



# THE POWER OF RED™

**SYMONS® DROP HEAD  
CONCRETE  
SHORING  
SYSTEM**

**APPLICATION GUIDE**



## **A WORD ABOUT SAFETY**

High productivity depends on safety; even a minor accident causes job delays and inefficiency, which run up costs. That's why Symons, in the design of its systems and products, makes the safety of those people who will be working with and near the equipment one of its primary concerns. Every product is designed with safety in mind, and is tested to be certain that it will perform as intended with appropriate safety allowances. Factory-built systems such as these provide predictable strength, minimizing the uncertainty that often surrounds "hand-made," "job-shop" and "job-built" equipment.

As a result, Symons products are your best assurance of a safe operation when used properly. To insure proper use, we have published this application guide. We recommend that all construction personnel who will be involved, directly or indirectly, with the use of this product be familiar with the contents of this guide.

As a concerned participant in the construction industry, Symons also recommends that regular safety meetings be held prior to starting the forming operation, and regularly throughout the concrete placement, form stripping and erection operations. Symons personnel will be happy to assist in these meetings with discussion of safe use of the Equipment, slide presentations and other formal safety information provided by such organizations as the Scaffolding, Shoring and Forming Institute.

In addition to the above meetings, all persons involved with the construction should be familiar and in compliance with applicable governmental regulations, codes and ordinances, as well as the industry safety standards developed and published by each of the following:

- American Concrete Institute
- American National Standards Institute
- The Occupational Safety and Health Administration
- The Scaffolding, Shoring and Forming Institute

Because field conditions vary and are beyond the knowledge and control of Symons, safe and proper use of this product is the responsibility of the user.

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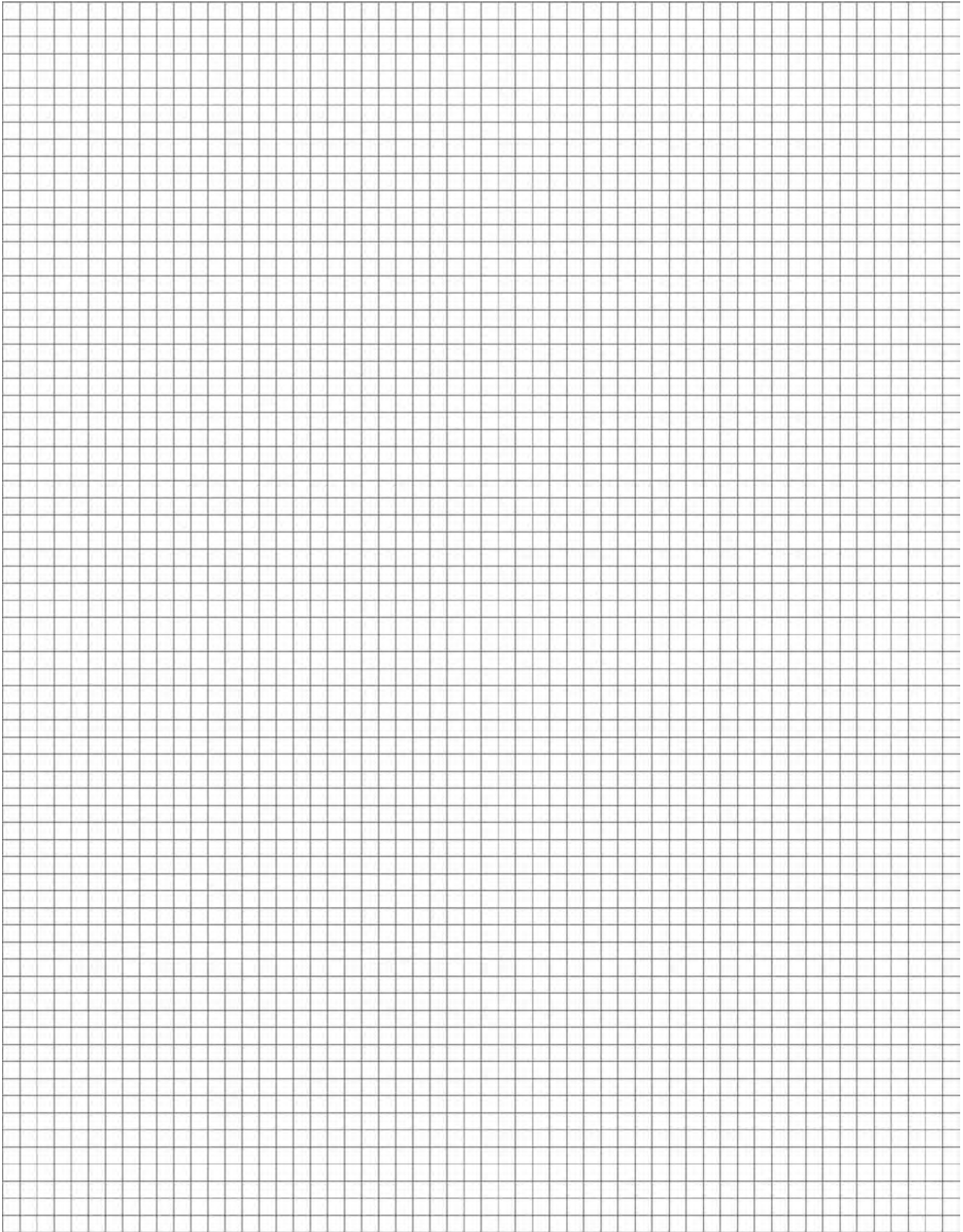
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## **GENERAL SHORING SAFETY RULES AS RECOMMENDED BY THE SCAFFOLDING, SHORING AND FORMING INSTITUTE**

It shall be the responsibility of all employers and users to read and comply with the following common sense guidelines which are designed to promote safety in the erection, dismantling and use of the shoring systems. These guidelines are not all inclusive nor do they supplant or replace other additional safety and precautionary measures to cover usual or unusual conditions. If these guidelines conflict in any way with any state, provincial, local or federal statute or governmental regulation, said statute or regulation shall supersede these guidelines and it shall be the responsibility of each employee and user to comply therewith and also to be knowledgeable and understand all state, local or federal statutes or governmental regulations. This pertains to Frame Shoring, Flying Deck Forms, Single Post Shoring, and Independent Post Shore Systems.

### **GENERAL GUIDELINES**

1. POST THESE SHORING SAFETY GUIDELINES in a conspicuous place and be sure that all persons who erect, dismantle or use shoring are aware of them.
2. FOLLOW ALL STATE, PROVINCIAL, LOCAL AND FEDERAL CODES, ORDINANCES AND REGULATIONS pertaining to shoring.
3. SURVEY THE JOB SITE. A survey by a qualified person shall be made of the job site for hazards, such as un-tamped earth fills, ditches, debris, high tension wires, unguarded openings and other hazardous conditions. These conditions should be corrected or avoided as noted in the following sections.
4. PLAN SHORING ERECTION SEQUENCE in advance and obtain necessary access equipment to accomplish the work safely.
5. INSPECT ALL EQUIPMENT BEFORE USING. Never use any equipment that is structurally defective in any way. Mark it or tag it as defective, then remove it from the job site.
6. A SHORING DRAWING prepared by a person qualified to analyze the loading intended and consistent with the manufacturer's recommended safe working loads, shall be used on the job at all times.
7. ERECT, DISMANTLE OR ALTER SHORING only under the supervision of a qualified person.
8. DO NOT ABUSE OR MISUSE THE SHORING EQUIPMENT.
9. INSPECT ERECTED SHORING: (a) immediately prior to concrete placement; (b) during concrete placement and while vibrating concrete; and (c) after concrete placement until concrete is set.
10. NEVER TAKE CHANCES! IF IN DOUBT REGARDING THE SAFETY OR USE OF THE SHORING, CONSULT YOUR SHORING SUPPLIER.
11. USE SHORING EQUIPMENT only for the purposes or in ways for which it was intended. Use proper tools when installing equipment.
12. ERECTING AND DISMANTLING OF SHORING requires good physical condition. Do not work on shoring if you feel dizzy, unsteady in any way or are impaired in any way by drugs or any other substances.
13. DO NOT USE SHORING SYSTEMS for fall protection.
14. USE SUPPLIER / MANUFACTURER RECOMMENDED SAFE WORKING LOADS consistent with the deck panel configurations and height of posts used.
15. DO NOT MAKE UNAUTHORIZED CHANGES TO THE LAYOUT. Always consult the designer prior to making changes.
16. IF MOTORIZED CONCRETE EQUIPMENT is to be used, be sure that the shoring layout has been designed for use with this equipment and to ensure that lateral loads, vibration and other forces have been considered and adequate precautions have been taken to assure stability and such fact is noted on the layout.
17. USE SPECIAL PRECAUTIONS when shoring from or to sloped surfaces.
18. SAFE ACCESS SHALL BE PROVIDED TO ALL FORMWORK as required by applicable code.

19. PANELS EXPOSED TO UPLIFTING WIND FORCES SHALL BE LOCKED OR TIED DOWN to prevent panel uplift.
20. PROVIDE AND MAINTAIN A SOLID FOOTING to distribute maximum loads properly.
21. WIND LOAD: Erector must analyze the forming / shoring system for additional loads imposed from wind loading and provide adequate anchorage to resist these forces, including uplifting wind forces.
22. RESHORING is one of the most critical operations in formwork; consequently, the reshoring procedure shall be designed by a qualified person and should be approved by the architect I engineer of record.
23. DO NOT RELEASE FORMS until proper authority is given.

### **SINGLE AND INDEPENDENT POST SHORE SYSTEM SAFETY RULES AS RECOMMENDED BY THE SCAFFOLDING, SHORING AND FORMING INSTITUTE**

- A. ALL INDEPENDENT POST SHORE SYSTEM DECKS SHALL BE LATERALLY STABILIZED by the existing building structure and/or longitudinal, transverse, and diagonal bracing. Bracing shall be installed as the shores are being erected.
- B. FOLLOW SUPPLIER/MANUFACTURER'S RECOMMENDED DIRECTION if applicable for:
  - Location and selection of deck panel type and stringers.
  - Type and height of vertical shoring components.
  - Starting points of deck layouts.
- C. PRIOR TO WORKING ON DECKS
  - All posts shall be plumb in two directions and adjusted evenly to ensure proper bearing contact.
  - Check plumb of post shores just prior to pour.
  - Deck shall be laterally stabilized.
- D. FALL PROTECTION SHALL BE PROVIDED ON ALL OPEN SIDES AND OPENINGS in formwork and slabs as required by applicable code.
- E. PLAN DECK PANEL LAYOUT TO ENSURE AGAINST INSTABILITY AND UNSUPPORTED CANTILEVERS. Take all necessary precautions to avoid uplift of cantilevered panels during and after construction. Make certain that form panels intended to be cantilevered are tied down to prevent tipping.
- F. PANELS EXPOSED TO UPLIFTING WIND FORCES SHALL BE LOCKED OR TIED DOWN TO PREVENT PANEL UPLIFT.
- G. PLAN CONCRETE PLACEMENT METHODS AND SEQUENCES TO ENSURE BALANCED LOADING of shoring equipment and panels, including cantilevered panels.
- H. BRACING SHALL BE FASTENED SECURELY. Check to see that clamps, screws, pins and all other components are in a closed or engaged position.

- I. ALL VERTICAL AND HORIZONTAL SHORING should be installed and used in compliance with safety rules and recommendations published by The Scaffolding, Shoring and Forming Institute. Erect Ledgers, LVL's and Panels from below. Never erect components while standing on previously erected deck.
- J. DO NOT INTERMINGLE SYMONS supplied components with those of other suppliers.
- K. LATERAL BRACING FOR SINGLE POST SHORES in job-built filler areas must be designed and installed by contractor.
- L. CONTRACTOR TO PROVIDE SOLID WEDGING under all post shores bearing on or supporting a sloping slab.
- M. ENSURE THAT ALL LVL JOISTS AND Drop Head PANELS are properly in the ledger grooves.
- N. WHEN CANTILEVERING LEDGERS, LVL JOISTS OR Drop Head PANELS secure opposite end cantilevered component to prevent tipping.
- O. CHECK ALL LOAD PINS FOR FULL BEARING AND SECURE EACH load pin with cotter pin.
- P. Drop Head DECKS ARE NOT INTENDED TO BE USED as a scaffold work platform.
- Q. DO NOT USE Drop Head POSTS MORE THAN ONE TIER HIGH. Where greater shore heights are required, consult the Dayton Superior Engineering Department.
- R. Drop Head POSTS WILL REQUIRE ADDITIONAL BRACING when shoring or bearing on sloping slabs. Contact the Dayton Superior Engineering Department for guidance with the bracing requirements.
- S. DRAWINGS ARE ILLUSTRATIVE ONLY. Specification of products and equipment shown herein are subject to change without notice.

## GENERAL SHORING NOTES

1. Contractor to check and verify all dimensions at job before proceeding with work.
2. Deviation from these layouts may be made only under the direction and supervision of a qualified person who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project and/or with the consultation of Dayton Superior Corporation.
3. The shoring installation must comply with safe practice and with the requirements of governmental regulations, codes and ordinances.
4. Contractor shall design and provide suitable sills to properly distribute the imposed shoring loads.
5. When setting elevations, allow for compression of lumber and soil.
6. The design and construction of lumber in job-built filler areas, and formwork, is the responsibility of the contractor.
7. The formwork system must be stabilized to poured columns and walls. The layout as shown is designed with the provision that the framework system is restrained from lateral movement with respect to shoring. The contractor shall provide sufficient lateral support as necessary.
8. The shoring layout is not designed for motorized concrete placing equipment unless specifically stated.
9. The reshoring and backshoring procedures are the responsibility of others, and should be approved by the architect/engineer of record.
10. All vertical and horizontal shoring should be installed and used in compliance with safety rules and recommendations published by The Scaffolding, Shoring & Forming Institute, Inc. and those of Dayton Superior Corporation. **Erect ledgers, LVL's and panels from below. Never erect components while standing on previously erected deck.**
11. Do not intermingle Symons supplied components with those of other suppliers.

12. Lateral bracing for single post shores in job-built filler areas must be designed and installed by a contractor.
13. All vertical shoring equipment shall be plumb in two directions unless otherwise specified on the shoring drawings.
14. Contractor to provide solid wedging under all post shores bearing on or supporting a sloping slab.
15. Follow all additional information shown on General Note Sheet and typical sheets of the shoring layout drawings. In the event a layout drawing is not available or job site conditions change contact Dayton Superior's Engineering Department.
16. Insure that all LVL Joists and Drop Head Panels are seated properly in ledger groves.
17. When cantilevering ledgers, LVL Joints or Drop Head Panels secure opposite end of cantilevered component to prevent tipping.
18. Check all load pins for full bearing and secure each load pin with a cotter pin.
19. Prior to pouring concrete, check all star nuts to assure they are tight and snug against bearing plates.
20. Drop Head panels are not intended to be used as a scaffold work platform.
21. Do not use Drop Head posts more than one tier high. Where greater shore heights are required, consult Dayton Superior's Engineering Department.
22. Drop Head posts will require additional bracing when shoring or bearing on sloping slabs. Contact the Dayton Superior Engineering Department for guidance with the bracing requirements.
23. Drawings are illustrative only. Specification of products and equipment shown herein are subject to change without notice.
24. Report any damaged Drop Head equipment to Dayton Superior for further instructions. This may include but is not limited to J-catches, panel siderails, Drop Heads, etc.

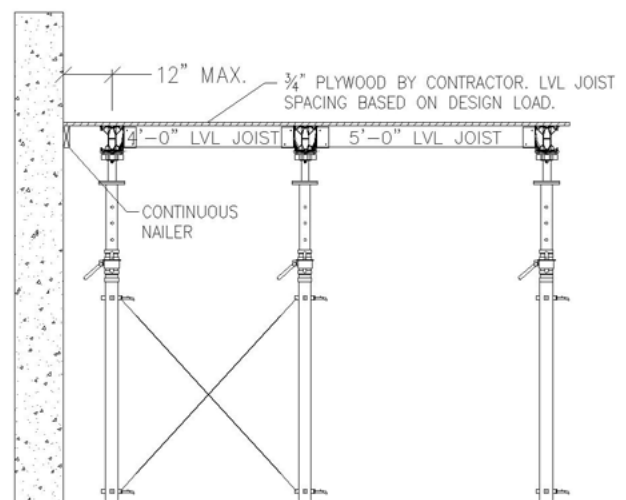
## STABILITY AND LATERAL FORCE CONSIDERATION ON SHORING SYSTEMS

Stability Bracing is required during the erection and dismantling of the shoring system when it is free-standing without blocking to a permanent structure. The Drop Head Cross-Braces shown on the shoring drawings illustrate a typical method used for stability bracing. The Cross-Braces acting in conjunction with the Ledger and LVL connections at the top of the post shores provide additional stability in the longitudinal and traverse directions. In addition to the standard Drop Head Cross-Bracing, shoring placed on slopes greater than 12% may require additional bracing.

Lateral Bracing is required to resist the horizontal forces acting on the shoring system, such as wind loads, concrete pressures against bulkheads or sloping soffits and dynamic loads during concrete placement. Blocking the plywood and components of the shoring system to the permanent structure provides lateral bracing. The cross-braces used as stability bracing may also provide lateral bracing when it is not possible to provide blocking to the structure.

**A qualified person should analyze every shoring system to determine what lateral bracing is required.**

Contact Symons Engineering for assistance.



TYPICAL APPLICATION



## BASIC EQUIPMENT

### Post Shores

The selection of shores in the Drop Head system offers a range of heights - from 6'-6" to 12'-8". The single posts allow for a clean, unbraced area for material movement and easy access.

All posts have eight (8) locations for Jet-Lok attachment. This expands the adaptability of the system when Cross-Braces are required to produce 4-legged towers for safe erection of the system. No tripods or wood bracing is required. The Posts have a 3.0:1 Factor of Safety while supplying safe support for slabs up to 18" in depth.

P/C	Description	Weight
F57073	Primary Post	58 lbs
F57074	2' Extension	15 lbs
F57075	#3 Post Shore	43 lbs

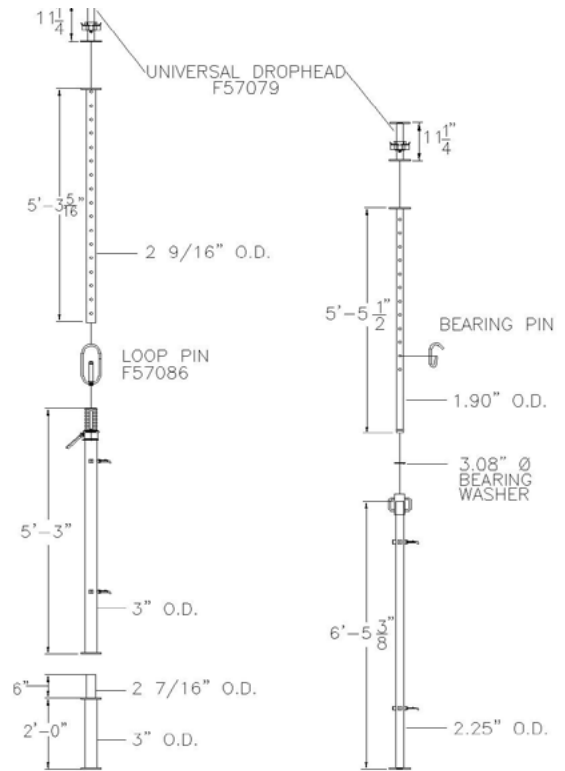
### Universal Drophead

The Universal Drop Head is a key component of the Drop Head System. The Drop Head facilitates the stripping process, allowing the LVLs (or Panels), Ledgers, and plywood to be stripped and moved forward to the next pour while maintaining a shore in place for structural support.

P/C	Description	Weight
F57079	Universal Drophead	15 lbs
F57082	3/4" x 4" Bolt	1 lb

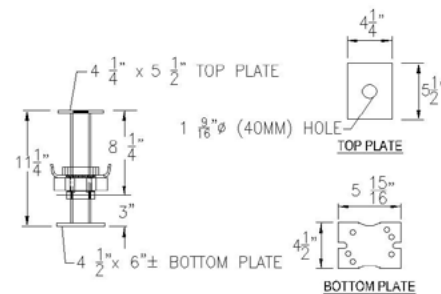
#### Notes:

- Add 2" to minimum dimension for stripping
- Only use (1) 2' Extension per shore
- Ensure all load pins are secured with cotter pins (split pins)
- Refer to table on back page for minimum and maximum shoring heights using the drop head

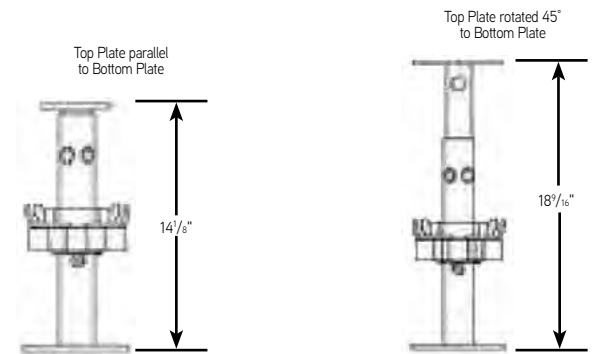


PRIMARY STEEL POST SHORE (WITH BASE EXTENSION)

#3 STEEL POST SHORE



UNIVERSAL DROP HEAD

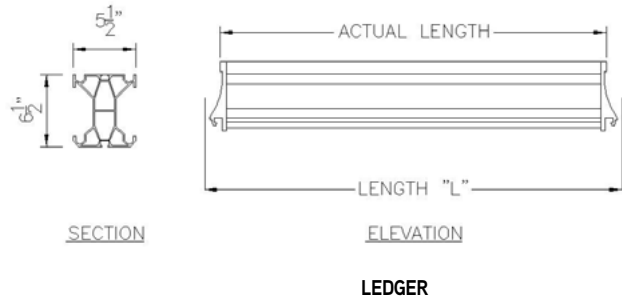


UNIVERSAL DROP HEAD LOWERED FOR DROP HEAD

UNIVERSAL DROP HEAD RAISED FOR DROP HEAD PANEL

*Ledgers*

Ledgers are utilized as the main stringers of the Drop Head System. They span from one drop head to the next. The end catch at each end of the aluminum Ledger sets and locks into the catch plate on the drop heads of adjacent shores. The Ledgers also have a catch on both sides which runs the length of the Ledger to receive Joists or Panels. The profile on the bottom of the Ledgers allows accessories to be attached for different support applications.

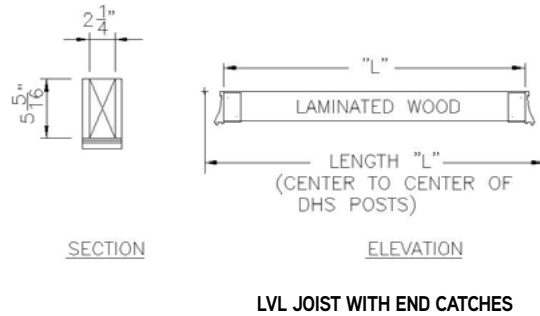


Drop Head Ledgers are color-coded and match colors on Dayton Superior Engineered drawings for ease of use and assembly on the job site.

P/C	Description	Actual Length	Weight
F57050	6' Ledger - Red	5'-5 <sup>5</sup> / <sub>16</sub> "	40 lbs
F57051	8' Ledger - Green	7'-5 <sup>5</sup> / <sub>16</sub> "	53 lbs
F57052	10' Ledger - Silver	9'-5 <sup>5</sup> / <sub>16</sub> "	67 lbs

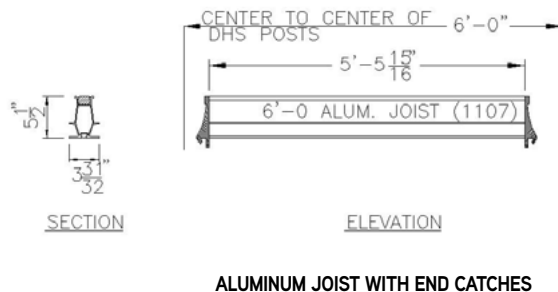
*Joists with End Catches*

LVLs and aluminum are used for the joists of the Drop Head System. They are lightweight and span from Ledger to Ledger. The end catch at each end of the joist sets and locks into the catch plate of parallel Ledgers. Since Ledgers have catch plates running their full lengths, joists can be placed at virtually any spacing to accommodate different slab thicknesses or job site conditions. Contractor-supplied plywood is placed on top of the LVL or aluminum joists.



Drop Head joists are color-coded and match colors on Dayton Superior Engineered drawings.

P/C	Description	Actual Length	Weight
F57055	4' LVL Joist - Black	3'-5 <sup>1</sup> / <sub>4</sub> "	14 lbs
F57056	5 LVL Joist - Blue	4'-5 <sup>1</sup> / <sub>4</sub> "	15 lbs
F57057	6' LVL Joist - Red	5'-5 <sup>1</sup> / <sub>4</sub> "	18 lbs
F57058	6' Alum. Joist - Orange	5'-5 <sup>15</sup> / <sub>16</sub> "	18 lbs

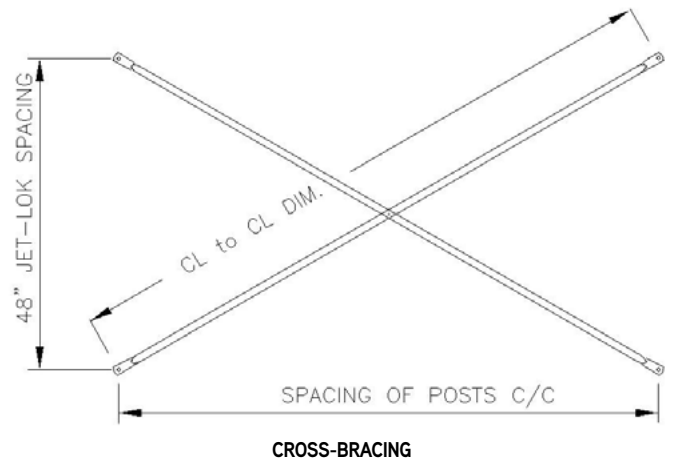


*Cross-Bracing*

The Cross-Braces with the Drop Head System provide stability to safely begin the erection sequence. They are also used in cantilever conditions, adding stability to the local shores.

Drop Head Cross-Braces are color-coded and match colors on Dayton Superior engineered drawings for ease of use and assembly on the job site.

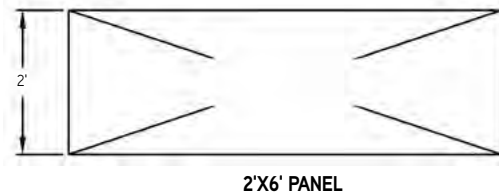
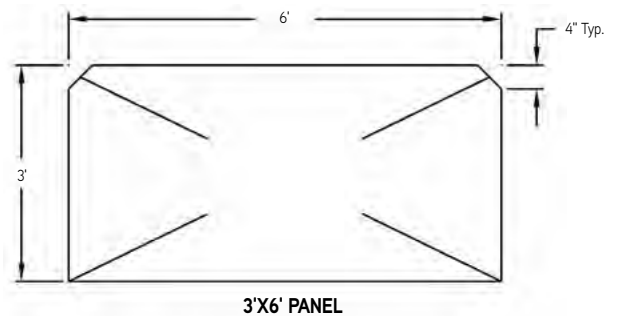
P/C	Description	CJC Dimension	Weight
F57062	4' x 8' Cross-Brace	6'	12 lbs
F57063	4' x 6' Cross-Brace	8'	10 lbs
F57064	4' x 5' Cross-Brace	10'	9 lbs
F57065	4' x 4' Cross-Brace	10'	8 lbs



*Panels*

The system utilizes two standard, modular panel sizes. These panels are a powder-coated 4 1/4" deep frame with a 1/2" thick plywood deck pre-cut and placed inside the frame.

P/C	Description	Weight
F57092	2' x 6' Panel	46 lbs
F57093	2' x 6' Panel Wood Replacement	18 lbs
F57094	3' x 6' Panel	63 lbs



## KEY ACCESSORIES

### Clips

The Drop Head system can incorporate a set of different clips to safely and efficiently accommodate various job site specific applications

P/C	Description	Weight
F57068	Ledger to Drophead Clip	0.5 lbs
F57069	Ledger to Hold Down Clip	0.5 lbs
F57070	Ledger to Ledger Clip	0.5 lbs

### Guardrail Post w/Twistlock

P/C F57059 26 lbs

The Guardrail Post can be attached to Ledgers and offers a safe connection for contractor-supplied safety railing. It is connected to Ledgers using a Twistlock. The Toeboard Support also features adjustability to slide up or down to accommodate different deck material.

### Bracing Slider w/ Two Jet-Loks™

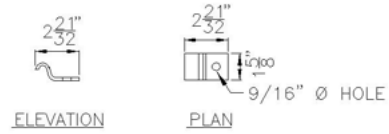
P/C F57060 5 lbs

The Bracing Slider is used to facilitate the use of Cross-Bracing in sloped slab conditions. It is attached at Jet-Lok locations of adjacent post shores.

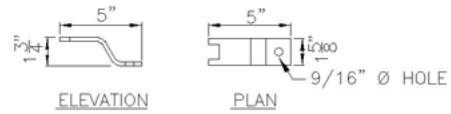
### Ledger Hanger

P/C F57071 10 lbs

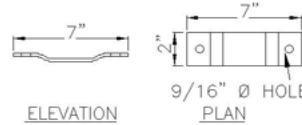
Ledger Hangers can be used to “hang” a Ledger below the main grid Ledgers, providing a lower deck for drop heads or drop beams.



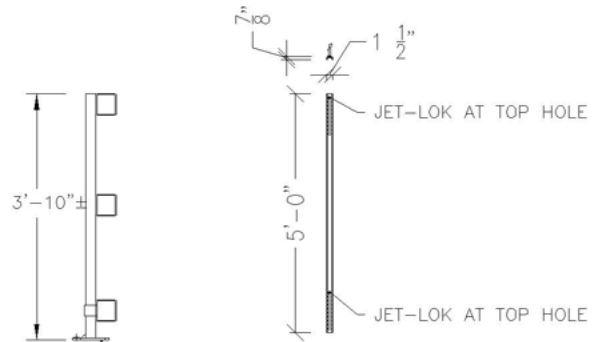
LEDGER TO HOLD DOWN CLIP



LEDGER TO DROP HEAD CLIP

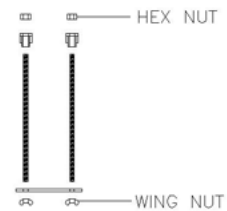


LEDGER TO LEDGER CLIP



GUARDRAIL POST WITH TWISTLOCK

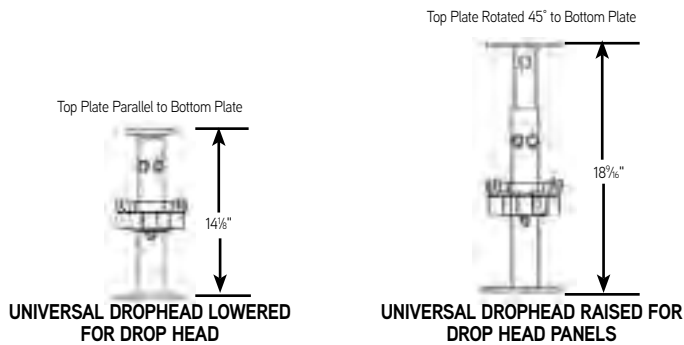
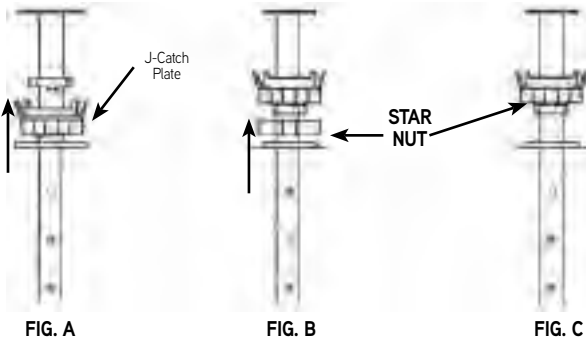
BRACING SLIDE WITH TWO JET-LOKS



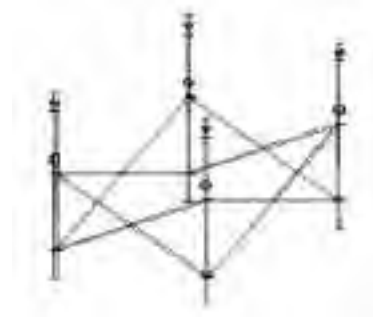
LEDGER HANGER

### DROP HEAD ERECTION SEQUENCE

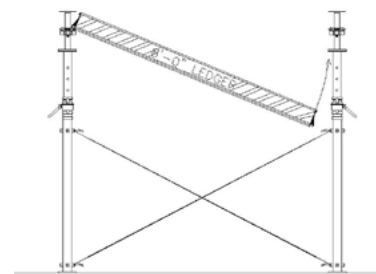
1. Prior to erecting Drop Head Posts, ensure the bearing plate is in the up position and the Star Nut is tight:
  - Raise the lower bearing plate of the Drophead to the stop position
  - Raise the Star nut to the underside of the lower plate
  - Hammer the Star Nut in the clockwise direction to secure the bearing plate



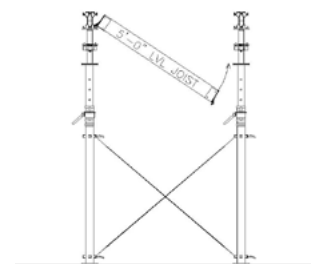
2. To erect the Drop Head system, set up a fully braced tower using four (4) posts and Cross-Braces. This creates a stable base from which to hang Ledgers and LVLs. The starting position should be shown on the drawing in a location that is easy to set out from field measurements and structural elements.



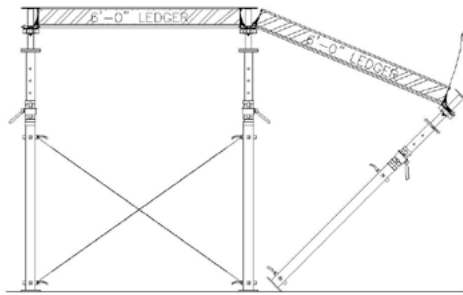
3. Place one end of the Ledger into the Drop Head Drophead assembly.
4. Raise the opposite end of the Ledger and place it into the second Drop Head Drophead assembly.



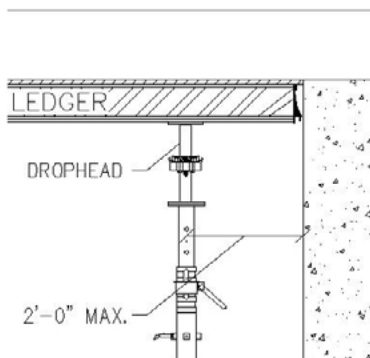
5. Repeat steps 3 and 4 to erect a parallel Ledger in the remaining two Drop Head posts.
6. Place one (1) LVL into the bottom slot of the Ledger near the first pair of erected Drop Head posts and raise it up to the adjacent Ledger.



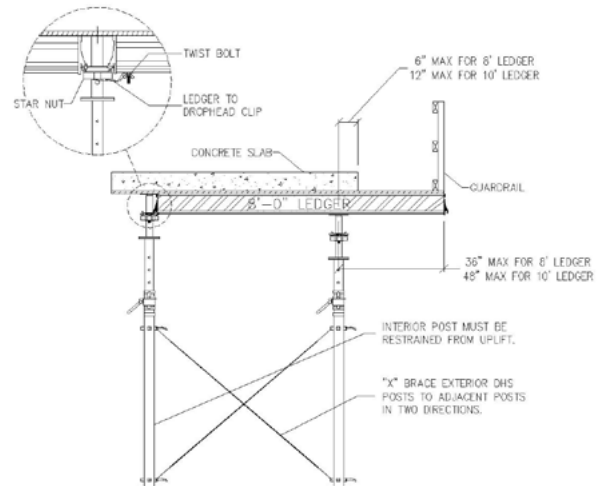
7. Erect additional LVLs at the spacing shown on the Dayton Superior layout drawing.
8. Continue erecting Ledgers by placing one end of the Ledger into a previously erected Drop Head assembly and raising the other end of the Ledger, using another Drop Head post as a prop.



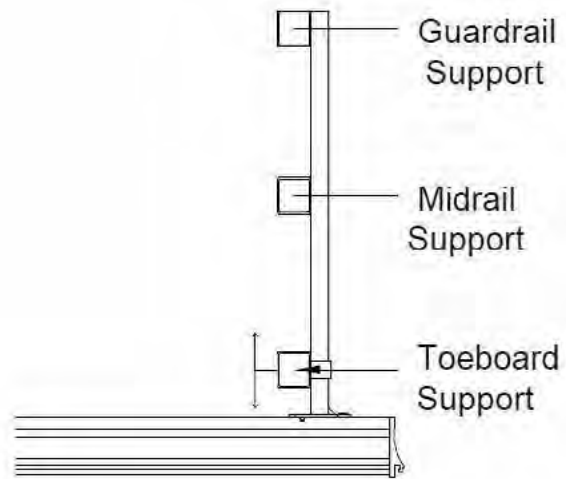
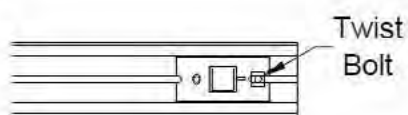
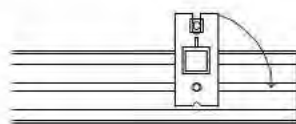
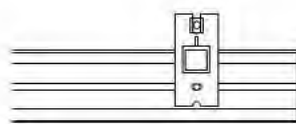
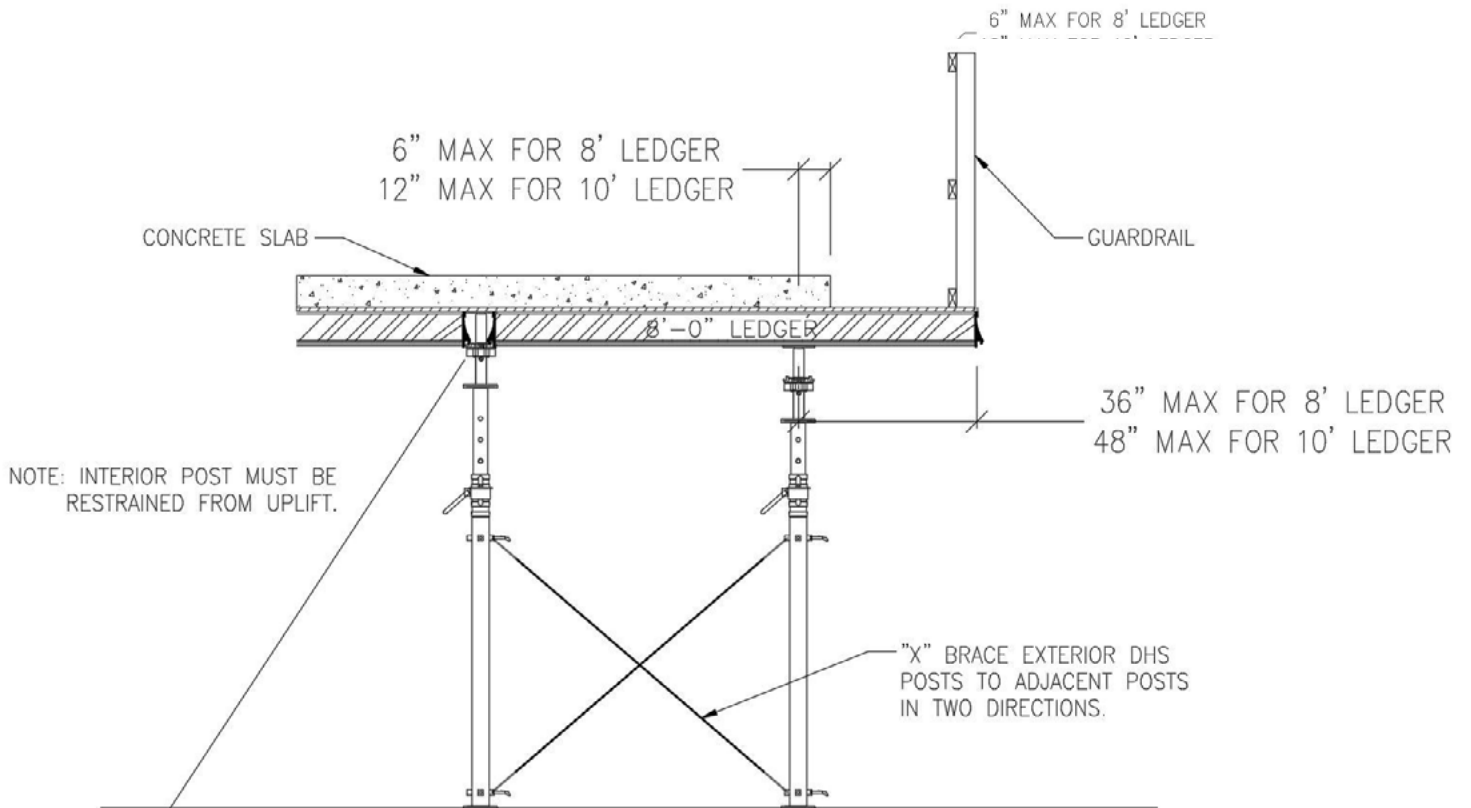
9. Add an LVL between each subsequent erected pair of post shores to provide additional stability.
10. It is recommended that a brace tower of four (4) Drop Head posts be erected with a maximum of six (6) bays between the braced towers in either direction during erection and dismantling.
11. When it is necessary to cantilever a Ledger over a Drop Head post, a plastic spud is inserted into the bottom the slot of the string and tightened. The post can then be erected and the plastic spud inserted into the hole of the Drophead plate.
12. When it is necessary to cantilever a Ledger over and beyond a Drophead, follow these steps:
  - Secure the Ledger to the Drophead with two (2) Ledger Hold Down Clips.
  - Additional cross-bracing may be required at cantilevered conditions next to interior openings, walls, beam sides, and other similar applications.



13. When it is necessary to cantilever a Ledger beyond a slab edge, follow these steps:
  - Attach a Ledger Hold Down Clip to the underside of the cantilevered Ledger and bear under the star nut of a Drophead plate.
  - Always brace the exterior Drop Head posts to the adjacent posts in two directions using Cross-Braces.

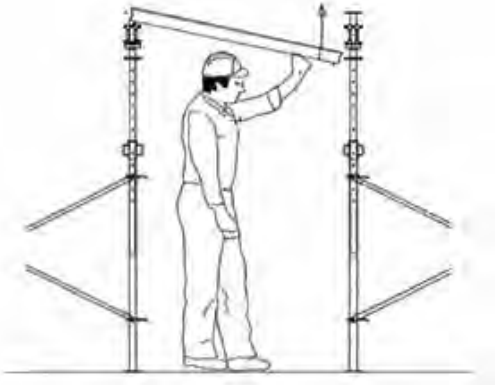


## DROP HEAD PERIMETER GUARDRAIL ATTACHMENT PROCEDURES

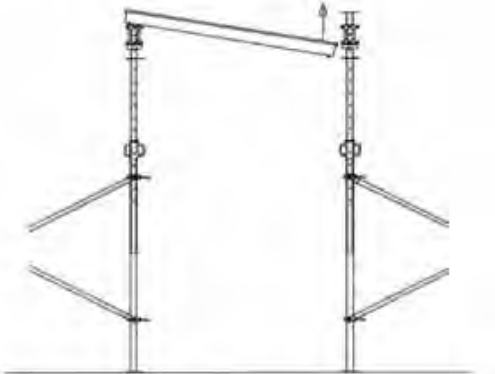


## DROP HEAD PANEL ERECTION SEQUENCE

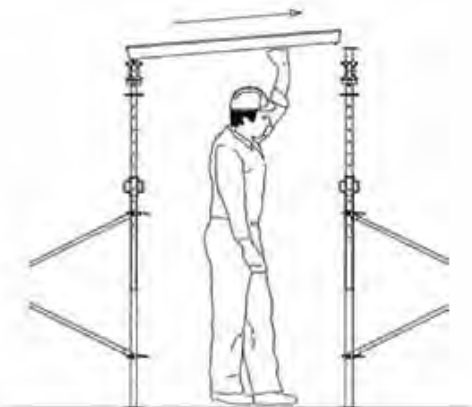
1. From below, place one end of the Drop Head panel on a previously erected and stabilized Ledger. To ensure a proper Ledger set-up, please follow steps 1-5 of the "Drop Head Erection Sequence" in this Application Guide.



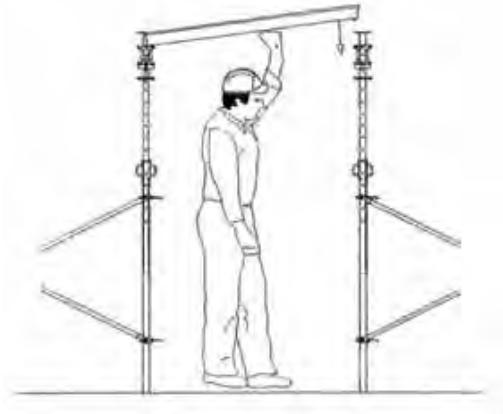
2. Rotate the unsupported end of the Drop Head panel above the adjacent stabilized Ledger.



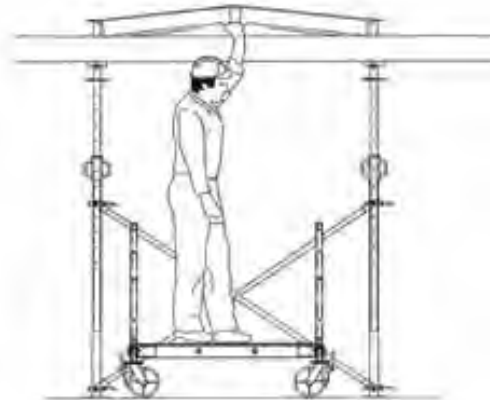
3. Slide the Drop Head panel over the second Ledger until the J-Catch of the panel locks into the first Ledger.



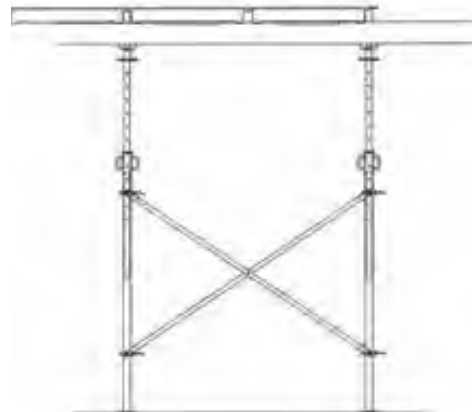
4. Lower the Drop Head panel, ensuring the J-Catch locks into place in the second Ledger.



5. To complete placement of the last Drop Head panel in a bay, lift the adjacent panel and last panel and lower both panels together.

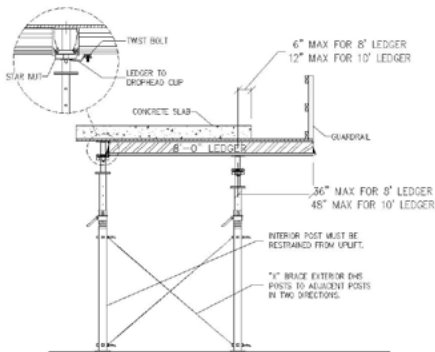


6. Repeat the previous steps to erect the remaining Drop Head panels.





7. When it is necessary to cantilever a Ledger beyond a slab edge, follow these steps:
- Attach a Ledger to Drop Head Clip to the underside of the cantilevered Ledger and bear under the star nut of the Drop Head Plate.
  - Always brace the exterior Drop Head posts to the adjacent posts in two directions using Cross-Braces.



#### Notes:

Reshores and backshores as defined below are some of the most critical operations in formwork; consequently, the reshoring and backshoring shall be designed by a qualified person and should be approved by the architect/engineer of record.

#### Reshores:

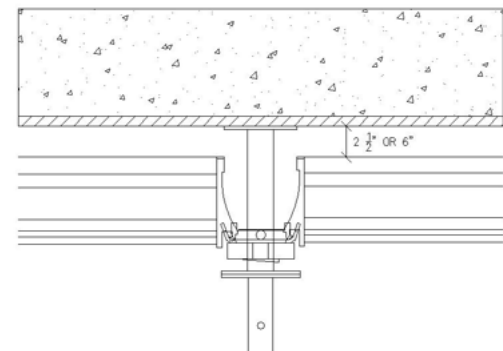
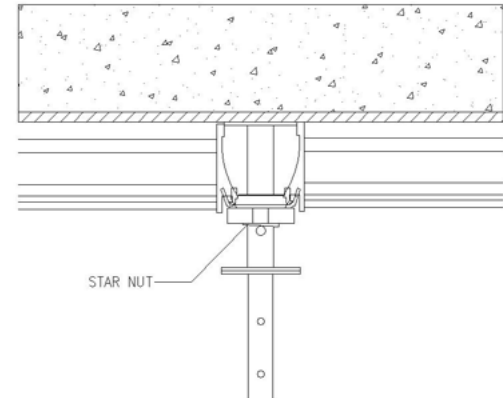
Shores placed snugly under a stripped concrete slab or structural member after the original forms and shoring have been removed from a large area, thus requiring the new slab or structural member to deflect and support its own weight and existing construction loads applied prior to the installation of reshores.

#### Backshores:

Shores placed snugly under a concrete slab or structural member after the original formwork and shores have been removed from a small area at a time, without allowing the slab or member to deflect, thus the slab or other members does not yet support its own weight or exiting construction loads from above.

## DROP HEAD STRIPPING SEQUENCE

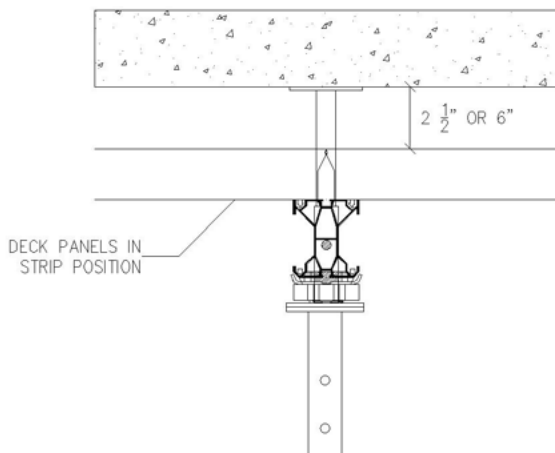
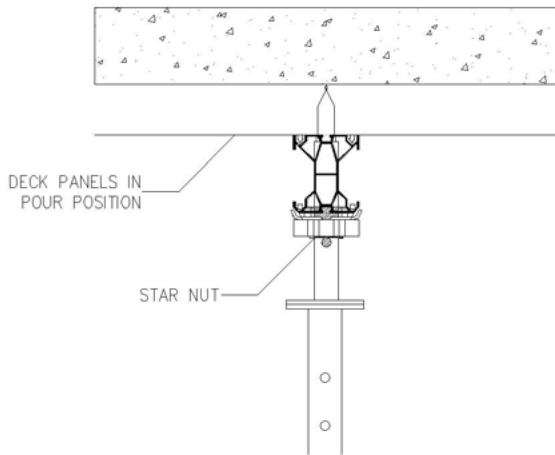
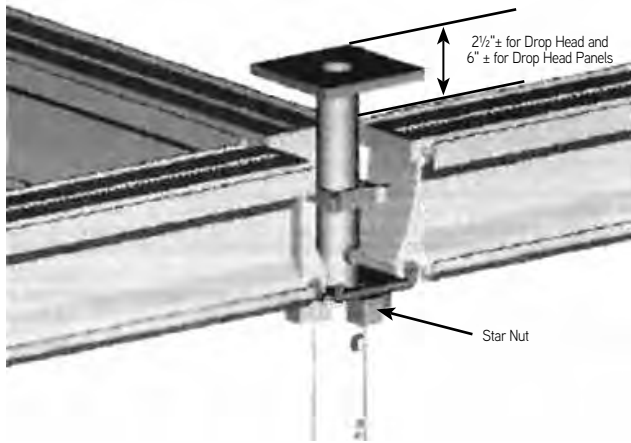
1. Begin by hammering the star nut in a counter clockwise direction in a three (3) bay wide area. This will drop all Ledgers and LVLs approximately 2½" while leaving the plywood pinched between the drop heads and concrete slab soffit.



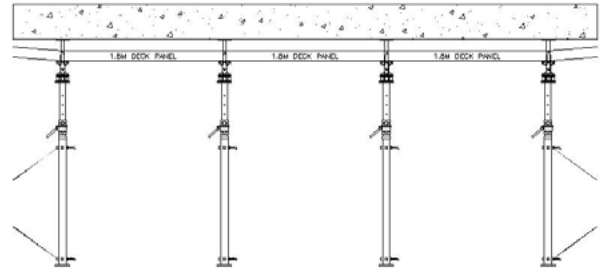
2. Remove the LVLs and stack onto a cart while carefully removing any loose plywood and stacking for reuse.
3. Lower the Ledgers and place them onto a second cart.
4. Once concrete has gained sufficient strength, lower the Drop Head posts to remove any remaining plywood. Reset the posts for use and reshore if required.

## DROP HEAD PANEL STRIPPING SEQUENCE

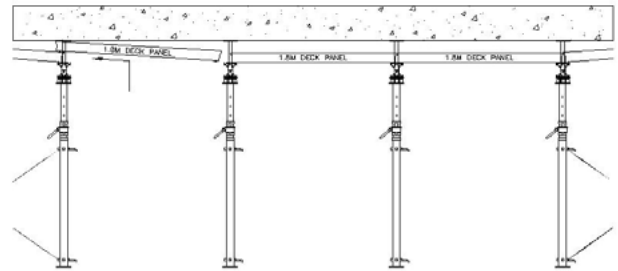
1. Begin by hammering the star nut in a counter clockwise direction in a three (3) bay wide area. This will drop all Ledgers and Panels approximately 6".



2. Release the star nut on several posts in adjacent rows to lower the Panel Drop Heads



3. Raise the Panel up and slide over adjacent Ledger and Panel. Finally, lower the Panel.

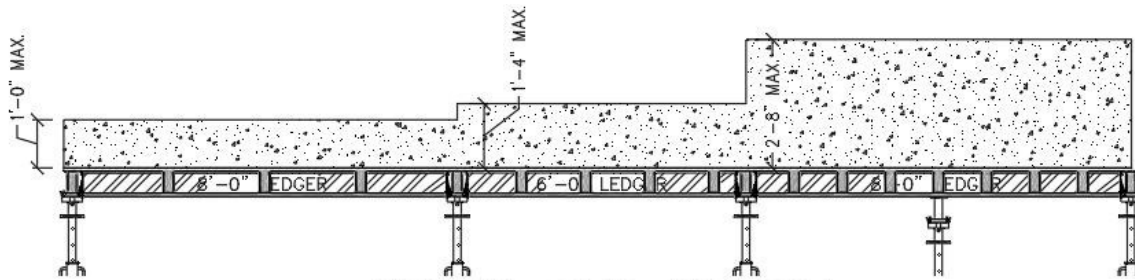


4. Continue lowering subsequent Panels and stack on cart for movement to the next pour.

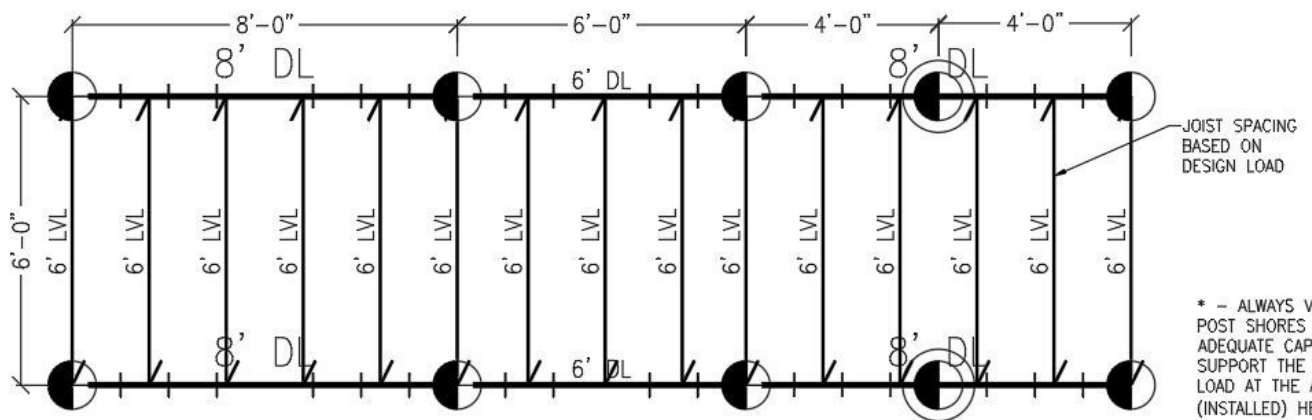
## DROP HEAD TYPICAL APPLICATION DETAILS

### Slab Conditions and Thicknesses

Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.

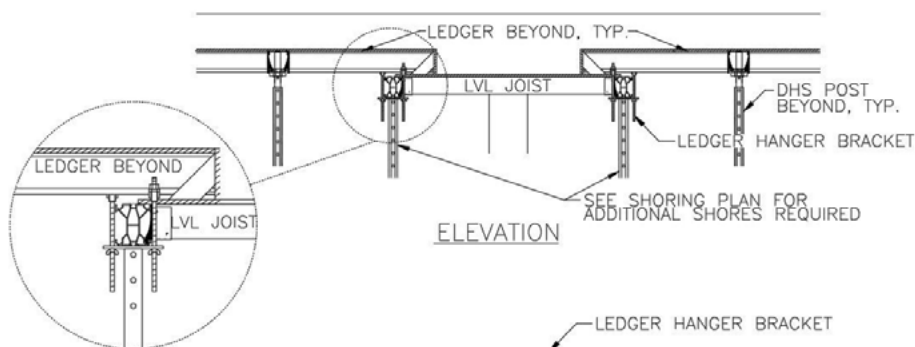


TYPICAL DHS SECTION  
(MAX. SLAB THICKNESS)

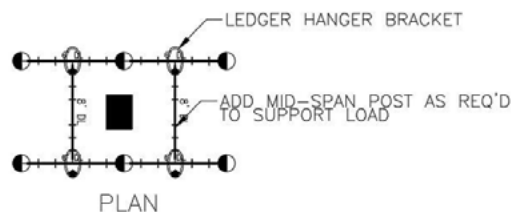


TYPICAL DHS PLAN VIEW

\* - ALWAYS VERIFY THE POST SHORES HAVE ADEQUATE CAPACITY TO SUPPORT THE DESIGN LOAD AT THE ACTUAL (INSTALLED) HEIGHT.



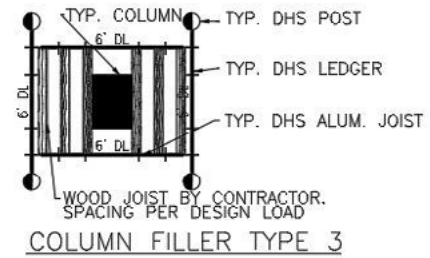
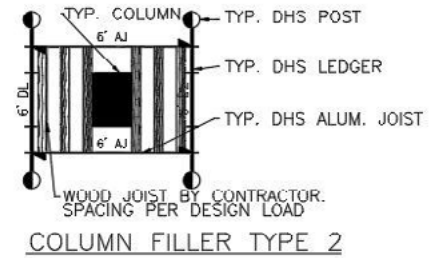
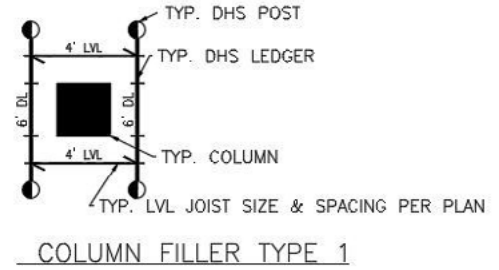
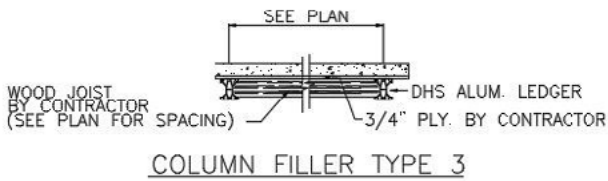
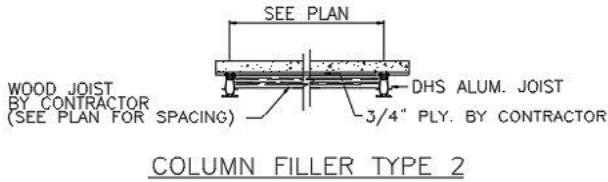
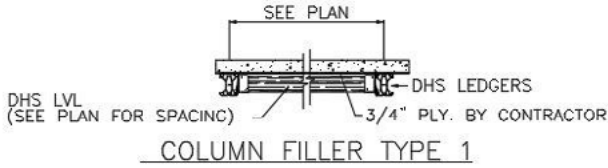
\* - LEDGER HANGER IS ATTACHED TO LOWER CATCH OF UPPER LEDGER WITH THREAD RODS AND PLATE SUPPORTING THE LOWER LEDGER.



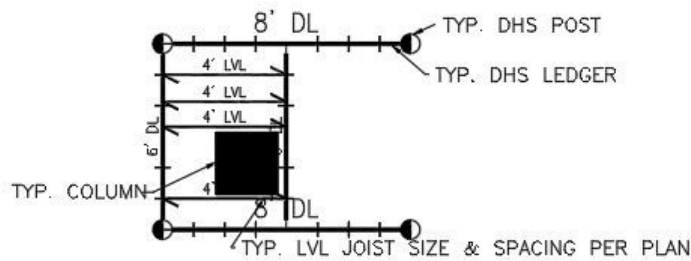
LEDGER HANGER DETAIL

Column Conditions

Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.

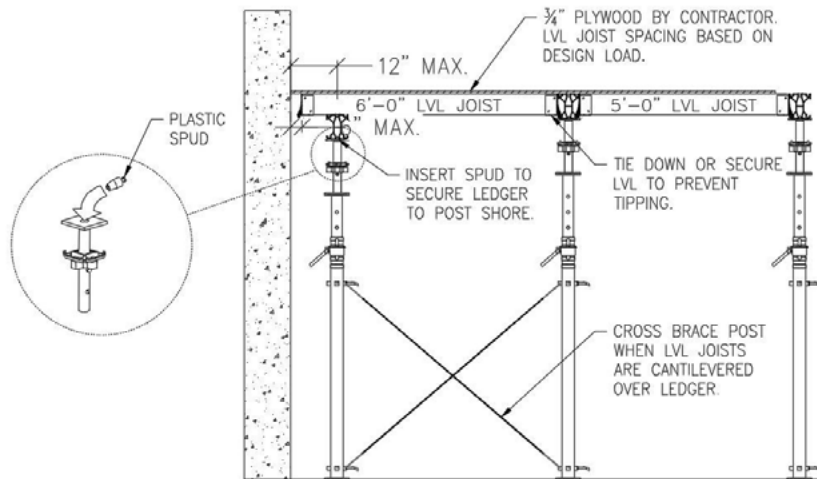


STANDARD COLUMN FILLER DETAILS

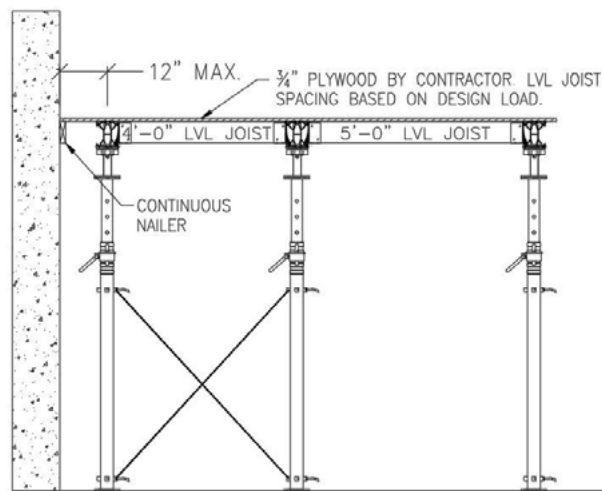


*Cantilevered Conditions*

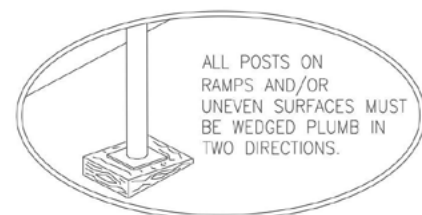
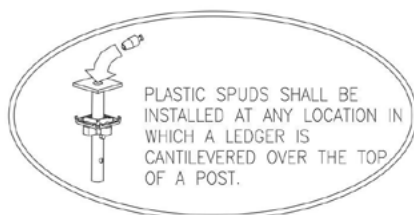
Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



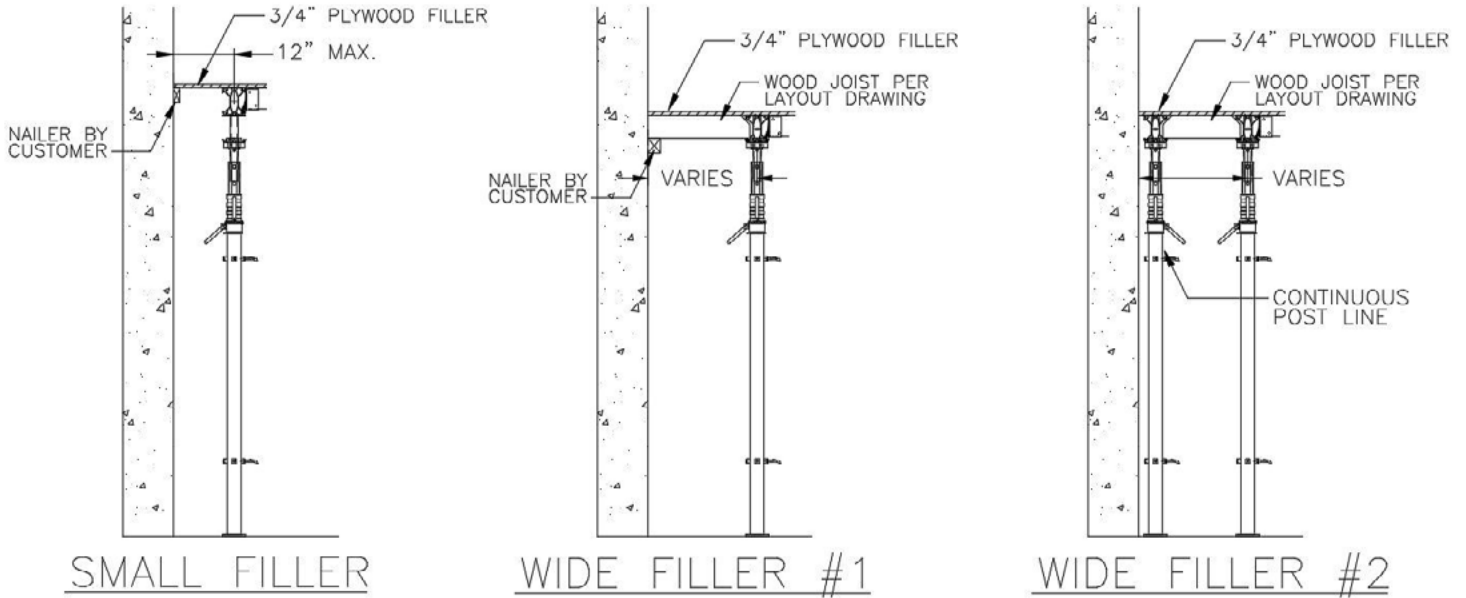
DHS JOIST CANTILEVERED OVER LEDGER AT WALL EDGE



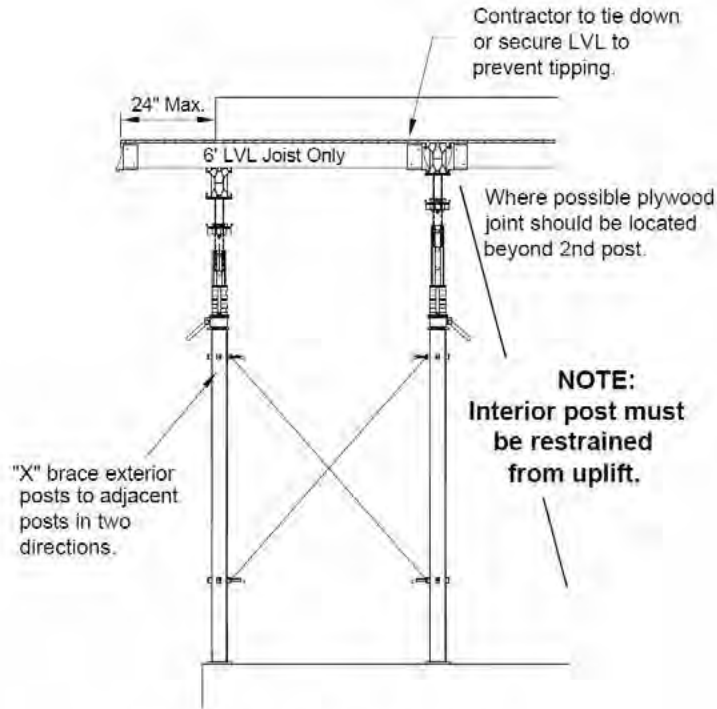
DHS CANTILEVER AT WALL EDGE



Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



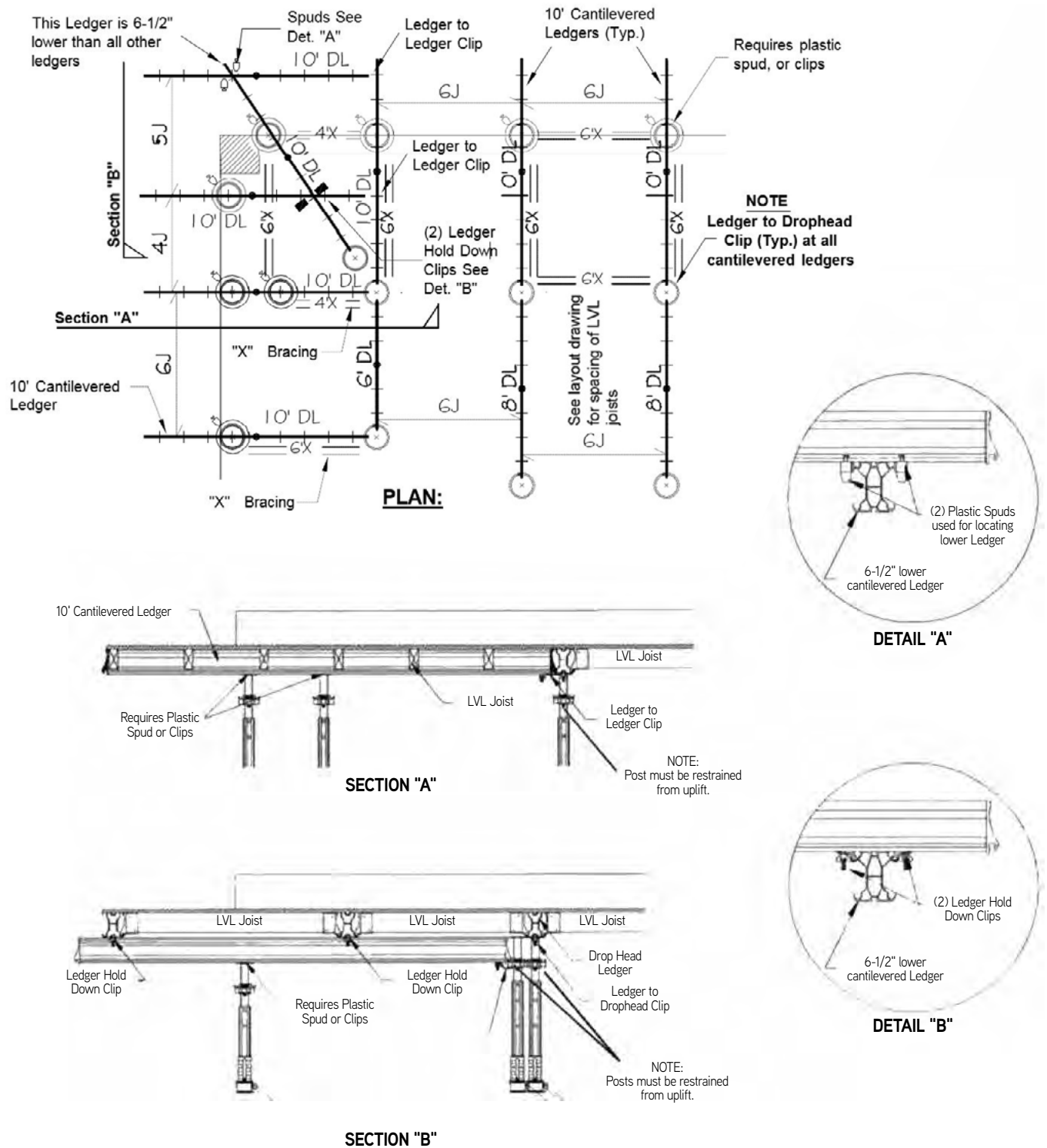
FILLER WITH WALL SUPPORT DETAILS



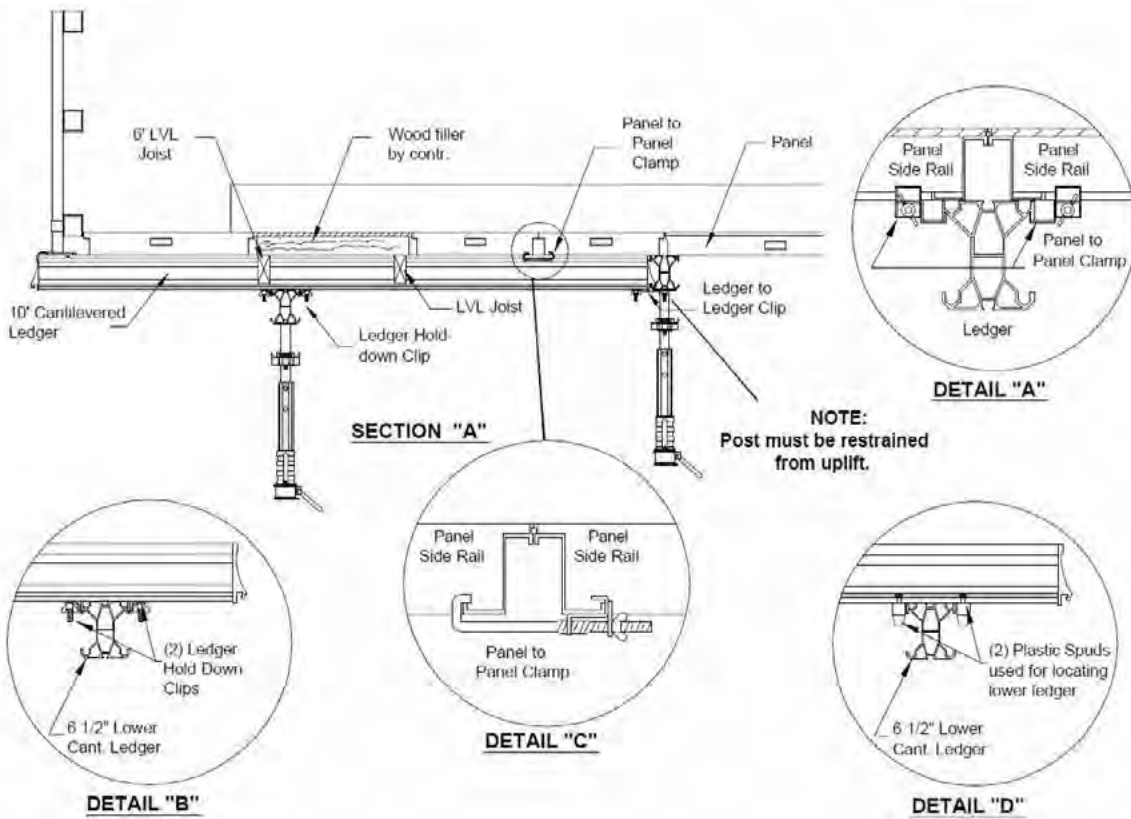
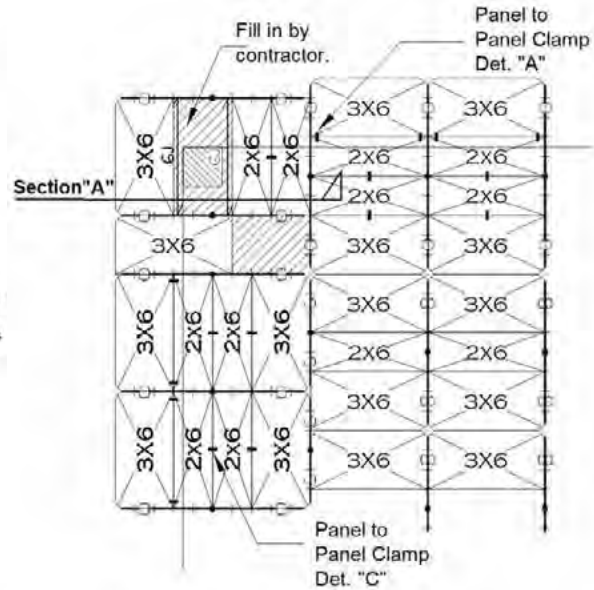
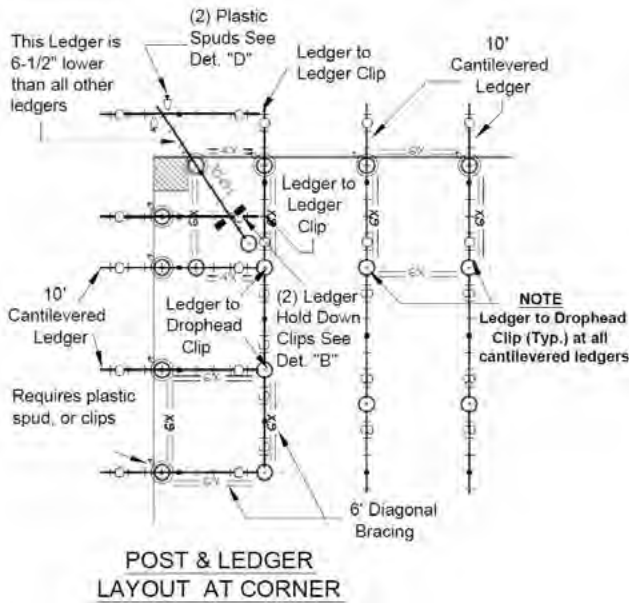
**CANTILEVER at SLAB EDGE:**

Corner Conditions

Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.

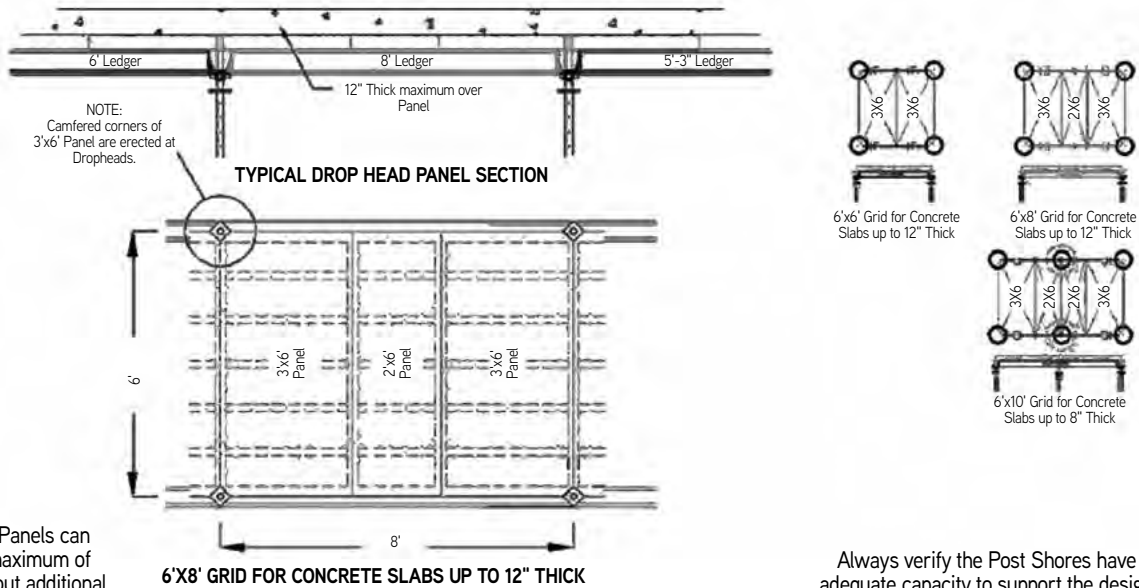




## DROP HEAD PANEL TYPICAL APPLICATION DETAILS

### Slab Conditions and Thicknesses

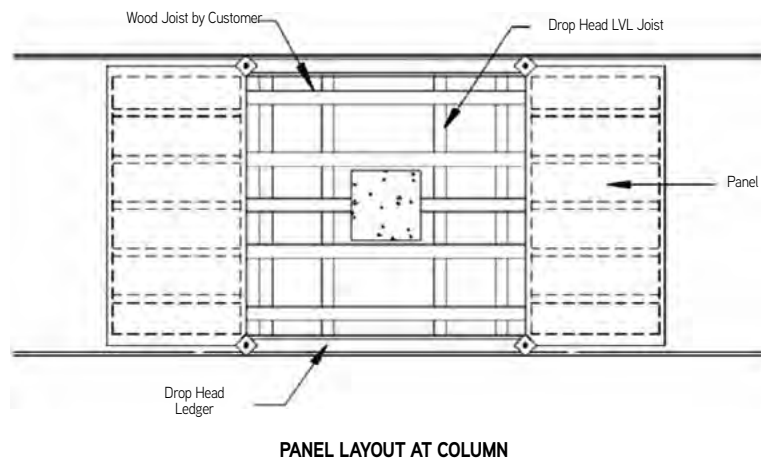
Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



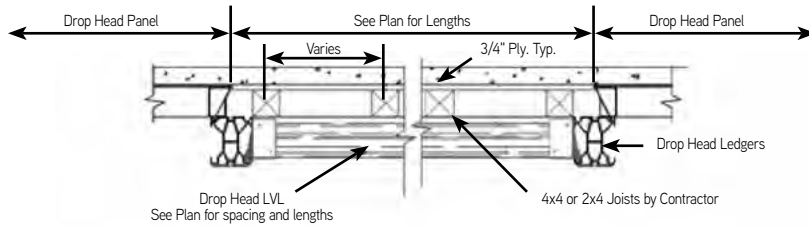
Drop Head Panels can support a maximum of 12" slab without additional intermediate support.

Always verify the Post Shores have adequate capacity to support the design load at the actual (installed) height.

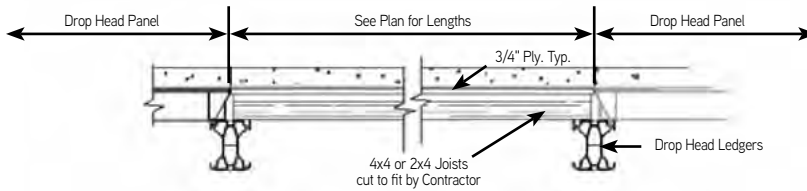
### Column Conditions



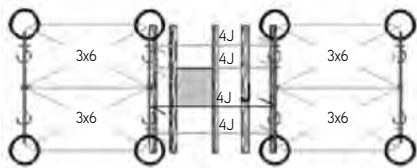
Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



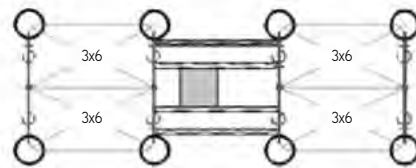
**COLUMN FILLER TYPE 1**



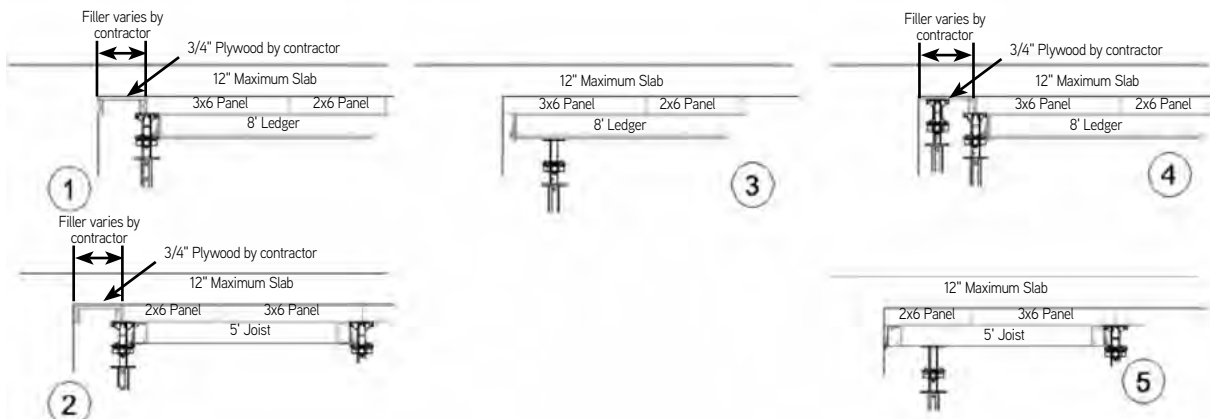
**COLUMN FILLER TYPE 1**



**COLUMN FILLER TYPE 1**

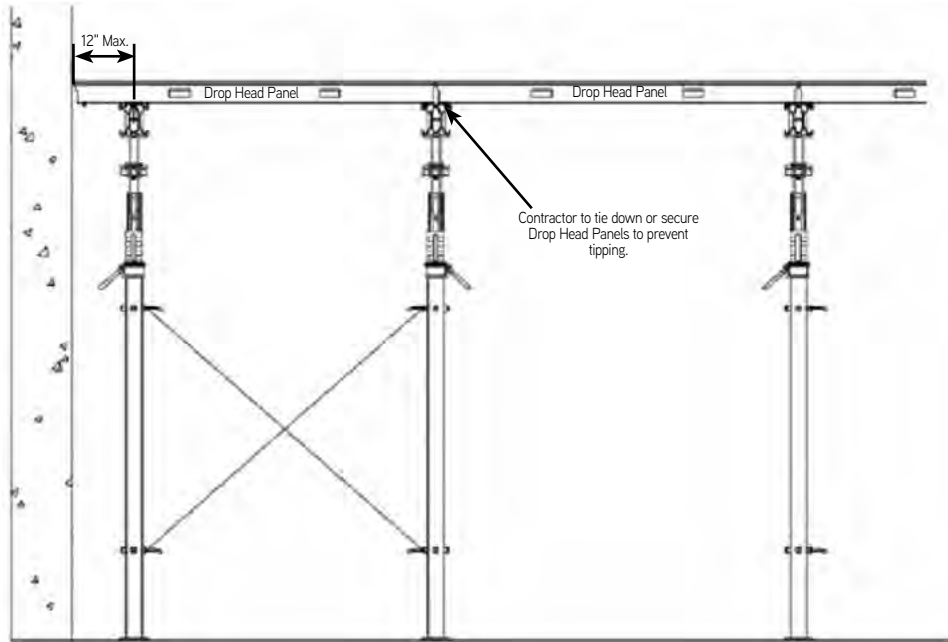


**COLUMN FILLER TYPE 2**

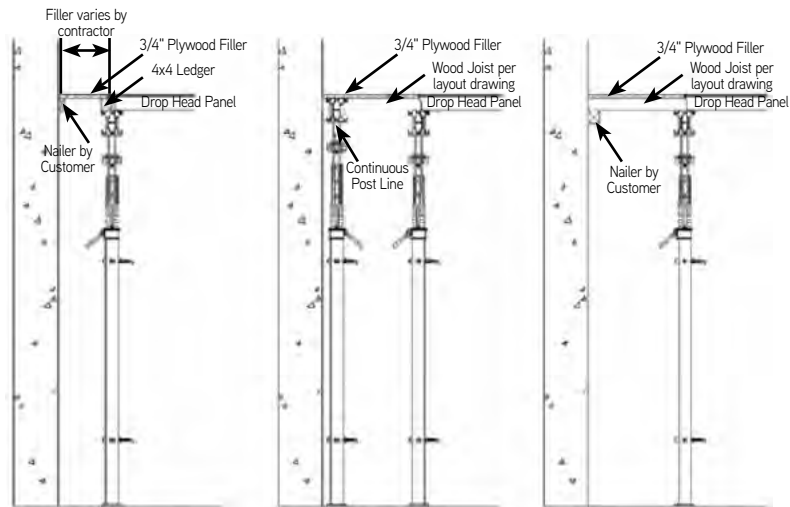


**TYPICAL EDGE CONDITIONS**

Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



**DROP HEAD PANEL CANTILEVER AT WALL EDGE**



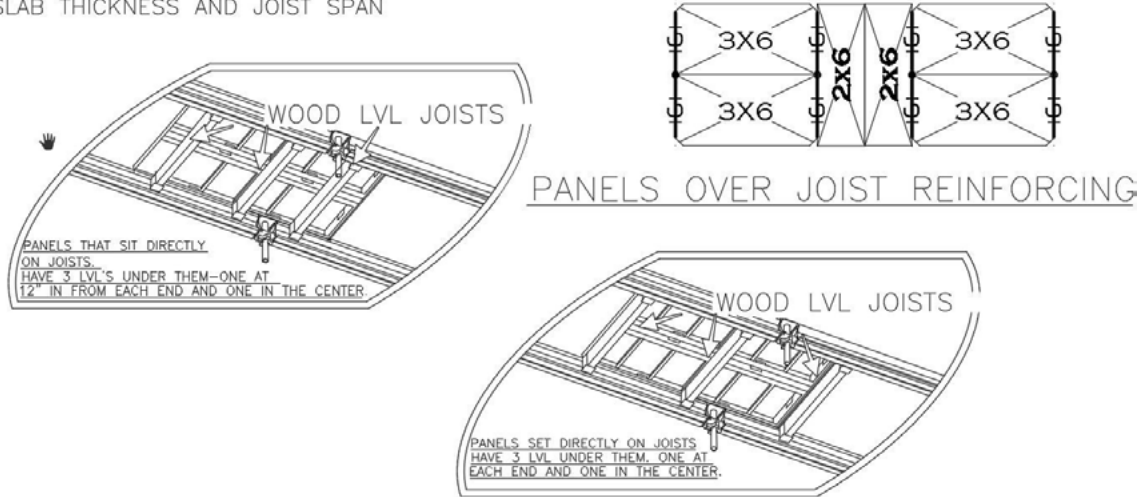
**SMALL FILLER AT WALL**  
with support at wall

**WIDE FILLER AT WALL**  
without support at wall

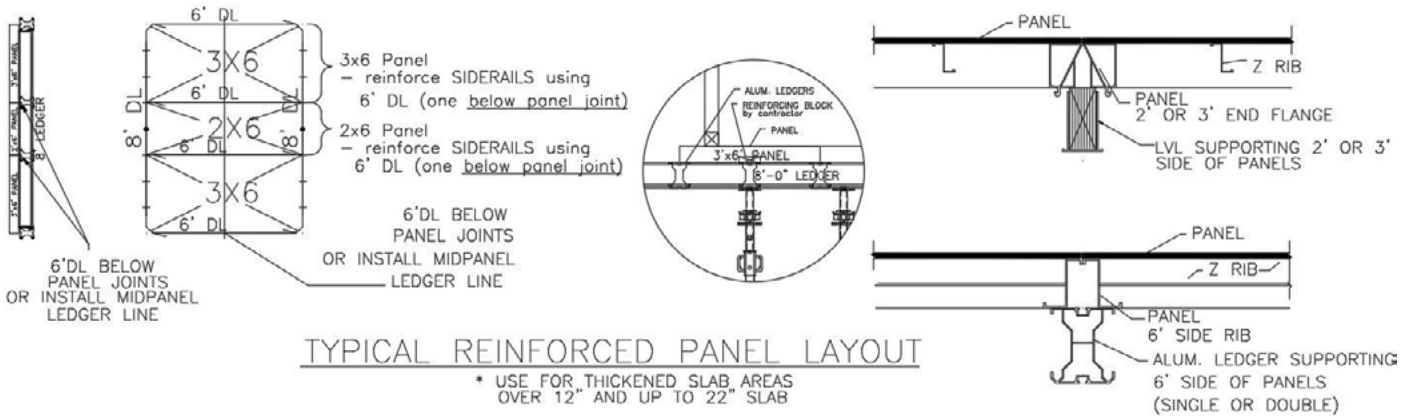
**WIDE FILLER AT WALL**  
with support at wall

Other Considerations

SPACING OF JOISTS IS DEPENDENT ON SLAB THICKNESS AND JOIST SPAN

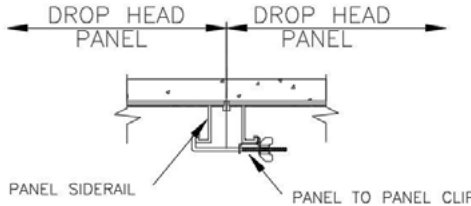
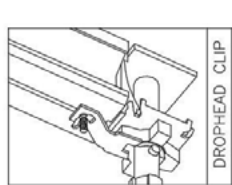
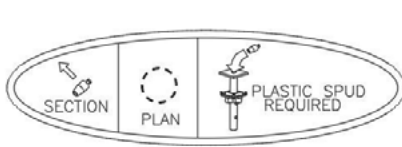


PANELS ON LVL JOISTS



TYPICAL REINFORCED PANEL LAYOUT

\* USE FOR THICKENED SLAB AREAS OVER 12" AND UP TO 22" SLAB



MISCELLANEOUS DETAILS

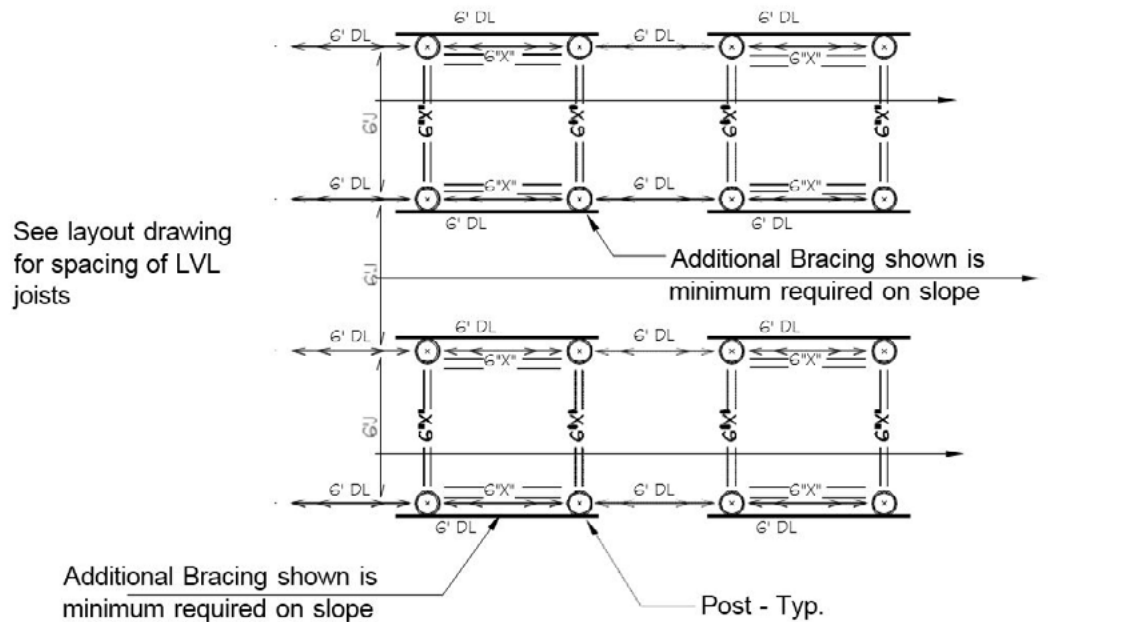
JOIST CLIPS ARE TO BE SUBSTITUTED FOR PLASTIC SPUD WHEN USING UNIVERSAL DROPHEAD

### SLOPED SLABS

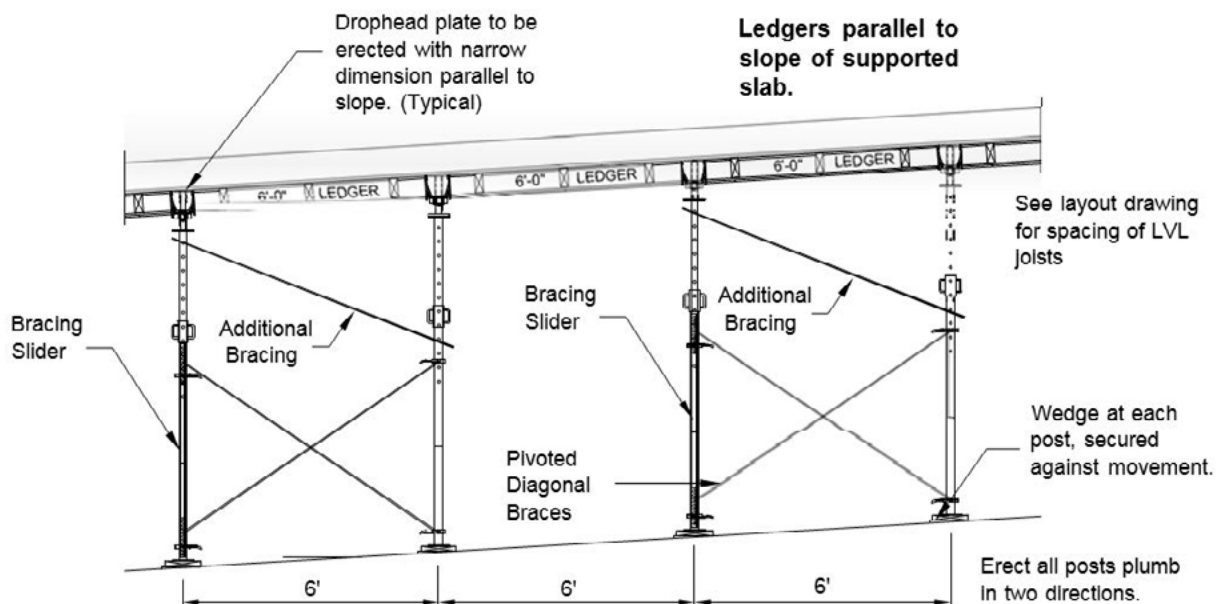
When it is necessary to place Drop Head on sloped surfaces, additional bracing and analysis is required. If slopes are greater than 12%, contact the Dayton Superior Engineering Department.

The drawings below are for illustrative purposes only. Each case is different.

Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



**PLAN**

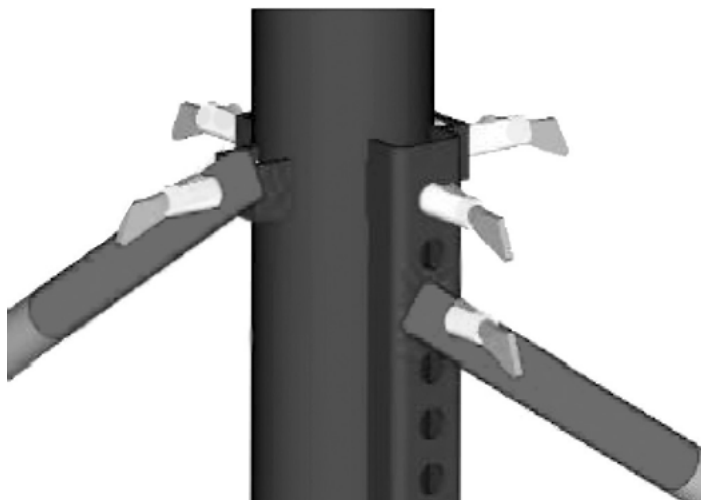
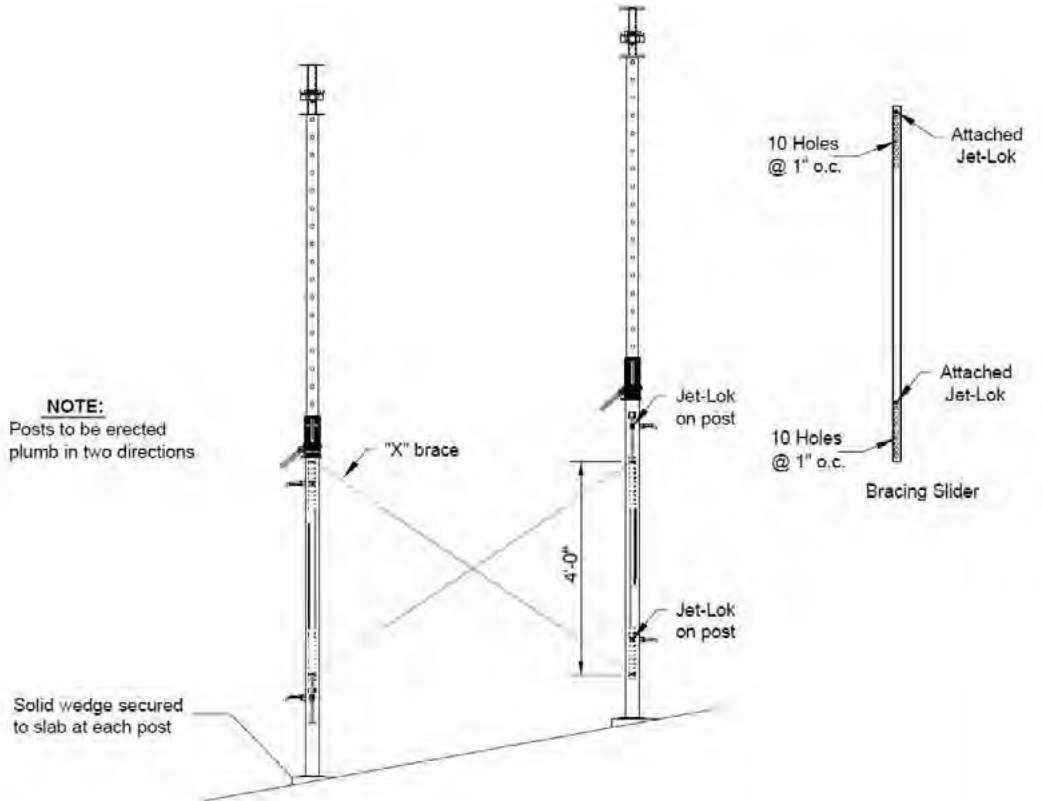


**SECTION**

### BRACING SLIDER

To facilitate proper Cross-Bracing of Drop Head bearing on a sloped slab, the Brace Slider is attached to one or both of the posts. The Bracing Slider is attached at the Jet-Lok locations of the post shores. The Cross-Braces are then attached to the Brace Slider and pivoted into position to the adjacent post shore.

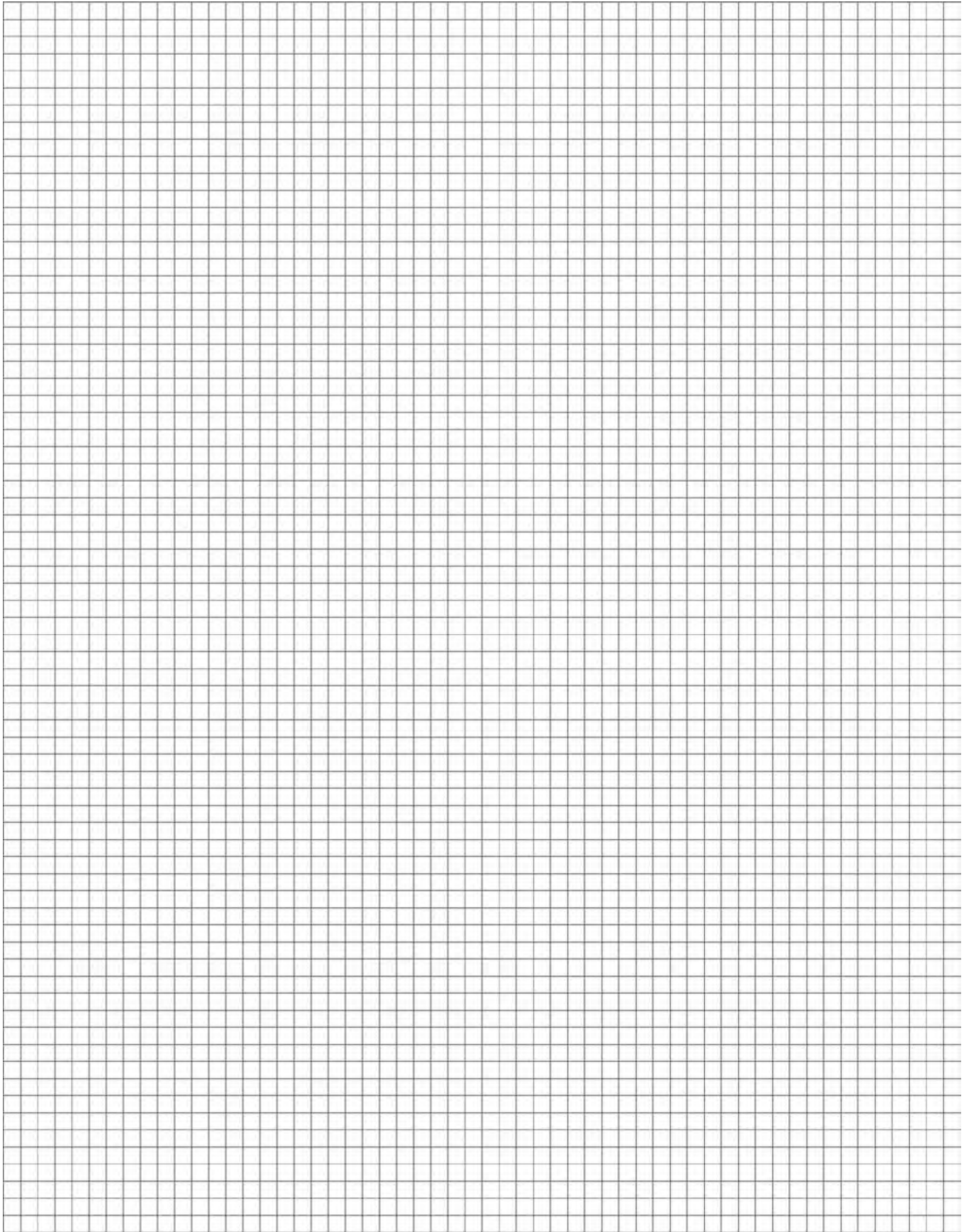
Note: Contractor to ensure proper fall protection is provided on all open sides and openings in formwork and slabs as required by local and applicable codes.



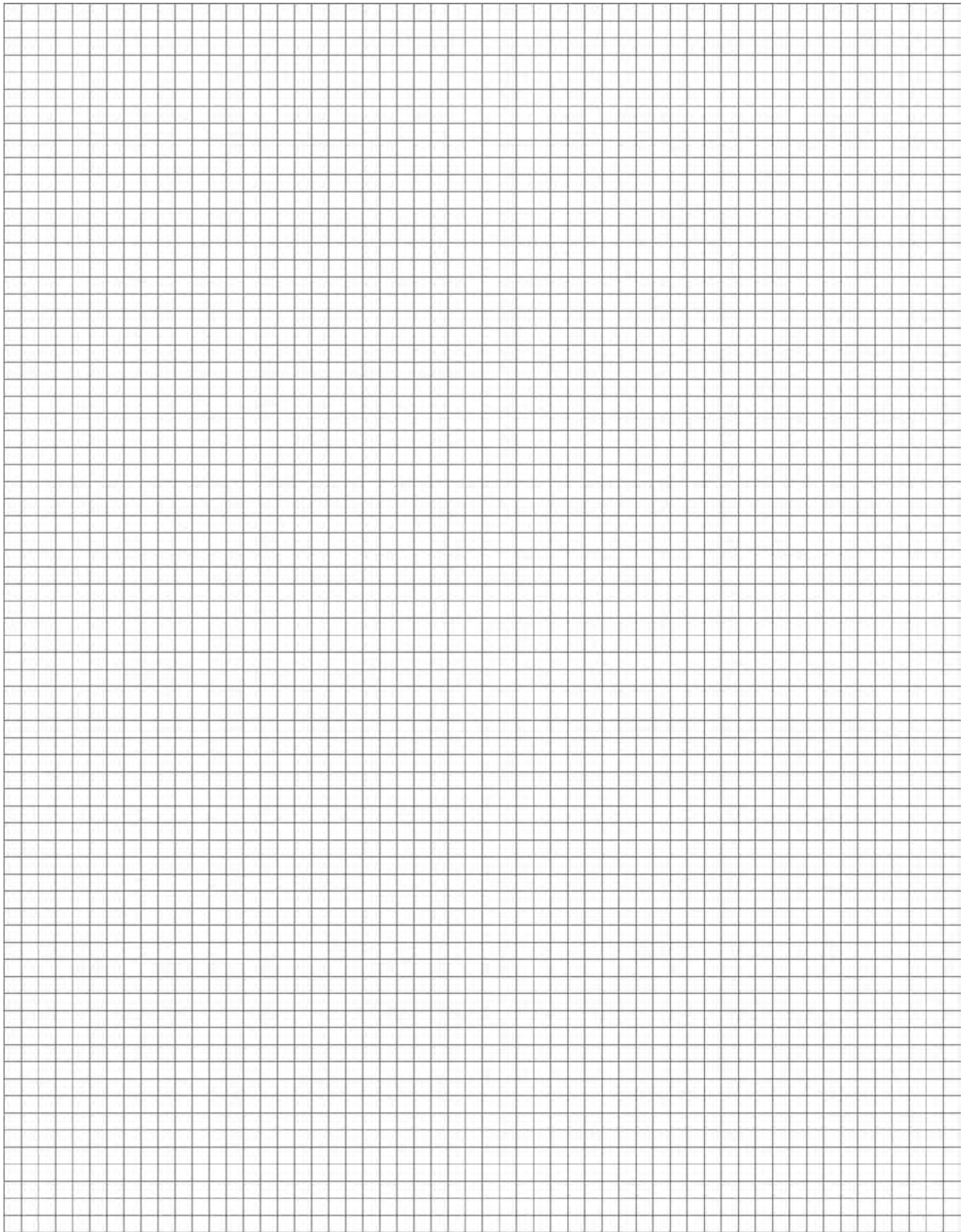
BRACING SLIDER

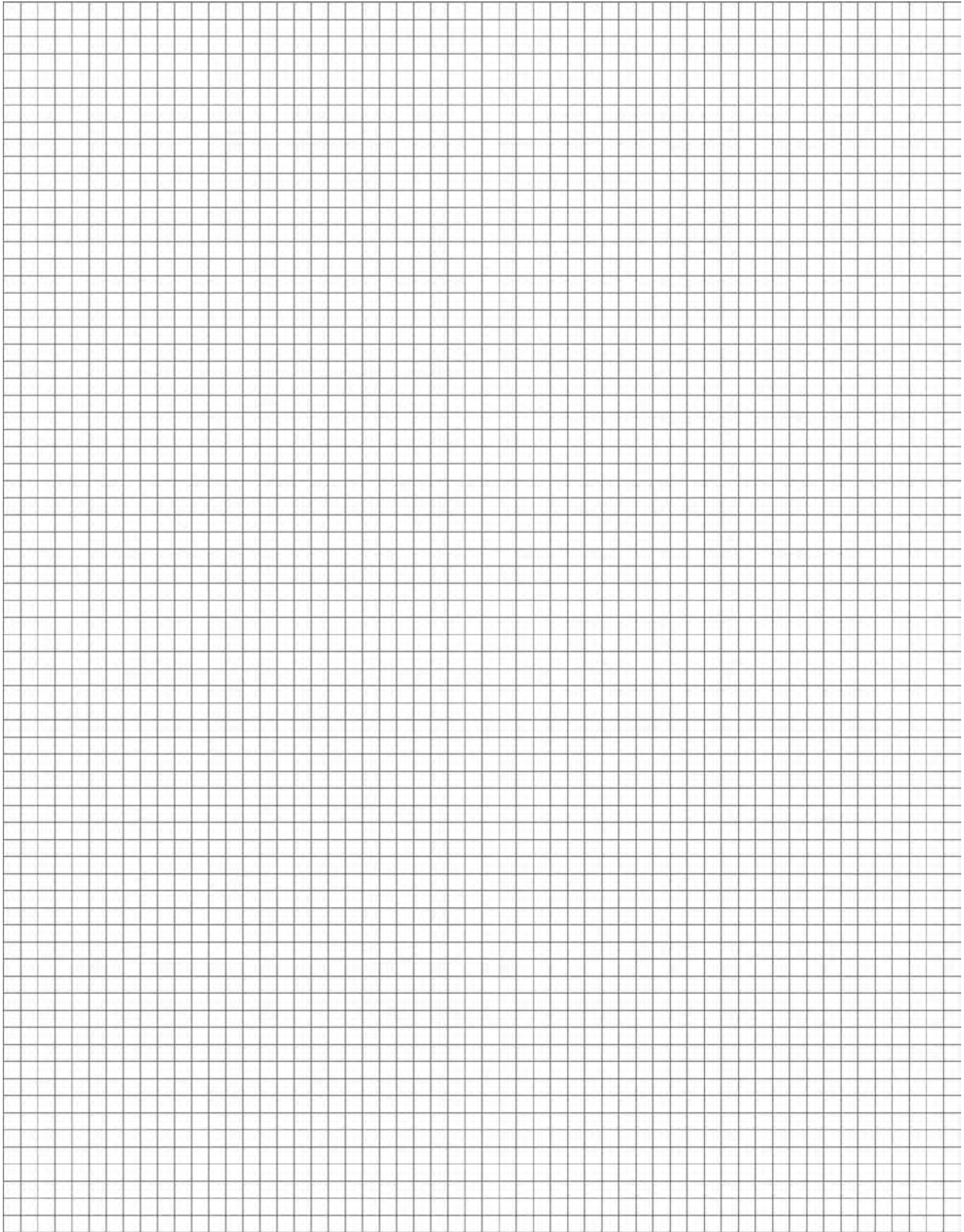
## MINIMUM & MAXIMUM SHORE HEIGHTS

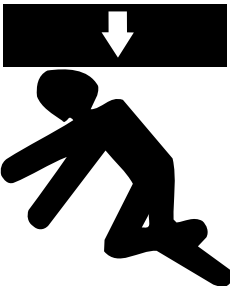
Product Code	Post	Fully Closed Height	Universal Drophead (lowered)		Universal Drophead (Raised)	
F57073	Primary Post	6'-6"	6'-9"	10'-8"	7'-1"	10'-8"
N/A	Primary Post w/ 2 Extensions	8'-6"	8'-9"	12'-8"	9'-1"	12'-8"
F57075	#3 Post Shore	7'-9"	8'	11'-8"	8'-4"	11'-8"









	<p><b>! WARNING</b></p> <p><b>Improper Use of Concrete Forms and Shores Can Cause Severe Injury or Death</b></p> <p>Read, understand and follow the information and instructions in this publication before using any of the Dayton Superior concrete accessories displayed herein. When in doubt about the proper use or installation of any Dayton Superior concrete accessory, immediately contact the nearest Dayton Superior Service Center or Technical Service Department for clarification. See back cover for your nearest location.</p>
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Dayton Superior products are intended for use by trained, qualified and experienced workmen only. Misuse or lack of supervision and/or inspection can contribute to serious accidents or deaths. Any application other than those shown in this publication should be carefully tested before use.

The user of Dayton Superior products must evaluate the product application, determine the safe working load and control all field conditions to prevent applications of loads in excess of a product's safe working load. Safety factors shown in this publication are approximate minimum values. The data used to develop safe working loads for products displayed in this publication are a combination of actual testing and/or other industry sources. Recommended safe working loads given for the products in this publication must never be exceeded.

---

### Worn Working Parts

For safety, concrete forms must be properly used and maintained. Concrete products shown in this publication may be subject to wear, overloading, corrosion, deformation, intentional alteration and other factors that may affect the device's performance. All reusable products must be inspected regularly by the user to determine if they may be used at the rated safe working load or should be removed from service. The frequency of inspections depends upon factors such as (but not limited to) the amount of use, period of service and environment. It is the responsibility of the user to schedule inspections for wear and remove the hardware from service when wear is noted.

---

### Shop or Field Modification

Welding can compromise a product's safe working load value and cause hazardous situations. Knowledge of materials, heat treating and welding procedures is necessary for proper welding. Consult a local welding supply dealer for assistance in determining required welding procedures.

Since Dayton Superior cannot control workmanship or conditions in which modifications are done, Dayton Superior cannot be responsible for any product altered in the field.

---

### Interchangeability

Many concrete products that Dayton Superior manufactures are designed as part of a system. Dayton Superior strongly discourages efforts to interchange products supplied by other manufacturers with components supplied by Dayton Superior. When used properly, and in accordance with published instructions, Dayton Superior products have proven to be among the best designed and safest in the industry. Used improperly or with incompatible components supplied by other manufacturers, Dayton Superior products or systems may be rendered unsafe.

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### Installation

#### WARNING

1. Dayton Superior Corporation products shall be installed and used only as indicated on the Dayton Superior Corporation installation guidelines and training materials.
2. Dayton Superior Corporation products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specific load ratings.
3. All instructions are to be completely followed to ensure proper and safe installation and performance.
4. Any improper misuse, misapplication, installation, or other failure to follow Dayton Superior Corporation's instruction may cause product malfunction, property damage, serious bodily injury and death.

#### THE CUSTOMER IS RESPONSIBLE FOR THE FOLLOWING:

1. Conformance to all governing codes
2. Use of appropriate industry standard hardware
3. The integrity of structures to which the products are attached, including their capability to safely accept the loads imposed, as evaluated by a qualified engineer.

#### SAFETY INSTRUCTIONS:

All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment

---

### Design Changes

Dayton Superior reserves the right to change product designs, rated loads and product dimensions at any time without prior notice.

**Note:** See Safety Notes and Safety Factor Information.



**SYMONS**<sup>®</sup>  
BY DAYTON SUPERIOR

1125 Byers Road  
Miamisburg, OH 45342  
937-866-0711  
888-977-9600

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