

# STRUCTURAL NOTES

## DESIGN LOADS

### 1. LIVE LOADS

ROOF	= 30 PSF
FLOOR	= 100 PSF

### ED 2. SNOW LOADS

GROUND SNOW LOAD	$P_g = 30$ PSF
SNOW EXPOSURE FACTOR	$C_e = 1.0$
THERMAL FACTOR	$C_t = 1.0$
SNOW IMPORTANCE FACTOR	$I = 1.1$
FLAT ROOF SNOW LOAD	$P_f = 24$ PSF

### 3. LATERAL LOADS

#### WIND LOADS PER IBC 2012

1. ULTIMATE DESIGN WIND SPEED	120 MPH
2. NOMINAL DESIGN WIND SPEED	93 MPH
3. WIND LOAD IMPORTANCE FACTOR	1.0
4. RISK CATEGORY	II
5. WIND EXPOSURE CATEGORY	B
6. INTERNAL PRESSURE COEFFICIENT	$\pm 0.18$
7. MIN. & MAX. DESIGN WIND PRESSURE FOR THE MAIN WIND FORCE-RESISTING SYSTEM	18 PSF & 21 PSF
8. MIN. & MAX. WIND PRESSURE FOR COMPONENTS & CLADDING MATERIALS	26 PSF & 30 PSF
9. LATERAL RESISTING SYSTEM IS INCLUDING THE EXISTING BUILDING	

#### SEISMIC LOADS PER IBC 2012

1. SEISMIC IMPORTANCE FACTOR	$I_e = 1.25$
2. RISK CATEGORY	III
3. MAPPED SPECTRAL RESPONSE ACCELERATIONS:	$S_s = 0.125$ & $S_1 = 0.055$
4. SITE CLASS:	D
5. MAPPED SPECTRAL RESPONSE COEFFICIENTS:	$S_{ds} = 0.133$ & $S_{d1} = 0.088$
6. SEISMIC DESIGN CATEGORY	B
7. BASIC SEISMIC-FORCE-RESISTANCE SYSTEM	ORDINARY REINFORCED MASONRY SHEAR WALLS (EXISTING)
8. DESIGN BASE SHEAR	0.08W
9. SEISMIC RESPONSE COEFFICIENTS	$C_s = 0.08$
10. RESPONSE MODIFICATION FACTORS	$R = 2$
11. ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE PROCEDURE

## SOIL BEARING

- ASSUMED 1500 PSF, SHALL BE FIELD VERIFIED

## MASONRY

- SOLID CONCRETE MASONRY SHALL BE GRADE NI IN ACCORDANCE WITH ASTM C-145 AND MAY BE 75% SOLID, UNLESS OTHERWISE NOTED.
- HOLLOW CONCRETE MASONRY UNITS SHALL BE GRADE NI CONFORMING TO ASTM C-90.
- CONCRETE MASONRY UNITS SHALL BE WITH LIGHT CONCRETE.
- ALL MORTAR SHALL BE TYPE 'S' CONFORMING TO ASTM C-270 FOR ABOVE GRADE CONSTRUCTION, USE TYPE 'M' FOR BELOW GRADE.
- PROVIDE A MINIMUM OF 3 COURSES OF SOLID BRICK OR ONE COURSE 100% SOLID BLOCK UNDER WALL BEARINGS ENDS OF ALL JOISTS AND SLABS THE FULL WIDTH OF THE WALL UNLESS NOTED.
- PROVIDE 100% SOLID MASONRY DOWN TO FOOTINGS BELOW GRADE AND UNDER ALL BEAMS AND LINTELS BEARING ON MASONRY, UNLESS NOTED.
- IN BEARING WALLS, PROVIDE SOLID BRICK OR 100% SOLID CONCRETE BLOCK EXTENDING 8" BEYOND WALL OPENINGS THE FULL WALL THICKNESS DOWN TO THE FLOOR, UNLESS NOTED.
- ALL PORTIONS OF BEARING WALLS HAVING A HORIZONTAL CROSS SECTION OF 4 SQ. FT. OR LESS SHALL BE OF SOLID MASONRY DOWN TO FOOTINGS.
- PROVIDE HORIZONTAL MASONRY REINFORCING AT 16" O.C. IN ALL MASONRY WALLS UNLESS NOTED.
- PROVIDE VERTICAL CONTROL JOINTS IN ALL MASONRY WALLS @ 30'-0" O.C., UNLESS NOTED.
- ALL MORTAR JOINTS IN MASONRY WALLS (HORIZONTAL & VERTICAL) SHALL BE FILLED 100% WITH MORTAR.
- GROUT SHALL BE SAND AND CEMENT, 8 BAGS OF CEMENT PER CUBIC YARD.
- PROVIDE MASONRY TIES BETWEEN 4" BRICK VENEER WALL AND THE STEEL STUD WALL. SPACE TIES @ 16" VERTICAL AND 24" HORIZONTAL.

## STRUCTURAL STEEL

- SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECS. FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 GRADE 50, STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B AND STEEL PIPE COLUMNS SHALL CONFORM TO ASTM A501.
- ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARD CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION, LATEST CODE, AND SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY.
- SHOP AND FIELD CONNECTIONS SHALL BE WELDED OR MADE WITH 3/4" STEEL HIGH STRENGTH BOLTS IN ACCORDANCE WITH ASTM A325 OR A490.
- ESTABLISH SPECIAL PROCEDURES FOR WELDS LARGER THAN 3/8" TO PREVENT LAMELLAR TEARING.
- NO HOLES SHALL BE LOCATED IN FLANGES OF BEAMS UNLESS APPROVED BY THE ENGINEER.
- THE OWNER SHALL RETAIN THE SERVICES OF A QUALIFIED INSPECTOR TO INSPECT ERECTED STEEL AND CONNECTIONS.
- NO FIELD CUTTING OF THE STEEL MEMBERS SHALL BE PERMITTED WITHOUT PRIOR AUTHORIZATION OF THE STRUCTURAL ENGINEER.
- PROVIDE STEEL SCREEN ANGLES ALONG EDGE OF CONCRETE SLAB WHERE REQUIRED.
- ALL STEEL TO BE PERMANENTLY EXPOSED TO WEATHER OR SOIL SHALL BE HOT DIP GALVANIZED.
- SUBMIT FOR APPROVAL ALL STEEL SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE BUILDING'S JURISDICTION. ALLOW TWO WEEKS FOR THE REVIEW OF STRUCTURAL SHOP DRAWINGS.
- ALL BEAM CONNECTION SHALL BE DESIGNED FOR THE MAXIMUM SHEAR CAPACITY.
- ALL FULL PENETRATION WELDS SHALL BE TESTED BY ULTRASONIC METHOD.
- SEE SPECIFICATIONS FOR PAINTING.
- ALL STEEL ERECTION SHALL BE COMPLETED, INCLUDING ALL BRACING BEFORE OTHER TRADES START THEIR WORK.
- ALL STIFF PLATE SHALL BE 1/2" THICK.

## PRE-EXISTING CONDITIONS

- GENERAL CONTRACTOR SHALL FIELD MEASURE LOCATION OF ALL EXISTING CONDITIONS, AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.

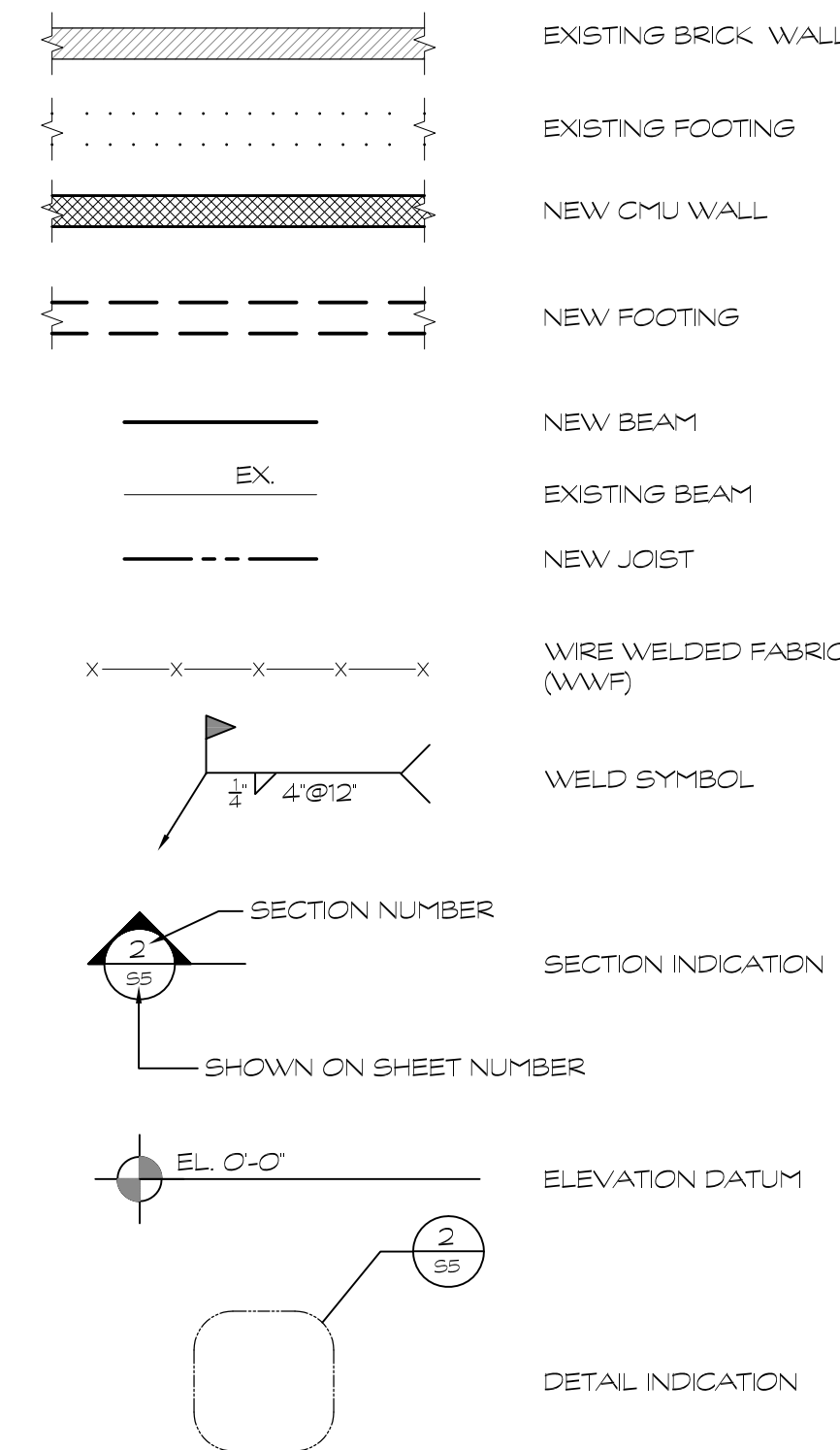
## TESTING AND INSPECTION

- INSPECTION FOR ALL STRUCTURAL PORTIONS OF THE PROJECT SHALL BE PROVIDED AS REQUIRED BY THE APPLICABLE BUILDING CODE.
- THE OWNERS TESTING AGENCY SHALL PERFORM ALL INSPECTIONS AND TESTING.
- ALL CONCRETE WORK SHOWN ON THESE DRAWINGS AND SPECIFIED IN THE SPECIFICATIONS SHALL BE INSPECTED IN ACCORDANCE WITH ACI-318 (LATEST EDITION). COPIES OF FIELD REPORTS, CONCRETE MIXES, CYLINDER TESTS, AND OTHER DATA SHALL BE SENT TO THE ARCHITECT, ENGINEER, AND OWNER.
- ALL FIELD AND LAB TESTING OF CONCRETE SHALL CONFORM TO THE LATEST APPROVED EDITIONS OF ASTM APPLICABLE SPECIFICATIONS.

## GENERAL

- ALL DETAIL, SECTION, AND NOTES SHOWN ON DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS NOTED.
- DO NOT SCALE DRAWINGS.
- REFER TO ARCHITECTURAL, MECHANICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, SLEEVES, DRIPS, REVEALS, FINISHES, DEPRESSIONS, DOOR AND OTHER SUCH PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.
- CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS REQUIRED TO PROPERLY CONSTRUCT THE BUILDING.
- ALL HANGERS FOR MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT SHALL BE CONNECTED TO THE STRUCTURAL MEMBERS. THE HANGERS SHALL BE LOCATED SUCH THAT DO NOT PRODUCE EQUIVALENT UNIFORM LOAD OF MORE THAN 3 PSF. SUBMIT SHOP DRAWINGS FOR HANGER TYPE AND LAYOUT FOR APPROVAL.
- PROVIDE ALL CLIPS, INSERTS, TIES, ANCHOR STRAPS, HANGERS, BOLTS AND OTHER FASTENERS AS REQUIRED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- NO PART OF THE BUILDING SHALL BE USED AS A STAGING AREA RESULTING IN A LOAD (UNDER THE LIMITED LOADED AREA) THAT EXCEEDS 75% OF THE DESIGN LIVE LOAD.
- ALL FORMWORK AND SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR.

## SYMBOLS



## ABBREVIATIONS

A.B.	= ANCHOR BOLT
ADDL.	= ADDITIONAL
ARCH.	= ARCHITECTURAL
BAL.	= BALANCE
B.M.	= BEAM
BOT.	= BOTTOM
C.J.	= CONTROL JOINT
C.	= CENTER LINE
C.C.	= CENTER TO CENTER
CL.	= CLEAR
COL.	= COLUMN
CONC.	= CONCRETE
CONT.	= CONTINUOUS
COTR.	= CONTRACTING OFFICERS TECHNICAL REPRESENTATIVE
DET.	= DETAIL
DIA.	= DIAMETER
DWG.	= DRAWING
DWLS.	= DOWELS
EA.	= EACH
E.F.	= EACH FACE
E.J.	= EXPANSION JOINT
EL.	= ELEVATION
E.O.S.	= EDGE OF STRUCTURAL SLAB
E.W.	= EACH WAY
EXP.	= EXPANSION
FIN.	= FINISHED
FL.	= FLOOR
F.F.	= FAR FACE
H.	= HORIZONTAL
H.D.G.	= HOT DIP GALVANIZED
JT.	= JOINT
L.L.H.	= LONG LEG HORIZONTAL
L.L.V.	= LONG LEG VERTICAL
L.W.	= LONG WAY
MAX.	= MAXIMUM
MECH.	= MECHANICAL
MIN.	= MINIMUM
N.F.	= NEAR FACE
NO.	= NUMBER
NTS.	= NOT TO SCALE
O.C.	= ON CENTER
OPNG.	= OPENING
P.C.	= PRECAST CONCRETE
P.J.F.	= PREMOULDED JOINT FILLER
P.	= PLATE
R.	= RADIUS
REINF.	= REINFORCEMENT
REQD.	= REQUIRED
SCHED.	= SCHEDULE
SECT.	= SECTION
SIM.	= SIMILAR
S.O.G.	= SLAB ON GRADE
S.S.	= STAINLESS STEEL
ST.	= STEEL
STD.	= STANDARD
STIFF.	= STIFFENER
S.W.	= SHORT WAY
SYM.	= SYMMETRICAL
T. & B.	= TOP AND BOTTOM
T.O.D.	= TOP OF STEEL DECK
T.O.F.	= TOP OF FOOTING
T.O.SL.	= TOP OF STRUCTURAL SLAB
T.O.ST.	= TOP OF STEEL
T.O.W.	= TOP OF STRUCTURAL WALL
TYP.	= TYPICAL
U.O.N.	= UNLESS OTHERWISE NOTED
V.	= VERTICAL
V.I.F.	= VERIFY IN FIELD
W.P.	= WORKING POINT
W.W.M.	= WELDED WIRE MESH

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SUBMISSION SCHEDULE DATE

NO DESCRIPTION

REVISION SCHEDULE DATE

NO DESCRIPTION

PROJECT:

## DYRS GYMNASIUM RENOVATION

1000 MOUNT OLIVET ROAD, NE  
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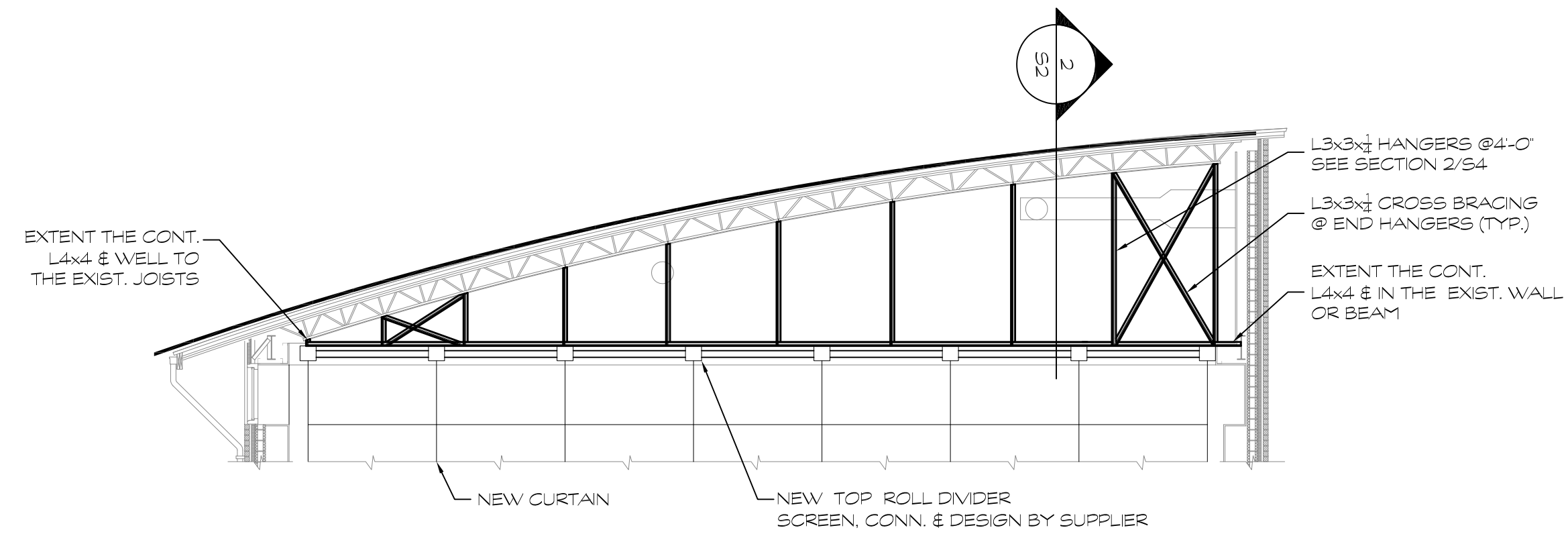
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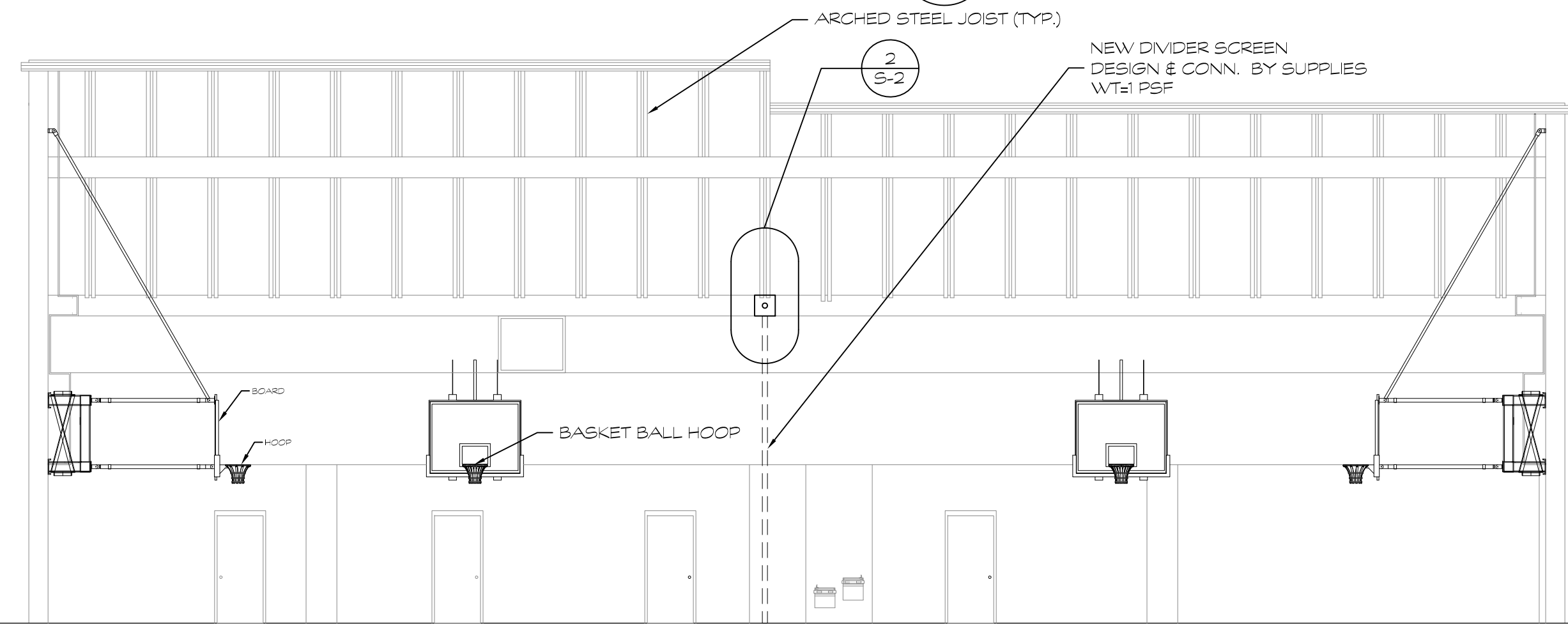
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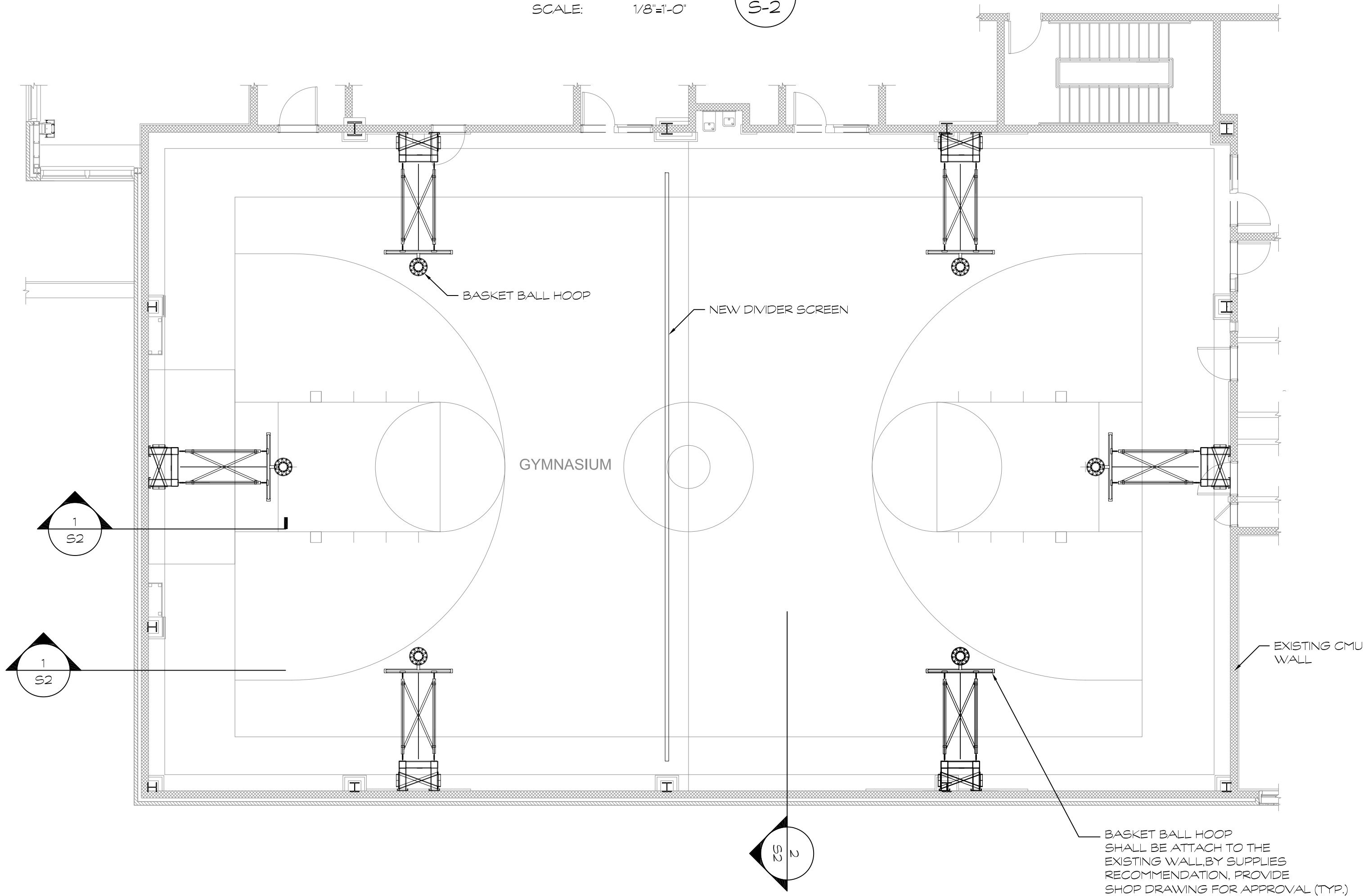
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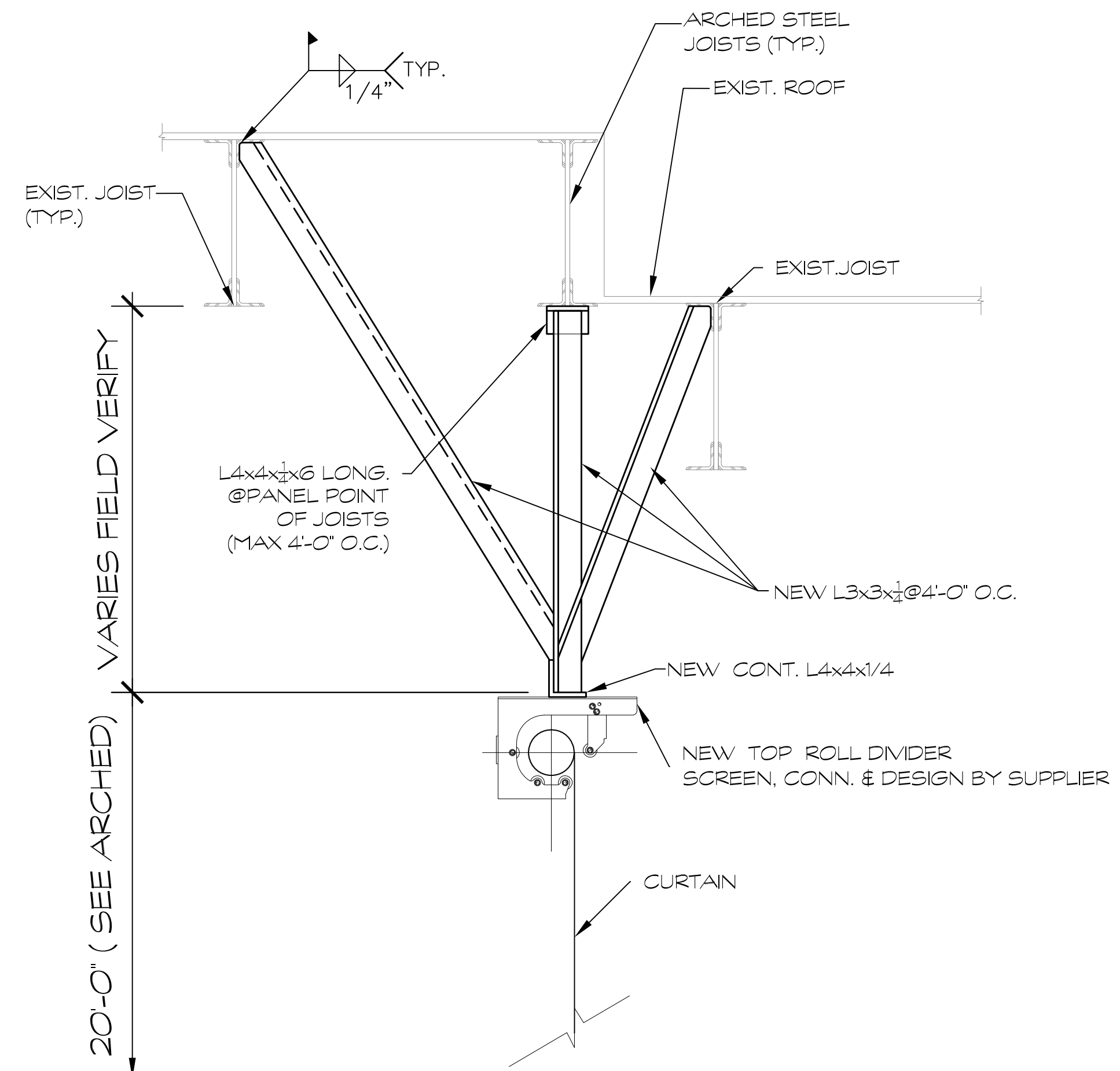
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SCALE: 1/8"=1'-0"  
S-2



**SECTION 1**  
SCALE: 1/8"=1'-0"  
S-2



**EXISTING GYMNASIUM PLAN**  
SCALE: 1/8"=1'-0"  
1 S-2



**SECTION 2**  
SCALE: 1 1/2"=1'-0"  
S-2

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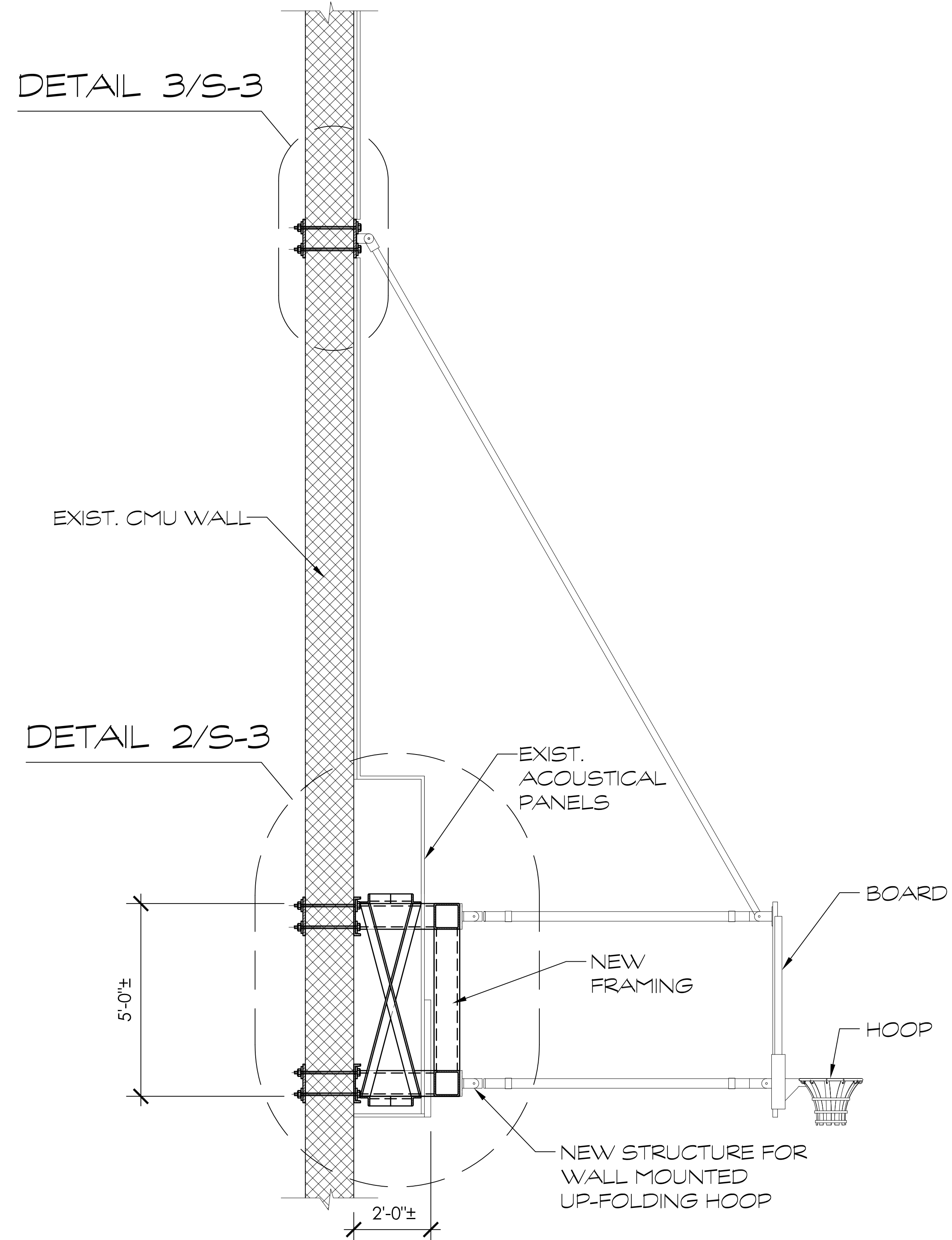
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SHEET TITLE:  
**FLOOR PLAN & SECTION**

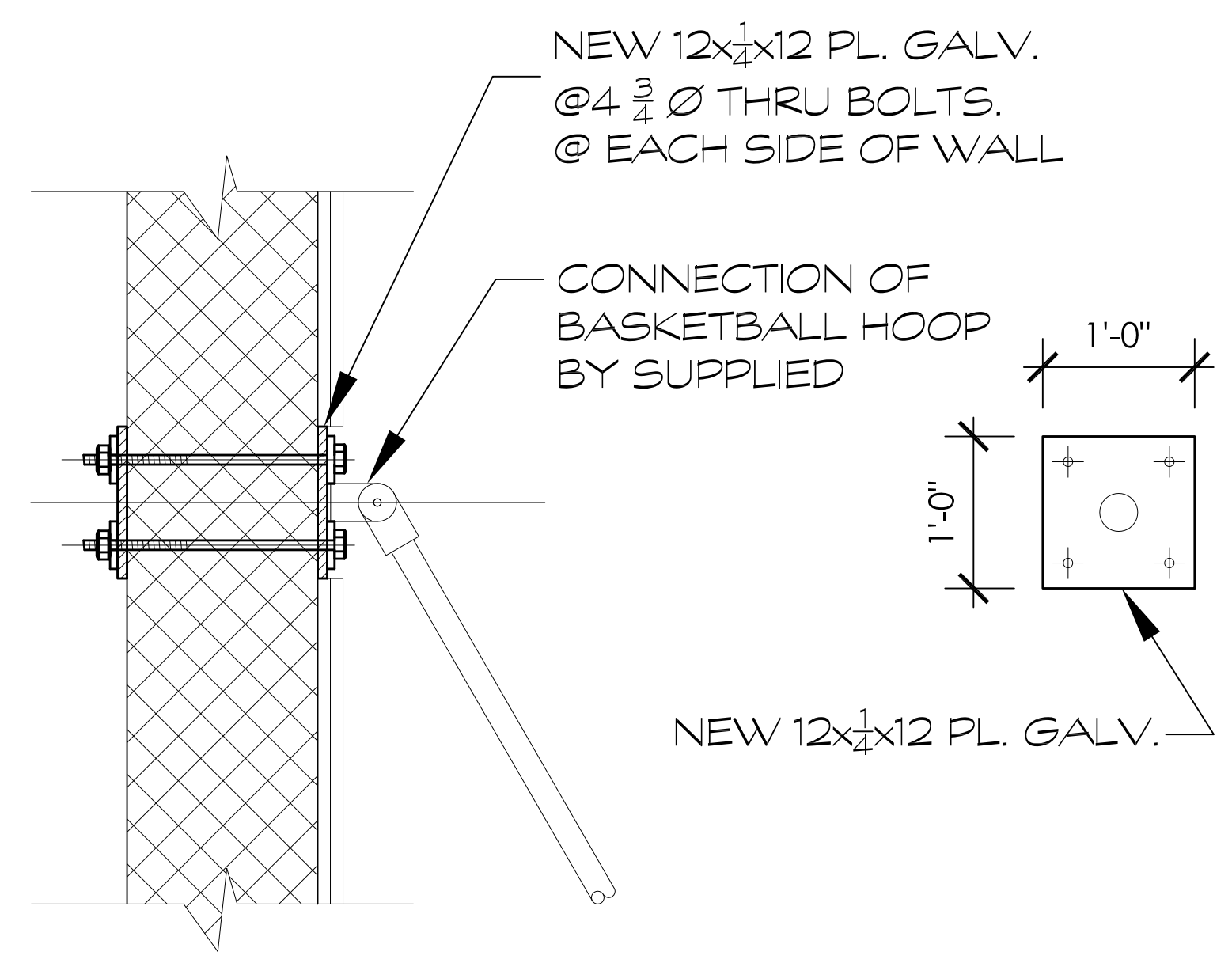
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DETAIL 3/S-3

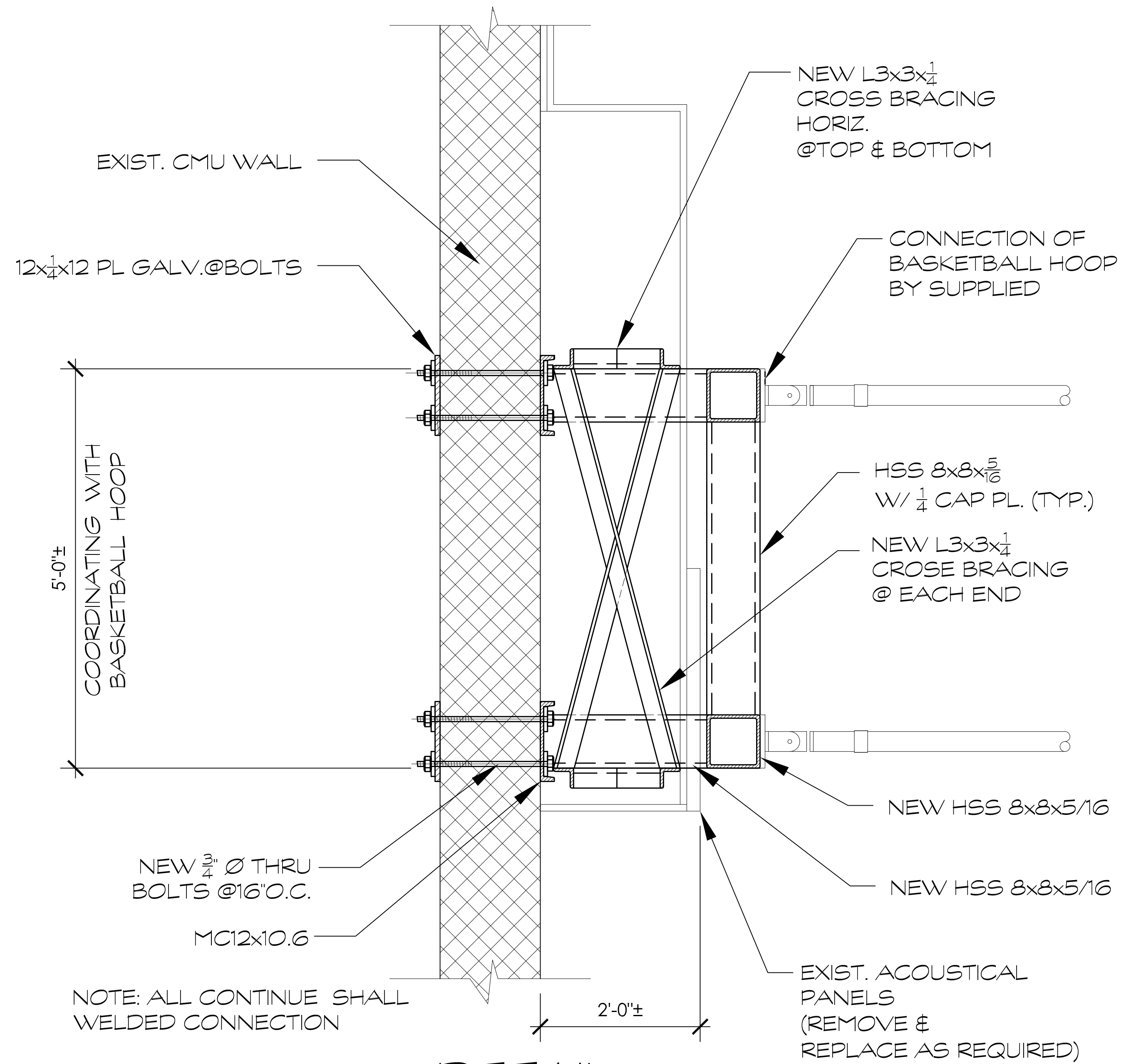


1  
S-3  
DETAIL  
SCALE: 1/2" = 1'-0"

NOTE: 1.- ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED  
2.- ALL DIMENSION SHALL COORDINATED WITH BASKETBALL HOOP SUPPLIER.



3  
S-3  
DETAIL  
SCALE: 1" = 1'-0"



2  
S-3  
DETAIL  
SCALE: 1" = 1'-0"

NOTE: ALL CONTINUE SHALL WELDED CONNECTION

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**SECTION & DETAIL**

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