FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-99M	2001	7	15

General:

A. Workmanship and materials shall conform to the building code of the County of Maui (amended UBC, 1991 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 2B

B. Basic wind speed and exposure ——— 80 mph, Exposure C

C. Design live loads
   a. Roof ——— 20 psf
   b. Offices ——— 50 psf
   c. Stairs and corridors ——— 100 psf
   d. Light storage ——— 125 psf

D. Allowable foundation bearing capacities
   a. Dead Load + Live Load ——— 2,000 psf
   b. Dead Load + Live Load + Lateral Load ——— 2,700 psf

Foundation:

A. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.

B. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.

C. Footings shall bear on undisturbed in-situ firm soils. Bottom of footings shall be compacted to provide a relatively firm and smooth bearing surface prior to placement of reinforcing steel and concrete. If soft and/or loose materials are encountered at the bottom of footing excavations, they shall be over-excavated to expose the underlying firm materials. The over-excavation shall be backfilled with select granular material compacted to a minimum of 95% relative compaction or the footing bottom may be extended down to the underlying competent material.

D. Excavations for footings shall be observed by a qualified Geotechnical Engineer prior to placement of concrete and reinforcing.

E. Contractor shall brace or protect all walls below grade from lateral loads until attaching floors are completely in place and have attained their full design strength.

Concrete:

A. Concrete construction shall conform to American Concrete Institute ACI 318R-89.

B. Concrete shall be regular weight hard rock concrete and shall have the following minimum 28 day compressive strengths:
   a. Footings, tie beams ——— 3,000 psi
   b. Slabs on grade ——— 3,000 psi
   c. Columns ——— 3,000 psi
   d. All other concrete ——— 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"
   c. Walls
      1. Faces exposed to earth or weather
         #5 bars and smaller ——— 1½"
         #6 bars and larger ——— 2"
      2. Interior faces 1"
   d. Beams and columns
      primary reinforcement, stirrups, ties and spirals ——— 1½"
   e. Structural slabs
      1. Faces exposed to earth or weather ——— 1½"
      2. Interior faces ——— 1"

D. Reinforcing steel shall be spliced where indicated on plans. Provide lap splice length per typical details and schedule, unless otherwise noted.

E. Welded wire fabric shall be lapped 8 inches or one full mesh plus 2 inches, whichever is greater.

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.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GAS STATION BUILDING-
GENERAL NOTES

MAUI DISTRICT BASEYARD
Project No. HWY-M-03-99M

Scale: AS SHOWN Date: APR. 2001

SHEET No. S1.0 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-99M	2001	8	15

Structural Steel:

A. Fabrication and erection of structural steel shall conform to the American Institute of Steel Construction Manual of Steel Construction, Ninth Edition.

B. Structural steel shall conform to ASTM A36 unless otherwise noted.

C. Steel tubes shall conform to ASTM 500, Grade B

D. Bolts shall conform to ASTM A307, Grade A unless otherwise noted.

E. High-strength bolts shall conform to ASTM A325, Type N. Use load indicator washers.

F. Welds and welding procedures shall conform to the structural welding code AWS D1.1 of the American Welding Society.

G. Welding shall be performed by welders prequalified for welding procedures to be used.

H. Welding electrodes shall be E70XX.

I. All steel shall be prime painted in the shop.

J. Exposed steel shall be hot-dipped galvanized.

Cold-Formed Steel Purlins

A. Fabrication and erection of gage metal structures shall be in accordance with the American Iron and Steel Institute Specifications, Latest Edition.

B. Cold-formed steel purlins and accessories shall be of the type and gage called for on the contract documents.

C. Purlins shall span over two or more supports.

D. Cold-formed steel purlins shall meet the requirements of ASTM A 570. Minimum yield strength of steel shall be 55,000 psi.

E. Cold formed steel purlins shall have the following minimum section properties:
a. Z-purlin: Ixx = 17.12 in 4
b. Eave strut: Ixx = 14.21 in 4

F. Contractor shall submit shop drawings to the Engineer for approval prior to fabrication. Shop drawings shall indicate layout, framing and supports with dimensions, sections, type and location of attachments and details of accessories.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

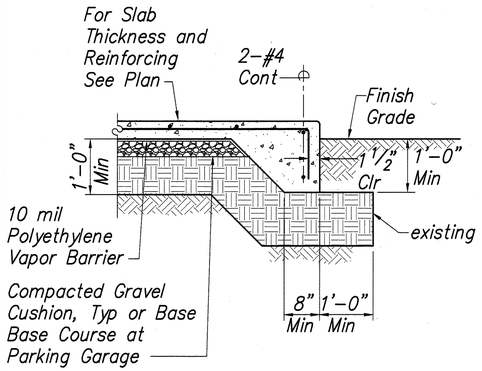
GAS STATION BUILDING-GENERAL NOTES

MAUI DISTRICT BASEYARD
Project No. HWY-M-03-99M

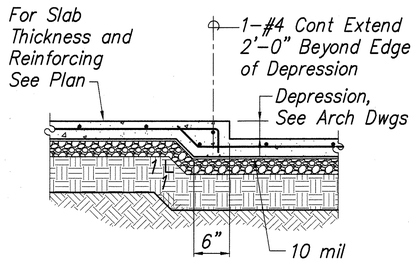
Scale: AS SHOWN Date: APR. 2001

SHEET No. S1.1 OF 5 SHEETS

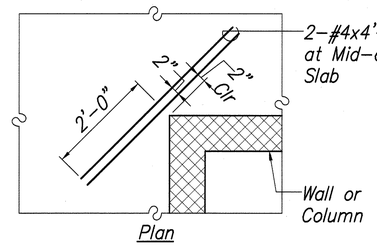
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-99M	2001	9	15



At Slab Edge



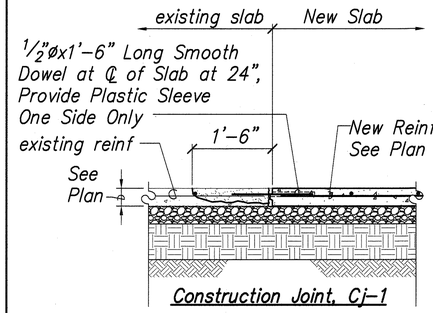
At Depressed Slab



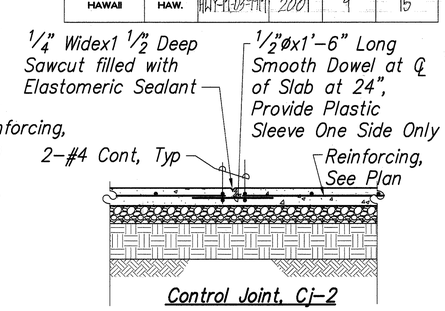
Reinforcing at Reentrant Corner

TYPICAL SLAB-ON-GRADE DETAILS — 1 (S1.2 | S1.2)

Not To Scale



Construction Joint, Cj-1



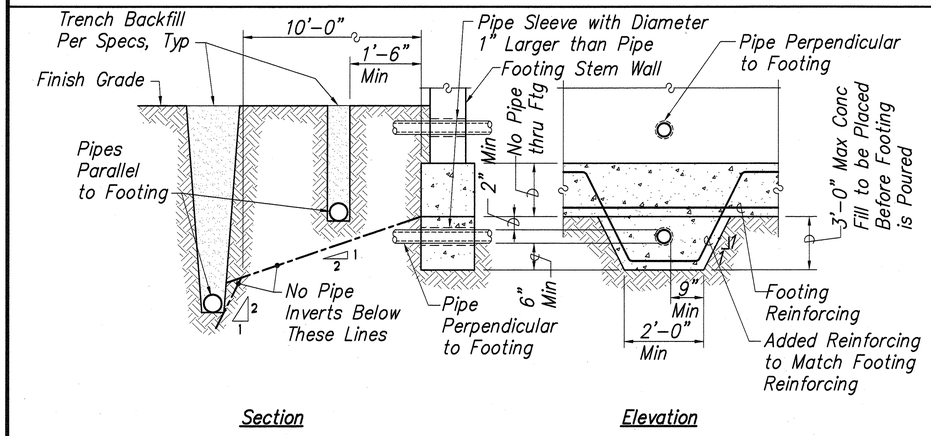
Control Joint, Cj-2

Note:

1. 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.
2. Remove 1'-6"x6" widex3" deep portion of existing slab.
3. Clean Reinforcing Steel, remove Grease, Oil and other Bond-Inhibiting Matter.
4. Apply Bonding Bridge Coating.
5. Fill with Concrete Epoxy (Sika 222 or Equivalent).

TYPICAL SLAB JOINT DETAILS — 2 (S1.2 | S1.2)

Not To Scale



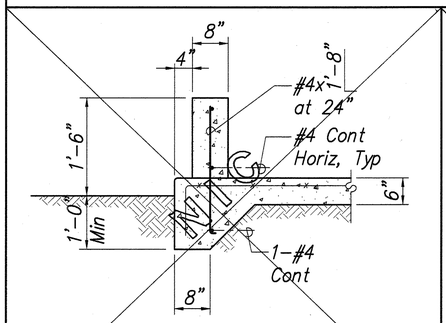
Section Elevation

TYPICAL PIPE AT FOOTING DETAIL — 3 (S1.2 | S1.2)

Not To Scale

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.



SECTION — 5 (S1.2 | S2.0)

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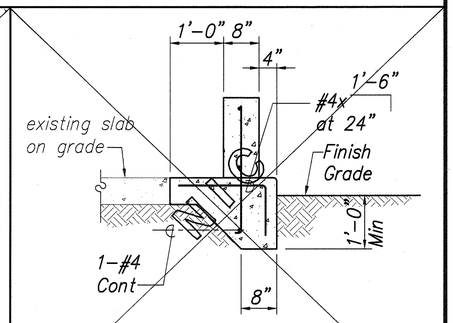

SECTION — 6 (S1.2 | S2.0)

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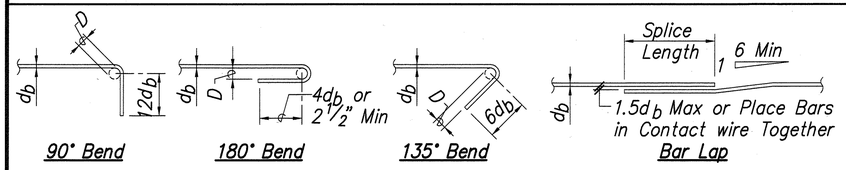

90° Bend 180° Bend 135° Bend Bar Lap

D = 6db for #8 and Smaller
D = 8db 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 — 4 (S1.2 | S1.2)

Not To Scale

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"

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GAS STATION BUILDING— TYPICAL DETAILS

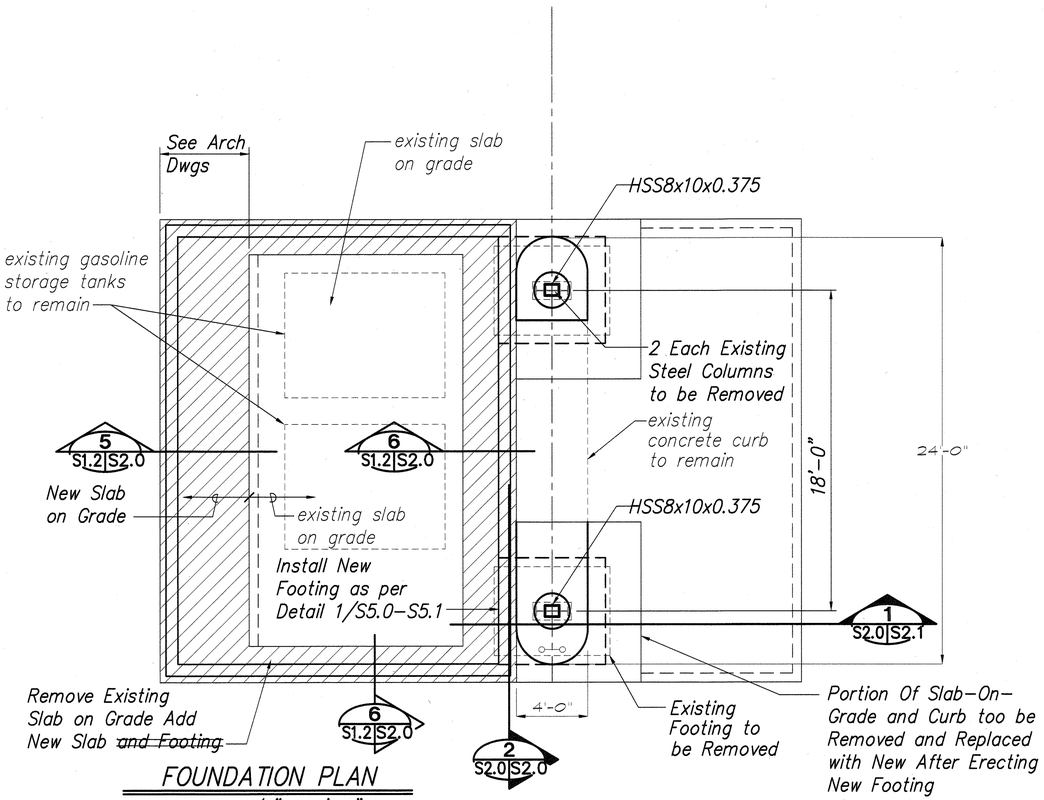
MAUI DISTRICT BASEYARD
Project No. HWY-M-03-99M

Scale: AS SHOWN Date: APR. 2001

SHEET No. S1.2 OF 5 SHEETS

"AS-BUILT"

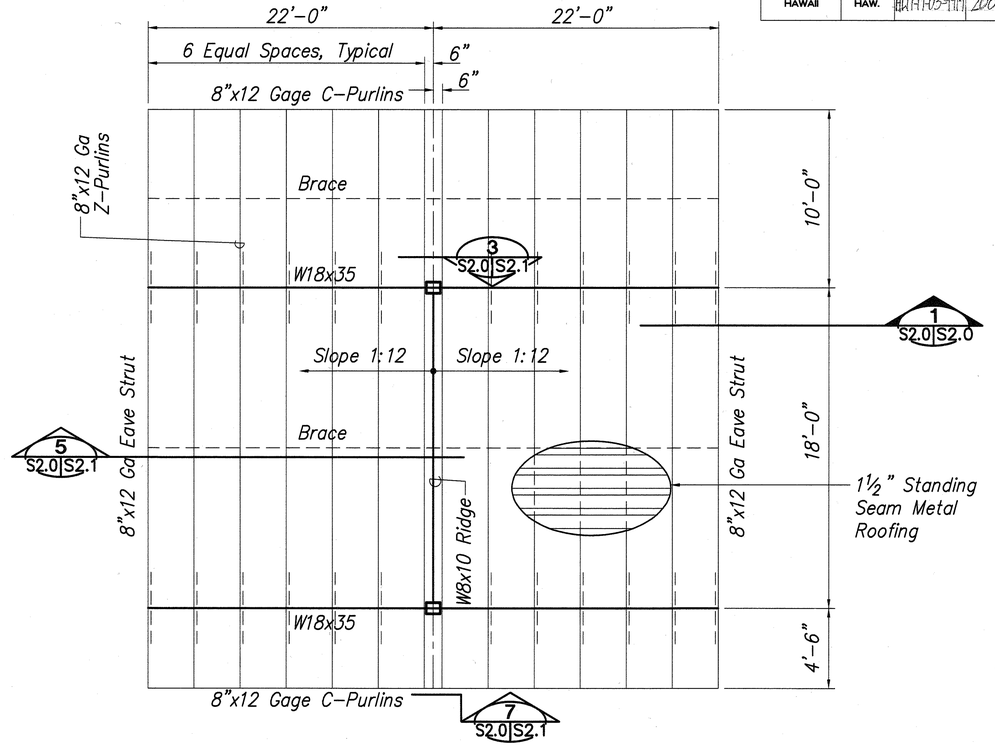
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-99M	2001	10	15



FOUNDATION PLAN

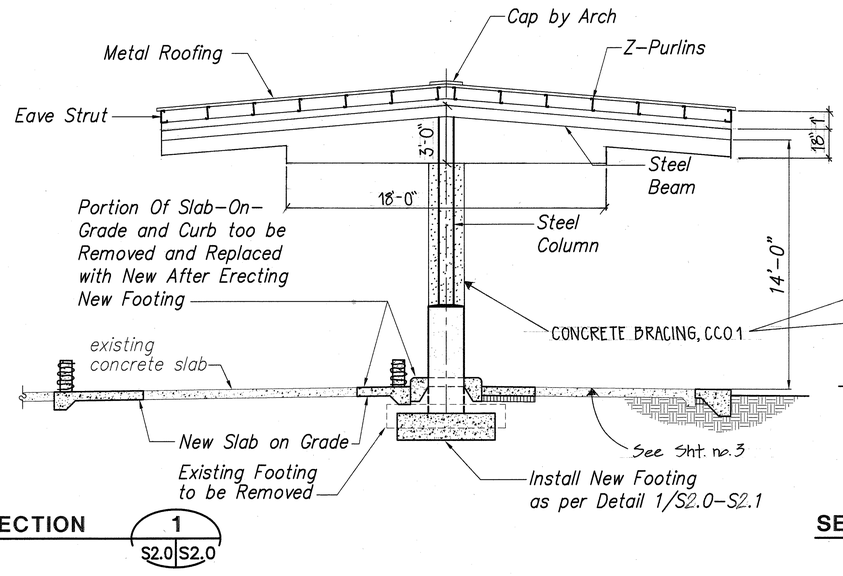
Scale: 1/4" = 1'-0"

NOTE: See Sht. no. 3

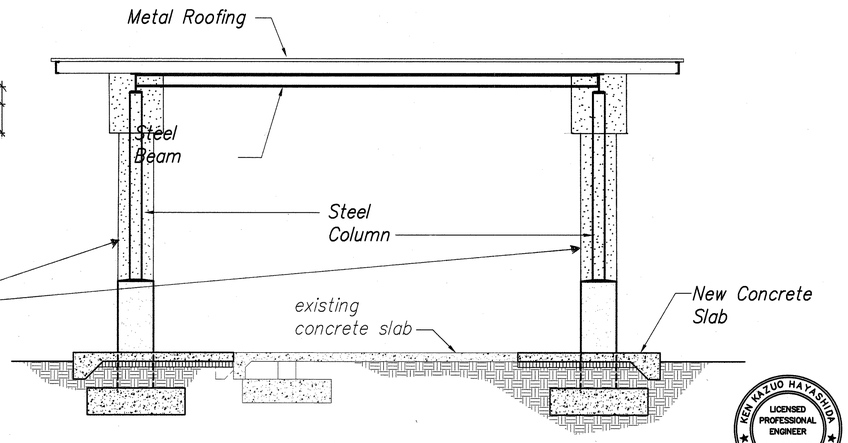


ROOF FRAMING PLAN

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



SECTION 1 S2.0|S2.0



SECTION 2 S2.0|S2.0

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GAS STATION BUILDING- FOUNDATION AND ROOF FRAM'G PLANS & SECTIONS

MAUI DISTRICT BASEYARD
Project No. HWY-M-03-99M

Scale: AS SHOWN Date: APR. 2001

SHEET No. S2.0 OF 5 SHEETS

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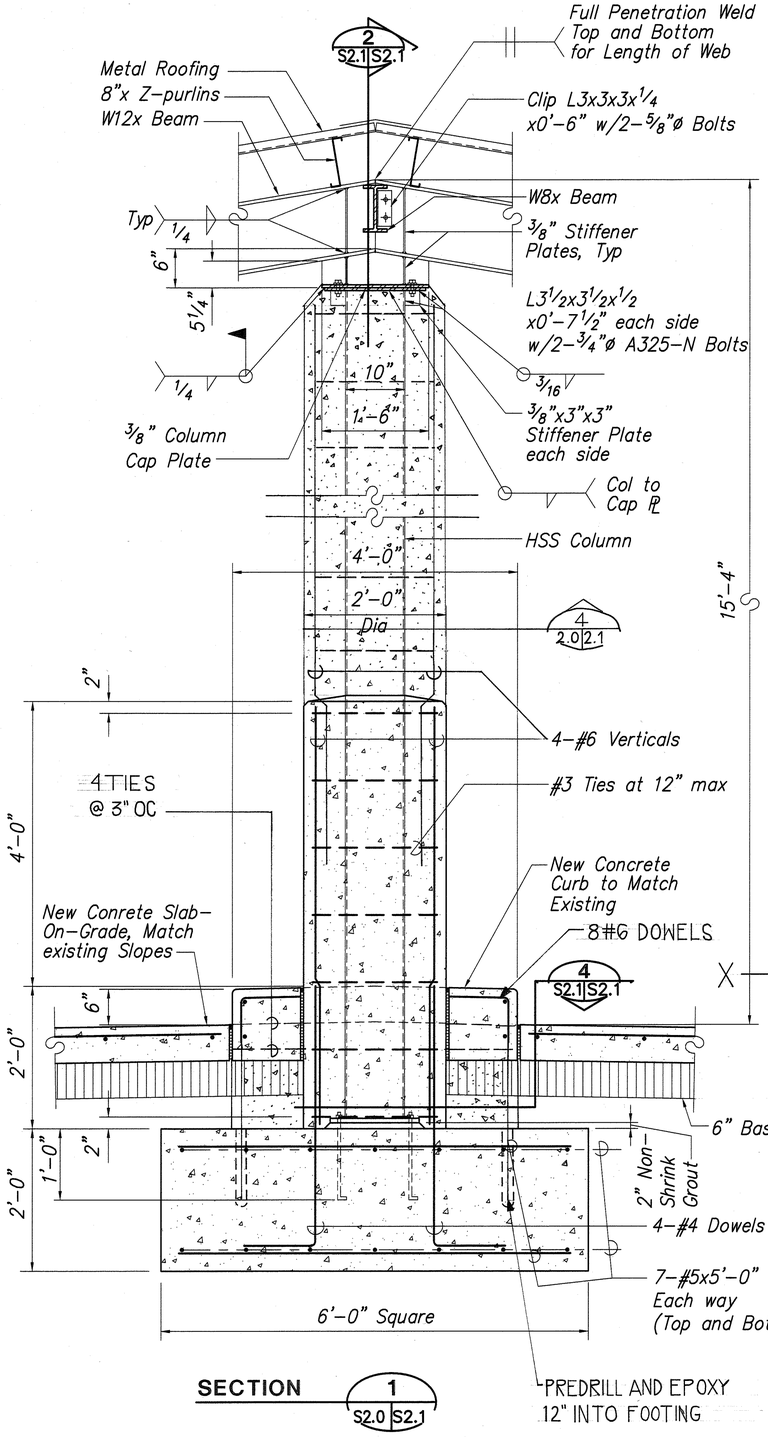

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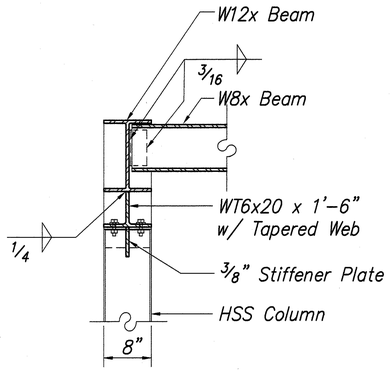

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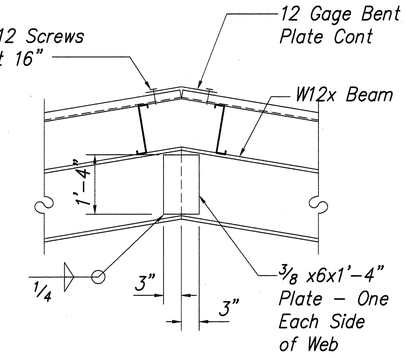

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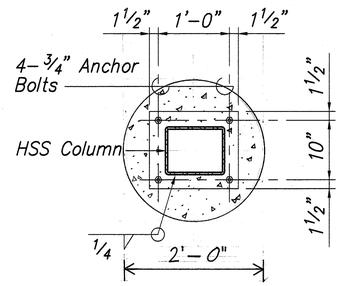

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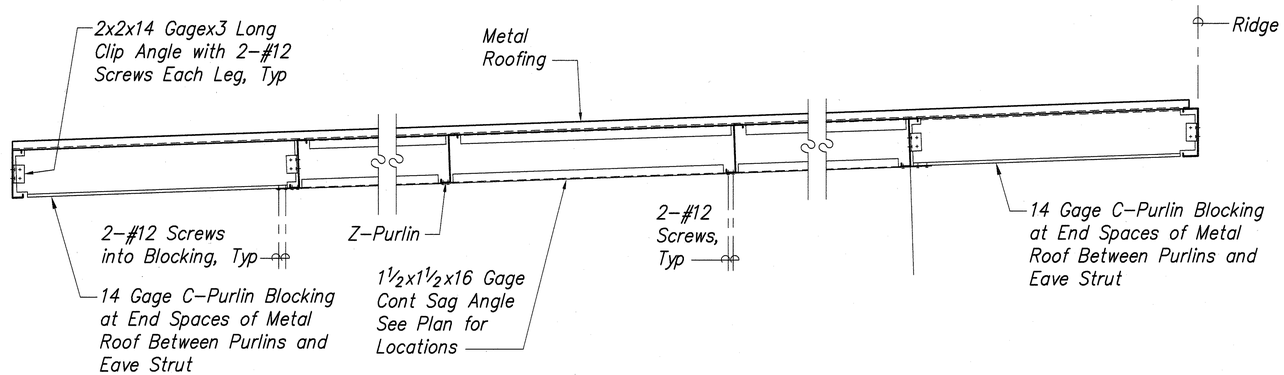

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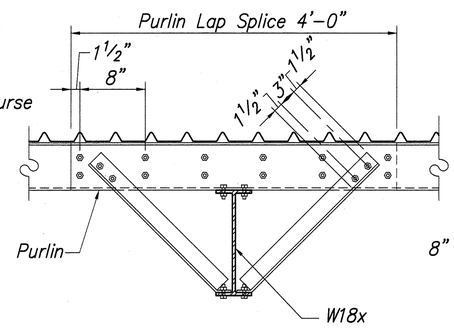

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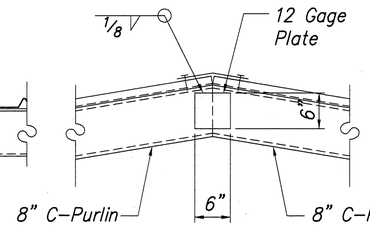

SECTION 7 (S2.0 | S2.1)

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S2.1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GAS STATION BUILDING- SECTIONS AND DETAILS

MAUI DISTRICT BASEYARD
Project No. HWY-M-03-99M
Scale: AS SHOWN Date: APR. 2001

SHEET No. S2.1 OF 5 SHEETS

"AS-BUILT"