

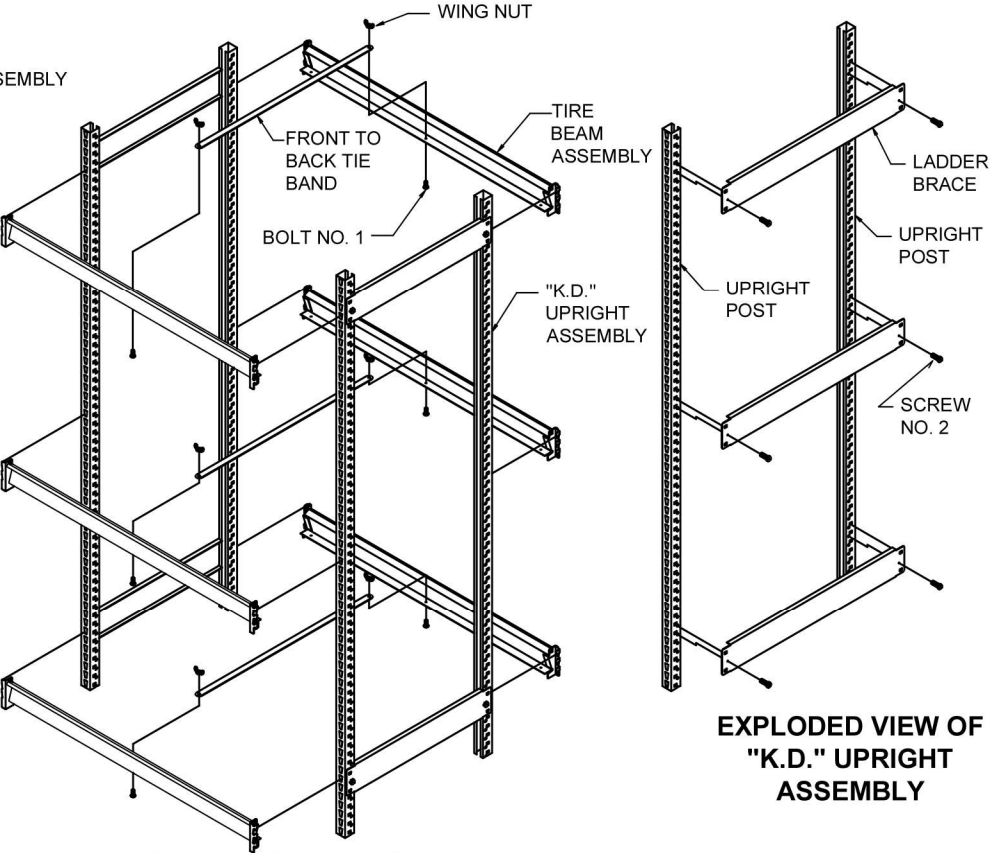
EXPLODED ASSEMBLY OF BULK STORAGE RACK

NUMBER REQUIRED FOR THE FOLLOWING BEAM SIZES						
	48" BEAMS	60" BEAMS	69" BEAMS	72" BEAMS	84" BEAMS	96" BEAMS
FRONT TO BACK TIE	ONE	ONE	TWO	TWO	TWO	TWO
PLYWOOD SUPPORT	TWO	TWO	THREE	THREE	THREE	FOUR

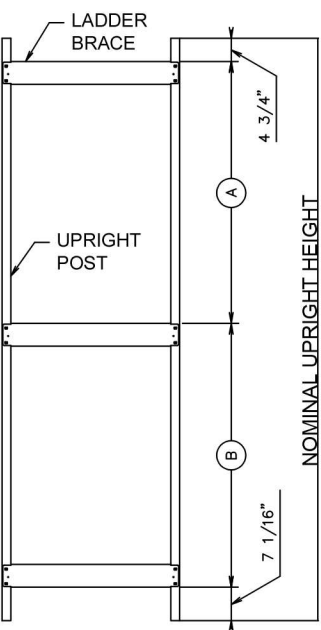
FRONT TO BACK TIE
USED AS A BEAM TIE ANGLE FOR DECKING PANELS OR WHEN MATERIAL IS STORED ON THE BEAMS. ON 48" AND 60", INSTALL THE FRONT TO BACK TIE IN THE CENTER SLOT OF THE BEAM, AND ON 69", 72", 84" AND 96" INSTALL IT IN THE THIRD SLOT FROM EACH END.

PLYWOOD SUPPORT
USED AS A SUPPORT ANGLE FOR CUSTOMER SUPPLIED PLYWOOD OR PARTICLE BOARD. ON 48" AND 60" BEAMS, INSTALL A PLYWOOD SUPPORT IN THE FIRST SLOT FROM EACH END OF THE BEAM. ON 69", 72" AND 84" BEAMS, INSTALL A PLYWOOD SUPPORT IN THE FIRST SLOT FROM EACH END AND THE MIDDLE SLOT OF THE BEAM. ON 96" BEAM, INSTALL A PLYWOOD SUPPORT IN THE FIRST SLOT FROM EACH END, AND THE FOURTH SLOT FROM EACH END OF THE BEAM.

NOTE: THE ABOVE QUANTITIES ARE THE MINIMUM QUANTITIES REQUIRED AND THE LOCATIONS RECOMMENDED ARE FOR THE BEST USAGE. MORE FRONT TO BACK TIES OR PLYWOOD SUPPORTS MAY BE USED.

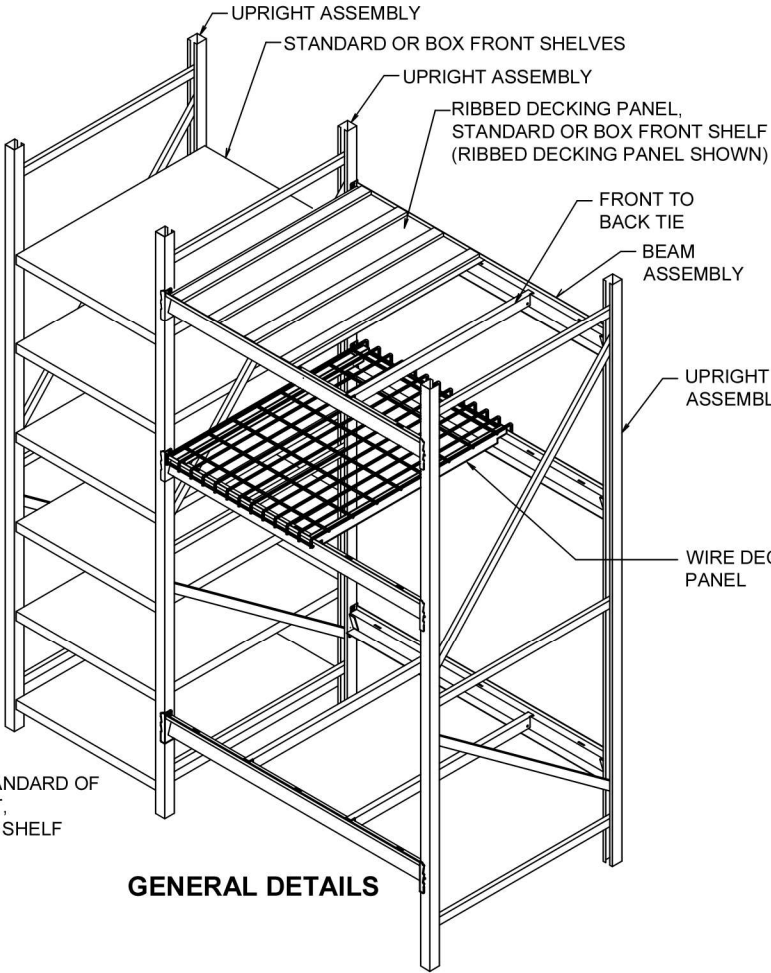


EXPLODED ASSEMBLY OF CAR AND TRUCK TIRE RACK

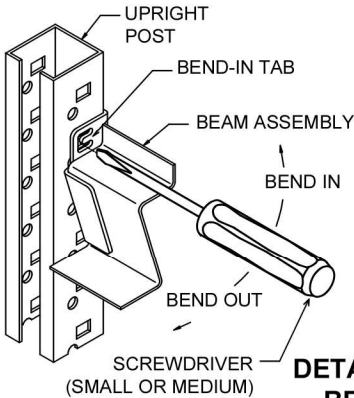


NOMINAL UPRIGHT HEIGHT	(A)	(B)	QUANTITY OF LADDER BRACES
48"	36 3/16"	—	TWO
60"	48 3/16"	—	TWO
72"	60 3/16"	—	TWO
84"	72 3/16"	—	TWO
96"	84 3/16"	—	TWO
120"	54"	54 3/16"	THREE
144"	66"	66 3/16"	THREE

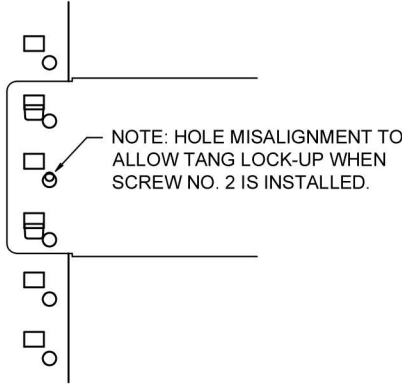
NOTE: QUANTITY OF LADDER BRACES IS MINIMUM QUANTITY REQUIRED. ADDITIONAL LADDER BRACES MAY BE USED IF REQUIRED.



GENERAL DETAILS



DETAIL SHOWING BEND-IN TAB



DETAIL SHOWING LADDER BRACE HOLE MISALIGNMENT

GENERAL INSTRUCTIONS

LYON RECOMMENDS THAT ALL RACKS BE ANCHORED TO THE FLOOR. ANCHOR FEET ARE AVAILABLE AS OPTIONAL EQUIPMENT.

THIS PRODUCT IS TO BE HAND LOADED ONLY. DO NOT USE FORK TRUCKS.

BULK STORAGE RACK ASSEMBLY

- IF ANCHOR FEET ARE USED, INSTALL THEM TO EACH UPRIGHT ASSEMBLY (2 PER UPRIGHT ASSEMBLY). SEE DETAIL OF ANCHOR FOOT ASSEMBLY ON SHEET 2.
- STAND UPRIGHT ASSEMBLY VERTICALLY. INSERT TEETH OF TWO BEAM ASSEMBLIES INTO THE FRONT TAPERED SLOTS IN THE UPRIGHT ASSEMBLY. THE TWO BEAM ASSEMBLIES SHOULD BE LOCATED AT THE LOWEST LEVEL DESIRED. NOTE: THE NARROW END OF THE TAPERED SLOTS ARE TO BE AT THE BOTTOM.
- STAND ANOTHER UPRIGHT ASSEMBLY VERTICALLY AND INSERT THE BEAM ASSEMBLY TEETH INTO THE UPRIGHT ASSEMBLY'S TAPERED SLOTS.
- INSTALL THE REMAINING BEAM ASSEMBLIES AT THE DESIRED HEIGHT REQUIRED. BE SURE THAT EACH BEAM ASSEMBLY IS PARALLEL (OR LEVEL) TO THE FLOOR, AND THAT EACH PAIR OF BEAM ASSEMBLIES IS AT THE SAME HEIGHT.
- INSTALL THE FRONT TO BACK TIES OR PLYWOOD SUPPORTS (DEPENDING ON THE STORAGE APPLICATION) ONTO EACH LEVEL. SEE THE CHART TO DETERMINE THE TYPE AND QUANTITIES TO BE INSTALLED. THE FRONT TO BACK TIES AND PLYWOOD SUPPORTS ARE INSTALLED ONTO THE BEAM ASSEMBLIES BY INSERTING THE TABS AT BOTH ENDS INTO THE RECTANGULAR SLOTS IN THE BEAM ASSEMBLIES.
- CONTINUE WITH THE BALANCE OF THE RACK RUN REPEATING THE ABOVE STEPS.

7. ONCE THE RACKS HAVE BEEN ASSEMBLED, ALL BEAM ASSEMBLIES SHOULD BE LOCKED INTO PLACE. THIS WILL AVOID ANY ACCIDENTAL BEAM LIFT OUT PROBLEM. ON EACH BEAM ASSEMBLY, BEND BOTH OF THE BEND-IN TABS SLIGHTLY INWARD. USE CAUTION NOT TO BEND THE BEND-IN TABS TOO FAR INWARD AS AT A LATER TIME THE BEAM ASSEMBLIES MIGHT REQUIRED RELOCATION AND IT WOULD BE DIFFICULT TO PULL OUT THE BEND-IN TABS. SEE DETAIL AT LEFT SHOWING BEND-IN TAB.

CAR AND TRUCK TIRE RACK ASSEMBLY

- REPEAT STEPS 1 THRU 4 FROM ABOVE.
- INSTALL THE FRONT TO BACK TIE BANDS ONTO EACH LEVEL (ONE PER LEVEL). USE (2) BOLT NO. 1 AND WING NUT FOR EACH FRONT TO BACK TIE BAND. INSTALL AT THE CENTER HOLE OF THE BEAM (72" AND 96" BEAMS ONLY).
- REPEAT STEPS 6 AND 7 FROM ABOVE.

"K.D." UPRIGHT ASSEMBLY

LAY TWO UPRIGHT POSTS DOWN. ATTACH THE REQUIRED QUANTITY OF LADDER BRACES TO THE UPRIGHT POSTS AT THE LOCATIONS INDICATED (SEE CHART AND DRAWING). INSERT THE TANGS OF THE LADDER BRACE INTO THE SQUARE HOLES ON THE UPRIGHT POST AND PUSH DOWN. ONCE THE LADDER BRACE IS IN PLACE, SECURE IT WITH (2) SCREW NO. 2 PER LADDER BRACE USING RATCHET. BRACE & POST HOLES SHOULD BE SLIGHTLY MISALIGNED (SEE DETAIL). THE NARROW END OF THE TAPERED SLOTS ARE TO BE AT THE BOTTOM. COMPLETE THE RACK ASSEMBLY AS INSTRUCTED ABOVE.

SHELF ASSEMBLY

- STAND UPRIGHT ASSEMBLY VERTICALLY. INSERT SHELF CLIPS INTO THE SQUARE HOLE IN THE UPRIGHT ASSEMBLY. THE TWO SHELF CLIPS SHOULD BE LOCATED AT THE LOWEST LEVEL DESIRED. SEE DETAIL AT LEFT FOR CLIP AND SHELF ASSEMBLY.
- IF INTEGRATING WITH BULK STORAGE, INSTALL TWO SHELF CLIPS ONTO THE UPRIGHT ASSEMBLY. IF A SECOND UPRIGHT ASSEMBLY IS REQUIRED, STAND IT UP VERTICALLY AND INSTALL THE TWO SHELF CLIPS ON IT. INSTALL A STANDARD OR BOX FRONT SHELF ONTO THE FOUR SHELF CLIPS.
- CONTINUE TO ADD THE SHELF CLIPS AND SHELVES AT THE DESIRED LOCATIONS UNTIL COMPLETE.

DECKING PANELS

RIBBED DECKING PANELS, STANDARD SHELVES OR BOX FRONT SHELVES FIT ONTO THE BEAM ASSEMBLY LEDGES FRONT TO BACK. NO ATTACHMENT IS REQUIRED. WIRE DECKING PANELS FIT OVER THE FRONT VERTICAL FLANGES OF THE BEAM ASSEMBLIES. NOTE: USE FRONT TO BACK TIE BANDS ON ALL BEAMS THAT HAVE DECKING PANELS.

HARDWARE

BOLT NO. 1
1/4-20 X 1/2"
SLOTTED TRUSS HEAD
MACHINE SCREW

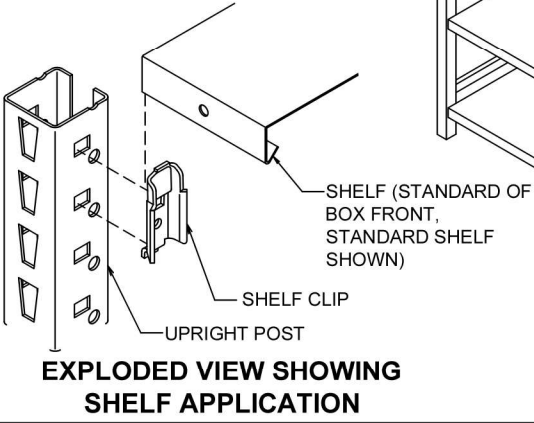
BOLT NO. 2
5/16-18 X 3/4"
HEX HEAD
MACHINE SCREW

SCREW NO. 1
1/4-20 X 1/2"
SLOTTED HEX HEAD THREAD
CUTTING SCREW

SCREW NO. 2
5/16-12 X 1/2"
SLOTTED HEX HEAD
SHEET METAL SCREW

WING NUT
1/4-20 WING NUT

NUT NO. 1
5/16-18 WAFFLE BACK
HEX NUT



EXPLODED VIEW SHOWING SHELF APPLICATION

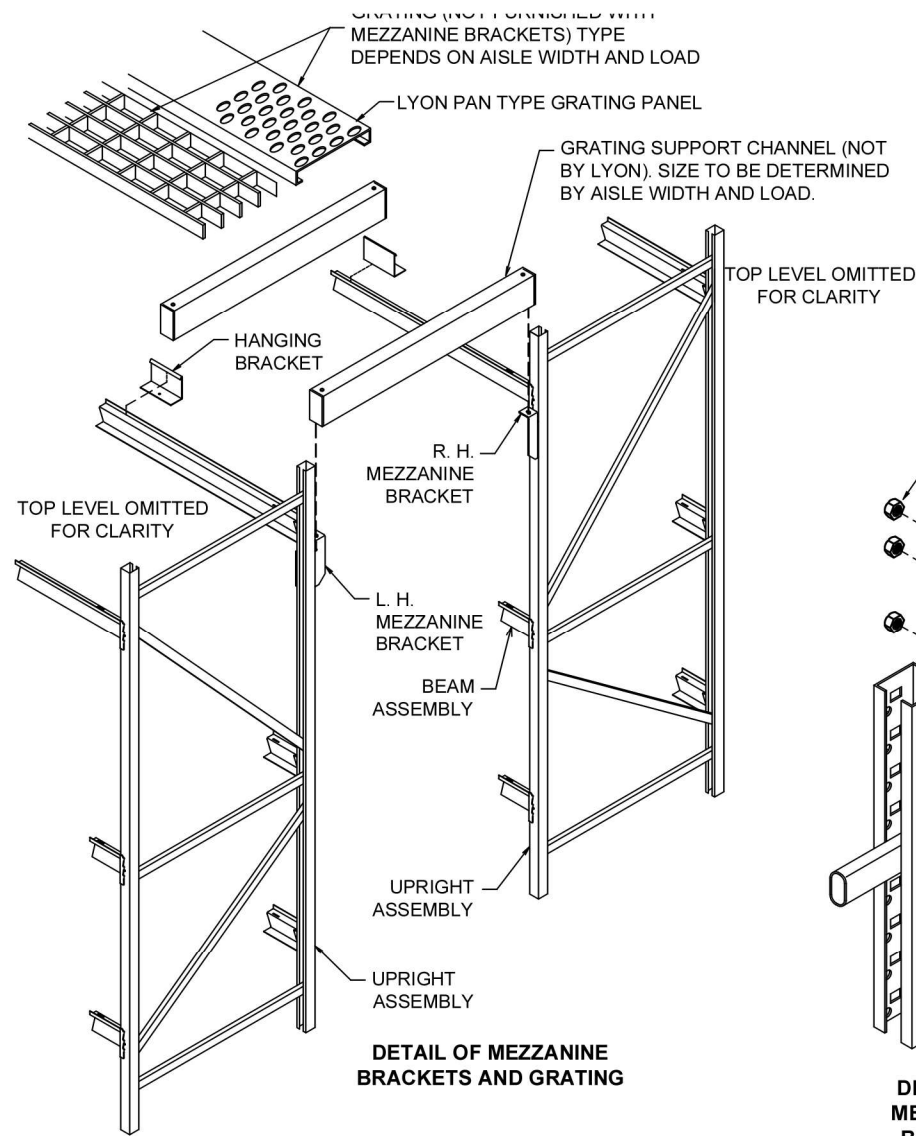
INSTALLATION INSTRUCTIONS
FOR LYON BULK STORAGE
RACK LYON TIRE RACK AND
ACCESSORIES

LYON METAL PRODUCTS
P.O. BOX 671
AURORA, IL 60507

REVISIONS

ECM# E-062285-02
ECM# E-101295-01
ECM# E-011988-01

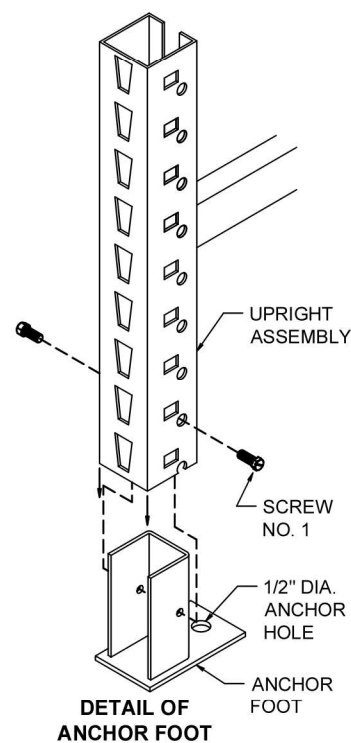
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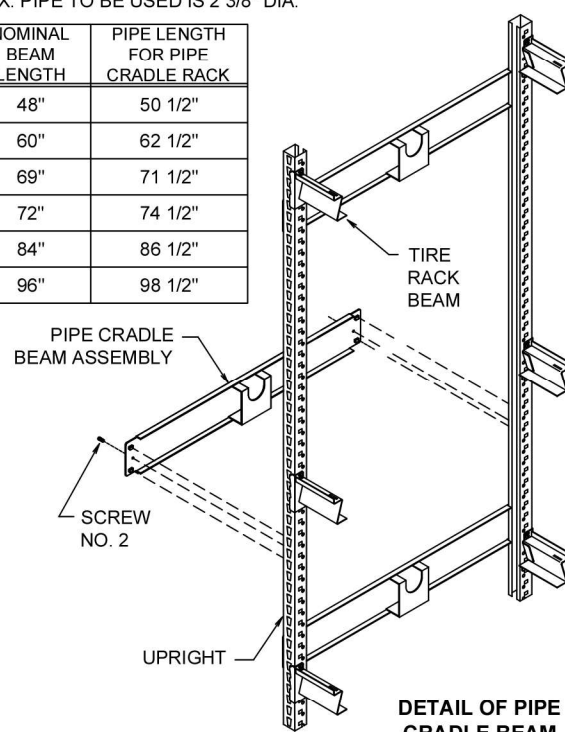
DETAIL OF MEZZANINE BRACKETS AND GRATING

NOTE:
PIPE IS NOT FURNISHED BY LYON.
MAX. PIPE TO BE USED IS 2 3/8" DIA.

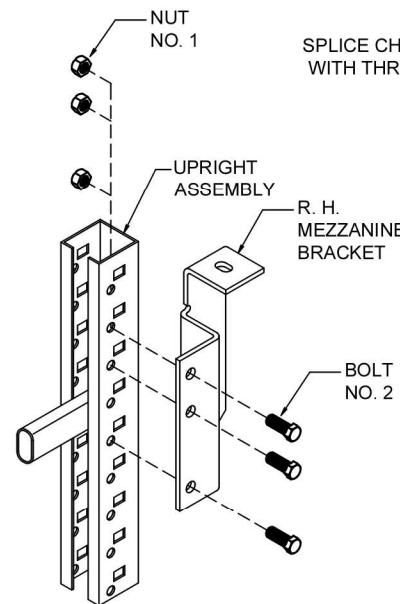
NOMINAL BEAM LENGTH	PIPE LENGTH FOR PIPE CRADLE RACK
48"	50 1/2"
60"	62 1/2"
69"	71 1/2"
72"	74 1/2"
84"	86 1/2"
96"	98 1/2"



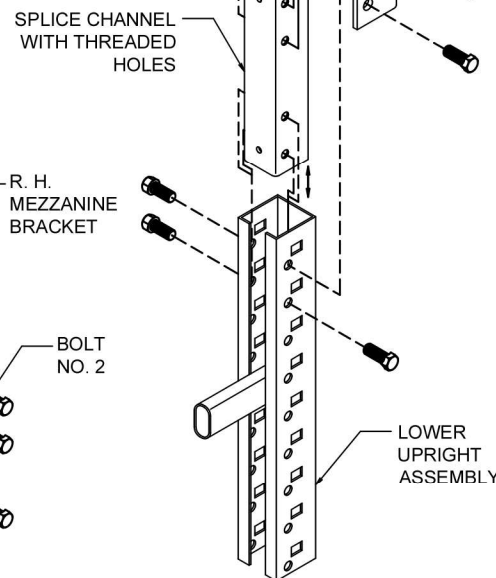
DETAIL OF ANCHOR FOOT



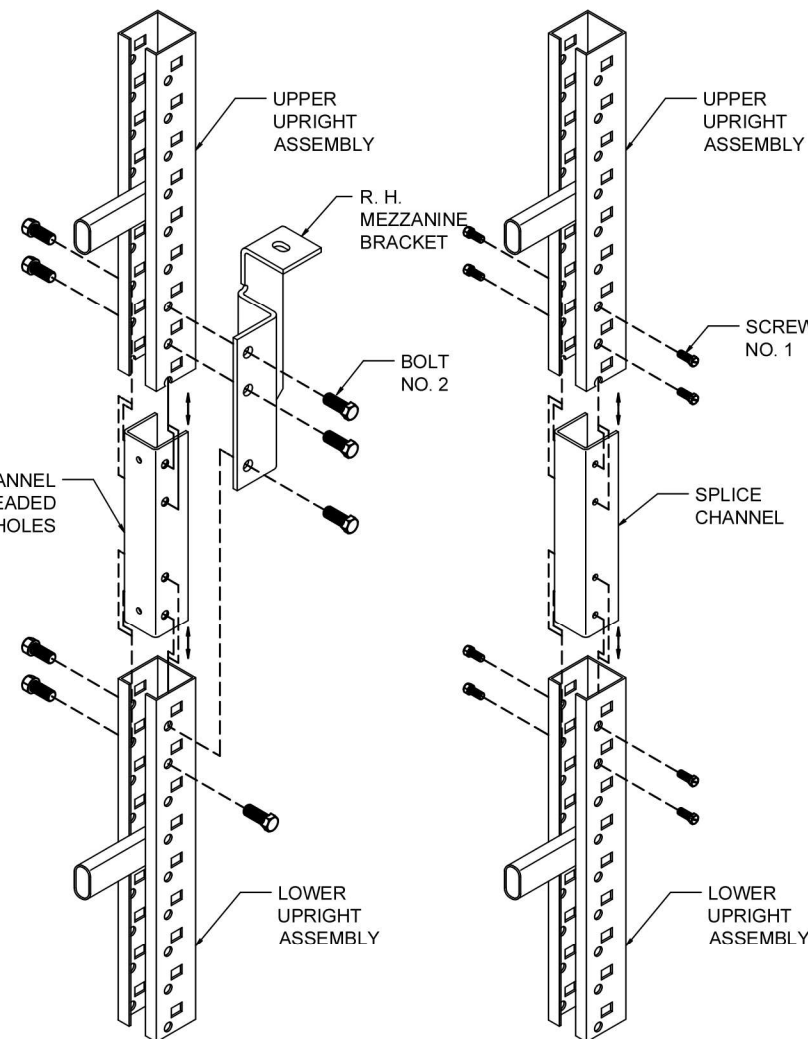
DETAIL OF PIPE CRADLE BEAM



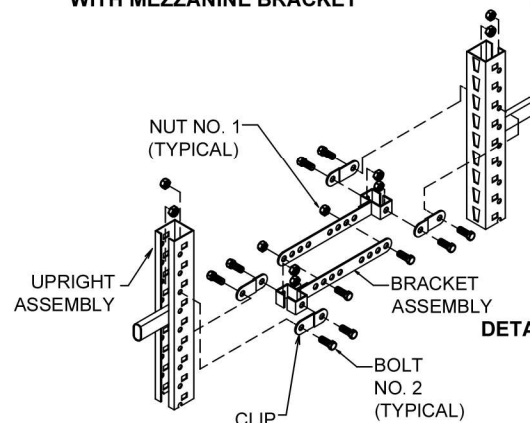
DETAIL OF MEZZANINE BRACKET



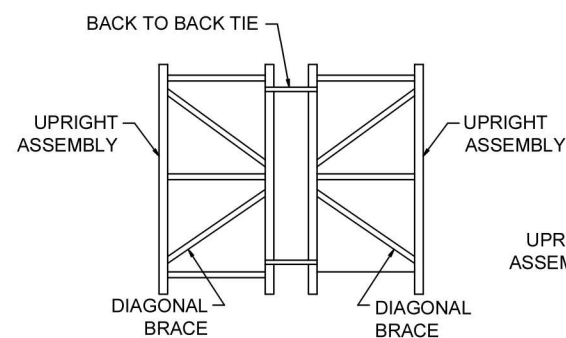
DETAIL OF SPLICE CHANNEL USED WITH MEZZANINE BRACKET



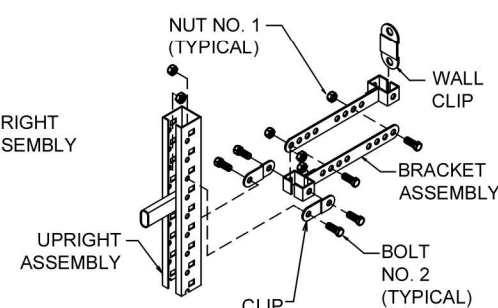
DETAIL OF SPLICE CHANNEL



DETAIL OF BACK TO BACK TIE



DETAIL OF BACK TO BACK UPRIGHTS



DETAIL OF BACK TO WALL TIE

ANCHOR FOOT

INSERT THE ANCHOR FOOT INTO THE INSIDE OF THE UPRIGHT. NOTE THAT THE ANCHOR HOLE TO BE ON THE INSIDE OF THE UPRIGHT ASSEMBLY. ATTACH THE UPRIGHT TO THE ANCHOR FOOT WITH (2) SCREW NO. 1. CONTINUE THIS FOR EACH ANCHOR FOOT INSTALLED. ONCE COMPLETE, ATTACH THE ANCHOR FOOT TO THE FLOOR WITH A SUITABLE ANCHOR (NOT SUPPLIED BY LYON).

PIPE CRADLE BEAM

THE PIPE CRADLE BEAMS CAN BE USED ON ANY BULK STORAGE RACK SECTION. IT ATTACHES TO THE UPRIGHT ASSEMBLY THE SAME AS A LADDER BRACE. SEE THE LADDER BRACE INSTRUCTIONS ON SHEET 1.

BACK TO WALL TIE

1. DETERMINE THE DESIRED SPACE BEHIND THE BULK STORAGE RACK SECTION. THE BACK TO WALL TIE IS ADJUSTABLE. ASSEMBLE TWO BRACKET ASSEMBLIES USING (2) BOLT NO. 2 AND NUT NO. 1. ATTACH TWO CLIPS TO THIS ASSEMBLY WITH (1) BOLT NO. 2 AND NUT NO. 1 PER CLIP. MAKE SURE THAT THE SHORTEST LEG OF THE CLIP IS ATTACHED TO THE BRACKET ASSEMBLY AND THAT THE CLIP OFFSET IS TO THE INSIDE. REPEAT FOR THE BALANCE OF ASSEMBLIES.

2. ATTACH THE BACK TO WALL TIE ASSEMBLIES TO THE UPRIGHTS WITH (2) BOLT NO. 2 AND NUT NO. 1 PER ASSEMBLY. PLACE THE WALL CLIP INTO THE ASSEMBLY AND ATTACH IT TO THE WALL WITH (2) SUITABLE ANCHORS (NOT SUPPLIED BY LYON).

BACK TO BACK TIE

1. MAKE SURE THAT ON BACK TO BACK UPRIGHTS THAT THE DIAGONAL BRACING AT THE BOTTOM OF THE UPRIGHT ASSEMBLIES ARE POINTING DOWN AND TOWARDS THE OUTSIDE OF THE UPRIGHTS (SEE DETAIL).

2. DETERMINE THE DESIRED SPACE BEHIND THE BULK STORAGE RACK SECTIONS. THE BACK TO WALL TIE IS ADJUSTABLE. ASSEMBLE TWO BRACKET ASSEMBLIES USING (2) BOLT NO. 2 AND NUT NO. 1. ATTACH FOUR CLIPS TO THIS ASSEMBLY WITH (1) BOLT NO. 2 AND NUT NO. 1 PER CLIP. MAKE SURE THAT THE SHORTEST LEG OF THE CLIP IS ATTACHED TO THE BRACKET ASSEMBLY AND THAT THE CLIP OFFSET IS TO THE INSIDE. REPEAT FOR THE BALANCE OF ASSEMBLIES.

3. ATTACH THE BACK TO BACK TIE ASSEMBLIES TO THE UPRIGHTS WITH (2) BOLT NO. 2 AND NUT NO. 1 PER ASSEMBLY (TOTAL OF 4 EACH PER BACK TO BACK TIE ASSEMBLY).

SPLICE CHANNEL

IF UPRIGHT ASSEMBLIES ARE TO BE MEZZANINE, USE SPLICE CHANNELS. SLIDE THE SPLICE INTO THE LOWER UPRIGHT POST AND ATTACH WITH (4) SCREW NO. 1. REPEAT WITH THE BALANCE OF THE LOWER UPRIGHT ASSEMBLIES. PUT THE UPPER UPRIGHT ASSEMBLIES IN PLACE AND ATTACH TO THE SPLICE CHANNEL WITH (4) SCREW NO. 1. NOTE THAT ALL MEZZANINE UPRIGHT POSTS MUST HAVE A SPLICE CHANNEL.

SPLICE CHANNEL USED WITH MEZZANINE BRACKET

SLIDE THE SPLICE CHANNEL INTO THE LOWER UPRIGHT POST. NOTE THAT THE SPLICE CHANNEL ATTACHMENT HOLES ARE THREADED. ATTACH THE SPLICE CHANNEL TO THE UPRIGHT POST THROUGH THE SECOND HOLE DOWN IN THE UPRIGHT WITH (2) BOLT NO. 2 (ONE ON EITHER SIDE OF THE POST). REPEAT WITH THE BALANCE OF LOWER UPRIGHT ASSEMBLIES. PUT AN UPPER UPRIGHT ASSEMBLY IN PLACE. ALIGN THE MEZZANINE BRACKETS WITH HOLES AS SHOWN AND COMPLETE THE ATTACHMENT WITH (6) BOLT NO. 2 (THREE ON EITHER SIDE OF THE POST). CONTINUE WITH THE BALANCE OF UPPER UPRIGHT ASSEMBLIES AND MEZZANINE BRACKETS.

MEZZANINE BRACKETS

DETERMINE THE MEZZANINE BRACKET LOCATION. ATTACH THE MEZZANINE BRACKET TO THE UPRIGHT WITH (3) BOLT NO. 2 AND NUT NO. 1 AS SHOWN. CONTINUE WITH THE BALANCE OF MEZZANINE BRACKETS MAKING CERTAIN THAT THE CORRECT MEZZANINE BRACKET (L.H. OR R.H.) IS USED.

MEZZANINE BRACKETS AND GRATING

1. INSTALL THE MEZZANINE BRACKETS AS EXPLAINED ABOVE. MAKE SURE THE MEZZANINE BRACKET IS 2 3/4" BELOW THE TOP FLANGE SURFACE OF THE BEAM ASSEMBLY. THE TYPE OF GRATING SUPPORTS AND GRATING WILL DEPEND ON THE AISLE WIDTH AND THE AISLE LOAD. PLEASE CONTACT LYON METAL TO DETERMINE THE PROPER ITEMS TO BE INSTALLED. THE INTERMEDIATE GRATING SUPPORTS WILL ATTACH TO THE BEAM ASSEMBLIES BY USING THE HANGING BRACKETS. THE SPACING BETWEEN THE INTERMEDIATE GRATING SUPPORTS WILL BE DETERMINED BY THE AISLE LOAD.

2. ATTACH THE GRATING SUPPORTS TO THE INSTALLED MEZZANINE BRACKETS. INSTALL THE HANGING BRACKETS ON THE BEAM ASSEMBLIES WITH THE REQUIRED SPACING BETWEEN THEM AS SPECIFIED. THE HANGING BRACKET SLIPS OVER THE TOP FLANGE OF THE BEAM ASSEMBLY AND SHOULD BE ATTACHED TO THE BEAM ASSEMBLY THROUGH THE BOTTOM FLANGE OF THE HANGING BRACKET WITH ONE FASTENER. ATTACH THE GRATING SUPPORTS TO THE HANGING BRACKETS IN A SECURE MANNER MAKING CERTAIN THEY ARE AT THE SAME LEVELS AS THE GRATING SUPPORTS THAT WERE ATTACHED TO THE MEZZANINE BRACKETS. THE HARDWARE TO ATTACH THE HANGING BRACKETS TO THE BEAM ASSEMBLIES AND THE GRATING SUPPORTS TO THE HANGING BRACKETS AND THE MEZZANINE BRACKETS IS NOT BY LYON.