GENERAL NOTES

I. GENERAL

1. THE WORK UNDER THIS CONTRACT IS ORDINARY REPAIR WORK TO THE SOUTH CLASSROOM WING OF THE PORTSMOUTH MIDDLE SCHOOL TO REINFORCE AND TO REPAIR AND RESTORE THE EXISTING FIRST LEVEL FLOOR FRAMING AND TO REPAIR BEARING WALL DAMAGE IN THE ATTIC.
2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE STATE AND LOCAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   ...INTERNATIONAL BUILDING CODE 2009 WITH AMENDMENTS AND ITS APPLICABLE REFERENCED STANDARDS.
   ...INTERNATIONAL EXISTING BUILDING CODE 2009 (ORDINARY REPAIR PROVISIONS)
   ...ANSI/ASCE 7-05
   ...OTHER CODES AND STANDARDS AS LISTED UNDER OTHER SECTIONS OF THESE GENERAL NOTES AND SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AS THEY RELATE TO NEW CONSTRUCTION. REPORT TO THE ARCHITECT/ENGINEER ALL OBSERVATIONS AND ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
4. WHERE DETAILS FOR SPECIFIC CONDITIONS ARE NOT SHOWN ON THESE PLANS, USE DETAILS FOR THE MOST NEARLY SIMILAR CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AS DETERMINED BY THE OWNER AND STRUCTURAL ENGINEER OF RECORD. REPORT ANY COORDINATION ISSUES IMMEDIATELY TO THE OWNER FOR REVIEW.
5. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE FOR A SAFE AND EFFICIENT METHOD OF SHORING AND/OR BRACING THE STRUCTURE DURING ALL CONSTRUCTION PHASES. SUBMIT AN OUTLINE OF PROPOSED PROCEDURE TO THE OWNER AND ENGINEER BEFORE CONSTRUCTION COMMENCES.
6. ALL WORK SHALL BE CONTINUOUSLY MONITORED AND INSPECTED BY AN INDEPENDENT TESTING AGENCY. SUBMIT ALL TEST AND INSPECTION REPORTS FOR REVIEW.
7. STRUCTURAL MEMBERS SHALL NOT BE MODIFIED IN THE FIELD WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER. IN THE EVENT OF A CONSTRUCTION OR FABRICATION ERROR, THE CONTRACTOR SHALL PREPARE A SKETCH WITH A PROPOSED REPAIR, AND SUBMIT IT FOR APPROVAL PRIOR TO PERFORMING ANY CORRECTIVE WORK.
8. ANY ANTICIPATED MODIFICATIONS TO THE CONSTRUCTION DOCUMENTS MUST BE SUBMITTED TO THE OWNER AND STRUCTURAL ENGINEER FOR REVIEW AND COMMENTS. THIS OFFICE CANNOT CERTIFY ANY UNAUTHORIZED DEVIATIONS TO THE CONSTRUCTION DOCUMENTS. THIS OFFICE RESERVES THE RIGHT TO REQUEST THE CONTRACTOR TO OBTAIN THE SERVICES OF AN INDEPENDENT STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE TO VISIT THE PROJECT SITE AND TO DESIGN ANY REQUIRED REPAIRS OR TO JUSTIFY THE INSTALLED MODIFICATION. ALL ENGINEERING CALCULATIONS AND SKETCHES MUST BE SUBMITTED TO THE DESIGN TEAM FOR REVIEW AND APPROVAL.
9. PRIOR TO A GENERAL CONTRACTOR/CONSTRUCTION MANAGER REQUEST FOR AN INSPECTION BY ODEH ENGINEERS FOR A COMPLETED STAGE OF CONSTRUCTION, THE GENERAL CONTRACTOR/ CONSTRUCTION MANAGER SHALL SUBMIT A STATEMENT STATING THAT "ALL WORK HAS BEEN COMPLETED IN CONFORMANCE WITH THE STRUCTURAL CONTRACT DRAWINGS AND SHOP DRAWINGS WITH NO EXCEPTION OR HAS BEEN PERFORMED WITH FORMAL WRITTEN EXCEPTIONS ORIGINATING FROM OR AUTHORIZED BY ODEH ENGINEERS, INC.". PRIOR TO RELEASE OF THE FINAL PROJECT CERTIFICATION TO THE BUILDING OFFICIAL, ODEH ENGINEERS REQUIRES A LETTER FROM THE PRINCIPAL OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER STATING THAT "ALL WORK INDICATED ON THE STRUCTURAL DRAWINGS HAS BEEN PERFORMED WITHOUT EXCEPTION OR WAS PERFORMED WITH FORMAL WRITTEN EXCEPTIONS ORIGINATING FROM OR AUTHORIZED BY ODEH ENGINEERS, INC.".
10. THE TRADE CONTRACTORS SHALL SUBMIT SHOP AND ERECTION DRAWINGS (COLLECTIVELY KNOWN HEREIN AS "SHOP DRAWINGS") FOR REVIEW PRIOR TO PROCEEDING WITH FABRICATION AND/OR CONSTRUCTION.
    a. THE SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE LATEST EDITION OF THE CODE OF STANDARD PRACTICE FOR EACH RESPECTIVE TRADE IN CONJUNCTION WITH ADDITIONAL SHOP DRAWING REQUIREMENTS INDICATED ON THESE DRAWINGS.
    b. ALL SHOP DRAWINGS SHALL BE FULLY DEVELOPED IN THE PREPARATION AND DEVELOPMENT OF SHOP DRAWINGS BY AGENTS OF THE CONTRACTORS. CAD FILES, PHOTOCOPIES, OR OTHER REPRODUCTIONS OF THE CONTRACT DRAWINGS IN WHOLE OR IN PART SHALL NOT BE USED BY THE TRADE CONTRACTORS OR THEIR AGENTS FOR THE PREPARATION AND DEVELOPMENT OF SHOP DRAWINGS WITHOUT THE EXPRESSED WRITTEN CONSENT OF ODEH ENGINEERS, INC.
    c. ALL SUBMITTALS SHALL BE IN UNLOCKED PDF FORMAT WITH SEARCHABLE TEXT.

II. DESIGN LOADS

THE SOUTH CLASSROOM WING OF THE PORTSMOUTH MIDDLE SCHOOL IS AN EXISTING STRUCTURE BUILT IN 1930 AND RENOVATED IN 2013. THE WORK OF THIS CONTRACT ARE CLASSIFIED AS ORDINARY REPAIRS AND THE RESULTING WORK WILL NOT MODIFY THE EXISTING RESISTANCE TO LATERAL WIND AND EARTHQUAKE LOADS.

1. GENERAL DESIGN REQUIREMENTS USED TO DESIGN REINFORCING AND OTHER REPAIRS (PER IEBC 2009)
   a. OCCUPANCY CATEGORY III
2. FLOOR LIVE LOADS (PER IBC 2009 SECTION 1607)
   a. CLASSROOMS..... 40 PSF
   b. CORRIDORS..... 100 PSF
   c. OFFICES..... 50 PSF
   d. MECHANICAL ROOMS ..... 150 PSF
   e. LIVE LOAD REDUCTION PER IBC 2009 SECTION 1607.9 APPLIED TO COLUMNS ONLY
3. ROOF LIVE LOAD (PER IBC 2009 SECTION 1608 & 780 CMR TABLE 1604.11)
   a. GROUND SNOW LOAD, Pg ..... 50 PSF
   b. SNOW EXPOSURE FACTOR, Ce 1.0
   c. THERMAL FACTOR, Ct 1.0
   d. SNOW LOAD IMPORTANCE FACTOR, Is 1.15
   e. MINIMUM FLAT ROOF SNOW LOAD, Pf ..... 40 PSF*

III. EXISTING CONDITIONS

1. EXISTING CONDITIONS ON THESE DRAWINGS ARE REPRODUCED, IN WHOLE OR IN PART, FROM EXISTING DRAWINGS AND LIMITED VISUAL OBSERVATIONS OF THE EXISTING STRUCTURE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WITH WORK.
2. THE CONTRACTOR SHALL CARRY CONTINGENCY IN PRICING FOR DIFFERENCES IN CONDITIONS SHOWN, INCLUDING BUT NOT LIMITED TO:
   a) DIFFERENT FRAMING CONDITIONS
   b) DIFFERENT FOUNDATION CONDITIONS
   c) HIDDEN DAMAGE OR DETERIORATION IN STRUCTURAL MEMBERS
3. WHERE DISCREPANCIES BETWEEN THE DESIGN DRAWINGS AND FIELD CONDITIONS ARE FOUND, OR EXISTING STRUCTURAL MEMBERS AND CONNECTIONS ARE FOUND TO BE DAMAGED OR DETERIORATED TO A DIMINISHED CAPACITY AND ARE NOT SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL SUBMIT DETAILED SKETCHES OF THE EXISTING CONDITIONS TO THE OWNER AND ENGINEER FOR REVIEW PRIOR TO COMMENCING WITH WORK. MODIFICATIONS TO CURRENT DETAILS OR ADDITIONAL NEW DETAILS MAY BE REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS.
4. EXISTING FRAMING MEMBERS SHOWN ON THESE DRAWINGS ARE DESIGNATED BY THEIR NOMINAL SIZE, UNLESS NOTED OTHERWISE. ACTUAL MEMBER SIZES SHALL BE VERIFIED IN THE FIELD.

IV. REPAIR OF CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318 AND 301 REQUIREMENTS.
2. CONCRETE RESTORATION MATERIALS:
   a. CONCRETE BONDING PRIMER: SIKA ARMATEC 110 OR APPROVED EQUAL.
   b. RUST INHIBITIVE PRIMER: SIKA ARMATEC 110 OR APPROVED EQUAL.
   c. REPAIR AND RESTORATION MORTAR: SIKATOP 123 OR APPROVED EQUAL.
3. PRETHREADED ARMATURES SHALL BE 1/4" DIA. STAINLESS STEEL.
4. HEAVY GAUGE WIRE SHALL BE 16 GAUGE STAINLESS STEEL WIRE.
5. REFER TO DETAILS, SPECIFICATIONS AND PLAN NOTES FOR CONCRETE REPAIR AND RESTORATION PROCEDURES.

V. CLAY BRICK MASONRY

1. IT IS THE INTENT OF THIS WORK TO REPLACE FAILED AND DAMAGED STRUCTURAL CLAY TILE MASONRY WITH NEW LOAD BEARING CLAY BRICK MASONRY WHERE INDICATED.
2. CLAY BRICK UNITS SHALL BE ASTM C216, GRADE SW, TYPE FBS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. MORTAR MATERIALS:
   a. PORTLAND CEMENT: ASTM C150, TYPE II OR II.
   b. HYDRATED LIME: ASTM C207, TYPE S
   c. MIX MORTAR WITH EQUAL PARTS OF PORTLAND CEMENT AND HYDRATED LIME.
4. REFER TO DETAILS, SPECIFICATIONS AND PLAN NOTES FOR ADDITIONAL CLAY BRICK MASONRY INSTALLATION REQUIREMENTS.

VI. STRUCTURAL STEEL

1. ALL WORK SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS AND ITS CODE OF STANDARD PRACTICE.
2. MATERIAL SPECIFICATIONS:
   W, WT SHAPES ..... ASTM A992 (50 KSI)
   S, M, HP, C, MC SHAPES..... ASTM A572, GRADE 50
   SQUARE & RECTANGULAR HSS ..... ASTM A500, GRADE C (50 KSI)
   ROUND HSS ..... ASTM A500, GRADE C (46 KSI)
   L SHAPES, MISC. PLATES & BARS..... ASTM A36
   THREADED RODS, THREADED FASTENERS ..... ASTM A36
   BOLTS ..... ASTM A325 OR A490
3. ALL WELDING OPERATIONS SHALL BE PERFORMED BY AWS CERTIFIED WELDERS IN CONFORMANCE WITH ALL APPLICABLE REQUIREMENTS. USE E-70XX WELDING ELECTRODES.
4. STRUCTURAL STEEL CONNECTIONS SHALL DEVELOP THE GREATER OF THE FOLLOWING: THE ASD LOADS LISTED ON THE DRAWINGS (1/2) OF MEMBERS' TOTAL DESIGN LOAD CAPACITY AS DETERMINED FROM THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION (ASD).
5. ALL STEEL TO STEEL BOLTED CONNECTIONS SHALL USE ASTM A325-F (SLIP CRITICAL) BOLTS (3/4"ø MINIMUM, UNLESS NOTED OTHERWISE. BOLTED CONNECTIONS SHALL BE DESIGNED PER THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION (ASD) AND THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS (ASD).
6. AFTER ERECTION IS COMPLETE, TOUCH-UP ALL GALVANIZED SURFACES DAMAGED DURING TRANSPORTATION, ERECTION,AND FIELD WELDING USING APPROVED ZINC RICH PAINTING SYSTEM SUCH AS ZRC OR ZIRP.
7. MOMENT CONNECTIONS, IF REQUIRED, SHALL BE DESIGNED TO DEVELOP THE FULL MOMENT CAPACITY OF THE MEMBERS. ALL MOMENT CONNECTIONS SHALL BE DESIGNED BY A P.E. REGISTERED IN THE STATE OF NEW HAMPSHIRE. SUBMIT STAMPED DRAWINGS AND CALCULATIONS FOR REVIEW.

VII. STRUCTURAL LUMBER (PSL COLUMN)

1. ALL WORK SHALL BE IN CONFORMANCE WITH THE STANDARDS, SPECIFICATIONS, & REQUIREMENTS OF THE AMERICAN FOREST & PAPER ASSOCIATION (AF&PA) AND APA - THE ENGINEERED WOOD ASSOCIATION (APA).
2. ALL LUMBER USED IN A STRUCTURAL CAPACITY SHALL BE S-P-F No.1/No.2 OR BETTER FOR ALL APPLICATIONS.
3. ANY WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY, EXPOSED TO UNHEATED BASEMENT AND CRAWL SPACES, OR EXPOSED TO THE EXTERIOR SHALL BE PRESERVATIVE-TREATED.
4. ALL ENGINEERED WOOD COLUMN MEMBERS SHALL BE "WOLMANIZED" PRESERVATIVE TREATED PARALLEL STRAND LUMBER (PSL) AS MANUFACTURED BY "LEVEL by WEYERHAEUSER" OF BOISE, IDAHO.
5. ALL WOOD CONNECTORS (JOIST & BEAM HANGERS, POST CAPS & BASES, HURRICANE STRAPS, ETC.) SHALL BE GALVANIZED STEEL CONNECTORS AS MANUFACTURED BY "SIMPSON STRONG-TIE" OF PLEASANTON, CA (OR AN APPROVED EQUAL).
6. A CONTINUOUS LOAD PATH MUST BE PROVIDED TO THE BUILDING FOUNDATION AT ALL CONCENTRATED LOADS, INCLUDING BUT NOT LIMITED TO PROVIDING SOLID BLOCKING AT THE INTERSTITIAL FLOOR STRUCTURE SPACE BETWEEN A POST FROM THE LEVEL ABOVE SUPPORTED BY A POST FROM THE LEVEL BELOW.

VIII. COORDINATION OF ASSOCIATED PLUMBING WORK

1. IT IS THE INTENT OF THIS WORK TO TEMPORARILY CUT EXISTING SANITARY WASTE, DRAINAGE AND WATER SUPPLY LINES IN THE CRAWL SPACE, AS REQUIRED TO INSTALL THE NEW STRUCTURAL STEEL REINFORCING; AND TO REINSTALL PORTIONS OF LINES REMOVED USING THE SAME MATERIALS.
2. IT IS NOT THE INTENT OF THIS WORK TO REDESIGN OR REDIRECT THE TEMPORARILY INTERRUPTED PLUMBING SYSTEMS. IT IS THE INTENT OF THIS WORK TO RESTORE THE TEMPORARILY INTERRUPTED SYSTEMS TO THEIR PREVIOUS ROUTES AND FUNCTIONS AFTER COMPLETION OF THE INSTALLATION OF THE NEW STRUCTURAL STEEL REINFORCING.
3. ALL PLUMBING WORK, INCLUDING ALL TEMPORARY INTERRUPTION, DISCONNECTION AND RECONNECTION IS TO BE PERFORMED BY PLUMBERS LICENSED BY THE STATE OF NEW HAMPSHIRE. ALL PLUMBING WORK, INCLUDING ALL TEMPORARY INTERRUPTION DISCONNECTION AND RECONNECTION, IS TO BE CONDUCTED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES, LAWS AND ORDINANCES.
4. IF DURING THE PROGRESS OF THE ASSOCIATED WORK, REDESIGN OF THE PLUMBING SYSTEMS BECOMES NECESSARY, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENGAGE THE SERVICES OF A PROFESSIONAL PLUMBING ENGINEER LICENSED BY THE STATE OF NEW HAMPSHIRE TO PERFORM THE DESIGN AND STAMP ALL SUCH DESIGN WORK.

IX. COORDINATION OF ASSOCIATED ELECTRICAL WORK

1. IT IS THE INTENT OF THIS WORK TO NOT DISTURB EXISTING MAIN ELECTRICAL CONDUIT IN THE CRAWL SPACE. WHERE THE SMALLER ELECTRICAL BRANCH CONDUIT AND CONNECTIONS MUST BE TEMPORARILY OR PERMANENTLY REMOVED AND RELOCATED IN THE CRAWL SPACE TO INSTALL THE NEW STRUCTURAL STEEL REINFORCING, ELECTRICAL CONDUIT, WIRING AND THEIR PROPER CONNECTIONS ARE TO BE REINSTALLED USING THE SAME MATERIALS.
2. DATA CABLE MAY NOT BE DISCONNECTED, BUT MAY BE TEMPORARILY SHIFTED TO INSTALL NEW STRUCTURAL STEEL REINFORCING.
3. ALL ELECTRICAL WORK, INCLUDING ALL TEMPORARY INTERRUPTION, DISCONNECTION AND RECONNECTION IS TO BE PERFORMED BY ELECTRICIANS LICENSED BY THE STATE OF NEW HAMPSHIRE. ALL ELECTRICAL WORK, INCLUDING ALL TEMPORARY INTERRUPTION DISCONNECTION AND RECONNECTION, IS TO BE CONDUCTED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES, LAWS AND ORDINANCES.
4. IF DURING THE PROGRESS OF THE ASSOCIATED ELECTRICAL WORK, REDESIGN OF THE ELECTRICAL SYSTEMS BECOMES NECESSARY, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENGAGE THE SERVICES OF A PROFESSIONAL ELECTRICAL ENGINEER LICENSED BY THE STATE OF NEW HAMPSHIRE TO PERFORM THE DESIGN AND STAMP ALL SUCH DESIGN WORK.

X. GENERAL NOTES REGARDING DEMOLITION

1. ALL WORK SHALL CONFORM TO APPLICABLE PROVISIONS OF ALL STATE AND LOCAL CODES AND ORDINANCES.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AS THEY RELATE TO CONSTRUCTION AND DEMOLITION. REPORT TO THE OWNER AND STRUCTURAL ENGINEER ALL OBSERVATIONS AND ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK. IN AREAS OF DISCREPANCY, DEMOLITION SHALL NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE OWNER AND ENGINEER OF RECORD.
3. WHERE DETAILS FOR SPECIFIC CONDITIONS ARE NOT SHOWN ON THESE PLANS, USE DETAILS FOR THE MOST NEARLY SIMILAR CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AS DETERMINED BY THE OWNER AND STRUCTURAL ENGINEER OF RECORD. REPORT ANY COORDINATION ISSUES IMMEDIATELY TO THE ARCHITECT FOR REVIEW.
4. DEMOLITION OF FRAMING ELEMENTS SHOWN ON THESE DRAWING MAY VARY BASED ON THE CONSTRUCTION SEQUENCE AND THE SCHOOL REQUIREMENTS TO REMAIN OPERATIONAL DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ADEQUATE CONTINGENCY IN BUDGET AND SCHEDULE TO ALLOW FOR MODIFICATIONS AND REVISIONS AS REQUIRED DUE TO THESE SPECIAL CONDITIONS.
5. IT IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE FOR A SAFE AND EFFICIENT METHOD OF SHORING AND/OR BRACING THE EXISTING STRUCTURE AS REQUIRED DURING ALL DEMOLITION AND CONSTRUCTION PHASES. NOTE THAT TEMPORARY BRACING IS REQUIRED FOR ALL COLUMNS AND WALLS TO REMAIN WHERE INTERCONNECTED FRAMING MEMBERS ARE TO BE REMOVED.
6. THE CONTRACTOR SHALL ENGAGE A STRUCTURAL ENGINEER, LICENSED IN THE STATE OF NEW HAMPSHIRE TO PROVIDE STAMPED STRUCTURAL CALCULATIONS AND DRAWINGS FOR ALL TEMPORARY SHORING AND BRACING SYSTEMS, AS WELL AS AN ANALYSIS OF ANY TEMPORARY LOADS THAT THE CONTRACTOR CHOOSES TO IMPOSE UPON THE EXISTING STRUCTURE.
7. DEMOLITION WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO PRESERVE THE INTEGRITY OF ALL ADJACENT STRUCTURAL ELEMENTS. WHERE NECESSARY, PROJECT CONNECTIONS TO STRUCTURAL ELEMENTS TO REMAIN IN ORDER TO AVOID DAMAGE DURING REMOVAL OF CONNECTED FRAMING MEMBERS. UTILIZE HAND TOOLS WHERE REQUIRED.
8. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT THE EXISTING BUILDING ELEMENTS TO REMAIN DURING DEMOLITION. DO NOT CUT OR ALTER ANY OF THE EXISTING STRUCTURE OR ARCHITECTURAL ELEMENTS TO REMAIN WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT OR ENGINEER OF RECORD. PROVIDE PROTECTION FOR EXISTING WALLS, COLUMNS, BRACES, AND OTHER BUILDING ELEMENTS FROM FALLING DEBRIS. ANY DAMAGE TO EXISTING ELEMENTS TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
9. ALL BIDDERS SHALL VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING FACILITY, LIMITATIONS TO ACCESS THE BUILDING FOR PERSONNEL AND EQUIPMENT, AND OTHER COORDINATION RELATED ISSUES. ANY DISCREPANCIES, OMISSIONS, OR VARIATIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS THAT ARE DISCOVERED DURING THE BIDDING PERIOD SHALL BE IMMEDIATELY COMMUNICATED IN WRITING TO THE OWNER AND ENGINEER.

XI. ENGINEERING REQUIREMENTS FOR CONTRACTOR

1. ALL CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED FOR THE LOADS INDICATED ON THE GENERAL NOTES AND ON TYPICAL DETAILS.
2. THE EXISTING STRUCTURAL FRAMING SYSTEM MAY REQUIRE SHORING DURING CONSTRUCTION. THE CONTRACTOR MUST PROVIDE A TEMPORARY SHORING SYSTEM DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED FOR FLOOR AND ROOF FRAMING AS REQUIRED DURING DEMOLITION. THE CONTRACTOR MUST SUBMIT SIGNED, STAMPED DRAWINGS AND CALCULATIONS FOR REVIEW PRIOR TO BEGINNING WORK.

XII. SPECIAL NOTES REGARDING THE USE OF THESE DRAWINGS

1. THIS BID SET OF DRAWINGS IS BEING PROVIDED FOR PRELIMINARY MAJOR STRUCTURAL STEEL AND CONCRETE REPAIR BIDDING PURPOSES ONLY. THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION. WHILE THESE DRAWINGS CAN BE USED TO OBTAIN A GENERAL UNDERSTANDING OF THE STRUCTURAL SYSTEMS INVOLVED, OMISSIONS AND INCONSISTENCIES BETWEEN SHEETS AND BETWEEN DIFFERENT TRADES WILL EXIST.
2. ALL REQUESTS FOR INFORMATION SHALL BE COORDINATED THROUGH THE OWNER AND ENGINEER.
3. VERIFY IN FIELD ALL DIMENSIONS AND LOCATIONS AND GEOMETRY OF EXISTING STRUCTURES PRIOR TO CONSTRUCTION. ALL EXISTING DIMENSIONS ARE APPROXIMATE. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCY BETWEEN THE FIELD CONDITIONS AND THE CONTRACT DRAWINGS.
4. CONTRACTOR SHALL CARRY A CONTINGENCY FOR ADDITIONAL SCOPE ITEMS NOT SHOWN ON THESE DRAWINGS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   a. ENCOUNTERED SITE CONDITIONS.
   b. ADDITIONAL FRAMING TO SUPPORT MECHANICAL EQUIPMENT AND PENETRATIONS THROUGH STEEL BEAMS DUE ENCOUNTERED CONDITIONS.
5. IF THE CONTRACTOR DEEMS IT NECESSARY TO MODIFY OR REMOVE ANY PORTION OF THE EXISTING STRUCTURE IN ORDER TO PERFORM THE WORK DESCRIBED WITHIN THE CONTRACT DOCUMENTS, THEN SUCH PORTIONS OF THE STRUCTURE SHALL BE REPAIRED OR REPLACED WITH EQUAL MATERIALS AND DETAILS TO MATCH THE EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER; THIS WORK SHALL BE INCLUDED IN THE BASE PRICE OF THE CONTRACT.
6. ALL BEAM PENETRATIONS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS. STEEL CONTRACTORS, IN THE BASE CONTRACT, SHALL PROVIDE A UNIT ADD & DEDUCT PRICE PER PENETRATION FOR EACH PENETRATION TYPE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ACTUAL QUANTITY, SIZE, AND LOCATION OF ALL REQUIRED PENETRATIONS, AND TO OBTAIN WRITTEN CONFIRMATION OF ALL PENETRATIONS FROM THE ARCHITECT, MEP ENGINEER, AND STRUCTURAL ENGINEER PRIOR TO FABRICATION.
7. IT IS RECOMMENDED THAT A PRE-CONSTRUCTION MEETING BE HELD WITH ALL SUBCONTRACTORS TO REVIEW THE PROJECT REQUIREMENTS AND POTENTIAL DESIGN AND CONSTRUCTION ISSUES.

ABBREVIATIONS & SYMBOLS LEGEND

SECTION DESIGNATION, SECTION APPEARS ON SAME SHEET
- INDICATES SECTION OR DETAIL
SECTION DESIGNATION
- INDICATES SECTION OR DETAIL
SHEET NUMBER WHERE SECTION APPEARS
- INDICATES COLUMN GRID.
- INDICATES CONCRETE MASONRY UNIT (CMU). SECTION VIEW
- INDICATES BRICK VENEER SECTION VIEW

ABBREVIATIONS

A/E	ARCHITECT/ENGINEER
ADDN'L	ADDITIONAL
B	BOTTOM
B.O.	BOTTOM OF
BLDG	BUILDING
C.L.	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
COORD.	COORDINATE
DIM.	DIMENSION
DWG	DRAWING
E.F.	EACH FACE
EL.	ELEVATION
ELEC.	ELECTRICAL
EXT.	EXTERIOR
FDN	FOUNDATION
FTG	FOOTING
GALV.	GALVANIZED
HSS	HOLLOW STRUCTURAL SECTION
K	KIP- KIPS (1 KIP = 1000 LBS)
LB, LBS	POUND, POUNDS
LFH	LONG FACE HORIZONTAL (TUBES)
LFV	LONG FACE VERTICAL (TUBES)
LLH	LONG LEG HORIZONTAL (L-ANGLES)
LLV	LONG LEG VERTICAL (L-ANGLES)
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.H.	OPPOSITE HAND
OEI	ODEH ENGINEERS, INC.
OPNG	OPENING
P.E.	PROFESSIONAL ENGINEER
PL.	PLATE
PSF	POUNDS PER SQUARE FOOT
P.T.	PRESERVATIVE TREATED (WOOD)
REINF.	REINFORCED, REINFORCEMENT, ETC.
REQ'D	REQUIRED
SIM.	SIMILAR
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
STL	STEEL
T&B	TOP AND BOTTOM
T.O.	TOP OF
T.O.W.	TOP OF WALL
T.O.S.	TOP OF STEEL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
w/	WITH
@	AT

STRUCTURAL DRAWING LIST

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PROJECT TITLE
PORTSMOUTH MIDDLE SCHOOL

155 Parrott Ave.
Portsmouth, NH 03801

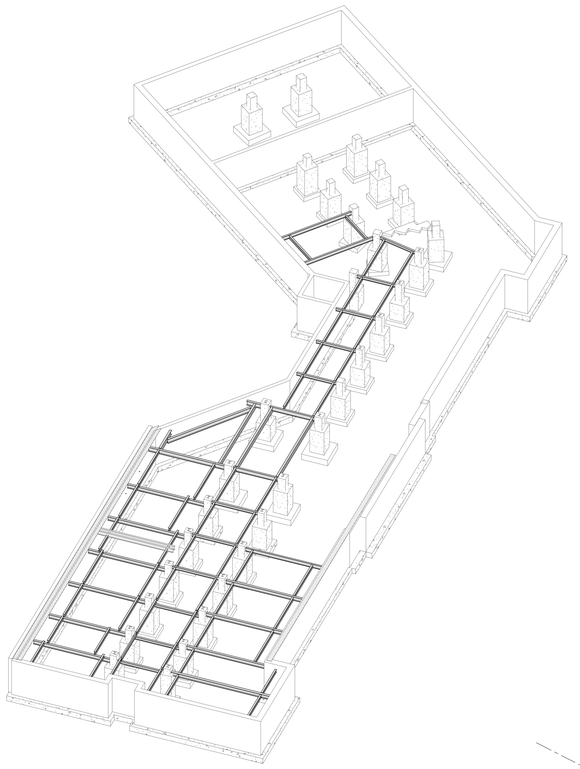
SHEET CONTENTS
GENERAL NOTES

SCALE	1/2" = 1'-0"
DRAWN BY	MTS/CGS
CHECKED BY	DJO
DATE	MARCH 11, 2016
PROJECT NO.	2015-00097

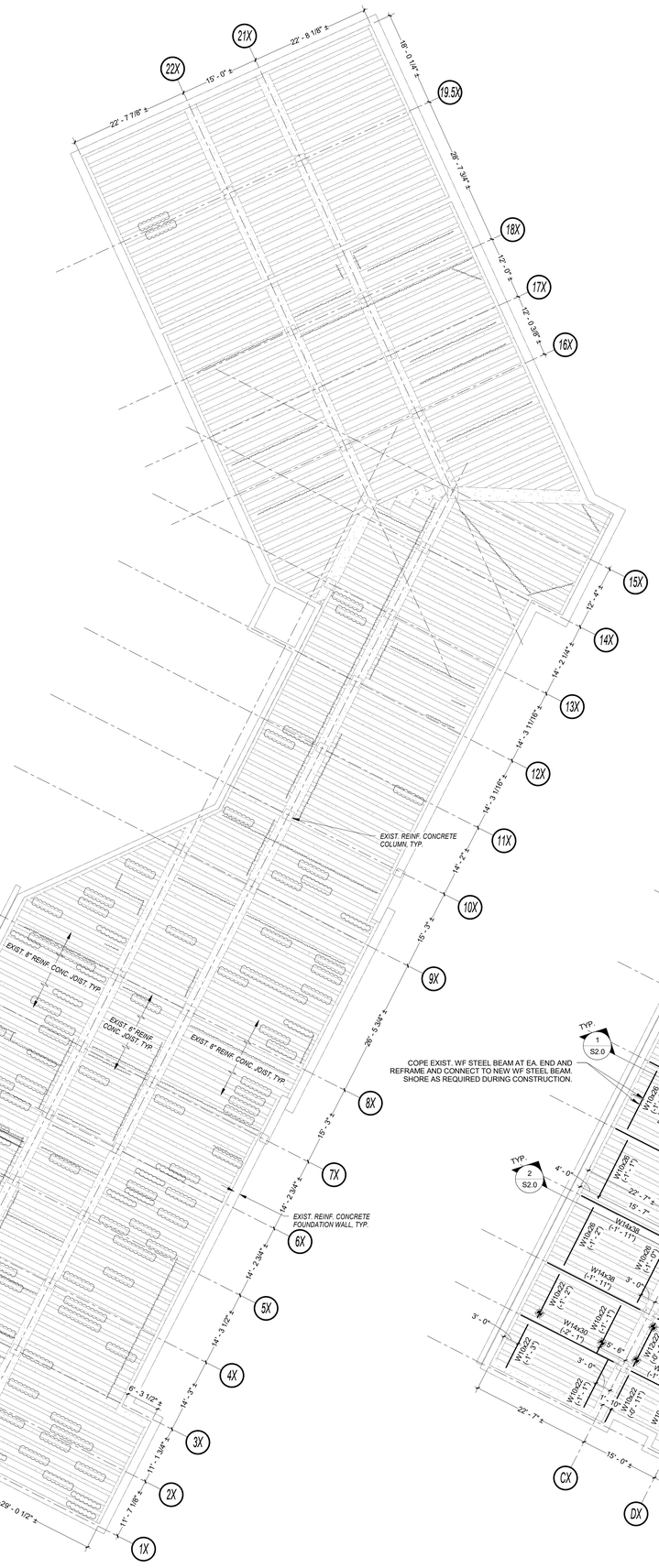
DRAWING NO.
S0.0

NOTES REGARDING 3D VIEWS

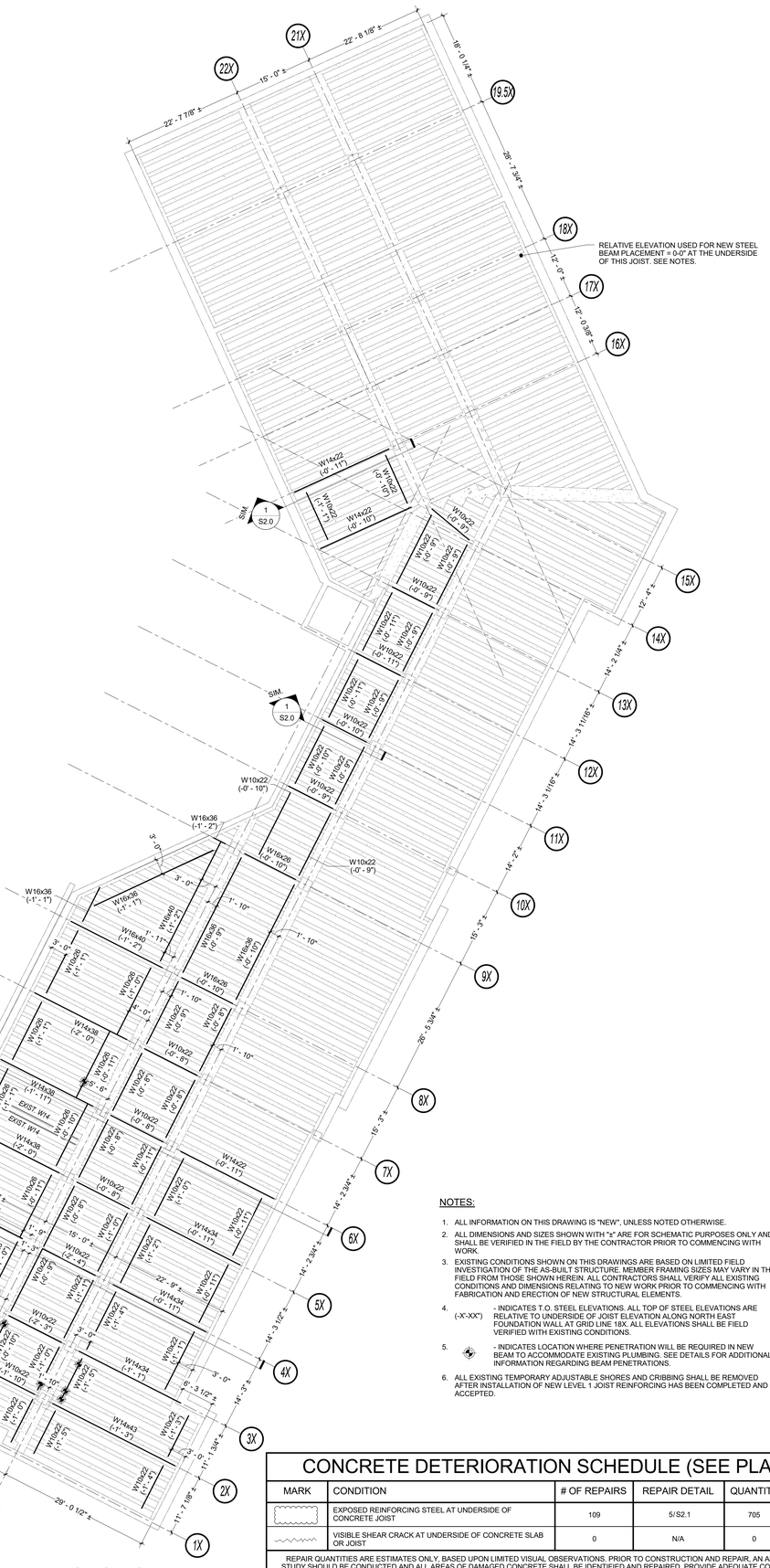
ALL 3D VIEWS ARE FOR REFERENCE ONLY. THE 3D VIEWS ONLY SHOW BASIC STRUCTURAL ELEMENTS; THEY DO NOT INCLUDE DETAILS SUCH AS EXTERIOR RAMPS AND STAIRS, SLAB AND ROOF PITCHES, OR SPECIFIC STRUCTURAL DETAILS. REFER TO ALL PLANS, DETAIL SHEETS, AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION. DO NOT SCALE OFF OF THIS DRAWING.



3 3D VIEW
N.T.S.



1 LEVEL 1 JOIST DEFICIENCY PLAN
SCALE: 3/32" = 1'-0"



2 LEVEL 1 JOIST REINFORCING PLAN
SCALE: 3/32" = 1'-0"

NOTES REGARDING EXISTING CONDITIONS

ALL EXISTING CONDITIONS ON THE PLANS ARE ASSUMED BASED ON LIMITED VISUAL INSPECTIONS AND/OR ORIGINAL DESIGN DRAWINGS. THE CONTRACTOR SHALL CARRY CONTINGENCY IN PRICING FOR DIFFERENCES IN CONDITIONS SHOWN, INCLUDING BUT NOT LIMITED TO:
a) DIFFERENT FRAMING CONDITIONS
b) DIFFERENT FOUNDATION CONDITIONS
c) HIDDEN DAMAGE OR DETERIORATION IN STRUCTURAL MEMBERS

NOTES:

1. ALL INFORMATION ON THIS DRAWING IS "NEW", UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AND SIZES SHOWN WITH "±" ARE FOR SCHEMATIC PURPOSES ONLY AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WITH WORK.
3. EXISTING CONDITIONS SHOWN ON THIS DRAWINGS ARE BASED ON LIMITED FIELD INVESTIGATION OF THE AS-BUILT STRUCTURE. MEMBER FRAMING SIZES MAY VARY IN THE FIELD FROM THOSE SHOWN HEREIN. ALL CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS RELATING TO NEW WORK PRIOR TO COMMENCING WITH FABRICATION AND ERECTION OF NEW STRUCTURAL ELEMENTS.
4. (-X'-XX") - INDICATES T.O. STEEL ELEVATIONS. ALL TOP OF STEEL ELEVATIONS ARE RELATIVE TO UNDERSIDE OF JOIST ELEVATION ALONG NORTH EAST FOUNDATION WALL AT GRID LINE 18X. ALL ELEVATIONS SHALL BE FIELD VERIFIED WITH EXISTING CONDITIONS.
5. - INDICATES LOCATION WHERE PENETRATION WILL BE REQUIRED IN NEW BEAM TO ACCOMMODATE EXISTING PLUMBING. SEE DETAILS FOR ADDITIONAL INFORMATION REGARDING BEAM PENETRATIONS.
6. ALL EXISTING TEMPORARY ADJUSTABLE SHORES AND CRIBBING SHALL BE REMOVED AFTER INSTALLATION OF NEW LEVEL 1 JOIST REINFORCING HAS BEEN COMPLETED AND ACCEPTED.

CONCRETE DETERIORATION SCHEDULE (SEE PLAN)

MARK	CONDITION	# OF REPAIRS	REPAIR DETAIL	QUANTITY	UNITS
	EXPOSED REINFORCING STEEL AT UNDERSIDE OF CONCRETE JOIST	109	5/ S2.1	705	LF
	VISIBLE SHEAR CRACK AT UNDERSIDE OF CONCRETE SLAB OR JOIST	0	N/A	0	LF

REPAIR QUANTITIES ARE ESTIMATES ONLY, BASED UPON LIMITED VISUAL OBSERVATIONS. PRIOR TO CONSTRUCTION AND REPAIR, AN ADDITIONAL STUDY SHOULD BE CONDUCTED AND ALL AREAS OF DAMAGED CONCRETE SHALL BE IDENTIFIED AND REPAIRED. PROVIDE ADEQUATE CONTINGENCY FOR ADDITIONAL REPAIRS DUE TO HIDDEN OR OTHERWISE UNFORESEEN CONDITIONS. **IN ADDITION TO PROVIDING A BASE BID FOR THE QUANTITIES OF CAST-IN-PLACE CONCRETE REPAIR SCHEDULED, REFER TO THE GENERAL REQUIREMENTS AND THE BID FORM TO PROVIDE UNIT PRICES FOR ADDITIONAL LINEAL FOOTAGE (ADD) OF REPAIRS AND UNIT PRICE FOR LESS LINEAR FOOTAGE (DEDUCT).**

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PROJECT TITLE
PORTSMOUTH MIDDLE SCHOOL

155 Parrott Ave.
Portsmouth, NH 03801

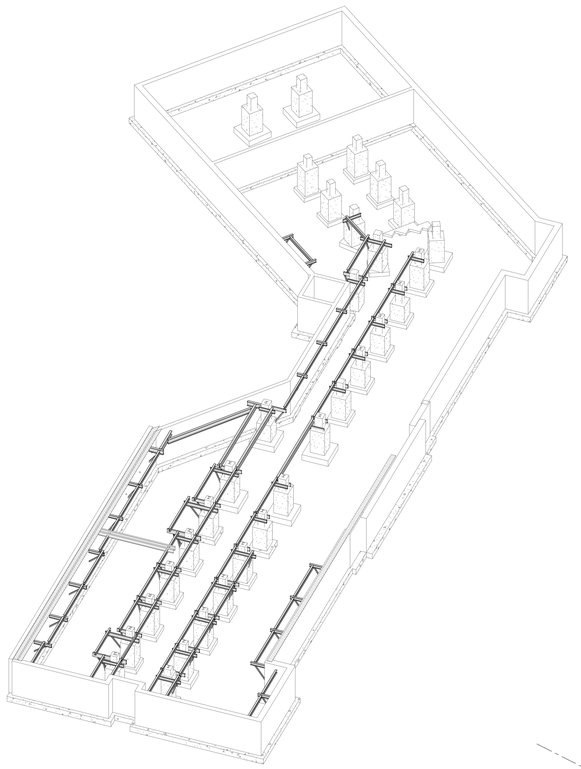
SHEET CONTENTS
JOIST REINFORCING PLAN

SCALE	As indicated
DRAWN BY	MTS/CGS
CHECKED BY	DJO
DATE	MARCH 11, 2016
PROJECT NO.	2015-00097

DRAWING NO.
S1.0

NOTES REGARDING 3D VIEWS

ALL 3D VIEWS ARE FOR REFERENCE ONLY. THE 3D VIEWS ONLY SHOW BASIC STRUCTURAL ELEMENTS; THEY DO NOT INCLUDE DETAILS SUCH AS EXTERIOR RAMPS AND STAIRS, SLAB AND ROOF PITCHES, OR SPECIFIC STRUCTURAL DETAILS. REFER TO ALL PLANS, DETAIL SHEETS, AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION. DO NOT SCALE OFF OF THIS DRAWING.



3 3D VIEW
N.T.S.

1 LEVEL 1 JOIST DEFICIENCY PLAN
SCALE: 3/32" = 1'-0"

2 ALTERNATE 1 - LEVEL 1 JOIST REINFORCING PLAN
SCALE: 3/32" = 1'-0"

NOTES REGARDING EXISTING CONDITIONS

ALL EXISTING CONDITIONS ON THE PLANS ARE ASSUMED BASED ON LIMITED VISUAL INSPECTIONS AND/OR ORIGINAL DESIGN DRAWINGS. THE CONTRACTOR SHALL CARRY CONTINGENCY IN PRICING FOR DIFFERENCES IN CONDITIONS SHOWN, INCLUDING BUT NOT LIMITED TO:
a) DIFFERENT FRAMING CONDITIONS
b) DIFFERENT FOUNDATION CONDITIONS
c) HIDDEN DAMAGE OR DETERIORATION IN STRUCTURAL MEMBERS

NOTES:

1. ALL INFORMATION ON THIS DRAWING IS "NEW", UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AND SIZES SHOWN WITH "±" ARE FOR SCHEMATIC PURPOSES ONLY AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WITH WORK.
3. EXISTING CONDITIONS SHOWN ON THIS DRAWINGS ARE BASED ON LIMITED FIELD INVESTIGATION OF THE AS-BUILT STRUCTURE. MEMBER FRAMING SIZES MAY VARY IN THE FIELD FROM THOSE SHOWN HEREIN. ALL CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS RELATING TO NEW WORK PRIOR TO COMMENCING WITH FABRICATION AND ERECTION OF NEW STRUCTURAL ELEMENTS.
4. (-X'-XX") - INDICATES T.O. STEEL ELEVATIONS. ALL TOP OF STEEL ELEVATIONS ARE RELATIVE TO UNDERSIDE OF JOIST ELEVATION ALONG NORTH EAST FOUNDATION WALL AT GRID LINE 18X. ALL ELEVATIONS SHALL BE FIELD VERIFIED WITH EXISTING CONDITIONS.
5. - INDICATES LOCATION WHERE PENETRATION WILL BE REQUIRED IN NEW BEAM TO ACCOMMODATE EXISTING PLUMBING. SEE DETAILS FOR ADDITIONAL INFORMATION REGARDING BEAM PENETRATIONS.
6. ALL EXISTING TEMPORARY ADJUSTABLE SHORES AND CRIBBING SHALL BE REMOVED AFTER INSTALLATION OF NEW LEVEL 1 JOIST REINFORCING HAS BEEN COMPLETED AND ACCEPTED.

CONCRETE DETERIORATION SCHEDULE (SEE PLAN)

MARK	CONDITION	# OF REPAIRS	REPAIR DETAIL	QUANTITY	UNITS
	EXPOSED REINFORCING STEEL AT UNDERSIDE OF CONCRETE JOIST	109	5/S2.1	705	LF
	VISIBLE SHEAR CRACK AT UNDERSIDE OF CONCRETE SLAB OR JOIST	0	N/A	0	LF

REPAIR QUANTITIES ARE ESTIMATES ONLY, BASED UPON LIMITED VISUAL OBSERVATIONS. PRIOR TO CONSTRUCTION AND REPAIR, AN ADDITIONAL STUDY SHOULD BE CONDUCTED AND ALL AREAS OF DAMAGED CONCRETE SHALL BE IDENTIFIED AND REPAIRED. PROVIDE ADEQUATE CONTINGENCY FOR ADDITIONAL REPAIRS DUE TO HIDDEN OR OTHERWISE UNFORESEEN CONDITIONS. **IN ADDITION TO PROVIDING A BASE BID FOR THE QUANTITIES OF CAST-IN-PLACE CONCRETE REPAIR SCHEDULED, REFER TO THE GENERAL REQUIREMENTS AND THE BID FORM TO PROVIDE UNIT PRICES FOR ADDITIONAL LINEAL FOOTAGE (ADD) OF REPAIRS AND UNIT PRICE FOR LESS LINEAR FOOTAGE (DEDUCT).**

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SHEET CONTENTS
ALTERNATE 1 - JOIST REINFORCING PLAN

SCALE	As indicated
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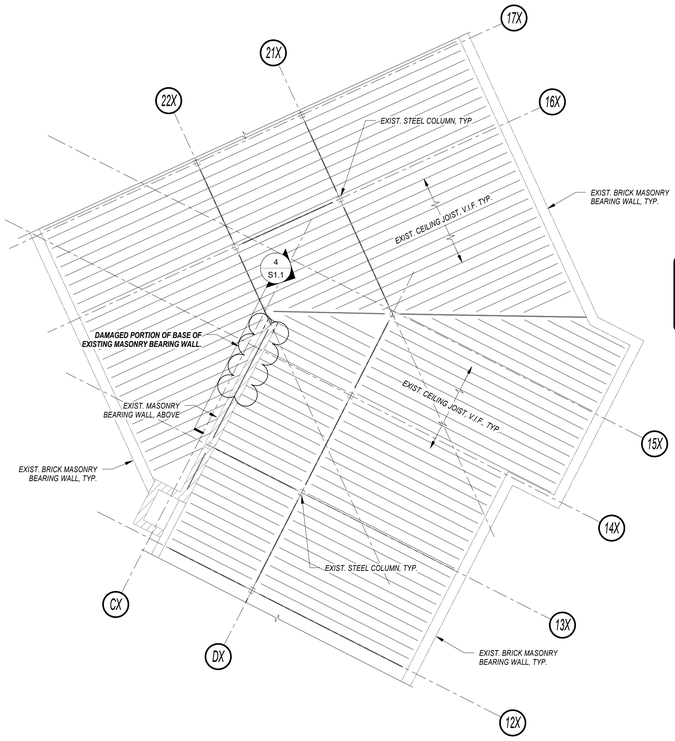
S1.0A



1 EXIST. ATTIC LEVEL PART PLAN

SCALE: 1/8" = 1'-0"

NOTES REGARDING EXISTING CONDITIONS

ALL EXISTING CONDITIONS ON THE PLANS ARE ASSUMED BASED ON LIMITED VISUAL INSPECTIONS AND/OR ORIGINAL DESIGN DRAWINGS. THE CONTRACTOR SHALL CARRY CONTINGENCY IN PRICING FOR DIFFERENCES IN CONDITIONS SHOWN, INCLUDING BUT NOT LIMITED TO:

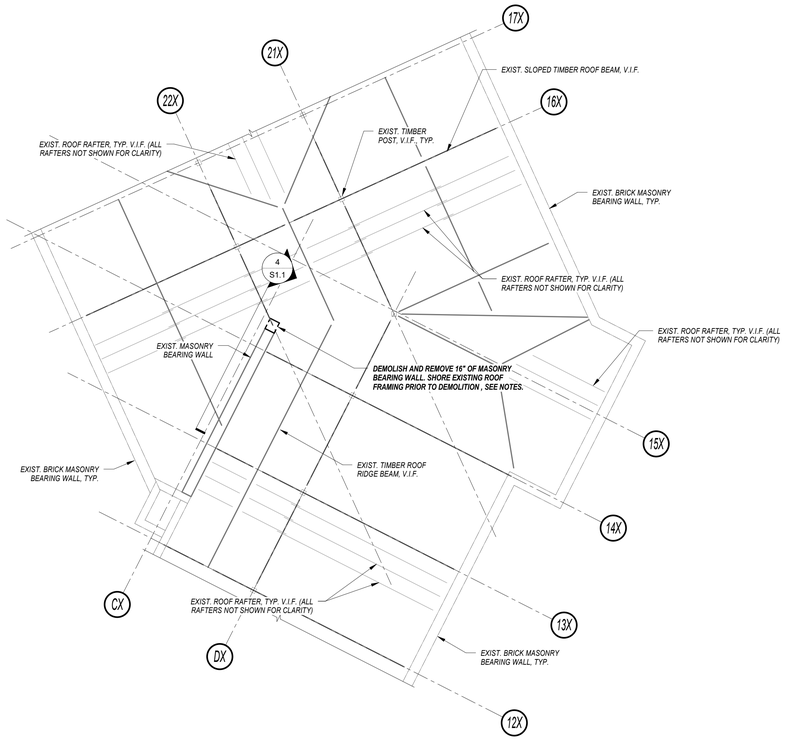
a) DIFFERENT FRAMING CONDITIONS
b) DIFFERENT FOUNDATION CONDITIONS
c) HIDDEN DAMAGE OR DETERIORATION IN STRUCTURAL MEMBERS

NOTES REGARDING RESUPPORT OF EXISTING ROOF

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE FOR A SAFE AND EFFICIENT METHOD OF SHORING AND/OR BRACING THE STRUCTURE DURING CONSTRUCTION.

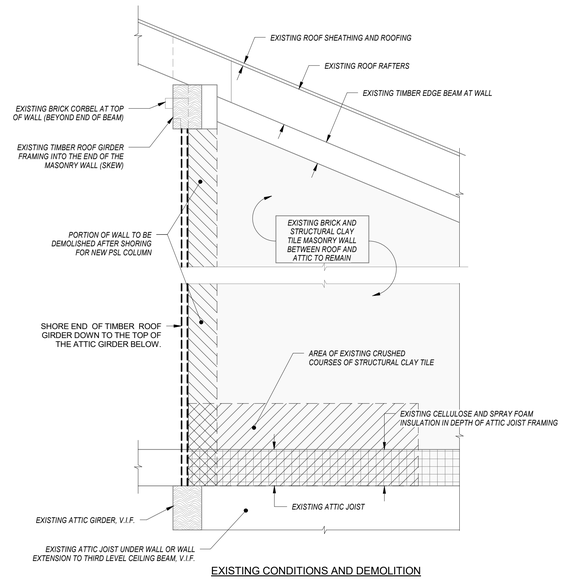
ODEH ENGINEERS RECOMMENDS THE FOLLOWING PROCEDURE FOR RESUPPORTING THE EXISTING ROOF FRAMING.THE CONTRACTOR SHALL SUBMIT AN OUTLINE OF ANY PROPOSED MODIFICATIONS TO THE PROCEDURE TO THE ENGINEER BEFORE CONSTRUCTION COMMENCES.

1. SHORE THE END OF EXISTING TIMBER BEAM TO ATTIC FRAMING AND COLUMN BELOW.
2. DEMOLISH AND REMOVE 16" OF EXISTING BRICK AND STRUCTRUAL TERRA COTTA MASONRY FROM THE END OF THE EXISTING LOAD BEARING MASONRY WALL.
3. INSTALL NEW 8x8 (MIN.) PSL COLUMN.
4. DEMOLISH AND REMOVE CRUSHED BOTTOM COURSE OF STRUCTURAL TERRA COTTA (APPROX. 4'-0" LENGTH) AND REPLACE WITH SOLID BRICK MASONRY.

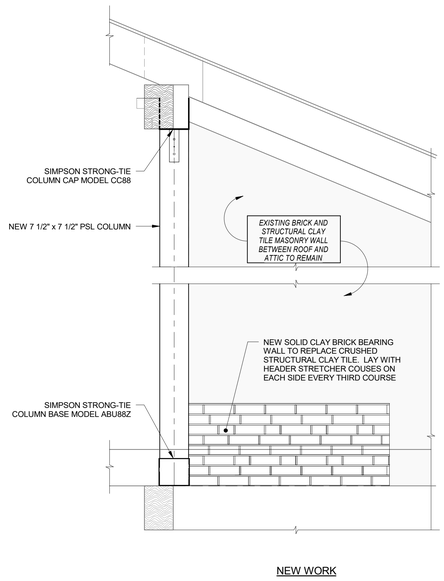


2 EXISTING ROOF FRAMING PART PLAN

SCALE: 1/8" = 1'-0"



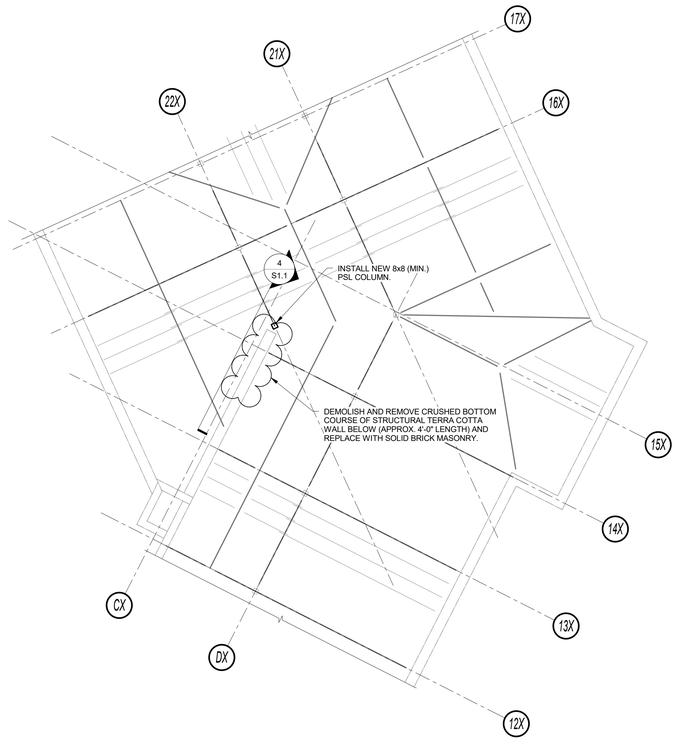
EXISTING CONDITIONS AND DEMOLITION



NEW WORK

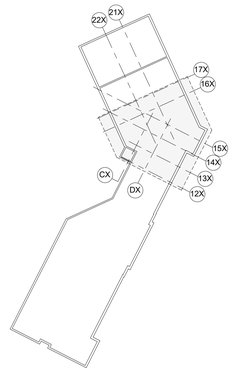
4 WALL REPAIR IN ATTIC

SCALE: 3/4" = 1'-0"



3 NEW ROOF FRAMING PART PLAN

SCALE: 1/8" = 1'-0"



KEY PLAN

N.T.S.

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PROJECT TITLE
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155 Parrott Ave.
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SHEET CONTENTS
ROOF AND ATTIC FRAMING PART PLAN AND DETAILS

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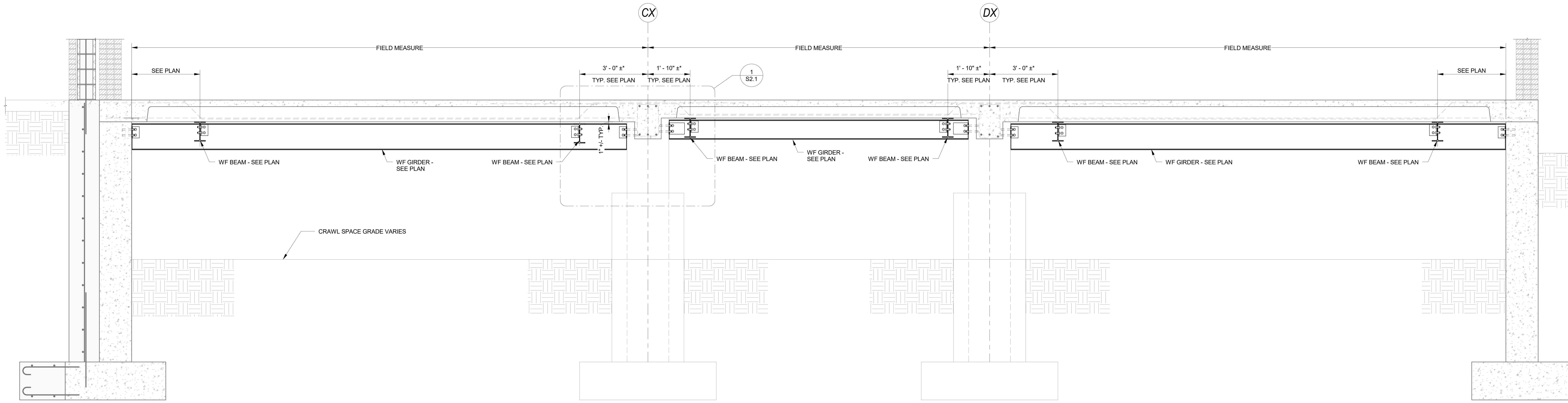
S1.1



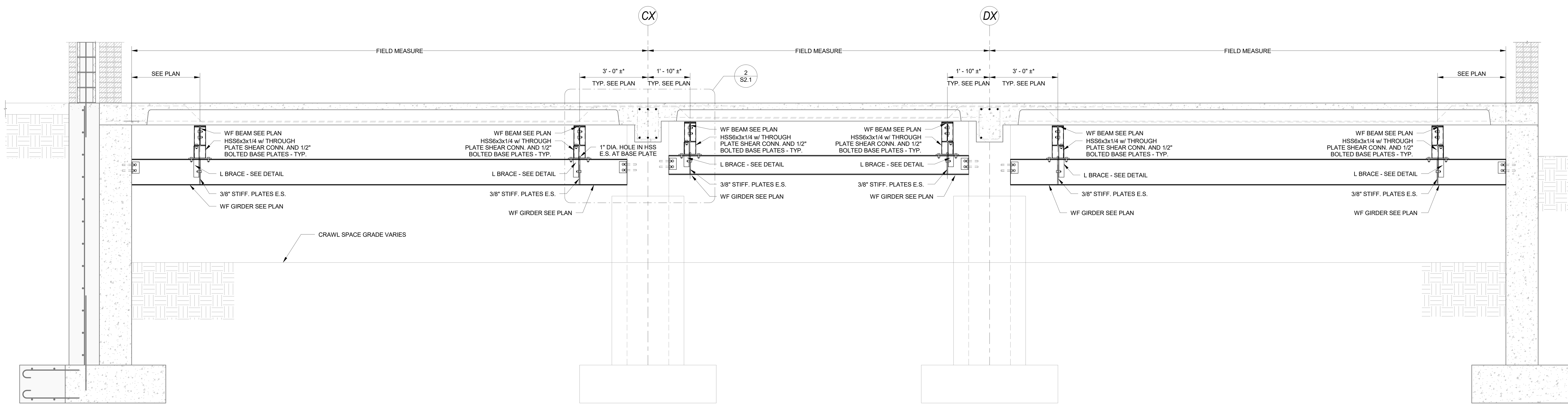
* FIELD VERIFY LOCATION OF NEW BEAMS BASED UPON LOCATION OF EXISTING CRACKING

NOTE: AT ALL LOCATIONS WHERE NEW WIDE FLANGE STEEL GIRDERS ARE LOCATED BELOW WIDE FLANGE STEEL BEAMS TO ACCOMMODATE THE EXISTING ELECTRICAL AND PLUMBING SEE DETAILS BELOW. THE FRAMING CONDITION IN EACH BAY MAY VARY - SEE PLANS FOR TOP OF STEEL BEAM ELEVATIONS.

DESIGN ALL CONNECTIONS TO EXISTING CONCRETE USING HILTI HIT-HY200 ADHESIVE ANCHORING SYSTEM WITH 3/4" DIA. MINIMUM HIT-Z-R THREADED RODS (9" MIN. EMBEDMENT) - OR APPROVED EQUAL ADHESIVE ANCHORING SYSTEM AND MATERIALS.

1 TYPICAL SECTION AT JOIST REINFORCING

SCALE: 1/2" = 1'-0"



* FIELD VERIFY LOCATION OF NEW BEAMS BASED UPON LOCATION OF EXISTING CRACKING

NOTE: THIS DETAIL APPLIES AT ALL LOCATIONS WHERE NEW WIDE FLANGE STEEL GIRDERS ARE LOCATED BELOW WIDE FLANGE STEEL BEAMS TO ACCOMMODATE THE EXISTING ELECTRICAL AND PLUMBING. THE FRAMING CONDITION IN EACH BAY MAY VARY - SEE PLANS FOR TOP OF STEEL BEAM ELEVATIONS.

2 TYPICAL SECTION AT JOIST REINFORCING WITH GIRDER LOW

SCALE: 1/2" = 1'-0"

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SHEET CONTENTS
TYPICAL REINFORCING DETAILS

SCALE	1/2" = 1'-0"
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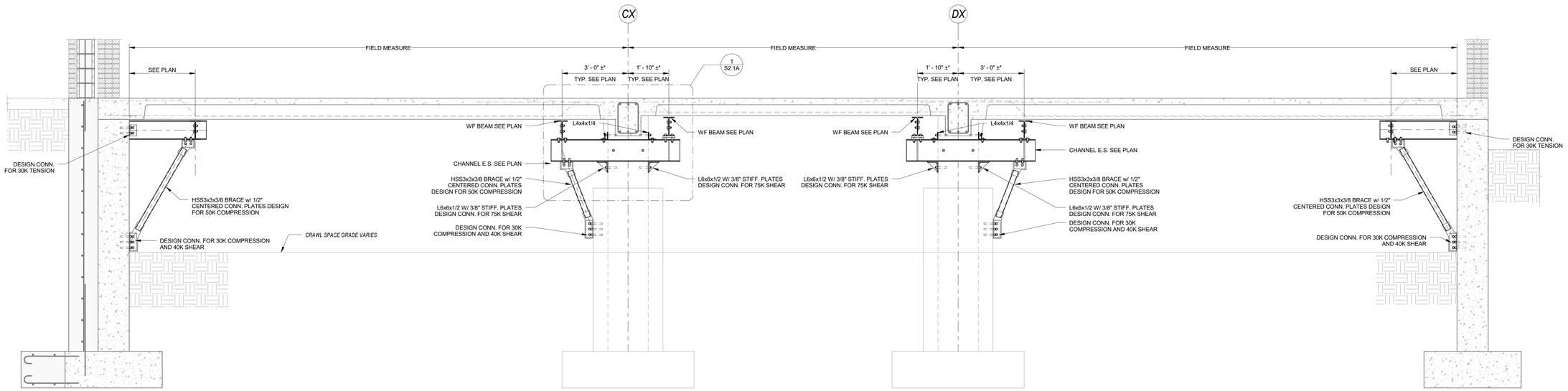


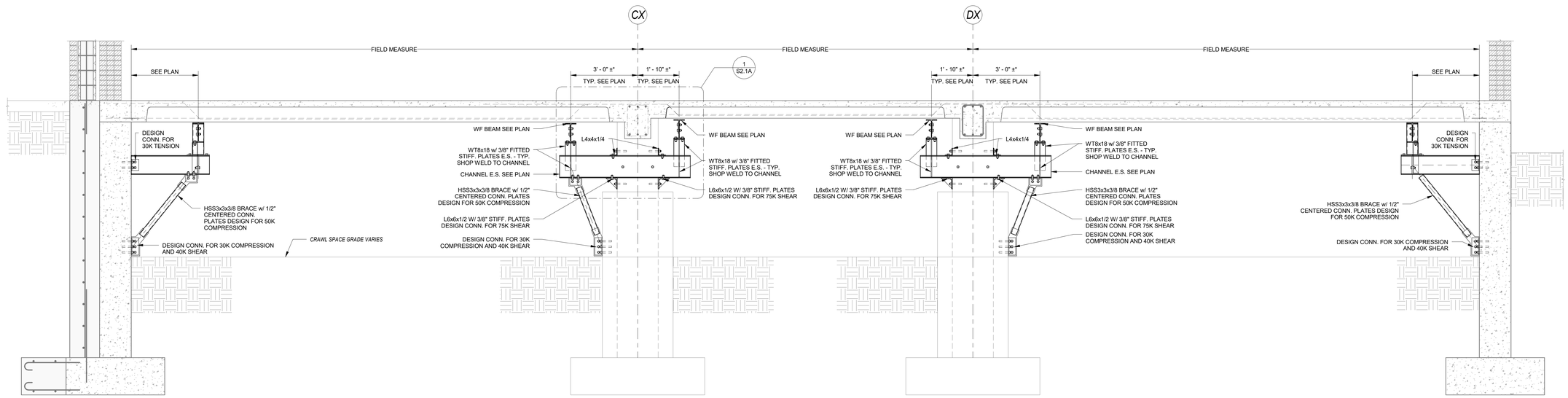
* FIELD VERIFY LOCATION OF NEW BEAMS BASED UPON LOCATION OF EXISTING CRACKING

NOTE: AT ALL LOCATIONS WHERE NEW STEEL CHANNELS OR BRACKETS ARE LOCATED BELOW WIDE FLANGE STEEL BEAMS TO ACCOMMODATE THE EXISTING ELECTRICAL AND PLUMBING SEE DETAILS BELOW. THE FRAMING CONDITION IN EACH BAY MAY VARY - SEE PLANS FOR TOP OF STEEL BEAM ELEVATIONS.

DESIGN ALL CONNECTIONS TO EXISTING CONCRETE USING HILTI HIT-HY200 ADHESIVE ANCHORING SYSTEM WITH 3/4" DIA. MINIMUM HIT-Z-R THREADED RODS (9" MIN. EMBEDMENT) - OR APPROVED EQUAL ADHESIVE ANCHORING SYSTEM AND MATERIALS.

1 ALTERNATE 1 - TYPICAL SECTION AT JOIST REINFORCING

SCALE: 1/2" = 1'-0"



* FIELD VERIFY LOCATION OF NEW BEAMS BASED UPON LOCATION OF EXISTING CRACKING

NOTE: THIS DETAIL APPLIES AT ALL LOCATIONS WHERE NEW STEEL CHANNELS OR BRACKETS ARE LOCATED BELOW WIDE FLANGE STEEL BEAMS TO ACCOMMODATE THE EXISTING ELECTRICAL AND PLUMBING. THE FRAMING CONDITION IN EACH BAY MAY VARY - SEE PLANS FOR TOP OF STEEL BEAM ELEVATIONS.

2 ALTERNATE 1 - TYPICAL SECTION AT JOIST REINFORCING WITH CHANNEL LOW

SCALE: 1/2" = 1'-0"

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SHEET CONTENTS
ALTERNATE 1 - TYPICAL REINFORCING DETAILS

SCALE	1/2" = 1'-0"
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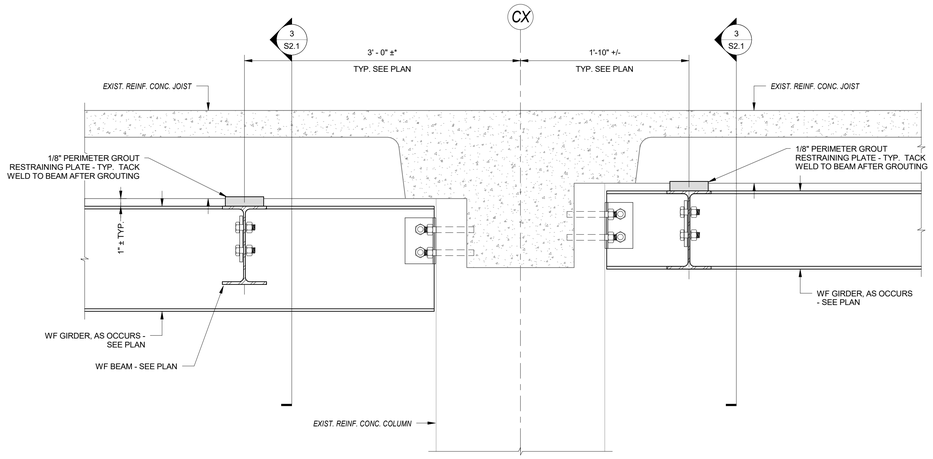
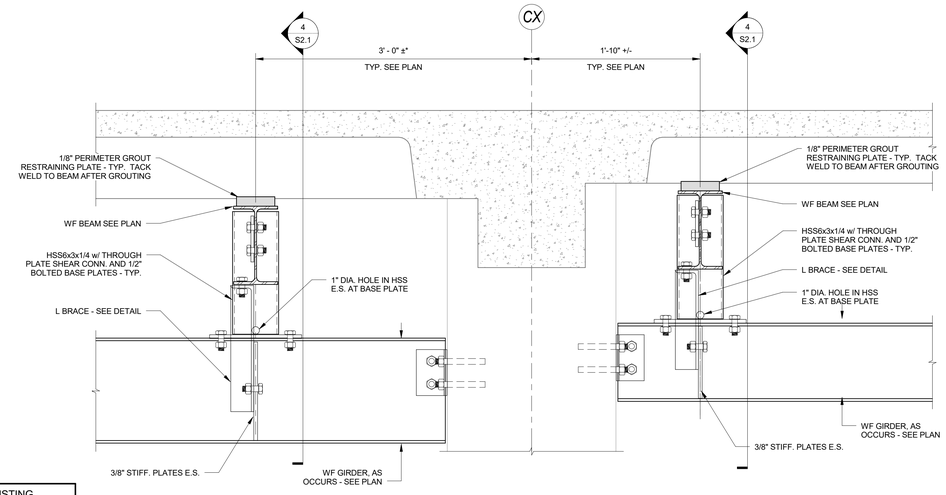
DRAWING NO.
S2.0A



NOTE: THE DETAILS SHOWN HERE ARE FOR THE PRIMARY DESIGN OPTION. SIMILAR JOIST SUPPORT DETAILS SHALL APPLY FOR THE ALTERNATE 1 REINFORCING SCHEME. SEE ALTERNATE TYPICAL REINFORCING DETAILS FOR MORE INFORMATION.

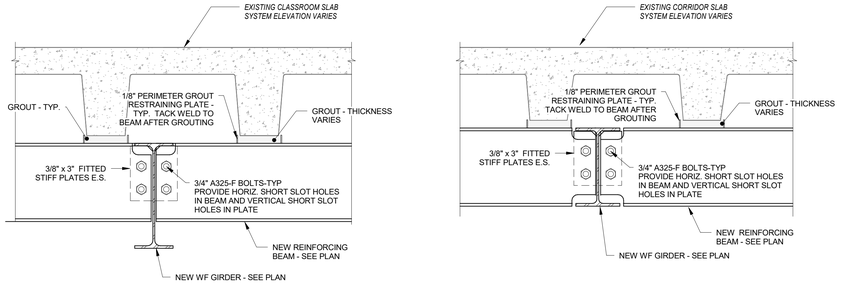
1 SECTION
SCALE: 1 1/2" = 1'-0"

DESIGN ALL CONNECTIONS TO EXISTING CONCRETE USING HILTI HIT-HY200 ADHESIVE ANCHORING SYSTEM WITH 3/4" DIA. MINIMUM HIT-Z-R THREADED RODS (9" MIN. EMBEDMENT) - OR APPROVED EQUAL ADHESIVE ANCHORING SYSTEM AND MATERIALS.

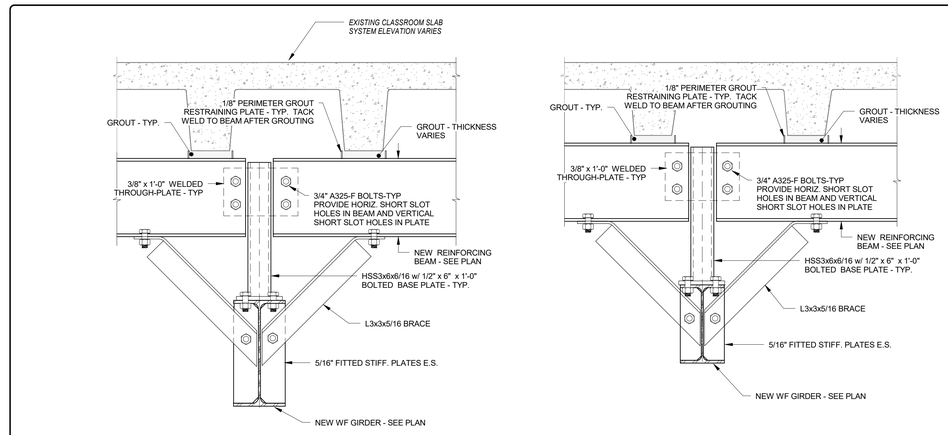


NOTE: THE DETAILS SHOWN HERE ARE FOR THE PRIMARY DESIGN OPTION. SIMILAR JOIST SUPPORT DETAILS SHALL APPLY FOR THE ALTERNATE 1 REINFORCING SCHEME. SEE ALTERNATE TYPICAL REINFORCING DETAILS FOR MORE INFORMATION.

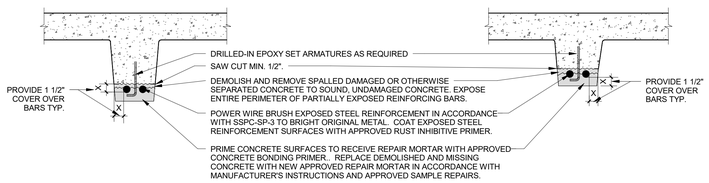
2 SECTION
SCALE: 1 1/2" = 1'-0"



3 SECTION
SCALE: 1 1/2" = 1'-0"



4 SECTION
SCALE: 1 1/2" = 1'-0"



CONSTRUCT SAMPLES OF EACH TYPE OF REPAIR, FOR APPROVAL PRIOR TO COMMENCING REPAIR WORK.

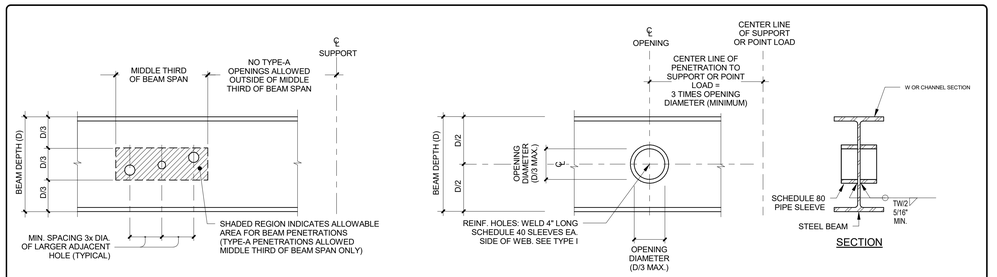
REINFORCING ARMATURES SHALL BE STAINLESS STEEL THREADED 1/4" DIA. ROD DRILLED-IN AND EPOXY-SET, INDIVIDUALLY SIZED AND CHOSEN AS REQUIRED FOR EACH REPAIR CONDITION.

CONCRETE BONDING PRIMER SHALL BE SIKA ARMATEC 110 EPOCEM, CONPRO PRIMER, SONOPREP PLUS, OR APPROVED EQUAL.

RUST INHIBITIVE PRIMER FOR EXPOSED STEEL ELEMENTS SHALL BE SIKA ARMATEC 110 EPOCEM, ECB BY CONPROCO, SONOPREP PLUS, OR APPROVED EQUAL.

REPAIR MORTAR FOR MISSING OR DETERIORATED CONCRETE SHALL BE SIKATOP-123 PLUS, CONPROSET, OR APPROVED EQUAL.

5 TYP. JOIST REINFORCING REPAIR DETAIL
SCALE: 1 1/2" = 1'-0"



PENETRATION TYPE-A

NOTES:
1. TYPE-A PENETRATIONS ALLOWED IN MIDDLE THIRD OF BEAM DEPTH (D/3) ONLY.
2. TYPE-A PENETRATIONS ALLOWED IN MIDDLE THIRD OF BEAM SPAN (L/3) ONLY.
3. TYPE-A PENETRATIONS MAXIMUM ALLOWABLE ROUND FINISHED HOLE SIZE = D/3 OR 4"ø.
4. FINISH LAST 1/8" OF HOLE BY REAMING OR GRINDING.
5. ALL OPENINGS OUTSIDE MIDDLE THIRD OF BEAM SPAN OR LARGER THAN 4"ø. REQUIRE REINFORCEMENT TYPE-B OR TYPE-C DETAIL.
6. L - INDICATES BEAM SPAN LENGTH.

PENETRATION TYPE-B

NOTES:
1. TYPE-B PENETRATIONS ALLOWED IN MIDDLE THIRD OF BEAM DEPTH (D/3) ONLY.
2. TYPE-B PENETRATIONS ALLOWED OUTSIDE THE MIDDLE THIRD OF THE BEAM SPAN, BUT MUST BE A MINIMUM OF 3 TIMES THE OPENING DIAMETER FROM ALL SUPPORTS AND POINT LOADS
3. TYPE-B PENETRATIONS MAXIMUM ALLOWABLE ROUND FINISHED HOLE SIZE = D/3 OR 6"ø.
4. FINISH LAST 1/8" OF HOLE BY REAMING OR GRINDING.
5. ALL OPENINGS NOT MEETING THE REQUIREMENTS FOR REINFORCEMENT TYPE-A OR TYPE-B REQUIRE REINFORCEMENT TYPE-C DETAIL.
6. L - INDICATES BEAM SPAN LENGTH.

6 TYPICAL BEAM PENETRATION DETAILS
NO SCALE

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SHEET CONTENTS
REINFORCING DETAILS

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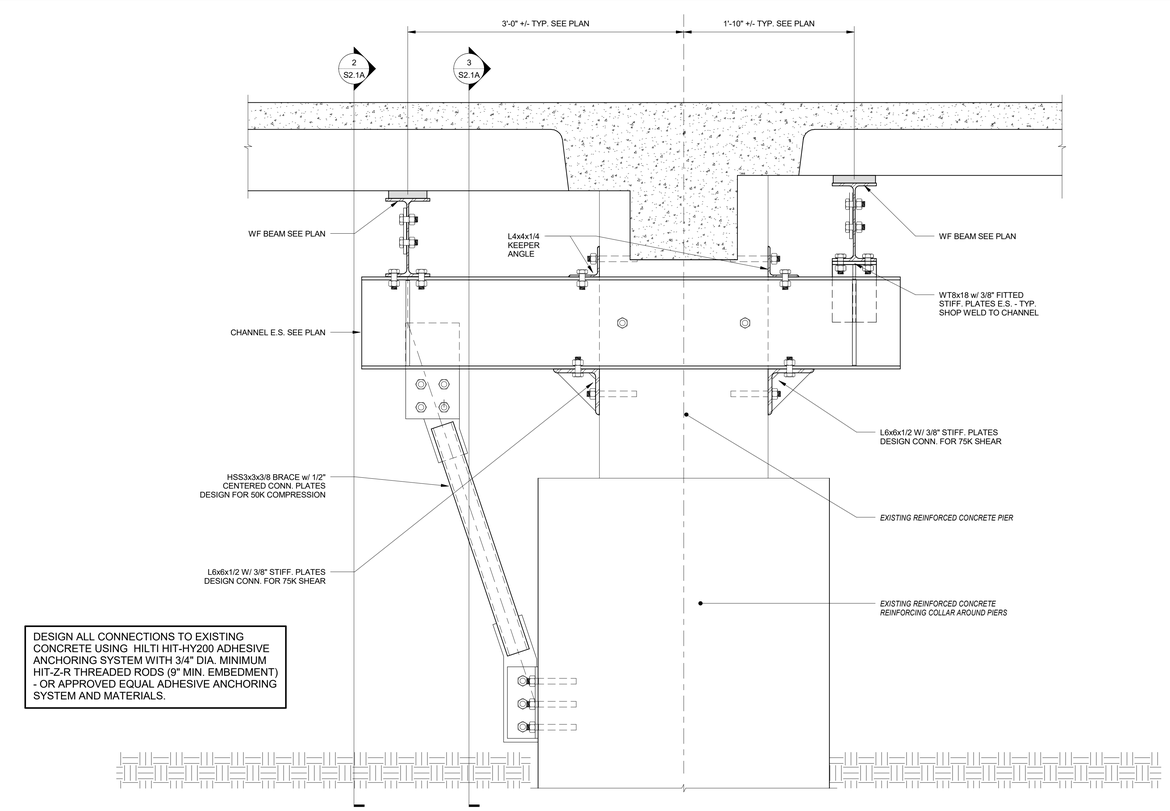
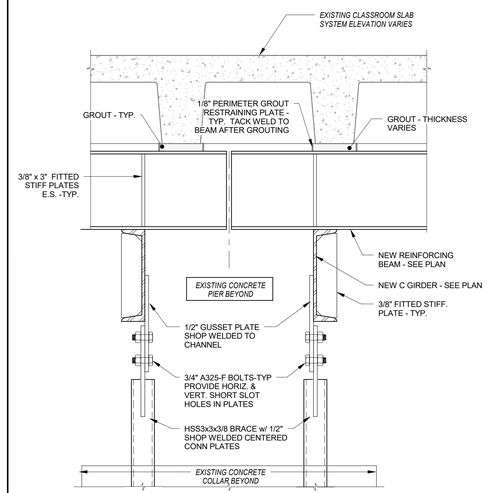
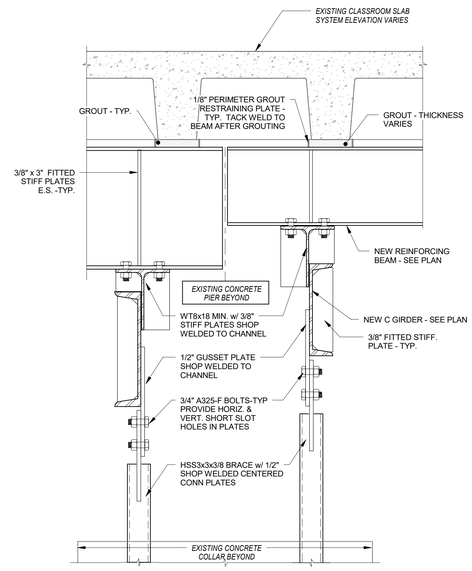


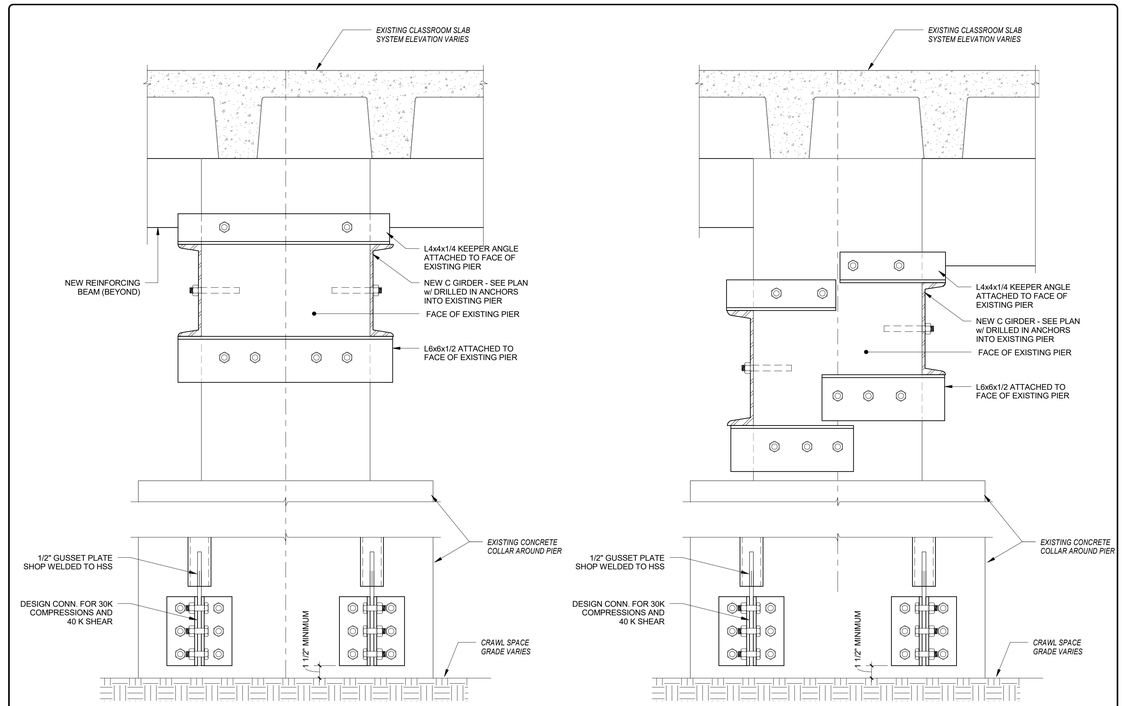
DESIGN ALL CONNECTIONS TO EXISTING CONCRETE USING HILTI HIT-HY200 ADHESIVE ANCHORING SYSTEM WITH 3/4" DIA. MINIMUM HIT-Z-R THREADED RODS (9" MIN. EMBEDMENT) - OR APPROVED EQUAL ADHESIVE ANCHORING SYSTEM AND MATERIALS.

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



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





3 SECTION
SCALE: 1 1/2" = 1'-0"

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ALTERNATE 1 - REINFORCING DETAILS

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