GENERAL NOTES

CONCRETE (See Specifications)

Min. Ult. Compressive Strength @ 28 Days:	3000 psi
MinimumCement:	5.0 Sacks/C.Y.
Minimum Mineral Admixture:	94 Lb. (1.0 "Sack")/C.Y.
Maximum Water:	6.7 Gallons/Sack of Cement & Mineral Admixture
Maximum Slump:	Footings - 4" /Slabs, Walls, Columns - 5"
Cement:	Type V or Type II Low-Alkali meeting optional physical requirements for Type V
Water Reducing Admixture:	Master Builders Pozzolith 322N or Grace WRDA with HYCOL
Mineral Admixture:	Fly Ash conforming to ASTM C618 except loss on ignition shall not exceed 4 percent

CONCRETE BLOCK (Special Inspection Required)

Open End Units of Lightweight Aggregate: (115 pcf)
Grade N-1 . . . . . .Fm'= 1500 PSI
Minimum Compressive Strengths @28 Days:
Mortar Type "S". . . . . 1800 PSI
Grout: 3/8" Maximum Pea Gravel. . . . 2000 PSI

Method of Grouting: Fill all cells using the Low-Lift procedure. W/ Max. Lift Ht. 2'-0"
Vertical Reinforcement Splices are not permitted except where detailed on the drawings. Solid Grout All Cells
Masonry Units Shall Be Laid In Running Bond Pattern.

REINFORCING STEEL

	A.S.T.M. No.
Deformed Bars.	Grade 60, A-615
Welded Wire Fabric.	A-185

Continuous Steel Lap Splice Lengths:
Concrete. . . . . .30 Bar Diameters
Concrete Block . . . . . .40 Bar Diameters
W.W.F. Splices . . . . . Minimum lap of 2 longitudinal wires + 2" or 8" min. in 6 x 6 W.W.F. (~~~~)

Concrete Coverage For Reinforcement:
Foundations-Poured Against Earth. . . . . 3" Clear
-Poured Against Forms. . . . . 2" Clear
Beams & Columns Above Grade (To Ties & Stirrups). . . . . .1½" Clear
Walls Above Grade. . . . . 1½" Clear
Slabs Above Grade. . . . . 1" Clear
Slabs On Grade. . . . . Reinforcement @ Slab ℄

STRUCTURAL STEEL

	Min Fy	A.S.T.M. NO.
Rolled Shapes, Plates, etc	36 ksi	A 36
Pipe Columns & Struts.	35 ksi	A 53, Grade "B"
Square & Rectangular Tubing. . . .	46 ksi	A500, Grade "B"
Machine Bolts & Anchor Bolts		A 307
Weld Electrodes.	A.W.S.D1.1	.E70XX

Fabrication & Erection: Conform to A.I.S.C. Specifications
Welding: By electric shielded metal-arc process.
Welders: Shall be certified and work done in accordance with the Structural Welding Code A.W.S. D.1.1.
Welding Inspection is required on the following:
All field welds

Shop Drawings: Submit 5 sets for review prior to fabrication.
Shop Painting: All steel not embedded in concrete or galvanized shall receive one shop coat of fabricator's standard rust-inhibiting primer after power tool cleaning.

WOOD

Framing Lumber: Douglas Fir -- grade-marked as follows:

2x4 Studs, blocking & bridging. . . . . ."No. 1"
2x4 roof rafters and ceiling joists. . . . . ."No. 1"
3x4 & 4x4 beams & posts. . . . . ."No. 1"
2x6 and larger studs, joists & rafters. . . . . ."No. 1"
4x6 and larger beams & posts. . . . . ."No. 1"
Sills. . . . . ."Pressure-Treated" D. F. . . . . ."No. 2"

Plywood:	A.P.A. Marked
Roof Sheathing.	T&G "Structural I" C-D
Wall Sheathing (¼" - 5 Ply)	"Structural I" C-D
Floor Sheathing	T&G Interior "Underlayment" W/ Exterior Glue

Standard Cut Washers: Required under bolt heads and nuts that would otherwise bear on wood surfaces.

Nailing Schedule:	Common Wire Nails
Joists or rafters to sides of studs, 8" depth or less	3-16d
for each additional 4" in depth	1-16d
Joists or rafters to all bearings, toenail each side.	2-10d
Studs to bearings-endnail.	2-20d
- or toenail each side.	2-8d
Blocking between joists or rafters:	
To joist or rafter - -toenail each side, each end.	2-10d
-or endnail each end.	2-16d
To joist or rafter bearings - -toenail each side.	2-10d
Blocking between studs, each end-toenail. . . .	2-10d
-or endnail .	2-16d
X-Bridging between joists or rafters, toenail each end.	2-8d
Ceiling strips to underside of joists, per bearing with "Stronghold" annular ring nails (subdrill for nails at ends where strips tend to split)-1x4 stripping.	2-8d
-2x3 stripping.	1-16d
Ribbons to studs-1x ribbons.	2-8d
-2x ribbons.	2-16d
Double top plates- Lower plate to top of studs, endnail.	2-20d
-Upper plate to lower plate,staggered. .	16d @ 12"o.c.
-Upper plate to lower plate,at laps . . .	4-16d
at intersections.	3-16d
Multiple studs - (stagger for widths over 4").	16d @ 12"o.c.
Built-Up beams - 10" or less in depth, staggered. . .	16d @ 12"o.c.
More than 10" deep, staggered. . .	1"ø bolts @ 24"o.c.
1x6 Let-in brace - to each stud.	2-8d
at each end.	3-8d

Note: Use nails driven perpendicular to the grain in lieu of toenails where possible.

MACHINE APPLIED NAILING

Use of machine nailing is subject to a satisfactory jobsite demonstration for each project and the approval by the project Architect or Structural Engineer and the Office of the State Architect. The approval is subject to continued satisfactory performance. Machine nailing will not be approved in 5/16" plywood. If nailheads penetrate the outer ply more than would be normal for a hand hammer or if minimum allowable edge distances are not maintained the performance will be deemed unsatisfactory.

REFERENCE Title 24, Part 2, Sec. 2513 (c)

GLUE-LAMINATED BEAMS

"All structural glued laminated timber shall be continuously inspected during fabrication by an inspector specially approved by the Office of the State Architect. An AITC Certificate will not meet this requirement."

REFERENCE Title 24, Part 2, Sec. 2518 (a)

Glue-Laminated Beams
Shall be Douglas Fir conforming to the "American National Standard for Wood Products - Structural Glued-Laminated Timber" ANSI/AITC A190.1 and "Voluntary Product Standard" PS56-73.

Beams. . . . . .Combination 22F-V7
Adhesive. . . . . .Exterior Glue
Appearance Grade. . . . . .Industrial
Protection, All Surfaces. . . . . .Clear Sealer & Load Wrap
Moisture Content. . . . . .7% to 12% Maximum

PLYWOOD WEB JOISTS

Plywood web joists and associated blocking panels shall be TJI/35X joists as manufactured by Trus Joist Corporation, OR SSI 324 JOISTS AS MANUFACTURED BY STANDARD STRUCTURES INC. SEE 1/ST-1 AND 2/ST-1 JOIST DEPTHS SHALL BE AS SHOWN ON THE DRAWINGS.

Web stiffeners and web filler blocks for plywood web joists shall be 7/8-inch plywood FOR TRUSJOIST TJI/35X JOIST OR 1"-INCH PLYWOOD FOR STANDARD STRUCTURES SSI 324 JOISTS, TO BE SUPPLIED BY THE JOIST MANUFACTURER AND INSTALLED BY THE CONTRACTOR.

DRILLED-IN ANCHORS

When installing drilled-in anchors and/or power driven pins in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. Maintain a minimum clearance of one-inch between reinforcement and the drilled-in anchors and/or pin.

PROOF LOAD TESTS FOR EXPANSION & ADHESIVE
TYPE ANCHOR BOLTS
(Bolts must have I.C.B.O. Approval)

All concrete anchor bolts of the expansion and adhesive type (loaded in either pullout or shear) shall have 10% of the sill plate bolts and 100% of the ledger and holddown bolts proof tested in tension to twice the allowable tension load. If there are any failures, the immediately adjacent bolts must then also be tested.

Type of Materials	Type of Test	Hilti Kwik Bolt II (ICBO #4627) Bolt Diameter 5/8"	3/4"	1"
3000 P.S.I. Hard Rock Concrete	Direct Pull-Tension, Lbs.	4270	6200	9300
Min. Embed		4"	5"	6"

POWDER DRIVEN CONCRETE FASTENERS

Use of Powder Drive Concrete Fasteners for tension loads is limited to support of minor loads like acoustical ceilings, duct work, conduit.

TESTING - The operator, tool and fastener shall be pre-qualified by the project inspector. He shall observe the testing of the first 10 fastener installations. A test "pull-out" load of not less than twice the design load, or 200 pounds, whichever is greater, shall be applied to the pin in such a manner as not to resist the spalling tendency of the concrete surrounding the pin. Thereafter, random tests under the project inspector's supervision shall be made of approximately 1 in 10 pins, except that when the design load exceeds 100 pounds, one half of the pins shall be tested. Should failure occur on any pin tested, all installations must be tested and unfair pins replaced.

Type of Material	Type of Test	Hilti DN72 ICBO #2388 Fastener Diameter
Hard Rock Concrete 2000 & 3000 psi	Direct Pull-Tension, Lbs.	0.145" 200

FOUNDATION NOTES (Refer to Geotechnical Investigation by KERN TESTING & INSPECTION, INC. 11-18-92)

Soil Type: Silty Sand
Maximum Design Bearing Pressure: 1500 PSF Ec. Dr. 1.1
Bottom of Footing Elevation: 2'-0" below finish floor elevation or as shown on drawings
Place Footings Only on Firm Bearing, not on loose soil or uncompacted fill.
Compact Fill Requirements: Compact to 90% of maximum density per A.S.T.M. D1557.

GENERAL NOTE

Typical Details & General Notes apply in all cases unless specifically shown otherwise on the drawings.
Where No Detail Is Shown, construction shall be as shown for other similiar work.
No Deviations from the Design Drawings are permitted without the permission of the Engineer and OSA.

RECOMMENDED SPECIFICATIONS FOR AUTOMATIC END WELDED STUDS

Material

Automatic end welded studs shall be Nelson Granular Fluxfilled Shear Connector or Anchor Studs (or approved equal).

Studs shall be manufactured of C-1015 cold rolled steel which conforms to A.S.T.M. Specification A-108-58-T.

Installation

The studs shall be automatically end welded in accordance with the manufacturer's recommendations in such a manner as to provide complete fusion between the end of the stud and the plate. There should be no porosity or evidence of lack of fusion between the welded end of the stud and the plate. The stud shall decrease in length during welding approximately 1/8" for 5/8" inch and under, and 3/16" for over 5/8" diameter. Welding shall be done only by qualified welders approved by the welding inspector.

Inspection and Tests

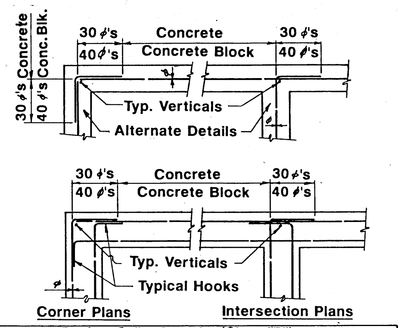
Inspection, in accordance with Title 24, Section 2727(e), of all the shop and field welding operations for the automatic end welded studs shall be made by a qualified welding inspector (approved by the Office of the State Architect). The type and capacity of the welding equipment shall be in accordance with the manufacturer's recommendations and shall be checked and approved by a welding inspector.

At the beginning of each day's work, a minimum of two test stud welds shall be made with the equipment to be used to metal which is the same as the actual work piece. The test studs shall be subjected to a 90% bend test by striking them with a heavy hammer. After the above test, the weld section shall not exhibit any tearing out or cracking.

Testing of end-welded studs shall be in accordance with Section 2727(c), Part 2, Title 24.

ABBREVIATIONS

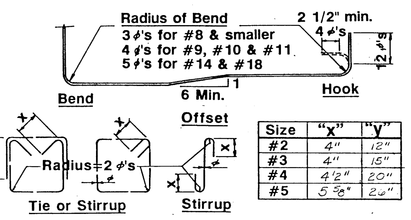
A.B.	=	Anchor Bolts
BLKG.	=	Blocking
BM.	=	Beam
B.N.	=	Boundary Nailing
C.J.	=	Ceiling Joist or Construction Joint
CL.	=	Clear
CLR.	=	Clear
CONC.	=	Concrete
CONT.	=	Continuous
C.T.S.K.	=	Countersink
EA.	=	Each
E.F.	=	Each Face
E.J.	=	Exterior Joint
E.N.	=	Edge Nailing
E.W.	=	Each Way
F.F.	=	Finish Floor
F.N.	=	Field Nailing
F.O.C.	=	Face of Concrete
F.O.S.	=	Face of Stud
G.L.B.	=	Glued-Laminated Beam
JST.	=	Joist
L.J.	=	Longitudinal Joint
O.C.	=	On Center
PL	=	Plate
RFTR.	=	Rafter
R.R.	=	Roof Rafter
T.C.R.	=	Top of Cricket Elevation
T.J.	=	Transverse Joint
TJI	=	Trus Joist Plywood Web I-Joist
T.P.	=	Top of Parapet Elevation
T.S.	=	Top of Sheathing Elevation
U.N.O.	=	Unless Noted Otherwise
W.W.F.	=	Weld Wire Fabric
w/	=	With
ø	=	Diameter



Bar Lap Splice Lengths (Class "B")									
Bar No.	#3	#4	#5	#6	#7	#8	#9	#10	#11
Top Bars *	1'-4"	1'-10"	2'-8"	2'-11"	4'-0"	5'-3"	6'-8"	8'-0"	10'-4"
Other Bars	1'-0"	1'-4"	1'-9"	2'-1"	2'-10"	3'-9"	4'-8"	6'-0"	7'-5"

*Horiz. bars with more than 12" of conc. cast in member below bar.

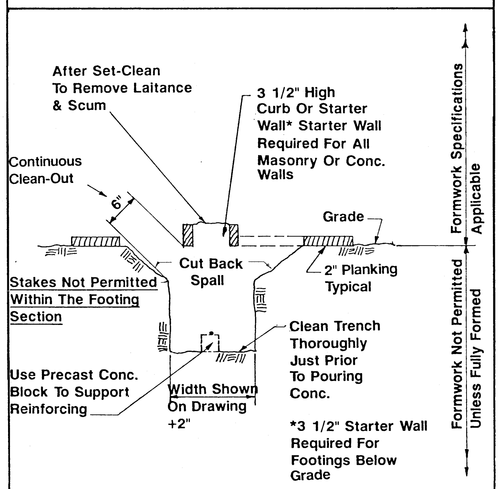
No More Than 50% Of The Bars Shall Be Spliced At Any One Section, And Splices Shall Be Staggered At Least 4'-0"



Size	"x"	"y"
#2	4"	12"
#3	4"	15"
#4	4½"	20"
#5	5 ½"	24"

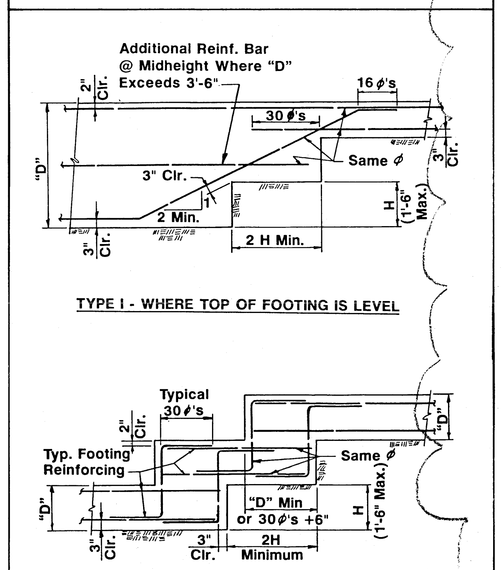
Reinforcing Placing Tolerances
1. Depth: ±1/4" for members 24" or less in depth.
2. Depth: ±1/2" for members larger than 24" in depth.
3. Length: ±1"

1/ST-1 **TYPICAL REINFORCING STEEL DETAILS**

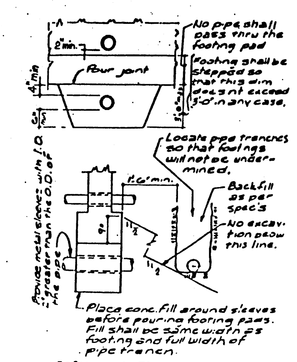


2/ST-1 **UNFORMED FOOTING DETAIL**

"Foundation concrete may be placed directly into neat excavations provided the foundation trench walls are stable as determined by the Architect (Structural Engineer) subject to the approval of the Office of the State Architect. In such case the minimum formwork shown on the drawings is mandatory to insure clean excavations immediately prior to and during the placing of concrete."



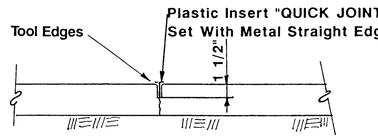
3/ST-1 **TYPICAL FOOTING STEPS (F.S.)**



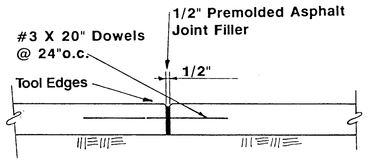
Reference: Title 24,2-2907(i)

TYPICAL PIPE TRENCH/FOOTING DETAIL

4/ST-1 **RELATION OF PIPES & TRENCHES TO FTG.**

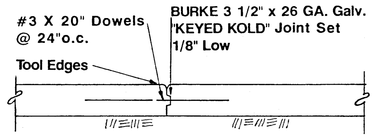


ALTERNATE E.J.



EXTERIOR JOINT (E.J.)

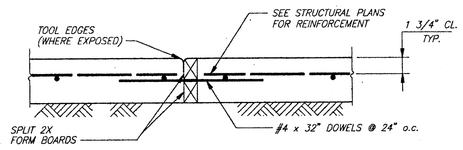
Maximum Spacing = 12'-0" o.c. Each Way



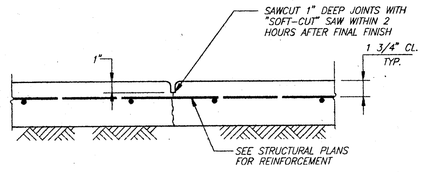
ALTERNATE E.J.

5/ST-1 **EXTERIOR CONCRETE SLAB JOINTS**

For Crack Control Of Concrete Sidewalks, Patios, Slabs & Residential Driveways. Not For Trucks Or Heavy Vehicles.

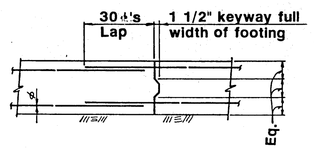


CONSTRUCTION JOINT
JOINT TO BE USED BETWEEN STRIP POURS

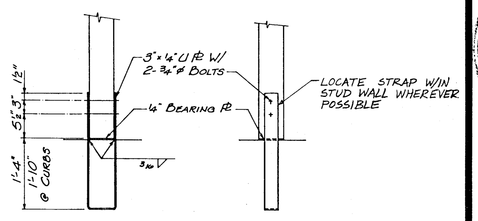


WEAKENED PLANE CONTROL JOINT
TO BE USED WHEREVER CONSTRUCTION JOINT IS NOT USED, 12'-0" MAXIMUM SPACING EA. WAY

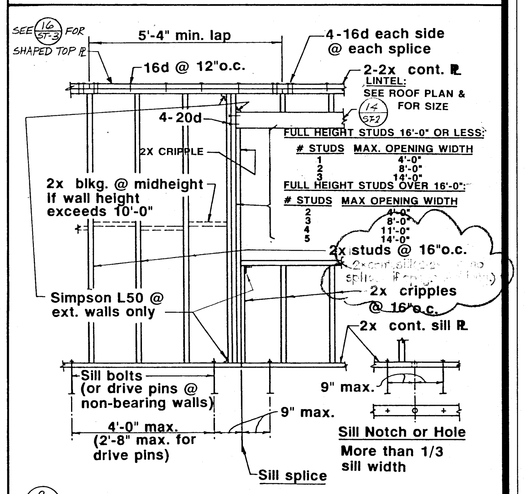
6/ST-1 **INTERIOR CONCRETE SLAB JOINTS**
FOR CRACK CONTROL OF FLOOR SLABS.



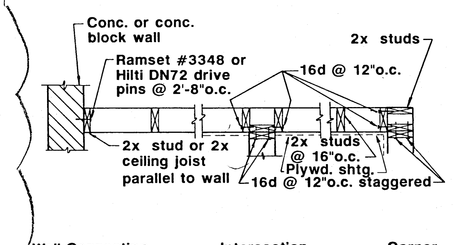
7/ST-1 **CONCRETE CONSTRUCTION JOINTS**



8/ST-1 **WOOD COLUMN BASE DETAIL** 3/4" = 1'-0"



9/ST-1 **WALL FRAMING DETAILS**
T(max) = 1.73 kips (for double plates)



10/ST-1 **TYPICAL STUD WALL CORNER PLAN** 3/4" = 1'-0"

KLASSEN CORPORATION
Architecture
Planning
Construction
2021 Westwind Drive
Bakersfield, CA 93301
(805) 327-0875
(805) 327-5933 Fax

REGISTERED ARCHITECT R. Phil Klassen STATE OF CALIFORNIA C-18-401

The above drawings and specifications and ideas, designs and arrangements represented thereby are and shall remain the property of the architect and no part thereof shall be copied, disclosed to others or used in connection with any work or project other than the specific project for which they have been prepared and developed without the written consent of the architect. Visual contact with these drawings or specifications shall constitute conclusive evidence of acceptance of these restrictions.

Written dimensions on these drawings shall have precedence over scaled dimension. contractors shall verify and be responsible for all dimensions and conditions on the job and the architect must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

BAKERSFIELD CITY SCHOOL DISTRICT
MESA MARIN ELEMENTARY SCHOOL
JEWETT STREET BAKERSFIELD, CALIFORNIA
Sheet title: GENERAL NOTES & STANDARD DETAILS

WARREN A. MINNER
STRUCTURAL ENGINEER
1716 OAK STREET
BAKERSFIELD, CALIFORNIA 93301
PHONE (805) 324-9724
FAX (805) 324-3416

Date:	Issued for:

Date:	Revisions:
7-2-93	1 ADD #4, Item 2
10-94	2 AS BUILTS

Drawn by: WL
Checked by: R. C. S
Job no: 1921
Sheet: **ST-1**
Sheet of: 24 SHEETS
Date: 3-8-93

REGISTERED PROFESSIONAL ENGINEER WARREN A. MINNER No. 863 STRUCTURAL STATE OF CALIFORNIA
Exp. Date 12-31-96