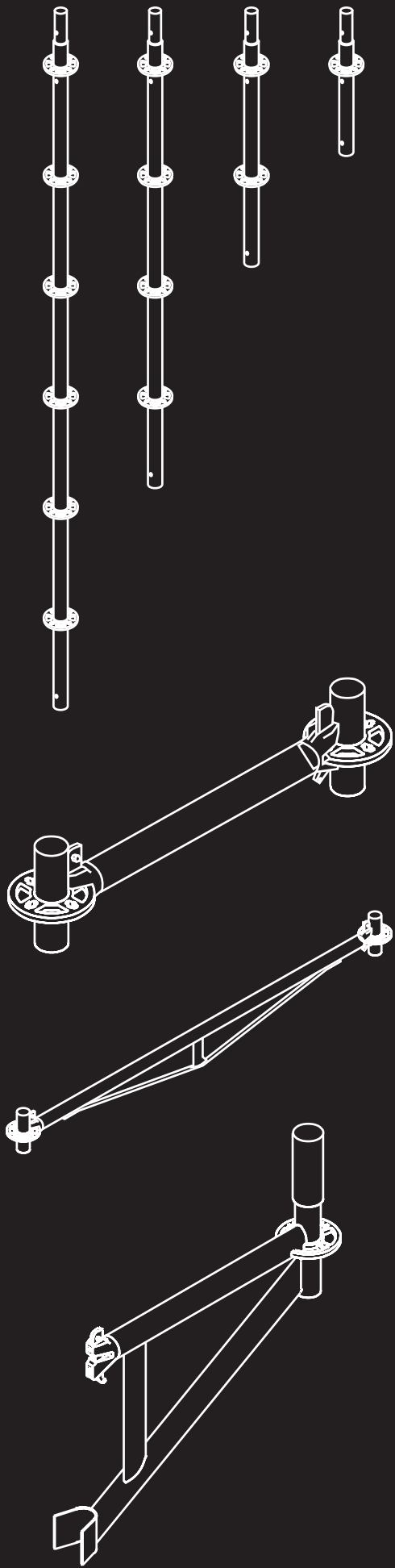


Universal System Scaffold

Erection Procedures



UNIVERSAL SYSTEM SCAFFOLD will conform to all applicable government regulations when erected properly and used safely.

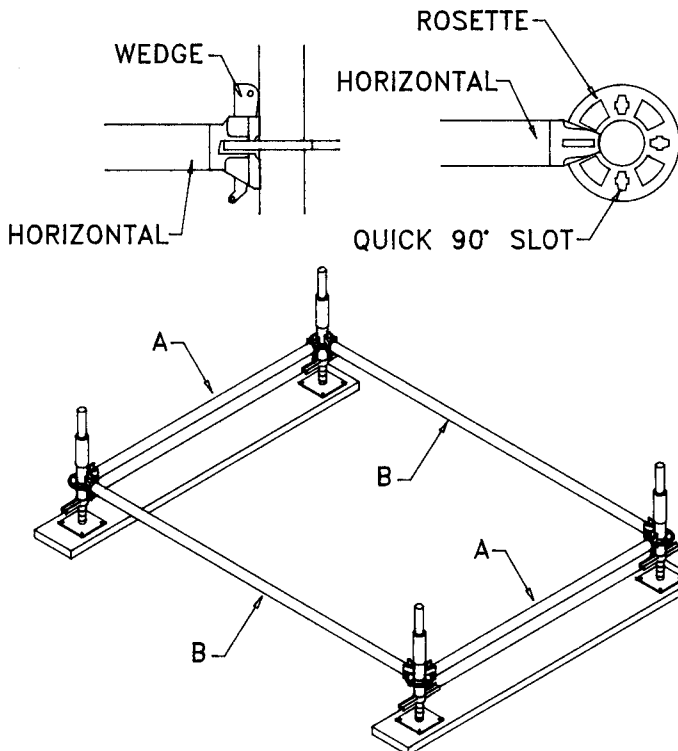
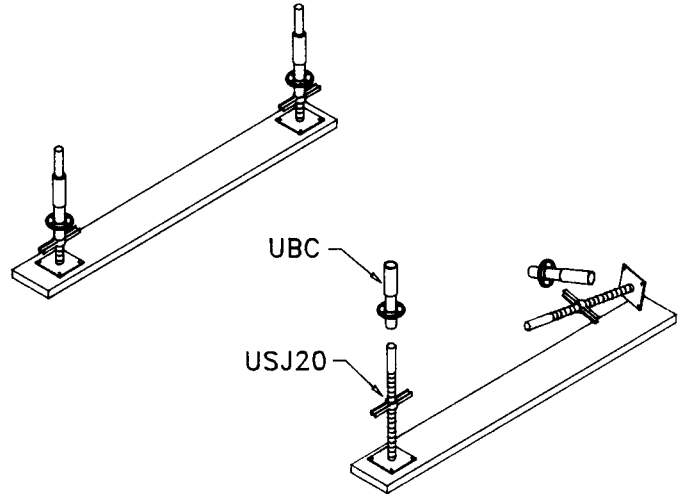
Proper erection and use of UNIVERSAL SYSTEM SCAFFOLD is the sole responsibility of the user. The manufacturer's recommendations and codes listed below should be followed:

OSHA 1910.28 and 1926.451
ANSI A10.8 1988

This material provides information on general erection guidelines. Consult your scaffold supplier or manufacturer if additional information is required.

Step 1

Position the screw jacks (USJ20) centered on sills and assemble the base collars (UBC) as shown. The amount of exposed thread on each jack should be equalized. For uneven elevations, start at the highest point and adjust the screw leg to its lowest position.



Step 2

Select the required length of load bearing horizontal (A) and attach to the base "Rosette" using the quick 90° slot. The horizontal slot in the mouthpiece should go over the quick 90° slot with the wide part of the wedge on top.

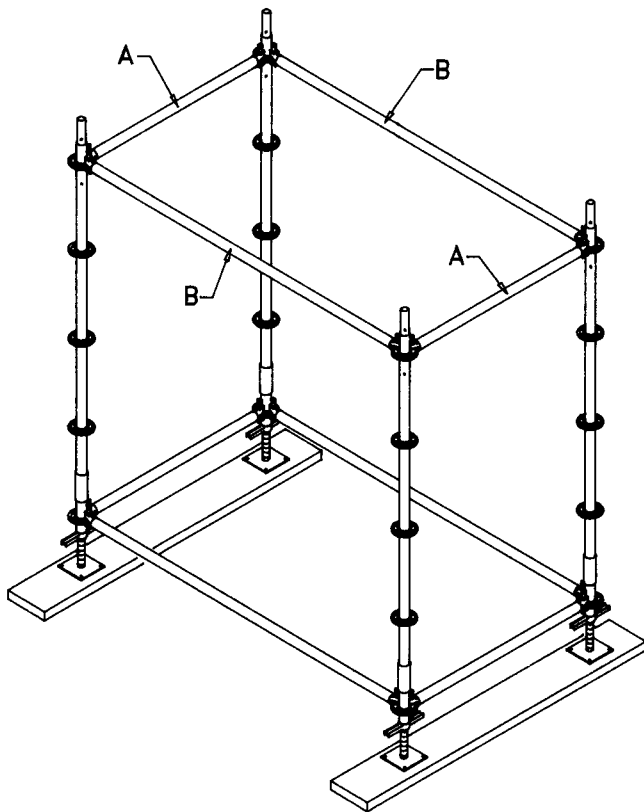
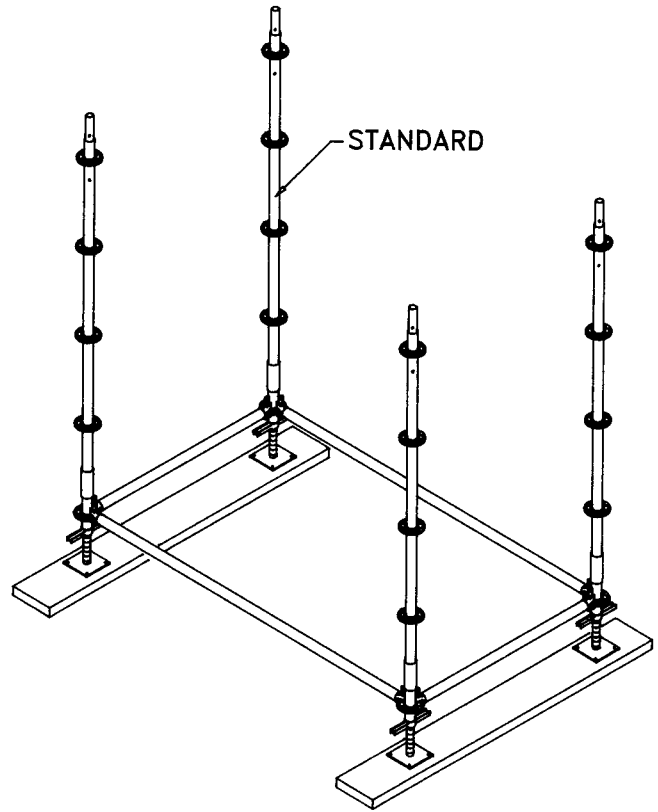
Hand tighten the wedge/rosette connection. The non-load bearing horizontals (B) are attached in the same manner.

Members "A" and "B" should now be leveled and squared to each other and connections secured by striking the wedge downward using a hard mallet or 1 lb. claw hammer.

Note: See Page 14 for Color Code Chart

Step 3

Insert appropriate height of "Standard" into base collars. Align quick 90° slot of rosette with holes in base collar.



Step 4

Assemble a second set of load bearing "A" and non-load bearing "B" horizontals on the rosettes at a maximum of 6'-6 3/4" (every four (4) rosettes). Secure these items in the same manner described in Step 2 (Page 4).

Step 5

Universal System Scaffold must be braced diagonally in the vertical plane as illustrated.

To erect a wall-type scaffold, continue assembling standards in sets of two with all associated components described in previous steps. When the scaffold height exceeds four (4) times the minimum base dimension, it shall be secured with rigid ties to the structure at that elevation. Wall tie intervals should not exceed 30 feet horizontally and 26 feet vertically.

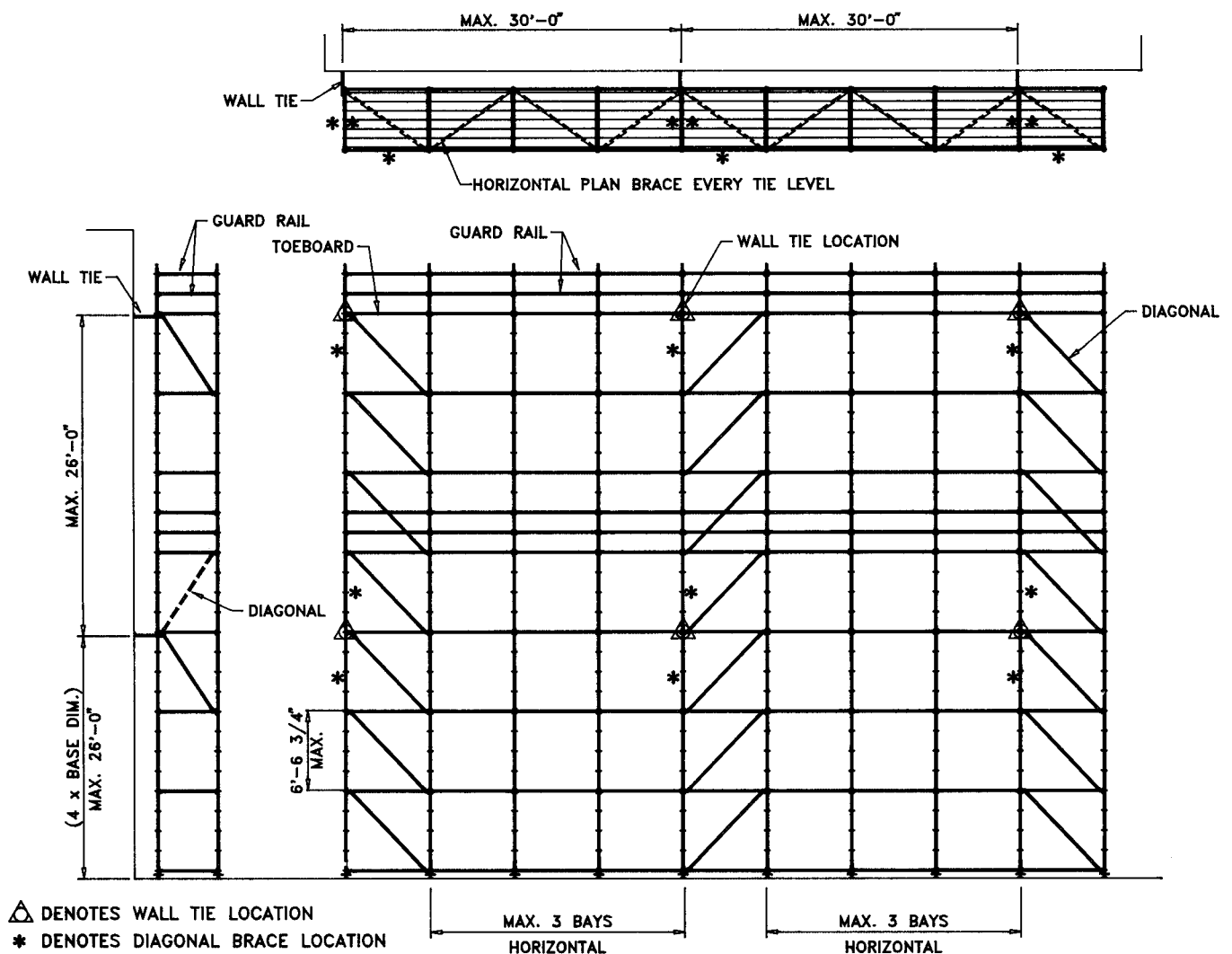
Also, install ties at the tops of scaffolds which extend more than one lift above the previous ties and at the ends of scaffolds which extend more than one bay beyond the previous ties. These ties shall be attached as close as possible to the rosette where the bearer and runner meet.

Horizontal plan braces shall be used to square scaffold at the base and at tie-in levels.

Guard rails and toeboard are required on all open sides and ends of fully planked working levels.

When stacking standards, all joints should be secured by nut and bolt.

Safe access and egress should be provided with rest platforms at levels not to exceed 35 feet vertically.

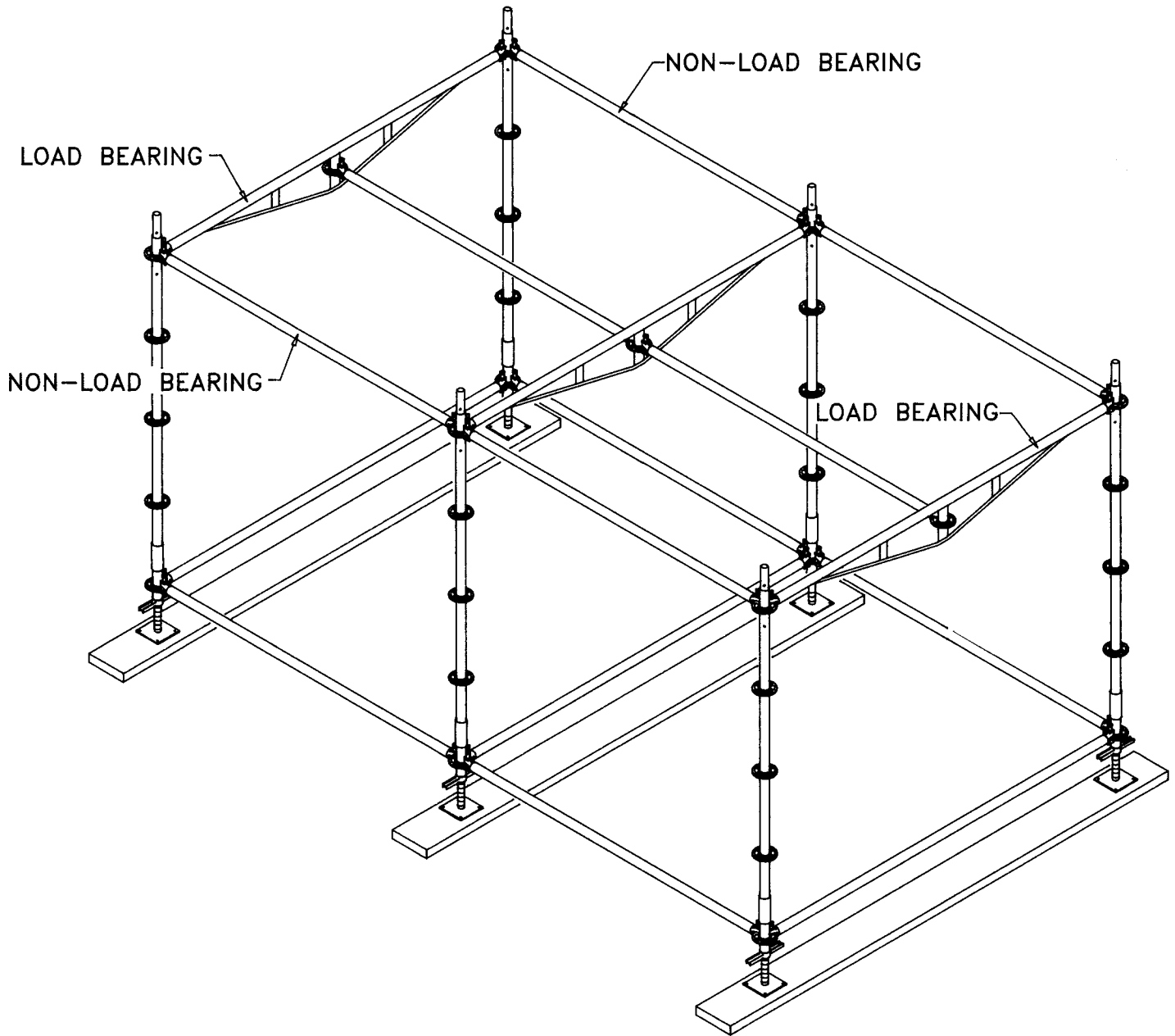


Free standing, mobile and guyed towers should be diagonally braced on all sides and at all levels.

HORIZONTAL TRUSS

Horizontal Trusses are used where long span load bearing capacity is required. All load bearing and non-load bearing horizontals may be replaced with trusses.

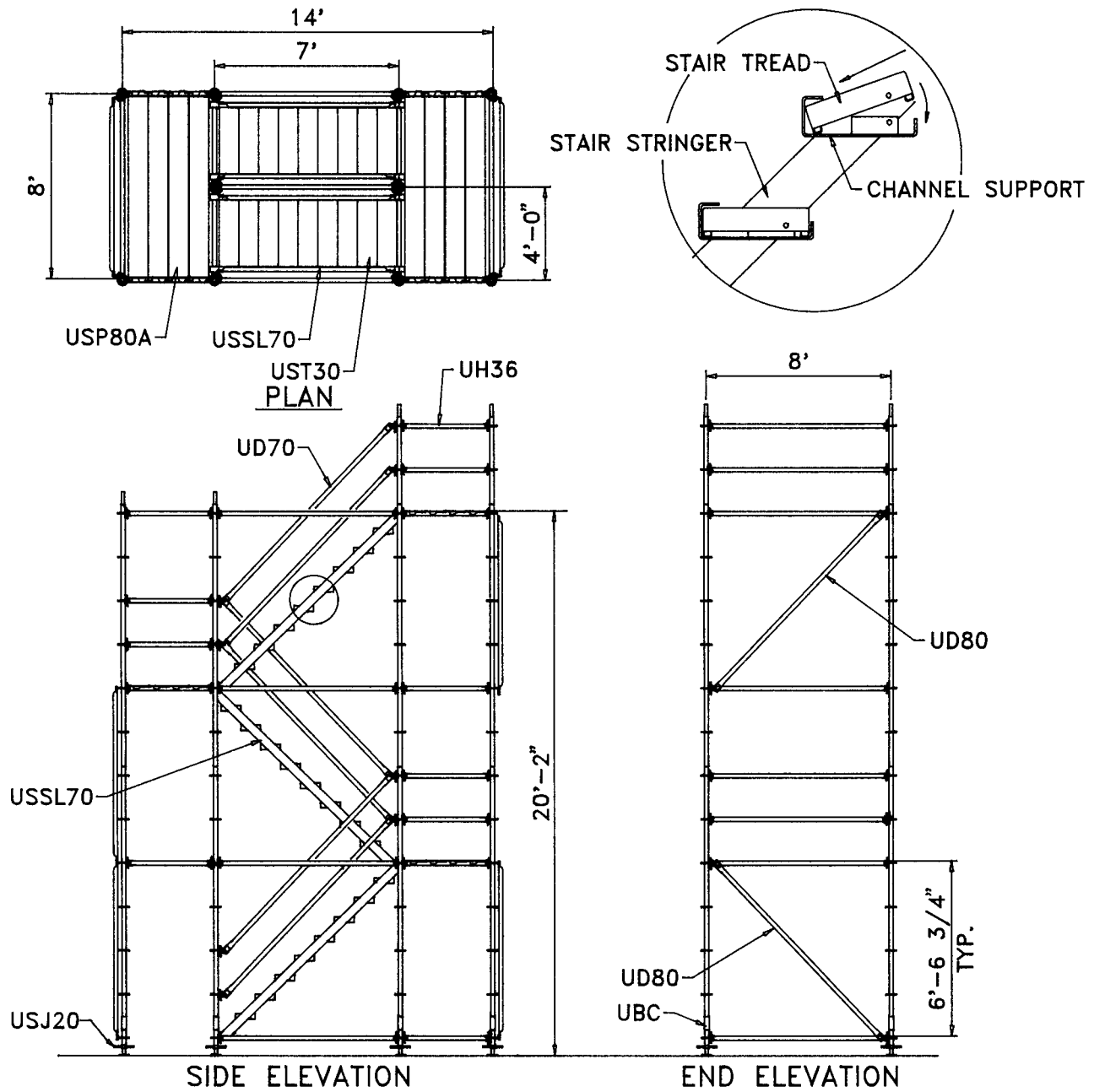
Note: Care must be taken not to overload the standards. The increased "area" must be considered. Consult factory for advice and loading information.



STAIR UNITS

Universal System Scaffold easily adapts to the requirements of complete stair units. Standard components combined with minimal stair-related parts as illustrated below and on pages 9 and 10 permit simple assembly of these units:

1. Assemble base section as shown.
2. Attach USSL70 Stair Stringers to upper and lower UH40 Horizontal.
3. The UST30 Stair Treads are inserted with a "rotary motion" into their respective channel supports.
4. Required hand rail consists of four (4) UD70 Diagonals assembled in the two (2) rosettes just above the stair base.

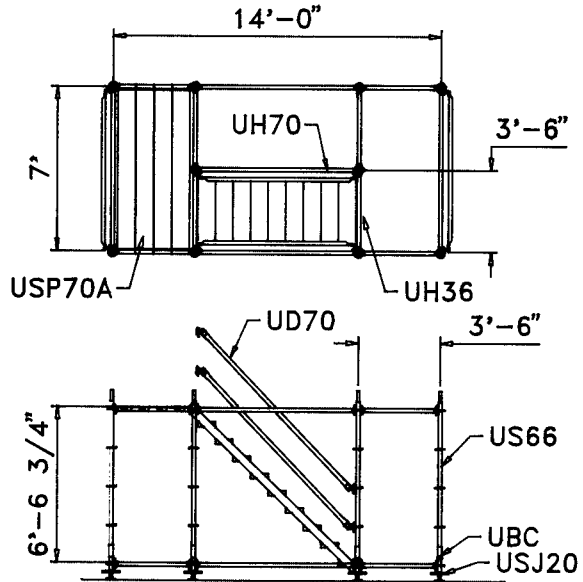


7' x 14' STAIR UNIT

3'6" - BAYS

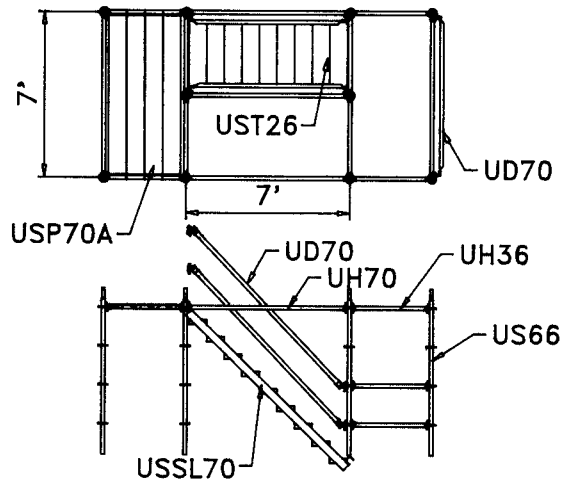
- BASE SECTION -

- 10 - US66
- 10 - UBC
- 10 - USJ20
- 10 - UH70
- 15 - UH36
- 1 - USSL70
- 1 - USSR70
- 6 - UD70
- 9 - UST26
- 4 - USP70A



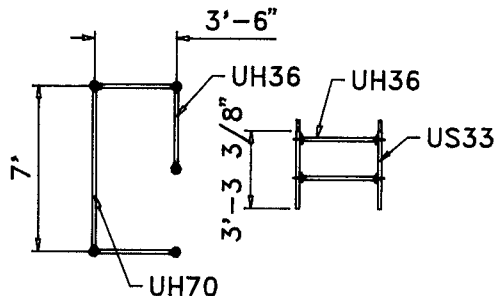
- INTERMEDIATE SECTION -

- 10 - US66
- 7 - UH70
- 12 - UH36
- 1 - USSL70
- 1 - USSR70
- 5 - UD70
- 9 - UST26
- 4 - USP70A



- TOP SECTION -

- 5 - US33
- 2 - UH70
- 6 - UH36

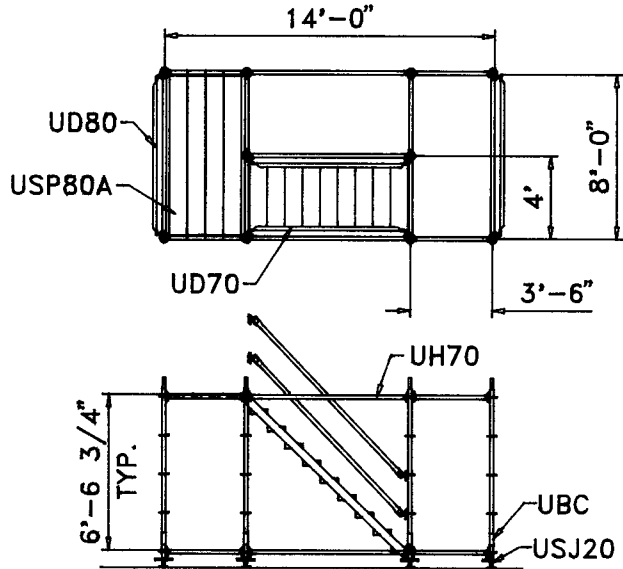


8' x 14' STAIR UNIT

4 - BAYS

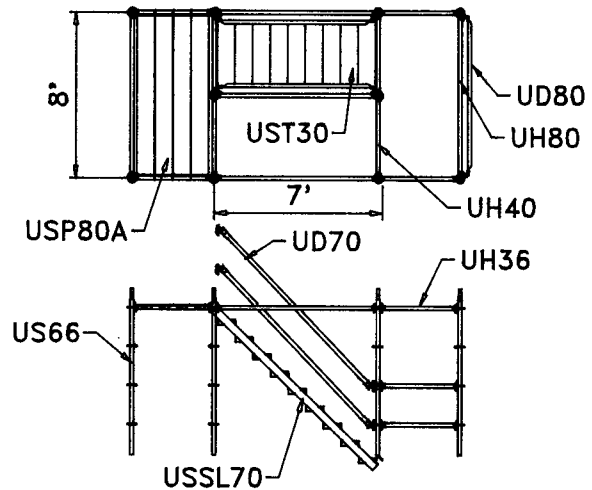
- BASE SECTION -

- 10 - US66
- 10 - UBC
- 10 - USJ20
- 4 - UH80
- 6 - UH70
- 8 - UH40
- 7 - UH36
- 1 - USSL70
- 1 - USSR70
- 2 - UD80
- 4 - UD70
- 9 - UST30
- 4 - USP80A



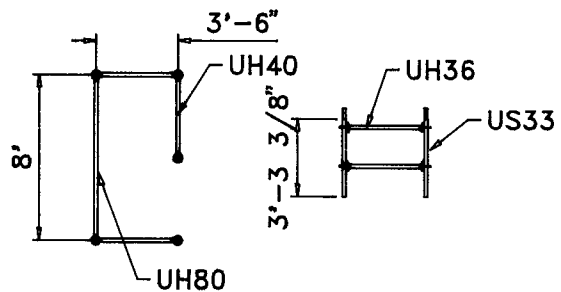
- INTERMEDIATE SECTION -

- 10 - US66
- 4 - UH80
- 3 - UH70
- 4 - UH40
- 8 - UH36
- 1 - USSL70
- 1 - USSR70
- 1 - UD80
- 4 - UD70
- 9 - UST30
- 4 - USP80A



- TOP SECTION -

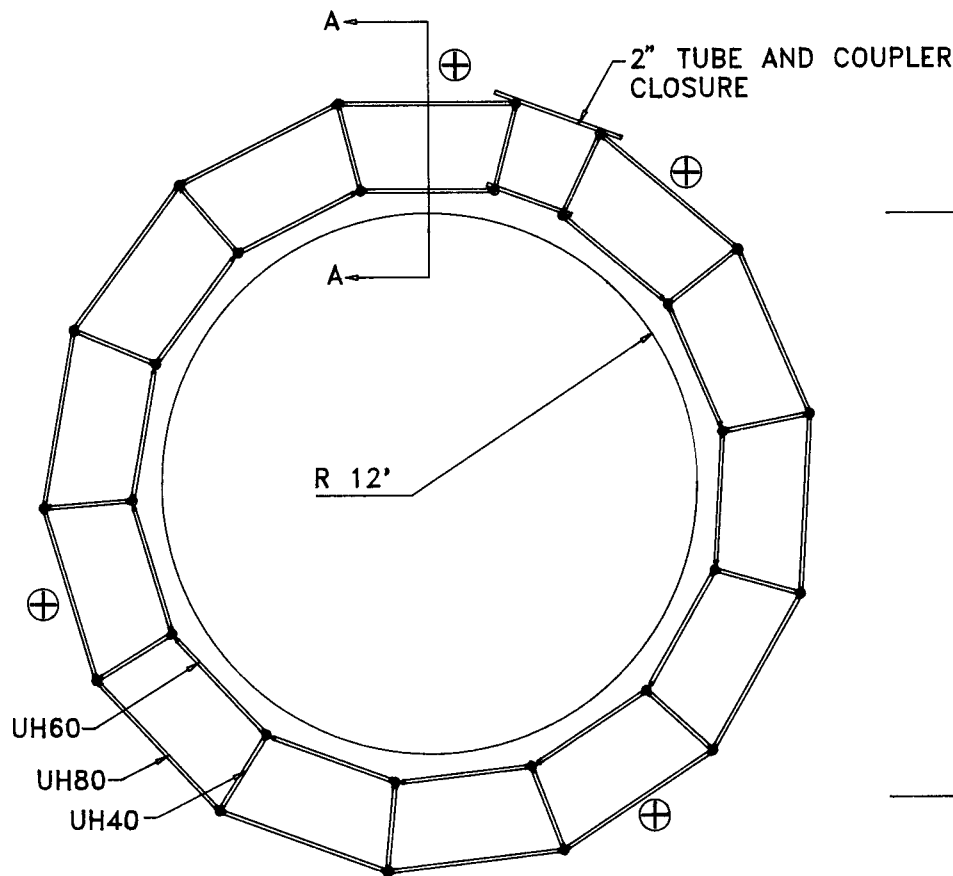
- 5 - US33
- 2 - UH80
- 2 - UH40
- 4 - UH36



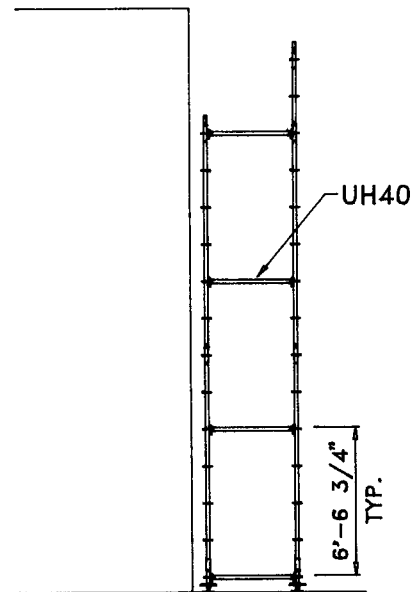
CIRCULAR VESSELS

For round or other irregular shaped structures, ideally it is most economical to vary the length of the inside versus the outside runners or horizontals. The spacing of each set of standards can usually be calculated to fit the circumference of the circular vessel or structure.

A perfect closure bay is very unlikely; therefore, these final ties are accomplished with tubes and couplers. The actual assembly should be very similar to a straight running scaffold making certain that the first level is plumb and in perfect alignment. Alternate methods of assembly include considering the round layout, a series of towers connected inside and outside with additional horizontals or tubes and couplers.



PLAN



SECTION A-A

⊕ - INDICATES DIAGONAL BRACING

GIVE TO SCAFFOLD ERECTOR & USER OR POST ON JOB

CODE OF SAFE PRACTICES FOR

FRAME SCAFFOLDS, SYSTEM SCAFFOLDS, TUBE AND CLAMP SCAFFOLDS & ROLLING SCAFFOLDS

DEVELOPED FOR INDUSTRY BY SCAFFOLD INDUSTRY ASSOCIATION, INC.

It shall be the responsibility of all users to read and comply with the following common sense guidelines which are designed to promote safety in the erecting, dismantling and use of Scaffolds. These guidelines do not purport to be all-inclusive nor to supplant or replace other additional safety and precautionary measures to cover usual or unusual conditions. If these guidelines in any way conflict with any state, local, federal or other government statute or regulation, said statute or regulation shall supersede these guidelines and it shall be the responsibility of each user to comply therewith.

I. GENERAL GUIDELINES

- A. **POST THESE SCAFFOLDING SAFETY GUIDELINES** in a conspicuous place and be sure that all persons who erect, dismantle or use scaffolding are aware of them.
- B. **FOLLOW ALL STATE, LOCAL AND FEDERAL CODES, ORDINANCES AND REGULATIONS** pertaining to scaffolding.
- C. **SURVEY THE JOB SITE.** A survey shall be made of the job site for hazards, such as untamped earth fills, ditches, debris, high tension wires, unguarded openings, and other hazardous conditions created by other trades. These conditions should be corrected or avoided as noted in the following sections.
- D. **INSPECT ALL EQUIPMENT BEFORE USING.** Never use any equipment that is damaged or defective in any way. Remove it from the job site.
- E. **SCAFFOLDS MUST BE ERECTED IN ACCORDANCE WITH DESIGN AND/OR MANUFACTURERS' RECOMMENDATIONS.**
- F. **DO NOT ERECT, DISMANTLE OR ALTER A SCAFFOLD** unless under the supervision of a qualified person.
- G. **DO NOT ABUSE OR MISUSE THE SCAFFOLD EQUIPMENT.**
- H. **ERECTED SCAFFOLDS SHOULD BE CONTINUALLY INSPECTED** by users to be sure that they are maintained in safe condition. Report any unsafe condition to your supervisor.
- I. **NEVER TAKE CHANCES! IF IN DOUBT REGARDING THE SAFETY OR USE OF THE SCAFFOLD, CONSULT YOUR SCAFFOLD SUPPLIER.**
- J. **NEVER USE EQUIPMENT FOR PURPOSES OR IN WAYS FOR WHICH IT WAS NOT INTENDED.**
- K. **DO NOT WORK ON SCAFFOLDS** if your physical condition is such that you feel dizzy or unsteady in any way.

II. GUIDELINES FOR ERECTION AND USE OF SCAFFOLDS

- A. **SCAFFOLD BASE MUST BE SET ON AN ADEQUATE SILL OR PAD** to prevent slipping or sinking and fixed thereto where required. Any part of a building or structure used to support the scaffold shall be capable of supporting the maximum intended load to be applied.
- B. **USE ADJUSTING SCREWS** or other approved methods instead of blocking to adjust to uneven grade conditions.
- C. **BRACING, LEVELING & PLUMBING OF FRAME SCAFFOLDS —**
 - 1. Plumb and level all scaffolds as the erection proceeds. Do not force frames or braces to fit — level the scaffold until proper fit can easily be made.
 - 2. Each frame or panel shall be braced by horizontal bracing, cross bracing, diagonal bracing or any combination thereof for securing vertical members together laterally. All brace connections shall be made secure, in accordance with the manufacturer's recommendations.
- D. **BRACING, LEVELING & PLUMBING OF TUBE & CLAMP AND SYSTEM SCAFFOLDS —**
 - 1. **POSTS SHALL BE ERECTED PLUMB** in all directions, with the first level of runners and bearers positioned as close to the base as feasible. The distance between bearers and runners shall not exceed manufacturer's recommended procedures.
 - 2. **PLUMB, LEVEL AND TIE** all scaffolds as erection proceeds.
 - 3. **FASTEN ALL COUPLERS AND/OR CONNECTIONS** securely before assembly of next level.
 - 4. **VERTICAL AND/OR HORIZONTAL DIAGONAL BRACING MUST BE INSTALLED** according to manufacturer's recommendations.
- E. **TIE CONTINUOUS (RUNNING) SCAFFOLDS TO THE WALL OR STRUCTURE** at each end and at least every 30 feet of length when scaffold height exceeds the maximum allowable free standing dimension.

Begin ties or stabilizers when the scaffold height exceeds that dimension, and repeat at vertical intervals not greater than 26 feet. The top anchor shall be placed no lower than four (4) times the base dimension from the top of the completed scaffold. Anchors must prevent scaffold from tipping into or away from wall or structure. Stabilize circular or irregular scaffolds in such a manner that completed scaffold is secure and restrained from tipping.

When scaffolds are partially or fully enclosed or subjected to overturning loads, specific precautions shall be taken to insure the frequency and accuracy of ties to the wall and structure. Due to increased loads resulting from wind or overturning loads the scaffolding component to which ties are subjected shall be checked for additional loads.
- F. **WHEN FREE STANDING SCAFFOLD TOWERS** exceed four (4) times their minimum base dimension vertically, they must be restrained from tipping. (CAL/OSHA and some government agencies require stricter ratio of 3 to 1.)
- G. **DO NOT ERECT SCAFFOLDS NEAR ELECTRICAL POWER LINES UNLESS PROPER PRECAUTIONS ARE TAKEN.** Consult the power service company for advice.
- H. **A MEANS OF ACCESS TO ALL PLATFORMS SHALL BE PROVIDED.**
- I. **DO NOT USE** ladders or makeshift devices on top of scaffolds to increase the height.
- J. **PROVIDE GUARDRAILS AND MID-RAILS AT EACH WORKING PLATFORM LEVEL** where open sides and ends exist, and toeboards where required by code.

K. BRACKETS AND CANTILEVERED PLATFORMS —

1. Brackets for **SYSTEM SCAFFOLDS** shall be installed and used in accordance with manufacturer's recommendations.
2. Brackets for **FRAME SCAFFOLDS** shall be seated correctly with side bracket parallel to the frames and end brackets at 90 degrees to the frames. Brackets shall not be bent or twisted from normal position. Brackets (except mobile brackets designed to carry materials) are to be used as work platforms only and shall not be used for storage of material or equipment.
3. Cantilevered platforms shall be designed, installed and used in accordance with manufacturer's recommendations.

L. ALL SCAFFOLDING COMPONENTS shall be installed and used in accordance with the manufacturers' recommended procedure. Components shall not be altered in the field.

Scaffold frames and their components manufactured by different companies shall not be intermixed, unless the component parts readily fit together and the resulting scaffold's structural integrity is maintained by the user.

M. PLANKING —

1. Working platforms shall cover scaffold bearer as completely as possible. Only scaffold grade wood planking, or fabricated planking and decking meeting scaffold use requirements shall be used.
2. Check each plank prior to use to be sure plank is not warped, damaged, or otherwise unsafe.
3. Planking shall have at least 12" overlap and extend 6" beyond center of support, or be cleated or restrained at both ends to prevent sliding off supports.
4. Solid sawn lumber, LVL (laminated veneer lumber) or fabricated scaffold planks and platforms (unless cleated or restrained) shall extend over their end supports not less than 6" nor more than 18". This overhang should not be used as a work platform.

N. FOR "PUTLOGS" AND "TRUSSES" THE FOLLOWING ADDITIONAL GUIDELINES APPLY:

1. Do not cantilever or extend putlogs/trusses as side brackets without thorough consideration for loads to be applied.
2. Putlogs/trusses should be extended at least 6" beyond point of support.
3. Place recommended bracing between putlogs/trusses when the span of putlog/truss is more than 12 feet.

O. FOR ROLLING SCAFFOLDS THE FOLLOWING ADDITIONAL GUIDELINES APPLY:

1. **RIDING A ROLLING SCAFFOLD IS VERY HAZARDOUS.** The Scaffold Industry Association does not recommend nor encourage this practice. However, if you choose to do so, be sure to follow all state, federal or other governmental guidelines.
2. Casters with plain stems shall be attached to the panel or adjustment screw by pins or other suitable means.
3. No more than 12 inches of the screw jack shall extend between the bottom of the adjusting nut and the top of the caster.
4. Wheels or casters shall be provided with a locking means to prevent caster rotation and scaffold movement and kept locked.
5. Joints shall be restrained from separation.
6. Use horizontal diagonal bracing near the bottom and at 20 foot intervals measured from the rolling surface.
7. Do not use brackets or other platform extensions without compensating for the overturning effect.
8. The platform height of a Rolling Scaffold must not exceed four (4) times the smallest base dimension (CAL/OSHA and some Government agencies require a stricter ratio of 3 to 1).
9. Cleat or secure all plank.
10. Secure or remove all materials and equipment from platform before moving.
11. Do not attempt to move a rolling scaffold without sufficient help — watch out for holes in floor and overhead obstructions — stabilize against tipping.

P. SAFE USE OF SCAFFOLD —

1. Prior to use, inspect scaffold to insure it has not been altered and is in safe working condition.
2. Erected scaffolds and platforms should be inspected continuously by those using them.
3. Exercise caution when entering or leaving a work platform.
4. Do not overload scaffold. Follow manufacturer's safe working load recommendations.
5. Do not jump onto planks or platforms.
6. Do not use ladders or makeshift devices on top of working platforms to increase the height or provide access from above.
7. Climb in access areas only and **USE BOTH HANDS.**

III. WHEN DISMANTLING SCAFFOLDING THE FOLLOWING ADDITIONAL GUIDELINES APPLY:

- A.** Check to assure scaffolding has not been structurally altered in a way which would make it unsafe and, if it has, reconstruct where necessary before commencing with dismantling procedures. This includes all scaffold ties.
- B.** Visually inspect plank prior to dismantling to be sure they are safe.
- C.** Consideration must be given as to the effect removal of a component will have on the rest of the scaffold prior to that component's removal.
- D.** Do not accumulate excess components or equipment on the level being dismantled.
- E.** Do not remove ties until scaffold above has been removed (dismantled).
- F.** Lower dismantled components in an orderly manner. Do not throw off of scaffold.
- G.** Dismantled equipment should be stockpiled in an orderly manner.
- H. FOLLOW ERECTION PROCEDURES AND USE MANUALS.**

These safety guidelines (Codes of Safe Practice) set forth common sense procedures for safely erecting, dismantling and using scaffolding equipment. However, equipment and scaffolding systems differ, and accordingly, reference must always be made to the instructions and procedures of the supplier and/or manufacturer of the equipment.

Since field conditions vary and are beyond the control of the Scaffold Industry Association, safe and proper use of scaffolding is the sole responsibility of the user.

UNIVERSAL SYSTEM SCAFFOLD COLOR CODE CHART

2'	=	BLANK
3'	=	YELLOW
3'6"	=	BLACK
4'	=	ORANGE
5'	=	BROWN
6'	=	BLUE
7'	=	BLANK
8'	=	GREEN
10'	=	RED

USSR70 Right Stair Stringer = RED
USSL70 Left Stair Stringer = BLANK