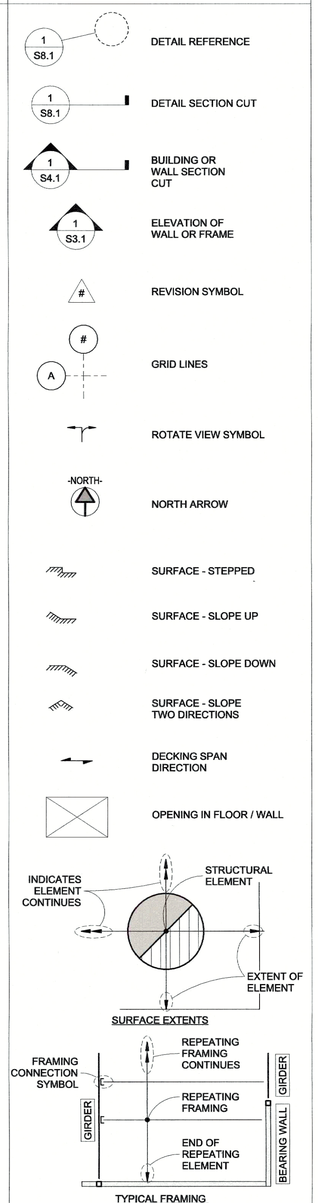
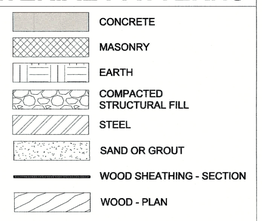
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S0.03	SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	PARTIAL ROOF FRAMING PLAN	•
S8.01	GYM 1 REPAIR DETAIL	•
S8.02	GYM 2 REPAIR DETAIL	•
S8.03	BEAM CABLE ASSEMBLY	•
S8.04	DETAILS	•

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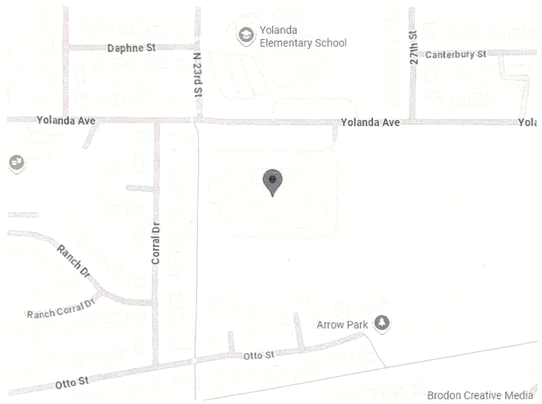
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1968
AREA: 92,000 SF
BUILDING CONSTRUCTION TYPE: V-A
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
THE FOLLOWING PLANS ARE FOR THE MANDATORY REINFORCEMENT OF (E) GLUE LAMINATED BEAMS

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: KEVIN MCCORMICK, kevin@miller-se.com
SECONDARY CONTACT: JENNYLIN LOPEZ, jennylin.lopez@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 16655PE OREGON JANUARY 15, 2016 KEVIN M. McCORMICK
EXPIRES: 12-31-2026

MILLER CONSULTING ENGINEERS
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Portland, OR | 97223
503.246.1250 | miller-se.com

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BRIGGS MIDDLE SCHOOL REPAIR

2355 YOLANDA AVE.
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.27.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL, FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR 'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR 'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE
PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR 'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			
BEAM LIFTING PLAN			X	X
FIBER REINFORCED POLYMER & BONDING EPOXY	X		X	X

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III

SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	15 PSF
WALLS	8 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	$I_s = 1.1$
GROUND SNOW LOAD	$P_g = 11$ PSF
EXPOSURE FACTOR	$C_e = 0.9$
THERMAL FACTOR	$C_t = 1.1$

STRUCTURAL STEEL
DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	ASTM SPECIFICATION	YIELD STRESS
W-SECTIONS	A992	50 KSI
RECTANGULAR HSS	A500, GRADE C	50 KSI
ROUND HSS	A500, GRADE C	46 KSI
PIPE	A53, GRADE B, TYPE E OR S	35 KSI
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE ASTM F3125 GRADE A325 WITH MATCHING NUTS, UNLESS NOTED OTHERWISE. NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED.

- SNUG TIGHT CONDITION SHALL BE PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS, SECTION 8.1.
- SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

POST-TENSIONING CABLES FOR WOOD BEAM STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

WOOD FRAMING
ALL WOOD STRUCTURAL GRADES SHALL BE PER TYPICAL WOOD FRAMING SCHEDULE UNLESS NOTED OTHERWISE.

TYPICAL WOOD FRAMING SCHEDULE	
MEMBER	VISUALLY GRADED (MIN)
COLUMNS	DF/L #1
BEAMS	DF/L #1
SILL PL TO CONCRETE/MASONRY	PT HF #2
BOT PL/SOLE PL/TOP PL	DF/L #2
STUDS	DF/L #2
BUILT-UP STUD PACKS	DF/L #2
JOISTS/RAFTERS	DF/L #2
PURLINS	DF/L #2
GIRTS	DF/L #2
BLOCKING	DF/L CONSTRUCTION
NON-STRUCTURAL FRAMING	DF/L CONSTRUCTION

ALL WOOD PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNLESS NOTED OTHERWISE. ALL COLUMNS SHALL HAVE SOLID BLOCKING FOR THE FULL COLUMN AREA TO SUPPORTING MEMBERS BELOW. COLUMNS SHALL ALIGN THROUGH ALL FLOORS TO THE FOUNDATION. ALL SAWN LUMBER SHALL HAVE A MOISTURE CONTENT LESS THAN 19% (S-DRY) PRIOR TO INSTALLATION OF NON-STRUCTURAL COMPONENTS.

WOOD FRAMING CONNECTIONS
PREDRILL ALL FASTENERS WITH (7/8) X SHANK DIAMETER.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32 " TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER 'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

GLUE LAMINATED (GLULAM) WOOD MEMBERS
GLULAM MEMBERS SHALL BE MANUFACTURED AND CERTIFIED PER THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC), ANSI/AITC A190.1, ASTM D3737 AND CERTIFICATION STAMPED. GLULAM MEMBERS SHALL CONTAIN AN AVERAGE MOISTURE CONTENT OF 16% OR LESS AT TIME OF MANUFACTURE. EASE EDGES ON GLULAM MEMBERS AS REQUIRED TO BE COMPATIBLE WITH STEEL AT CONNECTIONS.

GLULAM APPEARANCE SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE ON THE ARCHITECTURAL DRAWINGS:

- NOT EXPOSED TO VIEW IN COMPLETED CONSTRUCTION: INDUSTRIAL APPEARANCE
- EXPOSED TO VIEW: ARCHITECTURAL APPEARANCE

THE APPEARANCE CERTIFICATION STAMP ON ARCHITECTURAL APPEARANCE MEMBERS SHALL BE PLACED ON SURFACES NOT EXPOSED IN COMPLETED CONSTRUCTION.

GLULAM BEAMS WITH A SIMPLE SPAN BETWEEN SUPPORTS SHALL HAVE A CAMBER EQUAL TO A 2600' RADIUS BETWEEN SUPPORTS FOR SPANS OVER 24', OR AS NOTED ON DRAWINGS. MULTI-SPAN AND CANTILEVER BEAMS SHALL NOT HAVE A CAMBER UNLESS NOTED OTHERWISE.

GLULAM MEMBERS SPECIFIED AS PRESERVATIVE TREATED SHALL BE TREATED WITH PERMAPOST KLEAR-GARD 25 OR EQUAL.

[FOR ALLOWABLE GLULAM BEAM PENETRATIONS SEE 10/S8.00.]

GLULAM MEMBERS SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE DESIGN PROPERTIES:

GLULAM BEAMS		
	SIMPLE SPAN	CONTINUOUS OVER MULTIPLE SUPPORTS OR CANTILEVER
COMBINATION SYMBOL (SPECIES)	24F-V4 (DF/DF)	24F-V8 (DF/DF)
MODULUS OF ELASTICITY, E (PSI)	1,800,000	1,800,000
FLEXURAL STRESS, F_b '' (PSI)	+2,400 /-1,850	+2,400 /-2,400
TENSION STRESS, F_t (PSI)	1,100	1,100
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	650	650
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	1,650	1,650
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	265	265
SPECIFIC GRAVITY	0.50	0.50

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

ADHESIVE
PORTABLE EQUIPMENT SHALL BE USED EMPLOYING POSITIVE DISPLACEMENT METERING PUMPS WHICH ARE INTERLOCKED TO PROVIDE RESIN DELIVERY IN PROPORTIONS REQUIRED BY THE COMPOSITION OF THE TWO COMPONENT INJECTION ADHESIVE. MIXING OF THE ADHESIVE SHALL BE ACCOMPLISHED IN LINE WITH A STATIC MIXER. THE EQUIPMENT SHALL BE DRIVEN BY AIR OR ELECTRIC POWER. THE INJECTION EQUIPEMNT SHALL BE CAPABLE OF MAINTAINING THE VOLUME RATIO OF THE SPECIFIED ADHESIVE COMPONENTS DURING UNINTERRUPTED FLOW WITH A TOLERANCE OF +/- 5% PRESSURE CONTROL. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC PRESSURE CONTROL DEVICE THAT ALLOWS OPERATION AT ANY PRESET PRESSURE WITHIN ITS OPERATING RANGE. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC SHUT-OFF FEATURE TO PREVENT DELIVERY OF ONE ADHESIVE COMPONENT ONLY, WHEN THE OTHER COMPONENT SUPPLY IS EXAUSTED.

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 16655PE OREGON JANUARY 15, 2016 KEVIN M. McCORMACK
EXPIRES: 12-31-2026

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BRIGGS MIDDLE SCHOOL REPAIR

2355 YOLANDA AVE.
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.27.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS			
SYSTEM OR MATERIAL	FREQUENCY		REMARKS
	CONTINUOUS	PERIODIC	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE ON SHEET S1.02 AND DETAIL 3/S8.02

STEEL - SPECIAL INSPECTIONS				
SYSTEM OR MATERIAL	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION		REMARKS
		CONTINUOUS/ PERFORM	PERIODIC/ OBSERVE	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	



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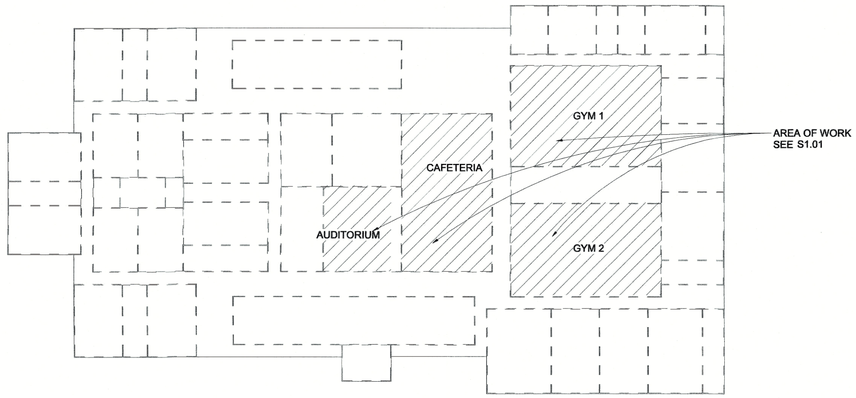
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SHEET CONTENT
SPECIAL INSPECTION

SHEET
S0.03

YOLANDA AVENUE



PL 627'

PL 1318'

-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | 1" = 50'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
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OREGON
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SHEET CONTENT
STRUCTURAL SITE PLAN

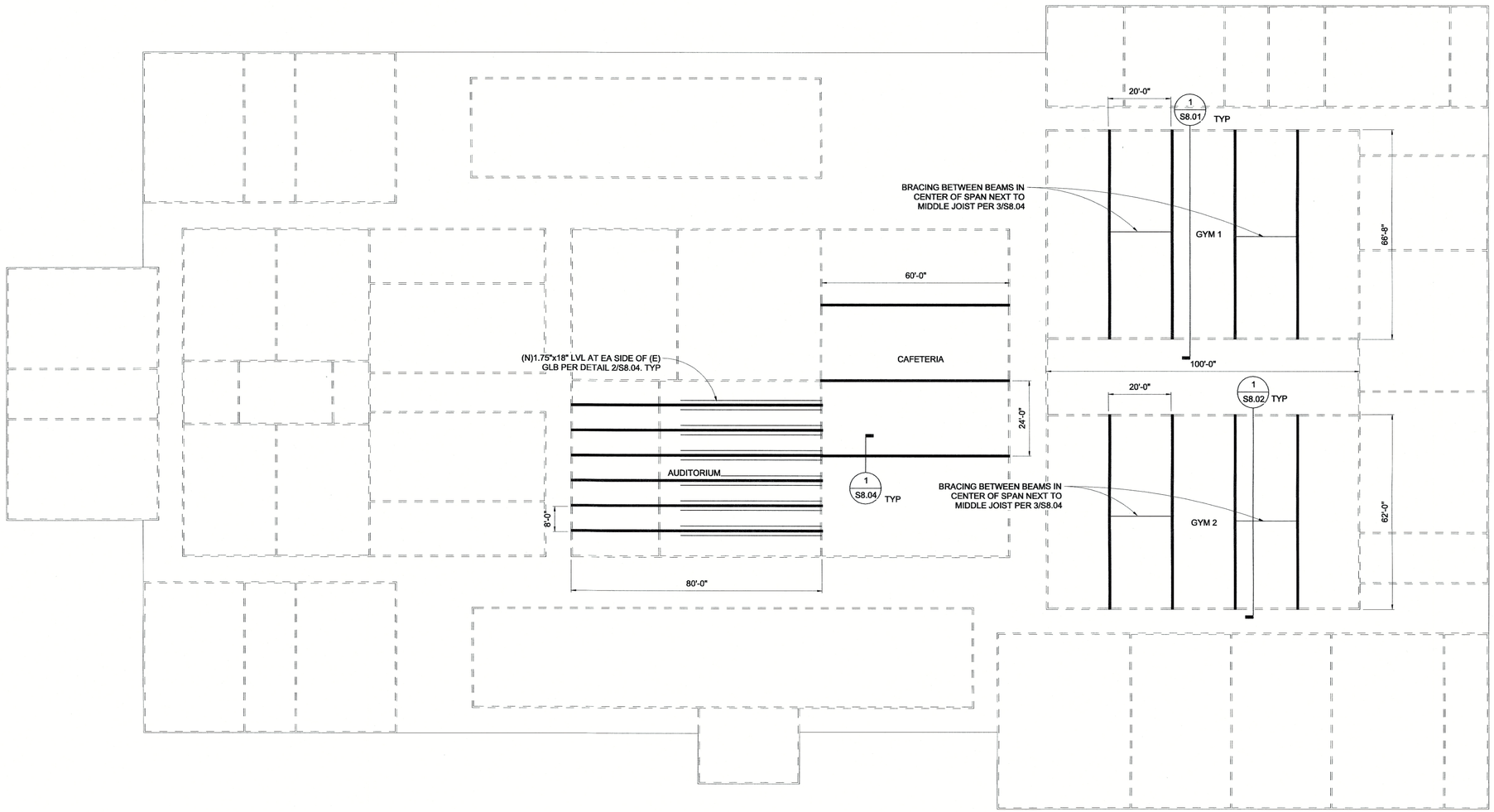
SHEET
S1.00

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS



-NORTH-

1 PARTIAL ROOF FRAMING REPAIR PLAN

S1.01 | 1" = 20'-0"

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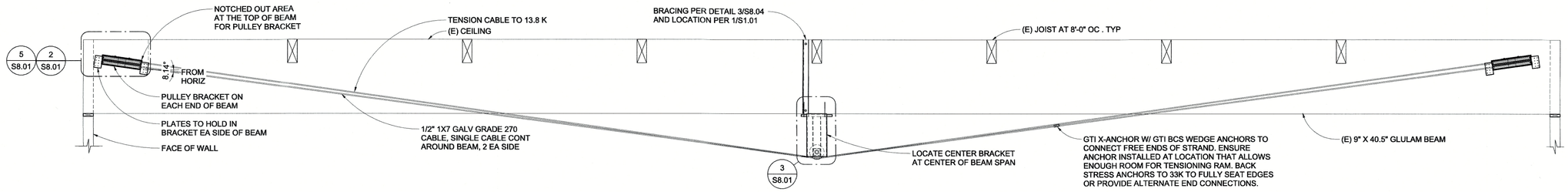
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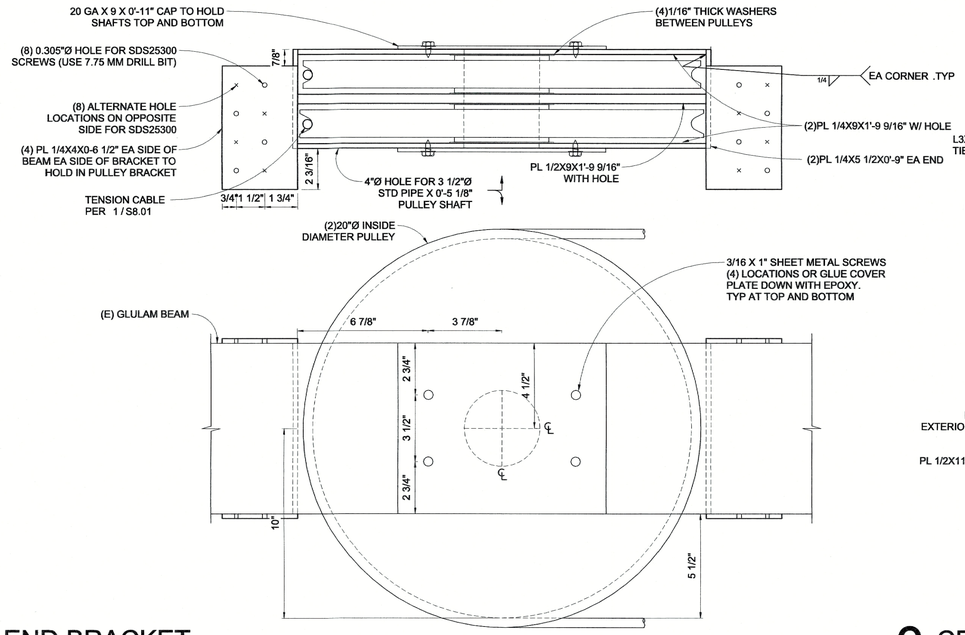
SHEET CONTENT
PARTIAL ROOF FRAMING PLAN

SHEET
S1.01



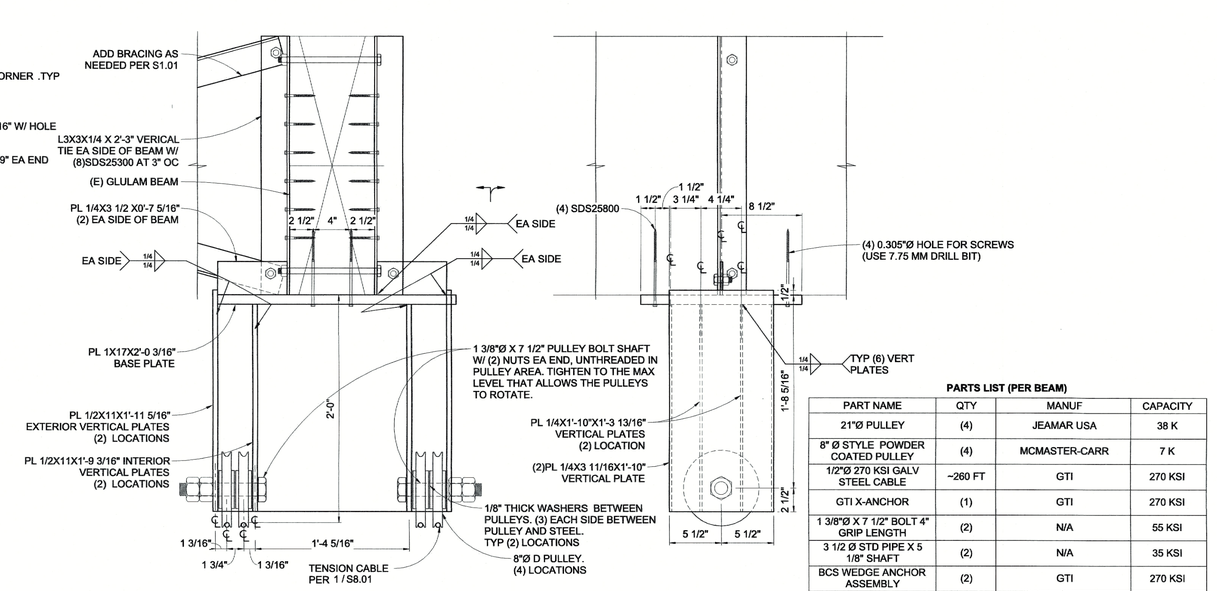
1 GYM 1 BEAM TENSION CABLE REINFORCEMENT ELEVATION

S8.01 | 3/8" = 1'-0"



2 END BRACKET

S8.01 | 3" = 1'-0"



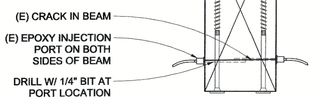
3 CENTER BRACKET

S8.01 | 1 1/2" = 1'-0"

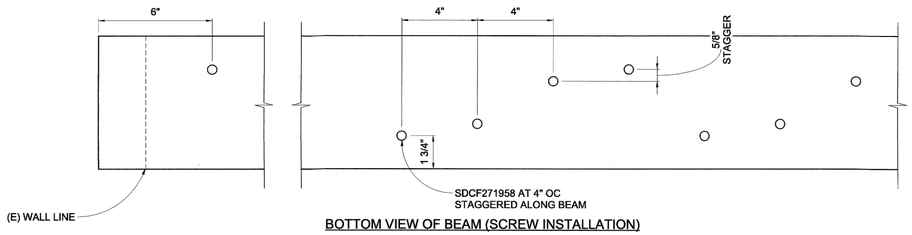
PARTS LIST (PER BEAM)

PART NAME	QTY	MANUF	CAPACITY
21"Ø PULLEY	(4)	JEAMAR USA	38 K
8" Ø STYLE POWDER COATED PULLEY	(4)	MCMASTER-CARR	7 K
1/2"Ø 270 KSI GALV STEEL CABLE	~260 FT	GTI	270 KSI
GTI X-ANCHOR	(1)	GTI	270 KSI
1 3/8"Ø X 7 1/2" BOLT 4" GRIP LENGTH	(2)	N/A	55 KSI
3 1/2 Ø STD PIPE X 5 1/8" SHAFT	(2)	N/A	35 KSI
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
SDS25800	(4)	SIMPSON	N/A
SDS25300	(32)	SIMPSON	N/A
SDCF271958	~(202)	SIMPSON	N/A

NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD



CROSS SECTION OF BEAM (CRACK INJECTION)



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)

4 BEAM REPAIR PROCEDURE

S8.01 | 3" = 1'-0"

STEP 1:
VERIFY ESTIMATED CRACK LOCATIONS SHOWN ON PLAN. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2:
INSTALL HARDWARE SHOWN ON 2/S8.01 AND 3/S8.01

STEP 3:
INSTALL CABLE SHOW ON 1/S8.01 AND TENSION PER PLAN. WAIT ONE WEEK FOR BEAM TO LIFT.

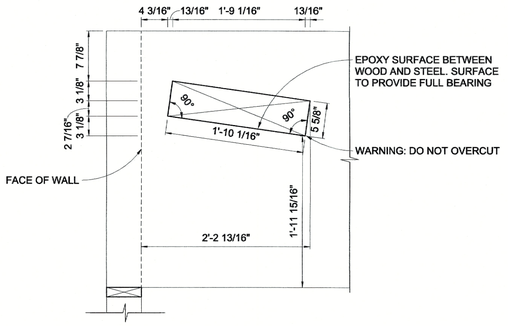
STEP 4:
PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

STEP 5:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
2)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE AND STICK AROUND EACH PREDRILLED LOCATION.
3) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
4)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
5)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

5 NOTCH DIMENSIONS

S8.01 | 1" = 1'-0"



STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2016
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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BRIGGS MIDDLE SCHOOL REPAIR

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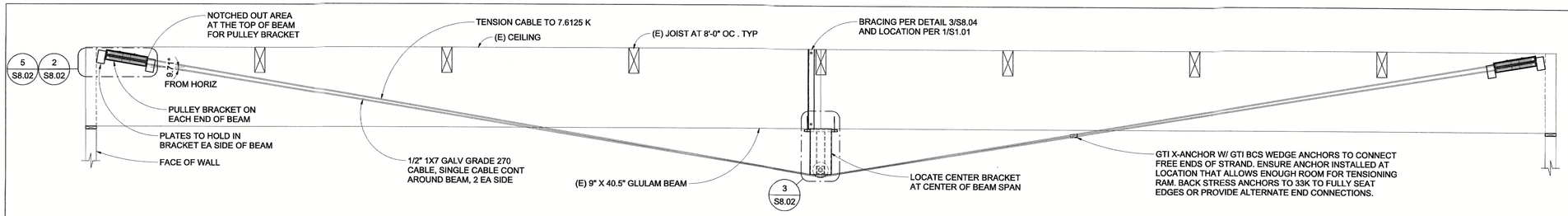
SPRINGFIELD PUBLIC SCHOOLS

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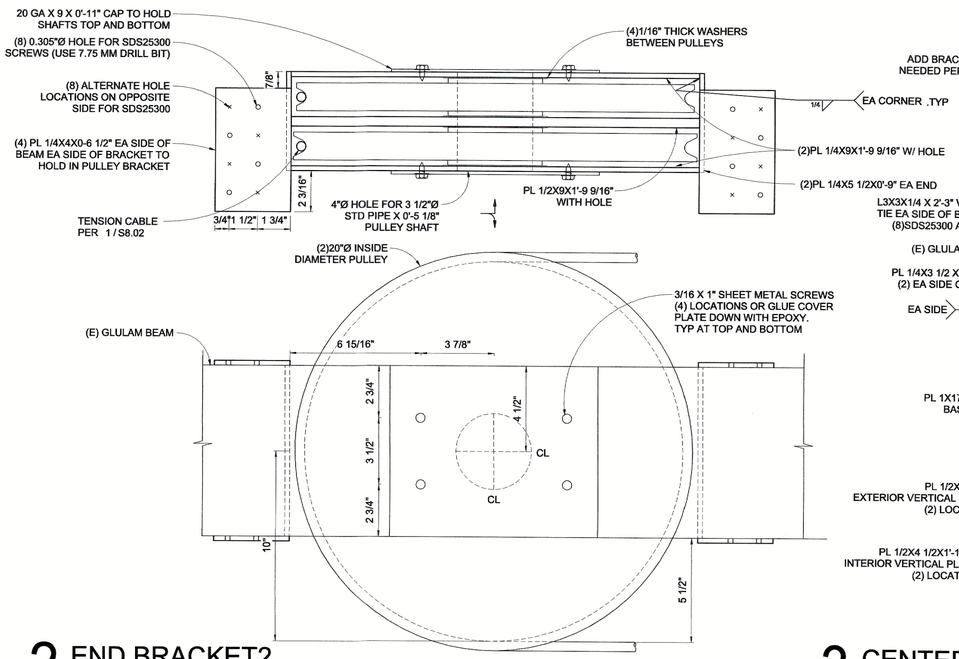
SHEET CONTENT
GYM 1 REPAIR DETAIL

SHEET
S8.01



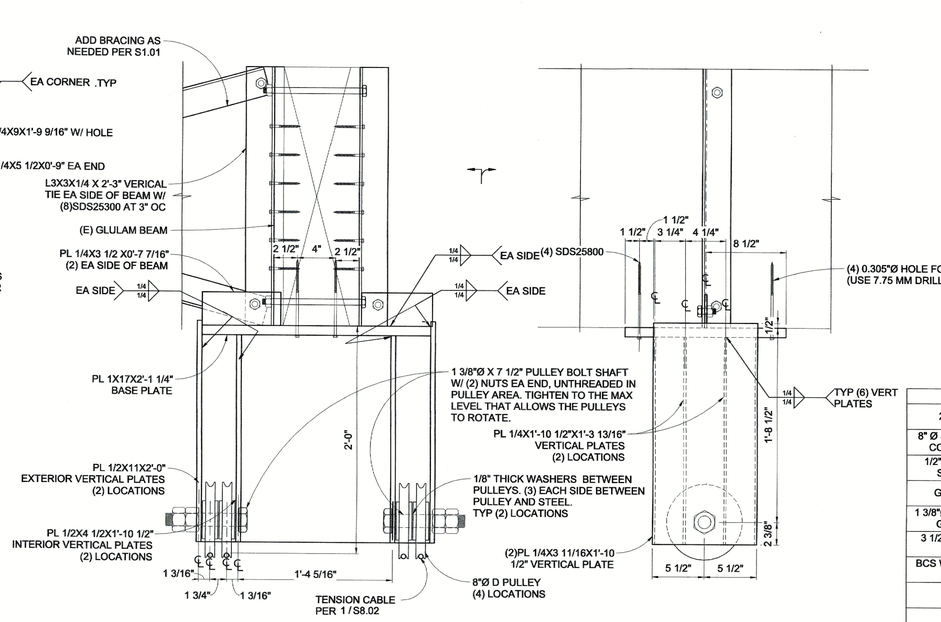
1 GYM 2 BEAM TENSION CABLE REINFORCEMENT ELEVATION

S8.02 | 3/8" = 1'-0"



2 END BRACKET2

S8.02 | 3" = 1'-0"



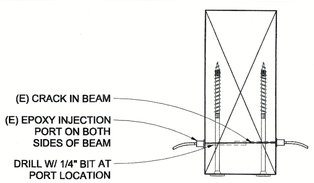
3 CENTER BRACKET2

S8.02 | 1 1/2" = 1'-0"

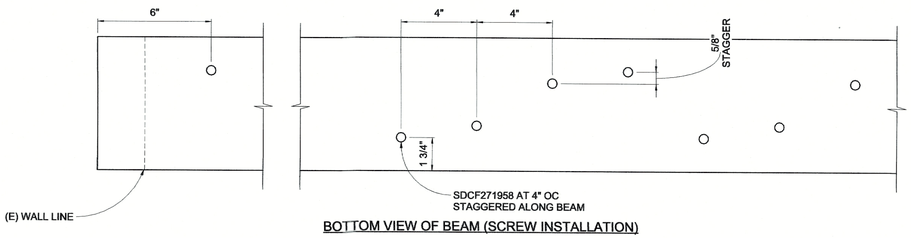
PARTS LIST (PER BEAM)

PART NAME	QTY	MANUF	CAPACITY
21"Ø PULLEY	(4)	JEAMAR USA	38 K
8" Ø STYLE POWDER COATED PULLEY	(4)	MCMASTER-CARR	7 K
1/2"Ø 270 KSI GALV STEEL CABLE	~250 FT	GTI	270 KSI
GTI X-ANCHOR	(1)	GTI	270 KSI
1 3/8"Ø X 7 1/2" BOLT 4" GRIP LENGTH	(2)	N/A	55 KSI
3 1/2 Ø STD PIPE X 5 1/8" SHAFT	(2)	N/A	35 KSI
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
SDS25800	(4)	SIMPSON	N/A
SDS25300	(32)	SIMPSON	N/A
SDCF271958	~(187)	SIMPSON	N/A

NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD



CROSS SECTION OF BEAM (CRACK INJECTION)



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)

4 BEAM REPAIR PROCEDURE2

S8.02 | 3" = 1'-0"

STEP 1:
VERIFY ESTIMATED CRACK LOCATIONS SHOWN ON PLAN. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

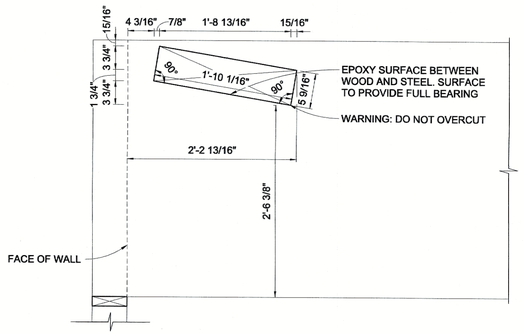
STEP 2:
INSTALL HARDWARE SHOWN ON 2/S8.01 AND 3/S8.01

STEP 3:
INSTALL CABLE SHOW ON 1/S8.01 AND TENSION PER PLAN. WAIT ONE WEEK FOR BEAM TO LIFT.

STEP 4:
PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

STEP 5:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
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3) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
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5)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS



5 NOTCH DIMENSIONS

S8.02 | 1" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
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OREGON
JANUARY 15, 2008
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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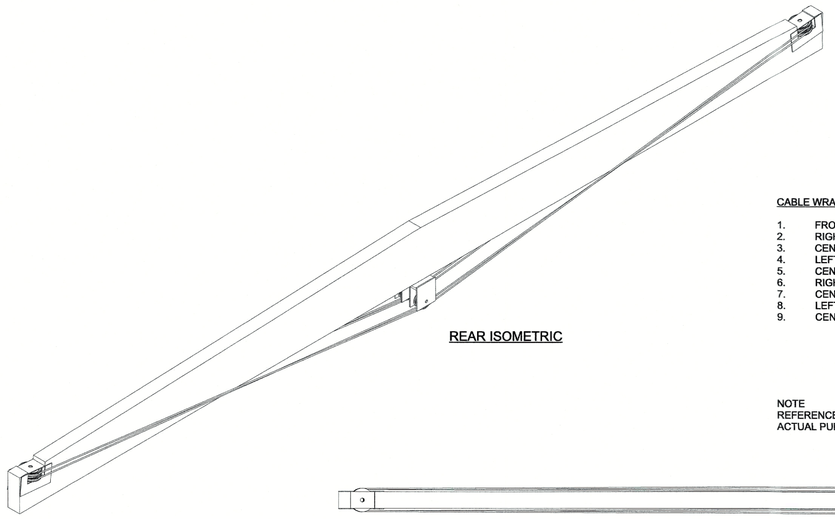
SPRINGFIELD PUBLIC SCHOOLS

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SHEET CONTENT
GYM 2 REPAIR DETAIL

SHEET
S8.02

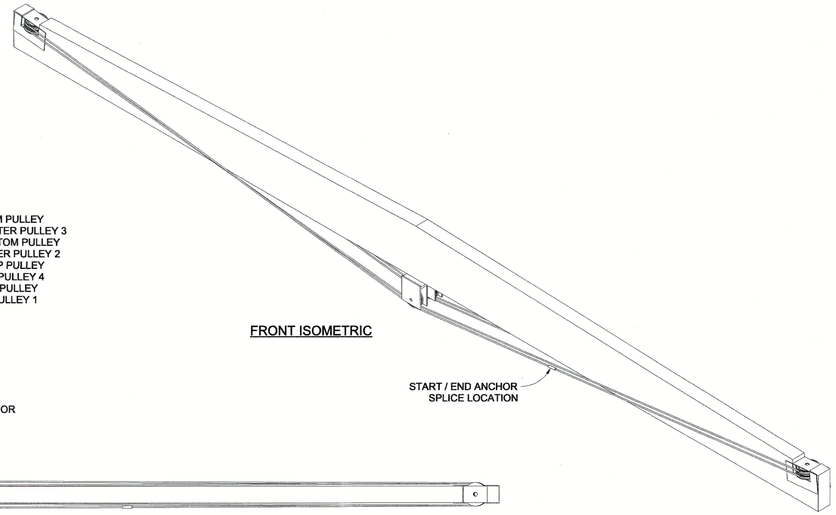


REAR ISOMETRIC

CABLE WRAP PULLEY ORDER

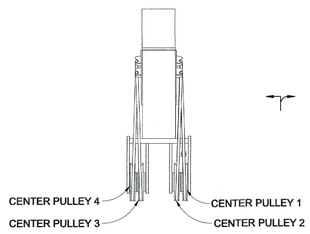
1. FROM SPLICE TO RIGHT BOTTOM PULLEY
2. RIGHT BOTTOM PULLEY TO CENTER PULLEY 3
3. CENTER PULLEY 3 TO LEFT BOTTOM PULLEY
4. LEFT BOTTOM PULLEY TO CENTER PULLEY 2
5. CENTER PULLEY 2 TO RIGHT TOP PULLEY
6. RIGHT TOP PULLEY TO CENTER PULLEY 4
7. CENTER PULLEY 4 TO LEFT TOP PULLEY
8. LEFT TOP PULLEY TO CENTER PULLEY 1
9. CENTER PULLEY TO SPLICE

NOTE
REFERENCE DETAILS ON SHEET FOR
ACTUAL PULLEY ASSEMBLIES

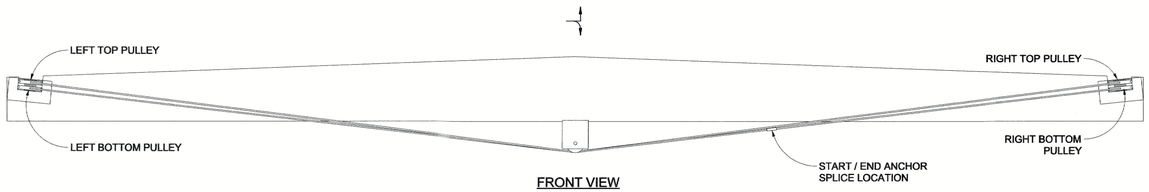


FRONT ISOMETRIC

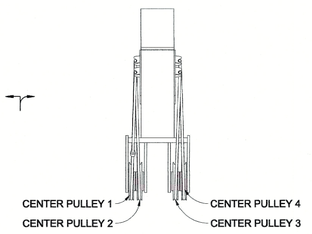
TOP VIEW



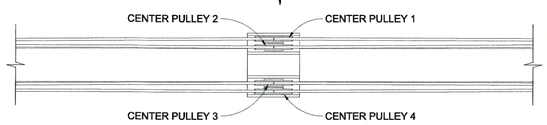
RIGHT END VIEW
SCALE: DOUBLE



FRONT VIEW



LEFT END VIEW
SCALE: DOUBLE



BOTTOM VIEW
SCALE: DOUBLE

1 BEAM CABLE ASSEMBLY

S8.03 | 3/8" = 1'-0"

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2026
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

MILLER CONSULTING ENGINEERS
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Portland, OR | 97223
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BRIGGS MIDDLE SCHOOL REPAIR

2355 YOLANDA AVE.
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

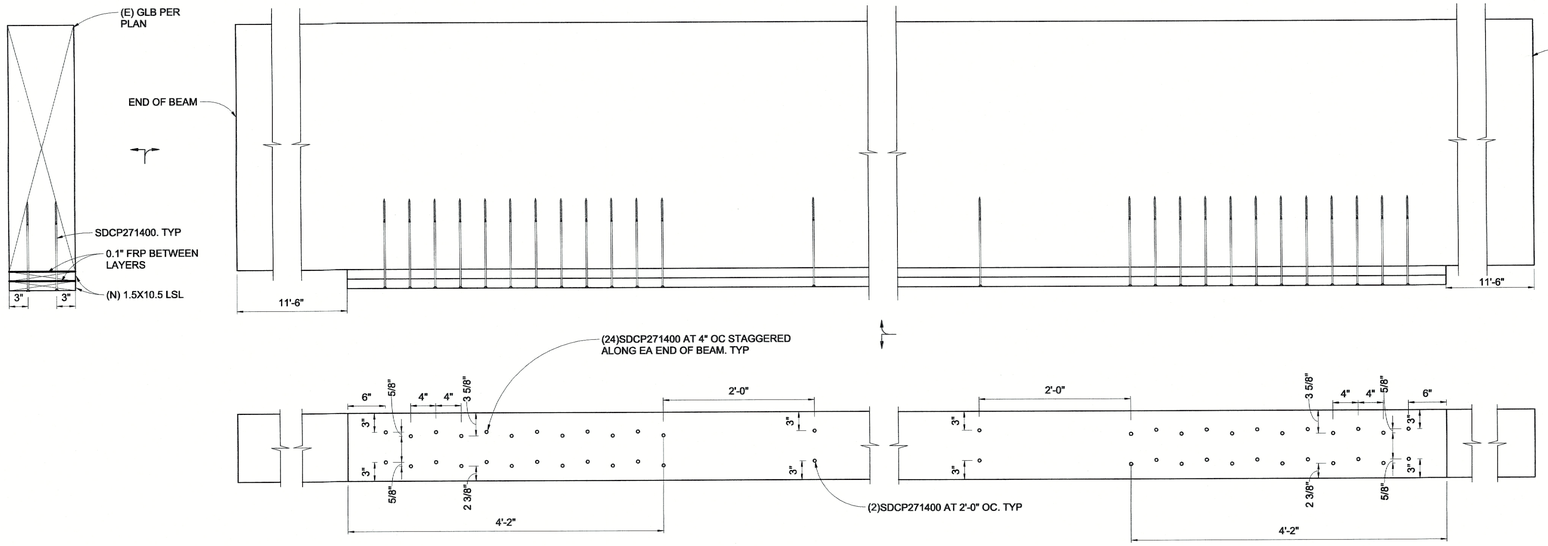
REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV

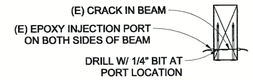
MCE PROJ #: 251372
ISSUE DATE: 02.27.2026
ISSUANCE: BID SET

SHEET CONTENT
BEAM CABLE ASSEMBLY

SHEET
S8.03



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)



CROSS SECTION OF BEAM (CRACK INJECTION)

STEP 1:
INSPECT BEAM FOR CRACKS OR CHECKS. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2:
LIFT BEAM WITHOUT DAMAGE TO BUILDING, DBO.

STEP 3:
VERIFY FRP INSTALLATION LOCATIONS PER DRAWING AT LEFT. CLEAN BOTTOM OF BEAM AT LOCATION OF (N) FRP TO REMOVE ALL CONTAMINANTS AND PREPARE FOR EPOXY. SAND BOTTOM OF BEAM IN SAME LOCATIONS. WIPE WITH ACETONE AND ALLOW TO FULLY EVAPORATE. SAND BONDING FACE OF (N) PSL AND CLEAN OFF ANY DUST OR DEBRIS. ALSO SAND AND CLEAN BONDING SURFACE OF LSL BOARDS.

STEP 4:
CUT FRP TO CORRECT LENGTH FOR APPLICATION ON BOTTOM OF BEAM. USE SIKA CARBODUR S914 OR 200 KSI EQUIVALENT. FRP TO FILL 0.1"X10.5" AREA, MEANING THERE SHOULD BE 3 PIECES OF S914 SIDE BY SIDE IN 2 LAYERS PER 0.1" SECTION. CLEAN FRP BONDING SURFACE WITH MANUFACTURER APPROVED SOLVENT. LIGHTLY ABRADE SURFACE PER MANUFACTURER. REMOVE DUST AND ALLOW TO DRY.

STEP 5:
FRP REINFORCEMENT SHOULD BE PUT INTO PLACE BEFORE INSTALLATION OF ANY SCREWS. USE SIKADUR-330 EPOXY OR APPROVED EQUIVALENT. APPLY EPOXY EVENLY ON BASE OF BEAM AND BONDING FACE OF FRP USING A ROLLER. ENSURE COMPLETE COVERAGE WITH NO DRY SPOTS. APPLY EACH LAYER OF FRP ONE BY ONE RE-APPLYING EPOXY EACH TIME.

STEP 6:
REPEAT FOR LSL BOARD, NEXT LAYER OF FRP AND FINAL LSL BOARD PER DIAGRAM AT LEFT.

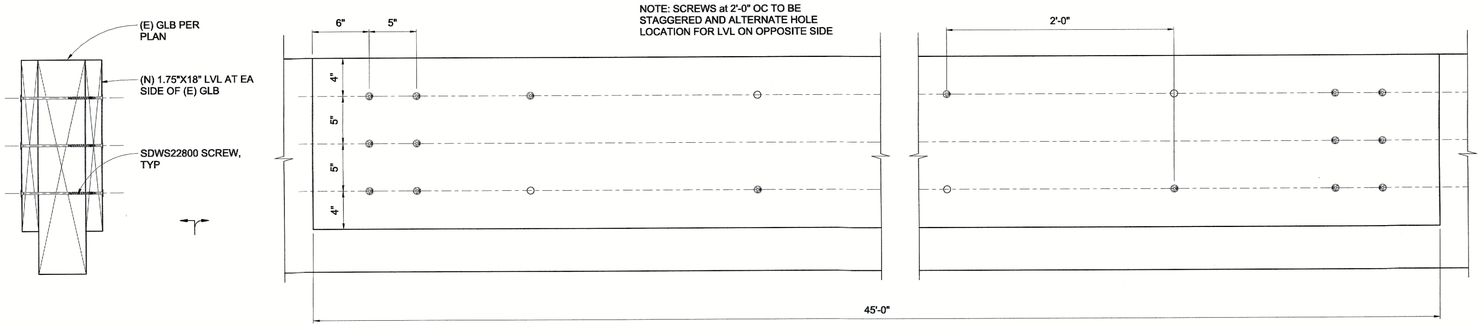
STEP 7:
PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM. SCREW INSTALLATION PER DRAWING AT LEFT. ENSURE ADHESIVE SQUEEZE OUT ALONG EDGES TO INDICATE FULL CONTACT. REMOVE EXCESS BEFORE CURE.

STEP 8:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
A)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
B)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE AND STICK AROUND EACH PREDRILLED LOCATION.
C) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
D)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
E)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 9:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

1 CAFETERIA REPAIR

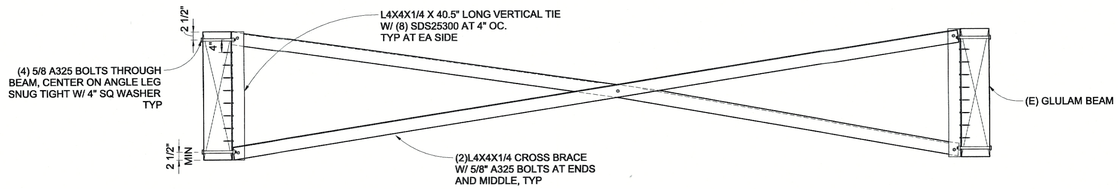
S8.04 | 1" = 1'-0"



STEP 1 - LIFT AND SHORE BEAM ABOUT 1/8" ABOVE LEVEL
STEP 2 - INSTALL MICROLLAM BEAMS
STEP 3 - REMOVE SHORING AND PAINT BEAM TO MATCH EXISTING

2 AUDITORIUM REPAIR

S8.04 | 1 1/2" = 1'-0"



3 GYM 1 BRACING

S8.04 | 1/2" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2016
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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BRIGGS MIDDLE SCHOOL REPAIR

2355 YOLANDA AVE.
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.27.2026
ISSUANCE: BID SET

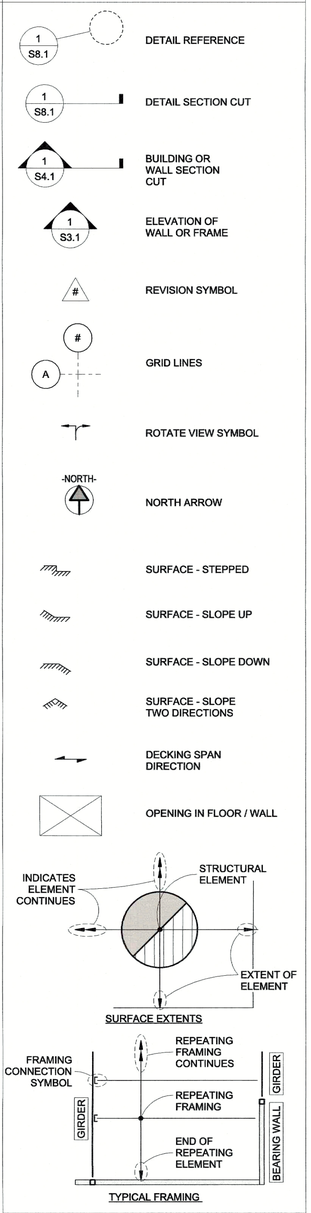
SHEET CONTENT
DETAILS

SHEET
S8.04

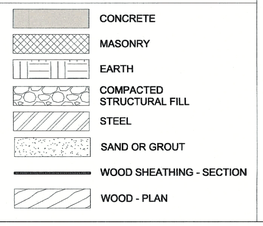
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF FRAMING PLAN	•
S8.01	DETAILS	•
S8.02	DETAILS	•
S8.03	DETAILS	•

CODE SUMMARY:

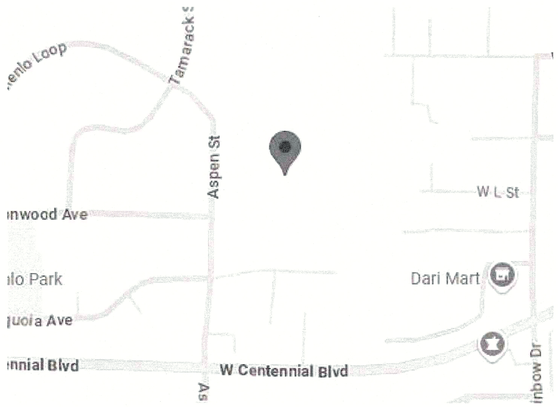
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1964
AREA: 72000 SF (NO CHANGE)
BUILDING CONSTRUCTION TYPE: V-A (NO CHANGE)
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
THE FOLLOWING PLANS ARE FOR THE MANDATORY REINFORCEMENT OF (E) GLUE LAMINATED BEAMS

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: KEVIN MCCORMICK, kevin@miller-se.com
SECONDARY CONTACT: JENNYLIN LOPEZ, jennylin.lopez@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2009
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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CENTENNIAL ELEMENTARY SCHOOL

1315 ASPEN STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.26.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE
PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR 'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			

STRUCTURAL DESIGN CRITERIA
LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	15 PSF

ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 11 PSF

STRUCTURAL STEEL
DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
W-SECTIONS	A992	50 KSI
RECTANGULAR HSS	A500, GRADE C	50 KSI
ROUND HSS	A500, GRADE C	46 KSI
PIPE	A53, GRADE B, TYPE E OR S	35 KSI
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS SHALL BE ASTM A307 GRADE A WITH MATCHING NUTS TIGHTENED TO A SNUG TIGHT CONDITION.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

POST-TENSIONING CABLES FOR WOOD BEAM STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2C DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

WOOD FRAMING
ALL WOOD STRUCTURAL GRADES SHALL BE PER TYPICAL WOOD FRAMING SCHEDULE UNLESS NOTED OTHERWISE.

TYPICAL WOOD FRAMING SCHEDULE	
MEMBER	**VISUALLY GRADED (MIN)**
COLUMNS	DF/L #1
BEAMS	DF/L #1
SILL PL TO CONCRETE/MASONRY	PT HF #2
BOT PL/SOLE PL/TOP PL	DF/L #2
STUDS	DF/L #2
BUILT-UP STUD PACKS	DF/L #2
JOISTS/RAFTERS	DF/L #2
PURLINS	DF/L #2
GIRTS	DF/L #2
BLOCKING	DF/L CONSTRUCTION
NON-STRUCTURAL FRAMING	DF/L CONSTRUCTION

ALL WOOD PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNLESS NOTED OTHERWISE. ALL COLUMNS SHALL HAVE SOLID BLOCKING FOR THE FULL COLUMN AREA TO SUPPORTING MEMBERS BELOW. COLUMNS SHALL ALIGN THROUGH ALL FLOORS TO THE FOUNDATION. ALL SAWN LUMBER SHALL HAVE A MOISTURE CONTENT LESS THAN 19% (S-DRY) PRIOR TO INSTALLATION OF NON-STRUCTURAL COMPONENTS.

WOOD FRAMING CONNECTIONS
PREDRILL ALL FASTENERS WITH (7/8) X SHANK DIAMETER.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32 " TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER 'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

GLUE LAMINATED (GLULAM) WOOD MEMBERS
GLULAM MEMBERS SHALL BE MANUFACTURED AND CERTIFIED PER THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC), ANSI/AITC A190.1, ASTM D3737 AND CERTIFICATION STAMPED. GLULAM MEMBERS SHALL CONTAIN AN AVERAGE MOISTURE CONTENT OF 16% OR LESS AT TIME OF MANUFACTURE. EASE EDGES ON GLULAM MEMBERS AS REQUIRED TO BE COMPATIBLE WITH STEEL AT CONNECTIONS.

GLULAM APPEARANCE SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE ON THE ARCHITECTURAL DRAWINGS:

- NOT EXPOSED TO VIEW IN COMPLETED CONSTRUCTION: INDUSTRIAL APPEARANCE
- EXPOSED TO VIEW: ARCHITECTURAL APPEARANCE

THE APPEARANCE CERTIFICATION STAMP ON ARCHITECTURAL APPEARANCE MEMBERS SHALL BE PLACED ON SURFACES NOT EXPOSED IN COMPLETED CONSTRUCTION.

GLULAM BEAMS WITH A SIMPLE SPAN BETWEEN SUPPORTS SHALL HAVE A CAMBER EQUAL TO A 2600' RADIUS BETWEEN SUPPORTS FOR SPANS OVER 24', OR AS NOTED ON DRAWINGS. MULTI-SPAN AND CANTILEVER BEAMS SHALL NOT HAVE A CAMBER UNLESS NOTED OTHERWISE.

GLULAM MEMBERS SPECIFIED AS PRESERVATIVE TREATED SHALL BE TREATED WITH PERMAPOST KLEAR-GARD 25 OR EQUAL.

[FOR ALLOWABLE GLULAM BEAM PENETRATIONS SEE 10/S8.00.]

GLULAM MEMBERS SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE DESIGN PROPERTIES:

GLULAM BEAMS		
	SIMPLE SPAN	**CONTINUOUS OVER MULTIPLE SUPPORTS OR CANTILEVER**
COMBINATION SYMBOL (SPECIES)	24F-V4 (DF/DF)	24F-V8 (DF/DF)
MODULUS OF ELASTICITY, E (PSI)	1,800,000	1,800,000
FLEXURAL STRESS, F_b +/- (PSI)	+2,400 / -1,850	+2,400 / -2,400
TENSION STRESS, F_t (PSI)	1,100	1,100
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	650	650
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	1,650	1,650
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	265	265
SPECIFIC GRAVITY	0.50	0.50

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

ADHESIVE
PORTABLE EQUIPMENT SHALL BE USED EMPLOYING POSITIVE DISPLACEMENT METERING PUMPS WHICH ARE INTERLOCKED TO PROVIDE RESIN DELIVERY IN PROPORTIONS REQUIRED BY THE COMPOSITION OF THE TWO COMPONENT INJECTION ADHESIVE. MIXING OF THE ADHESIVE SHALL BE ACCOMPLISHED IN LINE WITH A STATIC MIXER. THE EQUIPMENT SHALL BE DRIVEN BY AIR OR ELECTRIC POWER. THE INJECTION EQUIPEMNT SHALL BE CAPABLE OF MAINTAINING THE VOLUME RATIO OF THE SPECIFIED ADHESIVE COMPONENTS DURING UNINTERRUPTED FLOW WITH A TOLERANCE OF +/- 5% PRESSURE CONTROL. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC PRESSURE CONTROL DEVICE THAT ALLOWS OPERATION AT ANY PRESET PRESSURE WITHIN ITS OPERATING RANGE. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC SHUT-OFF FEATURE TO PREVENT DELIVERY OF ONE ADHESIVE COMPONENT ONLY, WHEN THE OTHER COMPONENT SUPPLY IS EXAUSTED.

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	FREQUENCY		REMARKS
	CONTINUOUS	PERIODIC	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE ON SHEET S1.02 AND DETAIL 3/S8.02

STEEL - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION		REMARKS
		CONTINUOUS/ PERFORM	PERIODIC/ OBSERVE	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2021
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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CENTENNIAL ELEMENTARY SCHOOL

1315 ASPEN STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.26.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16665PE
OREGON
JANUARY 15, 2016
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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SHEET CONTENT
STRUCTURAL SITE PLAN

SHEET
S1.00

GENERAL SHEET NOTES:

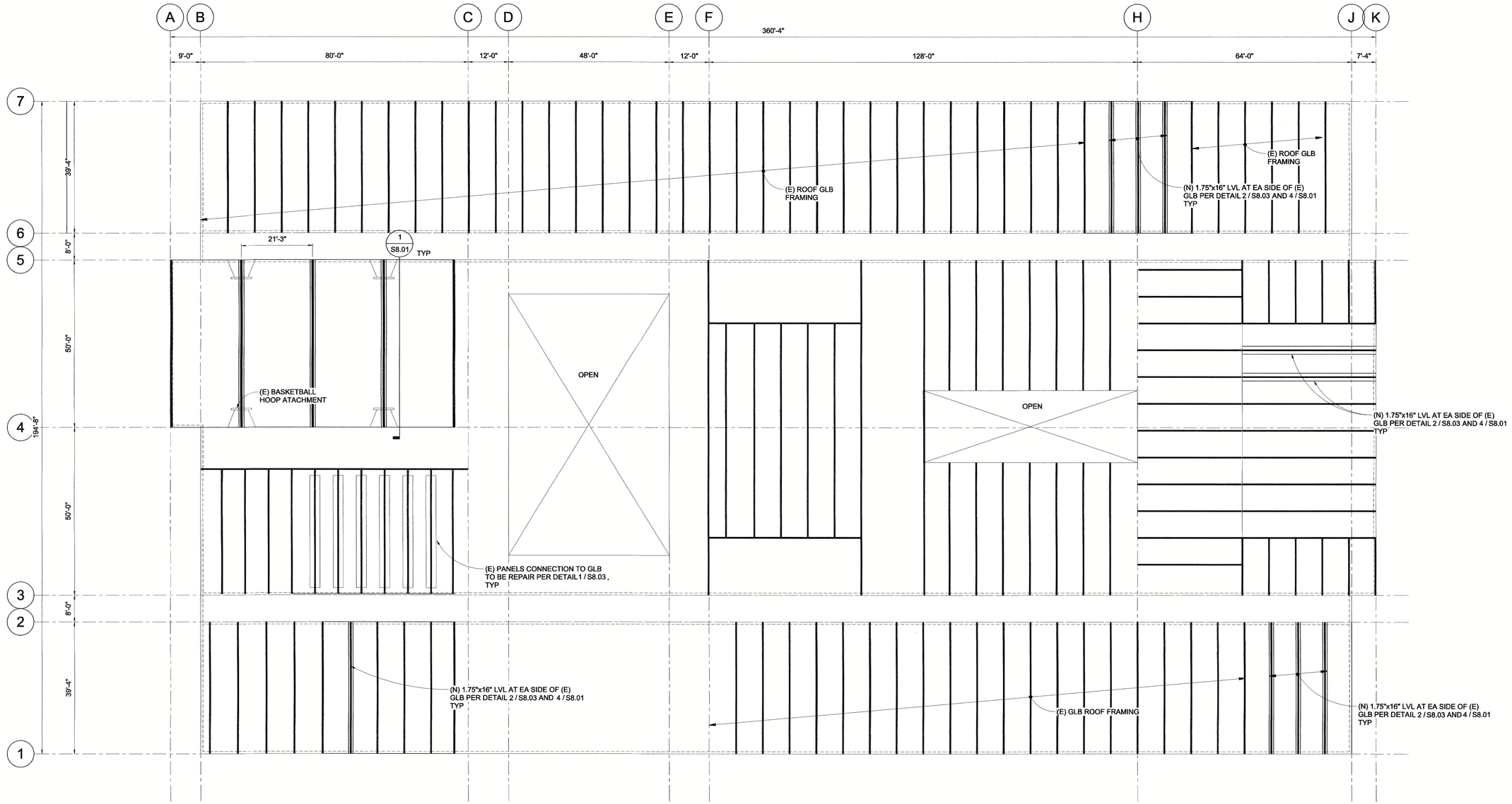
G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. ALL GLULAM BEAMS WITH CRACKS OR BEAMS SHOWING DELAMINATION SHALL PER REPAIR PER DETAIL 2/S8.02. VERIFY IN FIELD ALL BEAMS BEFORE PURCHASE OF MATERIAL. NOTIFY EOR

G5. ALL GLULAM BEAMS THAT WILL BE REPAIR NEED SHORING TO LIFT BEAM UP BEFORE INSTALLING LVL'S AT EA SIDE.



NORTH

1 ROOF FRAMING PLAN

S1.01 | 1/16" = 1'-0"

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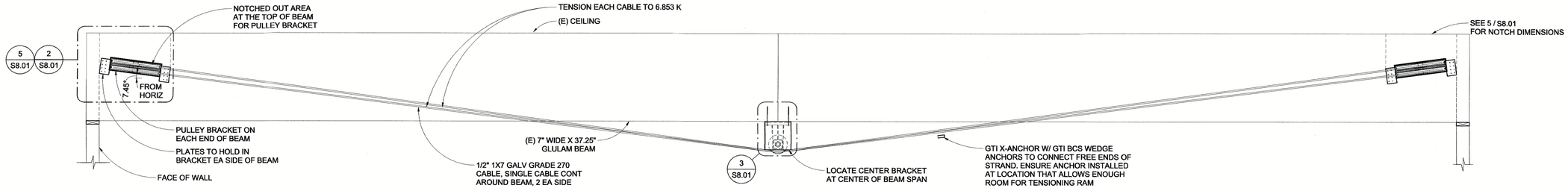
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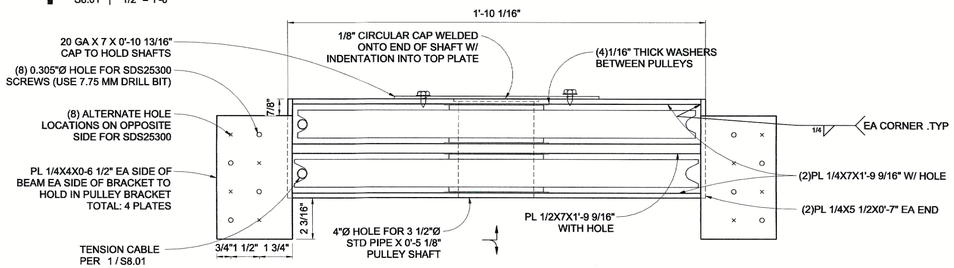
SHEET CONTENT
ROOF FRAMING PLAN

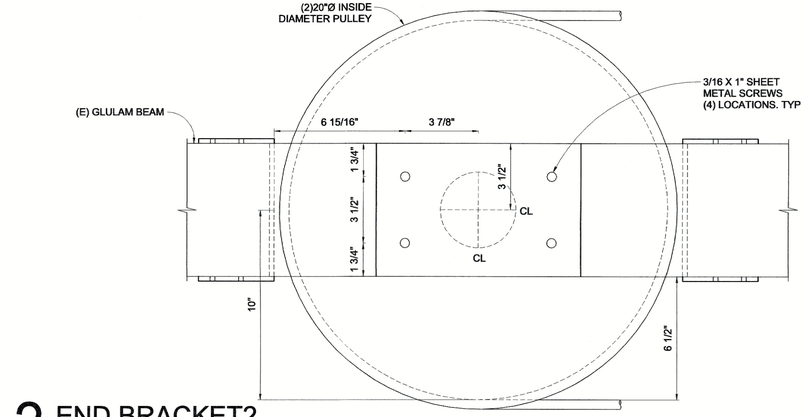
SHEET
S1.01



1 BEAM TENSION CABLE REINFORCEMENT ELEVATION2

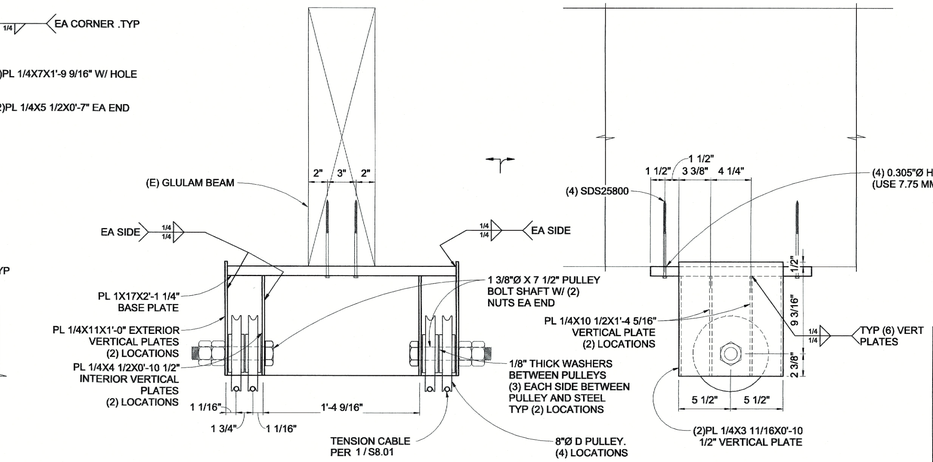
S8.01 | 1/2" = 1'-0"





2 END BRACKET2

S8.01 | 3" = 1'-0"



3 CENTER BRACKET2

S8.01 | 1 1/2" = 1'-0"

STEP 1:
VERIFY ESTIMATED CRACK LOCATIONS SHOWN ON PLAN. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2:
INSTALL HARDWARE SHOWN ON 2/S8.01 AND 3/S8.01

STEP 3:
INSTALL CABLE SHOW ON 1/S8.01 AND TENSION PER PLAN. WAIT ONE WEEK FOR BEAM TO LIFT.

STEP 4:
PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

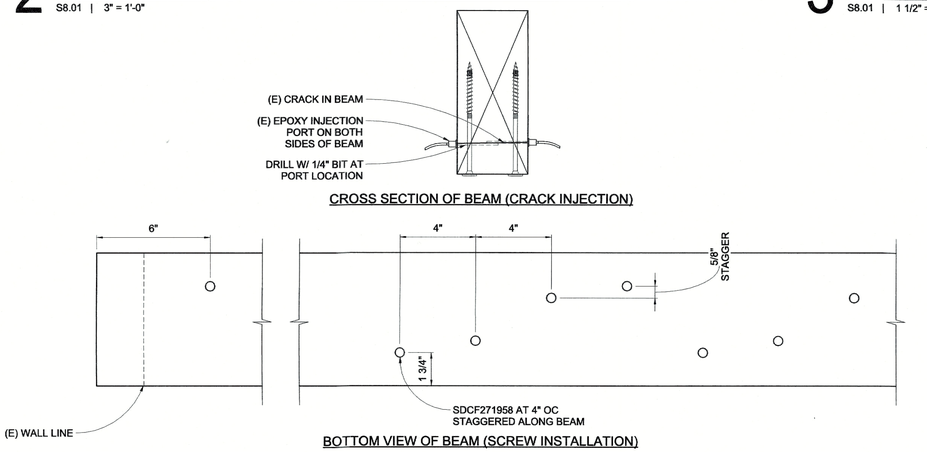
STEP 5:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
2)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE AND STICK AROUND EACH PREDRILLED LOCATION.
3) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
4)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
5)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

PARTS LIST (PER BEAM)

PART NAME	QTY	MANUF	CAPACITY
21"Ø PULLEY	(4)	JEAMAR USA	38 K
8" D STYLE POWDER COATED PULLEY	(4)	MCMASTER-CARR	7 K
1/2"Ø 270 KSI GALV STEEL CABLE	~200 FT	GTI	270 KSI
GTI X-ANCHOR	(1)	GTI	270 KSI
1 3/8"Ø X 7 1/2" BOLT 4" GRIP LENGTH	(2)	N/A	55 KSI
3 1/2 Ø STD PIPE X 5 1/8" SHAFT	(2)	N/A	35 KSI
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
SDS25800	(4)	SIMPSON	N/A
SDS25300	(32)	SIMPSON	N/A
SDCF271958	~(198)	SIMPSON	N/A

NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD

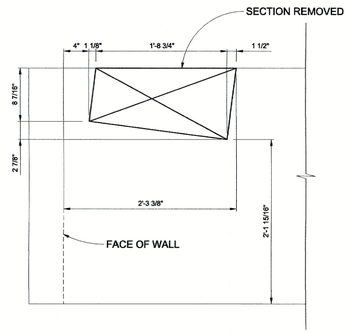


4 BEAM REPAIR PROCEDURE2

S8.01 | 3" = 1'-0"

5 NOTCH DIMENSIONS

S8.01 | 1" = 1'-0"



STRUCTURAL
REGISTERED PROFESSIONAL
ENGINEER
16655PE
OREGON
JANUARY 15, 2005
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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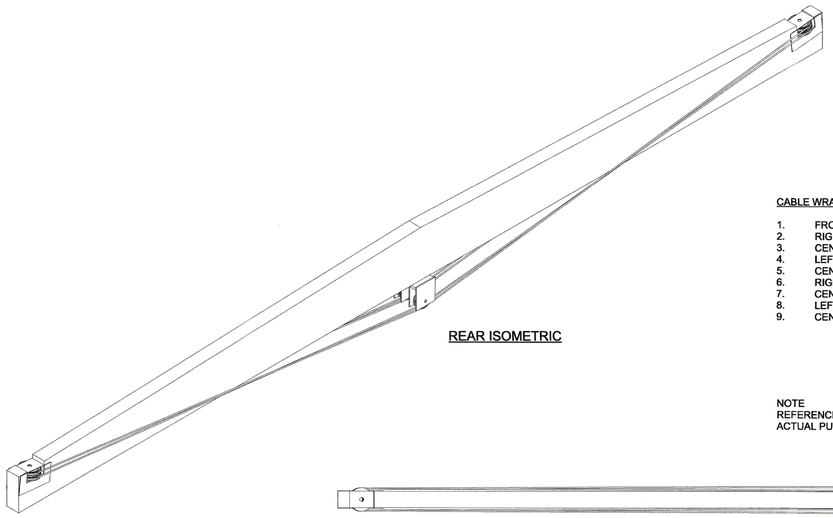
SPRINGFIELD PUBLIC SCHOOLS

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ISSUANCE: BID SET

SHEET CONTENT
DETAILS

SHEET
S8.01

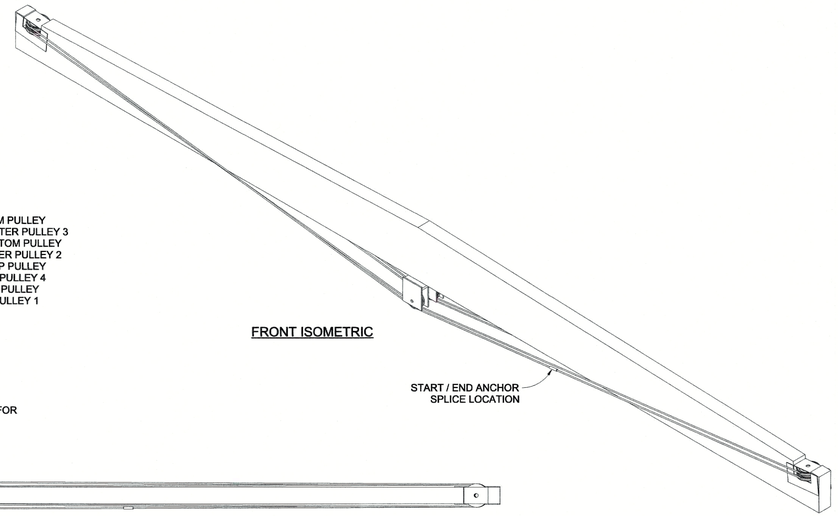


REAR ISOMETRIC

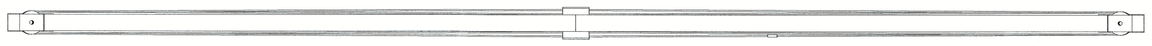
CABLE WRAP PULLEY ORDER

1. FROM SPLICE TO RIGHT BOTTOM PULLEY
2. RIGHT BOTTOM PULLEY TO CENTER PULLEY 3
3. CENTER PULLEY 3 TO LEFT BOTTOM PULLEY
4. LEFT BOTTOM PULLEY TO CENTER PULLEY 2
5. CENTER PULLEY 2 TO RIGHT TOP PULLEY
6. RIGHT TOP PULLEY TO CENTER PULLEY 4
7. CENTER PULLEY 4 TO LEFT TOP PULLEY
8. LEFT TOP PULLEY TO CENTER PULLEY 1
9. CENTER PULLEY TO SPLICE

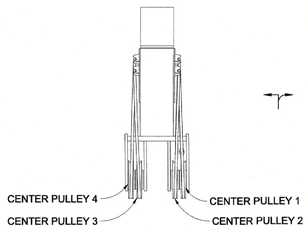
NOTE
REFERENCE DETAILS ON SHEET S8.01 FOR ACTUAL PULLEY ASSEMBLIES



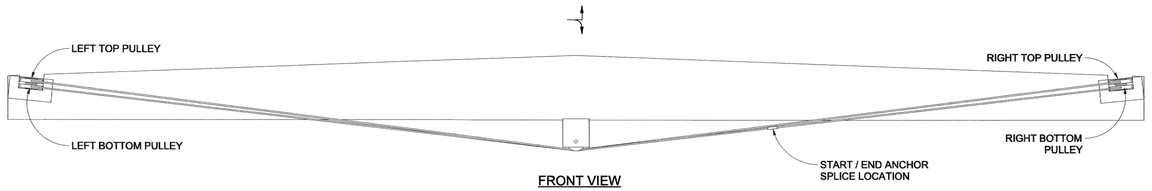
FRONT ISOMETRIC



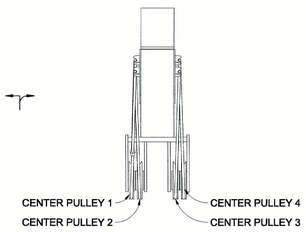
TOP VIEW



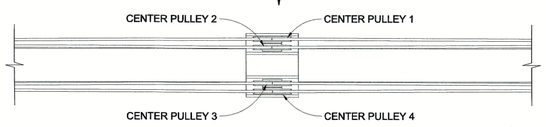
RIGHT END VIEW
SCALE: DOUBLE



FRONT VIEW



LEFT END VIEW
SCALE: DOUBLE



BOTTOM VIEW
SCALE: DOUBLE

1 BEAM CABLE ASSEMBLY

S8.02 | 3/8" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18655PE
OREGON
JANUARY 15, 2010
KEVIN M. MacCORMICK
EXPIRES: 12/31/ 2026

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
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CENTENNIAL ELEMENTARY SCHOOL

1315 ASPEN STREET
SPRINGFIELD, OREGON

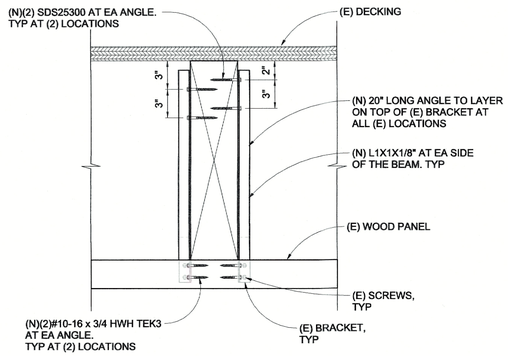
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 02.26.2026
ISSUANCE: BID SET

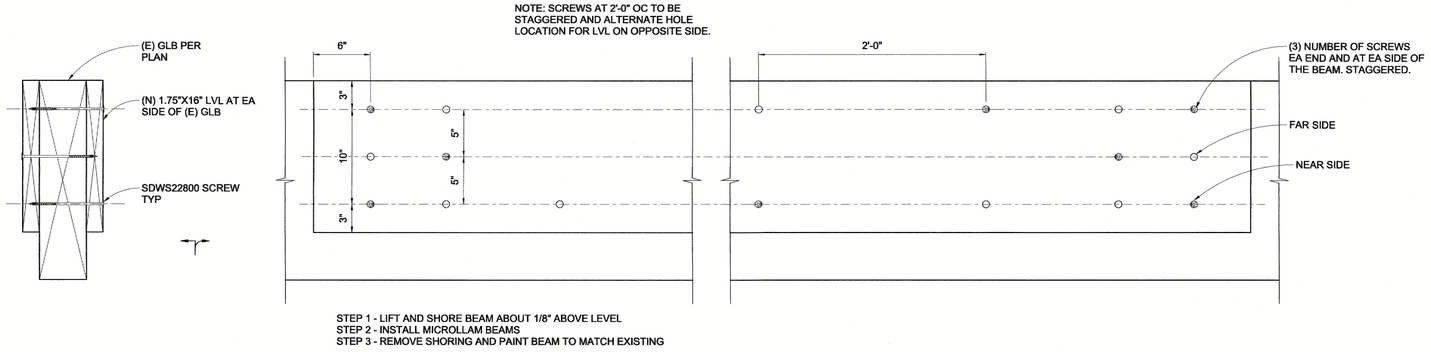
SHEET CONTENT
DETAILS

SHEET
S8.02



1 CAFETERIA PANEL CONNECTION

S8.03 | 1 1/2" = 1'-0"



STEP 1 - LIFT AND SHORE BEAM ABOUT 1/8" ABOVE LEVEL
STEP 2 - INSTALL MICROLLAM BEAMS
STEP 3 - REMOVE SHORING AND PAINT BEAM TO MATCH EXISTING

2 CLASSROOM REPAIR

S8.03 | 1 1/2" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16665PE
OREGON
JANUARY 15, 1982
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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CENTENNIAL ELEMENTARY SCHOOL

1315 ASPEN STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM

MCE PROJ #: 251372
ISSUE DATE: 02.26.2026
ISSUANCE: BID SET

SHEET CONTENT
DETAILS

SHEET
S8.03

STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED; REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



DETAIL REFERENCE



DETAIL SECTION CUT



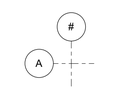
BUILDING OR WALL SECTION CUT



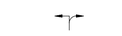
ELEVATION OF WALL OR FRAME



REVISION SYMBOL



GRID LINES


ROTATE VIEW SYMBOL



NORTH ARROW


SURFACE - STEPPED

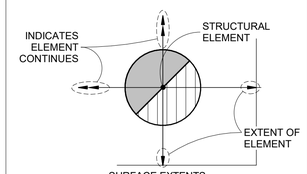

SURFACE - SLOPE UP


SURFACE - SLOPE DOWN

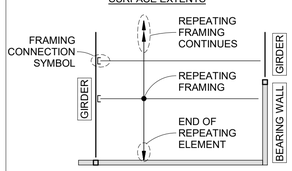

SURFACE - SLOPE TWO DIRECTIONS

DECKING SPAN DIRECTION


OPENING IN FLOOR / WALL

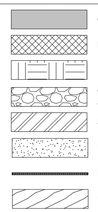


SURFACE EXTENTS



TYPICAL FRAMING

STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	PERMIT SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF FRAMING PLAN	•
S1.02	PARTIAL ROOF REPAIR PLAN	•
S8.01	DETAILS	•
S8.02	DETAILS	•

CODE SUMMARY:

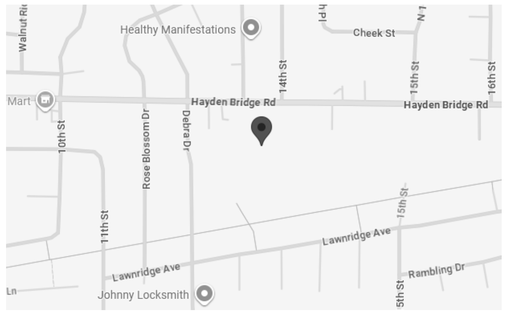
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1955
AREA: 40705 SF
BUILDING CONSTRUCTION TYPE:V-A
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
THE FOLLOWING PLANS ARE FOR THE MANDATORY REINFORCEMENT OF (E) GLUE LAMINATED BEAMS

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: STEVEN DOMITER, STEVEN@MILLER-SE.COM
SECONDARY CONTACT: RON VANDEHEY, RON@MILLER-SE.COM



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
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ELIZABETH PAGE ELEMENTARY SCHOOL REPAIR

1300 HAYDEN BRIDGE ROAD
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 01.16.2025
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE. CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			
PULLEY/SHEAVE	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	20 PSF
WALLS	8 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 12 PSF
EXPOSURE FACTOR	C_e = 0.9
THERMAL FACTOR	C_t = 1.1

FOUNDATION CRITERIA
CONTRACTOR SHALL VERIFY SOIL CONDITIONS AT THE FOOTINGS AND MAKE ANY NECESSARY CORRECTIONS TO PLACE THEM ON FIRM NATIVE SOIL OR STRUCTURAL FILL COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D698 (STANDARD PROCTOR) OR ASTM D1557 (MODIFIED PROCTOR). THE COMPACTION SHALL BE VERIFIED BY A QUALIFIED INSPECTOR APPROVED BY THE BUILDING OFFICIAL. COMPACTED STRUCTURAL FILL FOR DEPTHS GREATER THAN 12 INCHES SHALL COMPLY WITH PROVISIONS OF A GEOTECHNICAL REPORT STAMPED BY A LICENSED GEOTECHNICAL ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

CONCRETE

MIXING, BATCHING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE, ACI 318, ACI 301 AND BUILDING CODE CHAPTER 19.

ALL CONCRETE WITH REINFORCEMENT SHALL HAVE NO CHLORINE OR CHLORIDES. NO WATER MAY BE ADDED TO THE CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE REVIEWED CONCRETE MIX DESIGN.

SLEEVES, OPENINGS, CONDUIT AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED BY THE SEOR BEFORE PLACING CONCRETE.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.

DESIGN OF FORMWORK, SHORING AND RE-SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE MOST RECENT EDITION OF ACI 347R.

CONCRETE MIX DESIGN REQUIREMENTS:

CONCRETE MIX DESIGN REQUIREMENTS				
MEMBER TYPE/LOCATION	COMPRESSIVE STRENGTH AT 28 DAYS, f'c (PSI)	MAXIMUM AGGREGATE SIZE	MAXIMUM W/CM RATIO	EXPOSURE CLASS
FOOTINGS AND MAT FOUNDATIONS	4000	1"	0.50	F0, S0, W1, C0
INTERIOR SLAB ON GRADE	3000	1"	0.45	F0, S0, W0, C0

CONCRETE MIX AIR CONTENT REQUIREMENTS:
AIR ENTRAINMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE MAXIMUM AGGREGATE SIZE AND EXPOSURE CLASS OF THE MIX DESIGN SPECIFIED. THE AIR-ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260. MIX DESIGNS SPECIFIED AS EXPOSURE CLASS F0 DO NOT REQUIRE AIR ENTRAINMENT.

CONCRETE MIX AIR CONTENT REQUIREMENTS		
MAXIMUM AGGREGATE SIZE	CONCRETE SUBJECT TO FREEZE/THAW CYCLES (EXPOSURE CLASS F1)	CONCRETE SUBJECT TO CONTINUOUS MOISTURE AND/OR DEICING CHEMICALS (EXPOSURE CLASS F2, F3)
3/8"	6%	7.5%
1/2"	5.5%	7%
3/4"	5%	6%
1"	4.5%	6%
1-1/2"	4.5%	5.5%

CONCRETE REINFORCING STEEL
ALL REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 OR A706, GRADE 60 UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL BE SUPPORTED ON WELL-CURED CONCRETE BLOCKS, PLASTIC CHAIRS OR METAL CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STANDARD PRACTICE, MSP-1. REINFORCING SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE PRIOR TO PLACING CONCRETE. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE *GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS*, ACI 315R-18. BAR LENGTHS DETAILED ARE OUT TO OUT AND DO NOT INCLUDE ALLOWANCE FOR HOOKS OR BENDS.

WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR EMBEDDED STEEL ITEMS IS PROHIBITED EXCEPT WHERE SPECIFICALLY NOTED ON THE DRAWINGS. ANY WELDING OF REINFORCEMENT NOT SHOWN ON THE DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE SEOR. WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS WITH PROCEDURES CONFORMING TO AWS D1.4.

- WELDABLE REINFORCING STEEL: ASTM A706
- WELDING ELECTRODES: E9018, UNLESS NOTED OTHERWISE.

SPECIFIED CONCRETE COVER SHALL BE MAINTAINED TO ALL REINFORCEMENT AT CONCRETE REVEALS AND INSETS.

POST INSTALLED CONCRETE ANCHORS:
POST INSTALLED CONCRETE ANCHORS SHALL CONSIST OF THE FOLLOWING UNLESS NOTED OTHERWISE:

TYPICAL POST INSTALLED CONCRETE ANCHOR SCHEDULE	
ANCHOR TYPE	SPECIFIED ANCHOR
ADHESIVE REBAR DOWELS	A615 OR A706 GR 60 W/ SIMPSON SET-3G

ALL POST INSTALLED CONCRETE ANCHORS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTALLATION CRITERIA AND PER THE BUILDING CODE EVALUATION REPORT. ANCHOR INSTALLERS SHALL BE QUALIFIED AS REQUIRED BY JURISDICTION REQUIREMENTS.

ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS.

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	ASTM SPECIFICATION	YIELD STRESS
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS SHALL BE ASTM A325 WITH MATCHING NUTS TIGHTENED TO A SNUG TIGHT CONDITION.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

POST-TENSIONING CABLES FOR WOOD BEAM STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

WOOD FRAMING

ALL WOOD STRUCTURAL GRADES SHALL BE PER TYPICAL WOOD FRAMING SCHEDULE UNLESS NOTED OTHERWISE.

TYPICAL WOOD FRAMING SCHEDULE	
MEMBER	VISUALLY GRADED (MIN)
COLUMNS	DF/L #1
BLOCKING	DF/L CONSTRUCTION
NON-STRUCTURAL FRAMING	DF/L CONSTRUCTION

ALL WOOD PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNLESS NOTED OTHERWISE. ALL COLUMNS SHALL HAVE SOLID BLOCKING FOR THE FULL COLUMN AREA TO SUPPORTING MEMBERS BELOW. COLUMNS SHALL ALIGN THROUGH ALL FLOORS TO THE FOUNDATION. ALL SAWN LUMBER SHALL HAVE A MOISTURE CONTENT LESS THAN 19% (S-DRY) PRIOR TO INSTALLATION OF NON-STRUCTURAL COMPONENTS.

TYPICAL WOOD FRAMING CONNECTIONS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

- BUILT-UP STUD PACK FASTENING — SEE 3/S8.02

WOOD FRAMING CONNECTIONS
PREDRILL FOR ALL SCREWS INTO EXISITING LUMBER TO ⅞ THE SHANK DIAMETER OF THE SCREW. ALL WOOD SCREWS TO BE MANUFACTURED BY SIMPSON STRONG-TIE. ALTERNATE CONNECTORS MAY ONLY BE USED WITH PRIOR APPROVAL BY ENGINEER OF RECORD.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A325. BOLT HOLES IN WOOD SHALL BE 1/32" LARGER THAN THE BOLT. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ADHESIVE
PORTABLE EQUIPMENT SHALL BE USED EMPLOYING POSITIVE DISPLACEMENT METERING PUMPS WHICH ARE INTERLOCKED TO PROVIDE RESIN DELIVERY IN PROPORTIONS REQUIRED BY THE COMPOSITION OF THE TWO COMPONENT INJECTION ADHESIVE. MIXING OF THE ADHESIVE SHALL BE ACCOMPLISHED IN LINE WITH A STATIC MIXER. THE EQUIPMENT SHALL BE DRIVEN BY AIR OR ELECTRIC POWER. THE INJECTION EQUIPEMNT SHALL BE CAPABLE OF MAINTAINING THE VOLUME RATIO OF THE SPECIFIED ADHESIVE COMPONENTS DURING UNINTERRUPTED FLOW WITH A TOLERANCE OF +/- 5% PRESSURE CONTROL. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC PRESSURE CONTROL DEVICE THAT ALLOWS OPERATION AT ANY PRESET PRESSURE WITHIN ITS OPERATING RANGE. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC SHUT-OFF FEATURE TO PREVENT DELIVERY OF ONE ADHESIVE COMPONENT ONLY, WHEN THE OTHER COMPONENT SUPPLY IS EXAUSTED.

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	FREQUENCY		REMARKS
	CONTINUOUS	PERIODIC	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE DETAIL 4/S8.01

STEEL - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION		REMARKS
		CONTINUOUS/ PERFORM	PERIODIC/ OBSERVE	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE	X		CARDS
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"	6		X	

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
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Portland, OR | 97223
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ELIZABETH PAGE ELEMENTARY SCHOOL REPAIR

1300 HAYDEN BRIDGE ROAD
SPRINGFIELD, OREGON

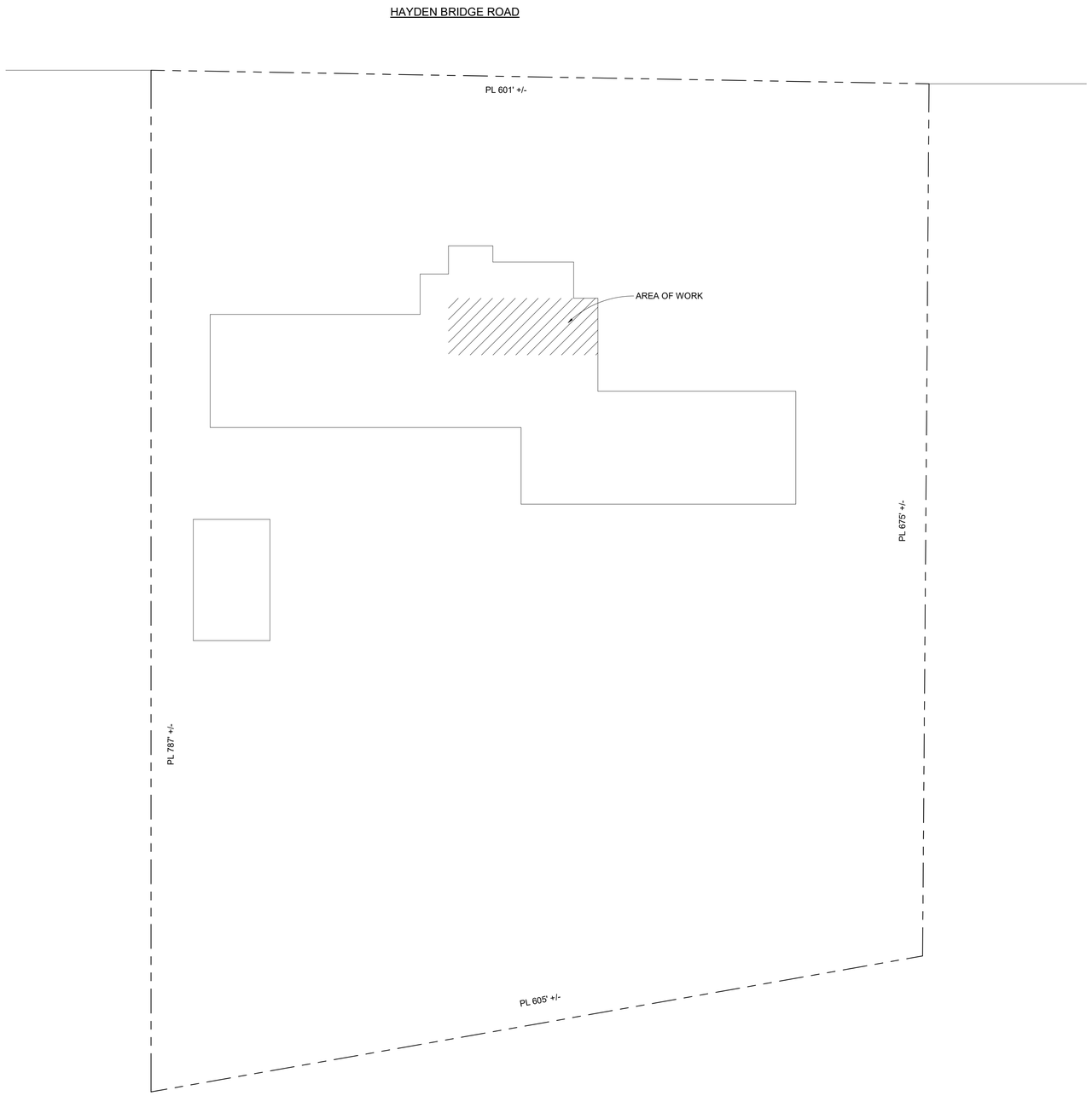
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 01.16.2025
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | 1" = 50'-0"

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SHEET CONTENT
STRUCTURAL SITE PLAN

SHEET
S1.00

GENERAL SHEET NOTES:

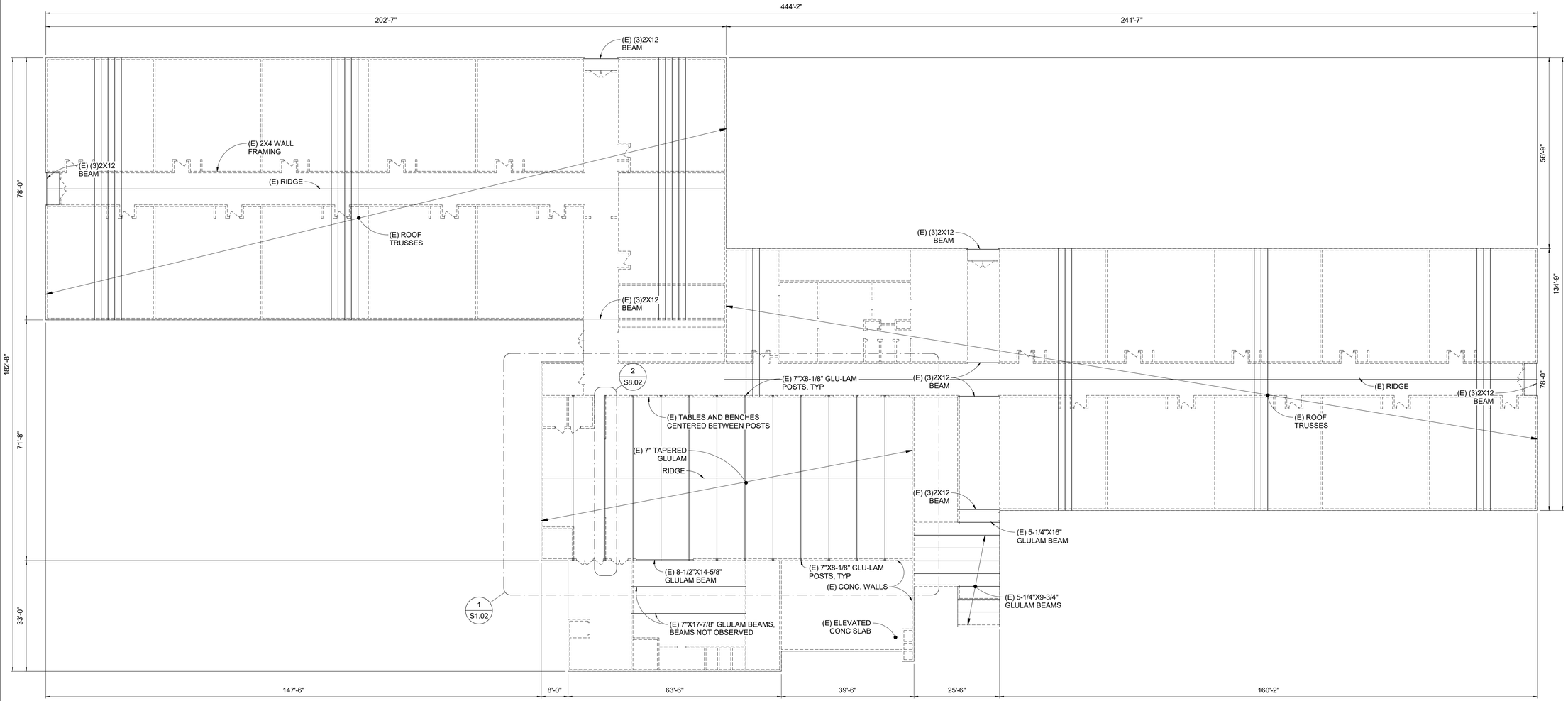
G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. PREDRILL ALL HOLES IN EXISTING LUMBER

G5. ESTIMATED LOCATION OF EXISTING CRACK/CHECK IN BEAM. TO BE REPAIRED PER 4/S8.01 VIF LOCATIONS



-NORTH-

1 ROOF FRAMING PLAN

S1.01 | 1/16" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
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SHEET CONTENT
ROOF FRAMING PLAN

SHEET
S1.01

GENERAL SHEET NOTES:

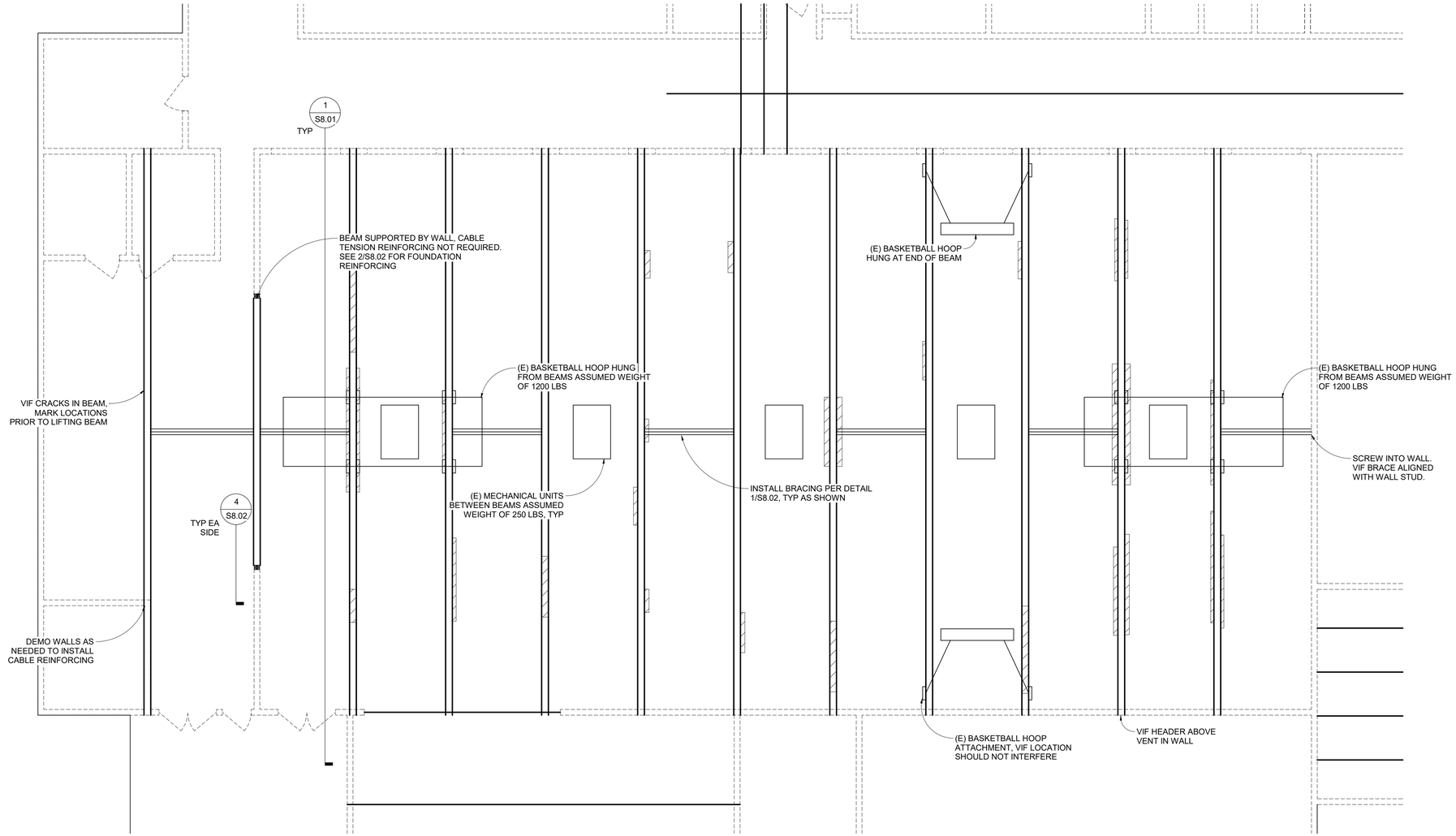
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G4. PREDRILL ALL HOLES IN EXISTING LUMBER

G5. ESTIMATED LOCATION OF EXISTING CRACK/CHECK IN BEAM. TO BE REPAIRED PER 4/S8.01 VIF LOCATIONS



-NORTH-

1 PARTIAL ROOF REPAIR PLAN

S1.02 | 3/16" = 1'-0"

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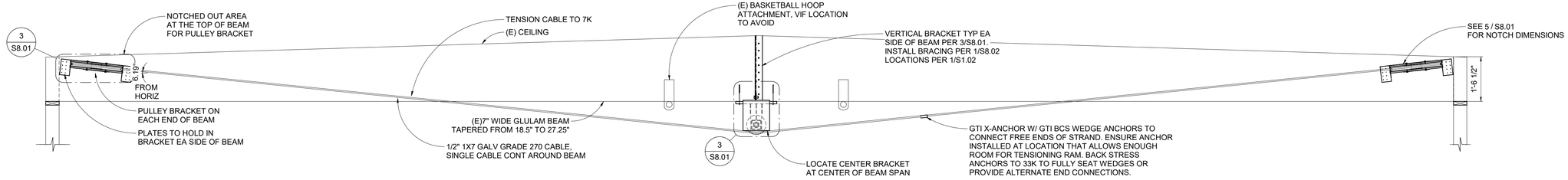
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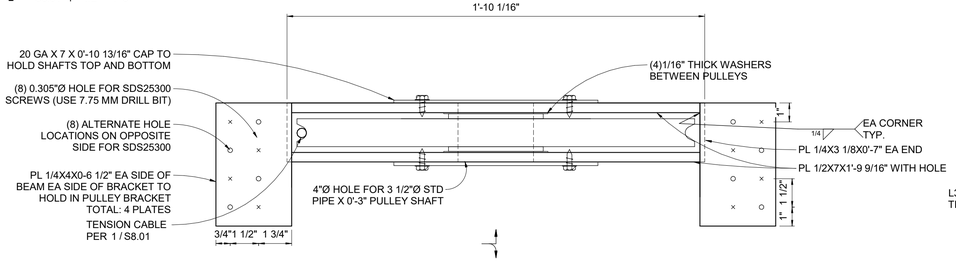
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PARTIAL ROOF REPAIR PLAN

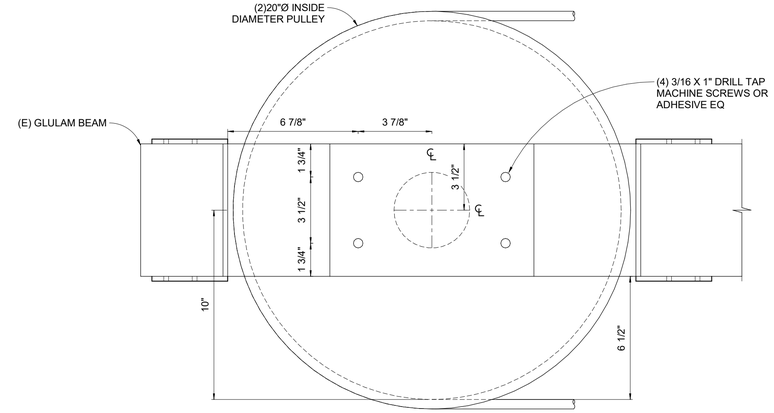
SHEET
S1.02

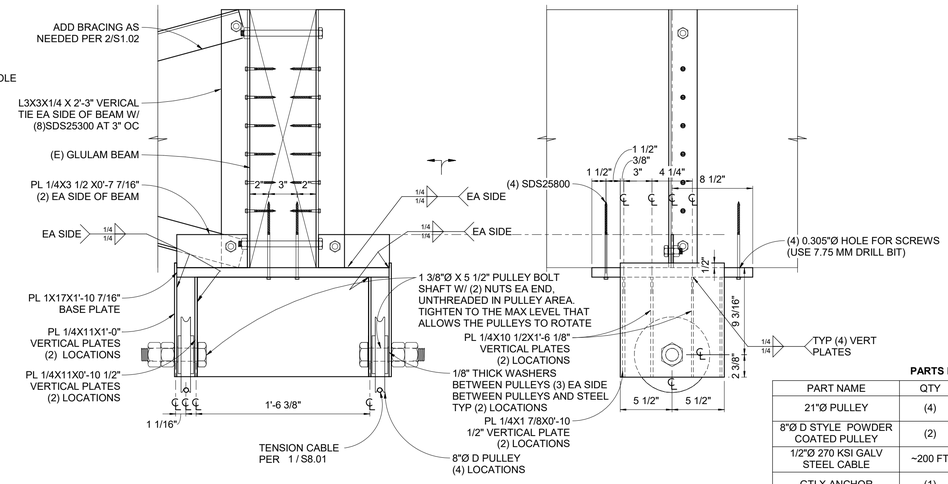


1 BEAM TENSION CABLE REINFORCEMENT ELEVATION

S8.01 | 1/2" = 1'-0"







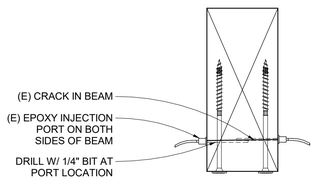
PARTS LIST (PER BEAM)

PART NAME	QTY	MANUF	CAPACITY
21"Ø PULLEY	(4)	JEAMAR USA	38 K
8"Ø D STYLE POWDER COATED PULLEY	(2)	MCMASTER-CARR	7 K
1/2"Ø 270 KSI GALV STEEL CABLE	~200 FT	GTI	270 KSI
GTI X-ANCHOR	(1)	GTI	270 KSI
1 3/8"Ø X 5 1/2" BOLT 4" GRIP LENGTH	(2)	N/A	55 KSI
3 1/2 Ø STD PIPE X 5 1/8" SHAFT	(2)	N/A	35 KSI
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
SDS25800	(4)	SIMPSON	N/A
SDS25300	(32)	SIMPSON	N/A
SDCF271100	~(143)	SIMPSON	N/A

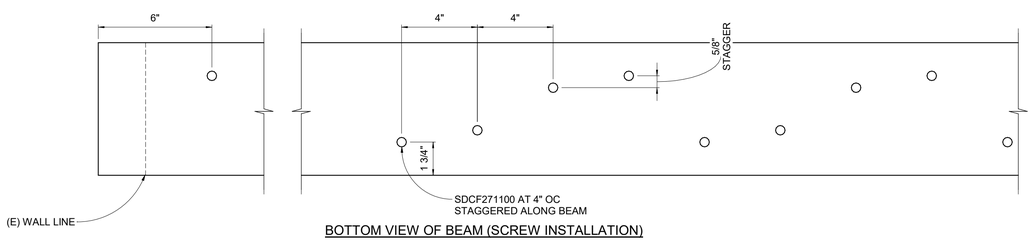
NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD

2 END BRACKET

S8.01 | 3" = 1'-0"



CROSS SECTION OF BEAM (CRACK INJECTION)



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)

3 CENTER BRACKET

S8.01 | 1 1/2" = 1'-0"

STEP 1:
VERIFY ESTIMATED CRACK LOCATIONS SHOWN ON PLAN. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2:
INSTALL HARDWARE SHOWN ON 2/S8.01 AND 3/S8.01

STEP 3:
INSTALL CABLE SHOW ON 1/S8.01 AND TENSION PER PLAN. WAIT ONE WEEK FOR BEAM TO LIFT.

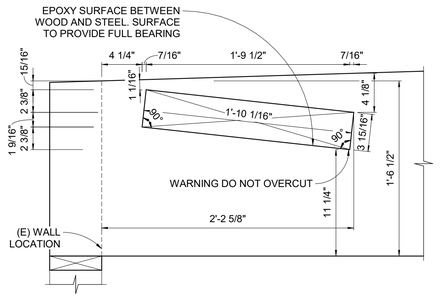
STEP 4:
PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

STEP 5:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
2)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE AND STICK AROUND EACH PREDRILLED LOCATION.
3) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
4)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
5)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

4 BEAM REPAIR PROCEDURE

S8.01 | 3" = 1'-0"



5 NOTCH DIMENSIONS

S8.01 | 1 1/2" = 1'-0"

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
503.246.1250 | miller-se.com

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ELIZABETH PAGE ELEMENTARY SCHOOL REPAIR

1300 HAYDEN BRIDGE ROAD
SPRINGFIELD, OREGON

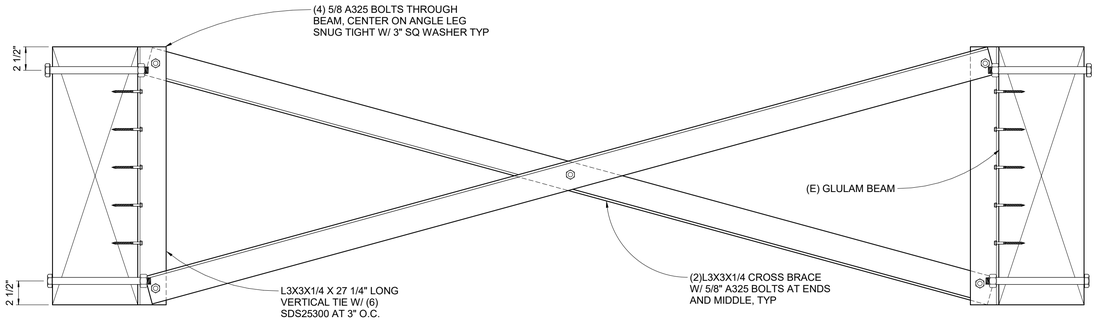
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 01.16.2025
ISSUANCE: BID SET

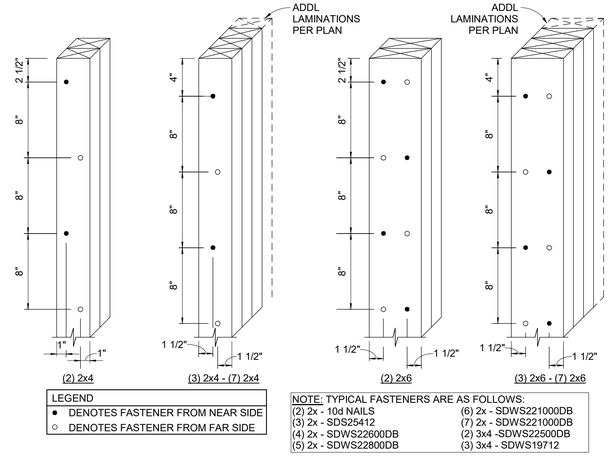
SHEET CONTENT
DETAILS

SHEET
S8.01



1 BEAM BRACING

S8.02 | 1 1/2" = 1'-0"



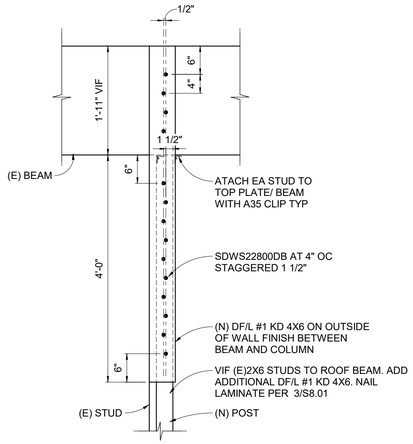
3 BUILT-UP STUD PACK FASTENING

S8.02 | 1 1/2" = 1'-0"



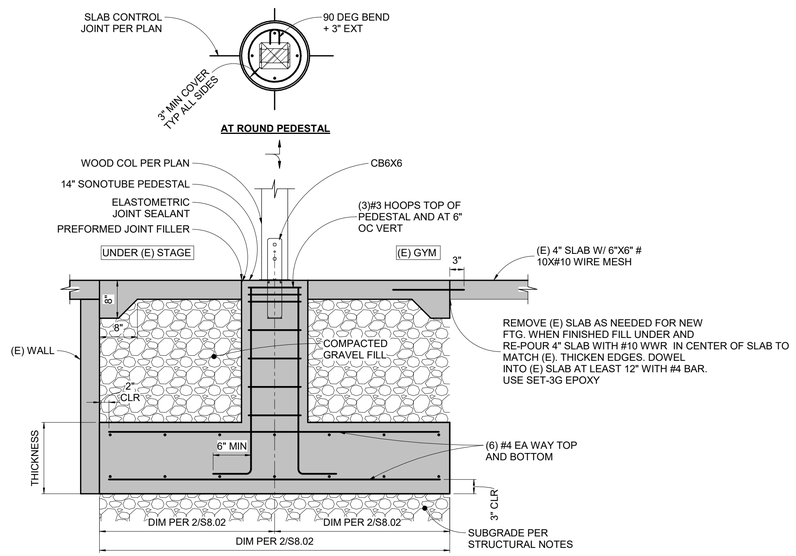
2 PARTIAL FOUNDATION REINF PLAN

S8.02 | 1/2" = 1'-0"



4 DETAIL

S8.02 | 3/4" = 1'-0"



5 WOOD COLUMN FOOTING DETAIL

S8.02 | 3/4" = 1'-0"

STRUCTURAL
REGISTERED PROFESSIONAL
ENGINEER
18211PE
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OREGON
JAN 23, 2001
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SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 01.16.2025
ISSUANCE: BID SET

SHEET CONTENT
DETAILS

SHEET
S8.02

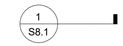
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

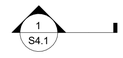
STRUCTURAL DRAWING SYMBOLS



DETAIL REFERENCE



DETAIL SECTION CUT



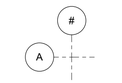
BUILDING OR WALL SECTION CUT



ELEVATION OF WALL OR FRAME



REVISION SYMBOL



GRID LINES


ROTATE VIEW SYMBOL



NORTH ARROW

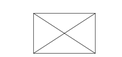
SURFACE - STEPPED

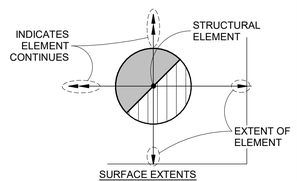

SURFACE - SLOPE UP


SURFACE - SLOPE DOWN

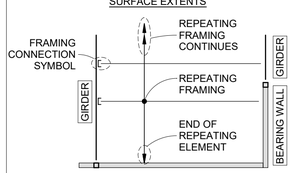

SURFACE - SLOPE TWO DIRECTIONS

DECKING SPAN DIRECTION


OPENING IN FLOOR / WALL

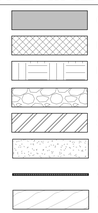


SURFACE EXTENTS



TYPICAL FRAMING

STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	OVERALL CAMPUS PLAN	•
S1.01	GYMNASIUM FLOOR PLAN	•
S1.02	GYMNASIUM ROOF FRAMING PLAN	•
S3.01	BEAM ELEVATION	•
S8.01	DETAILS	•
S8.02	DETAILS	•

SCOPE OF WORK:
THE FOLLOWING STRUCTURAL PLANS ARE FOR THE REPAIR AND STRENGTHENING OF EXISTING GLUE LAMINATED ROOF BEAMS AT THE GYMNASIUM OF THE EXISTING SCHOOL.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: ANDREW LEICHTY, PE, SE, andrew@miller-se.com
SECONDARY CONTACT: RON VANDEHEY, PE, SE, ron@miller-se.com

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
65401PE
OREGON
June 29, 2007
ANDREW RYAN LEICHTY

EXPIRES: 12 - 31 - 2026

MILLER CONSULTING ENGINEERS
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Portland, OR | 97223
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GATEWAYS HS - BRATTAIN CAMPUS BEAM REPAIRS

425 10TH ST
SPRINGFIELD, OR 97477

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: ARL
CHECKED BY: RGV

MCE PROJ #: 251372
ISSUE DATE: 02.24.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
DEAD LOAD	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	15 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 11 PSF

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
RECTANGULAR HSS	A500, GRADE C	50 KSI
PLATE	A572, GRADE 50	50 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS SHALL BE ASTM A307 GRADE A WITH MATCHING NUTS TIGHTENED TO A SNUG TIGHT CONDITION.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

POST-TENSIONING CABLES FOR WOOD BEAM STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

SPECIAL INSPECTION TABLES

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS			
SYSTEM OR MATERIAL	**FREQUENCY**		**REMARKS**
	CONTINUOUS	**PERIODIC**	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE ON SHEET S1.02 AND DETAIL 3/S8.02

STEEL - SPECIAL INSPECTIONS				
SYSTEM OR MATERIAL	**CODE OR STANDARD REFERENCE**	**FREQUENCY / INSPECTION**		**REMARKS**
		CONTINUOUS/ PERFORM	**PERIODIC/ OBSERVE**	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	

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425 10TH ST
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SPRINGFIELD PUBLIC SCHOOLS

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SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 OVERALL CAMPUS PLAN

S1.00 | 1/4" = 1'-0"

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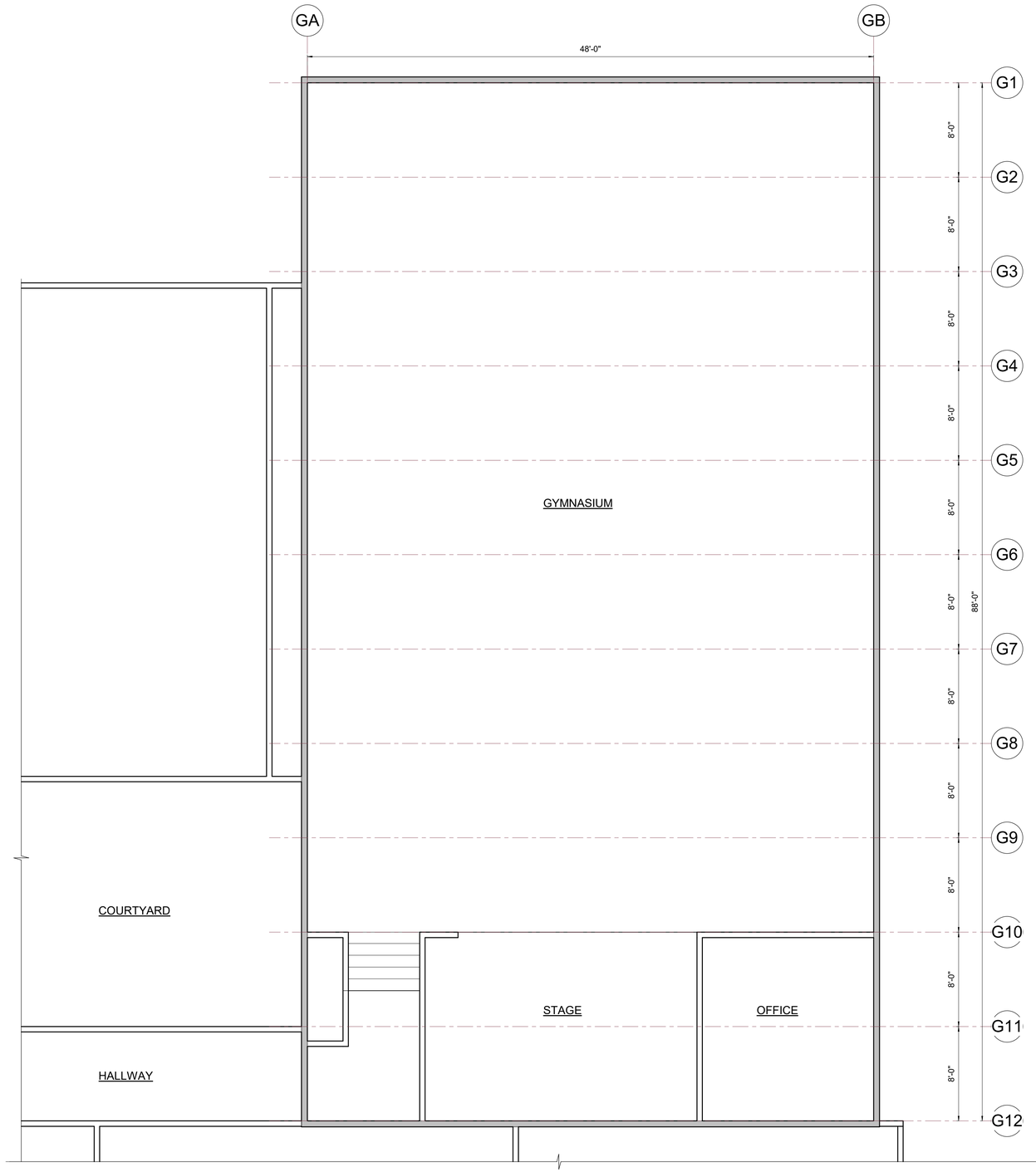
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SHEET CONTENT
OVERALL CAMPUS PLAN

SHEET
S1.00



-NORTH-

1 GYMNASIUM FLOOR PLAN

S1.01 | 3/16" = 1'-0"

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

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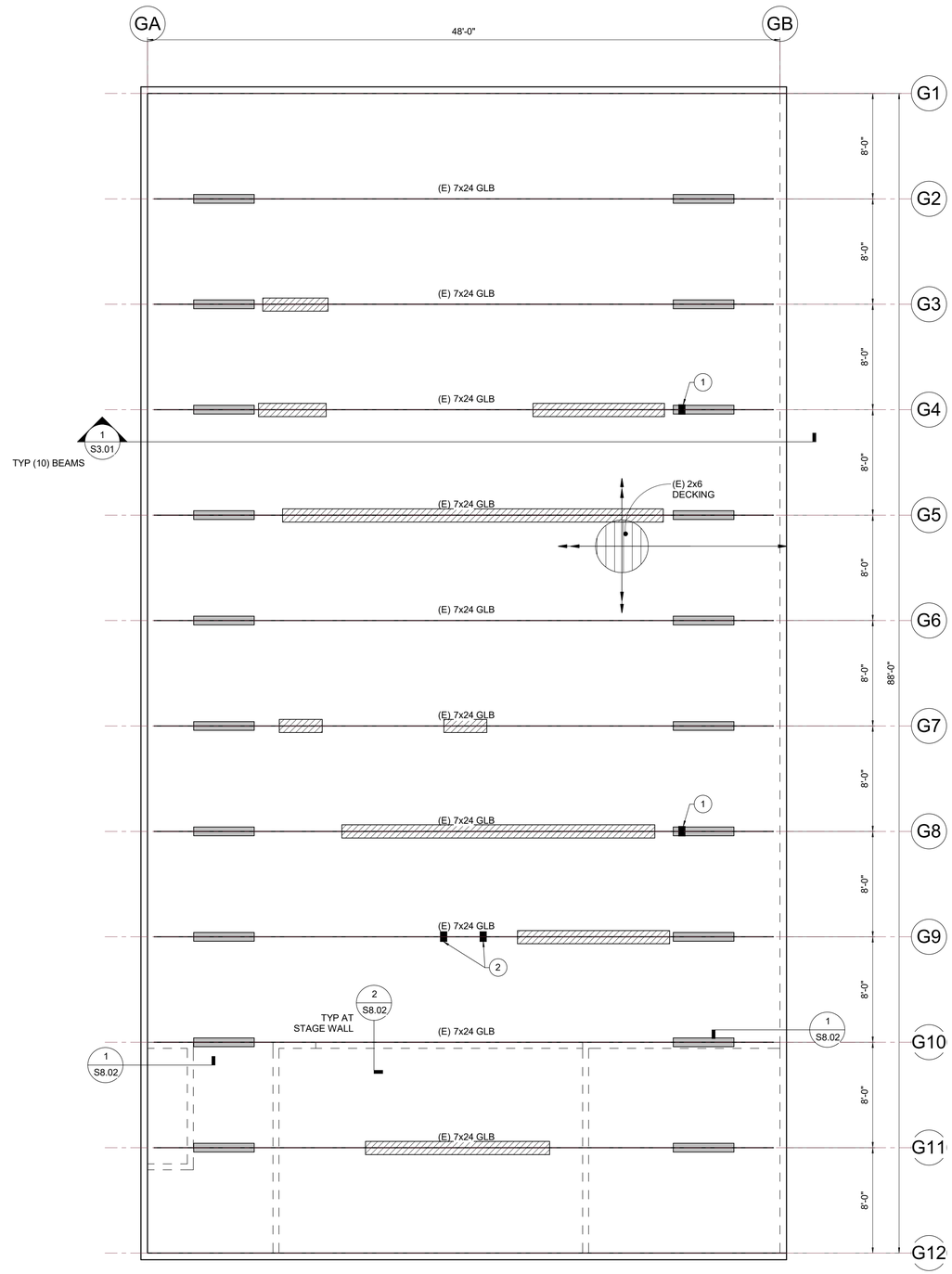
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SHEET CONTENT
GYMNASIUM FLOOR PLAN

SHEET
S1.01



GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. APPROXIMATE REGION OF OBSERVED BEAM CRACKS

G5. (N) CABLE ANCHOR ASSEMBLY

TYPICAL BEAM REPAIR PROCEDURE:

STEP 1:
VERIFY CRACK LOCATIONS SHOWN ON PLAN AND CAREFULLY EXAMINE ALL BEAMS FOR ANY ADDITIONAL CRACKS THAT MAY NOT BE DEPICTED ON PLAN. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATINGS. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS. MARK CRACKS ON THE BEAM TO ALLOW FOR EASY IDENTIFICATION.

STEP 2:
INSTALL STEEL CONNECTION HARDWARE SHOWN ON THE FOLLOWING DETAILS:

1 / S8.01
2 / S8.01
4 / S8.01
1 / S8.02
2 / S8.02

PRE-DRILL HOLES FOR SDS SCREWS USING AN 11/64" DIA BIT AND ENSURE SCREWS ARE CENTERED IN HOLE THROUGH STEEL PLATE.

STEP 3:
INSTALL CABLE SHOWN ON S3.01 AND PRETENSION AS NOTED. ALLOW FOR (1) WEEK BEFORE PROCEEDING TO STEP 4 IN ORDER TO ALLOW BEAM TO DEFLECT UNDER THE CABLE LOADING.

STEP 4:
AT CRACK LOCATIONS, INSTALL SCREWS PER DETAIL 3 / S8.02.

STEP 5:
EPOXY INJECT THE BEAM CRACKS PER DETAIL 4 / S8.02.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

KEYNOTES	
1	REMOVE (E) RIGGING POINT
2	MODIFY (E) BASKETBALL HOOP SUPPORT - SEE 4 / S8.01

-NORTH-

1 GYMNASIUM ROOF FRAMING PLAN

S1.02 | 3/16" = 1'-0"

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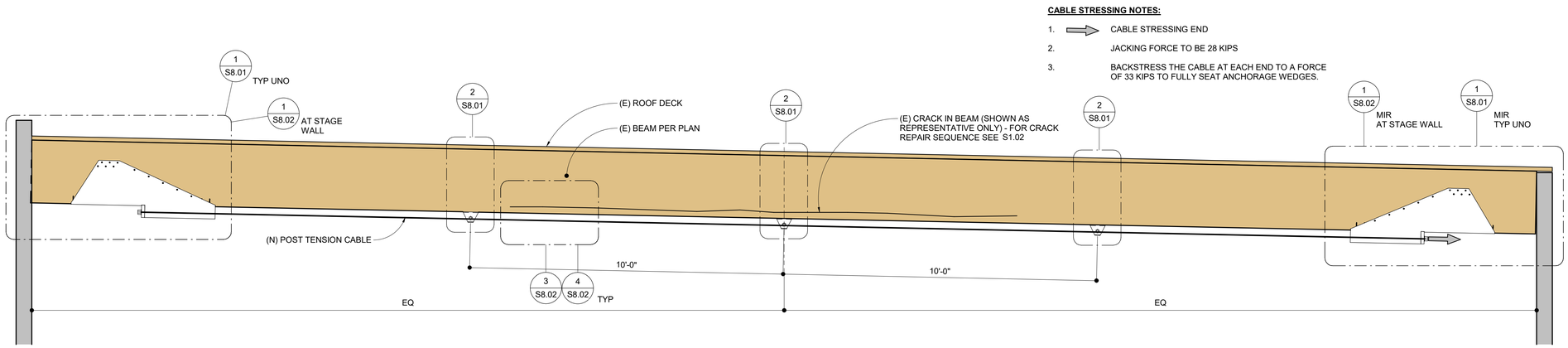
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SHEET CONTENT
GYMNASIUM ROOF FRAMING PLAN

SHEET
S1.02



CABLE STRESSING NOTES:

1. CABLE STRESSING END
2. JACKING FORCE TO BE 28 KIPS
3. BACKSTRESS THE CABLE AT EACH END TO A FORCE OF 33 KIPS TO FULLY SEAT ANCHORAGE WEDGES.

1 TYP BEAM REINFORCING ELEVATION

S3.01 | 1/2" = 1'-0"

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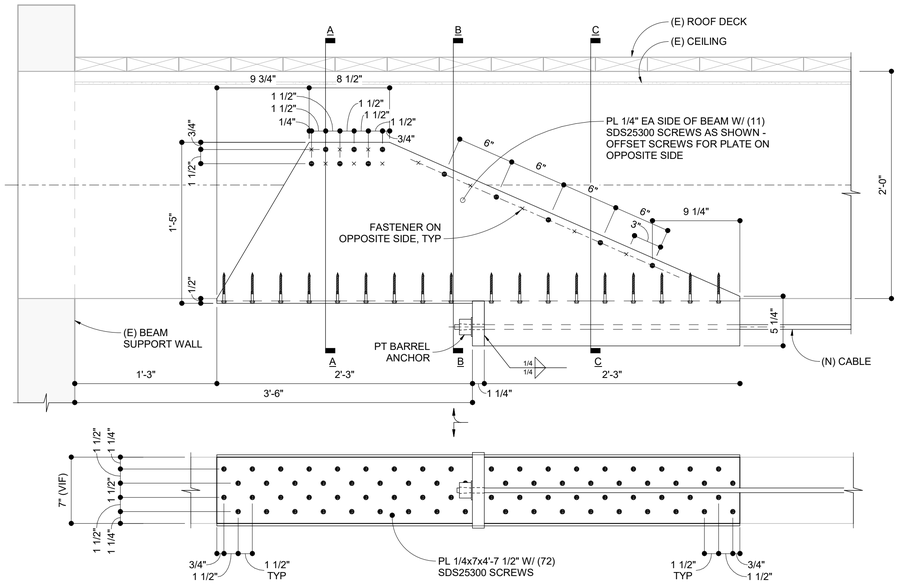
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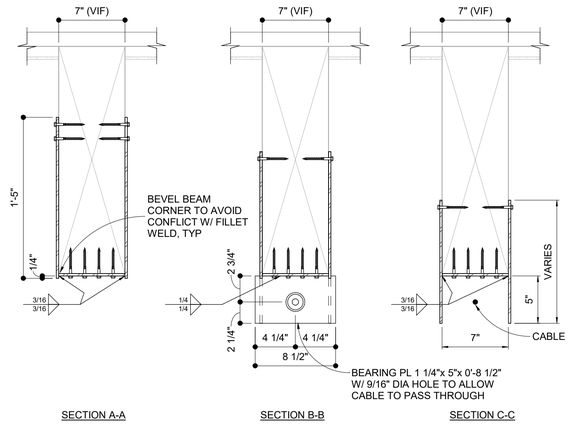
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BEAM ELEVATION

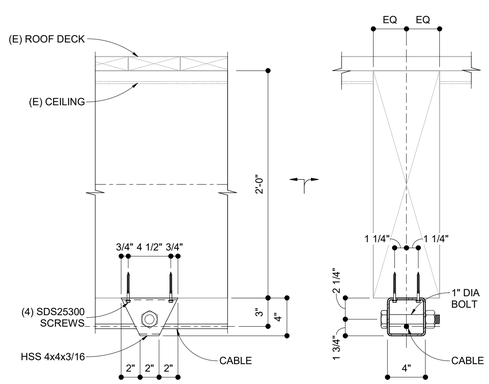
SHEET
S3.01



1 CABLE END ANCHORAGE

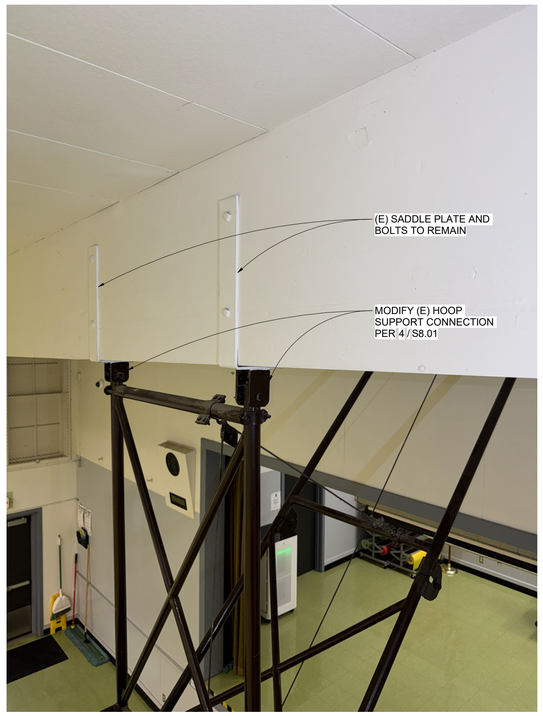
S8.01 | 1 1/2" = 1'-0"





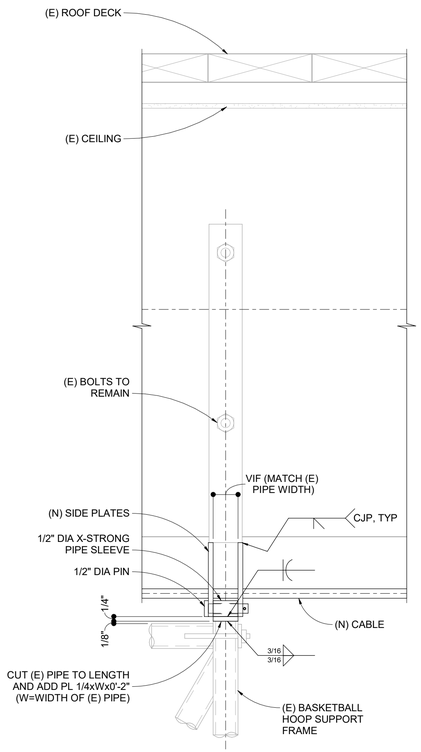
2 CABLE INTERMEDIATE SUPPORT

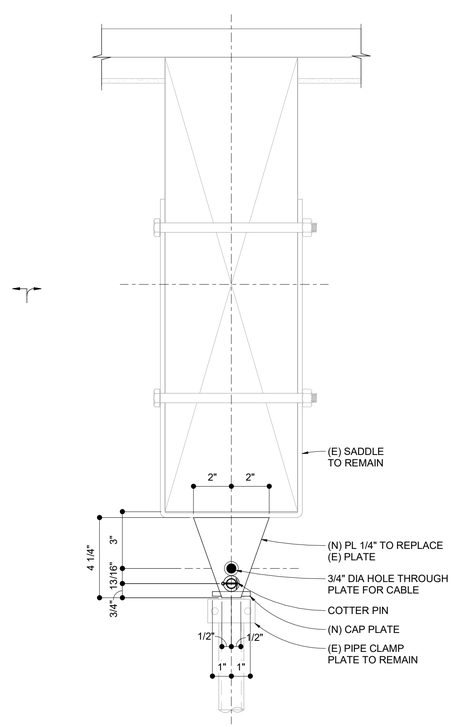
S8.01 | 1 1/2" = 1'-0"



3 (E) BASKETBALL HOOP SUPPORT

S8.01 | NOT TO SCALE





4 BASKETBALL HOOP SUPPORT MODIFICATION

S8.01 | 3" = 1'-0"

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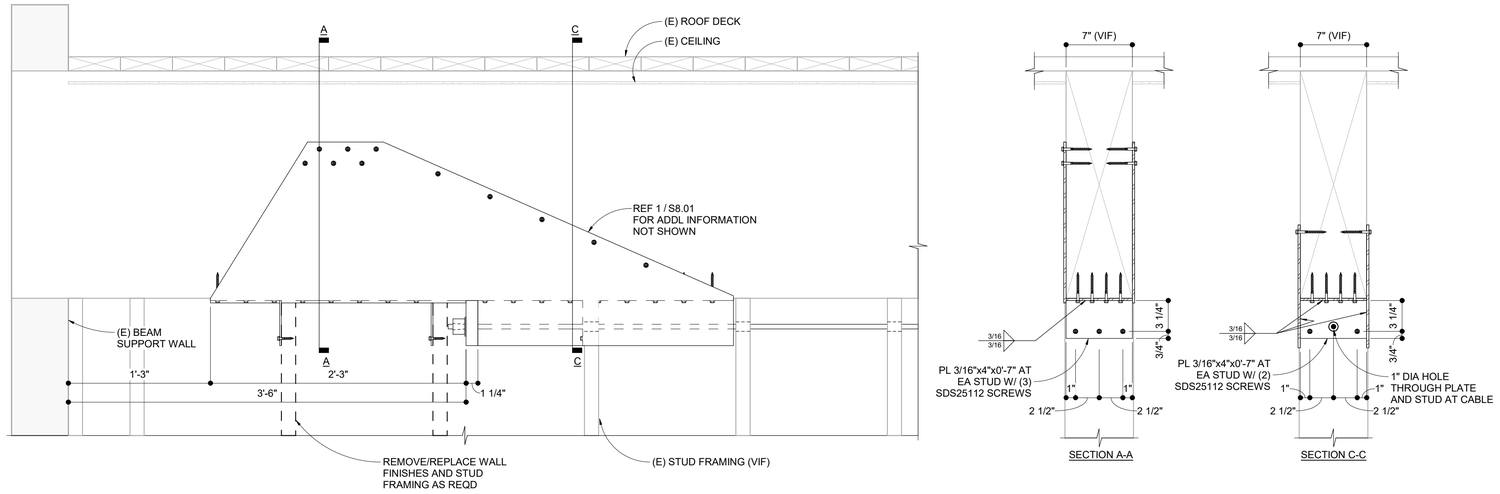
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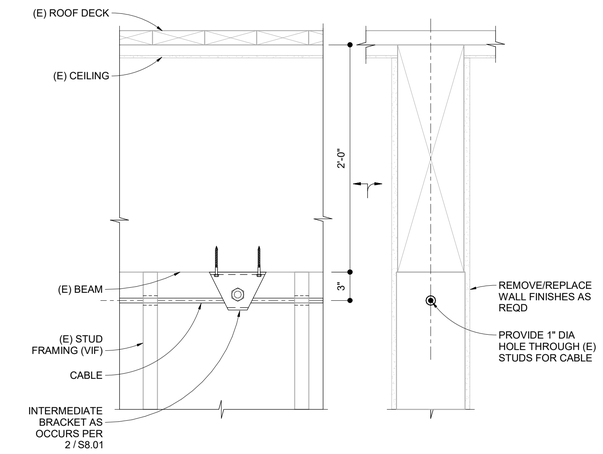
SHEET CONTENT
DETAILS

SHEET
S8.01



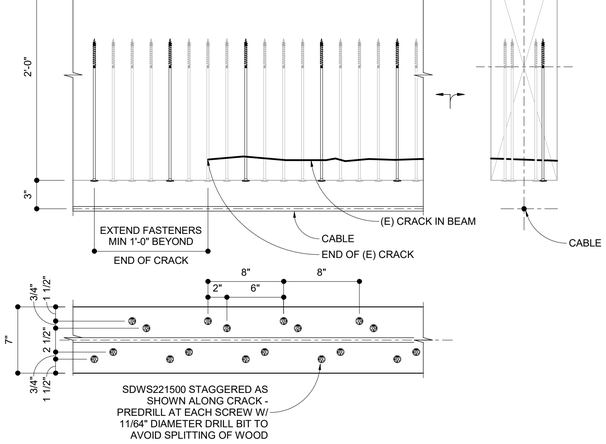
1 CABLE END ANCHORAGE AT STAGE WALL

S8.02 | 1 1/2" = 1'-0"



2 CABLE INSTALLATION AT STAGE WALL

S8.02 | 1 1/2" = 1'-0"



3 TYP BEAM CRACK REPAIR

S8.02 | 1 1/2" = 1'-0"

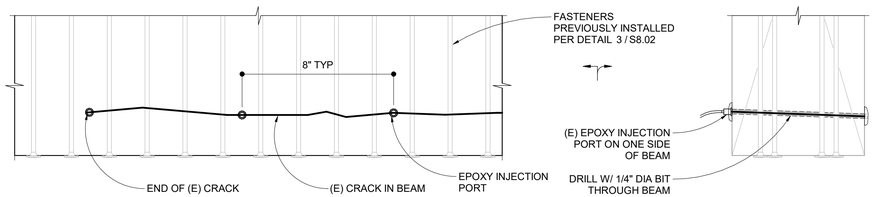
EPOXY CRACK INJECTION INSTALLATION SEQUENCE

STEP 1:
INSTALL CRACK INJECTION PORTS AT THE BEAM CRACKS. DRILL A 1/4" DIAMETER HOLE AT THE CRACK INJECTION PORTS. PLACE A PORT ON ONE END OF THE CRACK AND REPEAT EVERY 8" ALONG CRACK UNTIL ENTIRE CRACK IS PORTED. APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE.

STEP 2:
GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.

STEP 3:
ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.

STEP 4:
AFTER THE T-88 INJECTION EPOXY HAS CURED. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE THERE IS NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.



4 BEAM CRACK EPOXY INJECTION

S8.02 | 3" = 1'-0"

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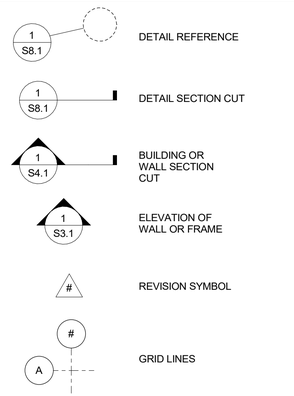
SHEET CONTENT
DETAILS

SHEET
S8.02

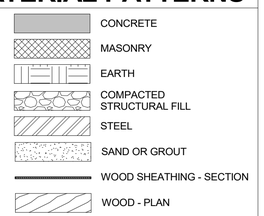
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED; REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF FRAMING PLAN	•
S1.02	GYM ROOF REPAIR PLAN	•
S3.01	SECTIONS	•
S4.01	ELEVATIONS	•
S8.01	REPAIR DETAILS	•
S8.02	REPAIR DETAILS	•
S8.03	TYPICAL DETAILS	•

CODE SUMMARY:

BUILDING CODE: 2022 OSSC
YEAR BUILT: 1961-1964
AREA: 51400 SF
BUILDING CONSTRUCTION TYPE: V-B (ASSUMED, NO CHANGE)
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

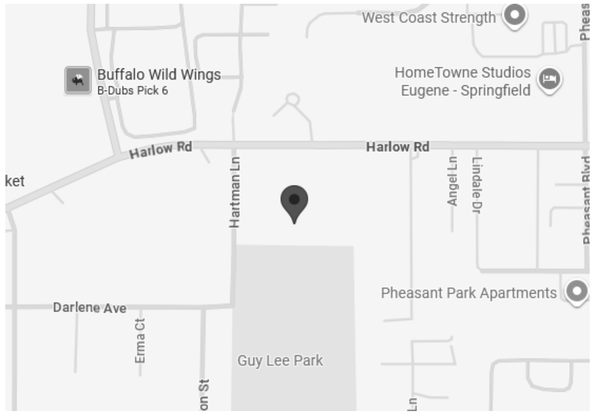
SCOPE OF WORK:
THE SCOPE OF THESE CONSTRUCTION DOCUMENTS INCLUDES STRENGTHENING OF GLULAM BEAMS AT THE GYMNASIUM USING POST TENSION CABLES ALONG THE BOTTOM TO PROVIDE ADDITIONAL FLEXURAL CAPACITY. AT THE STAGE AREA IN LIEU OF POST TENSIONING, ADDITIONAL COLUMNS AND FOOTINGS ARE ADDED FOR STRENGTHENING.

THE PROPOSED POST-TENSIONING SYSTEM IS DESIGNED TO AUGMENT THE STRUCTURAL CAPACITY UNDER SERVICE LOAD CONDITIONS. THE EXISTING GLULAM BEAMS RETAIN THEIR ORIGINAL INHERENT FIRE RESISTANCE RATING AND ARE CAPABLE OF MAINTAINING STRUCTURAL STABILITY UNDER DEAD LOAD CONDITIONS WITHOUT STRENGTHENING MEASURES.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: PAUL ALBERTINE, paul@miller-se.com
SECONDARY CONTACT: ERIC OSTAPENKO, eric.ostapenko@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
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GUY LEE ELEMENTARY SCHOOL

755 HARLOW ROAD
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY: EO
CHECKED BY: PRA

MCE PROJ #: 251372
ISSUE DATE: 3/6/2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL, FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
DEAD LOAD	
ROOF	18 PSF
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 11 PSF
EXPOSURE FACTOR	C_e = 1.0
THERMAL FACTOR	C_t = 1.0
SLOPE FACTOR	C_s = 1.0
FLAT ROOF SNOW LOAD	P_f = 9.4 PSF
WIND DESIGN DATA	
BASIC DESIGN WIND SPEED (3 SEC GUST)	V = 102 MPH
EXPOSURE	B

FOUNDATION CRITERIA
CONTRACTOR SHALL VERIFY SOIL CONDITIONS AT THE FOOTINGS AND MAKE ANY NECESSARY CORRECTIONS TO PLACE THEM ON FIRM NATIVE SOIL OR STRUCTURAL FILL COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D698 (STANDARD PROCTOR) OR ASTM D1557 (MODIFIED PROCTOR). THE COMPACTION SHALL BE VERIFIED BY A QUALIFIED INSPECTOR APPROVED BY THE BUILDING OFFICIAL. COMPACTED STRUCTURAL FILL FOR DEPTHS GREATER THAN 12 INCHES SHALL COMPLY WITH PROVISIONS OF A GEOTECHNICAL REPORT STAMPED BY A LICENSED GEOTECHNICAL ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

CONCRETE

MIXING, BATCHING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE, ACI 318, ACI 301 AND BUILDING CODE CHAPTER 19.

ALL CONCRETE WITH REINFORCEMENT SHALL HAVE NO CHLORINE OR CHLORIDES. NO WATER MAY BE ADDED TO THE CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE REVIEWED CONCRETE MIX DESIGN.

SLEEVES, OPENINGS, CONDUIT AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED BY THE SEOR BEFORE PLACING CONCRETE.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.

DESIGN OF FORMWORK, SHORING AND RE-SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE MOST RECENT EDITION OF ACI 347R.

CONCRETE MIX DESIGN REQUIREMENTS:

CONCRETE MIX DESIGN REQUIREMENTS				
MEMBER TYPE/LOCATION	**COMPRESSIVE STRENGTH AT 28 DAYS, f'c (PSI)**	**MAXIMUM AGGREGATE SIZE**	**MAXIMUM W/CM RATIO**	**EXPOSURE CLASS**
FOOTINGS AND MAT FOUNDATIONS	4000	1"	0.50	F0, S0, W1, C0
INTERIOR SLAB ON GRADE	3000	1"	0.45	F0, S0, W0, C0

CONCRETE MIX AIR CONTENT REQUIREMENTS:
AIR ENTRAINMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE MAXIMUM AGGREGATE SIZE AND EXPOSURE CLASS OF THE MIX DESIGN SPECIFIED. THE AIR-ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260. MIX DESIGNS SPECIFIED AS EXPOSURE CLASS F0 DO NOT REQUIRE AIR ENTRAINMENT.

CONCRETE MIX AIR CONTENT REQUIREMENTS		
MAXIMUM AGGREGATE SIZE	**CONCRETE SUBJECT TO FREEZE/THAW CYCLES (EXPOSURE CLASS F1)**	**CONCRETE SUBJECT TO CONTINUOUS MOISTURE AND/OR DEICING CHEMICALS (EXPOSURE CLASS F2, F3)**
3/8"	6%	7.5%
1/2"	5.5%	7%
3/4"	5%	6%
1"	4.5%	6%
1-1/2"	4.5%	5.5%

CONCRETE REINFORCING STEEL
ALL REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 OR A706, GRADE 60 UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL BE SUPPORTED ON WELL-CURED CONCRETE BLOCKS, PLASTIC CHAIRS OR METAL CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STANDARD PRACTICE, MSP-1. REINFORCING SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE PRIOR TO PLACING CONCRETE. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE *GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS*, ACI 315R-18. BAR LENGTHS DETAILED ARE OUT TO OUT AND DO NOT INCLUDE ALLOWANCE FOR HOOKS OR BENDS.

WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR EMBEDDED STEEL ITEMS IS PROHIBITED EXCEPT WHERE SPECIFICALLY NOTED ON THE DRAWINGS. ANY WELDING OF REINFORCEMENT NOT SHOWN ON THE DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE SEOR. WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS WITH PROCEDURES CONFORMING TO AWS D1.4.

- WELDABLE REINFORCING STEEL: ASTM A706
- WELDING ELECTRODES: E9018, UNLESS NOTED OTHERWISE.

SPECIFIED CONCRETE COVER SHALL BE MAINTAINED TO ALL REINFORCEMENT AT CONCRETE REVEALS AND INSETS.

AT THE CONTRACTOR'S OPTION, MECHANICAL COUPLINGS MAY BE USED IN LIEU OF LAP SPLICES FOR ANY BAR SIZE AND AT ANY LOCATION, PROVIDED A BUILDING CODE EVALUATION REPORT DEMONSTRATES THE COUPLING CAN ACHIEVE A MINIMUM TENSILE STRENGTH OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR AND 100% OF THE SPECIFIED TENSILE STRENGTH OF THE SPLICED BAR.

TYPICAL REINFORCING DETAILING SHALL BE AS FOLLOWS:

- FOR STANDARD REBAR DIMENSIONS - SEE 1/S8.03
- FOR CONCRETE COVER TO REINFORCING STEEL - SEE 2/S8.03
- FOR STIRRUP AND TIE GEOMETRY - SEE 3/S8.03
- FOR REINFORCING STANDARD HOOKS AND HOOK DEVELOPMENT LENGTHS - SEE 4/S8.03
- FOR LAP SPLICES AND STRAIGHT BAR DEVELOPMENT LENGTHS - SEE 5/S8.03

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
RECTANGULAR HSS	A500, GRADE C	50 KSI
ALL OTHER SECTIONS AND PL	A572, GRADE 50	50 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY OR STEEL TO BE GALVANIZED. EMBEDDED SURFACES SHALL BE FREE OF CONTAMINANTS. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE ASTM F3125 GRADE A325 WITH MATCHING NUTS, UNLESS NOTED OTHERWISE. NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED.

- SNUG TIGHT CONDITION SHALL BE PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS, SECTION 8.1.
- SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

WOOD FRAMING

ALL WOOD STRUCTURAL GRADES SHALL BE PER TYPICAL WOOD FRAMING SCHEDULE UNLESS NOTED OTHERWISE.

TYPICAL WOOD FRAMING SCHEDULE	
MEMBER	**VISUALLY GRADED (MIN)**
COLUMNS	DF/L #1
BEAMS	DF/L #1
STUDS	DF/L #2
BUILT-UP STUD PACKS	DF/L #2
BLOCKING	DF/L CONSTRUCTION
NON-STRUCTURAL FRAMING	DF/L CONSTRUCTION

ALL WOOD PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNLESS NOTED OTHERWISE. ALL COLUMNS SHALL HAVE SOLID BLOCKING FOR THE FULL COLUMN AREA TO SUPPORTING MEMBERS BELOW. COLUMNS SHALL ALIGN THROUGH ALL FLOORS TO THE FOUNDATION. ALL SAWN LUMBER SHALL HAVE A MOISTURE CONTENT LESS THAN 19% (S-DRY) PRIOR TO INSTALLATION OF NON-STRUCTURAL COMPONENTS.

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS			
SYSTEM OR MATERIAL	**FREQUENCY**		**REMARKS**
	CONTINUOUS	**PERIODIC**	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.

STEEL - SPECIAL INSPECTIONS					
SYSTEM OR MATERIAL	**OSSC CODE REFERENCE**	**CODE OR STANDARD REFERENCE**	**FREQUENCY / INSPECTION**		**REMARKS**
			CONTINUOUS/ PERFORM	**PERIODIC/ OBSERVE**	
STEEL FABRICATION					
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	1507.4 2205.1 TABLE 1705.2	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	1705.2.1.1 TABLE 1705.2-5	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING					
VERIFYING WELDER QUALIFICATIONS		AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"				X	

WOOD FRAMING CONNECTIONS
ALL NAILS SHALL BE COMMON. FASTENERS SHALL NOT BE OVERDRIVEN.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

TYPICAL WOOD FRAMING CONNECTIONS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

- BUILT-UP STUD PACK FASTENING — SEE 6/S8.03

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, F_{c_PERP} (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

POST-TENSIONING CABLES FOR WOOD TRUSS STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

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GUY LEE ELEMENTARY SCHOOL

755 HARLOW ROAD
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY: EO
CHECKED BY: PRA
MCE PROJ #: 251372
ISSUE DATE: 3/6/2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | NOT TO SCALE

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SHEET CONTENT
STRUCTURAL SITE PLAN

SHEET
S1.00

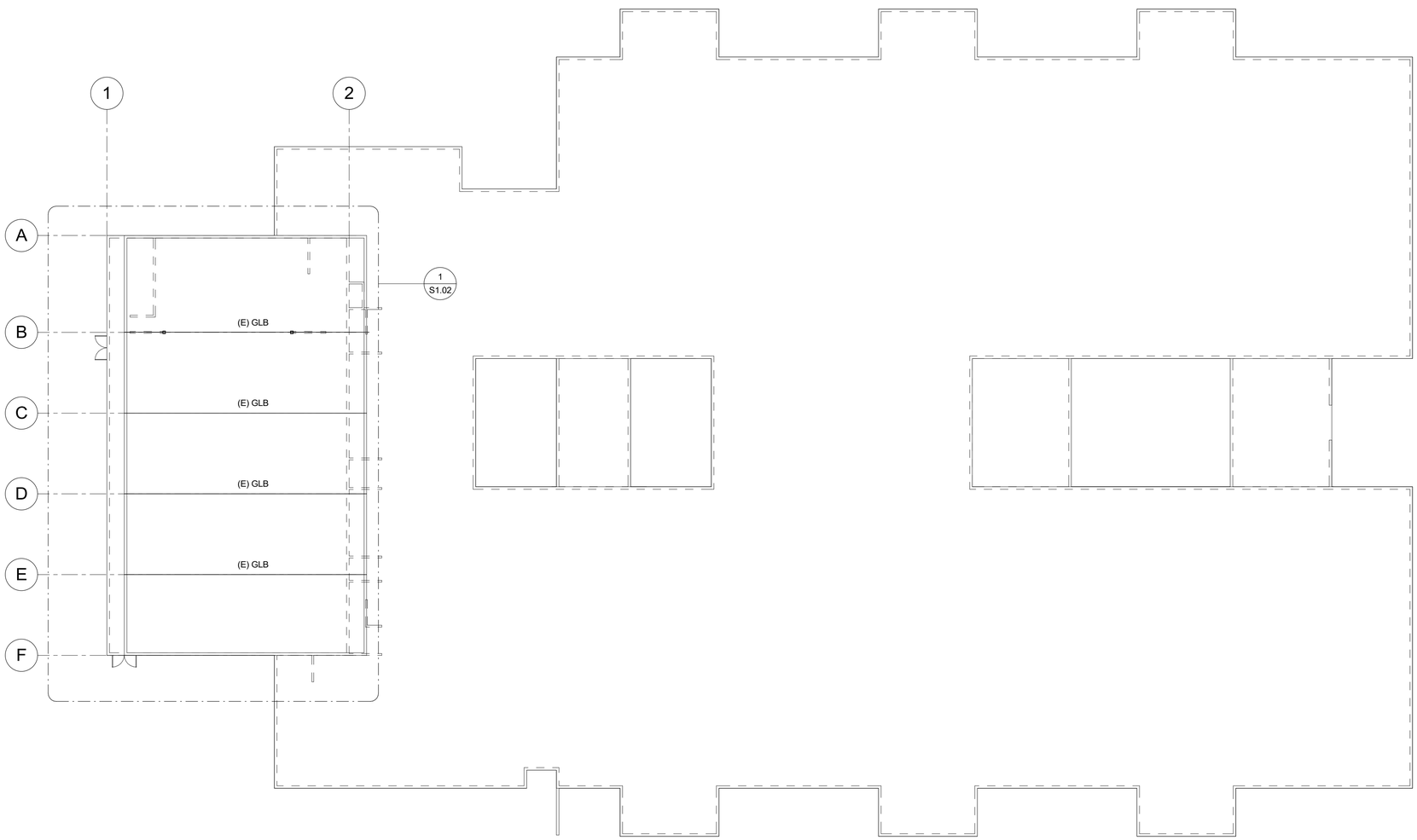
GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. (N) CABLE ANCHOR ASSEMBLY



-NORTH-

1 ROOF FRAMING PLAN

S1.01 | 1/16" = 1'-0"

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SHEET CONTENT
ROOF FRAMING PLAN

SHEET
S1.01

KEYNOTES	
1	(N) (2) 2x8 LEDGER. CUT AWAY (E) FRAMING AND REATTACH TO LEDGER W/ SIMPSON LUS26 HANGER AT (E) 2x8 FRAMING AND SIMPSON LUS24 HANGERS AT (E) 2x4 FRAMING. SEE DETAIL 1 / S8.02 FROM MORE INFORMATION

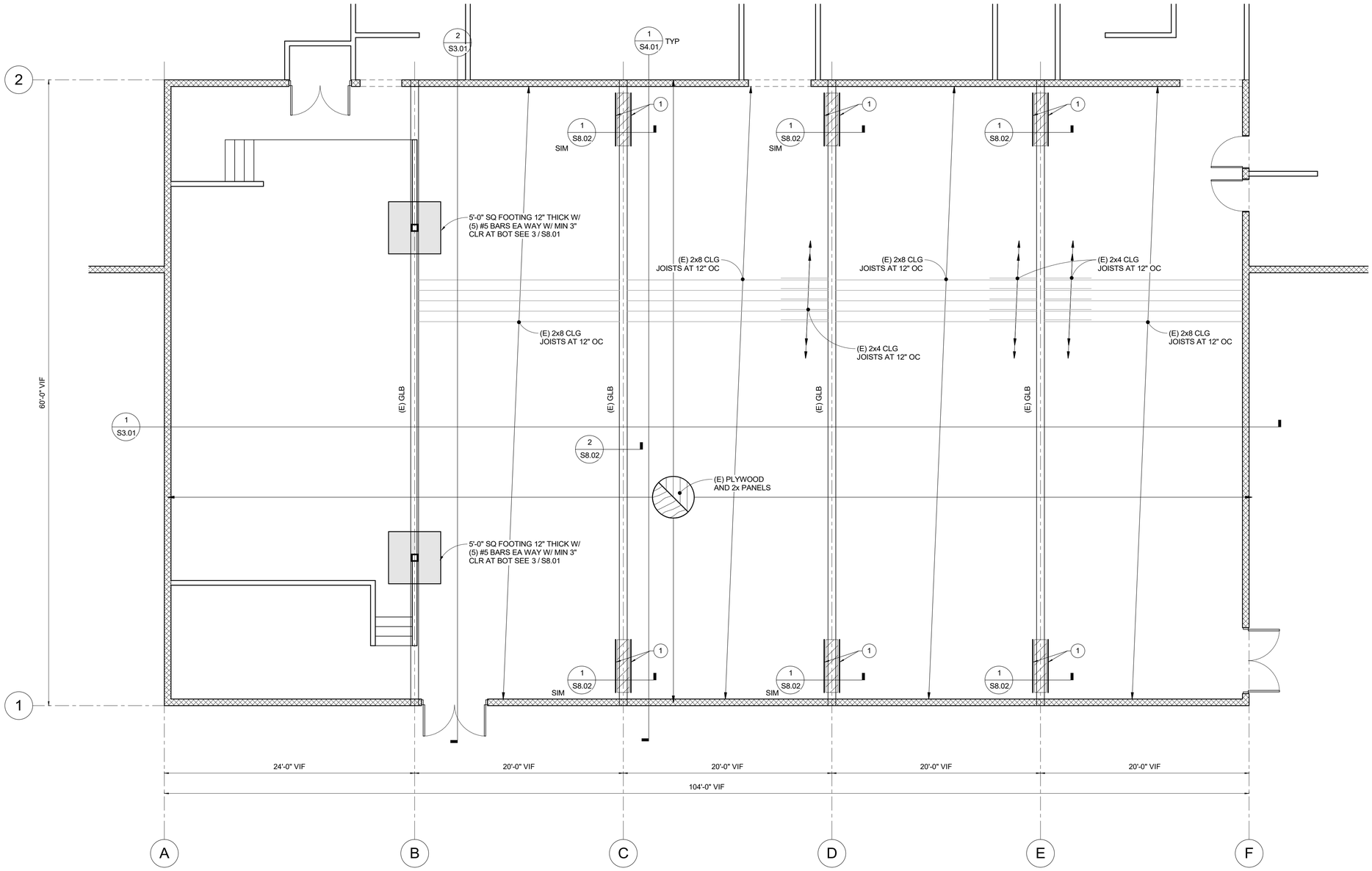
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G4. (N) CABLE ANCHOR ASSEMBLY



-NORTH-

1 GYM ROOF REPAIR PLAN

S1.02 | 3/16" = 1'-0"

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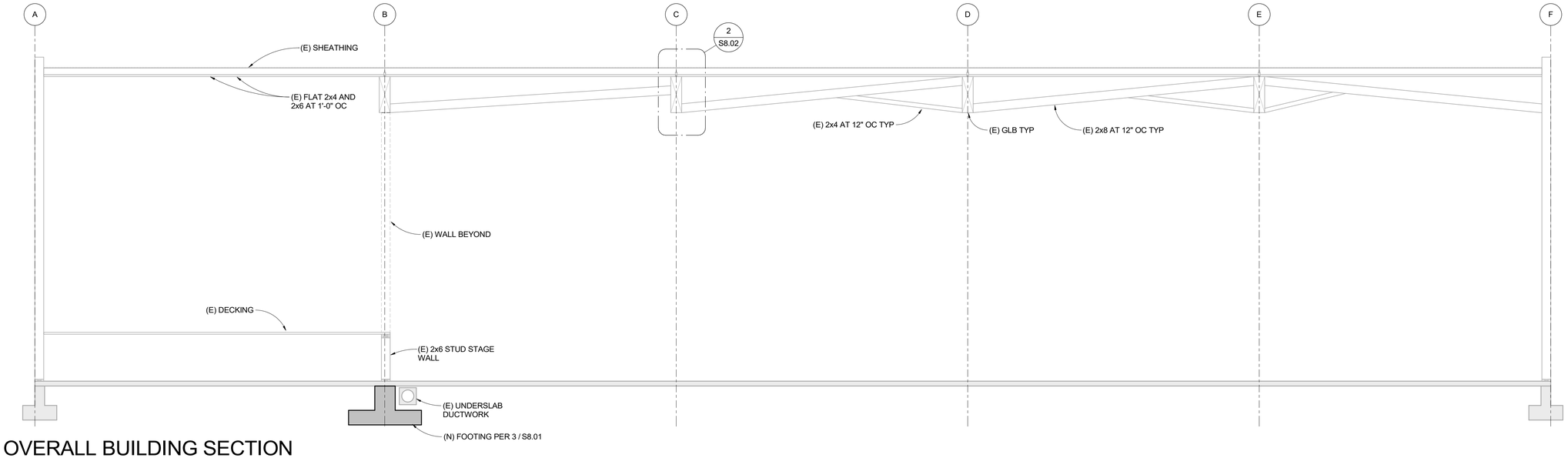
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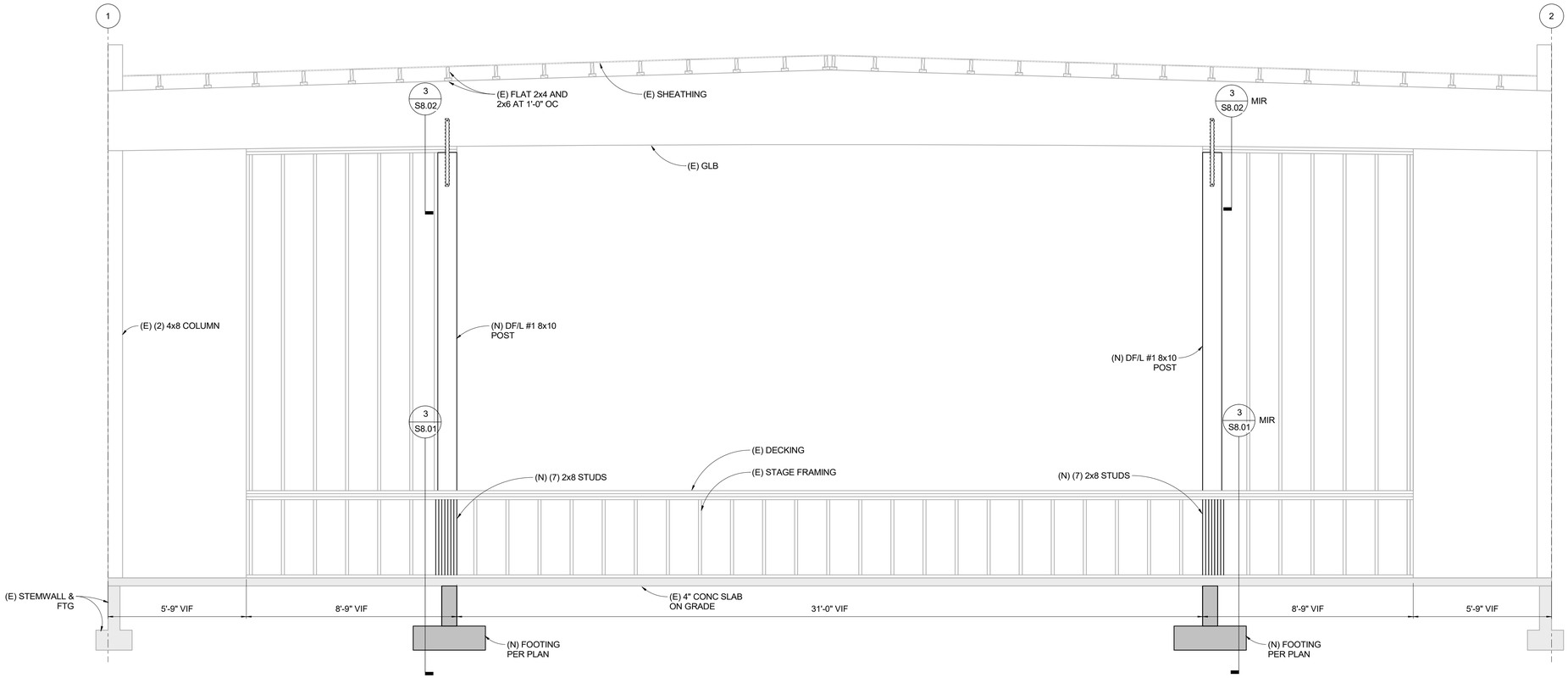
SHEET CONTENT
GYM ROOF REPAIR PLAN

SHEET
S1.02



1 OVERALL BUILDING SECTION

S3.01 | 1/4" = 1'-0"



2 STAGE REPAIR SECTION

S3.01 | 3/8" = 1'-0"

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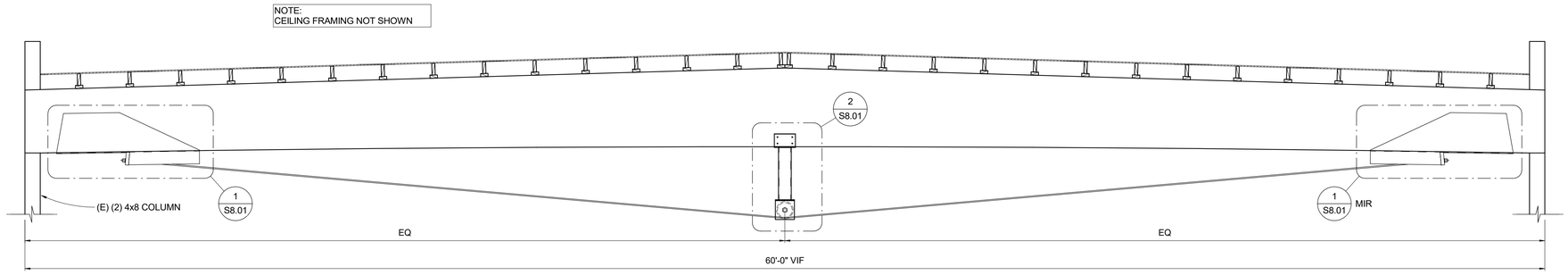
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SHEET CONTENT
SECTIONS

SHEET
S3.01



1 GLULAM BEAM REPAIR ELEVATION

S4.01 | 3/8" = 1'-0"

CABLE STRESSING NOTES

1. JACKING FORCE TO BE 25.75 KIPS PER CABLE. JACKING FORCE TO BE APPLIED TO BOTH CABLES AT THE SAME TIME. LOADING IN EACH CABLE SHOULD BE WITHIN 10% OF EACH OTHER DURING THE JACKING PROCEDURE

2. BACKSTRESS THE CABLES AT EACH END TO A FORCE OF 33 KIPS TO FULLY SEAT ANCHORAGE WEDGES. BACKSTRESSING OPERATIONS MAY BE DONE AT STEEL BEARING PLATE CONNECTIONS. DO NOT LOAD WOOD MEMBERS WITH BACKSTRESSING FORCES.

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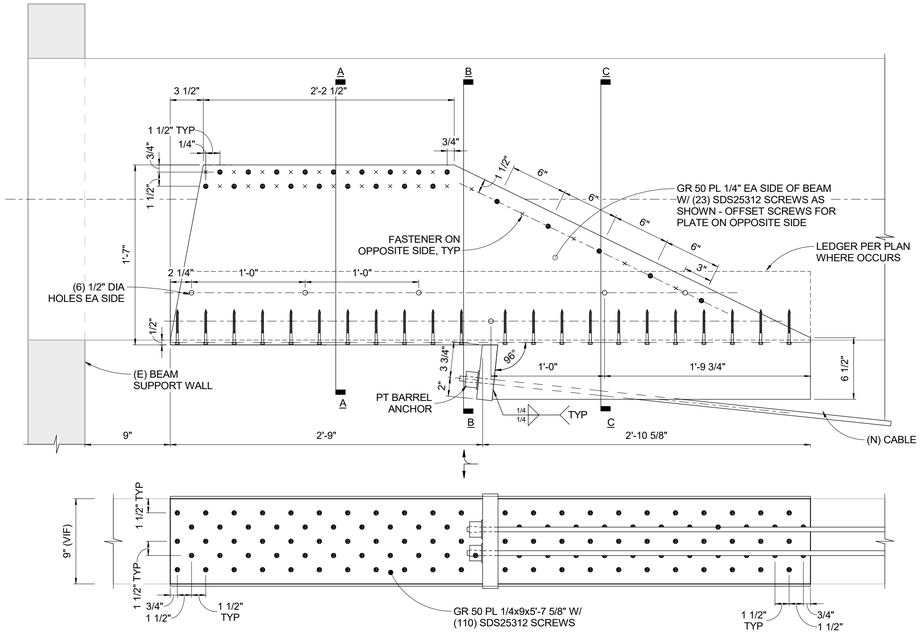
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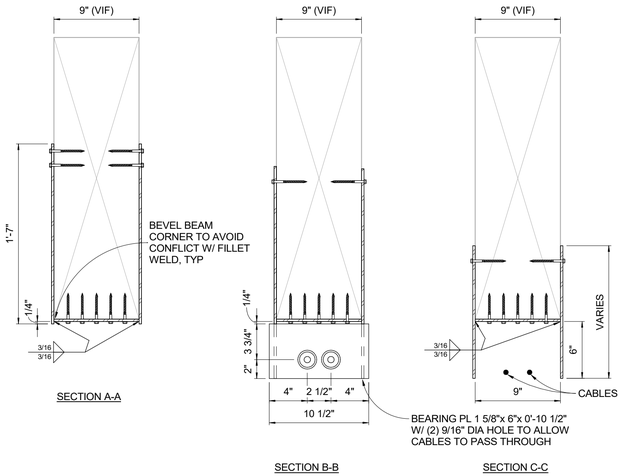
SHEET CONTENT
ELEVATIONS

SHEET
S4.01

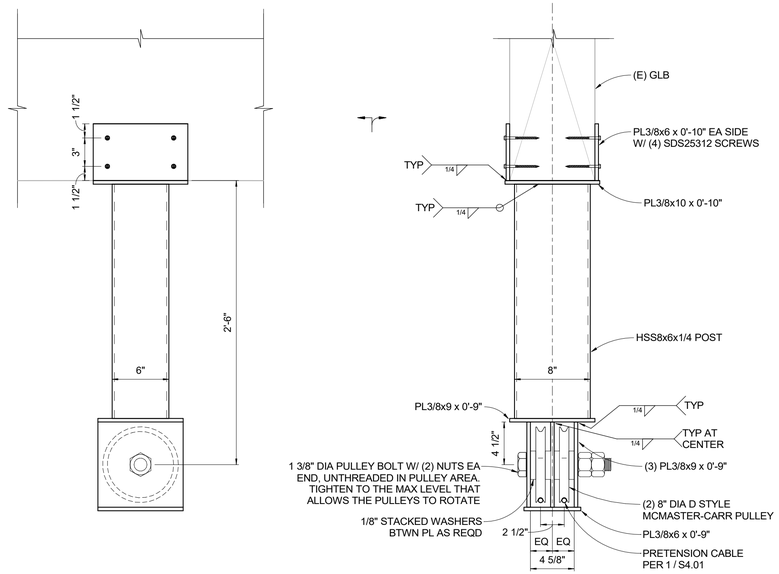


1 CABLE END ANCHORAGE

S8.01 | 1 1/2" = 1'-0"

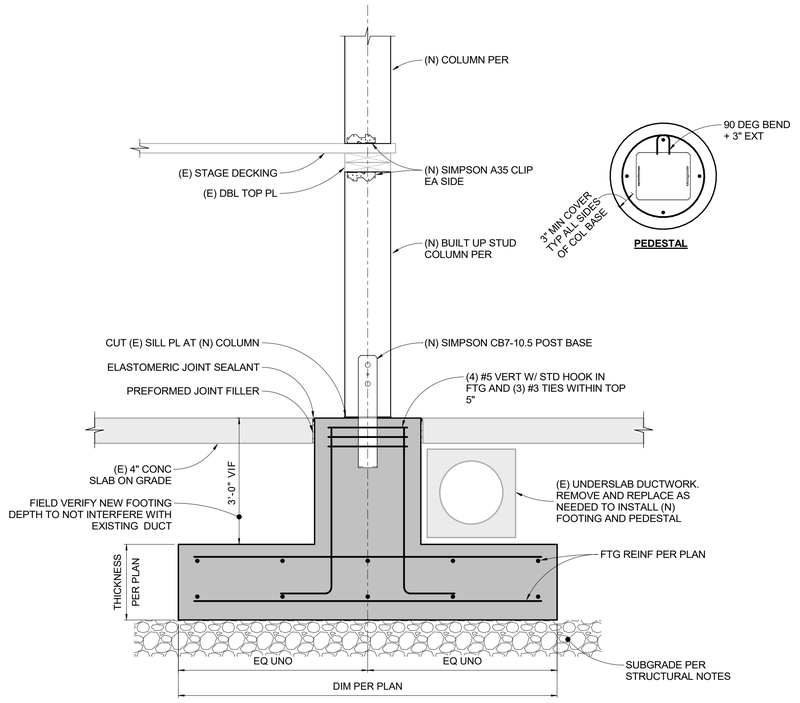


NOTE: ALL SCREWS INSTALLED IN EXISTING WOOD MEMBERS TO BE PRE-DRILLED WITH A HOLE THAT IS 7/8 OF THE SCREW ROOT DIAMETER. AT STEEL PROVIDE 9/32" DIA HOLE FOR SDS SCREWS UNO



2 CENTER BRACKET

S8.01 | 1 1/2" = 1'-0"



3 (N) COLUMN TO (N) FOOTING CONN

S8.01 | 1" = 1'-0"

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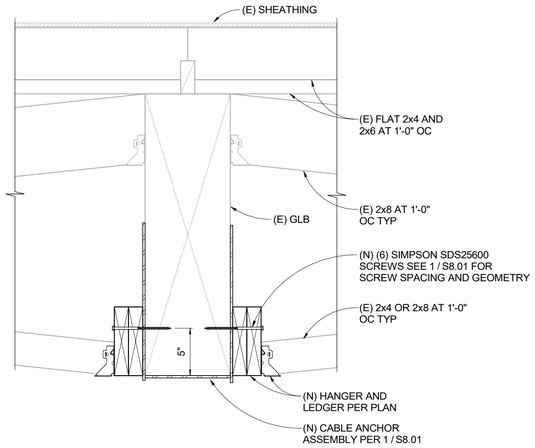
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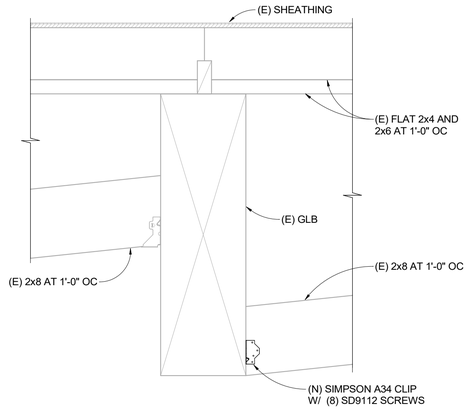
SHEET CONTENT
REPAIR DETAILS

SHEET
S8.01



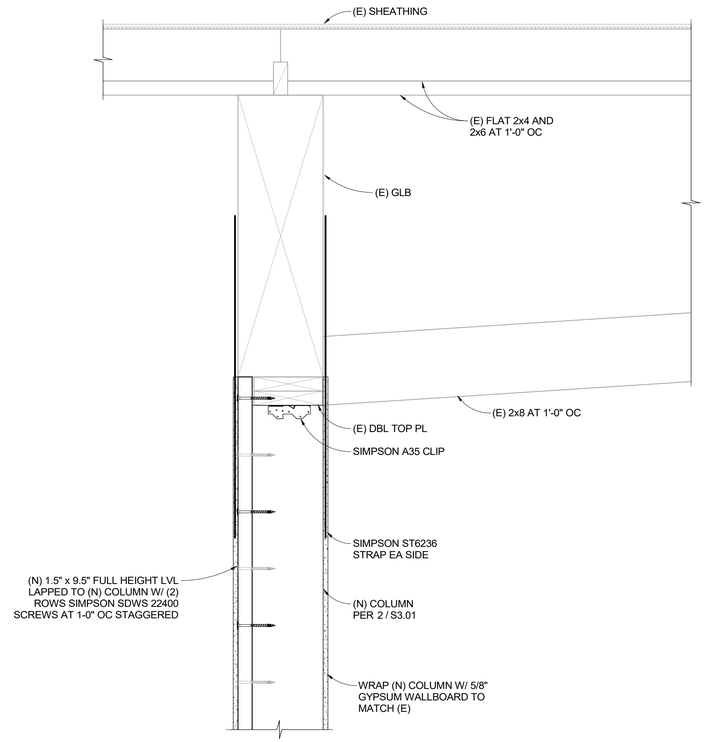
1 LEDGER AT CABLE ANCHOR ASSEMBLY

S8.02 | 1 1/2" = 1'-0"



2 GLULAM BEAM BRACE

S8.02 | 1 1/2" = 1'-0"



3 TOP OF (N) COLUMN TO BEAM CONN

S8.02 | 1 1/2" = 1'-0"

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SHEET CONTENT
REPAIR DETAILS

SHEET
S8.02

ASTM STANDARD REINFORCING BARS		
BAR SIZE DESIGNATION	NOMINAL DIMENSIONS	
	DIAMETER, db (IN)	AREA (IN^2)
#3	0.375	0.11
#4	0.500	0.20
#5	0.625	0.31
#6	0.750	0.44
#7	0.875	0.60
#8	1.000	0.79
#9	1.128	1.00
#10	1.270	1.27
#11	1.410	1.56
#14	1.693	2.25
#18	2.257	4.00

1 STD REBAR DIMENSIONS

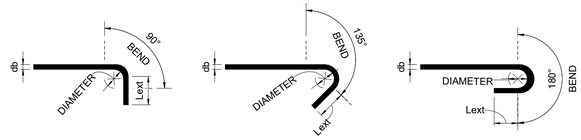
S8.03 | 1 1/2" = 1'-0"

CAST-IN-PLACE NONPRESTRESSED MEMBERS CONCRETE COVER (UNO)				
CONCRETE EXPOSURE	MEMBER TYPE	REINFORCEMENT APPLICATION	REINFORCEMENT BAR SIZE	SPECIFIED COVER (INCHES)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	ALL	3
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	ALL	#6 THROUGH #18	2
			#5 AND SMALLER / W31 OR D31 WIRE	1 1/2
NOT EXPOSED TO WEATHER / NOT IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	ALL	#14 AND #18	1 1/2
			#11 AND SMALLER	3/4
	BEAMS, COLS, PEDESTALS, AND TENSION TIES	PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS AND HOOPS	ALL	1 1/2

2 CAST-IN-PLACE NONPRESTRESSED CONCRETE REINF COVER

S8.03 | 1 1/2" = 1'-0"

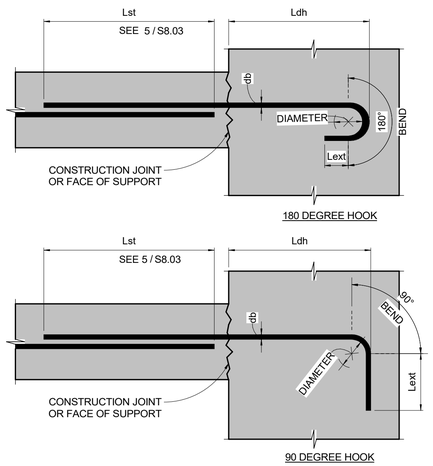
STANDARD HOOK GEOMETRY FOR STIRRUPS, TIES, AND HOOPS			
TYPE OF STANDARD HOOK	BAR DIA, db	MIN INSIDE BEND DIAMETER	STRAIGHT EXTENSION, Lext
90 DEGREE	#3 THROUGH #5	4*db	GREATER OF 6*db AND 3"
	#6 THROUGH #8	6*db	12*db
135 DEGREE	#3 THROUGH #5	4*db	GREATER OF 6*db AND 3"
	#6 THROUGH #8	6*db	
180 DEGREE	#3 THROUGH #5	4*db	GREATER OF 4*db AND 2 1/2"
	#6 THROUGH #8	6*db	



90 DEGREE HOOK | 135 DEGREE HOOK | 180 DEGREE HOOK

3 STIRRUP HOOKS AND TIE BENDS

S8.03 | 1 1/2" = 1'-0"



180 DEGREE HOOK

90 DEGREE HOOK

STANDARD HOOK GEOMETRY FOR DEVELOPMENT OF BARS IN TENSION			
TYPE OF STANDARD HOOK	BAR DIA, db	MIN INSIDE BEND DIAMETER	STRAIGHT EXTENSION, Lext[4]
90 DEGREE	#3 THROUGH #8	6*db	12*db
	#9 THROUGH #11	8*db	
	#14 THROUGH #18	10*db	
180 DEGREE	#3 THROUGH #8	6*db	GREATER OF 4*db AND 2 1/2"
	#9 THROUGH #11	8*db	
	#14 THROUGH #18	10*db	

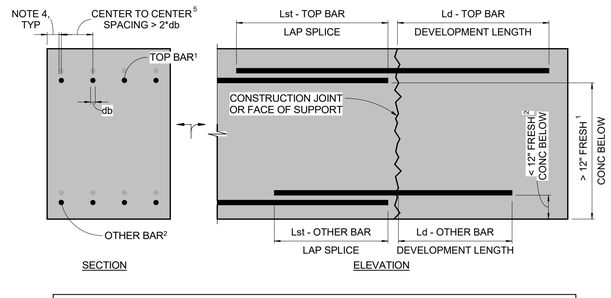
HOOK DEVELOPMENT LENGTHS (Ldh[1,2,3]) FOR GRADE 60 REBAR											
f'c (PSI)	BAR DIA, db										
	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18
2500	6"	6"	9"	11"	14"	17"	21"	24"	29"	74"	114"
3000	6"	6"	8"	11"	14"	16"	20"	23"	27"	71"	109"
4000	6"	6"	8"	10"	13"	15"	18"	22"	26"	66"	102"
4500	6"	6"	8"	10"	13"	15"	18"	22"	26"	65"	100"
5000	6"	6"	8"	10"	12"	15"	18"	21"	25"	64"	98"
6000	6"	6"	7"	10"	12"	15"	17"	21"	24"	63"	96"

NOTES:

1. FOR HOOKS WITH SIDE COVER < 6db, MULTIPLY TABLE VALUES BY 1.25 (EXCEPT FOR #14 & #18 REINFORCING)
2. FOR HOOKS WITH OC SPACING < 6db, MULTIPLY TABLE VALUES BY 1.6 (EXCEPT FOR #14 & #18 REINFORCING)
3. FOR EPOXY-COATED HOOKS, MULTIPLY THE TABULATED VALUES BY 1.2
4. BAR DIMENSION REQUIRED TO MANUFACTURE HOOK

4 STANDARD HOOKS AND HOOK DEVELOPMENT LENGTH

S8.03 | 1 1/2" = 1'-0"



SECTION | ELEVATION

DEVELOPMENT LENGTH OF STRAIGHT BARS IN TENSION, Ld										
f'c (PSI)	BAR LOCATION	BAR DIA, db								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
2500	TOP	18"	24"	35"	47"	76"	94"	114"	137"	160"
	OTHER	14"	18"	27"	36"	59"	72"	88"	105"	123"
3000	TOP	17"	22"	32"	43"	69"	86"	104"	125"	146"
	OTHER	13"	17"	25"	33"	53"	66"	80"	96"	113"
4000	TOP	14"	19"	28"	37"	60"	74"	90"	108"	127"
	OTHER	12"	15"	21"	29"	46"	57"	69"	83"	98"
4500	TOP	14"	18"	26"	35"	57"	70"	85"	102"	120"
	OTHER	12"	14"	20"	27"	44"	54"	65"	79"	92"
5000	TOP	13"	17"	25"	34"	54"	67"	81"	97"	114"
	OTHER	12"	13"	19"	26"	42"	51"	62"	75"	87"
6000	TOP	12"	16"	23"	31"	49"	61"	74"	88"	104"
	OTHER	12"	12"	18"	24"	38"	47"	57"	68"	80"

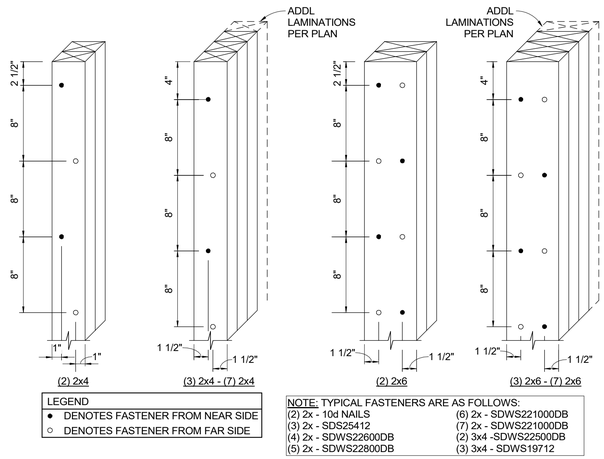
LAP SPLICE LENGTH OF STRAIGHT BARS IN TENSION, Lst[3]										
f'c (PSI)	BAR LOCATION	BAR DIA, db								
		#3	#4	#5	#6	#7	#8	#9	#10	#11
2500	TOP	23"	31"	45"	61"	99"	123"	149"	179"	208"
	OTHER	18"	24"	35"	47"	77"	94"	115"	137"	160"
3000	TOP	21"	28"	41"	56"	90"	112"	136"	163"	190"
	OTHER	17"	22"	32"	43"	69"	86"	104"	125"	147"
4000	TOP	19"	25"	36"	49"	78"	97"	117"	141"	166"
	OTHER	16"	19"	28"	38"	60"	75"	90"	108"	128"
4500	TOP	18"	23"	34"	46"	75"	91"	111"	133"	156"
	OTHER	16"	18"	26"	36"	58"	71"	85"	108"	120"
5000	TOP	17"	22"	32"	44"	71"	88"	106"	127"	149"
	OTHER	16"	17"	25"	34"	55"	67"	81"	98"	114"
6000	TOP	16"	20"	29"	40"	64"	80"	97"	115"	136"
	OTHER	16"	16"	23"	32"	50"	62"	75"	89"	104"

NOTES:

1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS
2. OTHER BARS ARE HORIZONTAL BARS WITH LESS THAN 12" OF FRESH CONCRETE CAST BELOW THE BARS AND VERTICAL BARS
3. NONCONTACT LAP SPLICES ARE PERMITTED, PROVIDED THE TRANSVERSE CENTER-TO-CENTER SPACING OF SPLICED BARS DOES NOT EXCEED THE LESSER OF ONE-FIFTH THE REQUIRED LAP SPLICE LENGTH AND 6 INCHES.
4. CLEAR COVER TO BARS SHALL BE IN ACCORDANCE WITH 2 / S8.03
5. MINIMUM SPACING BETWEEN LONGITUDINAL BARS SHALL BE 2*db
6. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5

5 REBAR STRAIGHT BAR DEVELOPMENT / LAP SPLICE LENGTH SCHEDULE

S8.03 | 1 1/2" = 1'-0"



(2) 2x4 | (3) 2x4 - (7) 2x4 | (2) 2x6 | (3) 2x6 - (7) 2x6

LEGEND	
●	DENOTES FASTENER FROM NEAR SIDE
○	DENOTES FASTENER FROM FAR SIDE

NOTE: TYPICAL FASTENERS ARE AS FOLLOWS:

(2) 2x - 10d NAILS	(6) 2x - SDWS221000DB
(3) 2x - SDS25412	(7) 2x - SDWS221000DB
(4) 2x - SDWS22600DB	(2) 3x4 -SDWS22500DB
(5) 2x - SDWS22800DB	(3) 3x4 - SDWS19712

6 BUILT-UP STUD PACK FASTENING

S8.03 | 1 1/2" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
503.246.1250 | miller-se.com

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GUY LEE ELEMENTARY SCHOOL

755 HARLOW ROAD
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY: EO
CHECKED BY: PRA

MCE PROJ #: 251372
ISSUE DATE: 3/6/2026
ISSUANCE: BID SET

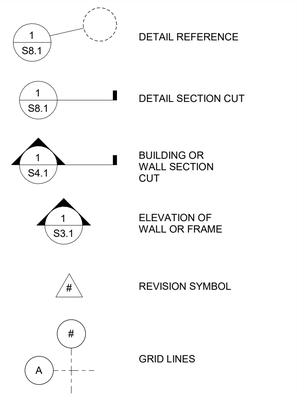
SHEET CONTENT
TYPICAL DETAILS

SHEET
S8.03

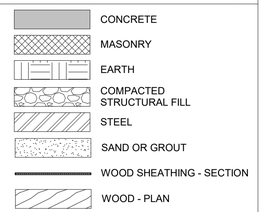
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED; REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	PERMIT SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF PLAN	•
S1.02	GYM ROOF REPAIR PLAN	•
S8.01	DETAILS	•
S8.02	DETAILS	•

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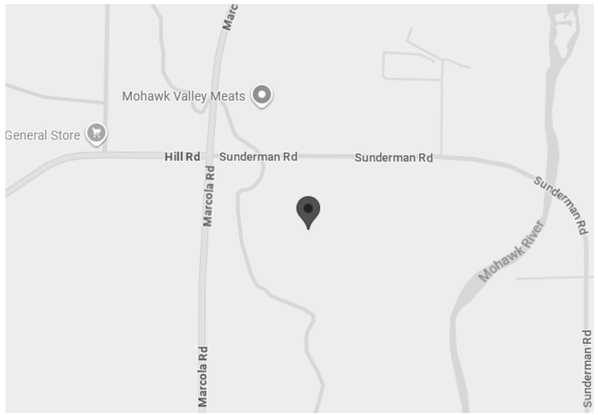
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1964
AREA: 24900 SF
BUILDING CONSTRUCTION TYPE: V-A
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
THE FOLLOWING PLANS ARE FOR THE MANDATORY REINFORCEMENT AND REPAIR OF (E) GLUE LAMINATED BEAMS AND TRUSSES

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: STEVEN DOMITER, STEVEN@MILLER-SE.COM
SECONDARY CONTACT: RON VANDEHEY, RON@MILLER-SE.COM



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
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MOHAWK ELEMENTRY SCHOOL REPAIR

91166 SUNDERMAN ROAD
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 02.23.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
DEAD LOAD	
ROOF (GYM)	17.7 PSF
ATTIC TOP CHORD	12 PSF
ATTIC BOTTOM CHORD	8 PSF
WALL	8 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ATTIC LIVE LOAD	20 PSF
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	22 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 11 PSF

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
ANGLES AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER. ALL EXTERNAL STEEL TO BE H.D.G.

STRUCTURAL STEEL BOLTING
ALL BOLTS SHALL BE ASTM A325 WITH MATCHING NUTS TIGHTENED TO A SNUG TIGHT CONDITION.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

POST-TENSIONING CABLES FOR WOOD BEAM STRENGTHENING
POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

WOOD FRAMING

WOOD FRAMING CONNECTIONS
PREDRILL FOR ALL SCREWS INTO EXISITING LUMBER TO ⅞ THE SHANK DIAMETER OF THE SCREW. ALL WOOD SCREWS TO BE MANUFACTURED BY SIMPSON STRONG-TIE. ALTERNATE CONNECTORS MAY ONLY BE USED WITH PRIOR APPROVAL BY ENGINEER OF RECORD.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A325. BOLT HOLES IN WOOD SHALL BE 1/32" LARGER THAN THE BOLT. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ADHESIVE
PORTABLE EQUIPMENT SHALL BE USED EMPLOYING POSITIVE DISPLACEMENT METERING PUMPS WHICH ARE INTERLOCKED TO PROVIDE RESIN DELIVERY IN PROPORTIONS REQUIRED BY THE COMPOSITION OF THE TWO COMPONENT INJECTION ADHESIVE. MIXING OF THE ADHESIVE SHALL BE ACCOMPLISHED IN LINE WITH A STATIC MIXER. THE EQUIPMENT SHALL BE DRIVEN BY AIR OR ELECTRIC POWER. THE INJECTION EQUIPEMNT SHALL BE CAPABLE OF MAINTAINING THE VOLUME RATIO OF THE SPECIFIED ADHESIVE COMPONENTS DURING UNINTERRUPTED FLOW WITH A TOLERANCE OF +/- 5% PRESSURE CONTROL. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC PRESSURE CONTROL DEVICE THAT ALLOWS OPERATION AT ANY PRESET PRESSURE WITHIN ITS OPERATING RANGE. THE INJECTION EQUIPMENT SHALL HAVE AN AUTOMATIC SHUT-OFF FEATURE TO PREVENT DELIVERY OF ONE ADHESIVE COMPONENT ONLY, WHEN THE OTHER COMPONENT SUPPLY IS EXAUSTED.

STEEL - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION		REMARKS
		CONTINUOUS/ PERFORM	PERIODIC/ OBSERVE	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	FREQUENCY		REMARKS
	CONTINUOUS	PERIODIC	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE ON DETAIL 4/S8.01

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 18211PE
DIGITALLY SIGNED OREGON JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

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MOHAWK ELEMENTRY SCHOOL REPAIR

91166 SUNDERMAN ROAD
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: SJD
CHECKED BY: RGV

MCE PROJ #: 251372

ISSUE DATE: 02.23.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



NORTH

1 STRUCTURAL SITE PLAN

S1.00 | 1/4" = 1'-0"

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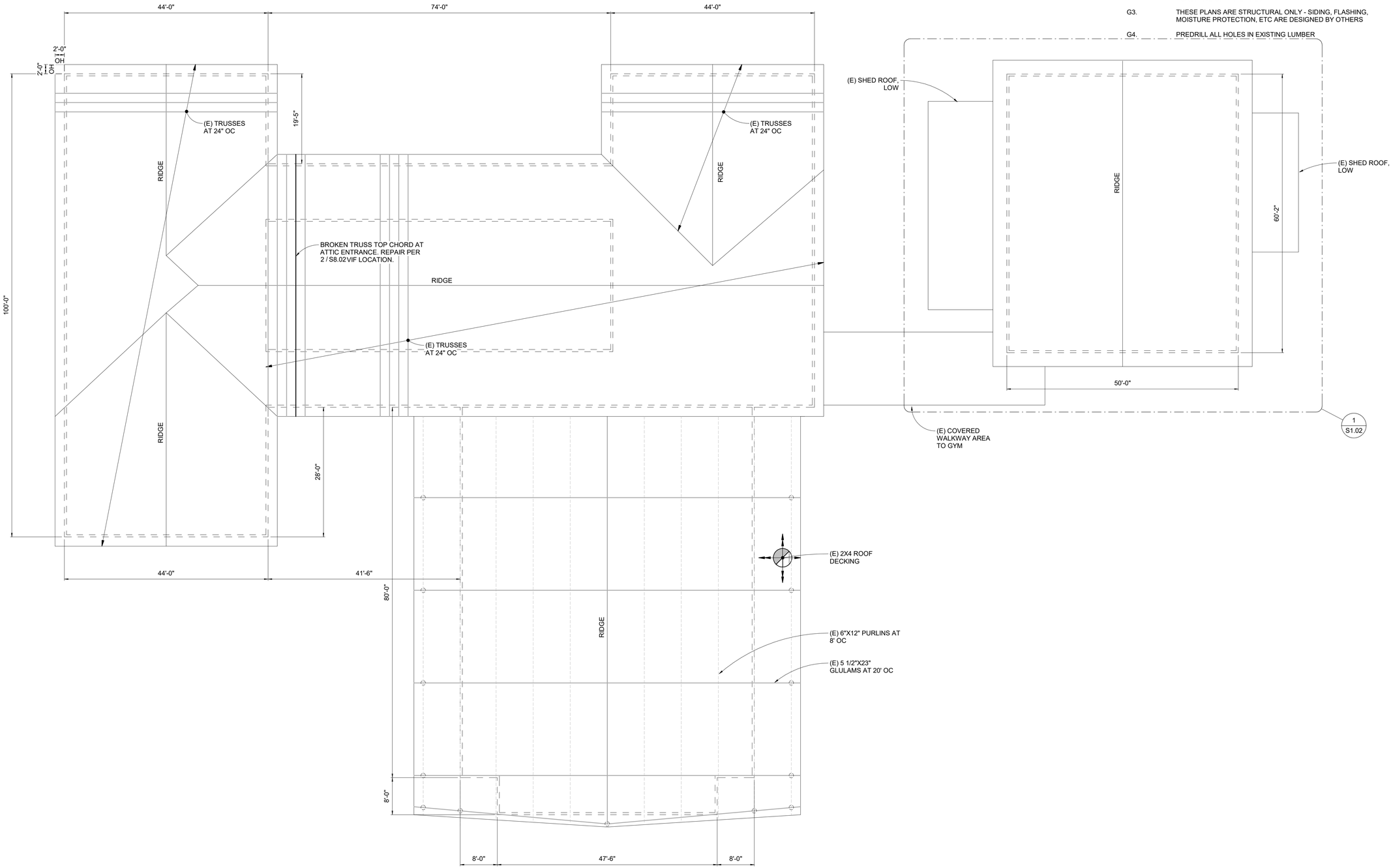
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SHEET CONTENT
STRUCTURAL SITE PLAN

SHEET
S1.00



GENERAL SHEET NOTES:

G1. SEE S0.02 STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. PREDRILL ALL HOLES IN EXISTING LUMBER

-NORTH-

1 ROOF FRAMING PLAN

S1.01 | 3/32" = 1'-0"

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SHEET CONTENT
ROOF PLAN

SHEET
S1.01

GENERAL SHEET NOTES:

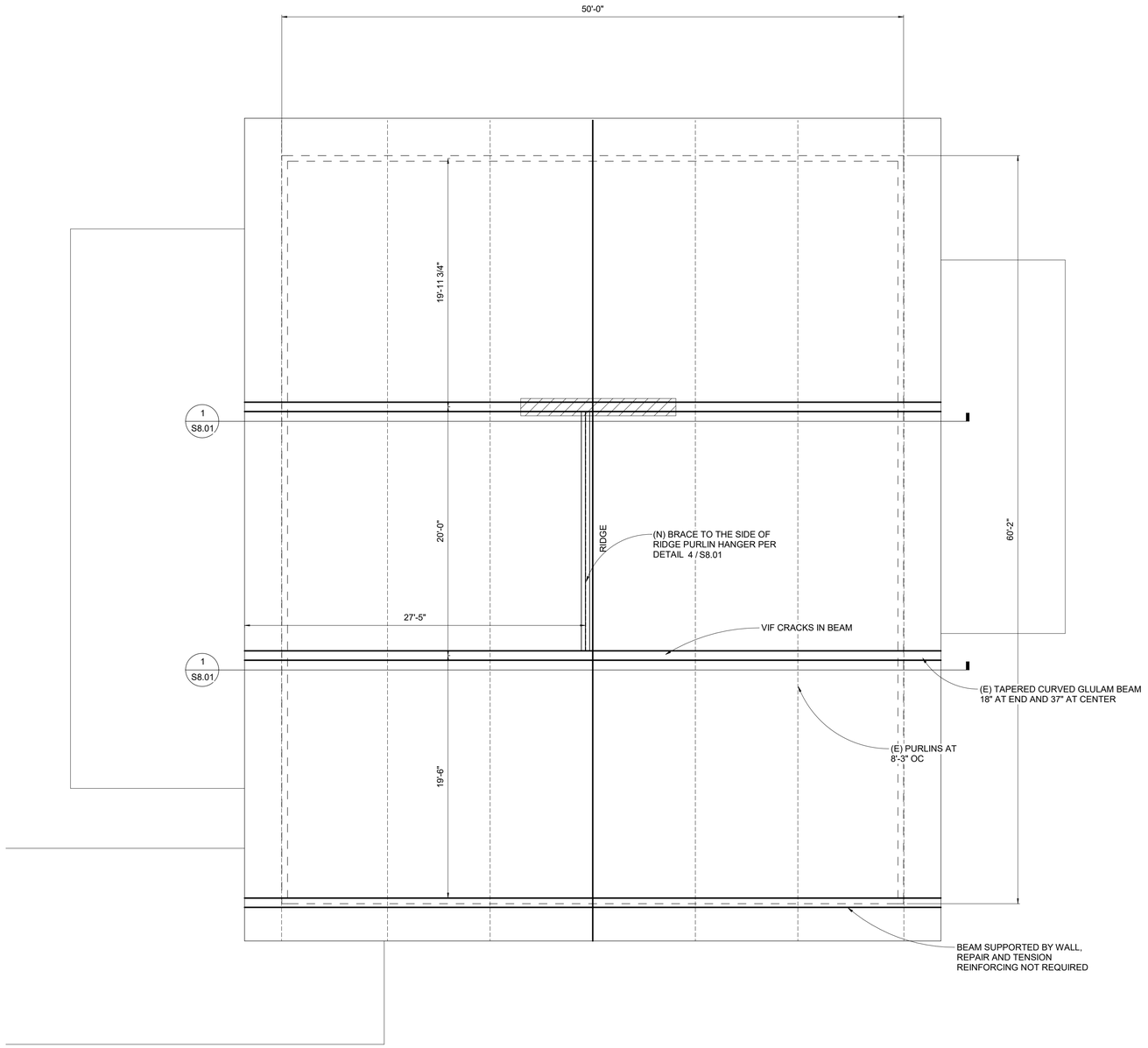
G1. SEE S0.02 STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. PREDRILL ALL HOLES IN EXISTING LUMBER

G5. ESTIMATED LOCATION IN EXISTING CRACK/CHECK IN BEAM. TO BE REPAIRED PER 4/S8.01 VIF LOCATIONS



-NORTH-

1 PARTIAL ROOF REPAIR PLAN

S1.02 | 3/16" = 1'-0"

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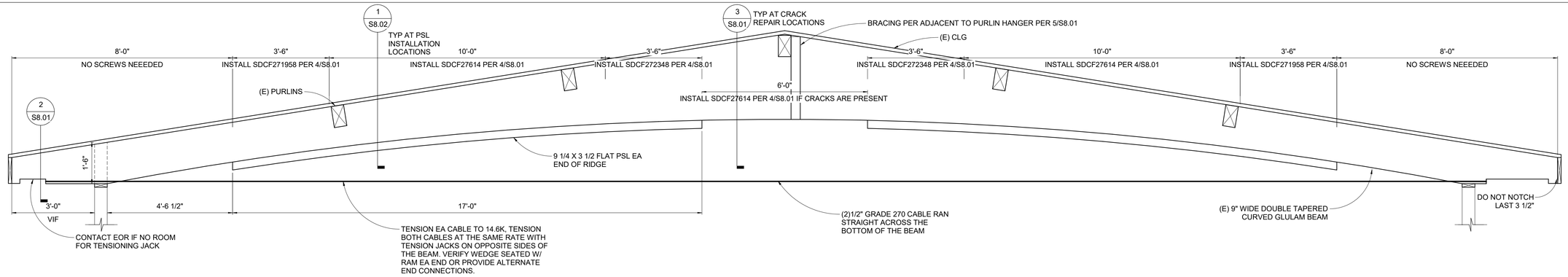
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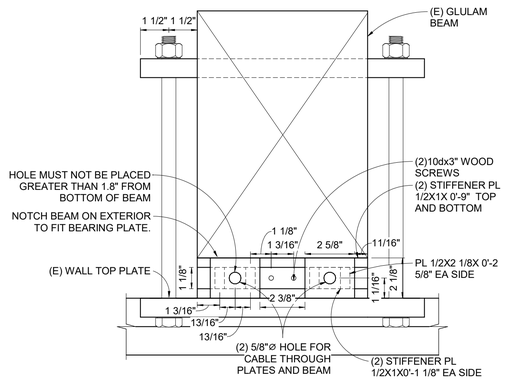
SHEET CONTENT
GYM ROOF REPAIR PLAN

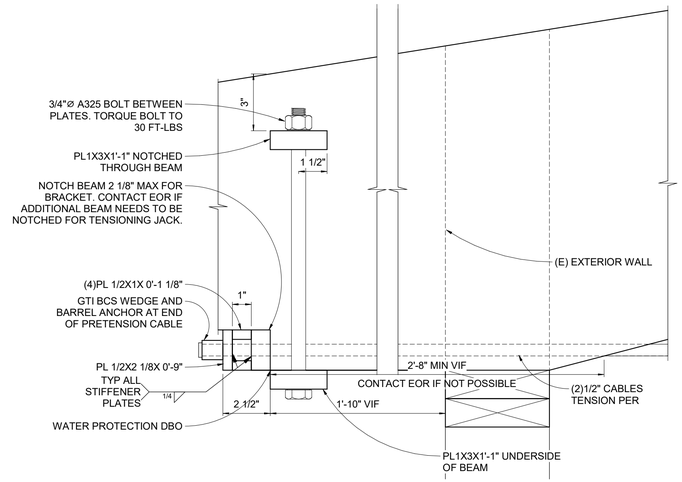
SHEET
S1.02



1 BEAM TENSION CABLE REINFORCEMENT ELEVATION

S8.01 | 1/2" = 1'-0"





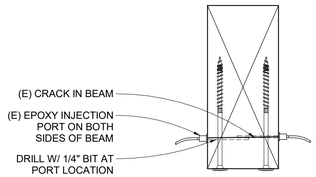
2 END BRACKET

S8.01 | 3" = 1'-0"

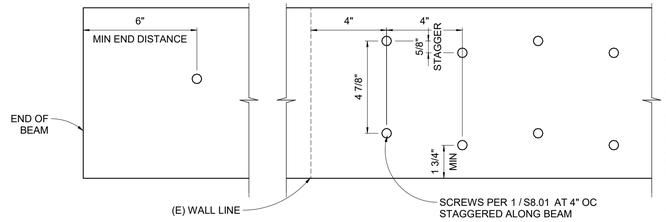
PARTS LIST (PER BEAM REPAIR 1/S8.01)

PART NAME	QTY	MANUF	CAPACITY
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
9 1/4 X 3 1/2 PSL X 17'	(2)	WEYERHAEUSER	2.2 E
(2) 1/2"Ø 270 KSI GALV STEEL CABLE	~52 FT EA	GTI	270 KSI

NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD



CROSS SECTION OF BEAM (CRACK INJECTION)



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)

STEP 1:
VERIFY ESTIMATED CRACK LOCATIONS SHOWN ON PLAN. MARK ANY CRACKING ON SIDE OR BOTTOM OF BEAM BEFORE JACKING UP BEAM. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATING. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2:
INSTALL BEAM BRACING PER 5/S8.01

STEP 3:
INSTALL CABLE SHOWN ON 1/S8.01 AND END BEARING PLATE AS SHOWN ON 2/S8.01, TENSION PER DETAIL. WAIT ONE WEEK FOR BEAM TO LIFT.

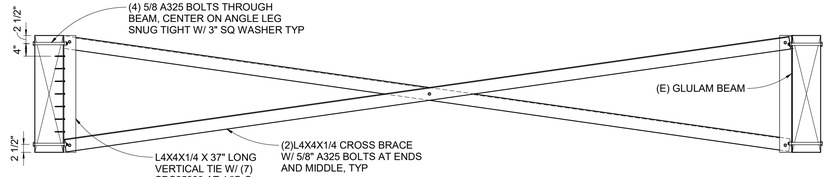
STEP 4:
REVIEW 1/S8.02 FOR BEAM AREAS WHERE CRACKS ARE PRESENT AND PSL REINFORCING IS TO BE INSTALLED. PSL SHOULD BE RAISED INTO PLACE BEFORE INSTALLATION OF ANY SCREWS. PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM TOGETHER AT CRACK LOCATIONS. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM. SCREW INSTALLATION PER DRAWING AT LEFT, SCREW SIZE PER 1/S8.01.

STEP 5:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)IDENTIFY PORT LOCATIONS ALONG CRACK. THERE SHOULD BE ONE PORT ON EACH END OF THE CRACK AND REPEATED EVERY 8" ALONG CRACK. DRILL WITH 1/4" BIT APPROXIMATELY HALF WAY INTO BEAM AT EACH IDENTIFIED LOCATION.
2)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE AND STICK AROUND EACH PREDRILLED LOCATION.
3) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
4)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
5)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 6:
SAND, RE-COAT OR REPAINT BEAMS TO MATCH (E) CONDITIONS

3 BEAM REPAIR PROCEDURE

S8.01 | 3" = 1'-0"



4 BEAM BRACING

S8.01 | 1/2" = 1'-0"

STRUCTURAL
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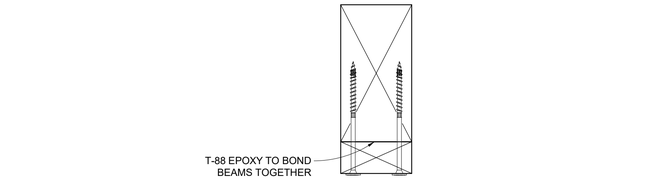
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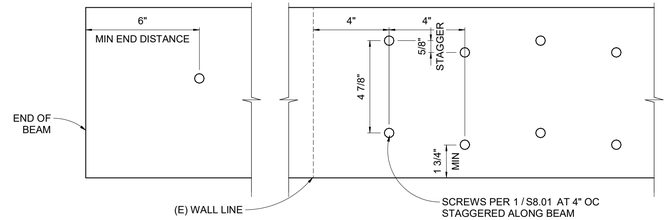
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SHEET CONTENT
DETAILS

SHEET
S8.01



CROSS SECTION OF BEAM (PSL REINFORCING INSTALLATION)



BOTTOM VIEW OF BEAM (SCREW INSTALLATION)

TO BE PREFORMED BEFORE STEP 4 OF 3/S8.01:

STEP 1:
VERIFY PSL INSTALLATION LOCATIONS ON 1/S8.01. CLEAN BOTTOM OF BEAM AT LOCATION OF (N) PSL TO REMOVE ALL CONTAMINANTS AND PREPARE FOR EPOXY. SAND BOTTOM OF BEAM IN SAME LOCATIONS. WIPE WITH ACETONE AND ALLOW TO FULLY EVAPORATE. SAND BONDING FACE OF (N) PSL AND CLEAN OFF ANY DUST OR DEBRIS.

STEP 2:
APPLY EPOXY EVENLY ON BASE OF BEAM AND BONDING FACE OF PSL USING A ROLLER. ENSURE COMPLETE COVERAGE WITH NO DRY SPOTS.

STEP 3:
RAISE PSL INTO PLACE. PRE-DRILL AND INSTALL SCREWS TO CLAMP BEAM AND PSL TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF EPOXY. SCREW INSTALLATION PER DRAWING AT LEFT. SCREW SIZE PER 1/S8.01. ENSURE ADHESIVE SQUEEZE OUT ALONE EDGES TO INDICATE FULL CONTACT. REMOVE EXCESS BEFORE CURE.

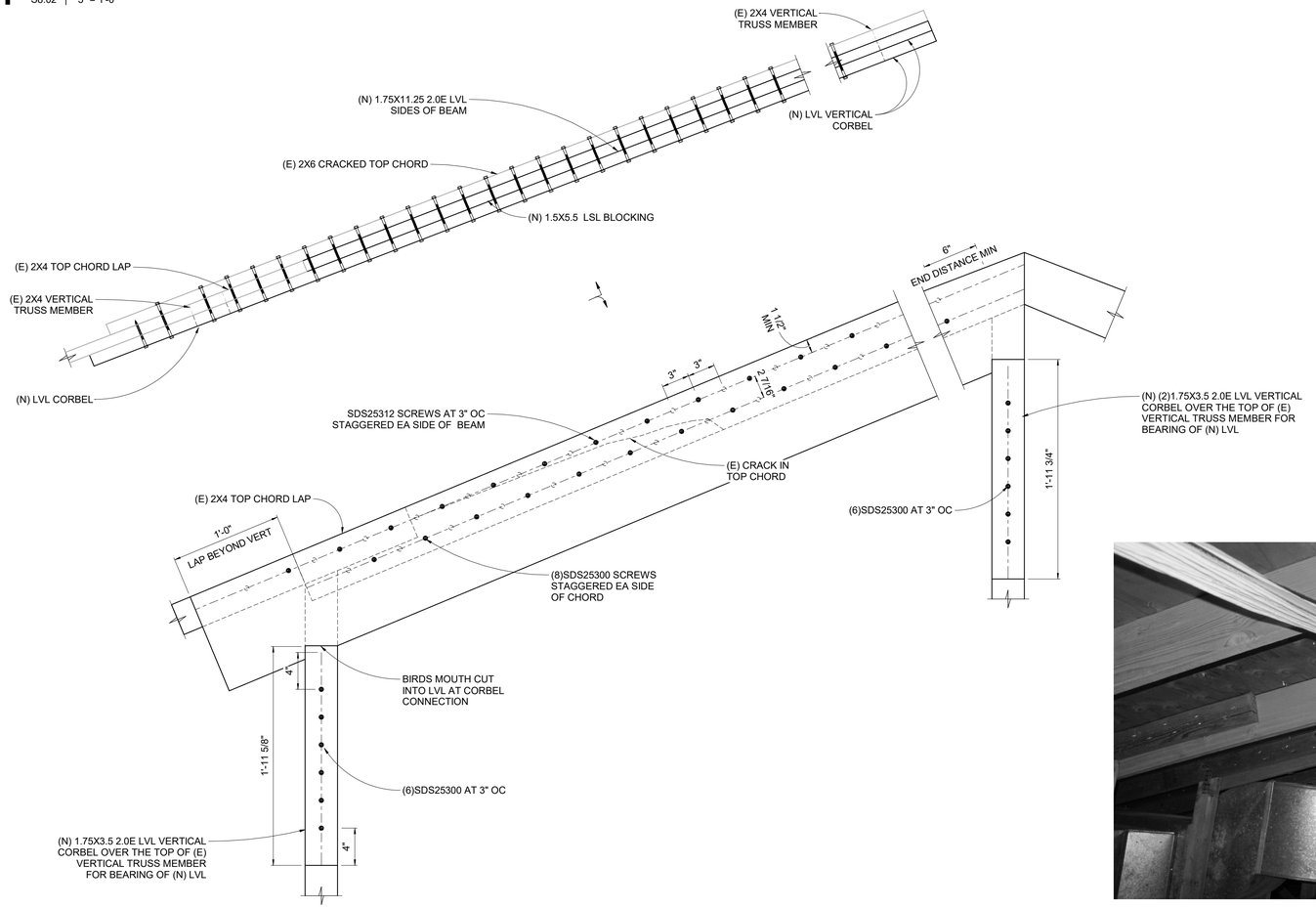
CONTINUE WITH STEP 5 OF 3/S8.01.

1 BEAM REPAIR PROCEDURE PSL

S8.02 | 3" = 1'-0"

2 TRUSS SPLICE REPAIR

S8.02 | 1 1/2" = 1'-0"





STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 18211PE
DIGITALLY SIGNED OREGON JAN 23, 2001 RONALD G. VANDEHEY
RENEWS: 6/30/26

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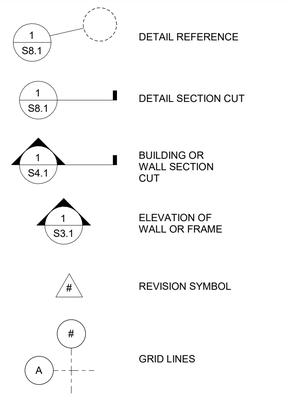
SHEET CONTENT
DETAILS

SHEET
S8.02

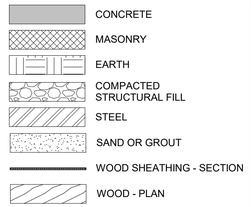
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED; REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF FRAMING PLAN	•
S1.02	TRUSS REPAIR DETAILS	•

CODE SUMMARY:

BUILDING CODE: 2022 OSSC
OCCUPANCY CLASSIFICATION: (NO CHANGE)

SCOPE OF WORK:
SCOPE OF WORK IS FOR THE STRENGTHENING OF THE EXISTING GLULAM BEAMS IN ORDER TO BE ADEQUATE TO MEET CURRENT CODE REQUIREMENTS.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: CJ MARQUARDT, cj@miller-se.com
SECONDARY CONTACT: RON VANDEHEY, ron@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
503.246.1250 | miller-se.com

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THURSTON HIGHSCHOOL ROOF REPAIR

333 58TH STREET
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY:
CHECKED BY:
MCE PROJ #: 251372
ISSUE DATE: 03.01.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE. CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			
STRUCTURAL ADHESIVES FOR TIMBER CRACK REPAIR	X			
PULLEY/SHEAVE	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	20 PSF
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF (PER ORIGINAL DRAWINGS)

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
W-SECTIONS	A992	50 KSI
RECTANGULAR HSS	A500, GRADE C	50 KSI
ROUND HSS	A500, GRADE C	46 KSI
PIPE	A53, GRADE B, TYPE E OR S	35 KSI
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY OR STEEL TO BE GALVANIZED. EMBEDDED SURFACES SHALL BE FREE OF CONTAMINANTS. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE ASTM F3125 GRADE A325 WITH MATCHING NUTS, UNLESS NOTED OTHERWISE. NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED.

- SNUG TIGHT CONDITION SHALL BE PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS, SECTION 8.1.
- SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

WOOD FRAMING

WOOD FRAMING CONNECTIONS
ALL SCREWS SHALL BE PRE-DRILLED TO 7/8 OF SHANK DIAMETER. FASTENERS SHALL NOT BE OVERDRIVEN.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	750
COMPRESSION PARALLEL TO GRAIN, $F_{c//}$ (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

PARALLEL STRAND LUMBER (PSL)
PSL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,200,000
FLEXURAL STRESS, F_b (PSI)	2,900
TENSION STRESS, F_t (PSI)	2,300
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	735
COMPRESSION PARALLEL TO GRAIN, $F_{c//}$ (PSI)	2,900
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	290
SPECIFIC GRAVITY	0.50

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	FREQUENCY		REMARKS
	CONTINUOUS	PERIODIC	
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.

STEEL - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION		REMARKS
		CONTINUOUS/ PERFORM	PERIODIC/ OBSERVE	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

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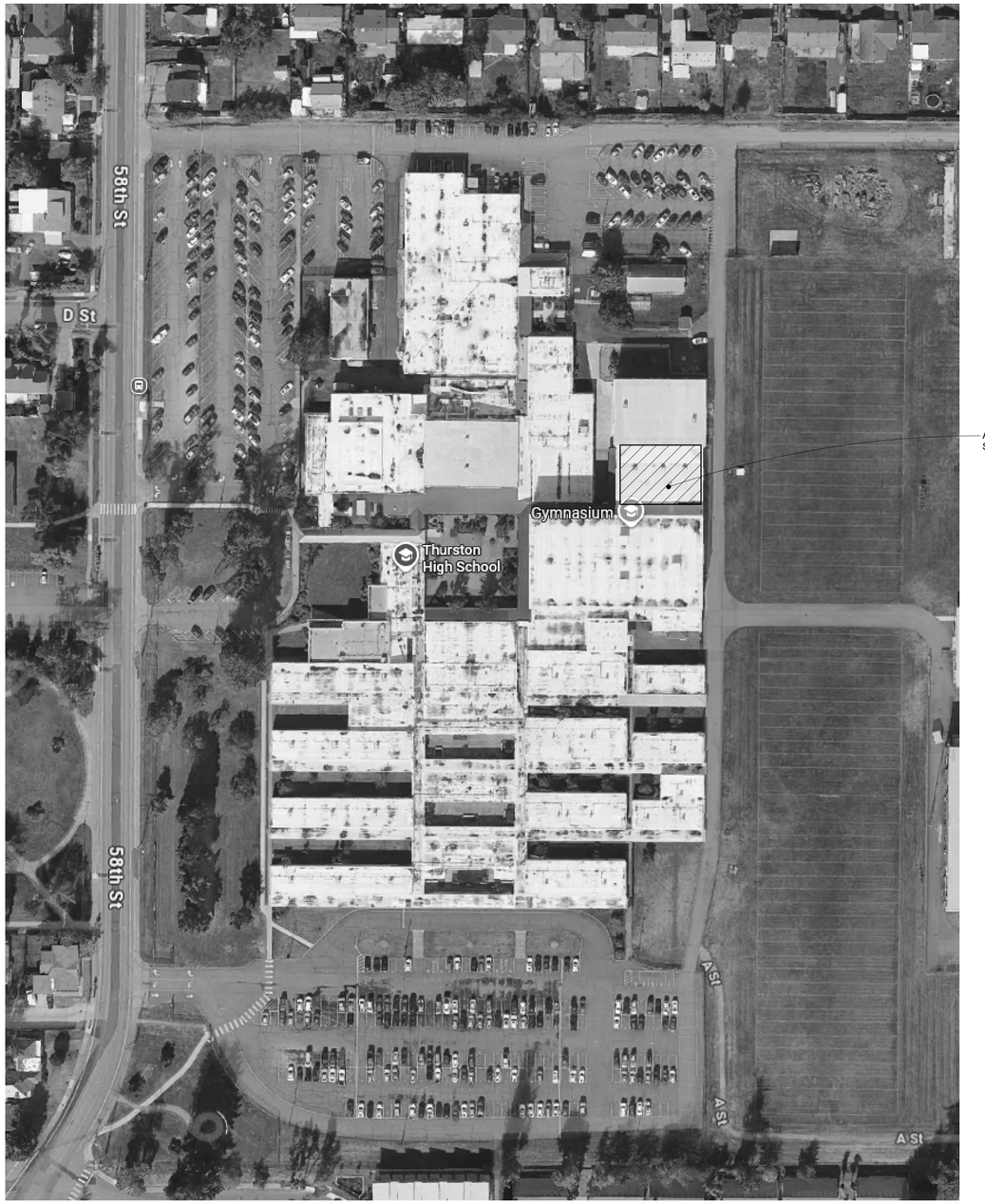
SPRINGFIELD SCHOOL DISTRICT

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SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



·NORTH·

1 STRUCTURAL SITE PLAN

S1.00 | NOT TO SCALE

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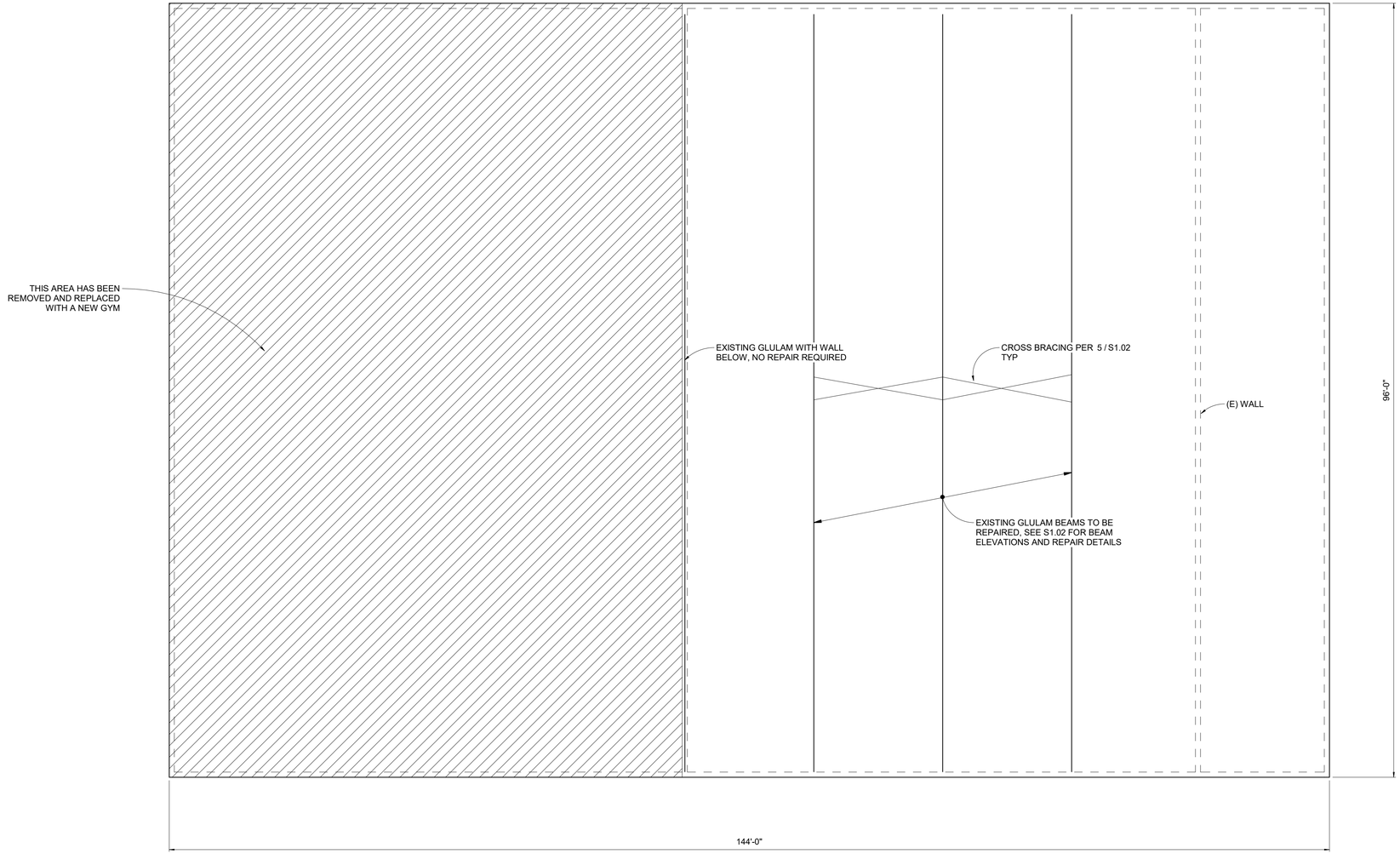
SHEET
S1.00

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS



NORTH

1 ROOF FRAMING PLAN

S1.01 | 1/8" = 1'-0"

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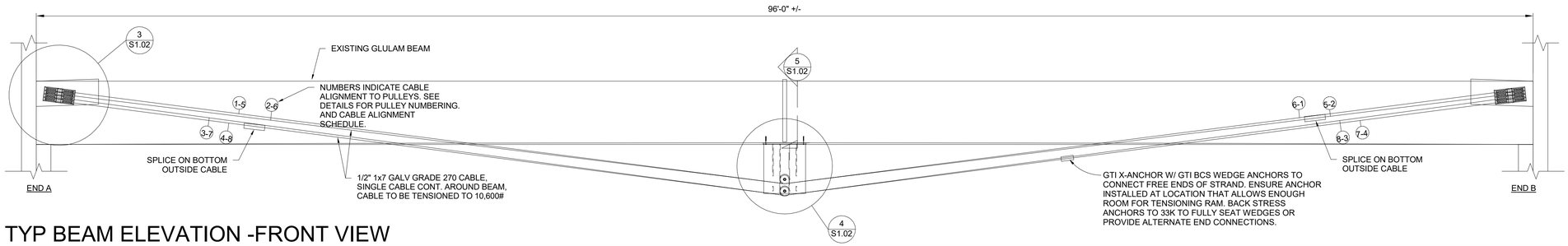
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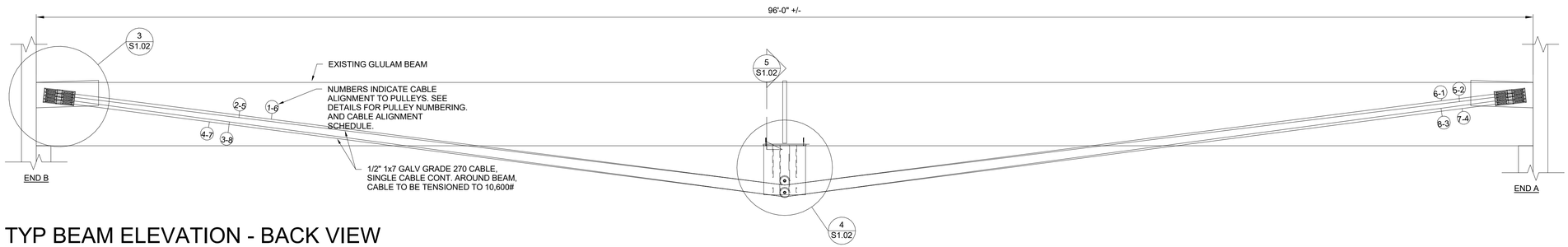
SHEET CONTENT
ROOF FRAMING PLAN

SHEET
S1.01



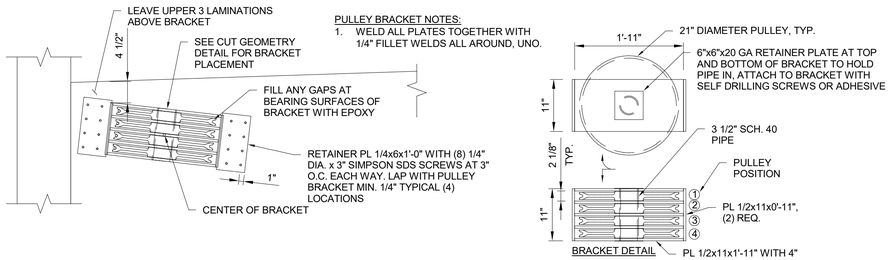
1 TYP BEAM ELEVATION -FRONT VIEW

S1.02 | 1/4" = 1'-0"



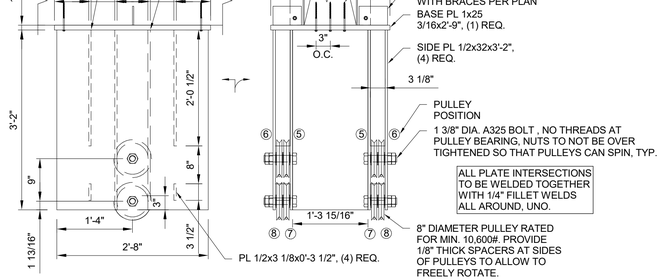
2 TYP BEAM ELEVATION - BACK VIEW

S1.02 | 1/4" = 1'-0"



3 END BRACKET

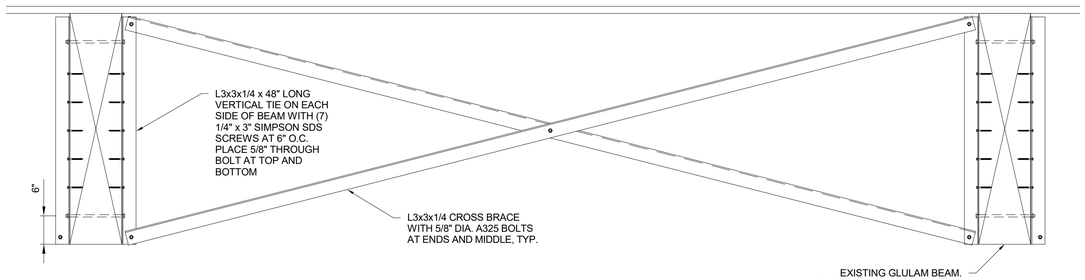
S1.02 | 3/4" = 1'-0"



4 CENTER BRACKET

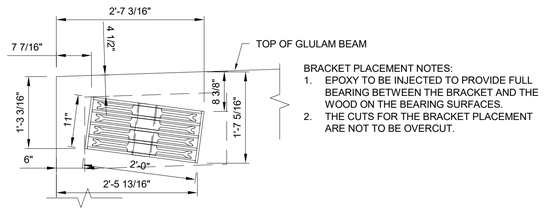
S1.02 | 3/4" = 1'-0"

CABLE ALIGNMENT SCHEDULE:			
UPPER CONTINUOUS CABLE:			
SEGMENT	PULLEY #'S	ELEVATION	END
1	1-5	FRONT	END A
2	5-2	FRONT	END B
3	2-5	BACK	END B
4	5-2	BACK	END A
5	2-6	FRONT	END A
6	6-1	FRONT	END B
7	1-6	BACK	END B
8	6-1	BACK	END A
LOWER CONTINUOUS CABLE:			
SEGMENT	PULLEY #'S	ELEVATION	END
1	3-7	FRONT	END A
2	7-4	FRONT	END B
3	4-7	BACK	END B
4	7-4	BACK	END A
5	4-8	FRONT	END A
6	8-3	FRONT	END B
7	3-8	BACK	END B
8	8-3	BACK	END A



5 BRACE DETAIL

S1.02 | 3/4" = 1'-0"



6 BRACKET PLACEMENT

S1.02 | 3/4" = 1'-0"

PARTS LIST (PER BEAM)

PART NAME	QTY	MANUF	CAPACITY
21"Ø PULLEY	(8)	JEAMAR USA	38 K
8"Ø D STYLE POWDER COATED PULLEY	(8)	MCMASTER-CARR	7 K
1/2"Ø 270 KSI GALV STEEL CABLE	~420 FT	GTI	270 KSI
GTI X-ANCHOR	(1)	GTI	270 KSI
1 3/8"Ø X 5 1/2" BOLT 4" GRIP LENGTH	(2)	N/A	55 KSI
3 1/2 Ø STD PIPE X 5 1/8" SHAFT	(2)	N/A	35 KSI
BCS WEDGE ANCHOR ASSEMBLY	(2)	GTI	270 KSI
SDS25300	(60)	SIMPSON	N/A
SDS25800	(6)	SIMPSON	N/A

NOTE: SIMILAR MATERIALS TO BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD

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CHECKED BY:
MCE PROJ #: 251372
ISSUE DATE: 03.01.2026
ISSUANCE: BID SET

SHEET CONTENT
TRUSS REPAIR DETAILS

SHEET
S1.02

STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED; REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



DETAIL REFERENCE



DETAIL SECTION CUT



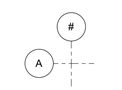
BUILDING OR WALL SECTION CUT



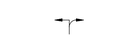
ELEVATION OF WALL OR FRAME



REVISION SYMBOL



GRID LINES


ROTATE VIEW SYMBOL



NORTH ARROW


SURFACE - STEPPED

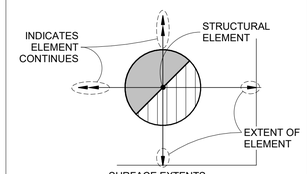

SURFACE - SLOPE UP

SURFACE - SLOPE DOWN

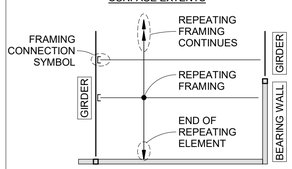

SURFACE - SLOPE TWO DIRECTIONS

DECKING SPAN DIRECTION


OPENING IN FLOOR / WALL

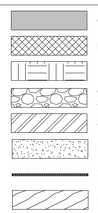


SURFACE EXTENTS



TYPICAL FRAMING

STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF PLAN	•
S1.02	BOWSTRING TRUSS ELEV AND REPAIR DETAILS	•

CODE SUMMARY:

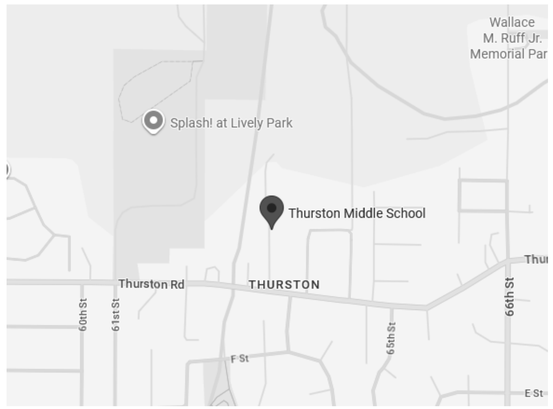
BUILDING CODE: 2022 OSSC
BUILDING CONSTRUCTION TYPE: V-A
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
FOR THE REPAIR OF DAMAGED BOWSTRING TRUSSES AND FOR THE STRENGTHING OF OTHER BOWSTRING TRUSSES IN THIS SPACE.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: CJ MARQUARDT, cj@miller-se.com
SECONDARY CONTACT: RON VANDEHEY, ron@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE



RENEWS: 6/30/26

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THURSTON MIDDLE SCHOOL BOWSTRING TRUSS REPAIR

6300 THURSTON ROAD
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY: CJM
CHECKED BY: RGV

MCE PROJ #: 251372
ISSUE DATE: 03.03.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:
- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	II
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	20 PSF
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	25 PSF (PER ORIGINAL DRAWINGS)

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	**ASTM SPECIFICATION**	**YIELD STRESS**
W-SECTIONS	A992	50 KSI
RECTANGULAR HSS	A500, GRADE C	50 KSI
ROUND HSS	A500, GRADE C	46 KSI
PIPE	A53, GRADE B, TYPE E OR S	35 KSI
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY OR STEEL TO BE GALVANIZED. EMBEDDED SURFACES SHALL BE FREE OF CONTAMINANTS. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

STRUCTURAL STEEL BOLTING
ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE ASTM F3125 GRADE A325 WITH MATCHING NUTS, UNLESS NOTED OTHERWISE. ALL ANCHOR RODS TO BE ASTM F1554 GRADE 36 WITH MATCHING NUTS. NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED.
- SNUG TIGHT CONDITION SHALL BE PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS, SECTION 8.1.
- SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

WOOD FRAMING

WOOD FRAMING CONNECTIONS
ALL SCREWS SHALL BE PRE-DRILLED TO 7/8 OF SHANK DIAMETER. FASTENERS SHALL NOT BE OVERDRIVEN.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, F_{c_PERP} (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

PARALLEL STRAND LUMBER (PSL)
PSL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,200,000
FLEXURAL STRESS, F_b (PSI)	2,900
TENSION STRESS, F_t (PSI)	2,300
COMPRESSION PERPENDICULAR TO GRAIN, F_{c_PERP} (PSI)	735
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,900
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	290
SPECIFIC GRAVITY	0.50

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE				
ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
HOLDOWNS AND RODS	X	X		
TRUSS LIFTING PLAN			X	X

STEEL - SPECIAL INSPECTIONS				
SYSTEM OR MATERIAL	**CODE OR STANDARD REFERENCE**	**FREQUENCY / INSPECTION**		**REMARKS**
		CONTINUOUS/ PERFORM	**PERIODIC/ OBSERVE**	
STEEL FABRICATION				
MATERIAL VERIFICATION OF STRUCTURAL STEEL COMPONENTS	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 N3.2		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	AISC 360 A3.5 AISC 360 N3.2 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
STRUCTURAL STEEL WELDING				
VERIFYING USE OF PROPER WPS'S	AISC 360 N3.2			RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	AWS D1.1		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 CLAUSE 6	X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"			X	

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

MILLER CONSULTING ENGINEERS
9600 SW Oak St | Suite 400
Portland, OR | 97223
503.246.1250 | miller-se.com

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THURSTON MIDDLE SCHOOL BOWSTRING TRUSS REPAIR

6300 THURSTON ROAD
SPRINGFIELD, OREGON

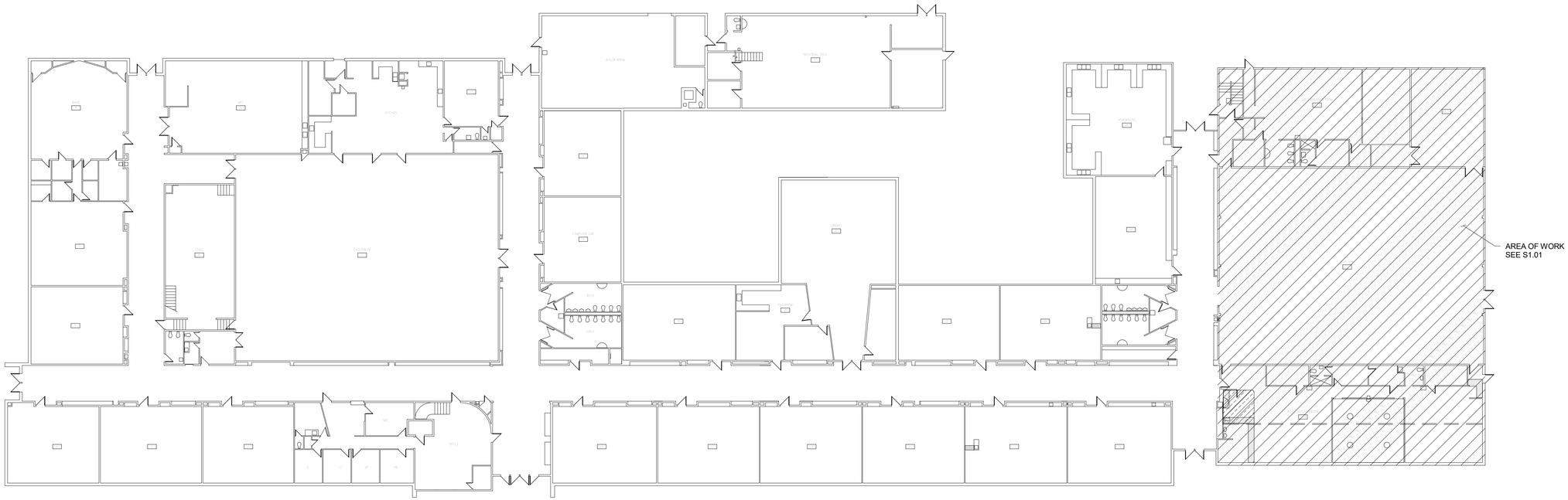
SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY:
CHECKED BY:
MCE PROJ #: 251372
ISSUE DATE: 03.03.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | 1" = 20'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
RONALD G. VANDEHEY
RENEWS: 6/30/26

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SHEET CONTENT
STRUCTURAL SITE PLAN

SHEET
S1.00

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

NOTES:
1. SEE SHEET S1.02 FOR TYPICAL TRUSS ELEVATION AND STRENGTHENING/REPAIR REQUIREMENTS.
2. APPROXIMATE AREAS OF INITIAL OBSERVED DAMAGE NOTED ON S1.01. VERIFY IN FIELD EXTENT OF ALL DAMAGE ONCE COMPLETE BOTTOM CHORDS ARE UNCOVERED.
3. ALL TRUSSES TO BE STRENGTHENED PER HOLDOWNS AND TIE-RODS SHOWN ON 1/S1.02.
4. ANY BOTTOM CHORD CRACK REPAIRS TO BE REPAIRED PER 4/S1.02. VERIFY EXTENT OF ALL DAMAGE.



-NORTH-

1 EXISTING GYM ROOF FRAMING PLAN

S1.01 | 1/8" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18211PE
DIGITALLY SIGNED
OREGON
JAN 23, 2001
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RENEWS: 6/30/26

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THURSTON MIDDLE SCHOOL BOWSTRING TRUSS REPAIR

6300 THURSTON ROAD
SPRINGFIELD, OREGON

SPRINGFIELD SCHOOL DISTRICT

REV	DESCRIPTION	DATE

DESIGNED BY: CJM
CHECKED BY: RGV
MCE PROJ #: 251372
ISSUE DATE: 03.03.2026
ISSUANCE: BID SET

SHEET CONTENT
ROOF PLAN

SHEET
S1.01

TRUSS REPAIR NOTES:

G1. SHORE AND CAREFULLY LIFT TRUSS WITH FORCE NOT EXCEEDING 1.25 TIMES THE DEAD LOAD AT EACH PANEL POINT UNTIL BOTTOM CHORD IS LEVEL. DO NOT LIFT END OF TRUSS OFF SUPPORTS. AND THEN TIGHTEN HOLDOWN RODS TO A SNUG CONDITION. TIGHTEN ALL HOLDOWNS EQUALLY. SHORING IS NOT REQUIRED ON TRUSSES THAT ARE NOT DAMAGED.

G2. HOLDOWN SETS TO BE INSTALLED ON BOTH SIDES OF EXISTING BOWSTRING TRUSS.

G3. IF THERE ARE ANY INTERFERENCES WITH SPLIT RINGS, SHIFT SCREWS TO AVOID. FIELD VERIFY SPLIT RING LOCATIONS PRIOR TO INSTALLATION.

G4. PROVIDE ROD COUPLER AS REQUIRED. ALL COUPLERS MUST EXCEED ROD CAPACITY.

G5. VERIFY EXTENT OF ANY CRACKS IN TRUSS PRIOR TO REPAIR. SIDE SPLICE MEMBERS CAN BE REMOVED TEMPORARILY AFTER SHORING IS IN PLACE TO VERIFY CRACK EXTENT. REINSTALL SIDE MEMBERS AFTER VERIFICATION IS COMPLETE.

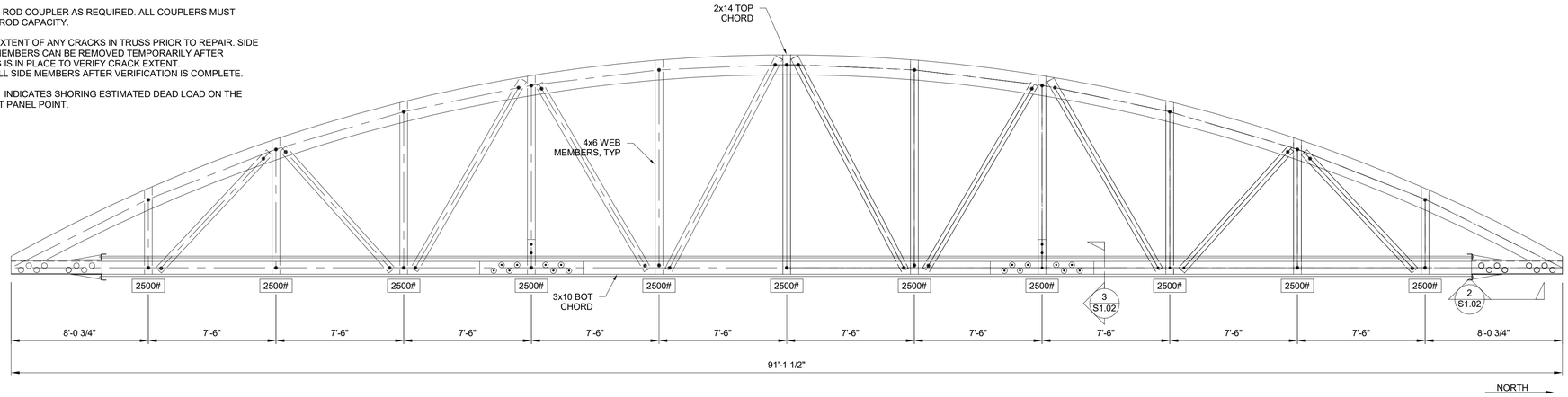
G6. XXXX# INDICATES SHORING ESTIMATED DEAD LOAD ON THE TRUSS AT PANEL POINT.

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

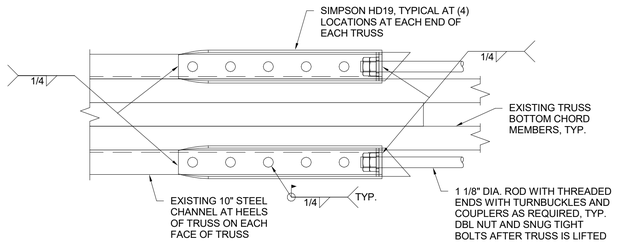
G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS



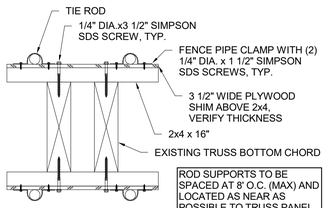
1 TYPICAL BOWSTRING TRUSS ELEVATION AT GYM

S1.02 | 1/4" = 1'-0"



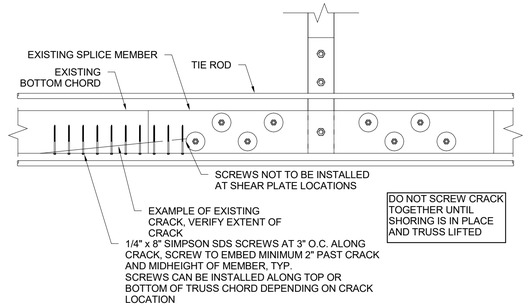
2 HOLDOWN CONN PLAN

S1.02 | 1 1/2" = 1'-0"



3 ROD SUPPORT

S1.02 | 1 1/2" = 1'-0"



4 CRACK REPAIR EXAMPLE - ELEV VIEW

S1.02 | 3/4" = 1'-0"

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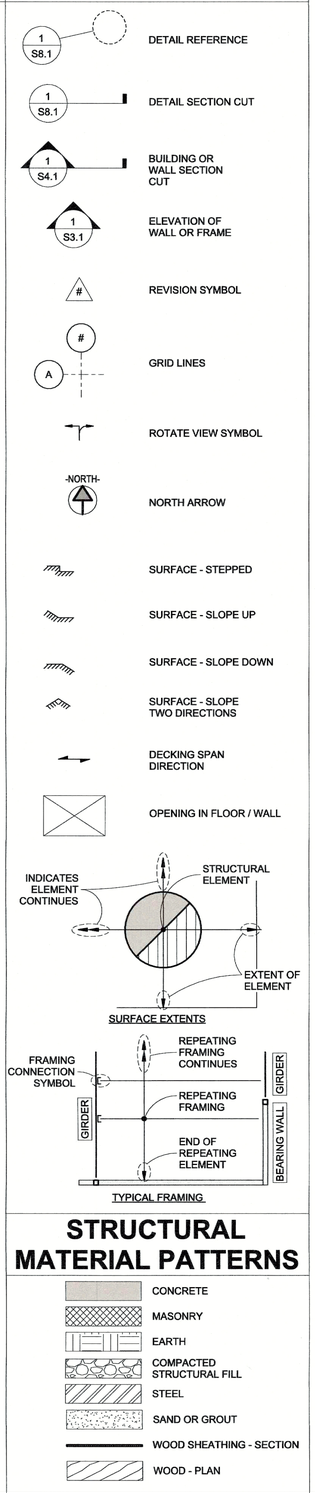
SHEET CONTENT
BOWSTRING TRUSS ELEV AND REPAIR DETAILS

SHEET
S1.02

STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS

STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.00	STRUCTURAL SITE PLAN	•
S1.01	ROOF PLAN	•
S1.02	PARTIAL ROOF FRAMING PLAN	•
S8.01	DETAILS	•

CODE SUMMARY:

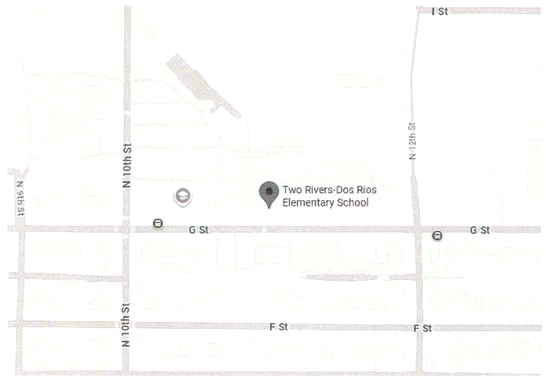
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1951
AREA: 65000 SF (NO CHANGE)
BUILDING CONSTRUCTION TYPE: V-A (NO CHANGE)
OCCUPANCY CLASSIFICATION: E (NO CHANGE)

SCOPE OF WORK:
THE FOLLOWING PLANS ARE FOR THE MANDATORY REINFORCEMENT OF (E) GLUE LAMINATED BEAMS AND A REPAIR AT THE CAFETERIA TOP CHORD.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: KEVIN MCCORMICK, kevin@miller-se.com
SECONDARY CONTACT: JENNYLIN LOPEZ, jennylin.lopez@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2010
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

MILLER CONSULTING ENGINEERS
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Portland, OR | 97223
503.246.1250 | miller-se.com

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

1084 G STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION. CHANGES TO THE CONTRACT DOCUMENTS REQUESTED BY THE CONTRACTOR TO ACCOMPLISH THEIR PREFERRED MEANS OR METHOD OF CONSTRUCTION MAY BE AT THE CONTRACTOR'S EXPENSE.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE
PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIME:

1. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

STRUCTURAL DESIGN CRITERIA
LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS W AS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	15 PSF
WALLS	8 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF OR 300LB CONCENTRATED LOAD
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	27 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	I_s = 1.1
GROUND SNOW LOAD	P_g = 11 PSF
EXPOSURE FACTOR	C_e = 0.9
THERMAL FACTOR	C_t = 1.1

WOOD FRAMING

WOOD FRAMING CONNECTIONS
PREDRILL ALL FASTENERS WITH (7/8) X SHANK DIAMETER.

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32 " TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT. ALL LAG SCREWS SHALL HAVE PILOT HOLES PER THE LAG SCREW PILOT HOLE SCHEDULE. REFER TO SECTION 12.1 OF THE NDS FOR ADDITIONAL INSTALLATION INSTRUCTIONS OF DOWEL-TYPE FASTENERS.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER 'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

GLUE LAMINATED (GLULAM) WOOD MEMBERS
GLULAM MEMBERS SHALL BE MANUFACTURED AND CERTIFIED PER THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC), ANSI/AITC A190.1, ASTM D3737 AND CERTIFICATION STAMPED. GLULAM MEMBERS SHALL CONTAIN AN AVERAGE MOISTURE CONTENT OF 16% OR LESS AT TIME OF MANUFACTURE. EASE EDGES ON GLULAM MEMBERS AS REQUIRED TO BE COMPATIBLE WITH STEEL AT CONNECTIONS.

GLULAM APPEARANCE SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE ON THE ARCHITECTURAL DRAWINGS:

- NOT EXPOSED TO VIEW IN COMPLETED CONSTRUCTION: INDUSTRIAL APPEARANCE
- EXPOSED TO VIEW: ARCHITECTURAL APPEARANCE

THE APPEARANCE CERTIFICATION STAMP ON ARCHITECTURAL APPEARANCE MEMBERS SHALL BE PLACED ON SURFACES NOT EXPOSED IN COMPLETED CONSTRUCTION.

GLULAM BEAMS WITH A SIMPLE SPAN BETWEEN SUPPORTS SHALL HAVE A CAMBER EQUAL TO A 2600' RADIUS BETWEEN SUPPORTS FOR SPANS OVER 24', OR AS NOTED ON DRAWINGS. MULTI-SPAN AND CANTILEVER BEAMS SHALL NOT HAVE A CAMBER UNLESS NOTED OTHERWISE.

GLULAM MEMBERS SPECIFIED AS PRESERVATIVE TREATED SHALL BE TREATED WITH PERMAPOST KLEAR-GARD 25 OR EQUAL.

GLULAM MEMBERS SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE DESIGN PROPERTIES:

GLULAM BEAMS		
	SIMPLE SPAN	**CONTINUOUS OVER MULTIPLE SUPPORTS OR CANTILEVER**
COMBINATION SYMBOL (SPECIES)	24F-V4 (DF/DF)	24F-V8 (DF/DF)
MODULUS OF ELASTICITY, E (PSI)	1,800,000	1,800,000
FLEXURAL STRESS, F_b"/" (PSI)	+2,400 / -1,850	+2,400 / -2,400
TENSION STRESS, F_t (PSI)	1,100	1,100
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	650	650
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	1,650	1,650
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	265	265
SPECIFIC GRAVITY	0.50	0.50

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, $F_{c\ PERP}$ (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 19655PE OREGON JANUARY 15, 2015 KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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Portland, OR | 97223
503.246.1250 | miller-se.com

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

1084 G STREET
SPRINGFIELD, OREGON

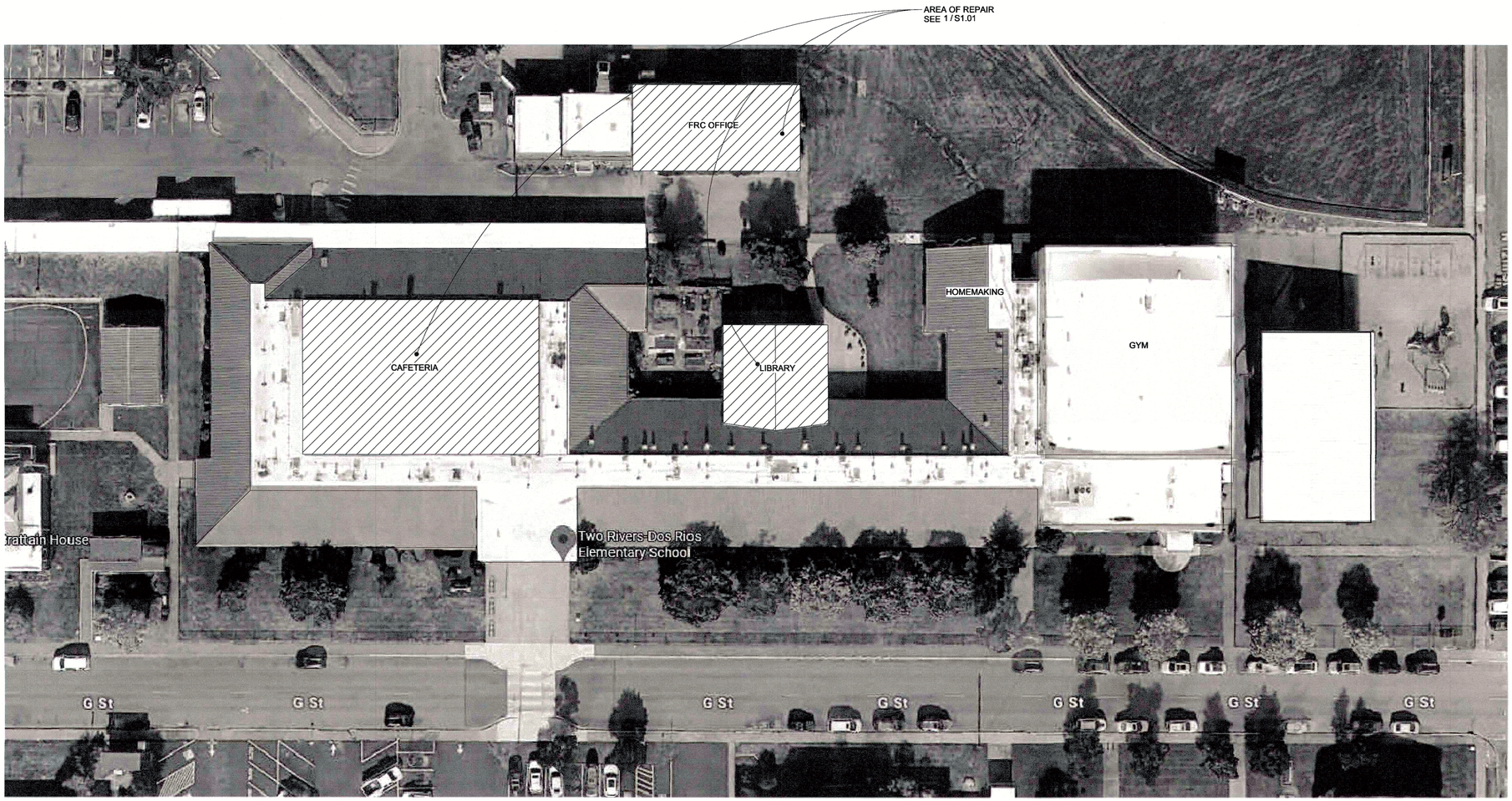
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



-NORTH-

1 STRUCTURAL SITE PLAN

S1.00 | 1" = 30'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2021
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

1084 G STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL SITE PLAN

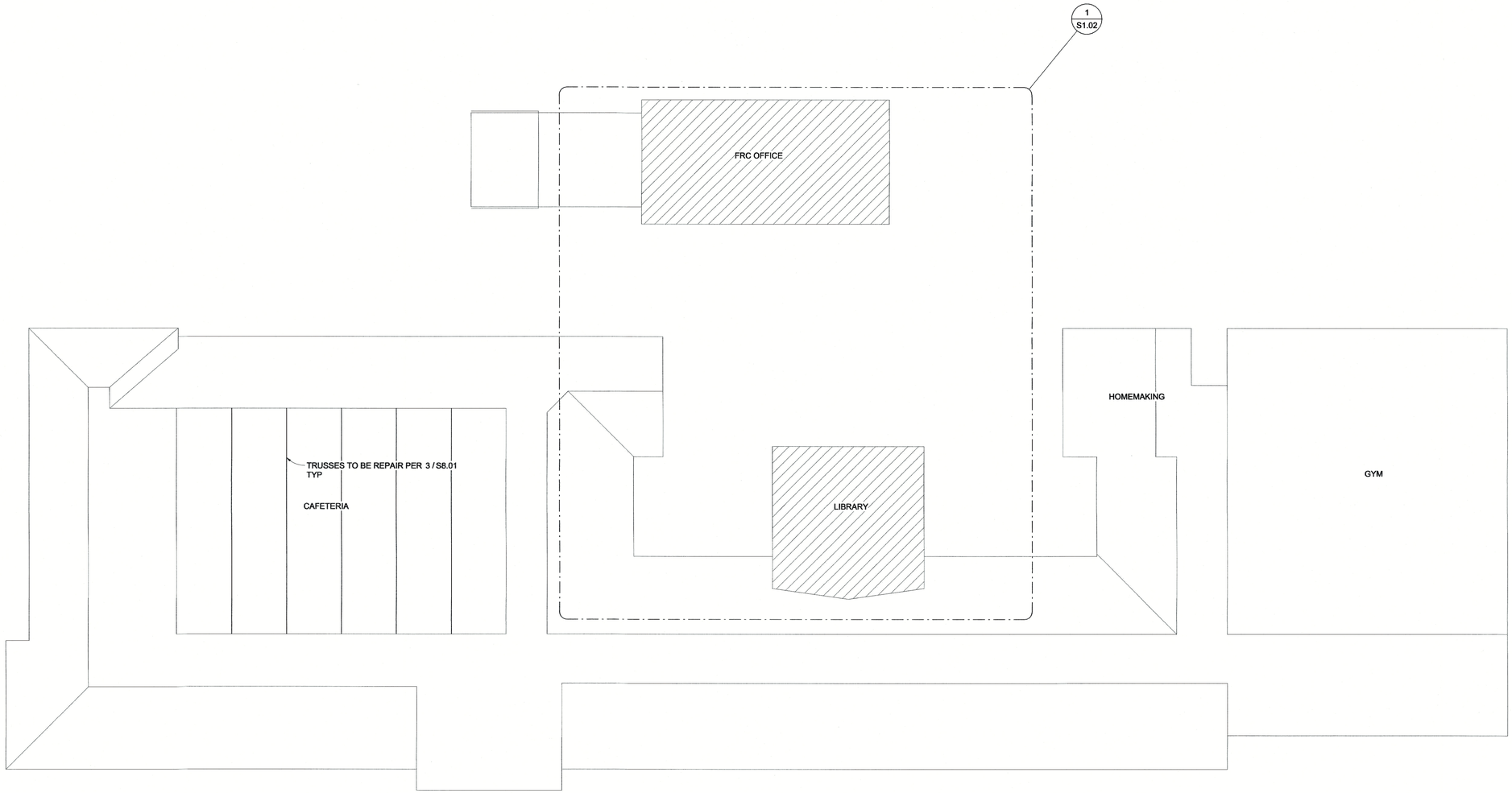
SHEET
S1.00

GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS



-NORTH-

1 ROOF PLAN

S1.01 | 1" = 20'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2016
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

1084 G STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM

MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

SHEET CONTENT
ROOF PLAN

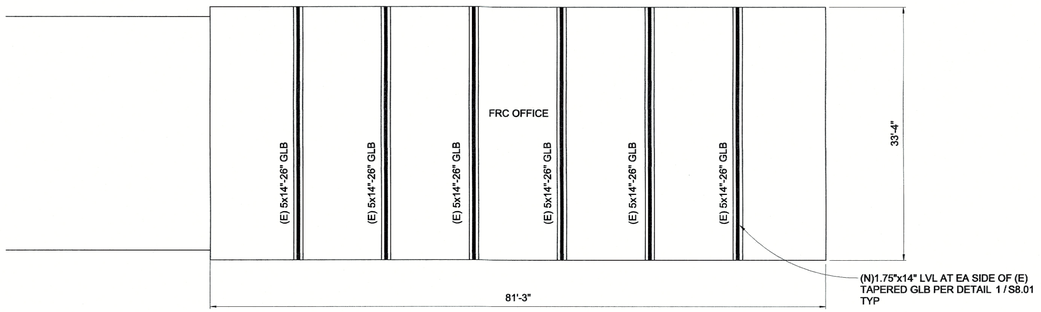
SHEET
S1.01

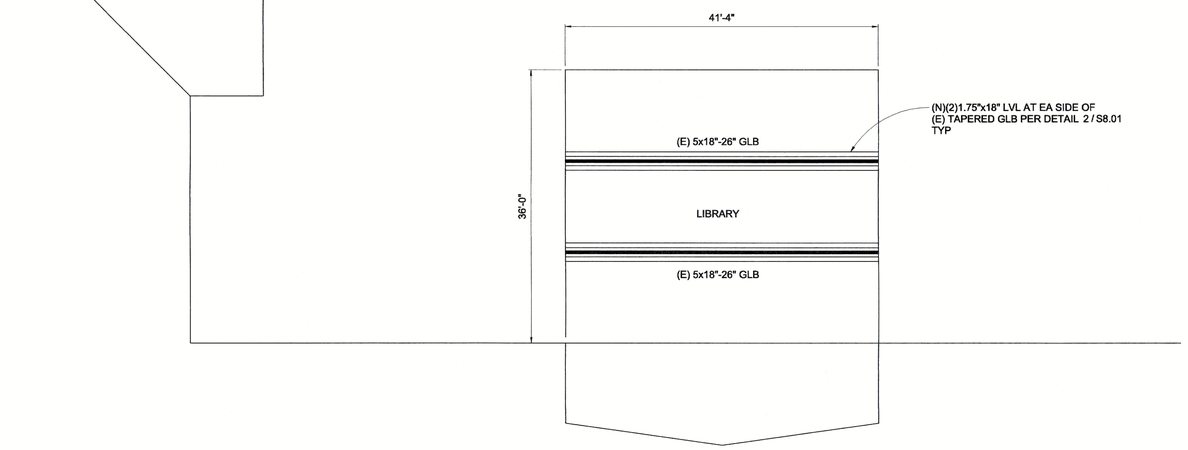
GENERAL SHEET NOTES:

G1. SEE S0.02 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS





-NORTH-

1 PARTIAL ROOF FRAMING PLAN

S1.02 | 1" = 10'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 15, 2005
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

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SPRINGFIELD, OREGON

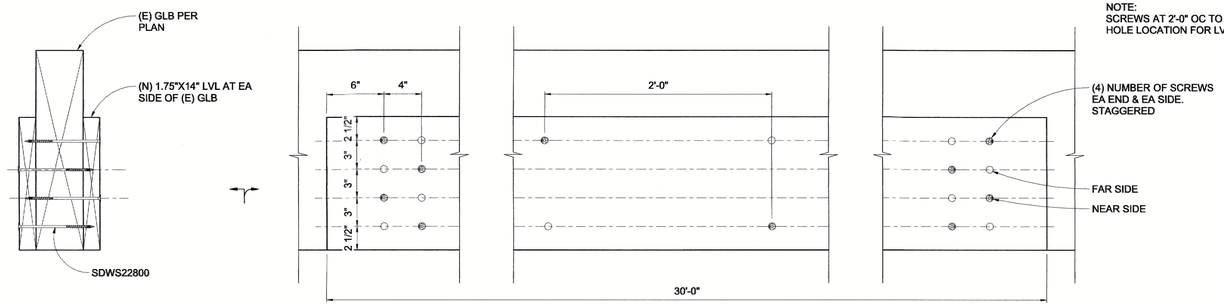
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

SHEET CONTENT
PARTIAL ROOF FRAMING PLAN

SHEET
S1.02



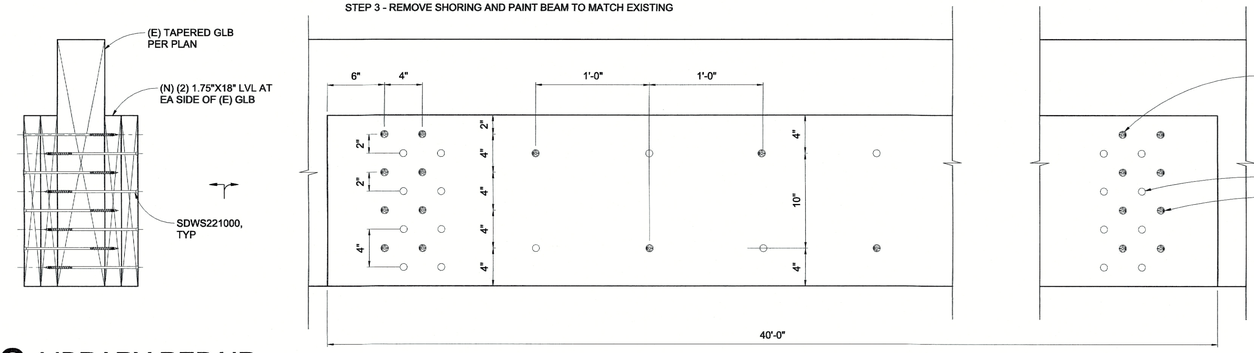
NOTE:
SCREWS AT 2'-0" OC TO BE STAGGERED AND ALTERNATE HOLE LOCATION FOR LVL ON OPPOSITE SIDE

STEP 1 - LIFT AND SHORE BEAM ABOUT 1/8" ABOVE LEVEL.
STEP 2 - INSTALL MICROLLAM BEAMS
STEP 3 - REMOVE SHORING AND PAINT BEAM TO MATCH EXISTING

1 FRC REPAIR

S8.01 | 1 1/2" = 1'-0"

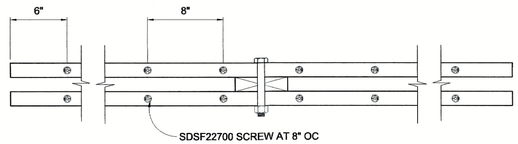
STEP 1 - LIFT AND SHORE BEAM ABOUT 1/8" ABOVE LEVEL.
STEP 2 - INSTALL MICROLLAM BEAMS
STEP 3 - REMOVE SHORING AND PAINT BEAM TO MATCH EXISTING



NOTE:
SCREWS AT 1'-0" OC TO BE STAGGERED AND ALTERNATE HOLE LOCATION FOR LVL ON OPPOSITE SIDE

2 LIBRARY REPAIR

S8.01 | 1 1/2" = 1'-0"



STEP 1
VERIFY CRACK GOING THROUGH THE BOLT, SAND SURFACE AND CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS.

STEP 2
PREDRILL AND INSTALL SCREWS TO CLAMP TOP CHORD TOGETHER. SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

STEP 3:
FILL MARKED AND CLEANED CRACKS WITH EPOXY. PRIOR TO EPOXY INJECTION, PROTECT ALL ADJACENT SURFACES FROM UNINTENDED CONTACT.
1)APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE. PLACE THE PORT ON ONE END OF THE CRACK AND REPEAT EVERY 8" ALONG CRACK UNTIL ENTIRE CRACK IS PORTED.
2) GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.
3)ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.
4)GIVE THE T-88 INJECTION EPOXY SUFFICIENT TIME TO CURE. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 4:
SAND TO REMOVE SURFACE GEL/EPOXY.

3 CAFETERIA TOP CHORD REPAIR

S8.01 | 1 1/2" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16655PE
OREGON
JANUARY 11, 2005
KEVIN M. McCORMICK
EXPIRES: 12-31-2026

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TWO RIVERS - DOS RIOS ELEMENTARY SCHOOL REPAIR

1084 G STREET
SPRINGFIELD, OREGON

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: JDL
CHECKED BY: KMM
MCE PROJ #: 251372
ISSUE DATE: 02.13.2026
ISSUANCE: BID SET

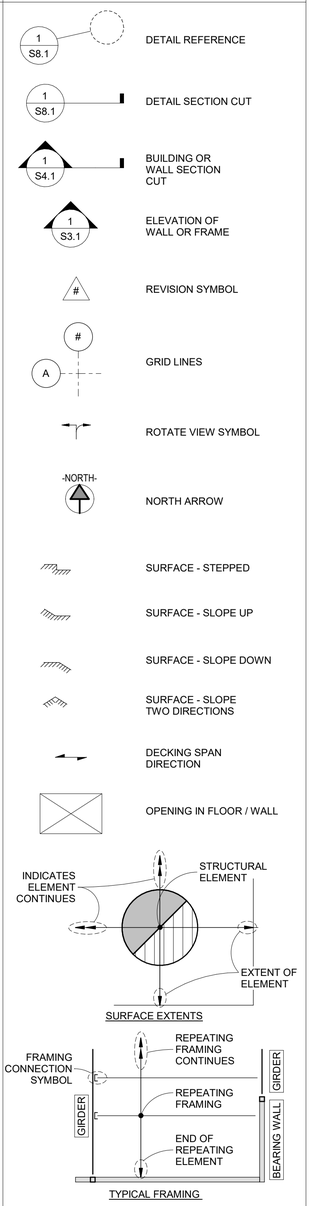
SHEET CONTENT
DETAILS

SHEET
S8.01

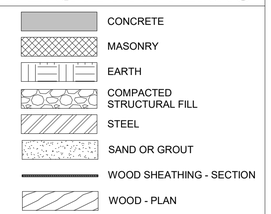
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASD	ALLOWABLE STRESS DESIGN
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DP	DEPTH OR DEEP
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
E	MODULUS OF ELASTICITY
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EOR	ENGINEER OF RECORD
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
f'm	MASONRY NET AREA COMPRESSIVE STRENGTH
Fy	YIELD STRESS
Fu	TENSILE STRESS
F/	FACE OF
FAB	FABRICATED / FABRICATOR
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FRT	FIRE RETARDANT TREATED
FS	FAR SIDE
FT	FEET
FTG	FOOTING
GA	GAUGE
GAF	GAS ACTUATED FASTENER
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HD	HOLDOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HEX	HEXAGONAL
HF	HEM-FIR
HGR	HANGER
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORMS
ID	INSIDE DIAMETER
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L, 2L	ANGLE OR DOUBLE ANGLE
LAT	LATERAL
LB	POUND
LF	LINEAR FOOT
LG	LIGHT GAUGE
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
LSL	LAMINATED STRAND LUMBER
LSH	LONG SLOTTED HOLE
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MANUF	MANUFACTURER
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
MT	MAGNETIC PARTICLE TESTING
MTL	METAL
(N)	NEW
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OCBF	ORDINARY CONCENTRIC BRACED FRAME
OD	OUTSIDE DIAMETER
OMF	ORDINARY MOMENT FRAME
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
P/T	POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
RBS	REDUCED BEAM SECTION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SCBF	SPECIAL CONCENTRIC BRACE FRAME
SCH	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMF	SPECIAL MOMENT FRAME
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SOMD	SLAB ON METAL DECK
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THRD	THREADED
TPL	TRIPLE
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL MATERIAL PATTERNS



STRUCTURAL DRAWING INDEX

SHEET #	SHEET NAME	BID SET
S0.01	COVER SHEET	•
S0.02	STRUCTURAL NOTES & SPECIAL INSPECTION	•
S1.01	OVERALL ROOF FRAMING PLAN	•
S2.01	WING A, B, AND C ROOF FRAMING PLANS	•
S2.02	GYM ROOF FRAMING PLAN	•
S4.01	WING A TRUSS REPAIR ELEVATIONS	•
S4.02	WING B AND C TRUSS REPAIR ELEVATIONS	•
S4.03	GYM TRUSS ELEVATIONS	•
S8.01	WING A, B, AND C TRUSS REPAIR DETAILS	•
S8.02	WING A, B, AND C TRUSS REPAIR DETAILS	•
S8.03	GYM TRUSS REPAIR DETAILS	•

CODE SUMMARY:

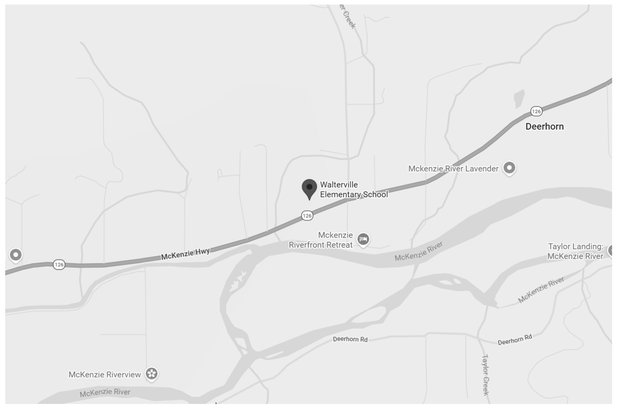
BUILDING CODE: 2022 OSSC
YEAR BUILT: 1952 - 1972
AREA: 22,500 SF
BUILDING CONSTRUCTION TYPE: V-B (ASSUMED, NO CHANGE)
OCCUPANCY CLASSIFICATION: E (NO CHANGE)
RISK CATEGORY: III

SCOPE OF WORK:
THE SCOPE OF THESE CONSTRUCTION DOCUMENTS INCLUDES REPAIRS TO EXISTING HEAVY TIMBER TRUSSES AS A RESULT OF DEFICIENCIES FOUND IN THE MATERIALS AT THE TIME OF CONSTRUCTION. TRUSSES ARE BEING STRENGTHENED AT THE CLASSROOM WINGS AND THE GYMNASIUM. THE SNOW LOADS USED ARE BASED ON THE SNOW LOAD IN EFFECT AT THE TIME OF OCCUPANCY.

PROJECT DESIGN TEAM:

MILLER CONSULTING ENGINEERS, INC
STRUCTURAL ENGINEER OF RECORD

PRIMARY CONTACT: PAUL ALBERTINE, paul@miller-se.com
SECONDARY CONTACT: ERIC OSTAPENKO, eric.ostapenko@miller-se.com



-NORTH- 1 VICINITY MAP
S0.01 | NOT TO SCALE

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

MILLER CONSULTING ENGINEERS
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WALTERVILLE ELEMENTARY SCHOOL ROOF REPAIR

40589 MCKENZIE HWY
SPRINGFIELD, OR 97478

SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: EO
CHECKED BY: PRA
MCE PROJ #: 251372
ISSUE DATE: 02/27/2026
ISSUANCE: BID SET

SHEET CONTENT
COVER SHEET

SHEET
S0.01

STRUCTURAL NOTES

GENERAL NOTES
THESE CONTRACT DOCUMENTS COMPRISED OF PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS (MCE) DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN.

THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PERFORM THE WORK.

SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED THEMSELVES AND HAS COMPLETE COMPREHENSION OF ALL ASPECTS OF THE PROJECT.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS ARE STRUCTURAL ONLY AND DO NOT NECESSARILYINDICATE ALL NON-STRUCTURAL PORTIONS OF THE PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING. ALL NON-STRUCTURAL PORTIONS OF WORK, AND STRUCTURAL WORK NOTED AS DELEGATED DESIGN IN THE SUBMITTAL SCHEDULE, ARE BEYOND THE SCOPE OF THESE DOCUMENTS AND ARE PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL NON-STRUCTURAL ITEMS IMPACTED BY THE STRUCTURAL WORK. THESE ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR MODIFIED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED DESIGN PROFESSIONAL ENGAGED AT THE CONTRACTOR'S OWN EXPENSE.

ANY MATERIAL NOT AS SPECIFIED IN THE CONTRACT DOCUMENTS OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL MATERIALS FROM DAMAGE THROUGHOUT THE COURSE OF CONSTRUCTION.

ALL MANUFACTURED PRODUCTS SPECIFIED SHALL BE USED UNLESS AN ALTERNATE IS SUBMITTED AND APPROVED BY THE SEOR. MANUFACTURED PRODUCTS REQUIRING A BUILDING CODE EVALUATION REPORT SHALL HAVE A CURRENT REPORT DEMONSTRATING CONFORMANCE WITH THE APPLICABLE BUILDING CODE, VALID AT THE TIME OF PRODUCT INSTALLATION.

TEMPORARY MEASURES/SHORING
THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL INSTANCES WHERE TEMPORARY MEASURES/SHORING ARE REQUIRED, AND SHALL AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY MEASURES/SHORING ARE REQUIRED. TEMPORARY MEASURES/SHORING SHALL:

- PROTECT PERSONNEL AND THE PUBLIC.
- PREVENT SETTLEMENT AND/OR DAMAGE TO THE BUILDING AND/OR EXISTING FACILITIES
- PROTECT STREETS, WALKWAYS, UTILITIES, AND IMPROVEMENTS.
- PROTECT ALL EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION/TESTING
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER AND APPROVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION.

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE BUILDING CODE, CONTRACT DOCUMENTS AND SUBMITTALS. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. FOR PROJECT REQUIREMENTS REFER TO THE SPECIAL INSPECTION TABLES WITHIN THE CONTRACT DOCUMENTS.

STRUCTURAL OBSERVATION
STRUCTURAL OBSERVATION BY THE SEOR SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH BUILDING CODE SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE PERFORMED DURING CONSTRUCTION AT THE FOLLOWING TIMES:

1. DURING PRESTRESSING OPERATIONS OF THE FIRST BEAM
2. AFTER COMPLETION OF STRUCTURAL REINFORCING OF ALL BEAMS

SHOP DRAWINGS/SUBMITTALS
SUBMITTALS AND SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY THE SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. SHOP DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF ITEMS NOTED IN THE SUBMITTAL SCHEDULE AS DELEGATED DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

DEFERRED SUBMITAL ITEMS NOTED IN THE SUBMITTAL SCHEDULE ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND ARE REQUIRED TO BE SUBMITTED TO THE BUILDING OFFICIAL.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SIGN AND DATE ALL SETS OF THE SUBMITTAL DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL. WHERE RE-SUBMITTALS ARE REQUIRED, CHANGES FROM THE PREVIOUS SUBMITTAL SHALL BE CLEARLY INDICATED WITH REVISION CLOUDS OR SIMILAR.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN	DEFERRED SUBMITTAL
PRESTRESSING CABLE	X			
PRESTRESSING CABLE ACCESSORIES	X			
FABRICATED STRUCTURAL STEEL ELEMENTS	X	X		
STEEL WELDING PROCEDURES	X			

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS NOT USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	III
DEAD LOAD	
WING A TRUSS TOP CHORD	10 PSF
WING A TRUSS BOT CHORD	8 PSF
WING B AND C TRUSS TOP CHORD	10.5 PSF
WING B AND C TRUSS BOT CHORD	9 PSF
GYM TRUSS TOP CHORD	15.3 PSF
GYM TRUSS BOT CHORD	7.2 PSF
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	30 PSF
WIND DESIGN DATA	
WING A, B, AND C ROOF WIND UPLIFT	10.6 PSF
GYM ROOF WIND UPLIFT	10.9 PSF

STRUCTURAL STEEL
DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS		
SHAPE	ASTM SPECIFICATION	YIELD STRESS
W-SECTIONS	A992	50 KSI
ALL OTHER SECTIONS AND PL	A36	36 KSI

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY OR STEEL TO BE GALVANIZED. EMBEDDED SURFACES SHALL BE FREE OF CONTAMINANTS. ALL EXPOSED STRUCTURAL STEEL AND FASTENINGS TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER. FAYING SURFACES OF STEEL BOLTED CONNECTIONS IDENTIFIED AS SLIP CRITICAL SHALL BE PREPARED IN ACCORDANCE WITH RCSC SPECIFICATION FOR JOINTS USING HIGH-STRENGTH BOLTS SECTION 3.2.2

STRUCTURAL STEEL BOLTING
ALL BOLTS IN STEEL TO STEEL CONNECTIONS SHALL BE ASTM F3125 GRADE A325 WITH MATCHING NUTS, UNLESS NOTED OTHERWISE. NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED.

- SNUG TIGHT CONDITION SHALL BE PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS, USING HIGH STRENGTH FASTENERS, SECTION 8.1
- SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

ALL WELDS SHALL RECEIVE THE SAME FINISH COATING AS THE MEMBER BEING WELDED. ANY COATINGS ON THE STRUCTURAL AFFECTED BY WELDING SHALL BE REPAIRED AS REQUIRED.

WOOD FRAMING
ALL WOOD STRUCTURAL GRADES SHALL BE PER TYPICAL WOOD FRAMING SCHEDULE UNLESS NOTED OTHERWISE.

TYPICAL WOOD FRAMING SCHEDULE	
MEMBER	VISUALLY GRADED (MIN)
COLUMNS	DF/L #1
BEAMS	DF/L #1
SILL PL TO CONCRETE/MASONRY	PT HF #2
BOT PL/SOLE PL/TOP PL	DF/L #2
STUDS	DF/L #2
BUILT-UP STUD PACKS	DF/L #2
BLOCKING	DF/L CONSTRUCTION
NON-STRUCTURAL FRAMING	DF/L CONSTRUCTION

ALL WOOD PLATES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNLESS NOTED OTHERWISE. ALL COLUMNS SHALL HAVE SOLID BLOCKING FOR THE FULL COLUMN AREA TO SUPPORTING MEMBERS BELOW. COLUMNS SHALL ALIGN THROUGH ALL FLOORS TO THE FOUNDATION. ALL SAWN LUMBER SHALL HAVE A MOISTURE CONTENT LESS THAN 19% (S-DRY) PRIOR TO INSTALLATION OF NON-STRUCTURAL COMPONENTS.

WOOD FRAMING CONNECTIONS
ALL NAILS SHALL BE COMMON. FASTENERS SHALL NOT BE OVERDRIVEN. ALL SCREWS SHALL BE PRE-DRILLED WITH 7/8 OF SHANK DIAMETER. ALL NAILS IN HANGERS SHALL BE SUBSTITUDED WITH EQUIVALENT SIZE AND LENGTH SCREWS UNO

PREFABRICATED METAL TIMBER CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE, UNLESS NOTED OTHERWISE. ALL PREFABRICATED METAL TIMBER CONNECTORS AND HANGERS SHALL BE FULLY BOLTED, NAILED, AND/OR SCREWED AS INDICATED BY MANUFACTURER, UNLESS NOTED OTHERWISE. ALL CONNECTORS, HANGERS AND FASTENERS SHALL BE CORROSION PROTECTED PER MANUFACTURER'S RECOMMENDATIONS.

ALL BOLTS IN WOOD CONNECTIONS SHALL BE ASTM A307 GRADE A. ALL BOLT HEADS OR NUTS BEARING ON WOOD TO HAVE STANDARD WASHERS. BOLT HOLES IN WOOD SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT.

ENGINEERED LUMBER
ENGINEERED LUMBER SHALL HAVE A BUILDING CODE EVALUATION REPORT.

ALL ENGINEERED LUMBER EXPOSED TO WEATHER AND SUBJECT TO DECAY, SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR PRESERVATIVE MATERIALS, RETENTION RATES, AND END USE.

LAMINATED VENEER LUMBER (LVL)
LVL FRAMING SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	2,000,000
FLEXURAL STRESS, F_b (PSI)	2,600
TENSION STRESS, F_t (PSI)	1,895
COMPRESSION PERPENDICULAR TO GRAIN, F_{c_PERP} (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,510
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	285
SPECIFIC GRAVITY	0.50

LAMINATED STRAND LUMBER (LSL) — GENERAL FRAMING
LSL FRAMING FOR BEAMS, STUDS AND COLUMNS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PROPERTY	MINIMUM VALUE
MODULUS OF ELASTICITY, E (PSI)	1,500,000
FLEXURAL STRESS, F_b (PSI)	2,250
TENSION STRESS, F_t (PSI)	1,815
COMPRESSION PERPENDICULAR TO GRAIN, F_{c_PERP} (PSI)	750
COMPRESSION PARALLEL TO GRAIN, F_{cII} (PSI)	2,105
HORIZONTAL SHEAR PARALLEL TO GRAIN, F_v (PSI)	505
SPECIFIC GRAVITY	0.50

POST-TENSIONING CABLES FOR WOOD TRUSS STRENGTHENING

POST-TENSIONING CABLES SHALL MEET THE REQUIREMENTS SET FORTH IN THE *SPECIFICATIONS FOR UNBONDED SINGLE STRAND TENDONS* (LATEST EDITION) AND THE *SPECIFICATION FOR SEVEN-WIRE PRESTRESSING STEEL STRAND FOR BARRIER CABLE APPLICATIONS* PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

POST-TENSIONING CABLES SHALL BE INSTALLED TO THE JACKING PRESTRESS FORCE AS SPECIFIED ON THE PLANS. ANCHORAGES, COUPLERS AND FITTINGS SHALL MEET THE FOLLOWING:

- HAVE A BUILDING CODE EVALUATION REPORT
- DEVELOP A MINIMUM OF 100% OF THE ULTIMATE STRENGTH OF THE CABLE
- HAVE A GALVANIZED COATING

CABLES SHALL BE 1/2" DIAMETER CONFORMING TO ASTM A416, GRADE 270 FOR SEVEN-WIRE LOW RELAXATION STRAND. CABLE SHALL HAVE A ZINC GALVANIZED COATING CONFORMING TO ASTM A475

EACH STRESSING JACK AND GAUGE COMBINATION SHALL BE CALIBRATED AS A UNIT TO KNOWN STANDARDS AT INTERVALS NOT EXCEEDING 6 MONTHS. COPIES OF THE CALIBRATION CERTIFICATES FOR EACH JACK AND GAUGE COMBINATION BEING USED SHALL BE SUBMITTED TO THE SEOR FOR REVIEW.

CABLE INSTALLATION AND STRESSING OPERATIONS SHALL BE PERFORMED UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK.

STEEL - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	OSSC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY / INSPECTION: CONTINUOUS/ PERFORM	FREQUENCY / INSPECTION: PERIODIC/ OBSERVE	REMARKS
STRUCTURAL STEEL WELDING					
VERIFYING WELDER QUALIFICATIONS	TABLE 1705.2-6	AWS D1.1 AWS D1.1 CLAUSE 6		X	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS			X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"				X	
HIGH-STRENGTH BOLTING					
SNUG-TIGHT BOLT INSTALLATION	1705.2.1 TABLE 1705.2-2 AISC 360 M2-5 AISC 360 N5-6	RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 9 AISC 360 SECTION M2.5		X	ALL CONNECTIONS VISUALLY INSPECTED AND VERIFIED SNUG
PRETENSIONED BOLT INSTALLATION USING TURN-OF-THE-NUT METHOD WITH MATCH MARKING, DIRECT TENSION INDICATOR METHOD, OR TWIST-OFF TYPE TENSION CONTROL BOLT METHOD				X	ALL CONNECTIONS VISUALLY INSPECTED. INCLUDING FAYING SURFACES TO BE JOINED. BOLT TIGHTNESS TO BE VERIFIED BY INSPECTOR PER RCSC SPEC. SECTION 9.
INSPECTION TASKS PRIOR TO BOLTING					
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	1705.2.1.2 TABLE 1705.2-2	AISC 360 TABLE N5.6-1 AISC 360 M2.5	X		
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS				X	
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)				X	
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL				X	
CONNECTING ELEMENTS< INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS				X	
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED				X	
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS				X	
INSPECTION TASKS DURING BOLTING					
FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	1705.2.1.2 TABLE 1705.2-2	AISC 360 TABLE N5.6-2 AISC M2.5 RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 9		X	
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION				X	
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING				X	
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES				X	
INSPECTION TASKS AFTER BOLTING					
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	1705.2.1.2 TABLE 1705.2-2	AISC 360 TABLE N5.6-3	X		

WOOD BEAM REPAIRS - SPECIAL INSPECTIONS

SYSTEM OR MATERIAL	FREQUENCY: CONTINUOUS	FREQUENCY: PERIODIC	REMARKS
POST-TENSIONED CABLE PLACEMENT		X	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
POST-TENSIONED CABLE GRADE		X	
APPLICATION OF PRESTRESSING FORCES FOR POST-TENSIONED CABLES	X		DOCUMENT APPLIED FORCE AND ELONGATION.
EPOXY CRACK INJECTION AND INSTALLATION OF FASTENERS FOR REPAIR OF BEAM CRACKS	X		REFERENCE INSTALLATION SEQUENCE ON DETAIL 4/S8.01

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

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WALTERVILLE ELEMENTARY SCHOOL ROOF REPAIR

40589 MCKENZIE HWY
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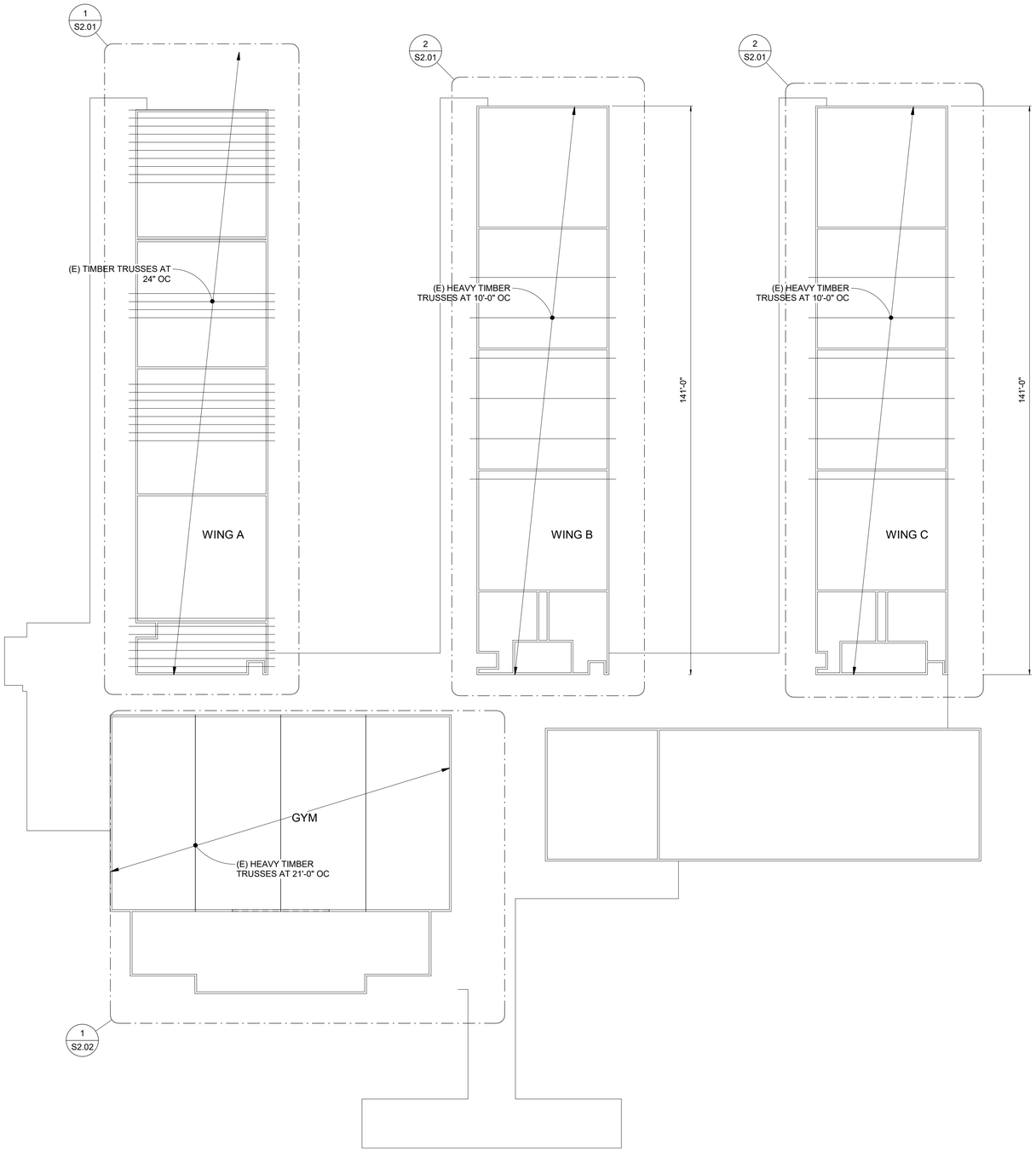
SPRINGFIELD PUBLIC SCHOOLS

REV	DESCRIPTION	DATE

DESIGNED BY: EO
CHECKED BY: PRA
MCE PROJ #: 251372
ISSUE DATE: 02/27/2026
ISSUANCE: BID SET

SHEET CONTENT
STRUCTURAL NOTES & SPECIAL INSPECTION

SHEET
S0.02



GENERAL SHEET NOTES:

G1. SEE S0.01 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. PREDRILL PILOT HOLES FOR ALL FASTENERS INTO EXISTING WOOD MEMBERS. HOLE SIZE TO BE 7/8 OF FASTENER SHAFT DIAMETER.

G5. CONTRACTOR TO VERIFY NO SPLITS OCCUR AT ANY TRUSS MEMBER. WHERE SPLITS OCCUR NOTIFY SEOR. A SPLIT IS DEFINED AS A CRACK THAT EXTENDS THRU THE MEMBER AND IS PRESENT ON OPPOSITE FACES. CONTRACTOR TO DOCUMENT ALL SPLITS.

-NORTH-

1 OVERALL ROOF FRAMING PLAN

S1.01 | 1/16" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
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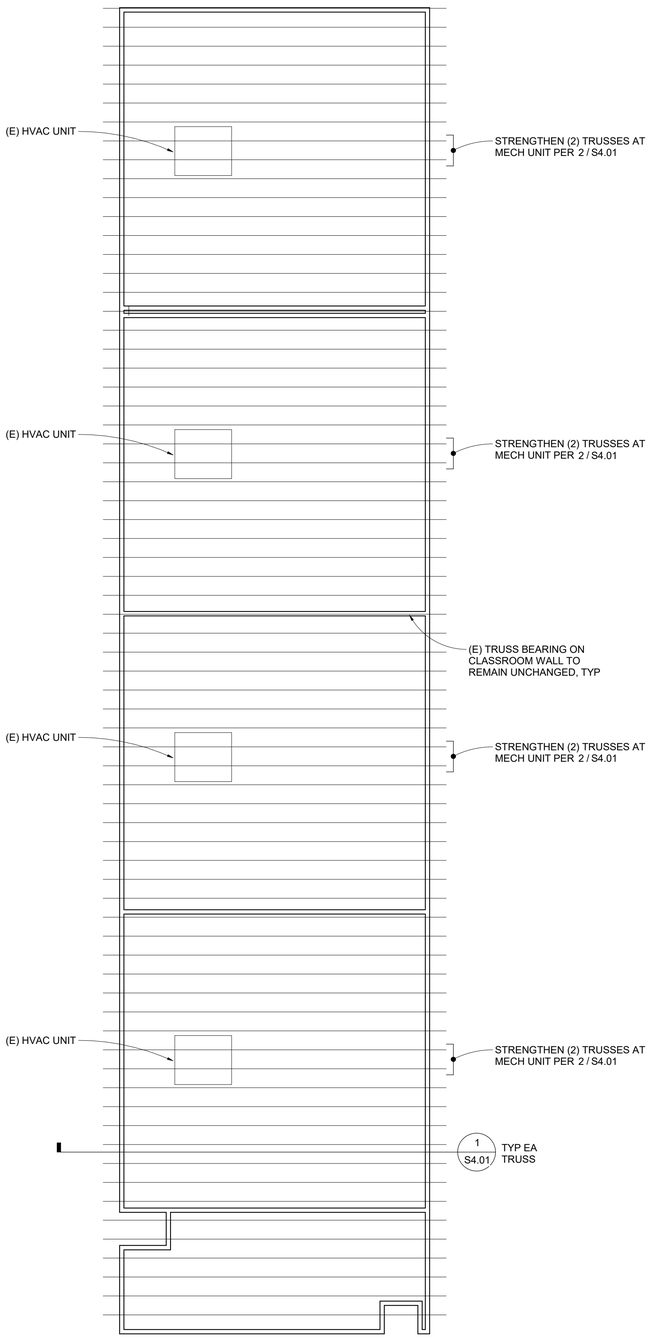
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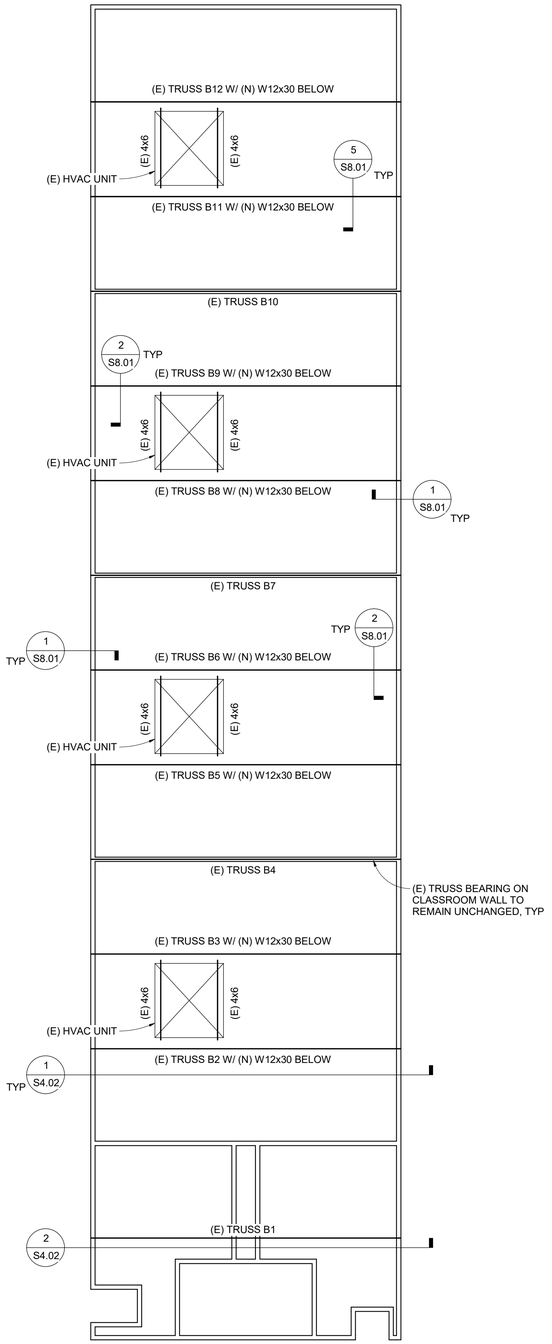
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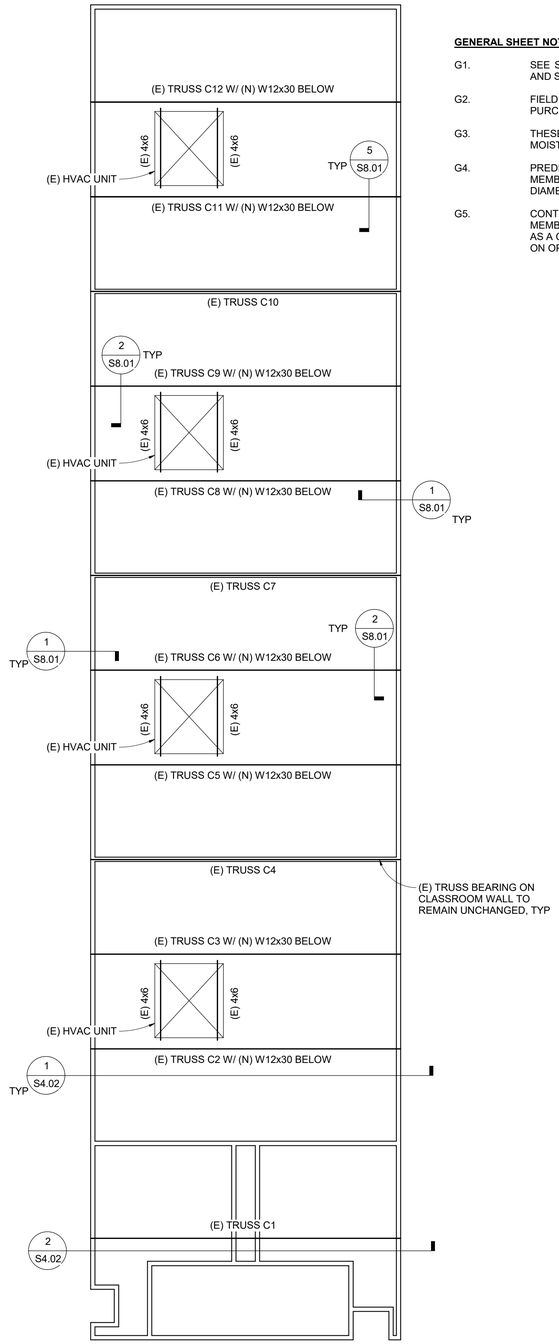
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SHEET CONTENT
OVERALL ROOF FRAMING PLAN

SHEET
S1.01







GENERAL SHEET NOTES:

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NORTH 1 WING A ROOF FRAMING PLAN
S2.01 | 1/8" = 1'-0"

NORTH 2 WING B ROOF FRAMING PLAN
S2.01 | 1/8" = 1'-0"

NORTH 3 WING C ROOF FRAMING PLAN
S2.01 | 1/8" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
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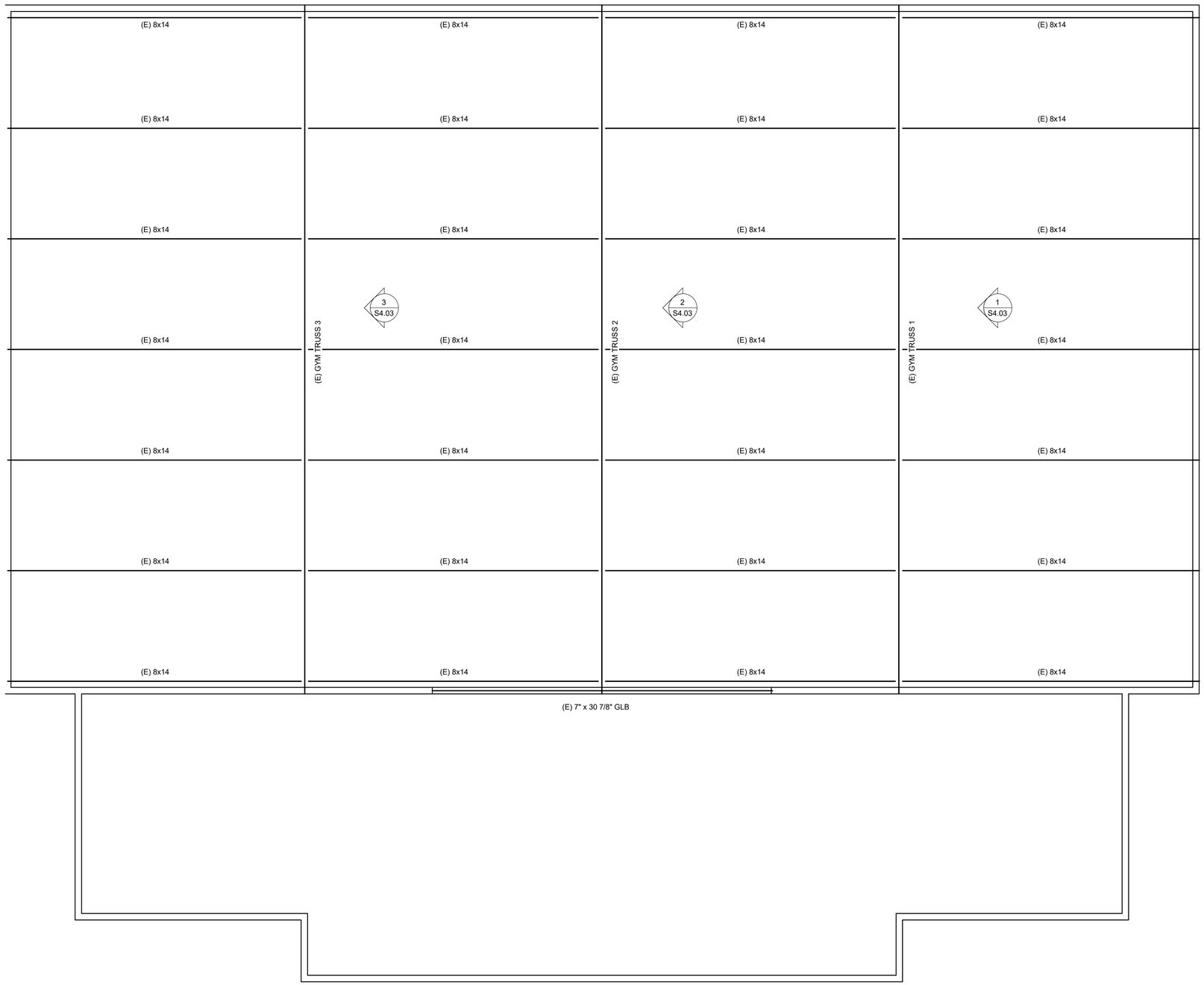
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SHEET CONTENT
WING A, B, AND C ROOF FRAMING PLANS

SHEET
S2.01



GENERAL SHEET NOTES:

G1. SEE S0.01 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. PREDRILL PILOT HOLES FOR ALL FASTENERS INTO EXISTING WOOD MEMBERS. HOLE SIZE TO BE 7/8 OF FASTENER SHAFT DIAMETER.

G5. CONTRACTOR TO VERIFY NO SPLITS OCCUR AT ANY TRUSS MEMBER. WHERE SPLITS OCCUR NOTIFY SEOR. A SPLIT IS DEFINED AS A CRACK THAT EXTENDS THRU THE MEMBER AND IS PRESENT ON OPPOSITE FACES. CONTRACTOR TO DOCUMENT ALL SPLITS.

-NORTH-

1 GYM ROOF FRAMING PLAN

S2.02 | 1/4" = 1'-0"

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16572
DIGITALLY SIGNED
OREGON
January 23, 2001
PAUL R. ALBERTINE
RENEWS: 12 -31 -2027

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WALTERVILLE ELEMENTARY SCHOOL ROOF REPAIR

40589 MCKENZIE HWY
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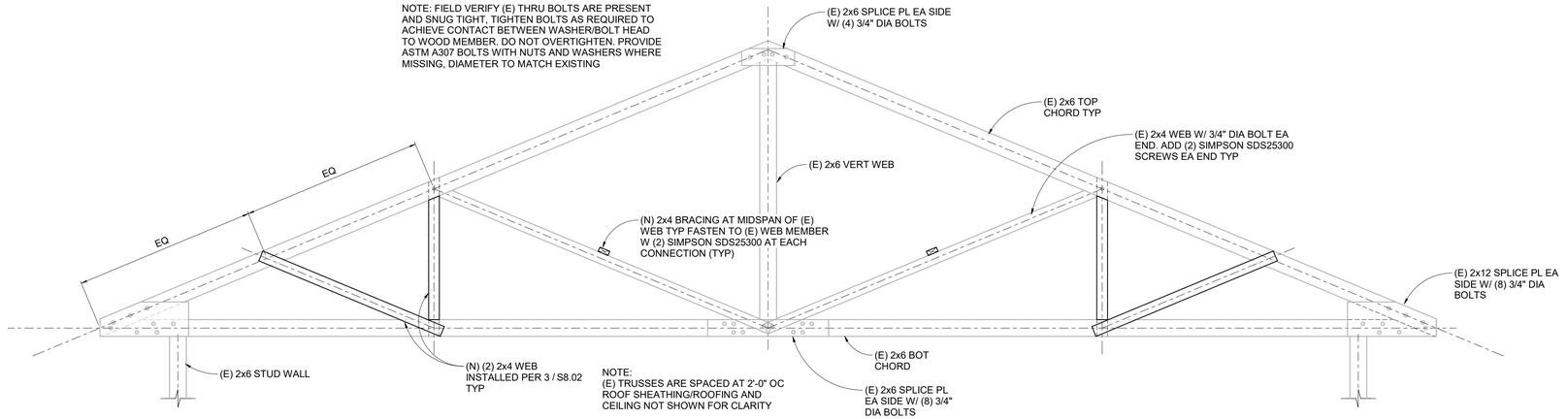
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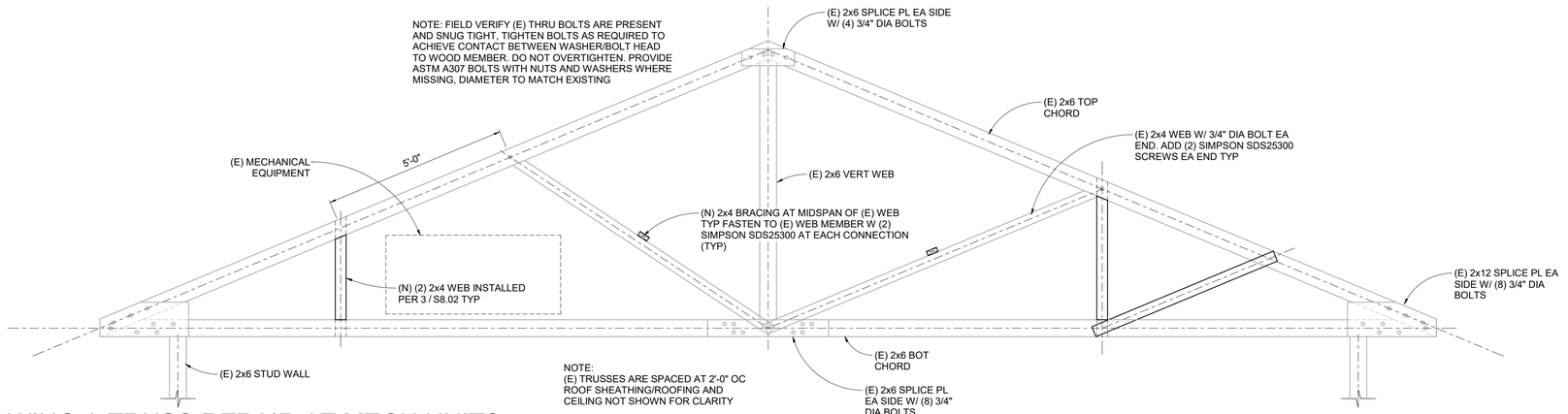
SHEET CONTENT
GYM ROOF FRAMING PLAN

SHEET
S2.02



1 WING A TYP TRUSS REPAIR

S4.01 | 1/2" = 1'-0"



2 WING A TRUSS REPAIR AT MECH UNITS

S4.01 | 1/2" = 1'-0"

GENERAL SHEET NOTES:

G1. SEE S0.01 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

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SHEET CONTENT
WING A TRUSS REPAIR ELEVATIONS

SHEET
S4.01

GENERAL SHEET NOTES:

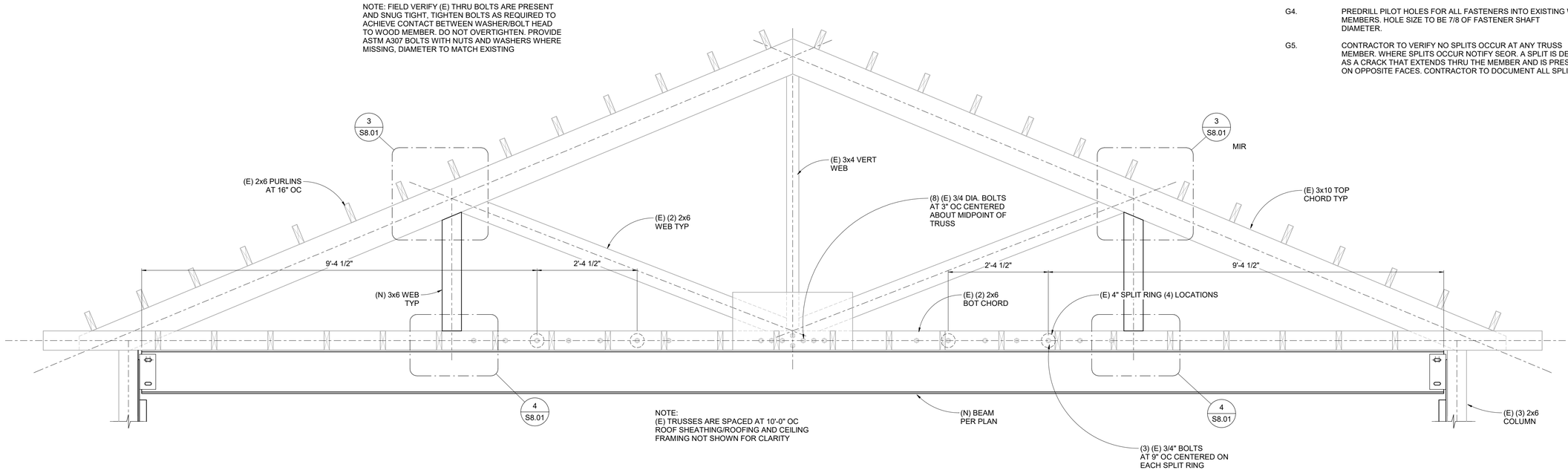
G1. SEE S0.01 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

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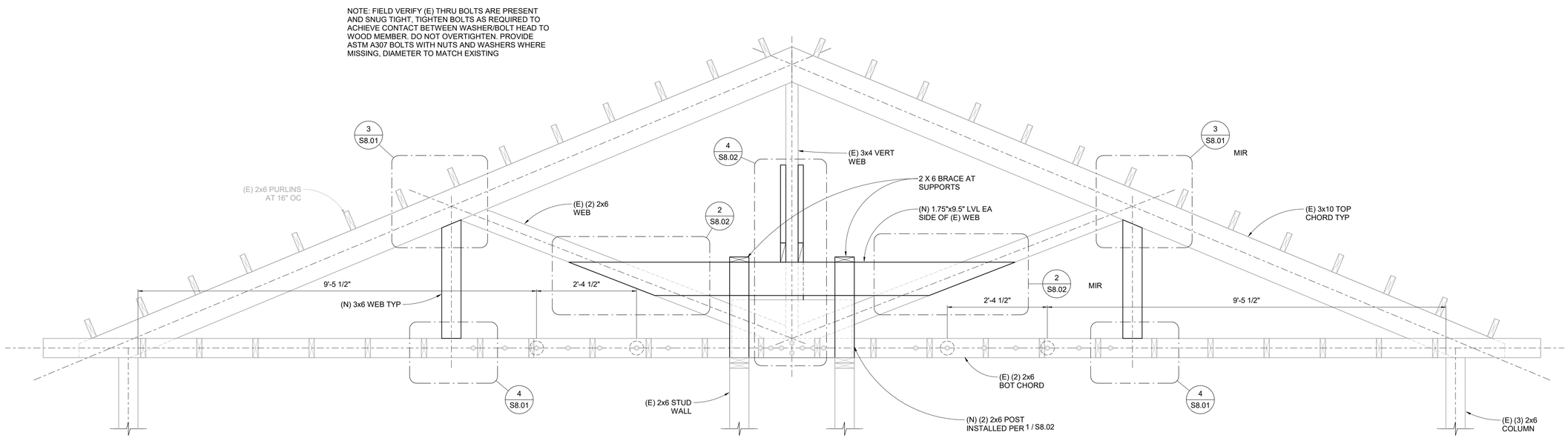
G4. PREDRILL PILOT HOLES FOR ALL FASTENERS INTO EXISTING WOOD MEMBERS. HOLE SIZE TO BE 7/8 OF FASTENER SHAFT DIAMETER.

G5. CONTRACTOR TO VERIFY NO SPLITS OCCUR AT ANY TRUSS MEMBER. WHERE SPLITS OCCUR NOTIFY SEOR. A SPLIT IS DEFINED AS A CRACK THAT EXTENDS THRU THE MEMBER AND IS PRESENT ON OPPOSITE FACES. CONTRACTOR TO DOCUMENT ALL SPLITS.



1 WING B AND C TYP TRUSS REPAIR

S4.02 | 3/4" = 1'-0"



2 WING B AND C TRUSS REPAIR AT CENTER BEARING

S4.02 | 3/4" = 1'-0"

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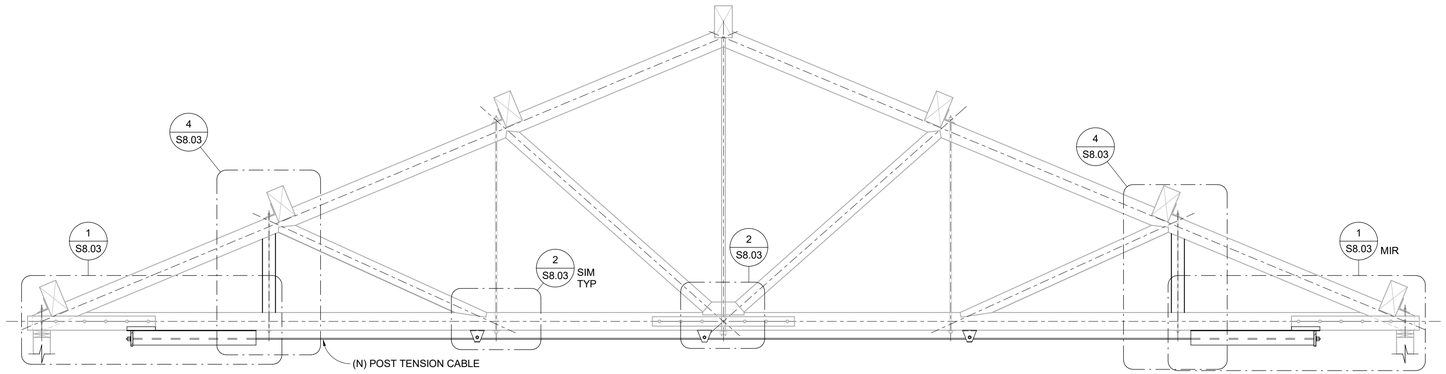
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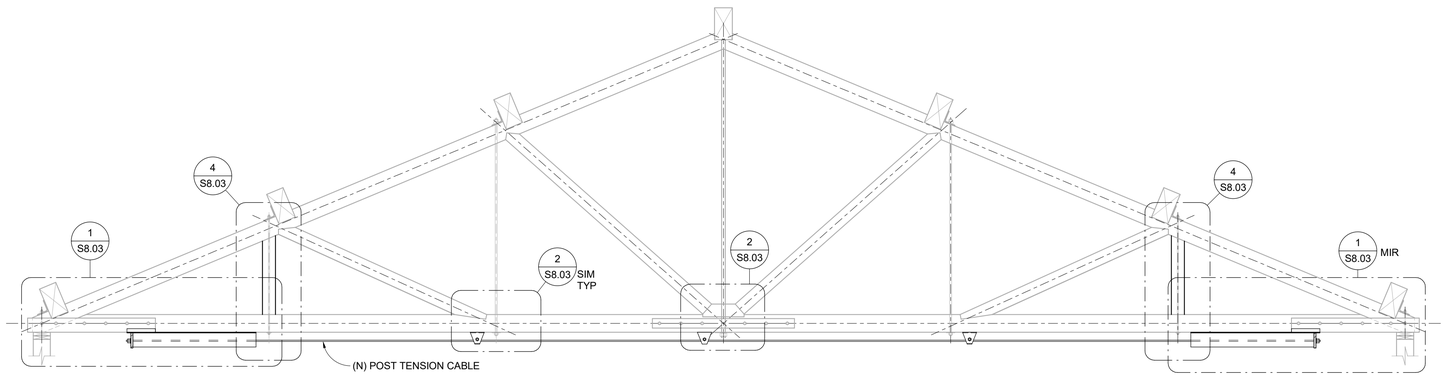
SHEET CONTENT
WING B AND C TRUSS REPAIR ELEVATIONS

SHEET
S4.02



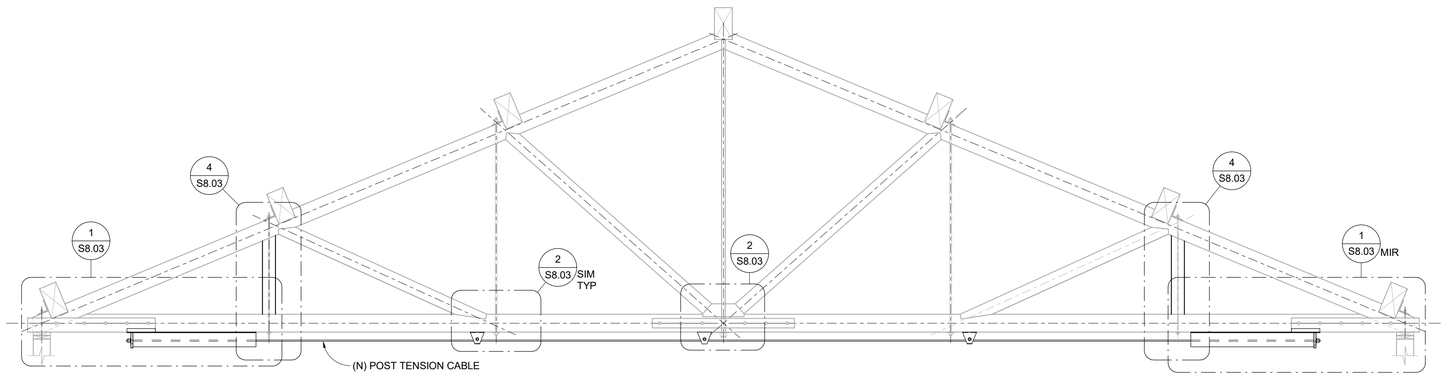
1 GYM TRUSS 1 ELEVATION

S4.03 | 3/8" = 1'-0"



2 GYM TRUSS 2 ELEVATION

S4.03 | 3/8" = 1'-0"



3 GYM TRUSS 3 ELEVATION

S4.03 | 3/8" = 1'-0"

CABLE STRESSING NOTES:

1. JACKING FORCE TO BE 16 KIPS
2. BACKSTRESS THE CABLE AT EACH END TO A FORCE OF 33 KIPS TO FULLY SEAT ANCHORAGE WEDGES. BACKSTRESSING OPERATIONS MAY BE DONE AT STEEL BEARING PLATE CONNECTIONS. DO NOT LOAD WOOD MEMBERS WITH BACKSTRESSING FORCES.

GENERAL SHEET NOTES:

G1. SEE S0.01 AND SUBSEQUENT SHEETS FOR STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G2. FIELD VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION OR PURCHASE OF MATERIALS

G3. THESE PLANS ARE STRUCTURAL ONLY - SIDING, FLASHING, MOISTURE PROTECTION, ETC ARE DESIGNED BY OTHERS

G4. CONTRACTOR TO VERIFY NO SPLITS OCCUR AT ANY TRUSS MEMBER. WHERE SPLITS OCCUR, FOLLOW THE REPAIR PROCEDURE SPECIFIED ON THIS SHEET. A SPLIT IS DEFINED AS A CRACK THAT EXTENDS THRU THE MEMBER AND IS PRESENT ON OPPOSITE FACES. CONTRACTOR TO DOCUMENT ALL SPLITS AND CHECKS PRIOR TO AND AFTER CABLE JACKING. NOTIFY ENGINEER OF ANY SPLITS THAT PENETRATE THROUGH THE TRUSS MEMBERS PRIOR TO CABLE JACKING. REFER TO 3 / S8.03 FOR CRACK REPAIRS

TYPICAL GYM TRUSS REPAIR PROCEDURE:

STEP 1:
VERIFY CRACK LOCATIONS SHOWN ON PLAN AND CAREFULLY EXAMINE ALL BEAMS FOR ANY ADDITIONAL CRACKS THAT MAY NOT BE DEPICTED ON PLAN. SAND SURFACE AROUND CRACK TO REMOVE PAINT OR OTHER COATINGS. CLEAN AREA AROUND CRACK TO ALLOW BONDING TO WOOD SURFACE. USE CLEAN COMPRESSED AIR TO BLOW OUT THE CRACK AND REMOVE ANY DUST OR DEBRIS. MARK CRACKS ON THE BEAM TO ALLOW FOR EASY IDENTIFICATION.

STEP 2:
INSTALL STEEL CONNECTION HARDWARE SHOWN ON THE FOLLOWING DETAILS:
1 / S8.03
2 / S8.03

STEP 3:
INSTALL CABLE SHOWN ON S3.01 AND PRETENSION AS NOTED.

STEP 4:
INSTALL CRACK INJECTION PORTS AT THE BEAM CRACKS. APPLY A SMALL AMOUNT OF GELMAGIC PASTE AROUND THE PORT BASE. PLACE THE PORT ON ONE END OF THE CRACK AND REPEAT EVERY 8" ALONG CRACK UNTIL ENTIRE CRACK IS PORTED.

STEP 5:
GENEROUSLY WORK GELMAGIC PASTE OVER THE ENTIRE LENGTH OF THE CRACK. IF CRACK IS PRESENT ON OPPOSITE SIDE OF BEAM BOTH SIDES MUST BE COVERED. MOUND THE PASTE AT LEAST 1/4" THICK AND 1" OUT FROM BASE OF PORT . MOUND 3/16" THICK AND 1" WIDE ALONG LENGTH OF CRACK.

STEP 6:
ONCE OUTER PASTE HAS CURED START INJECTING T-88 EPOXY AT THE END OF THE CRACK OR LOWEST INJECTION PORT. MAKE SURE THE HEADS OF ALL PORTS ARE IN THE OPEN POSITION. CONTINUE UNTIL EPOXY EMERGES FROM THE ADJACENT PORT. AS SOON AS EPOXY EMERGES FROM THE ADJACENT PORT THE INJECTOR SHOULD BE TRANSFERRED TO THE NEXT PORT AND THE PREVIOUS PORT SEALED. CONTINUE UNTIL EVERY PORT HAS REFUSED EPOXY AND THE CRACK IS COMPLETELY FILLED.

STEP 7:
AT CRACK LOCATIONS, INSTALL SCREWS TO CLAMP BEAM TOGETHER AS NOTED IN DETAIL 3 / S8.03 SCREWS MUST BE INSTALLED WITHIN CURE TIME OF INJECTION EPOXY IN SAME AREA OF BEAM.

STEP 8:
AFTER THE T-88 INJECTION EPOXY HAS CURED. REMOVE THE INJECTION PORTS AND GELMAGIC PASTE. ENSURE THERE IS NO RUN OUT OR SMEARING OF THE INJECTION EPOXY ONCE OUTER GEL IS REMOVED.

STEP 9:
SAND, RE-COAT OR REPAINT BEAMS PER CLIENT REQUIREMENTS TO MATCH (E) CONDITIONS

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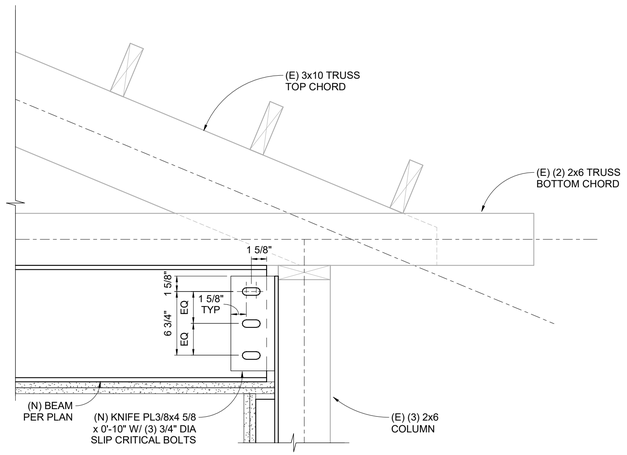
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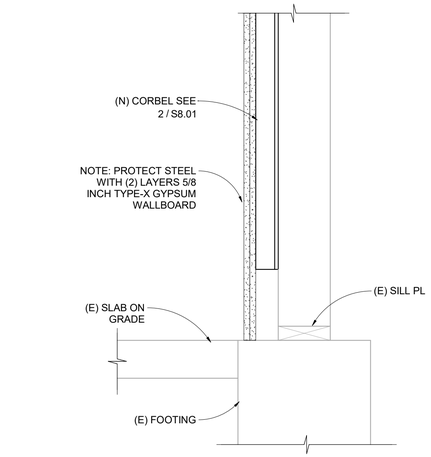
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SHEET CONTENT
GYM TRUSS ELEVATIONS

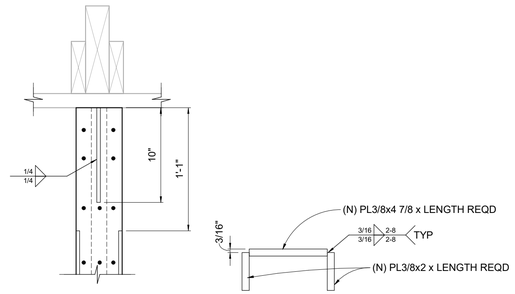
SHEET
S4.03



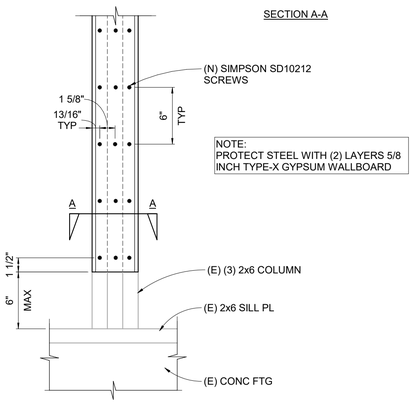


1 BEAM TO (E) COLUMN CONN

S8.01 | 1 1/2" = 1'-0"



SECTION A-A

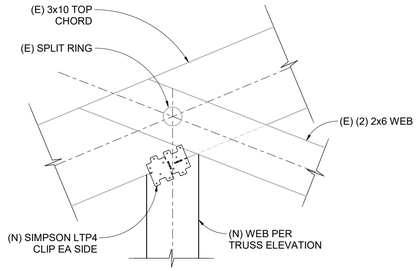


2 CORBEL AT (E) COLUMN

S8.01 | 1 1/2" = 1'-0"

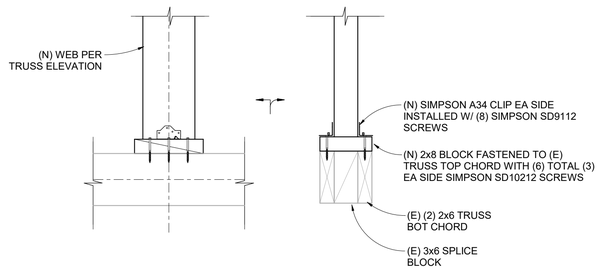
5 BEAM BRACING

S8.01 | 1 1/2" = 1'-0"



3 (N) WEB TO (E) TOP CHORD

S8.01 | 1 1/2" = 1'-0"



4 (N) WEB TO (E) BOT CHORD CONN

S8.01 | 1 1/2" = 1'-0"

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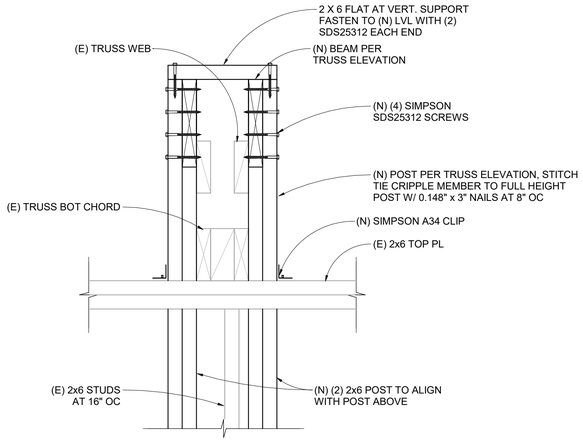
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SHEET CONTENT

WING A, B, AND C TRUSS REPAIR DETAILS

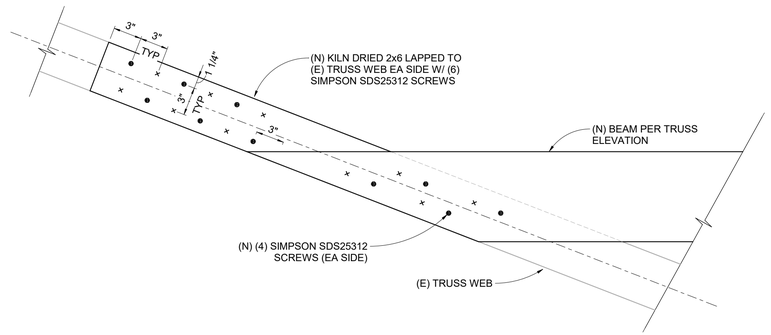
SHEET

S8.01



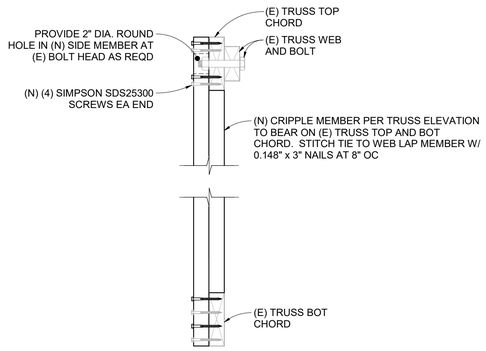
1 BEAM TO (E) WALL CONN

S8.02 | 1 1/2" = 1'-0"



2 (E) WEB TRUSS TO BEAM CONN

S8.02 | 1 1/2" = 1'-0"



3 TRUSS WEB TO TOP & BOT CHORD CONN

S8.02 | 1 1/2" = 1'-0"

4 (E) WEB TO BEAM CONN

S8.02 | 1 1/2" = 1'-0"

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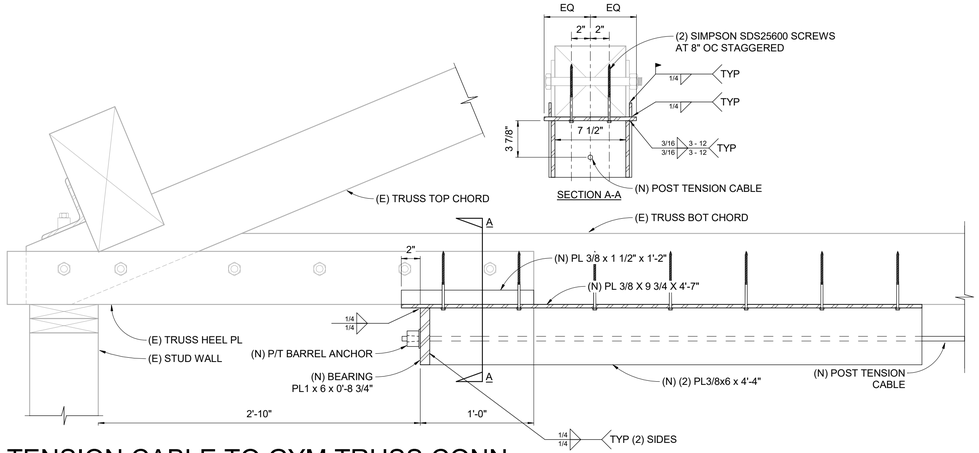
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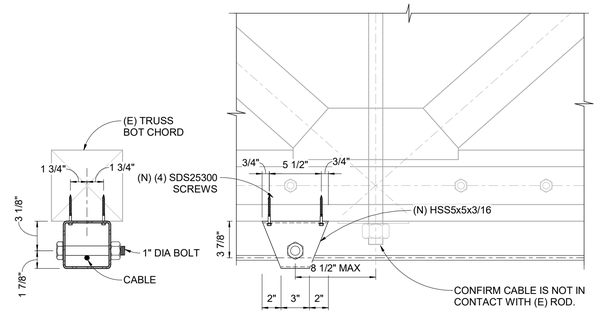
SHEET CONTENT
WING A, B, AND C TRUSS REPAIR DETAILS

SHEET
S8.02



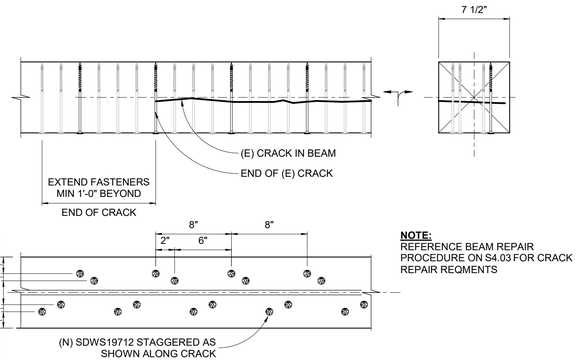
1 TENSION CABLE TO GYM TRUSS CONN

S8.03 | 1 1/2" = 1'-0"



2 CABLE INTERMEDIATE SUPPORT

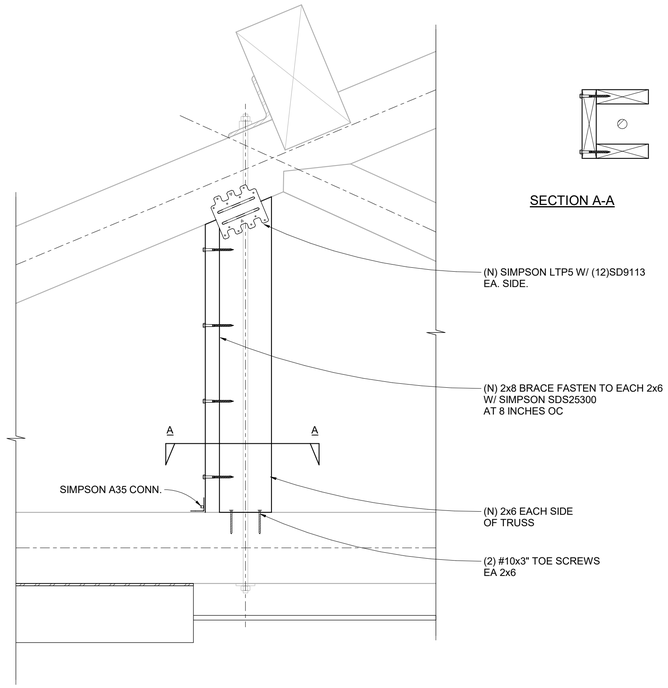
S8.03 | 1 1/2" = 1'-0"



NOTE:
REFERENCE BEAM REPAIR
PROCEDURE ON S4.03 FOR CRACK
REPAIR REQMENTS

3 GYM TRUSS TYP CRACK REPAIR

S8.03 | 1 1/2" = 1'-0"



SECTION A-A

4 (N) POST AT (E) TENSION ROD

S8.03 | 1 1/2" = 1'-0"

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SHEET CONTENT
GYM TRUSS REPAIR
DETAILS

SHEET
S8.03