FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX OF STRUCTURAL DRAWINGS

INTERSTATE ROUTE H-1 SAFETY IMPROVEMENTS
PALAILAI INTERCHANGE TO WAIAWA OVERPASS
FAP NO. HSIP-H1-1(270)

Scale: None — Date: July 26, 2018

SHEET No. S0.1 OF 5 SHEETS

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-HI-1(270)	2018	55	241

STRUCTURAL GENERAL NOTES

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:
   (A) AASHTO 2014 LRFD Bridge Design Specifications (Seventh Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.
   (B) State of Hawaii Department of Transportation Highways Division "Design Criteria for Bridges and Structures" dated August 8, 2014.

3. Loads:
   (A) Railing Test Level: TL-3

4. Materials:
   (A) All concrete strengths shall have a 28-day compressive strength of 4,000 psi unless otherwise noted. All concrete shall have a maximum W/C Ratio of 0.45.
   (B) Concrete shall contain 13 lbs./yd^3 of Comfil Anti-crack HP 67/36 Alkali Resistant Glass Fiber or equivalent.
   (C) The use of any calcium chloride in any concrete is prohibited.
   (D) All reinforcing steel shall be ASTM A 615 deformed bars Grade 60 unless otherwise noted.
   (E) Reinforcing steel shall be ASTM A 706 where welded connections are required.
   (F) All structural steel shall be ASTM A 36, hot dip galvanized after fabrication, unless otherwise noted.
   (G) All anchor bolts, washers and nuts shall be ASTM A325 hot dip galvanized after fabrication, unless otherwise specified.
   (H) All welding shall conform to AWS D1.5 Bridge Welding Code. All welds shall be ground smooth. Unless noted otherwise, all welding shall be shielded arc welding done with E70 electrodes.

5. Reinforcement:
   (A) The covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:
      (1) Concrete cast against and permanently exposed to earth = 3"
      (2) All others unless otherwise noted = 2".
   (B) Reinforcing bars shall be installed in accordance with the Concrete Reinforcing Steel Institute "Manual of Standard Practice" unless otherwise noted.
   (C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). In no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2".

5. Reinforcement (Cont.):
   (D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
   (E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.

6. Construction Notes:
   (A) The Contractor shall verify all dimensions and site conditions and shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
   (B) The Contractor shall verify all site conditions and not rely upon these plans for existing, dimensions, elevations and azimuths, stream channel location, roads, roadway gutters, curbs and sidewalks, etc.. Conditions may differ from those shown.
   (C) The Contractor shall be solely responsible for the protection of adjacent properties, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
   (D) The Contractor shall verify the location of all utility lines and notify the respective owners before commencing with excavation, and any temporary piling or sheeting.
   (E) All shoring, temporary embankments, temporary structures, etc. shall be capable of supporting the design loads as stated in the Structural General Notes. The drawings and calculations shall be stamped by a licensed Structural Engineer and a licensed Civil Engineer specializing in Geotechnical engineering in the State of Hawai'i. The above work, including working drawings and calculations, shall be incidental to various contract items. The drawings and calculations shall be found acceptable by the Engineer before any construction work is to proceed.
   (F) Except as otherwise noted, all vertical dimensions are measured plumb.
   (G) For concrete finish see Standard Specifications and Special Provisions.
   (H) Construction joints may be relocated or additional ones added subject to the approval of the Engineer.
   (J) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".
   (K) The Contractor shall verify the location and size of all existing reinforcing bars prior to drilling.
   (L) Location of drilled holes shown in plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel, anchor bolts, thru bolts holes, etc. and adjust the location of the drilled holes to clear of them. Final hole locations are subject to the approval of the Engineer.
   (M) Drilled holes in existing concrete for reinforcing steel dowels shall not be left unfilled for more than 8 hours. Epoxy in drilled holes shall be able to develop the full strength of the dowels prior to pouring concrete around reinforcing steel dowels. Follow all manufacturer's recommendations for dowel and epoxy.

6. Construction Notes (Cont.):
   (N) Contractor shall unplug, clean and maintain existing drains during construction of the project.
   (P) Bolts and nuts for guardrail connections shall bear flush against concrete surfaces. Wedge washers shall be used as required.
   (Q) When only portions of concrete are to be demolished. The intersections between the demolished concrete and the concrete that is to remain shall have a 3/4 inch deep sawcut around the entire perimeter of the demolished area.
   (R) The concrete surfaces which new concrete is poured against shall be roughened to a full amplitude of 1/4 inch and cleaned.
   (S) All existing reinforcing shall remain in place and shall not be damaged in any way unless otherwise noted.
   (T) All existing reinforcing that is to remain in place shall have a minimum concrete cover of 2".
   (U) The Contractor shall restore the bridge name inscribed in railing when it is obstructed or removed. This work shall be considered incidental to the cost of the end posts.
   (V) Temporarily relocate highway lighting conduit, pullboxes, etc. obstructing construction as needed. This work is considered incidental to the various contract items.
   (W) Pavement, concrete, riprap, etc. shall be restored to its original condition when it is removed to install new items of work.
   (X) New concrete surfaces shall match the finish of the existing structure. Any reveals, patterns, or decorative features shall also match the existing structure.
   (Y) Existing weepholes shall be extended through new concrete where applicable. New weephole shall be coupled to the existing weephole and form a watertight connection.
   (Z) Guardrails that are to remain may be removed to perform the construction work and shall be restored to their original condition after the work is done. The guardrail and posts shall not be damaged in any way. Damaged guardrail and guardrail posts shall be replaced at the expense of the Contractor.

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

CALVIN T. MIYAHARA LICENSED PROFESSIONAL ENGINEER NO. 8133-S HAWAII, U.S.A.

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4-30-20
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

INTERSTATE ROUTE H-1 SAFETY IMPROVEMENTS
PALAILAI INTERCHANGE TO WAIAWA OVERPASS
FAP NO. HSIP-HI-1(270)

Scale: None Date: July 26, 2018

SHEET No. S0.2 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-HI-1(270)	2018	56	241

STRUCTURAL GENERAL NOTES

7. General:

(A) All items noted incidental will not be paid for separately.

(B) Standard Plans refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.

(C) Plans of the existing structures are available for review from the Highways Design Branch located at the State Department of Transportation, Highways Division Kakuhihewa Building, Room 609, 601 Kamokila Boulevard, Kapolei, HI 96707 (phone number 692-7586).

ORIGINAL PLAN
NOTE BOOK
No.

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

DRAWING NAME: Z:\00 ONGOING\17-035-H1 SAFETY IMPRVMTS PALAILAI IC-WAIAWA-WSP\01 CAD\08-08-18 HWY CMTS FS PBF\H1SFT-S0002 GENNOTE.DWG PLOT TIME: 08-08-18, 8:09 AM)

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HAWAII, U.S.A.

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STATE OF HAWAII
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STRUCTURAL GENERAL NOTES

INTERSTATE ROUTE H-1 SAFETY IMPROVEMENTS
PALAILAI INTERCHANGE TO WAIAWA OVERPASS
FAP NO. HSIP-HI-1(270)

Scale: None Date: July 26, 2018

SHEET No. S0.3 OF 5 SHEETS

SYMBOLS AND ABBREVIATIONS

&	And
@	At
Ø	Diameter
≥	Greater Than or Equal to
≤	Less Than or Equal to
#	Number
Abut.	Abutment
Abbr.	Abbreviation
Add.	Additional
Alt.	Alternate
AB	Anchor Bolt
AC	Asphaltic Concrete
Approx.	Approximate
Az.	Azimuth
Bk.	Back
Bal.	Balance
℄	Baseline
Bm.	Beam
Brg., Brgs.	Bearing, Bearings
BVC	Beginning of Vertical Curve
Bet.	Between
BF	Both Faces
BW	Both Ways
BFE	Bottom of Footing Elevation
Bot., Bott., B	Bottom
BOF	Bottom of Footing
Br.	Bridge
Blt.	Bolt
Cant.	Cantilever
CIP	Cast Iron Pipe
℄	Center line
CG	Center of Gravity
cc	Center to Center
CFCW	Continuous Flashing Compound Waterproofing
Cl.	Class
Clr.	Clearance
CO	Clean Out
Col.	Column
Conc.	Concrete
CBW	Concrete Barrier Wall
CMU	Concrete Masonry Unit
Conn.	Connection
Const.	Construction
CJ	Construction Joint
Cntl. Jt.	Control Joint
CLSM	Controlled Low Strength Material
Cont.	Continuous
CSL	Crosshole Sonic Log
CF	Cubic Feet
CY, Cu. Yd.	Cubic Yard
Det.	Detail
Dia.	Diameter
Diaph.	Diaphragm
Dim.	Dimension
Dist.	Distance
DO	Ditto
Dwls.	Dowels
Dn.	Down
Dbl.	Double
DI	Drain Inlet, Ductile Iron
Dwg., Dwgs.	Drawing, Drawings
DS	Drilled Shaft
E	East
EA, Ea., ea.	Each
EF	Each Face
EFH	Each Face Horizontal
EFV	Each Face Vertical
EW	Each Way
EPE	Existing Edge of Pavement
EPS	Expanded Polystyrene
ES	Edge of Shoulder
Elec.	Electrical
EMH	Electrical Manhole
El., Elev.	Elevation
Emb.	Embankment
EVC	End of Vertical Curve
Eq.	Equal
Est.	Estimated
Exc.	Excavation
Excl.	Excluding
Exist., Ex.	Existing
Exp., (E)	Expansion
EJ	Expansion Joint
Ext.	Exterior
(F)	FIxed
FA	Force account
FB	Flat Bar
FC	Compression Stresses
f'c	Specified Compressive Strength of Concrete at 28 days
f'ci	Specified Compressive Strength of Concrete at Time of Initial Prestress
FF	Far Face. Front Face
Fig.	Figure
Fin. Gr.	Finish Grade
FRP	Fiberglass Reinforced Plastic
FT	Tensile Stresses
Ftg.	Footing
Ft.	Feet, Foot
Ga.	Gage, Gauge
Galv.	Galvanized
G, Gir.	Girder
GDI	Grated Drain Inlet
GFRP	Glass Fiber Reinforced Polymer Rebar
Gr.	Grade
Grd.	Ground
GRP	Grouted Rubble Pavement
Ht.	Height
(H)	Hinge
Horiz., H	Horizontal
HDOT	State of Hawaii Department of Transportation
HDPE	High Density Polyethylene
HS	High strength
HECO	Hawaiian Electric Company
IB	Inbound
In.	Inch
ID	Inside Diameter
IF	Inside Face
Int.	Interior
Inv.	Invert
Jt.	Joint
K	Kips
KF	Kip Foot
KSF	Kips Per Square Foot
KSI	Kips Per Square Inch
KLF	Kips Per Linear Foot
L	Length
lb., lbs., LBS.	Pound, Pounds
Ltg. Std.	Lighting Standard
LF, Lin. Ft.	Linear Feet/Foot
LS	Lump Sum
Longit.	Longitudinal
M	Modified
MH	Manhole
Max.	Maximum
Mech.	Mechanical
Min.	Minimum
Misc.	Miscellaneous
MPH	Miles Per Hour
NF	Near Face
N	North
NIC	Not in Contract
No.	Number
NTS	Not to Scale
O/S	Offset
oc	On Center
Opn'g	Opening
OB	Outbound
OD	Outside Diameter
OG	Outside Girder, Outbound Girder
Perf.	Perforated
PL	Plate
PCC	Portland Cement Concrete
PC	Point of Curvature
PCF	Pounds per Cubic Foot
P(e)	Effective Prestress Force After All Losses
PPM	Parts Per Million
PSF	Pounds per Square Foot
PSI, psi	Pounds per Square Inch
PLF	Pounds per Linear Foot
PI	Point of Intersection of Tangents
PIVC	Point of Intersection of Vertical Curve
PT	Point of Tangency
Pt., Pts.	Point, Points
PRC	Point of Reverse Curvature
PVC	Polyvinyl Chloride
Prestr.	Prestressed
P/S	Prestressed Strands
PB	Pull Box
Rad., R	Radius
RF	Rear Face
Rebar	Reinforcing Bar
Ref.	Reference
Reinf.	Reinforced, Reinforcing, Reinforcement
Req'd.	Required
Ret.	Retaining
ROW	Right of Way
Rdwy.	Roadway
Sect.	Section
SRW	Segmental Retaining Wall
Sht.	Sheet
Sim.	Similar
Sl.	Slope
S	South
Spc., Spg.	Spaces, Spacing
Sprd.	Spread
Spec.	Specification
SF	Square Feet
SY	Square Yard
SS	Stainless Steel
Std.	Standard
Sta.	Station
Stiff.	Stiffener
Stirr.	Stirrup
Stl.	Steel
Str.	Straight
Struct.	Structure
SE	Super Elevation
Symm.	Symmetrical
Tan.	Tangent
TC	Continuity Tendons
Temp.	Temporary
TD	Deck Tendon
Thk.	Thick
T	Top
T&B	Top and Bottom
TCE	Top of Column (and Bent Cap Soffit) Elevation
TOD	Top of Deck
TOP	Top of Pier
TFE	Top of Footing Elevation
Tot.	Total
Transv.	Transverse
TS	Structural Tubing
TSS	Tendon For Girder in Simply Supported Condition
Typ.	Typical
Undergrd.	Underground
Var.	Varies
Vert., V	Vertical
VC	Vertical Curve
VESLMC	Very Early Strength Latex Modified Concrete
W/C	Water/Cement
w/	With
W	West
WWF	Welded Wire Fabric
WW	Wingwall
WP	Work Point, Working Point
WS	Water Surface
Yr.	Year

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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HIGHWAYS DIVISION

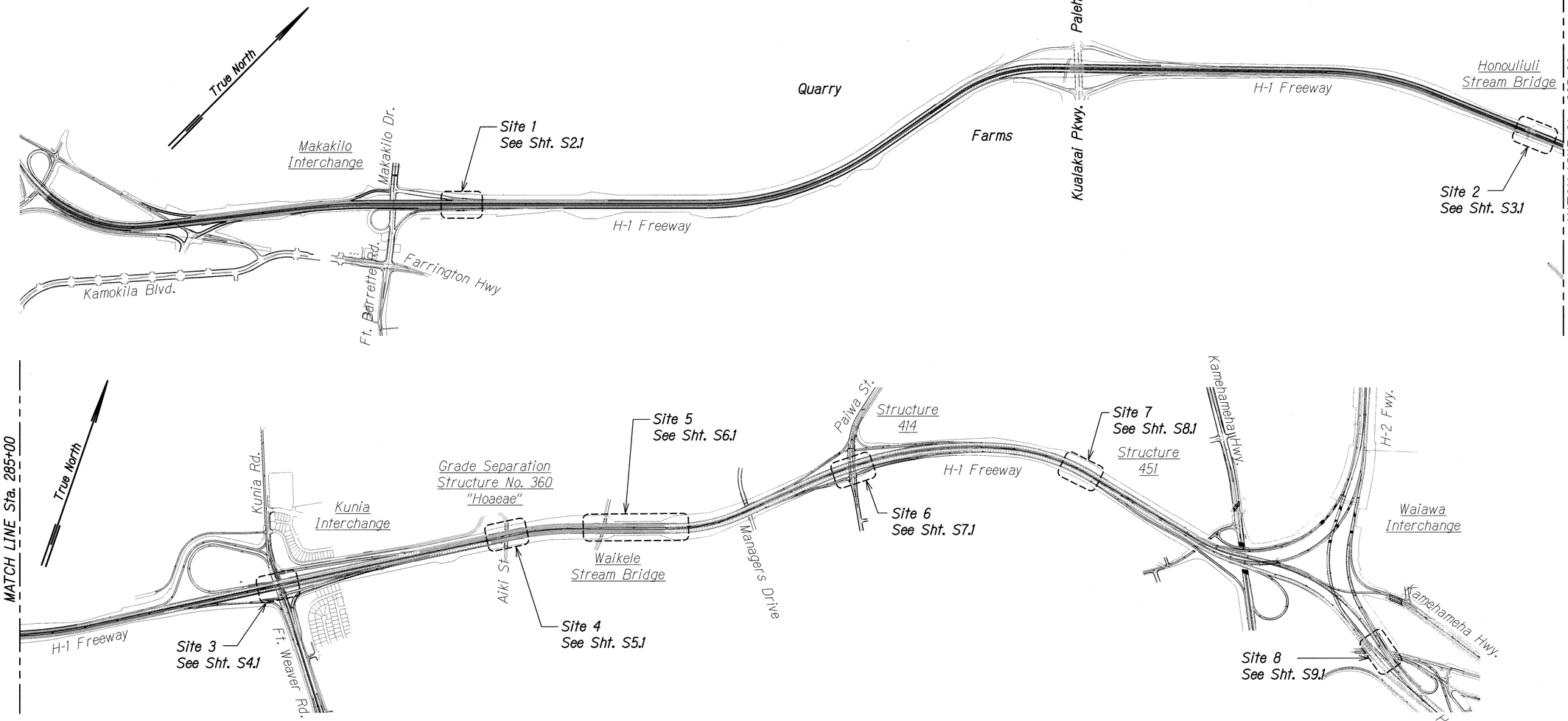
SYMBOLS AND ABBREVIATIONS

INTERSTATE ROUTE H-1 SAFETY IMPROVEMENTS
PALAILAI INTERCHANGE TO WAIAWA OVERPASS
FAP NO. HSIP-HI-1(270)

Scale: As Noted Date: July 26, 2018

SHEET No. S0.4 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HSIP-HI-1(270)	2018	58	241



KEY PLAN
Scale: 1" = 1000'-0"

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	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD_ONGOING\17-035-HI SAFETY IMPROVMTS PALAILAI IC-WAIAWA-WSP\01 CADD\08-18 HWY CMTS FS PDP\HISFT-S0005 KEYPLAN.DWG PLOT TIME: 08-08-18, 8:10 AM)

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KEY PLAN

INTERSTATE ROUTE H-1 SAFETY IMPROVEMENTS
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SHEET No. S0.5 OF 5 SHEETS