AS USED IN THESE GENERAL NOTES:

"DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON. "CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS

"SER" IS DEFINED AS THE STRUCTURAL ENGINEER OF RECORD FOR THE STRUCTURE IN ITS FINAL CONDITION.

"DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S ARCHITECT AND SER

"CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, STRUCTURAL STEEL FABRICATOR OR STRUCTURAL STEEL ERECTOR. "STRUCTURE IN ITS FINAL CONDITION" MEANS ALL STRUCTURAL ELEMENTS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS ARE INSTALLED AND COMPLETELY CONNECTED AND INSPECTED WITH NO OUTSTANDING NON-COMPLIANCE ISSUES.

- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE EXISTING CONDITIONS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.
- IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.
- APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.
- ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.
- ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.

SI SPECIAL INSPECTIONS

- PROVIDE SPECIAL INSPECTIONS PER CHAPTER 17 IBC 2015, SEE SPECIFICATIONS
- DE DEMOLITION
- DE-1 THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMOLITION AND THE INTEGRITY AND STABILITY OF THE EXISTING STRUCTURE DURING DEMOLITION UNTIL THE WORK IS COMPLETED. THE CONTRACTOR SHALL PROVIDE SHORING IN REQUIRED LOCATIONS WHERE EXISTING CONSTRUCTION TO REMAIN WILL BE AFFECTED BY DEMOLITION. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN SHORING.
- DE-2 THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO ANY STRUCTURAL ELEMENTS WHICH ARE TO REMAIN AND THAT HAVE BEEN DAMAGED DURING THE DEMOLITION PROCESS TO THE COMPLETE SATISFACTION OF THE OWNER. THE REPAIRS SHALL BE AT NO EXPENSE TO THE OWNER. ALL REPAIR WORK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED AND SUBMITTED TO THE SER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING REPAIR WORK.
- DE-3 ALL EXISTING FRAMING IS INDICATED FOR REFERENCE ONLY AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR. VERIFY THE EXACT EXTENT OF DEMOLITION AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE CONTRACT DOCUMENTS WITH THE EXISTING CONSTRUCTION. IMMEDIATELY NOTIFY THE DESIGN PROFESSIONALS OF ANY INCONSISTENCIES.
- DE-4 THE CONTRACTOR SHALL USE QUALIFIED, EXPERIENCED PERSONNEL FOR DEMOLITION AND REMOVAL OPERATIONS. PERFORM DEMOLITION AND REMOVAL OPERATIONS IN A CAREFUL AND ORDERLY MANNER TO PREVENT HAZARDS TO PERSONS, DAMAGE TO PROPERTY, AND THE SPREADING OF DUST AND DEBRIS.
- DE-5 DO NOT PERMIT PORTIONS OF THE STRUCTURE TO FALL NOR DEBRIS TO DROP EXCEPT BY METHODS WHICH WILL INSURE INTEGRITY OF THE STRUCTURE.
- DE-6 PRIOR TO THE START OF WORK, VERIFY THAT THE SCOPE OF DEMOLITION INDICATED ON THE CONTRACT DOCUMENTS SHALL NOT DAMAGE, CUT OR DISRUPT SERVICE OF ANY MECHANICAL SYSTEM, ELECTRICAL SYSTEM OR UTILITY EMBEDDED IN THE EXISTING
- DE-7 DO NOT DAMAGE, MAR, CUT OR DEFACE THE REMAINING STRUCTURE OR MATERIALS TO BE REUSED, INCLUDING EXISTING DOWELS INTO SLAB TO REMAIN.
- DE-8 THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF REMOVING DEMOLISHED MATERIALS (INCLUDING REBAR, WATER, AND CONCRETE DEBRIS) FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS.
- DE-9 WHERE INDICATED ON THE PLANS, THE DEPTH OF DEMOLITION MUST NOT EXCEED 3". NOTIFY EOR IF SPALLING EXCEEDS THE MAXIMUM 3" DEPTH.
- DE-10 CONTRACTOR TO PROTECT ALL ARCHITECTURAL FINISHES, EMBEDDED ITEMS, AND STRUCTURAL ELEMENTS FROM DAMAGE FROM DEMOLITION PROCESS. PROVIDE ALL NECESSARY TEMPORARY PROTECTION PER SELECTIVE DEMOLITION SPECIFICATION.
- DE-11 ALL EMBEDDED ELECTRICAL CONDUITS MUST BE DEPOWERED BEFORE BEGINNING AND DURING THE DEMOLTION PROCESS. CONTRACTOR TO COORDINATE WITH THE OWNER.
- DE-12 DEMOLITION IS TO STOP A MINIMUM OF 6 INCHES FROM ALL ITEMS EMBEDDED IN THE SLAB, WALLS, AND CONCRETE ENCASEMENTS. DEMOLITION IN THESE AREAS SHALL BE PERFORMED WITH HAND TOOLS.
- CD CODES AND DESIGN CRITERIA
- CD-1 PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE
 - DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:
 - 9TH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE
 - IBC 2015: INTERNATIONAL BUILDING CODE ASCE 7-10: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" THE AMERICAN CONCRETE INSTITUTE (ACI 318-2014)
- CD-2 LIVE LOADS
 - ASSEMBLY HALL, LOADING DOCK:
 - 350 LBS./SQ.FT CONSTRUCTION LOAD (DURING DEMOLITION AND PLACEMENT 50 LBS./SQ.FT. OF CONCRETE UNTIL 28 DAY STRENGTH PLUS 7-DAYS FOR CURING
 - HAS BEEN ACHIEVED) CONCRETE TRUCKS ARE NOT PERMITTED ON THE FLOOR SLAB.
- DEAD LOADS: CD-3
 - SELF WEIGHT OF STRUCTURAL COMPONENTS
 - SUPERIMPOSED LOADS/FLOOR FINISH
- 5 LBS./SQ. FT.

CM CONCRETE MATERIALS

- CONCRETE STRENGTH SHALL MEET THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS (f'c), UON:
 - STRUCTURAL SLAB 6000 PSI NON-SHRINK GROUT 5000 PSI
- TYPE III, HIGH-EARLY PORTLAND CEMENT MAY BE USED PENDING MIX DESIGN REVIEW BY EOR.
- CONCRETE MIX TO INCLUDE CORROSION INHIBITING ADMIXTURE. PROVIDE DOSAGE RATE OF 3 GAL/CY.
- PROVIDE NON-METALLIC DRY SHAKE FLOOR HARDENER AND POLISH AND FINISH PER ARCHITECTURAL SPECIFICATIONS.
- PROVIDE NORMAL WEIGHT CONCRETE WITH CURED DENSITY OF +/- 145 PCF, AND AGGREGATE CONFORMING TO ASTM
- THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED, PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINIUM CONDUIT, AND CONCRETE IS PROHIBITED.
- ALL CAST-IN-PLACE CONCRETE WILL EXPERIENCE DIFFERING VARIATIONS OF CRACKING. DURING CONSTRUCTION OR IN THE FINAL CONDITION ALL CONCRETE IS TO BE TREATED AND REGULARLY MAINTAINED TO PREVENT PROPAGATION OF CRACKS AND WATER PENETRATION. THE CONTRACTOR SHALL DEVELOP A CURING, PROTECTION AND MAINTENANCE PROGRAM AND SUBMIT IT TO THE OWNER.

BN BID NOTES AND ALLOWANCES

- SEE S1-100 FOR THE APPROXIMATE AREA OF SLAB REPAIR. THESE AREAS ARE BASED ON VISUAL SURVEY PROVIDED BY THE CITY OF WORCESTER. CONFIRMATION OF THE AREA OF WORK WILL BE MADE BY THE EOR AND THE CITY OF WORCESTER.
- CONTRACTOR TO PROVIDE AN ALLOWANCE FOR AN ADDITIONAL DEMOLITION OF UP TO 10% OF THE TOTAL AREA OF SLAB REPAIR.
- CONTRACTOR TO PROVIDE AN ALLOWANCE FOR ADDITIONAL REBAR FOR REPLACEMENT OF 1PSF FOR THE AREA OF SLAB REPAIR.

RE CONCRETE REINFORCEMENT

- ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS VERIFY WITH THE SER.
- REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

ASTM 615 GRADE 60 DEFORMED BARS: WELDABLE DEFORMED BARS: ASTM A706 EPOXY COATED DEFOMED BARS: ASTM A615/ A775

- ALL NEW AND EXISTING EXPOSED REBAR TO REMAIN SHALL BE COMPLETELY COATED WITH SIKA ARMATEK-110 INCLUDING TOP AND EXPOSED DOWELS INTO SLAB TO REMAIN.
- DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315, UON.
- WHERE A 90-DEG, 135 -DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS UON.
- SHEAR DOWELS SHALL BE ANCHORED TO EXISTING CONCRETE USING HILTI HIT-RE 500 V3 ADHESIVE.
- REINFORCEMENT MARKED AS CONTINUOUS CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR USING TENSION LAP SPLICES (LTS). SEE LAP SPLICE AND EMBEDMENT SCHEDULE.

EXISTING CONDITIONS

EXISTING BUILDING DRAWING IS TAKEN FROM:

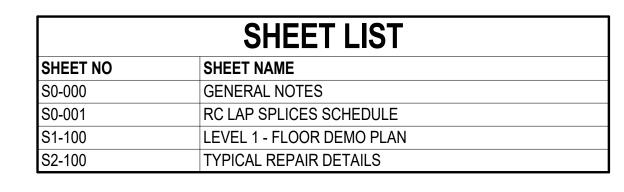
THE 1995 CONSTRUCTION DRAWING PREPARED BY LEMESSURIER CONSULTANTS INC, CAMBRIDGE, MA 02238

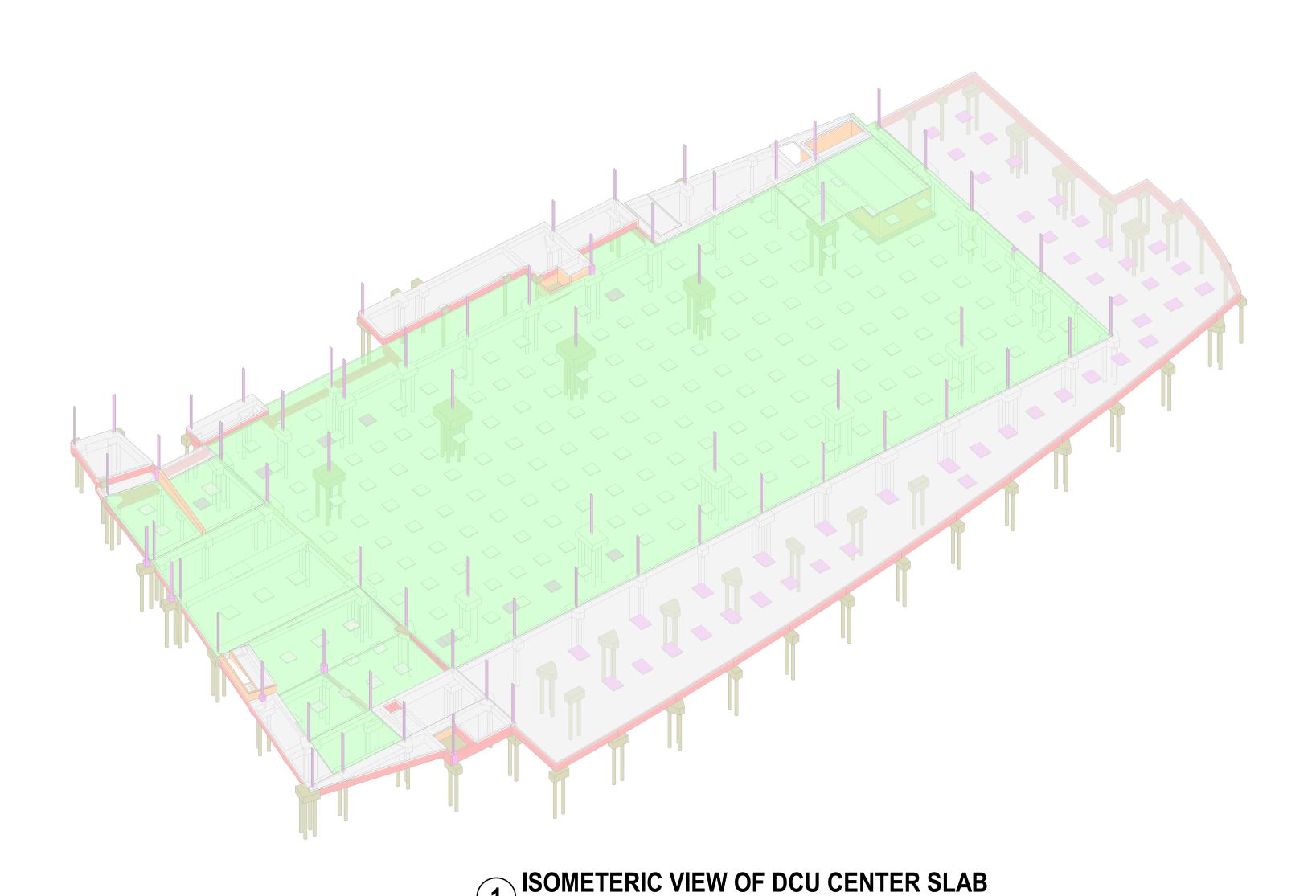
ALL EXISTING CONDITIONS AND REPAIR EXTENTS SHALL BE FIELD VERIFIED BY CONTRACTOR

SPECIFICATION LIST

014500 STRUCTURAL TESTING AND INSPECTION

CONCRETE REINFORCEMENT CAST-IN-PLACE CONCRETE







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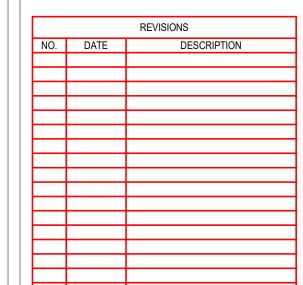
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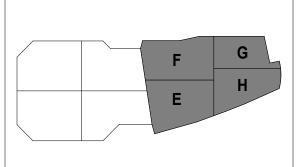
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GENERAL NOTES

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	DEVELOPMENT LENGTH SCHEDULE (INCHES) SEE NOTE 5															TE 5															
BAR	MINIMUM BAR SPACING (INCHES) [MAX(1",db) + db] NOTE 2	NOTED AS Ld ON DRAWINGS f'c (PSI)							NOTED AS Ldh ON DRAWINGS f'c (PSI)								COMPRESSION NOTED AS Ldc ON DRAWINGS f'c (PSI)														
SIZE		3000	4000	2000	0009	0002	0008	0006	10,000	11,000	12,000	3000	4000	2000	0009	2000	0008	0006	10,000	11,000	12,000	3000	4000	2000	0009	2000	0008	0006	10,000	11,000	12,000
#4	1.500	22	19	17	16	15	14	13	12	12	12	11	10	9	8	8	7	7	6	6	6	11	10	9	9	9	9	9	9	9	9
#5	1.625	28	24	22	20	18	17	16	15	15	15	14	12	11	10	9	9	8	8	8	8	14	12	12	12	12	12	12	12	12	12
#6	1.750	33	29	26	24	22	21	19	18	18	18	17	15	13	12	11	11	10	9	9	9	17	15	14	14	14	14	14	14	14	14
#7	1.875	48	42	38	34	32	30	28	27	27	27	20	17	15	14	13	12	12	11	11	11	20	17	16	16	16	16	16	16	16	16
#8	2.000	55	48	43	39	36	34	32	30	30	30	22	19	17	16	15	14	13	12	12	12	22	19	18	18	18	18	18	18	18	18
#9	2.375	62	54	48	44	41	38	36	34	34	34	25	22	20	18	17	16	15	14	14	14	25	22	21	21	21	21	21	21	21	21
#10	2.625	70	61	54	50	46	43	41	39	39	39	28	25	22	20	19	18	17	16	16	16	28	25	23	23	23	23	23	23	23	23
#11	2.875	78	67	60	55	51	48	45	43	43	43	31	27	24	22	21	19	18	17	17	17	31	27	26	26	26	26	26	26	26	26

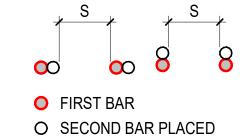
DEVELOPMENT LENGTH SCHEDULE NOTES:

- 1. WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE DEVELOPMENT LENGTH, MULTIPLY Ld BY 1.3.
- 2. WHERE STIRRUPS OR TIES ARE NOT PRESENT THROUGHOUT Ld, MINIMUM BAR SPACING MUST BE INCREASED TO [MAX(1", db) + 2db] FOR SCHEDULED VALUES TO BE APPLICABLE.

SLAB/SLAB-ON-GRADE REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES) SEE NOTE 5														
BAR	MINIMUM BAR													
SIZE	SPACING (INCHES)	f'c = 3 KSI	f'c = 4 KSI	f'c = 5 KSI	f'c = 6 KSI	f'c = 7 KSI	f'c = 8 KSI							
#4	5.500	22	19	17	16	14	14							
#5	5.375	32	28	25	23	21	20							
#6	5.250	43	37	34	31	28	27							
#7	5.125	69	60	54	49	46	43							
#8	5.000	86	74	67	61	56	53							

LAP SPLICE NOTES:

- TABULATED VALUES ARE PER ACI 318-11 REQUIREMENTS FOR NORMALWEIGHT CONCRETE. THE VALUES ON THIS SHEET DO NOT APPLY TO LIGHTWEIGHT CONCRETE
- 2. SEE TYPICAL DETAILS FOR CLEAR COVER
- 3. MINIMUM BAR SPACING DIAGRAM "S"



OR SPLICE BAR

- 4. WHERE ACTUAL CONDITIONS DIFFER FROM THE CLEAR COVER SHOWN ON THE TYPICAL DETAILS OR DIFFER FROM PROVIDED SCHEDULED BAR SIZE MINIMUM SPACING AND/OR f'c, LENGTHS SHALL BE ADJUSTED ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
- 5. TABULATED VALUES ARE FOR NON-EPOXY COATED GRADE 60 REINFORCEMENT IN NORMALWEIGHT CONCRETE

FOR EPOXY COATED REINFORCEMENT:
MULTIPLY Ld BY 1.5
MULTIPLY Ldh BY 1.2
Ldc IS NOT AFFECTED
MULTIPLY LTS BY 1.3 FOR "TOP BARS"
MULTIPLY LTS BY 1.5 FOR ALL OTHER
REINFORCEMENT

FOR GRADE 75 REINFORCEMENT:
MULTIPLY Ld, Ldh, Ldc, AND LTS BY 1.25
MULTIPLY Lcs BY 1.45

- 6. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED IN TENSION, THE TENSION LAP SPLICE LENGTH (LTS) SHALL BE THE LARGER OF THE TENSION DEVELOPMENT LENGTH (Ld) OF THE LARGER BAR AND THE TENSION LAP SPLICE LENGTH OF THE SMALLER BAR.
- 7. WHERE BARS OF DIFFERENT SIZES ARE LAP SPLICED IN COMPRESSION, THE COMPRESSION LAP LENGTH (LCS) SHALL BE THE LARGER OF THE COMPRESSION DEVELOPMENT LENGTH (Ldc) OF THE LARGER BAR OR THE COMPRESSION LAP SPLICE LENGTH OF THE SMALLER BAR.
- 8. "TOP BARS" ARE DEFINED AS HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE DEVELOPMENT LENGTH OR SPLICE "OTHER BARS" ARE ALL BARS FOR WHICH THIS DOES NOT APPLY

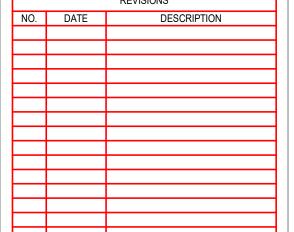
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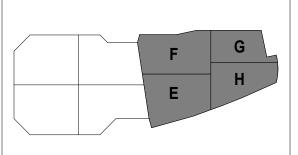
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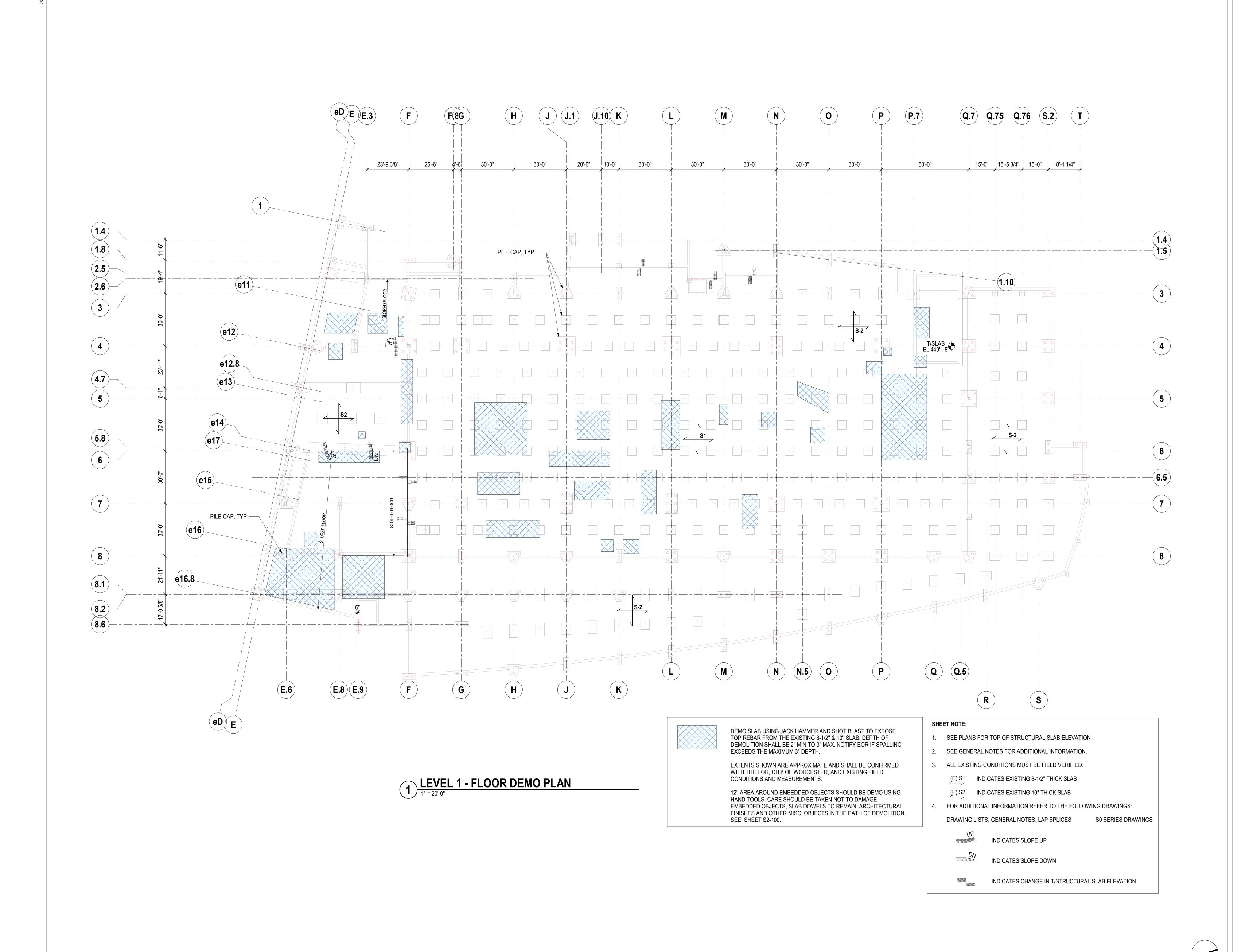
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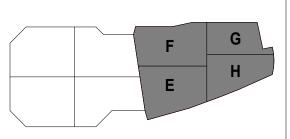
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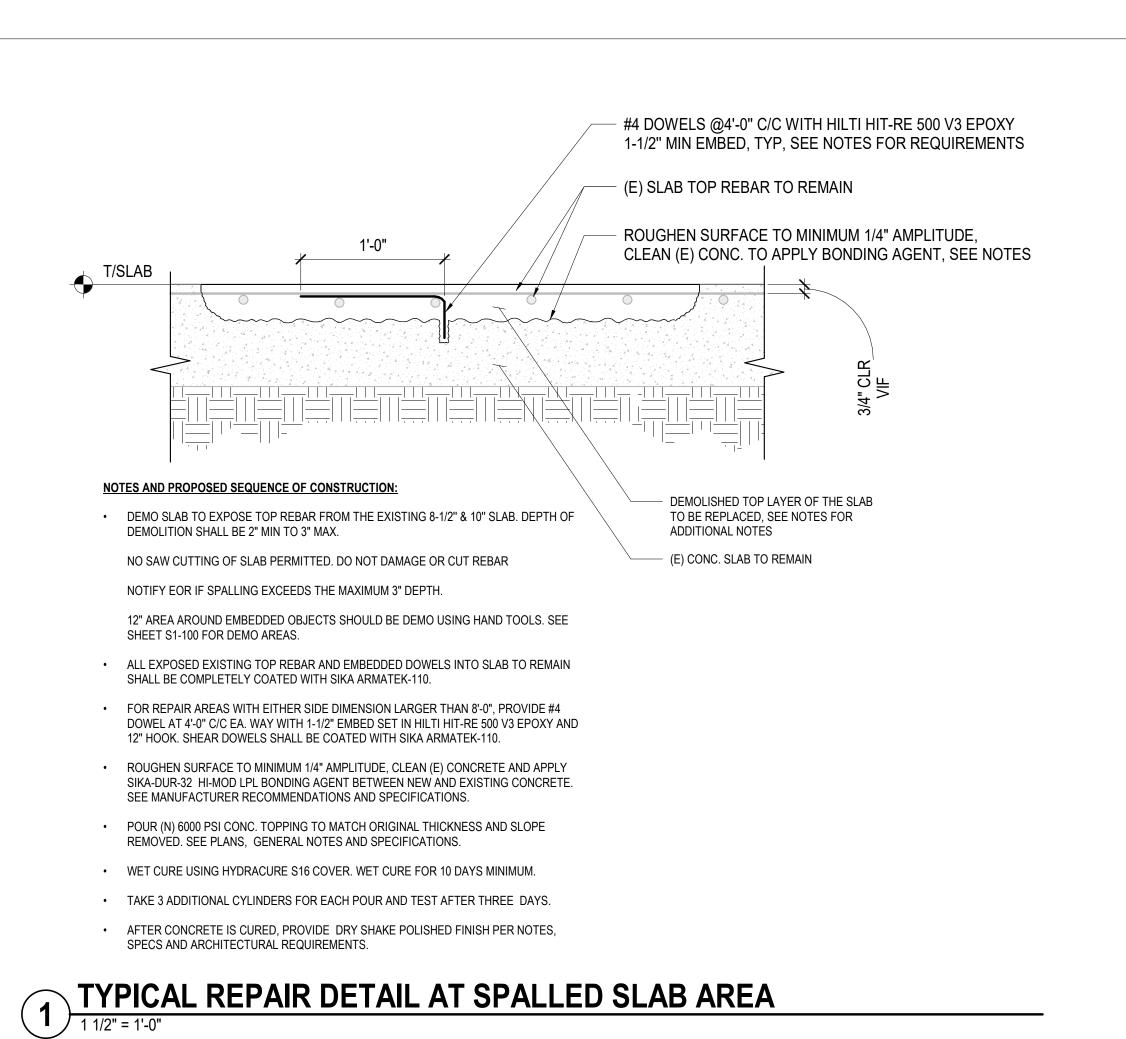
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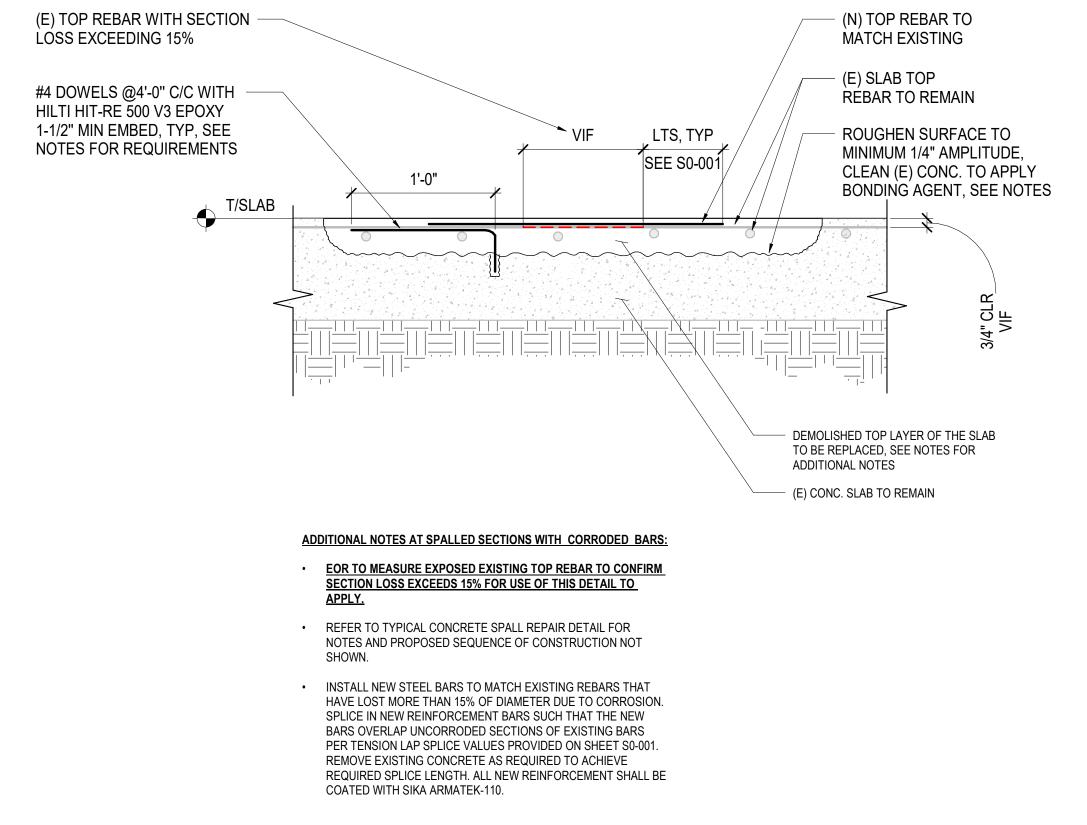
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TYPICAL REPAIR DETAIL AT CORRODED REBAR

1 1/2" = 1'-0"

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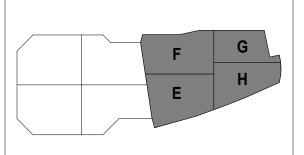
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TYPICAL REPAIR DETAILS

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