LOGIX XP-1

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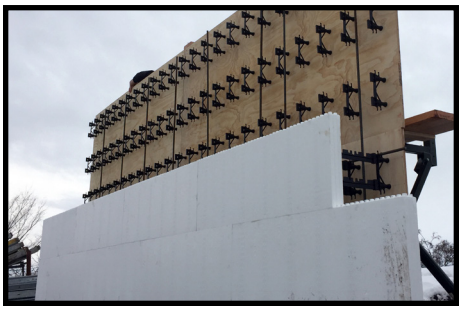
1.0 – INTRODUCTION



Logix XP-1 is the complete solution for ICF walls with exposed concrete. Designed for structures that require exposed concrete such as elevator shafts, stairwells, or other areas that require non-combustible materials, or where the architectural design calls for exposed concrete.

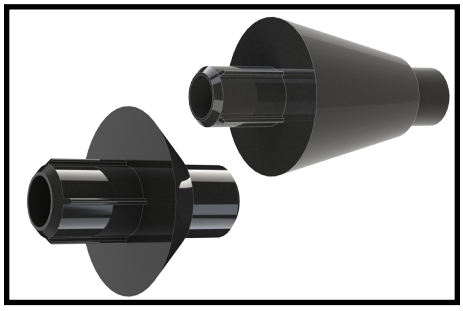
XP-1 consists of both permanent and removable form panels. ICF form panels remain on one side of the wall while 4’ x 8’ reusable wood forms are stripped to expose concrete on the other side.

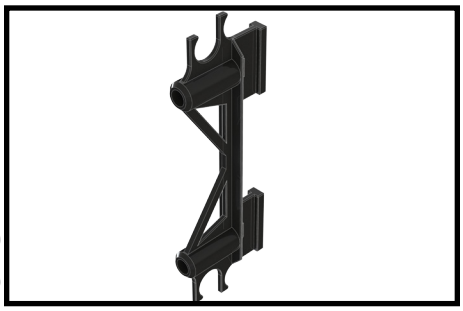
Having removable forms saves labour costs in areas where exposed concrete is required - no need to strip away EPS form panels. At the same time, the wall remains energy efficient - ICF form panels remain in place on the other side of the wall. Shipping costs are also reduced since only half of the ICF form panels are used for XP-1 wall systems.

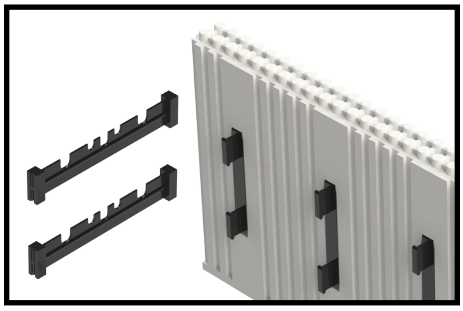
XP-1 is self-aligning and forgiving, plus the 10 available wall thickness configurations permit the seamless integration of XP-1 walls with a wide variety of regular ICF and conventional concrete wall thicknesses.

The reusable 4’ x 8’ plywood sheets minimize the number of seams and create a secure auto-offset. Plus, fool-proof and code-compliant rebar coverage is designed right into the XP-1 system.

2.0 – LOGIX XP-1 COMPONENTS







Logix XP-1 consists of the following components:

1. 4x8 plywood forms - 5/8" or 3/4" thickness.

2. XP-1 cones - 1/4" or 1" size

3. XP-1 side webs

4. Logix KD web ties - 4" to 12" (or larger with Logix Tie Xtenders)

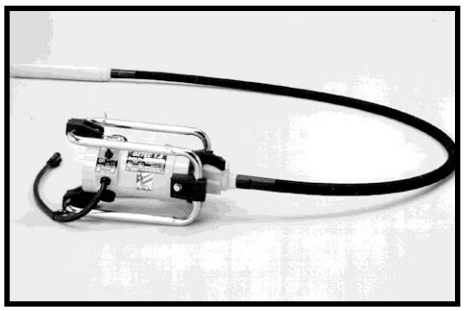
5. Logix KD Form Panels

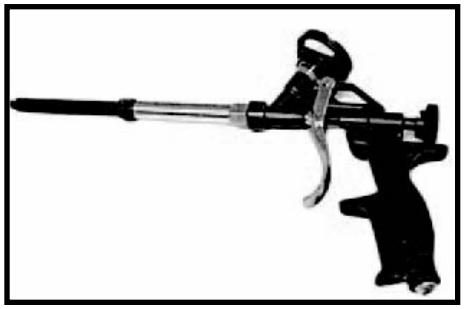
6. Zinc plated hex lag screws with 1" flat metal washers - 1/4"x2.5" or 3.5" long screws depending on wall thickness

   NOTE: Use zinc plated hex lag screws instead of galvanized screws. The thinner, more smoother, coating of zinc plated screws provide easier, more secure installation of XP-1.

For an assembled view of Logix XP-1 see Figures 1 and 2 in Section 4.

3.0 – USEFUL TOOLS & MATERIALS





- Cordless drill with 3/8” wood drill bit
- Hammer or rubber mallet
- Circular saw
- Screws
- 2x4 lumber
- Step ladder
- Pruning saw
- Contractor-grade foam gun
- Approved scaffold planks
- Transit or laser
- 48” level
- String line
- Chalk line
- Wall alignment system (safety compliant)
- 36” plastic zip ties, or Logix Vertical & Horizontal Hooks
- Logix Pro Buck for window and door openings
- Form oil
- Sleeves for wall penetrations
- Concrete embedments
- Rebar bender/cutter
- Internal vibrator

4.0 – WALL THICKNESS CHARTS

LOGIX XP-1 allows the option to construct Logix ICF walls

1. With exposed concrete on one side of the wall (see Figure 1),

2. Or exposed concrete flush to Logix ICF form panels (see Figure 2).

There are 5 various wall thicknesses for each option above, which can be found in Tables 1 and 2 for "Constant Wall Thickness" and "Flush to ICF" options, respectively.

WALL CHARTS

Table 1: Constant Wall Thickness Option (refer to Figure 1)

Concrete Wall Thickness, in	KD Web Tie & XP-1 Cone Size Required		Plywood Thickness Options, in	Zinc Plated Hex Lag Screw Size Required
	KD Web Tie, in	XP-1 Cone, in		
6	4	1/4	5/8 or 3/4	1/4"x2.5" long (with 1" flat washers)
8 1/4	6 1/4			
10	8			
12	10			
14	12			

Table 2: Flush with ICF Option (refer to Figure 2)

ICF Form Size, in	Concrete Wall Thickness Required, in	KD Web Tie & XP-1 Cone Size Required		Plywood Thickness Options, in	Zinc Plated Hex Lag Screw Size Required
		KD Web Tie, in	XP-1 Cone, in		
4	6 3/4	4	1	5/8 or 3/4	1/4"x3.5" long (with 1" flat washers)
6 1/4	9	6 1/4			
8	10 3/4	8			
10	12 3/4	10			
12	14 3/4	12			

Note: XP-1 Side Web accounts for 1 3/4" of the total concrete wall thickness.

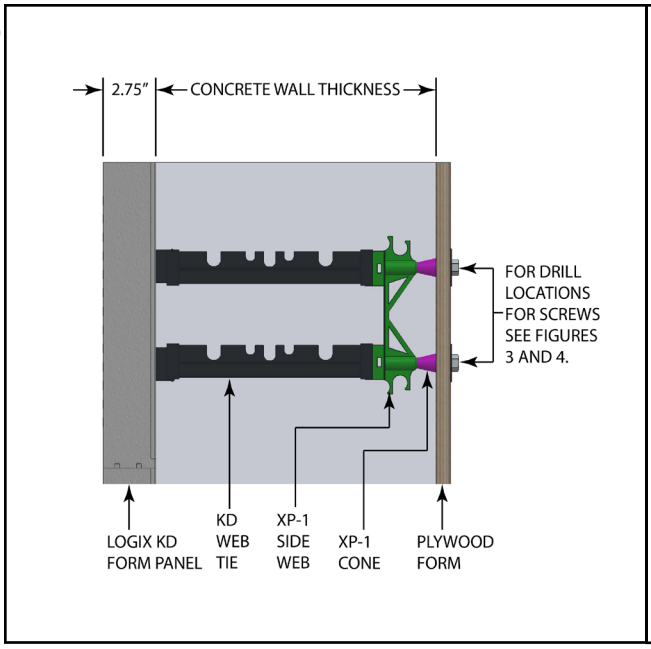


Figure 1 - Constant Wall Thickness Option

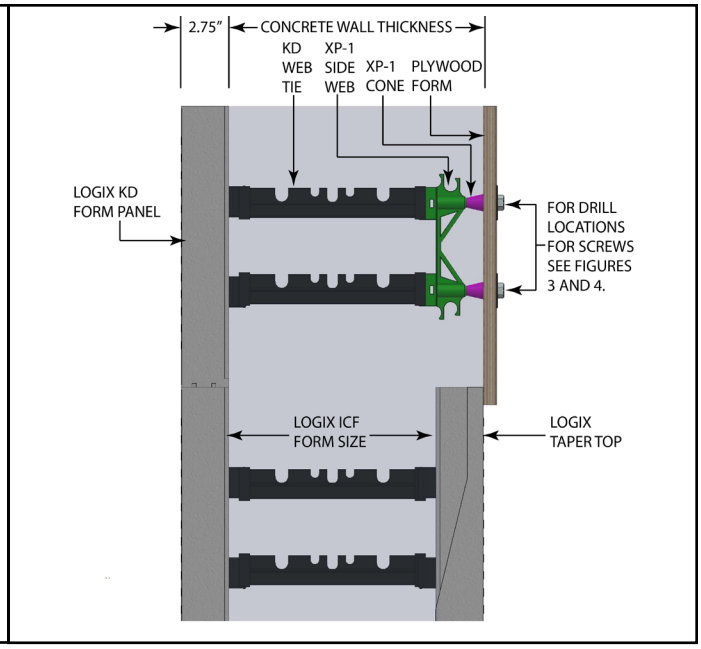


Figure 2 - Flush with ICF Option

NOTE: To prevent stripping of the XP-1 side web and cone, care must be taken not to over torque the lag screws.

5.0 – DRILLING LOCATIONS ON PLYWOOD FORMS

Plywood sheets used with XP-1 can be installed vertically or horizontally. Drilling locations on 4x8 plywood sheets will depend if the sheets are installed horizontally or vertically, as shown in Figures 3 and 4.

Figures 3 and 4 can be used as a guide to create templates for drilling locations on the plywood sheets. Drill hole sizes are 3/8".

PLYWOOD DRILLING LOCATIONS - HORIZONTAL PLACEMENT

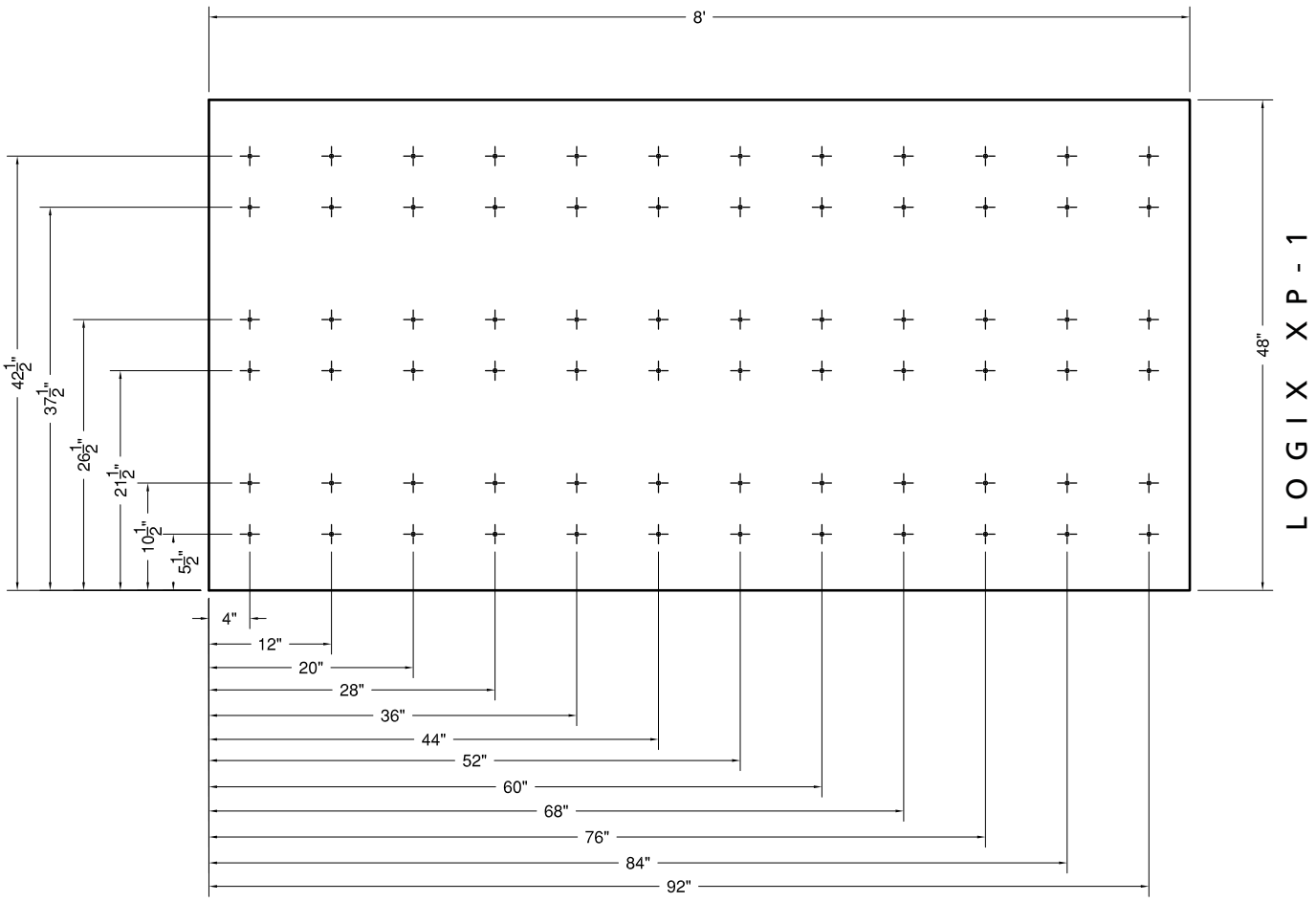


Figure 3 - Drilling locations for horizontal placement

5.0 – DRILLING LOCATIONS ON PLYWOOD FORMS cont'd

PLYWOOD DRILLING LOCATIONS - VERTICAL PLACEMENT

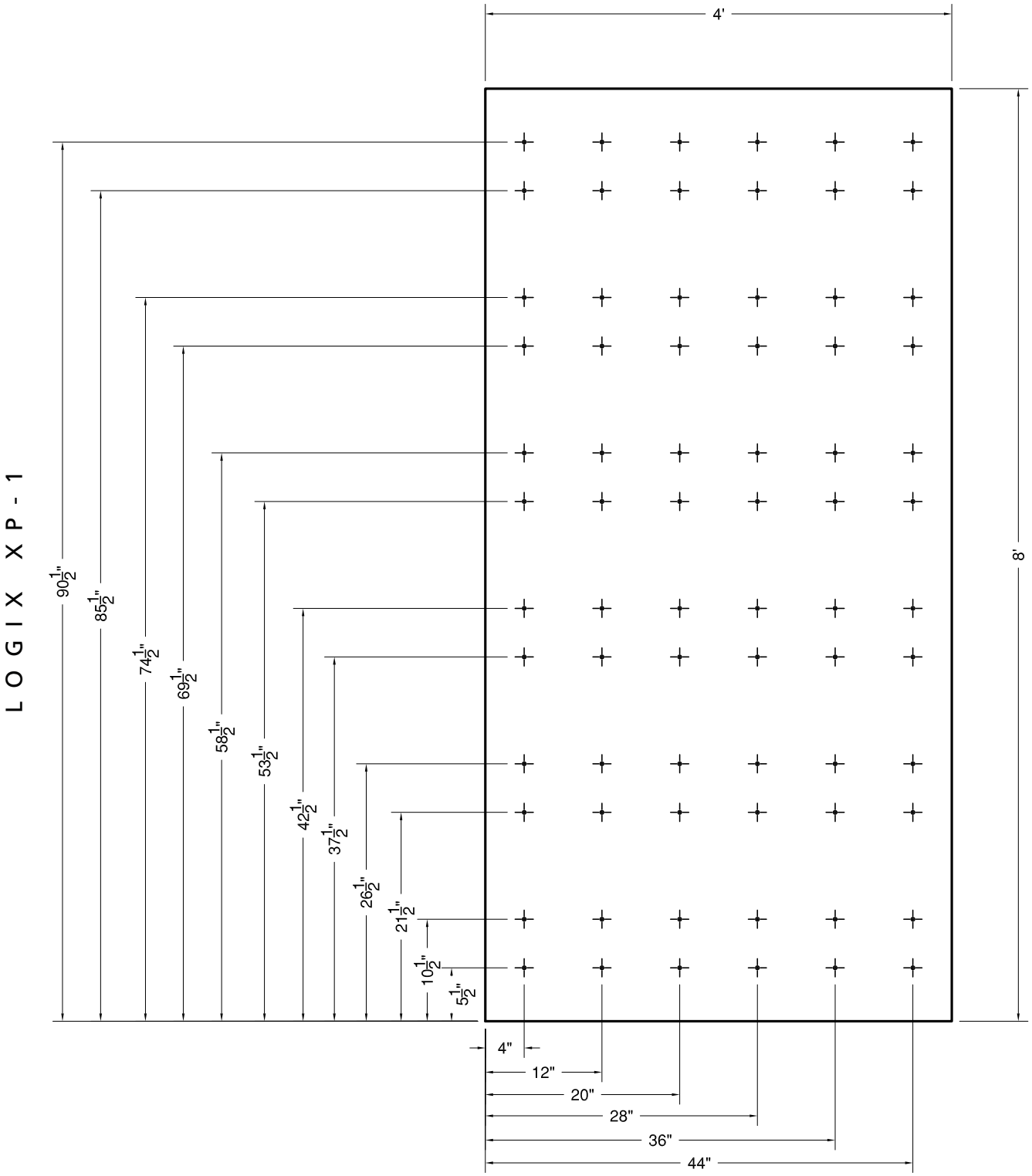


Figure 4 - Drill locations for vertical placement

6.0 – TOTAL R-VALUE CHART

Logix XP-1 wall system components that contribute to the total r-value include the concrete wall and the Logix KD form panels.

The KD form panels are available in conventional (white expanded polystyrene forms), or Neopor EPS (Logix Platinum forms), which provide higher R-values.

An additional boost in r-value can be achieved by using Logix D-Rv panels - also available in conventional or Neopor EPS. See "Logix D-Rv Panels For Increased R-Values" in Section 8.

The chart below summarizes the combination of r-values based on the concrete, KD form panel and D-Rv components and interior and exterior air films. The total R-value is higher when the r-value of cladding is included.

TOTAL R-VALUE CHARTS

Table 3: R-Values for Constant Wall Thickness Option (refer to Figure 1)

Concrete Wall Thickness [1], in	With Conventional KD Panels	With Platinum KD Panels	With Conventional D-Rv Panels and:		With Platinum D-Rv Panels and:	
			Conventional KD Panels	Platinum KD Panels	Conventional KD Panels	Platinum KD Panels
6	12.6	14.2	20.6	22.2	21.6	23.2
8 1/4	12.7	14.3	20.7	22.3	21.7	23.3
10	12.8	14.4	20.8	22.4	21.8	23.4
12	12.9	14.5	20.9	22.5	21.9	23.5
14	13.0	14.6	21.0	22.6	22.0	23.6

Table 4: R-Values for Flush with ICF Option (refer to Figure 2)

Concrete Wall Thickness [1], in	With Conventional KD Panels	With Platinum KD Panels	With Conventional D-Rv Panels and:		With Platinum D-Rv Panels and:	
			Conventional KD Panels	Platinum KD Panels	Conventional KD Panels	Platinum KD Panels
6.75	12.6	14.2	20.6	22.2	21.6	23.2
9	12.7	14.3	20.7	22.3	21.7	23.3
10.75	12.9	14.4	20.9	22.4	21.9	23.4
12.75	13.0	14.6	21.0	22.6	22.0	23.6
14.75	13.1	14.7	21.1	22.7	22.1	23.7

1. D-Rv panels are 2" thick. Therefore, D-Rv panels will decrease the concrete wall thickness shown by 2 inches.

7.0 – ASSEMBLING LOGIX XP-1 PLYWOOD FORMS

Figure 5: Use chalk lines to mark drilling locations on plywood sheets

Figure 6: Drill 3/8" holes at marked locations.

Figure 7: Stack plywood sheets to drill multiple sheets at once. Use a drilled plywood sheet as a template.

Before erecting Logix XP-1 walls, the XP-1 plywood forms require assembly. That includes using zinc plated lag screws to fasten the XP-1 cones and side webs to 4x8 plywood sheets following three simple steps:

Step 1: Create a plywood form template
Step 2: Insert XP-1 cones and side webs
Step 3: Fasten XP-1 cones and side webs with zinc plated lag screws.

STEP 1: CREATE A PLYWOOD FORM TEMPLATE

For efficiency, it is recommended that a template be used as a guide to help drill the holes on multiple plywood sheets simultaneously.

To create a template, and drill multiple plywood sheets simultaneously, stack a number of sheets together. Make the sure the stacked sheets are properly aligned along the edges and fix into place by screwing or clamping the plywood sheets together at two opposite corners. The plywood should be laid flat on a clean level surface before drilling.

Using chalk lines mark the drilling locations, as shown in Figure 3 or 4 in Section 5. Mark the drilling locations on the top plywood sheet of the stack. The drilling locations will depend if the sheets will be erected vertically or horizontally.

Drill 3/8" holes at the marked drilling locations. Make sure the drill bit is long enough to go through each plywood sheet. Use the top plywood sheet as your template to drill holes on addition sheets. Each plywood sheet will have 72 drilling locations.

7.0 – ASSEMBLING LOGIX XP-1 PLYWOOD FORMS Cont'd

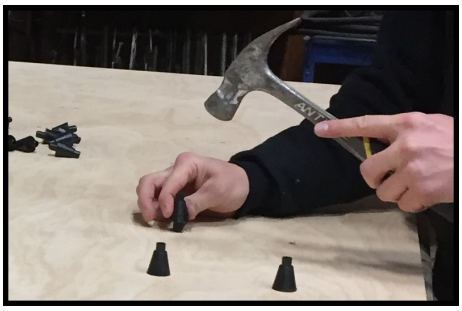


Figure 8: Lightly tap XP-1 cones into the drilled holes.

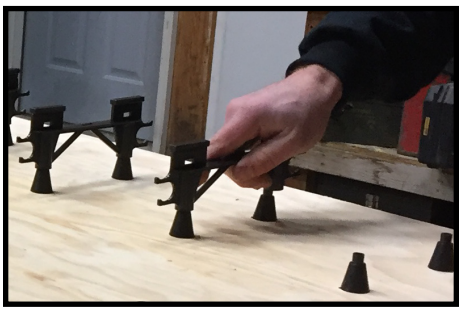


Figure 9: Attach XP-1 side webs to the XP-1 cones.

STEP 2: INSERT XP-1 CONES AND XP-1 SIDE WEBS

As the holes are drilled in each plywood sheet, the XP-1 cones can be inserted at the hole locations. The size of XP-1 cone to be used, 1/4" or 1", will depend on the intended wall thickness, as detailed in Section 4.0, Wall Thickness Charts.

The XP-1 cones will friction fit into the drilled holes and can be lightly tapped into place with a hammer or rubber mallet.

Ensure the cones are placed on the side of the plywood sheet that will be in direct contact with concrete.

As the cones are inserted connect the XP-1 side webs to the cones. Each XP-1 side web connects to two XP-1 cones.

A 4x8 XP-1 plywood form will have 72 XP-1 cones and 36 XP-1 side webs.

7.0 – ASSEMBLING LOGIX XP-1 PLYWOOD FORMS Cont'd

Figure 10: Turn plywood sheet over and fasten XP-1 cones and side webs to the plywood with zinc plated lag screws.

STEP 3: FASTEN THE XP-1 CONES & SIDE WEBS WITH ZINC PLATED LAG SCREWS

Ensure the assembled XP-1 cones and side webs are properly secured to the plywood by using 1/4" zinc plated hex head lag screws with 1" flat metal washers. The screw lengths will depend on the size of XP-1 cones used. Refer to Section 4.0, Wall Thickness Charts.

Lay the plywood forms on a flat surface, with the XP-1 side webs facing down. This will ensure the XP-1 side webs do not fall off when driving the screws. See Figure 10.

Each 4x8 plywood sheet will have 72 lag screws and washers.

As long as the plywood is laid on a firm, level surface, the lag screws can be installed while standing on the plywood - the XP-1 side webs are strong enough to support the weight of a person driving the screws.

NOTE: To prevent stripping of the XP-1 side web and cone, care must be taken not to over torque the lag screws.

8.0 – ERECTING LOGIX XP-1

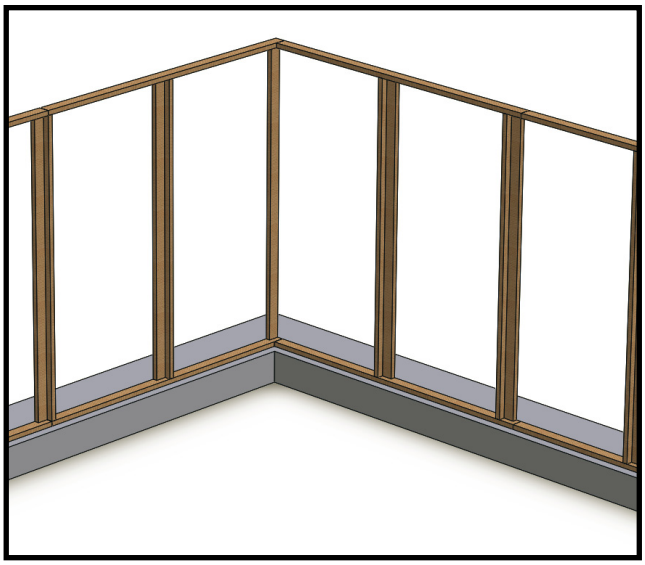


Figure 11: Framing structure using 2x4s

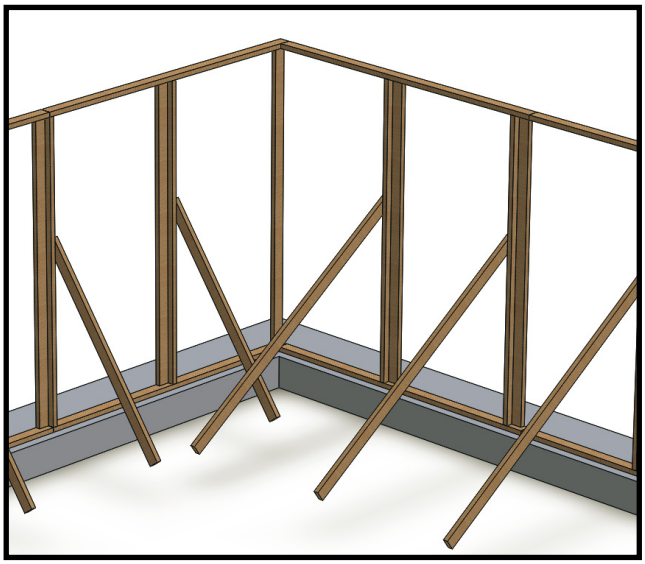


Figure 12a: Diagonal bracing supporting using 2x4s

Once the XP-1 plywood forms are assembled (see Section 7, Assembling Logix XP-1 Plywood Forms) they can be installed to create the XP-1 wall system. Installing XP-1 requires the following steps:

Step 1: Build a framing structure
Step 2: Install the XP-1 plywood forms, assembled in Section 7.
Step 3: Install the Logix KD panels
Step 4: Install the rebar

STEP 1: BUILD A FRAMING STRUCTURE

Using 2x4s plumb and level a framed structure with a bottom kicker and top plate, and vertical supports every 4 feet. This will support the XP-1 plywood forms as the forms are placed. See Figure 11.

Secure the framing structure to the ground following the layout of the wall and using diagonal bracing to keep the framing structure plumb. Steel strong backs and turnbuckles can also be used to plumb the framing structure and will act as a bracing and alignment system. See Figures 12a and 12b.

When using steel strong backs fasten directly to the vertical 2x4 members of the framing structure. For more information on bracing and alignment systems refer to Section 10, Bracing and Alignment.

Figure 12b: Diagonal bracing supporting steel strong backs and turn buckles.

Figure 13: Locate 2x4 vertical supports at edge of plywood sheets to provide edge nailing.

Figure 14: XP-1 forms installed horizontally (left) and vertically (right)

STEP 2: INSTALL XP-1 PLYWOOD FORMS

Place the first course of plywood sheets vertically or horizontally and fasten to the members of the framing structure making sure the vertical edges of the plywood sheets align with the approximate center of the vertical supports. The vertical supports will provide proper edge nailing for the plywood sheets. See Figure 13.

When placing plywood sheets horizontally offset the vertical joints by 4 ft to create a running bond pattern. See Figure 14.

Apply form oil to the inside face of the plywood forms. Do not use petroleum based oil in cases where the KD panels may be in contact with the form oil.

As the XP-1 plywood forms are erected, some plywood forms will require cutting or ripping to suit the building dimensions - always make sure when cutting the plywood forms that the XP-1 side webs align vertically and horizontally throughout the wall. This will ensure the Logix KD panels will properly align when installed.

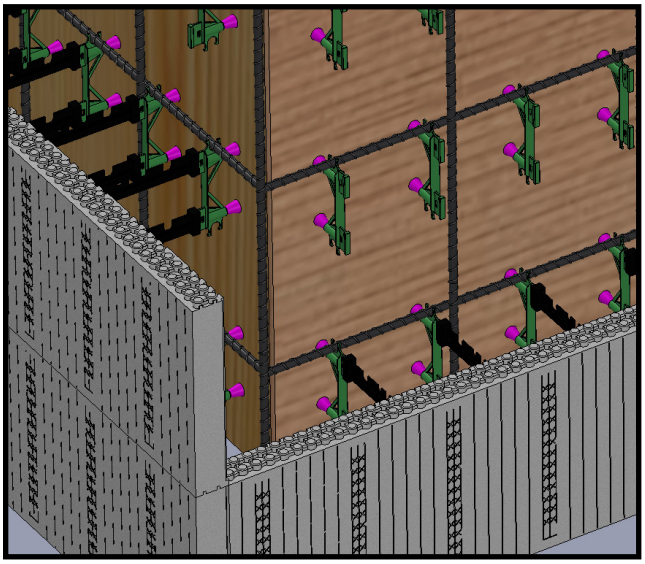


Figure 15: Use KD straight panels forms to build corners with ICFs. The KD panel can be trimmed at the corners to suit the building dimensions.

STEP 3: PLACING LOGIX KD FORM PANELS

Start placing Logix KD form panels once the plywood sheets are at most 8 feet tall. The KD forms connect to the XP-1 side webs with KD web ties, and will self-align once connected.

Beginning at a corner place the 1st course of Logix KD panels. (It's recommended that Standard KD panels be used to create corners instead of using KD corner panels). Make sure the first KD panel at the corner extends just beyond the perimeter of the ICF wall. The portion of KD panel beyond the perimeter can be later trimmed. See Figure 15.

Continue around the wall in this manner until the first course is complete. Leave the first course of forms in place across door and low window openings until second course has been placed to maintain proper running bond pattern above the openings.

Stack successive courses of KD panels in a running bond pattern starting at the same corner, and fully seat every KD panel to the KD panel below to minimize interlock settling during concrete placement.

Secure the top course of KD panels end-to-end and to the course below with zip ties or Logix Hooks to maintain building dimensions during concrete placement.

Figure 16: Rebar can be placed as the KD panels are installed.

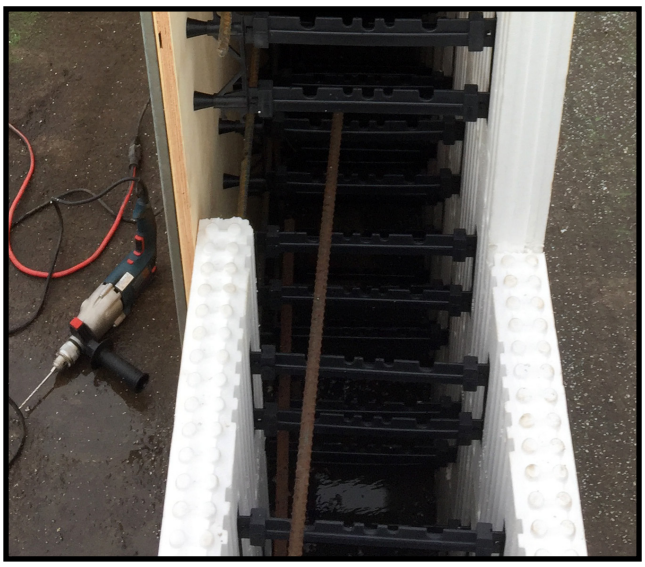
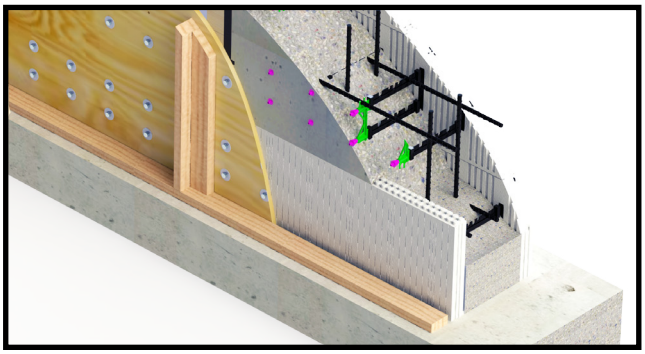


Figure 17: XP-1 is designed to integrate seamlessly with Logix ICF allowing the ICF to be installed flush with XP-1.



If Additional storeys are planned the interlock needs to be protected during concrete placement.

STEP 4: INSTALL REBAR

Placement of rebar can take place as each course of KD panels are installed. The XP-1 side webs have built-in chairs for horizontal rebar to allow proper rebar cover. See Figure 16.

LOGIX ICF FLUSH TO CONCRETE

Logix XP-1 is designed to integrate seamlessly with Logix ICF form blocks where the ICF form panels are on both sides of the wall.

Either Logix Pro forms (assembled solid ICFs) or KD forms (unassembled ICFs) can be used in combination with KD panels, as shown in Figure 17.

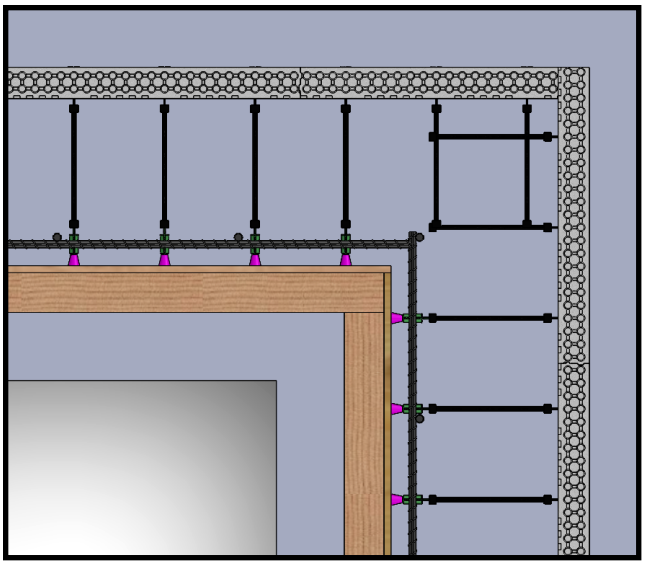


Figure 18: Plan view of Logix XP-1 using Logix KD panels at outside corners. The unattached web ties can be removed.

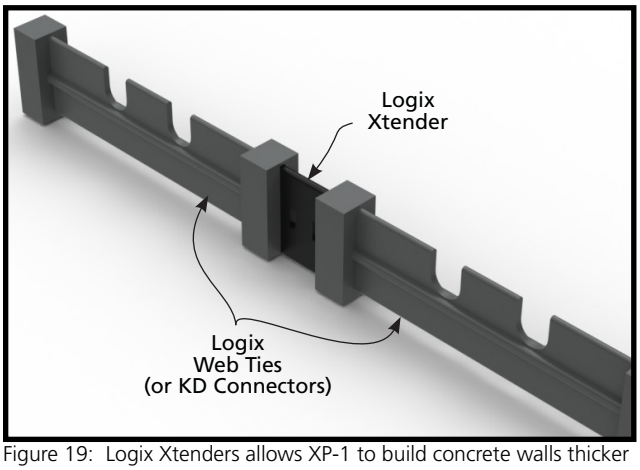


Figure 19: Logix Xtenders allows XP-1 to build concrete walls thicker than 14.75 inches.

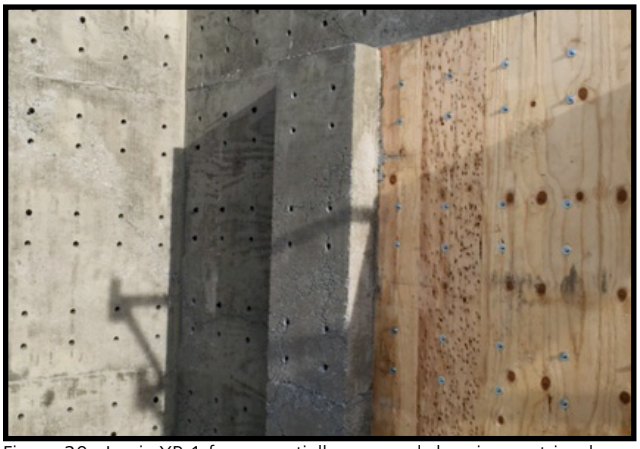


Figure 20: Logix XP-1 forms partially removed showing cast-in-place pilaster built using Logix Xtenders.

CORNERS

Building inside and outside corners should be done using Standard KD panels instead of Corner KD panels. This will ensure the KD web ties will properly align and connect to the XP-1 side webs on the plywood forms. See Figure 18.

For suggested corner form support see Section 11, Additional Form Support.

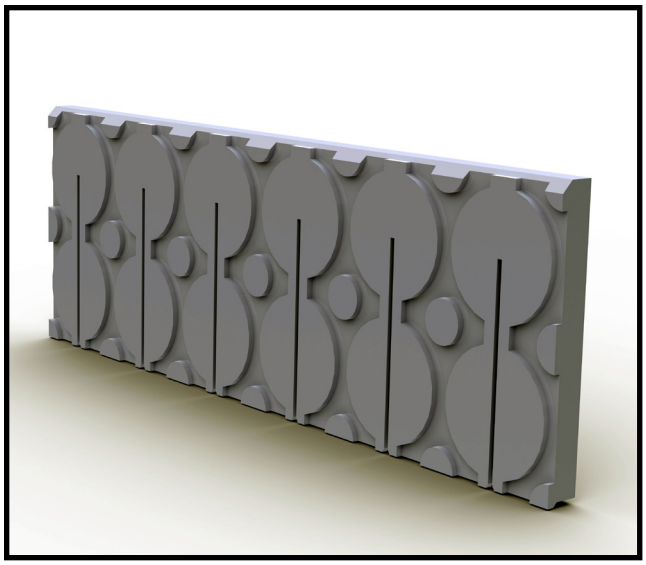
CONCRETE WALLS THICKER THAN 14.75"

Logix XP-1 wall systems can build concrete walls up to 14.75" thick. However, thicker walls can be built with the use of Logix Tie Xtenders.

Logix Tie Xtenders connect two KD web ties to create thicker concrete walls.

Examples where thicker walls may be required include corbels or pilasters. See Figures 19 and 20.

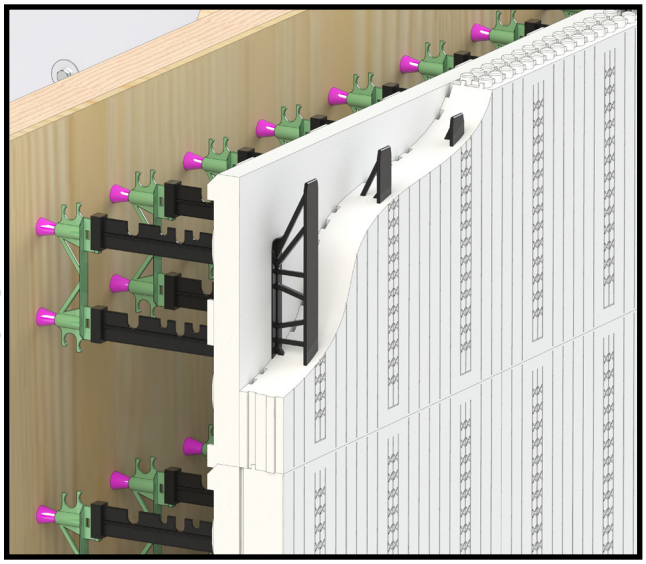
For suggested pilaster form support see Section 11, Additional Form Support.



LOGIX D-RV PANELS FOR INCREASED R-VALUES

Logix D-Rv panels are 2" thick EPS panels that are designed to fit against the inside face of Logix form panels. D-Rv panels are made with either conventional EPS or Neopor EPS, which provides an additional r-value of R-8 and R-9, respectively to Logix XP-1 wall assemblies.

Refer to Section 6, Tables 3 and 4 for total R-value charts.



LOGIX XP-1

Figure 21: Logix Pro Buck used to build window and door openings.

It's recommended that Logix Pro Buck be used to build the rough openings for window and door openings. Logix XP-1 is designed to integrate with Pro Buck to eliminate thermal bridging across the concrete wall.

Building rough openings with Logix Pro Buck can be done ahead of time, and lifted into place as the Logix KD form panels are installed. See Figures 21 and 22.

Do not cut around the plywood form to accommodate openings. Keeping the plywood forms in tact will also provide additional form support for the openings.

For added support to the plywood forms, see Section 11, Additional Form Support.

For information on Logix Pro Buck see the Logix Pro Buck Installation Guide.

Figure 22: Installed Logix Pro Buck opening with form support and with Logix XP-1 plywood forms in place. The unattached XP-1 cones and side webs may be removed.

10.0 – BRACING & ALIGNMENT

A bracing system provides support for the wall and acts as an alignment system to keep the walls straight and plumb during concrete placement.

Depending on site conditions the wall alignment system can be installed on the ICF or plywood side of XP-1 using either diagonal wood bracing or a proprietary bracing and alignment system. However, It's recommended the wall alignment system be installed on the plywood side of the XP-1 wall system when possible.

There are a number of proprietary systems available. However, each bracing unit typically consists of a vertical upright steel channel (or strong back) with slots for attaching screws to the XP-1 wall system (either on the ICF or plywood side), a turnbuckle arm, and a scaffold bracket.

It is recommended that a proprietary bracing and alignment system be use if placed on the ICF side.

Normally, wall bracing systems are installed after placing 2 to 4 courses of Logix KD panels (depending on wind and other conditions). Attach the bracing system to the webs using #10 screws with a hex head.

Screws should be snug, but not tight. Place bracing units no more than 2 feet (0.610 m) from each corner or wall end, and every 7 feet (2.134 m) or less, thereafter, in accordance with OSHA/OHSA requirements. Bracing units should also be placed on either side of every door and window opening.

STEP 1: Attach the upright steel channel to the Logix webs with a screw in each course. The screws should be snug but not tight. Always place screws near the top of the slots to accommodate settling at the interlock during concrete placement.

STEP 2: Attach a turnbuckle arm to the upright with a bolt and then secure to the floor or ground. In light or sandy soil, additional care must be taken to secure diagonal turnbuckle.

STEP 3: The scaffold bracket is then inserted behind the top of the turnbuckle and secured at the bottom with an additional bolt.

STEP 4: Place the appropriate scaffolding planks and rails according to safety regulations. For requirements on toeboard and handrail configuration, consult OSHA/OHSA.

STEP 5: Prior to concrete placement, make certain walls are aligned perfectly plumb, or leaning slightly inward. The wall must not lean out at all.

STEP 6: A string line must be used to achieve straight walls.

STEP 7: Before, during and after concrete placement, the diagonal turnbuckle arm is used to adjust wall straightness to stringline.

10.2 – BRACING & ALIGNMENT ON PLYWOOD SIDE

Either 2x4 diagonal wood bracing or a proprietary bracing and alignment system can be used if installed on the plywood side.

Instead of installing diagonal wood bracing, metal strongbacks can be directly fastened, with wood screws, to the vertical wood members of the framing structure discussed in Section 8, Erecting Logix XP-1. This means the bracing system will be installed no more than every 4 feet.

STEP 1: Attach the upright steel channel to the vertical wood members of the framing structure with wood screws.

STEP 2: Attach a turnbuckle arm to the upright with a bolt and then secure to the floor or ground. In light or sandy soil, additional care must be taken to secure

11.0 – ADDITIONAL FORM SUPPORT

Figure 23: Form support at corner using metal strong backs and turn buckles.

Figure 24: Form support at end wall using metal strong back and turn buckle.

Figure 24: Form support at pilaster using metal strong back and turn buckle.

The time spent prior to concrete placement pays huge dividends in job site efficiency, accuracy, and profitability. The following items should be completed.

- Horizontal wood strapping on the ICF side is required when:
  - The offset between ICF joints is less than 8 inches (203 mm) between courses.
  - There are more than 3 foam bars beyond a web.
  - Vertical joints are directly on top of each other.
  - Window or door openings occur less than 4 feet (1.220 m) from a corner. (Run strapping across opening to corner).
  - Temporary wood straps are required around window and door openings to maintain straightness.
- Cross bracing with 2x4 supports is required inside window and door bucks to hold bucks in place and prevent sagging or bowing.
- Foam adhesive can be used on wood bucks to provide additional buck support.
- The top course should be secured with adhesive foam, zip ties, or Logix Horizontal and Vertical Hooks.

- Forms in all lintels should be secured end-to-end with zip ties.
- If bracing on ICF side, the middle of large openings should be vertically braced to prevent tipping.
- All forms should be firmly seated to prevent settling.

Examples of form support at openings, corners, end walls and pilasters are shown on the following pages.

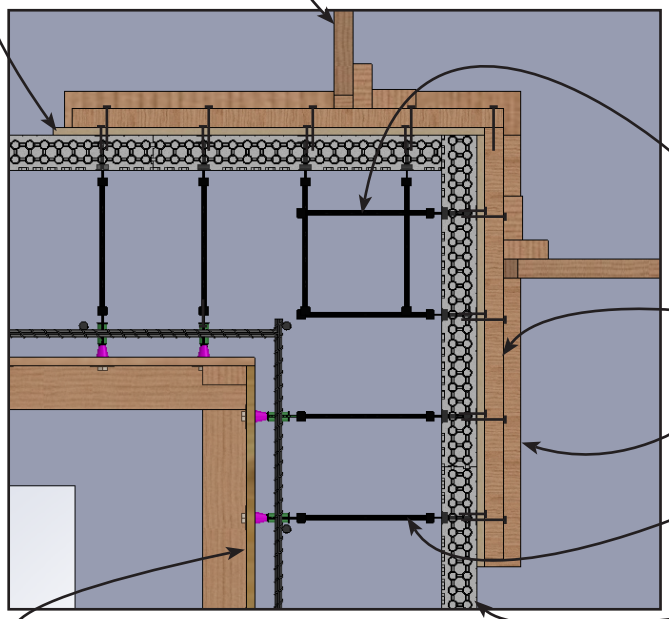
NOTE: In cases where excess form pressure is anticipated due to high slump concete, faster pour rate, or over-vibrating, for example, then additional bracing, such as walers, on the ICF side may be required. See Section 11.6, Form Support with Walers. Although typically not requried, walers may be added to the XP-1 plywood side if necessary.

11.1 – OUTSIDE CORNER FORM SUPPORT

Plywood sheets.
Attach to furring tabs embedded in KD panels.
See Notes.

Diagonal bracing in wood or steel.
Locate at approximate center of concrete wall.

Notes:
Ensure length of plywood sheets, wood strapping and kicker plate extends from corner to at least 2 web ties that are attached to XP-1 plywood forms.



Corner web ties not attached to XP-1 plywood forms can be removed.

2x4 wood strapping at approximately 16" o/c.
See Notes.

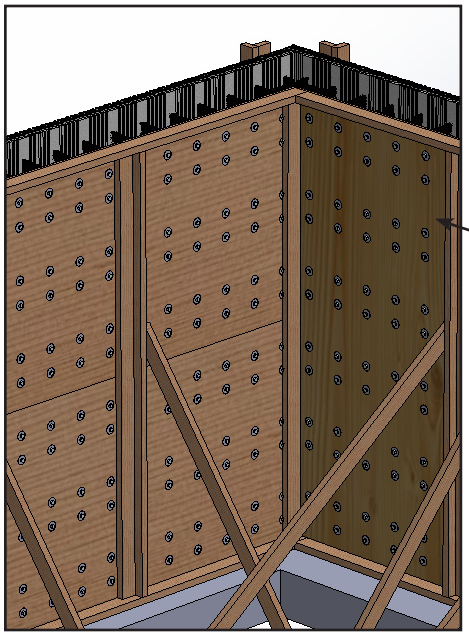
2x4 kicker plate. Secure to slab.
See Notes.

Web ties.

KD panel forms.

XP-1 plywood forms

PLAN VIEW



XP-1 PLYWOOD FORMS VIEW

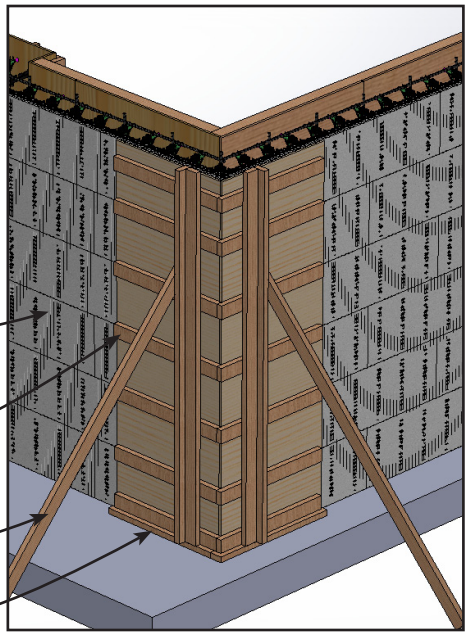
XP-1 plywood forms

KD panel forms.

Wood strapping over plywood sheets

Wood or metal bracing

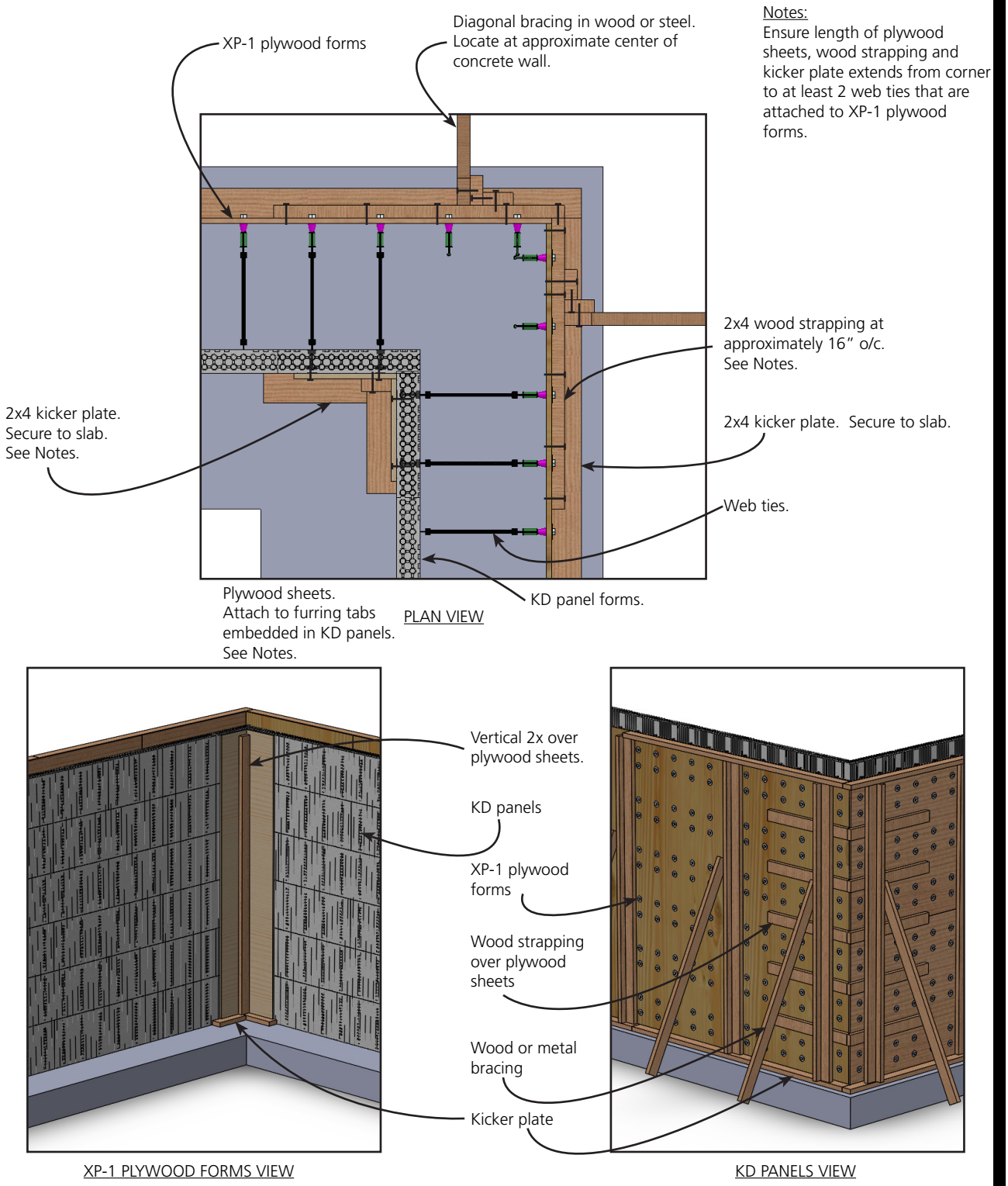
Kicker plate



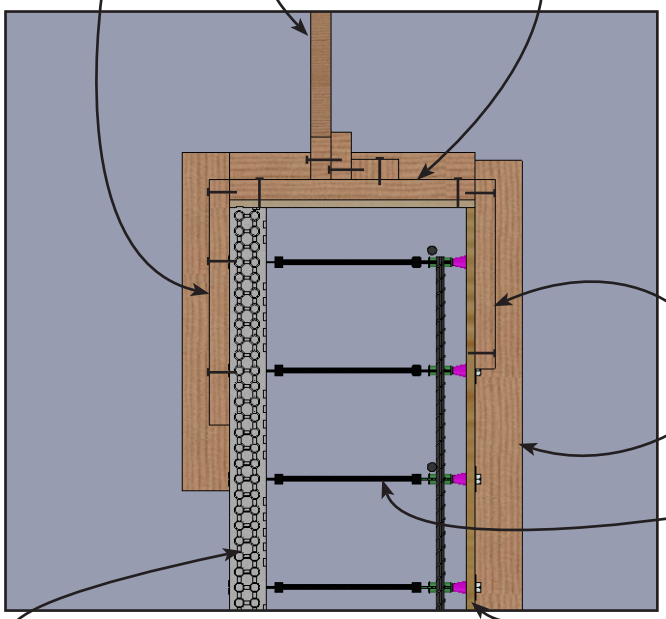
KD PANELS VIEW

LOGIX XP-1

11.2 – INSIDE CORNER FORM SUPPORT

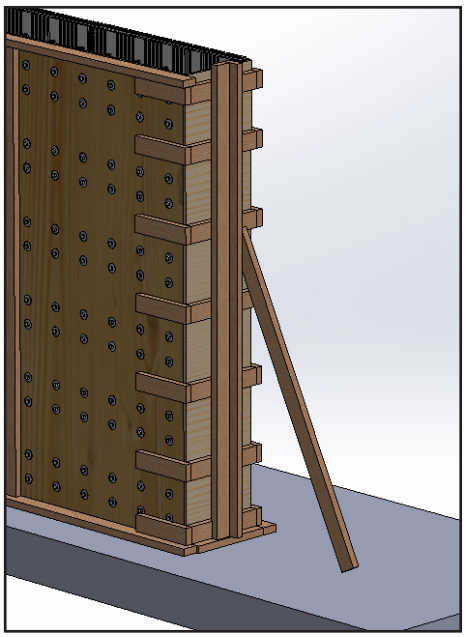


11.3 – END WALL FORM SUPPORT

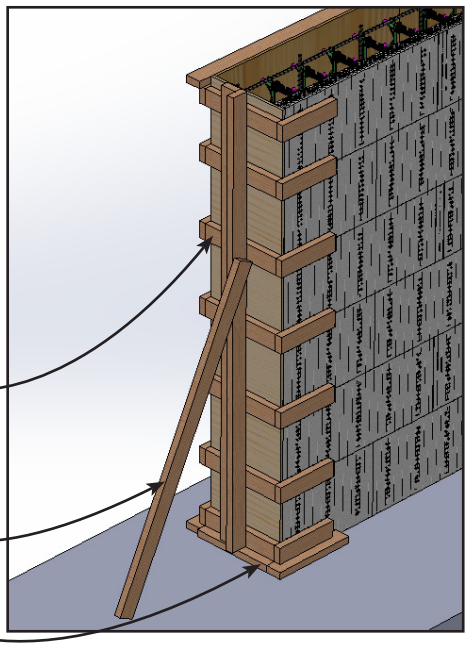


PLAN VIEW

Notes:
Ensure length of plywood sheets, wood strapping and kicker plate extends from corner to at least 2 web ties that are attached to XP-1 plywood forms.



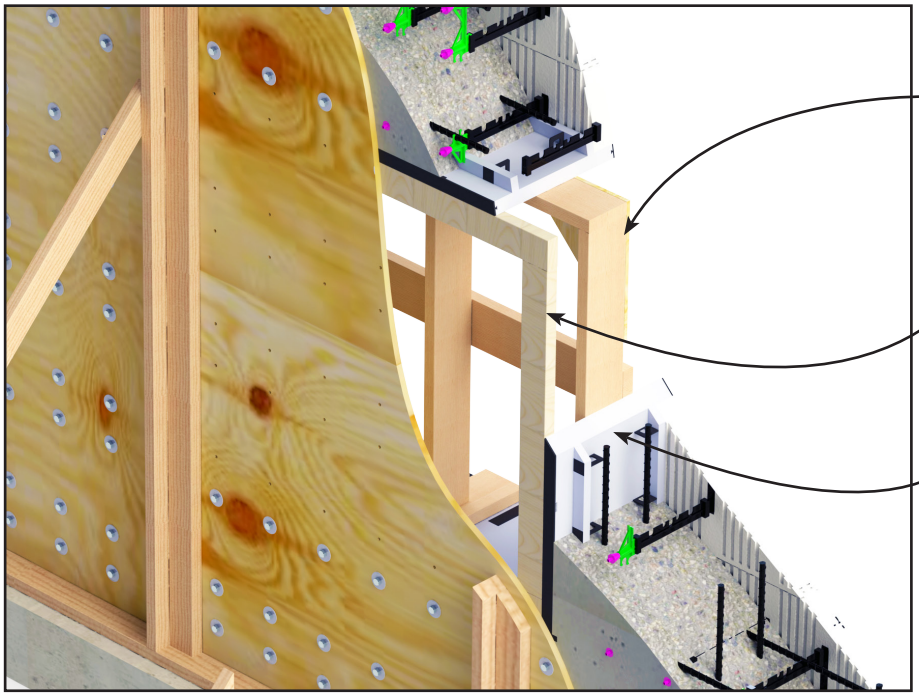
XP-1 PLYWOOD FORMS VIEW



KD PANELS VIEW

LOGIX XP-1

11.4 – WINDOW FORM SUPPORT

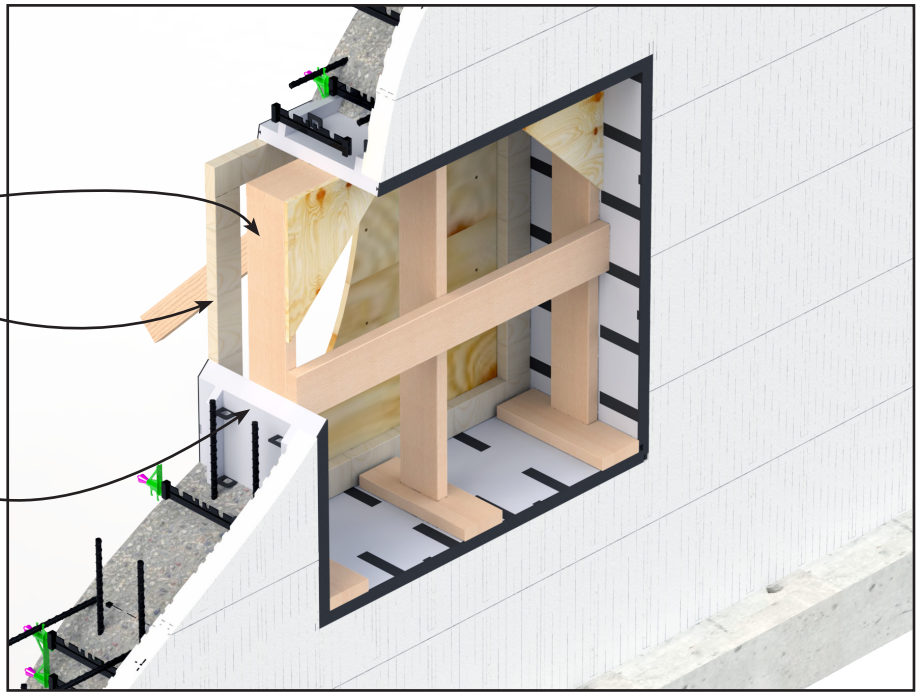


2X4 cross bracing for buck form support. See Logix Design Manual for more information.

Additional form support around perimeter of opening. Fasten to plywood.

Logix Pro Buck. See Logix Pro Buck Installation Guide for more information.

XP-1 PLYWOOD FORMS VIEW



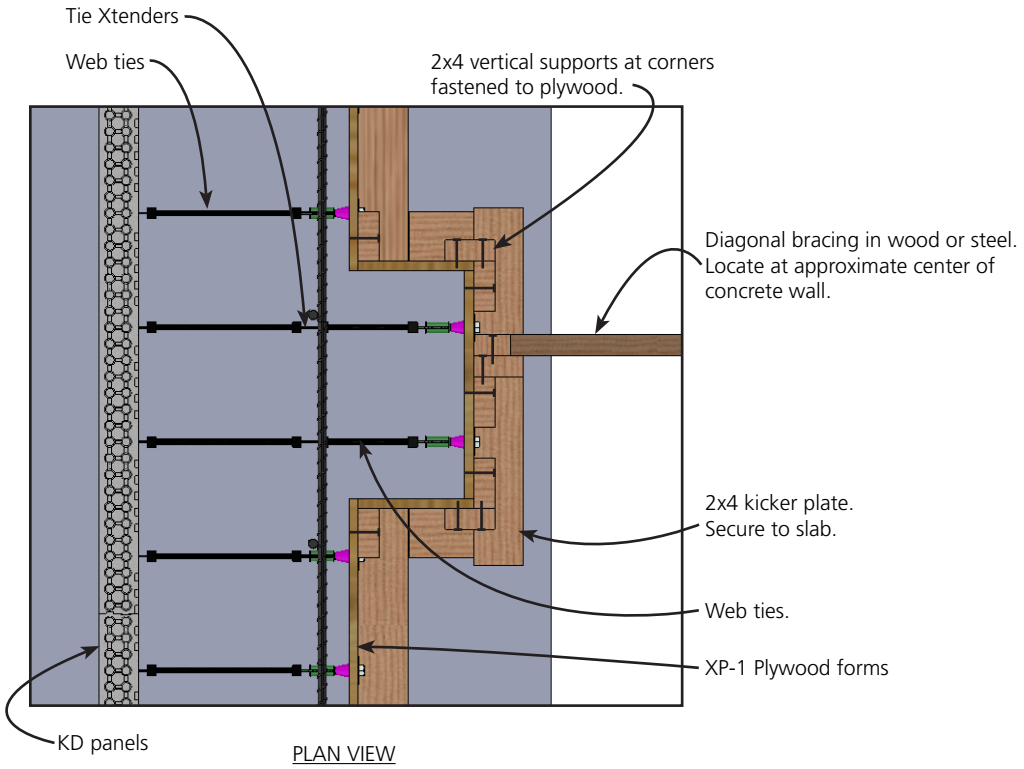
2X4 cross bracing for buck form support. See Logix Design Manual for more information.

Additional form support around perimeter of opening. Fasten to plywood.

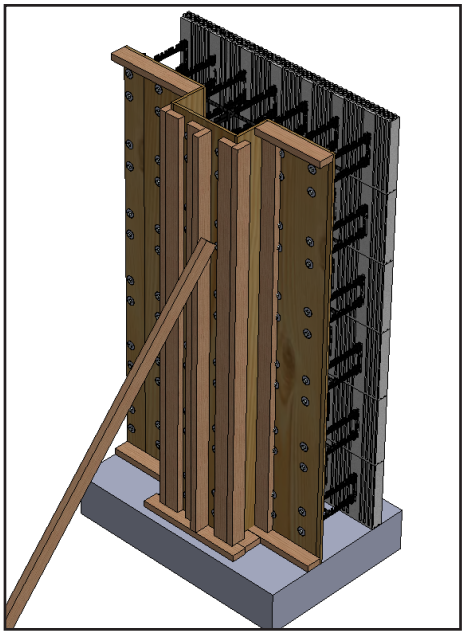
Logix Pro Buck. See Logix Pro Buck Installation Guide for more information.

KD PANELS VIEW

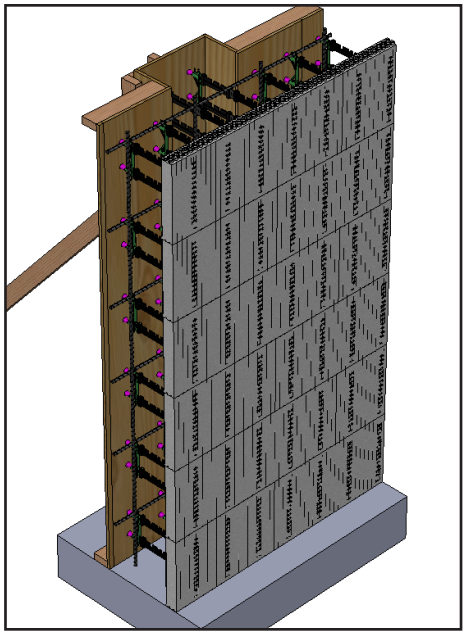
11.5 – PILASTER FORM SUPPORT



PLAN VIEW



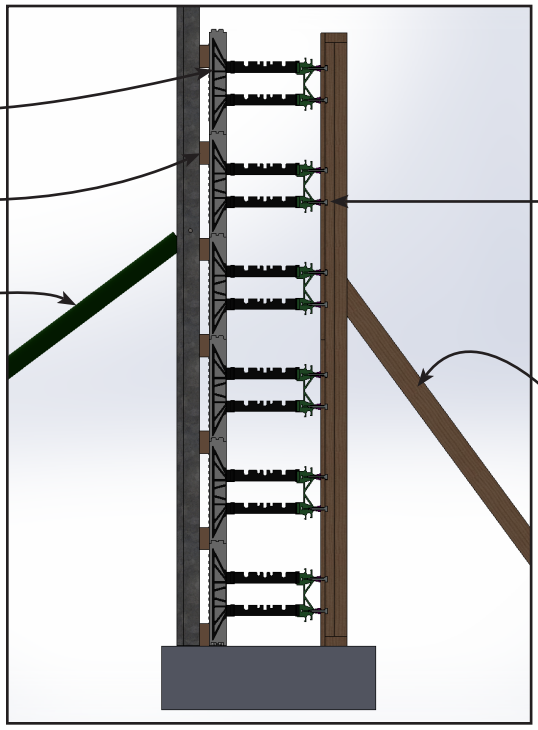
XP-1 PLYWOOD FORMS VIEW



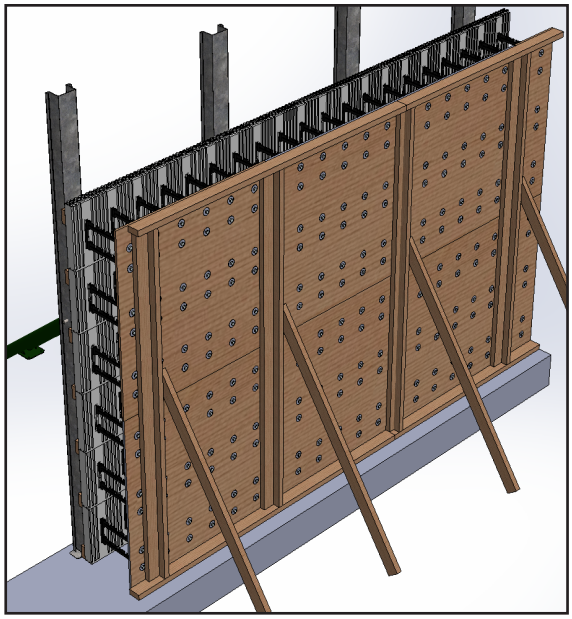
KD PANELS VIEW

LOGIX XP-1

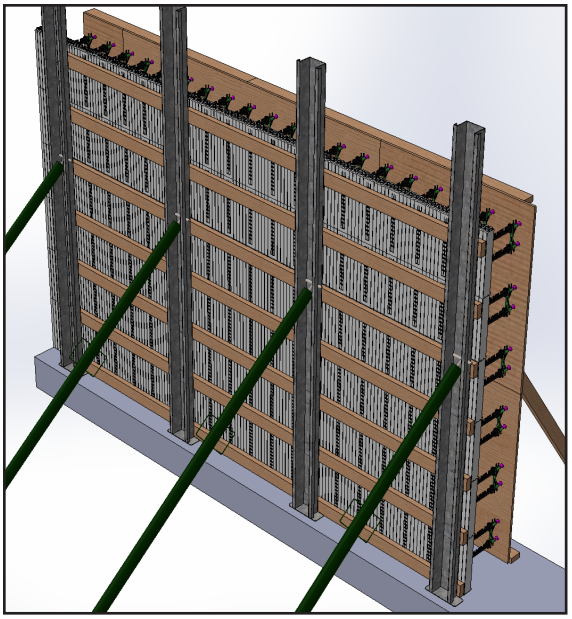
11.6 – FORM SUPPORT WITH WALERS



WALL SECTION



XP-1 PLYWOOD FORMS VIEW



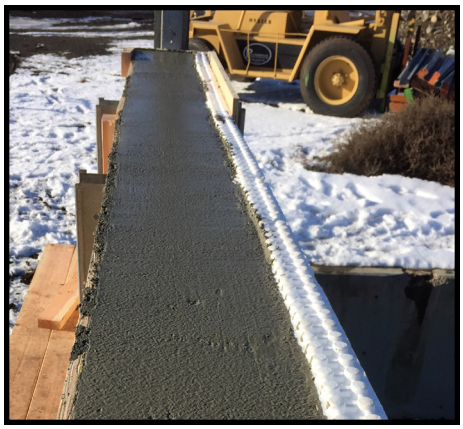
KD PANELS VIEW

NOTE: Walers not shown. Although typically not requried, walers may be added to the XP-1 plywood side if necessary.

12.0 – CONCRETE PLACEMENT

Prior to placing concrete in Logix insulated concrete forms, be certain to mark off each item on the checklist provided in this section.

____ 1. String line in place around the top of entire perimeter?
____ 2. Walls straight and plumb (not leaning out)?
____ 3. Top course foamed or tied down with zip ties or Logix Hooks end to end to maintain dimensions?
____ 4. Additional form support on all corners?
____ 5. Have Tee-walls been supported?
____ 6. Alignment - screw in every course?
____ 7. Scaffold planking properly secured?
____ 8. All handrails and toe boards installed?
____ 9. All bucks cross braced?
____ 10. All bucks secured to wall plywood forms?
____ 11. All buck concrete anchors installed?
____ 12. All horizontal and vertical rebar in place?
____ 13. All lintel reinforcing in place?
____ 14. All penetrations installed?
____ 15. All beam pockets in place?
____ 16. All floor embedments installed?
____ 17. Are anchor bolts and hold-downs on site?
____ 18. Has cavity of wall been checked, and foreign material removed?
____ 19. Plywood, screw gun, and saw on site?
____ 20. Interlock protected by tape, or other covering?
____ 21. Proper concrete mix and slump ordered?
____ 22. Concrete vibrator on site?
____ 23. Pump equipped with reducer or 2 1/2” trimmer hose available?



The most important stage of a successful Logix project is the concrete placement.

Extra workers at this stage are important - be certain to have enough on hand during the pour to safely handle placement, consolidation, alignment, embedments, and cleanup.

If the alignment system is placed on the ICF side, ensure straight walls by placing a string line at the top course set off from the ICF side of the wall using 3/4 inch (19 mm) pieces of wood placed in the corners. Check for straightness by running another 3/4" inch (19 mm) piece of wood between the string and wall. Adjust the turnbuckles as necessary to keep the wall straight during concrete placement.

Walls must be leaning in slightly when the alignment system is on the ICF side. Otherwise, if the alignment system is on the plywood side walls must be perfectly straight.

During concrete placement, watch the string lines to monitor the wall for straight and plumb. In addition, use a 4 ft level to make sure the plywood forms are plumb.

Suggested minimum compressive concrete strength of 2,900 psi (20MPa) at 28 days. For seismic areas mix design should be confirmed with local codes or by an engineer.

The following maximum aggregate sizes are recommended for use in Logix walls:

	Form Cavity Size, in. (mm)	
	6 to 6.75 (152 to 171)	8.25 to 14.75 or greater (210 to 375 or greater)
Max. Aggregate Size, in. (mm)	3/8 to 1/2 (9.5 to 13)	3/4 (19)

Concrete slump should be 5 inch (127 mm) to 6 inches (152mm) for best results.

Whenever possible, a pump truck should be used for concrete placement, and should be fitted with a 2.5 inch (76 mm) flexible hose end.

Other methods of placement include conveyor truck, crane and bucket, and directly off the ready mix truck.

Lift height is determined by many factors, such as air temperature, concrete temperature, slump, etc. In general, lift heights should not exceed 4ft (1.220 m) per hour.

Consult local ready mix companies for appropriate concrete mix design.

When placing concrete below freezing or at temperatures above 100° F (38° C), it's important to protect all exposed concrete with insulation.

Proper concrete consolidation is critical in obtaining a structurally solid wall.

Use an internal vibrator with a head size of 3/4 inch (19 mm) to 1 inch (25mm) and maximum 1 hp motor. Do not use a vibrator with a head larger than 1 inch (25 mm).

Appropriate internal vibration assures the strongest walls possible and is especially important for below grade application where the greatest loads occur.

The rule of thumb for internal vibration is fast in and slow out, always moving, with a withdrawal rate of approximately 3 inch (76 mm) per second.

STEP 1: Complete the pre-placement checklist.

STEP 2: Begin concrete placement under openings, filling those areas and consolidating.

STEP 3: Beginning no closer than 3 feet (0.914 m) from a corner, start filling the wall from the top, allowing the concrete to flow gently toward the corner. Then fill in that corner from the opposite side using the same technique.

STEP 4: Continue placing concrete around entire wall in appropriately sized lifts, using the same technique at each corner to minimize fluid pressure.

STEP 5: As the concrete is being placed, consolidation is taking place to remove air and voids to ensure structural integrity.

STEP 6: As the concrete is being placed, continually check wall alignment. Adjust the wall accordingly to maintain straight and plumb using the adjustable turnbuckle.

STEP 7: Return to starting location and begin the next lift. Follow all the techniques established above.

POST-PLACEMENT CHECKLIST

After placing concrete, be certain to mark off each item on the checklist provided in this section.

____ 1. Has consolidation been completed?

____ 2. Are walls straightened?

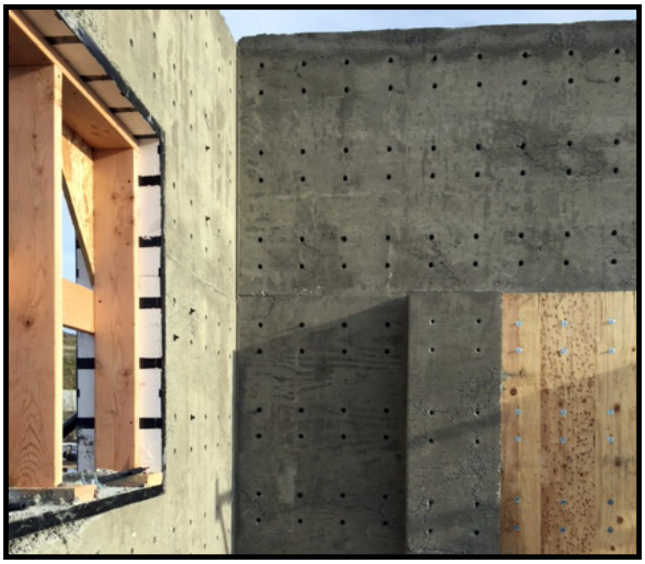
____ 3. In extreme temperatures, has exposed concrete been protected?

____ 4. Have all anchors and embeds been installed?

____ 5. Has spilled concrete been disposed of?

____ 6. Has final check for straight and plumb been done?

13.0 – REMOVING PLYWOOD FORMS



Typically the plywood forms can be removed after 3 days of proper curing. In most cases, this is enough time to allow the cured concrete wall to remain in place without additional support. However, if backfilling against the wall, it should be laterally supported at the top and bottom. The wall should not be subjected to external loads unless it has properly cured and gained sufficient strength.

In freezing weather, the plywood forms may need to stay in place longer and the curing concrete may need to be continuously heated. In hot weather, the concrete can cure faster and the forms may be removed sooner.

After removing, or stripping, the plywood forms the XP-1 cones may be exposed on the concrete surface. The cones can be easily removed with pliers, and the resulting hole left behind can remain or patched and finished.

The stripped forms can be stored and reused for additional jobs.

14.0 – ESTIMATING

Calculating the number of KD form panels and XP-1 form components needed is a simple task.

Drawing a wall section on graph paper before estimating a project saves time and effort and is a very helpful thing to do.

An important thing to remember in estimating is that walls with different heights should be calculated separately. As the wall heights change, so do the quantities required.

For estimating purposes, you may wish to use as an initial guideline, a labor rate of 0.09 man hours per square foot (not including concrete placement) for a typical installation.

14.1 – MATERIAL TAKE-OFF LIST

The material take off is the first step in any estimate.

____ Linear feet of XP-1 walls
____ Height of walls
____ Number of KD panel courses in wall
____ Number of XP-1 plywood form courses in wall - in vertical or horizontal installment
____ Thickness of concrete wall
Constant wall thickness option - 6.25”, 8.25”, 10”, 12” or 14”
Flush to concrete option - 6.75”, 9”, 10.75”, 12.75” or 14.75”
____ Linear feet of Brick Ledge
____ Linear feet of Taper Top
____ Square feet of parge coating “stucco” (height x length) between grade and siding
____ Square feet of water proofing (height x length) from grade to lap over footing
____ Square feet of door and window openings
____ Linear feet of buck material
____ Number of beam pockets (End Caps)
____ Linear feet of end walls (End Caps)

SQUARE FOOTAGE OF DIFFERENT FORM TYPES

Standard KD panels (straight): 5.33sf
Brick Ledge: 5.33sf
Taper Top: 5.33sf

14.2 – KD FORM UNITS

ESTIMATING STANDARD FORMS (STRAIGHT PANELS)

XP-1 wall systems can be built with a continuous wall thickness, or flush to concrete option, or a combination of both. Refer to Section 4, Wall Thickness Charts.

"Continuous wall thickness" option uses KD panels on one side of the XP-1 wall assembly (for estimating purposes tis will be referred to as 'KD panels').

Whereas, the "flush to concrete" option uses ICF panels on both sides of the XP-1 wall assembly. This can be done using either KD forms or Pro Forms. (For estimating purposes this will be referred to as 'ICF forms').

STEP 1: Determine the total lineal feet of walls that will be built using XP-1.

With this new lineal footage, multiply by the height of the walls to determine the wall's gross square footage **(A)**.

When figuring the total square footage of walls with different heights it's easiest to figure each wall separately and then add totals together.

Subtract the total square footage of all window and door openings from (A) to determine the net wall area, **(B)**.

STEP 2: Divide the net square footage of wall, (B), determined in Step 1 by 5.33 to determine gross number of ICF units required, **(C)** - the gross number of ICF forms or KD panels required for the wall.

STEP 3: If using a course of Brick Ledge or Taper Top KD panels, determine the total linear feet of wall using Brick Ledge or Taper Tops. Then divide the total length, by 4 feet to determine the number of Brick Ledge or Taper Top KD panels required, **(D) or (E)**.

STEP 4: If the "flush to concrete" option is part of the wall:

Determine wall area by multiplying total linear feet of wall and by the height of wall containing "flush to concrete" option.

The number of ICF forms required will be the total area divided by 5.333, **(F)**.

STEP 5: Determine number of KD Standard panels required.

Gross number of ICF units, (C) = _____
Number of Brick Ledge panels, (D) = _____
Number of Taper Top panels, (E) = _____
Number of ICF forms, (F) = _____

The number of KD panels, **(F)** will be

(F) = (C) - (D) - (E) - (F)

14.3 – XP-1 PLYWOOD FORMS

XP-1 plywood forms are 4x8 sheets of 5/8" or 3/4" plywood with the following components assembled:

- Zinc plated hex head lag screws with 1" flat metal washers
- XP-1 cones
- XP-1 side webs

The size of lag screws and cones varies depending if "continuous wall thickness" or "flush to concrete" option is used, as discussed in Section 4, Wall Thickness Charts.

STEP 1: Determine the total lineal feet of walls that will be built using XP-1.

With this new lineal footage, multiply by the height of the walls to determine the wall's gross square footage **(A)**.

Since the plywood does not require cutting around openings, there is no need to subtract any window or door openings from the wall area.

When figuring the total square footage of walls with different heights and plywood thickness it's easiest to figure each wall separately and then add totals together.

STEP 2: Divide the gross wall area, (A), by 32 to get the number of 4x8 plywood sheets required, **(B)**.

STEP 3: Each 4x8 sheet of plywood will contain the following (this applies to both vertical and horizontal installation):

- Number of lag screws = 72
- Number of 1" metal washers 72
- Number of XP-1 cones = 72
- Number of XP-1 side webs = 36

Multiply the number of plywood sheets, (B), by the appropriate numbers above to determine the number of lag screws and washers , XP-1 cones and side webs required.

14.4 – CONCRETE

STEP 1: Take the square footage of all wall area and subtract the square footage of all window and door openings.

STEP 2: Multiply Step 1 by the width of the concrete thickness in feet. Use the table below as a guide.

Constant Wall Thickness Option (refer to Figure 1)

Concrete Wall Thickness, in	Concrete Wall Thickness, ft
6	0.5
8.25	0.6875
10	0.8333
12	1
14	1.1667

Flush with ICF Option (refer to Figure 2)

Concrete Wall Thickness, in	Concrete Wall Thickness, ft
6.75	0.5625
9	0.7500
10.75	0.8958
12.75	1.0625
14.75	1.2292

STEP 3: Divide by 27 to determine the total number of yards of concrete required (or divide by 35.32 to determine meters of concrete required).

ADD ADDITIONAL CONCRETE FOR BRICK LEDGE & TAPER TOPS

Multiply linear feet of Brick Ledge by 0.007 cubic yards or
0.005 meters to determine the additional yards or meters of concrete needed.

Multiply linear feet of Taper Tops by 0.002 cubic yards or
0.005 meters to determine the additional yards or meters of concrete needed.

DISCLAIMER

By using the Logix XP-1 Design Manual, in part or in whole, the user accepts the following terms and conditions.

The Logix XP-1 Design Manual shall be used for the sole purpose of estimating, design or construction of Logix XP-1 Forms used in residential, commercial or industrial structures.

The information represented herein is to be used as a reference guide only. The user shall check to ensure the information provided in this manual, including updates and amendments, meets local building codes and construction practices by consulting local building officials, construction and design professionals, including any additional requirements.

Logix reserves the right to make changes to the information provided herein without notice and assumes no liability in connection with the use of this manual including modification, copying or distribution.

The user shall check to ensure that any construction projects utilizing the Logix XP-1 Design Manual includes the latest updates/ amendments (related to the version of the Logix XP-1 Design Manual being used at the time of the construction project). Updates/ amendments to the Logix XP-1 Design Manual are available for download in the “Technical Library” under “Addenda” at www.logixicf.com.

INTRODUCTION
Logix XP-1 walls are intended to be used both above and below grade, and can carry large vertical as well as lateral loads. They are particularly effective for residential, commercial and industrial buildings; providing excellent insulation as well as thermal mass and structural strength. They can be easily adapted to accommodate concrete floors and other "non-standard" building systems.

Construction must be in conformance with the Logix XP-1 Design Manual, including assembly of formwork, bracing, accurate rebar positioning, concrete mix design & placement, and details for interconnection with the other building components.

STRUCTURAL DESIGN AND PERFORMANCE
The Logix XP-1 building system can be used for an infinite variety of building situations with proper engineering. This report, with its load tables and diagrams, is intended to assist with the structural design of buildings using the Logix XP-1 system for the basement only, or continuing to two stories above-grade and/or roof. Where unusual conditions are encountered, it is recommended that the user consult a designer who can evaluate the loadings to the various components and who can appreciate the limitations of "prescriptive" design under unusual conditions. Connection details have generally been excluded from this report because of the great variety of floor and roof systems that can be used with the Logix XP-1 wall system. The designer should refer to the Logix Design Manual and the literature for the various proprietary products that are available for connections, which are an important part of the total design.

REINFORCEMENT TABLES
Above- and below-grade walls and lintel reinforcement tables are provided in this report. The tables were developed using the applicable sections of Chapter 16 of the International Building Code 2012/2015, Sections 404 and 611 of the International Residential Code 2012/2015, and ACI 318 Building Code Requirements for Structural Concrete.

Table 1 makes use of plain concrete foundation walls adapted from the IRC 2012, Table 404.1.2(8), for Logix XP-1 used below-grade. For walls that fall outside the scope of Table 1, Tables 2A, 2B, 2C and 2D are provided, which cover wall reinforcement for larger walls and larger loading conditions.

Tables 3A and 3B provides reinforcement tables for Logix XP-1 walls used above-grade.

LIMITATIONS
Building limitations used to develop above- and below-grade tables include:

Building perimeter = 80 ft max x 40 ft max
Roof clear span = 40 ft max
Floor clear span = 32 ft max
Number of stories above grade = 2 max
Number of stories below grade = 1

Tables 4A to 4E and Tables 5A to 5E provide lintel tables for factored uniform and concentrated loading conditions, respectively.

More specific design assumptions and limitations are located with the corresponding reinforcement tables.

BELOW-GRADE WALL REINFORCEMENT TABLES

NOTES FOR TABLE 1 - BELOW-GRADE TABLE ADAPTED FROM IRC 2012

Table 1 was developed adapting Table 404.1.2(8), Minimum Vertical Reinforcement For 6-, 8-, 10-Inch And 12-Inch Nominal Flat Basement Walls, of IRC 2012. Table 1 allows the use of foundation walls without reinforcement (in lieu of Tables 2A to 2D) provided the walls meet the following criteria:

1. Minimum 28day compressive strength of concrete = 2500 psi
2. Concrete foundation walls with corbels (ie, brick ledge), brackets or other projections built into the wall for support of masonry veneer or other purposes are not within the scope of the tables in this section
3. Where vertical rebar is not required (NR), provide minimum horizontal rebar as follows (Table 404.1.2(1)):
   - Maximum unsupported height of basement wall is LESS than or equal to 8 ft - One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near mid-height of the wall story
   - Maximum unsupported height of basement wall is GREATER than 8 ft - One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near third points in the wall story
4. Walls are not subject to hydrostatic pressure from ground water
5. Walls must be laterally supported at top and bottom of wall before backfilling
6. Interpolation is not permitted
7. Maximum 60 feet in plan dimensions, floors not more than 32 feet or roofs not more than 40 feet in clear span. Buildings shall not exceed 2 stories above-grade with each story not more than 10 feet high. Maximum ground snow load of 70 psf, and located in Seismic Design Categories A, B or C. For Seismic Design Categories D0, D1, or D2 see Items 7 to 9.
8. In Seismic Design Category D0, D1, and D2, concrete foundation walls supporting above grade concrete or Logix XP-1 walls shall comply with above and below-grade tables in this manual, ACI 318, ACI 332 or PCA 100
9. In Seismic Design Category D0, D1, and D2, where Table 1 permits plain concrete, and supporting light-frame walls shall comply with the following:
   - Wall height shall not exceed 8 feet
   - Unbalanced backfill height shall not exceed 4 feet
   - Minimum thickness for plain concrete foundation walls shall be 7.5 inches except that 6 inches can be used with Logix XP-1 where the maximum wall height is 4 feet, 6 inches
   - Minimum reinforcement shall consist of one #4 horizontal bar within the top 12 inches of the wall
10. Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above, or has been sufficiently braced to prevent damage by the back fill.
11. For walls that fall outside the scope Table 1 see "Notes for Tables 2A to 2D - Logix XP-1 Below-grade Tables."

TABLE 1 - LOGIX XP-1 BELOW-GRADE WALLS MINIMUM VERTICAL REINFORCEMENT - IRC2012

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Height of Basement Wall, ft	Max. Unbalanced Backfill Height, ft	6" to 6.75" THICK CONC. Design Lateral Soil Load (psf per foot of depth)			8.25" to 9" THICK CONC. Design Lateral Soil Load (psf per foot of depth)			10" to 10.75" THICK CONC. Design Lateral Soil Load (psf per foot of depth)			12" TO 14.75" THICK CONC. Design Lateral Soil Load (psf per foot of depth)		
		30	45	60	30	45	60	30	45	60	30	45	60
5	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	4	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	4	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6	**RR**	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR	NR	NR	NR
	7	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	NR	NR	NR	NR
8	4	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6	**RR**	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR	NR	NR	NR
	7	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	NR	NR	NR	NR
	8	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR
9	4	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6	**RR**	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR	NR	NR	NR
	7	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR
	8	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	**RR**
	9	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	**RR**
10	4	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	**RR**	**RR**	**RR**	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6	**RR**	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR	NR	NR	NR
	7	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	**RR**	NR	NR	NR
	8	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	**RR**	**RR**	NR	NR	**RR**
	9	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	**RR**	**RR**
	10	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	**RR**	NR	**RR**	**RR**

NOTES:

1. "NR" denotes plain concrete or no reinforcement required, except 6" to 6.25" Logix XP-1 will require #4@32" on center.
2. "RR" denotes reinforcement required. Refer to Tables 2A to 2D for Logix XP-1 Below-grade tables.
3. **Table 1** shall be read in conjunction with "Notes for Table 1 - Below-grade Table Adapted from IRC 2012".

NOTES FOR TABLES 2A to 2D - LOGIX XP-1 BELOW-GRADE TABLES
Tables 2A to 2D are recommended for use when larger walls and/or loading conditions fall outside the scope of Table 1.

Tables 2A to 2D shall be used in conjunction with corresponding Figures 2A to 2D, the notes listed below, and the building limitations noted in the "Reinforcement Tables" section, which form the basis of these tables.

1. Assumed interior face of Logix XP-1 below-grade wall is the exposed concrete side.
2. Vertical rebar spacing shown in the tables provide simple placement between ICF ties.
3. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi
4. Rebar spacing is based on 40 ksi reinforcing steel. For spacing based on 60 ksi reinforcing steel multiply spacings by 1.5.
5. Deflection criteria = L/240
6. Snow load = 70 psf
7. Assumed eccentricity = 3" (to account for loads on Logix Brick Ledge).
8. The basement walls must be supported at the top and bottom of the wall.
9. For light vehicles parked or travelling near the wall use reinforcement corresponding to 1 feet higher backfill.
10. Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
11. For walls with over 50% of height exposed to wind, also check rebar requirements for above-grade walls.
12. Except as noted for seismic design, horizontal rebar shall be #4 at 16 inches on center. At least one rebar shall be placed at the bottom course and top course. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
13. In Seismic Design Categories D0, D1, and D2, the reinforcing steel shall meet the requirements of ASTM A 706 for low-alloy steel with a minimum yield strength of 60 ksi.
14. For townhouses in Seismic Category C, the minimum vertical reinforcement shall be one #5 at 24 inches on center or one #4 bar at 16 inches on center, and the minimum horizontal reinforcement shall be one #4 bar at 16 inches on center. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
15. For all buildings in Seismic Design Categories D0, D1 and D2, the minimum vertical reinforcement shall be one #5 at 18 inches on center or one #4 bar at 12 inches on center, and the minimum horizontal reinforcement shall be one #5 bar at 16 inches on center. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
16. Horizontal reinforcement shall be continuous around building corners using corner bars or by bending the bars. The minimum lap splice shall be 24 inches. For townhouses in Seismic Design Categories D0, D1, and D2, each end of all horizontal reinforcement shall terminate with a standard hook or lap splice.
17. Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
18. Soil density is often referred to as "equivalent fluid density" or design fluid pressure.

NOTES FOR TABLES 2A to 2D - LOGIX XP-1 BELOW-GRADE TABLES Cont'd

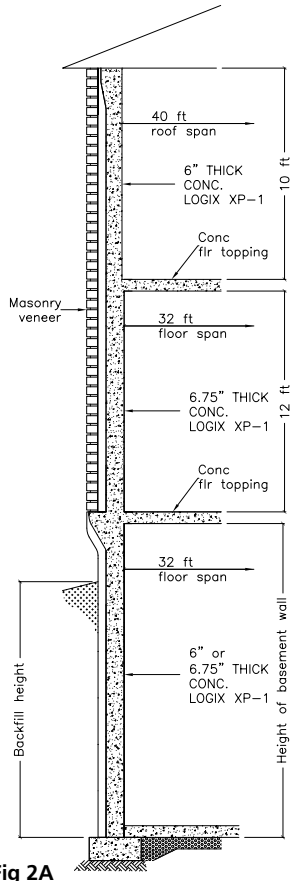


Fig 2A
Assumed typical flooring, wall & roof for **Table 2A**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 6.7 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

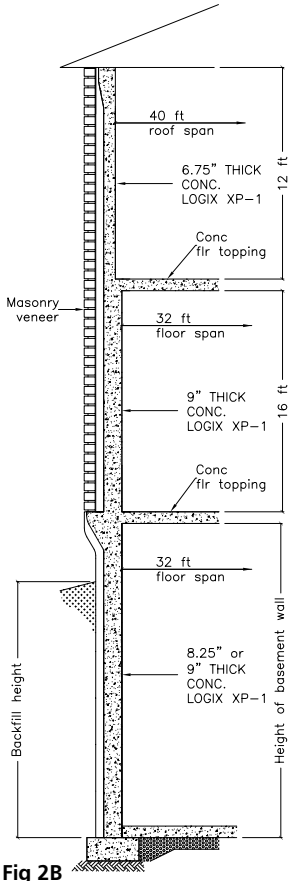


Fig 2B
Assumed typical flooring, wall & roof for **Table 2B**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 8 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

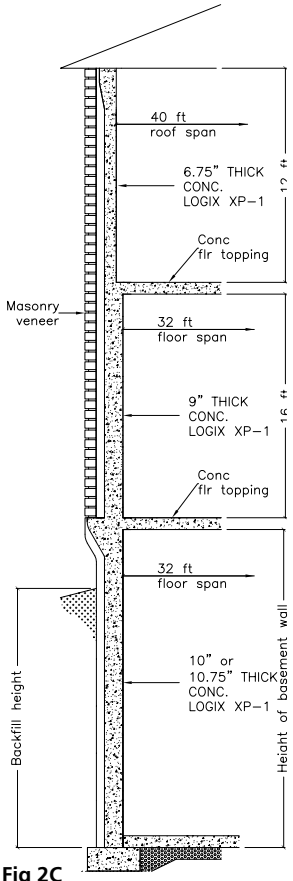


Fig 2C
Assumed typical flooring, wall & roof for **Table 2C**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 8 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

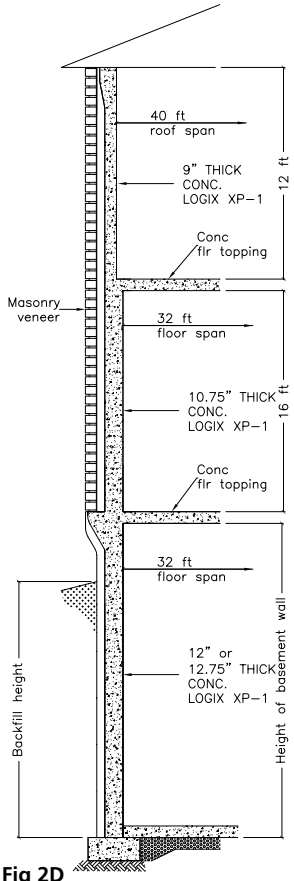


Fig 2D
Assumed typical flooring, wall & roof for **Table 2D**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 9 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

TABLE 2A - LOGIX XP-1 6" or 6.25" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Maximum Height of Basement Wall, ft	Maximum Unbalanced Backfill Height, ft	Bar Spacing, in.																			
		Maximum Equivalent Density 30pcf					Maximum Equivalent Density 45pcf					Maximum Equivalent Density 60pcf					Maximum Equivalent Density 75pcf				
8	4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	5	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48
	6	48	48	48	48	48	16	24	40	48	48	12	16	24	32	48	8	12	16	24	32
	7	16	32	48	48	48	12	16	24	32	40	8	12	16	24	24	6	8	12	16	16
	8	12	16	32	40	48	8	12	16	24	24	-	8	12	16	16	-	6	8	12	6
9	4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	40	48	48	48	48
	5	48	48	48	48	48	32	48	48	48	48	16	24	40	48	48	12	16	24	40	48
	6	32	48	48	48	48	16	24	32	40	48	8	16	16	24	32	6	12	16	16	24
	7	16	24	32	48	48	8	12	16	24	32	6	8	12	16	24	-	6	8	12	16
	8	8	16	24	32	40	6	8	12	16	24	-	6	8	12	16	-	-	6	6	6
	9	8	12	16	24	24	-	6	8	12	16	-	-	6	6	6	-	-	-	6	6
10	4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	24	48	48	48	48
	5	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48	12	16	24	32	40
	6	24	40	48	48	48	12	16	24	32	48	8	12	16	24	32	6	8	12	16	24
	7	12	16	24	40	48	6	12	16	16	24	-	8	8	12	16	-	6	8	6	6
	8	8	12	16	24	32	-	8	8	12	16	-	-	6	6	6	-	-	-	6	6
	9	6	8	12	16	24	-	6	8	6	6	-	-	-	6	6	-	-	-	-	6
	10	-	6	8	12	16	-	-	6	6	6	-	-	-	-	6	-	-	-	-	-
11	4	48	48	48	48	48	48	48	48	48	48	32	48	48	48	48	24	32	48	48	48
	5	40	48	48	48	48	16	32	40	48	48	12	16	24	32	48	8	12	16	24	32
	6	16	24	40	48	48	8	16	16	24	32	6	8	12	16	24	-	8	8	16	16
	7	8	16	16	24	40	6	8	12	16	24	-	6	8	12	16	-	-	6	6	6
	8	6	8	12	16	24	-	6	8	12	16	-	-	6	6	6	-	-	-	6	6
	9	-	8	8	12	16	-	-	6	6	6	-	-	-	6	6	-	-	-	-	-
	10	-	6	8	6	6	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-
	11	-	-	6	6	6	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
12	4	48	48	48	48	48	40	48	48	48	48	24	40	48	48	48	16	24	32	48	48
	5	24	48	48	48	48	16	24	32	40	48	8	16	16	24	40	8	12	16	16	24
	6	12	16	24	40	48	8	12	16	24	24	6	8	12	16	16	-	6	8	12	16
	7	8	12	16	24	32	-	8	8	12	16	-	-	8	6	6	-	-	6	6	6
	8	-	8	12	16	16	-	-	6	6	6	-	-	-	6	6	-	-	-	-	6
	9	-	6	8	12	6	-	-	-	6	6	-	-	-	-	6	-	-	-	-	-
	10	-	-	6	6	6	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	11	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8

NOTES:

1. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Min. effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 4.125"
2. **Table 2A** shall be read in conjunction with **Fig 2A**, and section **"Notes for Tables 2A to 2D - Logix XP-1 Below-grade Tables."**
3. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi.
4. Where cells show "-" engineering is required.

TABLE 2B - LOGIX XP-1 8.25" or 9" BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Maximum Height of Basement Wall, ft	Maximum Unbalanced Backfill Height, ft	Bar Spacing, in.																			
		Maximum Equivalent Density 30pcf					Maximum Equivalent Density 45pcf					Maximum Equivalent Density 60pcf					Maximum Equivalent Density 75pcf				
8	4-5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	32	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48
	8	48	48	48	48	48	24	40	48	48	48	12	24	32	40	48	8	16	16	24	40
9	4-5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48
	7	48	48	48	48	48	40	48	48	48	48	16	24	40	48	48	12	16	24	32	48
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10	4-5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
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	7	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48	8	16	24	32	40
	8	40	48	48	48	48	16	24	32	48	48	8	12	16	24	32	6	8	12	16	24
	9	16	32	40	48	48	8	16	16	24	40	6	8	12	16	24	-	8	8	12	16
	10	12	16	32	40	48	6	12	16	16	24	-	8	8	12	16	-	6	8	8	12
11	4-5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	6	48	48	48	48	48	48	48	48	48	48	24	48	48	48	48	16	24	40	48	48
	7	48	48	48	48	48	24	40	48	48	48	12	16	24	40	48	8	12	16	24	32
	8	32	48	48	48	48	12	16	24	40	48	8	12	16	24	32	6	8	12	16	24
	9	16	24	32	48	48	8	12	16	24	32	6	8	12	16	16	-	6	8	12	16
	10	12	16	24	32	40	6	8	12	16	24	-	6	8	12	16	-	-	6	8	12
	11	8	12	16	24	32	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
12	4-5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	6	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48
	7	48	48	48	48	48	16	32	40	48	48	12	16	24	32	48	8	12	16	24	32
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	11	6	8	16	16	24	-	6	8	12	16	-	-	6	8	8	-	-	-	6	8
	12	6	8	12	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
14	4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	32	48	48	48	48
	6	48	48	48	48	48	40	48	48	48	48	16	24	40	48	48	12	16	24	32	48
	7	40	48	48	48	48	16	24	32	40	48	8	12	16	24	32	6	8	12	16	24
	8	16	24	40	48	48	8	12	16	24	32	6	8	12	16	16	-	6	8	12	16
	9	8	16	24	32	40	6	8	12	16	16	-	6	8	12	16	-	-	6	8	12
	10	6	12	16	16	24	-	6	8	12	16	-	-	6	8	8	-	-	-	6	8
	11	-	8	12	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	12	-	6	8	12	16	-	-	-	8	8	-	-	-	-	6	-	-	-	-	-
	13	-	-	6	8	12	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-
	14	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
16	4	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48
	6	48	48	48	48	48	24	40	48	48	48	12	24	32	40	48	8	16	16	24	40
	7	24	40	48	48	48	12	16	24	32	48	8	12	16	24	24	6	8	12	16	16
	8	12	16	24	40	48	6	8	16	16	24	-	8	8	12	16	-	6	8	8	12
	9	8	12	16	24	32	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
	10	6	8	12	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	11	-	6	8	12	16	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-
	12	-	-	6	8	12	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-
	13	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	14	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8

LOGIX XP-1

NOTES:

1. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 6.375"
2. **Table 2B** shall be read in conjunction with **Fig 2B,** and section "Notes for Tables 2A to 2D - Logix XP-1 Below-grade Tables."
3. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi.
4. Where cells show "-" engineering is required.

TABLE 2C - LOGIX XP-1 10" or 10.75" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINF.

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Maximum Height of Basement Wall, ft	Maximum Unbalanced Backfill Height, ft	Bar Spacing, in.																			
		Maximum Equivalent Density 30pcf					Maximum Equivalent Density 45pcf					Maximum Equivalent Density 60pcf					Maximum Equivalent Density 75pcf				
8	4-8	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	4-7	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	8	48	48	48	48	48	48	48	48	48	48	16	32	48	48	48	12	16	24	40	48
	9	48	48	48	48	48	24	32	48	48	48	12	16	24	40	48	8	12	16	24	32
10	4-7	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	8	48	48	48	48	48	32	48	48	48	48	16	24	32	48	48	12	16	24	32	40
	9	48	48	48	48	48	16	24	40	48	48	8	16	24	32	40	8	12	16	24	24
	10	32	48	48	48	48	12	16	24	32	48	8	12	16	24	32	6	8	12	16	16
11	4-7	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	8	48	48	48	48	48	24	40	48	48	48	12	24	32	40	48	8	16	16	24	40
	9	40	48	48	48	48	16	24	32	48	48	8	12	16	24	32	6	8	12	16	24
	10	24	32	48	48	48	8	16	24	32	40	6	8	12	16	24	-	8	8	12	16
	11	16	24	32	48	48	8	12	16	24	32	-	8	12	16	16	-	6	8	12	12
12	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	24	40	48	48	48	16	24	32	48	48
	8	48	48	48	48	48	24	32	48	48	48	12	16	24	40	48	8	12	16	24	32
	9	32	48	48	48	48	12	16	24	40	48	8	12	16	24	32	6	8	12	16	24
	10	16	24	40	48	48	8	12	16	24	32	6	8	12	16	24	-	6	8	12	16
	11	12	16	24	40	48	6	8	12	16	24	-	6	8	12	16	-	-	6	8	12
	12	8	16	16	24	32	-	8	12	16	16	-	6	8	8	12	-	-	6	8	8
14	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	16	32	48	48	48	12	16	24	40	48
	8	48	48	48	48	48	16	24	40	48	48	8	16	24	32	40	8	12	16	24	24
	9	24	40	48	48	48	8	16	24	32	40	6	8	16	16	24	-	8	8	16	16
	10	12	24	32	40	48	6	12	16	16	24	-	8	8	12	16	-	6	8	8	12
	11	8	16	16	24	40	-	8	12	16	16	-	6	8	8	12	-	-	6	8	8
	12	6	12	16	16	24	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
	13	6	8	12	16	24	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	14	-	8	8	12	16	-	-	6	8	8	-	-	-	6	8	-	-	-	-	6
16	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	32	48	48	48	48	16	24	40	48	48	12	16	24	32	40
	8	40	48	48	48	48	16	24	32	48	48	8	12	16	24	32	6	8	12	16	24
	9	16	32	40	48	48	8	12	16	24	32	6	8	12	16	24	-	6	8	12	16
	10	12	16	24	32	48	6	8	12	16	24	-	6	8	12	16	-	-	6	8	12
	11	8	12	16	24	32	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
	12	6	8	12	16	24	-	-	8	8	12	-	-	-	6	8	-	-	-	-	6
	13	-	8	8	12	16	-	-	6	8	8	-	-	-	6	8	-	-	-	-	6
	14	-	6	8	12	16	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
	15	-	-	6	8	12	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-
	16	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-

NOTES:
See next page.

TABLE 2C - LOGIX XP-1 10" or 10.75" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT Cont'd

Maximum Height of Basement Wall, ft	Maximum Unbalanced Backfill Height, ft	Bar Spacing, in.																			
		Maximum Equivalent Density 30pcf					Maximum Equivalent Density 45pcf					Maximum Equivalent Density 60pcf					Maximum Equivalent Density 75pcf				
18	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	24	48	48	48	48	16	24	32	40	48	8	16	16	32	40
	8	32	48	48	48	48	12	16	24	40	48	8	12	16	24	32	6	8	12	16	24
	9	16	24	32	48	48	8	12	16	24	32	-	8	12	16	16	-	6	8	12	16
	10	8	16	16	32	40	-	8	12	16	16	-	6	8	8	12	-	-	6	8	8
	11	6	8	16	16	24	-	6	8	12	16	-	-	6	8	8	-	-	-	6	8
	12	-	8	12	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	13	-	6	8	12	16	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
	14	-	-	6	8	12	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-
	15	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	16	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	24	40	48	48	48	12	16	24	40	48	8	12	16	24	32
	8	24	40	48	48	48	12	16	24	32	48	6	12	16	16	24	-	8	12	16	16
	9	12	16	32	40	48	6	12	16	16	24	-	8	8	12	16	-	-	8	8	12
	10	8	12	16	24	32	-	8	8	12	16	-	-	6	8	12	-	-	-	8	8
	11	6	8	12	16	24	-	6	8	8	12	-	-	-	6	8	-	-	-	6	6
	12	-	6	8	12	16	-	-	6	8	8	-	-	-	6	6	-	-	-	-	-
	13	-	6	8	8	12	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
	14	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	15	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8

LOGIX XP-1

NOTES:

1. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar = 8.125"
2. **Table 2C** shall be read in conjunction with **Fig 2C**, and section "Notes for Tables 2A to 2D - Logix XP-1 Below-grade Tables."
3. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi.
4. Where cells show "-" engineering is required.

TABLE 2D - LOGIX XP-1 12" or 12.75" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINF.

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Maximum Height of Basement Wall, ft	Maximum Unbalanced Backfill Height, ft	Bar Spacing, in.																			
		Maximum Equivalent Density 30pcf					Maximum Equivalent Density 45pcf					Maximum Equivalent Density 60pcf					Maximum Equivalent Density 75pcf				
14	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	24		48	48	48
	8	48	48	48	48	48	48	48	48	48	48	16	32	48	48	48	12	16	24	40	48
	9	48	48	48	48	48	16	32	48	48	48	12	16	24	32	40	8	12	16	24	32
	10	32	48	48	48	48	12	16	24	32	48	8	12	16	24	24	-	8	12	16	16
	11	16	24	40	48	48	8	12	16	24	32	-	8	12	16	16	-	6	8	12	16
	12	12	16	24	32	48	6	8	12	16	24	-	6	8	12	16	-	-	6	8	12
	13	8	12	16	24	32	-	8	8	16	16	-	-	8	8	12	-	-	6	8	8
	14	6	12	16	16	24	-	6	8	12	16	-	-	6	8	8	-	-	-	6	8
16	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	24	32	48	48	48
	8	48	48	48	48	48	40	48	48	48	48	16	24	40	48	48	12	16	24	32	40
	9	48	48	48	48	48	16	24	40	48	48	8	16	16	24	40	6	8	16	16	24
	10	24	32	48	48	48	8	16	24	32	40	6	8	12	16	24	-	6	8	12	16
	11	12	16	32	40	48	6	12	16	16	24	-	6	8	12	16	-	-	8	8	12
	12	8	16	16	32	40	-	8	12	16	16	-	6	8	8	12	-	-	6	8	8
	13	8	12	16	16	24	-	6	8	12	16	-	-	6	8	8	-	-	-	6	8
	14	6	8	12	16	24	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	15	-	8	8	12	16	-	-	6	8	8	-	-	-	6	8	-	-	-	-	6
	16	-	6	8	12	16	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
18	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	40	48	48	48	48	16	32	40	48	48
	8	48	48	48	48	48	32	48	48	48	48	16	24	32	48	48	8	16	16	32	40
	9	48	48	48	48	48	16	24	32	40	48	8	12	16	24	32	6	8	12	16	24
	10	16	32	40	48	48	8	12	16	24	32	6	8	12	16	24	-	6	8	12	16
	11	12	16	24	32	48	6	8	12	16	24	-	6	8	12	16	-	-	6	8	12
	12	8	12	16	24	32	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
	13	6	8	12	16	24	-	6	8	8	12	-	-	-	8	8	-	-	-	6	6
	14	-	8	8	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	15	-	6	8	12	16	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
	16	-	-	8	8	12	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-
	17	-	-	6	8	12	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
20	4-6	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	7	48	48	48	48	48	48	48	48	48	48	32	48	48	48	48	16	24	40	48	48
	8	48	48	48	48	48	24	40	48	48	48	12	16	32	40	48	8	12	16	24	32
	9	40	48	48	48	48	12	16	24	40	48	8	12	16	24	32	6	8	12	16	16
	10	16	24	40	48	48	8	12	16	24	32	-	8	12	16	16	-	6	8	12	16
	11	8	16	24	32	40	6	8	12	16	16	-	6	8	12	12	-	-	6	8	8
	12	8	12	16	24	24	-	6	8	12	16	-	-	6	8	12	-	-	-	6	8
	13	6	8	12	16	16	-	-	6	8	12	-	-	-	6	8	-	-	-	-	6
	14	-	6	8	12	16	-	-	6	8	8	-	-	-	-	6	-	-	-	-	-
	15	-	6	8	8	12	-	-	-	6	8	-	-	-	-	6	-	-	-	-	-
	16	-	-	6	8	12	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	17	-	-	-	8	8	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19	-	-	-	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8	#4	#5	#6	#7	#8

NOTES:

1. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Effective depth (out face of concrete to center of vertical rebar) = 10.125"
2. Provide additional mat of rebar near exterior face of concrete surface:
   - Horizontal = #4 @ 16" o/c. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
   - Vertical = #4 to match vertical rebar spacing
3. **Table 2D** shall be read in conjunction with **Fig 2D**, and section "Notes for Tables 2A to 2D - Logix XP-1 Below-grade Tables."
4. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi.
5. Where cells show "-" engineering is required.

ABOVE-GRADE WALL REINFORCEMENT TABLES

NOTES FOR ABOVE-GRADE WALL TABLES - Tables 3A & 3B
Table 3A covers reinforcement for Logix XP-1 above-grade walls with wind speeds up to 150mph. For larger wind speeds see Table 3B, which covers wind speeds up to 300mph.

Logix XP-1 above-grade tables cover three different construction types:

- One storey Logix XP-1 supporting roof only (Fig. 3A)
- One storey Logix XP-1 supporting 2nd storey wood frame plus wood frame roof (Fig. 3B)
- Two storey Logix XP-1 supporting 2nd storey Logix XP-1 plus wood frame roof (Fig. 3C)

For two story buildings, the height of the second story wall is equal to the height of the first story provided the height of the first storey wall is not more than 12 feet high.

For first story walls greater than 12 feet high, the second story wall height is a maximum of 12 feet.

With the exception of 6" Logix XP-1, the second story concrete wall thickness is one size less than the concrete core thickness used for the first storey wall.

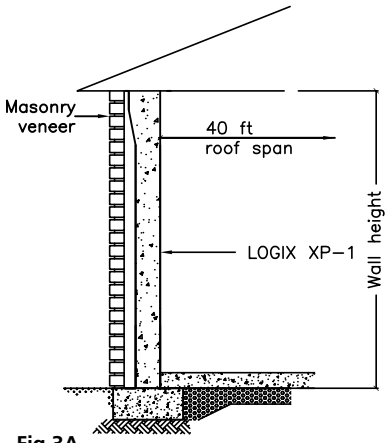


Fig 3A
Assumed typical flooring, wall & roof section for **Tables 3A and 3B, Logix XP-1 Supporting Roof Only**.

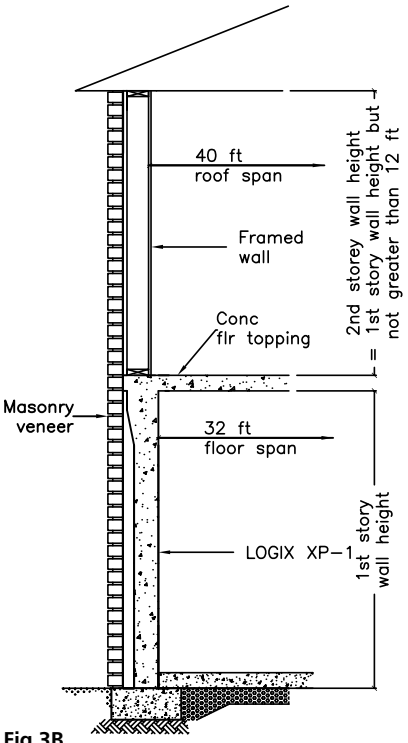


Fig 3B
Assumed typical flooring, wall & roof section for **Tables 3A and 3B, Logix XP-1 Supporting 2nd Story Wood Frame & Roof Structure**.

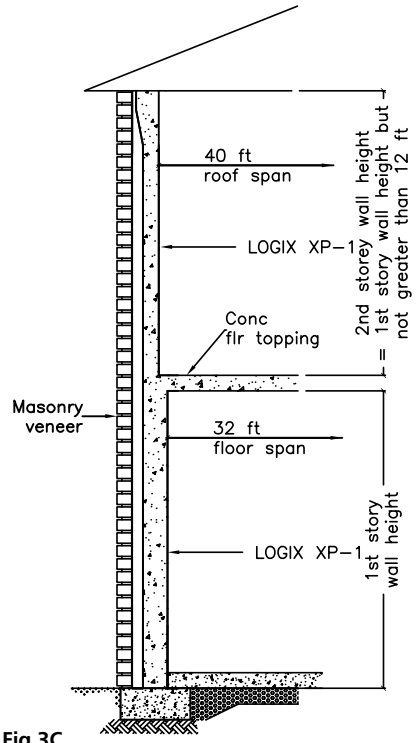


Fig 3C
Assumed typical flooring, wall & roof section for **Tables 3A and 3B, Logix XP-1 Supporting 2nd Story Logix XP-1 & Roof Structure**.

NOTES FOR ABOVE-GRADE WALL TABLES - Tables 3A & 3B Cont'd
The above-grade tables shall be used in conjunction with the notes listed below, the building limitations noted in the "Reinforcement Tables" section, and Figures 3A to 3B, which form the basis of this table.

1. Vertical rebar spacing shown in the tables provide simple placement between ICF ties.
2. Steel yield strength = 40 ksi and 60 ksi for Table 3A and 3B, respectively. 28 day concrete compressive strength = 3 ksi
3. For rebar spacing based on 40 ksi reinforcing steel multiply spacing by 1.5 if using 60 ksi steel.
4. Deflection criteria = L/240
5. Snow load = 70 psf
6. Assumed eccentricity = 1".
7. The walls must be supported at the top and bottom of the wall.
8. Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
9. Except as noted for seismic considerations, vertical rebar shall be placed in middle of wall, and minimum horizontal rebar shall be:
   - 6" to 10" THICK Logix XP-1 = #4 @ 16" on center. Closer horizontal rebar spacing can be used with Logix XP-1 when required.

   Provide additional mat of rebar for concrete thickness equal to or great than 12"
   - Horizontal rebar = #4 @ 16" on center (double mat). Closer horizontal rebar spacing can be used with Logix XP-1 when required.
   - Vertical rebar = to match vertical bar spacing in **Tables 3A or 3B, whichever applies.**

   Provide at least one #4 bar (two for concrete thickness equal to or great than 12") to be placed at the bottom course and top course.
10. In Seismic Design Categories D0, D1, and D2, the reinforcing steel shall meet the requirements of ASTM A 706 for low-alloy steel with a minimum yield strength of 60 ksi.
11. For townhouses in Seismic Category C, the minimum vertical reinforcement shall be one #5 at 24 inches on center or one #4 bar at 16 inches on center, and the minimum horizontal reinforcement shall be one #4 bar at 16 inches on center. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
12. For all buildings in Seismic Design Categories D0, D1 and D2, the minimum vertical reinforcement shall be one #5 at 18 inches on center or one #4 bar at 12 inches on center, and the minimum horizontal reinforcement shall be one #5 bar at 16 inches on center. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
13. Horizontal reinforcement shall be continuous around building corners using corner bars or by bending the bars. The minimum lap splice shall be 24 inches. For townhouses in Seismic Design Categories D0, D1, and D2, each end of all horizontal reinforcement shall terminate with a standard hook or lap splice.
14. For openings provide one #4 horizontal bar within 12 inches from the bottom of the opening to extend minimum 24 inches beyond opening. In locations with wind speeds greater than or equal to 110mph or in Seismic Design Categories A and B, provide one #4 bar for the full height of the wall story within 12 inches each side of the opening. In locations with wind speeds greater than 110 mph, townhouses in Seismic Design Categories D0, D1, and D2, provide two #4 bars or one #5 bar for full height of the wall story within 12 inches of each side of the opening.
15. Where design wind pressure exceeds 40 psf or for townhouses in Seismic Design Category C, and all buildings in Seismic Design Categories D0, D1 and D2, the vertical wall reinforcement

in the top-most ICF story shall terminate with a 90-degree standard hook in accordance with IRC 2006, Section R611.7.1.5. The free end of the hook shall be within 4 inches of the top of the wall and shall be oriented parallel to the horizontal steel in the top of the wall.

16. Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
17. Tables R301.2.1.3 and R611.3(1) are taken from the 2006 International Residential Code. These tables can be used to convert wind speeds to wind loads used in Table 3A, Logix XP-1 Above-Grade Wall Minimum Vertical Reinforcement.
18. For larger wind speeds greater than 150mph see Table 3B.

TABLE R301.2.1.3
EQUIVALENT BASIC WIND SPEEDS[a]

3-second gust, V_{3s}	85	90	100	105	110	120	125	130	140	145	150	160	170
Fastest mile, V_{fm}	71	76	85	90	95	104	109	114	123	128	133	142	152

For SI: 1 mile per hour = 0.447 m/s.
a. Linear interpolation is permitted.

TABLE R611.3(1)
DESIGN WIND PRESSURE FOR USE WITH TABLES R611.3(2), R611.4(1), AND R611.5 FOR ABOVE GRADE WALLS[a]

WIND SPEED (mph)[e]	DESIGN WIND PRESSURE (psf)					
	Enclosed[b]			Partially Enclosed[b]		
	Exposure[c]			Exposure[c]		
	B	C	D	B	C	D
85	18	24	29	23	31	37
90	20	27	32	25	35	41
100	24	34	39	31	43	51
110	29	41	48	38	52	61
120	35	48	57	45	62	73
130	41	56	66	53	73	85[d]
140	47	65	77	61	84[d]	99[d]
150	54	75	88[d]	70	96[d]	114[d]

For SI: 1 pound per square foot = 0.0479 kPa; 1 mile per hour = 0.447 m/s; 1 foot = 304.8 mm; 1 square foot = 0.0929 m^2.
a. This table is based on ASCE 7-98 components and cladding wind pressures using a mean roof height of 35 ft and a tributary area of 10 ft^2.
b. Buildings in wind-borne debris regions as defined in Section R202 shall be considered as "Partially Enclosed" unless glazed openings are protected in accordance with Section R301.2.1.2, in which case the building shall be considered as "Enclosed." All other buildings shall be classified as "Enclosed."
c. Exposure Categories shall be determined in accordance with Section R301.2.1.4.
d. For wind pressures greater than 80 psf, design is required in accordance with ACI 318 and approved manufacturer guidelines.
e. Interpolation is permitted between wind speeds.

TABLE 3A - LOGIX XP-1 ABOVE-GRADE WALL MINIMUM VERTICAL REINFORCEMENT (WIND SPEEDS UP TO 150 MPH)

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

LOGIX ABOVE-GRADE WALLS - VERTICAL REINFORCEMENT SPACING, in.

Ground Floor LOGIX XP-1 Supporting Roof Only

Wall Height, ft	6" or 6.25" Thick Conc. Unfactored Wind Load, psf						8.25" or 9" Thick Conc. Unfactored Wind Load, psf						10" or 10.75" Thick Conc. Unfactored Wind Load, psf						12" or 12.75" Thick Conc. Unfactored Wind Load, psf						14" or 14.75" Thick Conc. Unfactored Wind Load, psf					
	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114
8	48	48	48	48	40	24	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	48	48	48	24	24	16	48	48	48	48	48	32	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
10	48	48	32	16	16	12	48	48	48	48	32	16	48	48	48	48	48	32	48	48	48	48	48	48	48	48	48	48	48	48
12	48	40	16	8	8	6	48	48	40	16	16	12	48	48	48	32	24	16	48	48	48	48	48	24	48	48	48	48	48	48
14	32	16	8	6	6	-	48	48	16	12	8	6	48	48	32	16	16	8	48	48	48	32	24	12	48	48	48	48	48	40
16	16	12	6	-	-	-	24	24	12	8	6	-	40	40	16	12	8	6	48	48	32	16	12	8	48	48	48	24	24	16
18	8	8	-	-	-	-	16	16	8	6	-	-	16	16	12	8	6	-	24	24	16	12	8	6	24	24	24	16	16	12
20	6	6	-	-	-	-	8	8	6	-	-	-	12	12	8	6	-	-	12	12	12	8	6	-	16	16	16	12	12	8

Ground Floor LOGIX XP-1 Supporting 2nd Storey Wood Frame & Roof Structure

Wall Height, ft	6" or 6.25" Thick Conc. Unfactored Wind Load, psf						8.25" or 9" Thick Conc. Unfactored Wind Load, psf						10" or 10.75" Thick Conc. Unfactored Wind Load, psf						12" or 12.75" Thick Conc. Unfactored Wind Load, psf						14" or 14.75" Thick Conc. Unfactored Wind Load, psf					
	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114
8	48	48	48	48	48	32	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	48	48	48	48	32	16	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
10	48	48	48	24	16	12	48	48	48	48	48	24	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
12	48	48	16	12	8	6	48	48	48	24	16	12	48	48	48	48	40	24	48	48	48	48	48	40	48	48	48	48	48	48
14	24	24	12	6	6	-	48	48	32	16	12	8	48	48	48	24	16	12	48	48	48	48	32	16	48	48	48	48	48	32
16	12	12	6	-	-	-	16	16	16	8	8	-	32	32	24	12	12	8	48	48	48	24	16	12	48	48	48	48	32	16
18	6	6	-	-	-	-	12	12	8	6	-	-	16	16	16	8	8	-	16	16	16	12	12	8	24	24	24	24	16	8
20	-	-	-	-	-	-	8	8	6	-	-	-	8	8	8	6	6	-	12	12	12	8	8	6	12	12	12	12	12	8

Ground Floor LOGIX XP-1 Supporting 2nd Storey LOGIX & Roof Structure

Wall Height, ft	6" or 6.25" Thick Conc. Unfactored Wind Load, psf						8.25" or 9" Thick Conc. Unfactored Wind Load, psf						10" or 10.75" Thick Conc. Unfactored Wind Load, psf						12" or 12.75" Thick Conc. Unfactored Wind Load, psf						14" or 14.75" Thick Conc. Unfactored Wind Load, psf					
	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114	20	40	60	80	90	114
8	48	48	48	48	48	32	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	48	48	48	48	40	16	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
10	48	48	48	24	24	12	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
12	40	40	24	12	8	6	48	48	48	48	24	16	48	48	48	48	48	40	48	48	48	48	48	48	48	48	48	48	48	48
14	12	12	12	6	6	-	32	32	32	16	12	8	48	48	48	48	32	16	48	48	48	48	48	32	48	48	48	48	48	48
16	8	8	6	-	-	-	12	12	12	8	8	6	16	16	16	16	12	8	32	32	32	32	24	12	48	48	48	48	48	24
18	-	-	-	-	-	-	8	8	8	6	-	-	8	8	8	8	8	6	12	12	12	12	12	8	16	16	16	16	16	12
20	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6	6	-	8	8	8	8	8	6	8	8	8	8	8	8

NOTES:

1. **Table 3A** must be used in conjunction with the notes listed under **"Notes For Above-Grade Wall Tables"**.
2. Vertical bar spacing is for #4 rebar. #5 rebar can be substituted provided the spacing is multiplied by 1.5. Spacing shall be no more than 48 inches on center.
3. Steel yield strength = 40 ksi, 28 day concrete compressive strength = 3 ksi.

TABLE 3B - LOGIX XP-1 ABOVE-GRADE WALL MINIMUM VERTICAL REINFORCEMENT (WIND SPEEDS GREATER THAN 150 MPH)

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

LOGIX ABOVE-GRADE WALLS - VERTICAL REINFORCEMENT SPACING, in.

Ground Floor LOGIX XP-1 Supporting Roof Only

Wall Height, ft	6" or 6.25" Thick Conc. Wind Speed, mph					8.25" or 9" Thick Conc. Wind Speed, mph					10" or 10.75" Thick Conc. Wind Speed, mph					12" or 12.75" Thick Conc. Wind Speed, mph					14" or 14.75" Thick Conc. Wind Speed, mph				
	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300
8	40	16	12	8	8	48	32	16	12	12	48	48	24	16	16	48	48	32	24	16	48	48	48	32	24
9	24	16	8	6	6	48	24	12	8	8	48	32	16	12	12	48	48	24	16	12	48	48	32	24	16
10	16	12	6	-	-	32	16	8	8	6	48	24	12	8	8	48	32	16	12	12	48	40	16	16	12
12	12	6	-	-	-	16	8	6	-	-	24	16	8	6	-	40	16	8	8	6	48	24	12	8	8
14	8	-	-	-	-	12	8	-	-	-	16	8	6	-	-	24	12	6	6	-	32	16	8	6	6
16	6	-	-	-	-	8	-	-	-	-	12	6	-	-	-	16	8	-	-	-	16	12	6	-	-
18	-	-	-	-	-	6	-	-	-	-	8	-	-	-	-	12	6	-	-	-	12	8	-	-	-
20	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	8	-	-	-	-	8	6	-	-	-

Ground Floor LOGIX XP-1 Supporting 2nd Storey LOGIX (or 2nd Storey Wood Frame) & Roof Structure

Wall Height, ft	6" or 6.25" Thick Conc. Wind Speed, mph					8.25" or 9" Thick Conc. Wind Speed, mph					10" or 10.75" Thick Conc. Wind Speed, mph					12" or 12.75" Thick Conc. Wind Speed, mph					14" or 14.75" Thick Conc. Wind Speed, mph				
	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300	160	200	250	275	300
8	48	24	12	8	6	48	48	16	16	12	48	48	32	24	16	48	48	48	40	24	48	48	32	24	16
9	32	16	8	6	-	48	32	12	8	8	48	48	16	16	12	48	48	32	24	16	48	48	24	16	12
10	16	8	6	-	-	48	16	8	8	6	48	32	16	12	8	48	48	24	16	12	48	48	16	12	16
12	12	6	-	-	-	24	12	6	-	-	48	16	8	6	-	48	24	12	8	6	48	48	8	12	8
14	6	-	-	-	-	12	6	-	-	-	24	8	-	-	-	40	16	8	6	-	48	24	8	8	6
16	-	-	-	-	-	8	-	-	-	-	12	6	-	-	-	16	8	-	-	-	40	12	6	-	-
18	-	-	-	-	-	6	-	-	-	-	8	-	-	-	-	12	6	-	-	-	16	8	-	-	-
20	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	8	-	-	-	-	12	6	-	-	-

NOTES:

1. **Table 3B** must be used in conjunction with the notes listed under **"Notes For Above-Grade Wall Tables"**.
2. Vertical bar spacing is for #4 rebar. #5 rebar can be substituted provided the spacing is multiplied by 1.5. Spacing shall be no more than 48 inches on center.
3. Steel yield strength = 60 ksi, 28 day concrete compressive strength = 3 ksi.

LINTEL REINFORCEMENT TABLES

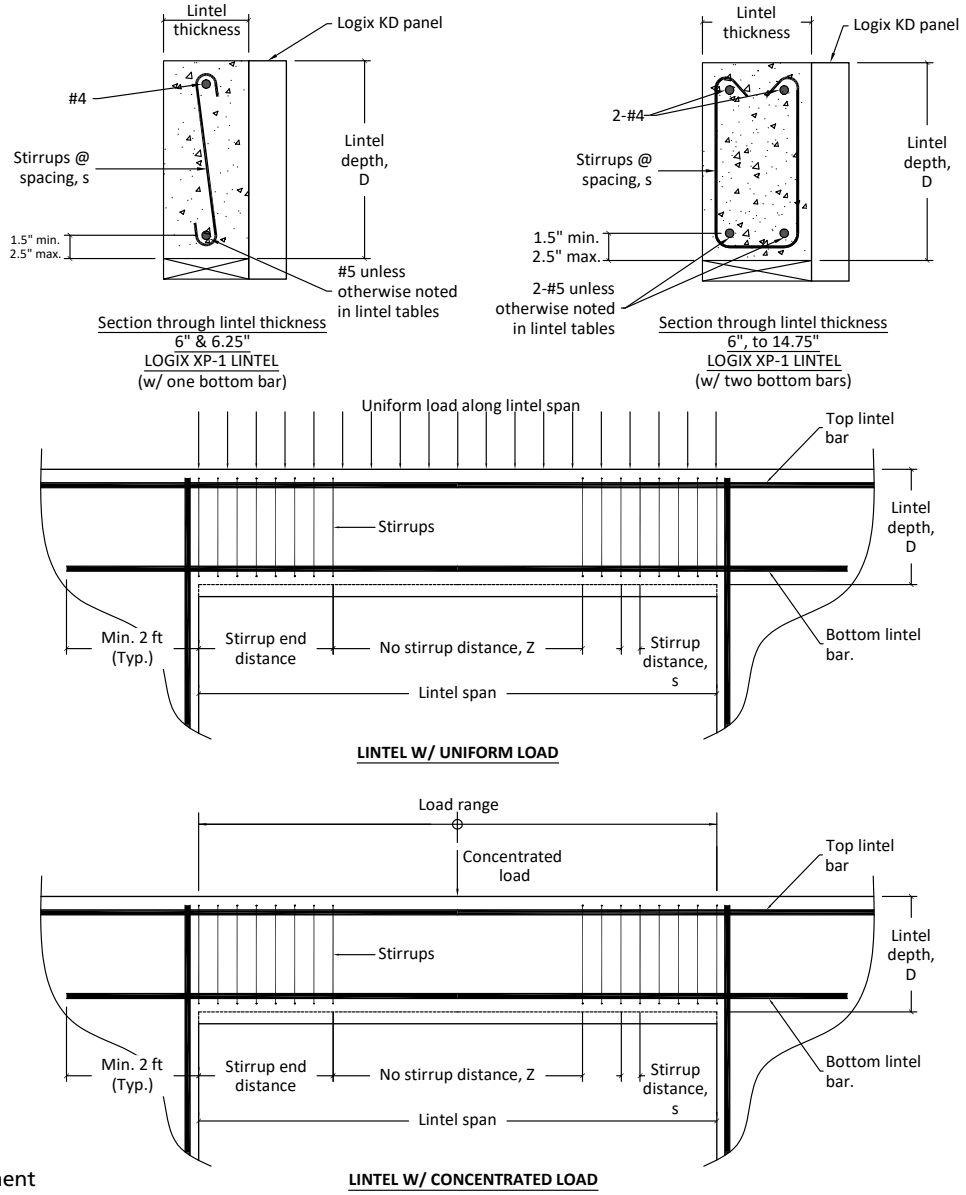


Fig 4
Lintel reinforcement

The lintel tables cover a wide range of uniform and concentrated load conditions, and span lengths. The depth of the lintels range from 8 inch to 30 inches. Uniform and concentrated loading are considered to be concentric and centered on the lintel. Uniform loads act along the entire lintel span, such as from roof trusses at 2 ft spacing. Concentrated load lintel tables consider only a single concentrated load acting anywhere along the lintel span. In addition, the lintel tables do not consider uniform and concentrated loads to act simultaneously on the lintel.

The following notes are common to both uniform and concentrated load lintel tables:

1. 28 day concrete compressive strength = 3 ksi. Steel yield strength = 40 ksi.
2. Stirrups are D9.5 wire or #3 bars, bent as shown, and conforming to ACI 318.
3. Shaded areas of the lintel tables require reinforcement, except for length Z.
4. Dimension D is to the concrete surface, not counting bucks or top plate.
5. Bottom steel must extend a min. 2 ft beyond opening, and no splices are permitted.
6. Deflection is limited to L/360, not considering long term effects. Long term deflection could be twice the short term depending on the nature of the load.
7. Seismic and wind loads are not considered.
8. Shear planes are not interrupted by embedded joists.
9. Top of lintel is assumed to be laterally restrained.

These tables should only be used if the above conditions are met. For other conditions, consult a structural engineer.

TABLE 4A - LOGIX XP-1 6” or 6.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 1-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						1 - #6
5				1 - #6	1 - #6	2 - #5
6			1 - #6	2 - #5	-	-
7		1 - #6	2 - #5	-	-	-
8		2 - #5	-	-	-	-
9	1 - #6	-	-	-	-	-
10	2 - #5	-	-	-	-	-
12	-	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		37	25	19	15	13

s=4", D=10"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						1 - #6
6				1 - #6	2 - #5	2 - #5
7			1 - #6	2 - #5	2 - #6	2 - #6
8		1 - #6	2 - #5	2 - #6	2 - #6	-
9		1 - #6	2 - #6	-	-	-
10		2 - #5	2 - #6	-	-	-
12	1 - #6	-	-	-	-	-
14	2 - #6	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		49	34	26	21	17

s=5", D=12"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6					1 - #6	1 - #6
7				1 - #6	2 - #5	2 - #5
8			1 - #6	2 - #5	2 - #6	2 - #6
9		1 - #6	2 - #5	2 - #6	2 - #6	2 - #7
10		1 - #6	2 - #6	2 - #6	2 - #7	-
12	1 - #6	2 - #6	2 - #7	-	-	-
14	2 - #5	2 - #7	-	-	-	-
16	2 - #6	-	-	-	-	-
18	2 - #7	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		62	43	32	26	22

s=7", D=16"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					1 - #6	1 - #6
8				1 - #6	1 - #6	2 - #5
9			1 - #6	2 - #5	2 - #5	2 - #6
10			1 - #6	2 - #5	2 - #6	2 - #6
12		1 - #6	2 - #6	2 - #6	2 - #7	2 - #8
14	1 - #6	2 - #5	2 - #7	2 - #7	2 - #8	-
16	2 - #5	2 - #6	2 - #7	-	-	-
18	2 - #5	2 - #7	-	-	-	-
20	2 - #6	2 - #8	-	-	-	-
No stirrup distance, Z (in.)		84	59	45	37	31

s=9", D=20"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					1 - #6	1 - #6
9				1 - #6	1 - #6	2 - #5
10			1 - #6	1 - #6	2 - #5	2 - #6
12		1 - #6	2 - #5	2 - #6	2 - #6	2 - #7
14		2 - #5	2 - #6	2 - #7	2 - #7	2 - #8
16	1 - #6	2 - #6	2 - #7	2 - #7	2 - #8	-
18	2 - #5	2 - #6	2 - #7	2 - #8	-	-
20	2 - #5	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)		106	75	58	47	40

s=11", D=24"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						1 - #6
9					1 - #6	1 - #6
10				1 - #6	1 - #6	2 - #5
12			1 - #6	2 - #5	2 - #6	2 - #6
14		1 - #6	2 - #5	2 - #6	2 - #7	2 - #7
16		2 - #5	2 - #6	2 - #7	2 - #7	2 - #8
18	1 - #6	2 - #6	2 - #7	2 - #8	2 - #8	-
20	2 - #5	2 - #6	2 - #7	2 - #8	-	-
No stirrup distance, Z (in.)			90	70	57	48

s=14", D=30"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						1 - #6
10					1 - #6	1 - #6
12			1 - #6	1 - #6	2 - #5	2 - #5
14		1 - #6	2 - #5	2 - #5	2 - #6	2 - #6
16		1 - #6	2 - #5	2 - #6	2 - #7	2 - #7
18	1 - #6	2 - #5	2 - #6	2 - #7	2 - #7	2 - #8
20	1 - #6	2 - #6	2 - #7	2 - #7	2 - #8	-
No stirrup distance, Z (in.)			111	87	71	61

Notes:

1. Where not shown otherwise, bottom steel is 1-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored uniform loads includes 1.2 and 1.6 for dead load and live load, respectively.

TABLE 4B - LOGIX XP-1 8.25” or 9” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6					2 - #6	2 - #6
7				2 - #6	-	-
8			2 - #6	-	-	-
9		2 - #6	-	-	-	-
10		-	-	-	-	-
12	-	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		50	34	26	21	17

s=4", D=10"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - #6	2 - #6
8				2 - #6	2 - #6	2 - #7
9			2 - #6	2 - #6	2 - #7	-
10			2 - #6	2 - #7	-	-
12		2 - #7	-	-	-	-
14	2 - #6	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		66	46	35	28	24

s=5", D=12"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - #6	2 - #6
9				2 - #6	2 - #6	2 - #7
10			2 - #6	2 - #6	2 - #7	2 - #8
12		2 - #6	2 - #7	2 - #8	-	-
14		2 - #7	2 - #8	-	-	-
16	2 - #6	-	-	-	-	-
18	2 - #8	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		82	57	44	36	30

s=7", D=16"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						2 - #6
10					2 - #6	2 - #6
12			2 - #6	2 - #6	2 - #7	2 - #8
14		2 - #6	2 - #7	2 - #7	2 - #8	-
16		2 - #6	2 - #7	-	-	-
18		2 - #7	2 - #8	-	-	-
20	2 - #6	2 - #8	-	-	-	-
No stirrup distance, Z (in.)		111	79	61	50	42

s=9", D=20"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - #6
12				2 - #6	2 - #6	2 - #7
14			2 - #6	2 - #7	2 - #7	2 - #8
16		2 - #6	2 - #7	2 - #7	2 - #8	-
18		2 - #6	2 - #7	2 - #8	-	-
20	2 - #6	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)			99	77	63	54

s=11", D=24"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					2 - #6	2 - #6
14				2 - #6	2 - #7	2 - #7
16			2 - #6	2 - #7	2 - #7	2 - #8
18		2 - #6	2 - #7	2 - #8	2 - #8	-
20		2 - #6	2 - #8	2 - #8	-	-
No stirrup distance, Z (in.)			118	92	76	65

s=14", D=30"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14					2 - #6	2 - #6
16				2 - #6	2 - #7	2 - #7
18			2 - #6	2 - #7	2 - #8	2 - #8
20		2 - #6	2 - #7	2 - #8	2 - #8	-
No stirrup distance, Z (in.)				114	95	81

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored uniform loads includes 1.2 and 1.6 for dead load and live load, respectively.

TABLE 4C - LOGIX XP-1 10” or 10.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6					2 - #6	2 - #6
7				2 - #6	-	-
8			2 - #6	-	-	-
9			-	-	-	-
10		-	-	-	-	-
12	-	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			41	31	25	21

s=4", D=10"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - #6	2 - #6
8				2 - #6	2 - #6	2 - #7
9			2 - #6	2 - #6	2 - #7	2 - #8
10			2 - #6	2 - #7	2 - #8	-
12		2 - #7	2 - #8	-	-	-
14	2 - #6	2 - #8	-	-	-	-
16	2 - #8	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		78	55	42	34	29

s=5", D=12"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - #6	2 - #6
9				2 - #6	2 - #6	2 - #7
10			2 - #6	2 - #6	2 - #7	2 - #8
12		2 - #6	2 - #7	2 - #8	2 - #8	-
14		2 - #7	2 - #8	-	-	-
16	2 - #6	-	-	-	-	-
18	2 - #8	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			68	52	43	36

s=7", D=16"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						2 - #6
10					2 - #6	2 - #6
12			2 - #6	2 - #6	2 - #7	2 - #8
14		2 - #6	2 - #7	2 - #7	2 - #8	-
16		2 - #6	2 - #8	-	-	-
18	2 - #6	2 - #7	2 - #8	-	-	-
20	2 - #6	2 - #8	-	-	-	-
No stirrup distance, Z (in.)			93	72	59	50

s=9", D=20"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - #6
12				2 - #6	2 - #6	2 - #7
14			2 - #6	2 - #7	2 - #7	2 - #8
16		2 - #6	2 - #7	2 - #8	2 - #8	-
18		2 - #6	2 - #8	2 - #8	-	-
20	2 - #6	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)			116	91	75	64

s=11", D=24"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					2 - #6	2 - #6
14				2 - #6	2 - #7	2 - #7
16			2 - #6	2 - #7	2 - #8	2 - #8
18		2 - #6	2 - #7	2 - #8	2 - #8	-
20		2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)					90	77

s=14", D=30"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - #6
14					2 - #6	2 - #6
16			2 - #6	2 - #6	2 - #7	2 - #7
18			2 - #6	2 - #7	2 - #8	2 - #8
20		2 - #6	2 - #7	2 - #8	2 - #8	-
No stirrup distance, Z (in.)					112	96

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored uniform loads includes 1.2 and 1.6 for dead load and live load, respectively.

TABLE 4D - LOGIX XP-1 12” or 12.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6					2 - #6	2 - #6
7				2 - #6	2 - #7	2 - #7
8			2 - #6	2 - #7	-	-
9			2 - #7	-	-	-
10		2 - #7	-	-	-	-
12	2 - #6	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			48	37	30	25

s=4", D=10"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - #6	2 - #6
8				2 - #6	2 - #6	2 - #7
9			2 - #6	2 - #6	2 - #7	2 - #8
10			2 - #6	2 - #7	2 - #8	-
12		2 - #6	2 - #8	-	-	-
14	2 - #6	2 - #8	-	-	-	-
16	2 - #8	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			64	50	40	34

s=5", D=12"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - #6	2 - #6
9				2 - #6	2 - #6	2 - #7
10			2 - #6	2 - #6	2 - #7	2 - #8
12		2 - #6	2 - #7	2 - #8	2 - #8	-
14		2 - #7	2 - #8	-	-	-
16	2 - #6	-	-	-	-	-
18	2 - #7	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			80	62	51	43

s=7", D=16"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						2 - #6
10					2 - #6	2 - #6
12			2 - #6	2 - #6	2 - #7	2 - #8
14		2 - #6	2 - #7	2 - #7	2 - #8	-
16		2 - #6	2 - #8	-	-	-
18	2 - #6	2 - #7	-	-	-	-
20	2 - #6	2 - #8	-	-	-	-
No stirrup distance, Z (in.)					70	59

s=9", D=20"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - #6
12				2 - #6	2 - #6	2 - #7
14			2 - #6	2 - #7	2 - #7	2 - #8
16		2 - #6	2 - #7	2 - #8	2 - #8	-
18		2 - #7	2 - #8	-	-	-
20	2 - #6	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)					88	75

s=11", D=24"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					2 - #6	2 - #6
14				2 - #6	2 - #7	2 - #7
16			2 - #6	2 - #7	2 - #8	2 - #8
18		2 - #6	2 - #7	2 - #8	-	-
20	2 - #6	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)						90

D=30"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - #6
14				2 - #6	2 - #6	2 - #6
16			2 - #6	2 - #6	2 - #7	2 - #7
18		2 - #6	2 - #6	2 - #7	2 - #8	2 - #8
20		2 - #6	2 - #7	2 - #8	2 - #8	-
No stirrup distance, Z (in.)						

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored uniform loads includes 1.2 and 1.6 for dead load and live load, respectively.

TABLE 4E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6					2 - #6	2 - #6
7				2 - #6	2 - #6	2 - #7
8			2 - #6	2 - #7	2 - #7	2 - #8
9		2 - #6	2 - #7	2 - #8	-	-
10		2 - #7	-	-	-	-
12	2 - #6	-	-	-	-	-
14	2 - #8	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)				43	35	29

s=4", D=10"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - #6	2 - #6
8				2 - #6	2 - #6	2 - #7
9			2 - #6	2 - #6	2 - #7	2 - #8
10			2 - #6	2 - #7	2 - #8	-
12		2 - #6	2 - #8	-	-	-
14	2 - #6	2 - #8	-	-	-	-
16	2 - #8	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)				57	47	39

s=5", D=12"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - #6	2 - #6
9				2 - #6	2 - #6	2 - #7
10			2 - #6	2 - #6	2 - #7	2 - #8
12		2 - #6	2 - #7	2 - #8	2 - #8	-
14		2 - #7	2 - #8	-	-	-
16	2 - #6	-	-	-	-	-
18	2 - #7	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)				71	58	49

s=7", D=16"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						2 - #6
10					2 - #6	2 - #6
12			2 - #6	2 - #6	2 - #7	2 - #8
14		2 - #6	2 - #7	2 - #8	2 - #8	-
16		2 - #7	2 - #8	-	-	-
18	2 - #6	2 - #7	-	-	-	-
20	2 - #7	2 - #8	-	-	-	-
No stirrup distance, Z (in.)					80	68

D=20"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - #6
12				2 - #6	2 - #6	2 - #7
14			2 - #6	2 - #7	2 - #7	2 - #8
16		2 - #6	2 - #7	2 - #8	2 - #8	-
18		2 - #7	2 - #8	-	-	-
20	2 - #6	2 - #7	-	-	-	-
No stirrup distance, Z (in.)						

D=24"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					2 - #6	2 - #6
14			2 - #6	2 - #6	2 - #7	2 - #7
16		2 - #6	2 - #6	2 - #7	2 - #8	2 - #8
18		2 - #6	2 - #7	2 - #8	-	-
20	2 - #6	2 - #7	2 - #8	-	-	-
No stirrup distance, Z (in.)						

D=30"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - #6
14				2 - #6	2 - #6	2 - #7
16			2 - #6	2 - #6	2 - #7	2 - #7
18		2 - #6	2 - #7	2 - #7	2 - #8	2 - #8
20		2 - #6	2 - #7	2 - #8	-	-
No stirrup distance, Z (in.)						

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored uniform loads includes 1.2 and 1.6 for dead load and live load, respectively.

TABLE 5A - LOGIX XP-1 6” or 6.25” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 1-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3													1 - #6	1 - #6	1 - #6	2 - #5	2 - #5
4										1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	-	-
5								1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	-	-	-	-
6						1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	-	-	-	-	-	-
7					1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	-	-	-	-	-	-	-	-
8					1 - #6	2 - #5	2 - #5	2 - #5	-	-	-	-	-	-	-	-	-
9				1 - #6	2 - #5	2 - #5	-	-	-	-	-	-	-	-	-	-	-
10				2 - #5	-	-	-	-	-	-	-	-	-	-	-	-	-
12			2 - #5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14		2 - #5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	2 - #5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																1 - #6	1 - #6
4													1 - #6	1 - #6	1 - #6	2 - #5	2 - #5
5											1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6
6									1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6
7							1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	-
8						1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	-	-
9						1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	-	-	-
10					1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	-	-	-	-	-
12				1 - #6	2 - #5	2 - #5	2 - #6	2 - #6	-	-	-	-	-	-	-	-	-
14			1 - #6	2 - #5	2 - #6	2 - #6	-	-	-	-	-	-	-	-	-	-	-
16		1 - #6	2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18		2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	2 - #5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																1 - #6	1 - #6
5														1 - #6	1 - #6	1 - #6	2 - #5
6											1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5
7										1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6
8								1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6
9							1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #7
10						1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
12					1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	-	-
14				1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	-	-	-
16			1 - #6	2 - #5	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-	-	-	-	-	-	-	-
18		1 - #6	2 - #5	2 - #6	2 - #6	2 - #7	2 - #7	-	-	-	-	-	-	-	-	-	-
20		2 - #5	2 - #6	2 - #7	2 - #7	-	-	-	-	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-4																	
5																	1 - #6
6															1 - #6	1 - #6	1 - #6
7														1 - #6	1 - #6	1 - #6	2 - #5
8												1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5
9										1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6
10									1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6
12							1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6
14						1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
16				1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	-
18			1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	-	-
20			1 - #6	1 - #6	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	-	-	-	-

TABLE 5A - LOGIX XP-1 6" or 6.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

s=9", D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																1 - #6	1 - #6
8															1 - #6	1 - #6	1 - #6
9													1 - #6	1 - #6	1 - #6	1 - #6	2 - #5
10												1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5
12									1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6
14							1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6
16						1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7
18				1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
20			1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-

s=11", D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	
8																1 - #6	1 - #6
9															1 - #6	1 - #6	1 - #6
10														1 - #6	1 - #6	1 - #6	1 - #6
12											1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5
14									1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6
16							1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6
18					1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6
20				1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-9																	
10																1 - #6	1 - #6
12														1 - #6	1 - #6	1 - #6	1 - #6
14											1 - #6	1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5
16									1 - #6	1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5
18							1 - #6	1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6
20					1 - #6	1 - #6	1 - #6	1 - #6	2 - #5	2 - #5	2 - #5	2 - #5	2 - #5	2 - #5	2 - #6	2 - #6	2 - #6

Notes:

1. Where not shown otherwise, bottom steel is 1-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored Point Load includes 1.2 and 1.6 for dead & live load, respectively.

TABLE 5B - LOGIX XP-1 8.25” or 9” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																2 - #6	2 - #6
5															2 - #6	2 - #6	-
6												2 - #6	2 - #6	2 - #6	-	-	-
7										2 - #6	2 - #6	2 - #6	2 - #6	-	-	-	-
8									2 - #6	2 - #6	2 - #6	-	-	-	-	-	-
9							2 - #6	2 - #6	2 - #6	-	-	-	-	-	-	-	-
10						2 - #6	-	-	-	-	-	-	-	-	-	-	-
12				2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-
14			2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-5																	
6																2 - #6	2 - #6
7														2 - #6	2 - #6	2 - #6	2 - #7
8													2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
9											2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	-
10										2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-	-
12							2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-	-	-	-	-
14					2 - #6	2 - #6	2 - #7	2 - #7	-	-	-	-	-	-	-	-	-
16				2 - #7	2 - #7	-	-	-	-	-	-	-	-	-	-	-	-
18			2 - #7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20		2 - #7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	2 - #6
8															2 - #6	2 - #6	2 - #6
9														2 - #6	2 - #6	2 - #6	2 - #7
10												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
12										2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
14								2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-
16						2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-	-	-	-
18					2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-
20			2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - #6
10																2 - #6	2 - #6
12														2 - #6	2 - #6	2 - #6	2 - #6
14												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
16										2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
18								2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8
20						2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-	-

TABLE 5B - LOGIX XP-1 8.25" or 9" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

s=9", D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																	2 - #6
14															2 - #6	2 - #6	2 - #6
16													2 - #6	2 - #6	2 - #6	2 - #6	2 - #7
18										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
20								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																	2 - #6
16															2 - #6	2 - #6	2 - #6
18													2 - #6	2 - #6	2 - #6	2 - #6	2 - #7
20										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																	2 - #6
18															2 - #6	2 - #6	2 - #6
20														2 - #6	2 - #6	2 - #6	2 - #6

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored Point Load includes 1.2 and 1.6 for dead & live load, respectively.

TABLE 5C - LOGIX XP-1 10" or 10.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	2 - #6
5															2 - #6	2 - #6	-
6												2 - #6	2 - #6	2 - #6	2 - #6	-	-
7										2 - #6	2 - #6	2 - #6	2 - #6	-	-	-	-
8									2 - #6	2 - #6	2 - #6	-	-	-	-	-	-
9								2 - #6	2 - #6	-	-	-	-	-	-	-	-
10						2 - #6	-	-	-	-	-	-	-	-	-	-	-
12				2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-
14			2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-5																	
6																2 - #6	2 - #6
7														2 - #6	2 - #6	2 - #6	2 - #7
8												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
9											2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8
10										2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8
12								2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-
14						2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-	-	-	-	-
16				2 - #6	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-
18			2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-
20		2 - #7	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	2 - #6
8															2 - #6	2 - #6	2 - #6
9														2 - #6	2 - #6	2 - #6	2 - #7
10												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
12										2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
14								2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-
16						2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-	-	-	-
18					2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-
20				2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - #6
10																2 - #6	2 - #6
12														2 - #6	2 - #6	2 - #6	2 - #7
14											2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
16									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
18							2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8
20						2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-	-

TABLE 5C - LOGIX XP-1 10" or 10.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																2 - #6	2 - #6
14															2 - #6	2 - #6	2 - #6
16												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
18										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
20								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																2 - #6	2 - #6
16															2 - #6	2 - #6	2 - #6
18												2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7
20									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																	2 - #6
18															2 - #6	2 - #6	2 - #6
20												2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored Point Load includes 1.2 and 1.6 for dead & live load, respectively.

TABLE 5D - LOGIX XP-1 12" or 12.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	2 - #6
5															2 - #6	2 - #6	2 - #6
6												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
7										2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-
8									2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-	-	-
9								2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	-	-	-	-	-
10							2 - #6	2 - #7	2 - #7	-	-	-	-	-	-	-	-
12					2 - #6	2 - #7	-	-	-	-	-	-	-	-	-	-	-
14			2 - #6	2 - #7	-	-	-	-	-	-	-	-	-	-	-	-	-
16		2 - #7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-5																	
6																2 - #6	2 - #6
7														2 - #6	2 - #6	2 - #6	2 - #7
8												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
9											2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
10									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8
12							2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-
14						2 - #6	2 - #6	2 - #7	2 - #8	2 - #8	2 - #8	-	-	-	-	-	-
16				2 - #6	2 - #7	2 - #8	-	-	-	-	-	-	-	-	-	-	-
18			2 - #6	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-
20		2 - #7	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																2 - #6	2 - #6
8															2 - #6	2 - #6	2 - #6
9														2 - #6	2 - #6	2 - #6	2 - #7
10												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
12									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
14							2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-
16						2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-	-	-	-
18				2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-
20			2 - #6	2 - #6	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-

D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - #6
10																2 - #6	2 - #6
12														2 - #6	2 - #6	2 - #6	2 - #7
14											2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
16								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8
18							2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8
20					2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	-	-

TABLE 5D - LOGIX XP-1 12" or 12.75" LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																2 - #6	2 - #6
14														2 - #6	2 - #6	2 - #6	2 - #6
16											2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
18									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7
20							2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																2 - #6	2 - #6
16														2 - #6	2 - #6	2 - #6	2 - #6
18											2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
20								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																2 - #6	2 - #6
18														2 - #6	2 - #6	2 - #6	2 - #6
20											2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored Point Load includes 1.2 and 1.6 for dead & live load, respectively.

TABLE 5E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

Where not shown otherwise, bottom steel is 2-#5

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	2 - #6
5															2 - #6	2 - #6	2 - #6
6												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
7										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8
8									2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8
9								2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-
10							2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-
12					2 - #6	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-
14				2 - #7	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-
16		2 - #6	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	2 - #6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-5																	
6																2 - #6	2 - #6
7														2 - #6	2 - #6	2 - #6	2 - #7
8												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
9											2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
10									2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8
12							2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-
14					2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-
16				2 - #6	2 - #7	2 - #8	-	-	-	-	-	-	-	-	-	-	-
18			2 - #6	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-
20		2 - #6	2 - #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																2 - #6	2 - #6
8															2 - #6	2 - #6	2 - #6
9														2 - #6	2 - #6	2 - #6	2 - #7
10												2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
12									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #8
14							2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8
16					2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #8	2 - #8	-	-	-	-	-
18				2 - #6	2 - #6	2 - #6	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-
20			2 - #6	2 - #6	2 - #7	2 - #8	2 - #8	-	-	-	-	-	-	-	-	-	-

D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - #6
10																2 - #6	2 - #6
12													2 - #6	2 - #6	2 - #6	2 - #6	2 - #7
14										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7
16								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8
18						2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8
20				2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8	2 - #8	-	-

TABLE 5E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

Based on 40 ksi reinforcing steel. Lintels tables for 60 ksi reinforcing steel are available for download at www.logixicf.com.

D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																2 - #6	2 - #6
14													2 - #6	2 - #6	2 - #6	2 - #6	2 - #6
16										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
18								2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7
20						2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7	2 - #7	2 - #8	2 - #8

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																2 - #6	2 - #6
16													2 - #6	2 - #6	2 - #6	2 - #6	2 - #6
18										2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7
20							2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7	2 - #7	2 - #7

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																2 - #6	2 - #6
18													2 - #6	2 - #6	2 - #6	2 - #6	2 - #6
20									2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #6	2 - #7	2 - #7

Notes:

1. Where not shown otherwise, bottom steel is 2-#5
2. Table is to be read in conjunction w/ **Figure 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Figure 4**.
5. Factored Point Load includes 1.2 and 1.6 for dead & live load, respectively.

15.2 – CANADIAN ENGINEERING ANALYSIS REPORT: IMPERIAL UNITS

INTRODUCTION

Logix XP-1 walls are intended to be used both above and below grade, and can carry large vertical as well as lateral loads. They are particularly effective for residential, commercial and industrial buildings; providing excellent insulation as well as thermal mass and structural strength. They can be easily adapted to accommodate concrete floors and other "non-standard" building systems.

Construction must be in conformance with the Logix XP-1 Design Manual, including assembly of formwork, bracing, accurate rebar positioning, concrete mix design and placement, and details for interconnection with the other building components.

STRUCTURAL DESIGN AND PERFORMANCE

The Logix XP-1 Building System can be used for an infinite variety of building situations with proper engineering. This report, with its load tables and diagrams, is intended to assist with the structural design of buildings using the Logix XP-1 system for the basement only, or continuing to a second floor and/or roof. Where unusual conditions are encountered, it is recommended that the user consult a designer who can evaluate the loadings to the various components and who can appreciate the limitations of "prescriptive" design under unusual conditions. Connection details have generally been excluded from this report because of the great variety of floor and roof systems that can be used with the Logix XP-1 wall system. The designer should refer to the Logix Design Manual and the literature for the various proprietary products that are available for connections, which are an important part of the total design.

REINFORCEMENT TABLES

Above- and below-grade walls and lintels were developed using the design criteria of Part 4 of the National Building Code of Canada 2010/2015, and CSA A23.3-04, Design of Concrete Structures.

The reinforcement tables allow for bar spacings common in residential and commercial construction.

LIMITATIONS

Building limitations used to develop above- and below-grade Tables include:

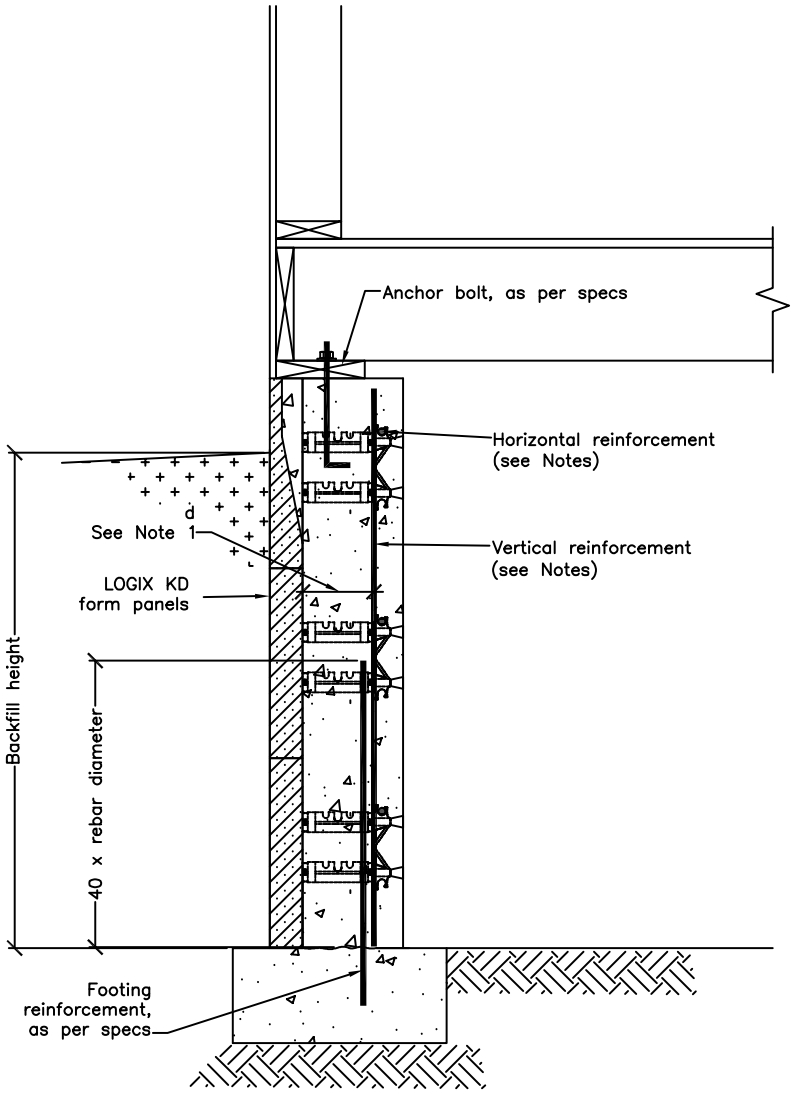
Building perimeter = 24.384 m (80 ft) max x 12.192 m (40 ft) max
Roof clear span = 12.192 m (40 ft) max
Floor clear span = 6.096 m (20 ft) max
Number of stories above grade = 2 max
Number of stories below grade = 1

Tables 3A to 3E and Tables 4A to 4E provide lintel tables for factored uniform and concentrated loading conditions, respectively.

In addition, crawl space reinforcement requirements were developed and can be found in Figure 1A.

More specific design assumptions and limitations are located with the corresponding reinforcement tables.

FIGURE 1A - CRAWL SPACE REINFORCEMENT REQUIREMENT



NOTES:

1. 6" (152mm) XP–1 Thick Logix wall: d = 4.25" (108mm)
   6.75" (171mm) XP–1 Thick Logix wall: d = 4.25" (108mm)
   8.25" (210mm) XP–1 Thick Logix wall: d = 6.5" (165mm)
   9" (228mm) XP–1 Thick Logix wall: d = 6.5" (165mm)
   10" (254mm) XP–1 Thick Logix wall: d = 8.25" (210mm)
   10.75" (273mm) XP–1 Thick Logix wall: d = 8.25" (210mm)
   12" (305mm) XP–1 Thick Logix wall: d = 10.25" (260mm)
   12.75" (324mm) XP–1 Thick Logix wall: d = 10.25" (260mm)
   14" (356mm) XP–1 Thick Logix wall: d = 12.25" (311mm)
   14.75" (375mm) XP–1 Thick Logix wall: d = 12.25" (311mm)

2. Min. vertical rebar, use #4@ max. 48" on centre (10M@1220mm) for 60ksi steel (#4@32" for 40ksi steel) for the following conditions (applicable to all LOGIX XP–1 wall sizes):
   Wall height: <= 4'–10" (1473mm)
   Equivalent fluid density: <= 75pcf (12kN/m^3) (w/ no surcharge)

3. Horizontal rebar (applicable to all LOGIX XP–1 wall sizes): #4@16" on center, max. spacing (10M@813mm). Closing rebar spacing is permitted, if required. Provide one addition #4 (10M) horizontal rebar in bottom and top course.

BELOW-GRADE WALL TABLES

NOTE FOR BELOW-GRADE WALL TABLES

Logix XP-1 below-grade Tables 1A to 1D shall be used in conjunction with corresponding Figures 2A to 2D, the notes listed below, and the building limitations noted in the "Reinforcement Tables", which form the basis of these tables.

1. Assumed interior face of Logix XP-1 below-grade wall is the exposed concrete side.
2. Tables do not consider seismic loads. For seismic load considerations refer to the Appendix in the Table of Contents. Factored snow load = 3.54 kPa
3. Horizontal rebar shall be 10M @ 16" o/c. Closer horizontal rebar spacing can be used with Logix XP-1 when required. Provide at least one 10M bar to be placed at the bottom course and top course.
4. Steel yield strength = 400MPa, 28 day concrete compressive strength = 20MPa
5. Deflection criteria = L/240
6. Assumed eccentricity = 3" (to account for loads on Logix Brick Ledge).
7. The basement walls must be supported at the top and bottom of the wall.
8. For light vehicles parked or travelling near the wall use reinforcement corresponding to 1 ft higher backfill.
9. Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
10. Provide two 15M bars (One 15M bar for 4" concrete core thickness) should be placed around all openings (along the vertical sides and bottom of opening), and extend a minimum of 2 ft beyond openings.
11. For walls with over 50% of height exposed to wind, also check rebar requirements for above-grade walls.
12. Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
13. Soil density is often referred to as "equivalent fluid density", and is the density of a liquid which would exert an equivalent horizontal load on a wall. The actual soil density is generally greater – ranging between 90 & 120pcf.
14. Consult a local licensed engineer for design of walls that fall outside the scope of the tables.

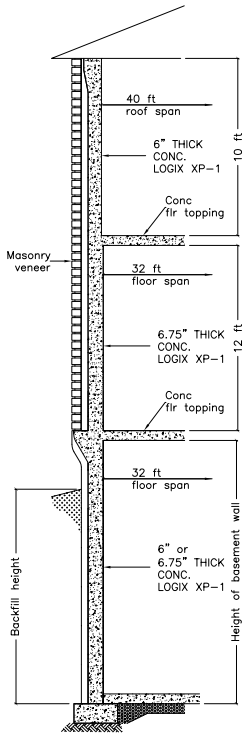


Fig 2A
Assumed typical flooring, wall & roof for **Table 1A**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 6 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

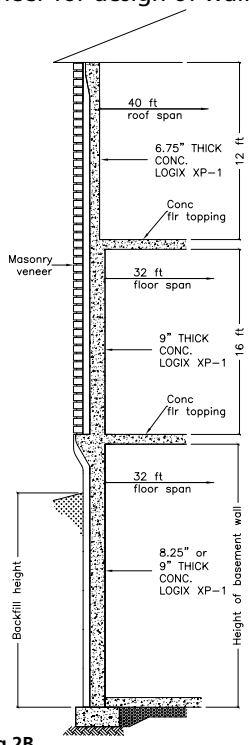


Fig 2B
Assumed typical flooring, wall & roof for **Table 1B**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 7.5 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

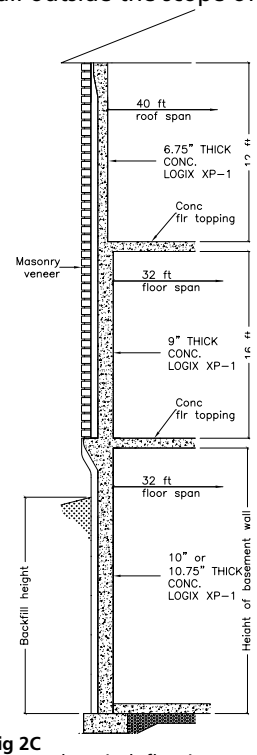


Fig 2C
Assumed typical flooring, wall & roof for **Table 1C**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 7.5 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

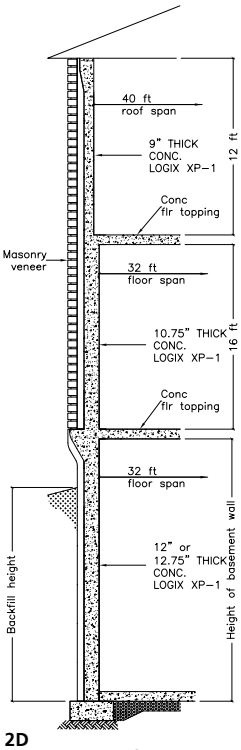


Fig 2D
Assumed typical flooring, wall & roof for **Table 1D**. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 8.3 kips/ft. And assumed interior face of Logix XP-1 below-grade wall to be exposed concrete side.

15.2 – CANADIAN ENGINEERING ANALYSIS REPORT: IMPERIAL UNITS

TABLE 1A - LOGIX XP-1 6" or 6.75" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINF.

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

LOGIX XP-1

Max. Height of Basement Wall, ft	Max. Unbalanced Backfill Height, ft	Vertical Bar Spacing, in.															
		Maximum Equivalent Density 30pcf				Maximum Equivalent Density 45pcf				Maximum Equivalent Density 60pcf				Maximum Equivalent Density 75pcf			
8	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	12	24	32	48	8	16	32	48
	6	16	32	48	48	12	24	32	48	8	16	24	40	6	12	16	32
	7	12	24	32	48	8	16	24	40	6	12	16	32	-	8	16	24
	8	8	16	24	48	6	12	16	32	-	8	12	24	-	8	8	16
9	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	40	48	12	24	32	48	8	16	24	48
	6	12	24	40	48	8	16	32	48	8	16	24	40	6	12	16	32
	7	8	16	32	48	8	16	16	32	6	12	16	24	-	8	12	16
	8	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	9	6	12	16	32	-	8	12	16	-	6	8	12	-	-	6	8
10	4	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	5	16	32	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	6	12	24	40	48	8	16	24	48	6	12	16	32	6	12	16	24
	7	8	16	24	48	6	12	16	32	-	8	16	24	-	8	12	16
	8	8	16	16	32	-	8	12	24	-	8	8	16	-	6	8	12
	9	6	12	16	24	-	8	12	16	-	6	8	12	-	-	6	8
	10	-	8	12	24	-	6	8	12	-	-	6	8	-	-	-	-
11	4	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	5	16	32	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	6	12	24	32	48	8	16	24	40	6	12	16	32	-	8	16	24
	7	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	8	6	12	16	32	-	8	12	16	-	6	8	16	-	-	6	12
	9	-	8	16	24	-	6	8	16	-	-	6	8	-	-	-	-
	10	-	8	12	16	-	-	8	12	-	-	-	-	-	-	-	-
	11	-	6	8	16	-	-	6	8	-	-	-	-	-	-	-	-
12	4	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	5	16	32	48	48	12	24	32	48	8	16	24	48	8	16	24	40
	6	12	24	32	48	8	16	24	40	6	12	16	32	-	8	16	24
	7	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	8	6	12	16	24	-	8	12	16	-	6	8	12	-	-	6	8
	9	-	8	12	24	-	6	8	12	-	-	6	8	-	-	-	-
	10	-	8	8	16	-	-	6	8	-	-	-	-	-	-	-	-
	11	-	6	8	12	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
		10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M
		Bar size															

NOTES:
1. Tables do not consider seismic loads. For seismic load considerations refer to the Appendix in the Table of Contents.
2. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 4.125"
3. Table 1A shall be read in conjunction with Fig 2A, and section "Notes for Below-grade Wall Tables."
4. 1 ft = 0.3048 m, 1 in = 25.4 mm, 1 pcf = 16.02 kg/m^3 = 0.157 kN/m^3
5. Where cells show "-" engineering is required.

TABLE 1B - LOGIX XP-1 8.25" or 9" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Max. Height of Basement Wall, ft	Max. Unbalanced Backfill Height, ft	Vertical Bar Spacing, in.															
		Maximum Equivalent Density 30pcf				Maximum Equivalent Density 45pcf				Maximum Equivalent Density 60pcf				Maximum Equivalent Density 75pcf			
8	4	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	5	16	40	48	48	16	40	48	48	16	40	48	48	16	32	48	48
	6	16	40	48	48	16	32	48	48	12	24	40	48	12	24	32	48
	7	16	40	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	8	16	32	48	48	8	16	32	48	8	16	24	40	6	12	16	32
9	4	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	5	16	40	48	48	16	40	48	48	16	40	48	48	16	32	48	48
	6	16	40	48	48	16	32	48	48	12	24	40	48	8	16	32	48
	7	16	32	48	48	12	24	32	48	8	16	24	48	8	16	24	40
	8	12	24	40	48	8	16	24	48	6	12	16	32	6	12	16	24
	9	12	24	32	48	8	16	24	40	6	12	16	24	-	8	12	24
10	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	40	48
	6	16	32	48	48	16	32	48	48	12	24	32	48	8	16	32	48
	7	16	32	48	48	12	24	32	48	8	16	24	40	6	12	16	32
	8	12	24	40	48	8	16	24	40	6	12	16	32	-	8	16	24
	9	8	16	32	48	6	12	16	32	-	8	16	24	-	8	12	16
	10	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
11	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	6	16	32	48	48	16	32	40	48	12	24	32	48	8	16	24	48
	7	16	32	48	48	8	16	32	48	8	16	24	40	6	12	16	32
	8	12	24	32	48	8	16	24	40	6	12	16	24	-	8	12	24
	9	8	16	24	48	6	12	16	32	-	8	12	24	-	8	8	16
	10	8	16	16	32	-	8	16	24	-	8	8	16	-	6	8	12
	11	6	12	16	32	-	8	12	16	-	6	8	12	-	-	6	12
12	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	6	16	32	48	48	12	24	40	48	12	24	32	48	8	16	24	40
	7	12	24	40	48	8	16	32	48	8	16	24	40	6	12	16	32
	8	8	16	32	48	8	16	24	32	6	12	16	24	-	8	12	16
	9	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	10	6	12	16	32	-	8	12	16	-	6	8	16	-	-	8	12
	11	6	12	16	24	-	8	8	16	-	-	8	12	-	-	6	8
	12	-	8	12	24	-	6	8	12	-	-	6	8	-	-	-	8
14	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	6	16	32	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	7	12	24	40	48	8	16	24	40	6	12	16	32	6	12	16	24
	8	8	16	24	48	6	12	16	32	-	8	16	24	-	8	12	16
	9	8	16	24	32	-	8	16	24	-	8	8	16	-	6	8	12
	10	6	12	16	24	-	8	12	16	-	6	8	12	-	-	6	8
	11	-	8	12	24	-	6	8	16	-	-	6	8	-	-	-	8
	12	-	8	12	16	-	-	8	12	-	-	-	8	-	-	-	6
	13	-	6	8	16	-	-	6	8	-	-	-	6	-	-	-	-
	14	-	6	8	12	-	-	-	8	-	-	-	-	-	-	-	-
16	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	12	24	40	48	12	24	32	48
	6	16	32	48	48	12	24	32	48	8	16	24	48	8	16	24	32
	7	12	24	32	48	8	16	24	40	6	12	16	32	-	8	16	24
	8	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	9	6	12	16	32	-	8	12	16	-	6	8	16	-	-	8	12
	10	-	8	16	24	-	6	8	16	-	-	6	12	-	-	6	8
	11	-	8	12	16	-	-	8	12	-	-	6	8	-	-	-	6
	12	-	6	8	16	-	-	6	8	-	-	-	6	-	-	-	-
	13	-	6	8	12	-	-	-	8	-	-	-	-	-	-	-	-
	14	-	-	6	8	-	-	-	6	-	-	-	-	-	-	-	-
	15	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
	16	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
		10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M
		Bar size															

NOTES:

1. Tables do not consider seismic loads. For seismic load considerations refer to the Appendix in the Table of Contents.
2. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 6.375"
3. **Table 1B** shall be read in conjunction with **Fig 2B**, and section "Notes for Below-grade Wall Tables."
4. 1 ft = 0.3048 m, 1 in = 25.4 mm, 1 pcf = 16.02 kg/m^3 = 0.157 kN/m^3
5. Where cells show "-" engineering is required.

15.2 – CANADIAN ENGINEERING ANALYSIS REPORT: IMPERIAL UNITS

TABLE 1C - LOGIX XP-1 10” or 10.75” THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Max. Height of Basement Wall, ft	Max. Unbalanced Backfill Height, ft	Vertical Bar Spacing, in.															
		Maximum Equivalent Density 30pcf				Maximum Equivalent Density 45pcf				Maximum Equivalent Density 60pcf				Maximum Equivalent Density 75pcf			
14	4	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	5	16	40	48	48	16	40	48	48	16	40	48	48	16	32	48	48
	6	16	40	48	48	16	32	48	48	12	24	40	48	12	24	32	48
	7	16	32	48	48	12	24	40	48	8	16	24	48	8	16	24	40
	8	12	24	40	48	8	16	24	48	6	12	16	32	6	12	16	24
	9	8	16	32	48	6	12	16	32	-	8	16	24	-	8	12	16
	10	8	16	24	40	-	8	16	24	-	8	12	16	-	6	8	16
	11	6	12	16	32	-	8	12	16	-	6	8	16	-	-	8	12
	12	-	8	16	24	-	6	8	16	-	-	8	12	-	-	6	8
	13	-	8	12	24	-	6	8	12	-	-	6	8	-	-	-	8
	14	-	8	12	16	-	-	8	12	-	-	-	8	-	-	-	6
16	4	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	5	16	40	48	48	16	40	48	48	16	40	48	48	16	32	48	48
	6	16	40	48	48	16	32	48	48	12	24	40	48	8	16	32	48
	7	16	32	48	48	12	24	32	48	8	16	24	40	6	12	16	32
	8	12	24	32	48	8	16	24	40	6	12	16	32	-	8	16	24
	9	8	16	24	48	6	12	16	32	-	8	12	24	-	8	12	16
	10	8	16	16	32	-	8	12	24	-	6	8	16	-	6	8	12
	11	6	12	16	24	-	8	12	16	-	6	8	12	-	-	6	8
	12	-	8	12	24	-	6	8	16	-	-	6	12	-	-	-	8
	13	-	8	12	16	-	-	8	12	-	-	-	8	-	-	-	6
	14	-	6	8	16	-	-	6	8	-	-	-	6	-	-	-	-
	15	-	6	8	12	-	-	-	8	-	-	-	6	-	-	-	-
	16	-	-	8	12	-	-	-	8	-	-	-	-	-	-	-	-
18	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	6	16	32	48	48	16	32	48	48	12	24	32	48	8	16	24	48
	7	16	32	48	48	8	16	32	48	8	16	24	40	6	12	16	32
	8	12	24	32	48	8	16	24	40	6	12	16	24	-	8	12	24
	9	8	16	24	40	6	12	16	24	-	8	12	16	-	6	8	16
	10	6	12	16	32	-	8	12	16	-	6	8	16	-	-	8	12
	11	-	8	16	24	-	6	8	16	-	-	8	12	-	-	6	8
	12	-	8	12	16	-	6	8	12	-	-	6	8	-	-	-	8
	13	-	6	8	16	-	-	6	8	-	-	-	8	-	-	-	6
	14	-	6	8	12	-	-	6	8	-	-	-	6	-	-	-	-
	15	-	-	8	12	-	-	-	8	-	-	-	-	-	-	-	-
	16	-	-	6	8	-	-	-	6	-	-	-	-	-	-	-	-
	17	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
20	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	40	48
	6	16	32	48	48	16	32	48	48	12	24	32	48	8	16	24	48
	7	16	32	40	48	8	16	32	48	8	16	24	40	6	12	16	32
	8	8	16	32	48	8	16	16	32	6	12	16	24	-	8	12	16
	9	8	16	24	40	-	8	16	24	-	8	12	16	-	6	8	16
	10	6	12	16	32	-	8	12	16	-	6	8	16	-	-	6	12
	11	-	8	12	24	-	6	8	16	-	-	6	12	-	-	-	8
	12	-	8	12	16	-	-	8	12	-	-	-	8	-	-	-	6
	13	-	6	8	16	-	-	6	8	-	-	-	6	-	-	-	-
	14	-	-	8	12	-	-	-	8	-	-	-	-	-	-	-	-
	15	-	-	6	8	-	-	-	6	-	-	-	-	-	-	-	-
	16	-	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
	17	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-
	19	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M
		Bar size															

NOTES:

1. Tables do not consider seismic loads. For seismic load considerations refer to the Appendix in the Table of Contents.
2. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Reinforcement to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar = 8.125”
3. Table 1C shall be read in conjunction with Fig 2C, and section “Notes for Below-grade Wall Tables.”
4. 1 ft = 0.3048 m, 1 in = 25.4 mm, 1 pcf = 16.02 kg/m^3 = 0.157 kN/m^3
5. Where cells show “-” engineering is required.

TABLE 1D - LOGIX XP-1 12" or 12.75" THICK CONC. BELOW-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Max. Height of Basement Wall, ft	Max. Unbalanced Backfill Height, ft	Vertical Bar Spacing, in.															
		Maximum Equivalent Density 30pcf				Maximum Equivalent Density 45pcf				Maximum Equivalent Density 60pcf				Maximum Equivalent Density 75pcf			
14	4	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	5	16	40	48	48	16	40	48	48	16	40	48	48	16	40	48	48
	6	16	40	48	48	16	40	48	48	16	32	48	48	12	24	40	48
	7	16	40	48	48	16	32	48	48	12	24	32	48	8	16	24	48
	8	16	32	48	48	12	24	32	48	8	16	24	40	6	12	16	32
	9	12	24	40	48	8	16	24	40	6	12	16	32	-	8	16	24
	10	8	16	32	40	6	12	16	32	-	8	16	24	-	8	12	16
	11	8	16	24	32	6	12	16	24	-	8	12	16	-	6	8	16
	12	6	12	16	24	-	8	12	24	-	6	8	16	-	6	8	12
	13	6	12	16	16	-	8	12	16	-	6	8	12	-	-	6	12
	14	-	8	16	16	-	6	8	16	-	-	8	12	-	-	6	8
16	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	6	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	7	16	32	48	48	16	32	40	48	12	24	32	48	8	16	24	48
	8	16	32	48	48	8	16	32	48	8	16	24	40	6	12	16	32
	9	12	24	32	40	8	16	24	40	6	12	16	32	-	8	12	24
	10	8	16	24	32	6	12	16	32	-	8	12	24	-	8	12	16
	11	8	16	24	24	-	8	16	24	-	8	12	16	-	6	8	12
	12	6	12	16	24	-	8	12	16	-	6	8	16	-	-	6	12
	13	-	8	16	16	-	6	8	16	-	-	8	12	-	-	6	8
	14	-	8	12	16	-	6	8	12	-	-	6	8	-	-	-	8
	15	-	8	12	12	-	-	8	12	-	-	-	8	-	-	-	6
	16	-	6	8	12	-	-	6	8	-	-	-	8	-	-	-	6
18	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	6	16	32	48	48	16	32	48	48	16	32	48	48	12	24	40	48
	7	16	32	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	8	16	32	40	48	8	16	32	48	8	16	24	40	6	12	16	32
	9	12	24	32	40	8	16	24	40	6	12	16	24	-	8	12	24
	10	8	16	24	32	6	12	16	24	-	8	12	16	-	6	8	16
	11	6	12	16	24	-	8	12	24	-	6	8	16	-	-	8	12
	12	6	12	16	16	-	8	12	16	-	6	8	12	-	-	6	8
	13	-	8	12	16	-	6	8	16	-	-	6	12	-	-	-	8
	14	-	8	12	12	-	-	8	12	-	-	6	8	-	-	-	6
	15	-	6	8	12	-	-	6	8	-	-	-	8	-	-	-	6
	16	-	6	8	8	-	-	6	8	-	-	-	6	-	-	-	-
	17	-	-	8	8	-	-	-	8	-	-	-	6	-	-	-	-
	18	-	-	6	8	-	-	-	6	-	-	-	-	-	-	-	-
20	4	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	5	16	32	48	48	16	32	48	48	16	32	48	48	16	32	48	48
	6	16	32	48	48	16	32	48	48	16	32	48	48	12	24	32	48
	7	16	32	48	48	12	24	40	48	8	16	32	48	8	16	24	40
	8	12	24	40	48	8	16	24	48	6	12	16	32	6	12	16	24
	9	8	16	32	40	6	12	16	32	-	8	16	24	-	8	12	16
	10	8	16	24	24	-	8	16	24	-	8	12	16	-	6	8	16
	11	6	12	16	24	-	8	12	16	-	6	8	16	-	-	8	12
	12	-	8	16	16	-	6	8	16	-	-	8	12	-	-	6	8
	13	-	8	12	16	-	6	8	12	-	-	6	8	-	-	-	8
	14	-	6	8	12	-	-	6	12	-	-	-	8	-	-	-	6
	15	-	6	8	8	-	-	6	8	-	-	-	6	-	-	-	-
	16	-	-	8	8	-	-	-	8	-	-	-	6	-	-	-	-
	17	-	-	6	8	-	-	-	6	-	-	-	-	-	-	-	-
	18	-	-	6	6	-	-	-	6	-	-	-	-	-	-	-	-
	19	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M	10M	15M	20M	25M
		Bar size															

NOTES:

1. Tables do not consider seismic loads. For seismic load considerations refer to the Appendix in the Table of Contents.
2. Based on interior face of Logix XP-1 below-grade wall to be exposed concrete side. Effective depth (out face of concrete to center of vertical rebar = 10.125"
3. Provide additional mat of rebar near exterior face of concrete surface:
   - Horizontal = 10M @ 16" o/c. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
   - Vertical = 10M to match vertical rebar spacing
4. **Table 1D** shall be read in conjunction with **Fig 2D**, and section "Notes for Below-grade Wall Tables."
5. 1 ft = 0.3048 m, 1 in = 25.4 mm, 1 pcf = 16.02 kg/m³ = 0.157 kN/m³
6. Where cells show "-" engineering is required.

ABOVE-GRADE WALL TABLE

Logix XP-1 above-grade tables cover three different construction types:

- One storey Logix XP-1 supporting roof only (Fig. 3A)
- One storey Logix XP-1 supporting 2nd storey wood frame plus wood frame roof (Fig. 3B)
- Two storey Logix XP-1 supporting 2nd storey Logix XP-1 plus wood frame roof (Fig. 3C)

For two story buildings, the height of the second story wall is equal to the height of the first story provided the height of the first storey wall is not more than 12 feet high.

For first story walls greater than 12 feet high, the second story wall height is a maximum of 12 feet.

With the exception of 6" Logix XP-1, the second story concrete wall thickness is one size less than the concrete core thickness used for the first storey wall.

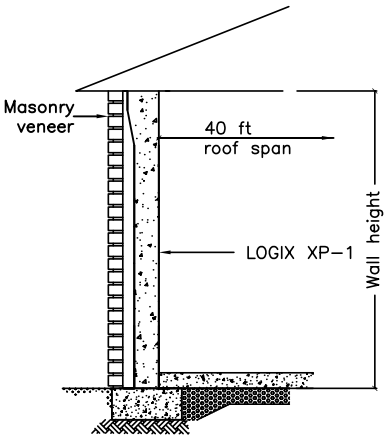


Fig 3A
Assumed typical flooring, wall & roof section for **Table 3, Logix XP-1 Supporting Roof Only**.

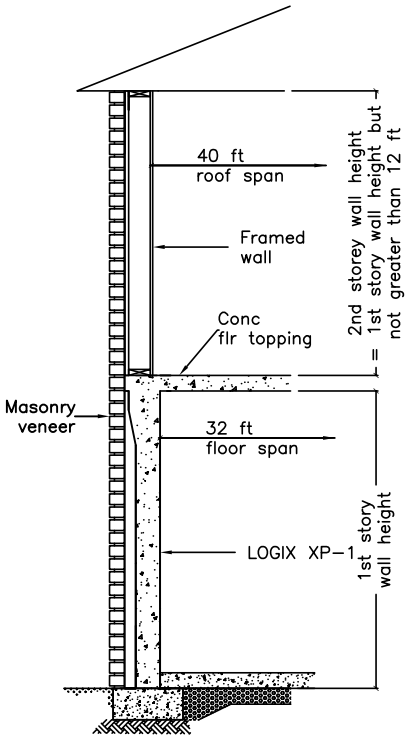


Fig 3B
Assumed typical flooring, wall & roof section for **Table 3, Logix XP-1 Supporting 2nd Story Wood Frame & Roof Structure**.

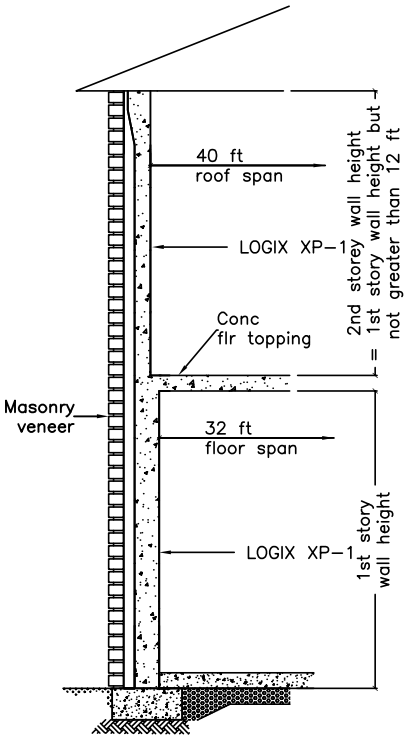


Fig 3C
Assumed typical flooring, wall & roof section for **Table 3, Logix XP-1 Supporting 2nd Story Logix XP-1 & Roof Structure**.

15.2 – CANADIAN ENGINEERING ANALYSIS REPORT: IMPERIAL UNITS

NOTES FOR ABOVE-GRADE WALL TABLES

The above-grade tables shall be used in conjunction with the notes listed below, the building limitations noted in the "Reinforcement Tables", which form the basis of this table.

1. 28 day concrete compressive strength = 20 MPa. Steel yield strength = 400 MPa.
2. Vertical rebar to be placed in middle of wall. Minimum horizontal rebar shall be:
   - 6" to 14.75" thick Logix XP-1 = 10M @ 16" o/c. Closer horizontal rebar spacing can be used with Logix XP-1 when required.

   Provide additional mat of rebar for 12" or thicker Logix XP-1
   - Horizontal rebar = 10M @ 16" o/c. Closer horizontal rebar spacing can be used with Logix XP-1 when required.
   - Vertical rebar = to match vertical bar spacing in **Table 2**
3. Provide at least one 10M bar to be placed at the bottom course and top course.
4. Max roof clear span = 40 ft. Max floor clear span = 20 ft.
5. Deflection criteria = L/240
6. Assumed eccentricity = 1".
7. Provide two 15M bars (One 15M bar for 4" concrete core thickness) to be placed around all openings (along the vertical sides and bottom of opening), and extend a minimum of 2 ft beyond openings.
8. The walls must be supported at the top and bottom of the wall.
9. Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
10. Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
11. Consult a local licensed engineer for design of walls that fall outside the scope of the above table.
12. 1 psf = 0.0479 kPa.
13. Governing load case is predominantly wind loading. Factored wind loading applicable by Provinces:

    British Columbia: 35psf
    Alberta: 40 psf
    Saskatchewan: 30psf
    Manitoba: 30psf
    Ontario: 25psf
    Quebec: 45psf
    New Brunswick: 35psf
    Nova Scotia: 35psf
    New Foundland: 55psf
    Prince Edward Island: 35psf

TABLE 2 - LOGIX XP-1 ABOVE-GRADE WALL MINIMUM VERTICAL REINFORCEMENT

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

Ground Floor LOGIX XP-1 Supporting Roof Only

Wall Height, ft	6" or 6.75" Thick Conc. Factored Wind Load, psf						8.25" or 9" Thick Conc. Factored Wind Load, psf						10" or 10.75" Thick Conc. Factored Wind Load, psf						12" or 12.75" Thick Conc. Factored Wind Load, psf						14" or 14.75" Thick Conc. Factored Wind Load, psf
	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25 to 55
8	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
10	48	48	48	48	48	40	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
12	48	48	40	32	32	24	48	48	48	48	48	40	48	48	48	48	48	48	48	48	48	48	48	48	48
14	32	32	24	24	24	16	40	40	40	40	32	24	40	40	40	40	40	32	48	48	48	48	48	40	48
16	16	16	16	16	16	12	24	24	24	24	24	16	24	24	24	24	24	24	32	32	32	32	32	32	32
18	12	12	12	12	12	8	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	24
20	8	8	8	8	8	6	12	12	12	12	12	12	12	12	12	12	12	12	16	16	16	16	16	16	16

Ground Floor LOGIX XP-1 Supporting 2nd Storey Wood Frame & Roof Structure

Wall Height, ft	6" or 6.75" Thick Conc. Factored Wind Load, psf						8.25" or 9" Thick Conc. Factored Wind Load, psf						10" or 10.75" Thick Conc. Factored Wind Load, psf						12" or 12.75" Thick Conc. Factored Wind Load, psf						14" or 14.75" Thick Conc. Factored Wind Load, psf
	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25 to 55
8	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
9	48	48	48	48	48	40	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
10	40	40	40	40	40	32	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
12	32	32	32	32	24	24	40	40	40	40	40	32	40	40	40	40	40	40	40	40	40	40	40	40	40
14	24	24	24	24	16	16	32	32	32	32	32	24	32	32	32	32	32	32	40	40	40	40	40	40	40
16	16	16	16	16	12	12	16	16	16	16	16	16	24	24	24	24	24	24	24	24	24	24	24	24	24
18	8	8	8	8	8	8	12	12	12	12	12	12	16	16	16	16	16	16	16	16	16	16	16	16	16
20	6	6	6	6	6	6	8	8	8	8	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12

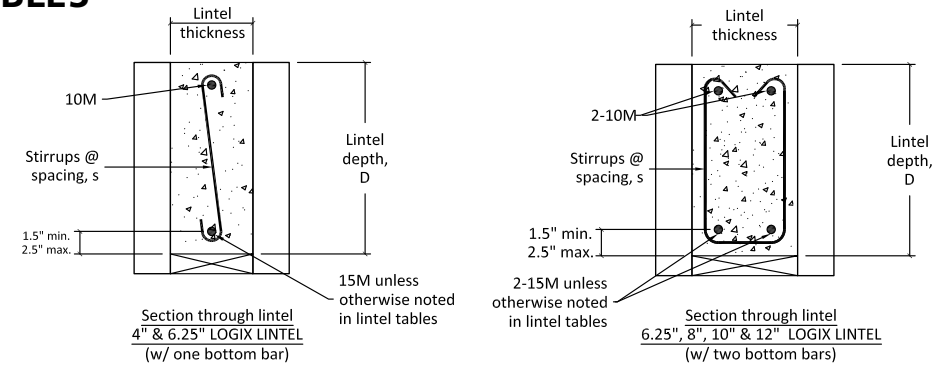
Ground Floor LOGIX XP-1 Supporting 2nd Storey LOGIX XP-1 & Roof Structure

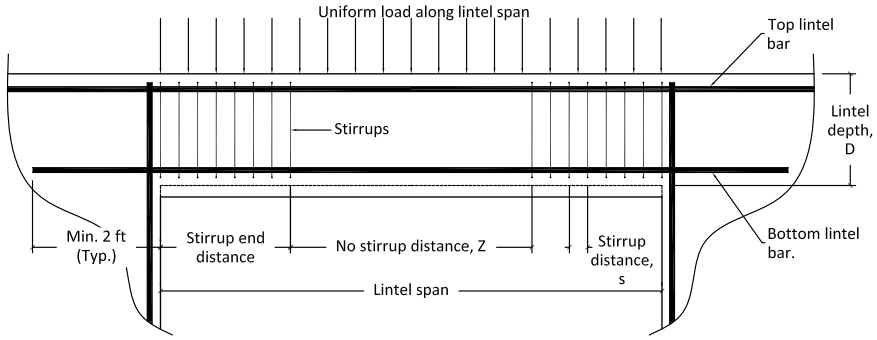
Wall Height, ft	6" or 6.75" Thick Conc. Factored Wind Load, psf						8.25" or 9" Thick Conc. Factored Wind Load, psf						10" or 10.75" Thick Conc. Factored Wind Load, psf						12" or 12.75" Thick Conc. Factored Wind Load, psf						14" or 14.75" Thick Conc. Factored Wind Load, psf
	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25	30	35	40	45	55	25 to 55
8	32	32	32	32	32	32	40	40	40	40	40	40	40	40	40	40	40	40	32	32	32	32	32	32	32
9	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
10	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
12	24	24	24	24	24	16	24	24	24	24	24	24	32	32	32	32	32	32	24	24	24	24	24	24	24
14	16	16	16	16	16	12	16	16	16	16	16	16	16	16	16	16	16	16	24	24	24	24	24	24	24
16	8	8	8	8	8	8	12	12	12	12	12	12	16	16	16	16	16	16	16	16	16	16	16	16	16
18	6	6	6	6	6	6	8	8	8	8	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12
20	-	-	-	-	-	-	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8

NOTES:

1. **Table 2** must be used in conjunction with the notes listed under **"Notes For Above-Grade Wall Table"**.
2. Vertical bar spacing is for 15M rebar. 10M rebar can be substituted provided the spacing is multiplied by 0.5. Spacing shall be no more than 48 inches on center.
3. See **"Notes For Above-Grade Wall Table"** for wind loading applicable by Provinces.
4. 1 psf = 0.0479 kPa, 1" = 25.4 mm, 1 ft = 0.3048 m
5. Where cells show "-" engineering is required.

LINTEL TABLES





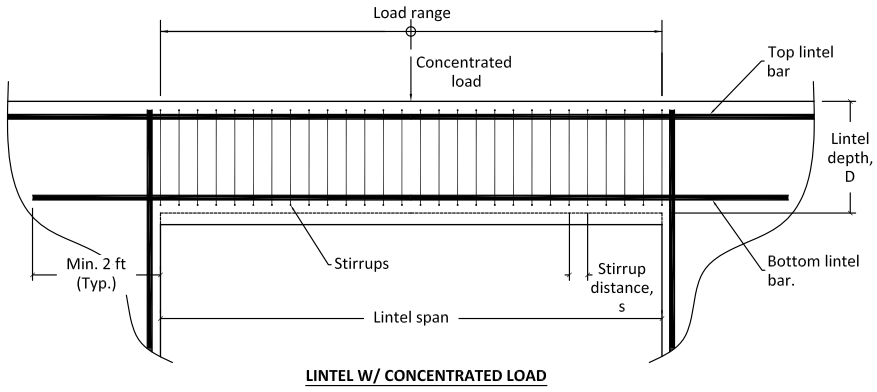


Fig 4
Lintel reinforcement

The lintel tables cover a wide range of uniform and concentrated load conditions, and span lengths. The depth of the lintels range from 8 inch to 30 inches. Uniform and concentrated loading are considered to be concentric and centered on the lintel. Uniform loads act along the entire lintel span, such as from roof trusses at 2 ft spacing. Concentrated load lintel tables consider only a single concentrated load acting anywhere along the lintel span. In addition, the lintel tables do not consider uniform and concentrated loads to act simultaneously on the lintel.

The following notes are common to both uniform and concentrated load lintel tables:

1. 28 day concrete compressive strength = 20 MPa. Steel yield strength = 400 MPa.
2. Stirrups are D9.5 wire or 10M bars, bent as shown, and conforming to CSA -A23.1.
3. Shaded areas of the lintel tables require reinforcement, except for length Z.
4. Dimension D is to the concrete surface, not counting bucks or top plate.
5. Bottom steel must extend a min. 2 ft beyond opening, and no splices are permitted.
6. Deflection is limited to L/360, not considering long term effects. Long term deflection could be twice the short term depending on the nature of the load.
7. Seismic and wind loads are not considered.
8. Shear planes are not interrupted by embedded joists.
9. Top of lintel is assumed to be laterally restrained.

These tables should only be used if the above conditions are met. For other conditions, consult a structural Engineer.

TABLE 3A - LOGIX XP-1 6” or 6.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Where not shown otherwise, bottom steel is 1-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5					1 - 20M	1 - 20M
6				1 - 20M	-	-
7			1 - 20M	-	-	-
8		1 - 20M	-	-	-	-
9		-	-	-	-	-
10	1 - 20M	-	-	-	-	-
12	-	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		36	25	19	15	13

s=4", D=10"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6					1 - 20M	1 - 20M
7				1 - 20M	2 - 15M	1 - 25M
8			1 - 20M	2 - 15M	1 - 25M	-
9		1 - 20M	2 - 15M	1 - 25M	-	-
10		1 - 20M	-	-	-	-
12	1 - 20M	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		44	31	23	19	16

s=5", D=12"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						1 - 20M
7					1 - 20M	1 - 20M
8				1 - 20M	2 - 15M	-
9			1 - 20M	2 - 15M	2 - 20M	2 - 20M
10		1 - 20M	2 - 15M	2 - 20M	2 - 20M	-
12		2 - 15M	2 - 20M	-	-	-
14	1 - 20M	-	-	-	-	-
16	2 - 20M	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)	93	52	36	28	22	19

s=7", D=16"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					1 - 20M	1 - 20M
9				1 - 20M	1 - 20M	2 - 15M
10			1 - 20M	1 - 20M	2 - 15M	2 - 20M
12		1 - 20M	2 - 15M	2 - 20M	2 - 20M	-
14		1 - 20M	2 - 20M	-	-	-
16	1 - 20M	2 - 15M	-	-	-	-
18	1 - 20M	2 - 20M	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		70	49	38	31	26

s=9", D=20"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9					1 - 20M	1 - 20M
10				1 - 20M	1 - 20M	2 - 15M
12			1 - 20M	2 - 15M	2 - 15M	2 - 20M
14		1 - 20M	2 - 15M	2 - 20M	2 - 20M	-
16		-	2 - 20M	2 - 20M	-	-
18	1 - 20M	2 - 15M	2 - 20M	-	-	-
20	1 - 20M	2 - 20M	-	-	-	-
No stirrup distance, Z (in.)		88	62	48	39	33

s=11", D=24"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						-
10					1 - 20M	1 - 20M
12				1 - 20M	2 - 15M	2 - 15M
14			1 - 20M	2 - 15M	2 - 20M	2 - 20M
16		1 - 20M	2 - 15M	2 - 20M	2 - 20M	-
18		2 - 15M	2 - 20M	-	-	-
20	1 - 20M	-	2 - 20M	-	-	-
No stirrup distance, Z (in.)		104	75	58	48	40

s=14", D=30"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					1 - 20M	1 - 20M
14			1 - 20M	1 - 20M	2 - 15M	2 - 15M
16		-	1 - 20M	2 - 15M	2 - 20M	2 - 20M
18		1 - 20M	2 - 15M	2 - 20M	2 - 20M	-
20		2 - 15M	2 - 20M	2 - 20M	-	-
No stirrup distance, Z (in.)			92	72	60	51

Notes:

1. Where not shown otherwise, bottom steel is 1-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5. Factored uniform load includes 1.25 and 1.5 for dead and live load, respectively.

TABLE 3B - LOGIX XP-1 8.25” or 9” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - 20M	-
8				-	-	-
9			-	-	-	-
10		-	-	-	-	-
12	2 - 20M	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			40	31	25	21

s=4", D=10"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - 20M	2 - 20M
9				2 - 20M	2 - 20M	-
10			2 - 20M	-	-	-
12		2 - 20M	-	-	-	-
14	2 - 20M	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		70	49	38	31	26

s=5", D=12"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9					2 - 20M	2 - 20M
10				2 - 20M	2 - 20M	2 - 25M
12			2 - 20M	2 - 25M	2 - 25M	-
14		2 - 20M	2 - 25M	-	-	-
16		2 - 25M	-	-	-	-
18	2 - 25M	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		81	57	44	36	31

s=7", D=16"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - 20M
12				2 - 20M	2 - 20M	2 - 25M
14			2 - 20M	2 - 20M	2 - 25M	2 - 25M
16		2 - 20M	2 - 20M	2 - 25M	-	-
18		2 - 20M	2 - 25M	-	-	-
20		2 - 25M	-	-	-	-
No stirrup distance, Z (in.)		108	77	61	50	42

s=9", D=20"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - 20M
14				2 - 20M	2 - 20M	2 - 25M
16			2 - 20M	2 - 20M	2 - 25M	2 - 25M
18		2 - 20M	2 - 20M	2 - 25M	2 - 25M	-
20		2 - 20M	2 - 25M	2 - 25M	-	-
No stirrup distance, Z (in.)			97	76	63	53

s=11", D=24"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14					2 - 20M	2 - 20M
16				2 - 20M	2 - 20M	2 - 25M
18			2 - 20M	2 - 25M	2 - 25M	2 - 25M
20		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
No stirrup distance, Z (in.)			114	91	75	64

s=14", D=30"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14						2 - 20M
16					2 - 20M	2 - 20M
18				2 - 20M	2 - 20M	2 - 25M
20			2 - 20M	2 - 25M	2 - 25M	2 - 25M
No stirrup distance, Z (in.)				111	93	80

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5. Factored uniform load includes 1.25 and 1.5 for dead and live load, respectively.

TABLE 3C - LOGIX XP-1 10” or 10.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - 20M	-
8				-	-	-
9			-	-	-	-
10		-	-	-	-	-
12	2 - 20M	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			40	31	25	21

s=4", D=10"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - 20M	2 - 20M
9				2 - 20M	2 - 20M	-
10			2 - 20M	-	-	-
12		2 - 20M	-	-	-	-
14	2 - 20M	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		70	49	38	31	26

s=5", D=12"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9					2 - 20M	2 - 20M
10				2 - 20M	2 - 20M	2 - 25M
12			2 - 20M	2 - 25M	2 - 25M	-
14		2 - 20M	2 - 25M	-	-	-
16		2 - 25M	-	-	-	-
18	2 - 25M	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		81	57	44	36	31

s=7", D=16"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - 20M
12				2 - 20M	2 - 20M	2 - 25M
14			2 - 20M	2 - 20M	2 - 25M	2 - 25M
16		2 - 20M	2 - 20M	2 - 25M	-	-
18		2 - 20M	2 - 25M	-	-	-
20		2 - 25M	-	-	-	-
No stirrup distance, Z (in.)		108	77	61	50	42

s=9", D=20"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - 20M
14				2 - 20M	2 - 20M	2 - 25M
16			2 - 20M	2 - 20M	2 - 25M	2 - 25M
18		2 - 20M	2 - 20M	2 - 25M	2 - 25M	-
20		2 - 20M	2 - 25M	2 - 25M	-	-
No stirrup distance, Z (in.)			97	76	63	53

s=11", D=24"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14					2 - 20M	2 - 20M
16				2 - 20M	2 - 20M	2 - 25M
18			2 - 20M	2 - 25M	2 - 25M	2 - 25M
20		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
No stirrup distance, Z (in.)			114	91	75	64

s=14", D=30"

Opening ft	Factored Uniform Load, lb/ft 400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14						2 - 20M
16					2 - 20M	2 - 20M
18				2 - 20M	2 - 20M	2 - 25M
20			2 - 20M	2 - 25M	2 - 25M	2 - 25M
No stirrup distance, Z (in.)				111	93	80

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5. Factored uniform load includes 1.25 and 1.5 for dead and live load, respectively.

TABLE 3D - LOGIX XP-1 12” or 12.75” THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - 20M	2 - 20M
8				2 - 20M	-	-
9			-	-	-	-
10		2 - 20M	-	-	-	-
12	2 - 20M	-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			47	36	29	25

s=4", D=10"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - 20M	2 - 20M
9				2 - 20M	2 - 20M	2 - 25M
10			2 - 20M	2 - 20M	2 - 25M	-
12		2 - 20M	2 - 25M	-	-	-
14		-	-	-	-	-
16	2 - 25M	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			57	44	36	31

s=5", D=12"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9					2 - 20M	2 - 20M
10				2 - 20M	2 - 20M	2 - 25M
12			2 - 20M	2 - 25M	2 - 25M	-
14		2 - 20M	2 - 25M	-	-	-
16		2 - 25M	-	-	-	-
18	2 - 25M	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)		94	67	52	43	36

s=7", D=16"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - 20M
12				2 - 20M	2 - 20M	2 - 25M
14			2 - 20M	2 - 20M	2 - 25M	2 - 25M
16		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
18		2 - 20M	2 - 25M	-	-	-
20	2 - 20M	2 - 25M	-	-	-	-
No stirrup distance, Z (in.)			90	71	58	50

s=9", D=20"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						2 - 20M
14				2 - 20M	2 - 20M	2 - 25M
16			2 - 20M	2 - 20M	2 - 25M	2 - 25M
18		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
20		2 - 20M	2 - 25M	2 - 25M	-	-
No stirrup distance, Z (in.)			112	89	74	63

s=11", D=24"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14					2 - 20M	2 - 20M
16				2 - 20M	2 - 20M	2 - 25M
18			2 - 20M	2 - 25M	2 - 25M	2 - 25M
20		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
No stirrup distance, Z (in.)				105	88	75

s=14", D=30"						
Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14						2 - 20M
16					2 - 20M	2 - 20M
18			2 - 20M	2 - 20M	2 - 25M	2 - 25M
20			2 - 20M	2 - 25M	2 - 25M	2 - 25M
No stirrup distance, Z (in.)					108	93

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5. Factored uniform load includes 1.25 and 1.5 for dead and live load, respectively.

15.2 – CANADIAN ENGINEERING ANALYSIS REPORT: IMPERIAL UNITS

TABLE 3E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH UNIFORM LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7					2 - 20M	2 - 20M
8				2 - 20M	-	-
9			2 - 20M	-	-	-
10		2 - 20M	-	-	-	-
12		-	-	-	-	-
14	-	-	-	-	-	-
16	-	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)				42	34	29

s=4", D=10"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8					2 - 20M	2 - 20M
9				2 - 20M	2 - 20M	2 - 25M
10			2 - 20M	2 - 20M	2 - 25M	2 - 25M
12		2 - 20M	2 - 25M	-	-	-
14		2 - 25M	-	-	-	-
16	2 - 25M	-	-	-	-	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			66	51	42	35

s=5", D=12"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9					2 - 20M	2 - 20M
10				2 - 20M	2 - 20M	2 - 25M
12			2 - 20M	2 - 25M	2 - 25M	2 - 25M
14		2 - 20M	2 - 25M	-	-	-
16		2 - 25M	-	-	-	-
18	2 - 25M	-	-	-	-	-
20	-	-	-	-	-	-
No stirrup distance, Z (in.)			77	60	49	42

s=7", D=16"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						2 - 20M
12				2 - 20M	2 - 20M	2 - 25M
14			2 - 20M	2 - 20M	2 - 25M	2 - 25M
16		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
18		2 - 20M	2 - 25M	-	-	-
20	2 - 20M	2 - 25M	-	-	-	-
No stirrup distance, Z (in.)			102	81	67	57

s=9", D=20"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12					2 - 20M	2 - 20M
14				2 - 20M	2 - 20M	2 - 25M
16			2 - 20M	2 - 25M	2 - 25M	2 - 25M
18		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
20		2 - 20M	2 - 25M	2 - 25M	-	-
No stirrup distance, Z (in.)				101	84	72

s=11", D=24"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14					2 - 20M	2 - 20M
16			2 - 20M	2 - 20M	2 - 25M	2 - 25M
18			2 - 20M	2 - 25M	2 - 25M	2 - 25M
20		2 - 20M	2 - 25M	2 - 25M	2 - 25M	-
No stirrup distance, Z (in.)				119	100	86

s=14", D=30"

Opening	Factored Uniform Load, lb/ft					
ft	400	800	1200	1600	2000	2400
3						
4						
5						
6						
7						
8						
9						
10						
12						
14						2 - 20M
16				2 - 20M	2 - 20M	2 - 20M
18			2 - 20M	2 - 20M	2 - 25M	2 - 25M
20		2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
No stirrup distance, Z (in.)						106

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5. Factored uniform load includes 1.25 and 1.5 for dead and live load, respectively.

TABLE 4A - LOGIX XP-1 6” or 6.75” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Where not shown otherwise, bottom steel is 1-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																1 - 20M	1 - 20M
4													1 - 20M	1 - 20M	1 - 20M	-	-
5										1 - 20M	1 - 20M	1 - 20M	1 - 20M	-	-	-	-
6									1 - 20M	1 - 20M	-	-	-	-	-	-	-
7							1 - 20M	1 - 20M	1 - 20M	-	-	-	-	-	-	-	-
8						1 - 20M	1 - 20M	-	-	-	-	-	-	-	-	-	-
9						1 - 20M	-	-	-	-	-	-	-	-	-	-	-
10					1 - 20M	-	-	-	-	-	-	-	-	-	-	-	-
12				-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																1 - 20M	1 - 20M
5														1 - 20M	1 - 20M	1 - 20M	2 - 15M
6												1 - 20M	1 - 20M	1 - 20M	-	2 - 15M	-
7										1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	-	-
8									1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	-	-	-
9								1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	-	-	-	-	-
10							1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	-	-	-	-	-	-
12					1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	-	-	-	-	-	-	-	-
14				1 - 20M	1 - 20M	-	-	-	-	-	-	-	-	-	-	-	-
16				2 - 15M	-	-	-	-	-	-	-	-	-	-	-	-	-
18			2 - 15M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	
5																1 - 20M	1 - 20M
6															1 - 20M	1 - 20M	1 - 20M
7													1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M
8											1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 20M
9										1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 20M	2 - 20M
10									1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M
12							1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	-	-
14						1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-
16					1 - 20M	1 - 20M	2 - 15M	-	2 - 20M	2 - 20M	-	-	-	-	-	-	-
18				1 - 20M	2 - 15M	2 - 20M	2 - 20M	-	-	-	-	-	-	-	-	-	-
20			1 - 20M	-	2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																1 - 20M	1 - 20M
8															1 - 20M	1 - 20M	1 - 20M
9														1 - 20M	1 - 20M	1 - 20M	1 - 20M
10												1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M
12										1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 20M
14								1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M
16							1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	-
18					1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-
20				1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-

TABLE 4A - LOGIX XP-1 6” or 6.75” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont’d

s=9", D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																1 - 20M	1 - 20M
10															1 - 20M	1 - 20M	1 - 20M
12													1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M
14											1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M
16									1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 20M	2 - 20M
18							1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M
20						1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M	2 - 20M	-

s=11", D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	
10																	1 - 20M
12															1 - 20M	1 - 20M	1 - 20M
14													1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M
16											1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M
18									1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 20M
20							1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M	2 - 15M	2 - 20M	2 - 20M

s=14", D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																	1 - 20M
14																1 - 20M	1 - 20M
16														1 - 20M	1 - 20M	1 - 20M	1 - 20M
18											1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M
20									1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	1 - 20M	2 - 15M	2 - 15M	2 - 15M

Notes:

1. Where not shown otherwise, bottom steel is 1-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5.. Factored Point Load inlcude 1.25 and 1.5 for dead and live load, respectively.

TABLE 4B - LOGIX XP-1 8.25” or 9” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	
5																-	-
6															-	-	-
7													-	-	-	-	-
8											-	-	-	-	-	-	-
9										-	-	-	-	-	-	-	-
10								-	-	-	-	-	-	-	-	-	-
12						-	-	-	-	-	-	-	-	-	-	-	-
14				-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																2 - 20M	2 - 20M
8															2 - 20M	2 - 20M	2 - 20M
9														2 - 20M	2 - 20M	2 - 20M	-
10													2 - 20M	2 - 20M	2 - 20M	-	-
12										2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-	-
14							2 - 20M	2 - 20M	-	-	-	-	-	-	-	-	-
16					2 - 20M	2 - 20M	-	-	-	-	-	-	-	-	-	-	-
18				2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-	-
20			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	
8																	
9																2 - 20M	2 - 20M
10															2 - 20M	2 - 20M	2 - 20M
12													2 - 20M	2 - 20M	2 - 20M	2 - 20M	-
14											2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-
16									2 - 20M	2 - 20M	2 - 20M	-	-	-	-	-	-
18							2 - 20M	2 - 20M	-	-	-	-	-	-	-	-	-
20					2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7-10																	
12																	2 - 20M
14															2 - 20M	2 - 20M	2 - 20M
16														2 - 20M	2 - 20M	2 - 20M	2 - 25M
18											2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M
20										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M

TABLE 4B - LOGIX XP-1 8.25” or 9” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont’d

s=9", D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-7																	
8-14																	
16																2 - 20M	2 - 20M
18															2 - 20M	2 - 20M	2 - 20M
20													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M

s=11", D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-16																	
18																	2 - 20M
20															2 - 20M	2 - 20M	2 - 20M

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-20																	

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.

5.. Factored Point Load inlcude 1.25 and 1.5 for dead and live load, respectively.

TABLE 4C - LOGIX XP-1 10” or 10.75” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	
5																	2 - 20M
6															2 - 20M	2 - 20M	2 - 20M
7													2 - 20M	2 - 20M	2 - 20M	-	-
8											2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-
9										2 - 20M	2 - 20M	2 - 20M	-	-	-	-	-
10									2 - 20M	2 - 20M	-	-	-	-	-	-	-
12						2 - 20M	-	-	-	-	-	-	-	-	-	-	-
14				2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-	-
16			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	2 - 20M
8															2 - 20M	2 - 20M	2 - 20M
9														2 - 20M	2 - 20M	2 - 20M	-
10													2 - 20M	2 - 20M	2 - 20M	-	-
12										2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-	-
14								2 - 20M	2 - 20M	-	-	-	-	-	-	-	-
16						2 - 20M	-	-	-	-	-	-	-	-	-	-	-
18				2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-	-
20			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	
8																	
9																	2 - 20M
10																2 - 20M	2 - 20M
12													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
14											2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
16									2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-
18							2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-
20					2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-

s=7", D=16"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																	2 - 20M
14															2 - 20M	2 - 20M	2 - 20M
16													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
18											2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M
20									2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M

TABLE 4C - LOGIX XP-1 10" or 10.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

s=9", D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																2 - 20M	2 - 20M
18															2 - 20M	2 - 20M	2 - 20M
20												2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-16																	
18																2 - 20M	2 - 20M
20															2 - 20M	2 - 20M	2 - 20M

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-20																	

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5.. Factored Point Load inlcude 1.25 and 1.5 for dead and live load, respectively.

TABLE 4D - LOGIX XP-1 12” or 12.75” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	
5																	2 - 20M
6															2 - 20M	2 - 20M	2 - 20M
7														2 - 20M	2 - 20M	2 - 20M	-
8												2 - 20M	2 - 20M	2 - 20M	-	-	-
9										2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-	-
10									2 - 20M	2 - 20M	2 - 20M	-	-	-	-	-	-
12							2 - 20M	-	-	-	-	-	-	-	-	-	-
14					-	-	-	-	-	-	-	-	-	-	-	-	-
16			2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	2 - 20M
8																2 - 20M	2 - 20M
9															2 - 20M	2 - 20M	2 - 20M
10													2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M
12										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
14								2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-
16							2 - 20M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-
18					2 - 20M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-	-	-
20			2 - 20M	2 - 25M	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - 20M
10																2 - 20M	2 - 20M
12													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
14											2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
16									2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M	-
18							2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-
20						2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	
10																	
12																	2 - 20M
14															2 - 20M	2 - 20M	2 - 20M
16													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
18										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M
20								2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M

TABLE 4D - LOGIX XP-1 12” or 12.75” THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont’d

D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																	2 - 20M
16																2 - 20M	2 - 20M
18														2 - 20M	2 - 20M	2 - 20M	2 - 20M
20											2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-16																	
18																2 - 20M	2 - 20M
20														2 - 20M	2 - 20M	2 - 20M	2 - 20M

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-18																	
20																2 - 20M	2 - 20M

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5.. Factored Point Load inlcude 1.25 and 1.5 for dead and live load, respectively.

TABLE 4E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD

Where not shown otherwise, bottom steel is 2-15M

NOTE: LOGIX recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being used.

s=3", D=8"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3																	
4																	
5																	2 - 20M
6															2 - 20M	2 - 20M	2 - 20M
7														2 - 20M	2 - 20M	2 - 20M	-
8												2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-
9										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-
10									2 - 20M	2 - 20M	2 - 20M	2 - 20M	-	-	-	-	-
12							2 - 20M	2 - 20M	-	-	-	-	-	-	-	-	-
14					2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-
16				-	-	-	-	-	-	-	-	-	-	-	-	-	-
18		2 - 20M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

s=4", D=10"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-6																	
7																	2 - 20M
8																2 - 20M	2 - 20M
9															2 - 20M	2 - 20M	2 - 20M
10													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
12										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
14								2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-	-
16						2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	-	-	-	-	-	-	-
18					2 - 20M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-	-	-
20			2 - 20M	2 - 25M	-	-	-	-	-	-	-	-	-	-	-	-	-

s=5", D=12"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-8																	
9																	2 - 20M
10															2 - 20M	2 - 20M	2 - 20M
12													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
14										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
16								2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M	-
18							2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M	-	-	-
20					2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	-	-	-	-	-	-	-	-

s=7", D=16"

Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-10																	
12																	2 - 20M
14															2 - 20M	2 - 20M	2 - 20M
16												2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M
18										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M
20								2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M	2 - 25M	2 - 25M

TABLE 4E - LOGIX XP-1 14" or 14.75" THICK LINTEL REINFORCEMENT WITH CONCENTRATED LOAD Cont'd

D=20"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-12																	
14																	2 - 20M
16															2 - 20M	2 - 20M	2 - 20M
18													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M
20										2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 25M	2 - 25M

D=24"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-14																	
16																	2 - 20M
18															2 - 20M	2 - 20M	2 - 20M
20													2 - 20M	2 - 20M	2 - 20M	2 - 20M	2 - 20M

D=30"																	
Opening	Factored Uniform Load, lb/ft																
ft	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	8000	9000	10000
3-18																	
20																2 - 20M	2 - 20M

Notes:

1. Where not shown otherwise, bottom steel is 2-15M
2. Table is to be read in conjunction w/ **Fig 4**.
3. Where spaces contain "-" the bar is presumed to be less economical and/or practical. Alternatively, consult with a local engineer to determine if a practical bar size is possible based on local load conditions.
4. Blank regions require no stirrups. Shaded regions require stirrups. For stirrup information refer to **Fig 4**.
5.. Factored Point Load inlcude 1.25 and 1.5 for dead and live load, respectively.

NOTE: Logix recommends builders, owners and/or designers using these tables confirm that on-site building conditions are w/in the scope of the tables being

Load Bearing Soil Classifications[1]

MINIMUM LOAD BEARING VALUE[2], psf	SOIL DESCRIPTION
2000 psf	Clay, sandy clay, silty clay, and clayey silt
3000 psf	Sand, silty sand, clayey sand, silty gravel, and clayey gravel
4000 psf	Sandy gravel and medium stiff clay
> 4000 psf	Stiff clay, gravel, sand, sedimentary rock, and crystalline bedrock.

1. User must verify that the values in this table agree with local codes and practices.
2. Tabulated values are the presumed strength of the soil, undisturbed (the maximum design load bearing value for the basement or foundation wall footing).

Equivalent Fluid Density Soil Classification[1, 2]

MAXIMUM EQUIVALENT FLUID DENSITY, pcf	USC[2] CLASSIFICATION	SOIL DESCRIPTION
30 pcf	GW, GP, SW, SP	Well-drained cohesionless soils such as clean (few or no fines) sand and gravels.
45 pcf	GM, GC, SM, SM-SC, ML	Well-drained cohesionless soils such as sand and gravels containing silt or clay.
60 pcf	SC, MH, CL, CH, ML-CL	Well-drained inorganic silts or clays that are broken up into smaller pieces.

1. User must verify that the values in this table agree with local codes and practices.
2. USC - Uniform soil classification

15.4 – FOOTING WIDTH TABLES

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NOTE: Logix recommend builders, owners and/or designers using these tables confirm that on-site loading conditions are within the scope of the tables being used.

Minimum width of concrete footing for Logix XP-1 walls

Maximum Number of Storeys	MINIMUM LOAD BEARING VALUE OF SOIL				
	2000 psf	2500 psf	3000 psf	3500 psf	4000 psf
6" & 6.25" THICK LOGIX XP-1 Wall Thickness					
One Storey	15"	12"	10"	9"	8"
Two Storey	20"	16"	13"	12"	10"
8.25" & 9" THICK LOGIX XP-1 Wall Thickness					
One Storey	20"	16"	14"	20"	10"
Two Storey	26"	21"	18"	22"	14"
10" & 10.75" THICK LOGIX XP-1 Wall Thickness					
One Storey	22"	18"	15"	13"	12"
Two Storey	29"	24"	20"	17"	16"

- Minimum 28 day concrete compressive strength = 3000 psi (20 MPa)
- Table does not consider seismic. Footing design must also consider local design loads and building practices.
- Footings shall be minimum 8" thick, and shall have a width that allows for a nominal 2 inch projection from either face of the concrete in the wall to the edge of the footing.
- Table values are based on 40 ft building width (floor and roof clear span).
- Applicable for storey heights not greater than 9'-4".
- Basement wall shall not be considered as a storey in determining footing widths.
- Applicable also for 8.25 inch thick to 10.75 inch thick Logix XP-1 foundation wall supporting 4 inch Logix storeys.
- Applicable also for 10 inch thick or 10.75 inch thick Logix XP-1 foundation wall supporting 6.25 inch Logix storeys.