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Steel Deck Institute Diaphragm Design Manual Second Edition

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DIAPHRAGM DESIGN MANUAL

SECOND EDITION

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Table Of Contents

PAGE NO.

Section 1

Section 1.1 Introduction 1-2
Section 1.2 Applicable Deck Types 1-2
Section 1.3 Connections 1-3
Section 1.4 Design Considerations 1-3

Section 2

Section 2.1 Diaphragm Strength 2-2
Section 2.2 Fastener Limitations 2-2
Section 2.3 Load Factors for Design 2-8
Section 2.4 Stability Checks 2-9
Section 2.5 Limiting Conditions 2-9

Section 3

Section 3.1 Diaphragm Stiffness 3-2
Section 3.2 Factors Affecting Stiffness 3-2
Section 3.3 Stiffness Coefficients 3-3
Section 3.4 Stiffness Example 3-4

Section 4

Section 4.1 Connections 4-2
Section 4.2 Arc-Spot Welds 4-3
Section 4.3 Welds with Washers 4-4
Section 4.4 Weld Flexibilities 4-5
Section 4.5 Screw Connections 4-6
Section 4.6 Power Driven Fasteners 4-7
Section 4.7 Button Punched Sidelaps 4-8
Section 4.8 Other Connections 4-9

Section 5

Section 5.1 Concrete Filled Diaphragms 5-2
Section 5.2 Insulating Concrete 5-2
Section 5.3 Structural Concrete 5-3
Section 5.4 Perimeter Connections 5-3
Section 5.5 Stud Connections 5-3
Section 5.6 Stiffness and Deflections 5-4
Section 5.7 Load Factors 5-4
Section 5.8 Other Systems 5-4

Table Of Contents

			PAGE NO.
Appendix I.		Symbols	AI-1
Appendix II.		References	AII-1
Appendix III.		Shear Diaphragm Examples	AIII-2
Example	1.	Behavior	AIII-2
Example	2.	Stiffness	AIII-4
Example	3.	Truss Analogy	AIII-6
Example	4.	Deflections	AIII-8
Example	5.	Simplified Deflections	AIII-12
Example	6.	Strength Evaluation	AIII-14
Example	7.	Roof Design	AIII-16
Example	8.	Expansion Joints	AIII-26
Example	9.	Non-Symmetric Diaphragms	AIII-30
Example	10.	Mixed Length Panels	AIII-34
Example	11.	Rigid Frame	AIII-36
Example	12.	Rigid Frames	AIII-38
Example	13.	Split Level Diaphragms	AIII-40
Example	14.	Floor Diaphragms	AIII-44
Example	15.	Diaphragms with Open Areas	AIII-46
Example	16.	Composite Floor Diaphragms	AIII-50
Appendix IV.		Typical Fastener Layout	AIV-1
		Warping Factor Development	AIV-2
Appendix V.		Load Tables	AV-1
Appendix VI.		Additional Load Tables	AVI-1

PREFACE

This manual has evolved from the first edition of the Steel Deck Diaphragm Design Manual (DDM01) and is based on research, testing and analysis done at West Virginia University since 1965. That work, sponsored by the Steel Deck Institute and its member companies, is under the direction of Dr. Larry D. Luttrell who is the technical advisor to the Steel Deck Institute. The Institute is very grateful to Dr. Luttrell for his untiring efforts and continued interest in this project.

The illustrations were prepared by Gene Engle of Vulcraft; the tables were prepared by Richard Heagler of United Steel Deck, Inc. The Steel Deck Institute Committee members for Diaphragm Design are:

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SECTION 1

INTRODUCTION

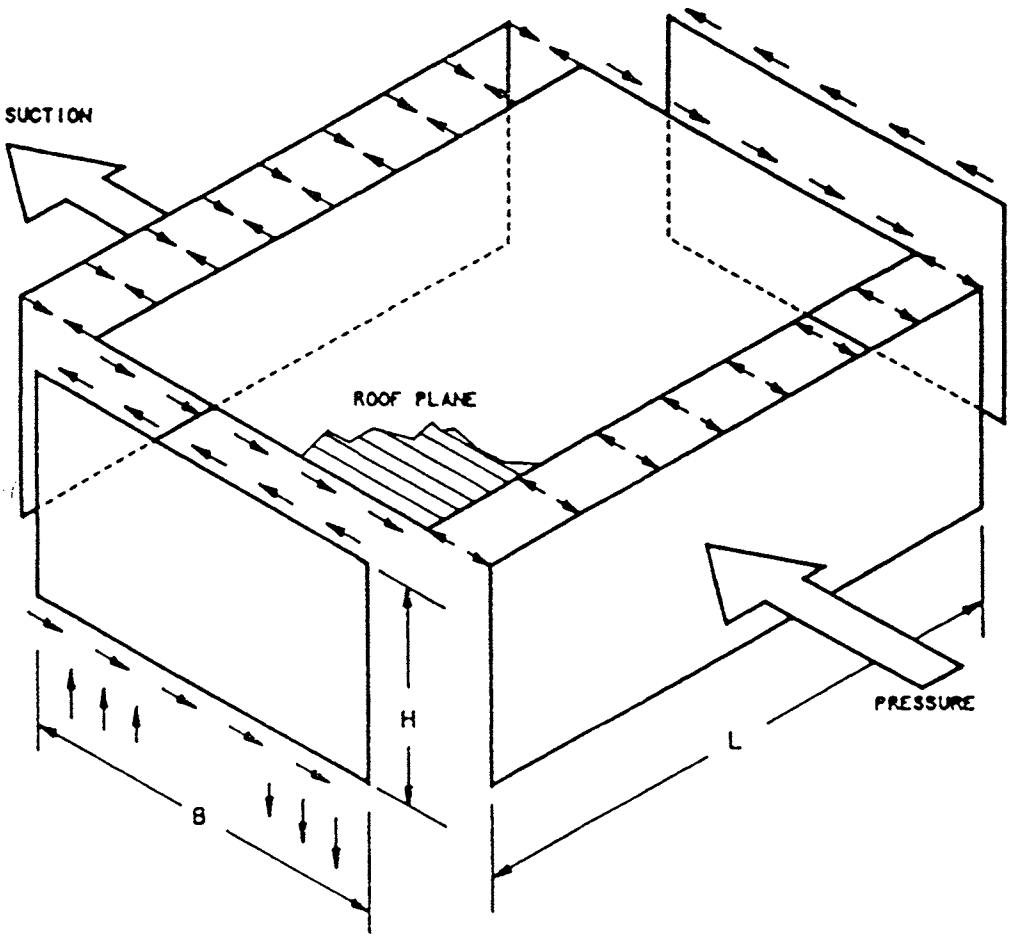
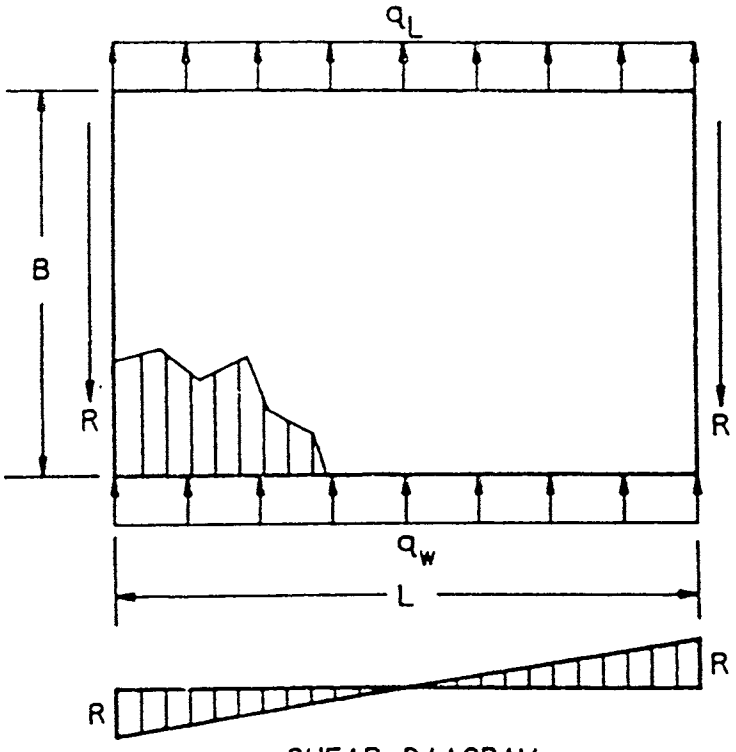


FIG 1.1-1 DIAPHRAGM COMPONENTS



SHEAR DIAGRAM

FIG 1.1-2 ROOF DIAPHRAGM

1.1 INTRODUCTION

Shear diaphragms are essentially planar structural systems such as those found in the roofs, floors, and walls of buildings. They are comprised of interconnected smaller units, attached to supporting members, such that the assemblies possess both in-plane shear strength and stiffness. Diaphragm design addresses the issue of selecting materials and designing connections such that the system can serve the function of transmitting in-plane forces.

Figure 1.1-1 illustrates the basic concept for a group of diaphragms, the principal one being of the roof plane. The exploded view shows walls of length L onto which pressures act. A line load can be delivered to the roof plane by any wall. The roof shown may be viewed as a simple horizontal girder, of depth B, with its end reactions provided by distributed shears along B at the wall intersection. Though it might be quite rigid and different from the roof, the endwall itself acts as a diaphragm between the roof and foundation levels.

The most basic design problem is illustrated in Figure 1.1-2 where the "short-deep beam" or diaphragm receives line loads of q_L and q_W from the sidewalls. R then becomes $0.5L\ (q_W + q_L)$. From the shape of the shear diagram, five items are apparent:

a. The maximum average shear S = R/B is at the end.
b. Zones nearer mid-span may have smaller shears and thus less diaphragm strength is required.
c. The larger design shears may be resisted using heavy panels and fewer connections or by more frequently connected lighter panels.
d. Efficient use of materials may not be met by using a single diaphragm design for the entire roof area.
e. The diaphragm is a short deep beam.

The structure illustrated in Figure 1.1-1 shows none of the roof supporting elements. However, such elements are important components of the diaphragm in that they act as stiffeners, similar to stiffeners in thin-web girders. Such elements protect the zone from general buckling.

The behavior of a diaphragm is dependent on the types of panels used, the methods of attachment, and the geometry of the described area. It may be determined either from full scale testing or from the identified behavior of its component parts.

1.2 APPLICABLE DECK TYPES

Diaphragms may be assembled from a wide variety of panel profiles including the Narrow Rib (NR), Intermediate Rib (IR), and Wide Rib (WR) profiles described in the SDI Publication No. 26, Design Manual for Composite Decks, Form Decks, and Roof Decks. Such panels may vary from 0.0295"to 0.064" in thickness and with widths from 18" to 36" or more.

Corrugated form deck profiles, with thicknesses ranging from 0.014" upward and with depths from 9/16" upward to 1.5 inches, have been part of the studies on which this manual is based. The test programs also have included longer

spanning 3" deep roof deck profiles as well as certain wall panel arrangements interconnected to be shear resistant.

The design recommendations in the following sections are limited to properly interconnected diaphragm panels having thicknesses to between 0.014 inches and 0.064 inches with panel depths D between the nominal limits of 9/16 inches and 3 inches.

1.3 CONNECTIONS

Given that the influence of panel geometry has been established, the more critical remaining parameters are those describing fasteners and how they perform. Fasteners commonly include welds, screws, and power driven nail-like pins. The two most essential pieces of information for any fastener are reliable values for its strength and stiffness. Tests for these properties are described in detail in Section 4.

1.4 DESIGN CONSIDERATIONS

This manual addresses those factors affecting the strength and stiffness of a diaphragm assembly. The formulas for diaphragm design values are based on a very large number of tests made in the laboratories at West Virginia University and in other laboratories over the past twenty-five years. Sections 2, 3, and 4 show the development of strength formulas, stiffness formulas, and properties of selected fasteners.

The appendices contain a series of example problems addressing the issue of analysis and design. Other appendices contain design load tables for diaphragms used to resist wind loads or other transient forces.

SECTION 2

DIAPHRAGM STRENGTH

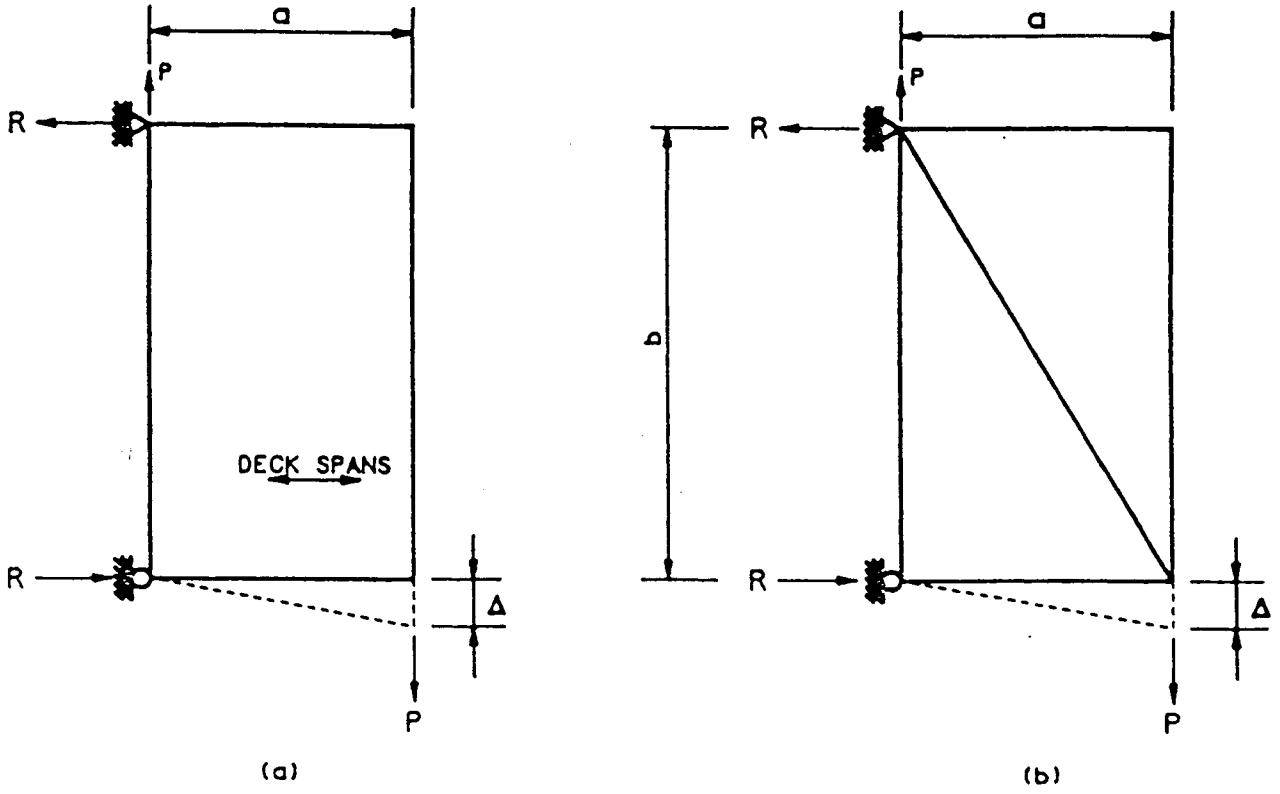


FIG 2.1 DIAPHRAGM AND TRUSS

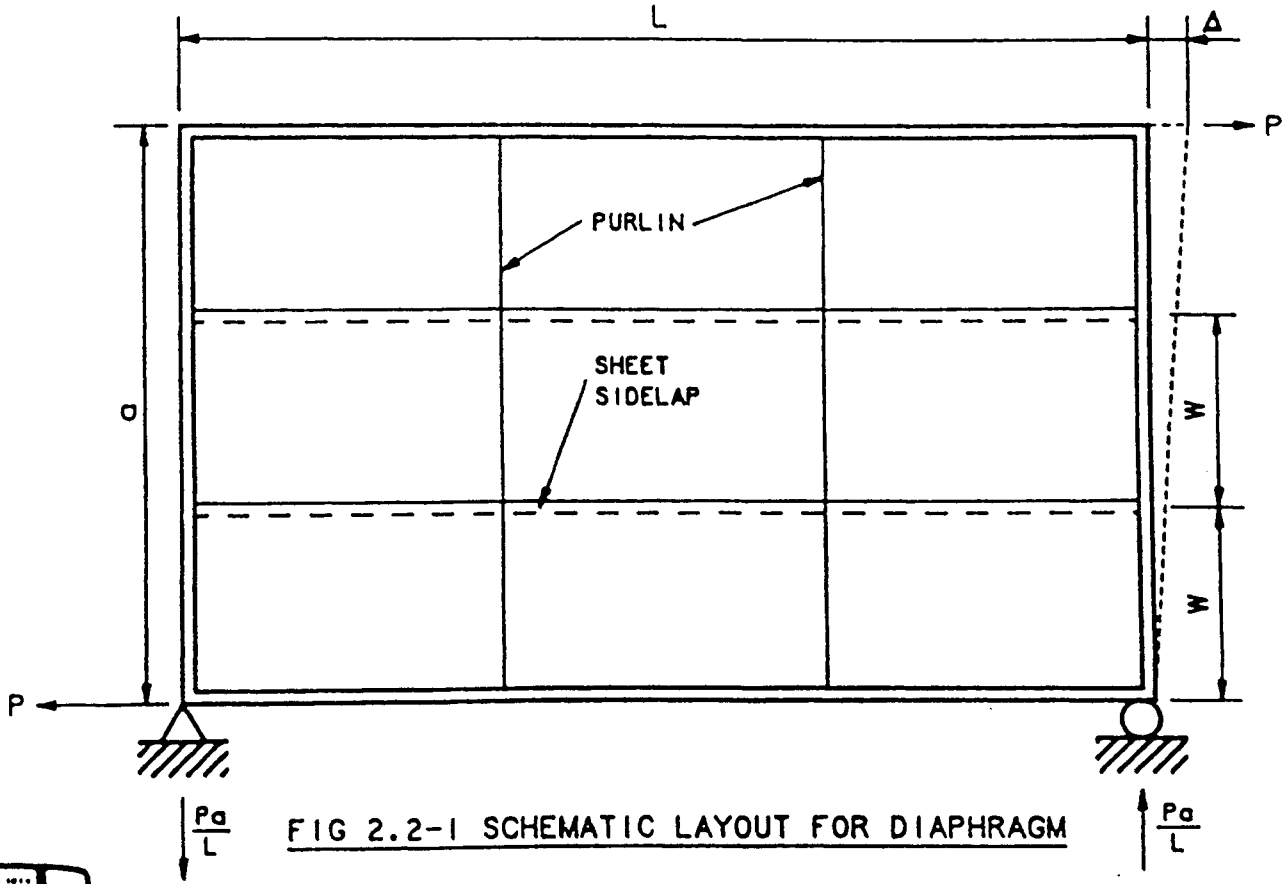


FIG 2.2-1 SCHEMATIC LAYOUT FOR DIAPHRAGM

2.1 DIAPHRAGM STRENGTH

The diaphragm is assembled to cover a specified area in such a way as to possess both predictable in-plane shear strength and stiffness. The principal elements are the supporting frame, the covering panels, and the interconnecting devices or fasteners. It can be a fairly flexible system somewhat analogous to a truss as in Fig. 2.1. Prior to installing the truss diagonal or attaching the diaphragm, neither of the frames possess much strength.

In Fig. 2.1, R = Pa/b where P is an external shear load acting along b. The truss diagonal force is made up of two components, R and P such that the average shear, parallel to b is P/b and the average shear, parallel to a is, R/a = P/b. Presuming edge members to have small changes in length, the average shear in the diaphragm also is P/b either horizontally or vertically.

Unattached panels may not possess the ability to resist equal unit forces in perpendicular directions. However, when they are part of the diaphragm system, including perimeter members, the individual corrugations are held in position by end attachments and the corrugations are not free to close.

The shear strength of a diaphragm system can be limited by the strength of connections, local buckling in the panels, or by general plate-like buckling of the whole diaphragm area.

2.2 FASTENER LIMITATIONS

Consider the simple diaphragm in Fig. 2.2-1 where three panels are represented. The panels may be connected to the support frame by structural connections, having a strength Q_f, along any structural member. Stitch or sidelap connections, having a strength Q_s, may be installed along the dashed lines to form sheet-to-sheet connections away from cross supports.

Edge Fasteners

Figure 2.2-2 represents the edgemost half panel and the forces transferred to it from P as the ultimate value P_u is approached. With $Q_f = Q_f x_e/(w/2)$, equilibrium is obtained with:

$$P_u = (2\alpha_1 + n_p\alpha_2 + n_e)Q_f \qquad (2.2\text{-}1)$$

where n_e = number of edge connectors between cross supports (n_e = 3 in Fig. 2.2-2)

$\alpha_1 = \frac{1}{w}\Sigma x_e$, end distribution factor with summation across a full width w.

x_e = distance from panel centerline to any fastener in a panel at the end support, in.

w = panel width, in.

α_2 = purlin dist. factor similar to α_1

L = panel length, ft.

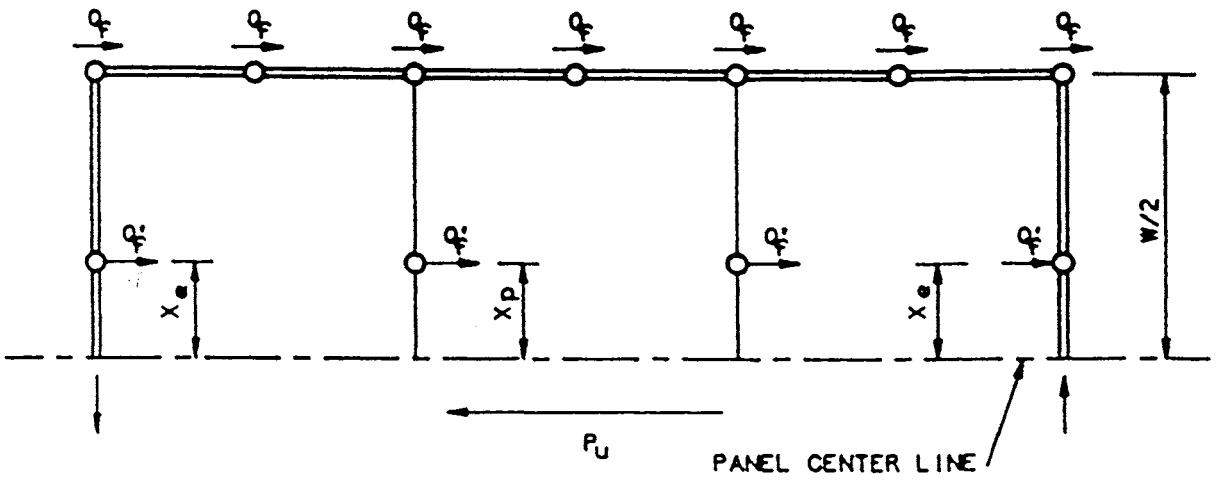


FIG 2.2-2 OUTER EDGE PANEL

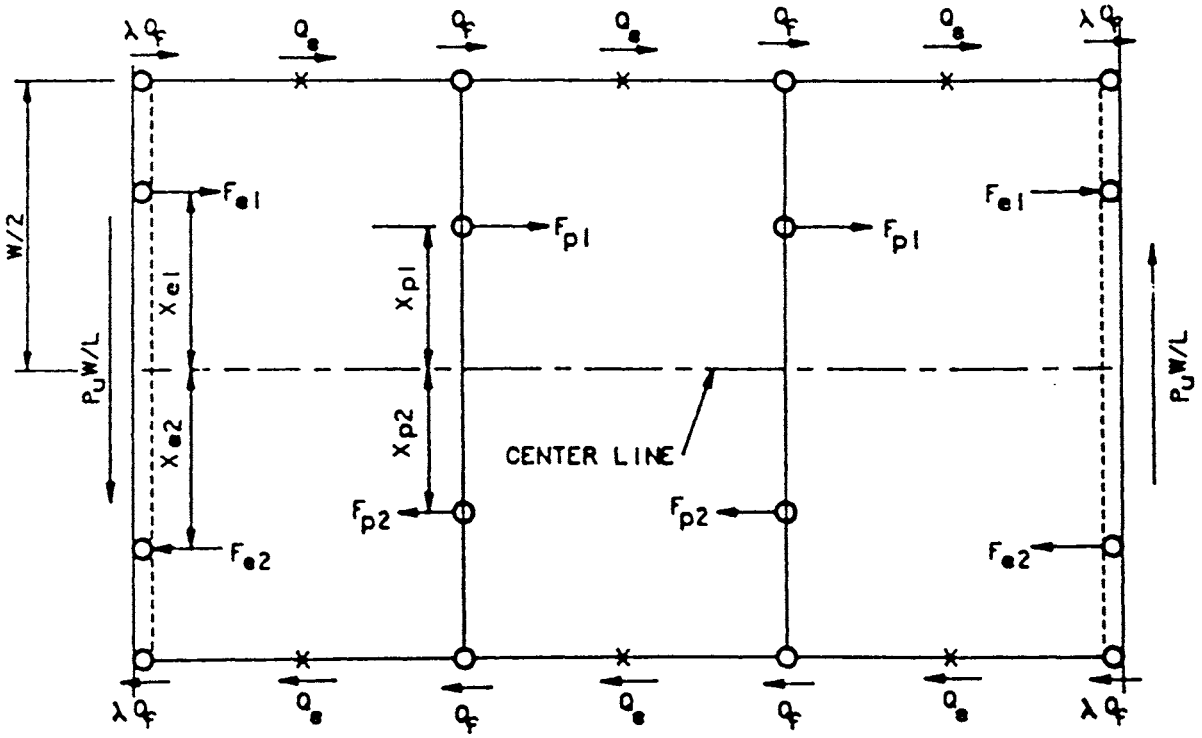


FIG 2.2-3 INTERIOR PANEL FORCE DISTRIBUTION

n_p = number of purlins excluding those at ends or end laps where connection patterns may differ.

Q_f = structural fastener strength, kips (see Section 4).

Equation 2.2-1 can be modified to:

$$S_u = \frac{P_u}{L} = (2\alpha_1 + n_p\alpha_2 + n_e)Q_f/L \qquad (2.2\text{-}2)$$

Note that the edge fasteners between purlins may require special details if the purlins set above the edge member.

Interior Panels

Figure 2.2-3 shows a free body of an interior panel where Q_s represents a sidelap (stitch) connector and P_u w/L is the transferred end-member axial force. Those purlins away from a braced frame line or rigid wall have little ability to transfer axial forces. Considering rotational equilibrium about the lower right corner:

$$(\frac{P_u w}{L})\ L = 2\ M_e + n_p M_p + n_s Q_s w \qquad (2.2\text{-}3)$$

where M_p = couple at purlin from F_{p1}, F_{p2} and Q_f

M_e = end member couple from F_{e1}, F_{e2}, and Q_f.

Q_s = stitch connector strength, kips (see Section 4)

n_s = number of stitch connectors within the length L (n_s = 3 for case shown

The magnitude of the F_p and F_e forces is difficult to define in terms of Q_f at the edge. As shear forces increase, yield can develop around edge fasteners and thus allow F_p and F_e to increase toward their yield values. However, they conservatively are presumed to be related linearly to Q_f through their position from centerline similar to the distribution shown in Fig. 2.2-2. Then:

$$\frac{Q_f}{w/2} = \frac{Q_f'}{x_e} \quad \text{and} \quad Q_f' = Q_f(2x_e/w)$$

$$F_e = Q_f\ (2x_e/w) \text{ and } F_p = Q_f\ (2x_p/w)$$

$$M_p = \Sigma\ F_p x_p = \frac{2}{w}\ Q_f\ \Sigma\ x_p^2$$

As diaphragm loads increase, the panel corners tend to warp limiting the corner force transfer to a lower value λQ_f. Then:

$$M_e = \frac{2}{w}\ Q_f\ \Sigma\ x_e^2 + (\lambda - 1)\ Q_f w$$

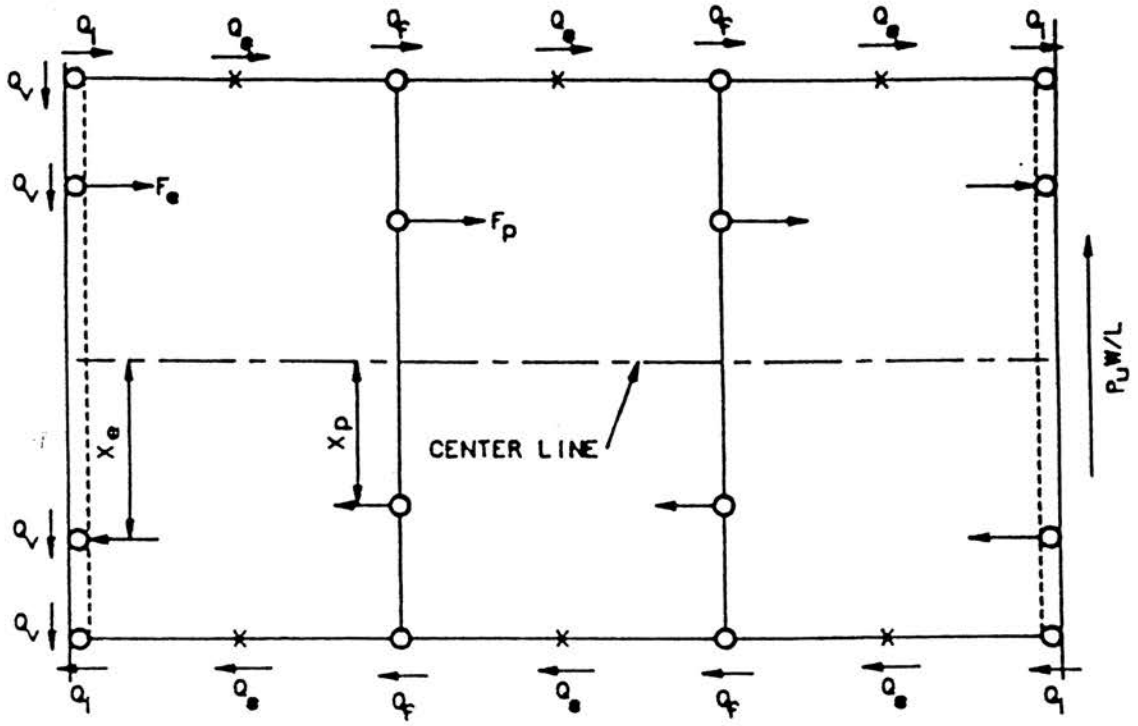


FIG 2.2-4a PANEL CORNER FORCES Q_l AND Q_v

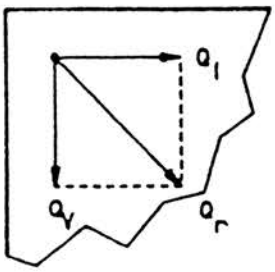


FIG 2.2-4b CORNER FORCE Q_r

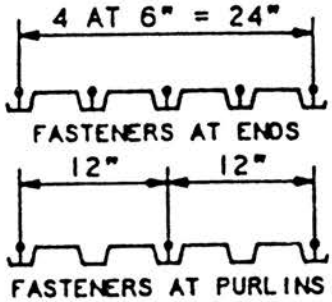


FIG 2.2-4c

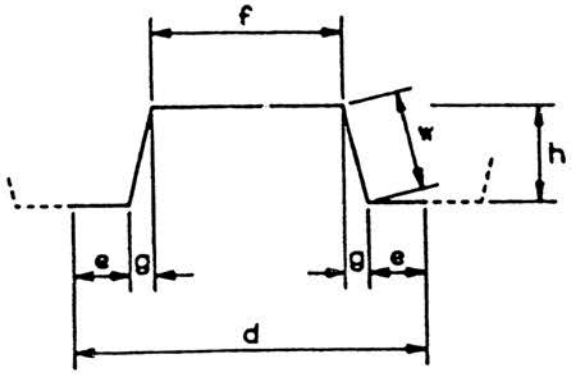


FIG 2.4-1 CORRUGATION DIMENSIONS

Letting $\alpha_s = Q_s/Q_f$, Eq. 2.2-3 can be rewritten as:

$$S_u = [2\ (\lambda-1) + n_s\alpha_s + \frac{1}{w^2}\ (2\ n_p\Sigma x_p^2 + 4\ \Sigma x_e^2)]\ \frac{Q_f}{L} \qquad (2.2\text{-}4)$$

with $B = n_s\alpha_s + \frac{1}{w^2}\ (2n_p\Sigma x_p^2 + 4\ \Sigma\ x_e^2)$

$$S_u = [2A\ (\lambda - 1) + B]\ Q_f/L \qquad (2.2\text{-}4a)$$

where $\lambda = 1 - DL_v/[240\ (t)^{0.5}]$

$\alpha_s = Q_s/Q_f$
D = panel depth, in.
t = base metal thickness, in.
L_v = purlin spacing, ft.
A = 2 for double edge fasteners as in case 36/9, Table 1, Appendix IV.
A = 1 Single fasteners at panel edges.
L = panel length, ft.

Note in Fig. 2.2-3 that the resistance over the panel length L is comprised of both M_p and M_e, M_e often being larger than M_p. Consider three cases assuming $\lambda = 1$, and $n_s = 0$. Use Eq. 2.2-4a with w = 24" and fasteners at 12" on centers at the purlins and 6" on centers at the ends as shown in Fig. 2.2-4c.

$$\Sigma x_e^2 = 2\ (6^2 + 12^2) = 360;\ \Sigma x_p^2 = 2(12^2) = 288$$

Case 1: Single span, $n_p = 0$, $L = L_v = 5'$

$B_1 = (0 + 4 \times 360)/24^2 = 2.50$

$S_{u1} = 2.5\ Q_f/5 = 0.5\ Q_f$

Case 2: Dual span, $n_p = 1$, $L = 2L_v = 10'$

$B_2 = (2 \times 288 + 4 \times 360)/24^2 = 3.50$

$S_{u2} = 3.5\ Q_f/10 = 0.35\ Q_f$

Case 3: Triple span, $n_p = 2$, $L = 3\ L_v = 15'$

$B_3 = (4 \times 288 + 4 \times 360)/24^2 = 4.50$

$S_{u3} = 4.5\ Q_f/15 = 0.3\ Q_f$

The first case has two lines of connections per five feet or a 2/5 = 0.40 index, the second has 3/10 = 0.30, and the last has a 4/15 = 0.27 index. These relative values become closer with the addition of sidelap connections, but strength is still influenced by the number of attached support lines per unit length.

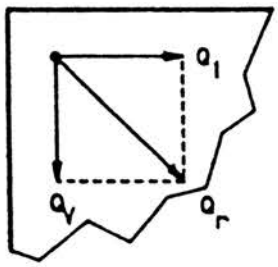


FIG 2.2-4b CORNER FORCE Q_r

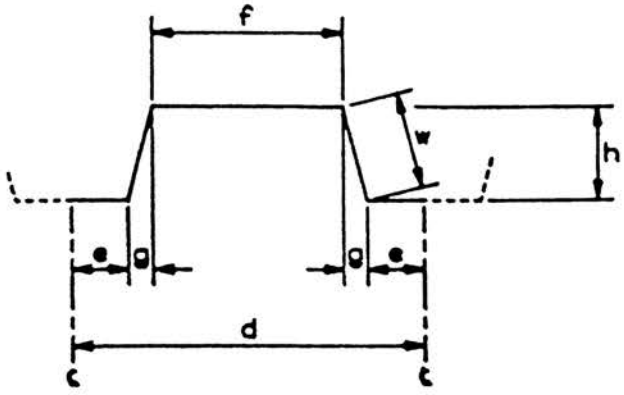


FIG 2.4-1 CORRUGATION DIMENSIONS

End Members

The maximum possible resultant force that could exist on a corner fastener as in Fig. 2.2-4b is:

$$Q_r = (Q_1^2 + Q_v^2)^{0.5} \text{ or } Q_r^2 = Q_1^2 + Q_v^2$$

where $Q_v = P_u/NL = S_u/N$

N = number of fasteners per foot along ends

$Q_1 = Q_f$ value from Eq. 2.2-4a with $\lambda = 1$.

Then $Q_1 = S_u L/B$ and letting Q_r approach Q_f:

$$Q_f^2 = S_u^2 \left(\frac{L^2}{B^2} + \frac{1}{N^2}\right)$$

The fasteners at panel corners then limit S_u to:

$$S_u = \left(\frac{N^2B^2}{L^2N^2 + B^2}\right)^{0.5} Q_f \qquad (2.2\text{-}5)$$

The strength of the diaphragm is limited to the smaller value from Eqns. 2.2-2, 2.2-4, or 2.2-5.

2.3 LOAD FACTORS FOR DESIGN

The shear strengths from Section 2.2 must be modified to arrive at working shear values with a method accounting both for possible overloads and under strength conditions. Connection quality is paramount to the evaluation.

The "Load and Resistance Factored Design" (LRFD) approach was described extensively in the prior edition of the SDI Diaphragm Design Manual, 1981. In that source, the nominal and mean resistances from full scale tests were evaluated. The coefficient of variation in strength with welded connections, as expected, is greater than when mechanical connections are used.

The same variational studies were applied to the direct shear strength tests for fasteners as described in Section 4. Since the quality of mechanical connectors is easier to control, variations in their strength is smaller than for welded connections and their performance is more predictable.

These studies have led to load factors for diaphragms under transient wind load or transient earthquake load conditions as follows:

$$S \leq S_u/SF \qquad (2.3\text{-}1)$$

where: SF = 2.75 for welded connections
SF = 2.35 for mechanical connections
SF = 2.75 for combinations of welds and mechanical conditions
S = design shear, kips/ft.
S_u = diaphragm shear strength, kips/ft.

The values from Eq. 2.3-1 are not to be modified by "increased factors" for wind load.

2.4 STABILITY CHECKS

The probability of plate-like shear buckling, producing diagonal waves across the whole diaphragm, is small for most common installations. For thin diaphragms, with small depth D and relatively long spans L_v, buckling may result when the fasteners are closely spaced. Such behavior has been noted in diaphragms 0.0179" and thinner, in some thin WR type wall panel profiles, and in certain 0.0295" diaphragms with very closely spaced sidelap connections and where larger than usual L_v values were involved.

In two span diaphragms, the central support does little to limit wave formation but, when larger numbers of spans are used, the interior purlins do limit buckling. For relatively ideal corrugated diaphragms, Easley (10)* has presented an approach to the critical shear load. That approach is modified here, conservatively treating the limiting case as being controlled by two end spans, resulting in a critical load of:

$$S_c = \frac{12.95 \times 10^3}{L^2} \left(I^3 t^3 \frac{d}{s}\right)^{0.25} \text{ (kips/ft)} \qquad (2.4\text{-}1)$$

where I = panel moment of inertia, in^4/ft. of width
d = corrugation pitch, in. (see Fig. 2.4-1)
s = developed flute width = 2(e + w) + f, in.
L = design length, ft.

Letting $L = 2L_v$, tending toward the lower bound two-span case,

$$S_c = \frac{3.25 \times 10^3}{L_v^2} \left(I^3 t^3 \frac{d}{s}\right)^{0.25} \text{ (kips/ft)} \qquad (2.4\text{-}2)$$

Since buckling is a stability problem, it is recommended that the design value for these cases be based in a 2.0 safety factor. Thus the preliminary design value, from Eqns. 2.2-2, 2.2-4a, or 2.2-5, is to be established using the appropriate load factor. The resulting value should be limited:

$$\text{Design } S \leq 0.5\, S_c \qquad (2.3\text{-}1)$$

2.5 LIMITING CONDITIONS

The quality of a diaphragm can be limited by inattention to detail particularly at edge and end terminations.

End Laps

At interior positions, panels must be sufficiently overlapped to provide adequate end distances for the connector used. A minimum end distance for fasteners used should be one inch requiring an end lap not less than two

* Reference 10 of Appendix II.

inches. Within the system, end laps may be staggered or on a continuous line without particular effect on the diaphragm strength. However, greater care must be exercised in making connections through multiple layers of deck at the panel corners on the end lap. If panels are butted at their ends rather than end lapped, as is common with floor decks, then each panel must be individually connected at its ends with the specified pattern.

Sidelaps

The overlaping edges of panels should be in close contact to allow minimum eccentricity on fasteners in the lap. When stitch fasteners connect adjacent panels between supports, equivalent or superior fasteners should be used on the edgemost panel at the diaphragm perimeter. Otherwise shear strength along the first interior sidelap may exceed that along the perimeter member and thus diminish the contribution of the stitch fasteners.

Welds

Welds should be made by qualified operators following AWS D1.3 Specifications. An approximate field check on quality control is described in Section 4.2.1.1. Welding thin material usually requires a much lower power setting and lower burn-off rate than in heavy steel units. Particular care is required when welding deck to joists in order to avoid damage to joist chords.

Screws

Screws must be installed using properly calibrated tools to avoid overdriving which can strip the threads at sidelaps or sever the screw when it is placed into heavier substrata.

Power Driven Fasteners

These fasteners must be installed following the manufacturer's recommendations. Care must be exercised in setting the driving force to obtain the proper depth of penetration. Once driven properly, these nail-like fasteners are very resistant to extraction by uplift forces. In uplift tests on sheet material, the usual mode of failure is one of tearing the sheet around the head or washer leaving the fastener in place.

Split Panels

Finishing out a diaphragm at its edge may require a split panel at what usually is a higher shear zone in the structure. Formulas of this section may be used to evaluate this special case noting the partial panel width w. Such a partial panel should be connected in every valley at all supports regardless of adjacent fastener patterns. Extra stitch connectors should be considered at the split panel sidelap.

Longitudinal Edges

In applications where joists terminate on a shear wall, the edge-most diaphragm panel may not contact the wall. If intermediate stitch fasteners have been required on sidelaps, similar intermediate fasteners must exist at the edge. These can be accommodated by installing a block-like spacer on the wall, to match the joist elevation, and then making connections to the block. A "collecting angle" may also be used as in Example Problem 6 of Appendix III.

Mixed Panel Lengths

When decks are installed with multiple spans, occasional shorter panels may be required. In a large diaphragm area, the shear strength can be determined satisfactorily by using the typical three span panel length.

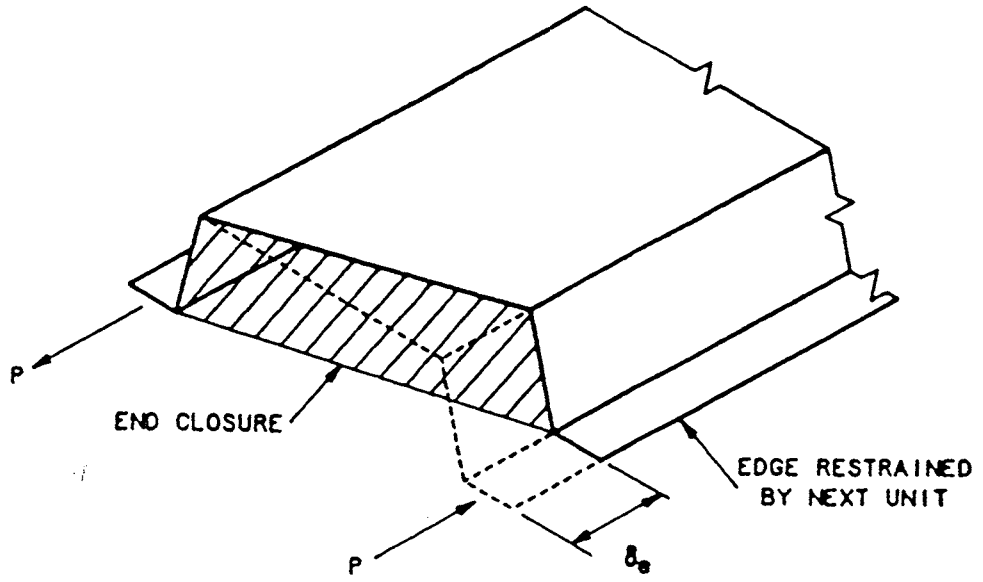
Load Tables

Design load tables, based on Section 2 formulas, are given in Appendix V for typical Steel Deck Institute profiles. The table headings describe the means of connection, the panel width and thickness, span lengths L_v, and the fastening pattern. The left column in any table gives the number of stitch or intermediate connections between structural supports. The tabular values have included the appropriate safety factor and are based in a conservative "three or more" span condition.

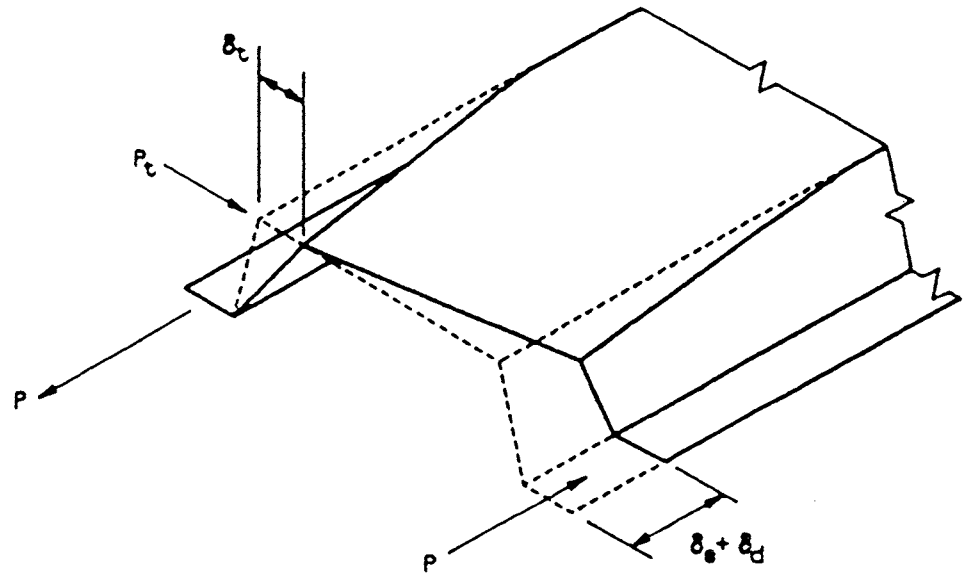
While the appended tables address specific profiles, the formulas on which they are based have been checked against full scale diaphragm tests on decks ranging in depth from five-eighths inches to three inches with thickness from 0.014 inches to 0.064 inches. The design formulas are applicable to these ranges and appropriate design tables can be developed from them.

SECTION 3

DIAPHRAGM STIFFNESS



(a) UNIT RESTRAINED AGAINST END WARPING



(b) OPEN-ENDED UNIT

FIG 3.2-1 SHEAR DISTORTIONS

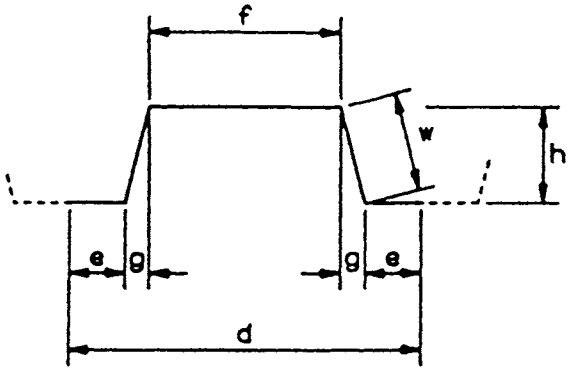


FIG 3.2-2 CORRUGATION DIMENSIONS

3.1 DIAPHRAGM STIFFNESS

The stiffness of a diaphragm is a direct indication of how it distorts under the influence of shear forces in its own plane. The need to know such movement is particularly important when assessing the transfer of forces, through a diaphragm, between adjacent frames or shear walls.

The stiffness of a diaphragm may be measured by testing an assembly such as that in Fig. 2.2-1. As the load P increases, the shear deflection Δ is noted. The average shear strain in the system is $\gamma = \Delta/a$ while the average shear stress within the diaphragm is $\tau = P/Lt$. Following the classic definition for shear modulus:

$$G = \frac{\tau}{\gamma} = \frac{P}{Lt} \cdot \frac{a}{\Delta} \qquad (3.1\text{-}1)$$

Since the diaphragm is not a thick flat plate, its stiffness is not linear with the thickness t. Noting that the average shear in Fig. 2.2-1 is equal either along the panel direction or across the panels:

$$S = \frac{P}{L} = \frac{R}{a} = \frac{Pa}{L} \cdot \frac{1}{a}$$

Then the stiffness G' is defined within the linear test range of P vs. Δ as:

$$G' = \frac{P}{\Delta} \cdot \frac{a}{L} = S\,\frac{a}{L} \qquad (3.1\text{-}2)$$

Typical values for G' in 0.03" thick material may be on the order 50 kips/in. depending on the deck profile and intensity of the connection pattern used. This translates to an effective modulus $G = G'/t = 1667\ k/in^2$, well below that of the base material $G = 11300\ k/in^2$. Roof diaphragms may routinely be an order of magnitude more flexible than flat continuous plates of similar thickness.

3.2 FACTORS AFFECTING STIFFNESS

Consider a corrugated element as in Fig. 3.2-1, to represent a unit width of a diaphragm. As forces P are applied parallel to the edges, shear displacements δ_s ensue. The end closure prohibits changes in the cell geometry through the presence of a restraint P_t and the cell is in virtually pure shear around its girth. Were the end closure effect removed while maintaining P at a fixed level, relaxation would occur through warping and δ_s would increase to $\delta_s + \delta_d$ as shown. For the whole system, Δ_s represents the total shear deflection for all corrugations and Δ_d the sum of all warping relaxations. Then G' could be expressed as:

$$G' = \frac{Pa/L}{\Delta_s + \Delta_d} \qquad (3.2\text{-}1)$$

The introduction of discrete connections at panel side laps further increases the deflection relaxation under load by an amount of Δ_c such that:

$$G' = \frac{Pa/L}{\Delta_s + \Delta_d + \Delta_c} \qquad (3.2\text{-}2)$$

The evaluation of the Δ terms is given detailed treatment in References 18 and 19 of Appendix II. All three terms involve E, t, L, and P and lead to a modified form:

$$G' = \frac{Et}{2(1+\nu)\frac{s}{d} + D_n + C} \qquad (3.2\text{-}3)$$

where E = modulus of elasticity (kips/in^2)
ν = Poisson's ratio, 0.3
D_n = warping constant
C = connector slip parameter
s = girth of corrugation per rib, in.
d = corrugation pitch, in.
t = base metal thickness, in.

3.3 STIFFNESS COEFFICIENTS

The slip coefficient C depends on the shear forces directly at the sidelaps which, in turn, depend on the number and location of fasteners in a panel. For the entire width of a diaphragm:

$$C = \frac{Et}{w} S_f \left(\frac{24\ L}{2\alpha_1 + n_p\alpha_2 + 2\ n_s S_f/S_s}\right) \qquad (3.3\text{-}1)$$

where w = panel width, in.
S_f = structural connection flexibility, in./kip
S_s = sidelap connector flexibility, in./kip
L = panel length, feet
α_1, α_2 = see Section 2.2 definitions.
n_p, n_s = see Section 2.2 definitions.
E = 29500 kips/in^2

It is noted that C depends only on L once a particular profile has been selected and its thickness and fastener arrangement established.

The warping constants D_n measure the warping relaxation at the ends of the diaphragm panels. The warping is smaller with frequently spaced end connections and penetrates the diaphragm less when purlins are more closely spaced.

The solution for D_n may involve a mixture of warping constants D depending on fastener arrangements at panel ends. Reference 18 presents a detailed solution for D values, a summary of which is given in Appendix IV.

For common 1.5 inch deep decks having a 6" pitch and end fasteners located in valleys as indicated:

$$D_n = \frac{D}{12L} \qquad (3.3\text{-}2)$$

Table 3.31. D Values

Type	t (in.)	Valley Spacing: Each	Alternate	Third	Fourth
WR	0.0295	1549	12864	26504	42404
	0.0358	1159	9623	19825	31719
	0.0474	761	6316	13013	20819
IR	0.0295	2712	14589	29131	46128
	0.0358	2028	10913	21790	34505
	0.0474	1331	7163	14303	22648
NR	0.0295	4271	15388	29303	45650
	0.0358	3195	11511	21919	34147
	0.0474	2097	7555	14387	22413

The effect of D_n is reduced to ϕD_n depending on the number of equal spans L_v within the sheet length L. ϕ values are given in Table 3.3-2.

Table 3.3-2. ϕ Values

Spans	1	2	3	4	5	6	7
ϕ	1.00	1.00	0.90	0.80	0.71	0.64	0.58

The final form of G' is presented with each load table in the appendices and, for those cases, its numerical value is obtained by simple substitution. The stiffness formula is based on diaphragm geometry and connector flexibilities in steel diaphragms.

$$G' = \frac{Et}{2.6\left(\frac{s}{d}\right) + \phi D_n + C} \qquad (3.3\text{-}3)$$

3.4 STIFFNESS EXAMPLE

(Refer to Problem 6, Appendix III.)

a. Wide rib deck with t = 0.0295" and 30/4 weld pattern on all supports (See Appendix IV for weld pattern definition.)
b. Three span condition with $L = 3L_v = 18.0$ ft. $n_p = 2$ Int. purlins.
c. 5/8" diameter welds along supports and 2 No. 10 screws per span on all sidelaps.
d. The steel is A446-A with $F_u = 45$ ksi.

Eq. 4.4-1: $S_f = 6.70 \times 10^{-3}$ in/kip

Eq. 4.5.1-2: $S_s = 17.47 \times 10^{-3}$ in/kip

From Table 1. in Appendix IV, $\alpha_1 = \alpha_2 = 1.60$ and n_s = (3 spans)(2 screws /span) = 6.

$$\text{Eq. 3.3-1:} \quad C = \frac{29.5\text{x}10^3(0.0295)(6.7\text{x}10^{-3}/30)(24\text{x}18)}{2(1.60) + 2(1.60) + 2(6)(6.70/17.47)} = 7.63$$

The end fasteners are spaced such that 2/5 of the width is the "single valley" type and 3/5 is of the "third valley" type.

From Table 3.3-1

$$D_1 = 1549 \text{ and } D_3 = 26504$$

and from Table 3.3-2 for the three span case, $\phi = 0.9$. Then for D_n =D/12L,

$$\text{Eq. 3.3-2:} \quad \phi D_n = 0.9 \left(\frac{2}{5} D_1 + \frac{3}{5} D_3\right) \frac{1}{12(18)} = 68.84$$

For Type WR decks, s/d = 1.454, and

$$\text{Eq. 3.3-3:} \quad G' = \frac{29.5 \times 10^3(0.0295)}{3.78 + \phi D_n + C} = 10.8 \text{ kips/in.}$$

Note that the D_n term is very sensitive to D_3 and that very significant increases in stiffness would result from the addition of a single fastener on either end of the panels along their centerlines.

This example shows the method for proportioning the D (warping) values when unequal end-of-panel spaces are encountered. Appendix IV contains a listing from which warping values for profiles may be determined.

For all listed shapes in the diaphragm tables in Appendix V, G' may be found by simple substitution. Three values are listed at the bottom of each table to represent the ϕD_n term for the given fastener layout:

$D_{wr} = \phi D_n$, wide rib deck
$D_{ir} = \phi D_n$, intermediate rib deck
$D_{nr} = \phi D_n$, narrow rib deck

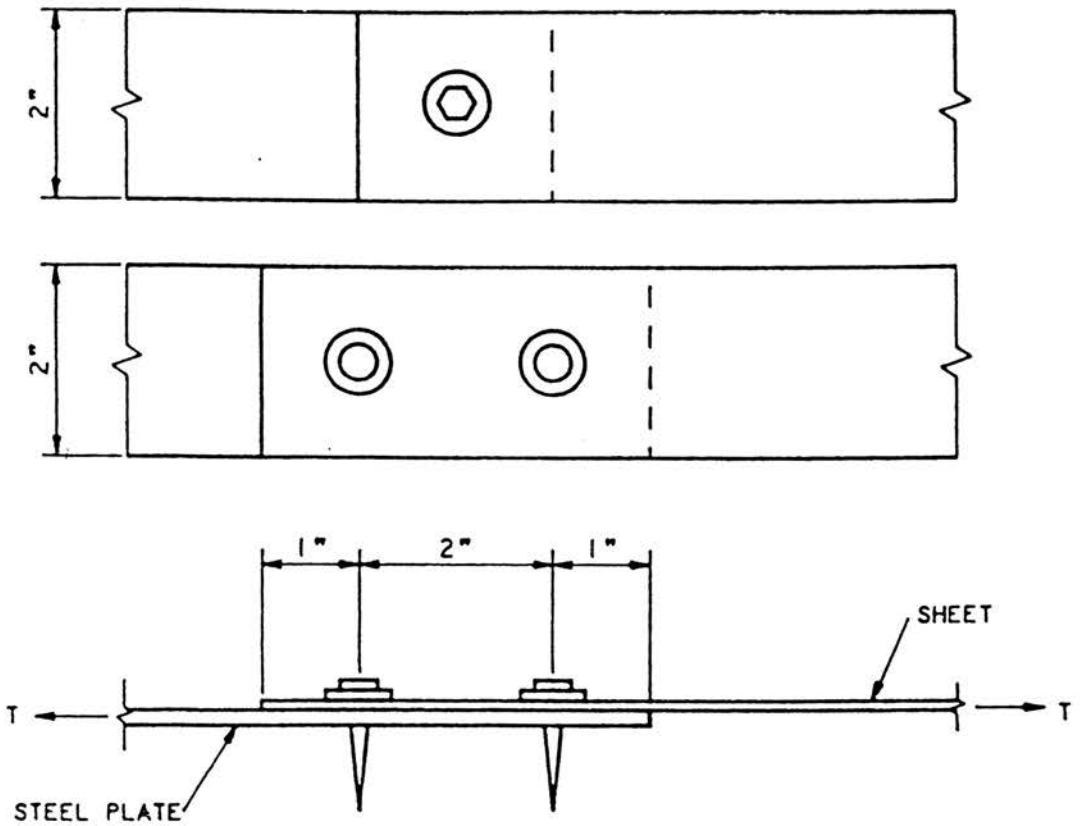
On page V-14, find the 30/4 pattern for t = 0.0295" and

$$G' = \frac{870}{3.78 + 0.3(1377/6) + 3(0.424)6} = 10.8 \text{ kips/in.}$$

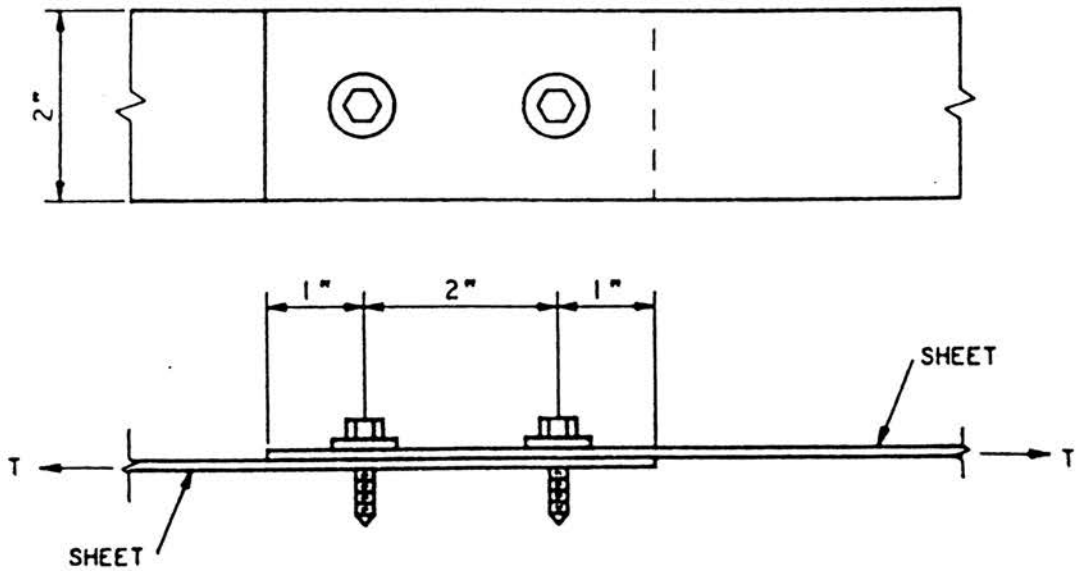
Where the C = 3 L_v(K1), with K1 = 0.424 from the right-most column in the top table, third line.

SECTION 4

CONNECTIONS



SHEET-TO-STRUCTURE CONNECTORS



SCREWS IN SHEET-TO-SHEET (SIDELAP) CONNECTORS

FIG 4.1 CONNECTORS

4.1 CONNECTIONS

The major parts comprising a diaphragm are the deck panels, the structural members to which they are connected, and the connecting devices or fasteners. The fastener types include welds, screws, power driven pins, or other mechanical devices having predictable performance. The strength and stiffness of a diaphragm depend on the panel properties, the span arrangements, and the connection quality. Changes from one type of connector to another affect the diaphragm response only to the degree that connections now exhibit different strengths and stiffness. Thus it is essential to know both the fastener shear strength and shear stiffness.

A twenty-year study, under the sponsorship of the Steel Deck Institute and its member companies, has been made at West Virginia University. These studies have led to specific fastener shear strength values Q and shear flexibilities S. For diaphragm fasteners, the following definitions are used:

Structural Connection. A fastener connecting one or more sheets to heavier frame or structural members. Values for it are indicated by a subscript f.

Sidelap Connection. A fastener connecting adjacent panels to each other but not connecting to the frame members.

Stitch Connection. Same as sidelap connection. Values are denoted by a subscript s.

Superior fastener performance ensues when connected parts are in close contact thus keeping shear eccentricity to a minimum. Individual fastener tests are made by assembling elements as in Figure 4.1. Fasteners are installed as dictated by specifications and the system loaded. During the loading sequence, both the strength and slip are noted.

The test assembly may involve light gage material of similar thicknesses, representing a sidelap or stitch connection, leading to:

Q_s = Individual stitch connector strength, kips
S_s = Stitch connector flexibility, in./kip

When the test specimen involves a thinner unit attached to a heavier unit, representing a structural member,

Q_f = Structural connector strength, kips
S_f = Structural connector flexibility, in./kip

Large groups of tests are conducted to establish repeatibility and the influence of such variables as sheet thickness and yield strength. Cross checks then are made against full scale diaphragm tests. Given that different fastener types have differing stiffness and strength values, one-on-one substitutions may not be possible. The different fastener types may be selected on cost, reliability, or workforce qualifications.

The tests reported in Section 4 have been made using ASTM A611 steels in Grades C, D and E; ASTM A446 steels in Grades A through E; and other miscellaneous steels with known properties. In round welds made without washers, the material strength F_u may not have great significance especially when it is below 60 ksi. The welding operation raises sheet temperatures until metallurgical changes result near the weld impairing strength built in either by cold rolling or other controlled means.

Welds made through weld washers result in the attached sheet being clamped down. The washer absorbs heat, limits burnout of the panel, and affords stability to the sheet under the washer. Weld washers are recommended for panels thinner than 0.0280 inches.

4.2 ARC-SPOT WELDS

Arc-spot welds, or puddle welds, are produced by striking an arc on the upper sheet, forcing a hole to form, while the lower unit is being raised to fusion temperature. With the attainment of proper temperature, the electrode is moved in a pattern until the hole is filled and fusion attained on the arc-puddle perimeter. The relative strength, in a series of welds, can be varied significantly by modest changes in welding times.

4.2.1 ARC-SPOT WELDS TO STRUCTURAL MEMBERS

The welding of thinner sheet materials to heavy structural units requires intimate contact between the units for proper heat transfer. Further, a proper balance between the welding time and the electrode burn-off rate is essential to good quality welding. For base metal thickness t, between 0.0285" and 0.0635", the ultimate strength has been found to be:

$$Q_f = 2.2t\ F_u\ (d-t) \qquad (4.2.1\text{-}1)$$

where d = average visible diameter, in.
limited to a minimum of 0.5 ins.
F_u = specified minimum steel strength, ksi
t = base metal thickness, in.

For typical steel diaphragms using A446-A steels having F_y = 33 ksi, F_u = 45 ksi, and with d = 5/8 inches:

$$Q_f = 99t\ (0.625-t) \qquad (4.2.1\text{-}2)$$

Few connections within the diaphragm penetrate multiple panel layers, and it is required that slightly increased welding times be employed at such locations.

4.2.1.1 ARC-SPOT WELD QUALITY CONTROL

Welding machine power settings required usually are well below those needed for welding in hot-rolled steels. The settings should be such that burn-off rates are between 0.15 and 0.25 inches of rod per second in typical

E60XX or E70XX 5/32 inch rods. The time required per weld may vary between 3 to 6 seconds or more depending on the properties of parts being connected. Heavier substrata require more welding time but increased power settings may burn out the panel faster than electrode material can be deposited.

A preliminary field quality check can be made by placing a pair of welds in adjacent valleys at one end of a panel. An inspection should show the weld material in fused contact over most of the weld perimeter. Spotty contact may indicate power settings that are excessive. The opposite end of the panel can be rotated, within the panel plane, placing the welds in shear, and continued rotation can lead to separation.

a. Separation, leaving no apparent external perimeter distress, but occurring at the sheet-to-structure plane, may indicate insufficient welding time and poor fusion with the substratum.

b. Failure around the external weld perimeter, showing distress within the panel but the weld still attached to the substratum, indicates a higher quality weld.

c. The ending of the welding operation may not permit complete fusion on the whole perimeter. Fusion should be visible over no less than three-quarters of the weld perimeter.

4.2.2 SIDELAP WELDS

In adjacent diaphragm panels with nestable or flat overlapping edges, sheet-to-sheet or stitch connections may be required away from supporting members. The placement of arc spot welds at such sidelaps is difficult and, the thinner the material, the more difficult is the welding operation. Welding of sidelaps is not recommended for material of 0.0295" or thinner. It is quite likely that welding in such thin materials will lead to a hole, which is to be expected, but the perimeter must be fused. Where excellent nesting exists and using well qualified operators, sheet-to-sheet welds have been found to exhibit strengths:

$$Q_s = 0.75\ Q_f \qquad (4.2.2\text{-}1)$$

where

$$Q_f = 2.2t\ F_u(d-t) \qquad (4.2.1\text{-}1)$$

4.3 WELDS WITH WASHERS

The weld washer functions as a heat sink allowing hole formation in thinner panels, without excessive growth of the hole, as substrate temperature is increased. The washer subsequently is filled with the weld stem growing into the substrate and anchored on the washer's hole perimeter. Upon cooling, the washer is clamped down on the attached sheet. Weld washers are recommended for panels thinner than 0.0280 inches.

Extensive studies involving washers of various thicknesses, with different hole sizes, and used on various types of sheet steel have been conducted at West Virginia University (20, 22). An efficiency study involving washers of several different thicknesses, has indicated that 0.060" thick washers are best suited for typical operations. During welding process, the sheet temperature reaches elevated values over an area significantly larger than the weld stem. This leads to local relief of cold-work stresses locked in during panel forming operations. For F_u values between 60 and 120 ksi, no significant influence of F_u was found and the material near the weld behaved as if it were fully relieved. For such washers, the strength was found to be:

$$Q_f = 99\ t\ (1.33\ d_o + 0.3\ F_{xx}t) \qquad (4.3\text{-}1)$$

where d_o = hole diameter, in.

F_{xx} = electrode strength, ksi

t = sheet thickness, in.

Using a 16 gage washer with d_o = 3/8 inches,

E60XX: $Q_f = 99\ t\ (0.50 + 18t)$, kips (4.3-2)

E70XX: $Q_f = 99\ t\ (0.50 + 21t)$, kips (4.3-3)

For washers with elongated or slotted holes one inch long by one-quarter inch wide, and having loads applied parallel to the weld axis,

E60XX: $Q_f = 99\ t\ (0.50 + 36t)$, kips (4.3-4)

It is noted that this slotted weld, at one-quarter inch by one inch, presents a larger weld area than does the three-eighths inch diameter round weld, requires more weld material, and is stronger.

Nominal 5/8" diameter arc welds of good quality are more efficiently obtained in metals thicker than 0.0280" than are welds through washers. Thus washers are not recommended for panels having thicknesses of 0.0280" or greater. In no cases should washers be used at interior sidelaps.

4.4 WELD FLEXIBILITIES

The amount of slip or movement experienced as welds are shear loaded in thin steel elements is very small relative to that for most mechanical connectors. The movement essentially is limited to panel distortion around the weld. The flexibility factors for both arc spot welds and welds through washers is well represented by:

$$S_f = 1.15 \times 10^{-3}/(t)^{0.5} \qquad (4.4\text{-}1)$$

Properly made sidelap welds can have similar distortion in both layers of material and are more flexible:

$$S_s = 1.25 \times 10^{-3}/(t)^{0.5} \qquad (4.4\text{-}2)$$

4.5 SCREW CONNECTIONS

Screw connections, such as Buildex TEKS screws, may be either self-drilling types or the self-tapping types that require a drilled hole for installation. The most commonly used screws are No. 12 and No. 14 sizes though smaller No. 8's and 10's may sometimes be used for sidelap connections. The screw shear strength is dependent on both the screw diameter and the yield strength of the connected sheets.

In connecting thin elements to heavier structural units such as bar joists or beam flanges, little difference exists in the shear strength for No. 12 and No. 14 screws. This is because the failure mode is one in which the sheet material tends to "roll up" on the bearing side of the screw and one or two tearing lines develop in the sheet. This result is obtained for both screw sizes and, for sheet-to-structural steel connections:

No. 12 or No. 14: $Q_f = 1.25\ F_y t\ (1-0.005F_y)$, kips (4.5-1)

For stitch connections between sheets at the sidelaps, a different performance ensues. The screw, not being anchored into a thicker more rigid element, tips over more easily and, thus, is more flexible. Its strength may be limited by bearing-tearing in the sheets or, with sufficient tipping, a tearing-pull out combination.

The SDI screw studies indicate that stitch screw shear strength is virtually independent of F_y in all steel panels commonly used as deck diaphragms.

Stitch Screws: $Q_s = 115\ dt$, kips (4.5-2)

where d = major diameter, in.

For the stitch screws studied, the following data were obtained:

Size	d (in.)	Q_s (kips)
8	0.1635	18.8t
10	0.1867	21.5t
12	0.2111	24.3t
14	0.2477	28.5t

4.5.1 SCREW FLEXIBILITIES

For No. 12 and No. 14 Buildex TEKS screws connecting sheets to heavier substrate material:

$$S_f = 1.3 \times 10^{-3}/(t)^{0.5},\ \text{in./kip} \qquad (4.5.1\text{-}1)$$

For stitch screw specimens, the load-slip curve stays virtually linear and constant at lower loads. The use of larger screws only leads to a later deviation from the curve. Thus:

$$S_s = 3 \times 10^{-3}/(t)^{0.5},\ \text{in./kip} \qquad (4.5.1\text{-}2)$$

4.5.2 SCREW QUALITY CONTROL

The quality of the screw itself is not a major problem though they can sometimes fracture while being driven into heavier substrata. The more common problem is one of allowing the screw to thread-up on the upper sheet before becoming engaged in lower sheets thus leaving major eccentricities between units. Such screws should be removed and redriven nearby while forcing sheet layers to remain in contact.

4.6 POWER DRIVEN FASTENERS

Sheet-to-structural connections can be made using nail-like pins, driven either with pneumetic devices or using powder actuated tools. Such fasteners are made from hardened steel and usually have heat treated knurled shafts to enhance anchorage. The shaft may have a slight taper and can be fitted with washers, concave to the driving direction, to absorb the final driving energy and thus clamp the sheet in position.

Since there are no predrilled holes, the driving operation displaces material and leaves it locked under washers resulting in a very stiff connection. The driving depth is controlled by the power selection for the tool used. Fastener strength is controlled by driving depths. These can be determined by measurements on the fastener, after driving, and they are set by the manufacturer.

The studies made at West Virginia University have involved tests wherein the back-up plates (see Fig. 4.1) were 3/16", 1/4", 5/16" cold rolled A36 straps or thicker wide flange beams (13, 21, 22). The backing element thickness has virtually no effect on shear strength since the thinner sheet material will control performance through its bearing on the pin diameter. Within sheet thicknesses between 0.024" and 0.1006", bearing controlled shear failures did not develop across the fastener diameter.

Ramset 26SD: $Q_f = 62.5t\ (1\text{-}5t),\ \text{kips}$ (4.6-1)

$$S_f = 2.5 \times 10^{-3}/(t)^{0.5},\ \text{in./kip} \qquad (4.6\text{-}2)$$

Hilti

ENP2-21-L15 & $Q_f = 61.1t\ (1 - 4t),\ \text{kips}$ (4.6-3)

ENP3-21-L15: $S_f = 1.25 \times 10^{-3}/(t)^{0.5},\ \text{in./kip}$ (4.6-4)

Hilti ENKK: $Q_f = 52.0t\ (1\text{-}3t),\ \text{kips}$ (4.6-5)

$$S_f = 1.56 \times 10^{-3}/(t)^{0.5},\ \text{in./kip} \qquad (4.6\text{-}6)$$

These formulas apply for sheet thicknesses between 0.024" and 0.060". When these fasteners are used in full-hard steels, such as ASTM A611E, higher shear values may result.

4.6.1 QUALITY CONTROL

A driven fastener should be installed such that the head projects outward, from the attached part, to limits set by the manufacturer. The axis of the fastener must be substantially perpendicular to the sheet prior to driving, usually within ± 10°.

The Q_f and S_f values in Section 4.6 were established using the Fig. 4.1 test arrangement. However, when placing pins at the edge of overlaps in a diaphragm, the available flat width is limited. In full scale diaphragm tests, the distances from the pin center to the edge of a sheet were kept at or larger than 3/8 inches. At end laps, the end distance was kept at or greater than one inch. Thus, it is recommended that edge and end fasteners have:

Minimum sidelap edge distances: 3/8 inches
Minimum end/endlap distance: 1.0 inches

4.7 BUTTON PUNCHED SIDELAPS

In certain panels, one edge has an upstanding single element while the opposite side has a folded-over double element. As panels are placed, the single element is inserted into the double element producing an upstanding sidelap that can be button punched for some interlocking. The tool used forms a three layer nest of small cones that is left in a slightly loose state, due to elastic rebound, as the forming force is removed.

Button punched sidelaps do stabilize panel edges but, otherwise, may contribute little to diaphragm strength. They can vary greatly in shape and effectiveness. Typical values from well controlled diaphragm tests at West Virginia University have led to strength and stiffness values of:

$$Q_s = 240\ t^2,\ \text{kips} \qquad (4.7\text{-}1)$$

$$S_s = 30 \times 10^{-3}/(t)^{0.5},\ \text{in./kip} \qquad (4.7\text{-}2)$$

In a typical 0.0295" thickness, Eq. 4.7-1 yields a 0.209 kips strength which is about 30% of the strength with a No. 12 stitch screw. The flexibility is several times greater than that for a No. 12 screw.

The quality of button punching is difficult to maintain; the attachment depends on the care and the energy used by the installer and the tool that is used. A conservative approach for using the tables in Appendix V for diaphragms with button punched sidelaps is to consider the button punches as having zero strength and then use the first line in each table. If a totally controlled mechanical punching device is developed, the strength and stiffness values can be established and appropriate load tables generated.

Diaphragms, required to resist higher shears, may be required to have structural connections immediately to either side of the upstanding sidelap at supports. Otherwise, the majority of shear force will be transmitted across panel edges through the button punches only. (See Fig. 16 of Appendix III.)

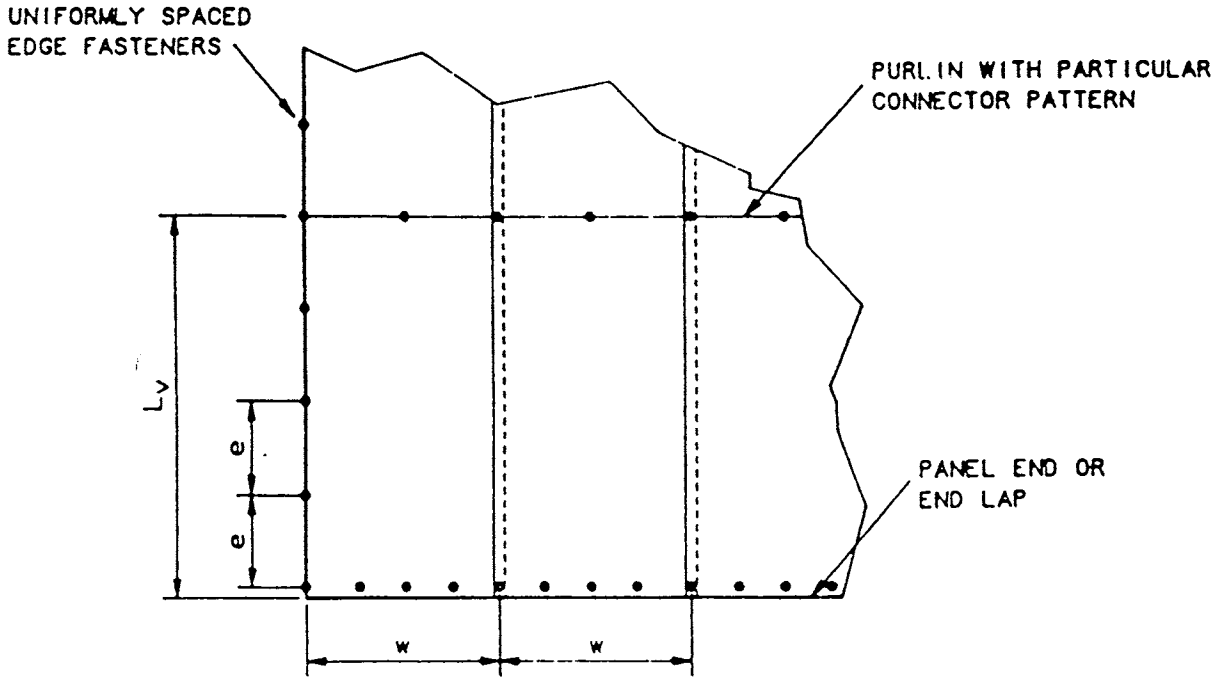
4.8 OTHER CONNECTIONS

The diaphragm studies have included fasteners other than those described in the preceding sections. Included were various sizes of pneumatically driven pins, screws with plastic covered heads, and blind rivets similar to pop-rivets. Given their individual strength and stiffness, their influence in diaphragms is equally as predictable as is that of the connections reported.

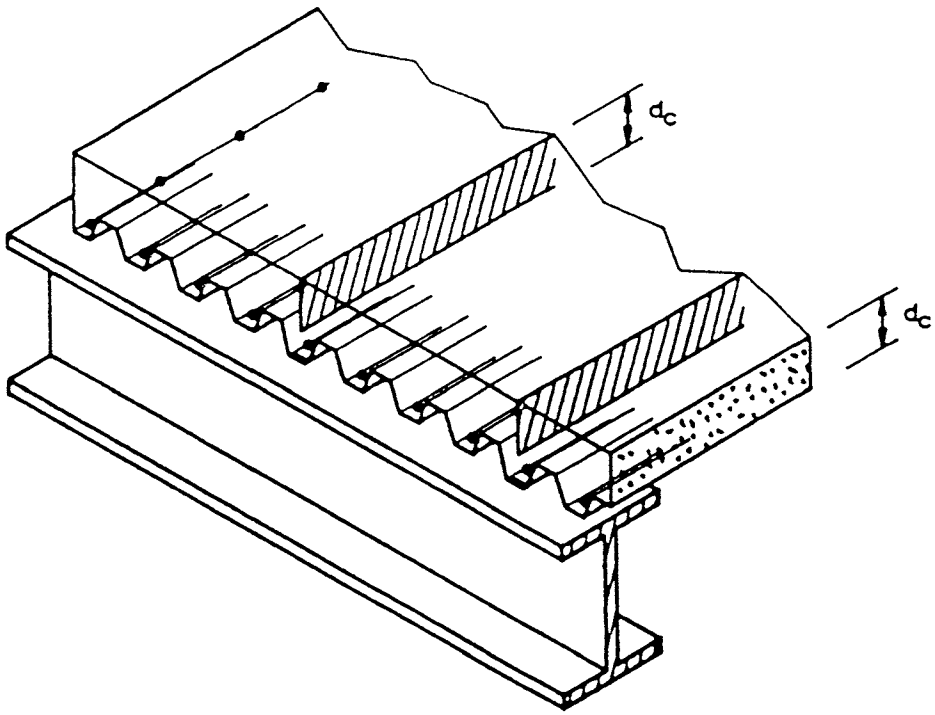
The introduction of some new connector for diaphragms requires that its strength-stiffness be found. Diaphragm design using it then can be accomplished directly. Full scale testing, as might be required, then is in the proper role of confirming expected performance.

SECTION 5

CONCRETE FILLED DIAPHRAGMS



(a) PANEL LAYOUT AND FASTENER ARRANGEMENT



(b) CONCRETE FILLED DIAPHRAGM SHOWING
COVER DEPTH OVER CORRUGATION CRESTS.

FIG 5.1

5.1 Concrete Filled Diaphragms

Steel diaphragms may be reinforced with overlayments of insulating concrete, structural concrete, or by directly attached flat panels used to produce a flat surface. Such devices present additional paths through which shear forces may traverse the diaphragm. Consider the diaphragm segment shown in Fig. 5.1 where the shaded areas are shear zones in the concrete above the steel deck. The shallowest zone above the corrugation top would present a shear area of 12 d_c in^2/foot along the sidelap. The concrete which fills the corrugations, prohibits or limits end warping and local corner buckling. Without local warping, the λ term of Eq. 2.2-4a would approach unity.

Concrete ultimate shear strengths for deep webs are reported in the form $V_u = kd_cb\ (f'_c)^{0.5}$ where k is a factor ranging up to about 3 and d_cb is the "web area" available for shear transfer (29). For the interior areas of a diaphragm, the shear strength takes the form:

$$S_u = BQ_f/L + 12\ kd_c(f'_c)^{0.5} \qquad (5.1\text{-}1)$$

where BQ_f/L = See Eq. 2.2-4a definitions

d_c = concrete cover depth

f'_c = concrete compressive strength, psi

k = test constant.

5.2 Insulating Concrete

Lightweight insulating concretes, with vermiculite aggregate, are used over "centering" type corrugated galvanized decks. Tests using a minimum d_c of 2.5" (15) have shown that the diaphragm shear strength, away from the perimeter, is increased above that of the base diaphragm to:

Type I $$S_u = \frac{BQf}{L} + 0.016\ d_c\ (f'_c)^{0.5} \quad (k/ft.) \qquad (5.2\text{-}1)$$

In certain constructions, a layer of insulating concrete is placed to a level slightly above corrugation crests. Rigid insulation boards of expanded cellular polystyrene, having about 2% of the area containing holes, are then embedded into the concrete and the excess concrete moves into the openings. A topping coat of two or more inches of similar concrete then is used to finish the diaphragms. Such diaphragms (34, 35) have been found to exhibit interior shear strengths of at least

Type II $$S_u = BQ_f/L + 0.064\ (f'_c)^{0.5} \quad (k/ft.) \qquad (5.2\text{-}2)$$

The types of welding and perimeter member connections may vary or cover depths may be increased leading to higher shear values. However, as a minimum, the following shear strengths are to be used for Types I and II assemblies:

Type I $$S_u = BQ_f/L + 0.040\ (f'_c)^{0.5} \quad (k/ft.) \qquad (5.2\text{-}3)$$

Type II $$S_u = BQ_f/L + 0.064\ (f'_c)^{0.5} \quad (k/ft.) \qquad (5.2\text{-}4)$$

5.3 Structural Concrete

The effect of adding normal or lightweight structural concrete to a steel diaphragm may greatly increase shear strength given sufficient perimeter attachments to transfer forces across the diaphragm perimeters. With greater concrete cover depths, the interior shear strength can approach that for a reinforced flat slab of thickness d_c. For composite floor deck diaphragms having cover depths between 2" and 6", measured shear stresses on the order of $3.5\ (f'_c)^{0.5}$ over the shear area d_cL have been reported (25). Shear increases with depth and methods of attachment but as a minimum for decks having at least d_c = 2.5" and 6x6-W1.4xW1.4 mesh reinforcement,

$$S_u = BQ_f/L + \frac{w^{1.5}(f'_c)^{0.5}}{19500} \quad (k/ft.) \qquad (5.3\text{-}1)$$

where w = concrete weight, pcf.

5.4 Perimeter Connections.

The perimeter connections at the extreme ends of the panels are spaced as dictated by the B term in Eq. 5.3-1. However, since the concrete fill may add significantly to the strength within the system, it may be necessary to increase the number or strength of perimeter connections in order to develop strengths indicated in Eq. 5.3-1. If the full strength is needed, perimeter edge fasteners must be spaced no greater than

$$e = 12\ Q_f/S_u \ (in.) \qquad (5.4\text{-}1)$$

with e not to exceed 30" when L_v is 5'-0" or more. If the design shear is less than the maximum $S_u/3.25$, where 3.25 is the Section 5.7 load factor, fewer connections may be required and

$$e = \frac{12\ Q_f}{3.25S} \ \leq\ 30" \qquad (5.4\text{-}2)$$

5.5 Stud Connections.

Perimeter connections may include shear studs extending into the concrete leading to enhanced shear strength. Stud ultimate shear strength values may be used in Eq. 5.4-1 to substitute for part or all of the perimeter connections. The AISC Manual of Steel Construction assigns stud working shear values and reduction coefficients to account for their being placed through steel deck profiles. (Refer to Example Problem 16 in Appendix III.)

5.6 Stiffness and Deflections

The presence of concrete fill over the corrugated shape of a diaphragm substantially eliminates panel end warping for loads within the design range. Thus the ϕD_n term of Eq. 3.3-3 approaches zero. Further, the steel panel shear force is proportionately smaller with the added concrete shear resistance and the total stiffness is increased to,

$$G' = \frac{Et}{2.6(\frac{s}{d}) + C} + 3.5\, d_c (f'_c)^{0.7} \qquad (5.6\text{-}1)$$

5.7 Load Factors

Composite diaphragms typically are assembled from welded steel deck diaphragms having a 2.75 recommended load factor and a supplemental covering material. Noting that the combination of elements can lead to increased variability, the composite diaphragm ultimate shear strengths are to be divided by a load factor of 3.25 to arrive at working shear values.

5.8 Other Systems

Systematic attachment of rigid flat panels to the top corrugations of a diaphragm can increase both diaphragm strength and stiffness. Such panels can include mineral boards (20) or other flat panel units suitable to receive an upper finish. Properly located attachments through the panels and into the tops of deck corrugations, particularly on the diaphragm perimeter, limit warping and increase shear stiffness. The flat elements themselves provide additional shear transfer paths. Testing may be required for determining system shear values.

APPENDIX I

SYMBOLS

APPENDIX II

REFERENCES

APPENDIX I. Symbols

a	Diaphragm width perpendicular to panel span direction - may be taken as equal to joist length for finding G' or S_u
C	Slip relaxation constant
d	External diameter of arc-spot weld, in.
D, D_n, D_m	Panel warping constants, or
D	Panel depth, in.
d	Corrugation pitch, in.
E	Modulus of Elasticity, 29500 ksi
F_y	Panel yield strength, ksi
F_u	Panel ultimate strength, ksi
F_{xx}	Electrode strength, ksi
G	Elastic modulus in shear, ksi
G'	Diaphragm shear stiffness, kips/in.
I	Panel moment of inertia, $in.^4$ per foot of panel width.
K_1	Slip relaxation constant
L	Panel length, ft.
L_v	Purlin or joist spacing, ft.
M_e, M_p	Resisting shear couples at panel ends and purlins
n_e	Number of intermediate sheet-to-structure connections per panel length and between purlins at the diaphragm edge
n_p	Number of purlins in length L excluding those at ends and end laps
n_s	Number of intermediate side lap connections in length L per panel sidelap
n_{sh}	The number of panels in the width a
N	The average number of connectors per foot along panel ends
P_u	Diaphragm strength, kips
Q_f	Fastener strength, panel-to-frame, kips

Q_S	Fastener strength, panel-to-panel, kips
q_W, q_L, q_E	Line loads at diaphragm edges
R, R_L, R_W	Diaphragm reactions
S	Average shear or design shear, kips/ft.
S_f, S_s	Fastener flexibility factors
S_u	Ultimate shear, kips/ft.
s	Developed width of corrugation per pitch d
t	Base metal thickness, in.
w	Panel width, in.
x_e	Distance from panel centerline to fastener at end support, in.
x_p	Distance from panel centerline to fastener at purlins, in.
α_1, α_2	Fastener weighting factors
γ	Shear strains
Δ	Total shear displacement = $\Delta_s + \Delta_c + \Delta_e + \Delta_m$, in.
ϕ	Purlin effect factor on warping
υ	Poisson's Ratio
τ	Shear stress

APPENDIX II

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APPENDIX III

SHEAR DIAPHRAGM EXAMPLES

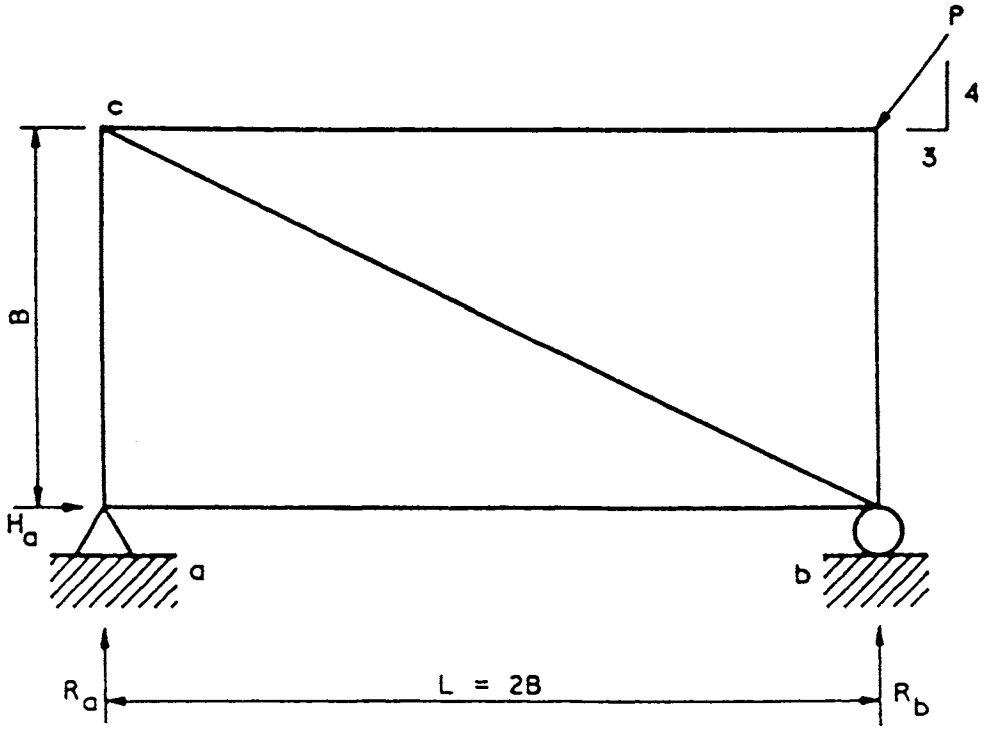


FIG 1.1

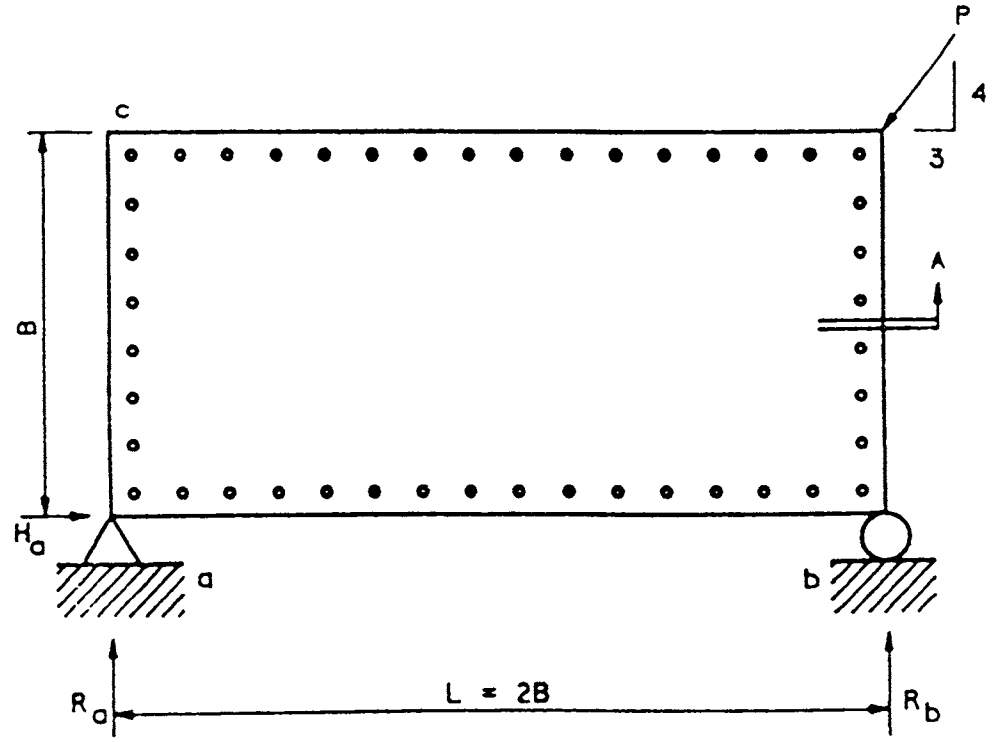
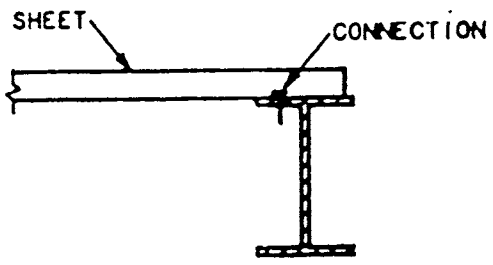


FIG 1.2



SECTION - A

APPENDIX III

SHEAR DIAPHRAGM EXAMPLES

Introduction. The following series of design examples are arranged to illustrate selected problems encountered in the use of diaphragms. The more common problems usually are not in the assessment of either strength or stiffness but in the structural analysis itself and particularly in the determination of deflections. For indeterminate structural systems, it is essential to know displacements else the proper assignment of force distribution through the system may not be possible.

The first five examples introduce simple behavioral concepts including simple methods of deflection calculations. The remaining examples focus more toward design evaluations and, necessarily, they are limited to a specific loading condition. The assumed loading conditions are for illustrative purposes. A specific building design must be based on its own design loads which may come from any direction.

Example 1. Behavior. The rectangular areas of Figs. 1.1 and 1.2 have different shear transfer systems. Compare the two when all perimeter areas are pin-connected at their ends. P = 15 kips

a. Components of P, Horizontal: $P_h = \frac{3}{5}(15) = 9$ kips

Vertical: $P_v = \frac{4}{5}(15) = 12$ kips

Find: $H_a = 9$ kips, $R_a = 4.5$ kips, and $R_b = 7.5$ kips

b. Truss. The truss diagonal has a horizontal component of 9 kips and a vertical component of 4.5 kips resulting in a tension force of 10.06 kips. The <u>average shear</u> across the panel is, parallel to L,

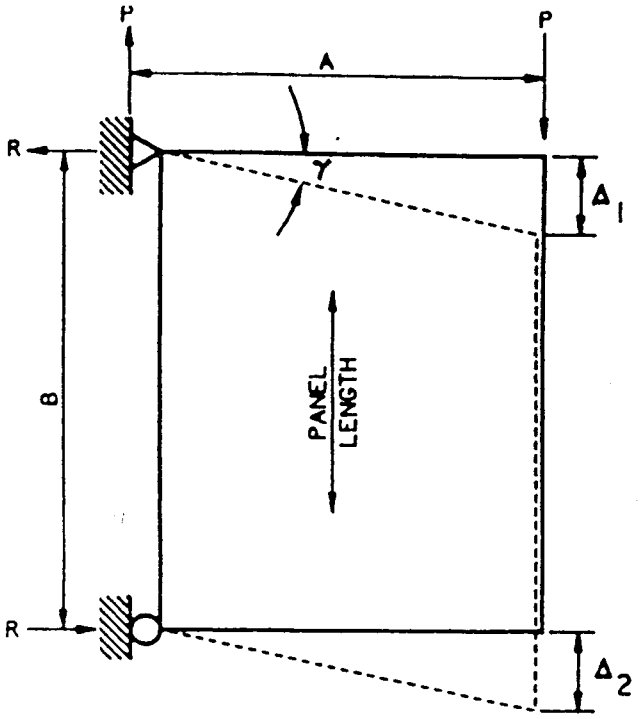
$$S = 9/2B = 4.5/B$$

and parallel to B, $S = 4.5/B$, an equal value.

c. Diaphragm. The diaphragm resists distortion of the rectangular area as does the diagonal member in the truss. The average shears along both the long and short dimensions are:

$$S = H_a/2B = R_a/B = 4.5/B$$

Notes: The perimeter members are integral parts of the system and must be stable in order to transfer forces through the system. Given the diaphragm stiffness properties, its deflection under load can be precisely modeled by a properly arranged truss. (See Example 3.)



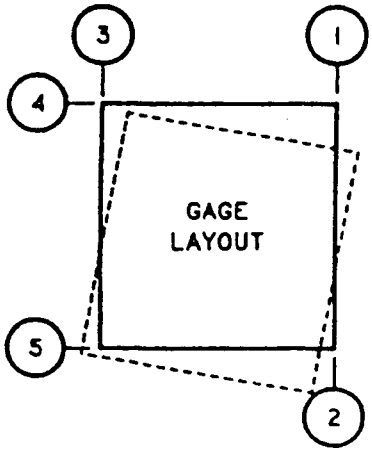


FIG 2.1

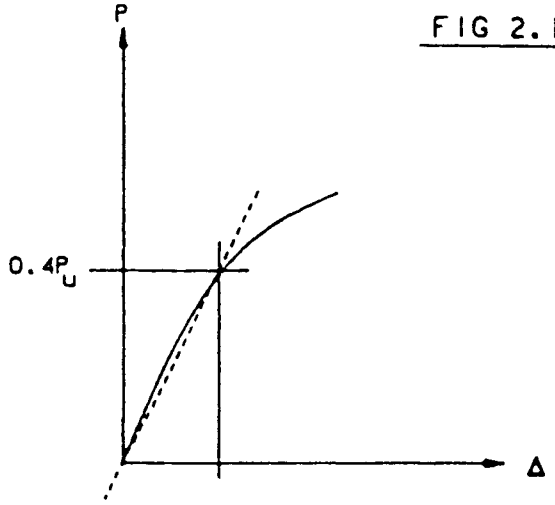


FIG 2.2

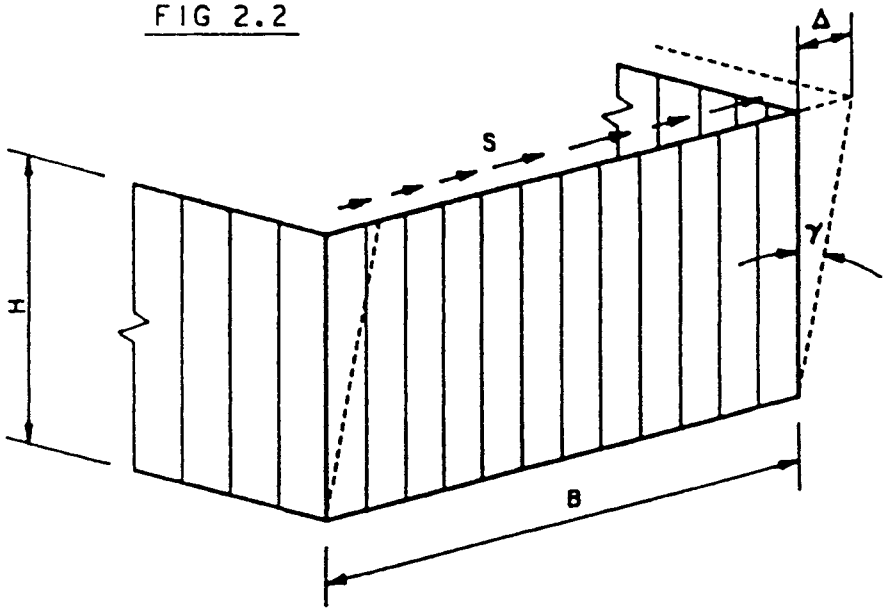


FIG 2.3

Example 2. Stiffness. A diaphragm of width A and length B is to be tested to confirm predicted strength and stiffness values. Figure 2.1 indicates the shape of the assembly.

a. For various stages of the gradually applied load P, record all corner movements as indicated by the gage layout. Gages 3, 4, and 5 will indicate any movement of the supports which must be removed to arrive at the actual shear deflection. Δ_1 will be virtually identical to Δ_2 noting that axial strains in the perimeter members will be small. Find the net shear deflection to be:

$$\Delta = \frac{g_1 + g_2}{2} - g_3 - \frac{A}{B}(g_4 + g_5)$$

where g values are the net movements at each gage position.

b. Plot P vs Δ as in Fig. 2.2. G' is defined relative to the slope of the line through 0.4 P_u, in the substantially linear range. For small angles, the angle γ of Fig. 2.1 and its tangent are essentially equal. Then,

$$G' = \frac{S}{\gamma} = \frac{P/B}{\Delta/A} = \frac{P}{\Delta}\frac{A}{B} \quad \text{with } P = 0.4P_u$$

$$S_u = \frac{P_u}{B} = \frac{R_u}{A}$$

P_u = ultimate observed load

Notes: The <u>average shears</u> are identical either parallel to A or B. Stiffness depends, among other factors, on panel length and the fastener patterns. Had the panels spanned a shorter dimension A, a different stiffness value could have developed.

c. Suppose G' = 20 kips/in, find the displacement Δ in the wall system of Fig. 2.3. The analysis has led to S = 150 lbs/ft along the wall top. The wall is 18 feet high and 42 feet wide.

$$G' = \frac{S}{\gamma} = \frac{S}{\Delta/H} \quad \text{or} \quad \Delta = \frac{SH}{G}$$

$$\Delta = \frac{(0.150 \text{ k/ft})(18 \text{ ft})}{20 \text{ k/in}} = 0.135 \text{ in.}$$

Note: A structural member must exist at the top and bottom of the wall along B for continuous shear transfer.

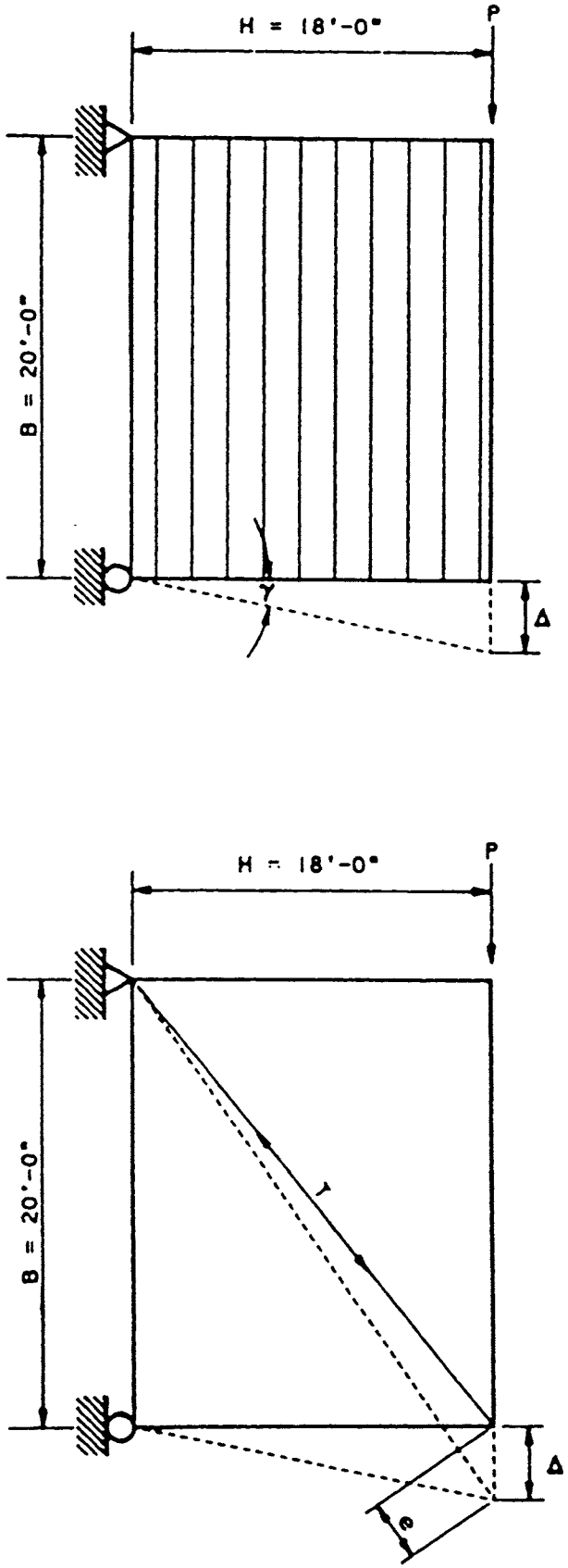


FIG 3

Example 3. **Truss Analogy.** A diaphragm area of 18' x 20' has been found to have stiffness of 15 k/in and an allowable shear S = 200 plf. Find the shear deflection and compare the evaluation to deflections in a truss of similar size. P = SB = 4.0 kips.

a. $G' = \frac{P}{\Delta} \cdot \frac{H}{B}$; $\Delta = \frac{4.0}{15} \cdot \frac{18}{20} = 0.240$ in.

b. Consider the Fig. 3 truss as having pinned connections and a 0.75" diameter steel rod diagonal of area A_d. The four perimeter members are presumed to have very large areas relative to A_d as often is the case with supplemental bracing. Then,

$L_d = (H^2 + B^2)^{0.5} = 26.91$ ft. = 323 in.

$A_d = 0.442$ in^2 ; $T = \frac{L_d}{B} P = 5.38$ kips

$e = \frac{T}{E} \frac{L_d}{A_d} = \frac{5.38\ (323)}{29500\ A_d} = \frac{0.0589}{A_d} = 0.133"$

$\Delta = \frac{26.91}{20.00} (0.133) = 0.179"$

c. Find the area A_d required for the truss to have $\Delta = 0.240"$.

$\Delta = \frac{26.91}{20.00}\ e = \frac{26.91}{20.00} (\frac{0.0589}{A_d}) = 0.240"$

Then $A_d = 0.330$ in^2

d. Suppose the systems in a and b were used jointly, find the final displacement and how the load is shared:

Truss: $G'_t = \frac{P}{\Delta} \cdot \frac{H}{B} = \frac{4}{0.179} \cdot \frac{18}{20} = 20.11$ k/in

Diaphragm: G' = 15 k/in and the combined stiffness is (15 + 20.11)k/in.

then $P_t = \frac{20.11}{20.11+15} (P) = 2.29$ kips

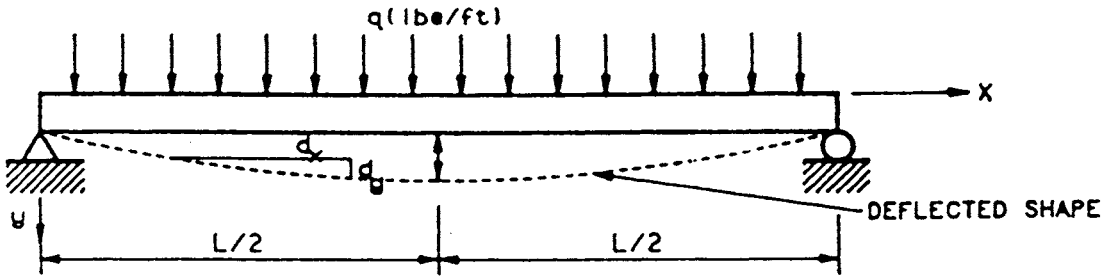
By scale from the previous answer:

$$\Delta = 0.179 (\frac{2.29}{4}) = 0.103 \text{ in.}$$

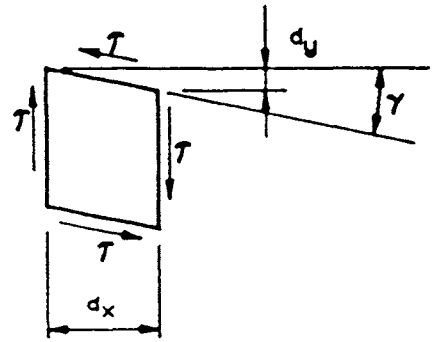
Diaphragm: $P_d = \frac{15}{20.11+15} P = 1.71$ kips

$$\Delta = \frac{1.71}{15} (\frac{18}{20}) = 0.103 \text{ in.}$$

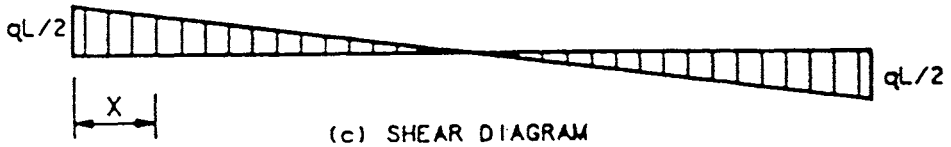
Note: In mixed systems, loads are shared in proportion to the relative stiffnesses. Further it can be seen that a single diagonal could be used to model the stiffness of a diaphragm.



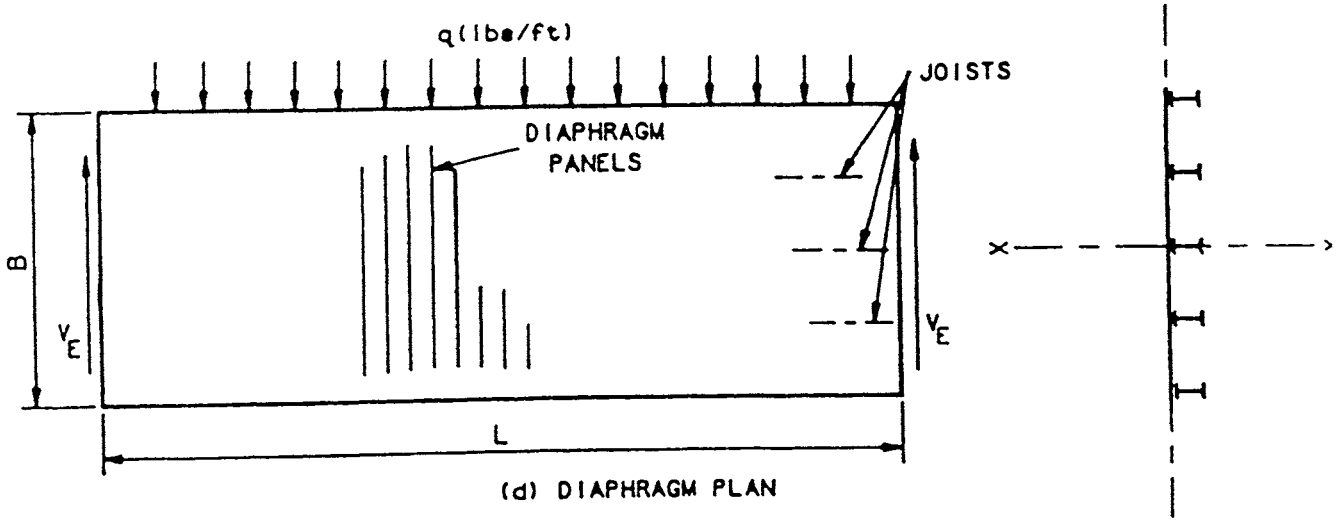
(a)



(b) SHEAR ELEMENT AT X



(c) SHEAR DIAGRAM



(d) DIAPHRAGM PLAN

FIG 4

Example 4. **Deflections.** The diaphragm of Fig. 4d represents the roof diaphragm indicated in Fig. 1.1-1 where q is the total line load from both the windward and leeward walls. Find the deflection at x = L/2 given:

$q = 0.200$ kips/ft.; $B = 40$ ft., $L = 125$ ft., $G' = 30$ k/in.

Joist beams at 10' centers each with area $A = 10$ in^2

$$V_E = \frac{qL}{2} \text{ and } S_{max} = \frac{V_E}{B} = \frac{0.200\,(125)}{2(40)} = 0.312 \text{ kips/ft.}$$

Consider the moment of inertia conservatively as being comprised from the two outermost joists only. Then,

$$I = 2A\,(B/2)^2 = 2(10 \text{ in}^2)\left(\frac{40'}{2} \times 12 \frac{\text{in}}{\text{ft}}\right)^2 = 1.15 \times 10^6 \text{ in.}^4$$

Bending deflection:

$$\Delta_B = \frac{5\,qL^4}{384\,EI} = \frac{5(0.200)(125)^4(1728)}{384(29500)(1.15\times10^6)} = 0.032 \text{ in.}$$

Shear Deflection. From Example 2, the shear strain γ is,

$$\gamma = \frac{S}{G'} = \frac{dy}{dx}\text{, the slope of the shear deflected shape.}$$

At any x in Fig. 4c, the average shear across the diaphragm is,

$$S = \left(\frac{qL}{2} - qx\right)\frac{1}{B}$$

and

$$\frac{S}{G'} = \frac{dy}{dx} = \frac{q}{B}\,\frac{1}{G'}\,\left(\frac{L}{2} - x\right)$$

$$\Delta_S = \int_0^{0.5L} dy = \int_0^{0.5L} \frac{q}{2B}\,\frac{1}{G'}\,(L - 2x)\,dx$$

$$= \frac{qL^2}{8BG'} = \frac{0.200(125)^2}{8(40)(30)} = 0.326 \text{ in.}$$

The total deflection calculated as $\Delta = 0.032 + 0.326 = 0.358$ in.

Note that the Δ_B value is based in the beam theory requiring the "beam" to be several times longer than it is deep and which theory presumes a G' stiffness an order of magnitude greater than is common in diaphragms. (See Section 3.1.) Further note that, even if a bending theory were applicable, the $I = 1.15 \times 10^6$ in.^{4} may be considerably too small. The more correct deflection then is:

$$\text{design } \Delta_{max} = 0.326 \text{ inches}$$

Stiffness and Flexibility. Some design manuals specify diaphragm flexibilities for the purpose of finding displacements (31). Using the Fig. 4d diaphragm, compare the cited Canadian reference to SDI stiffness values.

Canadian	SDI
L = 125 ft.	L = 125 ft.
w = 200 lbs/ft.	q = 0.200 k/ft
D = 40 ft. (depth)	B = 40 ft. (depth)
R = WL/2 = 12500 lbs.	V_e = qL/2 = 12.5 kips
Avg. $v = \frac{1}{2}\frac{R}{D}$ = 156.25 lbs/ft.	
F = 33.33 in/lb.	G' = 30 k/in
$\Delta_w = \frac{vLF}{2 \times 10^6}$ = 0.326"	$\Delta = \frac{qL^2}{88G'}$ = 0.326"

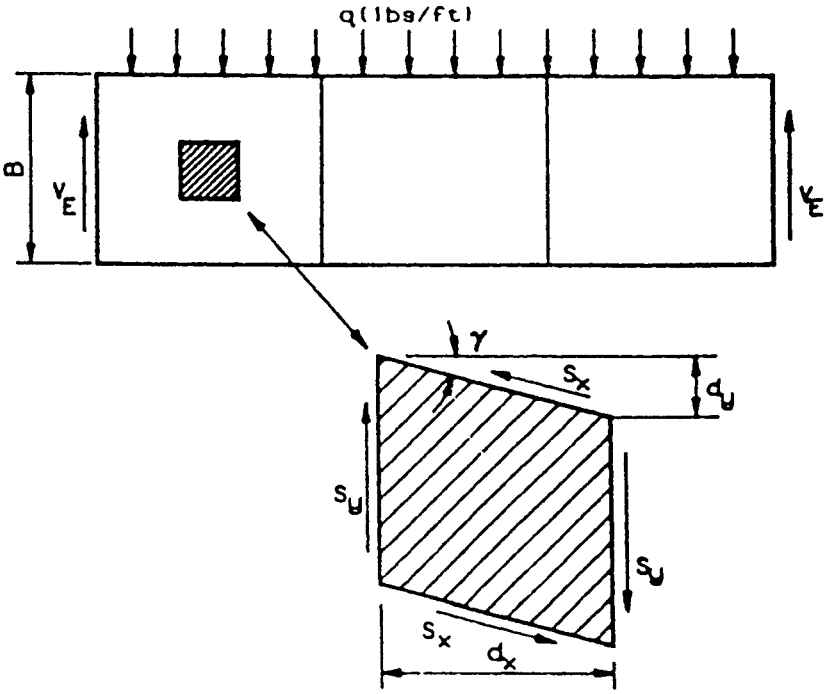
Then $\frac{vLF}{2 \times 10^6} = \frac{R}{2D}\ \frac{LF}{2 \times 10^6} = \frac{WL}{4D} \cdot \frac{LF}{2 \times 10^6} = \frac{qL^2}{88G'}$

But noting that B = D, $wF = 10^6\ q/G'$

Since q is in k/ft, $F = 10^3/G'$

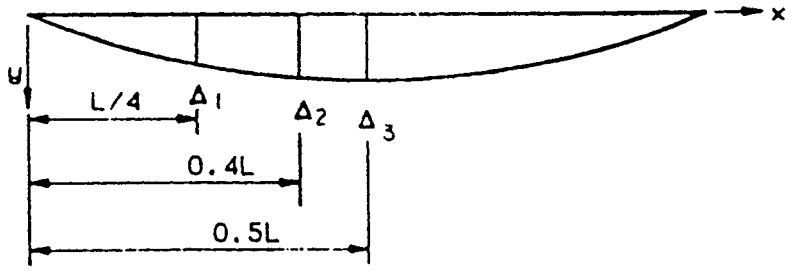
Some authorities define diaphragms as in the following list which shows direct comparisons.

	F (in/lb.)	SDI G' (k/in.)
Flexible	70 to 150	14.3 to 6.67
Semi-flexible	10 to 70	100 to 14.3
Semi-rigid	1 to 10	1000 to 100
Rigid	less than 1	over 1000

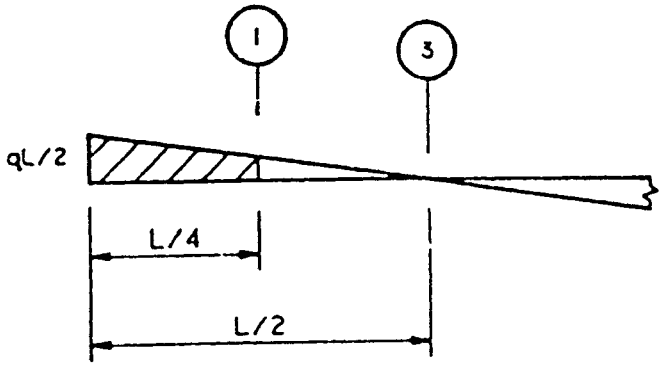


(a)

(b)



(c)



(d)

FIG 5 SHEAR DEFLECTIONS

Example 5. Simplified Deflections. The general deflection for a very long and narrow diaphragm may be found from the general equations:

$$\text{Bending:} \quad \frac{d^2y}{dx^2} = -\frac{M}{EI} \tag{a}$$

$$\text{Shear:} \quad \frac{dy}{dx} = \frac{V}{BG'} \tag{b}$$

where: V = total shear force across B at any x of Fig. 5

with dv/dx = -q, the general equation is:

$$\frac{d^2y}{dx^2} = -\frac{1}{EI}\left(M + \frac{q\,EI}{BG'}\right)$$

For a uniformly loaded diaphragm, on a simple span, the maximum deflection at x = L/2 is:

$$\Delta = \frac{5qL^4}{384\,EI} + \frac{qL^2}{8BG'} \tag{c}$$

It is important to note that the bending term presumes plane section bending and, further, a length of "several times" the depth is expected. Equation (a) simply is not applicable to most diaphragms because they are short, deep, and shear sensitive.

The second term of Eq. (c) may be compared to the area enclosed by half the shear diagram of Fig. 5b where the area is $(qL/2)(L/2)(1/2) = qL^2/8$. Referring to Example 4,

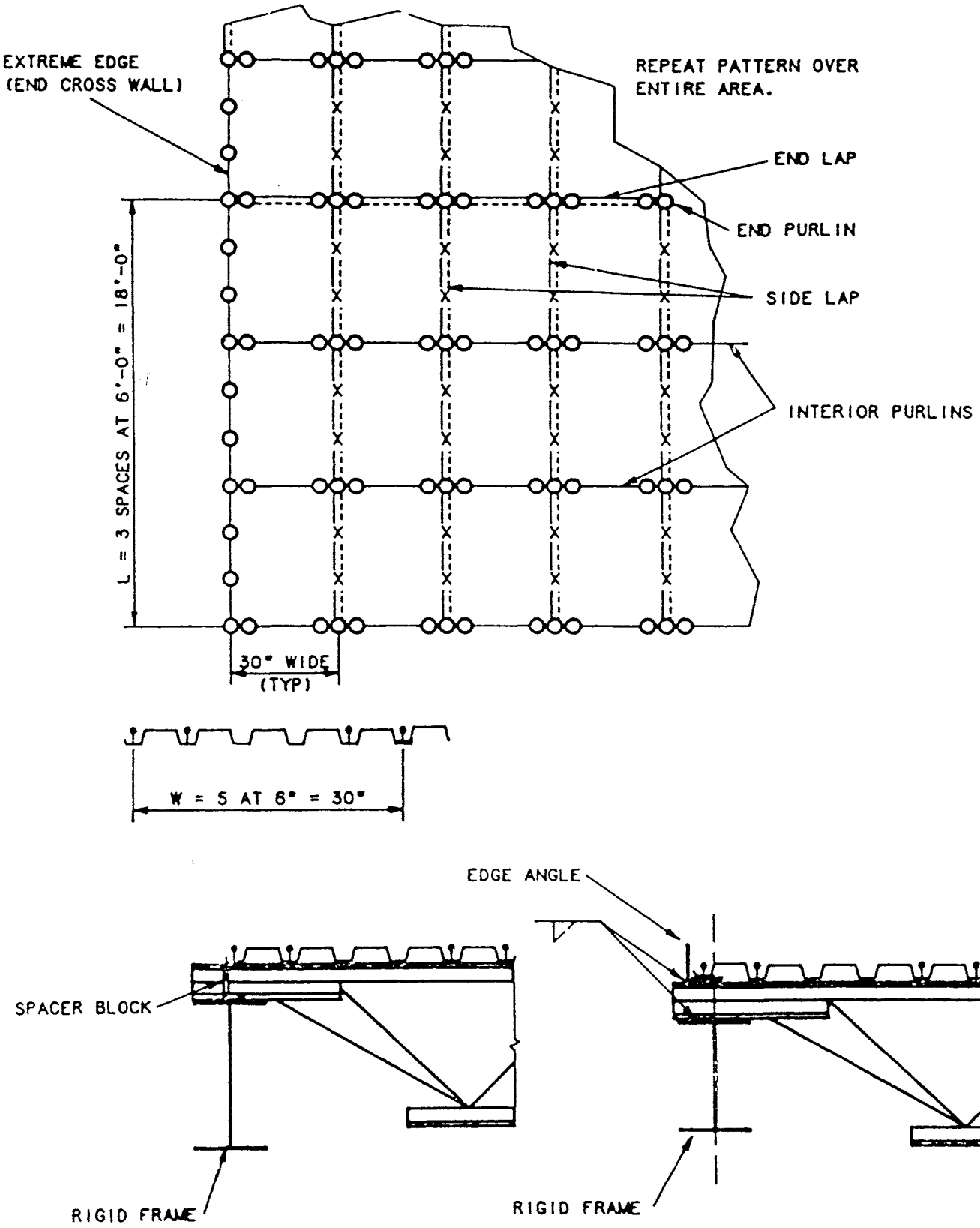
$$\Delta_x = \int_0^x \frac{q}{2BG'}(L - 2x)dx$$

$$= \frac{q}{2BG'}(Lx - x^2)$$

at x = L/4, for example, $\Delta = \frac{3qL^2}{32BG'}$

The shaded area in Fig. 5 is $\frac{1}{2}\ \frac{L}{4}\left(\frac{qL}{2} + \frac{qL}{4}\right) = \frac{3}{32}\,qL^2$

The change in shear deflection, between any two points, equals the shear diagram area, between those same points, divided by the shear width B and the stiffness G'.



SECTION A. ALTERNATES FOR INTERMEDIATE EDGE WELD POSITIONS

FIG 6

Example 6. Strength Evaluation. A diaphragm has 18' long WR type panels on three equal spans as in Fig. 6. The design thickness is t = 0.0295", and 5/8" arc-spot welds are used in a 30/4 pattern on all supports and at the ends. (See Appendix IV for typical fastener patterns.) Two No. 12 stitch screws are to be used at the sidelaps within each span. Find the maximum allowable shear load.

Eq. 4.2.1-2: $Q_f = 99t\,(0.625 - t) = 1.74$ kips

Eq. 4.5-2: $Q_s = 115\,dt = 24.3t = 0.717$ kips

$\alpha_s = Q_s/Q_f = 0.412$

Eq. 2.2-4a: $\lambda = 1 - 1.5(6)/[240(t)^{0.5}] = 0.782$

$n_s\alpha_s = (3 \text{ spans} \times 2 \text{ screws/span})(0.412) = 2.47$

Eq. 2.2-1: $\Sigma x_e = \Sigma x_p = (9 + 15 + 9 + 15) = 48$

$\alpha_1 = \alpha_2 = 48/w = 48/30 = 1.60$

$n_e = 6$ ($n_e = n_s$ in this case)

$n_p = 2$ (excluding end lap purlins)

Eq. 2.2-2: $S_u = (2 \times 1.60 + 2 \times 1.6 + 6)(1.74/18) = \underline{1.198 \text{ kips/ft.}}$

Eq. 2.2-4a: $\Sigma x_p^2 = \Sigma x_e^2 = 2(9^2 + 15^2) = 612$

$$B = 2.47 + \frac{1}{30^2}(2 \times 2 + 4)612 = 7.910$$

$$S_u = [2(0.782 - 1) + 7.910]\frac{1.74}{18} = \underline{0.723 \text{ kips/ft.}}$$

Eq. 2.2-5: $N = 3$ welds/2.5 ft. $= 1.20$

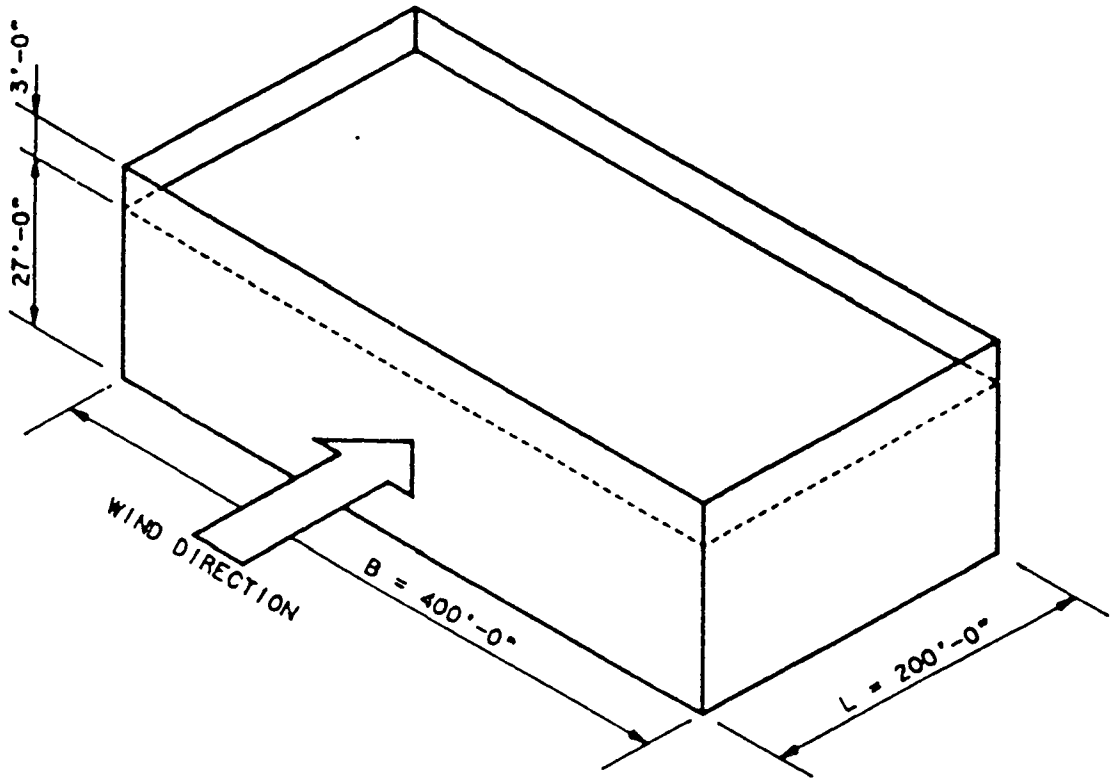
$$S_u = \left[\frac{(1.20 \times 7.91)^2}{18^2(1.2)^2 + (7.91)^2}\right]^{0.5}(1.74) = \underline{0.718 \text{ kips/ft.}}$$

Following Eq. 2.3-1, SF = 2.75. Then,

Design shear: $S = \frac{0.718}{2.75} = 0.261$ kips/ft.

Compare to 255 plf value in Appendix V, page 14, where the slightly smaller No. 10 stitch screws have been used.

At 0.261 kips per foot, the edge support angle (collector angle) must deliver 6(0.261) = 1.56 kips at each joist top. This small force transfer could be accomodated with an E60 fillet weld of 1" x 3/16" having a resistance of about 2.78 kips. An angle of 2" x 2" x 3/16", for example, would be adequate and would have an axial stress of about 2.2 ksi in this case.



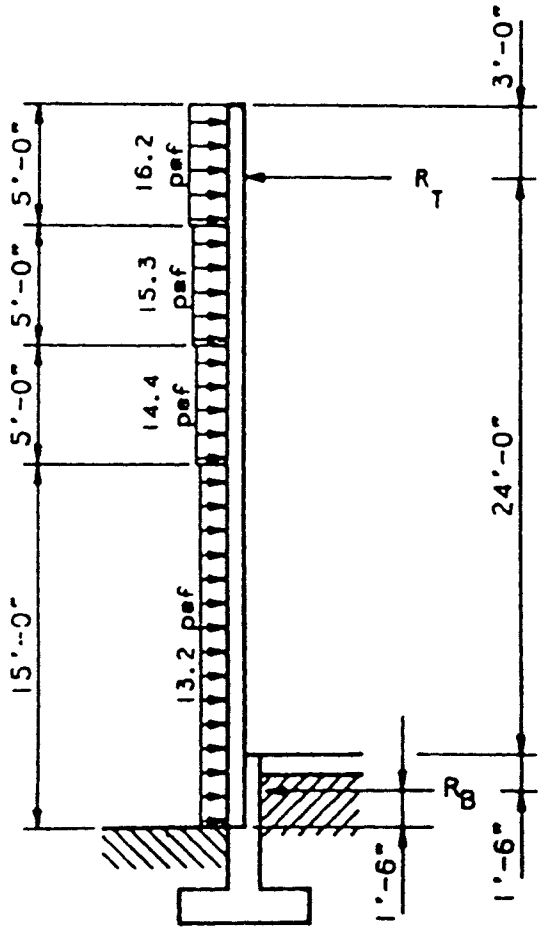


FIG 7.1 GENERAL DIMENSIONS AND WIND PRESSURES ON WINDWARD WALL

Example 7. Roof Design. Make a preliminary design for the roof deck needed for a 200'x 400'x 30' warehouse to be located in open terrain in a rural inland area. The construction involves tilt-up wall panels which rely on the roof diaphragm for stability. Follow ANSI A58.1-1982 for wind loads.

Consider the structure both with and without an expansion joint at B/2 where B and L follow ANSI notation and are as shown in Fig. 7-1. The walls may have openings up to 10% of their surface area.

a. The building is a warehouse with:
Importance Factor I = 1 (ANSI, Table 1 = T.1)
Exposure C (open terrain) (ANSI, T.6)

b. $q_z = 0.00256\ K_z\ (IV)^2$ @ V = 80 mph (ANSI 6.5)
$q_z = 0.00256\ K_z\ (1x80)^2 = 16.384\ K_z$ (psf)

c. GUST FACTORS: AT h = 30' $G_h = 1.26$ (ANSI T.8)

d. PRESSURE COEFFICIENTS (ANSI Fig.2 & T.9)

h/L = 30/200 = 0.120 (parallel to wind)
L/B = 200/400 = 0.500 (note ANSI symbols L&B)

Surface	C_p	Use C_p with	Internal	z (ft.)	K_z	q_z
Windward	0.8	q_z	$GC_{pi} = \pm 0.25$	0-15	0.80	13.1
Leeward	-0.5	$q_h = q_{30}$	with wall openings $\leq$ 10%	15-20	0.87	14.3
Sides	-0.7	$q_h = q_{30}$		20-25	0.93	15.2
Roof	-0.7	$q_n = q_{30}$		25-30	0.98	16.1

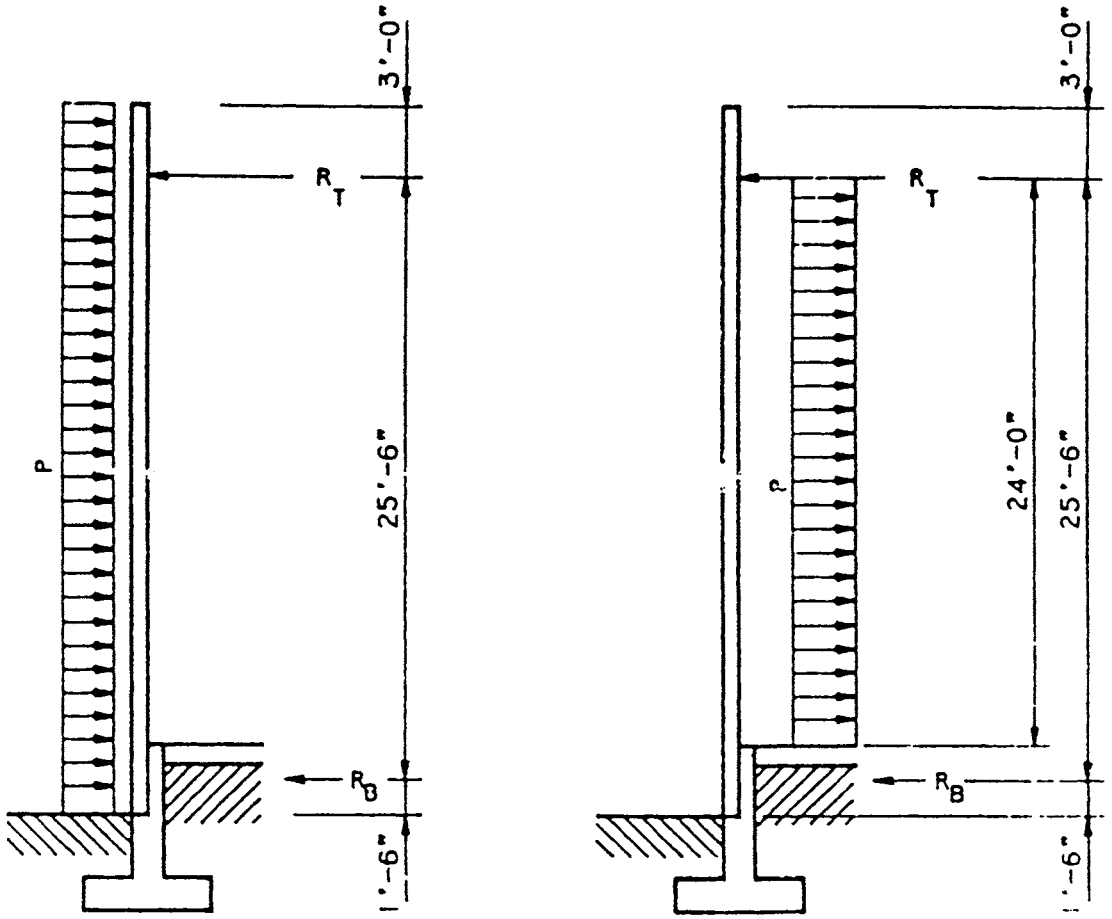
ANSI T.4 $p = q\ G_h\ C_p$ or, if more severe,

$p = q\ G_h\ C_p - q_h\ (GC_{pi})$

Surface	$q\ G_h\ C_p$*	$q_h\ GC_{pi}$	Net Pressure: Int. Pressure	Net Pressure: Int. Suction
Windward	1.01 q_z	$\pm$ 4.02	1.01 q_z - 4.02	1.01 q_z + 4.02
Leeward	-10.14 psf	$\pm$ 4.02	-14.16	-6.12
Sidewall	-14.20 psf	$\pm$ 4.02	-18.22	-10.18

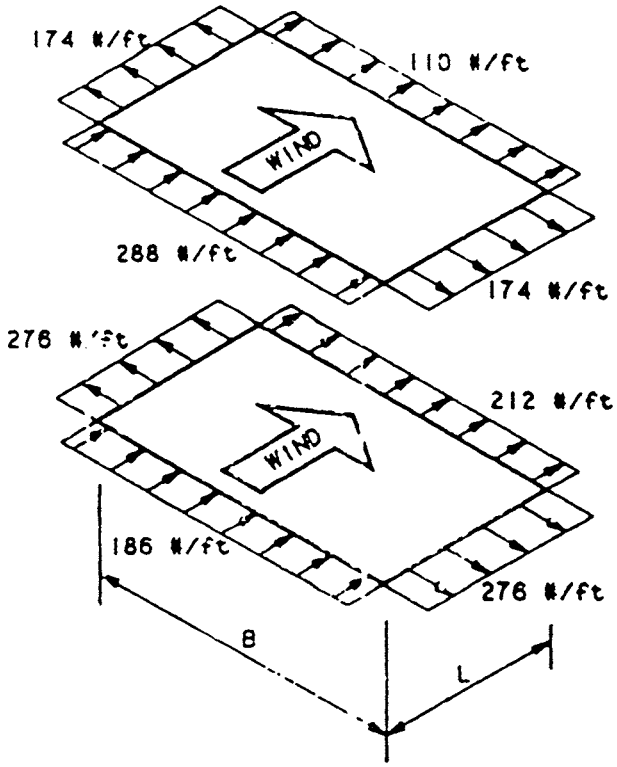
*Positive sign means net force toward interior.

The pressures indicated for the windward wall in Fig. 7.1 are $1.01(q_z)$ where the q_z values are from the first table above and reflect K_z coefficient changes with different elevations.



(a) UNIFORM EXTERIOR PRESSURE (b) UNIFORM INTERIOR PRESSURE

FIG 7.2



(a) FORCES DELIVERED TO THE ROOF WITH INTERNAL SUCTION (R = 398 B/2)

(b. FORCES DELIVERED TO THE ROOF WITH INTERNAL PRESSURE (R = 398 B/2)

FIG 7.3 ROOF DIAPHRAGM FORCES

7e. ROOF BRACING FORCES R_T. (Assumes tilt-up wall which relies on roof diaphragm for stability.)

WINDWARD WALL (Exterior Loads. See Fig. 7-1.)

$25.5\ R_T = 13.2(15)(6) + 14.4(5)(16) + 15.3(5)(21) + 16.2(5)(26)$

$R_T = 237$ lbs/ft. along roof

UNIFORM EXTERIOR LOADS (See Fig. 7-2.)

$25.5\ R_T = p\ (30)(15\text{-}1.5)$

$R_T = 15.88\ p$

Leeward $R_T = -10.14(15.88) = -161$ lbs/ft.

Sides (ends) $R_T = -14.20(15.88) = -225$ lbs/ft.

INTERNAL PRESSURES (See Fig. 7-2.)

$25.5\ R_T = \pm\ 4.02(24)(12+1.5)$, where $p = \pm\ 4.02$

$R_T = \pm\ 51$ lbs/ft.

The net forces R_T per foot delivered to the roof are shown in Fig. 7-3.

	With Int. Suction	With Int. Pressure
Windward:	237 + 51 = 288	237 - 51 = 186
Leeward:	-161 + 51 = -110	-116 - 51 = -212
Ends:	-225 + 51 = -174	-225 - 51 = -276

Note that the "down wind" loads: 398 = 288 + 110 = 186 + 212. The internal pressure effects lead to no net diaphragm shears; those pressure effects simply move through the diaphragm support structure to the opposite wall. Wall-to-roof connections must be designed accordingly.

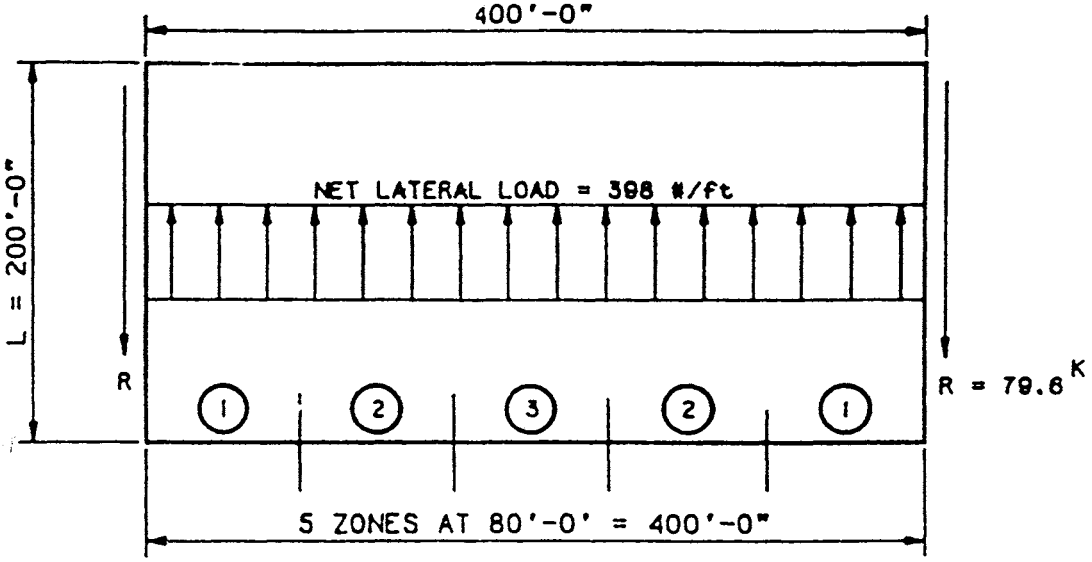
The total diaphragm shear force delivered to the end walls:

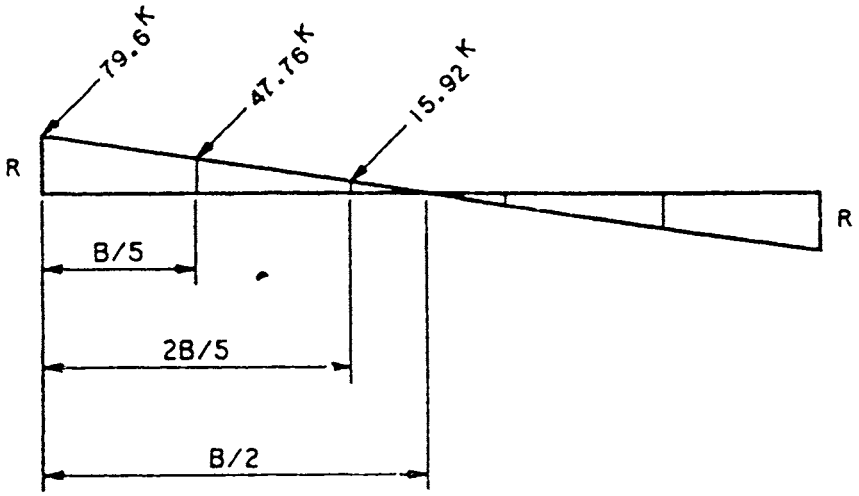
$R = (400')(0.5)(398$ lbs/ft.$) = 79{,}600$ lbs.

Along the 200 end wall, the average shear is:

$S = R/L = R/200 = 398$ lbs/ft. maximum.

Note that the maximum shears vary with the shear diagram as in Figure 7.4.





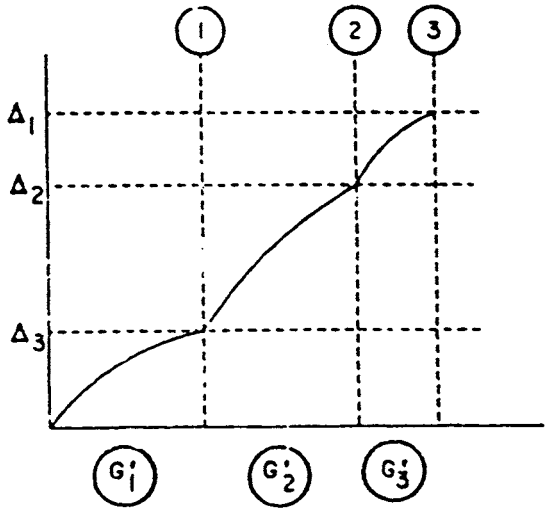


FIG 7.4 DEFLECTION SOLUTIONS

7f. PRELIMINARY DESIGN

Zone 1. S = 398 lbs/ft. Try a 0.0295" WR deck with a 36/7 pattern of 5/8" welds and No. 10 stitch screws. The span is 5'-0".

From Appendix V, page 9, with 4 stitch screws per span:

allowable S = 420 lbs/ft. O.K.

Using the Table formula with K1 = 0.226 and $D_n = D_{wr} = 129$

$$G' = \frac{870}{3.78 + 0.3(129/5) + 3(.226)(5)} = 58 \text{ k/in.}$$

Following example 5 and using shear diagram areas,

$$\Delta_1 = \frac{(79.60 + 47.76)k}{2 \times 200 \text{ ft.}} \quad \frac{80 \text{ ft}}{58 \text{ kip/in}} = 0.44"$$

Zone 2. S_{max} = 47760/200 = 239 lbs/ft. Try an 0.0295" WR with a 36/5 pattern. (See App. V, page 10.) Use 1 No. 10 stitch screw per span.

allowable S = 275 lbs/ft.

$$G' = \frac{870}{3.78 + 0.3(758/5) + 15(0.433)} = 16 \text{ k/in.}$$

$$\Delta_2 = \Delta_1 + \frac{(47.76 + 15.92)\ 80}{(2 \times 200)\quad 16} = 1.24"$$

Zone 3. Try a lighter 36/4 pattern without stitch screws. S = 170 > 80 O.K.

G' = 11 k/in

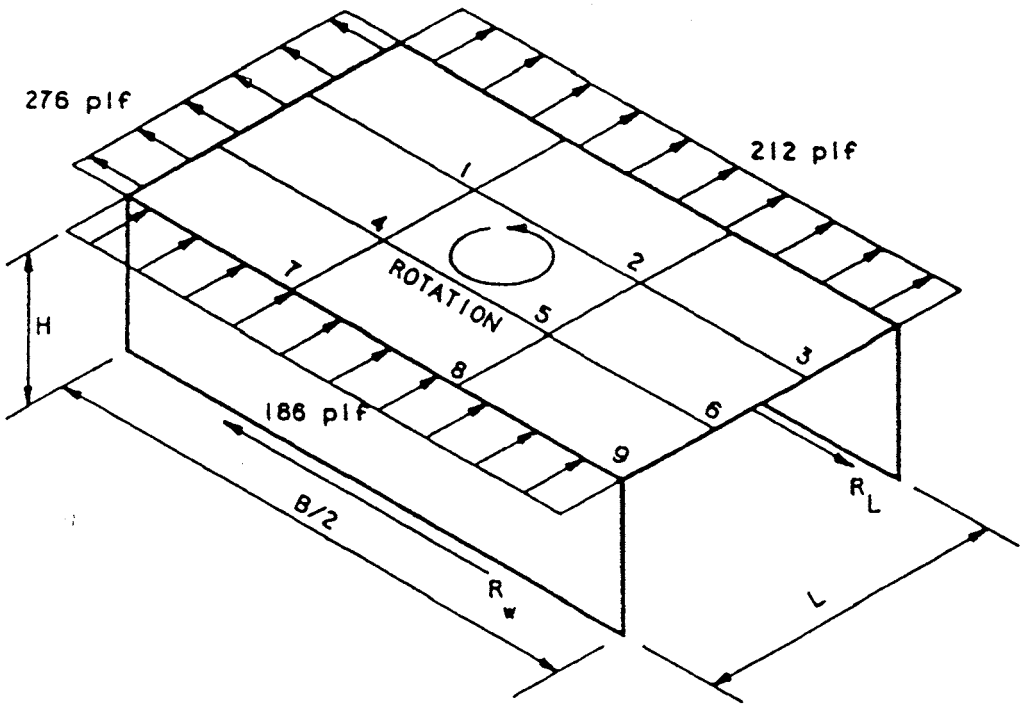
$$\Delta_3 = \Delta_2 + \frac{15.92}{2x200} \quad \frac{40}{11} = 1.38"$$

Notes: 1. From a strength viewpoint, these diaphragms are adequate but note the strong influence of fastener patterns in Zone 2 on the stiffness. This has led to a fairly large deflection, which may be excessive, and a new design for this zone may be necessary.

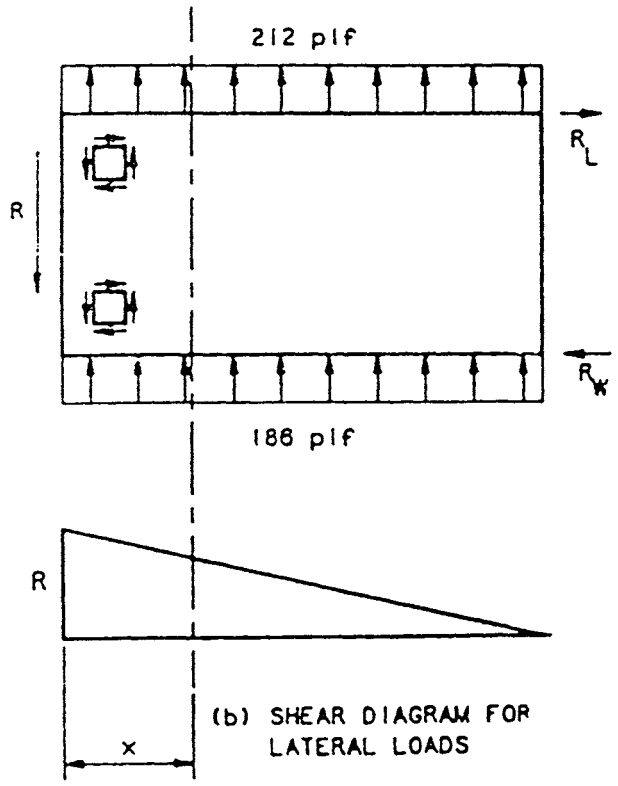
2. Examine wind uplift at say 1.5 q_z = 1.5(16.1) = 24 psf. In the 36/7 pattern with L_v = 5', each weld has a tributary area of 2.5 ft^2. The "hold down" required per weld is 24(2.5) = 60 lbs., a small value.

3. Examine wind load effects from other directions. Usually it will be most severe when loads are received from the long walls and delivered to the short walls.

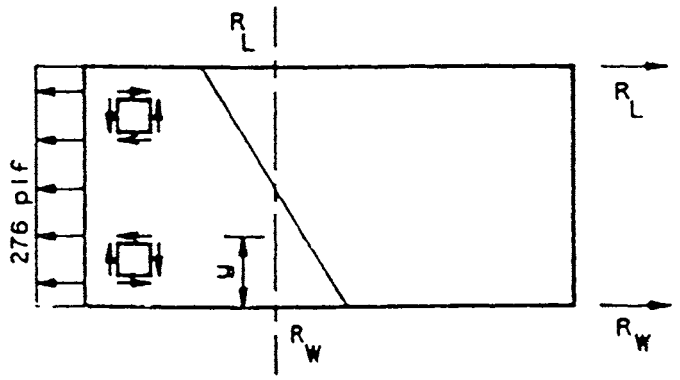
4. Note the potential economic advantage of selecting a particular fastener pattern and then using different panel thicknesses for various roof zones.



(a) OPEN ENDED STRUCTURE WITH NINE ROOF ZONES.



(b) SHEAR DIAGRAM FOR LATERAL LOADS



(c) END WALL LOADS AND SHEAR VARIATIONS

FIG 7.5

7g. EXPANSION JOINTS

Consider the building to have an expansion joint at B/2 such that either end is substantially independent. The "chord" forces, formerly developed in spandrel beams along the B dimension, must now be developed in the windward and leeward sidewalls; these walls now act as diaphragms.

Consider the loading case from Figure 7.3b applied to the "open-ended" structure of Figure 7.5a. The problem is divided into two parts; first, the windward and leeward forces are considered; and secondly, the sidewall forces. The results will be superimposed.

Windward and Leeward Forces, Fig. 7.5b:

The total reaction: $R = (212 + 186)(B/2) = 79{,}600$ lbs.

The average shear along L at the end walls is:

$$S = R/L = 398 \text{ lbs/ft.}$$ as before for the full structure.

At some distance x, such as $x = B/4$, the total shear force is:

$$V = R - (212 + 186)(100) = 39{,}800 \text{ lbs.}$$

The average shear is $V/L = 199$ lbs/ft. The average unit shear changes with the shear diagram.

The side-wall reaction forces R_L and R_W as shown in Fig. 7.5c, formerly chord forces, are:

$$R_L = R_W = \frac{1}{L}(212 + 186)(B/2)(B/4) = 49.75\, B^2/L$$

$$= 39{,}800 \text{ lbs.}$$

R_W and R_L vary from zero at the expansion joint to a maximum at the end wall. If the wall stiffness is consistent along B, the variation is virtually linear. The maximum shear then is

$$S = 2 \text{ (avg. shear)} = 2\left(\frac{39800}{0.5B}\right) = 398 \text{ lbs/ft.}$$

At any point in a diaphragm, the average shears in the system, parallel to the deck span, exactly equal those perpendicular to the span. The perimeter beams have axial forces and are an integral part of the system eliminating accordion-like collapse of the deck.

Endwall Forces, Fig. 7.5c:

The total reaction $R_W + R_L = 276(L) = 55{,}200$ lbs. The maximum total shear force on any one line parallel to B is:

$R_W = R_L = 27600$ lbs. and the average maximum shear is

$S = R_L/(0.5B) = 138$ lbs/ft.

With changes in y across the shear diagram, as in Fig. 7.5-c, S also changes. At $y = L/3$, for example, $S = 0.333\ R_W/0.5B = 46$ lbs/ft.

Addition of Shears

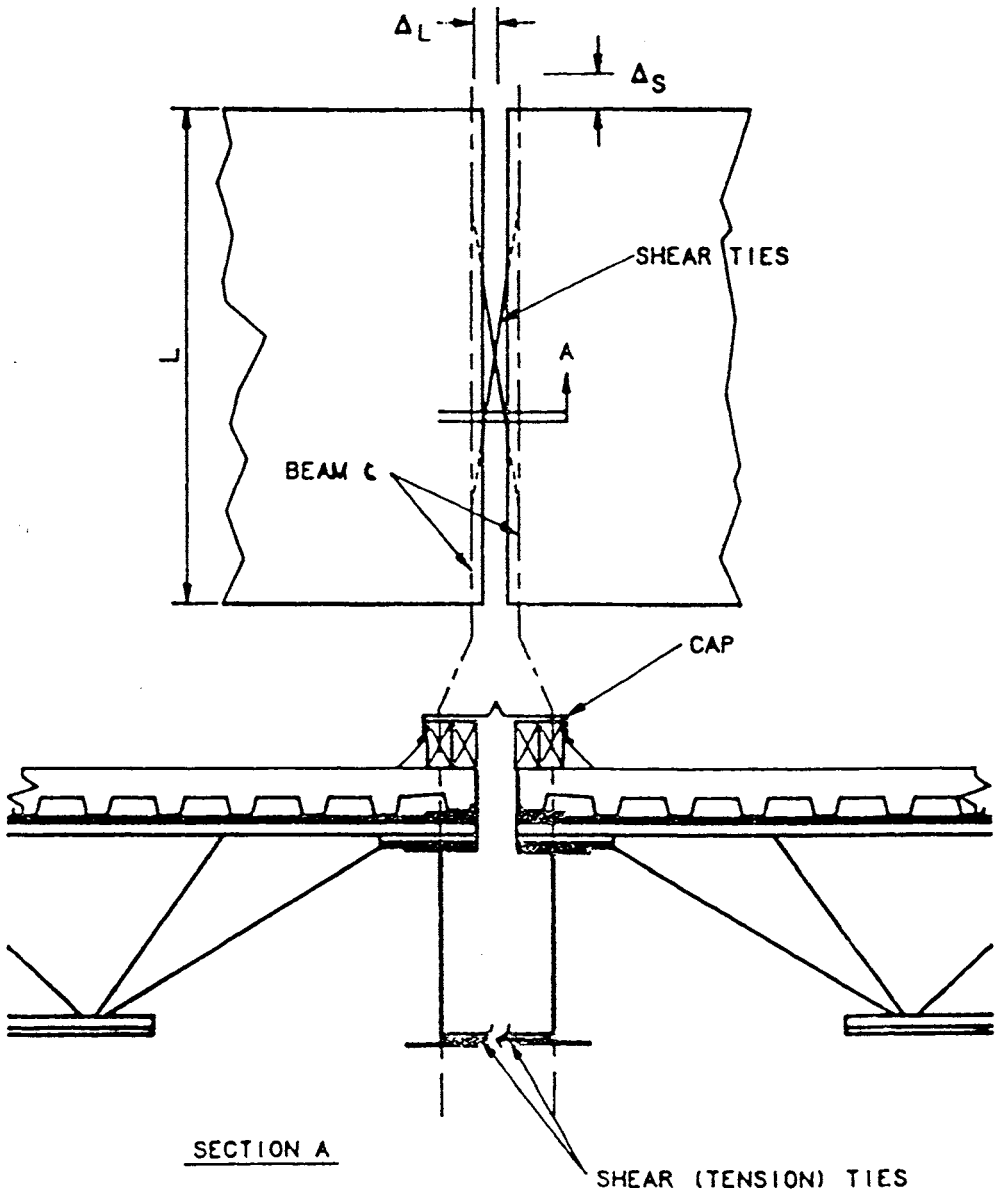
The small element shear forces, shown near the left corners of Figs. 7-5b and 7-5c, have directions dependent on the shear diagram. As shown and following the values from the prior section, the upper left block would have a maximum possible value of 398 + 138 = 536 plf and the lower block could have 398 - 138 = 260 plf. However the wind direction may reverse leaving either block at the maximum 536 value. This approach is used in the following table.

The addition of shears from different load conditions is direct since the orthogonal values always are equal. Therefore, it is good practice to consider either different deck thicknesses or fastener patterns to meet the actual conditions; there is little reason for the roof diaphragm to be everywhere identical. Consider the present case with the roof subdivided into nine zones as in Figure 7.5a.

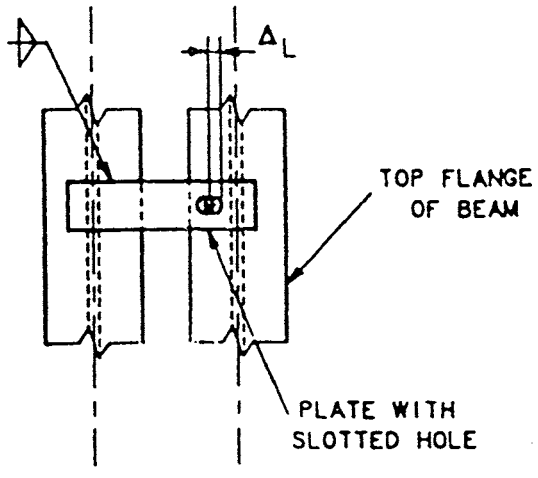
	Maximum Shears (plf) for Zone								
Loading Condition	1	2	3	4	5	6	7	8	9
Figure 7.5b	398	265	133	398	265	133	398	265	133
Figure 7.5c	138	138	138	46	46	46	138	138	138
Totals	536	403	271	444	311	179	536	403	271

The six different diaphragm shear values could be met using six different diaphragm arrangements. This could be troublesome to manage during construction, but perhaps three would not. With joists at 5 ft. centers and using 36" wide deck panels, consider:

Zones	Diaphragm Selection
1,7	36/7 pattern, 18 gage deck with 5/8 welds and 3 No. 10 stitch screws per span. S = 550 plf.
2,4,8	36/7 Pattern, 20 gage deck with 5/8 welds and 3 No. 10 stitch screws per span. S = 460 plf.
3,5,6,9	36/7 Pattern, 22 gage deck with 5/8 welds and 2 No. 10 stitch screws per span. S = 340 plf.



(a) SHEAR (TENSION) TIES



(b) SLOTTED PLATE

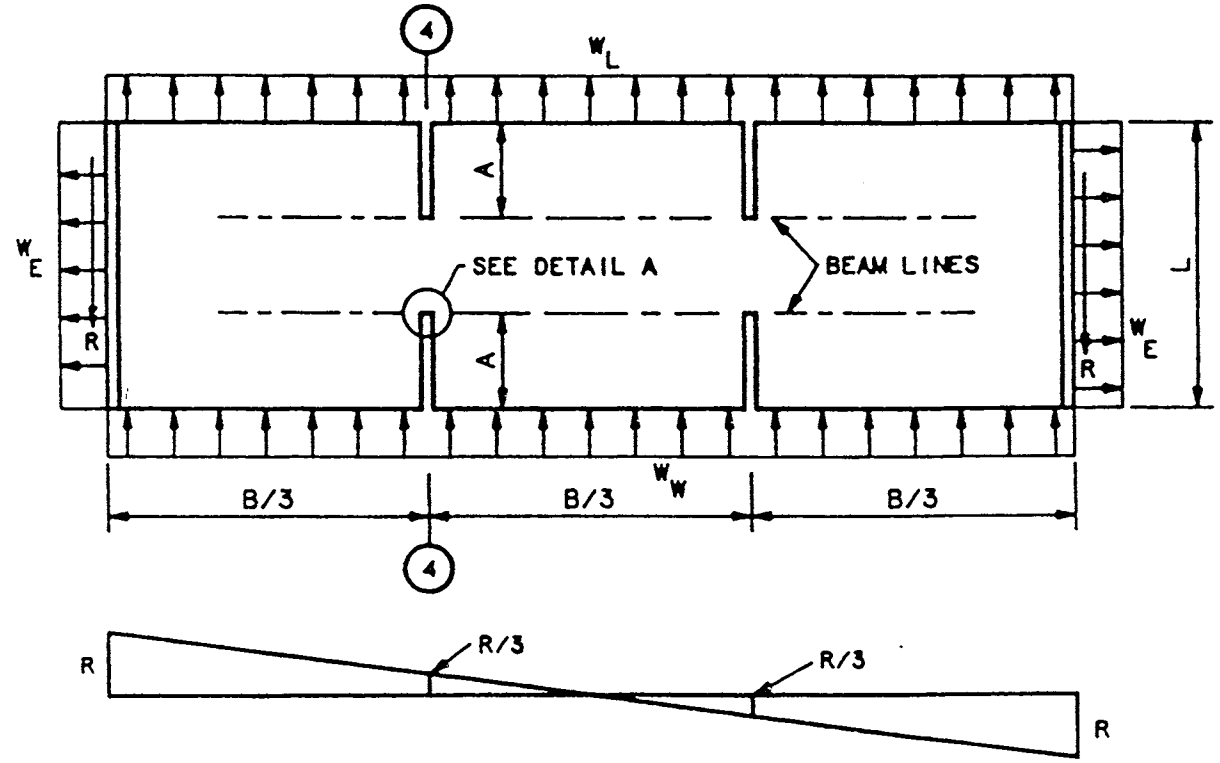
FIG 8.1

Example 8. Expansion Joints.

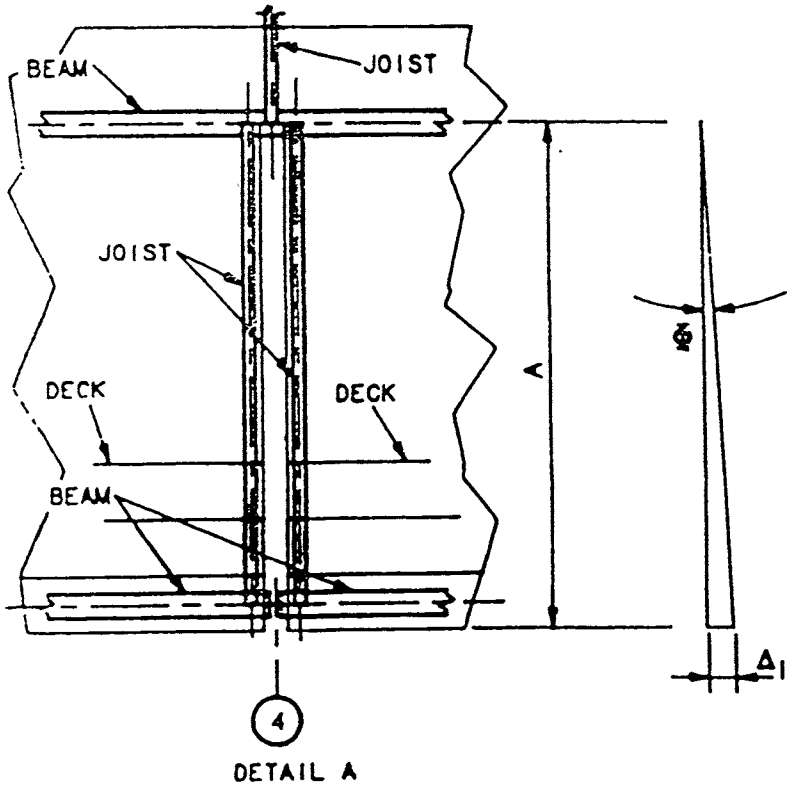
Buildings are subject to non-symmetric load conditions. Thus it is not realistic to leave a structure, free to move parallel to the joint, as in the latter part of the prior example. The joint cover could try to span the joint and be damaged. Various solutions might be considered as in Figure 8.1.

The function of the expansion joint is to permit relatively free movement Δ_L as in Figure 8.1. A pair of crossed tension members, essentially parallel to the joint and connected to the main beams, would virtually eliminate Δ_S but not impede Δ_L. They would be designed as counters or tension members.

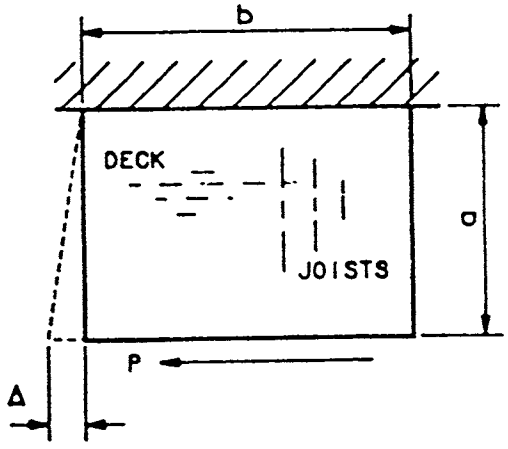
A slotted stub apparatus, welded to one beam and slotted on the opposite end, could transfer shears from one side to the other, shears arising from unbalanced loadings for example. The stub design and performance will depend on connections, the flange width of the support beam, and the frequency of top flange bracing. The torque imposed on the beam must be considered.



(a) SHEAR DIAGRAM



DETAIL A



(b)

FIG 8.2

The expansion joint perhaps should not extend completely across the roof. Consider a roof structure such as that in Figure 8.2. The end loads w_E now have a path to the opposite side, particularly in the mid-region. Given the tributary areas supported by the beam lines, about one-half the w_E forces will not introduce shears on the long walls; they are balanced by opposing forces at the opposite wall.

The stiffness of the diaphragm system G' is known. Noting the load P on Figure 8.2b, stiffness is defined as

$$G' = \frac{P}{\Delta} \cdot \frac{a}{b} = \frac{P}{b} \cdot \frac{a}{\Delta} = S\,\frac{a}{\Delta}$$

Suppose the sidewall joint of Detail A opens with $\Delta_1 = 1/2$ inch, and further, suppose A = 75'. Then the movement could have been 0.25" for either side of the joint. With G' assumed at 40 kips/inch for example,

$$S = G'\,\frac{\Delta}{A} = 40{,}000\ \frac{\#}{\text{in.}}\ \frac{(0.025")}{75'} = 133\ \text{lbs/ft.}$$

This force would be transferred along the joist at the joint, through the joist end into the beam, and from the beam to the parallel opposite joist. The wall has now been permitted to relax but the mid third of the diaphragm along line 4-4 remains effective.

Along line 4-4, just to the right of the expansion joint, the average shear force is R/3. The average unit shear is

$$S = (R/3)/L = R/3L$$

when the right side joists deliver their accumulated forces to the beam lines, the remaining diaphragm between beams, acts as the link. With A = L/3, the line 4-4 unit shear is:

$$S = (R/3)/(L/3) = R/L$$

the same as at the building ends.

If the diaphragm, between the beam lines, is designed to resist R/L in the immediate area (perhaps 3 feet to either side), the link problem is solved.

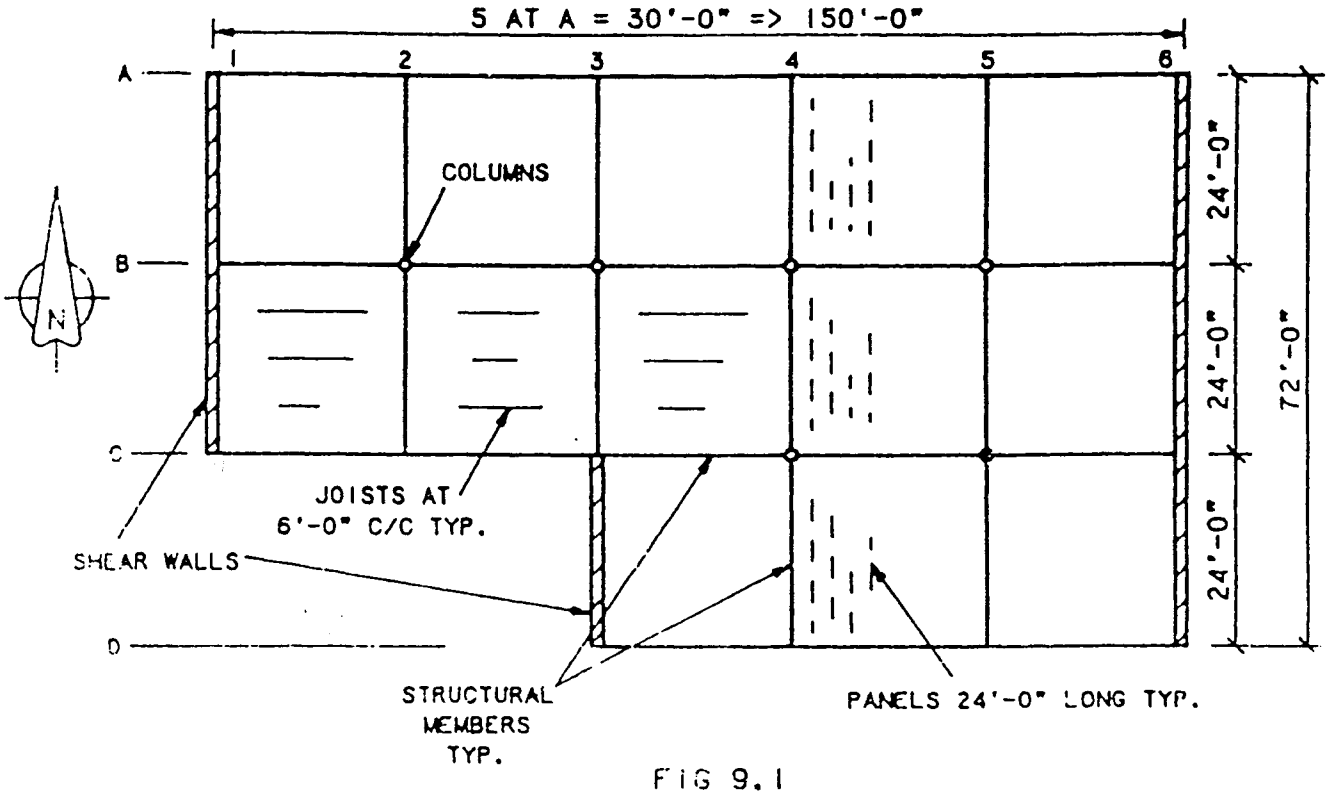

5 AT A = 30'-0" => 150'-0"
1
2
3
4
5
6
A
B
C
D
N
COLUMNS
JOISTS AT
6'-0" C/C TYP.
SHEAR WALLS
STRUCTURAL
MEMBERS
TYP.
PANELS 24'-0" LONG TYP.
24'-0"
24'-0"
24'-0"
72'-0"

FIG 9.1

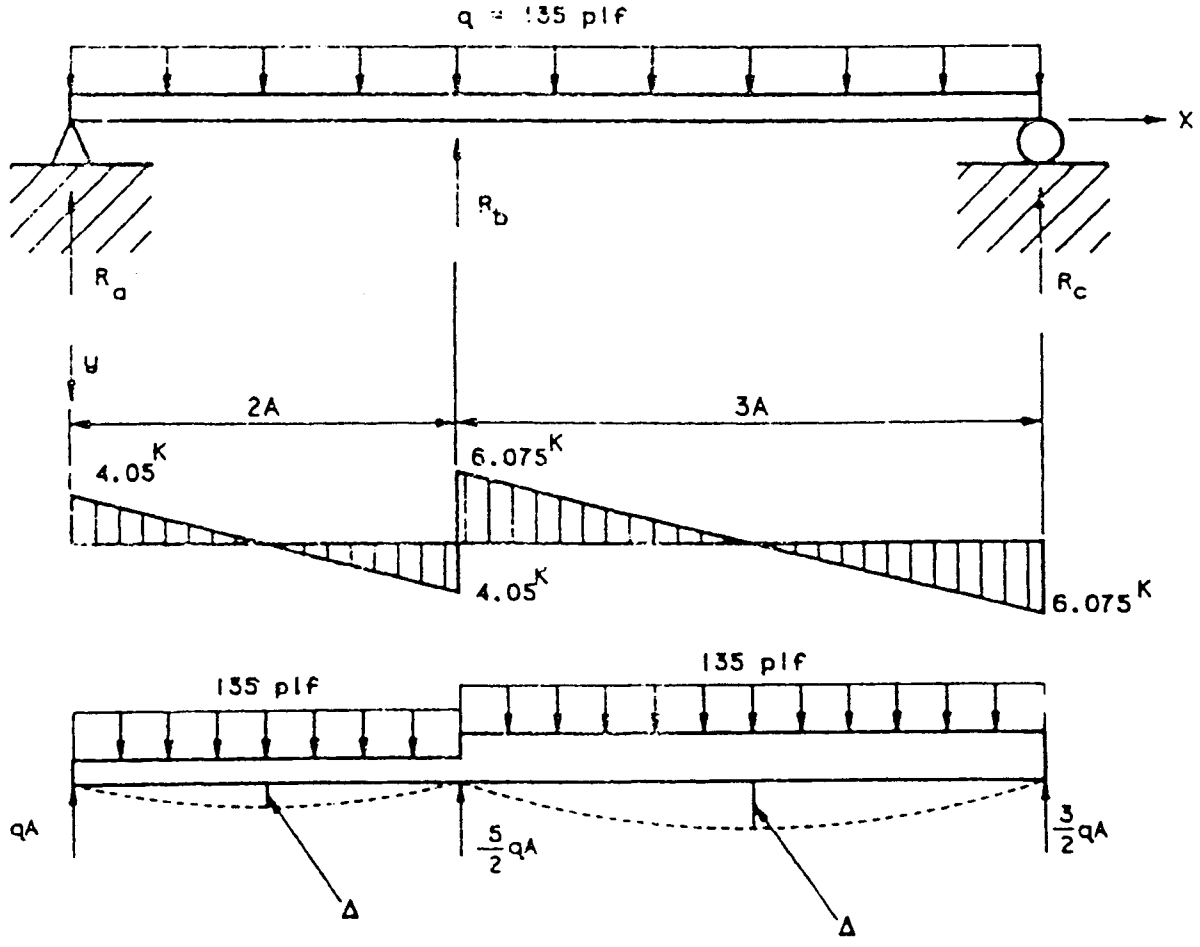

q = 135 plf
X
R_b
R_a
R_c
V
2A
3A
4.05 K
6.075 K
4.05 K
6.075 K
135 plf
135 plf
qA
$\frac{5}{2}$qA
$\frac{3}{2}$qA
Δ
Δ

FIG 9.2

Example 9. Non-Symmetric Diaphragms. The building roof plan, shown in Fig. 9.1, is for a roof receiving a 135 plf load in its plane. The three shear walls are considered as being shear rigid in their own plane. Evaluate the roof system.

The most likely critical area is at the short shear wall in line 3. It receives loads both directly and from the line 3 "collector beam" anchored to it as in Fig. 9.4.

The diaphragm is short, deep, and presumed to be shear sensitive. With no deflection at the short wall, the wall reactions are as indicated in Fig. 9.2.

$$R_a = 4.05 \text{ kips}; \quad R_b = 10.125 \text{ kips}; \quad R_c = 6.075 \text{ kips}$$

Following Example Problem 5 and using shear diagram areas to find deflections:

$$\text{West max. } \Delta = \frac{4.05^{k}(30'/2)}{48'G'} = \frac{1.266}{G'}$$

$$\text{East max. } \Delta = \frac{6.075^{k}(45'/2)}{72'G'} = \frac{1.898}{G'}$$

$$\text{West max shear: } S = \frac{4.05 \text{ kips}}{48 \text{ ft}} = 0.084 \text{ k/ft}$$

$$\text{East max. shear: } S = \frac{6.075 \text{ kips}}{72 \text{ ft}} = 0.084 \text{ k/ft}$$

As indicated in Fig. 9.2, the maximum design shear, for the diaphragm is 84 lbs/ft. However, the line 3 beam accumulates shears for a total thrust of:

$$T = \pm (0.084)(2 \text{ sides})(48 \text{ ft}) = 8.06 \text{ kips},$$

The ± depends on the loading direction. The total shear force delivered to the short shear wall is:

$$R = T + 0.084 \text{ (24' along short wall)} = 10.08 \text{ kips}$$

Within round off error, this is the same as:

$$R = \frac{5}{2} qA = \frac{5}{2} (0.135)(30') = 10.125 \text{ kips}$$

The maximum shear in the short wall is R/24 = 0.422 k/ft.

A review of Fig. 9.4 will lead to the obvious need for little or no slip being allowed at the beam anchorage. Otherwise, potentially crippling local stresses will be delivered to the diaphragm. The joists at the wall must be anchored to deliver the average 84 plf load.

Wall Movements. Shear walls tend toward in-place rotation due to eccentricity between the base level and top-of-wall shears. In heavy walls, gravity forces usually will prohibit any up lift at the base but such tendencies must be checked.

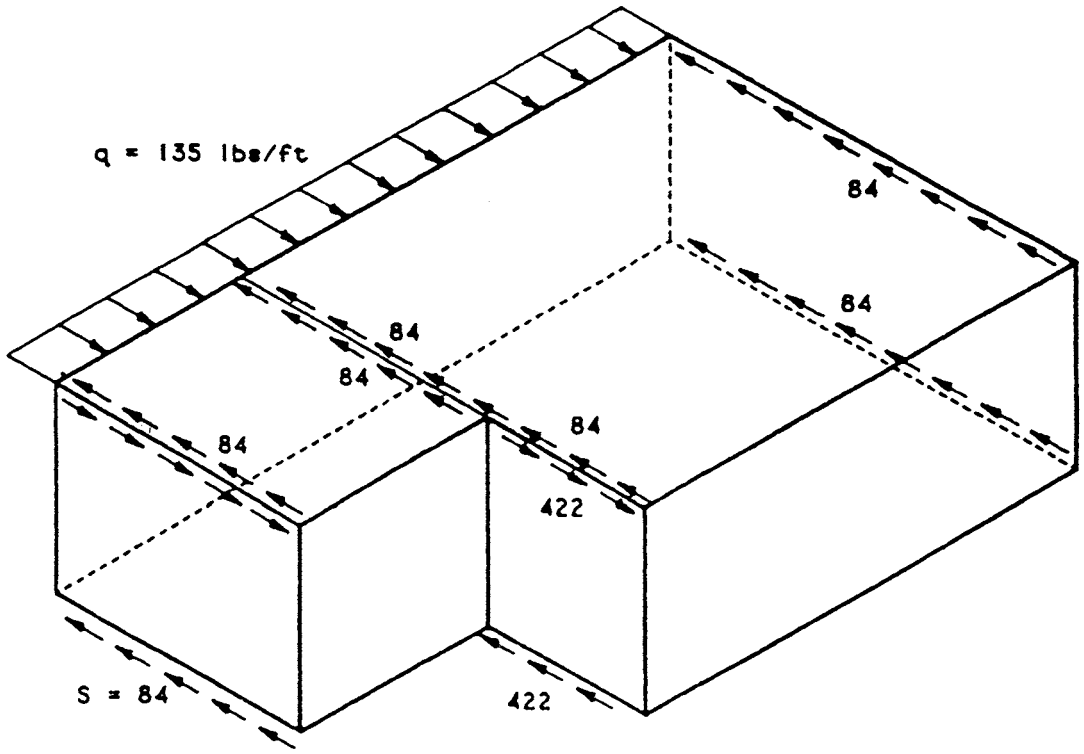


FIG 9.3 SHEARS (lbs/ft)

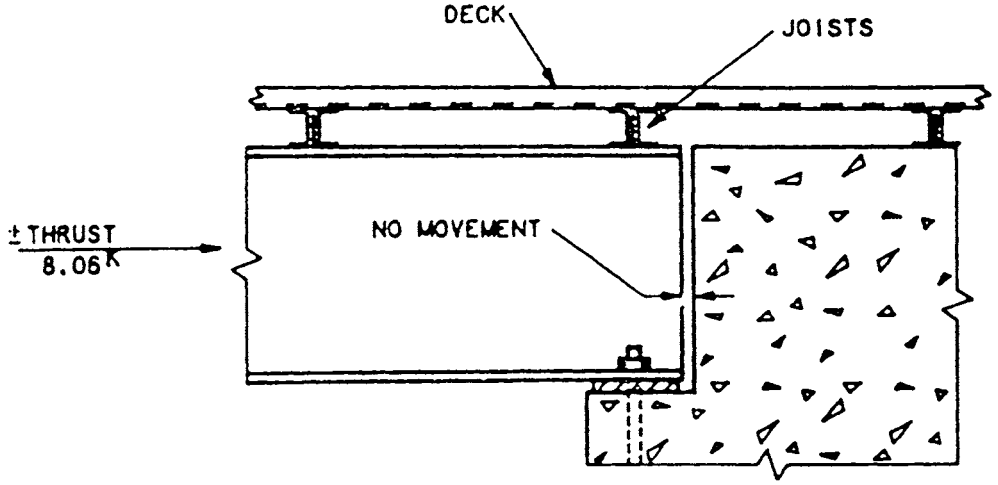


FIG 9.4

The limits that are placed on wall deflections, normal to the wall, reflect architectural considerations relative to appearance. Further, the limits must be such that the walls do not experience undue strains or curvature. For example, local deflections between girt lines in metal wall assemblies often are limited to values of 1/120 to 1/180 times the girt spacing.

Suppose the roof diaphragm in this example has the rather low stiffness of G' = 12 k/in and the wall height H = 30 feet.

$$\text{West } \Delta = \frac{1.266}{12} = 0.11" \qquad \text{and East } \Delta = \frac{1.898}{12} = 0.16"$$

If the walls are masonry, the deflection limit frequently is fixed at,*

$$\Delta_w = \frac{H^2 f}{0.01\, E_w t_w}$$

where H = wall height, ft.
f = allowable flexural compressive stress, psi
E_w = modulus of elasticity, psi
t_w = wall thickness, in.

In a paper presented at the 1978 masonry conference, Holm* listed the following typical properties for normal-weight block:

$$E_c = 22\, w^{1.5} \sqrt{f'_c} = 1.54 \times 10^6 \text{ psi}$$

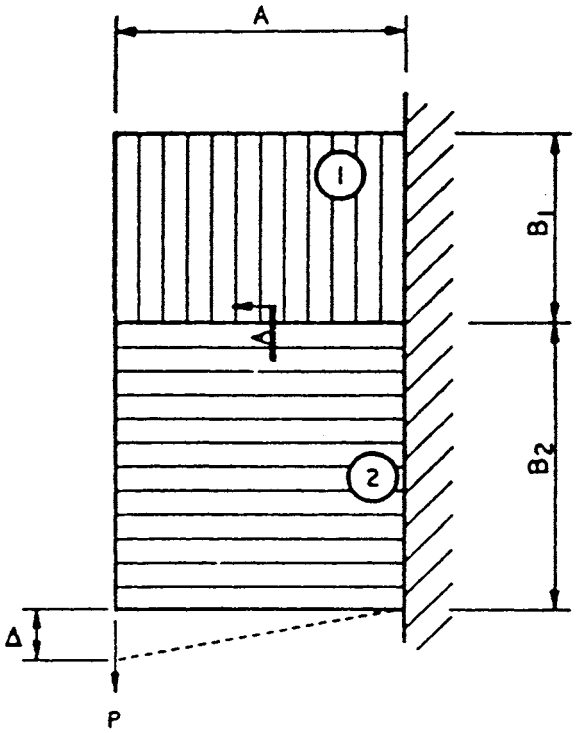
with w = 135 pcf
f'_c = 2000 psi

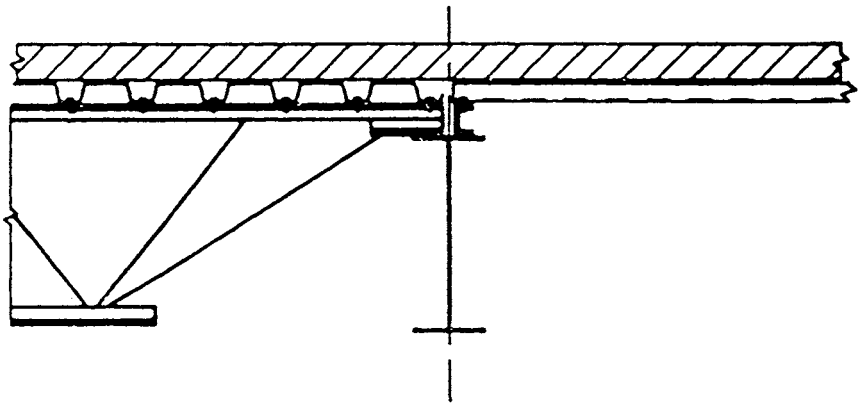
Limiting the stress to a typical value of $f = 0.3\, f'_c$ = 600 psi, and presuming the 30' high wall to be 12" thick,

$$\Delta_w = \frac{(30)^2(600)}{0.01(1.54 \times 10^6)12} = 2.92 \text{ in.}$$

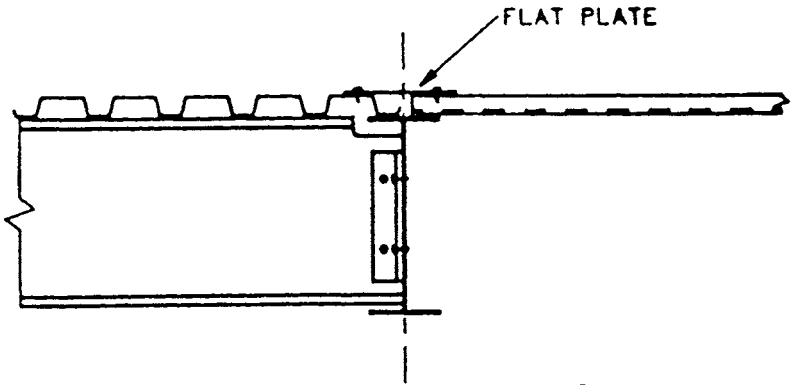
Obviously the Δ = 0.16" is less than 2.92" the latter value simply implying that moderately large wall movements may not cause undue wall stresses.

*See References 23 and 28 of Appendix II. For further reading see, "Structural Properties of Block Concrete," by T. A. Holm, Proceedings of the North American Masonry Conference, University of Colorado, Boulder, 1978.





SECTION - A Case 1



SECTION - A Case 2

FIG 10

Example 10. Mixed Length Panels. Adjacent diaphragm zones may differ in stiffness because of different panel lengths. Figure 10 shows a case where diaphragm panels change direction. Two possible sections are shown.

Case 1. The c-shaped channel is used to permit the roof to have a common top elevation. Local warping may occur in the diaphragm over the channel and this can be minimized by frequent connection, perhaps in every valley along the channel. The channel must be connected to the beam flange to resist the design shear.

Case 2. The top elevation is uniform. The flat plate is used to retard warping or simply to close off the gap.

Analysis. Find the system stiffness G'.

$$G' = \frac{P}{\Delta} \cdot \frac{A}{(B_1 + B_2)} \quad \text{or} \quad \Delta = \frac{P}{G'} \frac{A}{(B_1 + B_2)} \tag{a}$$

In No. 1: $S_1 = P_1/B_1 = G_1' \Delta/A$

In No. 2: $S_2 = P_2/B_2 = G_2' \Delta/A$

$$\text{But } P = P_1 + P_2 = \frac{\Delta}{A} (B_1 G_1' + B_2 G_2') \tag{b}$$

From (a) and (b):

$$P = \frac{G' \Delta (B_1 + B_2)}{A} = \frac{\Delta}{A} (B_1 G_1' + B_2 G_2')$$

Then the mixed system stiffness is:

$$G' = \frac{B_1 G_1' + B_2 G_2'}{B_1 + B_2} \tag{c}$$

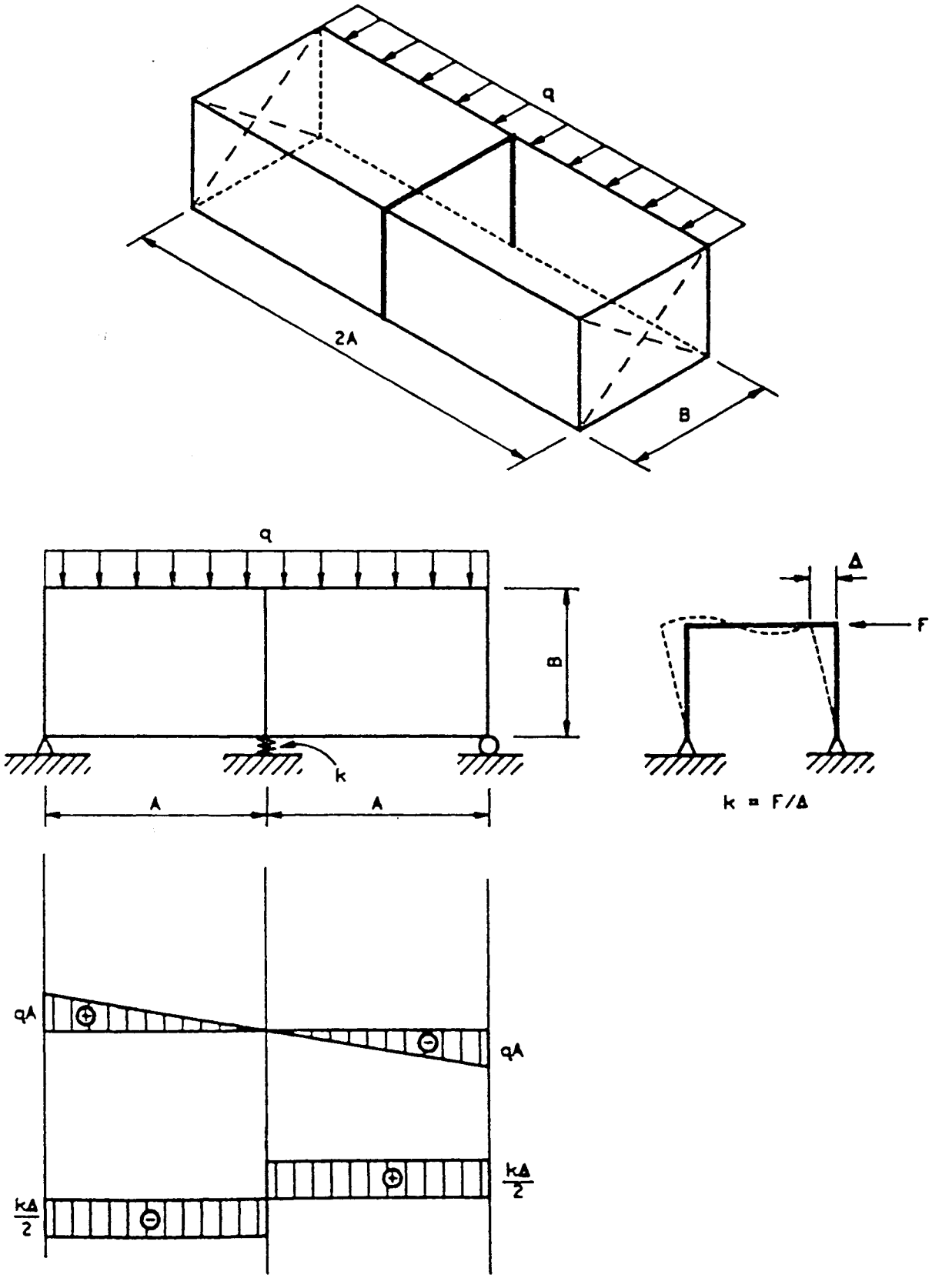


FIG 11

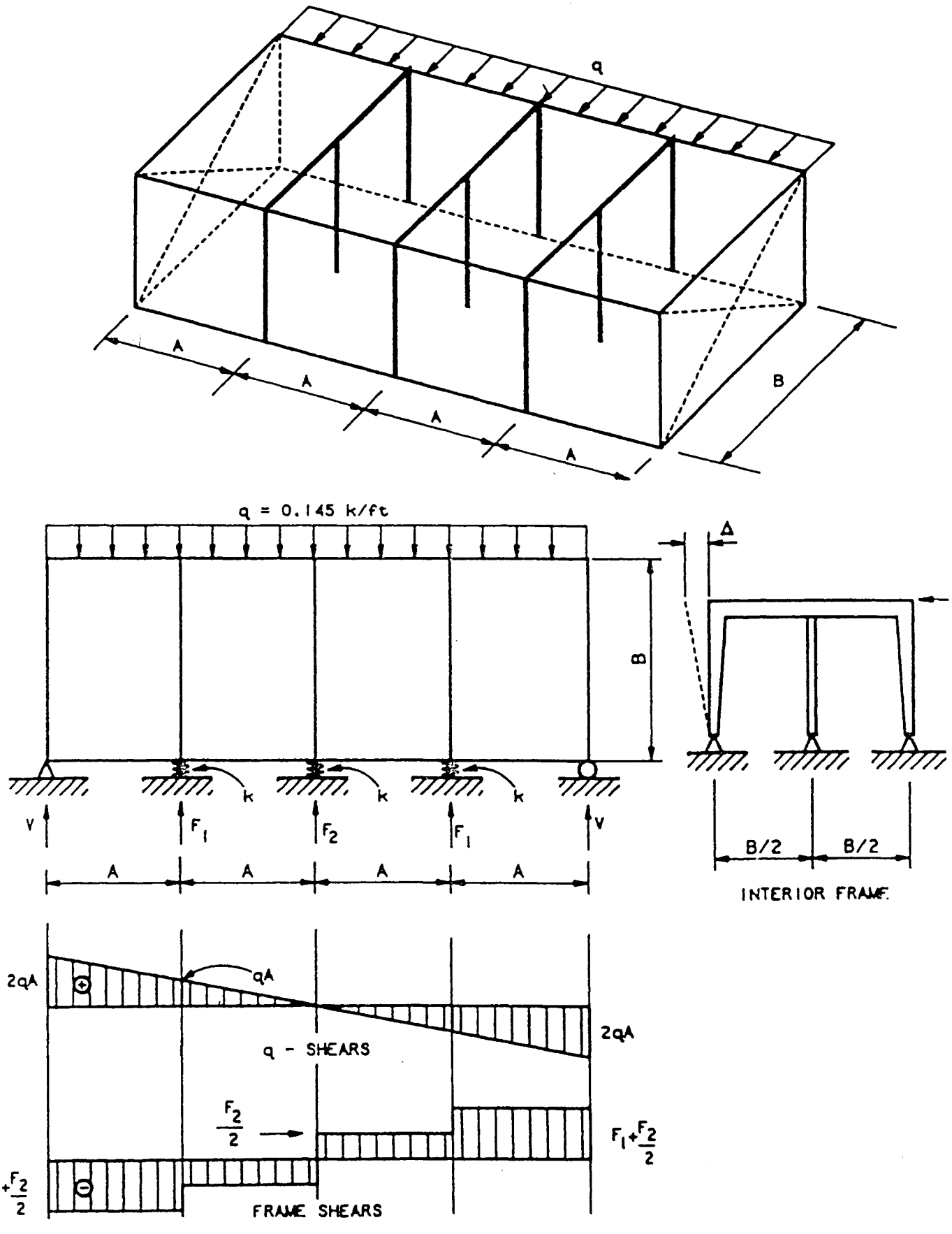

q
A
A
A
A
B
q = 0.145 k/ft
B
k
k
k
V
F1
F2
F1
V
A
A
A
A
Δ
B/2
B/2
INTERIOR FRAME
2qA
qA
2qA
q - SHEARS
F2/2
F1+F2/2
F1+F2/2
FRAME SHEARS

FIG 12

Example 12. **Rigid Frames.** The building in Fig. 12 has three semi-rigid interior frames and shear-rigid end walls. The roof is covered with a diaphragm having G' = 30 k/in and the frames have a stiffness k = 2 k/in.

Data: $q = 0.145$ k/ft $\qquad A = 38'$ $\quad B = 72'$

Find the total lateral forces transferred to each frame.

Solution. The shear diagram is drawn in two separate parts, for k- and q-forces, to make area calculations easier. Using shear diagram areas for deflection, as was done in Example Problem 5,

$$\Delta_1 = \frac{1}{BG'}\left[(2qA + qA)\frac{A}{2} - \left(F_1 + \frac{F_2}{2}\right)A\right]$$

Since $k = F/\Delta$ at any frame,

$$BG'\Delta_1 = \frac{3}{2}qA^2 - \left(k\Delta_1 + \frac{k\Delta_2}{2}\right)A$$

$$(2160 + 76)\Delta_1 + 38\Delta_2 = 314 \qquad (a)$$

$$BG'\Delta_2 = 2qA\left(\frac{2A}{2}\right) - \left(F_1 + \frac{F_2}{2} + \frac{F_2}{2}\right)A$$

$$76\Delta_1 + (2160 + 76)\Delta_2 = 419 \qquad (b)$$

Solving (a) and (b) leads to $\Delta_1 = 0.138"$ and $\Delta_2 = 0.183"$, and then to $F_1 = k\Delta_1 = 0.276$ kips and $F_2 = 0.366$ kips.

It is observed that even with this moderately flexible diaphragm, little of the frame tributary load of $0.145 \times A = 5.51$ kips is transferred to the foundation through the frames. Most of it goes through the diaphragm area, to the end walls, and then to the foundation. Frame member sizes then may be smaller than when design was based on tributary area loads.

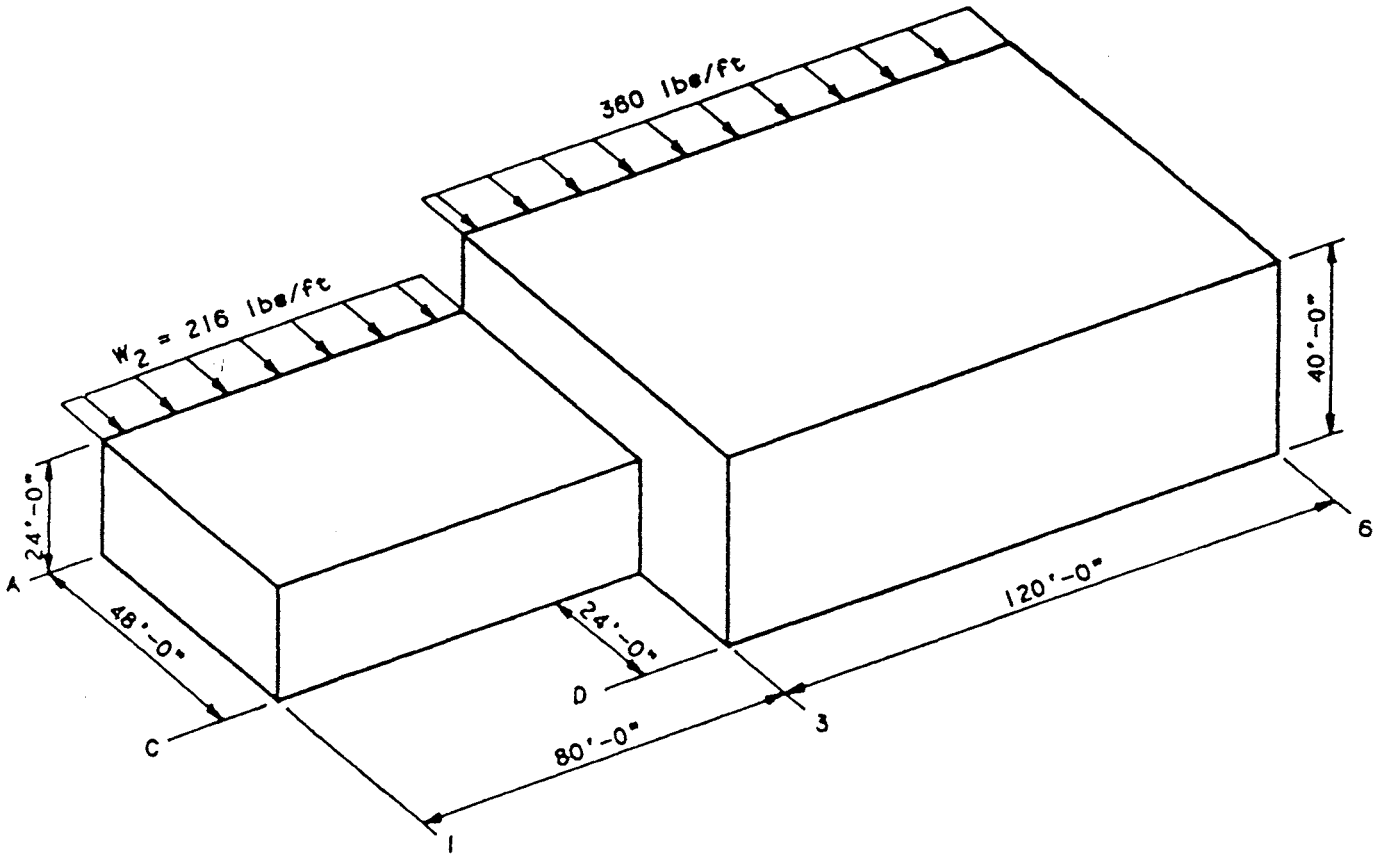
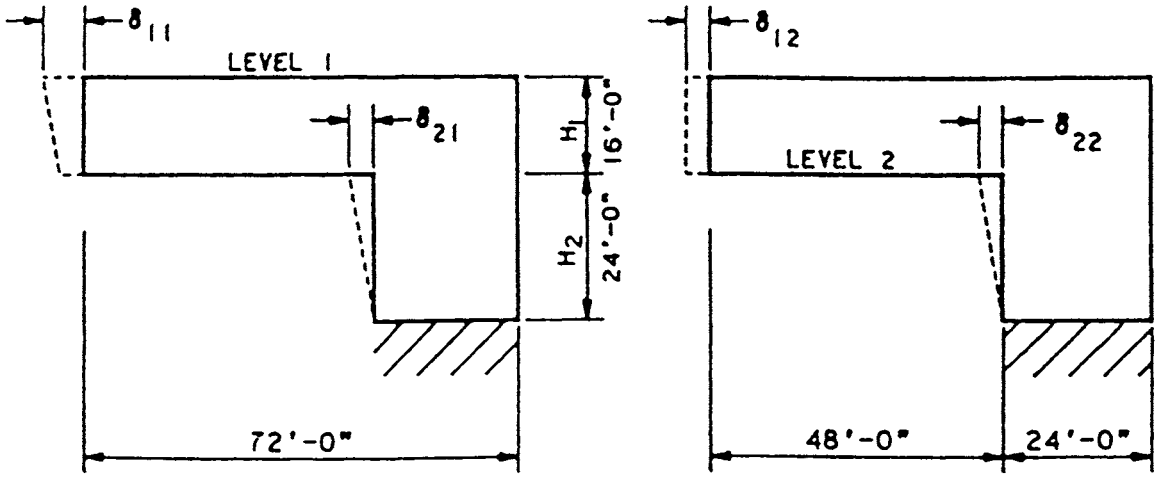


FIG 13.1 TWO LEVEL BUILDING



(a) LEVEL 1 STIFFNESS (b) LEVEL 2 STIFFNESS

FIG 13.2 INTERIOR CROSS WALL AT LINE 3

Example 13. Split Level Diaphragms. The building in Fig. 13.1 has the same roof plan as in Fig. 9.1, but the roofs are at different levels. The east and west end walls, Lines 1 and 6, are shear rigid, but the structural steel system has little lateral stiffness of its own. The wall at Line 3 is a diaphragm with a stiffness G' = 20 k/in. and both roof levels have the same stiffness of 50 k/in. Evaluate the shear distribution through the system for the line loads shown at the roof levels.

a. Line 3 Diaphragm. This assembly receives loads at two levels and may transfer forces between roof levels 1 and 2. This two degree of freedom problem requires mixed spring-like stiffnesses, following Fig. 13.2. For unit loads:

$$\delta_{22} = \frac{1\ H_2}{24'G'} = \frac{1\ (24')}{24'(20\ k/in)} = 0.0500\ in/k$$

$\delta_{12} = \delta_{22}$; $\delta_{21} = \delta_{22}$ for the Level 1 unit shear.

$$\delta_{11} = \delta_{21} + \frac{1\ H_1}{72'G'} = 0.0611\ in/k$$

b. Roof Level 2. From the Fig. 13.3 shear diagram and using Example 5 definitions for the right-side deflection of Diaphragm 2:

$$\Delta_2 = \frac{1}{B_2G'}\left[\frac{V_2}{2}\left(\frac{V_2}{V_2 + R_2}\right) L_2 - \frac{R_2}{2} L_2 \left(1 - \frac{V_2}{V_2 + R_2}\right)\right]$$

$$= \frac{L_2}{2\ B_2G'}\left(\frac{V_2^2 - R_2^2}{V_2 - R_2}\right) = \frac{L_2}{2\ B_2G'}(V_2 - R_2)$$

Note that each diaphragm must be in equilibrium. Then

$$V_2 + R_2 = W_2L_2$$

Then Δ_2 can be expressed in terms of the sought value R_2:

$$\Delta_2 = \frac{L_2}{2\ B_2G'}(w_2L_2 - 2R_2) \qquad (a)$$

Note that the T_2 and C_2 forces must be developed for equilibrium.

c. Roof Level 1. Following the above approach for the displacement at R_1:

$$\Delta_1 = \frac{L_1}{2\ B_1G'}(w_1L_1 - 2R_1) \qquad (b)$$

d. Line 3 Shear Wall. Shears from both levels affect displacements and they will be R times greater than the values from Part a above.

$$\Delta_1 = R_1\delta_{11} + R_2\delta_{12} = 0.0611\ R_1 + 0.0500\ R_2 \qquad (c)$$

$$\Delta_2 = R_2\delta_{22} + R_1\delta_{12} = 0.0500\ R_1 + 0.0500\ R_2 \qquad (d)$$

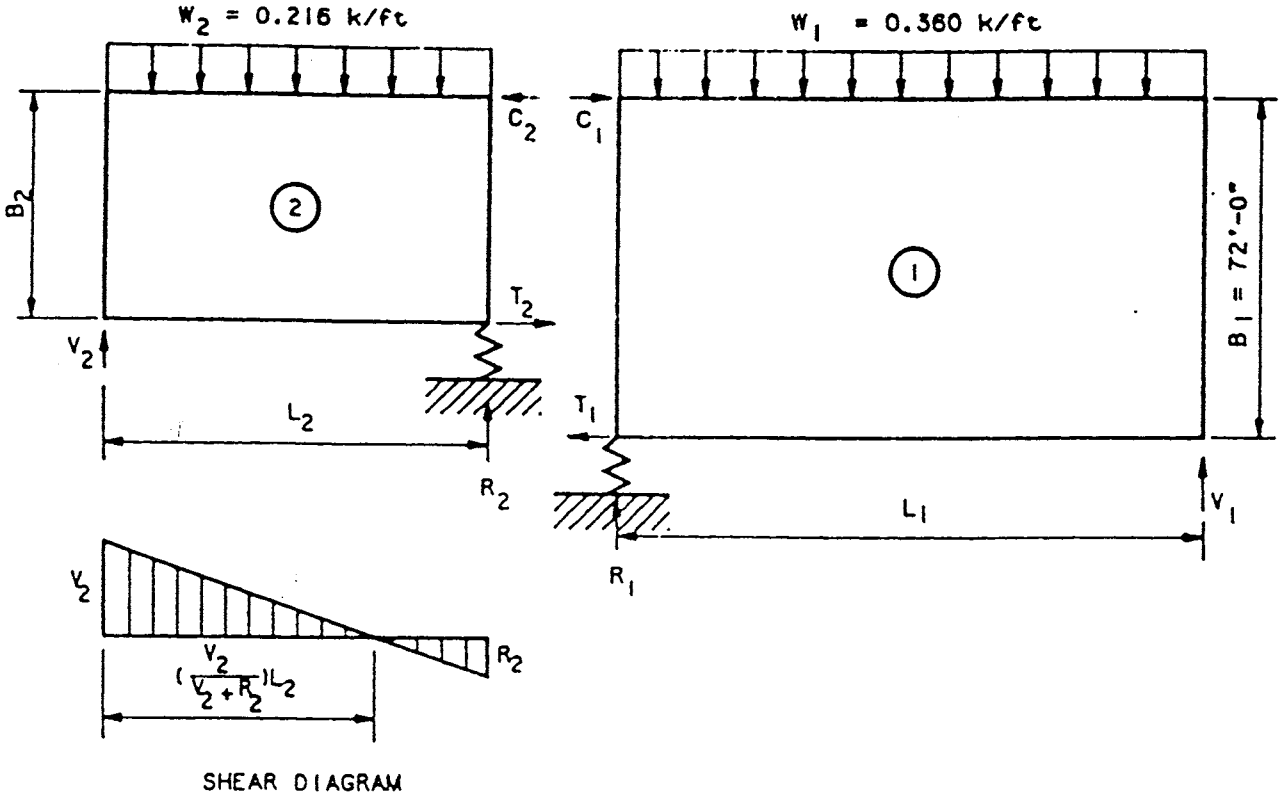


FIG 13.3 ROOF AREAS 1 AND 2

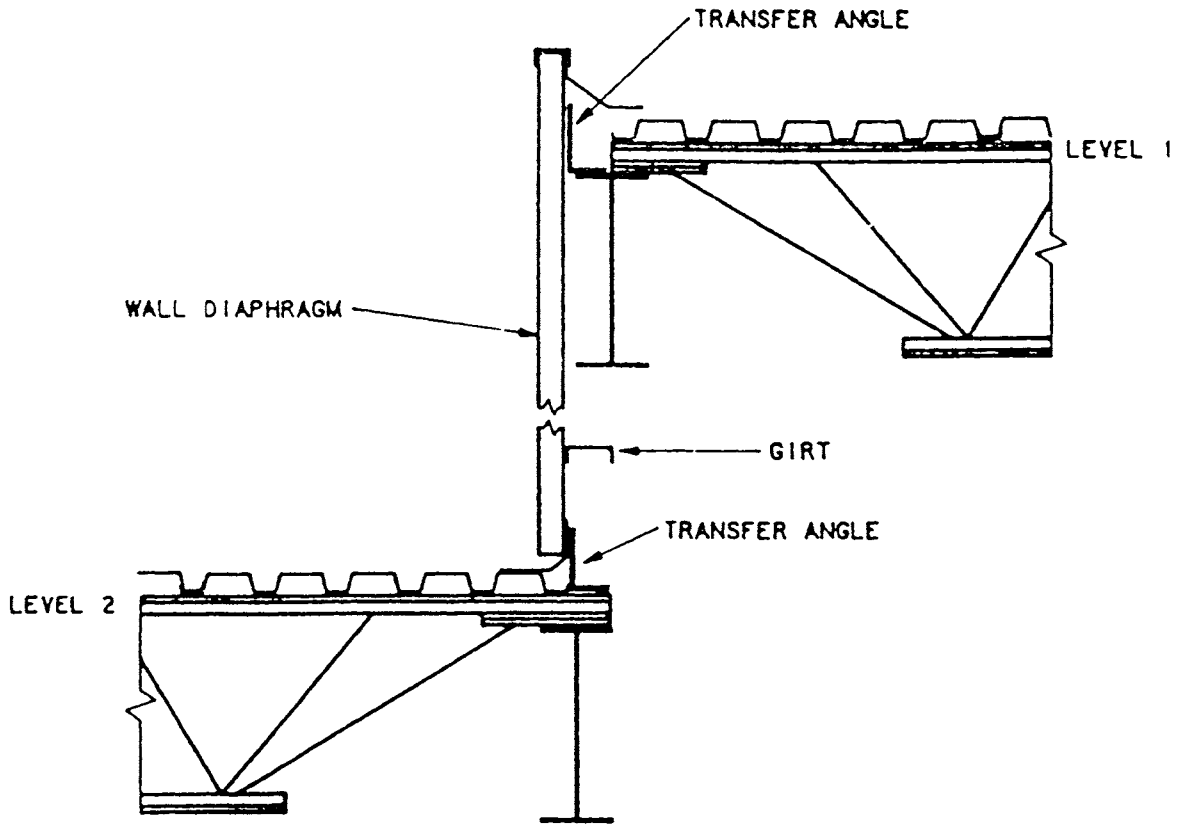


FIG 13.4 VERTICAL DIAPHRAGM SECTION

With G' = 50 k/in, w_1 = 0.360 k/ft, w_2 = 0.216 k/ft, and using the given dimensions with Equations a through d leads to:

$$0.0611\ R_1 + 0.0500\ R_2 = 0.0167\ (w_1 L_1 - 2\ R_1)$$

$$0.0500\ R_1 + 0.0500\ R_2 = 0.0167\ (w_2 L_2 - 2\ R_2)$$

and $$0.0945\ R_1 + 0.0500\ R_2 = 0.720$$

$$0.0500\ R_1 + 0.0834\ R_2 = 0.288$$

Then $R_1 = 8.48$ kips and $R_2 = -1.63$ kips

From Eqs. c and d: $\Delta_1 = 0.437"$ and $\Delta_2 = 0.343"$.

e. Shear Summary. Refer to Fig. 13.3.

$$V_2 = w_2 L_2 - R_2 = 18.91 \text{ kips and } S = \frac{V_2}{48'} = 394 \text{ lbs/ft}$$

$$V_1 = w_1 L_1 - R_1 = 34.72 \text{ kips and } S = \frac{V_1}{72'} = 482 \text{ lbs/ft}$$

The lower roof receives loads from the upper level and the transfer is through the cross wall of Fig. 13.2. That wall has:

$$\text{Upper portion: } S = \frac{8.48 \text{ kips}}{72'} = 118 \text{ lbs/ft}$$

$$\text{Lower portion: } S = \frac{8.48 - 1.63}{24} = 285 \text{ lbs/ft}$$

f. Special Details. The eave forces T_1, T_2, and C_1 must be transferred to the foundation through their sidewall diaphragms as in Example 7. The force C_2 may be resisted either in its own wall diaphragm or distributed into the higher parallel wall by a distribution beam. This transfer problem is analogous to the thrust delivery of Example 9 and its illustration in Fig. 9.4. The roof to wall shear transfers at Line 3 may be made following the scheme presented in Fig. 13.4. Positive connections are made through the angles or other similar devices to allow transfer between the diaphragms. The angles are required to transfer only 118 lbs/ft between roof levels and could be rather small in area.

The Line 3 cross wall, being both flexible and near the mid-length of the building, does not receive shear on the same scale as does the rigid short wall in Example 9. This is because the wall does have the flexibility to move somewhat away from the load. The 24 ft. diaphragm length, being short, does have a moderately high average shear and it might be required that this diaphragm segment be reinforced. This could be accomplished by supplemental diagonal bracing designed following Example 3.

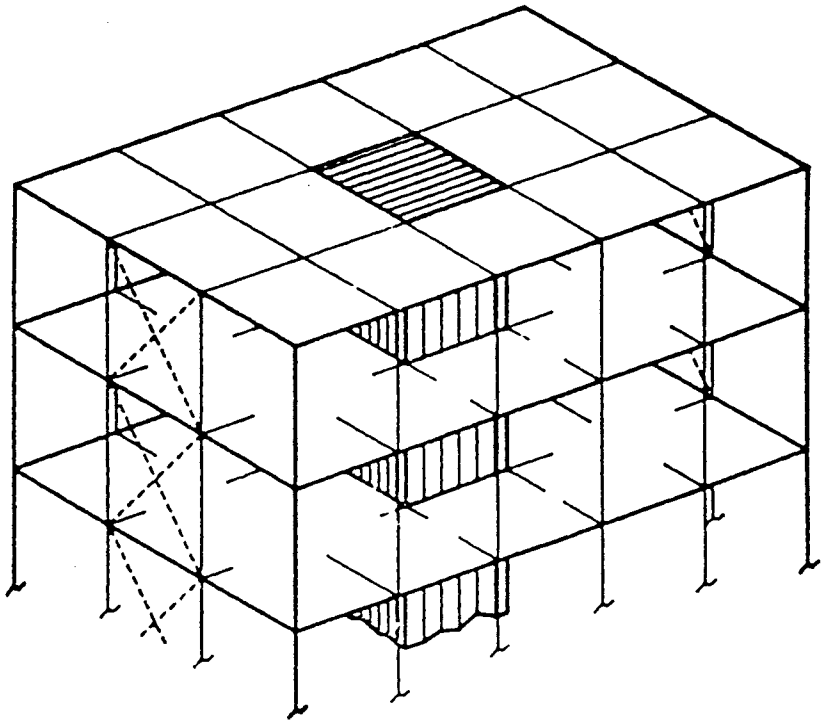


FIG 14.1

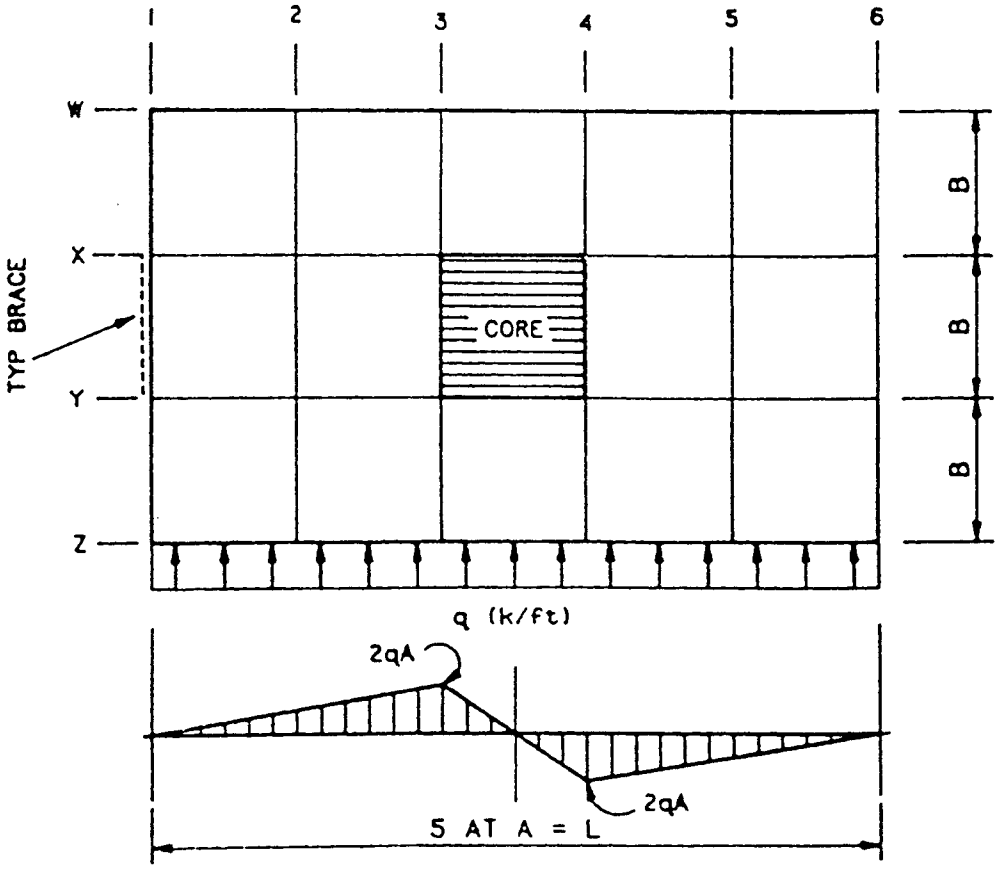


FIG 14.2 FLOOR PLAN AND SHEAR DIAGRAM

Example 14. Floor Diaphragms. Multistory structures may have floor layouts where a central core is used as the principal element for resisting lateral forces. A core, such as that indicated for the building of Fig. 14.1 where certain columns have been omitted for clarity, may attract forces over a rather short length B near the center of the structure. For unsymmetrical load cases, torsion will be present and it may be necessary to add secondary bracing in the walls such as that indicated to the left in the figure.

Consider one floor as in Fig. 14.2 where the core is to resist all lateral loads q. Examine the shear distribution in the core vicinity.

1. To the left of Line 3 (or right of Line 4), the average diaphragm shear force is 2qA and the average shear across the floor width is

$$S = 2qA/3B \qquad (a)$$

If the only attachment to the core wall were in the diaphragm and along the dimension B, the average <u>local shear</u> is more intense and would be,

$$S = 2qA/B \qquad (b)$$

2. If the beams in Line 3 or 4 are attached to the core at their ends, a corner stress problem can be eliminated. For example, the Beam YZ on Line 3 attracts shears from the left for a total axial force of

$$C = B(2qA/3B) = 2qA/3 \qquad (c)$$

It also may receive, depending on the details between Lines 3 and 4, about half the load between those lines. Then the beam end anchorage required would be about

$$C = 2qA/3 + qA/2 \qquad (d)$$

The anchorage is similar to that in Example 9 in that very little movement at the beam ends could be permitted.

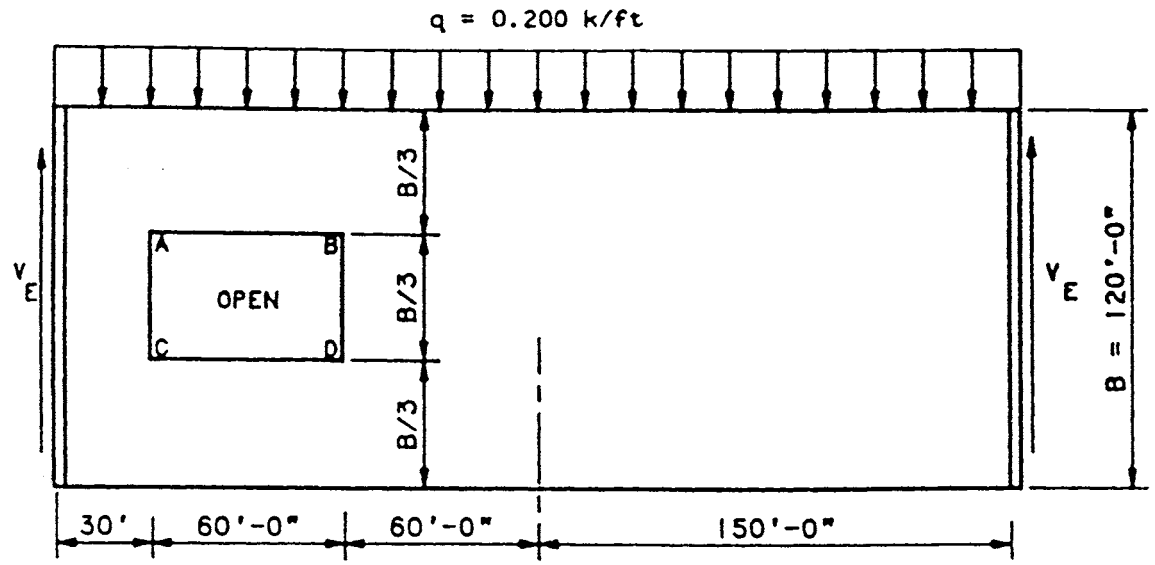
3. Relative to the nearest core wall, the maximum deflection at the diaphragm end is found from the shear diagram:

$$\Delta = 2qA\ (2A/2)/3BG' = \frac{2qA^2}{3BG'} \qquad (e)$$

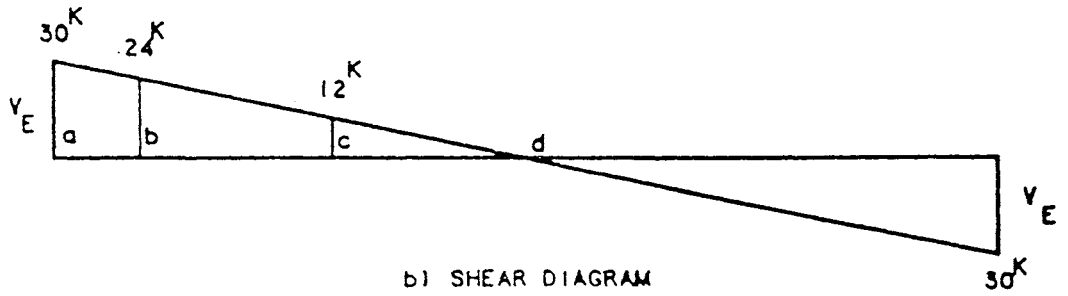
Floor diaphragms usually will be concrete filled and quite stiff. Suppose $G' = 300$ k/in., $q = 0.250$ k/ft, $A = 40'$, $B = 30'$.

$$\Delta = \frac{2qA^2}{3BG'} = \frac{2(0.250\ \text{k/ft})(40\ \text{ft})^2}{3\ (30')\ (300\ \text{k/in})} = 0.03"$$

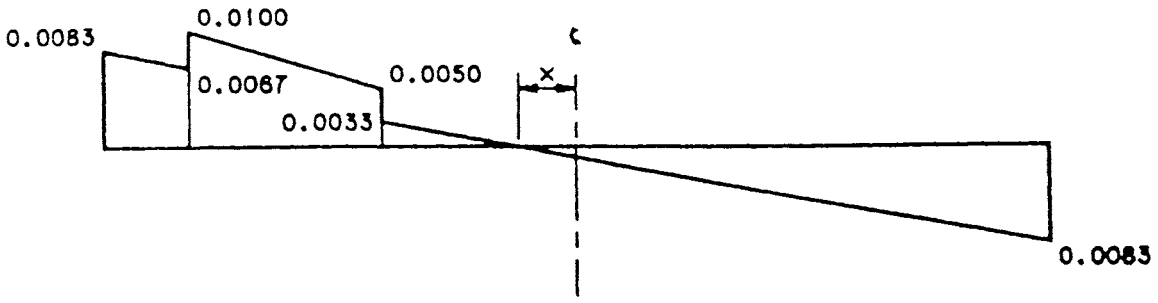
See Example 16 for other floor diaphragm examples.



a) DIAPHRAGM PLAN



b) SHEAR DIAGRAM



c) V/BG' VARIATION

FIG 15 DIAPHRAGMS WITH OPEN AREAS

Example 15. Diaphragm With Open Areas. Diaphragms with open areas must be designed to account for force transfer around the openings. The transfer must be arranged such that high local force concentrations are avoided.

Consider the diaphragm of Figure 15a which has an opening 60' x 40' nearer the left end as shown. With q = 0.200 k/ft, G' = 30 k/in., L = 300 ft and B = 120 ft, determine the shear forces around the opening, the maximum deflection, and design the force transfer mechanism. The maximum shear is

$$V_E = 0.200 \text{ k/ft } (300'/2) = 30.0 \text{ kips} \qquad (a)$$

The regions marked ab and cd on the shear diagram are for areas having the established stiffnesses G' over the full width B. Within the 60' zone marked bc having the open area, unique stiffnesses also exist. For the purpose here, that zone is considered to be two-thirds as stiff as the full width diaphragms. Then following the Example 5 simplified deflection method with V/BG' variations as shown in Fig. 15c, the deflections are:

$$\text{At b: } \Delta_b = \frac{30k + 24k}{2(120')} \cdot \frac{30'}{30k/in} = \frac{0.0083 + 0.0067}{2} (30) = 0.225 \text{ in.} \qquad (b)$$

$$\text{At c: } \Delta_c = 0.225 \text{ in} + \frac{0.0100 + 0.0050}{2} (60) = 0.675 \text{ in.} \qquad (c)$$

The maximum shear deflection is at the point where the V/BG' diagram is zero. That point is at x to the left of mid-span such that the areas to the left and right are equal.

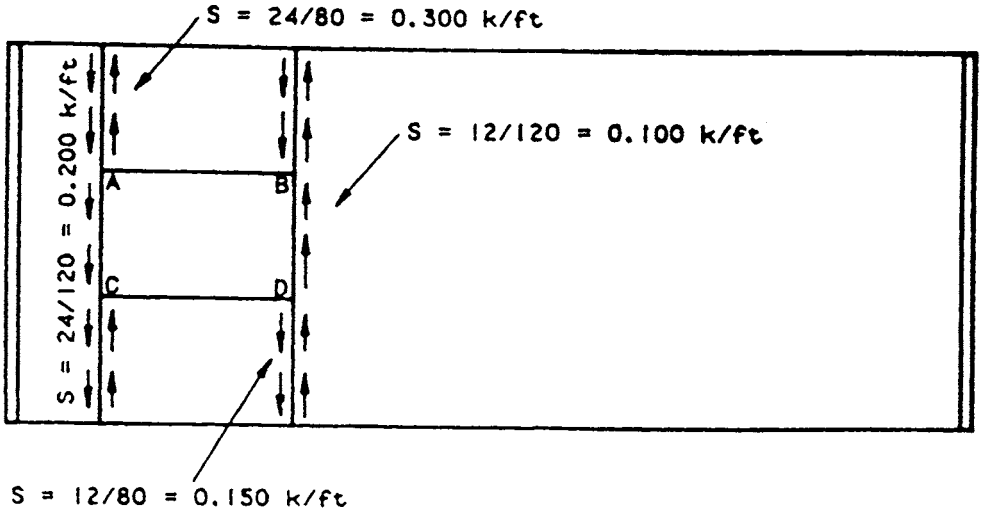
$$A_{left} = 0.675 + \frac{0.0033}{2} (60 - x); \quad A_{rt} = \frac{0.0083}{2} (150 + x)$$

$$\text{Then } x = 26 \text{ ft and } \Delta_{max} = \frac{0.0083}{2} (150 + x) = 0.73 \text{ in.} \qquad (d)$$

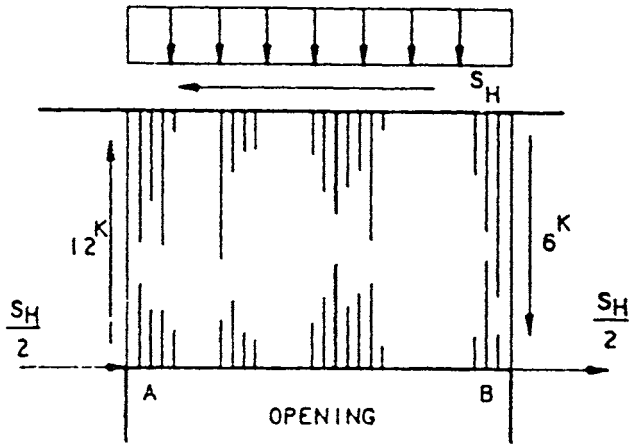
The forces in the vicinity of the opening may be determined from Fig. 15d showing the average shears to either side of the frame lines containing AC and BD. From the shear diagram and noting the shear length available;

AC left: S = 24 kips/120' = 0.200 k/ft
AC right: S = 24 kips/(120'-40') = 0.300 k/ft
BD left: S = 12 kips/(120'-40') = 0.150 k/ft
BD right: S = 12 kips/120' = 0.100 k/ft

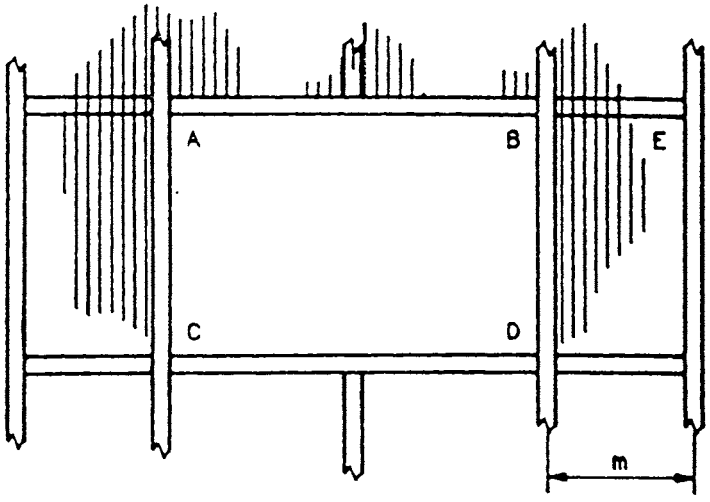
The zone above AB or below CD must be in equilibrium through axial forces S_H in members AB and CD as in Fig. 15e. These S_H forces must be transferred into adjacent diaphragms over distances m, as in Fig. 15f, sufficiently great to avoid corner crippling. In lieu of a more detailed analysis, presume that half of the q = 0.200 k/ft. line load is acting on the upper zone and half on the lower zone as with "down wind" suction. Then from Fig. 15e, equilibrium can be established by summation of moments about the upper left corner:



d) AVERAGE SHEARS



e) ADJACENT DIAPHRAGM PERIMETER FORCES



f) FRAME AT OPENING

FIG 15 continued

$$S_H = \frac{1}{40} \cdot (0.100 \text{ k/ft.} \times 60' \times 30' + 6k \times 60') = 13.5 \text{ kips} \qquad (e)$$

Half of this force can be transferred into adjacent diaphragms through extensions such as BE and over a length m of Fig. 15f.

Suppose the diaphragm design thickness is t = 0.0295", m = 15', and that powder actuated fasteners are used for connections. From Section 4.6

Ramset 26SD: $Q_f = 62.5t\ (1-5t) = 1.572$ kips
Hilti ENP-2-21-L15: $Q_f = 61.1t\ (1-4t) = 1.590$ kips

Noting a load factor of 2.35 for mechanical connectors from Section 2.3, the transfer of $S_H/2$ into the diaphragms adjacent would require a number of fasteners along m of,

$$n = \frac{S_H}{2} \frac{2.35}{Q_f} = 10 \qquad (f)$$

With m = 15 ft., the S_H force is delivered as shear along both sides of the extension:

$$S = \frac{S_H}{2} \frac{1}{2m} = 0.225 \text{ k/ft.} \qquad (g)$$

It is clear that large openings should be arranged such that their corners lie on major beam lines thus allowing the transfer length m to be great and the concentrated shear forces to be small.

With m fixed at 15' in the above example, the near-by diaphragm zones are required to resist:

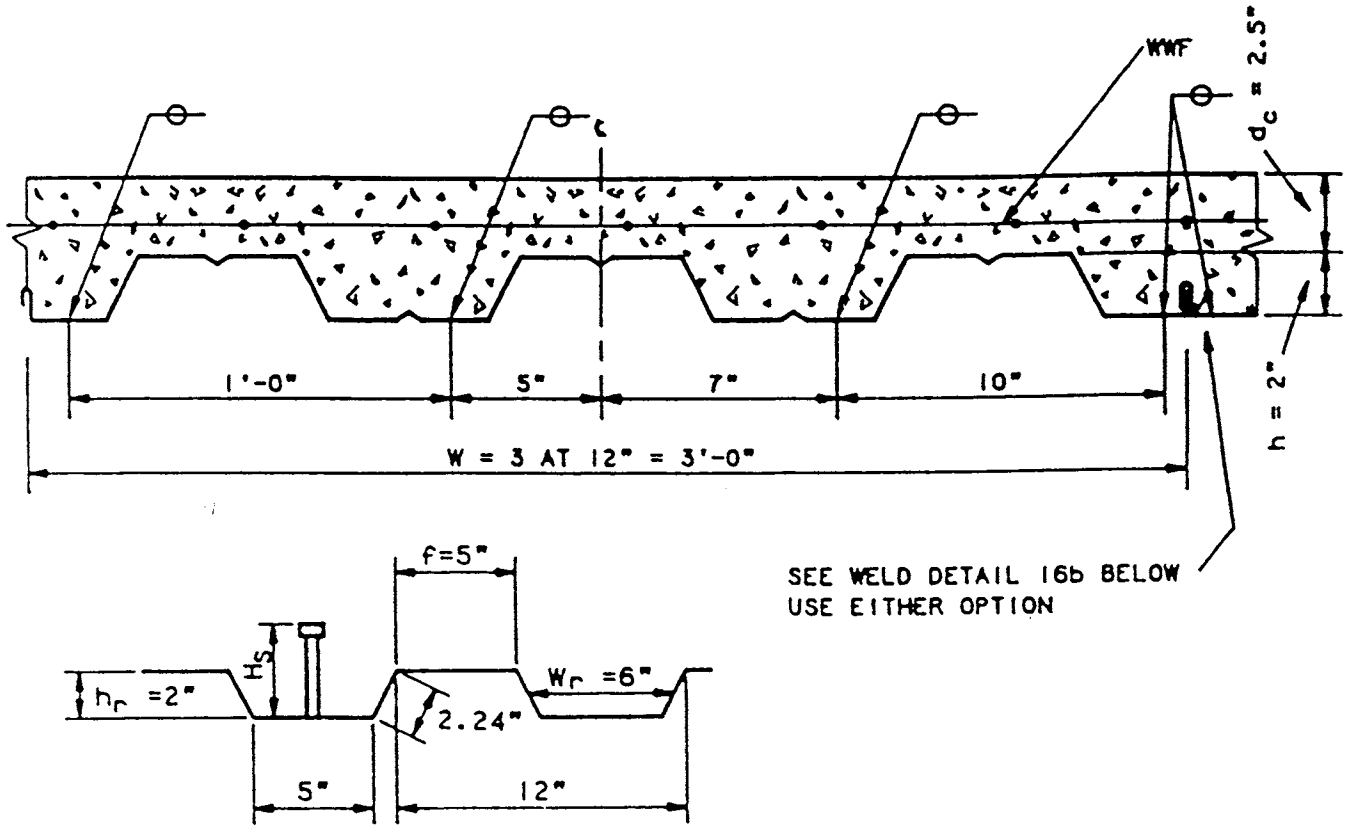
ab: S = 0.200 + 0.225 = 0.425 k/ft.
cd: S = 0.100 + 0.225 = 0.325 k/ft.

Since the diaphragm above AB must be designed for a 0.300 kip/ft. shear, consider the needed length of m to keep the ab zone at a design shear of similar magnitude. From

$$\frac{S_H}{2} \cdot \frac{1}{2m} + 0.200 \text{ k/ft.} = 0.300 \text{ k/ft.}$$

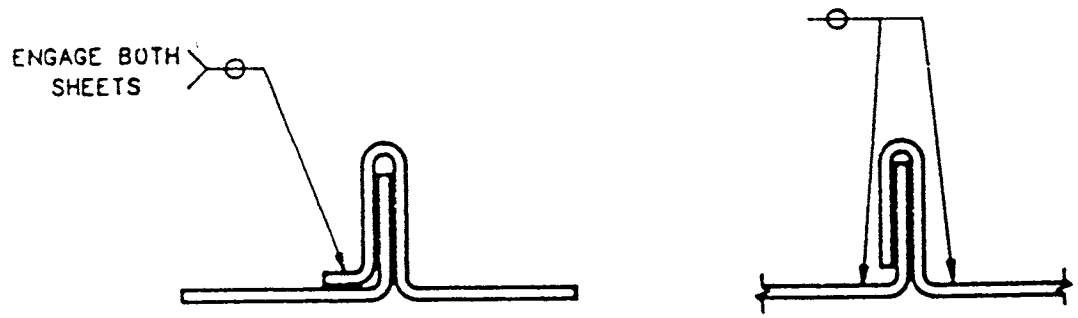
$$m = 33.75'$$

The 10 fasteners from Eq. f, along the BE-type extensions, must be included above those required for the basic design of the ab or cd zones.



AISC DIMENSIONS

a) SECTION DIMENSIONS



b) DETAIL FOR SIDE LAP WELDING AT SUPPORTS
WITH ALTERNATE LAP DETAILS.

FIG 16

Example 16. Composite Floor Diaphragm. A floor system is fabricated using normal weight concrete over a 2-inch deep steel section as in Fig. 16a. The steel panel lengths are at least 3 L_v long where L_v is the cross support beam spacing. Evaluate the composite system for strength and stiffness considering possible use of 3/4" shear studs on the diaphragm perimeter. The analysis has led to a maximum required design shear of 0.750 kips/ft.

Data: Design ultimate shear, $S_u = 3.25\ (0.750) = 2.44$ kips/ft
$f_c = 3000$ psi; $d_c = 2.5$" cover; $w_c = 150$ pcf
Welds: E70XX 5/8" diameter, all positions
$t = 0.0358$"; $w = 36$" cover width; No. 10 stitch screws
min. $L = 3\ L_v = 27'\text{-}0$" (three or more span conditions)

Following Section 5.3,

$$S_u = \frac{BQ_f}{L} + \frac{w_c^{1.5}(f_c')^{0.5}}{19500} = \frac{BQ_f}{27} + 5.160 \qquad (5.3.1)$$

$$B = n_s\alpha_s + \frac{1}{w^2}\left(2n_p \Sigma x_p^2 + 4 \Sigma x_e^2\right) \qquad (2.2\text{-}4)$$

$$Q_s = 21.5\ t = 21.5\ (0.0358) = 0.770 \text{ kips} \qquad (\text{Sec. } 4.5)$$

$$Q_f = 99t\ (0.625 - t) = 2.088 \text{ kips} \qquad (4.2.1\text{-}2)$$

$$n_s\alpha_s = 3 \text{ spans } (2 \text{ screws/span})(Q_s/Q_f) = 2.21$$

$$\Sigma x_p^2 = \Sigma x_e^2 = 5^2 + 17^2 + 7^2 + 17^2 = 652$$

Note that Σx^2 may be slightly different if a single sidelap weld is used as may be possible with the left detail of Fig. 16b.

Then

$$B = 2.21 + \frac{1}{36^2}\left[2 \times 2 \times 652 + 4 \times 652\right] = 6.23$$

and

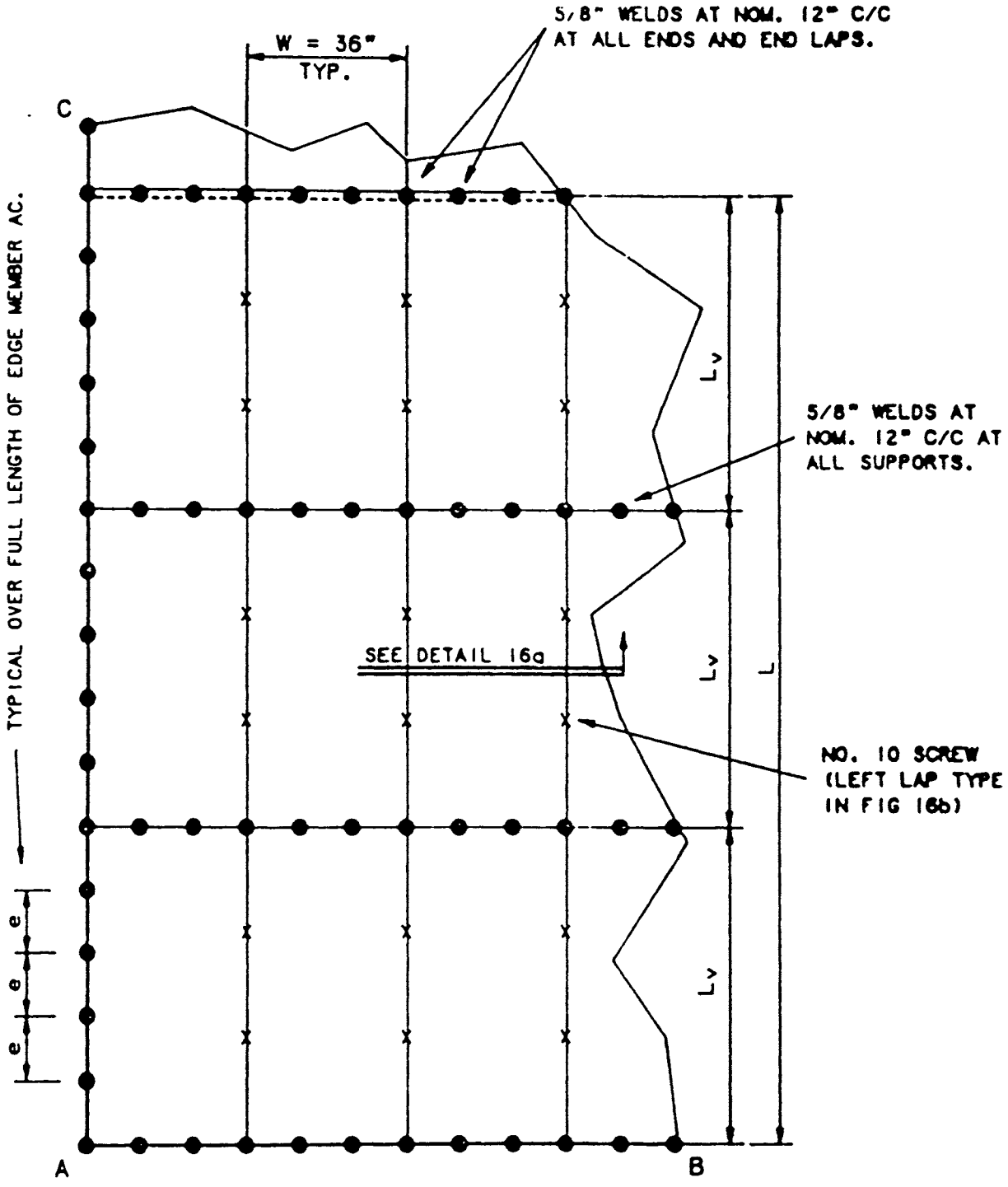
$$S_u = \frac{6.23(2.088)}{27} + 5.160 = 5.64 \text{ kips/ft.}$$

The 5.64 kips/ft. value represents the maximum strength available away from perimeter members, a value larger than the required ultimate shear of $S = 3.25(0.750) = 2.44$ kips/ft. where 3.25 is the recommended load factor.

Using the 5/8 welds with $Q_f = 2.088$ kips in shear,

$$e = \frac{12\ Q_f}{3.25(S)} = \frac{12(2.088)}{2.44} = 10.27" \qquad (5.4\text{-}2)$$

Along member AC of Fig. 16c with $L_v = 9' = 108$", ten intermediate welds within L_v would allow $e = 9.81$" and meet the required spacing. However, along member AB, the spacing was fixed at an average of 12". The inclusion of at least one extra weld, within w of Fig. 16a, would be required at panel ends on the diaphragm perimeter. With the fastener spacing across panel ends is at 12 inches, the maximum design shear would be $(10.27/12)(0.750) = 0.642$ kips/ft.



(c) TYPICAL DECK LAYOUT

FIG 16 CONT.

The addition of one extra weld per panel would lead to an average end spacing of 36"/4 welds = 9 inches noting that the former average count was three welds per panel or a 12" spacing.

Shear studs may be used on the perimeter for force transfer with values established following Section 1.11.5, and commentary, of the AISC Manual of Steel Construction, Eighth Edition. Given the general dimensions of Fig. 16a, coefficients are developed for shears perpendicular and parallel to the deck:

N_r = 1 stud per valley.
w_r = 6" rib opening
h_r = 2" rib height
H_s = 3.5" stud height

$Q_u = 0.5\ A_s(f'_c\ E_c)^{0.5} = 21.0$ kips for 3/4" studs. Q_u not to exceed $A_s F_u$ of 0.4418(60) = 26.5 kips. (Follow AISC for symbols.)

Perpendicular: $FAC = \frac{0.85}{(N_r)^{0.5}} \left(\frac{w_r}{h_r}\right) \left(\frac{H_s}{h_r} - 1.0\right) = 1.91$; use 1.00

Parallel: $w_r/h_r = 3.00 > 1.5$, use FAC = 1.00

Suppose it is desired to develop the maximum shear strength of 5.64 kips/ft. through perimeter studs. Then using the value Q_u in lieu of the Q_f value earlier, the maximum stud spacing at the edge would be

$$e = \frac{12\ (21.0)}{5.64} = 44.7"$$

It is clear that the common AISC maximum spacing of e = 32" for these systems is sufficient for the diaphragm transfer.

It is expected that this diaphragm is a very rigid diaphragm because the concrete both carries much of the shear and retards end warping in the steel panels. For Eq. 5.6-1, the developed width per flute, s/d = 14.48/12 = 1.207. For the C term, as in Eq. 3.3-1:

$$\alpha_1 = \alpha_2 = \frac{1}{36}(5 + 17 + 7 + 17) = 1.278$$

$$S_f = 1.15 \times 10^{-3}/(t)^{0.5} = 0.0061 \qquad (4.4\text{-}1)$$

$$S_s = 3 \times 10^{-3}/(t)^{0.5} = 0.0159$$

n_p = 2 interior purlins within L

n_s = 6 stitch screws per panel length

then, $C = \frac{29500(0.0358)(0.0061)}{36}\left[\frac{24 \times 27}{4 \times 1.278 + 12 \times 0.38}\right] = 11.99$ (3.3-1)

and, $G' = \frac{29500 \times 0.0358}{2.6 \times 1.207 + 11.99} + 3.5(2.5)(3000)^{0.7} = 2447$ kips/in. (5.6-1)

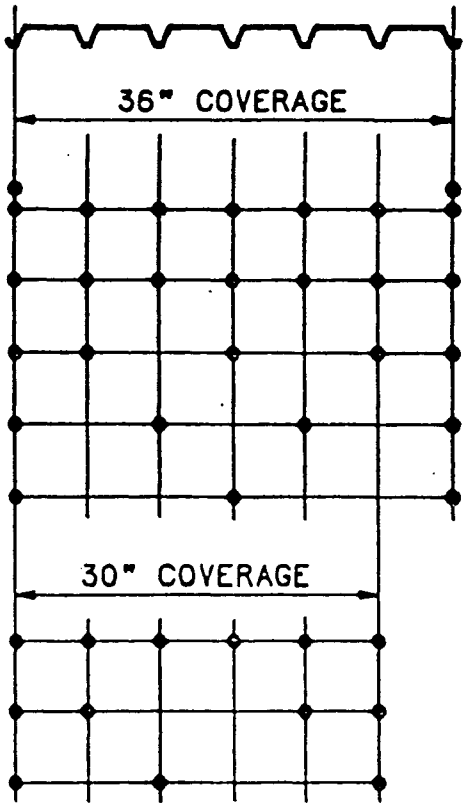
The G' = 2447 kips/in. value defines a very stiff composite system as can be seen from the list included Example Problem 4.

APPENDIX IV

TYPICAL FASTENER LAYOUT
WARPING FACTOR DEVELOPMENT

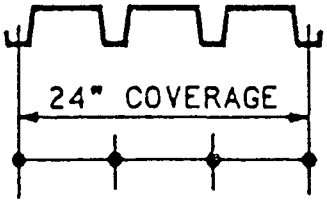
TYPICAL FASTENER LAYOUTS

1.5 (WR, IR, NR)



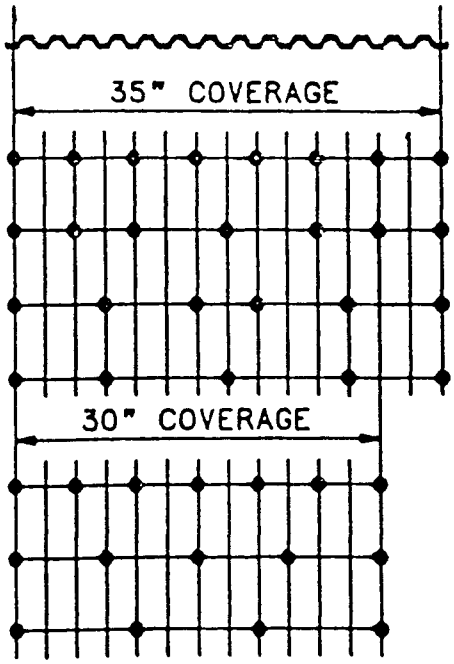
	$\alpha = \Sigma \frac{X}{W}$	$\Sigma (\frac{X}{W})^2$
36/9 PATTERN	3.000	1.2778
36/7 PATTERN	2.000	0.7778
36/5 PATTERN	1.667	0.7222
* 36/4 PATTERN	1.333	0.5556
36/3 PATTERN	1.000	0.5000
30/6 PATTERN	1.800	0.7000
30/4 PATTERN	1.600	0.6800
30/3 PATTERN	1.100	0.5100

3.0 DR



24/4 PATTERN	1.333	0.5556

9/16 FORM



35/8 PATTERN	2.286	0.8571
35/7 PATTERN	2.143	0.8469
35/6 PATTERN	1.714	0.6735
35/5 PATTERN	1.571	0.6632
30/7 PATTERN	2.000	0.7778
30/5 PATTERN	1.500	0.6250
30/4 PATTERN	1.333	0.5556

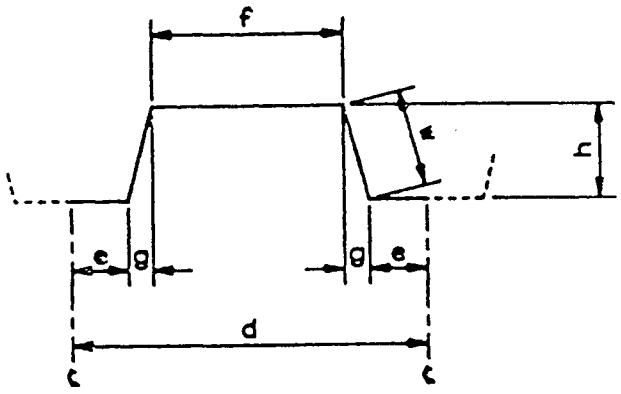
* This pattern is also used for 2" & 3" Composite.

Warping Factor Development

D-values for warping are given in Table 3.31 for the more common 1.5 inch deep standard SDI profiles. They were developed following the rather detailed material from Reference 18 which is summarized below and suited to programmed use. The profile of one corrugation is as shown where dimensions are in inches and are presumed to represent flat elements between their intersection points. The symbols used herein are intended only for this appendix.

Not all of the values in the listing below are needed for any one end fastener layout. Beginning with WT, values are established for subsequent use leading to DW1 through DW4 representing D-values for bottom end fasteners in each, alternate, every third, and fourth valleys respectively.

Listing



$$WT = 4f^2\ (f + w)$$

$$WB = 16e^2\ (2e + w)$$

$$PW = 1/(t)^{1.5}$$

$$A = 2e/f$$

$$D1 = \frac{1}{3}\ h^2\ (2w + 3f)$$

$$D2 = D1/2$$

$$V = 2(e + w) + f$$

$$D3 = \frac{1}{12}\ \frac{h^2}{d^2}\ [(V)\ (4e^2 - 2ef + f^2) + d^2\ (3f + 2w)]$$

$$C1 = 1/(D3 - D2/2)$$
$$C2 = 1/[e(D2/f) + D3]$$
$$C3 = 1/[(0.5 + A)D2 + D3]$$
$$C4 = A/[e(D1/f) + D2]$$
$$C5 = A/[(0.5 + A)D1 + D2]$$
$$C6 = 1/[(0.5 + A)D1 + D3 + D2/2]$$

$$D4(1) = (24f/C1)\ \left(\frac{C1}{WT}\right)^{0.25}$$

$$D4(2) = (24f/C2)\ \left(\frac{C2}{WT}\right)^{0.25}$$

$$D4(3) = (24f/C3)\ \left(\frac{C3}{WT}\right)^{0.25}$$

$$D4(4) = (48e/C4)\ \left(\frac{C4}{WB}\right)^{0.25}$$

$$D4(5) = (48e/C5)\ \left(\frac{C5}{WB}\right)^{0.25}$$

$$D4(6) = (24f/C6)\ \left(\frac{C6}{WT}\right)^{0.25}$$
$$G4(1) = D4(1)$$

$$G4(2) = 2[D4(2)] + A[D4(4)]$$
$$G4(3) = 2[D4(3)] + D4(6) + 2A\,[D4(5)]$$

$$C41 = A/[(1.5A + 1)D1 + D2]$$
$$C42 = 1/[D3 + (1.5A + 1)D2]$$
$$C43 = A/[(2A + 1)D1 + 2(D2)]$$
$$C44 = 1/[(1.5A + 1)D1 + (0.5A + 1)D2 + D3]$$

$$D42 = (24f/C42)\left(\frac{C42}{WT}\right)^{0.25}$$

$$D44 = (24f/C44)\left(\frac{C44}{WT}\right)^{0.25}$$

$$D41 = (48e/C41)\left(\frac{C41}{WB}\right)^{0.25}$$

$$D43 = (48e/C43)\left(\frac{C43}{WB}\right)^{0.25}$$

$$G44 = 2(D42 + D44) + A[2(D41) + D43]$$

$$DW1 = G4(1)(f/d)PW$$
$$DW2 = G4(2)(f/2d)PW$$
$$DW3 = G4(3)(f/3d)PW$$
$$DW4 = G44(f/4d)PW$$

Any computer program developed following the above list should be checked against the values of Table 3.31 for a preliminary check of its accuracy. For that table, the following inch dimensions were used:

Type	h	w	d	e	f	g	s
WR	1.50	1.5052	6.00	1.000	3.750	0.125	8.760
IR	1.50	1.5052	6.00	0.625	4.500	0.125	8.760
NR	1.50	1.5117	6.00	0.250	5.125	0.1875	8.648

APPENDIX V

LOAD TABLES

Appendix V. Load Tables

The following load tables are for typical panel configurations and connector types. Specific design applications may dictate an arrangement, not listed, which would require the designer to make direct use of the strength and stiffness formulas in Sections 1 through 5.

The tables are arranged showing fastener types and safety factor across the top along with the fastener patterns as defined in Appendix IV. For each steel base metal design thickness given, allowable design shears are listed under specific span lengths. The left column shows the number of stitch connectors between cross supports at each sheet edge. For example, "5" would represent six even spaces or stitch fasteners at 12" centers within a 6 ft. span.

Generally, the stability check of Section 2.4 will not control roof deck shear. However, if a span exceeds the maximum recommended by the SDI Design Manual for Floor Decks and Roof Decks, Pub. No. 27, the stability equation should be checked against the tabular value.

For roof deck and composite floor deck, the steel yield point is taken at 33 ksi; form deck yield strength is taken at 80 ksi. Structural concrete strength is 3000 psi and the weights are 145 pcf and 110 pcf for normal weight and light weight concrete respectively. Though design tables show side lap stitch welds for all thicknesses listed, they are not recommended for design thicknesses of 0.0295 inches and less.

Subscripted D-values are listed warping constants for the particular connector pattern and panel profile. They may be substituted directly into the G' stiffness equation at the bottom of each page along with K1 and K2.

D_{wr} for wide rib deck
D_{ir} for intermediate rib deck
D_{nr} for narrow rib deck
D_{3DR} for 3" deep rib deck
D_{FD} for form deck
D_{CD} for composite deck
K1 (see Section 3.4)
K2 = 29500 t

The tables for concrete filled composite deck (pages V93 through V112) are for 1 1/2", 2", and 3" deck with a 36/4 weld pattern; the values would not appreciably change for 24" wide deck with a 24/3 pattern.

Refer to Section 3.4 and to Example Problem 6 for introductory use of the tables.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 36/7 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	415	360	315	275	245	225	205	185	170	0.486
1	540	475	420	380	340	310	280	260	240	0.287
2	645	575	515	465	425	390	360	330	310	0.204
3	740	665	600	550	500	465	430	400	375	0.158
4	815	740	675	620	570	530	495	460	430	0.129
5	880	810	745	685	635	590	550	515	485	0.109
6	935	865	805	745	695	650	610	570	540	0.094

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	375	335	300	270	245	225	210	195	180	0.535
1	505	455	410	375	340	315	290	270	250	0.317
2	620	560	510	470	435	400	370	345	325	0.225
3	720	660	605	555	515	480	450	420	395	0.174
4	815	745	685	635	590	550	515	485	460	0.142
5	895	825	765	710	665	620	585	550	520	0.120
6	965	895	835	780	730	685	645	610	575	0.104
7	1025	960	895	840	790	745	705	665	630	0.092

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	390	355	320	295	275	255	235	220	210	0.615
1	535	485	445	410	380	350	330	310	290	0.364
2	665	610	565	525	485	450	420	395	375	0.259
3	780	720	670	620	580	545	515	485	455	0.200
4	890	825	770	715	670	630	595	565	535	0.164
5	990	920	860	805	755	715	675	640	605	0.138
6	1085	1010	945	890	840	790	750	710	675	0.120
7	1165	1090	1025	970	915	865	820	780	745	0.106
8	1240	1165	1100	1040	985	935	890	845	805	0.094

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

sdi.

FRAME FASTENING: 5/8'' WELDS on 36/5 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	365	320	285	255	230	205	190	170	160	0.583
1	470	420	380	345	315	290	265	245	225	0.319
2	550	500	455	420	385	355	330	310	290	0.219
3	610	560	520	480	450	415	390	365	345	0.167
4	655	610	570	535	500	470	440	415	395	0.135
5	690	650	615	580	545	515	490	460	440	0.113
6	715	680	650	615	585	555	530	500	480	0.098

D_{ur} = 758 D_{lr} = 886 D_{nr} = 974 K2 = 873

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	345	310	275	250	225	210	190	180	165	0.642
1	455	410	375	345	320	295	275	255	235	0.351
2	545	500	465	430	400	370	350	330	310	0.242
3	625	580	535	500	470	440	415	390	370	0.184
4	685	640	600	565	530	500	475	445	425	0.149
5	740	695	655	620	585	555	525	500	475	0.125
6	780	740	705	665	635	605	575	545	520	0.108
7	810	775	740	710	675	645	615	590	565	0.094

D_{ur} = 567 D_{lr} = 663 D_{nr} = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	360	325	300	275	250	235	220	205	190	0.738
1	490	450	415	385	360	335	310	290	275	0.404
2	600	555	515	485	455	425	400	380	355	0.278
3	700	650	610	570	535	505	480	455	430	0.212
4	780	735	690	650	615	580	550	525	500	0.171
5	850	805	760	720	685	650	615	590	560	0.144
6	910	865	825	785	745	710	680	650	620	0.124
7	965	920	875	840	800	765	735	705	675	0.109
8	1005	965	925	885	850	815	785	755	725	0.097

D_{ur} = 372 D_{lr} = 435 D_{nr} = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	280	245	220	195	170	155	140	130	120	0.729
1	375	340	310	280	260	240	220	200	185	0.358
2	445	410	380	350	325	300	280	265	250	0.237
3	495	460	430	405	380	355	335	315	295	0.177
4	525	500	470	445	420	400	380	360	340	0.142
5	550	525	500	480	455	435	415	395	380	0.118
6	565	545	525	505	485	465	445	430	410	0.101

D_{wr} = 1072 D_{ir} = 1216 D_{nr} = 1282 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	265	235	210	190	170	155	145	135	125	0.803
1	370	335	310	285	265	245	225	210	195	0.394
2	455	420	390	360	340	315	300	280	265	0.261
3	520	485	455	425	400	380	355	340	320	0.195
4	565	535	505	480	455	430	410	390	370	0.156
5	605	575	550	525	500	475	455	435	415	0.130
6	630	605	585	560	535	515	495	475	455	0.111
7	655	630	610	590	565	545	525	505	490	0.097

D_{wr} = 802 D_{ir} = 909 D_{nr} = 959 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	275	245	225	205	190	175	165	155	145	0.923
1	400	370	345	320	295	275	255	240	225	0.454
2	505	470	440	410	385	365	345	325	310	0.301
3	590	555	520	490	465	440	415	395	375	0.225
4	660	625	590	560	530	505	480	460	440	0.180
5	715	680	650	620	590	565	540	515	495	0.150
6	755	725	695	665	640	615	590	565	545	0.128
7	790	765	735	710	685	660	635	610	590	0.112
8	820	795	770	745	720	695	675	650	630	0.099

D_{wr} = 526 D_{ir} = 597 D_{nr} = 630 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

sdi.

FRAME FASTENING: 5/8'' WELDS on 36/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	235	210	190	170	155	140	125	115	105	0.971
1	305	280	260	240	225	210	195	185	170	0.408
2	345	325	305	290	275	260	245	230	220	0.258
3	370	355	340	325	310	295	280	270	255	0.189
4	385	370	360	345	335	320	310	300	285	0.149
5	395	385	375	365	355	340	330	320	310	0.123
6	400	390	385	375	365	355	350	340	330	0.105

D_{wr} = 2209 D_{ir} = 2428 D_{nr} = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	225	205	185	165	150	140	130	120	110	1.070
1	310	290	270	250	235	220	205	195	180	0.450
2	370	350	330	310	295	275	265	250	240	0.285
3	405	390	370	355	340	325	310	295	280	0.208
4	430	415	400	385	370	360	345	330	320	0.164
5	450	435	425	410	400	385	375	360	350	0.135
6	460	450	440	430	420	405	395	385	375	0.115
7	470	460	450	440	435	425	415	405	395	0.100

D_{wr} = 1652 D_{ir} = 1816 D_{nr} = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	245	220	200	185	170	155	145	135	125	1.231
1	350	325	305	285	270	255	240	225	210	0.517
2	425	400	380	360	340	325	310	295	280	0.327
3	480	460	440	420	400	385	365	350	335	0.239
4	520	500	485	465	445	430	415	400	385	0.189
5	550	535	515	500	485	470	455	440	425	0.156
6	570	555	540	530	515	500	485	470	460	0.133
7	585	575	560	550	535	525	510	500	485	0.115
8	600	590	575	565	555	545	530	520	510	0.102

D_{wr} = 1084 D_{ir} = 1192 D_{nr} = 1199 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 30/6 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	375	320	280	245	220	200	180	165	155	0.647
1	505	445	395	350	315	285	260	240	220	0.366
2	620	550	490	445	405	370	340	310	290	0.256
3	715	640	580	525	480	445	410	380	355	0.196
4	795	720	655	600	555	510	475	445	415	0.159
5	865	790	725	670	620	575	535	500	470	0.134
6	920	850	790	730	680	635	595	555	525	0.116

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	340	300	265	240	220	200	185	170	160	0.713
1	470	425	380	345	315	290	265	250	230	0.404
2	590	530	485	445	410	375	350	325	305	0.282
3	695	630	580	530	495	460	430	400	375	0.216
4	790	720	665	615	570	530	500	470	440	0.175
5	875	805	745	690	645	600	565	535	505	0.148
6	945	875	815	760	710	670	630	595	560	0.127
7	1010	940	880	825	775	730	690	650	615	0.112

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	350	315	290	265	245	225	210	200	185	0.821
1	495	450	410	380	350	325	305	285	270	0.465
2	630	575	530	490	455	425	395	370	350	0.324
3	750	690	640	595	555	520	490	460	430	0.249
4	865	800	740	690	645	610	575	545	515	0.202
5	965	895	835	780	735	690	655	620	585	0.170
6	1060	985	925	865	815	770	730	690	655	0.147
7	1145	1070	1005	945	895	845	800	760	725	0.129
8	1220	1145	1080	1020	965	915	870	830	790	0.115

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING; 5/8'' WELDS on 30/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	340	300	270	240	215	195	175	160	150	0.728
1	440	395	355	325	300	275	255	235	215	0.391
2	515	470	430	395	365	340	315	295	280	0.267
3	570	530	490	455	425	400	375	350	330	0.203
4	610	570	535	505	475	445	420	400	375	0.164
5	635	605	575	545	515	490	465	440	420	0.137
6	660	630	605	575	550	525	500	475	455	0.118

D_{wr} = 1377 D_{ir} = 1547 D_{nr} = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	320	290	260	235	215	195	180	165	155	0.802
1	430	390	360	330	305	285	260	245	225	0.431
2	520	475	440	410	380	355	335	315	295	0.294
3	590	550	510	480	450	420	395	375	355	0.224
4	645	605	570	535	505	480	455	430	410	0.180
5	690	655	620	585	555	530	505	480	455	0.151
6	725	690	660	630	600	575	545	525	500	0.130
7	755	725	695	665	640	610	585	565	540	0.114

D_{wr} = 1030 D_{ir} = 1157 D_{nr} = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	340	305	280	255	235	220	205	190	180	0.923
1	465	430	395	370	340	320	295	280	260	0.496
2	570	530	495	460	435	410	385	365	345	0.339
3	665	620	580	545	515	485	460	440	415	0.257
4	740	695	655	620	590	560	530	505	480	0.207
5	805	760	725	685	655	620	595	565	540	0.174
6	855	820	780	745	710	680	650	620	595	0.150
7	900	865	830	795	760	730	700	675	645	0.131
8	940	905	870	835	805	775	745	720	695	0.117

D_{wr} = 676 D_{ir} = 760 D_{nr} = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 30/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	250	220	200	175	155	140	130	115	110	1.059
1	335	305	280	255	235	220	205	190	175	0.470
2	390	360	335	315	295	275	260	245	230	0.302
3	420	400	380	360	340	320	305	290	275	0.222
4	445	425	410	390	375	355	340	325	310	0.176
5	460	445	430	415	400	385	370	355	340	0.146
6	470	455	445	430	420	405	390	380	365	0.124

D_{wr} = 1754 D_{ir} = 1943 D_{nr} = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	240	215	190	170	155	140	130	120	110	1.167
1	335	305	285	265	245	230	210	195	185	0.518
2	405	380	355	330	310	295	275	260	250	0.333
3	455	430	405	385	365	345	330	315	300	0.245
4	490	470	450	430	410	390	375	355	340	0.194
5	515	495	480	460	445	425	410	395	380	0.160
6	535	520	500	485	470	455	440	425	410	0.137
7	545	535	520	505	490	475	465	450	435	0.119

D_{wr} = 1312 D_{ir} = 1453 D_{nr} = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	250	225	205	185	175	160	150	140	130	1.343
1	370	340	315	295	280	260	240	225	210	0.596
2	460	430	405	380	360	340	320	305	290	0.383
3	530	500	475	450	425	405	385	370	355	0.282
4	580	555	530	505	485	465	445	425	410	0.223
5	620	600	575	555	530	510	490	475	455	0.185
6	650	630	610	590	570	550	530	515	500	0.157
7	675	655	640	620	600	585	565	550	535	0.137
8	695	675	660	645	630	610	595	580	565	0.122

D_{wr} = 861 D_{ir} = 954 D_{nr} = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	415	360	315	275	245	225	205	185	170	0.486
1	475	415	370	325	295	265	240	220	205	0.377
2	535	470	420	375	340	305	280	255	240	0.308
3	590	520	465	420	380	350	320	295	270	0.261
4	640	570	510	460	420	385	355	330	305	0.226
5	690	615	555	500	460	420	390	365	335	0.199
6	730	655	595	540	495	455	425	395	370	0.178

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	375	335	300	270	245	225	210	195	180	0.535
1	445	395	355	320	290	270	250	230	215	0.415
2	505	455	410	370	340	310	290	270	250	0.340
3	560	505	460	420	385	355	330	305	285	0.287
4	615	555	510	465	430	400	370	340	320	0.249
5	670	605	555	510	470	440	410	380	355	0.219
6	715	655	600	550	510	475	445	415	390	0.196
7	765	695	640	590	550	510	480	450	425	0.178

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	390	355	320	295	275	255	235	220	210	0.615
1	465	420	385	355	325	305	285	265	250	0.478
2	535	485	445	410	380	350	330	310	290	0.391
3	600	550	505	465	430	400	375	350	330	0.330
4	665	610	565	525	485	450	420	395	375	0.286
5	725	665	615	575	535	500	470	440	415	0.253
6	785	720	670	625	580	545	515	485	455	0.226
7	840	775	720	670	630	590	555	525	495	0.204
8	890	825	770	715	670	630	595	565	535	0.187

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 36/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	365	320	285	255	230	205	190	170	160	0.583
1	420	370	335	300	275	250	225	205	190	0.433
2	465	415	375	340	310	285	265	245	225	0.345
3	510	460	415	380	350	320	300	275	255	0.286
4	545	495	450	415	380	355	330	305	285	0.245
5	575	530	485	445	415	385	360	335	315	0.214
6	605	555	515	475	445	410	385	360	340	0.190

D_{wr} = 758 D_{ir} = 886 D_{nr} = 974 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	345	310	275	250	225	210	190	180	165	0.642
1	400	360	330	300	275	250	230	215	200	0.477
2	450	410	375	345	320	295	270	255	235	0.380
3	500	455	420	385	360	335	310	290	270	0.315
4	545	500	460	425	395	370	345	325	305	0.270
5	585	540	500	465	430	405	380	355	335	0.236
6	620	575	535	495	465	435	410	385	365	0.209
7	655	610	565	530	495	465	440	415	395	0.188

D_{wr} = 567 D_{ir} = 663 D_{nr} = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	360	325	300	275	250	235	220	205	190	0.738
1	430	395	360	330	305	285	265	250	235	0.549
2	490	450	415	385	360	335	310	290	275	0.437
3	545	505	470	435	410	380	355	335	315	0.363
4	600	555	520	485	455	425	400	380	355	0.310
5	650	605	565	530	495	465	440	420	395	0.271
6	700	650	610	570	535	505	480	455	430	0.241
7	740	695	650	610	575	545	515	490	465	0.216
8	780	735	690	650	615	580	550	525	500	0.196

D_{wr} = 372 D_{ir} = 435 D_{nr} = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	280	245	220	195	170	155	140	130	120	0.729
1	330	295	265	240	220	195	180	165	150	0.509
2	375	340	305	280	255	235	220	200	185	0.391
3	410	375	340	315	290	270	250	235	215	0.318
4	445	405	375	345	320	300	280	260	245	0.267
5	470	435	405	375	350	325	305	285	270	0.231
6	490	455	425	400	375	350	330	310	295	0.203

D_{wr} = 1072 D_{ir} = 1216 D_{nr} = 1282 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	265	235	210	190	170	155	145	135	125	0.803
1	320	290	265	240	215	200	185	170	160	0.561
2	370	335	310	285	265	240	225	210	195	0.431
3	410	380	350	325	300	280	265	245	230	0.350
4	450	415	385	360	335	315	295	280	265	0.294
5	485	450	420	395	370	345	325	310	290	0.254
6	515	480	450	425	400	375	355	335	320	0.224
7	540	510	480	450	425	400	380	360	345	0.200

D_{wr} = 802 D_{ir} = 909 D_{nr} = 959 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	275	245	225	205	190	175	165	155	145	0.923
1	345	315	285	265	245	225	210	195	185	0.645
2	400	370	345	320	295	275	255	240	225	0.496
3	455	420	395	365	345	325	300	285	265	0.403
4	505	470	440	410	385	365	345	325	310	0.339
5	550	515	480	450	425	405	380	360	345	0.293
6	590	555	520	490	465	440	415	395	380	0.257
7	625	590	555	525	500	475	450	430	410	0.230
8	660	625	590	560	530	505	480	460	440	0.207

D_{wr} = 526 D_{ir} = 597 D_{nr} = 630 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 36/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	235	210	190	170	155	140	125	115	105	0.971
1	275	250	225	210	190	175	165	150	140	0.617
2	305	280	260	240	220	205	195	180	170	0.452
3	325	305	285	265	250	235	220	205	195	0.356
4	345	325	305	285	270	255	240	230	215	0.294
5	355	340	320	305	290	275	260	250	235	0.251
6	365	350	335	320	305	290	280	265	255	0.218

D_{wr} = 2209 D_{ir} = 2428 D_{nr} = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	225	205	185	165	150	140	130	120	110	1.070
1	270	250	230	215	200	180	170	155	145	0.679
2	310	290	265	250	235	220	205	195	180	0.498
3	340	320	300	280	265	250	235	220	210	0.393
4	365	345	325	310	290	275	260	250	235	0.324
5	390	370	350	330	315	300	285	270	260	0.276
6	405	385	370	350	335	320	305	295	280	0.240
7	420	400	385	370	355	340	325	310	300	0.213

D_{wr} = 1652 D_{ir} = 1816 D_{nr} = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	245	220	200	185	170	155	145	135	125	1.231
1	300	280	260	240	220	205	190	180	170	0.782
2	350	325	305	285	270	255	240	225	210	0.573
3	390	365	345	325	305	290	275	260	250	0.452
4	425	400	380	360	340	325	310	295	280	0.373
5	455	435	410	390	370	355	340	325	310	0.318
6	480	460	440	420	400	385	365	350	335	0.277
7	505	480	460	445	425	410	390	375	360	0.245
8	520	500	485	465	445	430	415	400	385	0.220

D_{wr} = 1084 D_{ir} = 1192 D_{nr} = 1193 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{wr}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 30/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	375	320	280	245	220	200	180	165	155	0.647
1	440	385	335	300	265	240	220	200	185	0.491
2	500	440	390	350	315	285	260	235	220	0.395
3	560	495	440	395	360	325	295	275	250	0.331
4	615	540	485	440	400	365	335	310	285	0.284
5	660	590	530	480	440	400	370	345	320	0.249
6	710	635	570	520	475	435	405	375	350	0.222

D_{ur} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	340	300	265	240	220	200	185	170	160	0.713
1	410	360	325	290	265	245	225	210	195	0.541
2	470	420	380	345	315	285	265	245	230	0.435
3	530	475	435	395	360	330	305	285	265	0.364
4	585	530	480	440	405	375	345	320	300	0.313
5	640	580	530	485	450	415	385	360	335	0.275
6	690	625	575	530	490	455	425	395	370	0.245
7	735	670	615	570	525	490	460	430	405	0.220

D_{ur} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	350	315	290	265	245	225	210	200	185	0.821
1	425	385	350	320	295	275	255	240	225	0.622
2	495	450	410	380	350	325	305	285	270	0.501
3	565	520	475	435	405	375	350	330	310	0.419
4	630	575	535	490	455	425	395	370	350	0.360
5	690	635	585	545	510	475	440	415	390	0.316
6	750	690	640	595	555	520	490	460	430	0.281
7	810	745	690	645	605	565	535	500	475	0.254
8	865	800	740	690	650	610	575	545	515	0.231

D_{ur} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{ur}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: 5/8'' WELDS on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	340	300	270	240	215	195	175	160	150	0.728
1	395	350	315	285	260	235	215	195	180	0.536
2	440	395	355	325	295	275	255	230	215	0.424
3	475	430	395	360	330	305	285	265	245	0.350
4	510	465	425	395	365	335	315	295	275	0.299
5	540	495	460	425	395	365	340	320	300	0.260
6	565	525	485	450	420	395	370	345	325	0.231

D_{wr} = 1377 D_{ir} = 1547 D_{nr} = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	320	290	260	235	215	195	180	165	155	0.802
1	375	340	310	285	260	240	220	205	190	0.590
2	425	390	355	330	305	280	260	240	225	0.467
3	475	435	400	370	340	320	300	280	260	0.386
4	515	475	440	405	380	355	330	310	295	0.329
5	550	510	475	440	410	385	365	345	325	0.287
6	585	545	505	475	445	420	395	370	350	0.254
7	615	575	540	505	475	445	420	400	380	0.228

D_{wr} = 1030 D_{ir} = 1157 D_{nr} = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	340	305	280	255	235	220	205	190	180	0.923
1	405	370	340	315	290	270	250	235	220	0.679
2	465	430	395	370	340	320	295	280	260	0.537
3	520	480	445	415	390	365	345	320	305	0.444
4	570	530	495	465	435	410	385	365	345	0.379
5	620	575	540	505	475	450	425	400	380	0.330
6	665	620	580	545	515	485	460	440	415	0.293
7	705	660	620	585	555	525	495	470	450	0.263
8	740	695	660	620	590	560	530	505	480	0.238

D_{wr} = 676 D_{ir} = 760 D_{nr} = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 30/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	250	220	200	175	155	140	130	115	110	1.059
1	295	265	240	220	200	185	165	150	140	0.696
2	330	300	275	255	235	215	200	190	175	0.518
3	360	335	310	285	265	245	230	215	205	0.413
4	385	360	335	310	290	275	255	240	225	0.343
5	405	380	355	335	315	295	280	265	250	0.293
6	420	395	375	355	335	315	300	285	270	0.256

D_{wr} = 1754 D_{ir} = 1943 D_{nr} = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	240	215	190	170	155	140	130	120	110	1.167
1	290	265	240	220	200	185	170	160	145	0.766
2	335	305	280	260	245	225	210	195	180	0.571
3	370	345	320	295	275	260	245	230	215	0.454
4	405	375	350	330	310	290	275	260	245	0.378
5	430	405	380	355	335	320	300	285	270	0.323
6	450	430	405	385	360	345	325	310	295	0.282
7	470	450	425	405	385	365	350	335	320	0.250

D_{wr} = 1312 D_{ir} = 1453 D_{nr} = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	250	225	205	185	175	160	150	140	130	1.343
1	315	290	265	245	225	210	195	180	170	0.882
2	370	340	315	295	280	260	240	225	210	0.657
3	415	390	365	340	320	300	285	270	255	0.523
4	460	430	405	380	360	340	320	305	290	0.434
5	495	465	440	415	395	375	355	340	325	0.372
6	530	500	475	450	425	405	390	370	355	0.325
7	555	530	505	480	455	435	415	400	380	0.288
8	580	555	530	505	485	465	445	425	410	0.259

D_{wr} = 861 D_{ir} = 954 D_{nr} = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{\quad\quad}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	285	245	215	190	170	155	140	125	120	0.549
1	355	310	275	250	225	200	185	170	155	0.414
2	420	370	330	300	275	250	230	210	195	0.333
3	475	425	380	345	315	290	270	250	235	0.278
4	525	475	430	390	360	330	310	285	270	0.239
5	565	515	470	430	400	370	345	320	300	0.209
6	600	555	510	470	435	405	375	355	330	0.186

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	260	230	205	185	170	155	145	135	125	0.605
1	335	300	270	245	225	205	190	175	165	0.456
2	400	365	330	305	280	255	235	220	205	0.366
3	465	420	385	355	330	305	285	265	245	0.306
4	520	475	435	400	375	350	325	305	290	0.263
5	570	525	485	450	415	390	365	345	325	0.230
6	615	570	525	490	460	430	400	380	360	0.205
7	660	610	570	530	495	465	440	415	390	0.185

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	275	250	225	210	195	180	165	155	145	0.696
1	360	325	300	275	255	235	220	205	195	0.525
2	440	400	370	340	315	295	275	260	245	0.422
3	510	470	435	405	375	350	330	310	290	0.352
4	575	535	495	460	430	405	380	360	340	0.303
5	640	595	550	515	485	455	430	405	385	0.265
6	700	650	605	565	535	500	475	450	425	0.236
7	750	700	655	615	580	550	520	490	470	0.212
8	800	750	705	665	625	590	560	535	505	0.193

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	250	220	195	175	155	140	130	120	110	0.659
1	310	275	250	225	205	190	175	160	145	0.474
2	360	325	295	270	250	230	215	200	185	0.370
3	395	365	335	310	285	265	245	230	215	0.304
4	425	395	370	340	320	300	280	260	245	0.257
5	450	425	395	370	350	325	305	290	275	0.223
6	470	445	420	395	375	350	335	315	300	0.197

D_{wr} = 758 D_{ir} = 886 D_{nr} = 974 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	240	215	190	170	155	145	135	125	115	0.725
1	300	275	250	230	210	195	180	165	155	0.522
2	360	325	300	280	260	240	225	210	195	0.408
3	405	375	345	320	300	280	265	250	235	0.334
4	445	415	385	360	340	320	300	285	270	0.283
5	480	450	420	395	375	350	335	315	300	0.246
6	510	480	455	430	405	385	365	345	330	0.217
7	535	505	480	455	430	410	390	370	355	0.195

D_{wr} = 567 D_{ir} = 663 D_{nr} = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	255	230	210	195	180	165	155	145	135	0.835
1	330	305	280	260	240	225	210	195	185	0.601
2	400	370	340	320	300	280	260	245	230	0.469
3	460	425	395	370	350	330	310	295	280	0.385
4	510	480	450	420	395	375	355	335	320	0.326
5	560	525	495	465	440	415	395	375	360	0.283
6	600	565	535	505	480	455	435	415	395	0.250
7	635	605	570	545	520	495	470	450	430	0.224
8	665	635	605	580	550	525	505	480	460	0.203

D_{wr} = 372 D_{ir} = 435 D_{nr} = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	190	170	150	130	120	105	95	90	80	0.824
1	250	225	200	185	170	155	140	130	120	0.554
2	290	265	245	225	205	190	180	165	155	0.417
3	320	300	280	260	240	225	210	200	185	0.334
4	345	325	305	285	270	255	240	225	215	0.279
5	360	345	325	310	295	275	265	250	235	0.240
6	375	360	345	330	310	300	285	270	260	0.210

D_{wr} = 1072 D_{ir} = 1216 D_{nr} = 1282 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	180	160	145	130	120	110	100	90	85	0.907
1	245	220	205	190	175	160	145	135	125	0.610
2	295	270	250	235	215	205	190	180	165	0.459
3	335	315	290	275	255	240	225	215	205	0.368
4	370	345	325	305	290	275	260	245	235	0.307
5	395	375	355	335	320	305	290	275	260	0.264
6	415	395	380	360	345	330	315	300	285	0.231
7	435	415	400	380	365	350	335	325	310	0.206

D_{wr} = 802 D_{ir} = 909 D_{nr} = 959 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	195	175	160	145	135	125	115	110	100	1.044
1	270	250	230	210	195	180	170	160	150	0.702
2	335	310	290	270	250	235	225	210	195	0.529
3	385	360	340	320	300	285	270	255	240	0.424
4	430	405	385	360	345	325	310	295	280	0.354
5	470	445	425	400	380	365	345	330	315	0.304
6	500	480	455	435	415	395	380	365	350	0.266
7	530	505	485	465	445	425	410	395	380	0.237
8	550	530	510	490	470	455	435	420	405	0.213

D_{wr} = 526 D_{ir} = 597 D_{nr} = 630 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

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FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	160	145	130	115	105	95	85	80	70	1.098
1	200	185	170	155	145	135	125	120	110	0.665
2	230	215	200	190	175	165	155	145	140	0.477
3	245	235	220	210	200	190	180	170	165	0.372
4	255	245	235	225	215	210	200	190	185	0.305
5	265	255	245	240	230	225	215	205	200	0.258
6	270	260	255	250	240	235	225	220	210	0.224

D_{wr} = 2209 D_{ir} = 2428 D_{nr} = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	155	140	130	115	105	95	90	80	75	1.209
1	205	190	175	165	155	145	135	125	115	0.733
2	245	230	215	200	190	180	170	160	150	0.526
3	270	255	240	230	220	210	200	190	180	0.410
4	285	275	265	255	240	230	220	215	205	0.336
5	300	290	280	270	260	250	240	235	225	0.285
6	310	300	290	285	275	265	260	250	240	0.247
7	315	310	300	295	285	280	270	265	255	0.218

D_{wr} = 1652 D_{ir} = 1816 D_{nr} = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	170	155	140	130	120	110	100	95	90	1.392
1	235	220	205	190	180	170	155	145	140	0.843
2	285	265	250	235	225	210	200	190	185	0.605
3	320	305	290	275	260	250	240	230	220	0.472
4	350	335	320	305	295	280	270	260	250	0.387
5	370	360	345	330	320	310	295	285	275	0.327
6	385	375	365	350	340	330	320	310	300	0.284
7	400	390	380	370	360	350	340	330	320	0.251
8	410	400	390	380	375	365	355	345	335	0.224

D_{wr} = 1084 D_{ir} = 1199 D_{nr} = 1199 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	255	220	190	170	150	135	125	115	105	0.732
1	330	290	255	230	205	185	170	155	145	0.538
2	400	350	315	285	255	235	215	195	180	0.425
3	455	405	365	330	305	280	255	240	220	0.351
4	510	455	415	375	345	320	295	275	255	0.299
5	555	500	455	420	385	355	330	310	290	0.261
6	590	540	495	455	425	395	365	340	320	0.231

D_{wr} = 129 D_{lr} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	235	205	185	165	150	140	130	120	110	0.806
1	310	280	250	225	205	190	175	165	150	0.592
2	380	345	310	285	260	240	220	205	195	0.468
3	445	400	365	340	310	290	270	250	235	0.387
4	500	460	420	385	360	335	310	295	275	0.330
5	555	510	470	435	400	375	350	330	310	0.287
6	600	555	515	475	445	415	390	365	345	0.255
7	645	595	555	515	485	455	425	405	380	0.229

D_{wr} = 97 D_{lr} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	245	220	205	185	170	160	150	140	130	0.928
1	335	300	275	255	235	215	205	190	180	0.682
2	415	380	345	320	295	275	255	240	225	0.539
3	485	445	415	385	360	335	310	290	275	0.445
4	555	510	475	440	415	390	365	345	325	0.380
5	620	575	535	495	465	440	415	390	370	0.331
6	680	630	590	550	515	485	460	435	415	0.293
7	735	685	640	600	565	535	505	480	455	0.263
8	785	735	690	650	610	575	545	520	495	0.239

D_{wr} = 63 D_{lr} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

sdi.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	235	205	185	165	145	130	120	110	100	0.823
1	290	260	235	215	195	180	165	150	140	0.585
2	335	305	280	255	235	220	205	190	180	0.454
3	370	340	315	290	270	255	235	220	210	0.371
4	400	370	345	325	305	285	265	250	235	0.314
5	420	395	370	350	330	310	295	275	265	0.272
6	435	415	395	370	350	335	315	300	285	0.240

D_{wr} = 1377 D_{ir} = 1547 D_{nr} = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	225	200	180	160	145	135	125	115	105	0.907
1	285	260	235	220	200	185	170	160	150	0.645
2	340	310	285	265	245	230	215	205	190	0.500
3	385	355	330	305	285	270	255	240	225	0.409
4	420	395	365	345	325	305	285	270	260	0.346
5	450	425	400	375	355	335	320	305	290	0.299
6	475	450	430	405	385	365	345	330	315	0.264
7	495	475	450	430	410	390	375	355	340	0.236

D_{wr} = 1030 D_{ir} = 1157 D_{nr} = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	240	215	195	180	165	155	145	135	125	1.044
1	315	290	265	245	230	210	200	185	175	0.742
2	380	350	325	305	285	270	250	235	225	0.576
3	435	405	380	355	335	315	300	285	270	0.470
4	485	455	430	405	380	360	340	325	310	0.398
5	530	500	470	445	420	400	380	365	345	0.344
6	565	535	510	485	460	440	415	400	380	0.304
7	600	570	545	520	495	470	450	430	415	0.272
8	625	600	570	550	525	505	480	460	445	0.246

D_{wr} = 676 D_{ir} = 760 D_{nr} = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	170	150	135	120	105	95	90	80	75	1.198
1	220	200	180	165	155	140	130	120	110	0.753
2	255	235	220	205	190	175	165	155	145	0.549
3	280	260	245	230	215	205	195	185	175	0.432
4	295	280	265	255	240	230	215	205	195	0.356
5	305	295	280	270	260	245	235	225	215	0.303
6	315	305	295	285	270	260	250	240	235	0.263

D_{wr} = 1754 D_{ir} = 1943 D_{nr} = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	165	145	130	120	105	100	90	85	80	1.319
1	220	205	185	175	160	150	135	125	120	0.829
2	265	245	230	215	200	190	175	165	160	0.605
3	300	280	265	250	235	220	210	200	190	0.476
4	325	305	290	275	265	250	240	225	215	0.392
5	340	325	315	300	285	275	260	250	240	0.334
6	355	345	330	320	305	295	285	270	260	0.290
7	365	355	345	335	320	310	300	290	280	0.257

D_{wr} = 1312 D_{ir} = 1453 D_{nr} = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	175	160	145	130	120	115	105	100	90	1.518
1	245	230	210	200	185	170	160	150	140	0.954
2	305	285	265	250	235	220	210	200	190	0.696
3	350	330	310	295	280	265	250	240	225	0.548
4	385	365	350	330	315	300	285	275	260	0.451
5	415	395	380	365	345	330	320	305	295	0.384
6	435	420	405	390	375	360	345	335	320	0.334
7	455	440	425	410	395	385	370	360	345	0.296
8	470	455	445	430	415	405	390	380	370	0.265

D_{wr} = 861 D_{ir} = 954 D_{nr} = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 36/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	435	380	330	290	260	235	215	195	180	1.056
1	510	445	395	350	315	285	260	240	220	0.650
2	580	510	455	410	370	335	305	280	260	0.469
3	640	570	510	460	415	385	350	320	295	0.367
4	700	625	560	505	465	425	395	365	335	0.302
5	755	675	610	555	505	465	430	400	375	0.256
6	800	720	655	595	550	505	470	435	410	0.222

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	390	345	305	280	255	230	215	200	185	1.163
1	465	415	370	335	310	285	260	245	225	0.716
2	535	480	435	395	360	335	310	285	265	0.517
3	600	540	495	455	415	385	355	330	310	0.404
4	665	600	550	505	465	435	400	375	350	0.332
5	720	655	600	555	515	475	445	415	390	0.282
6	775	710	650	600	560	520	485	455	430	0.245
7	830	760	700	645	600	560	525	495	465	0.216

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	380	345	315	290	265	250	230	215	205	1.338
1	465	425	385	355	330	305	285	265	250	0.823
2	550	500	460	420	390	365	340	320	300	0.595
3	625	570	530	490	450	420	395	370	350	0.465
4	695	640	590	550	515	480	445	420	395	0.382
5	765	705	650	605	570	535	500	470	445	0.324
6	830	765	710	665	620	585	550	520	490	0.282
7	890	825	770	715	675	635	595	565	535	0.249
8	950	880	825	770	725	680	645	610	580	0.223

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: RAMSET 26SD on 36/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	385	340	305	270	240	220	200	180	170	1.266
1	450	400	355	325	295	265	245	225	205	0.724
2	505	450	405	370	340	310	290	265	245	0.507
3	550	495	450	415	380	350	325	305	285	0.390
4	590	540	495	455	420	385	360	335	315	0.317
5	625	575	530	490	455	420	395	370	345	0.267
6	655	610	565	525	485	455	425	400	375	0.230

D_{wr} = 758 D_{ir} = 886 D_{nr} = 974 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	355	315	285	255	235	215	200	185	170	1.395
1	420	380	345	315	290	265	245	225	210	0.797
2	480	435	400	365	340	315	290	270	255	0.558
3	535	490	450	415	385	360	335	315	295	0.429
4	585	535	495	460	430	400	375	355	335	0.349
5	625	580	540	500	470	440	410	390	365	0.294
6	665	620	575	540	505	475	445	425	400	0.254
7	700	655	615	575	540	510	480	455	430	0.223

D_{wr} = 567 D_{ir} = 663 D_{nr} = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	350	320	290	265	245	230	215	200	185	1.605
1	430	395	365	335	310	285	265	250	235	0.917
2	500	460	425	400	370	345	320	300	285	0.642
3	565	525	485	455	425	400	375	350	330	0.494
4	625	580	540	505	475	450	425	400	380	0.401
5	680	635	595	555	525	495	470	445	420	0.338
6	730	685	640	605	570	540	510	485	460	0.292
7	775	730	685	650	615	580	550	525	500	0.257
8	820	770	730	690	655	620	590	560	535	0.229

D_{wr} = 372 D_{ir} = 435 D_{nr} = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

sdi.

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	295	260	230	205	180	165	150	135	125	1.584
1	355	315	285	260	235	215	195	180	165	0.817
2	405	365	330	305	280	255	240	220	200	0.551
3	445	410	375	345	315	295	275	255	240	0.415
4	480	445	410	380	350	330	305	285	270	0.333
5	510	475	440	410	385	360	335	315	300	0.278
6	530	500	465	440	410	385	365	345	325	0.239

D_{wr} = 1072 D_{ir} = 1216 D_{nr} = 1282 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	270	240	215	195	175	160	150	135	130	1.745
1	335	305	280	255	230	210	195	180	170	0.900
2	390	360	330	305	280	260	240	225	210	0.607
3	440	405	375	350	325	305	285	270	250	0.458
4	485	450	415	390	365	340	320	305	285	0.367
5	520	485	455	425	400	375	355	335	320	0.307
6	550	520	490	460	435	410	385	365	350	0.263
7	580	545	515	490	465	440	415	395	375	0.231

D_{wr} = 802 D_{ir} = 909 D_{nr} = 959 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	265	240	220	200	185	170	160	150	140	2.008
1	345	320	290	265	245	230	215	200	190	1.036
2	415	380	355	330	310	285	270	250	235	0.698
3	475	440	410	385	360	340	320	300	285	0.526
4	530	495	460	435	410	385	365	345	330	0.423
5	575	540	510	480	455	430	405	385	370	0.353
6	615	580	550	520	495	470	445	425	405	0.303
7	655	620	590	560	530	505	480	460	440	0.265
8	685	655	620	595	565	540	515	495	475	0.236

D_{wi} = 526 D_{ir} = 597 D_{nr} = 630 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: RAMSET 26Sn on 36/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	245	220	200	180	160	145	130	120	110	2.111
1	290	265	245	225	205	190	175	160	150	0.938
2	325	300	280	260	240	225	210	195	185	0.603
3	350	330	310	290	270	255	240	225	215	0.444
4	370	350	330	310	295	280	265	250	240	0.352
5	385	365	350	330	315	300	285	275	260	0.291
6	395	380	365	350	335	320	305	290	280	0.248

D_{wr} = 2209 D_{ir} = 2428 D_{nr} = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	235	210	190	170	155	145	130	120	115	2.326
1	285	265	240	225	210	195	180	165	155	1.034
2	330	305	285	265	250	235	220	210	195	0.664
3	365	340	320	300	285	265	255	240	230	0.490
4	390	370	350	330	315	295	280	270	255	0.388
5	410	390	375	355	340	325	310	295	280	0.321
6	430	410	395	375	360	345	330	320	305	0.274
7	440	425	410	395	380	365	350	340	325	0.239

D_{wr} = 1652 D_{ir} = 1816 D_{nr} = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	240	215	195	180	165	155	140	130	125	2.676
1	305	280	260	245	225	210	195	185	170	1.189
2	355	335	315	295	275	260	250	235	220	0.765
3	400	380	355	340	320	305	290	275	260	0.563
4	440	415	395	375	360	340	325	310	295	0.446
5	470	450	430	410	390	375	360	345	330	0.369
6	495	475	455	435	420	405	385	370	360	0.315
7	515	495	480	460	445	430	415	400	385	0.274
8	530	515	500	480	465	450	435	420	405	0.243

D_{wr} = 1084 D_{ir} = 1192 D_{nr} = 1199 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 30/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	395	340	295	260	235	210	190	175	160	1.407
1	475	415	365	320	285	260	235	215	200	0.831
2	545	475	425	380	340	310	280	260	240	0.589
3	610	540	480	435	395	360	325	300	280	0.456
4	670	595	535	480	440	405	370	340	315	0.373
5	725	650	585	530	485	445	410	385	355	0.315
6	775	700	630	575	525	485	450	420	390	0.272

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	350	305	275	250	225	205	190	175	165	1.550
1	430	380	340	310	280	260	240	220	205	0.915
2	500	450	405	365	335	310	285	265	245	0.649
3	570	510	465	425	390	360	330	310	290	0.503
4	635	570	520	480	440	410	380	350	330	0.410
5	695	630	575	530	490	455	425	395	370	0.347
6	750	685	625	580	535	500	465	440	410	0.300
7	805	735	675	625	580	540	505	475	450	0.265

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	340	310	280	260	240	220	205	195	180	1.784
1	425	385	355	325	300	280	260	245	230	1.053
2	515	465	425	390	360	335	315	295	275	0.747
3	590	540	495	460	425	395	370	345	325	0.579
4	660	610	560	520	485	450	425	395	375	0.472
5	730	675	625	580	545	510	475	450	420	0.399
6	800	740	685	640	595	560	530	500	470	0.345
7	865	800	740	695	650	610	575	545	515	0.304
8	925	855	800	745	700	660	620	590	560	0.272

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: RAMSET 26SD on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	360	320	285	255	225	205	185	170	155	1.583
1	420	375	335	305	280	255	230	210	195	0.889
2	470	425	385	350	320	295	275	255	235	0.618
3	515	470	430	390	360	335	310	290	270	0.474
4	555	505	465	430	400	370	345	325	305	0.384
5	585	540	500	465	430	405	375	355	335	0.323
6	610	570	530	495	465	435	405	385	360	0.278

D_{wr} = 1377 D_{ir} = 1547 D_{nr} = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	330	300	265	240	220	200	185	170	160	1.744
1	395	360	325	300	275	250	230	215	200	0.979
2	455	415	380	350	325	300	280	260	240	0.681
3	505	465	425	395	370	345	320	305	285	0.522
4	550	510	470	440	410	385	360	340	320	0.423
5	590	550	510	480	445	420	395	375	355	0.356
6	630	585	550	515	485	455	430	405	385	0.307
7	660	620	580	545	515	485	460	435	415	0.270

D_{wr} = 1030 D_{ir} = 1157 D_{nr} = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	330	300	270	250	230	215	200	185	175	2.007
1	405	375	345	315	295	270	255	240	225	1.127
2	475	440	405	380	355	330	310	290	270	0.783
3	540	500	465	435	405	385	360	340	320	0.600
4	595	555	520	485	455	430	405	385	365	0.487
5	645	605	565	535	505	475	450	425	405	0.409
6	695	650	615	580	545	520	490	465	445	0.353
7	735	695	655	620	585	560	530	505	480	0.310
8	775	730	695	660	625	595	565	540	515	0.277

D_{wr} = 676 D_{ir} = 760 D_{nr} = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 30/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	265	235	210	185	165	150	135	125	115	2.303
1	315	285	260	235	215	200	180	165	150	1.078
2	360	325	300	275	255	235	220	205	190	0.704
3	390	360	335	310	290	270	250	235	225	0.522
4	415	390	365	340	320	300	280	265	250	0.415
5	435	410	390	365	345	325	310	290	275	0.345
6	450	430	410	385	365	350	330	315	300	0.295

D_{wr} = 1754 D_{ir} = 1943 D_{nr} = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	245	220	195	175	160	145	135	125	115	2.537
1	305	275	255	235	215	195	180	170	155	1.188
2	355	325	300	280	260	245	230	210	195	0.775
3	395	370	340	320	300	280	265	250	235	0.575
4	430	405	380	355	335	315	300	280	270	0.458
5	460	435	410	385	365	345	330	310	295	0.380
6	480	460	435	415	395	375	355	340	325	0.325
7	500	480	455	435	415	400	380	365	350	0.283

D_{wr} = 1312 D_{ir} = 1453 D_{nr} = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	245	220	200	185	170	155	145	135	125	2.919
1	315	295	270	250	230	215	200	185	175	1.367
2	380	350	330	305	290	270	255	235	225	0.892
3	430	405	380	355	335	315	300	285	270	0.662
4	475	450	425	400	380	360	340	325	310	0.526
5	515	490	465	440	415	395	380	360	345	0.437
6	550	520	495	475	450	430	410	395	380	0.373
7	575	550	525	505	485	460	445	425	410	0.326
8	600	575	555	530	510	490	470	455	435	0.289

D_{wr} = 861 D_{ir} = 956 D_{nr} = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: HILTI ENP2 & 3 on 36/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	440	385	335	295	265	240	215	200	185	0.528
1	515	450	400	355	320	290	260	240	225	0.402
2	585	515	455	410	370	335	305	280	260	0.325
3	645	575	510	460	420	385	350	325	300	0.272
4	705	630	565	510	465	430	395	365	340	0.235
5	760	680	615	555	510	470	435	405	375	0.206
6	810	730	660	600	550	510	470	440	410	0.184

D_{wr} = 129 D_{lr} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	395	350	315	285	260	235	220	205	190	0.581
1	475	425	380	345	315	285	265	245	230	0.443
2	545	490	445	400	365	340	310	290	270	0.358
3	610	550	500	460	420	390	360	335	310	0.300
4	670	610	555	510	470	440	405	375	355	0.258
5	730	665	610	560	520	480	450	420	395	0.227
6	785	720	660	610	565	525	490	460	435	0.202
7	840	770	705	655	610	565	530	500	470	0.182

D_{wr} = 97 D_{lr} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	395	360	325	300	275	255	240	225	210	0.669
1	480	435	400	365	340	315	295	275	260	0.510
2	565	515	470	435	400	375	350	325	305	0.412
3	640	585	540	500	460	430	400	375	355	0.345
4	710	655	605	560	525	490	455	430	405	0.297
5	780	720	665	620	580	545	510	480	450	0.261
6	845	780	725	675	635	595	560	530	500	0.233
7	910	840	785	730	685	645	610	575	545	0.210
8	970	900	840	785	735	690	655	620	590	0.191

D_{wr} = 63 D_{lr} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 36/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	390	345	305	275	245	220	200	185	170	0.633
1	455	400	360	325	295	270	245	225	210	0.461
2	510	455	410	375	340	315	290	265	245	0.362
3	555	500	455	415	380	355	330	305	285	0.298
4	595	545	495	455	420	390	365	340	320	0.253
5	630	580	535	495	455	425	395	370	350	0.220
6	660	610	565	525	490	460	430	400	380	0.195

D_{wr} = 758 D_{ir} = 886 D_{nr} = 974 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	360	325	290	260	240	220	200	185	175	0.698
1	425	385	350	320	295	270	250	230	215	0.507
2	485	445	405	375	345	320	295	275	255	0.399
3	540	495	455	420	390	365	340	320	295	0.328
4	590	545	500	465	435	405	380	355	335	0.279
5	635	585	545	505	475	445	415	395	370	0.243
6	675	630	585	545	510	480	450	425	405	0.215
7	710	665	620	580	545	515	485	460	435	0.192

D_{wr} = 567 D_{ir} = 663 D_{nr} = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	365	330	300	275	255	235	220	205	195	0.803
1	445	410	375	345	320	295	275	260	245	0.584
2	515	475	440	410	380	355	330	310	290	0.459
3	580	535	500	465	435	410	385	360	340	0.378
4	640	595	555	520	485	460	430	410	385	0.321
5	695	650	605	570	535	505	475	450	430	0.279
6	750	700	655	615	580	550	520	495	470	0.247
7	795	745	700	660	625	590	560	535	510	0.221
8	840	790	745	705	665	630	600	570	545	0.201

D_{wr} = 372 D_{ir} = 435 D_{nr} = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	300	265	235	205	185	165	150	140	125	0.792
1	360	320	290	260	240	215	195	180	165	0.539
2	410	370	335	305	280	260	240	220	205	0.409
3	450	410	375	345	320	295	275	260	240	0.329
4	485	445	410	380	355	330	310	290	270	0.275
5	510	475	445	415	385	360	340	320	300	0.237
6	535	500	470	440	415	390	365	345	325	0.208

D_{ur} = 1072 D_{ir} = 1216 D_{nr} = 1282 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	275	245	220	195	180	165	150	140	130	0.872
1	340	310	280	255	235	215	200	185	170	0.594
2	400	365	335	310	285	265	245	225	210	0.450
3	450	410	380	355	330	305	290	270	255	0.362
4	490	455	420	395	370	345	325	305	290	0.303
5	530	490	460	430	405	380	360	340	320	0.261
6	560	525	495	465	440	415	390	370	355	0.229
7	585	555	525	495	470	445	420	400	380	0.204

D_{ur} = 802 D_{ir} = 909 D_{nr} = 959 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	275	250	225	210	190	180	165	155	145	1.004
1	355	330	300	275	255	235	220	205	195	0.683
2	425	390	365	340	315	295	275	255	240	0.518
3	485	450	420	395	370	345	330	310	290	0.417
4	540	505	470	445	415	395	375	355	335	0.349
5	590	550	520	490	460	435	415	395	375	0.300
6	630	595	560	530	505	480	455	430	415	0.263
7	670	635	600	570	540	515	490	470	450	0.234
8	705	670	635	605	575	550	525	505	480	0.211

D_{ur} = 526 D_{ir} = 597 D_{nr} = 630 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 36/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	250	225	200	185	165	150	135	120	110	1.056
1	295	270	245	225	210	195	180	165	150	0.650
2	330	305	280	260	245	225	210	200	185	0.469
3	355	330	310	290	275	255	240	225	215	0.367
4	370	355	335	315	300	280	265	250	240	0.302
5	385	370	350	335	320	305	290	275	260	0.256
6	395	380	365	350	335	320	305	295	280	0.222

D_{wr} = 2209 D_{ir} = 2428 D_{nr} = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	240	215	195	175	160	145	135	125	115	1.163
1	290	265	245	230	210	195	180	170	155	0.716
2	335	310	290	270	250	235	225	210	195	0.517
3	370	345	325	305	285	270	255	245	230	0.404
4	395	375	355	335	315	300	285	270	260	0.332
5	420	400	380	360	345	325	310	300	285	0.282
6	435	415	400	380	365	350	335	320	310	0.245
7	450	435	415	400	385	370	355	340	330	0.216

D_{wr} = 1652 D_{ir} = 1816 D_{nr} = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	245	225	205	185	170	160	145	140	130	1.338
1	310	290	270	250	235	215	200	190	175	0.823
2	365	345	320	300	285	270	255	240	225	0.595
3	415	390	365	345	325	310	295	280	270	0.465
4	450	425	405	385	365	350	330	315	305	0.382
5	480	460	440	420	400	380	365	350	335	0.324
6	510	485	465	450	430	410	395	380	365	0.282
7	530	510	490	475	455	440	420	405	390	0.249
8	545	530	510	495	480	460	445	430	415	0.223

D_{wr} = 1084 D_{ir} = 1192 D_{nr} = 1199 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: HILTI ENP2 & 3 on 30/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	400	345	300	265	235	215	195	180	165	0.704
1	480	415	365	325	290	260	240	220	200	0.522
2	550	480	425	385	345	310	285	260	240	0.415
3	615	540	485	435	395	360	330	300	280	0.345
4	675	600	535	485	440	405	375	345	320	0.295
5	730	655	590	535	485	450	415	385	355	0.257
6	785	705	635	580	530	490	450	420	395	0.228

D_{wr} = 129 D_{ir} = 226 D_{nr} = 356 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	355	315	280	255	230	210	195	180	170	0.775
1	435	385	345	315	285	260	240	225	210	0.575
2	510	455	410	370	340	310	290	270	250	0.458
3	575	520	470	430	395	360	335	310	290	0.380
4	640	580	530	485	445	415	380	355	330	0.325
5	700	635	580	535	495	460	430	400	375	0.283
6	760	690	635	585	540	505	470	440	415	0.251
7	815	745	685	630	585	545	510	480	455	0.226

D_{wr} = 97 D_{ir} = 169 D_{nr} = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	355	320	290	270	245	230	215	200	190	0.892
1	440	400	365	335	310	285	270	250	235	0.662
2	525	475	435	400	370	345	320	300	285	0.526
3	605	555	510	470	435	405	375	355	330	0.437
4	675	620	575	535	495	460	430	405	380	0.373
5	745	690	635	590	555	520	485	455	430	0.326
6	815	750	695	650	605	570	535	505	475	0.289
7	880	815	755	705	660	620	585	555	525	0.260
8	940	870	810	760	710	670	630	600	570	0.236

D_{wr} = 63 D_{ir} = 111 D_{nr} = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: HILTI ENP2 6 3 on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	365	320	285	255	230	205	190	170	160	0.792
1	425	380	340	310	280	255	235	215	195	0.569
2	475	430	390	355	325	300	275	255	235	0.444
3	520	475	430	395	365	335	315	290	275	0.365
4	560	510	470	435	400	370	345	325	305	0.309
5	590	545	505	470	435	405	380	355	335	0.268
6	615	575	535	500	465	435	410	385	365	0.237

D_{ur} = 1377 D_{lr} = 1547 D_{nr} = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	340	305	270	245	225	205	190	175	165	0.872
1	400	365	335	305	280	255	235	220	205	0.627
2	460	420	385	355	330	305	280	260	245	0.490
3	510	470	435	400	375	350	325	305	285	0.402
4	560	515	475	445	415	385	365	345	325	0.340
5	600	555	520	485	455	425	400	380	355	0.295
6	635	595	555	520	490	460	435	410	390	0.261
7	670	625	590	555	520	495	465	440	420	0.234

D_{ur} = 1030 D_{lr} = 1157 D_{nr} = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	345	310	285	260	240	220	205	195	180	1.004
1	420	385	355	325	300	280	260	245	230	0.722
2	490	450	420	390	365	340	315	295	280	0.563
3	550	510	475	445	415	390	370	345	325	0.462
4	610	565	530	495	465	440	415	395	375	0.392
5	665	620	580	545	515	485	460	435	415	0.340
6	710	665	625	590	560	530	500	475	455	0.300
7	755	710	670	635	600	570	540	515	490	0.269
8	790	750	710	670	640	605	580	550	525	0.243

D_{ur} = 676 D_{lr} = 760 D_{nr} = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\ D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

STANDARD 1.5'' DECK

FRAME FASTENING: HILTI ENP2 & 3 on 30/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	265	235	210	190	170	150	135	125	115	1.152
1	320	290	260	240	220	200	180	165	155	0.734
2	360	330	300	280	255	240	220	205	190	0.539
3	395	365	340	315	290	270	255	240	225	0.426
4	420	395	365	345	320	300	285	265	250	0.352
5	440	415	390	370	350	330	310	295	280	0.300
6	455	435	410	390	370	350	335	315	300	0.261

D_{ur} = 1754 D_{ir} = 1943 D_{nr} = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	250	225	200	180	165	150	135	125	120	1.269
1	310	280	260	240	220	200	185	170	160	0.809
2	360	330	305	285	265	245	230	215	200	0.594
3	400	375	345	325	305	285	270	255	240	0.469
4	435	410	385	360	340	320	300	285	270	0.389
5	465	440	415	390	370	350	330	315	300	0.330
6	490	465	440	420	395	380	360	345	325	0.288
7	510	485	465	440	420	405	385	370	350	0.255

D_{ur} = 1312 D_{ir} = 1453 D_{nr} = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	255	230	205	190	175	160	150	140	130	1.460
1	325	300	280	255	235	220	205	190	180	0.931
2	390	360	335	315	295	275	260	245	230	0.683
3	445	415	385	365	345	325	305	290	275	0.540
4	490	460	435	410	385	365	350	330	315	0.446
5	530	500	475	450	425	405	385	370	350	0.380
6	560	535	510	485	460	440	420	400	385	0.331
7	590	565	540	515	495	470	450	435	415	0.293
8	615	590	565	545	520	500	480	465	445	0.263

D_{ur} = 861 D_{ir} = 954 D_{nr} = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.78 + 0.3\, D_{xx}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 24/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	85	80	75	70	65	60	55	50	45	1.093
1	145	135	125	120	110	105	100	90	85	0.537
2	205	190	180	170	160	150	140	135	125	0.356
3	265	245	230	220	205	195	185	175	165	0.266
4	325	305	285	270	255	240	225	215	205	0.213
5	370	355	335	320	300	285	270	255	245	0.177
6	410	395	375	360	345	330	315	300	285	0.152
7	450	430	415	395	380	365	350	340	325	0.133
8	485	465	445	430	415	395	385	370	355	0.118
9	515	495	475	460	445	425	415	400	385	0.106
10	545	525	505	490	470	455	440	425	415	0.096
11	570	550	530	515	495	480	465	450	440	0.088

D_{3DR} = 653 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	90	85	80	75	70	65	60	55	55	1.204
1	155	145	135	130	120	115	110	100	95	0.591
2	220	205	195	180	170	165	155	150	140	0.392
3	280	265	250	235	225	215	205	195	185	0.293
4	345	325	305	290	275	260	250	240	230	0.234
5	405	385	365	345	330	310	300	285	270	0.195
6	450	430	415	400	380	360	345	330	315	0.167
7	495	475	455	440	420	405	395	375	360	0.146
8	535	515	495	475	460	445	430	415	400	0.130
9	575	550	530	515	495	480	465	450	435	0.117
10	605	585	565	545	530	510	495	480	465	0.106
11	640	615	595	580	560	545	525	510	495	0.097
12	665	645	625	605	590	570	555	540	525	0.090

D_{3DR} = 488 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

STANDARD 3DR DECK

FRAME FASTENING: 5/8'' WELDS on 24/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	100	95	90	85	80	75	70	65	1.385
1	180	170	160	155	145	140	130	125	120	0.681
2	255	240	230	220	205	195	190	180	170	0.451
3	330	315	295	280	270	255	245	235	225	0.337
4	405	385	365	345	330	315	300	290	280	0.269
5	480	455	430	410	390	375	360	345	330	0.224
6	540	515	495	475	455	435	415	400	385	0.192
7	590	570	550	530	510	490	475	455	435	0.168
8	645	620	595	575	555	540	520	505	490	0.149
9	690	665	645	620	600	580	565	545	530	0.134
10	735	710	685	665	645	625	605	585	570	0.122
11	775	750	725	705	685	665	645	625	605	0.112
12	810	790	765	740	720	700	680	660	645	0.103
13	845	820	800	775	755	735	715	695	675	0.096

D_{3DR} = 321 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	115	110	105	95	90	85	85	80	1.556
1	205	195	185	175	165	160	150	145	140	0.764
2	290	275	260	250	240	225	220	210	200	0.507
3	370	355	335	320	310	295	285	270	260	0.379
4	455	435	415	395	380	360	350	335	320	0.303
5	535	510	490	470	450	430	415	400	385	0.252
6	615	590	565	540	520	500	480	460	445	0.216
7	675	650	630	610	585	565	545	525	505	0.189
8	735	710	685	665	645	625	605	585	565	0.168
9	795	765	740	720	695	675	655	635	615	0.151
10	845	820	795	770	745	725	705	685	665	0.137
11	895	870	845	820	795	770	750	730	710	0.126
12	945	915	890	865	840	815	795	775	755	0.116
13	985	960	930	905	880	860	835	815	795	0.108
14	1025	1000	970	945	920	900	875	855	835	0.100

D_{3DR} = 226 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

'See page V1 for notes.

FRAME FASTENING: 5/3'' WELDS on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	85	80	75	70	65	60	55	50	45	1.093
1	115	105	100	90	85	80	75	70	65	0.763
2	145	135	125	115	110	100	95	90	85	0.587
3	175	160	150	140	130	125	115	110	105	0.476
4	200	190	175	165	155	145	140	130	125	0.401
5	230	215	200	190	180	170	160	150	145	0.346
6	260	240	225	215	200	190	180	170	165	0.305
7	290	270	255	240	225	210	200	190	180	0.272
8	315	295	280	260	245	235	220	210	200	0.246
9	345	325	305	285	270	255	245	230	220	0.224
10	365	345	330	310	295	280	265	250	240	0.206
11	385	365	350	335	315	300	285	270	260	0.190

D_{3DR} = 653 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	90	85	80	75	70	65	60	55	55	1.204
1	125	115	105	100	95	90	85	80	75	0.841
2	155	145	135	125	120	115	105	100	95	0.646
3	185	175	165	155	145	135	130	125	120	0.525
4	215	205	190	180	170	160	155	145	140	0.442
5	245	230	220	205	195	185	175	170	160	0.381
6	280	260	245	235	220	210	200	190	180	0.336
7	310	290	275	260	245	235	225	215	205	0.300
8	340	320	305	285	270	260	245	235	225	0.270
9	370	350	330	315	300	285	270	260	245	0.247
10	400	380	360	340	325	305	295	280	270	0.227
11	425	405	385	365	350	330	315	305	290	0.210
12	445	425	410	395	375	355	340	325	310	0.195

D_{3DR} = 488 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\, D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

STANDARD 3DR DECK

FRAME FASTENING: 5/8'' WELDS on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	100	95	90	85	80	75	70	65	1.385
1	145	135	130	120	115	110	105	100	95	0.968
2	180	170	160	155	145	140	130	125	120	0.744
3	220	205	195	185	175	170	160	155	145	0.604
4	255	240	230	220	205	200	190	180	170	0.508
5	295	280	265	250	240	225	215	205	200	0.439
6	330	315	295	280	270	255	245	235	225	0.386
7	365	350	330	315	300	285	275	260	250	0.345
8	405	385	365	345	330	315	300	290	280	0.311
9	440	420	400	380	360	345	330	315	305	0.284
10	480	455	430	410	390	375	360	345	330	0.261
11	510	490	465	445	425	405	390	370	355	0.241
12	540	515	495	475	455	435	415	400	385	0.224
13	565	545	525	505	485	465	445	425	410	0.210

D_{3DR} = 321 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	115	110	105	95	90	85	85	80	1.556
1	165	155	150	140	135	125	120	115	110	1.087
2	205	195	185	175	170	160	155	145	140	0.835
3	250	235	225	215	205	195	185	180	170	0.678
4	290	280	265	250	240	230	220	210	205	0.571
5	335	320	305	290	275	265	255	245	235	0.493
6	375	360	340	325	315	300	285	275	265	0.434
7	420	400	380	365	350	335	320	310	295	0.387
8	460	440	420	400	385	370	355	340	330	0.350
9	505	480	460	440	420	405	385	375	360	0.319
10	545	520	500	475	455	440	420	405	390	0.293
11	590	560	535	515	490	470	455	435	420	0.271
12	620	600	575	550	530	505	485	470	450	0.252
13	655	630	610	585	565	540	520	500	485	0.235
14	685	660	640	615	595	575	555	535	515	0.221

D_{3DR} = 226 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\, D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

RAME FASTENING: #12 SCREWS (BUILDEX) on 24/4 Pattern.
ITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch onnectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	60	55	50	45	45	40	35	35	30	1.235
1	95	85	80	75	70	65	60	60	55	0.830
2	125	120	110	105	95	90	85	80	75	0.625
3	160	150	140	130	125	115	110	105	100	0.502
4	195	180	170	160	150	145	135	130	120	0.419
5	230	215	200	190	180	170	160	150	145	0.359
6	255	240	230	215	205	195	185	175	165	0.315
7	275	265	250	240	230	220	210	200	190	0.280
8	300	285	275	260	250	240	235	220	210	0.252
9	320	305	295	280	270	260	250	240	235	0.229
10	340	325	310	300	290	280	270	260	250	0.210
11	355	340	330	315	305	295	285	275	265	0.194

D_{3DR} = 653 K2 = 870

ubstitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch onnectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	65	60	55	50	50	45	40	40	35	1.361
1	100	95	85	80	75	75	70	65	60	0.915
2	135	130	120	115	105	100	95	90	85	0.689
3	170	160	155	145	135	130	125	120	110	0.553
4	210	195	185	175	165	160	150	145	135	0.461
5	245	230	220	205	195	185	180	170	160	0.396
6	280	265	250	240	225	215	205	195	190	0.347
7	305	295	280	270	255	245	230	220	215	0.308
8	330	320	305	295	280	270	260	250	240	0.278
9	355	340	330	315	305	295	285	275	265	0.253
10	380	365	350	340	325	315	305	295	285	0.232
11	400	385	370	360	345	335	325	315	305	0.214
12	420	405	390	375	365	355	340	330	320	0.199

D_{3DR} = 488 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/span + 3 \times K1 \times span}$$

. See page V1 for notes.

STANDARD 3DR DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	75	70	65	65	60	55	55	50	45	1.566
1	120	115	105	100	95	90	85	80	80	1.053
2	165	155	145	140	130	125	120	115	110	0.793
3	205	195	185	175	165	160	155	145	140	0.636
4	250	235	225	215	205	195	185	180	170	0.531
5	295	280	265	250	240	230	220	210	200	0.455
6	335	320	305	290	275	265	250	240	235	0.399
7	370	355	345	325	310	300	285	275	265	0.355
8	405	390	375	360	345	335	320	305	295	0.320
9	435	420	405	390	375	365	350	340	325	0.291
10	465	445	430	415	400	390	375	365	355	0.266
11	490	475	460	445	430	415	400	390	380	0.246
12	515	500	485	465	455	440	425	415	400	0.229
13	540	525	505	490	475	460	450	435	425	0.213

D_{3DR} = 321 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	90	85	80	75	70	65	65	60	55	1.759
1	140	130	125	120	110	105	100	95	95	1.182
2	190	180	170	160	155	145	140	135	130	0.890
3	235	225	215	205	195	190	180	175	165	0.714
4	285	275	260	250	240	230	220	210	200	0.596
5	335	320	305	295	280	270	260	250	240	0.512
6	385	370	350	335	320	310	295	285	275	0.448
7	435	415	395	380	365	350	335	325	310	0.399
8	470	455	440	425	405	390	375	360	350	0.359
9	510	490	475	460	445	430	415	400	385	0.326
10	545	525	510	490	475	460	445	435	420	0.299
11	580	560	540	525	505	490	475	465	450	0.276
12	610	590	570	555	535	520	505	490	480	0.257
13	640	620	600	585	565	550	535	520	505	0.240
14	670	650	630	610	595	575	560	545	530	0.225

D_{3DR} = 226 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\, D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

RAME FASTENING: RAMSET 26SD on 24/4 Pattern.
TITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch onnectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	90	85	80	70	65	60	60	55	50	2.376
1	125	115	110	100	95	90	80	75	75	1.226
2	160	150	140	130	120	115	105	100	95	0.826
3	190	180	165	155	145	140	130	125	120	0.623
4	225	210	195	185	175	165	155	145	140	0.500
5	260	245	225	215	200	190	180	170	160	0.418
6	295	275	255	240	230	215	205	195	185	0.359
7	325	305	285	270	255	240	230	220	205	0.314
8	360	340	315	300	280	265	255	240	230	0.279
9	385	365	345	325	310	295	280	265	250	0.252
10	410	390	370	355	335	320	305	290	275	0.229
11	430	415	395	375	360	345	325	310	295	0.210

D_{3DR} = 653 K2 = 870

ubstitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch onnectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	95	85	80	75	70	65	60	60	55	2.617
1	130	120	115	105	100	95	90	85	80	1.351
2	165	155	145	140	130	125	115	110	105	0.910
3	205	190	180	170	160	150	145	135	130	0.686
4	240	225	210	200	190	180	170	165	155	0.551
5	275	260	245	230	220	210	200	190	180	0.460
6	310	295	280	265	250	235	225	215	205	0.395
7	350	330	310	295	280	265	255	240	230	0.346
8	385	365	345	325	310	295	280	270	255	0.308
9	420	395	375	355	340	320	305	295	280	0.277
10	445	425	410	385	370	350	335	320	305	0.252
11	470	450	435	415	400	380	360	345	330	0.231
12	495	475	455	440	420	405	390	370	355	0.214

D_{3DR} = 488 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/span + 3 \times K1 \times span}$$

. See page V1 for notes.

STANDARD 3DR DECK

FRAME FASTENING: RAMSET 26SD on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	105	100	95	85	80	75	75	70	65	3.011
1	150	140	130	125	120	110	105	100	95	1.554
2	190	180	170	160	155	145	140	135	125	1.047
3	235	225	210	200	190	180	175	165	160	0.790
4	280	265	250	240	225	215	205	195	190	0.634
5	320	305	290	275	260	250	240	230	220	0.529
6	365	345	330	315	300	285	275	260	250	0.454
7	410	390	370	350	335	320	305	295	280	0.398
8	450	430	410	390	370	355	340	325	310	0.354
9	490	470	445	425	405	390	375	355	345	0.319
10	525	505	485	465	445	425	405	390	375	0.290
11	555	535	515	495	480	460	440	420	405	0.266
12	590	565	545	525	505	490	475	455	435	0.246
13	620	595	575	555	535	515	500	485	465	0.228

D_{3DR} = 321 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	110	105	100	95	90	85	80	75	70	3.382
1	160	155	145	140	130	125	120	115	110	1.746
2	210	200	190	180	175	165	160	150	145	1.176
3	260	250	235	225	215	205	195	190	180	0.887
4	310	295	280	270	255	245	235	225	220	0.712
5	360	345	325	315	300	285	275	265	255	0.595
6	410	390	375	355	340	325	315	300	290	0.510
7	460	440	420	400	385	370	355	340	325	0.447
8	510	485	465	445	425	410	390	375	365	0.398
9	555	535	510	490	465	450	430	415	400	0.358
10	595	570	550	530	510	490	470	455	435	0.326
11	630	610	585	565	550	530	510	490	475	0.299
12	665	645	620	600	580	565	545	530	510	0.276
13	700	680	655	635	615	595	575	560	545	0.256
14	735	710	685	665	645	625	605	590	570	0.239

D_{3DR} = 226 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	90	85	80	75	65	65	60	55	50	1.188
1	125	115	110	100	95	90	85	80	75	0.809
2	160	150	140	130	120	115	105	100	95	0.613
3	195	180	170	160	150	140	130	125	120	0.494
4	225	210	200	185	175	165	155	150	140	0.413
5	260	245	230	215	200	190	180	170	165	0.355
6	295	275	260	245	230	215	205	195	185	0.312
7	330	305	290	270	255	240	230	220	210	0.277
8	360	340	320	300	285	270	255	240	230	0.250
9	385	370	350	330	310	295	280	265	255	0.228
10	410	390	375	355	335	320	305	290	275	0.209
11	435	415	395	380	365	345	330	310	300	0.193

D_{3DR} = 653 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	95	90	85	75	70	70	65	60	55	1.309
1	130	125	115	110	100	95	90	85	80	0.891
2	170	160	150	140	130	125	120	110	105	0.675
3	205	195	180	170	160	155	145	140	130	0.544
4	240	225	215	200	190	180	170	165	155	0.455
5	280	260	245	235	220	210	200	190	180	0.391
6	315	295	280	265	250	240	225	215	205	0.343
7	350	330	310	295	280	265	255	245	230	0.306
8	385	365	345	325	310	295	280	270	255	0.275
9	420	400	375	360	340	325	310	295	280	0.251
10	450	430	410	390	370	350	335	320	305	0.230
11	475	455	435	420	400	380	365	345	335	0.213
12	500	480	460	440	425	410	390	375	360	0.197

D_{3DR} = 488 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

STANDARD 3DR DECK

FRAME FASTENING: HILTI ENP2 & 3 on 24/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	105	95	90	85	80	75	70	65	1.506
1	155	145	135	130	120	115	110	105	100	1.025
2	195	185	175	165	155	150	140	135	130	0.777
3	240	225	215	205	195	185	175	170	160	0.626
4	285	270	255	240	230	220	210	200	190	0.524
5	325	310	295	280	265	255	240	230	220	0.450
6	370	350	330	315	300	290	275	265	255	0.395
7	415	390	370	355	340	325	310	295	285	0.352
8	455	435	410	390	375	355	340	330	315	0.317
9	500	475	450	430	410	390	375	360	345	0.288
10	535	510	490	465	445	425	410	390	375	0.265
11	565	545	520	505	480	460	440	425	410	0.245
12	595	575	550	530	515	495	475	455	440	0.227
13	625	605	580	560	540	525	505	490	470	0.212

D_{3DR} = 321 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	110	105	100	95	90	85	80	75	1.691
1	170	160	150	145	135	130	125	120	115	1.151
2	220	205	195	185	180	170	165	155	150	0.873
3	270	255	240	230	220	210	200	195	185	0.703
4	320	300	290	275	265	250	240	230	220	0.588
5	365	350	335	320	305	290	280	270	260	0.506
6	415	395	380	360	345	330	320	305	295	0.444
7	465	445	425	405	390	375	360	345	330	0.395
8	515	490	470	450	430	415	395	380	370	0.356
9	565	540	515	495	475	455	435	420	405	0.324
10	605	585	560	535	515	495	475	455	440	0.297
11	645	620	600	580	555	535	515	495	475	0.275
12	680	655	635	610	590	575	555	535	515	0.255
13	715	690	670	645	625	605	585	570	550	0.238
14	750	725	700	680	655	635	620	600	580	0.224

D_{3DR} = 226 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D_{3DR}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

sdi.

FRAME FASTENING: WELDS/WASHERS E70xx on 35/8 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	720	560	450	360	250	180	140	0.311
1	760	605	490	360	250	180	140	0.248
2	795	645	530	360	250	180	140	0.207
3	825	680	560	360	250	180	140	0.177
4	850	715	560	360	250	180	140	0.155

D_{FD} = 128 K2 = 440

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	725	580	465	325	235	180	145	0.340
1	780	630	465	325	235	180	145	0.272
2	830	680	465	325	235	180	145	0.226
3	870	725	465	325	235	180	145	0.194
4	910	725	465	325	235	180	145	0.170

D_{FD} = 97 K2 = 528

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	890	705	490	360	275	220	175	0.393
1	955	705	490	360	275	220	175	0.314
2	1020	705	490	360	275	220	175	0.262
3	1080	705	490	360	275	220	175	0.224
4	1105	705	490	360	275	220	175	0.196

D_{FD} = 63 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: WELDS/WASHERS E70xx on 35/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	665	530	430	360	250	180	140	0.331
1	695	570	470	360	250	180	140	0.261
2	720	600	505	360	250	180	140	0.216
3	745	630	535	360	250	180	140	0.184
4	765	660	560	360	250	180	140	0.160

D_{FD} = 189 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	685	560	465	325	235	180	145	0.363
1	730	605	465	325	235	180	145	0.286
2	775	645	465	325	235	180	145	0.236
3	810	685	465	325	235	180	145	0.201
4	840	720	465	325	235	180	145	0.175

D_{FD} = 143 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	855	705	490	360	275	220	175	0.420
1	915	705	490	360	275	220	175	0.331
2	970	705	490	360	275	220	175	0.273
3	1025	705	490	360	275	220	175	0.232
4	1070	705	490	360	275	220	175	0.202

D_{FD} = 93 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\, D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: WELDS/WASHERS E70xx on 35/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	540	430	345	290	245	180	140	0.414
1	575	470	385	325	250	180	140	0.310
2	600	500	420	355	250	180	140	0.248
3	625	530	450	360	250	180	140	0.206
4	640	555	480	360	250	180	140	0.177

D_{FD} = 250 K2 = 440

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	555	450	375	320	235	180	145	0.454
1	600	495	415	325	235	180	145	0.340
2	645	540	455	325	235	180	145	0.272
3	680	575	465	325	235	180	145	0.226
4	710	610	465	325	235	180	145	0.194

D_{FD} = 190 K2 = 528

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	685	570	485	360	275	220	175	0.524
1	750	630	490	360	275	220	175	0.393
2	805	680	490	360	275	220	175	0.314
3	860	705	490	360	275	220	175	0.261
4	905	705	490	360	275	220	175	0.224

D_{FD} = 124 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

V50 2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: WELDS/WASHERS E70xx on 35/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	475	390	325	275	235	180	140	0.452
1	495	420	355	305	250	180	140	0.331
2	515	445	385	335	250	180	140	0.261
3	530	465	410	360	250	180	140	0.215
4	540	485	430	360	250	180	140	0.183

D_{FD} = 365 K2 = 440

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	505	420	355	305	235	180	145	0.495
1	540	460	390	325	235	180	145	0.363
2	575	495	425	325	235	180	145	0.286
3	600	525	455	325	235	180	145	0.236
4	620	550	465	325	235	180	145	0.201

D_{FD} = 277 K2 = 528

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	640	540	465	360	275	220	175	0.572
1	695	590	490	360	275	220	175	0.419
2	740	640	490	360	275	220	175	0.330
3	780	680	490	360	275	220	175	0.273
4	820	705	490	360	275	220	175	0.232

D_{FD} = 181 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\, D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	685	520	415	340	250	180	140	0.414
1	730	570	460	360	250	180	140	0.322
2	770	615	500	360	250	180	140	0.263
3	805	655	540	360	250	180	140	0.222
4	830	690	560	360	250	180	140	0.193

D_{FD} = 128 K2 = 440

Substitute these values into the equation for C' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	675	535	445	325	235	180	145	0.454
1	735	590	465	325	235	180	145	0.353
2	785	640	465	325	235	180	145	0.288
3	835	685	465	325	235	180	145	0.244
4	880	725	465	325	235	180	145	0.211

D_{FD} = 97 K2 = 528

Substitute these values into the equation for C' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	820	675	490	360	275	220	175	0.524
1	890	705	490	360	275	220	175	0.407
2	960	705	490	360	275	220	175	0.333
3	1020	705	490	360	275	220	175	0.282
4	1080	705	490	360	275	220	175	0.244

D_{FD} = 63 K2 = 705

Substitute these values into the equation for C' as appropriate.

$$C' = \frac{K2}{3.2 + 0.3\, D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: WELDS/WASHERS E70xx on 30/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	505	400	320	270	230	180	140	0.552
1	535	440	360	305	250	180	140	0.399
2	565	470	395	335	250	180	140	0.313
3	585	500	425	360	250	180	140	0.257
4	600	525	455	360	250	180	140	0.218

D_{FD} = 270 K2 = 440

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	515	415	345	295	235	180	145	0.605
1	565	465	390	325	235	180	145	0.437
2	605	505	430	325	235	180	145	0.343
3	640	545	465	325	235	180	145	0.281
4	670	575	465	325	235	180	145	0.239

D_{FD} = 205 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	635	530	450	360	275	220	175	0.699
1	700	585	490	360	275	220	175	0.506
2	755	640	490	360	275	220	175	0.396
3	810	690	490	360	275	220	175	0.325
4	855	705	490	360	275	220	175	0.276

D_{FD} = 134 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	405	335	275	230	200	175	140	0.619
1	430	365	310	265	230	180	140	0.433
2	450	390	335	290	250	180	140	0.333
3	465	410	360	315	250	180	140	0.270
4	475	425	380	340	250	180	140	0.228

D_{FD} = 436 K2 = 440

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	430	355	300	260	225	180	145	0.679
1	470	395	340	295	235	180	145	0.475
2	500	430	375	325	235	180	145	0.365
3	525	460	405	325	235	180	145	0.296
4	550	485	430	325	235	180	145	0.250

D_{FD} = 331 K2 = 528

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	545	460	395	345	275	220	175	0.785
1	595	510	440	360	275	220	175	0.549
2	645	555	485	360	275	220	175	0.422
3	685	600	490	360	275	220	175	0.343
4	725	635	490	360	275	220	175	0.288

D_{FD} = 216 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 35/8 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	630	490	395	325	250	180	140	0.351
1	675	540	440	360	250	180	140	0.273
2	715	585	485	360	250	180	140	0.224
3	745	625	525	360	250	180	140	0.189
4	765	655	560	360	250	180	140	0.164

D_{FD} = 128 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	590	470	390	325	235	180	145	0.385
1	650	530	440	325	235	180	145	0.300
2	700	580	465	325	235	180	145	0.245
3	750	630	465	325	235	180	145	0.208
4	790	670	465	325	235	180	145	0.180

D_{FD} = 97 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	630	520	445	360	275	220	175	0.445
1	705	590	490	360	275	220	175	0.346
2	775	655	490	360	275	220	175	0.283
3	840	705	490	360	275	220	175	0.240
4	895	705	490	360	275	220	175	0.208

D_{FD} = 63 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\, D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 35/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	580	460	375	315	250	180	140	0.374
1	615	505	420	355	250	180	140	0.287
2	645	545	460	360	250	180	140	0.233
3	665	575	495	360	250	180	140	0.196
4	685	600	525	360	250	180	140	0.169

D_{FD} = 189 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	555	450	380	325	235	180	145	0.410
1	610	505	425	325	235	180	145	0.315
2	650	550	465	325	235	180	145	0.255
3	690	590	465	325	235	180	145	0.215
4	720	630	465	325	235	180	145	0.185

D_{FD} = 143 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	605	505	430	360	275	220	175	0.474
1	675	570	490	360	275	220	175	0.364
2	735	630	490	360	275	220	175	0.295
3	790	685	490	360	275	220	175	0.248
4	840	705	490	360	275	220	175	0.214

D_{FD} = 93 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

V56 2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 35/6 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	470	375	305	250	215	180	140	0.468
1	510	420	345	295	250	180	140	0.339
2	540	455	385	330	250	180	140	0.266
3	560	485	420	360	250	180	140	0.219
4	575	510	445	360	250	180	140	0.186

D_{FD} = 250 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	450	365	305	260	225	180	145	0.513
1	505	415	350	305	235	180	145	0.372
2	550	465	395	325	235	180	145	0.292
3	585	505	435	325	235	180	145	0.240
4	615	535	465	325	235	180	145	0.204

D_{FD} = 190 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	485	405	345	300	265	220	175	0.593
1	555	470	405	355	275	220	175	0.430
2	620	530	460	360	275	220	175	0.337
3	670	580	490	360	275	220	175	0.277
4	715	630	490	360	275	220	175	0.236

D_{FD} = 124 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\, D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 35/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	410	340	285	240	205	180	140	0.511
1	440	375	320	275	240	180	140	0.361
2	455	400	350	305	250	180	140	0.279
3	470	425	375	335	250	180	140	0.228
4	480	440	395	355	250	180	140	0.192

D_{FD} = 365 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	410	340	285	250	215	180	145	0.560
1	450	385	330	290	235	180	145	0.396
2	485	420	370	325	235	180	145	0.306
3	510	450	400	325	235	180	145	0.250
4	525	475	430	325	235	180	145	0.211

D_{FD} = 277 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	455	385	330	290	255	220	175	0.647
1	515	440	385	340	275	220	175	0.458
2	560	490	435	360	275	220	175	0.354
3	600	535	475	360	275	220	175	0.289
4	635	570	490	360	275	220	175	0.244

D_{FD} = 181 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

V58 2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/7 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	595	455	360	300	250	180	140	0.468
1	650	510	415	345	250	180	140	0.353
2	690	560	460	360	250	180	140	0.284
3	725	600	500	360	250	180	140	0.237
4	755	635	540	360	250	180	140	0.204

D_{FD} = 128 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	550	435	360	305	235	180	145	0.513
1	615	495	410	325	235	180	145	0.387
2	670	550	460	325	235	180	145	0.311
3	720	600	465	325	235	180	145	0.260
4	765	645	465	325	235	180	145	0.223

D_{FD} = 97 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	580	480	405	350	275	220	175	0.593
1	660	550	470	360	275	220	175	0.447
2	735	615	490	360	275	220	175	0.359
3	805	680	490	360	275	220	175	0.300
4	865	705	490	360	275	220	175	0.258

D_{FD} = 63 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/5 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	440	345	280	235	200	175	140	0.624
1	480	390	325	275	235	180	140	0.435
2	505	430	365	310	250	180	140	0.334
3	525	460	395	345	250	180	140	0.271
4	540	480	425	360	250	180	140	0.228

D_{FD} = 270 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	415	340	280	240	210	180	145	0.684
1	470	390	330	285	235	180	145	0.477
2	515	435	375	325	235	180	145	0.366
3	550	475	415	325	235	180	145	0.297
4	580	510	450	325	235	180	145	0.250

D_{FD} = 205 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	450	375	320	280	245	220	175	0.791
1	520	440	380	330	275	220	175	0.552
2	585	500	435	360	275	220	175	0.423
3	635	550	485	360	275	220	175	0.344
4	680	600	490	360	275	220	175	0.289

D_{FD} = 134 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

V60 2-1/2 x 9/16 STD. FORM DECK

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.0	1.5	2.0	2.5	3.0	3.5	4.0	K1
0	355	290	240	200	175	150	135	0.702
1	380	325	280	240	210	180	140	0.472
2	400	355	310	270	240	180	140	0.356
3	415	375	335	295	250	180	140	0.285
4	420	390	350	320	250	180	140	0.238

D_{FD} = 436 K2 = 440

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	4.5	K1
0	350	290	245	210	180	160	145	0.770
1	390	335	285	250	220	180	145	0.517
2	425	370	325	285	235	180	145	0.390
3	450	400	355	315	235	180	145	0.313
4	465	425	380	325	235	180	145	0.261

D_{FD} = 331 K2 = 528

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0239 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	5.0	K1
0	385	325	280	245	215	195	175	0.890
1	445	385	335	295	260	220	175	0.598
2	495	435	380	340	275	220	175	0.450
3	535	475	425	360	275	220	175	0.361
4	565	510	460	360	275	220	175	0.301

D_{FD} = 216 K2 = 705

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.2 + 0.3\ D_{FD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	135	125	115	105	95	90	85	80	75	0.729
1	215	195	180	170	155	145	135	130	120	0.358
2	280	265	250	230	215	200	190	180	170	0.237
3	335	315	295	280	265	255	240	230	215	0.177
4	380	360	340	325	310	295	280	270	260	0.142
5	415	395	380	360	345	330	320	305	295	0.118
6	445	430	410	395	380	365	350	335	325	0.101
7	470	455	440	420	405	395	380	365	355	0.088
8	495	475	460	445	430	420	405	390	380	0.078
9	510	495	480	465	455	440	425	415	400	0.071

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	140	130	120	110	105	95	90	85	80	0.803
1	220	205	190	175	165	155	145	140	130	0.394
2	300	280	260	245	230	215	205	195	185	0.261
3	355	340	320	305	290	275	260	250	235	0.195
4	410	390	370	355	340	325	310	300	285	0.156
5	455	435	415	400	380	365	350	340	325	0.130
6	495	475	455	435	420	405	390	375	365	0.111
7	525	505	490	470	455	440	425	410	395	0.097
8	555	535	520	500	485	470	455	440	425	0.086
9	580	560	545	530	510	495	485	470	455	0.078
10	600	585	565	550	535	520	505	495	480	0.071

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

2 x 12-36 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	155	145	135	130	120	115	110	100	95	0.923
1	250	235	220	205	195	185	175	165	160	0.454
2	340	320	300	285	270	255	240	230	220	0.301
3	415	395	375	360	345	325	310	295	280	0.225
4	480	460	440	420	405	385	370	360	345	0.180
5	540	515	495	475	455	440	425	410	395	0.150
6	590	565	545	525	505	490	470	455	440	0.128
7	635	610	590	570	550	530	515	500	480	0.112
8	675	650	630	610	590	570	555	535	520	0.099
9	705	685	665	645	625	610	590	575	560	0.090
10	735	715	695	675	660	640	625	605	590	0.081
11	760	740	725	705	685	670	655	635	620	0.075

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	200	185	175	160	155	145	135	130	125	1.037
1	310	290	275	260	245	230	220	210	200	0.510
2	425	400	375	355	335	320	300	290	275	0.338
3	515	490	465	445	425	405	385	365	350	0.253
4	595	565	540	520	500	480	460	440	425	0.202
5	665	640	610	585	565	545	525	505	485	0.168
6	730	700	675	650	625	600	580	560	545	0.144
7	785	755	730	705	680	655	635	615	595	0.126
8	830	805	780	755	730	705	685	665	645	0.112
9	875	845	820	795	775	750	730	710	690	0.101
10	910	885	860	835	815	790	770	750	730	0.091
11	940	915	895	870	850	825	805	785	765	0.084

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for ...

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	120	110	100	90	85	80	75	70	65	1.457
1	200	180	170	155	145	135	125	120	110	0.612
2	270	255	235	220	205	190	180	170	160	0.387
3	325	305	290	275	260	245	230	220	205	0.283
4	370	350	335	315	300	285	275	260	250	0.223
5	410	390	370	355	340	325	310	300	285	0.184
6	440	420	405	390	375	360	345	330	320	0.157
7	465	450	435	415	400	385	375	360	350	0.137
8	490	475	455	440	425	415	400	385	375	0.121
9	510	495	480	465	450	435	425	410	400	0.109

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	120	115	105	95	90	85	80	75	70	1.605
1	205	190	175	165	155	145	135	130	120	0.674
2	285	265	245	230	215	205	195	185	175	0.427
3	345	325	310	295	280	265	250	235	225	0.312
4	400	380	360	345	330	315	300	290	275	0.246
5	445	425	405	390	375	360	345	330	320	0.203
6	485	465	445	430	415	395	385	370	355	0.173
7	520	500	485	465	450	435	420	405	390	0.151
8	550	530	515	495	480	465	450	435	420	0.133
9	575	555	540	525	505	490	475	465	450	0.120
10	595	580	565	545	530	515	505	490	475	0.108

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2 x 12-24 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	140	130	120	115	105	100	95	90	85	1.846
1	230	215	205	190	180	170	160	155	145	0.776
2	325	305	285	270	255	240	230	220	210	0.491
3	405	385	365	345	330	310	295	280	270	0.359
4	470	450	430	410	390	375	360	345	330	0.283
5	530	505	485	465	445	430	415	400	385	0.234
6	580	560	535	515	495	480	460	445	430	0.199
7	625	605	580	560	540	525	505	490	475	0.173
8	665	645	625	600	585	565	545	530	515	0.153
9	700	680	660	640	620	600	585	565	550	0.138
10	730	710	690	670	655	635	615	600	585	0.125
11	755	735	720	700	680	665	645	630	615	0.114

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	175	165	155	145	135	125	120	115	110	2.074
1	290	270	255	240	225	215	205	195	185	0.871
2	405	380	355	335	315	300	285	270	260	0.552
3	495	475	450	430	410	390	370	350	335	0.404
4	580	555	530	505	485	465	445	430	410	0.318
5	655	625	600	575	550	530	510	490	475	0.263
6	715	690	660	635	615	590	570	550	530	0.223
7	775	745	720	695	670	645	625	605	585	0.195
8	820	795	770	745	720	695	675	655	635	0.172
9	865	840	815	790	765	740	720	700	680	0.155
10	900	875	850	830	805	785	760	740	720	0.140
11	935	910	885	865	840	820	800	780	760	0.128

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	85	80	75	70	65	60	55	50	45	0.729
1	145	135	125	120	110	105	100	90	85	0.358
2	205	190	180	170	160	150	140	135	125	0.237
3	265	245	230	220	205	195	185	175	165	0.177
4	310	295	280	270	255	240	225	215	205	0.142
5	345	330	320	305	295	280	270	255	245	0.118
6	380	365	350	335	325	315	300	290	280	0.101
7	405	395	380	365	355	340	330	320	310	0.088
8	430	420	405	390	380	365	355	345	335	0.078
9	455	440	425	415	400	390	380	370	360	0.071
10	470	460	445	435	425	410	400	390	380	0.064
11	490	475	465	455	440	430	420	410	400	0.059

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	90	85	80	75	70	65	60	55	55	0.803
1	155	145	135	130	120	115	110	100	95	0.394
2	220	205	195	180	170	165	155	150	140	0.261
3	280	265	250	235	225	215	205	195	185	0.195
4	340	325	305	290	275	260	250	240	230	0.156
5	380	365	350	340	325	310	300	285	270	0.130
6	420	405	390	375	365	350	340	330	315	0.111
7	455	440	425	410	395	385	370	360	350	0.097
8	485	470	455	440	425	415	400	390	380	0.086
9	510	495	485	470	455	440	430	420	405	0.078
10	535	520	505	495	480	465	455	445	430	0.071
11	555	545	530	515	505	490	480	465	455	0.065
12	575	565	550	535	525	510	500	490	475	0.060

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-36 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	100	95	90	85	80	75	70	65	0.923
1	180	170	160	155	145	140	130	125	120	0.454
2	255	240	230	220	205	195	190	180	170	0.301
3	330	315	295	280	270	255	245	235	225	0.225
4	405	385	365	345	330	315	300	290	280	0.180
5	455	440	425	410	390	375	360	345	330	0.150
6	505	490	470	455	440	425	410	400	385	0.128
7	550	530	515	500	480	465	455	440	425	0.112
8	590	570	555	535	520	505	490	480	465	0.099
9	625	610	590	575	560	540	525	515	500	0.090
10	660	640	625	605	590	575	560	545	530	0.081
11	685	670	655	635	620	605	590	575	565	0.075
12	715	695	680	665	650	635	620	605	590	0.069
13	735	720	705	690	675	660	645	630	615	0.064

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	115	110	105	95	90	85	85	80	1.037
1	205	195	185	175	165	160	150	145	140	0.510
2	290	275	260	250	240	225	220	210	200	0.338
3	370	355	335	320	310	295	285	270	260	0.253
4	455	435	415	395	380	360	350	335	320	0.202
5	525	505	485	470	450	430	415	400	385	0.168
6	580	560	545	525	510	495	480	460	445	0.144
7	635	615	595	575	560	545	525	510	500	0.126
8	685	665	645	625	605	590	575	560	545	0.112
9	730	710	690	670	650	635	615	600	585	0.101
10	770	750	730	710	690	675	655	640	625	0.091
11	805	785	765	745	730	710	695	680	660	0.084
12	840	820	800	780	765	745	730	715	695	0.077
13	870	850	830	815	795	780	760	745	730	0.072
14	895	880	860	840	825	810	790	775	760	0.067

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	75	70	65	60	55	50	45	45	40	1.457
1	135	125	115	110	100	95	90	85	80	0.612
2	195	180	170	160	150	140	130	125	120	0.387
3	255	235	220	210	195	185	175	165	160	0.283
4	300	285	275	260	245	230	220	210	200	0.223
5	340	325	310	300	285	275	260	250	235	0.184
6	375	360	345	330	320	305	295	285	275	0.157
7	400	385	375	360	350	335	325	315	305	0.137
8	425	415	400	385	375	360	350	340	330	0.121
9	450	435	425	410	400	385	375	365	355	0.109
10	470	455	445	430	420	405	395	385	375	0.098
11	485	475	460	450	440	425	415	405	395	0.090

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	80	75	70	65	60	55	50	50	45	1.605
1	140	135	125	115	110	105	100	95	90	0.674
2	205	195	180	170	160	155	145	140	130	0.427
3	270	255	240	225	215	205	195	185	175	0.312
4	330	315	295	280	265	255	240	230	220	0.246
5	375	360	345	330	315	300	290	275	265	0.203
6	415	395	385	370	355	345	330	320	305	0.173
7	450	435	420	405	390	375	365	355	345	0.151
8	480	465	450	435	420	410	395	385	375	0.133
9	505	490	475	465	450	435	425	410	400	0.120
10	530	515	505	490	475	465	450	440	425	0.108
11	555	540	525	510	500	485	475	460	450	0.099
12	575	560	545	535	520	510	495	485	475	0.091

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-24 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 2.75

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	95	85	80	75	70	65	65	60	55	1.846
1	170	160	150	140	135	125	120	115	110	0.776
2	240	230	215	205	195	185	175	170	160	0.491
3	315	300	285	270	255	245	235	225	215	0.359
4	390	370	350	335	320	305	290	280	265	0.283
5	445	430	415	400	380	365	350	335	320	0.234
6	495	480	460	445	430	415	405	390	375	0.199
7	540	525	505	490	475	460	445	430	420	0.173
8	585	565	545	530	515	500	485	470	455	0.153
9	620	600	585	565	550	535	520	505	495	0.138
10	655	635	615	600	585	570	555	540	525	0.125
11	680	665	645	630	615	600	585	570	555	0.114
12	710	690	675	660	645	630	615	600	585	0.105
13	730	715	700	685	670	655	640	625	610	0.097

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	105	100	95	90	85	80	75	70	65	2.074
1	190	180	170	160	155	145	140	135	130	0.871
2	270	260	245	235	225	215	205	195	190	0.552
3	355	340	320	305	295	280	270	260	250	0.404
4	440	415	400	380	365	350	335	320	310	0.318
5	510	490	475	455	435	415	400	385	370	0.263
6	570	550	530	515	500	485	465	450	430	0.223
7	625	605	585	565	550	535	520	505	490	0.195
8	675	655	635	615	600	580	565	550	535	0.172
9	720	700	680	660	640	625	610	590	575	0.155
10	760	740	720	700	685	665	650	635	615	0.140
11	800	780	760	740	720	705	685	670	655	0.128
12	835	815	795	775	755	740	725	705	690	0.118
13	865	845	825	805	790	770	755	740	725	0.110
14	890	875	855	835	820	800	785	770	755	0.102

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	135	125	115	105	95	90	85	80	75	0.729
1	175	160	145	135	125	115	110	100	95	0.509
2	210	195	180	165	155	145	135	125	120	0.391
3	250	230	210	195	185	170	160	150	140	0.318
4	280	260	245	225	210	200	185	175	165	0.267
5	305	285	270	255	240	225	210	200	190	0.231
6	330	310	295	280	265	250	235	225	210	0.203
7	355	335	315	300	285	270	260	245	235	0.181
8	375	355	335	320	305	290	280	265	255	0.164
9	395	375	355	340	325	310	295	285	270	0.149

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	140	130	120	110	105	95	90	85	80	0.803
1	180	165	155	145	135	125	120	110	105	0.561
2	220	200	190	175	165	155	145	140	130	0.431
3	260	240	225	210	195	185	175	165	155	0.350
4	295	275	260	240	225	215	200	190	180	0.294
5	325	310	290	275	260	245	230	220	205	0.254
6	355	335	320	300	290	275	260	245	230	0.224
7	380	360	345	325	310	300	285	270	260	0.200
8	405	385	370	350	335	320	305	295	285	0.180
9	430	410	390	375	355	340	330	315	305	0.164
10	450	430	410	395	380	365	350	335	325	0.151

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2 x 12-36 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	155	145	135	130	120	115	110	100	95	0.923
1	205	190	180	170	160	150	140	135	125	0.645
2	250	235	220	205	195	185	175	165	160	0.496
3	295	275	260	245	230	220	210	200	190	0.403
4	340	320	300	285	270	255	240	230	220	0.339
5	380	360	345	325	305	290	275	265	250	0.293
6	415	395	380	360	345	325	310	295	280	0.257
7	450	430	410	390	375	360	345	325	310	0.230
8	480	460	440	420	405	385	370	360	345	0.207
9	510	490	470	450	430	415	400	385	370	0.189
10	540	515	495	475	455	440	425	410	395	0.174
11	565	545	520	500	480	465	450	430	420	0.161

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	200	185	175	160	155	145	135	130	125	1.037
1	255	240	225	210	200	190	180	170	160	0.725
2	315	295	275	260	245	235	220	210	200	0.557
3	375	350	330	310	295	275	265	250	240	0.452
4	430	405	380	360	340	320	305	290	280	0.381
5	475	450	430	410	385	365	350	330	315	0.329
6	520	495	470	450	430	410	390	375	355	0.289
7	560	535	510	490	470	450	430	415	395	0.258
8	600	575	550	525	505	485	465	450	430	0.233
9	640	610	585	560	540	520	500	480	465	0.212
10	675	645	620	595	570	550	530	510	495	0.195
11	705	680	650	625	605	580	560	540	520	0.181

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	120	110	100	90	85	80	75	70	65	1.457
1	160	145	135	125	115	105	100	95	85	0.925
2	195	180	165	155	145	135	125	115	110	0.678
3	235	215	200	185	170	160	150	140	135	0.535
4	265	250	230	215	200	185	175	165	155	0.441
5	295	275	260	245	230	215	200	190	180	0.376
6	320	300	285	270	255	240	225	215	200	0.327
7	345	325	305	290	275	265	250	240	225	0.290
8	365	345	330	310	295	285	270	260	245	0.260
9	385	365	350	330	315	300	290	275	265	0.236

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	120	115	105	95	90	85	80	75	70	1.605
1	160	150	140	130	120	115	105	100	95	1.019
2	200	185	175	165	150	145	135	125	120	0.746
3	240	225	210	195	185	175	165	155	145	0.589
4	280	260	245	230	215	200	190	180	170	0.486
5	315	295	280	260	245	230	220	205	195	0.414
6	345	325	305	290	275	260	245	235	220	0.361
7	370	350	335	315	305	290	275	260	250	0.319
8	395	375	360	340	325	310	300	285	275	0.287
9	420	400	380	365	350	335	320	305	295	0.260
10	440	420	405	385	370	355	340	325	315	0.238

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

2 x 12-24 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	140	130	120	115	105	100	95	90	85	1.846
1	185	175	160	150	145	135	130	120	115	1.172
2	230	215	205	190	180	170	160	155	145	0.859
3	280	260	245	230	215	205	195	185	175	0.678
4	325	305	285	270	255	240	230	220	210	0.560
5	365	345	325	310	290	275	265	250	240	0.477
6	405	385	365	345	330	310	295	280	270	0.415
7	435	415	395	380	365	345	330	315	300	0.367
8	470	450	430	410	390	375	360	345	330	0.330
9	500	480	455	440	420	405	390	375	360	0.299
10	530	505	485	465	445	430	415	400	385	0.274
11	555	535	510	490	475	455	440	425	410	0.252

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	175	165	155	145	135	125	120	115	110	2.074
1	235	220	205	190	180	170	160	155	145	1.317
2	290	275	255	240	230	215	205	195	185	0.965
3	350	330	310	290	275	260	245	235	225	0.761
4	410	385	360	340	320	305	290	275	265	0.628
5	460	435	410	390	370	350	330	315	300	0.535
6	505	480	455	435	415	395	375	355	340	0.466
7	545	520	495	475	455	435	415	400	380	0.413
8	585	560	535	510	490	470	450	435	420	0.370
9	625	595	570	550	525	505	485	470	450	0.336
10	660	630	605	580	560	540	520	500	480	0.307
11	695	665	640	615	590	570	550	530	510	0.283

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	85	80	75	70	65	60	55	50	45	0.729
1	115	105	100	90	85	80	75	70	65	0.509
2	145	135	125	115	110	100	95	90	85	0.391
3	175	160	150	140	130	125	115	110	105	0.318
4	200	190	175	165	155	145	140	130	125	0.267
5	230	215	200	190	180	170	160	150	145	0.231
6	260	240	225	215	200	190	180	170	165	0.203
7	285	270	255	240	225	210	200	190	180	0.181
8	305	290	280	260	245	235	220	210	200	0.164
9	325	310	295	285	270	255	245	230	220	0.149
10	340	325	315	300	290	275	265	250	240	0.137
11	360	345	330	315	305	295	280	270	260	0.127

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	90	85	80	75	70	65	60	55	55	0.803
1	125	115	105	100	95	90	85	80	75	0.561
2	155	145	135	125	120	115	105	100	95	0.431
3	185	175	165	155	145	135	130	125	120	0.350
4	215	205	190	180	170	160	155	145	140	0.294
5	245	230	220	205	195	185	175	170	160	0.254
6	280	260	245	235	220	210	200	190	180	0.224
7	310	290	275	260	245	235	225	215	205	0.200
8	335	320	305	285	270	260	245	235	225	0.180
9	355	340	330	315	300	285	270	260	245	0.164
10	380	365	350	335	325	305	295	280	270	0.151
11	400	380	365	355	340	330	315	305	290	0.140
12	415	400	385	370	360	345	335	325	310	0.130

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

3 x 12-36 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	100	95	90	85	80	75	70	65	0.923
1	145	135	130	120	115	110	105	100	95	0.645
2	180	170	160	155	145	140	130	125	120	0.496
3	220	205	195	185	175	170	160	155	145	0.403
4	255	240	230	220	205	200	190	180	170	0.339
5	295	280	265	250	240	225	215	205	200	0.293
6	330	315	295	280	270	255	245	235	225	0.257
7	365	350	330	315	300	285	275	260	250	0.230
8	405	385	365	345	330	315	300	290	280	0.207
9	430	415	400	380	360	345	330	315	305	0.189
10	455	440	425	410	390	375	360	345	330	0.174
11	480	465	450	430	420	405	390	370	355	0.161
12	505	490	470	455	440	425	410	400	385	0.150
13	530	510	495	475	460	445	435	420	410	0.140

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	115	110	105	95	90	85	85	80	1.037
1	165	155	150	140	135	125	120	115	110	0.725
2	205	195	185	175	170	160	155	145	140	0.557
3	250	235	225	215	205	195	185	180	170	0.452
4	290	280	265	250	240	230	220	210	205	0.381
5	335	320	305	290	275	265	255	245	235	0.329
6	375	360	340	325	315	300	285	275	265	0.289
7	420	400	380	365	350	335	320	310	295	0.258
8	460	440	420	400	385	370	355	340	330	0.233
9	500	480	460	440	420	405	385	375	360	0.212
10	530	510	495	475	455	440	420	405	390	0.195
11	560	540	520	505	490	470	455	435	420	0.181
12	590	570	550	535	515	500	485	470	450	0.168
13	615	595	575	560	540	525	510	495	480	0.157
14	645	625	605	585	565	550	535	520	505	0.147

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	75	70	65	60	55	50	45	45	40	1.457
1	105	95	90	80	75	70	65	65	60	0.925
2	130	125	115	105	100	95	90	85	80	0.678
3	160	150	140	130	125	115	110	105	95	0.535
4	190	175	165	155	145	135	130	125	115	0.441
5	220	205	190	180	170	160	150	145	135	0.376
6	245	230	215	205	190	180	170	165	155	0.327
7	275	260	240	230	215	205	195	185	175	0.290
8	295	285	270	250	240	225	215	205	195	0.260
9	315	300	290	275	260	245	235	225	210	0.236
10	335	320	305	295	280	270	255	245	230	0.216
11	350	335	325	310	300	285	275	265	250	0.199

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	80	75	70	65	60	55	50	50	45	1.605
1	110	105	95	90	85	80	75	70	65	1.019
2	140	130	125	115	110	105	100	90	85	0.746
3	170	160	150	145	135	130	120	115	110	0.589
4	205	190	180	170	160	150	145	135	130	0.486
5	235	220	210	195	185	175	165	160	150	0.414
6	265	250	235	225	210	200	190	180	175	0.361
7	295	280	265	250	235	225	215	205	195	0.319
8	325	310	290	275	260	250	235	225	215	0.287
9	350	335	320	305	285	275	260	250	240	0.260
10	370	355	340	325	315	300	285	270	260	0.238
11	390	375	360	345	335	320	305	295	280	0.219
12	410	395	380	365	350	340	330	315	300	0.203

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-24 COMP.DECK

FRAME FASTENING: 5/8'' WELDS on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.75

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	95	85	80	75	70	65	65	60	55	1.846
1	130	125	115	110	105	95	90	85	85	1.172
2	170	160	150	140	135	125	120	115	110	0.859
3	205	195	185	175	165	155	150	140	135	0.678
4	240	230	215	205	195	185	175	170	160	0.560
5	280	265	250	235	225	215	205	195	190	0.477
6	315	300	285	270	255	245	235	225	215	0.415
7	355	335	315	300	290	275	265	250	240	0.367
8	390	370	350	335	320	305	290	280	270	0.330
9	420	405	385	365	350	335	320	305	295	0.299
10	445	430	415	400	380	365	350	335	320	0.274
11	475	455	440	425	410	395	375	360	345	0.252
12	495	480	460	445	430	415	405	390	375	0.234
13	520	500	485	470	455	440	425	410	400	0.218

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	105	100	95	90	85	80	75	70	65	2.074
1	150	140	135	125	120	115	110	105	100	1.317
2	190	180	170	165	155	150	140	135	130	0.965
3	235	220	210	200	190	180	175	165	160	0.761
4	275	260	250	240	225	215	210	200	190	0.628
5	320	305	290	275	265	250	240	230	220	0.535
6	360	345	325	310	300	285	275	265	255	0.466
7	405	385	365	350	335	320	310	295	285	0.413
8	445	425	405	385	370	355	340	330	315	0.370
9	485	465	445	425	405	390	375	360	345	0.336
10	520	500	480	460	440	425	410	390	380	0.307
11	550	530	510	495	480	460	440	425	410	0.283
12	580	560	540	520	505	490	475	455	440	0.263
13	605	585	565	550	530	515	500	485	470	0.245
14	635	615	595	575	560	540	525	510	495	0.229

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/span + 3 \times K1 \times span}$$

. See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	145	130	120	110	100	95	90	85	75	1.584
1	190	170	160	145	135	125	120	110	105	0.817
2	235	215	195	180	170	160	150	140	130	0.551
3	275	255	235	220	205	190	180	170	160	0.415
4	305	285	270	255	235	220	210	195	185	0.333
5	335	315	300	285	270	255	240	225	210	0.278
6	365	345	325	310	295	280	265	255	240	0.239
7	390	370	350	335	315	300	290	275	265	0.209
8	415	390	375	355	340	325	310	295	285	0.186
9	435	415	395	375	360	345	330	315	305	0.168

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	140	130	120	115	105	100	95	85	80	1.745
1	190	175	165	150	140	135	125	120	110	0.900
2	235	220	205	190	180	170	160	150	140	0.607
3	285	260	245	230	215	200	190	180	170	0.458
4	320	305	285	265	250	235	225	210	200	0.367
5	355	335	320	305	285	270	255	245	230	0.307
6	385	365	350	330	315	305	290	275	260	0.263
7	415	395	375	360	345	330	315	305	290	0.231
8	445	425	405	385	370	355	340	325	315	0.205
9	470	450	430	410	395	380	365	350	335	0.185
10	490	470	450	435	415	400	385	370	360	0.168

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

See page V1 for notes.

2 x 12-36 COMP.DECK

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	155	145	135	125	120	110	105	100	95	2.008
1	210	195	180	170	160	150	145	135	130	1.036
2	260	245	230	215	205	195	185	175	165	0.698
3	315	295	280	260	250	235	225	210	200	0.526
4	365	345	325	310	290	275	260	250	240	0.423
5	405	385	370	350	335	315	300	290	275	0.353
6	445	425	405	390	370	355	340	325	310	0.303
7	480	460	440	420	405	390	375	360	345	0.265
8	515	495	475	455	435	420	405	390	375	0.236
9	545	525	505	485	465	450	430	415	405	0.213
10	575	555	535	515	495	475	460	445	430	0.193
11	605	580	560	540	520	505	485	470	455	0.177

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	180	170	160	150	140	130	125	120	110	2.255
1	250	235	220	205	195	185	175	165	160	1.164
2	320	300	280	265	250	235	225	215	205	0.784
3	385	360	340	320	305	290	275	260	250	0.591
4	440	420	400	380	360	340	325	310	295	0.475
5	490	470	445	425	410	390	375	355	340	0.396
6	540	515	490	470	450	435	415	400	385	0.340
7	585	560	535	510	490	470	455	440	420	0.298
8	625	600	575	550	530	510	490	475	460	0.265
9	660	635	610	590	565	545	525	510	490	0.239
10	695	670	645	620	600	580	560	540	525	0.217
11	725	700	675	655	630	610	590	570	555	0.199

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	125	115	105	95	90	85	75	70	70	3.167
1	170	155	145	135	125	115	105	100	95	1.407
2	215	200	185	170	155	145	135	130	120	0.905
3	260	240	220	205	190	180	165	155	150	0.667
4	295	275	260	240	225	210	195	185	175	0.528
5	325	305	290	275	260	240	225	215	200	0.437
6	355	335	315	300	285	270	255	240	230	0.373
7	380	360	340	325	310	295	280	270	255	0.325
8	405	385	365	345	330	315	300	290	275	0.288
9	425	405	385	370	350	335	325	310	295	0.259

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	125	115	105	100	95	85	80	75	70	3.489
1	175	160	150	140	130	120	115	105	100	1.550
2	220	205	190	175	165	155	145	140	130	0.997
3	265	245	230	215	200	190	180	170	160	0.734
4	310	290	270	255	240	225	210	200	190	0.581
5	345	325	310	290	275	260	245	230	220	0.481
6	375	355	340	320	305	295	280	265	250	0.410
7	405	385	370	350	335	320	305	295	280	0.358
8	435	415	395	375	360	345	330	320	305	0.317
9	460	440	420	400	385	370	355	340	330	0.285
10	485	465	445	425	410	395	380	365	350	0.258

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

V80 2 x 12-24 COMP.DECK

FRAME FASTENING: RAMSET 26SD on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	135	125	120	110	105	100	90	85	80	4.014
1	190	175	165	155	145	140	130	125	120	1.784
2	245	230	215	200	190	180	170	160	155	1.147
3	300	280	260	245	235	220	210	200	190	0.845
4	350	330	310	295	275	265	250	240	225	0.669
5	395	375	355	340	320	305	290	275	265	0.554
6	435	410	395	375	360	345	330	315	300	0.472
7	470	450	430	410	395	380	365	350	335	0.412
8	505	485	460	445	425	410	395	380	365	0.365
9	535	515	495	475	455	440	425	410	395	0.328
10	565	545	525	505	485	465	450	435	420	0.297
11	595	570	550	530	510	495	475	460	445	0.272

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	160	150	140	130	125	115	110	105	100	4.509
1	230	215	200	190	180	170	160	150	145	2.004
2	295	280	260	245	235	220	210	200	190	1.288
3	365	340	320	305	285	270	260	245	235	0.949
4	425	405	385	360	340	325	310	295	280	0.751
5	475	455	430	415	395	375	360	340	325	0.622
6	525	500	480	455	440	420	405	390	370	0.530
7	570	545	520	500	430	460	445	425	410	0.462
8	610	585	560	540	520	500	480	465	445	0.410
9	650	625	600	575	555	535	515	500	480	0.368
10	685	660	635	610	590	570	550	530	515	0.334
11	715	690	665	645	620	600	580	565	545	0.306

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	90	85	80	70	65	60	60	55	50	1.584
1	125	115	110	100	95	90	80	75	75	0.817
2	160	150	140	130	120	115	105	100	95	0.551
3	190	180	165	155	145	140	130	125	120	0.415
4	225	210	195	185	175	165	155	145	140	0.333
5	260	245	225	215	200	190	180	170	160	0.278
6	295	275	255	240	230	215	205	195	185	0.239
7	315	300	285	270	255	240	230	220	205	0.209
8	340	325	310	295	280	265	255	240	230	0.186
9	360	345	330	315	305	295	280	265	250	0.168
10	380	365	350	335	325	310	300	290	275	0.153
11	400	380	365	355	340	330	315	305	295	0.140

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	95	85	80	75	70	65	60	60	55	1.745
1	130	120	115	105	100	95	90	85	80	0.900
2	165	155	145	140	130	125	115	110	105	0.607
3	205	190	180	170	160	150	145	135	130	0.458
4	240	225	210	200	190	180	170	165	155	0.367
5	275	260	245	230	220	210	200	190	180	0.307
6	310	295	280	265	250	235	225	215	205	0.263
7	345	330	310	295	280	265	255	240	230	0.231
8	370	355	340	325	310	295	280	270	255	0.205
9	395	380	365	350	335	320	305	295	280	0.185
10	415	400	385	370	360	345	335	320	305	0.168
11	440	420	405	390	380	365	355	340	330	0.154
12	460	440	425	410	400	385	370	360	350	0.142

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

V82 3 x 12-36 COMP.DECK

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	105	100	95	85	80	75	75	70	65	2.008
1	150	140	130	125	120	110	105	100	95	1.036
2	190	180	170	160	155	145	140	135	125	0.698
3	235	225	210	200	190	180	175	165	160	0.526
4	280	265	250	240	225	215	205	195	190	0.423
5	320	305	290	275	260	250	240	230	220	0.353
6	365	345	330	315	300	285	275	260	250	0.303
7	405	390	370	350	335	320	305	295	280	0.265
8	435	420	405	390	370	355	340	325	310	0.236
9	465	450	430	415	405	390	375	355	345	0.213
10	495	475	460	445	430	415	400	390	375	0.193
11	520	505	485	470	455	440	425	415	400	0.177
12	545	525	510	495	480	465	450	435	425	0.164
13	570	550	535	515	500	485	475	460	445	0.152

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	110	105	100	95	90	85	80	75	70	2.255
1	160	155	145	140	130	125	120	115	110	1.164
2	210	200	190	180	175	165	160	150	145	0.784
3	260	250	235	225	215	205	195	190	180	0.591
4	310	295	280	270	255	245	235	225	220	0.475
5	360	345	325	315	300	285	275	265	255	0.396
6	410	390	375	355	340	325	315	300	290	0.340
7	455	440	420	400	385	370	355	340	325	0.298
8	490	475	460	440	425	410	390	375	365	0.265
9	525	510	490	475	460	445	430	415	400	0.239
10	560	540	525	505	490	475	460	450	435	0.217
11	590	570	555	535	520	505	490	475	465	0.199
12	620	600	585	565	550	535	520	505	490	0.184
13	650	630	610	595	575	560	545	530	515	0.171
14	675	655	635	620	600	585	570	555	540	0.160

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

sdi.

FRAME FASTENING: RAMSET 26SD on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	80	70	65	60	55	50	50	45	40	3.167
1	115	105	95	90	85	80	75	70	65	1.407
2	145	135	125	120	110	105	100	90	85	0.905
3	180	170	155	145	140	130	120	115	110	0.667
4	215	200	185	175	165	155	145	140	130	0.528
5	245	230	215	205	190	180	170	160	155	0.437
6	280	265	245	230	220	205	195	185	175	0.373
7	310	295	275	260	245	230	220	210	200	0.325
8	330	315	300	290	270	260	245	235	220	0.288
9	350	335	325	310	295	285	270	255	245	0.259
10	370	355	340	330	315	305	295	280	265	0.235
11	390	375	360	345	335	320	310	300	290	0.215

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	80	75	70	65	60	55	50	50	45	3.489
1	120	110	105	95	90	85	80	75	70	1.550
2	155	145	135	125	120	115	105	100	95	0.997
3	190	180	170	160	150	140	135	125	120	0.734
4	225	215	200	190	180	170	160	155	145	0.581
5	265	245	235	220	210	200	190	180	170	0.481
6	300	280	265	250	240	225	215	205	195	0.410
7	335	315	300	285	270	255	245	230	220	0.358
8	360	345	330	315	300	285	270	260	245	0.317
9	385	370	355	340	330	310	300	285	270	0.285
10	410	395	380	365	350	340	325	310	295	0.258
11	430	415	400	385	370	360	345	335	325	0.237
12	450	435	420	405	390	380	365	355	345	0.218

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-24 COMP.DECK

FRAME FASTENING: RAMSET 26SD on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	90	85	80	75	70	65	60	60	55	4.014
1	135	125	120	110	105	100	95	90	85	1.784
2	180	170	160	150	140	135	130	120	115	1.147
3	220	210	200	190	180	170	160	155	150	0.845
4	265	250	235	225	215	205	195	185	180	0.669
5	310	290	275	265	250	240	230	220	210	0.554
6	350	335	315	300	285	275	260	250	240	0.472
7	395	375	355	340	325	310	295	285	270	0.412
8	425	410	395	375	360	345	330	315	300	0.365
9	455	440	425	410	395	380	360	345	335	0.328
10	485	465	450	435	420	405	395	380	365	0.297
11	510	495	475	460	445	430	420	405	395	0.272
12	535	520	500	485	470	455	445	430	415	0.251
13	560	545	525	510	495	480	465	450	440	0.233

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	95	90	85	80	75	70	70	65	60	4.509
1	145	140	130	125	120	115	105	100	100	2.004
2	195	185	175	170	160	155	145	140	135	1.288
3	245	235	220	210	200	195	185	180	170	0.949
4	295	280	270	255	245	235	225	215	205	0.751
5	345	330	315	300	285	275	265	255	245	0.622
6	395	375	360	345	330	315	300	290	280	0.530
7	445	425	405	385	370	355	340	330	315	0.462
8	480	465	445	430	415	395	380	365	350	0.410
9	515	500	480	465	450	435	420	405	390	0.368
10	550	530	515	500	480	465	455	440	425	0.334
11	580	565	545	530	510	495	485	470	455	0.306
12	610	590	575	555	540	525	510	495	485	0.282
13	640	620	600	585	570	555	540	525	510	0.261
14	665	645	630	610	595	580	565	550	535	0.244

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	145	130	120	110	105	95	90	85	80	0.792
1	190	175	160	150	135	130	120	110	105	0.539
2	235	215	200	185	170	160	150	140	130	0.409
3	275	255	235	220	205	190	180	170	160	0.329
4	310	290	270	255	240	225	210	195	185	0.275
5	340	320	300	285	270	255	240	225	215	0.237
6	365	345	325	310	295	280	265	255	240	0.208
7	390	370	350	335	320	305	290	275	265	0.185
8	415	395	375	360	340	325	310	300	285	0.167
9	435	415	395	380	360	345	330	320	305	0.152

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	145	135	125	115	110	100	95	90	85	0.872
1	190	180	165	155	145	135	125	120	115	0.594
2	240	220	205	195	180	170	160	150	145	0.450
3	285	265	245	230	215	205	195	185	175	0.362
4	325	305	290	270	255	240	225	215	205	0.303
5	360	340	320	305	290	275	260	245	235	0.261
6	390	370	355	335	320	305	290	275	260	0.229
7	420	400	380	365	345	330	320	305	290	0.204
8	450	430	410	390	375	355	345	330	315	0.184
9	475	455	435	415	395	380	365	350	340	0.167
10	495	475	455	440	420	405	390	375	360	0.153

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

2 x 12-36 COMP.DECK

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	160	150	140	130	120	115	110	105	100	1.004
1	215	200	185	175	165	155	150	140	135	0.683
2	270	250	235	220	210	200	190	180	170	0.518
3	320	300	285	265	250	240	225	215	205	0.417
4	375	350	330	315	295	280	265	255	240	0.349
5	415	395	375	360	340	320	305	290	280	0.300
6	455	430	415	395	380	360	345	330	315	0.263
7	490	470	450	430	410	395	380	365	350	0.234
8	525	505	480	460	445	425	410	395	380	0.211
9	560	535	515	490	475	455	440	425	410	0.192
10	585	565	540	520	500	485	465	450	435	0.176
11	615	590	570	550	530	510	495	475	460	0.163

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	190	180	170	160	150	140	130	125	120	1.127
1	260	245	230	215	205	190	180	175	165	0.768
2	330	310	290	275	260	245	230	220	210	0.582
3	395	370	350	330	310	295	280	270	255	0.468
4	455	430	410	390	365	350	330	315	300	0.392
5	505	480	460	440	420	400	380	365	345	0.337
6	555	530	505	485	465	445	425	410	390	0.296
7	600	575	550	525	505	485	465	450	435	0.263
8	645	615	590	565	545	525	505	485	470	0.237
9	680	655	630	605	580	560	540	520	505	0.216
10	715	690	665	640	615	595	575	555	535	0.198
11	750	725	695	670	650	625	605	585	570	0.183

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	130	115	105	100	90	85	80	75	70	1.583
1	175	160	145	135	125	115	110	100	95	0.974
2	220	200	185	170	160	150	140	130	120	0.704
3	265	240	220	205	190	180	170	160	150	0.551
4	295	280	260	240	225	210	200	185	175	0.452
5	330	310	290	275	260	245	230	215	205	0.384
6	355	335	320	300	285	270	260	245	230	0.333
7	385	360	345	325	310	295	280	270	255	0.295
8	405	385	365	350	335	320	305	290	280	0.264
9	430	410	390	370	355	340	325	310	300	0.239

D_{CD} = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	130	120	110	100	95	90	85	80	75	1.744
1	175	160	150	140	130	125	115	110	105	1.073
2	220	205	190	180	165	155	150	140	135	0.775
3	270	250	230	215	205	190	180	170	160	0.607
4	310	295	275	255	240	225	215	200	190	0.498
5	345	330	310	295	275	260	245	235	220	0.423
6	380	360	340	325	310	295	280	265	250	0.367
7	410	390	370	355	340	325	310	295	280	0.325
8	440	420	400	380	365	350	335	320	310	0.291
9	465	445	425	405	390	375	360	345	330	0.263
10	490	470	450	430	410	395	380	365	355	0.241

D_{CD} = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

2 x 12-24 COMP.DECK

FRAME FASTENING: HILTI ENP2 & 3 on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	140	130	120	115	110	100	95	90	85	2.007
1	195	180	170	160	150	145	135	130	120	1.235
2	250	235	220	205	195	185	175	165	160	0.892
3	305	285	265	250	240	225	215	205	195	0.698
4	360	335	315	295	280	265	255	240	230	0.573
5	400	380	360	345	325	310	290	280	265	0.487
6	440	420	400	380	365	350	330	315	300	0.423
7	480	455	435	415	400	385	370	355	340	0.373
8	515	490	470	450	430	415	400	385	370	0.335
9	545	525	500	480	465	445	430	415	400	0.303
10	575	555	530	510	495	475	460	440	425	0.277
11	605	585	560	540	520	500	485	470	455	0.255

D_{CD} = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

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t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	170	160	150	140	130	125	115	110	105	2.254
1	240	225	210	195	185	175	165	160	150	1.387
2	305	285	270	255	240	225	215	205	195	1.002
3	375	350	330	310	295	280	265	255	240	0.784
4	435	415	390	370	350	330	315	300	285	0.644
5	490	465	445	425	405	385	365	350	330	0.547
6	540	515	490	470	450	430	415	395	380	0.475
7	585	560	535	510	490	470	455	435	420	0.419
8	630	600	575	555	530	510	490	475	455	0.376
9	670	640	615	590	570	550	530	510	490	0.340
10	705	680	655	630	605	585	565	545	525	0.311
11	740	715	685	660	640	615	595	575	560	0.286

D_{CD} = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\, D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	90	85	80	75	65	65	60	55	50	0.792
1	125	115	110	100	95	90	85	80	75	0.539
2	160	150	140	130	120	115	105	100	95	0.409
3	195	180	170	160	150	140	130	125	120	0.329
4	225	210	200	185	175	165	155	150	140	0.275
5	260	245	230	215	200	190	180	170	165	0.237
6	295	275	260	245	230	215	205	195	185	0.208
7	320	305	290	270	255	240	230	220	210	0.185
8	340	325	310	300	285	270	255	240	230	0.167
9	360	345	330	320	305	295	280	265	255	0.152
10	380	365	350	335	325	310	300	290	275	0.139
11	400	385	370	355	340	330	320	305	295	0.129

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	95	90	85	75	70	70	65	60	55	0.872
1	130	125	115	110	100	95	90	85	80	0.594
2	170	160	150	140	130	125	120	110	105	0.450
3	205	195	180	170	160	155	145	140	130	0.362
4	240	225	215	200	190	180	170	165	155	0.303
5	280	260	245	235	220	210	200	190	180	0.261
6	315	295	280	265	250	240	225	215	205	0.229
7	345	330	310	295	280	265	255	245	230	0.204
8	375	355	345	325	310	295	280	270	255	0.184
9	395	380	365	350	340	325	310	295	280	0.167
10	420	405	390	375	360	350	335	320	305	0.153
11	440	425	410	395	380	370	355	345	335	0.142
12	460	445	430	415	400	390	375	365	350	0.132

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-36 COMP.DECK

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	110	105	95	90	85	80	75	70	65	1.004
1	155	145	135	130	120	115	110	105	100	0.683
2	195	185	175	165	155	150	140	135	130	0.518
3	240	225	215	205	195	185	175	170	160	0.417
4	285	270	255	240	230	220	210	200	190	0.349
5	325	310	295	280	265	255	240	230	220	0.300
6	370	350	330	315	300	290	275	265	255	0.263
7	410	390	370	355	340	325	310	295	285	0.234
8	445	425	410	390	375	355	340	330	315	0.211
9	475	455	440	425	410	390	375	360	345	0.192
10	500	485	465	450	435	420	410	390	375	0.176
11	530	510	495	475	460	445	435	420	405	0.163
12	555	535	520	500	485	470	455	445	430	0.151
13	580	560	545	525	510	495	480	465	455	0.141

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	120	110	105	100	95	90	85	80	75	1.127
1	170	160	150	145	135	130	125	120	115	0.768
2	220	205	195	185	180	170	165	155	150	0.582
3	270	255	240	230	220	210	200	195	185	0.468
4	320	300	290	275	265	250	240	230	220	0.392
5	365	350	335	320	305	290	280	270	260	0.337
6	415	395	380	360	345	330	320	305	295	0.296
7	465	445	425	405	390	375	360	345	330	0.263
8	505	485	470	450	430	415	395	380	370	0.237
9	540	520	505	485	470	455	435	420	405	0.216
10	575	555	535	520	505	485	475	455	440	0.198
11	605	585	570	550	535	515	500	490	475	0.183
12	635	615	600	580	560	545	530	515	500	0.170
13	665	645	625	610	590	575	560	545	530	0.159
14	695	675	655	635	615	600	585	570	555	0.149

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: HILTI ENP2 & 3 on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	80	75	65	60	55	55	50	45	40	1.583
1	115	105	95	90	85	80	75	70	65	0.974
2	145	135	125	120	110	105	100	90	85	0.704
3	180	170	155	145	140	130	125	115	110	0.551
4	215	200	185	175	165	155	145	140	130	0.452
5	250	230	215	205	190	180	170	165	155	0.384
6	280	265	245	230	220	205	195	185	175	0.333
7	310	295	275	260	245	235	220	210	200	0.295
8	335	320	305	290	275	260	245	235	220	0.264
9	355	340	325	310	300	285	270	255	245	0.239
10	375	360	345	330	320	305	295	280	265	0.218
11	395	375	365	350	335	325	310	300	290	0.201

D_{CD} = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	85	75	70	65	60	55	55	50	45	1.744
1	120	110	105	95	90	85	80	75	70	1.073
2	155	145	135	130	120	115	110	100	95	0.775
3	190	180	170	160	150	145	135	130	120	0.607
4	230	215	200	190	180	170	165	155	145	0.498
5	265	250	235	220	210	200	190	180	170	0.423
6	300	285	265	255	240	230	215	205	200	0.367
7	335	320	300	285	270	255	245	235	225	0.325
8	365	350	335	315	300	285	270	260	250	0.291
9	390	375	360	345	330	315	300	285	275	0.263
10	410	395	380	365	355	340	325	310	300	0.241
11	435	420	400	390	375	360	350	340	325	0.221
12	455	440	425	410	395	380	370	355	345	0.205

D_{CD} = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

3 x 12-24 COMP.DECK

FRAME FASTENING: HILTI ENP2 & 3 on 24/3 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

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t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	95	90	85	80	75	70	65	60	55	2.007
1	140	130	120	115	110	105	100	90	90	1.235
2	180	170	160	155	145	140	130	125	120	0.892
3	225	210	200	190	180	170	165	155	150	0.698
4	270	255	240	230	215	205	195	190	180	0.573
5	310	295	280	265	255	240	230	220	210	0.487
6	355	335	320	305	290	275	265	255	240	0.423
7	400	375	360	340	325	310	295	285	275	0.373
8	430	415	400	380	360	345	330	315	305	0.335
9	465	445	430	415	400	380	365	350	335	0.303
10	495	475	460	440	425	415	395	380	365	0.277
11	520	500	485	470	455	440	425	410	395	0.255
12	545	530	510	495	480	465	450	435	425	0.236
13	570	550	535	520	500	485	470	460	445	0.220

D_{CD} = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	105	95	90	85	80	75	70	70	65	2.254
1	155	145	135	130	125	115	110	105	100	1.387
2	200	190	180	175	165	155	150	145	140	1.002
3	250	240	230	215	205	200	190	180	175	0.784
4	300	285	275	260	250	240	230	220	210	0.644
5	350	335	320	305	290	280	265	255	245	0.547
6	400	380	365	350	335	320	305	295	285	0.475
7	450	430	410	390	375	360	345	330	320	0.419
8	490	475	455	435	415	400	385	370	355	0.376
9	530	510	490	475	460	440	425	410	395	0.340
10	565	545	525	510	490	475	465	445	430	0.311
11	595	575	560	540	525	510	495	480	465	0.286
12	625	605	590	570	555	535	520	505	495	0.265
13	655	635	615	600	580	565	550	535	520	0.247
14	685	665	645	625	610	590	575	560	545	0.231

D_{CD} = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ D_{CD}/\text{span} + 3 \times K1 \times \text{span}}$$

. See page V1 for notes.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1705	1670	1640	1620	1610	1595	1590	1580	1575	1570	0.729
1	1810	1750	1710	1680	1660	1640	1630	1620	1610	1600	0.358
2	1910	1830	1775	1735	1710	1685	1670	1655	1640	1630	0.237
3	2010	1910	1840	1795	1760	1730	1710	1690	1675	1665	0.177
4	2110	1990	1910	1850	1810	1775	1750	1725	1710	1695	0.142
5	2210	2070	1975	1910	1860	1820	1790	1765	1740	1725	0.118
6	2310	2150	2040	1965	1910	1865	1830	1800	1775	1755	0.101

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1745	1700	1670	1645	1630	1615	1605	1595	1590	1580	0.803
1	1865	1795	1750	1715	1690	1670	1650	1640	1630	1620	0.394
2	1990	1890	1830	1785	1750	1720	1700	1685	1670	1655	0.261
3	2110	1990	1910	1850	1810	1775	1750	1725	1710	1695	0.195
4	2230	2085	1990	1920	1870	1830	1795	1770	1750	1730	0.156
5	2350	2180	2070	1990	1930	1885	1845	1815	1790	1770	0.130
6	2470	2280	2150	2060	1990	1935	1895	1860	1830	1805	0.111

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1755	1715	1685	1665	1645	1635	1620	1610	1605	1595	0.923
1	1880	1820	1775	1740	1715	1695	1680	1665	1650	1640	0.454
2	2005	1925	1865	1820	1785	1760	1735	1715	1700	1685	0.301
3	2130	2030	1955	1900	1855	1820	1790	1770	1750	1730	0.225
4	2255	2130	2045	1975	1925	1885	1850	1820	1795	1775	0.180
5	2380	2235	2130	2055	1995	1945	1905	1875	1845	1820	0.150
6	2505	2340	2220	2135	2065	2010	1965	1925	1895	1865	0.128

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1815	1765	1725	1700	1680	1660	1650	1635	1625	1620	1.037
1	1970	1890	1835	1795	1765	1740	1720	1700	1685	1675	0.510
2	2125	2020	1950	1895	1850	1815	1790	1765	1745	1730	0.338
3	2275	2150	2060	1990	1935	1895	1860	1830	1805	1785	0.253
4	2430	2280	2170	2085	2020	1970	1930	1895	1865	1840	0.202
5	2585	2405	2280	2180	2105	2050	2000	1960	1925	1895	0.168
6	2740	2535	2390	2280	2195	2125	2070	2020	1985	1950	0.144

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1705	1670	1640	1620	1610	1595	1590	1580	1575	1570	0.729
1	1755	1705	1675	1650	1630	1620	1610	1600	1590	1585	0.509
2	1805	1745	1705	1680	1655	1640	1625	1615	1610	1600	0.391
3	1855	1785	1740	1705	1680	1660	1645	1635	1625	1615	0.318
4	1900	1825	1770	1735	1705	1685	1665	1650	1640	1630	0.267
5	1950	1860	1805	1760	1730	1705	1685	1670	1655	1645	0.231
6	2000	1900	1835	1790	1755	1725	1705	1685	1675	1660	0.203

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1745	1700	1670	1645	1630	1615	1605	1595	1590	1580	0.803
1	1805	1745	1705	1680	1660	1640	1630	1615	1610	1600	0.561
2	1865	1795	1745	1715	1685	1665	1650	1640	1630	1620	0.431
3	1925	1840	1785	1745	1715	1695	1675	1660	1645	1635	0.350
4	1985	1890	1825	1780	1745	1720	1700	1680	1665	1655	0.294
5	2045	1935	1865	1815	1775	1745	1720	1705	1685	1675	0.254
6	2100	1985	1905	1850	1805	1770	1745	1725	1705	1690	0.224

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

RAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1755	1715	1685	1665	1645	1635	1620	1610	1605	1595	0.923
1	1820	1765	1730	1705	1680	1665	1650	1640	1630	1620	0.645
2	1880	1820	1775	1740	1715	1695	1680	1665	1650	1640	0.496
3	1945	1870	1820	1780	1750	1725	1705	1690	1675	1665	0.403
4	2005	1925	1865	1820	1785	1760	1735	1715	1700	1685	0.339
5	2070	1975	1910	1860	1820	1790	1765	1740	1725	1710	0.293
6	2130	2030	1955	1900	1855	1820	1790	1770	1750	1730	0.257

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1815	1765	1725	1700	1680	1660	1650	1635	1625	1620	1.037
1	1895	1830	1785	1750	1720	1700	1685	1670	1655	1645	0.725
2	1970	1895	1840	1800	1765	1740	1720	1700	1685	1675	0.557
3	2050	1960	1895	1850	1810	1780	1755	1735	1720	1705	0.452
4	2130	2025	1955	1895	1855	1820	1790	1770	1750	1730	0.381
5	2210	2090	2010	1945	1900	1860	1825	1800	1780	1760	0.329
6	2290	2160	2065	1995	1940	1900	1865	1835	1810	1785	0.289

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1625	1600	1585	1575	1565	1560	1555	1550	1550	1545	0.824
1	1675	1640	1620	1605	1590	1580	1575	1570	1565	1560	0.554
2	1720	1680	1650	1630	1615	1605	1595	1585	1580	1575	0.417
3	1770	1720	1685	1660	1640	1625	1615	1605	1595	1590	0.334
4	1820	1760	1715	1685	1665	1645	1635	1620	1615	1605	0.279
5	1870	1795	1750	1715	1690	1670	1655	1640	1630	1620	0.240
6	1915	1835	1780	1740	1715	1690	1670	1655	1645	1635	0.210

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1650	1620	1605	1590	1580	1570	1565	1560	1555	1550	0.907
1	1710	1670	1640	1625	1610	1600	1590	1580	1575	1570	0.610
2	1770	1715	1680	1655	1640	1625	1615	1605	1595	1590	0.459
3	1825	1765	1720	1690	1670	1650	1635	1625	1615	1605	0.368
4	1885	1810	1760	1725	1700	1675	1660	1645	1635	1625	0.307
5	1945	1860	1800	1760	1725	1705	1685	1670	1655	1645	0.264
6	2005	1905	1840	1790	1755	1730	1705	1690	1675	1660	0.231

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1660	1635	1615	1600	1590	1585	1575	1570	1565	1560	1.044
1	1720	1685	1660	1640	1625	1615	1605	1595	1590	1585	0.702
2	1785	1735	1705	1680	1660	1645	1635	1625	1615	1605	0.529
3	1845	1790	1750	1720	1695	1675	1660	1650	1640	1630	0.424
4	1910	1840	1795	1760	1730	1710	1690	1675	1665	1650	0.354
5	1970	1895	1840	1800	1765	1740	1720	1700	1685	1675	0.304
6	2035	1945	1885	1835	1800	1770	1745	1730	1710	1695	0.266

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1695	1665	1645	1625	1615	1605	1595	1585	1580	1575	1.173
1	1775	1730	1700	1675	1655	1640	1630	1620	1610	1605	0.788
2	1855	1795	1755	1725	1700	1680	1665	1655	1640	1635	0.594
3	1935	1865	1810	1775	1745	1720	1700	1685	1670	1660	0.476
4	2015	1930	1870	1825	1790	1760	1740	1720	1705	1690	0.397
5	2090	1995	1925	1875	1835	1800	1775	1750	1735	1715	0.341
6	2170	2060	1980	1925	1875	1840	1810	1785	1765	1745	0.299

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1690	1650	1630	1610	1600	1590	1580	1575	1570	1565	1.584
1	1735	1690	1660	1640	1625	1610	1600	1590	1585	1580	0.817
2	1785	1730	1695	1665	1645	1630	1620	1610	1600	1595	0.551
3	1835	1770	1725	1695	1670	1655	1640	1625	1615	1610	0.415
4	1885	1810	1760	1725	1695	1675	1660	1645	1635	1625	0.333
5	1930	1845	1790	1750	1720	1695	1680	1665	1650	1640	0.278
6	1980	1885	1825	1780	1745	1720	1700	1680	1665	1655	0.239

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1720	1675	1650	1630	1615	1600	1595	1585	1580	1575	1.745
1	1775	1725	1690	1660	1645	1630	1615	1605	1600	1590	0.900
2	1835	1770	1725	1695	1675	1655	1640	1630	1620	1610	0.607
3	1895	1820	1765	1730	1700	1680	1665	1650	1640	1630	0.458
4	1955	1865	1805	1765	1730	1705	1685	1670	1660	1645	0.367
5	2015	1915	1845	1800	1760	1735	1710	1695	1675	1665	0.307
6	2075	1960	1885	1830	1790	1760	1735	1715	1695	1685	0.263

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1715	1680	1655	1640	1625	1610	1605	1595	1590	1585	2.008
1	1780	1735	1700	1675	1660	1645	1630	1620	1610	1605	1.036
2	1840	1785	1745	1715	1695	1675	1660	1645	1635	1625	0.698
3	1905	1835	1790	1755	1730	1705	1690	1675	1660	1650	0.526
4	1965	1890	1835	1795	1765	1735	1715	1700	1685	1670	0.423
5	2030	1940	1880	1835	1795	1770	1745	1725	1710	1695	0.353
6	2090	1995	1925	1875	1830	1800	1775	1750	1735	1715	0.303

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1750	1710	1680	1660	1640	1630	1620	1610	1600	1595	2.255
1	1825	1775	1735	1710	1685	1670	1655	1640	1630	1625	1.164
2	1905	1840	1795	1755	1730	1705	1690	1675	1660	1650	0.784
3	1985	1905	1850	1805	1775	1745	1725	1705	1690	1680	0.591
4	2065	1970	1905	1855	1815	1785	1760	1740	1720	1705	0.475
5	2145	2035	1960	1905	1860	1825	1795	1775	1755	1735	0.396
6	2220	2105	2020	1955	1905	1865	1835	1805	1785	1765	0.340

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1690	1655	1630	1615	1600	1590	1580	1575	1570	1565	0.792
1	1740	1695	1660	1640	1625	1610	1600	1595	1585	1580	0.539
2	1790	1730	1695	1670	1650	1635	1620	1610	1600	1595	0.409
3	1835	1770	1725	1695	1675	1655	1640	1630	1620	1610	0.329
4	1885	1810	1760	1725	1695	1675	1660	1645	1635	1625	0.275
5	1935	1850	1790	1750	1720	1700	1680	1665	1650	1640	0.237
6	1985	1890	1825	1780	1745	1720	1700	1680	1665	1655	0.208

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1725	1680	1650	1630	1615	1605	1595	1585	1580	1575	0.872
1	1780	1725	1690	1665	1645	1630	1620	1610	1600	1595	0.594
2	1840	1775	1730	1700	1675	1655	1640	1630	1620	1610	0.450
3	1900	1820	1770	1730	1705	1685	1665	1650	1640	1630	0.362
4	1960	1870	1810	1765	1735	1710	1690	1675	1660	1650	0.303
5	2020	1915	1850	1800	1765	1735	1715	1695	1680	1665	0.261
6	2075	1965	1890	1835	1795	1760	1735	1715	1700	1685	0.229

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

V102 COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1725	1685	1660	1645	1630	1615	1605	1600	1590	1585	1.004
1	1785	1740	1705	1680	1665	1645	1635	1625	1615	1610	0.683
2	1850	1790	1750	1720	1695	1680	1665	1650	1640	1630	0.518
3	1910	1845	1795	1760	1730	1710	1690	1675	1665	1655	0.417
4	1975	1895	1840	1800	1765	1740	1720	1705	1690	1675	0.349
5	2035	1950	1885	1840	1800	1775	1750	1730	1710	1695	0.300
6	2100	2000	1930	1880	1835	1805	1775	1755	1735	1720	0.263

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1760	1720	1690	1665	1650	1635	1625	1615	1605	1600	1.127
1	1840	1785	1745	1715	1695	1675	1660	1650	1635	1630	0.768
2	1920	1850	1805	1765	1740	1715	1695	1680	1665	1655	0.582
3	2000	1920	1860	1815	1780	1755	1730	1715	1700	1685	0.468
4	2080	1985	1915	1865	1825	1795	1770	1745	1730	1710	0.392
5	2160	2050	1970	1915	1870	1835	1805	1780	1760	1740	0.337
6	2235	2115	2030	1965	1915	1875	1840	1810	1790	1770	0.296

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1195	1155	1130	1110	1095	1085	1075	1070	1065	1060	0.729
1	1295	1235	1195	1170	1145	1130	1115	1105	1095	1090	0.358
2	1395	1315	1265	1225	1195	1175	1155	1140	1130	1120	0.237
3	1495	1395	1330	1280	1245	1220	1195	1180	1165	1150	0.177
4	1595	1475	1395	1340	1295	1265	1235	1215	1195	1180	0.142
5	1695	1555	1465	1395	1345	1310	1275	1250	1230	1210	0.118
6	1795	1635	1530	1455	1395	1355	1315	1290	1265	1245	0.101

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1235	1185	1155	1135	1115	1105	1090	1085	1075	1070	0.803
1	1355	1285	1235	1200	1175	1155	1140	1125	1115	1105	0.394
2	1475	1380	1315	1270	1235	1210	1190	1170	1155	1145	0.261
3	1595	1475	1395	1340	1295	1265	1235	1215	1195	1180	0.195
4	1715	1575	1475	1410	1355	1315	1285	1260	1235	1220	0.156
5	1835	1670	1555	1475	1415	1370	1335	1305	1275	1255	0.130
6	1960	1765	1640	1545	1475	1425	1380	1345	1315	1295	0.111

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: WELDS SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1245	1205	1175	1150	1135	1120	1110	1100	1090	1085	0.923
1	1370	1305	1265	1230	1205	1185	1165	1150	1140	1130	0.454
2	1495	1410	1350	1310	1275	1245	1225	1205	1190	1175	0.301
3	1620	1515	1440	1385	1345	1310	1280	1255	1235	1220	0.225
4	1745	1620	1530	1465	1410	1370	1335	1310	1285	1265	0.180
5	1870	1725	1620	1540	1480	1435	1395	1360	1335	1310	0.150
6	1995	1830	1710	1620	1550	1495	1450	1415	1380	1355	0.128

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1300	1250	1215	1190	1165	1150	1135	1125	1115	1105	1.037
1	1455	1380	1325	1285	1250	1225	1205	1190	1175	1160	0.510
2	1610	1510	1435	1380	1340	1305	1275	1255	1235	1215	0.338
3	1765	1635	1545	1475	1425	1380	1345	1315	1295	1270	0.253
4	1920	1765	1655	1575	1510	1460	1415	1380	1350	1325	0.202
5	2075	1895	1765	1670	1595	1535	1485	1445	1410	1380	0.168
6	2230	2025	1875	1765	1680	1615	1555	1510	1470	1435	0.144

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1195	1155	1130	1110	1095	1085	1075	1070	1065	1060	0.729
1	1245	1195	1160	1140	1120	1105	1095	1085	1080	1075	0.509
2	1295	1235	1195	1165	1145	1130	1115	1105	1095	1090	0.391
3	1340	1275	1225	1195	1170	1150	1135	1120	1110	1105	0.318
4	1390	1310	1260	1220	1195	1170	1155	1140	1130	1120	0.267
5	1440	1350	1290	1250	1220	1195	1175	1160	1145	1135	0.231
6	1490	1390	1325	1275	1240	1215	1195	1175	1160	1150	0.203

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1235	1185	1155	1135	1115	1105	1090	1085	1075	1070	0.803
1	1295	1235	1195	1165	1145	1130	1115	1105	1095	1090	0.561
2	1355	1280	1235	1200	1175	1155	1140	1125	1115	1105	0.431
3	1410	1330	1275	1235	1205	1180	1165	1150	1135	1125	0.350
4	1470	1375	1315	1270	1235	1210	1185	1170	1155	1145	0.294
5	1530	1425	1355	1300	1265	1235	1210	1190	1175	1160	0.254
6	1590	1470	1390	1335	1295	1260	1235	1215	1195	1180	0.224

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: 5/8'' WELDS on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1245	1205	1175	1150	1135	1120	1110	1100	1090	1085	0.923
1	1305	1255	1220	1190	1170	1150	1140	1125	1115	1110	0.645
2	1370	1305	1265	1230	1205	1185	1165	1150	1140	1130	0.496
3	1430	1360	1310	1270	1240	1215	1195	1180	1165	1150	0.403
4	1495	1410	1355	1310	1275	1245	1225	1205	1190	1175	0.339
5	1555	1465	1395	1345	1310	1275	1250	1230	1215	1195	0.293
6	1620	1515	1440	1385	1345	1310	1280	1255	1235	1220	0.257

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1300	1250	1215	1190	1165	1150	1135	1125	1115	1105	1.037
1	1380	1315	1270	1235	1210	1190	1170	1155	1145	1135	0.725
2	1460	1385	1330	1285	1255	1230	1210	1190	1175	1160	0.557
3	1540	1450	1385	1335	1300	1270	1245	1225	1205	1190	0.452
4	1620	1515	1440	1385	1340	1310	1280	1255	1235	1220	0.381
5	1695	1580	1495	1435	1385	1345	1315	1290	1265	1245	0.329
6	1775	1645	1555	1485	1430	1385	1350	1320	1295	1275	0.289

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1115	1090	1075	1065	1055	1050	1045	1040	1035	1035	0.824
1	1160	1130	1105	1090	1080	1070	1065	1055	1050	1050	0.554
2	1210	1170	1140	1120	1105	1090	1080	1075	1070	1065	0.417
3	1260	1205	1170	1145	1130	1115	1100	1090	1085	1080	0.334
4	1310	1245	1205	1175	1150	1135	1120	1110	1100	1095	0.279
5	1355	1285	1235	1200	1175	1155	1140	1130	1115	1110	0.240
6	1405	1325	1270	1230	1200	1180	1160	1145	1135	1125	0.210

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1140	1110	1090	1075	1065	1060	1055	1050	1045	1040	0.907
1	1195	1155	1130	1110	1095	1085	1075	1070	1065	1060	0.610
2	1255	1205	1170	1145	1125	1110	1100	1090	1085	1075	0.459
3	1315	1250	1210	1180	1155	1140	1125	1115	1105	1095	0.368
4	1375	1300	1250	1215	1185	1165	1150	1135	1125	1115	0.307
5	1435	1345	1290	1245	1215	1190	1170	1155	1140	1130	0.264
6	1490	1395	1325	1280	1245	1215	1195	1175	1160	1150	0.231

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: #12 SCREWS (BUILDEX) on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1145	1120	1105	1090	1080	1070	1065	1060	1055	1050	1.044
1	1210	1175	1150	1130	1115	1105	1095	1085	1080	1075	0.702
2	1270	1225	1195	1170	1150	1135	1120	1110	1105	1095	0.529
3	1335	1280	1240	1210	1185	1165	1150	1135	1125	1115	0.424
4	1395	1330	1280	1245	1220	1195	1180	1165	1150	1140	0.354
5	1460	1380	1325	1285	1255	1230	1205	1190	1175	1160	0.304
6	1520	1435	1370	1325	1290	1260	1235	1215	1200	1185	0.266

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1185	1155	1130	1115	1100	1090	1080	1075	1070	1065	1.173
1	1265	1220	1190	1165	1145	1130	1120	1110	1100	1090	0.788
2	1345	1285	1245	1215	1190	1170	1155	1140	1130	1120	0.594
3	1420	1350	1300	1265	1235	1210	1190	1175	1160	1150	0.476
4	1500	1415	1355	1310	1275	1250	1225	1205	1190	1175	0.397
5	1580	1485	1415	1360	1320	1290	1260	1240	1220	1205	0.341
6	1660	1550	1470	1410	1365	1330	1300	1275	1250	1235	0.299

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1175	1140	1115	1100	1085	1075	1070	1060	1055	1050	1.584
1	1225	1180	1150	1125	1110	1100	1090	1080	1075	1065	0.817
2	1275	1220	1180	1155	1135	1120	1110	1100	1090	1080	0.551
3	1320	1255	1215	1185	1160	1140	1125	1115	1105	1095	0.415
4	1370	1295	1245	1210	1185	1165	1145	1135	1120	1110	0.333
5	1420	1335	1280	1240	1210	1185	1165	1150	1140	1125	0.278
6	1470	1375	1310	1265	1235	1205	1185	1170	1155	1140	0.239

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1205	1165	1135	1115	1100	1090	1080	1075	1065	1060	1.745
1	1265	1210	1175	1150	1130	1115	1105	1095	1085	1080	0.900
2	1325	1260	1215	1185	1160	1145	1130	1115	1105	1100	0.607
3	1385	1305	1255	1220	1190	1170	1150	1140	1125	1115	0.458
4	1445	1355	1295	1250	1220	1195	1175	1160	1145	1135	0.367
5	1500	1400	1335	1285	1250	1220	1200	1180	1165	1150	0.307
6	1560	1450	1375	1320	1280	1250	1225	1200	1185	1170	0.263

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: RAMSET 26SD on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1205	1170	1145	1125	1110	1100	1090	1085	1075	1070	2.008
1	1265	1220	1190	1165	1145	1130	1120	1110	1100	1095	1.036
2	1330	1275	1235	1205	1180	1165	1150	1135	1125	1115	0.698
3	1390	1325	1280	1245	1215	1195	1175	1160	1150	1140	0.526
4	1455	1380	1325	1280	1250	1225	1205	1185	1175	1160	0.423
5	1515	1430	1370	1320	1285	1255	1235	1215	1195	1185	0.353
6	1580	1480	1415	1360	1320	1290	1260	1240	1220	1205	0.303

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1235	1195	1170	1145	1130	1115	1105	1095	1090	1080	2.255
1	1315	1260	1225	1195	1175	1155	1140	1130	1120	1110	1.164
2	1395	1330	1280	1245	1220	1195	1175	1160	1150	1140	0.784
3	1475	1395	1335	1295	1260	1235	1215	1195	1180	1165	0.591
4	1550	1460	1395	1345	1305	1275	1250	1230	1210	1195	0.475
5	1630	1525	1450	1395	1350	1315	1285	1260	1240	1225	0.396
6	1710	1590	1505	1445	1395	1355	1320	1295	1270	1250	0.340

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

sdi.

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0295 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1180	1140	1120	1100	1090	1080	1070	1065	1055	1055	0.792
1	1225	1180	1150	1130	1110	1100	1090	1080	1075	1070	0.539
2	1275	1220	1185	1155	1135	1120	1110	1100	1090	1085	0.409
3	1325	1260	1215	1185	1160	1145	1130	1115	1105	1100	0.329
4	1375	1300	1250	1210	1185	1165	1150	1135	1120	1115	0.275
5	1420	1335	1280	1240	1210	1185	1165	1150	1140	1130	0.237
6	1470	1375	1315	1270	1235	1210	1185	1170	1155	1145	0.208

K2 = 870 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0358 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1210	1170	1140	1120	1105	1090	1085	1075	1070	1065	0.872
1	1270	1215	1180	1155	1135	1120	1105	1095	1090	1080	0.594
2	1330	1265	1220	1185	1165	1145	1130	1120	1110	1100	0.450
3	1390	1310	1260	1220	1195	1170	1155	1140	1125	1115	0.362
4	1445	1355	1295	1255	1220	1195	1175	1160	1145	1135	0.303
5	1505	1405	1335	1290	1250	1225	1200	1180	1165	1155	0.261
6	1565	1450	1375	1320	1280	1250	1225	1205	1185	1170	0.229

K2 = 1060 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

V112 COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: HILTI ENP2 & 3 on 36/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0474 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1210	1175	1150	1130	1115	1105	1095	1085	1080	1075	1.004
1	1275	1230	1195	1170	1150	1135	1125	1110	1105	1095	0.683
2	1335	1280	1240	1210	1185	1165	1150	1140	1130	1120	0.518
3	1400	1330	1285	1250	1220	1200	1180	1165	1150	1140	0.417
4	1460	1385	1330	1285	1255	1230	1210	1190	1175	1165	0.349
5	1525	1435	1375	1325	1290	1260	1235	1215	1200	1185	0.300
6	1585	1490	1420	1365	1325	1290	1265	1245	1225	1210	0.263

K2 = 1400 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0598 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1250	1210	1180	1155	1140	1125	1110	1105	1095	1090	1.127
1	1330	1275	1235	1205	1180	1165	1150	1135	1125	1115	0.768
2	1410	1340	1290	1255	1225	1205	1185	1170	1155	1145	0.582
3	1490	1405	1345	1305	1270	1240	1220	1200	1185	1170	0.468
4	1565	1470	1405	1355	1315	1280	1255	1235	1215	1200	0.392
5	1645	1535	1460	1400	1355	1320	1290	1265	1245	1230	0.337
6	1725	1605	1515	1450	1400	1360	1330	1300	1275	1255	0.296

K2 = 1760 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3.$$ See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	1875	1780	1730	1690	1665	1645	0.621
1	1940	1830	1765	1725	1695	1670	0.434
2	2005	1880	1805	1755	1720	1695	0.334
3	2070	1930	1845	1790	1750	1720	0.271
4	2135	1980	1885	1820	1780	1745	0.228

K2 = 440 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	1865	1790	1745	1710	1685	1665	0.681
1	1920	1840	1785	1745	1715	1695	0.476
2	1980	1885	1825	1780	1745	1720	0.366
3	2040	1935	1865	1815	1775	1745	0.297
4	2100	1980	1905	1845	1805	1770	0.250

K2 = 530 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	1940	1865	1815	1775	1750	1725	0.785
1	2000	1920	1860	1815	1785	1755	0.549
2	2065	1970	1905	1855	1820	1785	0.422
3	2125	2025	1950	1895	1850	1820	0.342
4	2190	2075	1995	1935	1885	1850	0.288

K2 = 700 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times span} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	1780	1715	1670	1645	1625	1610	1.621
1	1845	1760	1710	1680	1655	1635	0.763
2	1910	1810	1750	1710	1680	1660	0.499
3	1980	1860	1790	1745	1710	1685	0.370
4	2045	1910	1830	1775	1740	1710	0.295

K2 = 440 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	1755	1705	1670	1650	1630	1620	1.777
1	1815	1750	1710	1685	1660	1645	0.836
2	1870	1800	1750	1715	1690	1670	0.547
3	1930	1845	1790	1750	1720	1695	0.406
4	1990	1895	1830	1785	1750	1725	0.323

K2 = 530 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	1770	1725	1695	1670	1655	1640	2.048
1	1830	1780	1740	1710	1690	1670	0.964
2	1895	1830	1785	1750	1725	1700	0.630
3	1960	1885	1830	1790	1760	1735	0.468
4	2020	1935	1875	1830	1795	1765	0.372

K2 = 700 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times span} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	1360	1270	1215	1180	1155	1135	0.621
1	1425	1320	1255	1210	1180	1160	0.434
2	1495	1370	1295	1245	1210	1185	0.334
3	1560	1420	1335	1280	1240	1210	0.271
4	1625	1465	1375	1310	1265	1230	0.228

K2 = 440 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	1350	1280	1235	1200	1175	1155	0.681
1	1410	1325	1270	1235	1205	1180	0.476
2	1470	1375	1310	1265	1235	1205	0.366
3	1530	1420	1350	1300	1265	1235	0.297
4	1585	1470	1390	1335	1290	1260	0.250

K2 = 530 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	1425	1355	1305	1265	1235	1210	0.785
1	1490	1405	1350	1305	1270	1245	0.549
2	1550	1460	1395	1345	1305	1275	0.422
3	1615	1510	1440	1385	1340	1305	0.342
4	1680	1565	1485	1425	1375	1340	0.288

K2 = 700 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times \text{span}} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	1270	1200	1160	1135	1115	1100	0.702
1	1335	1250	1200	1165	1140	1125	0.472
2	1400	1300	1240	1200	1170	1150	0.356
3	1465	1350	1280	1230	1200	1175	0.285
4	1530	1400	1320	1265	1225	1195	0.238

K2 = 440 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	1240	1195	1160	1135	1120	1105	0.770
1	1300	1240	1200	1170	1150	1130	0.517
2	1360	1290	1240	1205	1180	1160	0.390
3	1420	1335	1280	1240	1210	1185	0.313
4	1480	1380	1320	1270	1240	1210	0.261

K2 = 530 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	1255	1215	1185	1160	1140	1125	0.888
1	1320	1265	1230	1200	1175	1160	0.597
2	1385	1320	1275	1240	1210	1190	0.449
3	1445	1370	1320	1280	1245	1220	0.360
4	1510	1425	1365	1315	1280	1255	0.301

K2 = 700 ; K3 = 2380

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times span} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	500	410	355	320	295	275	0.621
1	570	460	395	355	320	300	0.434
2	635	510	435	385	350	325	0.334
3	700	560	475	420	380	350	0.271
4	765	610	515	450	405	375	0.228

K2 = 440 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	490	420	375	340	315	295	0.681
1	550	470	415	375	345	320	0.476
2	610	515	450	405	375	345	0.366
3	670	565	490	440	405	375	0.297
4	730	610	530	475	435	400	0.250

K2 = 530 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	565	495	445	405	375	350	0.785
1	630	550	490	445	410	385	0.549
2	695	600	535	485	445	415	0.422
3	755	655	580	525	480	445	0.342
4	820	705	625	565	515	480	0.288

K2 = 700 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times span} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

V118 STD. 9/16 FORM/INSULATING FILL - TYPE I

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	410	340	300	275	255	240	0.702
1	475	390	340	305	280	265	0.472
2	540	440	380	340	310	290	0.356
3	605	490	420	370	340	315	0.285
4	670	540	460	405	365	340	0.238

K2 = 440 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	380	335	300	275	260	245	0.770
1	440	380	340	310	290	275	0.517
2	500	430	380	345	320	300	0.390
3	560	475	420	380	350	325	0.313
4	620	525	460	415	380	350	0.261

K2 = 530 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	400	355	325	300	280	270	0.888
1	460	405	370	340	315	300	0.597
2	525	460	415	380	350	330	0.449
3	585	510	460	420	385	360	0.360
4	650	565	505	460	420	395	0.301

K2 = 700 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times \text{span}} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

FRAME FASTENING: WELDS/WASHERS E70xx on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

---

t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	585	495	440	400	375	355	0.621
1	650	545	480	435	405	380	0.434
2	715	590	520	470	435	405	0.334
3	780	640	555	500	460	430	0.271
4	845	690	595	535	490	455	0.228

K2 = 440 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	575	505	455	420	395	375	0.681
1	635	550	495	455	425	405	0.476
2	690	600	535	490	455	430	0.366
3	750	645	575	525	485	455	0.297
4	810	690	615	555	515	485	0.250

K2 = 530 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	650	580	525	490	460	435	0.785
1	715	630	570	530	495	465	0.549
2	775	685	615	565	530	500	0.422
3	840	735	660	605	565	530	0.342
4	900	790	705	645	600	560	0.288

K2 = 700 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times \text{span}} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

V120 STD. 9/16 FORM/INSULATING FILL - TYPE II

FRAME FASTENING: #12 SCREWS (BUILDEX) on 30/4 Pattern.
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

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t = design thickness = .0149 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 1.5	2.0	2.5	3.0	3.5	4.0	K1
0	490	425	385	355	335	320	0.702
1	555	475	425	390	365	345	0.472
2	625	520	460	420	395	370	0.356
3	690	570	500	455	420	395	0.285
4	755	620	540	485	450	420	0.238

K2 = 440 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0179 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.0	2.5	3.0	3.5	4.0	4.5	K1
0	465	415	385	360	345	330	0.770
1	525	465	425	395	370	355	0.517
2	585	510	460	430	400	380	0.390
3	640	560	500	460	430	410	0.313
4	700	605	540	495	460	435	0.261

K2 = 530 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

---

t = design thickness = .0238 ''

Stitch Connectors per span	DESIGN SHEAR, plf Span, ft. 2.5	3.0	3.5	4.0	4.5	5.0	K1
0	480	435	405	385	365	350	0.888
1	545	490	450	420	400	380	0.597
2	605	540	495	460	435	415	0.449
3	670	595	540	500	470	445	0.360
4	730	645	585	540	505	475	0.301

K2 = 700 ; K3 = 260

Substitute K1, K2, and K3 into the equation for G'.

$$G' = \frac{K2}{3.2 + 3 \times K1 \times span} + K3$$

See page V1 for notes.

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table. Check section 5.4.

APPENDIX VI

ADDITIONAL LOAD TABLES

STANDARD 1.5" DECK
FRAME FASTENING: 3/4" WELDS on a 36/9 Pattern
STITCH FASTENING: WELDS SAFETY FACTOR 2.75

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	780	685	610	540	485	435	395	365	335	0.324
1	890	790	705	640	580	525	475	435	405	0.222
2	985	885	795	720	660	610	555	510	470	0.169
3	1075	970	875	800	735	680	630	585	540	0.136
4	1150	1045	950	875	805	745	690	645	605	0.114
5	1215	1110	1020	940	870	805	750	705	660	0.098
6	1275	1175	1085	1000	930	865	810	760	715	0.086

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	735	655	585	530	480	440	405	380	350	0.358
1	850	770	700	635	575	530	490	455	425	0.245
2	955	870	795	730	670	615	570	530	495	0.186
3	1055	960	885	815	755	705	650	605	565	0.150
4	1145	1050	965	895	830	775	730	680	635	0.126
5	1225	1130	1045	970	905	845	795	750	705	0.108
6	1300	1205	1120	1040	975	915	860	810	765	0.095
7	1370	1275	1185	1110	1040	975	920	870	820	0.085

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	770	695	635	585	540	500	465	435	410	0.412
1	910	830	760	695	645	595	555	520	490	0.281
2	1035	950	880	810	750	695	650	610	570	0.213
3	1150	1060	985	915	855	795	740	695	655	0.172
4	1260	1165	1080	1010	945	890	835	785	735	0.144
5	1360	1265	1175	1100	1035	975	920	870	820	0.124
6	1455	1355	1265	1185	1115	1055	995	945	895	0.109
7	1545	1440	1350	1270	1195	1130	1070	1015	965	0.097
8	1625	1525	1430	1350	1270	1205	1140	1085	1035	0.087

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: 5/8" WELDS on a 36/9 Pattern
STITCH FASTENING: WELDS SAFETY FACTOR 2.75

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	645	570	505	450	400	360	330	300	275	0.324
1	755	670	600	545	495	445	405	375	345	0.222
2	845	760	685	625	570	525	485	445	415	0.169
3	925	840	765	700	645	595	555	515	480	0.136
4	995	910	835	770	710	660	615	575	540	0.114
5	1055	970	900	830	770	720	670	630	590	0.098
6	1105	1025	955	890	830	775	725	680	645	0.086

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	610	540	485	435	400	365	335	310	290	0.358
1	720	650	595	540	495	450	420	385	360	0.245
2	825	750	685	635	585	540	500	465	430	0.186
3	920	840	775	715	665	620	580	540	505	0.150
4	1005	925	855	790	735	690	645	610	575	0.126
5	1080	1000	925	865	805	755	710	670	635	0.108
6	1145	1065	995	930	870	820	770	730	690	0.095
7	1205	1125	1055	990	930	880	830	785	745	0.085

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	635	575	520	480	440	410	380	355	335	0.412
1	770	705	645	595	550	510	475	445	420	0.281
2	890	820	760	705	655	605	565	530	500	0.213
3	1005	930	860	805	755	705	660	620	580	0.172
4	1105	1025	955	895	840	790	745	705	665	0.144
5	1200	1120	1045	980	925	870	825	780	740	0.124
6	1290	1205	1130	1065	1000	945	895	850	810	0.109
7	1370	1285	1210	1140	1075	1020	970	920	875	0.097
8	1445	1360	1285	1210	1150	1090	1035	985	940	0.087

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

sdi.

STANDARD 1.5" DECK
FRAME FASTENING: 5/8" WELDS on a 36/9 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.75

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	645	570	505	450	400	360	330	300	275	0.324
1	700	620	555	500	445	405	365	335	310	0.272
2	750	665	600	540	490	445	405	370	345	0.234
3	800	710	640	580	530	485	445	405	375	0.206
4	840	755	680	620	570	525	480	445	410	0.183
5	885	795	720	660	605	555	515	480	440	0.166
6	920	835	760	695	640	590	550	510	475	0.151

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	610	540	485	435	400	365	335	310	290	0.358
1	665	600	540	490	445	410	375	350	325	0.300
2	720	650	595	540	490	450	415	385	360	0.259
3	770	700	640	590	540	495	455	425	395	0.227
4	820	745	685	630	585	535	495	460	430	0.203
5	870	790	725	670	620	580	535	500	465	0.183
6	915	835	770	710	660	615	575	535	500	0.166
7	955	880	810	750	695	650	610	575	535	0.153

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	635	575	520	480	440	410	380	355	335	0.412
1	710	640	585	535	495	460	430	400	375	0.345
2	770	710	645	595	550	510	475	445	420	0.297
3	835	765	705	650	600	560	520	490	460	0.261
4	890	820	760	705	655	610	565	530	500	0.233
5	950	875	810	755	705	655	615	575	540	0.210
6	1005	930	860	805	755	705	660	620	580	0.191
7	1055	980	910	850	795	750	705	660	625	0.176
8	1110	1030	960	895	840	790	745	705	665	0.162

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: #12 SCREWS (BUILDEX) on a 36/9 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	440	390	345	305	275	245	225	205	190	0.367
1	505	445	400	360	330	295	270	245	230	0.302
2	560	500	450	410	375	345	315	290	265	0.256
3	605	550	495	455	415	385	355	330	305	0.222
4	650	590	540	495	455	420	390	365	345	0.197
5	690	630	580	535	495	455	425	400	375	0.176
6	720	665	615	570	525	490	460	430	405	0.160

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	420	375	335	300	275	250	230	215	200	0.405
1	485	440	400	360	330	300	280	260	240	0.333
2	545	495	455	420	385	355	325	305	280	0.282
3	605	550	505	465	430	405	375	345	325	0.245
4	655	600	555	510	475	445	415	390	365	0.217
5	700	645	600	555	515	485	455	430	405	0.194
6	745	690	640	595	555	520	490	465	440	0.176
7	785	730	680	635	595	560	525	495	470	0.161

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	445	405	370	340	310	290	270	250	235	0.466
1	530	485	440	405	375	345	325	305	285	0.383
2	600	555	510	470	435	405	380	355	335	0.325
3	670	615	570	535	495	465	430	405	380	0.282
4	730	680	630	590	550	520	485	455	430	0.249
5	790	735	685	640	600	565	535	505	475	0.223
6	845	790	740	690	650	615	580	550	525	0.202
7	900	840	785	740	695	660	625	590	565	0.185
8	945	890	835	785	740	700	665	630	600	0.170

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page VI DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: RAMSET 26SD on a 36/9 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	685	600	535	475	425	380	345	320	295	0.706
1	745	660	590	530	475	430	390	360	330	0.498
2	805	715	640	580	530	480	435	400	370	0.385
3	860	770	690	630	575	530	480	445	410	0.314
4	910	815	740	675	615	570	525	485	445	0.265
5	955	865	785	715	660	610	565	525	485	0.229
6	1000	905	825	755	695	645	600	560	525	0.202

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	625	555	500	450	410	375	345	320	300	0.774
1	690	625	565	510	465	425	395	365	340	0.547
2	755	685	625	570	520	475	440	410	380	0.423
3	815	740	675	625	575	525	485	450	420	0.345
4	870	795	730	670	625	575	535	495	460	0.291
5	925	845	780	720	665	620	580	540	505	0.252
6	975	895	825	765	710	665	620	585	545	0.222
7	1025	945	870	810	755	705	660	620	585	0.198

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	620	560	510	465	430	400	375	350	325	0.893
1	705	640	580	535	495	460	425	400	375	0.631
2	775	715	655	600	555	515	480	450	425	0.487
3	850	780	720	665	615	575	535	500	470	0.397
4	915	845	785	730	680	630	590	555	520	0.335
5	980	905	840	785	735	690	645	605	570	0.290
6	1040	965	900	840	785	740	700	655	615	0.255
7	1100	1020	955	890	835	790	745	705	665	0.228
8	1155	1075	1005	940	885	835	790	750	710	0.206

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: HILTI ENP2 & 3 on a 36/9 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	690	610	540	480	430	385	350	320	295	0.353
1	755	665	595	540	480	435	395	365	335	0.292
2	815	725	650	585	535	485	440	405	375	0.249
3	865	775	700	635	580	535	485	445	410	0.217
4	920	825	745	680	620	575	530	490	450	0.192
5	965	870	790	720	665	610	570	530	490	0.173
6	1005	915	835	765	705	650	605	565	530	0.157

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	640	570	510	460	420	385	355	325	305	0.387
1	705	635	575	520	470	435	400	370	345	0.321
2	770	695	635	580	525	485	445	415	385	0.274
3	830	750	690	635	580	535	495	460	425	0.239
4	885	805	740	680	630	585	540	500	470	0.212
5	940	860	790	730	675	630	585	545	510	0.190
6	990	910	835	775	720	670	630	590	550	0.172
7	1040	955	880	820	760	710	670	630	590	0.158

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	640	580	530	485	450	415	385	360	340	0.443
1	730	660	600	550	510	475	440	415	390	0.367
2	800	735	675	620	570	530	495	465	435	0.313
3	870	805	745	685	635	590	550	515	485	0.273
4	940	865	805	750	695	645	605	565	535	0.242
5	1005	930	865	805	755	705	660	615	580	0.218
6	1070	990	920	860	805	755	710	670	630	0.198
7	1125	1045	975	910	855	805	760	720	675	0.181
8	1185	1100	1030	965	905	855	805	765	725	0.167

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDH02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNUETEK PINS on a 36/9 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	400	350	315	275	245	225	205	185	170	0.392
1	460	410	365	330	300	270	250	225	210	0.318
2	515	460	415	380	345	320	295	270	250	0.268
3	560	510	460	420	385	360	330	310	285	0.231
4	605	550	505	460	425	395	370	345	320	0.203
5	640	585	540	500	460	430	400	375	355	0.182
6	670	620	575	530	495	460	435	405	380	0.164

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	405	365	325	295	265	245	225	210	195	0.422
1	470	425	390	350	320	295	270	250	235	0.344
2	535	485	445	410	375	345	320	295	275	0.291
3	590	540	495	455	425	395	365	340	315	0.252
4	640	590	540	500	465	435	410	385	360	0.222
5	685	635	585	545	510	475	445	420	395	0.198
6	730	675	630	585	545	515	485	455	430	0.179
7	770	715	665	625	585	550	520	490	465	0.163

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	465	420	385	355	325	300	280	265	245	0.528
1	550	500	455	420	390	360	335	315	295	0.424
2	620	570	530	485	450	420	390	365	345	0.354
3	690	635	590	550	510	475	445	415	390	0.304
4	755	695	650	605	565	535	500	465	440	0.266
5	815	755	705	660	615	580	550	520	490	0.237
6	870	810	755	710	665	630	595	565	535	0.213
7	925	860	805	760	715	675	640	605	575	0.194
8	975	910	855	805	760	720	680	645	615	0.178

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 36/7 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	255	220	195	170	155	140	125	115	105	0.587
1	325	285	255	230	205	185	170	155	145	0.436
2	390	345	310	280	255	235	215	200	185	0.347
3	445	400	360	325	300	275	255	235	220	0.288
4	490	445	405	370	340	315	290	270	255	0.246
5	530	485	445	410	380	350	325	305	285	0.215
6	560	520	480	445	415	385	360	335	315	0.191

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870
Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	250	225	200	180	165	150	140	130	120	0.634
1	325	295	265	240	220	200	185	175	160	0.473
2	395	355	325	295	275	250	235	215	205	0.377
3	455	415	380	350	320	300	280	260	245	0.314
4	510	465	430	395	370	345	320	300	285	0.269
5	560	515	475	440	410	385	360	340	320	0.235
6	605	560	520	485	450	425	395	375	355	0.209
7	645	600	560	520	490	460	435	410	385	0.188

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056
Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	285	260	235	220	200	185	175	165	155	0.792
1	375	340	310	285	265	245	230	215	200	0.579
2	450	415	380	350	325	305	285	265	250	0.456
3	525	480	445	415	385	360	335	315	300	0.376
4	590	545	505	470	440	415	390	365	345	0.320
5	655	605	565	525	495	465	440	415	395	0.278
6	715	665	620	580	545	510	485	460	435	0.246
7	770	720	670	630	590	560	530	500	475	0.221
8	820	770	720	675	640	605	570	545	515	0.200

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398
Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 36/5 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf

*	Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	225	200	175	160	140	125	115	105	100	0.705
1	285	255	230	210	190	175	160	150	135	0.498
2	330	300	275	250	230	215	200	185	175	0.384
3	370	340	310	290	270	250	235	220	205	0.313
4	395	370	345	320	300	280	265	250	235	0.264
5	420	395	370	350	325	310	290	275	260	0.229
6	435	415	390	370	350	330	315	300	285	0.201

Dwr = 758 Dir = 886 Dnr = 974 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf

*	Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	230	205	185	165	150	140	130	120	110	0.760
1	295	265	245	225	205	190	175	165	150	0.540
2	350	320	295	270	255	235	220	205	195	0.419
3	395	365	340	315	295	275	260	245	230	0.342
4	435	405	380	355	335	315	295	280	265	0.289
5	470	440	415	390	365	345	325	310	295	0.250
6	500	470	445	420	400	375	355	340	325	0.221
7	520	495	470	445	425	405	385	365	350	0.197

Dwr = 567 Dir = 663 Dnr = 728 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf

*	Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	265	240	220	200	185	175	160	150	140	0.951
1	345	315	290	270	250	230	215	200	190	0.659
2	410	380	350	330	305	290	270	255	240	0.504
3	470	440	410	380	360	335	320	300	285	0.408
4	525	490	460	430	405	385	365	345	330	0.343
5	575	540	505	475	450	425	405	385	365	0.296
6	615	580	550	520	490	465	445	425	405	0.260
7	655	620	585	560	530	505	480	460	440	0.232
8	685	655	620	590	565	540	515	495	470	0.209

Dwr = 372 Dir = 435 Dnr = 478 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 36/4 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	175	150	135	120	105	95	85	80	75	0.881
1	230	205	185	170	155	145	130	120	110	0.580
2	270	245	225	210	195	180	170	155	150	0.432
3	300	280	260	240	225	210	200	185	175	0.344
4	320	300	285	270	255	240	225	215	205	0.286
5	335	320	305	290	275	260	250	235	225	0.245
6	345	330	320	305	290	280	265	255	245	0.214

Dwr = 1072 Dir = 1216 Dnr = 1282 K2 = 870
Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	175	155	140	125	115	105	95	90	85	0.951
1	240	215	200	185	170	155	145	135	125	0.630
2	290	265	245	230	215	200	185	175	165	0.471
3	330	305	285	270	250	235	225	210	200	0.376
4	360	340	320	300	285	270	255	240	230	0.313
5	385	365	350	330	315	300	285	270	260	0.268
6	405	390	370	355	340	325	310	295	285	0.234
7	425	405	390	375	360	345	330	315	305	0.208

Dwr = 802 Dir = 909 Dnr = 959 K2 = 1056
Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	200	180	165	150	140	130	120	115	105	1.189
1	280	255	240	220	200	185	175	165	155	0.765
2	345	320	295	275	260	245	230	215	200	0.564
3	400	370	350	325	310	290	275	260	250	0.446
4	445	420	395	370	350	335	315	300	285	0.369
5	485	460	435	410	390	370	355	340	325	0.315
6	515	490	470	445	425	405	390	370	355	0.275
7	545	520	500	475	455	435	420	400	385	0.244
8	565	545	525	505	485	465	445	430	415	0.219

Dwr = 526 Dir = 597 Dnr = 630 K2 = 1398
Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 36/3 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	145	130	115	105	95	85	75	70	65	1.175
1	185	170	155	145	135	125	120	110	105	0.693
2	210	200	185	175	165	155	145	140	130	0.492
3	225	215	205	195	185	175	170	160	155	0.381
4	235	225	220	210	200	195	185	180	170	0.311
5	240	235	230	220	215	205	200	195	185	0.263
6	245	240	235	230	225	215	210	205	200	0.227

Dwr = 2209 Dir = 2428 Dnr = 2442 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	150	140	125	110	100	95	85	80	75	1.267
1	200	185	175	160	150	140	130	125	115	0.755
2	240	225	210	195	185	175	165	155	150	0.537
3	265	250	235	225	215	205	195	185	175	0.417
4	280	270	260	245	235	225	220	210	200	0.341
5	295	285	275	265	255	245	235	230	220	0.288
6	300	295	285	275	270	260	250	245	235	0.250
7	310	300	295	285	280	270	265	260	250	0.220

Dwr = 1652 Dir = 1816 Dnr = 1827 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	180	160	145	135	125	115	105	100	95	1.585
1	245	225	210	195	185	175	160	150	140	0.911
2	295	275	260	245	230	220	205	195	190	0.639
3	330	315	300	285	270	255	245	235	225	0.493
4	360	345	330	315	300	290	275	265	255	0.401
5	385	370	355	340	330	315	305	295	285	0.337
6	400	390	375	365	350	340	330	315	305	0.292
7	415	405	390	380	370	360	350	340	330	0.257
8	425	415	405	395	385	375	365	355	345	0.229

Dwr = 1084 Dir = 1192 Dnr = 1199 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 30/6 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf

*	Span, ft. 3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	230	200	175	155	135	125	110	105	95	0.783
1	305	270	240	215	190	170	155	145	135	0.565
2	370	330	295	265	240	220	200	185	170	0.442
3	430	385	345	315	285	265	245	225	210	0.363
4	475	430	390	355	330	305	280	260	245	0.308
5	520	475	435	400	365	340	315	295	280	0.267
6	555	510	470	435	400	375	350	330	310	0.236

Dwr = 129 Dir = 226 Dnr = 356 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf

*	Span, ft. 4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	225	200	180	160	145	135	125	115	105	0.845
1	305	275	245	220	200	185	170	160	150	0.613
2	375	335	305	280	255	235	220	205	190	0.481
3	435	395	360	330	305	285	265	245	230	0.390
4	495	450	415	380	355	330	310	290	270	0.337
5	545	500	460	425	395	370	345	325	310	0.293
6	590	545	505	470	440	410	385	365	345	0.259
7	635	590	545	510	475	450	420	400	375	0.232

Dwr = 97 Dir = 169 Dnr = 266 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf

*	Span, ft. 5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	255	230	210	195	180	165	155	145	135	1.056
1	345	310	285	260	240	225	210	195	185	0.749
2	425	390	355	330	305	280	265	250	235	0.580
3	500	460	425	395	365	340	320	300	280	0.473
4	570	525	485	450	420	395	370	350	330	0.400
5	635	585	545	510	475	445	420	400	380	0.346
6	695	645	600	560	525	495	470	445	420	0.305
7	750	700	655	610	575	545	515	485	460	0.273
8	805	750	705	660	625	590	555	530	505	0.247

Dwr = 63 Dir = 111 Dnr = 175 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 30/4 Pattern
STITCH FASTENING:#10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	210	185	165	150	130	120	110	100	90	0.881
1	270	240	215	195	180	165	155	140	130	0.614
2	310	285	260	240	220	205	190	180	165	0.472
3	345	320	295	275	255	240	225	210	195	0.383
4	370	345	325	305	285	265	250	235	225	0.322
5	385	365	345	325	310	290	275	260	250	0.278
6	400	385	365	345	330	315	300	285	270	0.245

Dwr = 1377 Dir = 1547 Dnr = 1608 K2 = 870

Substitute these values into the equation for G' as appropriate

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	215	195	175	155	140	130	120	110	105	0.950
1	280	255	230	215	195	180	165	155	145	0.667
2	330	305	280	260	240	225	210	200	185	0.514
3	375	350	325	300	280	265	250	235	220	0.418
4	410	385	360	340	320	300	285	270	255	0.352
5	440	415	390	370	350	330	315	300	285	0.304
6	465	440	420	400	380	360	340	325	310	0.268
7	485	465	445	420	405	385	365	350	335	0.239

Dwr = 1030 Dir = 1157 Dnr = 1202 K2 = 1056

Substitute these values into the equation for G' as appropriate

t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	250	225	205	190	175	160	150	140	130	1.189
1	325	300	275	255	235	220	205	190	180	0.813
2	390	360	335	315	295	275	260	245	230	0.618
3	450	420	390	365	345	325	305	290	275	0.498
4	500	470	440	415	390	370	350	330	315	0.417
5	545	510	485	455	430	410	390	370	355	0.359
6	585	550	525	495	470	450	425	405	390	0.315
7	615	585	555	530	505	485	460	440	425	0.281
8	645	615	590	560	540	515	495	475	455	0.253

Dwr = 676 Dir = 760 Dnr = 789 K2 = 1398

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK
FRAME FASTENING: PNEUTEK PINS on a 30/3 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

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t = design thickness = .0295"

DESIGN SHEAR, plf
Span, ft.

*	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	K1
0	155	135	120	110	95	85	80	70	65	1.282
1	205	185	170	155	145	130	125	115	105	0.786
2	235	220	205	190	175	165	155	145	135	0.567
3	255	240	230	215	205	190	180	170	165	0.443
4	270	260	245	235	225	215	205	195	185	0.364
5	280	270	260	250	240	230	220	210	205	0.308
6	285	280	270	260	255	245	235	225	220	0.268

Dwr = 1754 Dir = 1943 Dnr = 1978 K2 = 870

Substitute these values into the equation for G' as appropriate

---

t = design thickness = .0358"

DESIGN SHEAR, plf
Span, ft.

*	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	K1
0	160	140	125	115	105	95	90	80	75	1.383
1	215	200	180	170	155	145	135	125	115	0.855
2	260	240	225	210	195	185	175	165	155	0.619
3	290	275	260	245	230	220	205	195	185	0.485
4	315	300	285	270	260	245	235	225	215	0.398
5	335	320	305	295	280	270	260	245	235	0.338
6	345	335	325	310	300	290	280	265	255	0.294
7	355	345	335	325	315	305	295	285	275	0.260

Dwr = 1312 Dir = 1453 Dnr = 1480 K2 = 1056

Substitute these values into the equation for G' as appropriate

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t = design thickness = .0474"

DESIGN SHEAR, plf
Span, ft.

*	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	K1
0	185	165	150	140	125	120	110	100	95	1.729
1	255	235	220	205	190	175	165	155	145	1.034
2	315	290	275	255	240	230	215	205	190	0.738
3	360	340	320	300	285	270	255	245	235	0.573
4	395	375	355	340	325	310	295	280	270	0.469
5	425	410	390	370	355	340	325	315	300	0.397
6	450	435	415	400	385	370	355	340	330	0.344
7	470	455	440	425	410	395	380	365	355	0.303
8	485	470	460	445	430	415	400	390	375	0.271

Dwr = 861 Dir = 956 Dnr = 971 K2 = 1398

Substitute these values into the equation for G' as appropriate

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$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch connectors per span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 3/4" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.75

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	795	730	675	625	580	545	510	480	455	0.461
	1	945	870	805	745	695	650	615	580	545	0.315
	2	1090	1010	935	870	810	760	715	675	640	0.240
	3	1215	1135	1060	990	925	865	815	770	730	0.193
	4	1340	1250	1170	1100	1040	975	920	865	820	0.162
36/9	5	1455	1360	1280	1205	1135	1075	1020	965	910	0.139
	6	1565	1470	1380	1300	1230	1165	1110	1055	1005	0.122
	7	1670	1570	1480	1395	1325	1255	1195	1140	1085	0.109
	8	1770	1670	1575	1490	1410	1340	1275	1220	1165	0.098
	9	1865	1760	1665	1575	1495	1425	1355	1295	1240	0.089

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	490	450	415	385	360	335	315	300	285	0.691
	1	640	590	545	505	475	445	420	395	375	0.409
	2	790	730	675	630	590	550	520	490	465	0.290
	3	920	855	800	750	700	660	620	585	555	0.225
	4	1050	980	915	860	810	765	725	685	650	0.184
36/7	5	1170	1095	1025	965	910	860	815	775	740	0.155
	6	1285	1205	1130	1065	1005	955	905	860	820	0.134
	7	1395	1310	1230	1160	1100	1045	990	945	900	0.118
	8	1495	1405	1325	1255	1190	1130	1075	1025	980	0.106
	9	1590	1500	1420	1345	1275	1215	1155	1105	1055	0.096

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	450	415	385	355	330	310	295	275	260	0.829
	1	600	555	515	480	445	420	395	370	350	0.453
	2	725	680	635	595	560	525	495	470	445	0.312
	3	845	790	740	700	660	625	595	565	535	0.238
	4	950	895	840	795	755	715	680	650	620	0.192
36/5	5	1050	990	935	885	840	800	760	725	695	0.161
	6	1140	1075	1020	970	920	880	840	800	770	0.139
	7	1215	1155	1100	1045	1000	955	910	875	840	0.122
	8	1285	1225	1170	1120	1070	1025	980	940	905	0.109
	9	1350	1290	1235	1185	1135	1090	1045	1005	965	0.098

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 3/4" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	340	315	290	270	250	235	220	205	195	1.037
	1	490	455	420	390	365	340	320	300	285	0.509
	2	610	570	535	505	475	450	420	400	375	0.337
	3	720	675	635	600	570	540	515	490	470	0.252
	4	815	770	730	690	655	625	595	570	545	0.201
36/4	5	900	850	810	770	735	700	670	640	615	0.168
	6	970	925	880	845	805	770	740	710	680	0.144
	7	1030	985	945	905	870	835	805	770	745	0.126
	8	1085	1040	1000	965	930	895	860	830	800	0.112
	9	1130	1090	1050	1015	980	945	915	880	855	0.100

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	305	280	260	240	220	210	195	185	175	1.382
	1	435	405	380	360	335	315	295	280	265	0.580
	2	535	505	475	450	430	410	390	370	355	0.367
	3	615	585	555	530	505	485	465	445	425	0.268
	4	680	650	625	600	575	550	530	510	490	0.212
36/3	5	735	705	680	655	630	610	585	565	545	0.175
	6	775	750	725	700	680	655	635	615	595	0.149
	7	810	785	765	740	720	700	680	660	640	0.129
	8	835	815	795	775	755	735	715	695	675	0.115
	9	855	840	820	800	780	765	745	730	710	0.103

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 3/4" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.7

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	435	400	370	345	320	300	285	265	250	0.921
	1	590	540	500	465	435	410	385	365	345	0.521
	2	740	680	630	590	550	515	485	460	435	0.363
	3	880	815	760	710	665	625	585	555	525	0.279
	4	1005	940	875	825	775	730	690	650	615	0.226
30/6	5	1130	1055	990	930	875	830	785	745	710	0.190
	6	1250	1165	1095	1030	975	925	875	835	795	0.164
	7	1360	1275	1200	1130	1070	1015	965	915	875	0.144
	8	1460	1375	1295	1225	1160	1100	1050	1000	955	0.129
	9	1560	1470	1390	1315	1245	1185	1130	1080	1030	0.116

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	425	390	360	335	310	290	275	260	245	1.036
	1	570	530	490	455	425	400	375	355	335	0.556
	2	695	650	605	570	540	505	475	450	425	0.380
	3	805	755	710	670	635	600	570	545	520	0.289
	4	910	855	810	765	725	690	655	625	600	0.233
30/4	5	1000	945	895	850	810	770	735	700	670	0.195
	6	1080	1025	975	930	885	845	810	775	745	0.168
	7	1155	1100	1050	1000	960	915	880	845	810	0.147
	8	1215	1165	1115	1070	1025	980	945	905	870	0.131
	9	1275	1220	1175	1125	1085	1040	1000	965	930	0.118

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	310	285	265	245	225	210	200	185	175	1.508
	1	450	420	395	365	340	320	300	285	270	0.668
	2	565	530	500	470	445	425	400	380	360	0.429
	3	660	625	590	560	530	505	485	460	440	0.316
	4	740	705	670	640	610	580	555	535	510	0.250
30/3	5	805	770	740	705	675	650	625	600	575	0.207
	6	860	830	795	765	735	710	680	655	635	0.177
	7	905	875	845	815	785	760	735	710	685	0.154
	8	945	915	885	860	830	805	780	755	735	0.136
	9	975	950	920	895	870	845	820	800	775	0.122

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.75

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	650	595	550	510	475	445	420	395	375	0.461
	1	725	670	620	575	535	500	470	445	420	0.387
	2	805	740	685	635	595	555	525	495	465	0.333
	3	880	810	750	700	650	610	575	545	515	0.293
	4	945	880	820	760	710	665	625	590	560	0.261
36/9	5	1010	940	880	825	770	720	680	640	605	0.236
	6	1075	1000	935	880	830	775	730	690	655	0.215
	7	1135	1060	995	935	880	830	785	740	700	0.197
	8	1195	1115	1045	985	930	880	835	790	745	0.182
	9	1250	1170	1100	1035	980	930	880	840	795	0.169

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	400	370	340	315	295	275	260	245	230	0.691
	1	480	440	405	380	355	330	310	295	280	0.537
	2	555	510	475	440	410	385	365	345	325	0.439
	3	630	585	540	505	470	440	415	395	370	0.372
	4	700	650	605	565	530	495	470	440	420	0.322
36/7	5	770	715	670	625	585	550	520	490	465	0.284
	6	835	775	725	680	645	605	570	540	510	0.254
	7	900	835	785	735	695	655	625	590	560	0.230
	8	960	895	840	790	745	705	670	635	605	0.210
	9	1020	955	895	840	795	755	715	680	650	0.193

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	370	340	315	290	270	255	240	225	215	0.829
	1	450	410	380	355	330	310	290	275	260	0.617
	2	520	480	450	415	390	365	345	325	305	0.491
	3	585	545	510	475	450	420	395	375	355	0.408
	4	645	600	565	530	500	475	445	425	400	0.349
36/5	5	705	660	620	585	550	520	495	470	445	0.305
	6	760	710	670	630	600	565	540	515	490	0.271
	7	810	765	720	680	645	610	580	555	530	0.243
	8	860	810	765	725	690	655	625	595	570	0.221
	9	905	855	810	770	730	695	665	635	610	0.202

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.7

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	280	255	235	220	205	190	180	170	160	1.037
	1	360	330	305	280	265	245	230	220	205	0.725
	2	425	400	370	345	320	300	285	265	255	0.557
	3	490	455	430	405	380	355	335	315	300	0.453
	4	545	515	480	455	430	405	385	365	345	0.381
36/4	5	600	565	530	505	475	450	430	410	390	0.329
	6	650	615	580	550	520	495	470	450	430	0.290
	7	695	655	625	590	565	535	510	490	470	0.259
	8	735	700	665	630	600	575	550	525	505	0.233
	9	775	735	700	670	640	610	585	560	540	0.213

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	250	230	210	195	180	170	160	150	140	1.382
	1	320	300	280	260	240	225	210	200	190	0.878
	2	375	355	335	315	295	280	265	250	235	0.644
	3	430	405	380	360	345	325	310	295	280	0.508
	4	475	450	425	405	385	365	350	335	320	0.420
36/3	5	510	485	465	445	425	405	385	370	355	0.357
	6	545	520	500	475	455	440	420	405	390	0.311
	7	575	550	530	510	490	470	450	435	420	0.276
	8	600	580	555	535	515	500	480	465	445	0.247
	9	625	600	580	560	540	525	505	490	475	0.224

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.75

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	360	330	305	280	265	245	230	220	205	0.921
	1	435	400	370	345	320	300	285	270	255	0.699
	2	515	475	435	405	380	355	335	315	300	0.563
	3	590	545	505	470	440	410	390	365	345	0.471
	4	665	615	570	530	495	465	440	415	395	0.405
30/6	5	735	680	635	595	555	520	490	465	440	0.355
	6	800	745	695	650	615	575	545	515	485	0.317
	7	865	805	755	705	665	630	595	565	535	0.285
	8	925	865	810	760	720	680	645	610	580	0.260
	9	985	925	865	815	770	725	690	655	625	0.238

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	345	320	295	275	255	240	225	210	200	1.036
	1	425	390	360	335	315	295	275	260	245	0.763
	2	495	460	430	400	370	350	330	310	295	0.604
	3	555	520	485	455	430	405	380	360	340	0.500
	4	615	575	540	510	480	455	430	410	385	0.426
30/4	5	670	630	595	560	530	500	475	455	435	0.371
	6	725	680	645	610	575	545	520	495	475	0.329
	7	775	730	690	655	620	590	560	535	515	0.295
	8	820	775	735	695	660	630	600	575	550	0.268
	9	865	820	775	740	705	670	640	615	585	0.245

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	255	235	215	200	185	175	165	155	145	1.508
	1	330	305	280	260	245	230	215	205	190	0.991
	2	395	370	345	325	305	285	265	250	240	0.738
	3	450	425	400	375	355	335	320	300	285	0.588
	4	505	475	445	425	400	380	365	345	330	0.489
30/3	5	550	520	490	465	445	425	405	385	370	0.418
	6	590	560	535	510	485	460	440	425	405	0.365
	7	630	600	570	545	520	500	475	460	440	0.324
	8	660	630	605	580	555	530	510	490	470	0.292
	9	690	660	635	610	585	565	540	520	500	0.265

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page VI DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.75

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	650	595	550	510	475	445	420	395	375	0.461
	1	800	735	680	635	590	555	520	490	465	0.315
	2	940	875	810	755	705	660	620	585	555	0.240
	3	1065	990	930	875	820	770	725	685	645	0.193
	4	1180	1105	1035	975	920	875	825	780	740	0.162
36/9	5	1290	1210	1140	1075	1015	965	915	870	830	0.139
	6	1395	1315	1235	1170	1105	1050	1000	955	910	0.122
	7	1495	1410	1330	1260	1195	1135	1080	1035	990	0.109
	8	1585	1495	1415	1345	1280	1215	1160	1110	1060	0.098
	9	1665	1580	1500	1425	1355	1295	1235	1185	1135	0.089

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	400	370	340	315	295	275	260	245	230	0.691
	1	550	510	470	435	410	385	360	340	325	0.409
	2	695	645	600	560	525	490	465	435	415	0.299
	3	825	770	720	675	635	600	565	535	505	0.225
	4	950	885	830	780	735	695	660	630	595	0.184
36/7	5	1065	995	935	880	830	790	750	715	680	0.155
	6	1170	1100	1035	975	925	880	835	795	760	0.134
	7	1270	1195	1130	1070	1015	965	915	875	835	0.118
	8	1360	1285	1215	1155	1095	1045	995	950	910	0.106
	9	1440	1365	1300	1235	1175	1120	1070	1025	980	0.096

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	370	340	315	290	270	255	240	225	215	0.829
	1	515	480	445	415	385	360	340	320	305	0.453
	2	640	595	560	525	495	470	440	420	395	0.312
	3	750	705	665	625	590	560	535	510	485	0.238
	4	850	800	755	715	680	645	615	590	560	0.192
36/5	5	940	890	845	800	760	725	695	665	635	0.161
	6	1015	965	920	875	835	800	765	735	705	0.139
	7	1085	1035	990	945	905	870	835	800	770	0.122
	8	1140	1095	1050	1010	970	930	895	860	830	0.109
	9	1195	1150	1105	1065	1025	985	950	915	885	0.098

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page VI DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.75

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	280	255	235	220	205	190	180	170	160	1.037
	1	425	395	365	340	320	300	280	265	250	0.509
	2	540	505	475	450	425	405	380	360	340	0.337
	3	645	605	570	540	515	490	465	445	425	0.252
	4	730	690	655	625	595	570	540	520	500	0.201
36/4	5	800	765	730	695	665	640	610	585	565	0.168
	6	860	825	790	760	730	700	675	650	625	0.144
	7	910	875	845	815	785	755	730	705	680	0.126
	8	950	920	890	860	830	805	780	755	730	0.112
	9	985	955	925	900	875	845	820	795	775	0.100

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	250	230	210	195	180	170	160	150	140	1.382
	1	375	350	330	310	295	280	260	245	235	0.580
	2	470	445	420	400	380	365	345	330	315	0.367
	3	540	515	495	475	450	435	415	400	385	0.268
	4	595	575	550	530	510	495	475	460	440	0.212
36/3	5	640	620	600	580	560	540	525	510	490	0.175
	6	670	650	635	615	600	580	565	550	535	0.149
	7	695	680	660	645	630	615	600	585	570	0.129
	8	710	700	685	670	655	640	630	615	600	0.115
	9	725	715	705	690	675	665	650	640	625	0.103

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING 5/8" WELDS STITCH FASTENING WELDS SAFETY FACTOR 2.75

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	360	330	305	280	265	245	230	220	205	0.921
	1	510	470	435	405	375	355	335	315	300	0.521
	2	655	610	565	525	490	460	435	410	390	0.363
	3	790	735	685	645	605	570	535	505	480	0.279
	4	915	855	800	750	710	670	635	605	570	0.226
30/6	5	1030	965	905	855	805	765	725	690	660	0.190
	6	1140	1070	1005	950	900	855	810	775	740	0.164
	7	1240	1170	1105	1045	990	940	895	855	815	0.144
	8	1335	1260	1190	1130	1075	1020	975	930	890	0.129
	9	1420	1345	1275	1210	1155	1100	1050	1005	965	0.116

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	345	320	295	275	255	240	225	210	200	1.036
	1	490	455	425	395	370	345	325	310	290	0.556
	2	610	570	535	505	475	450	425	405	380	0.380
	3	720	675	635	600	570	540	515	490	470	0.289
	4	810	765	725	690	655	625	595	570	545	0.233
30/4	5	895	850	805	770	730	700	670	640	615	0.195
	6	965	920	875	840	800	770	735	705	680	0.168
	7	1025	980	940	900	865	830	800	770	740	0.147
	8	1075	1035	995	955	920	890	855	825	795	0.131
	9	1120	1080	1040	1005	970	940	905	875	850	0.118

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	255	235	215	200	185	175	165	155	145	1.508
	1	390	365	345	320	300	280	265	250	235	0.668
	2	500	470	445	420	395	375	360	345	325	0.429
	3	585	555	525	500	480	455	435	420	400	0.316
	4	655	625	600	570	550	525	505	485	465	0.250
30/3	5	710	680	655	630	605	585	565	545	525	0.207
	6	755	730	705	680	655	635	615	595	575	0.177
	7	790	765	745	720	700	680	660	640	620	0.154
	8	815	795	775	755	735	715	695	675	660	0.136
	9	840	820	800	785	765	745	730	710	695	0.122

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING HILTI ENP2 & 3 STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	630	580	535	495	465	435	410	385	365	0.500
	1	725	665	615	570	530	500	470	440	420	0.414
	2	815	750	690	645	600	565	530	500	470	0.353
	3	895	830	770	715	670	625	590	555	525	0.308
	4	970	905	845	790	735	690	650	615	580	0.273
36/9	5	1045	975	910	860	805	755	710	670	635	0.245
	6	1115	1040	975	920	870	820	770	730	690	0.223
	7	1185	1110	1040	980	925	875	835	785	745	0.204
	8	1250	1170	1100	1040	980	930	885	845	800	0.188
	9	1315	1235	1160	1095	1035	985	935	890	850	0.174

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	390	355	330	305	285	270	250	240	225	0.750
	1	480	440	410	380	355	335	315	295	280	0.572
	2	570	525	485	455	425	395	375	355	335	0.462
	3	655	610	565	525	490	460	435	410	390	0.388
	4	735	685	640	600	560	525	495	470	445	0.334
36/7	5	810	755	705	665	625	590	555	525	500	0.293
	6	885	825	775	730	685	650	615	585	555	0.262
	7	960	895	840	790	745	705	670	635	605	0.236
	8	1025	960	900	850	805	760	725	690	655	0.215
	9	1090	1025	965	910	860	815	775	740	705	0.197

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	360	330	305	285	265	250	235	220	210	
	1	450	415	385	355	335	310	295	275	260	
	2	530	495	460	430	400	375	355	335	315	
	3	605	565	530	495	470	440	415	390	370	
	4	675	630	590	555	525	500	475	450	425	
36/5	5	740	695	650	615	580	555	525	500	480	
	6	800	750	710	670	635	605	575	550	525	
	7	855	805	765	725	685	655	625	595	570	
	8	905	860	815	775	735	700	670	640	615	
	9	955	905	860	820	780	745	715	685	655	

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

sdi.

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING HILTI ENP2 & 3 STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	270	250	230	215	200	185	175	165	155	1.125
	1	365	335	310	285	265	250	235	220	210	0.767
	2	440	410	385	360	335	315	295	280	265	0.582
	3	510	480	450	425	400	380	355	335	320	0.469
	4	575	540	510	480	455	430	410	390	375	0.392
36/4	5	630	595	565	535	505	480	460	440	420	0.338
	6	685	650	615	585	555	530	505	485	465	0.296
	7	730	695	660	630	600	575	550	525	505	0.264
	8	775	735	705	670	645	615	590	565	545	0.238
	9	810	775	745	710	680	655	630	605	580	0.216

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	245	225	205	190	175	165	155	145	140	1.499
	1	325	300	285	265	245	230	215	205	190	0.924
	2	390	365	345	325	310	290	275	260	245	0.668
	3	445	420	395	375	360	340	325	310	300	0.523
	4	490	465	445	425	405	385	370	355	340	0.430
36/3	5	530	510	485	465	445	425	410	395	380	0.365
	6	565	545	520	500	480	465	445	430	415	0.317
	7	595	575	550	530	515	495	480	460	445	0.280
	8	620	600	580	560	540	525	505	490	475	0.251
	9	640	620	600	585	565	550	535	515	500	0.227

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING HILTI ENP2 & 3 STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	350	320	295	275	255	240	225	210	200	1.000
	1	440	405	375	345	325	305	285	270	255	0.743
	2	530	490	450	420	395	370	345	325	310	0.591
	3	620	570	530	495	460	435	410	385	365	0.491
	4	700	650	605	565	530	495	470	445	420	0.420
30/6	5	780	725	675	635	600	560	530	500	475	0.366
	6	855	795	745	700	660	625	590	560	530	0.325
	7	925	865	810	760	720	680	645	615	585	0.292
	8	995	930	875	825	780	735	700	665	635	0.266
	9	1060	995	935	880	835	790	750	715	685	0.243

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	335	310	285	265	250	230	220	205	195	1.125
	1	430	395	365	340	315	295	280	265	250	0.810
	2	505	470	440	410	385	360	340	320	305	0.633
	3	575	540	505	475	450	425	400	380	360	0.519
	4	645	605	570	535	505	480	455	435	415	0.440
30/4	5	705	665	625	590	560	530	505	485	460	0.382
	6	765	720	680	645	610	580	555	530	505	0.337
	7	815	770	730	695	660	630	600	575	550	0.302
	8	865	820	780	740	705	675	645	620	595	0.274
	9	905	865	825	785	750	720	685	660	635	0.250

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	250	225	210	195	180	170	160	150	140	1.636
	1	335	310	290	265	250	235	220	205	195	1.045
	2	405	380	360	335	320	300	280	265	250	0.768
	3	470	440	415	395	375	355	335	320	305	0.607
	4	525	495	470	445	425	405	385	370	350	0.502
30/3	5	575	545	520	495	470	450	430	410	395	0.427
	6	620	590	560	535	515	490	470	450	435	0.372
	7	655	625	600	575	550	530	510	490	470	0.330
	8	685	660	635	610	585	565	545	525	505	0.296
	9	715	690	665	640	620	595	575	555	540	0.269

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING PNEUTEK PINS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	510	470	435	405	375	350	330	310	295	0.588
	1	605	555	510	475	445	415	390	370	350	0.473
	2	690	640	590	550	510	480	450	425	405	0.395
	3	770	715	670	620	580	545	510	485	460	0.340
	4	840	785	735	690	650	610	575	540	515	0.298
36/9	5	915	855	800	755	710	675	635	600	565	0.265
	6	980	920	865	815	770	730	690	655	620	0.239
	7	1045	980	925	870	825	780	745	710	675	0.217
	8	1105	1040	980	925	880	835	795	755	725	0.199
	9	1165	1095	1035	980	930	885	845	805	770	0.184

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	315	290	270	250	230	215	205	195	180	0.882
	1	405	375	345	320	300	280	265	250	235	0.646
	2	495	460	425	395	370	345	325	310	290	0.509
	3	575	535	500	465	435	410	385	365	345	0.421
	4	655	610	570	535	505	475	450	425	400	0.358
36/7	5	730	680	635	600	565	535	505	480	455	0.312
	6	800	745	700	660	625	590	560	535	510	0.276
	7	865	810	760	720	680	645	610	585	555	0.248
	8	930	870	820	775	735	695	665	630	605	0.225
	9	985	930	880	830	790	750	715	680	650	0.205

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	290	265	245	230	215	200	190	180	170	1.058
	1	380	350	325	305	285	265	250	235	225	0.735
	2	455	425	400	375	350	330	310	295	280	0.564
	3	530	495	465	435	410	390	370	350	330	0.457
	4	595	560	525	495	470	445	425	405	385	0.384
36/5	5	655	615	580	550	520	495	475	450	430	0.331
	6	710	670	635	605	575	545	520	495	475	0.291
	7	760	720	685	650	620	590	565	540	520	0.260
	8	805	765	730	695	665	635	610	585	560	0.235
	9	845	805	770	735	705	675	650	620	600	0.214

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING PNEUTEK PINS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	220	200	185	175	160	150	140	135	125	1.323
	1	310	285	265	245	230	215	200	190	180	0.854
	2	385	360	335	315	300	280	265	250	235	0.631
	3	450	425	400	375	355	335	320	305	290	0.500
	4	510	480	455	430	410	390	370	355	340	0.414
36/4	5	560	530	505	480	455	435	415	400	380	0.353
	6	605	575	550	525	500	480	460	440	420	0.308
	7	645	615	590	565	540	520	500	480	460	0.273
	8	680	655	625	600	580	555	535	515	495	0.245
	9	710	685	660	635	610	590	570	550	530	0.223

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	195	180	165	155	145	135	125	120	110	1.764
	1	275	255	240	225	210	200	185	175	165	1.019
	2	335	315	300	285	270	255	245	235	220	0.716
	3	385	365	350	330	315	300	290	275	265	0.552
	4	430	410	390	375	360	345	330	315	305	0.449
36/3	5	460	445	425	410	395	380	365	350	340	0.379
	6	490	470	455	440	425	410	395	385	370	0.327
	7	510	495	480	465	450	440	425	410	400	0.288
	8	530	515	500	485	475	460	450	435	425	0.257
	9	545	530	520	505	495	480	470	455	445	0.233

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING PNEUTEK PINS STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	280	260	240	220	205	195	180	170	160	1.176
	1	375	345	315	295	275	260	245	230	215	0.836
	2	465	425	395	370	345	325	305	285	270	0.649
	3	550	510	475	440	410	385	365	345	325	0.530
	4	625	585	545	510	480	450	425	400	380	0.448
30/6	5	700	655	610	575	540	515	485	460	435	0.388
	6	775	725	680	640	600	570	540	515	490	0.342
	7	840	790	740	700	660	625	595	565	540	0.306
	8	905	850	800	755	715	680	645	615	585	0.277
	9	965	910	860	810	770	730	695	665	635	0.252

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	275	250	230	215	200	190	175	165	155	1.323
	1	360	335	310	290	270	250	235	225	210	0.908
	2	435	405	380	360	340	315	300	280	265	0.691
	3	505	475	445	420	395	375	355	340	320	0.558
	4	570	535	505	475	450	430	410	390	370	0.468
30/4	5	625	590	560	530	505	480	455	435	415	0.403
	6	675	640	610	580	550	525	500	480	460	0.353
	7	720	685	655	625	595	570	545	520	500	0.315
	8	765	730	695	665	635	610	585	560	540	0.284
	9	800	765	735	705	675	650	620	600	575	0.259

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	200	185	170	155	145	135	130	120	115	1.924
	1	285	265	250	230	215	200	190	180	170	1.156
	2	355	330	315	295	280	265	250	235	225	0.826
	3	415	390	370	350	330	315	300	285	275	0.642
	4	465	440	420	400	380	360	345	330	320	0.526
30/3	5	505	485	460	440	420	405	385	370	355	0.445
	6	540	520	500	480	460	440	425	410	395	0.386
	7	570	550	530	510	490	475	460	440	425	0.340
	8	595	575	555	540	520	505	485	470	455	0.304
	9	615	600	580	565	545	530	515	500	485	0.275

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/spa: + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING #12 SCREWS (BUILDEX) STITCH FASTENING #10 SCREWS (BUILDEX) S.F. = 2.3

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	470	430	395	370	345	320	300	285	270	0.519
	1	560	515	475	440	410	385	365	340	325	0.427
	2	645	600	555	515	480	450	425	400	380	0.363
	3	720	675	630	585	550	515	485	455	435	0.316
	4	795	740	695	655	615	580	545	515	490	0.279
36/9	5	865	810	760	715	675	640	605	575	540	0.250
	6	930	870	820	775	730	695	660	630	595	0.227
	7	995	935	880	830	785	745	710	675	645	0.207
	8	1050	990	935	885	840	800	760	725	695	0.191
	9	1110	1045	990	940	890	845	810	770	740	0.177

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	290	265	245	225	210	200	185	175	165	0.779
	1	380	350	325	300	280	265	250	235	220	0.589
	2	470	435	400	375	350	330	310	290	275	0.473
	3	550	510	475	445	420	390	370	350	330	0.396
	4	625	580	545	510	480	455	430	405	385	0.340
36/7	5	695	650	610	575	540	510	485	460	440	0.298
	6	765	715	675	635	600	570	540	515	490	0.265
	7	830	780	735	690	655	620	590	565	540	0.239
	8	890	835	790	745	710	675	640	610	585	0.217
	9	945	895	845	800	760	725	690	660	630	0.199

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	265	245	225	210	195	185	175	165	155	0.935
	1	355	330	305	285	265	250	235	220	210	0.674
	2	430	400	375	355	335	310	295	280	265	0.527
	3	500	470	440	415	390	370	355	335	320	0.432
	4	565	530	500	475	450	425	405	385	370	0.366
36/5	5	625	590	555	525	500	475	455	435	415	0.318
	6	675	640	605	575	550	525	500	480	455	0.281
	7	725	685	655	625	595	570	545	520	500	0.252
	8	765	730	695	665	635	610	585	560	540	0.228
	9	800	765	735	705	675	650	620	600	575	0.208

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING #12 SCREWS (BUILDEX) STITCH FASTENING #10 SCREWS (BUILDEX) S.F. = 2.3

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	200	185	170	160	145	140	130	120	115	1.169
	1	290	270	250	230	215	200	190	180	170	0.787
	2	365	340	320	300	285	265	250	235	225	0.593
	3	430	400	380	360	340	320	305	290	280	0.476
	4	485	460	435	410	390	370	355	340	325	0.398
36/4	5	535	505	480	460	435	415	400	380	365	0.341
	6	575	550	525	500	480	460	440	425	405	0.299
	7	610	585	560	540	520	495	480	460	445	0.266
	8	645	620	595	575	550	530	510	495	475	0.240
	9	670	645	625	605	580	560	545	525	505	0.218

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	180	165	150	140	130	125	115	110	100	1.558
	1	255	240	225	215	200	185	175	165	155	0.947
	2	315	300	285	270	255	240	230	220	210	0.680
	3	365	350	330	315	300	290	275	265	255	0.530
	4	405	385	370	355	340	325	315	300	290	0.435
36/3	5	435	420	405	390	375	360	350	335	325	0.368
	6	460	445	430	415	405	390	380	365	355	0.319
	7	480	465	450	440	425	415	405	390	380	0.282
	8	495	480	470	460	445	435	425	415	400	0.253
	9	505	495	485	475	465	455	445	430	420	0.229

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING #12 SCREWS (BUILDEX) STITCH FASTENING #10 SCREWS (BUILDEX) S.F. = 2.35

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	260	235	220	205	190	180	165	155	150	1.039
	1	350	320	295	275	260	240	230	215	205	0.764
	2	440	405	375	350	325	305	290	275	260	0.605
	3	520	485	450	420	395	370	350	330	315	0.500
	4	600	560	520	490	460	435	410	390	370	0.426
30/6	5	675	630	590	555	520	495	470	445	420	0.372
	6	745	695	650	615	580	550	520	495	475	0.329
	7	810	760	715	675	635	605	575	545	520	0.296
	8	870	820	770	730	690	655	625	595	570	0.268
	9	930	875	825	785	745	705	675	645	615	0.245

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	250	230	210	195	185	170	160	150	145	1.169
	1	335	315	290	270	250	235	220	210	200	0.832
	2	410	385	360	340	320	300	285	270	255	0.646
	3	480	450	425	400	375	360	340	325	310	0.528
	4	540	510	480	455	430	410	390	370	355	0.447
30/4	5	595	560	535	505	480	460	435	420	400	0.387
	6	645	610	580	555	525	505	480	460	440	0.341
	7	685	655	625	595	570	545	525	500	480	0.305
	8	725	690	660	635	610	585	560	540	520	0.276
	9	755	725	695	670	645	620	595	575	555	0.252

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	185	170	155	145	135	125	120	110	105	1.700
	1	270	250	235	215	200	190	180	170	160	1.071
	2	335	315	295	280	265	250	240	225	215	0.782
	3	390	370	350	335	315	300	285	275	265	0.615
	4	440	420	400	380	360	345	330	315	305	0.507
30/3	5	480	460	440	420	400	385	370	355	345	0.432
	6	510	490	470	455	435	420	405	390	375	0.376
	7	540	520	500	485	470	450	435	420	410	0.332
	8	560	545	525	510	495	480	465	450	435	0.298
	9	580	560	545	530	515	500	490	475	460	0.270

Dwr = 607 Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\,Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING RAMSET 26SD STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	595	545	505	470	435	410	385	360	340	1.000
	1	685	630	585	540	505	475	445	420	395	0.707
	2	780	715	660	615	575	540	505	475	450	0.546
	3	855	795	740	685	640	600	565	535	505	0.445
	4	930	870	815	760	710	665	625	590	560	0.376
36/9	5	1005	940	880	825	780	730	690	650	615	0.325
	6	1075	1005	945	890	840	795	750	710	670	0.287
	7	1140	1070	1005	945	895	850	805	765	725	0.256
	8	1205	1130	1065	1005	950	900	860	815	780	0.232
	9	1270	1195	1125	1060	1005	955	910	865	825	0.211

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	365	335	310	290	270	255	240	225	210	1.499
	1	460	420	390	360	340	315	300	280	265	0.924
	2	550	505	470	435	405	380	360	340	320	0.668
	3	630	585	545	510	475	445	420	395	375	0.523
	4	710	660	620	580	545	510	480	455	430	0.430
36/7	5	785	735	685	645	605	575	540	510	485	0.365
	6	860	805	755	710	665	630	600	570	540	0.317
	7	930	870	815	770	725	690	655	620	590	0.280
	8	995	935	880	830	785	740	705	670	640	0.251
	9	1060	995	940	885	840	795	755	720	690	0.227

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	340	310	290	265	250	235	220	205	195	1.799
	1	430	395	365	340	320	300	280	265	250	1.030
	2	510	475	440	415	385	360	340	320	305	0.722
	3	580	545	510	480	450	425	400	380	360	0.555
	4	650	610	570	540	510	480	460	435	415	0.451
36/5	5	715	670	630	595	565	535	510	485	465	0.380
	6	775	730	690	650	615	585	560	535	510	0.328
	7	830	780	740	700	670	635	605	580	555	0.289
	8	880	830	790	750	715	680	650	625	595	0.258
	9	925	880	835	795	760	725	695	665	640	0.233

Dwr = 262 Dir = 307 Dnr = 337 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING RAMSET 26SD STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.35

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	255	235	215	200	185	175	165	155	145	2.250
	1	350	320	295	275	255	240	225	210	200	1.164
	2	425	395	370	345	325	305	285	270	255	0.785
	3	490	460	435	410	385	365	345	330	310	0.592
	4	555	520	490	465	440	420	400	380	365	0.475
36/4	5	610	575	545	520	490	470	445	425	410	0.397
	6	660	630	595	565	540	515	490	470	450	0.341
	7	705	675	640	610	585	560	535	515	490	0.299
	8	745	715	680	650	625	600	575	550	530	0.266
	9	780	750	720	690	660	635	610	590	565	0.239

Dwr = 371 Dir = 421 Dnr = 444 K2 = 1764

Substitute these values into the equation for G' as appropriate

fastener layout	*	DESIGN SHEAR, plf Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	230	210	195	180	165	155	145	135	130	2.999
	1	310	290	270	250	235	220	205	195	185	1.336
	2	370	350	330	310	295	280	270	255	240	0.860
	3	425	405	385	365	345	330	315	300	290	0.634
	4	475	450	430	410	390	375	360	345	330	0.502
36/3	5	510	490	470	450	430	415	395	380	365	0.415
	6	545	520	500	485	465	450	430	415	400	0.354
	7	570	550	530	515	495	480	465	445	435	0.309
	8	590	575	555	540	520	505	490	475	460	0.274
	9	610	595	575	560	545	530	515	500	485	0.246

Dwr = 765 Dir = 841 Dnr = 846 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 1.5" DECK TYPE 16 (t = 0.0598")

FRAME FASTENING RAMSET 26SD STITCH FASTENING #10 SCREWS (BUILDEX) SAFETY FACTOR 2.3

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	330	300	280	260	240	225	210	200	190	1.999
	1	420	385	355	330	310	290	275	260	245	1.182
	2	510	470	435	405	380	355	335	315	300	0.839
	3	600	555	515	475	445	420	395	375	355	0.651
	4	680	630	590	550	515	485	455	430	410	0.531
30/6	5	755	705	660	615	580	550	515	490	465	0.449
	6	830	775	725	680	640	605	575	545	515	0.388
	7	900	840	790	745	700	665	630	600	570	0.343
	8	970	910	855	805	760	720	685	650	620	0.306
	9	1035	970	915	860	815	775	735	700	670	0.277

Dwr = 45 Dir = 78 Dnr = 123 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10 0	K1
	0	320	290	270	250	235	220	205	195	185	2.249
	1	410	375	350	325	300	285	265	250	240	1.265
	2	485	450	420	395	370	350	325	310	295	0.880
	3	555	520	485	460	435	410	390	365	345	0.675
	4	620	585	550	520	490	465	440	420	400	0.547
30/4	5	680	640	605	575	545	515	490	470	450	0.460
	6	740	695	660	625	595	565	540	515	495	0.397
	7	790	745	710	675	640	610	585	560	535	0.349
	8	835	795	755	720	685	655	630	600	575	0.312
	9	875	835	795	760	730	695	670	640	615	0.281

Dwr = 477 Dir = 536 Dnr = 557 K2 = 1764

Substitute these values into the equation for G' as appropriate

DESIGN SHEAR, plf

fastener layout	*	Span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
	0	235	215	200	185	170	160	150	140	135	3.272
	1	320	300	275	255	240	225	210	200	185	1.535
	2	390	365	345	325	305	290	270	255	240	1.003
	3	455	425	405	380	360	345	325	310	295	0.745
	4	510	480	455	430	410	390	375	355	340	0.592
30/3	5	555	530	500	480	455	435	420	400	385	0.492
	6	595	570	545	520	500	475	460	440	425	0.420
	7	630	605	580	555	535	515	495	475	460	0.367
	8	660	635	610	590	570	545	530	510	490	0.326
	9	685	665	640	620	600	580	560	540	520	0.293

Dwr = [illegible] Dir = 673 Dnr = 685 K2 = 1764

Substitute these values into the equation for G' as appropriate

$$G' = \frac{K2}{3.78 + 0.3\ Dxx/span + 3 \times K1 \times span}$$

See page V1 DDM02 for notes.

* Stitch Connectors per Span

STANDARD 3DR DECK

FRAME FASTENING: PNEUTEK PINS on 24/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	55	50	45	40	40	35	35	30	30	1.322
1	85	80	75	70	65	60	60	55	50	0.869
2	120	115	105	100	95	90	85	80	75	0.648
3	155	145	135	125	120	115	105	100	95	0.516
4	190	175	165	155	145	140	130	125	120	0.429
5	220	210	195	185	175	165	155	150	140	0.367
6	250	235	225	210	200	190	180	170	165	0.320
7	275	260	250	235	225	215	205	195	185	0.285
8	295	280	270	260	250	240	230	220	210	0.256
9	315	305	290	280	270	255	250	240	230	0.232
10	335	320	310	295	285	275	265	255	250	0.213

D3DR = 653 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	60	55	55	50	45	45	40	40	35	1.426
1	100	90	85	80	75	70	70	65	60	0.945
2	135	125	120	110	105	100	95	90	85	0.706
3	170	160	150	145	135	130	120	115	110	0.564
4	205	195	185	175	165	155	150	145	135	0.469
5	245	230	215	205	195	185	175	170	160	0.402
6	280	265	250	235	225	215	205	195	185	0.351
7	310	295	280	270	255	245	230	220	210	0.312
8	335	320	310	295	285	270	260	250	235	0.281
9	360	345	335	320	310	295	285	275	260	0.255
10	385	370	355	345	330	320	305	295	285	0.234

D3DR = 488 K2= 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D3DR/span + 3 \times K1 \times span}$$

STANDARD 3DR DECK

FRAME FASTENING: PNEUTEK PINS on 24/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	80	75	70	65	60	60	55	50	50	1.783
1	125	115	110	105	100	95	90	85	80	1.147
2	165	155	150	140	135	130	120	115	110	0.846
3	210	200	190	180	170	160	155	150	140	0.670
4	255	240	230	215	205	195	190	180	175	0.554
5	295	280	265	255	245	230	220	210	205	0.473
6	340	320	305	290	280	265	255	245	235	0.412
7	385	365	345	330	315	300	290	275	265	0.365
8	420	400	385	365	350	335	320	310	295	0.328
9	455	435	420	400	385	370	355	340	330	0.298
10	485	465	450	430	415	400	390	375	360	0.272

D3DR = 653 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	95	90	85	80	75	70	70	65	60	1.985
1	145	140	130	125	120	115	110	105	100	1.282
2	195	185	175	170	160	155	145	140	135	0.946
3	245	235	220	210	205	195	185	180	170	0.750
4	295	280	270	255	245	235	225	215	210	0.621
5	345	330	315	300	285	275	265	255	245	0.530
6	395	375	360	345	330	315	305	290	280	0.462
7	445	425	405	385	370	355	340	330	315	0.410
8	495	470	450	430	415	395	380	365	355	0.368
9	535	515	495	475	455	435	420	405	390	0.334
10	575	555	535	515	495	480	460	445	425	0.306

D3DR = 488 K2= 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{4.31 + 0.3\ D3DR/span + 3 \times K1 \times span}$$

2 x 12-36 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	115	110	100	95	90	85	80	75	70	1.189
1	170	160	150	140	130	125	120	115	105	0.765
2	225	210	195	185	175	165	160	150	145	0.564
3	275	260	245	230	220	210	200	190	180	0.446
4	315	300	285	275	260	250	235	225	215	0.369
5	355	340	325	310	295	285	275	265	250	0.315
6	390	370	355	340	330	315	305	295	280	0.275
7	420	400	385	370	360	345	330	320	310	0.244
8	445	430	415	400	385	370	360	345	335	0.219
9	470	455	440	425	410	395	385	370	360	0.198
10	495	480	465	450	435	420	405	395	385	0.182

DCD = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	155	145	135	130	120	115	105	100	95	1.323
1	225	210	195	185	175	165	155	150	140	0.854
2	290	275	260	245	230	220	205	195	190	0.631
3	355	335	320	300	285	270	255	245	235	0.500
4	410	390	370	355	340	320	305	290	280	0.414
5	455	435	415	400	380	365	350	340	325	0.353
6	500	480	460	440	420	405	390	375	365	0.308
7	540	520	500	480	460	445	425	410	400	0.273
8	580	555	535	515	495	480	460	445	430	0.245
9	610	590	570	550	530	510	495	480	465	0.223
10	640	620	600	580	560	540	525	510	495	0.204

DCD = 48 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ DCD/span + 3 \times K1 \times span}$$

2 x 12-36 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	85	75	70	65	60	55	50	50	45	0.881
1	130	120	110	100	95	85	80	75	70	0.580
2	170	155	145	135	125	120	110	105	100	0.432
3	200	185	175	165	160	150	140	135	125	0.344
4	225	215	205	190	185	175	165	160	155	0.286
5	250	235	225	215	205	195	190	180	175	0.245
6	265	255	245	235	225	215	205	200	190	0.214
7	285	270	260	250	240	235	225	215	210	0.190
8	295	285	275	265	255	250	240	230	225	0.171
9	310	300	290	280	270	260	255	245	240	0.155
10	320	310	300	290	285	275	265	260	250	0.142

DCD = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	95	85	80	75	70	65	60	55	55	0.951
1	140	130	120	110	105	100	95	90	85	0.630
2	185	175	160	150	140	135	125	120	115	0.471
3	225	210	200	190	180	170	160	150	145	0.376
4	255	240	230	220	210	200	190	180	175	0.313
5	285	270	260	245	235	225	215	210	200	0.268
6	310	295	285	270	260	250	240	230	220	0.234
7	330	315	305	295	280	270	260	250	245	0.208
8	350	335	325	315	300	290	280	270	265	0.187
9	365	355	340	330	320	310	300	290	280	0.170
10	380	370	360	345	335	325	315	305	295	0.156

DCD = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ DCD/span + 3 \times K1 \times span}$$

2 x 12-24 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 24/3 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	K1
0	75	65	60	55	50	50	45	40	40	1.762
1	120	110	100	95	85	80	75	70	65	1.040
2	160	150	140	130	120	110	105	100	95	0.738
3	195	180	170	160	155	145	135	125	120	0.572
4	220	210	195	185	180	170	160	155	145	0.467
5	245	230	220	210	200	190	185	175	170	0.394
6	265	250	240	230	220	210	205	195	190	0.341
7	280	270	260	250	240	230	220	215	205	0.301
8	295	285	275	265	255	245	235	230	220	0.269
9	305	295	285	275	270	260	250	245	235	0.243
10	315	305	300	290	280	270	265	255	250	0.222

DCD = 139 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	K1
0	80	75	70	65	60	55	55	50	45	1.901
1	130	120	110	105	95	90	85	80	75	1.132
2	175	165	150	140	135	125	120	110	105	0.806
3	215	205	190	180	170	160	150	145	135	0.626
4	250	235	225	215	205	195	185	175	165	0.511
5	275	265	250	240	230	220	210	200	195	0.432
6	305	290	275	265	255	245	235	225	215	0.375
7	325	315	300	290	275	265	255	245	240	0.330
8	345	335	320	310	295	285	275	265	260	0.295
9	365	350	340	325	315	305	295	285	275	0.267
10	380	365	355	345	330	320	310	305	295	0.244

DCD = 104 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ DCD/span + 3 \times K1 \times span}$$

2 x 12-24 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 24/3 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	100	95	90	85	80	75	70	65	60	2.377
1	155	145	135	130	120	115	110	105	100	1.367
2	210	195	185	175	165	155	150	140	135	0.959
3	265	250	235	220	210	200	190	180	170	0.739
4	305	290	275	265	250	240	225	215	205	0.601
5	345	330	315	300	290	275	265	255	245	0.506
6	380	365	350	335	320	310	295	285	275	0.437
7	410	395	380	365	350	340	325	315	305	0.385
8	440	425	410	395	380	365	355	340	330	0.343
9	465	450	435	420	405	390	380	365	355	0.311
10	490	475	460	445	430	415	400	390	380	0.283

DCD = 68 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	140	130	120	115	105	100	95	90	85	2.646
1	205	195	180	170	160	150	145	135	130	1.528
2	275	255	240	230	215	205	195	185	175	1.074
3	340	320	305	285	270	255	245	230	220	0.828
4	395	375	355	340	325	310	295	280	265	0.674
5	445	425	405	385	370	355	340	325	315	0.568
6	490	470	450	430	410	395	380	365	355	0.491
7	530	510	490	470	450	435	420	405	390	0.432
8	570	545	525	505	485	470	455	435	425	0.386
9	605	580	560	540	520	505	485	470	455	0.349
10	635	610	590	570	550	535	515	500	485	0.318

DCD = 48 K2 = 1398

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.14 + 0.3\ DCD/span + 3 \times K1 \times span}$$

3 x 12-36 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	55	50	45	40	40	35	35	30	30	0.881
1	85	80	75	70	65	60	60	55	50	0.580
2	120	115	105	100	95	90	85	80	75	0.432
3	155	145	135	125	120	115	105	100	95	0.344
4	185	175	165	155	145	140	130	125	120	0.286
5	205	195	190	180	175	165	155	150	140	0.245
6	225	215	205	200	190	185	180	170	165	0.214
7	240	235	225	215	210	200	195	190	180	0.190
8	255	250	240	230	225	215	210	205	195	0.171
9	270	260	255	245	240	230	225	215	210	0.155
10	285	275	265	260	250	245	235	230	225	0.142

DCD = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	60	55	55	50	45	45	40	40	35	0.951
1	100	90	85	80	75	70	70	65	60	0.630
2	135	125	120	110	105	100	95	90	85	0.471
3	170	160	150	145	135	130	120	115	110	0.376
4	205	195	185	175	165	155	150	145	135	0.313
5	235	225	215	205	195	185	175	170	160	0.268
6	260	250	240	230	220	215	205	195	185	0.234
7	280	270	260	250	245	235	225	220	210	0.208
8	300	290	280	270	265	255	245	240	230	0.187
9	320	310	300	290	280	270	265	255	250	0.170
10	335	325	315	305	295	290	280	270	265	0.156

DCD = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ DCD/span + 3 \times K1 \times span}$$

3 x 12-36 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	80	75	70	65	60	60	55	50	50	1.189
1	125	115	110	105	100	95	90	85	80	0.765
2	165	155	150	140	135	130	120	115	110	0.564
3	210	200	190	180	170	160	155	150	140	0.446
4	255	240	230	215	205	195	190	180	175	0.369
5	295	280	265	255	245	230	220	210	205	0.315
6	330	315	305	290	280	265	255	245	235	0.275
7	360	345	330	320	310	300	290	275	265	0.244
8	385	370	360	345	335	325	315	305	295	0.219
9	410	395	385	370	360	350	340	330	320	0.198
10	435	420	405	395	385	370	360	350	340	0.182

DCD = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	95	90	85	80	75	70	70	65	60	1.323
1	145	140	130	125	120	115	110	105	100	0.854
2	195	185	175	170	160	155	145	140	135	0.631
3	245	235	220	210	205	195	185	180	170	0.500
4	295	280	270	255	245	235	225	215	210	0.414
5	345	330	315	300	285	275	265	255	245	0.353
6	390	375	360	345	330	315	305	290	280	0.308
7	425	410	400	385	370	355	340	330	315	0.273
8	460	445	430	415	405	390	380	365	355	0.245
9	495	480	465	450	435	420	410	400	385	0.223
10	525	510	495	480	465	450	440	425	415	0.204

DCD = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ DCD/span + 3 \times K1 \times span}$$

3 x 12-24 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 24/3 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	K1
0	45	40	40	35	35	30	30	25	25	1.762
1	80	75	70	65	60	55	55	50	45	1.040
2	115	105	100	95	85	80	75	75	70	0.738
3	145	140	130	120	115	110	100	95	90	0.572
4	180	170	160	150	140	135	125	120	115	0.467
5	200	190	185	175	170	160	150	145	135	0.394
6	220	210	205	195	190	180	175	165	160	0.341
7	240	230	220	215	205	200	190	185	180	0.301
8	255	245	235	230	220	215	205	200	195	0.269
9	270	260	250	245	235	230	220	215	210	0.243
10	280	270	265	255	250	240	235	230	220	0.222

DCD = 271 K2 = 870

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	K1
0	55	50	45	40	40	35	35	30	30	1.901
1	90	85	80	75	70	65	60	60	55	1.132
2	125	120	110	105	100	95	90	85	80	0.806
3	160	150	145	135	130	120	115	110	105	0.626
4	200	185	175	165	160	150	145	135	130	0.511
5	230	220	210	200	190	180	170	165	155	0.432
6	255	245	235	225	215	210	200	190	180	0.375
7	275	265	255	245	240	230	225	215	205	0.330
8	295	285	275	265	260	250	240	235	225	0.295
9	315	305	295	285	275	270	260	250	245	0.267
10	330	320	310	305	295	285	275	270	260	0.244

DCD = 203 K2 = 1056

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ DCD/span + 3 \times K1 \times span}$$

3 x 12-24 COMP. DECK

FRAME FASTENING: PNEUTEK PINS on 24/3 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 2.35

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	K1
0	70	65	60	55	55	50	45	45	40	2.377
1	110	105	100	95	90	85	80	75	70	1.367
2	155	145	140	130	125	120	115	110	105	0.959
3	200	190	180	170	160	155	145	140	135	0.739
4	240	230	220	205	195	190	180	170	165	0.601
5	285	270	255	245	235	225	215	205	195	0.506
6	320	310	295	285	270	260	245	235	225	0.437
7	350	340	325	315	305	290	280	270	260	0.385
8	380	365	355	340	330	320	310	300	290	0.344
9	405	390	380	365	355	345	335	325	315	0.311
10	430	415	400	390	380	365	355	345	335	0.283

DCD = 133 K2 = 1398

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	K1
0	85	80	75	70	65	60	60	55	55	2.646
1	135	125	120	115	110	100	100	95	90	1.528
2	185	175	165	155	150	145	135	130	125	1.074
3	235	220	210	200	190	185	175	170	160	0.828
4	280	270	255	245	235	225	215	205	200	0.674
5	330	315	300	290	275	265	255	245	235	0.568
6	380	365	345	330	320	305	295	280	270	0.491
7	420	405	390	375	360	345	330	320	310	0.432
8	455	435	425	410	395	385	370	355	345	0.386
9	485	470	455	440	425	415	400	390	380	0.349
10	515	500	485	470	455	445	430	420	405	0.318

DCD = 94 K2 = 1764

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.54 + 0.3\ DCD/span + 3 \times K1 \times span}$$

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1610	1590	1575	1565	1560	1555	1550	1545	1540	1540	0.881
1	1660	1630	1610	1595	1585	1575	1570	1560	1560	1555	0.580
2	1710	1670	1640	1620	1610	1595	1585	1580	1575	1570	0.432
3	1755	1705	1675	1650	1630	1620	1605	1600	1590	1585	0.344
4	1805	1745	1705	1680	1655	1640	1625	1615	1605	1600	0.286
5	1855	1785	1740	1705	1680	1660	1645	1635	1625	1615	0.245
6	1905	1825	1770	1735	1705	1685	1665	1650	1640	1630	0.214

K2 = 870 K3 = 2380

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1645	1615	1595	1585	1575	1565	1560	1555	1550	1550	0.951
1	1700	1665	1635	1620	1605	1595	1585	1580	1570	1565	0.630
2	1760	1710	1675	1650	1635	1620	1610	1600	1590	1585	0.471
3	1820	1760	1715	1685	1665	1645	1630	1620	1610	1605	0.376
4	1880	1805	1755	1720	1695	1670	1655	1640	1630	1620	0.313
5	1940	1850	1795	1755	1725	1700	1680	1665	1650	1640	0.268
6	2000	1900	1835	1785	1750	1725	1705	1685	1670	1660	0.234

K2 = 1060 K3 = 2380

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3$$

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table.

COMPOSITE DECK/STRUCTURAL (NW) CONCRETE

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

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t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1700	1660	1635	1620	1605	1595	1585	1575	1570	1565	1.189
1	1780	1725	1690	1660	1645	1630	1615	1605	1595	1590	0.765
2	1860	1785	1740	1705	1680	1665	1645	1635	1625	1615	0.564
3	1935	1850	1795	1750	1720	1695	1680	1665	1650	1640	0.446
4	2015	1915	1845	1795	1760	1730	1710	1690	1675	1665	0.369
5	2095	1975	1895	1840	1800	1765	1740	1720	1700	1685	0.315
6	2170	2040	1950	1885	1840	1800	1770	1750	1730	1710	0.275

K2 = 1400 K3 = 2380

Substitute these values into the equation for G' as appropriate.

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t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1765	1710	1680	1655	1635	1620	1610	1600	1590	1585	1.323
1	1860	1790	1745	1710	1685	1665	1650	1635	1625	1615	0.854
2	1960	1870	1810	1765	1735	1710	1690	1670	1660	1645	0.631
3	2060	1950	1875	1825	1785	1750	1730	1710	1690	1675	0.500
4	2160	2030	1940	1880	1835	1795	1765	1745	1725	1705	0.414
5	2260	2105	2005	1935	1880	1840	1805	1780	1755	1740	0.353
6	2355	2185	2075	1990	1930	1885	1845	1815	1790	1770	0.308

K2 = 1760 K3 = 2380

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3$$

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

t = design thickness = 0.0295"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1100	1080	1065	1055	1045	1040	1035	1035	1030	1025	0.881
1	1150	1115	1095	1080	1070	1065	1055	1050	1045	1040	0.580
2	1195	1155	1130	1110	1095	1085	1075	1070	1060	1055	0.432
3	1245	1195	1160	1140	1120	1105	1095	1085	1080	1070	0.344
4	1295	1235	1195	1165	1145	1130	1115	1105	1095	1085	0.286
5	1345	1275	1225	1195	1170	1150	1135	1120	1110	1100	0.245
6	1390	1310	1260	1220	1195	1170	1155	1140	1125	1115	0.214

K2 = 870 K3 = 2380

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0358"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 4	5	6	7	8	9	10	11	12	13	K1
0	1130	1105	1085	1070	1065	1055	1050	1045	1040	1035	0.951
1	1190	1150	1125	1105	1090	1080	1075	1065	1060	1055	0.630
2	1250	1200	1165	1140	1120	1110	1095	1085	1080	1075	0.471
3	1310	1245	1205	1175	1150	1135	1120	1110	1100	1090	0.376
4	1370	1295	1245	1210	1180	1160	1145	1130	1120	1110	0.313
5	1425	1340	1285	1240	1210	1185	1170	1150	1140	1130	0.268
6	1485	1390	1320	1275	1240	1215	1190	1175	1160	1145	0.234

K2 = 1060 K3 = 2380

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times \text{span}} + K3$$

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table.

COMPOSITE DECK/STRUCTURAL (LW) CONCRETE

FRAME FASTENING: PNEUTEK PINS on 36/4 Pattern
STITCH FASTENING: #10 SCREWS (BUILDEX) SAFETY FACTOR: 3.25

t = design thickness = 0.0474"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1130	1105	1085	1070	1065	1055	1050	1045	1040	1035	0.951
1	1190	1150	1125	1105	1090	1080	1075	1065	1060	1055	0.630
2	1250	1200	1165	1140	1120	1110	1095	1085	1080	1075	0.471
3	1310	1245	1205	1175	1150	1135	1120	1110	1100	1090	0.376
4	1370	1295	1245	1210	1180	1160	1145	1130	1120	1110	0.313
5	1425	1340	1285	1240	1210	1185	1170	1150	1140	1130	0.268
6	1485	1390	1320	1275	1240	1215	1190	1175	1160	1145	0.234

K2 = 1400 K3 = 2380

Substitute these values into the equation for G' as appropriate.

t = design thickness = 0.0598"

Stitch Connectors per span	DESIGN SHEAR, plf span, ft. 5	6	7	8	9	10	11	12	13	14	K1
0	1250	1200	1165	1140	1125	1110	1095	1090	1080	1075	1.323
1	1350	1280	1230	1200	1170	1155	1135	1125	1115	1105	0.854
2	1450	1360	1300	1255	1220	1195	1175	1160	1145	1135	0.631
3	1550	1435	1365	1310	1270	1240	1215	1195	1180	1165	0.500
4	1645	1515	1430	1365	1320	1285	1255	1230	1210	1195	0.414
5	1745	1595	1495	1425	1370	1330	1295	1270	1245	1225	0.353
6	1845	1675	1560	1480	1420	1370	1335	1305	1280	1255	0.308

K2 = 1760 K3 = 2380

Substitute these values into the equation for G' as appropriate.

$$G' = \frac{K2}{3.5 + 3 \times K1 \times span} + K3$$

It may be necessary to increase the number, or strength, of the perimeter connections to develop the values shown in the table.