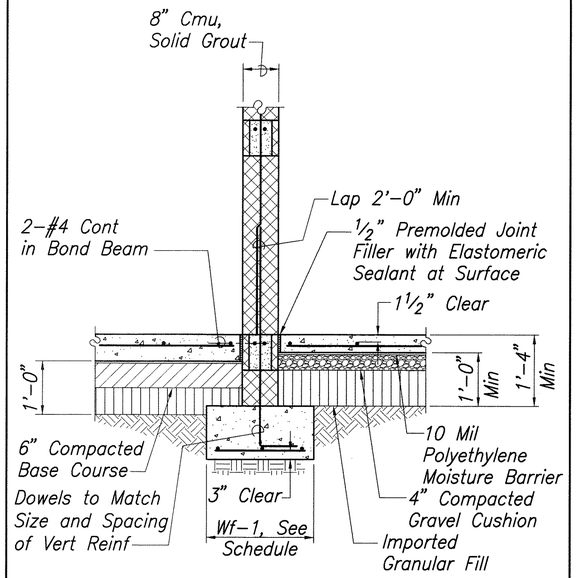


SECTION A
Scale: 3/4" = 1'-0"
S7 | S5

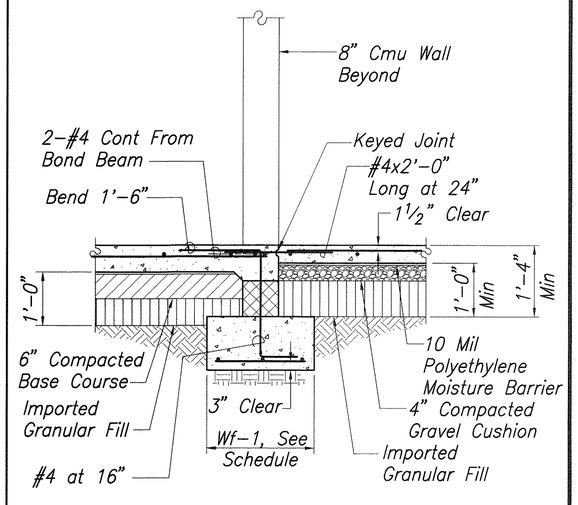


Note:
See A/S3 for Cmu Wall Reinforcing

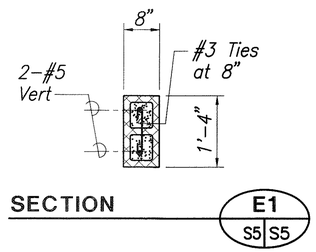
SECTION B
Scale: 3/4" = 1'-0"
S7 | S5



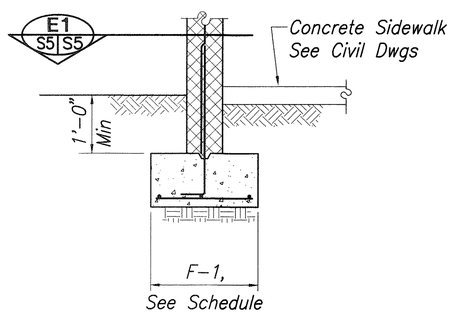
SECTION C
Scale: 3/4" = 1'-0"
S7 | S5



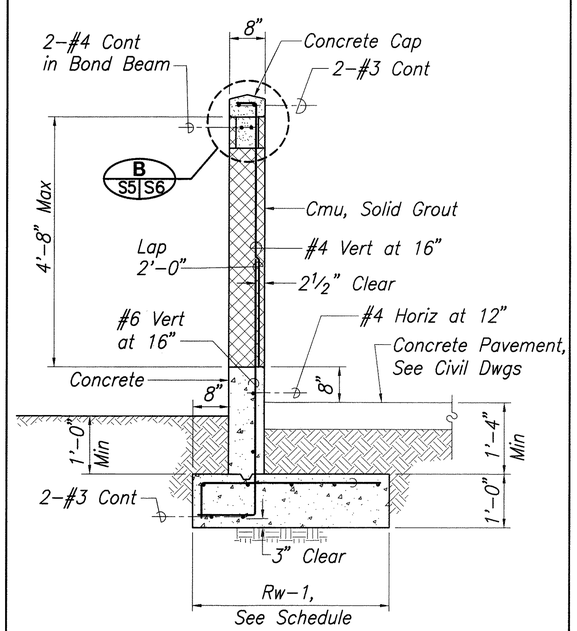
SECTION D
Scale: 3/4" = 1'-0"
S7 | S5



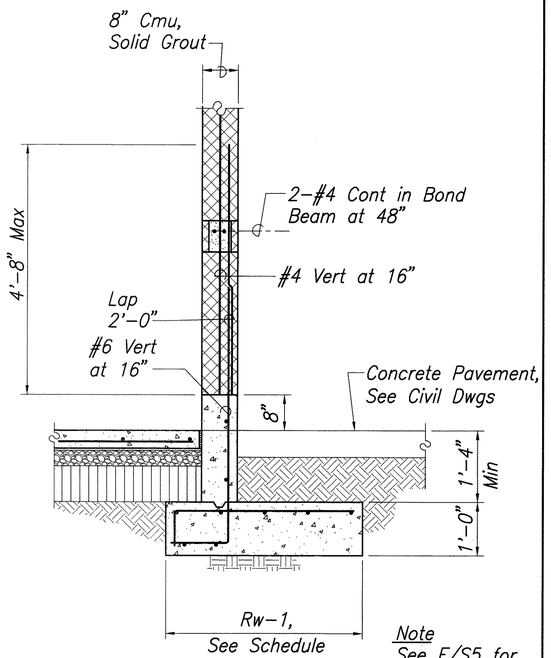
SECTION E1
S5 | S5



DETAIL E
Scale: 3/4" = 1'-0"
S7 | S5



SECTION F
Scale: 3/4" = 1'-0"
S7 | S5



Note
See F/S5 for Balance of Information

SECTION G
Scale: 3/4" = 1'-0"
S7 | S5

ORIGINAL PLAN	NOTE BOOK	No.	DATE

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

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S5

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

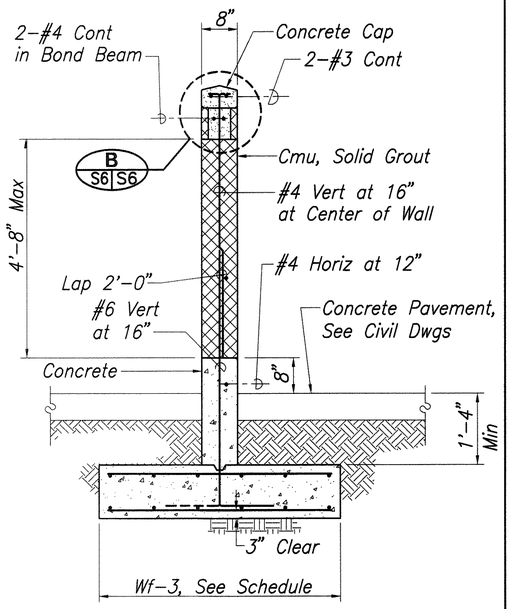
FOUNDATION SECTIONS AND DETAILS

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

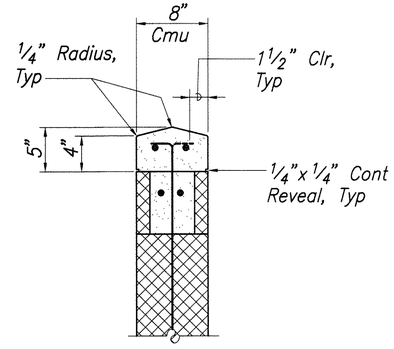
SCALE: AS NOTED
DATE: APRIL 2000

SHEET No. S5 OF 60 SHEETS

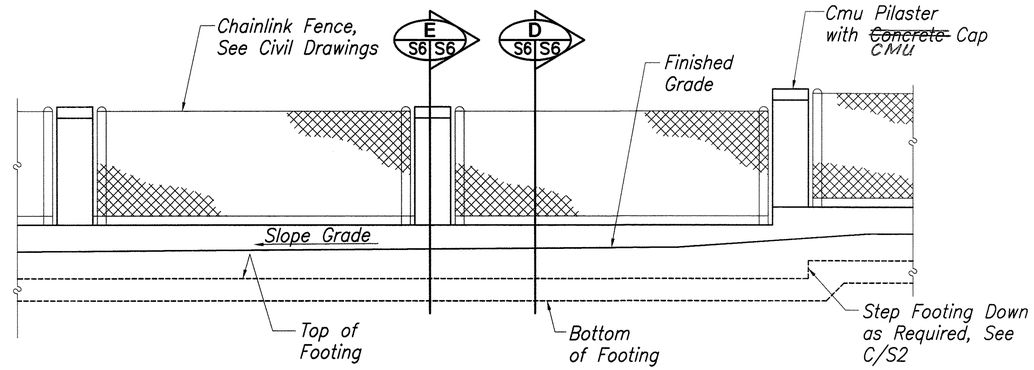
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	ADD.44	60



SECTION A (S7 | S6)
Scale: 3/4" = 1'–0"



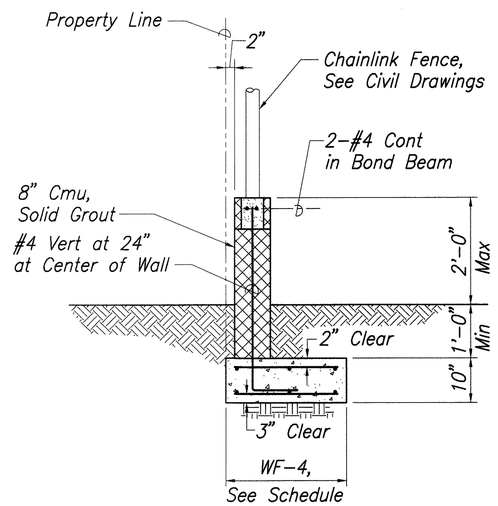
DETAIL B (S6 | S6) S3
Scale: 1 1/2" = 1'–0"



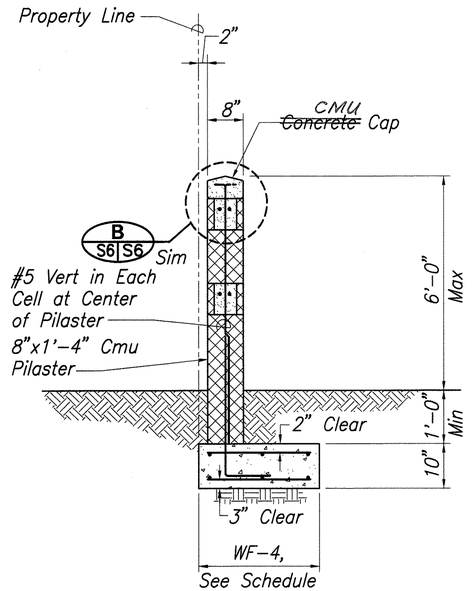
4'-0" HIGH CHAINLINK FENCE ON 2'-0" HIGH CMU WALL C (S6 | S6)
Scale: 3/8" = 1'–0"

Notes:

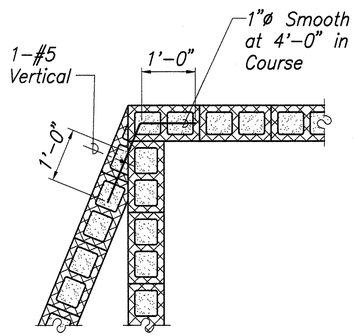
1. See Civil Drawings for wall location and grades adjacent to wall.
2. See Civil Drawings for fence detail



SECTION D (S6 | S6)
Scale: 3/4" = 1'–0"



SECTION E (S6 | S6)
Scale: 3/4" = 1'–0"



Note:
See B/S3 for Wall Reinforcing at Bond Beam

DETAIL F (S7 | S6)
Scale: 3/4" = 1'–0"

DATE	REVISION
5–30–00	Revised Section D

ORIGINAL PLAN | NOTE BOOK | No. .....
SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE .....

KEN KAZUO HAYASHIDA LICENSED PROFESSIONAL ENGINEER No. 6818–S HAWAII, U.S.A.
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S6

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION SECTIONS AND DETAILS

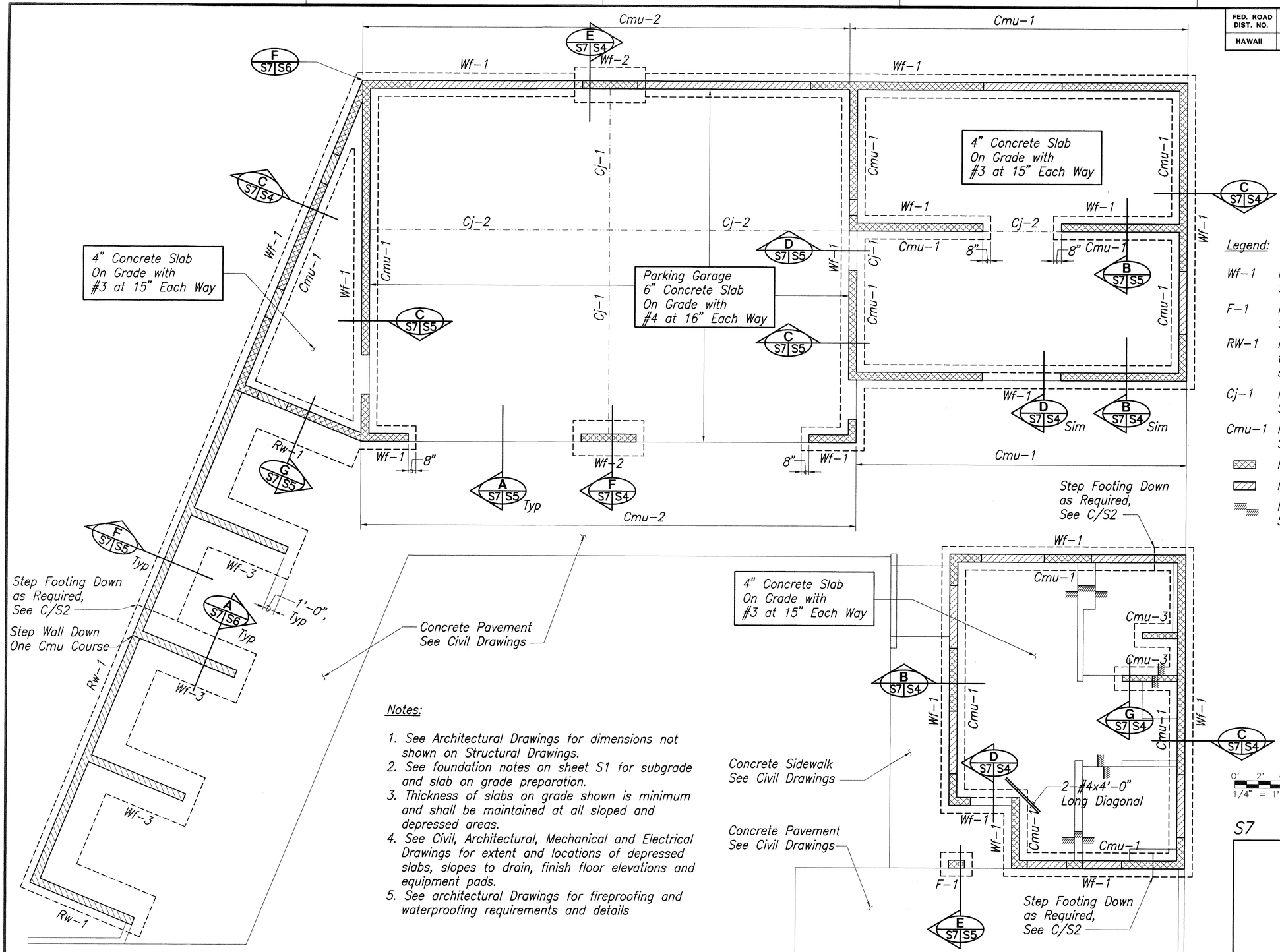
HAUULA BASEYARD IMPROVEMENTS
Project No. HWY–0–03–98

SCALE: AS NOTED DATE: APRIL 2000
SHEET No. S6 OF 60 SHEETS

"AS-BUILT"

ADD. 44

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	45	60



Legend:

Wf-1	Indicates wall footing type, See footing schedule on sheet S4
F-1	Indicates column footing type, See footing schedule on sheet S4
RW-1	Indicates retaining wall footing type, See footing schedule on sheet S4
Cj-1	Indicates slab joint type, See sheet B/S2
Cmu-1	Indicates cmu wall type, See wall schedule
	Indicates full height cmu walls
	Indicates partial height cmu walls
	Indicates change in slab elevation, See Architectural Drawings

Notes:

1. See Architectural Drawings for dimensions not shown on Structural Drawings.
2. See foundation notes on sheet S1 for subgrade and slab on grade preparation.
3. Thickness of slabs on grade shown is minimum and shall be maintained at all sloped and depressed areas.
4. See Civil, Architectural, Mechanical and Electrical Drawings for extent and locations of depressed slabs, slopes to drain, finish floor elevations and equipment pads.
5. See architectural Drawings for fireproofing and waterproofing requirements and details

FOUNDATION PLAN
Scale: 1/4" = 1'-0"

0' 2' 4' 8' 12'
1/4" = 1'-0"

KENKAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, USA

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ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
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QUANTITIES BY
CHECKED BY
DATE
No.

S7

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION PLAN

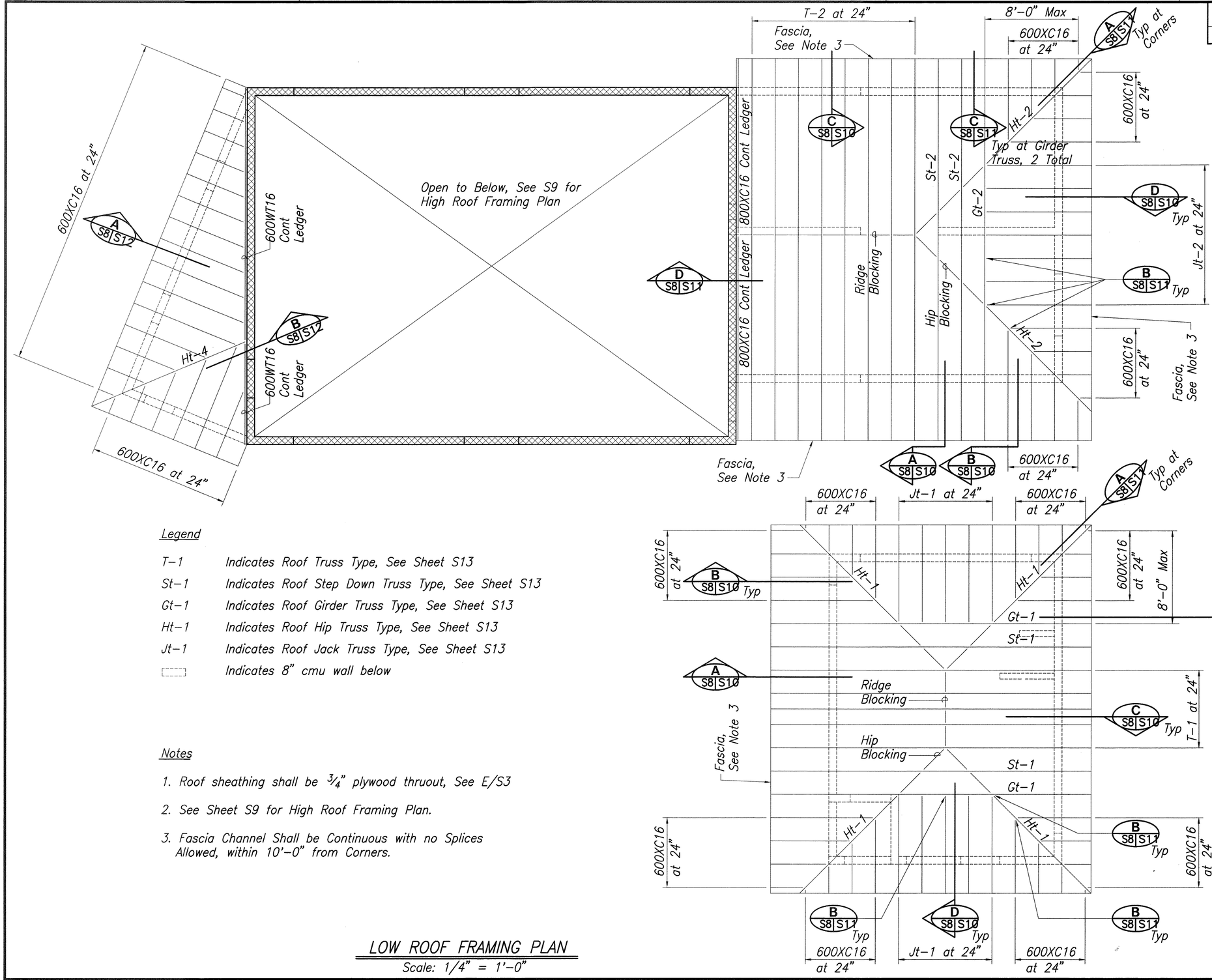
HAUULA BASEYARD IMPROVEMENTS

Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S7 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	46	60



Legend

T-1	Indicates Roof Truss Type, See Sheet S13
St-1	Indicates Roof Step Down Truss Type, See Sheet S13
Gt-1	Indicates Roof Girder Truss Type, See Sheet S13
Ht-1	Indicates Roof Hip Truss Type, See Sheet S13
Jt-1	Indicates Roof Jack Truss Type, See Sheet S13
[dashed]	Indicates 8" cmu wall below

Notes

1. Roof sheathing shall be 3/4" plywood thruout, See E/S3
2. See Sheet S9 for High Roof Framing Plan.
3. Fascia Channel Shall be Continuous with no Splices Allowed, within 10'-0" from Corners.

LOW ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

0' 2' 4' 8' 12'
1/4" = 1'-0"

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S8

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

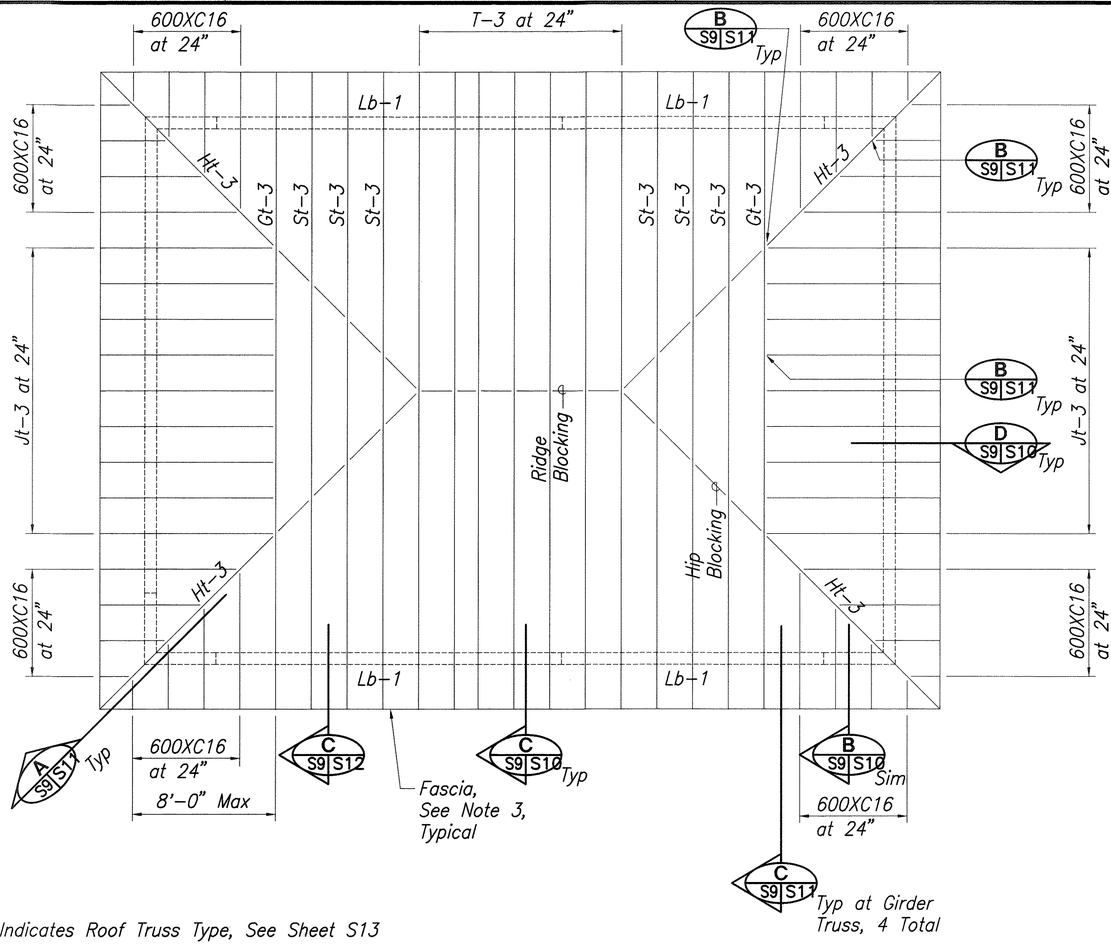
LOW ROOF FRAMING PLAN

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S8 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	47	60



Legend

T-1	Indicates Roof Truss Type, See Sheet S13
St-1	Indicates Roof Step Down Truss Type, See Sheet S13
Gt-1	Indicates Roof Girder Truss Type, See Sheet S13
Ht-1	Indicates Roof Hip Truss Type, See Sheet S13
Jt-1	Indicates Roof Jack Truss Type, See Sheet S13
[----]	Indicates 8" cmu wall below
Lb-1	Indicates Cmu Lintel Type

Notes

1. Roof sheathing shall be $\frac{3}{4}$" plywood thruout, See E/S3
2. See Sheet S8 for Low Roof Framing Plan.
3. Fascia Channel Shall be Continuous with no Splices Allowed, within 10'-0" from Corners.

HIGH ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
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DATE

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LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

0' 2' 4' 8' 12'
1/4" = 1'-0"

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S9

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

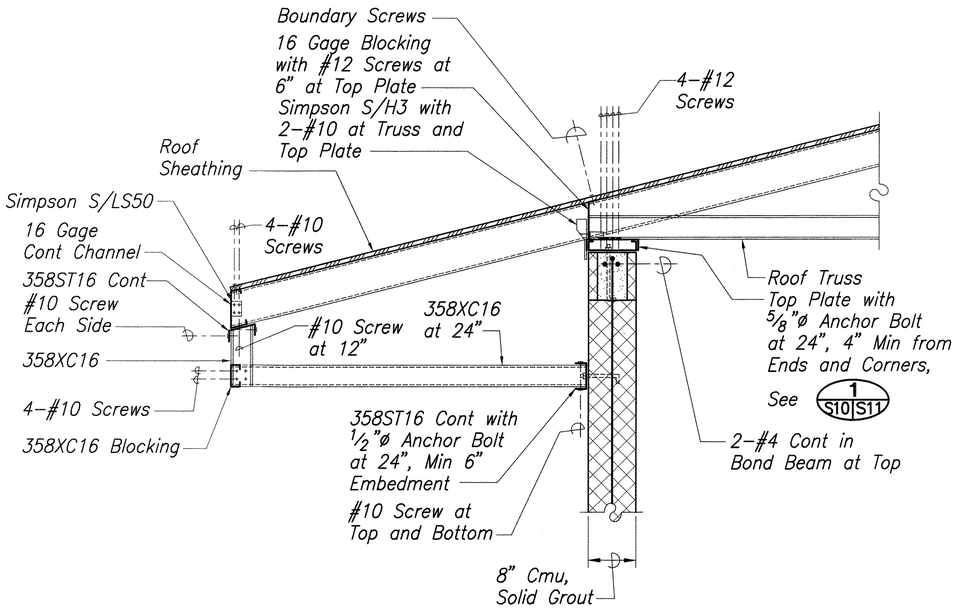
HIGH ROOF FRAMING PLAN

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

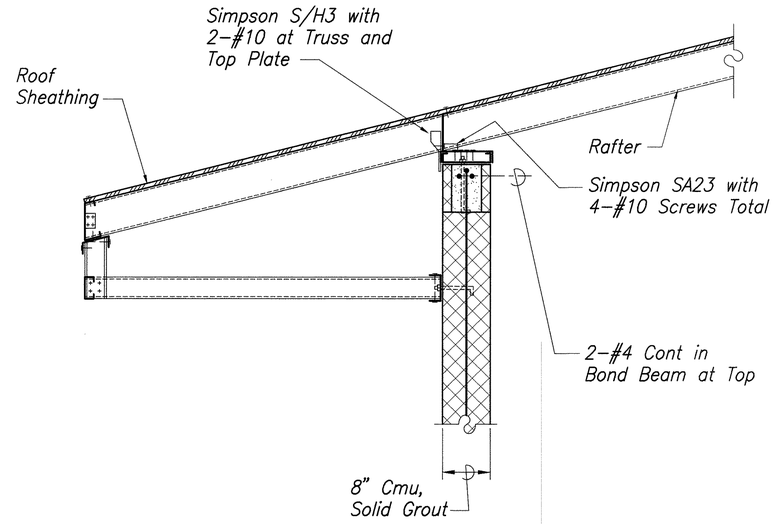
SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S9 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	48	60

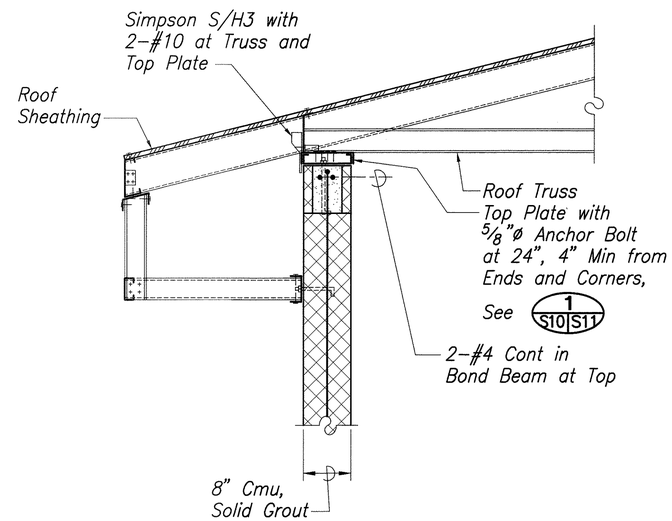


SECTION A — S8|S10
Scale: 1" = 1'–0"



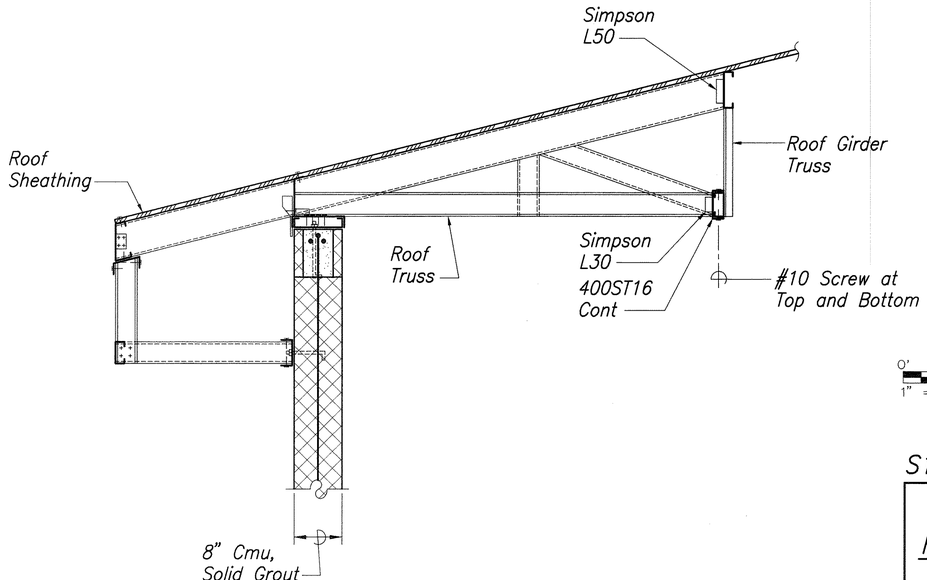
SECTION B — S8|S10 — S9
Scale: 1" = 1'–0"

Note:
See A/S10 for Balance of Detail



SECTION C — S8|S10
Scale: 1" = 1'–0"

Note:
See A/S10 for Balance of Detail



SECTION D — S8|S10 — S9
Scale: 1" = 1'–0"

Note:
See A/S10 for Balance of Detail

0' 6" 1' 2' 3'
1" = 1"–0"

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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROOF SECTIONS AND DETAILS

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S10 OF 60 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
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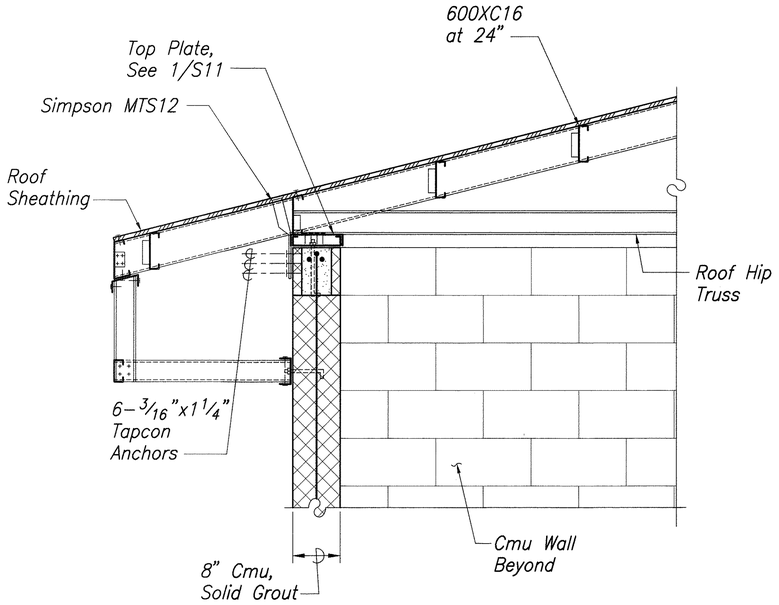
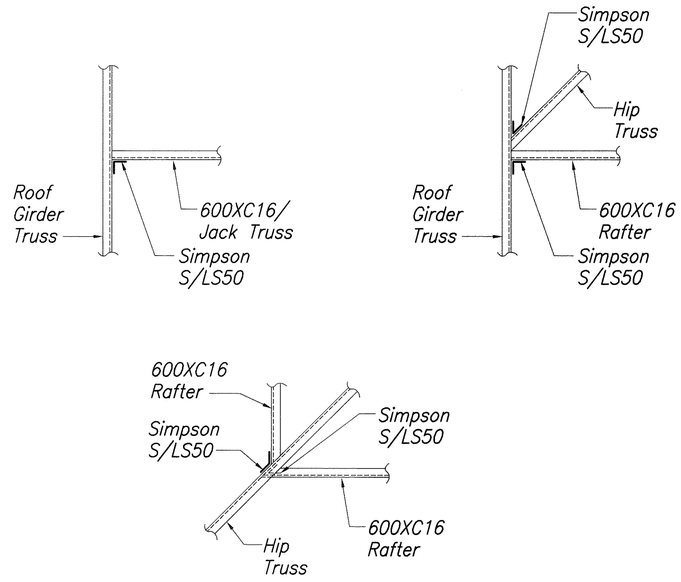
DATE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	49	60

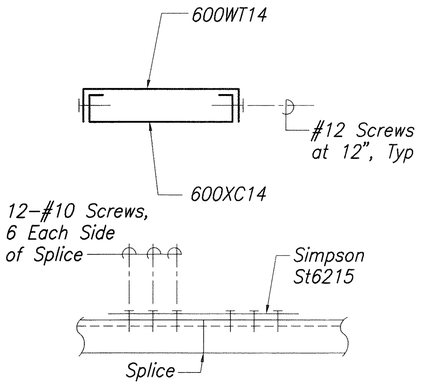


SECTION A
Scale: 1" = 1'–0" S8, S9, S11

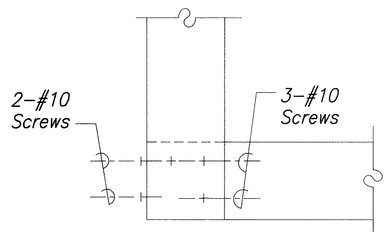
Note:
See A/S10 for
Balance of Detail



TYPICAL RAFTER AND HIP CONNECTIONS B
Scale: 1" = 1'–0" S8, S9, S11

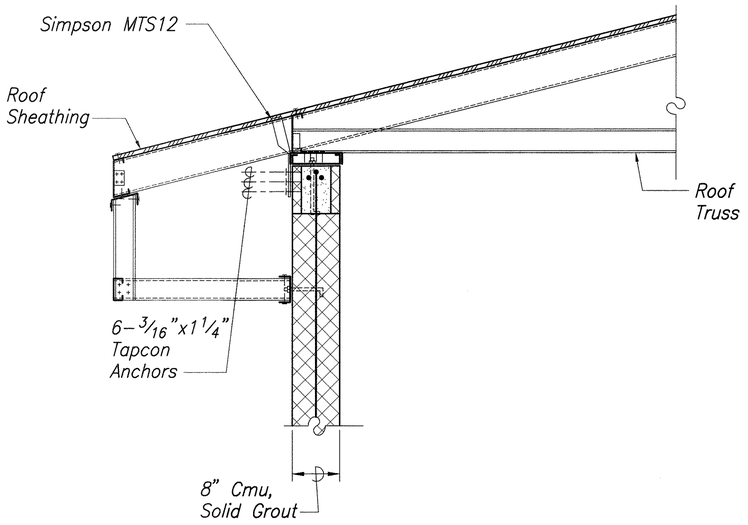


AT SPLICE



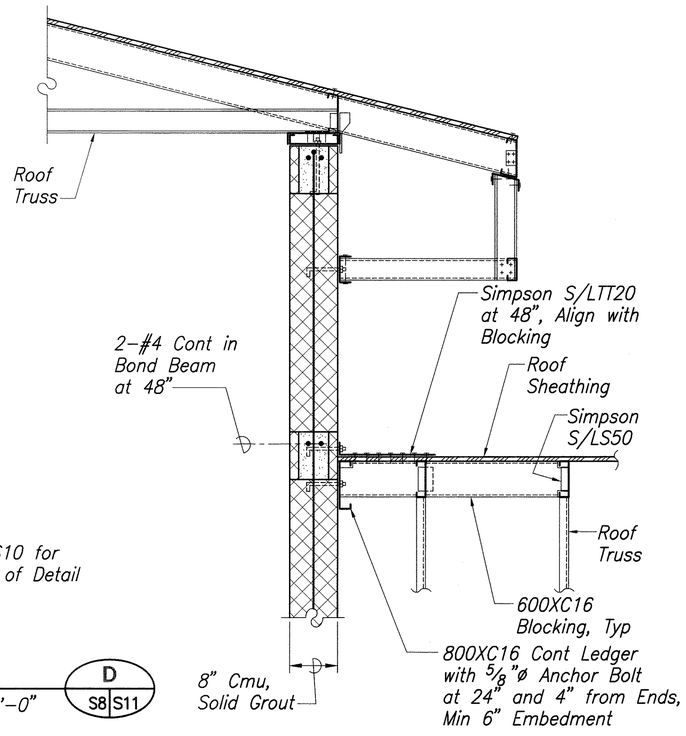
AT CORNER

TYPICAL TOP PLATE DETAIL 1
Scale: 3" = 1'–0" S10, S11, S12, S11



SECTION C
Scale: 1" = 1'–0" S8, S11
S9

Note:
See A/S10 for
Balance of Detail



Note:
See A/S10 for
Balance of Detail

SECTION D
Scale: 1" = 1'–0" S8, S11

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CHECKED BY
DATE
ORIGINAL PLAN
NOTE BOOK
No.

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818–S
HAWAII, U.S.A.

0' 6" 1' 2' 3'
1" = 1"–0"

S11

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

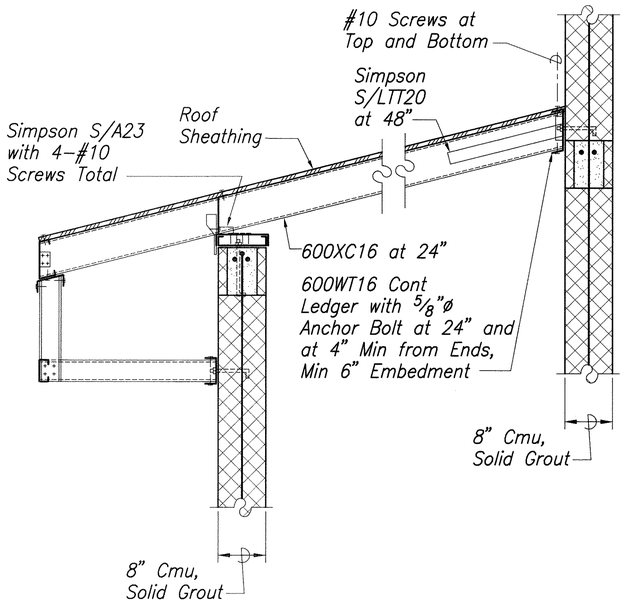
ROOF SECTIONS AND DETAILS

HAUULA BASEYARD
IMPROVEMENTS
Project No. HWY–0–03–98

SCALE: AS NOTED DATE: APRIL 2000

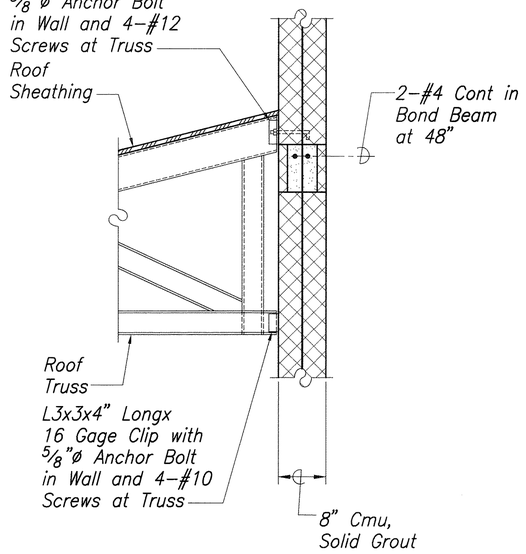
SHEET No. S11 OF 60 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	50	60

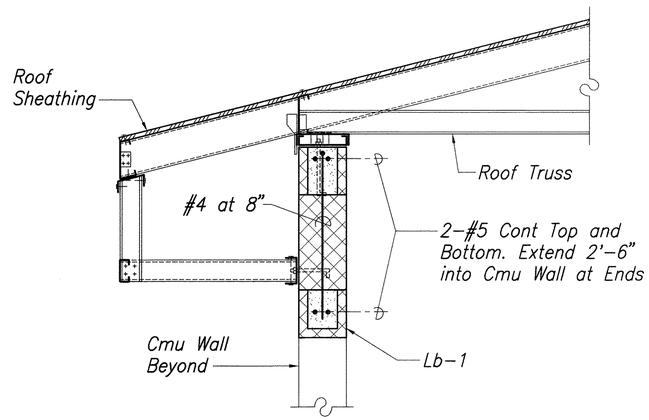


SECTION A (S8|S12)
Scale: 1" = 1'–0"

Note:
See A/S10 for Balance of Detail



SECTION B (S8|S12)
Scale: 1" = 1'–0"



SECTION C (S9|S12)
Scale: 1" = 1'–0"

Note:
See A/S10 for Balance of Detail

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

0' 6" 1' 2' 3'
1" = 1"–0"

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No. 6818–S
HAWAII, U.S.A.

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S12

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

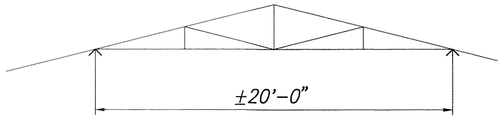
ROOF SECTIONS AND DETAILS

HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98

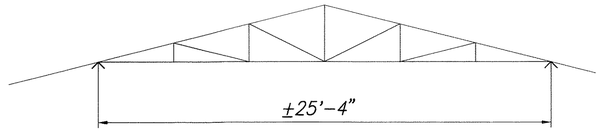
SCALE: AS NOTED DATE: APRIL 2000

SHEET No. S12 OF 60 SHEETS

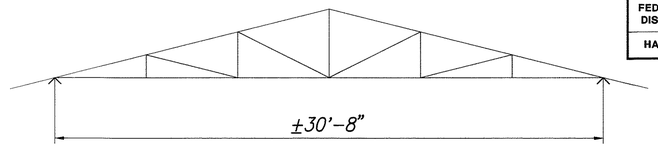
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-03-98	2000	51	60



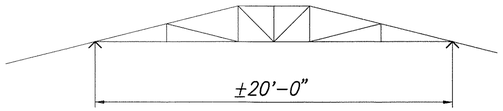
Truss T-1



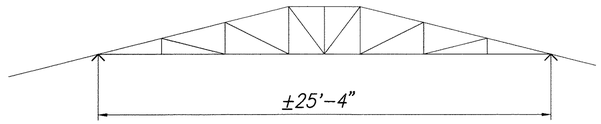
Truss T-2



Truss T-3



Truss St-1



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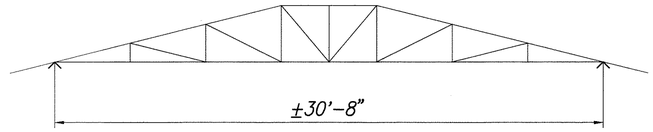

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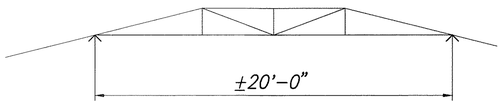

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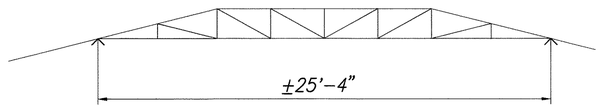

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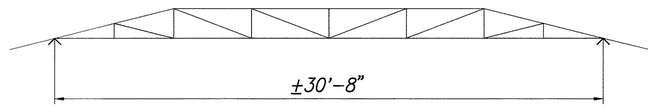

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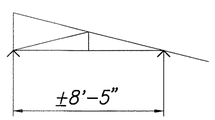

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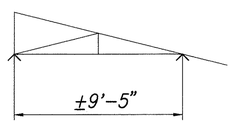

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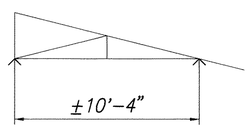

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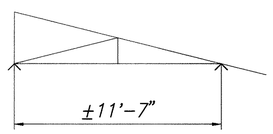
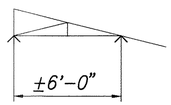
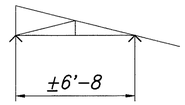


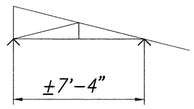
Truss Ht-4



Truss Jt-1



Truss Jt-2



Truss Jt-3

Pre-engineered Cold-Formed Steel Roof Trusses:

A. All work shall comply with the "Specification For The Design Of Cold-Formed Steel Structural Members" of the American Iron and Steel Institute, Latest Edition.
B. Cold-formed steel shall conform to the Metal Stud Manufacturers Association. All members 16, 14, and 12 gauge shall meet the minimum requirements of ASTM A653 Sq Grade 50. All members 20 and 18 gauge shall meet the minimum requirements of ASTM A653 Sq Grade 33. All members shall have a minimum G90 galvanized coating.
C. The fabricator shall have a minimum of 3 years successful experience in the fabrication of prefabricated steel trusses, similar to the trusses required for this project. The fabricator shall have sufficient production capacity to produce, transport and deliver the required trusses without causing delay in the work.
D. Structural calculations and shop drawings shall be submitted to the engineer for review and approval, prior to fabrication. Shop drawings shall include layout of trusses, truss configuration, member sizes, connection details, fabrication details and bracing requirements. Structural calculations shall be stamped by a structural engineer licensed to practice in the State of Hawaii.

TRUSS ELEVATIONS
Scale: 1/4" = 1'-0"

E. Design shall be based on the UBC or the following minimum criteria:
   a. Roof dead load (not including self weight of trusses) — 10 psf
   b. Roof live load top chord — 20 psf
   c. Bottom chord live load — 10 psf
   d. Wind loads — inward 8 psf
   e. Wind loads — outward 22 psf
   f. Wind loads on overhang — outward 64 psf
   g. Top chord and bottom chord live load need not act concurrently.

Not Concurrent

F. Wind loads along collector trusses are reversible. Loads along top chord shall be transferred to bottom chord through truss member connections.
G. Member designations are per metal stud manufacturer's association. Truss members shall be minimum 16 gauge with minimum sizes as follows:
   a. Top chord — 600XC
   b. Bottom chord — 400XC
   c. Web members — 400XC

H. Connection plates shall be the same gauge as thickest member being connected.

0' 2' 4' 8' 12'
1/4" = 1'-0"

KEN KAZUO HAYASHIDA
LICENSED PROFESSIONAL ENGINEER
No. 6818-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

S13

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRUSS ELEVATIONS
HAUULA BASEYARD IMPROVEMENTS
Project No. HWY-0-03-98
SCALE: AS NOTED DATE: APRIL 2000
SHEET No. S13 OF 60 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE