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boston planning & development agency

BPDA Design Review Provisos
25 Howard Street, Roxbury
January 17th, 2024

General

1. All changes to the exterior and/or site plans shall be submitted to the Boston Planning & Development Agency ("BPDA") for review and approval.
2. All building improvements shall be completed *prior to issuance of occupancy permit by ISD* unless prior approval is granted by the BPDA.
3. All site improvements, including but not limited to hardscape and plantings, must be completed *prior to issuance of occupancy permit by ISD* unless prior approval is granted by the BPDA for a delay in completing the site improvements.

Landscape/Street/Site

4. Curb-cuts should be limited to 10ft wide for residential projects, and 20ft wide for commercial projects. The pedestrian sidewalk must be continuous over the access driveway.
5. Public sidewalks fronting the project site should be upgraded to meet the Americans with Disabilities Act (ADA) minimum 4' wide clear path of travel (exclusive of the 6" curb).

Other (Commercial)

6. All signage for the retail tenant shall be submitted to the BPDA for review and approval.

Project Specific

7. The correct garage configuration is reflected on the architectural plans.

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GRAPHIC SYMBOLS

Symbol	Description
6 / 5	ENLARGED DETAIL REFERENCE NUMBER SHEET NUMBER
A / A1.3	SECTION DETAIL REFERENCE I.D. SHEET NUMBER
1 / A2.2	ELEVATION REFERENCE I.D. SHEET NUMBER
A B C D 4 6	INTERIOR ELEVATION ELEVATION NUMBER SHEET NUMBER REFERENCE I.D.
6	WINDOW SYMBOL REFERENCE NUMBER
C.H. 9'-0" GWB	CEILING HEIGHT KEY HEIGHT MATERIAL TYPE
CEILING 10'-0"	DATUM POINT LOCATION ELEVATION
A1.3	MATCH LINE SHEET NUMBER
1	REVISION INDICATOR REVISION NUMBER
123	PARTITION INDICATOR PARTITION TYPE
A	FIRE DOOR SYMBOL 90MIN FIRE RATED DOOR (3HR FIRE WALL)
B	FIRE DOOR SYMBOL 60MIN FIRE RATED DOOR (2HR FIRE WALL)
C	FIRE DOOR SYMBOL 45MIN FIRE RATED DOOR (1HR FIRE WALL)
EXIT	EXIT SIGN
	EMERGENCY LIGHT
ANSUL	ANSUL SYSTEM SWITCH
SD	SMOKE DETECTOR
CD	CARBON MONOXIDE & SMOKE COMBO DETECTOR
HD	HEAT DETECTOR
B	OUTSIDE BEACON
H	HORN
S	STROBE ONLY
F	PULL STATION W/HORN
FD	FLOOR DRAIN
FE	FIRE EXTINGUSHER
	EXISTING PARTITION
	DEMOLITION PARTITION
	NEW PARTITION
	FIRE RATED PARTITION

ABI	ACCENT BUILT-IN	FAO	FINISHED ALL OVER	MAX	MAXIMUM	RM	ROOM
ACT	ACOUSTIC CEILING TILE	FE	FIRE EXTINGUISHER	MB	MERCHANDISE BAY	RO	ROUGH OPENING
AFF	ABOVE FINISH FLOOR	FEC	FIRE EXTINGUISHER CABINET	MDO	MEDIUM DENSITY OVERLAY	SBC	STANDARD BUILDING CODE
AL	ALUMINUM	FIN	FINISH	MECH	MECHANICAL	SCH	SCHEDULE
AVG	AVERAGE	FT	FEET	MFR	MANUFACTURER	SECT	SECTION
BD	BOARD	FL	FLOOR	MIN	MINIMUM	SHT	SHEET
BLDG	BUILDING	FLUOR	FLUORESCENT	MISC	MISCELLANEOUS	SIM	SIMILAR
BOCA	BUILDING OFFICIALS CODE ADMINISTRATION	FRT	FIRE RETARDANT TREATED	MLDG	MOLDING	SMF	STRUCTURAL METAL FRAMING
		FS	FULL SIZE	MO	MASONRY OPENING	SPECS	SPECIFICATIONS
BR	BRASS	FSU	FREE STANDING UNIT	MR	MOISTURE RESISTANT	SQ	SQUARE
BRZ	BRONZE	FURN	FURNISH	MTL	METAL	SQ FT	SQUARE FEET
CAB	CABINET	FW	FEATURE WALL	MULL	MULLION	SQ IN	SQUARE INCHES
CH	CHROME	GA	GAUGE	NAT	NATURAL	SS	STAINLESS STEEL
CL	CENTER LINE	G.C.	CONTRACTOR	NIC	NOT IN CONTRACT	STD	STANDARD
CLG	CEILING	GL	GLASS	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	SUSP	SUSPENDED
CLR	CLEAR	GRG	GLASS REINFORCED GYPSUM			SYS	SYSTEM
CMU	CONCRETE MASONRY UNIT	GWB	GYPSUM BOARD	NO	NUMBER	T	THICK
COL	COLUMN	H	HEIGHT	NOM	NOMINAL	T&G	TONGUE AND GROOVE
CONC	CONCRETE	HC	HOLLOW CORE	NTS	NOT TO SCALE	TEL	TELEPHONE
CONST	CONSTRUCTION	HDW	HARDWARE	OC	ON CENTER	TEMP	TEMPERATURE
CONT	CONTINUOUS	HDWD	HARDWOOD	OFI	OWNER FURNISHED ITEM	TR	TREAD
D	DEEP	HOR	HORIZONTAL	OPNG	OPENING	TYP	TYPICAL
DEMO	DEMOLITION	HR	HANGRAIL	OPP	OPPOSITE	UBC	UNIFORM BUILDING CODE
DET	DETAIL	IN	INCH	PL	PLASTIC LAMINATE	UNO	UNLESS NOTED OTHERWISE
DIA	DIAMETER	INSUL	INSULATION	PLBG	PLUMBING	UR	URINAL
DIV PNL	DIVIDER PANEL	INT	INTERIOR	PLYWD	PLYWOOD	VB	VAPOR BARRIER
DWG	DRAWING	JB	JUNCTION BOX	PNL	PANEL	VIF	VERIFY IN THE FIELD
EA	EACH	L	LONG	PT	PRESSURE TREATED	W	WIDE
ELEC	ELECTRIC	LAV	LAVATORY	QTY	QUANTITY	WC	WATER CLOSET
EQ	EQUAL	LIN	LINEAR	R	RADIUS	WD	WOOD
EST	ESTIMATE	LL	LANDLORD	REF	REFERENCE	WI	WROUGHT IRON
EXIST	EXISTING	LT	LIGHT	REQD	REQUIRED	WT	WEIGHT
		LTG	LIGHTING	REV	REVISION	W/O	WITHOUT

CODE SUMMARY

APPLICABLE CODES

BUILDING CODE	:	INTERNATIONAL BUILDING CODE, ED. 2015 & MA AMENDMENT CMR 780 9TH EDITION
ACCESSIBILITY CODE	:	521 CMR
PLUMBING CODE	:	248 CMR 10.00: UNIFORM STATE PLUMBING CODE
MECHANICAL CODE	:	INTERNATIONAL MECHANICAL CODE, ED. 2015
ELECTRICAL CODE	:	NATIONAL ELECTRICAL CODE, ED. 2020
FIRE PROTECTION	:	NFPA1, ED. 2021; & 527 CMR 1.00 MASSACHUSETTS COMPREHENSIVE FIRE CODE
ENERGY	:	INTERNATIONAL ENERGY CONSERVATION CODE, ED. 2018

PROJECT NARRATIVE

THIS PROJECT IS AN ADDITION TO THE FOOD PROCESSING BUILDING, ADDITION OF A LOADING DOCK AND MAIN ENTRANCE ON THE FIRST FLOOR, AND ADDITION OF THE OFFICE SPACE ON THE SECOND FLOOR. ADDITION OF A FREIGHT ELEVATOR AT THE MAIN LOBBY.

DESCRIPTION	CODE REFERENCE	REQUIREMENT	EXISTING	PROPOSED
GENERAL				
USE GROUP	303	F-1	F-1	F-1
CONSTRUCTION TYPE	TABLE 602	2B	2B -	2A
NO. OF STORIES (BUILDING)	TABLE 503	2	2	2
HIGH RISE?	403.1	NO	NO	NO
COVERED MALL	402.0	NO	NO	NO
SPRINKLERED	903.2.1.2	NO	NO	YES
MANUAL FIRE ALARM SYSTEM	907.2.7	YES	YES	YES
AUTOMATIC FIRE ALARM SYSTEM	PER MECHANICAL CODE	NO	NO	YES
SEPARATIONS				
TENANT SEPARATION	TABLE 508.4	NONE	1-HR	1-HR
FINISH CLASSIFICATION	TABLE 803.5	ROOM WALLS CLASS C ROOM CEILINGS CLASS B EXIT CORRIDORS CLASS C	CLASS C CLASS B CLASS C	CLASS C CLASS B CLASS C
OCCUPANT LOAD				
GROSS FLOOR AREA			-	17,700 GROSS sq.ft.
FLOOR AREA ALLOWANCE	1004.1.1	MERCANTILE-STORAGE & SHIPPING (300 GSF) BUSINESS AREA (100 GSF)		2,150 sq.ft. / 300 = 7 15,550 sq.ft. / 100 = 155
MAX OCCUPANT LOAD				162
EGRESS				
REQUIRED NUMBER OF EXITS	TABLE 1021.1	2	2	3
MIN. EXIT SEPARATION	1025.1	188' (1/3 DIAG. = 62'-0")	86'	86'
MAXIUM EGRESS PATH	TABLE 1016.1	200 FEET	96'	96'-0"
EGRESS WIDTH (SERVING 50) >	1023.2	44 INCHES	44"	44"
EGRESS WIDTH (SERVING =50) <	1023.2	36 INCHES	36"	36"
PLUMBING FACILITIES				
WATER CLOSETS	TABLE 403.1	1/30 PER FEMALE, 1/60 PER MALE	-	2 MALE/ 2 FEMALE
LAVATORY	TABLE 403.1	1/200 PER FEMALE, 1/200 PER MALE	-	2 MALE/ 2 FEMALE
DRINKING FOUNTAIN	TABLE 403.1	1/1,000	-	NONE
UTILITY SINK	TABLE 403.1	1	-	1

GENERAL NOTES

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE AND COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE, THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND ALL OTHER APPLICABLE REGULATIONS, LAWS, ORDINANCES, ETC. GOVERNING THIS WORK.
2. PRIOR TO BUILDING, ALL CONTRACTORS MUST THOROUGHLY EXAMINE THE DRAWINGS AND SPECIFICATIONS AND INSPECT THE BUILDING TO FULLY UNDERSTAND THE FACILITY, DIFFICULTIES AND RESTRICTIONS AFFECTING THE EXECUTION OF THE WORK UNDER THIS CONTRACT. THE FAILURE OF ANY CONTRACTORS TO RECEIVE OR EXAMINE ANY FORM OF INSTRUMENT OR DOCUMENT OR TO VISIT THE SITE SHALL IN NO WAY RELIEVE ANY OBLIGATION WITH RESPECT TO THIS WORK. NO CLAIMS FOR ANY ADDITIONAL COST WILL BE ALLOWED DUE TO LACK OF FULL KNOWLEDGE OF EXISTING CONDITIONS.
3. CONTRACTOR'S BID PRICE SHALL REFLECT ALL SPECIFIED WORK.
4. INFORMATION ON THESE PLANS ARE SCHEMATIC. INDIVIDUAL ROOF MANUFACTURES HAVE DIFFERENT DETAILS AND THESE MAY VARY DEPENDING ON WHICH MANUFACTURING SYSTEM IS SELECTED. CONTRACTOR SHOULD VISIT SITE TO ENSURE THAT HE IS FAMILIAR WITH THE PROJECT REQUIREMENT TO DO A COMPLETE ATTENTION SHOULD BE MADE AT THE MECHANICAL EQUIPMENT WITH RESPECT TO DISCONNECTION, MOVING, ROOF INSTALLATION AND RE-INSTALLING.
5. ALL EXISTING CONDITIONS AND PLAN AND DETAIL DIMENSIONS SHOULD BE VERIFIED IN THE FIELD PRIOR TO COMMENCING THE WORK. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES FOUND IN THE PLANS OR SPECIFICATIONS BEFORE PROCEEDING WITH AFFECTED PART OF THE WORK.
6. THE GENERAL CONTRACTOR MUST RECONFIRM THE DIMENSIONS OF THE DEMISING PARTITIONS AND COLUMN LOCATIONS.
7. THE GENERAL CONTRACTOR SHALL UPON INITIAL SITE VISIT VERIFY ALL EXISTING CONDITIONS (I.E., OVERALL DIMENSIONS, CONDITION OF CONCRETE SLAB, LOCATION OF SERVICES, STRUCTURE, CLEARANCES, ETC.) AND REPORT ANY DISCREPANCIES, OMISSIONS, OR OBSTRUCTIONS THAT WILL AFFECT THE LAYOUT OR DESIGN OF THE SPACE IMMEDIATELY TO THE OWNER OR OWNER'S PROJECT MANAGER.
8. CONTRACTOR SHALL LAY OUT PARTITION LINES ON FLOOR AT BEGINNING OF JOB AND NOTIFY ARCHITECT OF ANY OMISSIONS OR DISCREPANCIES IN THE CONTRACT DOCUMENTS IMMEDIATELY.
9. G.C. TO PATCH AND REPAIR EXISTING WALLS AFFECTED BY DEMOLITION OR NEW CONSTRUCTION WITH LIKE CONSTRUCTION MATERIALS TO MATCH EXISTING.
10. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTION TO PROTECT ADJOINING PROPERTY AND STRUCTURES FROM DAMAGE. ALL ABUTTING WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER.
11. IT IS NOT INTENDED THAT THESE DRAWINGS SHOW EVERY CUT, CONDITION ETC., OF THIS SYSTEM. HOWEVER, THE CONTRACTOR SHALL FURNISH A COMPLETE PRODUCT IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE AND IN STRICT CONFORMANCE WITH ALL APPLICABLE INTERNATIONAL CODE AND STATE BUILDING CODE REGULATIONS.
12. CONTRACTOR SHALL ADHERE TO A SCHEDULE FOR ALL WORK WHICH DOES NOT INTERFERE WITH NORMAL OPERATIONS OF THE FACILITY.
13. CONTRACTOR SHALL ENSURE THAT MEMBRANE ROOFING MANUFACTURE'S REPRESENTATIVE IS PRESENT ON SITE DURING INSTALLATION OF THE ENTIRE ROOF.
14. ROOF SLOPES AS NOTED ON DRAWINGS ARE BASED ON AVAILABLE EXISTING INFORMATION. CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND SLOPES AND SUBMIT TO DESIGNER ALL EXISTING ELEVATIONS PRIOR TO INSTALLATION OF INSULATION. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE MINIMUM SLOPES TOWARDS ROOF FRAMING AS NOTED. USE TAPERED INSULATION AT FLAT AREAS AS REQUIRED TO ACHIEVE POSITIVE SLOPES.
15. COMPLETE SYSTEM WARRANTIES INCLUDING ROOFING, INSULATION AND OTHER RELATED ITEMS ARE REQUIRED FOR THIS PROJECT. REFER TO MANUFACTURER'S SPECIFICATION.
16. DO NOT PUT DISSIMILAR METALS IN CONTACT WITH EACH OTHER.
17. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL ITEMS ARE NEW.
18. USE ONLY MASONRY MATERIALS FOR MASONRY PATCHING AND USE ONLY ROOFING MATERIALS FOR ROOF WORK.

BUILDING LANDLORD GENERAL NOTES:

A FULL SET OF APPROVED CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO FIRE ALARM DRAWINGS, FIRE SPRINKLER DRAWINGS, STRUCTURAL ENGINEERING DRAWINGS, DOCUMENTS AND CALCULATIONS ALONG WITH THE MASTER PERMIT AND SUB-CONTRACTOR PERMITS IS REQUIRED TO BE SUBMITTED TO THE LANDLORD PRIOR TO COMMENCING WITH ANY IMPROVEMENTS.

-STRUCTURAL, STAMPED PLANS AT THE TENANTS' SOLE EXPENSE ARE REQUIRED FOR EQUIPMENTS/MATERIAL LOADS HEAVY ENOUGH TO CAUSE DEFLECTION/DAMAGE TO THE LANDLORD'S STRUCTURE.

-ANY AND ALL ROOF WORK WILL BE PERFORMED BY THE LANDLORD'S PREFERRED ROOFING CONTRACTOR AT TENANT'S SOLE COST.

- MAINTAIN ACCESS TO ANY AND ALL LANDLORD POINTS OF MAINTENANCE FOR CLEAN OUTS, ELECTRICAL JUNCTION BOXES, ETC.

- ALL ROOF TOP EQUIPMENT IS REQUIRED TO BE LABELED, INCLUDED BUT NOT LIMITED TO HVAC, EXHAUST FANS, KITCHEN HOOD FANS, ETC. THE LABEL SHALL BE BLACK IN COLOR AND SHALL BE A MINIMUM OF 3" IN HEIGHT IN A VISIBLE LOCATION. THE LABEL SHALL STATE THE TENANT UNIT NUMBER.

- A FULLY ADHERED TOP OR PVC ROOF WALKWAY MATS COMPATIBLE WITH THE EXISTING ROOF SYSTEM IS REQUIRED TO BE INSTALLED SURROUNDING ALL ROOFTOP EQUIPMENT.

-A A COMPATIBLE GREASE MAT IS REQUIRED TO BE INSTALLED AROUND ROOF TOP GREASE EXHAUST SYSTEM. THE SIZE WILL BE DETERMINE BY THE GREASE HOOD EXHAUST USE AND ROOF MEMBRANE MANUFACTURE RECOMMENDATIONS.

- A NEW ROOF SUPPORTS SHALL BE CONSTRUCTED FOR ELECTRICAL/CONDENSATE LINE AND IS REQUIRED TO BE COMPATIBLE WITH THE EXISTING ROOF MEMBRANE.

-ALL ELECTRICAL EQUIPMENT AND GEAR IS REQUIRED TO BE LABELED INCLUDING BUT NOT LIMITED TO PANELS, DISCONNECTS, METERS ETC. THE LABEL SHALL BE BLACK IN COLOR AND SHALL BE A MINIMUM OF 2" IN HEIGHT IN A VISIBLE LOCATION, THE LABEL SHALL STATE THE TENANT UNIT NUMBER.

- ALL EXTERIOR WALL PENETRATION SHALL BE MADE WATERTIGHT AND BE FINISHED TO MATCH THE SURROUNDING WALL FINISHES.

- NO EXPOSED WIRES OR CONDUIT IS ALLOWED ON THE EXTERIOR OF THE STRUCTURE WITHOUT WRITTEN PERMISSION FROM THE LANDLORD.

- ATTACHMENT TO THE UNDERSIDE OF THE ROOF/PAN DECK ARE PROHIBITED.

- THE TENANT WILL ULTIMATELY BE LIABLE FOR ANY DAMAGE OCCURRING TO ANY LANDLORD COMMON UTILITIES THAT MAY BE WITHIN THE TENANT SPACE AFTER TAKING POSSESSION.

-THE FIRE RATING OF ALL EXISTING DEMISING WALLS MUST BE MAINTAINED.

-LANDLORD REQUIRES A CERTIFIED COPY OF THE AS-BUILT DRAWINGS UPON COMPLETION OF CONSTRUCTION AND FINAL INSPECTION BY THE AUTHORITY HAVING JURISDICTION.

-4" OR 6" PVC TUBE CAPPED ON THE BOTTOM END AND A CLEAN OUT ON THE TOP END TO HOUSE THE HARD COPY OF THE AS BUILT PLANS MUST BE INSTALLED IN A UTILITY ROOM OR BY THE MAIN ELECTRICAL PANEL. LABEL THE TUBE "AS-BUILTS" DO NOT REMOVE"

-LANDLORD REQUIRES A SIGNED/COMPLETED ELECTRONIC PDF COPY OF THE CERTIFICATE OF OCCUPANCY AND CERTIFICATE OF COMPLETION.

-LANDLORD REQUIRES EVIDENCE THE TENANT GREASE WASTE/SEWER LINES HAVE BEEN RODDED AND ARE FREE AND CLEAR TO THE MAIN AFTER CONSTRUCTION WAS COMPLETE.

-DEVIATIONS FROM THE APPROVED CONSTRUCTION DOCUMENTS SHALL REQUIRE THE REVIEW AND APPROVAL OF THE LANDLORD.

- CONTRACTOR'S WORK THAT PREVENTS THE SURROUNDING TENANTS FROM QUITE ENJOYMENT OF THEIR SPACE IS PROHIBITED AND IS REQUIRED TO BE COORDINATED WITH THE LANDLORD TO BE CONDUCTED AFTER OPERATING HOURS.

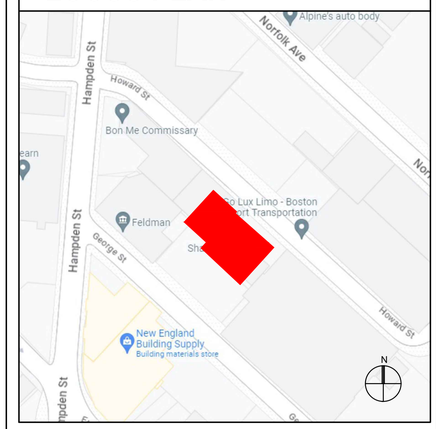
-THE EXTERIOR AREAS OF THE BUILDING SHALL BE KEPT CLEAN AND CLEAR OF DEBRIS.

- ALL SURFACES AND AREAS ARE REQUIRED TO BE PROTECTED FROM DAMAGE BY THE DUMPSTER.

DOCUMENT LIST

A0	TITLE SHEET	SHEET	1
C-1	SURVEY PLOT PLAN	SHEET	2
A0.1	WALL TYPES AND SCHEDULES	SHEET	3
A1.0	PROPOSED SITE PLAN	SHEET	4
A1.1	EXISTING FIRST FLOOR PLAN (PARTIAL LEFT)	SHEET	5
A1.2	EXISTING FIRST FLOOR PLAN (PARTIAL RIGHT)	SHEET	6
A1.3	EXISTING SECOND FLOOR PLAN	SHEET	7
A1.4	PROPOSED FIRST FLOOR PLAN (PARTIAL LEFT SIDE)	SHEET	8
A1.5	PROPOSED FIRST FLOOR PLAN (PARTIAL RIGHT SIDE)	SHEET	9
A1.6	PROPOSED SECOND FLOOR PLAN	SHEET	10
A1.7	PROPOSED ROOF PLAN	SHEET	11
A2.1	EXISTING EXTERIOR ELEVATIONS	SHEET	12
A2.2	PROPOSED EXTERIOR ELEVATIONS	SHEET	13
A3.1	PROPOSED BUILDING SECTIONS	SHEET	14
A3.2	PROPOSED WALL SECTIONS	SHEET	15
S0.0	STRUCTURAL GENERAL NOTES	SHEET	16
S1.0	FOUNDATION PLAN	SHEET	17
S1.1	SECOND FLOOR FRAMING PLAN	SHEET	18
S1.2	ROOF FRAMING PLAN	SHEET	19
S2.0	BRACING ELEVATIONS	SHEET	20
S3.0	STRUCTURAL DETAILS	SHEET	21
S3.1	STRUCTURAL DETAILS	SHEET	22
H1.0	PROPOSED HVAC PLAN	SHEET	23
H1.2	PROPOSED HVAC PLAN	SHEET	24
H2.1	HVAC NOTES & SCHEDULES	SHEET	25
H2.2	HVAC DETAILS	SHEET	26
P1.0	PROPOSED PLUMBING PLAN	SHEET	27
P1.1	PROPOSED PLUMBING PLAN	SHEET	28
P1.2	PROPOSED PLUMBING PLAN	SHEET	29
P2.1	PROPOSED PLUMBING DETAILS	SHEET	30
P2.2	PROPOSED PLUMBING DETAILS	SHEET	31
FP1.0	PROPOSED FIRE PROTECTION PLAN	SHEET	32
FP1.1	PROPOSED FIRE PROTECTION PLAN	SHEET	33
FP1.2	PROPOSED FIRE PROTECTION PLAN	SHEET	34
FP2.0	FIRE PROTECTION NOTES	SHEET	35
FP2.1	FIRE PROTECTION DETAILS	SHEET	36
E1.0	PROPOSED FIRST FLOOR PLAN (LIGHTING)	SHEET	37
E2.0	SECOND FLOOR PLAN (LIGHTING)	SHEET	38
E3.0	FIRE FLOOR PLAN (POWER)	SHEET	39
E4.0	SECOND FLOOR PLAN (POWER)	SHEET	40
E5.0	ELECTRICAL DETAILS	SHEET	41
FA1.0	FIRE FLOOR (FIRE ALARM)	SHEET	42
FA2.0	SECOND FLOOR PLAN (FIRE ALARM)	SHEET	43
FA3.0	FIRE ALARM DETAILS	SHEET	44

LOCUS PLAN



SHANGHAI CORP FACTORY
25 HOWARD STREET
ROXBURY, MA

JCBT ARCHITECT
585 WASHINGTON STREET, QUINCY, MA 02169
ADMIN@JCBTARCHITECT.COM
TEL: (617) 404-8182

CONSULTANT

REGISTRATION

REGISTERED ARCHITECT JIM CHEN No. 51071 QUINCY, MA

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	LANDLORD COMMENTS	1/7/2023

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

TITLE SHEET

DRAWN: J.C.	DRAWING NO:
SCALE: NOTED	
DATE: 07-01-2023	
CHECKED:	A0
SHEET OF	

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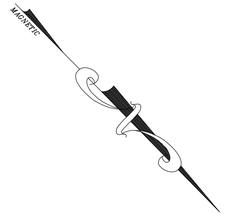
LEGEND

	BOUND
	IRON PIN/PIPE
	STONE POST
	TREE
	TREE STUMP
	SHRUBS/FLOWERS
	SIGN
	BOLLARD
S	SEWER MANHOLE
D	DRAIN MANHOLE
	CATCH BASIN
W	WATER MANHOLE
WV	WATER VALVE
	HYDRANT
GV	GAS VALVE
E	ELECTRIC MANHOLE
EL	ELECTRIC HANDHOLE
	UTILITY POLE
	LIGHT POLE
M	MANHOLE
×148.00	SPOT GRADE
TW	TOP OF WALL
BW	BOTTOM OF WALL
	EXISTING BUILDING
	RETAINING WALL
	STONE WALL
	FENCE
	TREE LINE
S	SEWER LINE
D	DRAIN LINE
W	WATER LINE
G	GAS LINE
E	UNDERGROUND ELECTRIC LINE
OHW	OVERHEAD WIRES
145	CONTOUR LINE (MJR)
146	CONTOUR LINE (MNR)



NOTES:

1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 12/16/2021.

2. MASTER DEED REFERENCE: BOOK 39126, PAGE 85
PLAN REFERENCE: PLAN BOOK 7262, PLAN 174 OF 1957
PLAN REFERENCE: PLAN BOOK 2006, PLAN 166
SUFFOLK COUNTY REGISTRY OF DEEDS

3. THIS PLAN IS NOT INTENDED TO BE RECORDED.

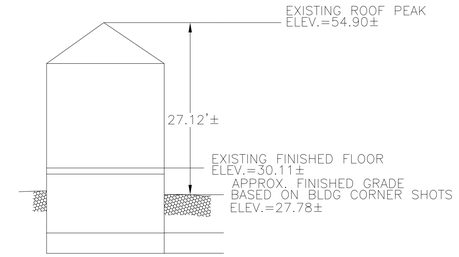
4. I CERTIFY THAT THE DWELLING SHOWN IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE X, ON FLOOD HAZARD BOUNDARY MAP NUMBER 25025C0079J, IN COMMUNITY NUMBER: 250286, DATED 3/16/2016.

5. THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT USES OF THE LAND; HOWEVER THIS NOT CONSTITUTE A GUARANTEE THAT NO SUCH EASEMENTS EXIST.

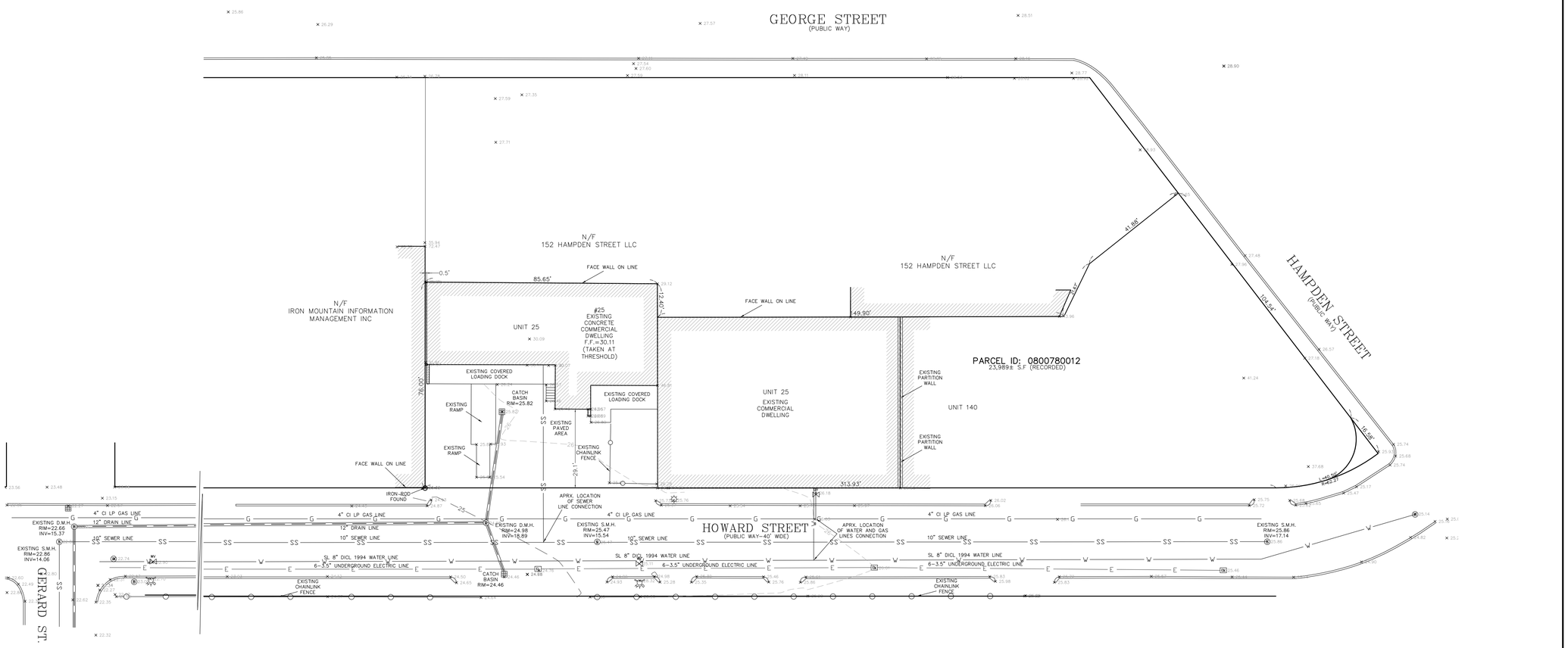
6. FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.

7. NO RESPONSIBILITY IS TAKEN FOR ZONING TABLE AS PETER NOLAN & ASSOCIATES LLC ARE NOT ZONING EXPERTS. TABLE IS TAKEN FROM TABLE PROVIDED BY LOCAL ZONING ORDINANCE. CLIENT AND/OR ARCHITECT TO VERIFY THE ACCURACY OF ZONING ANALYSIS.

8. THE ELEVATIONS SHOWN ARE BASED ON CITY OF BOSTON DATUM.



EXISTING PROFILE
NOT TO SCALE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SCALE 1"=20'				
DATE 1/24/2022	REV	DATE	REVISION	BY
SHEET 1				
PLAN NO. 1 OF 1				
CLIENT:				
DRAWN BY KK				
CHKD BY ETS				
APPD BY PJN				

25 HOWARD STREET
WEST ROXBURY (BOSTON)
MASSACHUSETTS

EXISTING CONDITIONS
PLAN

PETER NOLAN & ASSOCIATES LLC
LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS
80 JEWETT STREET, SUITE 2 NEWTON, MA 02458
PHONE: 857 891 7478/617 782 1533 FAX: 617 202 5691
EMAIL: pnolan@pnasurveyors.com

COMMONWEALTH OF MASSACHUSETTS
PETER J. NOLAN
No. 49185
REGISTERED PROFESSIONAL LAND SURVEYOR

SHEET NO.
1

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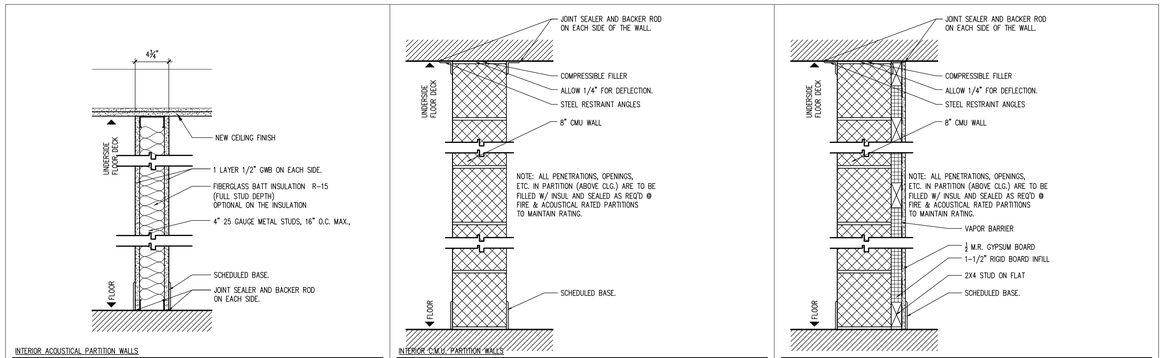
FINISH SCHEDULE

CODE	MATERIAL	MANUF.	SERIES/COLOR/FFINISH	LOCATION
P1	PAINT	BEN. MOORE	BM 957 (OFF WHITE)	GENERAL WALLS
P2	PAINT	S. WILLIAMS	SW 7037 BALANCED BEIGE	ACCENT
P3	PAINT	BEN. MOORE	BM 183 MORNING LIGHT	ACCENT
P4	PAINT	BEN. MOORE	BM 962 (WHITE)	CEILING
P5	PAINT	BEN. MOORE	BM 985	CEILING
P6	PAINT	BEN. MOORE	BM 1631 DARK GRAY	DOOR FRAMES

FLOOR TILES AND WALL TILES REFER TO SHEET A2.2

WALL TYPES



INTERIOR ACOUSTICAL PARTITION WALLS

1	NON RATED 2X4 STUD W/ ACOUSTICAL INSULATION		
2	NON RATED 2X6 STUD W/ ACOUSTICAL INSULATION		
3	NON RATED 2X4 STUD W/ ACOUSTICAL INSULATION & MR GWB ON BATH SIDES		

INTERIOR C.M.U. PARTITION WALLS

4	2 HR RATED PARTITION	STC 50	UL-U906

57	2 HR RATED PARTITION - WITH FINISHED SIDE	STC 54	UL-U906

HARDWARE LEGEND

1 - HINGE	STANLEY: A - FIVE KNUCKLE HEAVY WEIGHT BALL BEARING HINGE PROVIDE QUANTITY TO CORRESPOND WITH DOOR HEIGHT AND WIDTH; 3 MINIMUM.	SATIN S.S.
2 - LATCHSET	SCHLAGE "D" SERIES CHROME PLATE; "SPARTA" HC 625 LEVER A - OFFICE FUNCTION B - CLASSROOM FUNCTION C - PASSAGE FUNCTION D - STOREROOM FUNCTION E - CORRIDOR FUNCTION F - PRIVACY FUNCTION G - DEADBOLT	SATIN CHROME
3 - PANIC/EXIT	VON DUPRIN A - SERIES 55 CROSSBAR EXIT DEVICE	SATIN S.S.
4 - PUSH/PULL	BALDWIN ENGRAVED SQUARE EDGE A - 8" X 16" PUSH PLATE. 4" X 16" PLATE W/ 2554 PULL B - ELMES T3015-01-034 S.S. BRUSHED FINISH WITH POLISH PULL-SIDE ONLY C - ELMES T3004-01-024-P2025; S..S. W/ HAIRLINE AND POLISH CUSTOM LENGTH (7'-10" DOOR) PULL 4"X16" PUSH PLATE	SATIN S.S.
5 - DOORSTOP	IVES A - CHROME CONCEALED WALL MOUNT B - CHROME FLOOR MOUNT	SATIN

DOOR & HARDWARE SCHEDULE

REF	DOOR LOCATION	TYPE	LBL	SIZE	MATL.	FIN.	FRAME JAMB	FRAME HEAD	FRAME MATL.	FRAME FIN.	HARDWARE 1	2	3	4	5				REMARKS
01	MAIN ENTRY	1		3'-4"X7'-10"	ALUM/GLS	BRONZE	KAWNEER TRIFAB VG 451T						A	C					
02	VESTIBULE	1		3'-4"X7'-10"	ALUM/GLS	BRONZE	KAWNEER TRIFAB VG 451T						A	C					
03	RESTROOM	2		3'-0"X6'-8"	WOOD	PAINTED	2"	2"	H.M.	PTD.	A	F		AB	A				
04	RESTROOM	2		3'-0"X6'-8"	WOOD	PAINTED	2"	2"	H.M.	PTD.	A			AB	A				
05	INTERIOR DOOR	2		3'-0"X6'-8"	WOOD	PAINTED	2"	2"	H.M.	PTD.	A			AB	A				
EX	VARIES	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	--	--	--	--	--	--	--	--	-- --

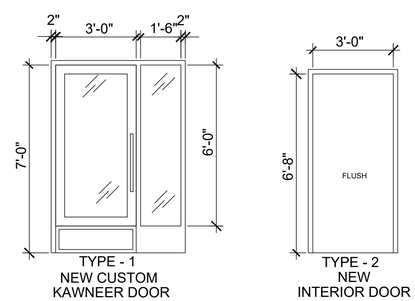
MISCELLANEOUS ITEMS, BY OWNER

ITEM	MODEL/MANUFACTURE	FINISH/REMARKS
FISH TANK		
FURNITURE		
WINDOW GRAPHICS		
KITCHEN EQUIPMENT		
INTERIOR LOGOS		
EXTERIOR SIGNAGE		

NOTE: ALL OWNER SUPPLIED ITEMS TO BE INSTALLED BY GC UNLESS NOTED OTHERWISE.

DOOR & WINDOW TYPES

SCALE: 3/8" - 1'-0"



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CONSULTANT

REGISTRATION

REGISTERED ARCHITECT JIM CHEN No. 51071 COMMONWEALTH OF MASSACHUSETTS

REVISIONS

NO.	BY	DESCRIPTION	DATE

PROJECT

SHANGHAI CORP.

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED
WALL TYPES
& SCHEDULES

DRAWN:	J.C.	DRAWING NO:
SCALE:	NOTED	A0.1
DATE:	07-14-2023	
CHECKED:		
SHEET	OF	

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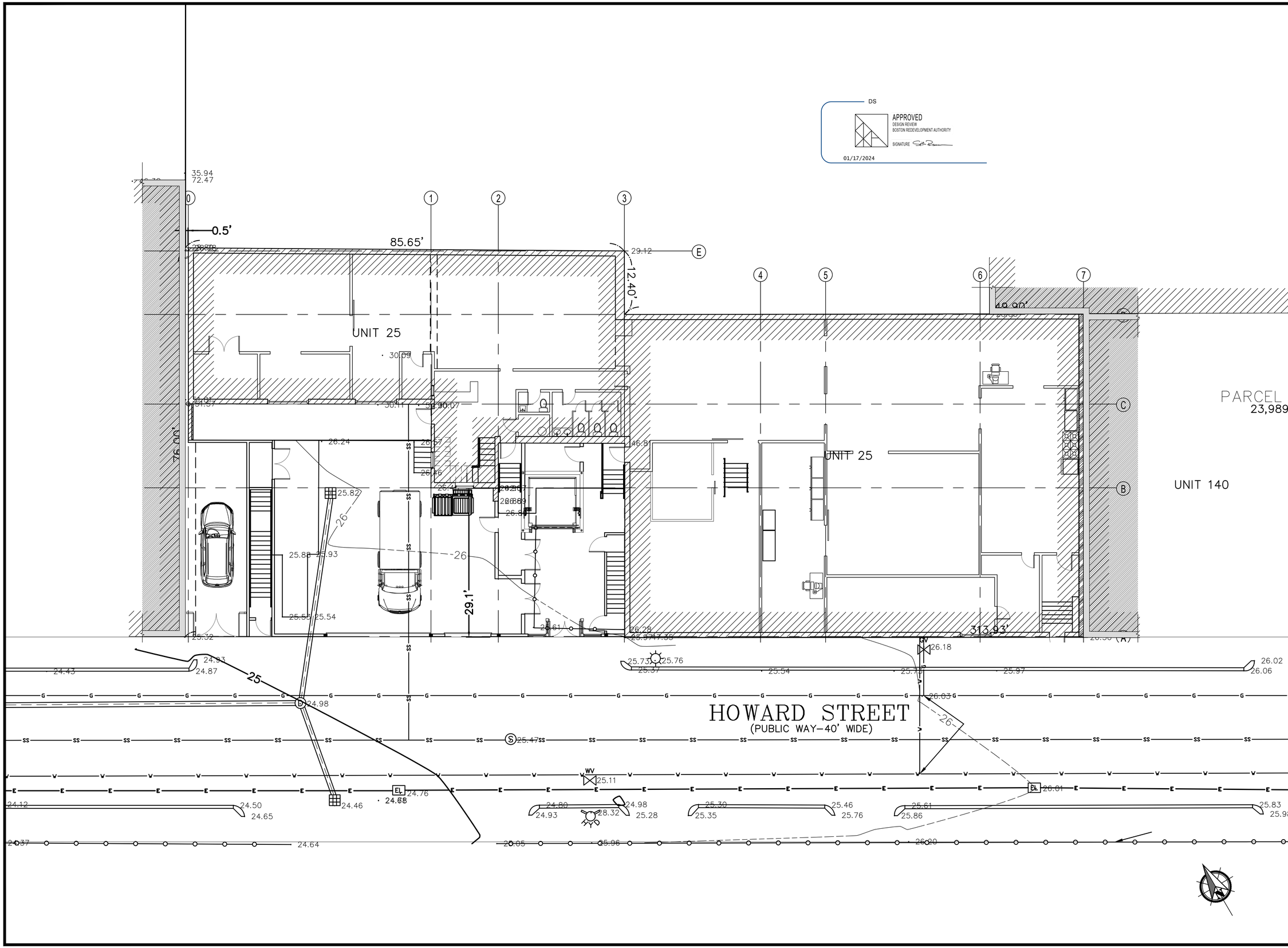

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REGISTRATION

REGISTERED ARCHITECT
JIM CHEN
No. S1071
QUINCY, MA

REVISIONS

NO.	BY	DESCRIPTION	DATE

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

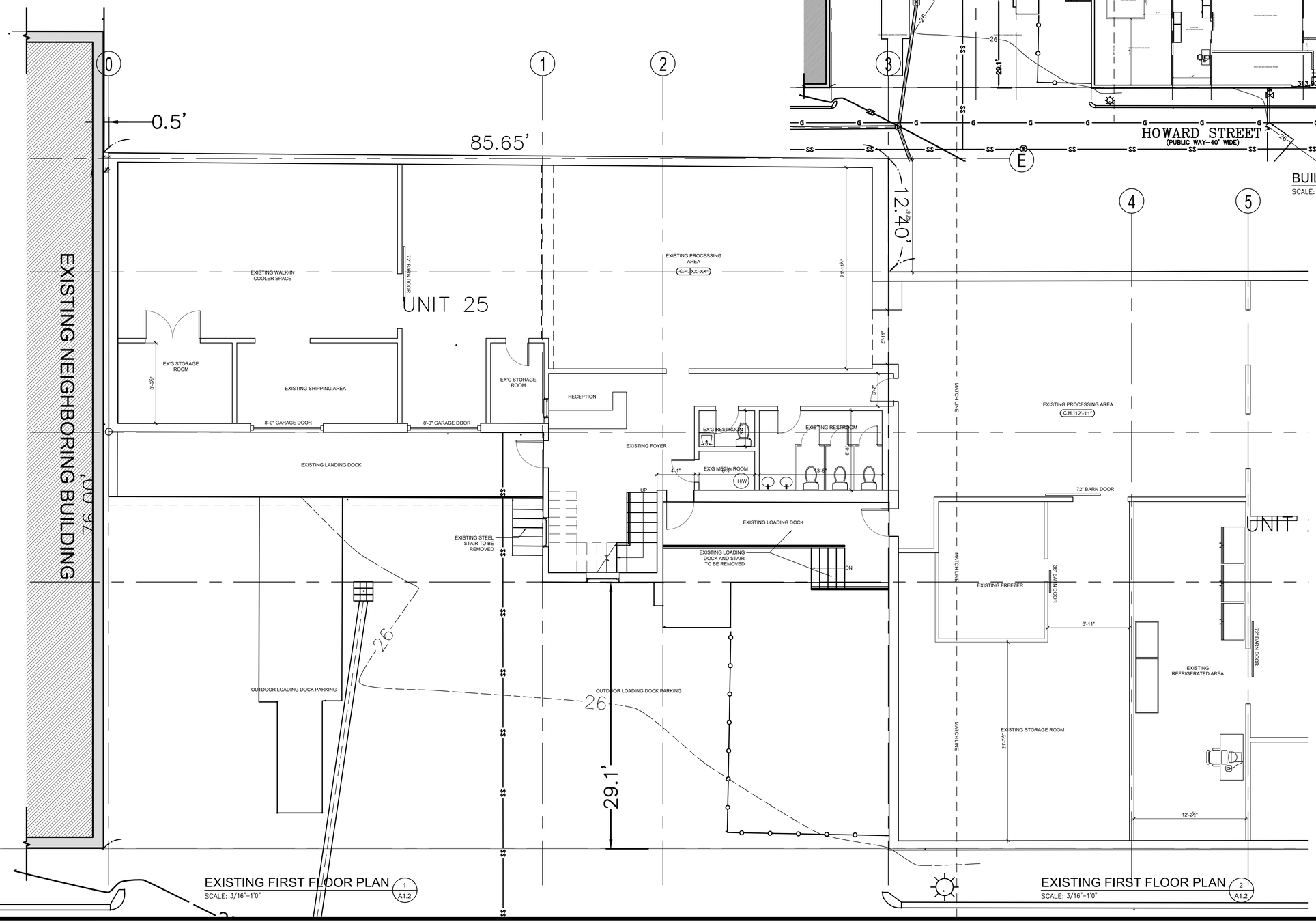
PROJECT NO. 21217

SHEET TITLE

PROPOSED
SITE
PLAN

DRAWN:	J.C.	DRAWING NO:
SCALE:	NOTED	
DATE:	07-14-2023	
CHECKED:		A1.0
SHEET	OF	

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243



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JIM CHEN
No. 51071
QUINCY, MA
COMMONWEALTH OF MASSACHUSETTS

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

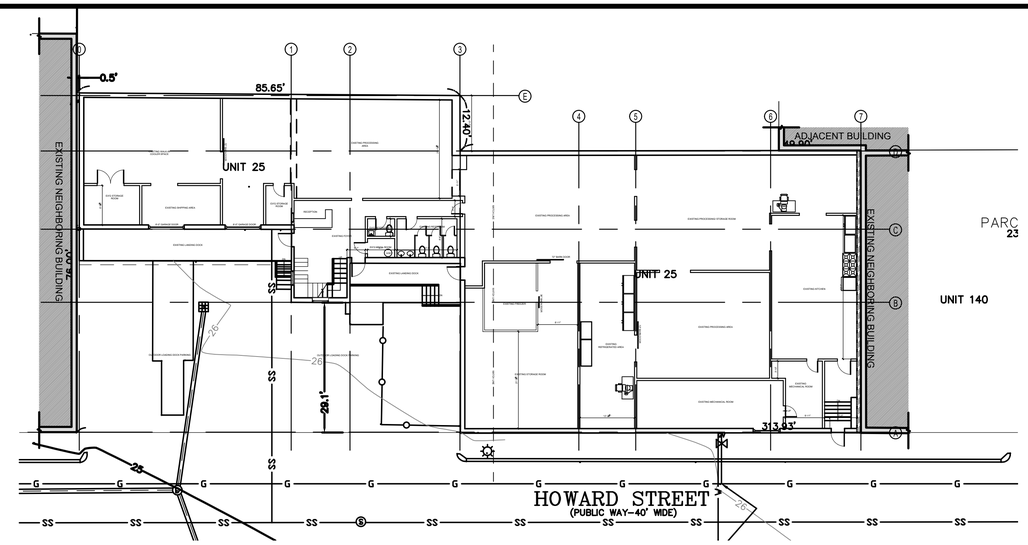
PROJECT NO. 21217

SHEET TITLE

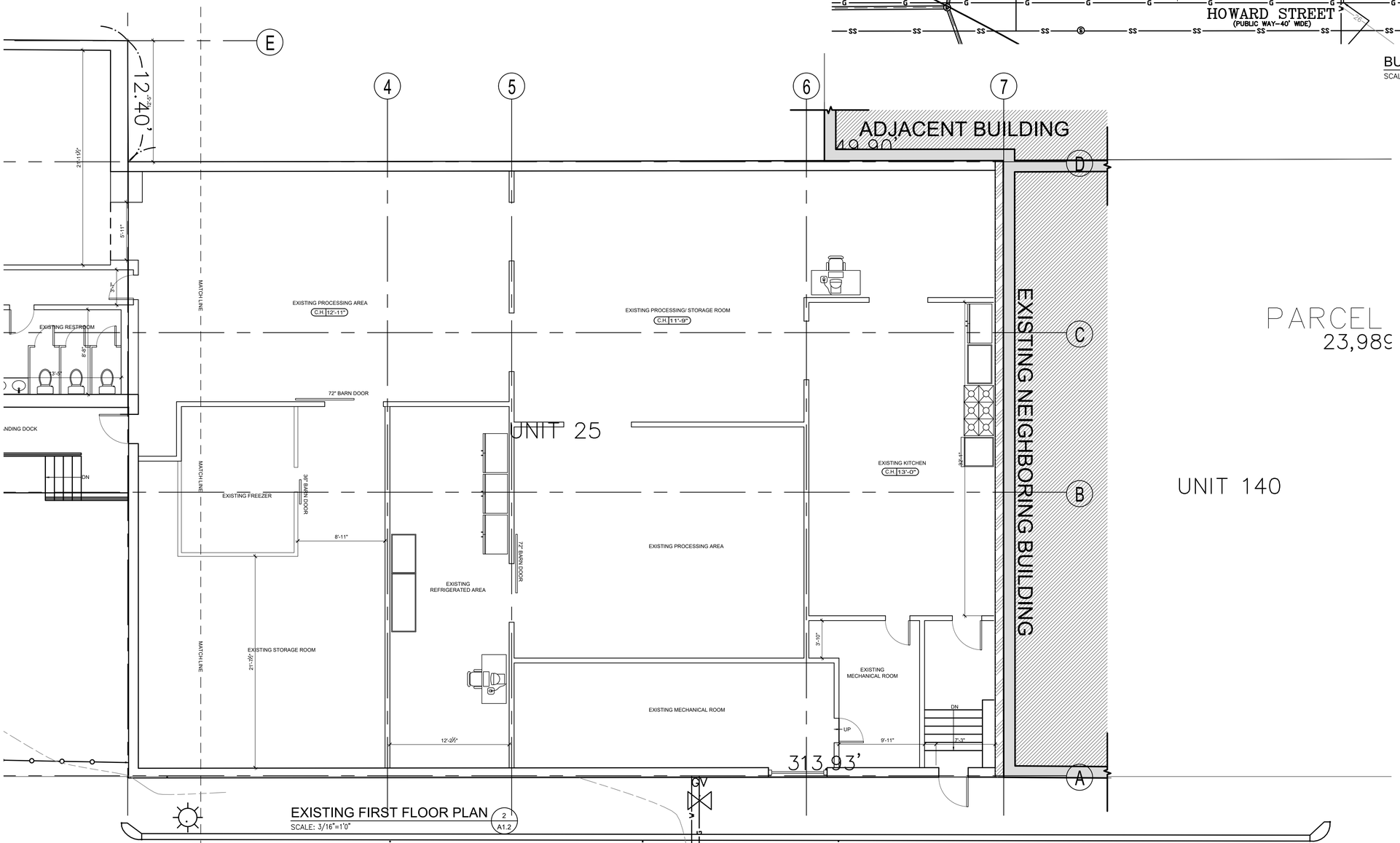
EXISTING FLOOR PLAN

DRAWN:	J.C.	DRAWING NO:
SCALE:	NOTED	
DATE:	07-14-2023	
CHECKED:		
SHEET	OF	A1.1

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243



BUILDING KEY PLAN (A / A1.1)
SCALE: 1/16"=1'0"



EXISTING FIRST FLOOR PLAN (2 / A1.2)
SCALE: 3/16"=1'0"

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REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

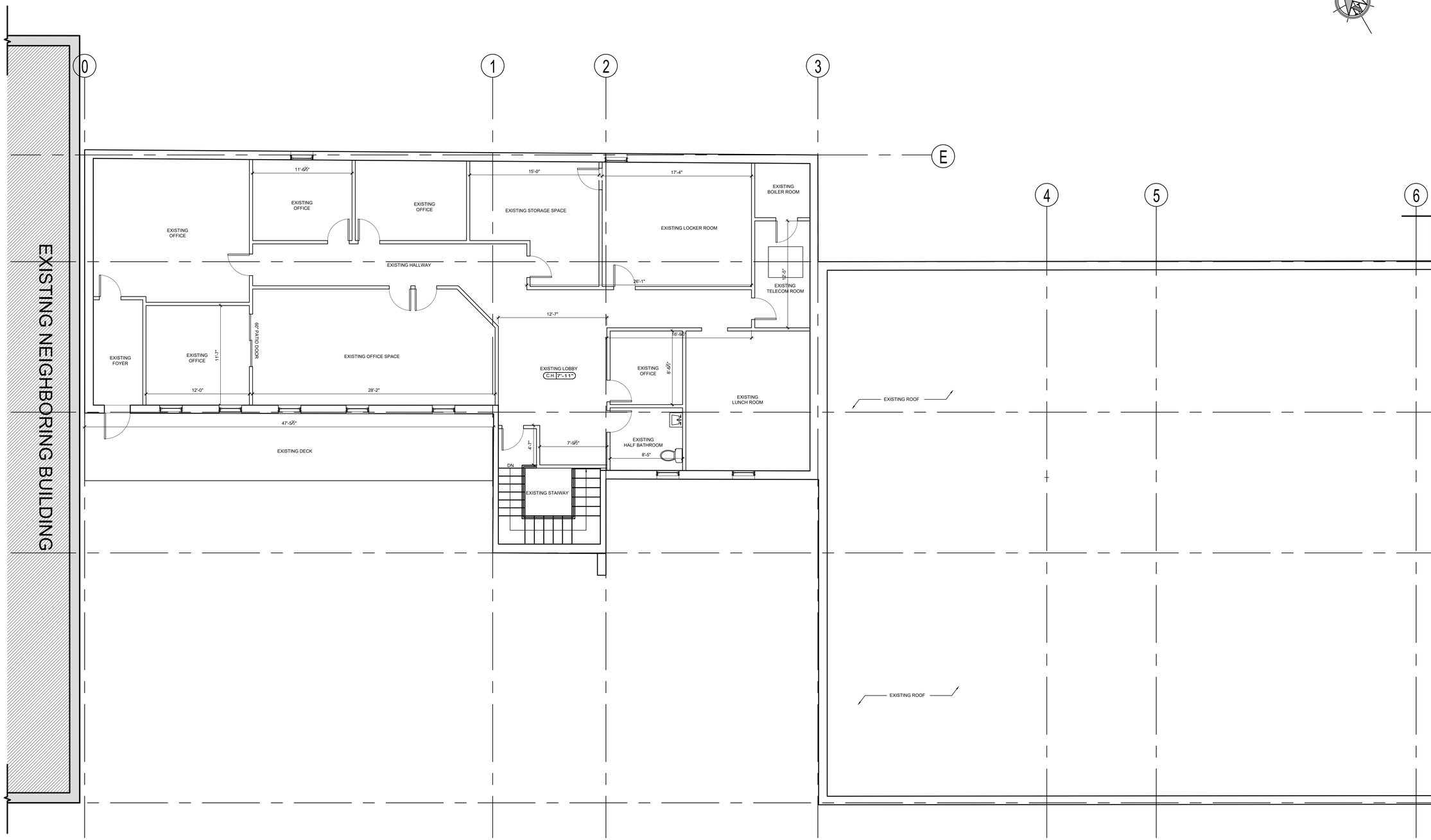
SHEET TITLE

EXISTING
FLOOR
PLAN

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO: A1.2

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243



EXISTING SECOND FLOOR PLAN (1 / A1.3)

SCALE: 3/16"=1'0"

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REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

EXISTING FLOOR PLAN

DRAWN:	KX	DRAWING NO:
SCALE:	NOTED	
DATE:	12-30-2021	
CHECKED:		A1.3
SHEET	OF	

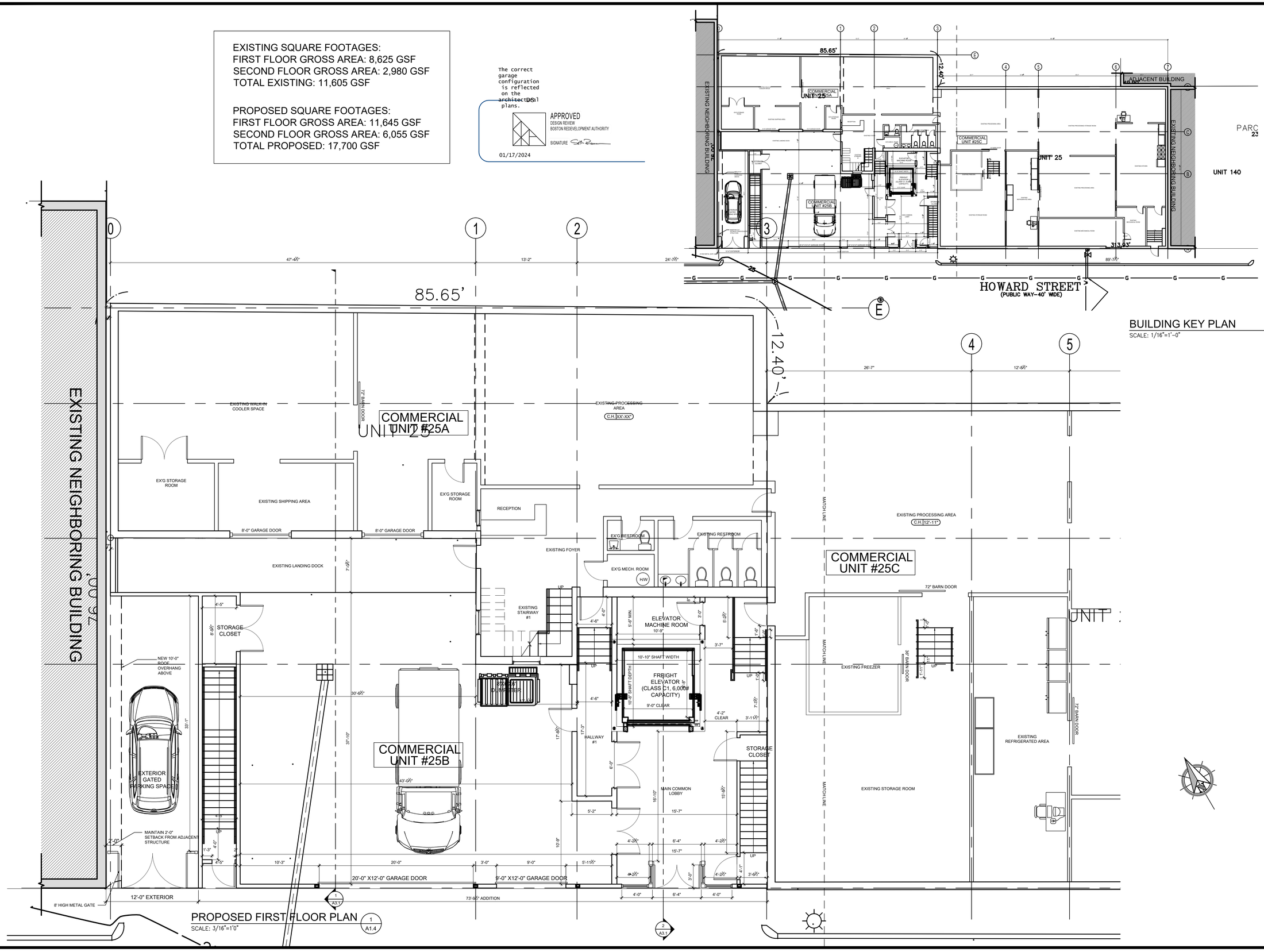
DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243

EXISTING SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 8,625 GSF
SECOND FLOOR GROSS AREA: 2,980 GSF
TOTAL EXISTING: 11,605 GSF

PROPOSED SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 11,645 GSF
SECOND FLOOR GROSS AREA: 6,055 GSF
TOTAL PROPOSED: 17,700 GSF

The correct garage configuration is reflected on the architectural plans.

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE
01/17/2024



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REVISIONS

NO.	BY	DESCRIPTION	DATE
3	J.C.	PLAN REV.	07/01/23
2	J.C.	PLAN REV.	12/01/22
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED FLOOR PLAN

DRAWN:	KX	DRAWING NO:
SCALE:	NOTED	
DATE:	12-30-2021	
CHECKED:		
SHEET	OF	A1.4

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243

EXISTING SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 8,625 GSF
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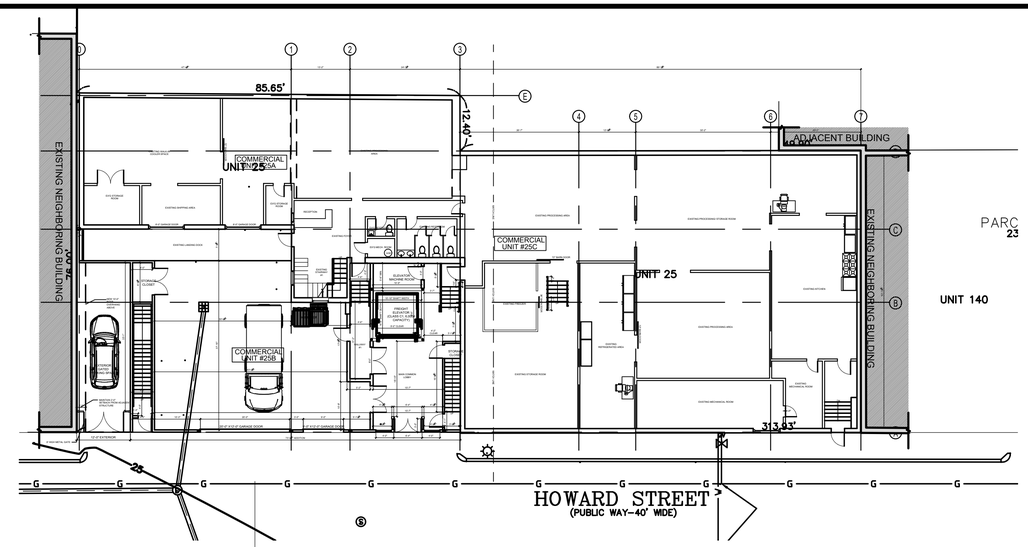
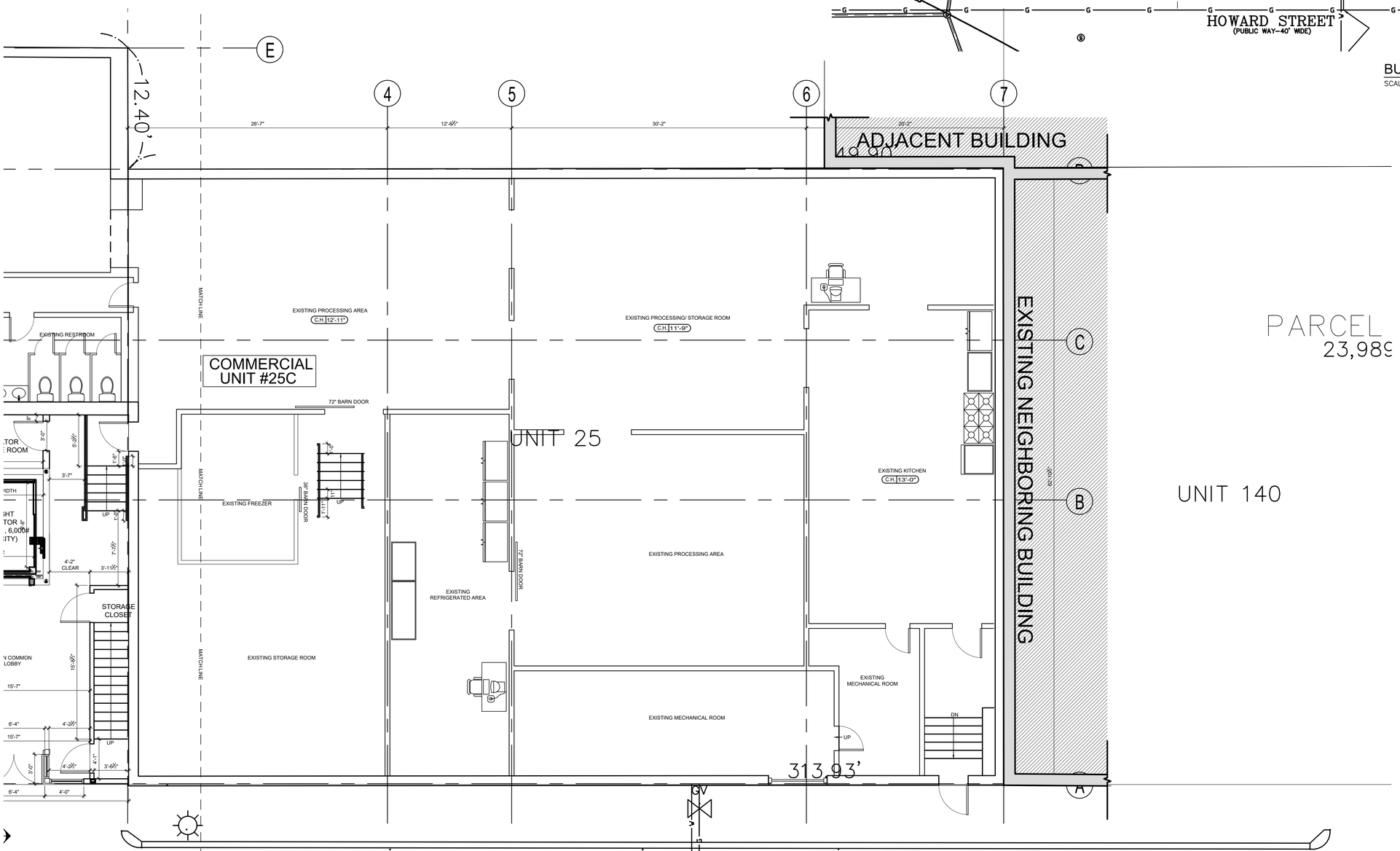


BUILDING KEY PLAN
SCALE: 1/16"=1'-0"



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REGISTERED ARCHITECT
TIM CHEN
No. 51071
QUINCY, MA

REVISIONS

NO.	BY	DESCRIPTION	DATE
3	J.C.	PLAN REV.	07/01/23
2	J.C.	PLAN REV.	12/01/22
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED FLOOR PLAN

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO:
A1.5

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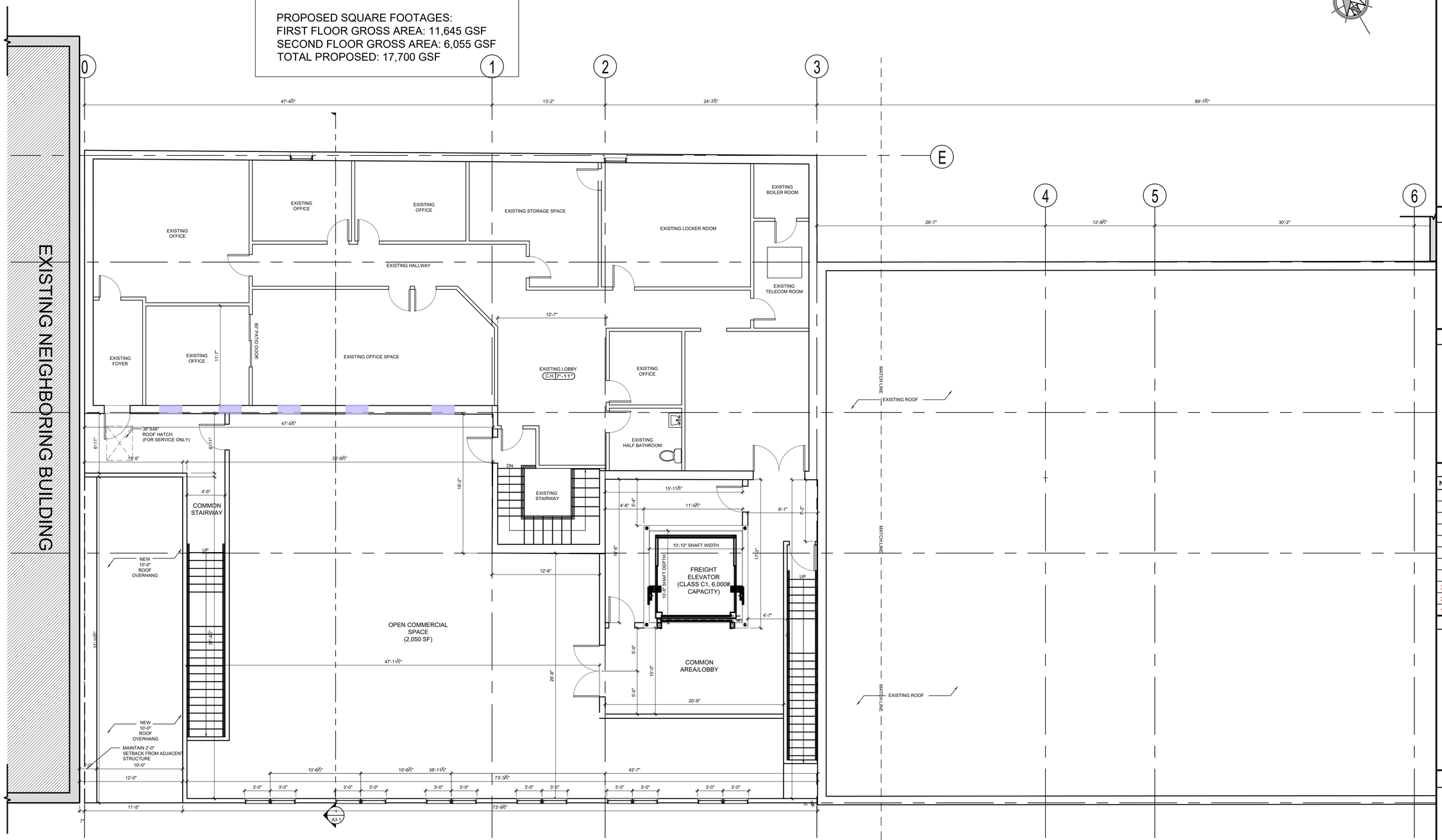
EXISTING SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 8,625 GSF
SECOND FLOOR GROSS AREA: 2,980 GSF
TOTAL EXISTING: 11,605 GSF

PROPOSED SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 11,645 GSF
SECOND FLOOR GROSS AREA: 6,055 GSF
TOTAL PROPOSED: 17,700 GSF



PROPOSED SECOND FLOOR PLAN
SCALE: 3/16"=1'0"
1 / A1.6

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REVISIONS

NO.	BY	DESCRIPTION	DATE
3	J.C.	PLAN REV.	07/01/23
2	J.C.	PLAN REV.	12/01/22
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED FLOOR PLAN

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO: A1.6

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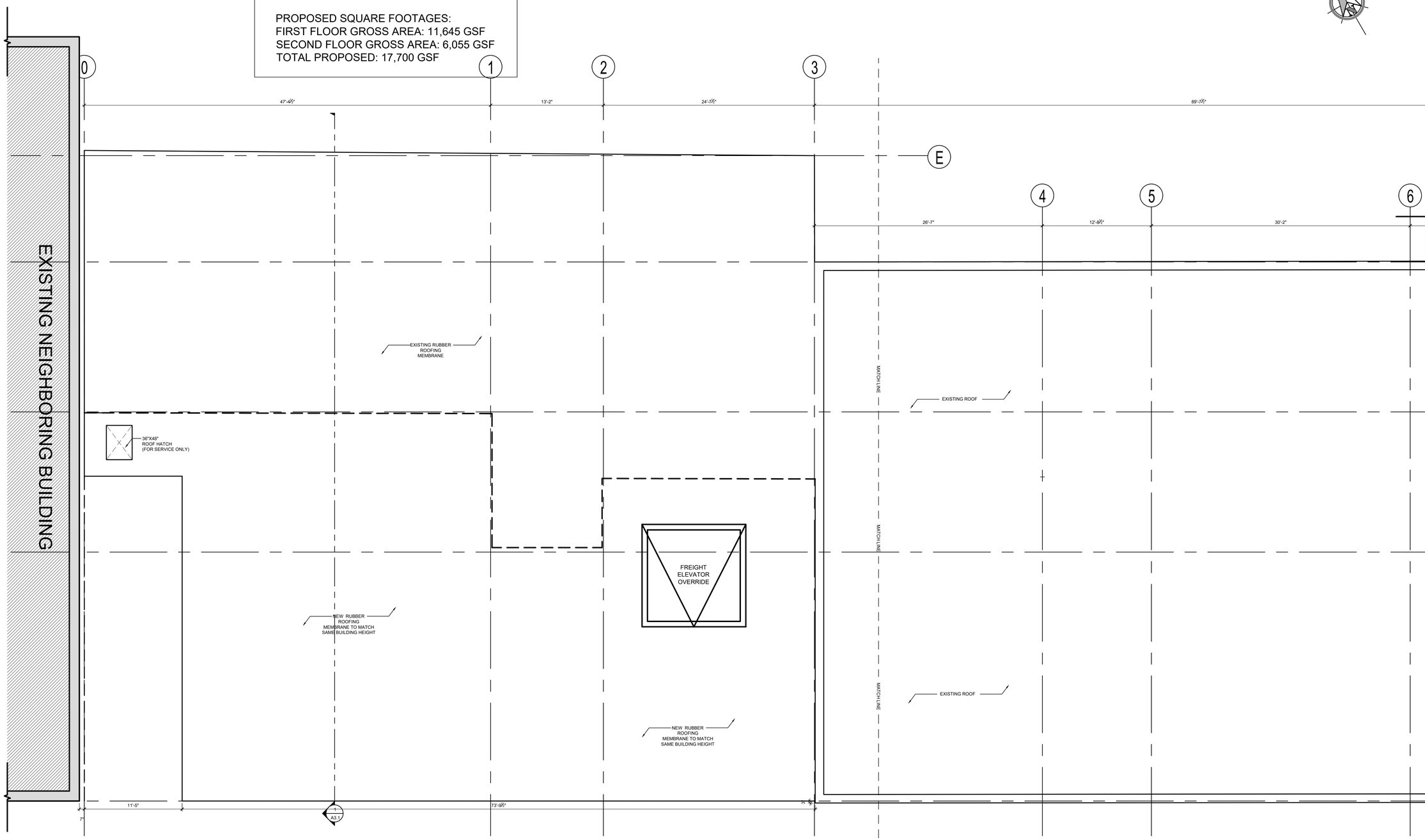
EXISTING SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 8,625 GSF
SECOND FLOOR GROSS AREA: 2,980 GSF
TOTAL EXISTING: 11,605 GSF

PROPOSED SQUARE FOOTAGES:
FIRST FLOOR GROSS AREA: 11,645 GSF
SECOND FLOOR GROSS AREA: 6,055 GSF
TOTAL PROPOSED: 17,700 GSF



PROPOSED ROOF FLOOR PLAN (1 / A1.7)
SCALE: 3/16"=1'0"

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REVISIONS

NO.	BY	DESCRIPTION	DATE
3	J.C.	PLAN REV.	07/01/23
2	J.C.	PLAN REV.	12/01/22
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED FLOOR PLAN

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO: A1.7

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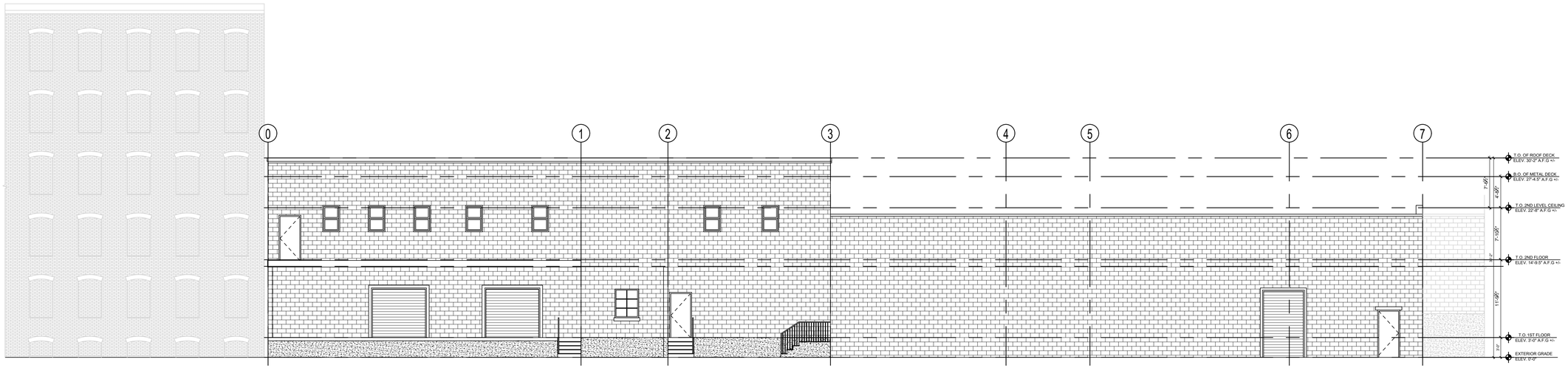
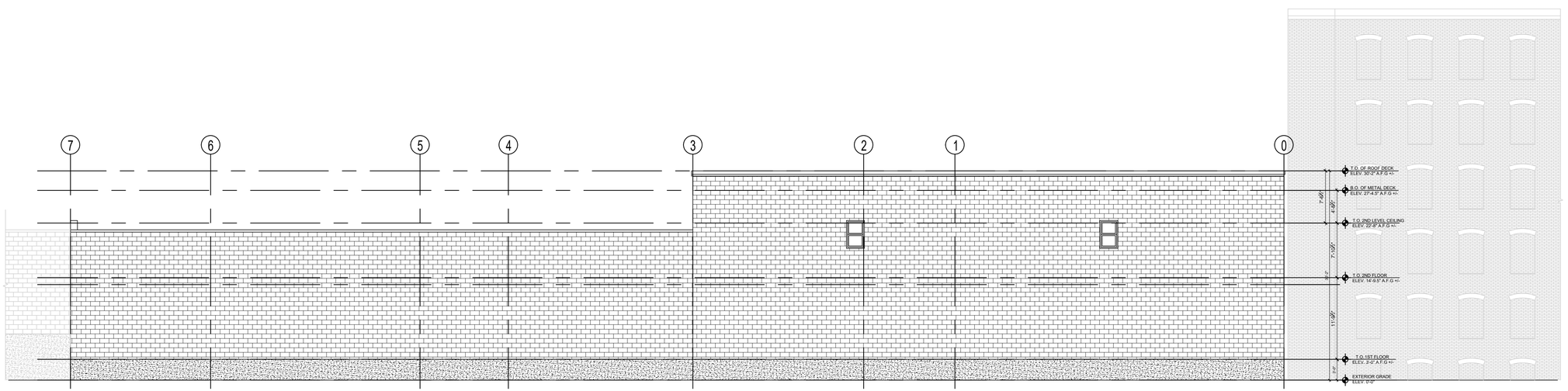


EXISTING FRONT ELEVATION

1
A2.1

SCALE: 1/8"=1'0"



EXISTING REAR ELEVATION

2
A2.1

SCALE: 1/8"=1'0"

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No. 51071
QUINCY, MA.
COMMONWEALTH OF MASSACHUSETTS

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP.

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

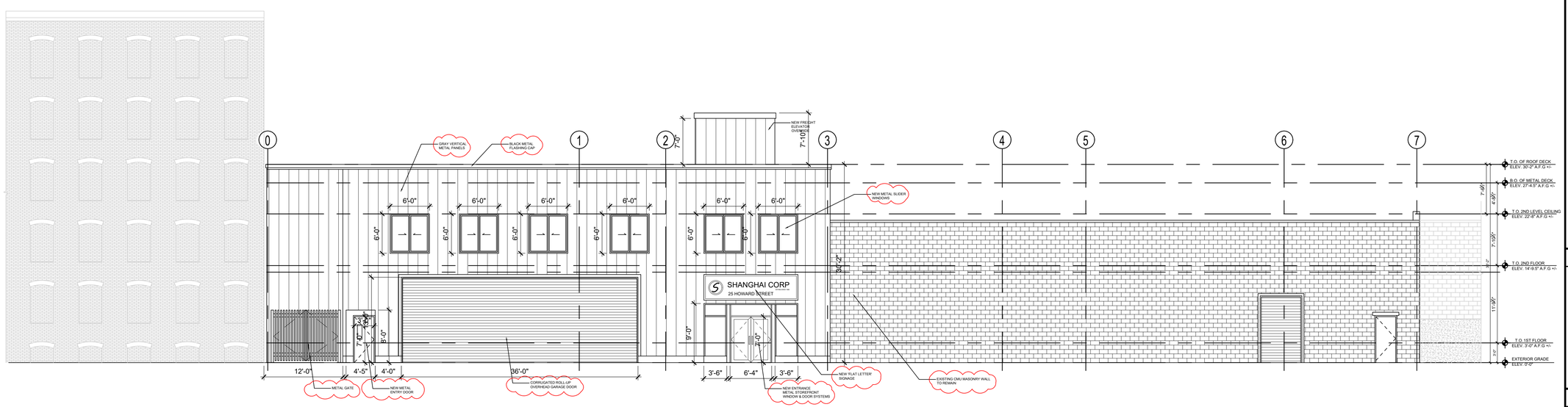
SHEET TITLE

EXISTING EXTERIOR ELEVATIONS

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO:
A2.1

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243



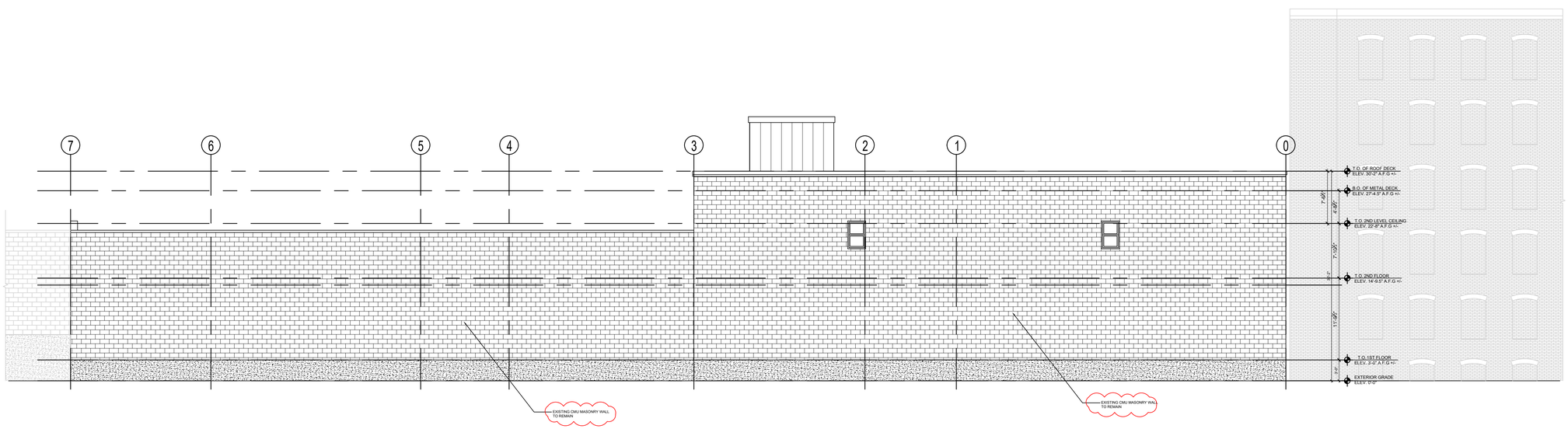
PROPOSED FRONT ELEVATION (HOWARD STREET VIEW)

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

1 / A2.2

DS

APPROVED
DESIGN REVIEW
BOSTON REDEVELOPMENT AUTHORITY
SIGNATURE
01/17/2024



PROPOSED REAR ELEVATION

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

2 / A2.2

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JIM CHEN
No. 51071
QUINCY, MA
COMMONWEALTH OF MASSACHUSETTS

REVISIONS

NO.	BY	DESCRIPTION	DATE
4	J.C.	EXT. MATERIAL BPDA	10/16/23
3	J.C.	GARAGE SIZE TO 30FT	09/06/23
2	J.C.	PLAN REV.	12/02/22
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP.

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

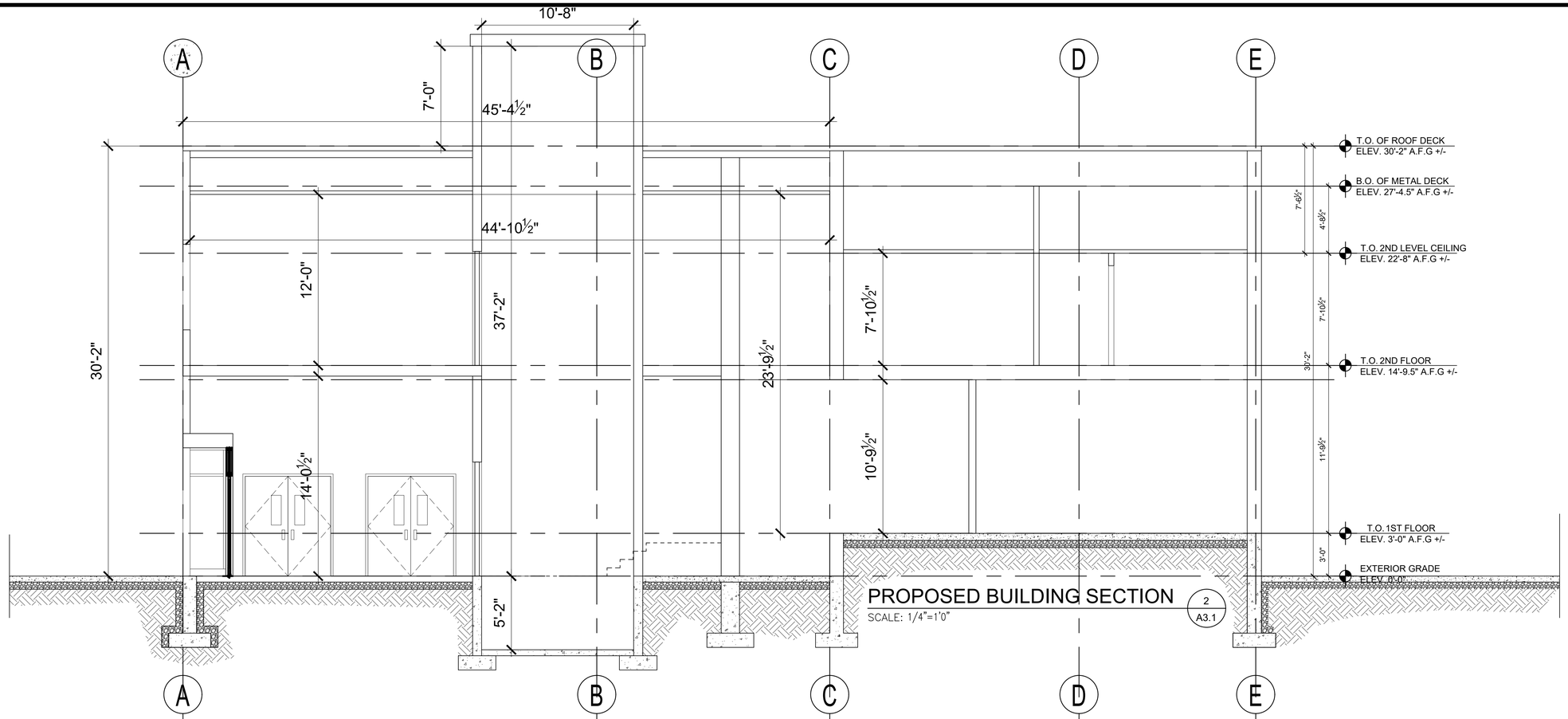
PROJECT NO. 21217

SHEET TITLE

PROPOSED EXTERIOR ELEVATIONS

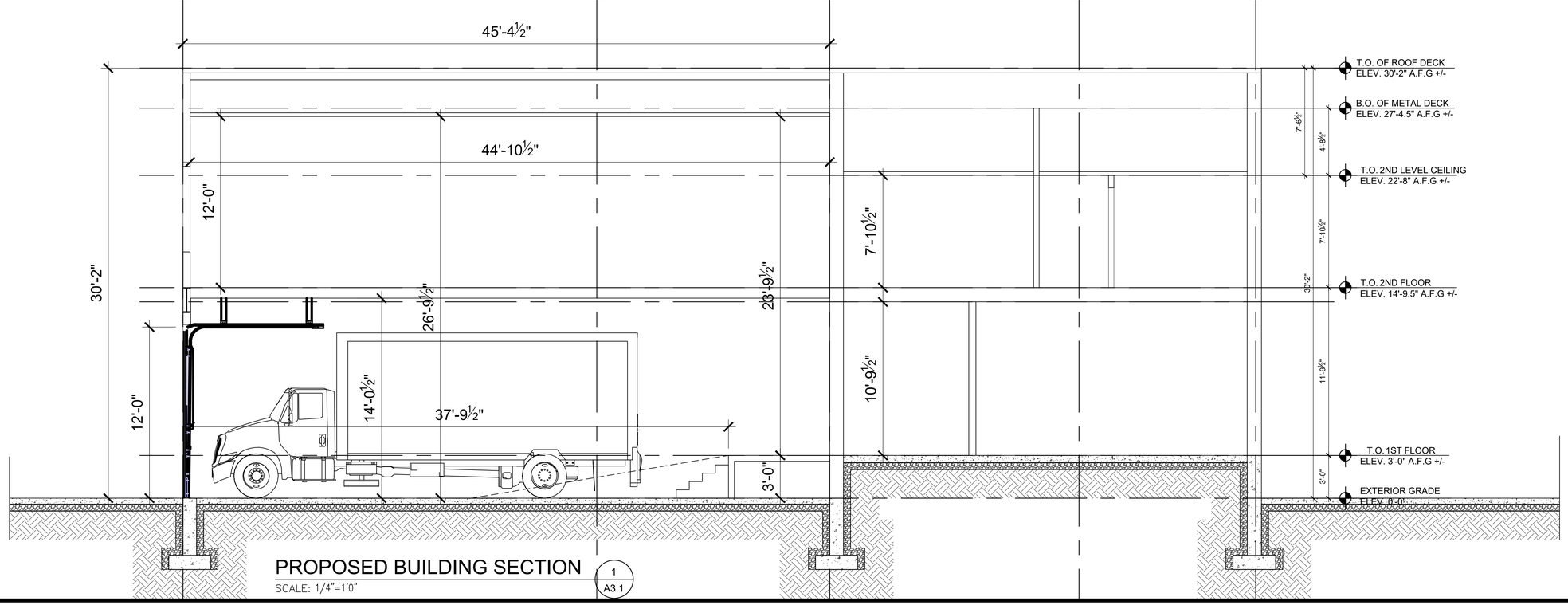
DRAWN:	J.C.	DRAWING NO:
SCALE:	NOTED	
DATE:	07-14-2023	
CHECKED:		A2.2
SHEET	OF	

DocuSign Envelope ID: 83979D58-95F5-43D0-B20A-20639BD1F243



PROPOSED BUILDING SECTION (2 / A3.1)

SCALE: 1/4"=1'0"



PROPOSED BUILDING SECTION (1 / A3.1)

SCALE: 1/4"=1'0"

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JIM CHEN
No. 51071
STATE OF MASSACHUSETTS

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C	PLAN REV	11/04/22

PROJECT

SHANGHAI CORP.

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

BUILDING SECTIONS

DRAWN: KX
SCALE: NOTED
DATE: 12-30-2021
CHECKED:
SHEET OF

DRAWING NO: A3.1

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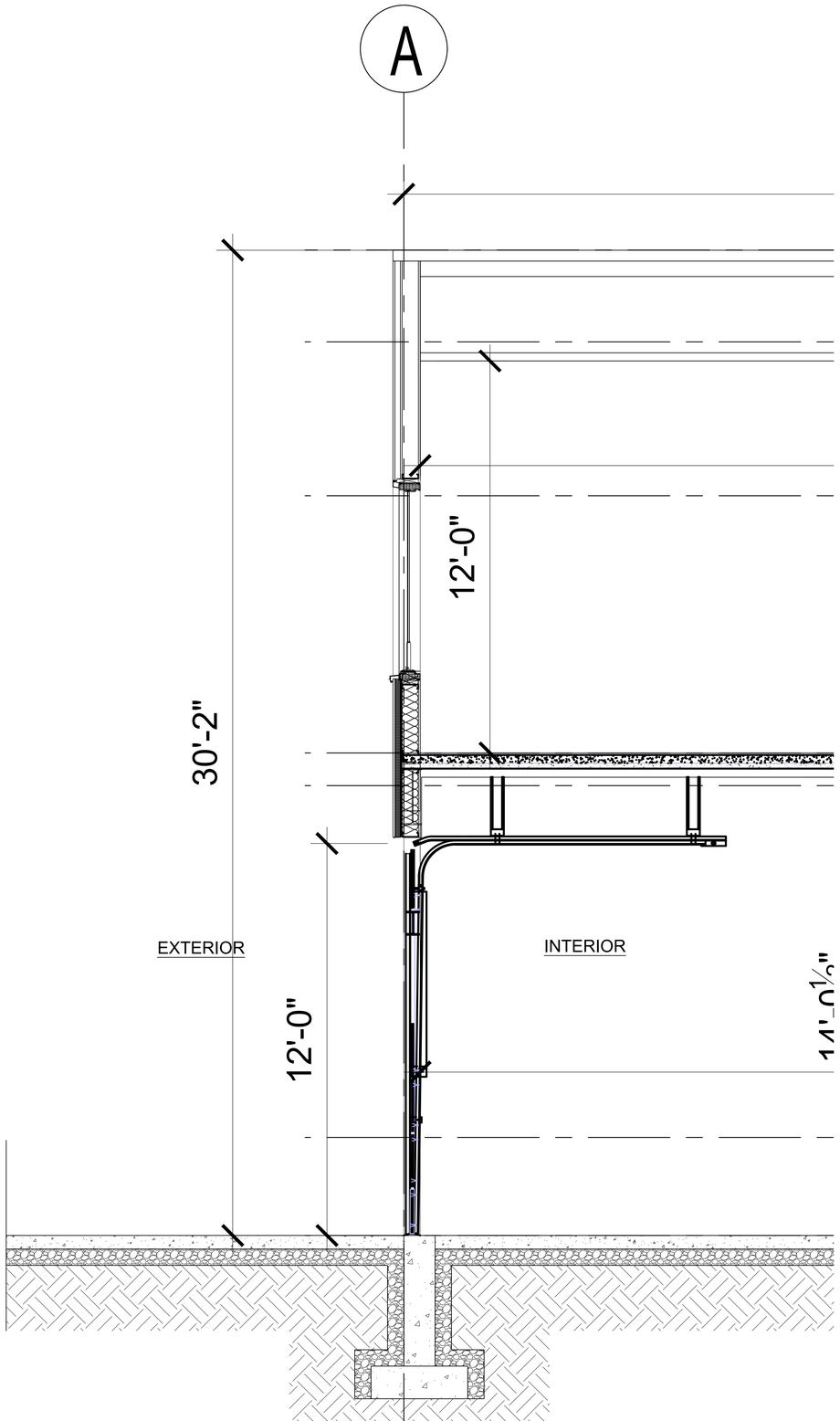
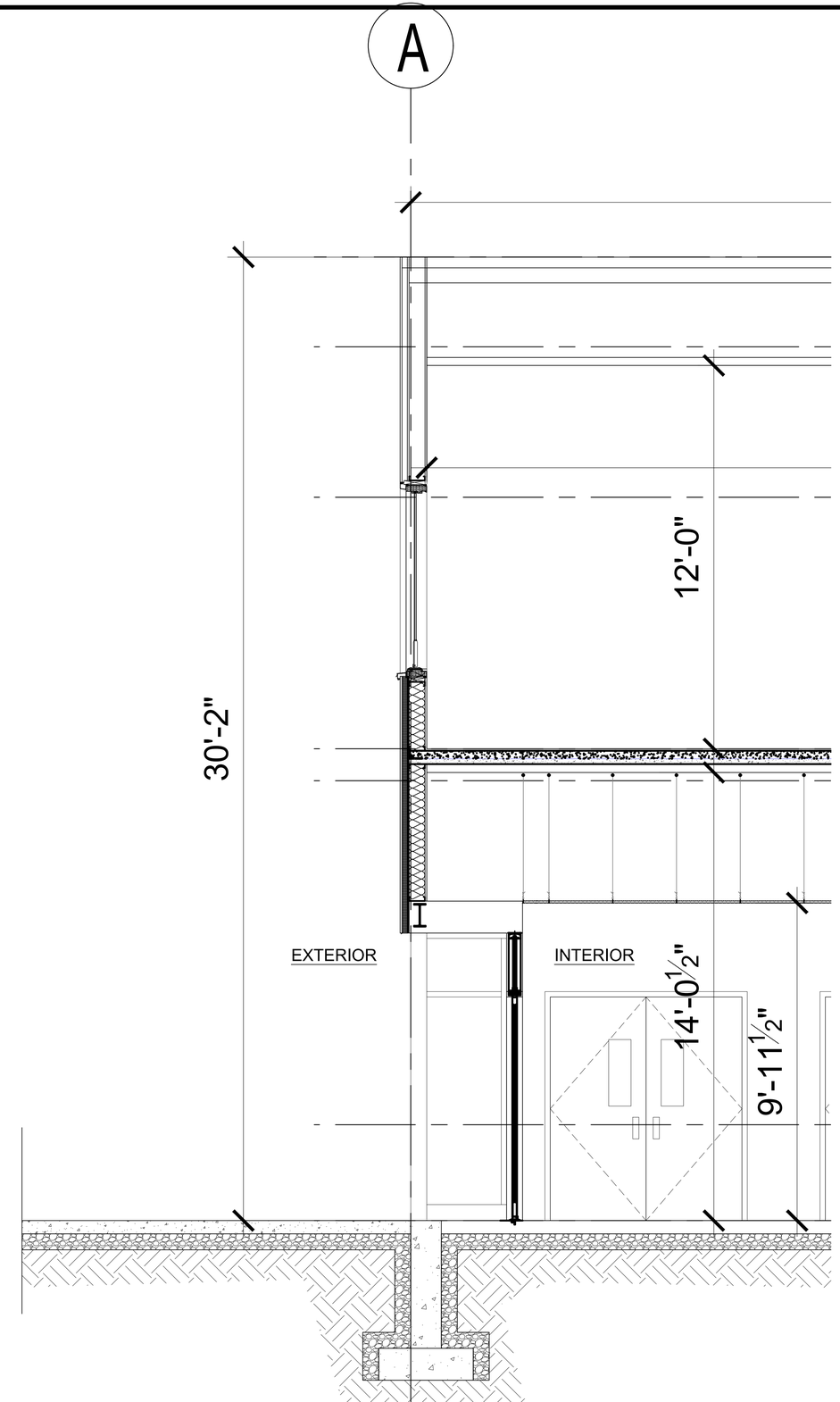


PROPOSED WALL SECTION 1 A3.2

SCALE: 1/2"=1'0"



PROPOSED WALL SECTION 2 A3.2

SCALE: 1/2"=1'0"

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REGISTRATION

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REVISIONS

NO.	BY	DESCRIPTION	DATE
1	J.C.	PLAN REV.	11/04/22

PROJECT

SHANGHAI CORP.

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FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED WALL SECTIONS

DRAWN: J.C.
SCALE: NOTED
DATE: 07-14-2023
CHECKED:
SHEET OF

DRAWING NO: A3.2

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GENERAL CONDITIONS

1. ALL STRUCTURAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ADDITION OF THE MASSACHUSETTS STATE BUILDING CODE AND THE INTERNATIONAL BUILDING CODE.CONTRACTOR MUST BUILD EXACTLY WHAT IS SHOWN ON STRUCTURAL DRAWINGS. ANY PROPOSED
2. DEPARTURES FROM WHAT IS INDICATED MUST BE REVIEWED AND APPROVED WITH THE ENGINEER PRIOR TO CONSTRUCTION. ALL UNAUTHORIZED CHANGES TO THE APPROVED DRAWINGS MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL REVIEW ALL THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS FOR THIS PROJECT AND IS ENTIRELY RESPONSIBLE FOR: COORDINATING THE WORK OF ALL TRADES, VERIFYING ALL THE PROPOSED AND EXISTING BUILDING AND SITE CONDITIONS, CONFIRMING ALL NEW AND EXISTINGBUILDING DIMENSIONS, ELEVATIONS, AND MEASUREMENTS, FRAMING CONDITIONS, MEASUREMENTS AND ALL OTHER RELATED PROPOSED AND EXISTING BUILDING CONDITIONS.
4. ENGINEER'S DESIGN IS DERIVED FROM ASSUMED FIELD CONDITIONS. ANY DISCREPANCIES BETWEEN MUST IMMEDIATELY BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO ANY CONSTRUCTION.
5. THE CONTRACTOR SHALL CAREFULLY VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ENGINEERING AND ARCHITECTURAL DOCUMENTS.
6. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. THE GENERAL
7. CONTRACTOR SHALL EXAMINE THE STRUCTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL
8. CONTRACTOR. PROVIDING ALL OPENINGS REQUIRED BY THE MECHANICAL, ELECTRICAL, OR PLUMBING TRADES SHALL BE A PART OF THE GENERAL CONTRACT, WHETHER OR NOT SHOWN IN THE STRUCTURAL DRAWINGS. ANY DEVIATION FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR REVIEW.
9. TYPICAL DETAILS AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK UNLESS SPECIFICALLY NOTED OTHERWISE.
10. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF TEMPORARY SHORING, BRACING, OR OTHERWISE PROTECTING ANY PORTION OF THE STRUCTURE, SITE AND UTILITIES FROM DAMAGE DURING CONSTRUCTION. THE ENGINEER IS SPECIFYING THE FINISHED CONDITION ONLY, WITHOUT ASSUMING KNOWLEDGE NOR RESPONSIBILITY FOR HOW THE CONTRACTOR WILL ACHIEVE THIS RESULT.
11. FOR EXACT LOCATIONS OF FLOOR AND ROOF OPENINGS, POSTS, ETC., SEE ARCHITECTURAL DRAWINGS.

FOUNDATIONS

1. EXCAVATE TO LINES AND GRADES REQUIRED TO PROPERLY INSTALL THE FOUNDATIONS AS REQUIRED BY THE STRUCTURAL ENGINEER.
2. ALL FOOTINGS SHALL BE PLACED ON INORGANIC, UNDISTURBED SOIL OR CONTROLLED STRUCTURAL BACKFILL. FOOTING ELEVATIONS GIVEN ARE NOT TO BE CONSTRUED AS LIMITING IN ANY WAY TO THE DEPTH OF EXCAVATION REQUIRED TO REACH ADEQUATE BEARING.
3. NO FOUNDATION SHALL BE PLACED IN WATER OR FROZEN GROUND. CONTRACTOR IS REQUIRED TO ENSURE DRY AND UNFROZEN CONDITION POST POURING UNTIL THE CONCRETE HAS REACHED 75% OF ITS SPECIFIED DESIGN STRENGTH.
4. EXTERIOR FOOTINGS SHALL BE PLACED ON APPROVED SOIL AT A MINIMUM DEPTH OF 4 FEET, OR AS MODIFIED BY THE STRUCTURAL ENGINEER, BELOW THE LOWEST ADJACENT GROUND EXPOSED TO FREEZING. ANY ADJUSTMENT OF FOOTING ELEVATIONS DUE TO FIELD CONDITIONS MUST HAVE THE APPROVAL OF THE STRUCTURAL ENGINEER.
5. SOIL BEARING CAPACITY: FOOTINGS MUST BE PLACED ON SOIL WITH A MINIMUM BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT. PER TABLE 1806.2 PRESUMPTIVE LOAD BEARING VALUES.
6. BACKFILL BELOW FOOTINGS AND SLABS SHALL BE MADE WITH APPROVED GRANULAR MATERIALS PLACED IN 6" LAYERS. LAYERS SHALL BE COMPACTED TO 96% DENSITY AT OPTIMUM MOISTURE CONTENT, AS DEFINED BY ASTM D1557.
7. PROVIDE FOUNDATION DRAINAGE, WATERPROOFING/DAMP-PROOFING, AND FOUNDATION WALL INSULATION AS INDICATED ON THE CIVIL/DRAINAGE DRAWINGS.
8. PROVIDE METAL OR PVC SLEEVES IN THE FOUNDATION WALLS FOR SEWER, GAS, ELECTRIC, AND WATER LINES, AS REQUIRED.

CONCRETE

1. ALL CONCRETE WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE LATEST EDITION OF ACI-318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
2. ALL CONCRETE SHALL BE CONTROLLED CONCRETE, MIXED AND PLACED UNDER THE SUPERVISION OF A CONCRETE TESTING AGENCY APPROVED BY THE OWNER. CONCRETE SHALL BE NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE, AS INDICATED, WITH A SAND AND GRAVEL AGGREGATE , TYPE I OR TYPE II PORTLAND CEMENT AND HAVING A MINIMUM COMPRESSIVE STRENGTH (f'c) IN 28 DAYS AS FOLLOWS UNLESS INDICATED ON PLANS
   - FOOTINGS .... 4000 PSI (NORMAL WT.)
   - BASEMENT WALLS & PIERS .... 3000 PSI (NORMAL WT.)
   - INTERIOR SLABS .... 4000 PSI (NORMAL WT.)
   - EXTERIOR SLABS EXPOSED TO WEATHER ..... 4000 PSI (NORMAL WT.)
   - CONCRETE NOT OTHERWISE SPECIFIED ....3000 PSI (NORMAL WT.)

1. MAXIMUM DENSITY OF NORMAL WEIGHT CONCRETE SHALL BE 150 POUNDS PER CUBIC FOOT. MAXIMUM DENSITY OF LIGHT WEIGHT CONCRETE SHALL BE 110 POUNDS PER CUBIC FOOT
2. REINFORCING STEEL: TYPICAL - ASTM A615, GRADE 60. FIELD BENT - ASTM A615, GRADE 40 WELDED WIRE FABRIC - ASTM A185.
3. REINFORCING STEEL SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL. THESE DRAWINGS SHALL SHOW COMPLETE AND ACCURATE BAR LAYOUT, SIZES, OPENINGS, ACCESSORIES, AND ALL OTHER INFORMATION NECESSARY FOR COMPLETE AND ACCURATE FABRICATION AND PLACEMENT OF REINFORCING STEEL.
4. THE CONTRACTOR SHALL SUBMIT A CONCRETE MIX DESIGN TO THE OWNER FOR APPROVAL AT LEAST TWO WEEKS PRIOR TO THE FIRST PLACEMENT.
5. CONTRACTOR SHALL PROVIDE A CONCRETE POURING SEQUENCE TO THE ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL 7 DAYS PRIOR TO CONCRETE PLACEMENT.
6. INSPECTION AND TESTING OF CAST-IN-PLACE CONCRETE WORK WILL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY, UNDER A SEPARATE CONTRACT WITH THE OWNER. IF CONCRETE FAILS, CONTRACTOR SHALL PROMPTLY REPLACE CONCRETE MATERIALS OR REDO WORK WHICH HAS BEEN REJECTED BY ARCHITECT AND/OR TESTING AGENCY, AT NO EXPENSE TO THE OWNER.
7. INSPECTION AND APPROVAL BY THE OWNER OR THEIR REPRESENTATIVE SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO PROVIDE QUALITY CONTROL, MATERIALS, AND WORKMANSHIP
8. FULLY INSURING THAT THIS WORK WILL CONFORM TO THE CONTRACT REQUIREMENTS.
9. SAMPLING AND TESTING FOR QUALITY ASSURANCE DURING THE PLACEMENT OF CONCRETE MAY INCLUDE THE FOLLOWING, AS DIRECTED BY THE ARCHITECT. SAMPLES WILL BE MADE AT THE POINT OF DISCHARGE FROM THE READY-MIX TRUCK.
10. SLUMP TEST, COMPLYING WITH ASTM C143; ONE TEST FOR EACH SET OF COMPRESSION STRENGTH TEST SPECIMENS. SLUMP AT THE POINT OF DISCHARGE FROM THE READY-MIX TRUCK SHALL BE 3-5".
11. COMPRESSION TEST SPECIMENS, COMPLYING WITH ASTM C31; ONE SET OF 4 STANDARD CYLINDERS FOR EACH COMPRESSION STRENGTH TEST. ONE SET OF CYLINDERS SHALL BE TAKEN FROM THE FIRST FOOTING POUR, AND TWO SETS SHALL BE TAKEN DURING FOUNDATION WALL POURS, AT AN INTERVAL CHOSEN BY THE ARCHITECT.
12. COMPRESSION STRENGTH TESTS SHALL COMPLY WITH ASTM C39; ONE SPECIMEN TESTED AT 7 DAYS, 2 SPECIMENS TESTED AT 28 DAYS, AND 1 SPECIMEN RETAINED IN RESERVE FOR LATER TESTING IF REQUIRED.
13. ALL CONCRETE EXPOSED TO THE WEATHER OR POSSIBLE FREEZE/THAW ACTION SHALL CONTAIN AN AIR ENTRAINMENT ADMIXTURE.
14. CONCRETE FLOOR SLABS ON METAL DECK SHALL HAVE LIGHT-WEIGHT COARSE AGGREGATE, SAND FINE AGGREGATE AND TYPE I OR II PORTLAND CEMENT, SEE NOTE 3 ABOVE.
15. ALL CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS, EXCEPT WHERE SPECIFICALLY NOTED. VERTICAL CONSTRUCTION JOINTS AND STOPS IN SHORED CONCRETE WORK SHALL BE MADE AT MIDSPAN. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH VERTICAL CONSTRUCTION JOINTS.
16. GROUT UNDER COLUMN BASE PLATES AND UNDER OTHER BEARING PLATES SHALL BE NON-SHRINK, NONMETALLIC GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 3 DAYS.NON-SHRINK GROUT SHALL BE "EMBECO 153" BY MASTER BUILDERS, SONOGROUT" BY SONNEBORN BUILDING PRODUCTS , "FIVE STAR GROUT" BY U.S. GROUT CORPORATION, OR EQUAL AS APPROVED BY THE ARCHITECT AND ENGINEER.
17. ALL KEYS SHALL BE 2"X4" (NOMINAL) UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
18. REFER TO THE ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES.WHERE FINISH IS NOT SPECIFIED, CONFORM TO REQUIREMENTS OF ACI 301-SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
19. SEE ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW OPENINGS, DRIPS,WASHES, REGLETS, CONCRETE FINISHES, MASONRY ANCHORS, AND FOR MISCELLANEOUS EMBEDDED PLATES, BOLTS, ANCHORS, ANGLES, ETC.
20. THE PLACEMENT OF SLEEVES, OUTLET BOXES, BOX-OUTS, ANCHORS, ETC.,FOR THE MECHANICAL, ELECTRICAL, AND PLUMBING TRADES IS THE RESPONSIBILITY OF THE TRADE INVOLVED. HOWEVER, ANY BOX-OUTS NOT COVERED BY TYPICAL DETAILS IN THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.
21. UNLESS OTHERWISE NOTE, COVER TO REINFORCING BARS SHALL AS INDICATED BELOW.
22. CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH ....3"
23. CONCRETE IN CONTACT WITH EARTH OR WEATHER ....2"
24. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH, FOR SLABS, WALLS & BEAMS .... 11/2"

ROUGH CARPENTRY

1. ALL ROUGH CARPENTRY WORK SHALL BE EXECUTED IN CONFORMANCE WITH THE 9TH EDITION OF THE MASSACHUSETTS BUILDING CODE FOR (MBC) AND THE INTERNATIONAL RESIDENTIAL CODE (IRC).
2. REFER TO THE MBC AND IRC FOR FRAMING COMPONENTS NOT SPECIFIED IN PLANS AND SECTIONS. NOTIFY THE ENGINEER OF ANY COMPONENT NOT DEFINED IN EITHER THE MBC AND IRC OR IN THESE DRAWINGS.
3. REFER TO THE IRC FASTENER SCHEDULE FOR STRUCTURAL MEMBERS TABLE 2304.10.1 FOR CONNECTION FASTENING NOT IDENTIFIED IN THESE PLANS OR DETAILS.
4. WHEN NOT OTHERWISE IDENTIFIED, ALL WOOD BEAMS, JOISTS, RAFTERS, HEADERS, STRINGERS, PLATES, AND SILLS SHALL BE SPRUCE PINE FIR #2 OR BETTER, WITH A MINIMUM Fb = 875 PSI (SINGLE USE) AND Fb = 1000 PSI (REPETITIVE USE), AND E SHALL BE 1,4000,000 PSI OR BETTER.
5. WOOD STUDS MAY BE EASTERN HEMLOCK, EASTERN SPRUCE, OR HEM-FIR, GRADED "STUD" GRADE, #2 OR BETTER.
6. LVL BEAMS, AS NOTED ON PLANS, SHALL HAVE A MINIMUM Fb = 3100 PSI, E = 2,000,000 PSI, AND Fv = 285 PSI. LVL BEAMS SHALL BE "VERSALAM" BY BOISE CASCADE. NO SUBSTITUTIONS WILL BE ACCEPTED, UNLESS THE ENGINEER SPECIFICALLY APPROVES ANOTHER PRODUCT SUBMITTED BY THE CONTRACTOR.
7. WOOD "I" BEAMS SHALL BE BY BOISE CASCADE. NO SUBSTITUTIONS WILL BE ACCEPTED, UNLESS THE ENGINEER SPECIFICALLY APPROVES ANOTHER PRODUCT SUBMITTED BY THE CONTRACTOR. MANUFACTURER'S RECOMMENDATIONS FOR BEARING, REINFORCING, CUTS, CANTILEVERS, FASTENING, ETC., SHALL BE STRICTLY ADHERED TO.
8. ENGINEERED WOOD POSTS (VERSA COLUMNS), AS NOTED ON PLANS, SHALL BE VERSA-LAM 1.7 2650.
9. PLYWOOD WALL SHEATHING, ROOF SHEATHING, AND SUBFLOORING SHALL BE APA GRADE, TRADEMARKED C-D INTERIOR WITH EXTERIOR GLUE. SUBFLOORING SHALL BE 3/4" THICK TONGUE AND GROOVE, AND SHALL BE GLUED TO FLOOR JOISTS WITH AN APPROVED ADHESIVE PRIOR TO NAILING. ROOF SHEATHING SHALL BE 5/8" THICK, WALL SHEATHING SHALL BE 1/2" THICK AND SHEATHING FOR FLAT ROOFS SHALL BE 3/4" THICK.
10. ALL WOOD HAVING DIRECT CONTACT WITH CONCRETE OR MASONRY, AND WHEREVER WOOD IS WITHIN 8" OF FINISHED GRADE OR PART OF OPEN DECK CONSTRUCTION, SHALL BE PRESSURE TREATED.
11. ALL METAL CONNECTORS INCLUDING JOIST AND BEAM HANGERS AND COLUMN CAP AND BASES SHALL BE BY SIMPSON STRONG-TIE CORP. THE CONTRACTOR SHALL STRICTLY ADHERE TO MANUFACTURER'S FASTENING REQUIREMENTS. CONTRACTOR TO VERIFY ALL CONNECTOR SIZES TO FRAMING ELEMENTS BEFORE ORDERING.
12. UNLESS DETAILED OR SPECIFIED OTHERWISE ON THE PLANS, HEADERS AND BEAMS SHALL BE SUPPORTED BY AT LEAST ONE JACK STUD AND ONE KING STUD.
13. FOR WOOD JOIST SPANS UP TO 14 FEET, PROVIDE A SINGLE ROW OF FULL DEPTH BLOCKING BETWEEN JOISTS AT MIDSPAN. FOR SPANS EXCEEDING 14 FEET, PROVIDE TWO ROWS OF FULL DEPTH BLOCKING BETWEEN JOISTS AT THIRD POINTS OF THE SPAN.
14. GABLE-END WALL STUDS IN CATHEDRAL, PARTIAL CATHEDRAL, OR HIGH CEILING SPACES SHALL SPAN UNINTERRUPTED FROM THE FLOOR PLATE TO THE UNDERSIDE OF THE ROOF RAFTERS. THEY SHOULD NOT BE INTERRUPTED BY ANY HORIZONTAL PLATES OR BEAMS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
15. MEMBERS WITHIN BUILT-UP BEAMS, WHETHER MADE OF SAWN OR ENGINEERED LUMBER, SHALL ONLY BE SPLICED OVER SUPPORTS.
16. PROVIDE SIMPSON H2.5 HURRICANE TIE BETWEEN EACH SLOPING 2x RAFTER BOTTOM AND ITS BEARING POINT.
17. PROVIDE SIMPSON H8 HURRICANE TIE BETWEEN EACH I-JOIST ROOF RAFTER BOTTOM & ITS BEARING POINT.
18. CONTRACTOR SHALL CAREFULLY COORDINATE THE WORK OF ALL TRADES TO MINIMIZE THE NEED FOR CUT, BORED OR NOTCHED IN FRAMING LUMBER. STRUCTURAL FLOOR MEMBERS SHALL NOT BE CUT, BORED OR NOTCHED IN EXCESS OF THE LIMITATIONS SPECIFIED IN THE BUILDING CODE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
19. AT WOOD POSTS LANDING ON FLOOR DECK, PROVIDE SOLID VERTICAL WOOD BLOCKING WITHIN DECK SANDWICH TO LINK UPPER POST WITH LOWER SUPPORT. BLOCKING TO MATCH UPPER POST SIZE.
20. SET LVL BEAMS THAT FRAME FLUSH WITH DIMENSIONED LUMBER JOISTS 3/8" BELOW THE TOP OF JOISTS TO ALLOW FOR JOIST SHRINKAGE. WHERE BEARING WALLS OR POSTS LAND ON THESE BEAMS, INFILL GAP WITH 3/8" PLYWOOD FOR SOLID BEARING.
21. BEAMS COMPRISED OF 3 LVLS OR MORE SHALL BE BOLTED TOGETHER WITH A MINIMUM OF 2-1/2"• BOLTS AT 16" ON CENTER OR 3-1/4"• DIAMETER SELF TAPPING LAG SCREWS AT 16" ON CENTER, ALTERNATING INSERTION SIDES, FOLLOW MANUF. SPECS, UNLESS NOTED OTHERWISE ON DRAWING.
22. IN ADDITION TO THE FLOOR JOIST SHOWN IN THE PLANS, CONTRACTOR SHALL INSTALL DOUBLE JOISTS UNDER ALL PARTITIONS WALLS RUNNING PARALLEL TO THE DIRECTION OF FRAMING.
23. MINIMUM BEAM BEARING TO BE 3 INCHES UNLESS NOTED OTHERWISE ON PLAN.

STRUCTURAL STEEL

1. STRUCTURAL STEEL WORK SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRIUCTION, " MANUAL OF STEEL CONSTRUCTION", 14TH EDITION ASD .
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS
3. RESEARCH COUNCIL OF STRUCTURAL CONNECTIONS " SPECIFICATION FOR A325 OR A490
4. STRUCTURAL WELDING CODE - AWS D1.1/D1.1M
5. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH "DETAILING FOR STEEL CONSTRUCTION (AISC)".
6. STRUCTURAL STEEL DETAILS NOT SPECIFICALLY SHOWN SHALL BE TAKEN AS BEING SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ENGINEER.
7. STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING: UNLESS NOTED OTHERWISE: ASTM A992 GRADE 50 (FY = 50 KSI)
8. HIGH STRENGTH BOLTS: ASTM A325 OR ASTM A490.
   BOLTED CONNECTIONS SHALL BE AS FOLLOWS:
   A. MINIMUM BOLT DIAMETER -3/4" UNLESS SPECIFICALLY NOTED OTHERWISE
   B. TWO BOLTS MINIMUM
   C. STANDARD HOLES IN WEBS OF BEAMS.
9. SHEAR CONNECTIONS FOR MOMENT CONNECTED MEMBERS SHALL BE HIGH STRENGTH BOLTS SIZED AS SLIP CRITICAL SHEAR CONNECTIONS.
10. SIMPLE SHEAR CONNECTIONS SHALL BE HIGH STRENGTH BOLTS SIZED AS BEARING TYPE CONNECTIONS.
11. WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS USING FILLER METAL CONFORMING TO E70XX.
12. WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MATERIALS BEING WELDED, UNLESS NOTED OTHERWISE, EXCEPT THAT FILLET WELDS SHALL BE A MINIMUM OF I/4".
13. BEAM CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL PROVIDE CONNECTION CAPACITY AS FOLLOWS: BEAMS: SUPPORT A REACTION 'R' EQUAL TO 60% OF THE TOTAL UNIFORM LOAD CAPACITY OF BEAM FOR A GIVEN SHAPE, SPAN, AND GRADE OF STEEL PER "ALLOWABLE LOADS ON BEAMS" PART 2, AISC MANUAL OF STEEL CONSTRUCTION.
14. ENDS OF COLUMNS AT SPLICES AND AT OTHER BEARING CONNECTIONS SHALL BE 'FINISHED TO BEAR' TO COMPLETE TRUE BEARING.
15. PROVIDE STIFFENERS 'FINISHED TO BEAR' UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS, OVER COLUMNS, AND WHERE SHOWN ON DRAWINGS.
16. PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING AND MOMENT CONNECTIONS HAVE BEEN CONSTRUCTED.
17. STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.
18. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE CONSTRUCTION MANAGER FOR EACH SPECIFIC CASE.
19. STRUCTURAL STEEL SHALL BE PAINTED IN THE SHOP WITH ONE COAT OF PRIMER.
20. STRUCTURAL STEEL MEMBERS AND CONNECTIONS EXPOSED TO THE WEATHER IN THE FINAL CONDITION SHALL BE GALVANIZED. OTHER STEEL SHALL BE GALVANIZED AS INDICATED ON THE DRAWINGS.
21. STEEL CONTRACTOR SHALL PROVIDE AND INSTALL ALL STEEL ANGLE FRAMES REQUIRED PROVIDING SUPPORT OF METAL DECK AROUND ALL ROOF OPENINGS AND ROOF DRAINS.
22. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL. THESE DRAWINGS SHALL SHOW COMPLETE AND ACCURATE MEMBER LAYOUT, SIZES, GRADE, DIMENSIONS, CONNECTIONS, OPENINGS, ACCESSORIES, AND ALL OTHER INFORMATION NECESSARY FOR COMPLETE AND ACCURATE FABRICATION AND ASSEMBLY OF THE MEMBERS. PROVIDE TEMPLATES OR LOCATIONS DRAWINGS FOR INSTALLATION OF ANCHOR BOLTS. A SUBMITTAL SHALL BE STAMPED MY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MASSACHUSETTS.
23. NO CUTTING OF OR OPENINGS THROUGH STEEL WILL BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER

WELDING NOTES

1. ALL WELDS SHALL BE AWS D1.1 PREQUALIFIED JOINTS. WHERE JOINTS ARE NOT QUALIFIED BY AWS D1.1, SUBMIT QUALIFICATION PROCEDURE TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
2. WELDER SHALL BE CERTIFIED FOR WELDS HE IS RESPONSIBLE FOR. CERTIFICATION SHALL BE PROVIDED TO ENGINEER UPON REQUEST.
3. WELDS SHALL BE INSPECTED AND TESTED BY THE FABRICATOR IN ACCORDANCE WITH AWS D1.1 AND THE FOLLOWING
4. ALL WELDS SHALL BE VISUALLY INSPECTED BY AN AWS CERTIFIED WELDING INSPECTOR (CWI).
5. ALL FULL PENETRATION WELDS SHALL BE NON-DESTRUCTIVELY TESTED BY AN ULTRASONIC AND MAGNETIC PARTICLE TESTING TECHNIQUES AS APPROVED BY THE ENGINEER UNLESS NOTED OTHERWISE.

REINFORCED MASONRY

1. MASONRY CONSTRUCTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS AND FOR CONCRETE MASONRY CONSTRUCTION (ACI 530.05ASCE 5-05/TMS 602-05) AND SPECIFICATIONS FOR MASONRY STRUCTURES AND RELATED COMMENTARIES (ACI 530/530.1-05/ASCE 605/TMS 602-05).
2. MASONRY UNITS SHALL CONFORM TO ASTM C55 OR ASTM C90 AND ARE SAMPLED AND TESTED IN ACCORDANCE WITH ASTM C140. F'm = 1500PSI.
3. THICKNESS OF BED JOINTS DOES NOT EXCEED 5/8"
4. MORTAR FOR BLOCK WALL CONSTRUCTION SHALL BE TYPE M OR S CONFORMING TO ASTM C270.
5. GROUT FOR PIERS AND BLOCK WALLS SHALL CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 psi DETERMINED IN ACCORDANCE WITH THE PROVISIONS OF ASTM C1019.
6. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
7. WIRE FOR JOINT REINFORCING SHALL CONFIRM TO ASTM A82, YIELD POINT = 70 ksi (MIN).
8. UNLESS NOTED OTHERWISE ON PLANS, PROVIDE THE FOLLOWING MINIMUM REINFORCEMENT:#5 @ 32" OC VERTICAL AND #9 GA. LADDER OR TRUSS TYPE @ 16"OC HORIZONTAL.
9. PROVIDE BOND BEAMS WITH 1-#5 CONTINUOUS, AT THE TOP OF FOUNDATION WALLS AND THE TOP OF PARAPETS, AT EACH FLOOR LEVEL, AND WHERE SHOWN ON THE DRAWINGS. MAXIMUM SPACE BETWEEN HORIZONTAL BOND BEAMS SHALL NOT EXCEED 8'-0".
10. UNLESS NOTED OTHERWISE ON PLANS, PROVIDE THE FOLLOWING ADDITIONAL VERTICAL REINFORCEMENT IN THE CELL IMMEDIATELY ADJACENT TO EACH SIDE OF A MASONRY OPENING AND IN THE CELL OF DISCONTINUOUS WALLS. THESE BARS ARE TO EXTEND FULL HEIGHT OF THE WALL OR IN THE CASE OF MASONRY OPENING AT MULTI-STORY WALLS, FROM STORY TO LEVEL ABOVE TO STORY LEVEL BELOW THE OPENING. 6" AND 8"CMU WALLS - 1-#510" AND 12" CMU WALLS - 2-#6
11. EXTEND ADDITIONAL REINFORCEMENT A MINIMUM OF 36 BAR DIAMETERS BEYOND THE OPENING.
12. THE MINIMUM LENGTH OF LAP FOR REINFORCING BARS EMBEDDED IN GROUT IS 48 BAR DIAMETERS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
13. PLACE REINFORCING BARS BEFORE GROUTING. PLACE GROUT IN LIFTS NOT EXCEEDING 5 FEET. CONSOLIDATE EACH LIFT BY MECHANICAL VIBRATION. THE NEXT LIFT OF THE POUR MAY BE MADE AFTER THE INITIAL WATER LOSS AND RECONSOLIDATION OF THE PRIOR LIFT, WHILE IT IS STILL PLASTIC.
14. PROPERLY SECURE REINFORCING BARS TO MAINTAIN THE POSITIONS INDICATED ON THE DRAWINGS. BARS TO BE LOCATED IN CENTER OF CELLS UNLESS OTHERWISE NOTED.
15. ALL CMU SHALL BE BRACED DURING CONSTRUCTION FOR THE GOVERNING CODE LATERAL DESIGN LOADS UNTIL PERMANENT RESTRAINTS HAVE BEEN INSTALLED.
16. INSPECTION AND TESTING OF MASONRY WORK WILL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY, UNDER A SEPARATE CONTRACT WITH THE OWNER. IF THE MASONRY FAILS, CONTRACTOR SHALL PROMPTLY REPLACE MATERIALS OR REDO WORK WHICH HAS BEEN REJECTED BY ARCHITECT, ENGINEER AND/OR TESTING AGENCY, AT NO EXPENSE TO THE OWNER.
17. THE FOLLOWING STEPS ARE TO BE FOLLOWED WHEN LAYING MASONRY IN THE TEMPERATURES STATED BELOW:
    40 - 32 DEG F (MEAN DAILY AIR TEMPERATURE)
    - HEAT MIXING WATER OR AGGREGATE TO 70° F.
    - PROTECT MASONRY FROM RAIN OR SNOW FOR 24 HOURS.

    32 - 20 DEG F (MEAN DAILY AIR TEMPERATURE)
    - HEAT MIXING WATER AND AGGREGATE TO 70° F.
    - PROVIDE WIND BRACING FOR WIND VELOCITY IN EXCESS OF 15 M.P.H.
    - COVER MASONRY WITH INSULATING BLANKETS FOR 24 HOURS AND PROVIDE HEAT SOURCES ON BOTH SIDES OF MASONRY CONSTRUCTION.

    BELOW 20° F (MEAN DAILY AIR TEMPERATURE)
    - HEAT MIXING WATER & AGGREGATE TO 70° F.
    - PROVIDE ENCLOSURES AND HEAT TO MAINTAIN 40° MINIMUM TEMPERATURE.
    - TEMPERATURE OF MASONRY UNITS MUST BE 40° F MINIMUM WHEN LAID. MAINTAIN MASONRY

    ABOVE 40° F FOR 24 HOURS BY ENCLOSURES AND SUPPLEMENTAL HEAT.

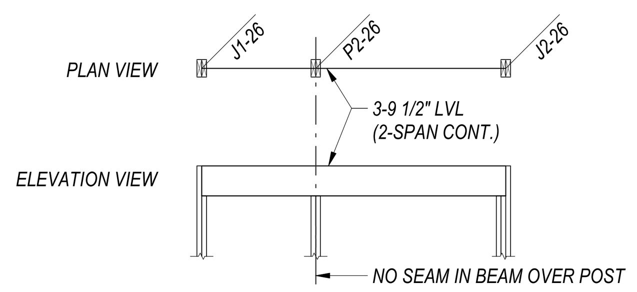
UNIT MASONRY

1. HOLLOW MASONRY BLOCK SHALL CONFORM TO ASTM C-90, GRADE N, AND SHALL BE NORMAL WEIGHT. MINIMUM COMPRESSIVE STRENGTH OF BLOCK f'c = 2500 PSI. MASONRY ASSEMBLY SHALL ACHIEVE A COMPRESSIVE STRENGTH f'm = 1500 PSI.
2. MORTAR SHALL COMPLY WITH ASTM C-270, AND SHALL BE TYPE N OR S.
3. GROUT SOLID ALL CELLS CONTAINING VERTICAL STEEL. REFER TO STRUCTURAL DRAWINGS FOR STEEL SIZE AND SPACING. CELLS SHALL BE CLEAN AND FREE OF MORTAR AND OTHER MATERIALS, TO PERMIT THE FREE VERTICAL FLOW OF GROUT. GROUTING SHALL OCCUR IN 4'-0" LIFTS MAXIMUM.
4. PROVIDE 4 #6 DOWELS, HOOKED INTO FOOTINGS, IN EACH MASONRY PIER. MASONRY PIER CELLS SHALL BE FULLY GROUTED. CELLS SHALL BE CLEAN AND FREE OF MORTAR AND OTHER MATERIALS, TO PERMIT THE FREE VERTICAL FLOW OF GROUT THROUGH THE PIER. GROUTING SHALL OCCUR IN 4'-0" LIFTS MAXIMUM.
5. PROVIDE HOT-DIPPED GALVANIZED STEEL LINTEL ANGLES IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. PROVIDE 6 INCHES OF BEARING PER END OF LINTEL:
   ONE ANGLE PER 4" WIDTH OF MASONRY
   - R.O≤3'-0" L 3-1/2 x 3-1/2 x 1/4"
   - R.O≤4'-0" L 4 x 3-1/2 x 1/4"
   - R.O≤5'-0" L 4 x 3-1/2 x 5/16"
   - R.O≤6'-0" L 5 x 3-1/2 x 5/16"
   - R.O≤8"-0" L 6 x 3-1/2 x 5/16"

MULTIPLE SPAN BEAM LEGEND

BEAMS IDENTIFIED AS MULTI-SPAN CONTINUOUS

EXAMPLE: (2-SPAN), (3-SPAN) ETC.
(NO SPAN IDENTIFICATION INDICATES SINGLE SPAN BEAM)



POST LEGEND

BW = BEARING WALL
FVP = FLAT VALLEY PLATE
(**E**) = EXISTING
(*) SPAN = JOIST OR BEAM RUNS CONTINUOUS OVER SUPPORTS FOR (*) SPANS

(**PU**) POST ABOVE FRAMING LEVEL
POST BELOW FRAMING LEVEL

P3-26
NUMBER OF STUDS IF APPLICABLE
SIZE OF STUD OR DIMENSION OF SOLID POST
TYPE OF POST: **P** = POST, **J** = JACK,
K = KING
VC = VERSA COLUMN,
LC = LALLY COLUMN
HSS = HOLLOW STRUCTURAL SECTION

METAL DECK

1. STEEL ROOF DECK SHALL BE AS MANUFACTURED BY VULCRAFT OR APPROVED EQUAL. STEEL SHALL CONFORM TO ASTM A446 GRADE "A" GALVANIZED. THE MINIMUM YIELD STRENGTH SHALL BE AT LEAST 33,000 PSI.

   METAL ROOF DECK SCHEDULE

DECK GAUGE	SDI DECK TYPE	DECK DEPTH (in)	SHEET WIDTH (in)	(in.4)	MIN Ix (in.3)	MIN Sx
22	WR	1.5	36	.167	.186	

CONN @ SUPPORTS (W/N)	CONN @ SIDELAP PARALLEL CONN EDGES (in)	(No./SPAN)	REQ'D SHEAR CAPACITY (PLF)
36/4	12	3	250

   SUPPORT AND PARALLEL EDGE CONNECTIONS SHALL BE MADE WITH 5/8" DIAMETER PUDDLE WELDS AT THE SPACING NOTED IN THE TABLE ABOVE

2. SIDELAP CONNECTIONS SHALL BE MADE WITH #10 TEK SCREWS AT THE SPACING NOTED IN THE TABLE ABOVE
3. GALVANIZING FOR ALL DECK PRODUCTS SHALL CONFORM TO ASTM A525, CLASS G60.
4. ROOF DECK SHALL EXTEND OVER THREE OR MORE SPANS WHEREVER POSSIBLE.
5. INSTALLATION OF METAL DECK SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE MANUAL OF CONSTRUCTION WITH METAL DECK.
6. METAL DECK SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL. THESE DRAWINGS SHALL SHOW COMPLETE AND ACCURATE DECK LAYOUT, DIMENSIONS, GAUGES, FASTENING REQUIREMENTS, SECTIONS, OPENINGS, ACCESSORIES, AND ALL OTHER INFORMATION NECESSARY FOR COMPLETE AND ACCURATE FABRICATION AND ERECTION OF THE DECK.
7. DECK SHALL BE WELDED TO SUPPORTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. AT THE MINIMUM WELDING SHALL CONSIST OF 5/8" DIAMETER PUDDLE WELDS SPACED 12" O.C. AT INTERMEDIATE SUPPORTING MEMBERS AND 6" O.C. AT EDGE SUPPORTS UNLESS NOTED OTHERWISE ON PLANS.
8. METAL DECKING ATTACHED TO CONCRETE SUPPORTS WITH #12x11/2" SELF-TAPING CONCRETE SCREW @ 12"OC.
9. CONTRACTOR SHALL SUPPLY ALL METAL DECK ACCESSORIES INCLUDING, BUT NOT LIMITED TO, LIGHT GAUGE ANGLES, POUR STOPS, SUMP AND DRAIN PANS AND CLOSURES.
10. A SUBMITTAL SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MASSACHUSETTS.

COMPOSITE METAL FLOOR

1. STEEL DECK SHALL BE AS MANUFACTURED BY VULCRAFT STEEL DECK OR APPROVED EQUAL. THE MINIMUM YIELD STRENGTH SHALL BE AT LEAST 50 KSI.
2. DECKING ALONE SHALL BE CAPABLE OF SUPPORTING THE WETY WEIGHT OF CONCRETE PLUS CONSTRUCTION LOADS WITHOUT REQUIRING INTERMEDIATE SHORING FOR ALL SPAN CONDITIONS

   COMPOSITE SLAB

SLAB THICKNESS	SLAB REINF	CONCRETE TYPE
4"	6x6-W2.1xW2.1 **	NORMAL WEIGHT

   ** PROVIDE #4(5'-0")@18"OC TYPICAL ADDITIONAL REINFORCING OVER GIRDERS

   COMPOSITE METAL DECK SCHEDULE

DECK GAUGE	SDI DECK TYPE	DECK DEPTH (in)	SHEET WIDTH (in)	MIN Ix (in.4)	MIN Sx (in.3)
20	VLI	11/2"	36	.409	.346

3. SUPPORT AND PARALLEL EDGE CONNECTIONS SHALL BE MADE WITH 5/8" DIAMETER PUDDLE WELDS AT THE SPACING NOTED IN THE TABLE ABOVE
4. SIDELAP CONNECTIONS SHALL BE MADE WITH #10 TEK SCREWS AT THE SPACING NOTED IN THE TABLE ABOVE
5. GALVANIZING FOR ALL DECK PRODUCTS SHALL CONFORM TO ASTM A525, CLASS G60.
6. METAL DECK SHALL EXTEND OVER THREE OR MORE SPANS WHEREVER POSSIBLE.
7. INSTALLATION OF METAL DECK SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE MANUAL OF CONSTRUCTION WITH METAL DECK.
8. METAL DECK SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE ARCHITECT FOR APPROVAL. THESE DRAWINGS SHALL SHOW COMPLETE AND ACCURATE DECK LAYOUT, DIMENSIONS, GAUGES, FASTENING REQUIREMENTS, SECTIONS, OPENINGS, ACCESSORIES, AND ALL OTHER INFORMATION NECESSARY FOR COMPLETE AND ACCURATE FABRICATION AND ERECTION OF THE DECK.
9. A SUBMITTAL SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MASSACHUSETTS.

COMPOSITE STEEL BEAMS

1. ALL BEAMS SHALL HAVE SHEAR STUDS SPACED AT 2'-0" OC MAX WHETHER SHOWN OR NOT
2. COMPOSITE STEEL BEAMS DO NOT REQUIRE SHORING DURING PLACEMENT OF CONCRETE SLABS, UNLESS NOTED OTHERWISE

SHEAR STUDS

1. SHEAR STUDS SHALL BE FUSION WELDED, HEADED STUDS OF HIGH STRENGTH STEEL
2. UNLESS NOTED OTHERWISE STUDS SHALL HAVE A SHANK DIAMETER OF 3/4"
3. RATED SHEAR CONNECTOR CAPACITY, FOR USE WITH METAL DECK, SHALL BE A MINIMUM OF 15.9 KIPS PER CONNECTOR

EARTHQUAKE LOAD - PER MASSACHUSETTS STATE BUILDING CODE

SEISMIC SITE CLASS: C
SEISMIC DESIGN CATEGORY: B
SEISMIC RESISTING SYSTEM:
UNREINFORCED MASONRY SHEAR WALLS (IEBC)
R = 1.25
Cd = 1.25
OMEGA = 1.25

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
SEISMIC COEFFICIENT: Ss=0.29 S1=0.068

DESIGN LOADS PER MASSACHUSETTS STATE BUILDING CODE

LIVE LOADS

GROUND SNOW LOAD:	45 PSF
STAIRS & EXITS:	100 PSF
CORRIDORS @ 1ST FLOOR ONLY	100 PSF
CORRIDORS ABOVE THE 1ST FLOOR	80 PSF
RESIDENTIAL AREAS & CORRIDORS SERVING THEM	40 PSF
BALCONIES & DECKS (SERVING A SINGLE UNIT)	40 PSF
COMMON BALCONIES & DECKS	100 PSF

WIND LOADS

MASSACHUSETTS STATE BUILDING CODE : 105 MPH, EXPOSURE B

DEAD LOAD

WEIGHT OF MATERIALS AND CONSTRUCTION

ABBREVIATIONS:

ADD'L - ADDITIONAL
BLKG - BLOCKING
BM - BEAM
BTM - BOTTOM
BRG - BEARING
BTWN - BETWEEN
BW - BEARING WALL
CLG - CEILING
COL - COLUMN
CONC - CONCRETE
CONN - CONNECTION
CONT - CONTINUOUS
DIAG - DIAGONAL
DN - DOWN
EQSP - EQUAL SPACES
EF - EACH FACE
EW - EACH WAY
FDN - FOUNDATION
FIN - FINISH
FLG - FLANGE
FTG - FOOTING
HORIZ - HORIZONTAL
HDR - HEADER
JST - JOIST
LSL - LAMINATED STRAND LUMBER
LVL - LAMINATED VENEER LUMBER
LW - LONG WAY
MAX - MAXIMUM
MIN - MINIMUM
MFR - MANUFACTURER
NTS - NOT TO SCALE
OC - ON CENTER
PL - PLATE
PT - PRESSURE TREATED
REQ - REQUIRED
SPEC - SPECIFICATION
SW - SHEAR WALL
TFN - TOP FLANGE NAILER
TYP - TYPICAL
UON - UNLESS OTHERWISE NOTED
VERT - VERTICAL
W/ - WITH
WS - STRUCTURAL GRADE WOOD SCREW 3/8" DIAMETER, UNLESS NOTED OTHERWISE, SIMPSON SDS OR TIMBERLOK OR SIMILAR

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CONSULTANT
Webb Structural Services
670 MAIN STREET | READING MA 01867 | 781.779.1330
DANIEL W. WEBB STRUCTURAL No. 40752 REGISTERED PROFESSIONAL ENGINEER
07/07/2023

REGISTRATION

REVISIONS

NO.	BY	DESCRIPTION	DATE
-	-	-	-

PROJECT

-

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

SHEET TITLE

GENERAL NOTES

DRAWN:	DRAWNING NO:
SCALE: 1/4" = 1'-0"	
DATE: 07.07.23	
CHECKED:	S0.0
SHEET OF	

7/7/2023 1:49:09 PM Autodesk Docs://23021_25 HOWARD_R23/23021_25 HOWARD_R23.rvt

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STATEMENT OF SPECIAL INSPECTIONS

VERIFICATION OF SOILS

CHECK IF REQUIRED	INSPECTION TASK (STANDARD & CODE REFERENCE)	CONTINUOUS INSPECTION	PERIODIC INSPECTION	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
☐	VERIFICATION OF SOILS 1705.6 & CHAPTER 18 IBC	☐	☐	TESTING LAB	
☐	VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	☐	☒	TESTING LAB	
☒	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	☐	☒	TESTING LAB	
☒	PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS	☐	☒	TESTING LAB	
☒	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	☒	☐	TESTING LAB	
☒	PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERTY	☐	☒	TESTING LAB	

EXCAVATION AND FILLING

CHECK IF REQUIRED	INSPECTION TASK (STANDARD & CODE REFERENCE)	CONTINUOUS INSPECTION	PERIODIC INSPECTION	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
☒	VERIFY MATERIALS BELOW SHALLOW FOUNDATION ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	☐	☒	TESTING LAB	
☒	VERIFY EXCAVATION ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	☐	☒	TESTING LAB	
☒	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	☐	☒	TESTING LAB	
☒	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED MATERIAL	☒	☐	TESTING LAB	
☒	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	☐	☒	TESTING LAB	

CONCRETE CONSTRUCTION

CHECK IF REQUIRED	INSPECTION TASK (STANDARD & CODE REFERENCE)	CONTINUOUS INSPECTION	PERIODIC INSPECTION	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
☒	INSPECT REINFORCEMENT, INCLUDING PRETESTING TENDONS, AND VERIFY PLACEMENT. (ACI 318: 3.5, 7.1-7.7, IBC SECTION1913.4)	☐	☒	TESTING LAB	
☐	REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM $\frac{5}{16}$"; C. INSPECT ALL OTHER WELDS (IBC TABLE 1704.3, ITEM 5B. AWS: D1.4, ACI 318: 3.5.2)	☐	☐ ☒	TESTING LAB	
☐	INSPECT ANCHORS CAST IN CONCRETE. (IBC SECTION 1911.5)	☐	☒	TESTING LAB	
☒	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A	☒	☒	TESTING LAB	
☒	VERIFY USE OF REQUIRED DESIGN MIX. (ACI 318: CH.4, 5.2-5.4, 1904.2.2, IBC SECTION 1913.2, 1913.3)	☐	☒	TESTING LAB	
☒	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. (ASTM C 172, ASTM C 21, ACI 318: 5.6, 5.8, IBC SECTION 1913.10)	☒	☐	TESTING LAB	
☐	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. (ACI 318: 5.9, 5.10, IBC SECTION 1913.9)	☐	☐	TESTING LAB	
☒	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES (ACI 318: 5.11, 5.13, IBC SECTION 1913.9)	☐	☒	TESTING LAB	
☐	INSPECTION OF PRESTRESSED CONCRETE: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS. (ACI 318: 18.20, ACI 318: 18.18.4)	☐	☐	TESTING LAB	
☐	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. (ACI 318: CH.16)	☐	☐	TESTING LAB	
☐	VERIFICATION OF IN-SITU CONCRETE, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE, AND PRIOR TO REMOVAL OF SHORES AND FORMS FORM BEAMS AND STRUCTURAL SLABS. (ACI 318: 6.2)	☐	☐	TESTING LAB	
☒	INSPECT FORM WORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. (ACI 318: 6.1.1)	☐	☒	TESTING LAB	

STRUCTURAL MASONRY (QUALITY ASSURANCE PROGRAM, LEVEL B)

CHECK IF REQUIRED	INSPECTION TASK (STANDARD & CODE REFERENCE)	CONTINUOUS INSPECTION	PERIODIC INSPECTION	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
☒	VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SIDE IN ACCORDANCE WITH ART. 1.5 B.1.b3			TESTING LAB	
☒	VERIFICATION OF F'M AND F'ACC PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THE OCDE		☒		
☒	VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS				
☒	AS MASONRY CONSTRUCTION BEGINS, VERIFY THE FOLLOWING ARE INCOMPLIANCE. A. PROPORTIONS OF SITE-PREPARED MORTAR. B. CONSTRUCTION OF MORTAR JOINTS. C. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES. D. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES (ART. 2.6A, ART. 3.3B, ART. 3.4)	☐	☒	TESTING LAB	
☒	PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE: A. GROUT SPACE B. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS, AND ANCHORAGES. C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES. D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING TENDONS AND ANCHORAGES. E. CONSTRUCTION OF MORTAR JOINTS.SEC 2108.9.2.11, ITEM 2, SEC. 2104.3, 2104.4, ACI 318: SEC. 1.15.4, 2.1.2, SEC. 2.1.8.6.2, ACI 3.3G ART. 2.4, 3.4, ART. 1.8	☒	☒	TESTING LAB	
☒	VERIFY DURING CONSTRUCTION: A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION. C. WELDING OF REINFORCEMENT. D. PREPARATION,CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMP. BELOW 40°F OR HOT WEATHER (TEMP ABOVE 90°) E. APPLICATION AND MEASUREMENT OF PRESTRSSING FORCE. F. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IN IN COMPLIANCE. SEC. 1.12, ART. 3.2D, ART. 3.4, ART. 2.6B, ART. 3.3B	☐	☒	TESTING LAB	
☒	GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION PROVISIONS. ART. 3.5	☒	☐	TESTING LAB	
☒	PREPARATION OF ANY REQUIRED GROUP SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED. SEC. 2105.3, 2105.4, 2105.5, ART.1.5	☐	☒	TESTING LAB	
☒	COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED. ART. 1.5	☐	☒	TESTING LAB	

STRUCTURAL STEEL

☒	SPECIAL INSPECTION AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS. STRUCTURES AND PORTIONS THEREOF SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360 CHAPTER N				

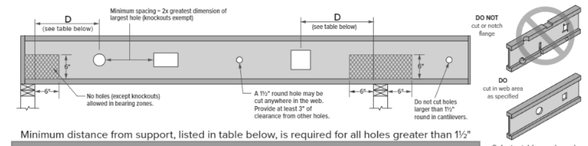
NOTE: QUALTIY CONTROL AS SPECIFIED IN AISC 360 SHALL BE PROVIDED BY THE FABRICATOR AND ERECTOR. QUALITY ASSURANCE AS SPECIFIED IN AISC 306 SHALL BE PROVIDED BY OTHERS

HIGH-STRENGTH BOLTING AND STEEL FRAME INSPECTION

CHECK IF REQUIRED	INSPECTION TASK (STANDARD & CODE REFERENCE)	CONTINUOUS INSPECTION	PERIODIC INSPECTION	SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
☒	INSTALLATION OF HIGH STRENGTH BOLTS SHALL BE INSPECTED IN ACCORDANCE WITH AISC SPECIFICATIONS (ASTMA 325 OR ASTMA 490) BOLTS MUST BE IN ACCORDANCE WITH AISC ASD OR AISC LRFD	☐	☒	TESTING LAB	
☒	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHER. (A) IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTIONS DOCUMENTS. (B) MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. ASTM, AISC ASD, SEC. A3.4, AISC LRFD, SEC. A3.3	☐	☒	TESTING LAB	
☒	INSPECTION OF HIGH-STRENGTH BOLTING: BEARING-TYPE CONNECTIONS. AISC LRFD SEC. M2.5, IBC SECTION 1704.3.3	☐	☒	TESTING LAB	
☒	INSPECTION OF HIGH-STRENGTH BOLTING: SLIP-CRITICAL CONNECTIONS. AISC LRFD SEC. M2.5, IBC SECTION 1704.3.3	☒	☒	TESTING LAB	
☒	MATERIAL VERIFICATION OF STRUCTURAL STEEL: (A) IDENTIFICATION OF MARKING TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. (B) MANUFACTURER'S CERTIFIED MILL TEST REPORTS. ASTM A 6 OR ASTM A 568, IBC SECTION 1708.4	☐	☐	TESTING LAB	
☒	MATERIAL VERIFICATION OF WELD FILLER MATERIALS. (A) IDENTIFICATION OF MARKINGS TO CONFORM TO ASTM SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS (B) MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. AISC LRFD, SEC. A3.5	☐	☐	TESTING LAB	
☒	INSPECTION OF WELDING: (A) STRUCTURAL STEEL (1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS. (2) MULTI-PASS FILLET WELDS. (3) SINGLE-PASS FILLET WELDS, $\frac{5}{16}$" (7.9MM) (4) FLOOR AND DECK WELDS. (B) REINFORCING STEEL. (1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706. (2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES AT INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS, AND SHEAR REINFORCEMENT. (3) SHEAR REINFORCEMENT. (4) OTHER REINFORCING STEEL. AWSD1.1, AWSD1.3, AWSD1.4, ACI 318: 3.5.2, IBC SECTION 1704.3.1	☒	☒	TESTING LAB	
☒	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS. (A) DETAILS SUCH AS BRACING AND STIFFENING. (B) MEMBER LOCATIONS (C) APPLICATION OF JOINT DETAILS AT EACH CONNECTION. IBC SECTION 1704.3.2	☐	☒	TESTING LAB	

AJS® Joist Hole Location & Sizing

AJS® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center



Minimum distance from support, listed in table below, is required for all holes greater than 1½"

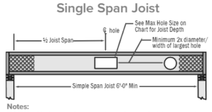
MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE														
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8⅝	9	10	11	12	13
Rectangular Hole Side [in]		-	-	2	4	6	6	-	-	-	-	-	-	-	-
Any 9½" Joist	Span [ft]	8	2'–0"	2'–5"	2'–11"	3'–5"	3'–10"	4'–0"							
		12	3'–0"	3'–8"	4'–5"	5'–1"	5'–10"	6'–0"							
		16	4'–0"	4'–11"	5'–11"	6'–10"	7'–9"	8'–0"							
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8⅝	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	2	3	4	5	7	8	-	-	-	-	-
Any 11⅞" Joist	Span [ft]	8	1'–0"	1'–5"	1'–10"	2'–3"	2'–8"	2'–11"	3'–1"	3'–6"	3'–11"				
		12	1'–5"	2'–1"	2'–9"	3'–5"	4'–0"	4'–4"	4'–8"	5'–4"	5'–11"				
		16	1'–11"	2'–10"	3'–8"	4'–6"	5'–5"	5'–10"	6'–3"	7'–1"	7'–10"				
		20	2'–5"	3'–6"	4'–7"	5'–8"	6'–9"	7'–3"	7'–10"	8'–11"	9'–10"				
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8⅝	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	-	2	3	3	5	6	6	8	9	-	-
Any 14" Joist	Span [ft]	8	1'–0"	1'–1"	1'–2"	1'–4"	1'–8"	1'–11"	2'–1"	2'–6"	2'–10"	2'–11"	3'–4"	3'–9"	
		12	1'–0"	1'–1"	1'–4"	2'–0"	2'–7"	2'–11"	3'–2"	3'–10"	4'–4"	4'–5"	5'–0"	5'–7"	
		16	1'–0"	1'–1"	1'–10"	2'–8"	3'–5"	3'–10"	4'–3"	5'–1"	5'–9"	5'–11"	6'–8"	7'–6"	
		20	1'–0"	1'–3"	2'–4"	3'–4"	4'–4"	4'–10"	5'–4"	6'–4"	7'–3"	7'–4"	8'–5"	9'–5"	
		24	1'–0"	1'–7"	2'–9"	4'–0"	5'–2"	5'–10"	6'–5"	7'–8"	8'–8"	8'–10"	10'–1"	11'–3"	
Round Hole Diameter [in]		2	3	4	5	6	6½	7	8	8⅝	9	10	11	12	13
Rectangular Hole Side [in]		-	-	-	-	-	-	2	3	5	5	6	8	9	10
Any 16" Joist	Span [ft]	8	1'–0"	1'–1"	1'–2"	1'–2"	1'–3"	1'–3"	1'–8"	2'–0"	2'–1"	2'–5"	2'–10"	3'–2"	3'–7"
		12	1'–0"	1'–1"	1'–2"	1'–2"	1'–4"	1'–8"	1'–11"	2'–6"	3'–0"	3'–1"	3'–8"	4'–3"	4'–10"	5'–5"
		16	1'–0"	1'–1"	1'–2"	1'–2"	1'–10"	2'–2"	2'–7"	3'–4"	4'–0"	4'–2"	4'–11"	5'–8"	6'–5"	7'–2"
		20	1'–0"	1'–1"	1'–2"	1'–4"	2'–3"	2'–9"	3'–3"	4'–3"	5'–1"	5'–2"	6'–2"	7'–1"	8'–1"	9'–0"
		24	1'–0"	1'–1"	1'–2"	1'–7"	2'–9"	3'–4"	3'–11"	5'–1"	6'–1"	6'–3"	7'–4"	8'–6"	9'–8"	10'–10"

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out. **DO NOT** cut the flanges. Holes apply to either single or multiple joists in repetitive member conditions.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- 1½" round knockouts in the web may be removed by using a short piece of metal pipe and hammer.
- Holes may be positioned vertically in the web, provided they don't extend into either flange.
- This table was designed to apply to design conditions covered by uniform load PLF tables only, shown elsewhere in this publication. Use BC Calc® software to check other hole sizes or holes under other design conditions, including joists supporting concentrated loads. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC Calc® software.

Large Rectangular Holes in AJS® Joists

Hole size table based on maximum uniform load of 40 psf live load and 15 psf dead load, at maximum spacing of 24" on-center.

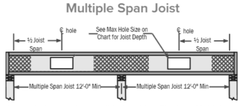
Single Span Joist



Notes:
Additional holes may be cut in the web provided they meet the specifications as shown in the hole distance chart shown above or as allowed using BC Calc® sizing software.

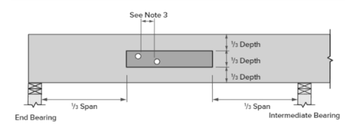
Joist Depth	Maximum Hole Size	
	Simple Span	Multiple Span
9½"	6" x 12"	6" x 7"
11⅞"	8" x 13"	8" x 8"
14"	9" x 16"	8" x 13"
	10" x 14"	9" x 11"
16"	11" x 16"	10" x 14"
	12" x 15"	11" x 12"

Multiple Span Joist



Larger holes may be possible for either Single or Multiple span joists; use BC Calc® sizing software for specific analysis.

Allowable Holes in Versa-Lam® LVL Beams



1. Square and rectangular holes are not permitted.
2. Round holes may be drilled or cut with a hole saw anywhere within the shaded area of the beam.
3. The horizontal distance between adjacent holes must be at least two times the size of the larger hole.
4. Do not drill more than three access holes in any four foot long section of beam.
5. The maximum round hole diameter permitted is:

Beam Depth	Max. Hole Diameter
5½"	¾"
7¼"	1"
9¼" and greater	2"

6. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are governed by the provisions of the *National Design Specification® for Wood Construction*.
7. Beams deflect under load. Size holes to provide clearance where required.
8. This hole chart is valid for beams supporting uniform load only. For beams supporting concentrated loads or for beams with larger holes, use BC Calc® sizing software (www.BCCalc.com) or contact Boise Cascade EWP Engineering.

I-JOIST ACCEPTABLE ALTERNATIVES

JOIST SERIES	DEPTH	FLANGE	ACCEPTABLE ALTERNATIVES				MIN. EI MOMENT AND SHEAR		
			TJI	NORDIC	LPI	GP	EI x 106 [lb-in2]	Moment [ft-lbs]	Shear [lbs]
AJS 140	9-1/2"	2-1/2" FIR	TJI 210	NORDIC NI-40x	LPI 20 PLUS	GPI 40 / WI40	182	2450	1160
AJS 20	9-1/2"	2-1/2" FIR		NORDIC NI-60	LPI 32 PLUS		232	3395	1160
BCI 6500s 1.8	9-1/2"	2-9/16" LVL		NORDIC NI-60	LPI 32 PLUS		220	3505	1575
AJS 25	9-1/2"	3-1/2" FIR		NORDIC NI-80	LPI 42 PLUS		322	5370	1160
AJS 140	11-7/8"	2-1/2" FIR	TJI 210	NORDIC NI-40x	LPI 20 PLUS	GPI 40 / WI40	310	3175	1490
AJS 20	11-7/8"	2-1/2" FIR	TJI 360	NORDIC NI-60	LPI 32 PLUS	WI 60	394	4400	1490
BCI 6500s 1.8	11-7/8"	2-5/16" LVL	TJI 360	NORDIC NI-60	LPI 32 PLUS	WI 60	365	4495	1675
BCI 60s 2.0	11-7/8"	2-5/16" LVL	TJI 560	NORDIC NI-80	LPI 42 PLUS	WI 80	450	6235	1675
AJS 25	11-7/8"	3-1/2" FIR	TJI 560	NORDIC NI-80	LPI 42 PLUS	WI 80	545	6960	1490
BCI 90s 2.0	11-7/8"	3-1/2" LVL			LPI 56		675	9550	2150
AJS 140	14"	2-1/2" FIR	TJI 210	NORDIC NI-40x	LPI 20 PLUS	GPI 40 / WI40	457	3825	1790
AJS 20	14"	2-1/2" FIR	TJI 360	NORDIC NI-60	LPI 32 PLUS	WI 60	578	5295	1790
BCI 6500s 1.8	14"	2-9/16" LVL	TJI 230	NORDIC NI-60	LPI 32 PLUS	WI 60	365	4495	1675
BCI 60s 2.0	14"	2-5/16" LVL	TJI 360	NORDIC NI-80	LPI 36	WI 80	450	6235	1675
AJS 25	14"	3-1/2" FIR	TJI 560	NORDIC NI-80	LPI 42 PLUS	WI 80	798	8380	1790
BCI 90s 2.0	14"	3-1/2" LVL	TJI 560	NORDIC NI-90	LPI 42 PLUS	WI 80	675	9550	2150
AJS 140	16"	2-1/2" FIR	TJI 210	NORDIC NI-60	LPI 20 PLUS	WI 60	623	4435	2065
AJS 20	16"	2-1/2" FIR	TJI 360	NORDIC NI-60	LPI 32 PLUS	WI 60	786	6140	2065
BCI 6500s 1.8	16"	2-5/16" LVL	TJI 360	NORDIC NI-60	LPI 32 PLUS	WI 60	720	6085	2175
BCI 60s 2.0	16"	2-5/16" LVL	TJI 560	NORDIC NI-80	LPI 42 PLUS	WI 80	895	8520	2175
AJS 25	16"	3-1/2" FIR	TJI 560	NORDIC NI-80	LPI 42 PLUS	WI 80	1082	9720	2065
BCI 90s 2.0	16"	3-1/2" LVL	TJI 560	NORDIC NI-90			1330	13050	2550

NOTE: FOR ALTERNATIVE NOT SHOWN REFER TO MINIMUM DESIGN PROPERTIES

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DANIEL W. WEBB
07/07/2023

REGISTRATION

REVISIONS

NO.	BY	DESCRIPTION	DATE
-	-	-	-

PROJECT

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SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

SHEET TITLE

JOIST HOLE INFO & SPECIAL INSPECTION

DRAWN:
SCALE: 1/4" = 1'-0"
DATE: 07.07.23
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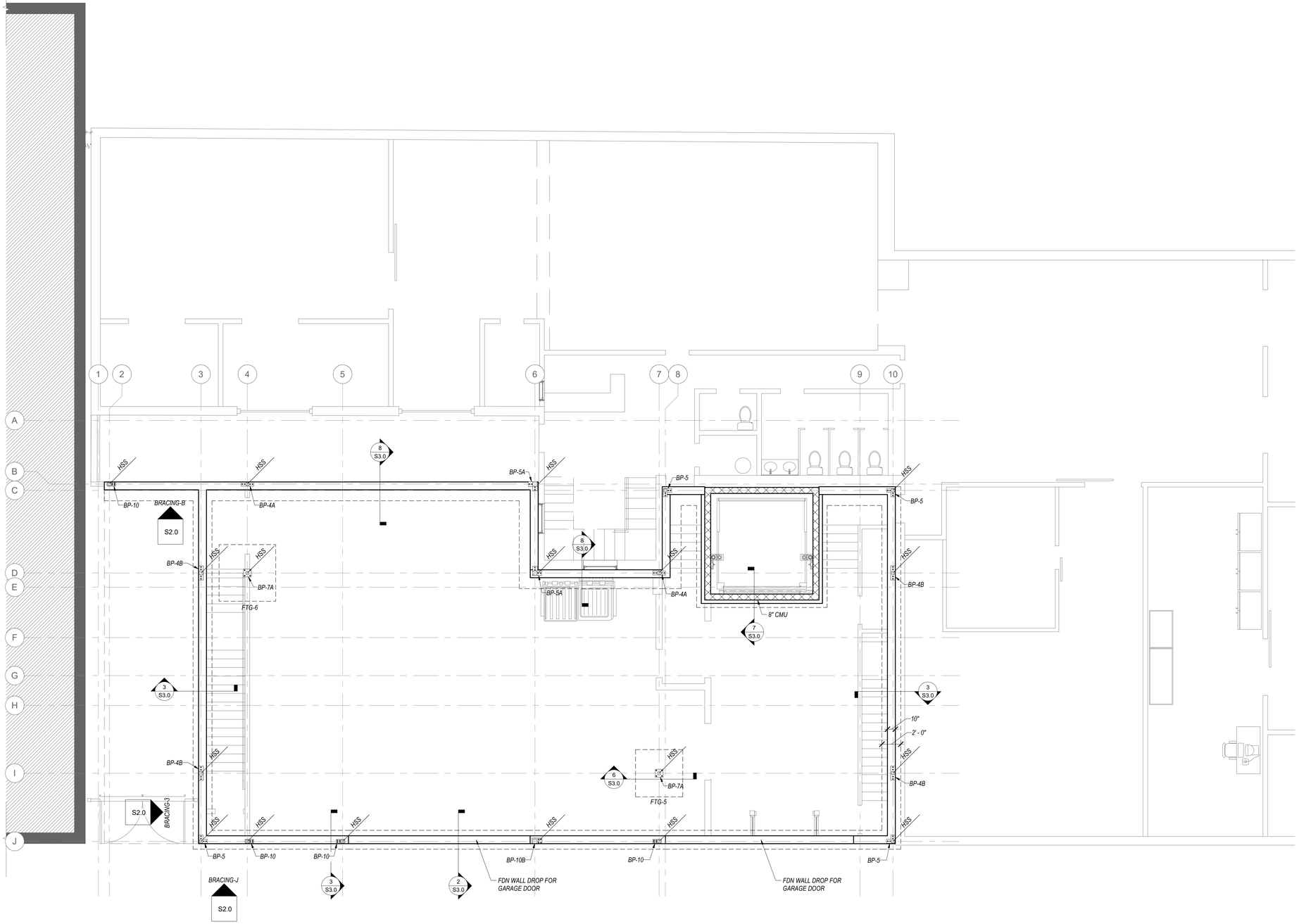

FOUNDATION PLAN

3/16" = 1'-0"

FOUNDATION NOTES:

1. REFERENCE ARCHITECTURAL PLANS FOR FOUNDATION DIMENSIONS AND ELEVATIONS NOT SHOWN
2. GENERAL CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER OF ANY TOP OF WALL ELEVATION AND DIMENSION DEVIATIONS BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS

BASE PLATE SCHEDULE

TYPE	COUNT	DESCRIPTION	TYPE COMMENTS
BP-4A	2	1/2" x 5" x 16"	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)
BP-4B	4	1/2" x 6" x 18"	(4) 5/8"ø EPOXY (6" EMBED)
BP-5	4	1/2" x 5" x 10 1/2" x 10 1/2" CORNER PLATE	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)
BP-5A	2	1/2" x 6" x 11 1/2" x 11 1/2" CORNER PLATE	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)
BP-7A	2	1/2" x 10" x 10"	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)
BP-10	4	1/2" x 5" x 11"	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)
BP-10B	1	1/2" x 7" x 13"	(4) 5/8"ø CONCRETE SCREWS (6" EMBED)

FOOTING SCHEDULE

TYPE	COUNT	LENGTH	WIDTH	THICKNESS	REBAR
FTG-5	1	5' - 0"	5' - 0"	1' - 0"	5-#6 EW BTM
FTG-6	1	6' - 0"	6' - 0"	1' - 4"	5-#6 EW BTM

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DANIEL W. WEBB
STRUCTURAL
No. 10752
COMMONWEALTH OF MASSACHUSETTS
PROFESSIONAL ENGINEER
07/07/2023

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PROJECT

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SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

SHEET TITLE

FOUNDATION PLAN

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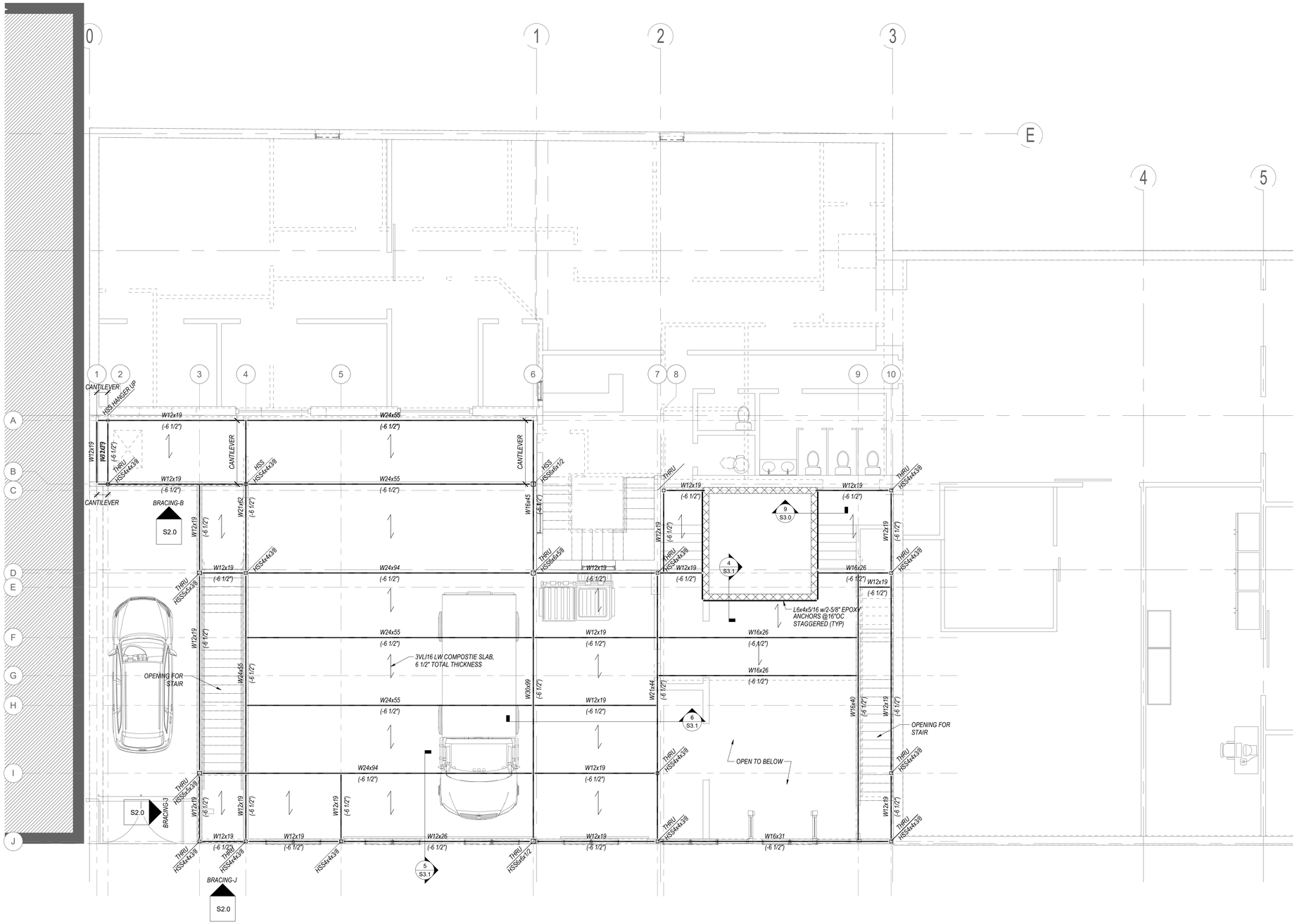

SECOND FLOOR FRAMING PLAN

3/16" = 1'-0"

TOP OF STEEL ELEVATION:

1. TOP OF STEEL ELEV. = 14'-2 3/4", UNO
   2ND FLOOR ELEV. = 14'-9 1/4"

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SHANGHAI CORP
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SECOND FLOOR FRAMING PLAN

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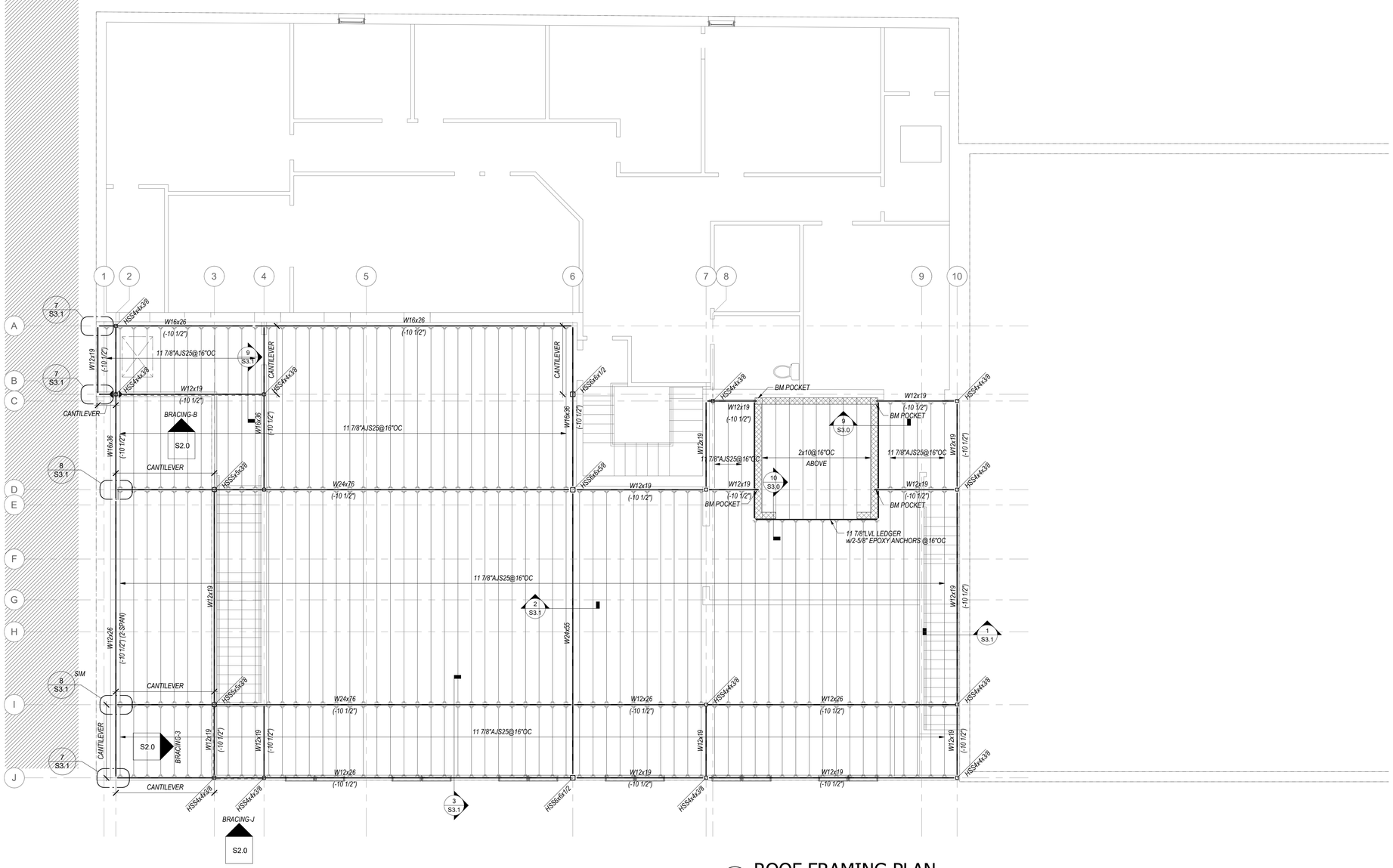

ROOF FRAMING PLAN

3/16" = 1'-0"

FLOOR & ROOF FRAMING NOTES:

1. ALL INDIVIDUAL LVLS ARE 1 3/4" THICK UNLESS NOTED OTHERWISE ON PLAN.

LATERAL LEGEND

1. SHEARWALL =
2. BEARING WALL =
3. ▶ = DENOTES STEEL MOMENT RESISTING CONNECTION

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SHANGHAI CORP
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25 HOWARD ST.
ROXBURY, MA

WSS # 23021

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ROOF FRAMING PLAN

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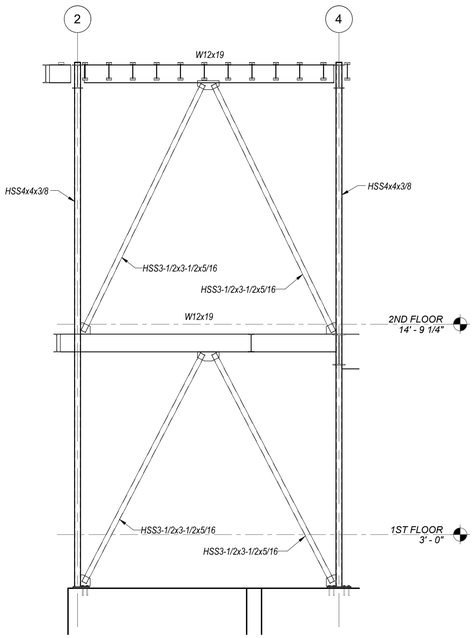
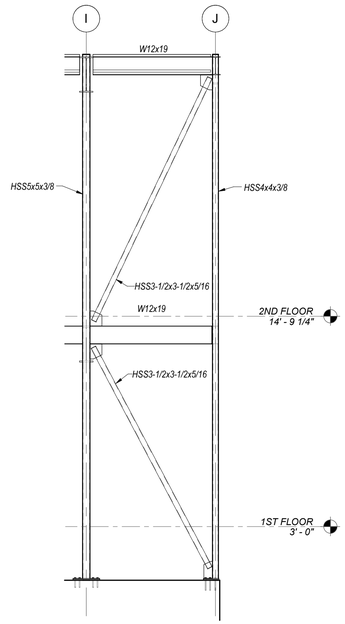
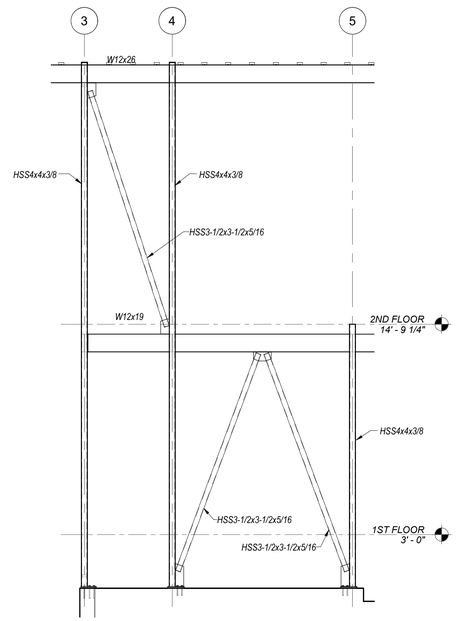


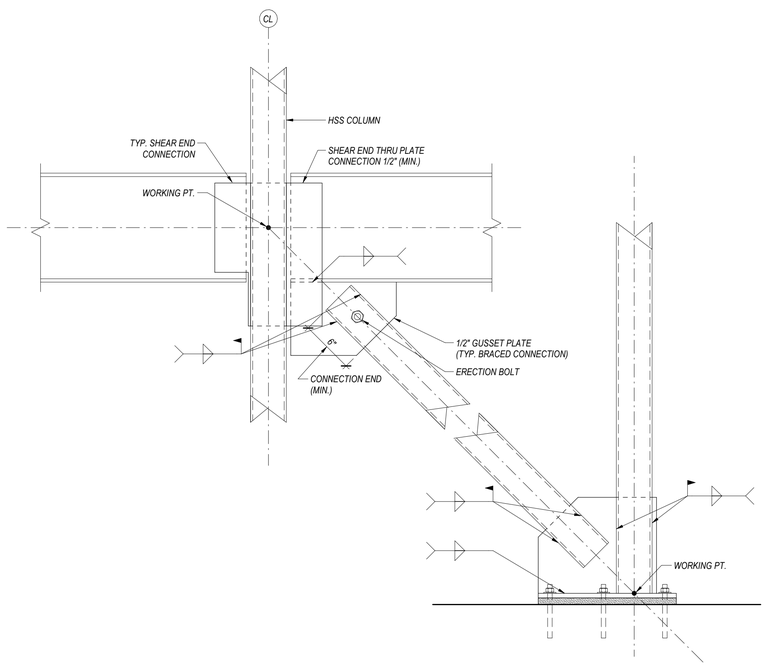
1 BRACING-B
1/4" = 1'-0"



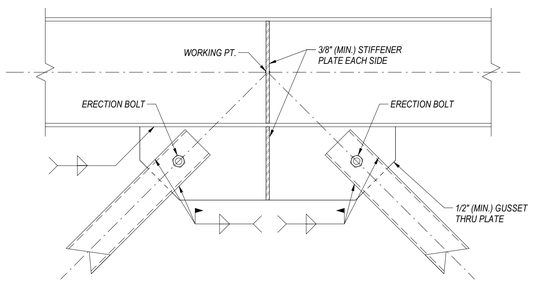
2 BRACING-3
1/4" = 1'-0"



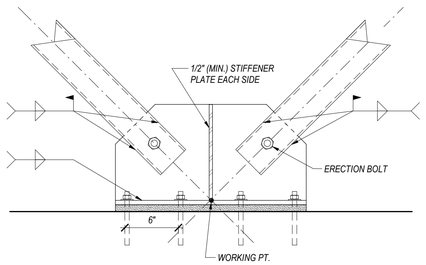
3 BRACING-J
1/4" = 1'-0"



4 TYPICAL BRACING CONNECTIONS
1 1/2" = 1'-0"



5 TYPICAL BRACING CONNECTION (TOP)
1 1/2" = 1'-0"



6 TYPICAL BRACING CONNECTION (BOTTOM)
1 1/2" = 1'-0"

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SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

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BRACING ELEVATIONS

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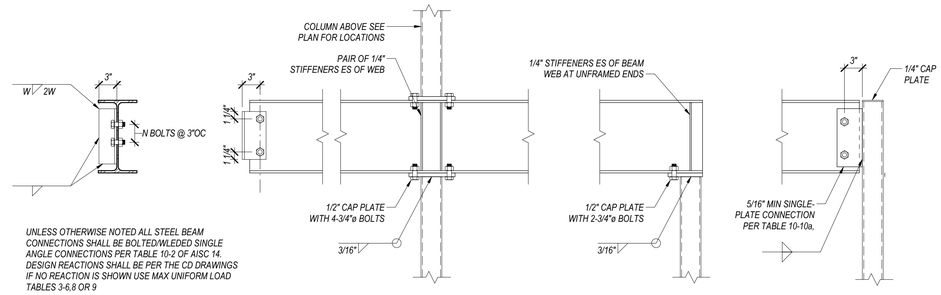
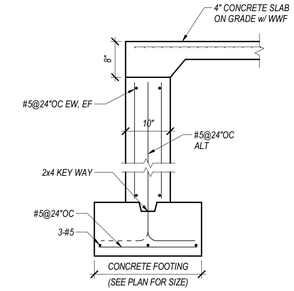
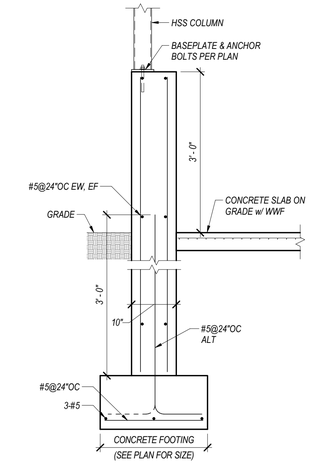


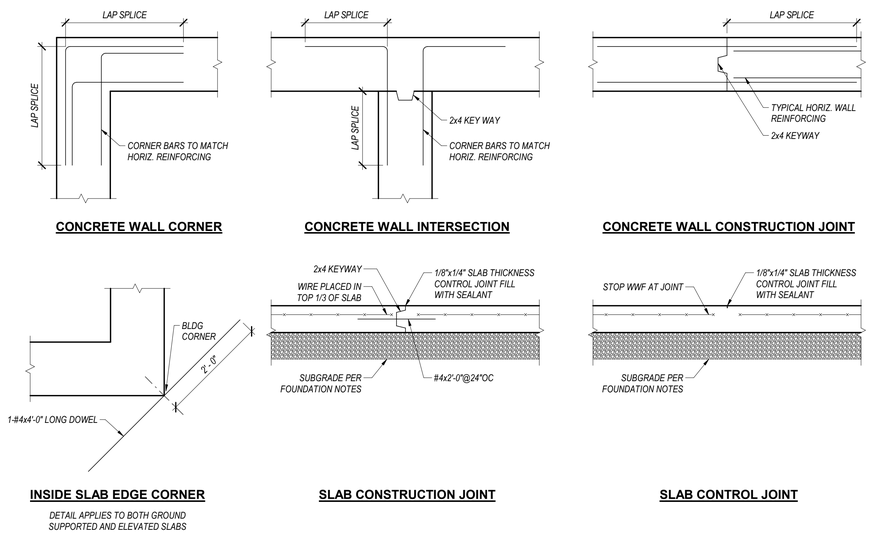
1 TYPICAL STEEL DETAILS
1" = 1'-0"



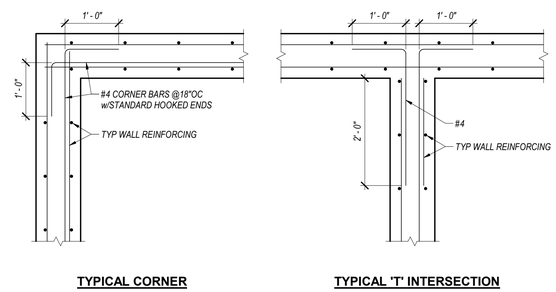
2 FOUNDATION WALL AT PARKING GARAGE
3/4" = 1'-0"



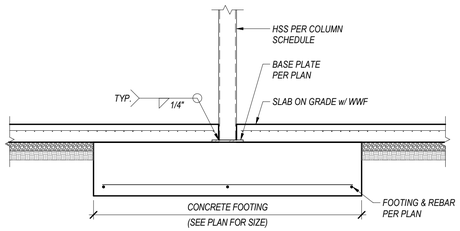
3 FOUNDATION WALL AT PARKING GARAGE
3/4" = 1'-0"



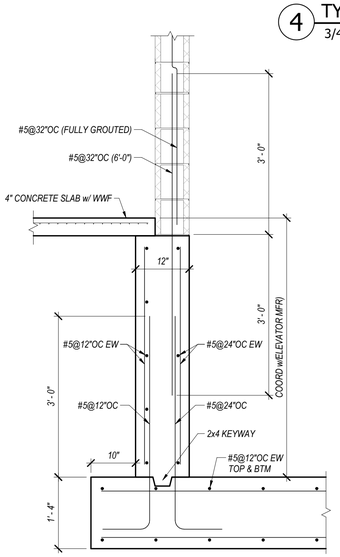
4 TYPICAL CONCRETE DETAILS
3/4" = 1'-0"



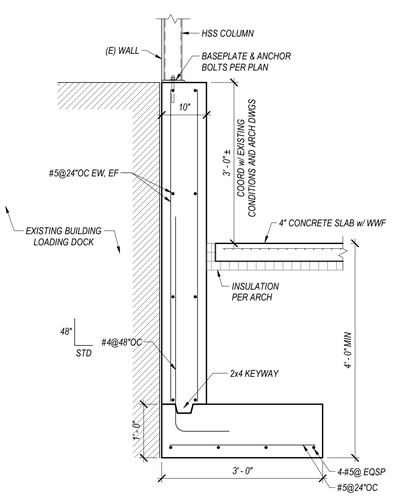
5 MISC REINF WALL
3/4" = 1'-0"



6 INTERNAL COLUMN FOOTING
3/4" = 1'-0"



7 ELEVATOR
3/4" = 1'-0"



8 SECTION
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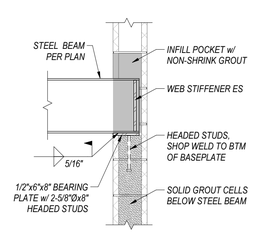
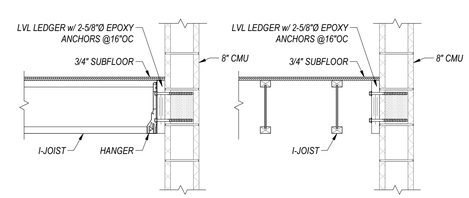


9 BEAM POCKET DETAIL
3/4" = 1'-0"



10 JOIST CONNECTION TO CMU
3/4" = 1'-0"

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CONSULTANT

Webb Structural Services
670 MAIN STREET | READING MA 01867 | 781.779.1330
DANIEL W. WEBB
07/07/2023

REGISTRATION

REVISIONS

NO.	BY	DESCRIPTION	DATE
-	-	-	-

PROJECT

-

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

SHEET TITLE

STRUCTURAL DETAILS

DRAWN:	DRAWNING NO:
SCALE: As indicated	
DATE: 07.07.23	
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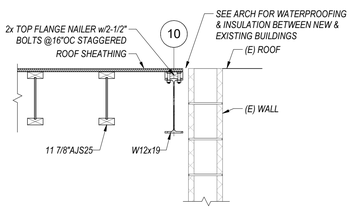

1 SECTION
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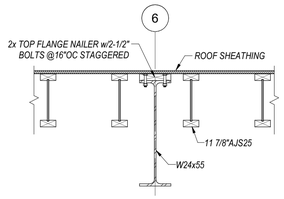

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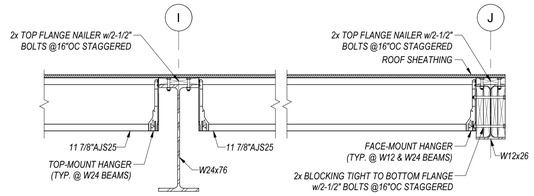

3 SECTION
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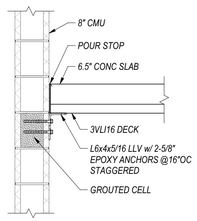
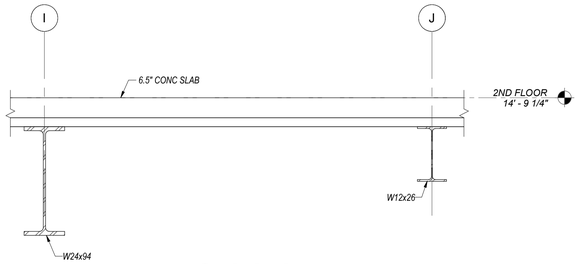
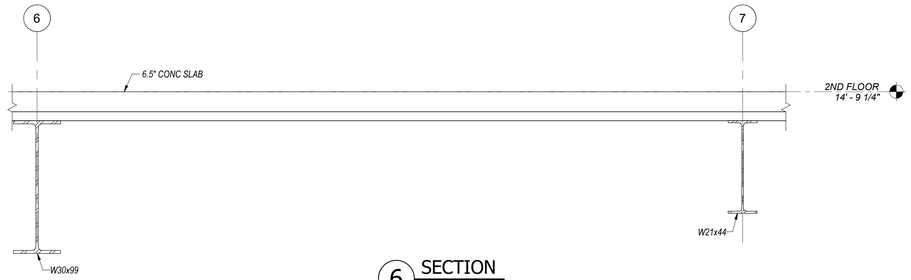


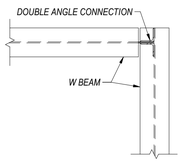
4 SECTION
3/4" = 1'-0"



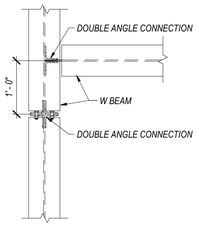
5 SECTION
3/4" = 1'-0"



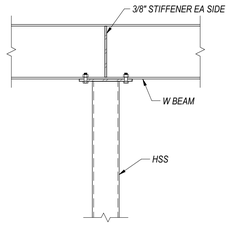
6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"



9 TYPICAL CANTILEVER
3/4" = 1'-0"

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DANIEL W. WEBB STRUCTURAL No. 40752 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER
07/07/2023

REGISTRATION

REVISIONS

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-	-	-	-

PROJECT

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SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

WSS # 23021

SHEET TITLE

STRUCTURAL DETAILS

DRAWN:	DRAWNING NO:
SCALE: 3/4" = 1'-0"	
DATE: 07.07.23	
CHECKED:	S3.1
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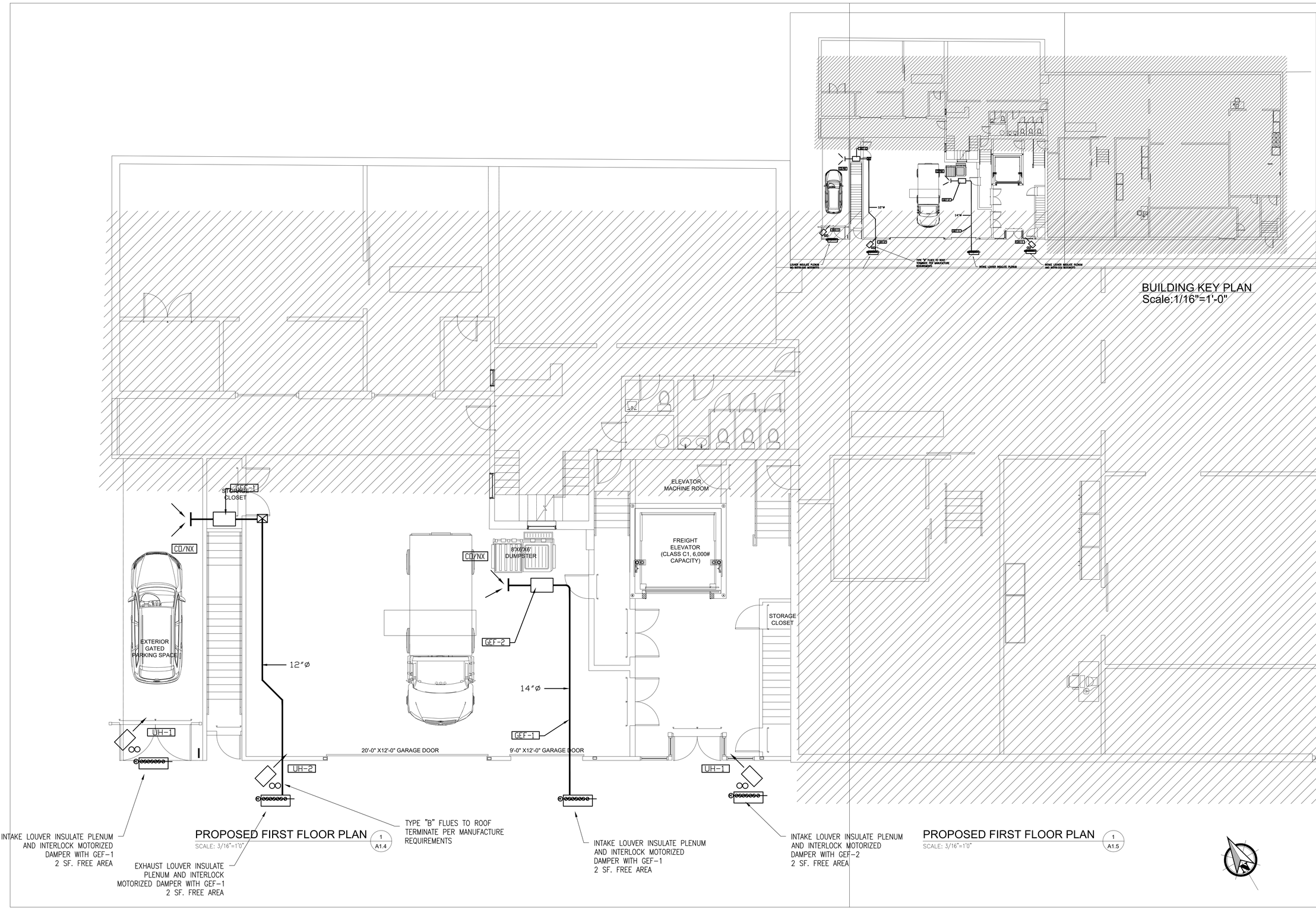

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REGISTRATION

COMMONWEALTH OF MASSACHUSETTS
MOHAMMED ZADE
No. 27233
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

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PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED
HVAC
PLAN

DRAWN:	DRAWING NO:
SCALE: NOTED	H1.0
DATE: 07-17-23	
CHECKED:	

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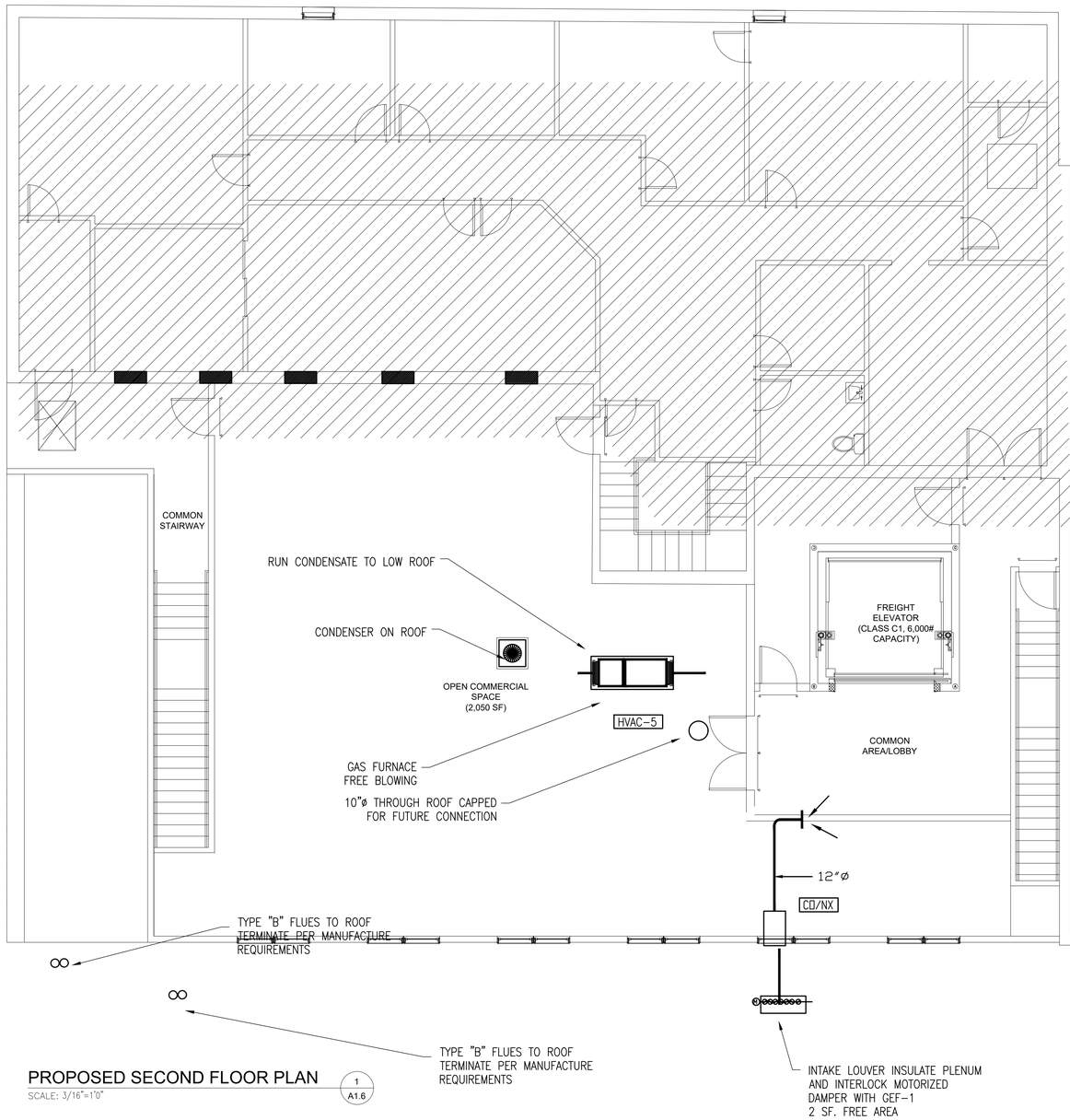

PROPOSED SECOND FLOOR PLAN

1 / A1.6

SCALE: 3/16"=1'0"

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REVISIONS

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PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED
HVAC
PLAN

DRAWN:	DRAWING NO:
SCALE: NOTED	H1.2
DATE: 07-17-23	
CHECKED:	

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LEGEND

	SUPPLY AIR DUCT UP	CH/HWR	CHILLED OR HOT WATER RETURN
	SUPPLY AIR DUCT DOWN	CH/HWS	CHILLED OR HOT WATER SUPPLY
	RETURN AIR DUCT UP	CWR	CONDENSER WATER RETURN PIPE
	RETURN AIR DUCT DOWN	CWS	CONDENSER WATER SUPPLY PIPE
	VOLUM DAMPER	HWR	HOT WATER RETURN PIPE
MD	MOTORIZED DAMPER	HWS	HOT WATER SUPPLY PIPE
FD	FIRE DAMPER	D	CONDENSATE DRAIN PIPE
	1" LINED DUCTWORK		PIPE UP
			PIPE DOWN
	RETURN OR EXHAUST AIR REGISTER		BALL VALVE
	SUPPLY AIR DIFFUSER		GATE VALVE
	THERMOSTAT		CHECK VALVE
			STRAINER
RTU-#	ROOFTOP UNIT		UNION
			3-WAY CONTROL VALVE
EHU-#	ENERGY RECOVERY UNIT		2-WAY CONTROL VALVE
G.C.	GENERAL CONTRACTOR		BALANCING VALVE
P.C.	PLUMBING CONTRACTOR		THERMOMETER
E.C.	ELECTRICAL CONTRACTOR		PRESSURE GAUGE
DN.	DOWN		FLEXIBLE PIPE CONNECTION

GENERAL NOTES:

1. SHOULD ANY CONTRADICTION, AMBIGUITY, ERROR, INCOSISTENCY, OMMISION OR INCOMPLETE SYSTEM APPEAR IN OR BETWEEN ANY OF CONTRACT DOCUMENTS THE CONTRACTOR SHALL, BEFORE SUBMITTING THE FINAL BID AND SIGNING THE CONTRACT FOR CONSTRUCTION, NOTIFY THE ARCHITECT AND REQUEST A WRITTEN RESOLUTION AS TO WHICH METHODS OR MATERIALS WILL BE REQUIRED. IN THE EVENT OF CONFLICTING REQUIREMENTS OF STANDARDS , DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE MORE STRINGENT REQUIREMENTS. BEFORE SUBMITTING THE FINAL BID AND THE SIGNING THE CONTRACT FOR THE CONSTRUCTION THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION FROM THE ARCHITECT. IN NO CASE SHALL THE CONTRACTOR PROCEED WITH THE AFFECTED WORK UNTIL ADVISED BY THE ARCHITECT.

IF THE CONTRACTOR FAILS TO MAKE A REQUEST FOR INTERPRETATION OR RESOLUTION NO EXCUSE WILL BE ACCEPTED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER, AS INTERPRETED BY THE ARCHITECT. THIS GENERALLY MEANS THE USE OF THE HIGHEST QUALITY MATERIAL, MOST EXPENSIVE WAY OF PERFORMING WORK AND PROVIDING COMPLETE FUNCTIONING SYSTEM FOR PROPER OPERATION.

EACH AND EVERY TRADE OR SUBCONTRACTOR WILL BE DEEMED TO HAVE FAMILIARIZED THEMSELVES WITH ALL THE CONTRCAT DOCUMENTS OF THIS PROJECT, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND SITE WORK, AND TO HAVE VISITED THE SITE, SO AS TO AVOID ERRORS, OMMISIONS AND MISINTERPRETATIONS. RELATED INFORMATION MAY BE PROVIDED ON CONTRACT DOCUMENTS OTHER THAN THOSE ASSOCIATED WITH THE SUBCONTRACTOR'S TRADE. THE CONTRACTOR IS RESPONSABLE FOR COORDINATING RELATED WORK OF ALL THE CONTRACT DOCUMENTS. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR ALLEGED ERRORS, OMMISIONS AND MISINTERPRETATIONS WHETHER THEY ARE A RESULT OF FAILURE TO OBSERVE THIS REQUIREMENT OR NOT.

2. ALL PENETRATIONS OF ASSEMBLIES EXPOSED TO THE EXTERIOR ENVIRONMENT SHALL BE SEALED WITH FOAM SEALANT OR EQUIVALENT SEALER TO PROVIDE ZERO AIR INFILTRATION. COORDINATE WITH FIRE STOPPING REQUIREMENTS.

3. NO COMPONENT OF ANY SYSTEM SHALL RUN THROUGH THE STAIR ENCLOSURE THAT DOES NOT RELATE TO OR SERVE THE STAIR ENCLOSURE

BRANCH DUCT SCHEDULE

SIZE	MAX. CFM
6" DIA	100
7" DIA	150
8" DIA	200
9" DIA	300
10" DIA	400

NOTE: MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 4 FT.

DIFFUSER/REGISTER SCHEDULE

LEGEND: (N)A – ZZZ
- A: TYPE
- ZZ: QUANTITY
- ZZZ: CFM

TYPE	DESCRIPTION	MODEL (BASED ON TITUS)	NEC SIZE	MAX CFM	MAX NC
A	ROUND CEILING DIFFUSER	TITUS TMR	8x8	175	14
A1	LOUVER FACE CEILING DIFFUSER FOR 2'x2' LAY-IN CEILING INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR.	TITUS TDCA, BORDER 3	6x6 9x9 12x12 15x15 18x18	150 250 450 650 900	18 18 18 18 18
B	DOUBLE DEFLECTION REGISTER FOR SHEET ROCK CEILING INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR.	TITUS 272RS	10x6 12x6 20x6 18x10	150 250 400 650	10 14 16 18
E	DOUBLE DEFLECTION GRILLE FOR SHEET ROCK CEILING OR WALL INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR AS NEEDED	TITUS, 25 RL, BORDER 3	10x10 12x6 20x6 18x10	150 250 400 650	10 14 16 18
F	PERFORATED 24x24 FACE RETURN GRILLE FOR 2'x2' LAY-IN CEILING INSTALLATION. PROVIDE ROUND TO SQUARE ADAPTOR AS NEEDED	TITUS PAR	6x6 8x8 12x12	150 250 375	18 18 18

PROVIDE HANDS OFF AUTO SWITCH FOR ALL MECHANICAL EQUIPMENT

LOUVER NOTES

LOUVER DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS
LOUVERS SHALL BE AMCA CERTIFIED FOR WIND DRIVEN RAINS
BLADES SHALL BE 4" DEEP MOUNTED BETWEEN 35-45 DEGREES WITH DRAINABLE BLADE AND DRAINABLE HEAD
PROVIDE BIRD SCREENS IN COMPLIANCE WITH IMC 401
PROVIDE CLOR ANODIZED LOUVER PER ARCHITECTS DIRECTION
LOUVERS SHALL BE AS MANUFACTURED BY GREENHECK MODEL EHH 401 SERIES

INSULATION NOTES

CONTRACTOR SHALL FOLLOW THE MOST STRINGENT INSULATION REQUIREMENT FOR EACH ITEM

THE FOLLOWING SYSTEMS SHALL BE INSULATED.
DUCT LINER SHALL BE CLOSED CELL TYPE, GERM PROOF

IECC 2015 REQUIREMENTS:

1. HEATING HOT WATER MAINS AND BRANCHES:
   PIPING < 1" REQUIRES 1 1/2" INSULATION
   PIPING > 1½" REQUIRES 2" INSULATION
2. SUPPLY & RETURN DUCTWORK FROM HVAC UNITS:
   1 1/2" INSULATION MIN. R-6

LEED/ASHRAE 2013 REQUIREMENTS:

1. HEATING HOT WATER MAINS AND BRANCHES:
   PIPING < 1 1/2" REQUIRES 1½" INSULATION
   PIPING > 1½" REQUIRES 2" INSULATION
2. SUPPLY & RETURN DUCTWORK FROM HVAC UNITS:
   1" INSULATION MIN. R-6

GENERAL INSULATION REQUIREMENTS:

1: ALL LINED SUPPLY, RETURN AND TRANSFER DUCTWORK SHALL BE 1" DUCT LINER
   –DUCT INSUALTION SHALL CONTINUE OVER DUCT AT LINED POINT
   –FIRST 10' OF SUPPLY AND RETURN FOR ALL ERU'S AND HVAC UNITS
2. CONDENSATE DRAIN: 1"
3. ALL DUCTWORK IN CEILING SPACE SHALL HAVE R-6 INSULATION,
4. REFRIGERANT PIPING ⅜" ARAMFLEX

ALL DUCTWORK ON ROOF OR UNCONDITIONED SPACE SHALL BE INSULATED WITH R-12 INSULATION AND COVERED WITH EPDM ROOFING MATERIAL FOR WATER TIGHT INSTALLATION.

CO & NO2 DETECTION AND CONTROL SYSTEM

Provide and install IN TEC Controals Multi-Point Gas Detection controller (MGC series) with Carbon Monoxide (CO) and Nitrogen Dioxide (NO2) remote sensors as indicated:

Controller (MGC):

A. The control panel shall provide continuous monitoring of the designated gas levels in the assigned area and control the ventilation system. The control panel shall have status indicator LED's located on the front; Red = Fail, Yellow = Alarm. The control panel shall include a two-line, backlit LCD display of 16 characters, at 1 digit resolution. The controller shall be NRTL performance tested and certified to ANSI/UL 2017. The controller shall continuously detect the surrounding air for any traces of carbon monoxide and nitrogen dioxide gas. The controller shall be factory set to 50 PPM for CO and 2PPM for NO2 for the low alarm and 100 PPM for CO and 5 PPM for NO2 for the high alarm. When 50 PPM CO and or 2 PPM NO2 is reached, the sensor shall activate the low alarm relay and the corresponding ventilation equipment, such as the exhaust fans, dampers, etc. If the gas level continues to increase to 150 PPM CO and or 5 PPM NO2 and maintain that PPM reading for a duration of 10 minutes (adjustable), the high alarm shall activate the associated remote devices, such as the horn/strobe and any other audio/visual alarms, etc. The sensor shall continue to monitor the specified gas and it shall not be possible to reset the alarm until the gas level has dropped either 4 or 10% below the alarm set points, as selected.

CARBON MONOXIDE (CO) SENSOR/TRANSMITTER

B. The carbon monoxide sensor/transmitter shall provide monitoring of the Carbon Monoxide levels in the parking garage. The sensors shall be electrochemical type and shall have plug-in technology. The sensor range shall be 0-250 ppm carbon monoxide. Each sensor/transmitter shall cover 7,500 square feet of the garage floor and placement shall be applied strategically and appropriately per floor plan requirement. The sensor/transmitter shall be contained in a NEMA 4X metal enclosure. The enclosure for the sensor/transmitter shall be installed on walls or columns approximately 5 feet above the floor. If the level of Carbon Monoxide reaches 50 PPM in the area of detection, the low alarm shall activate and the exhaust fans will be started. If the level of CO increases to 150 PPM, the high alarm shall activate.

NITROGEN DIOXIDE (NO2) SENSOR/TRANSMITTER

C. The Nitrogen Dioxide sensor/transmitter shall provide monitoring of the Nitrogen Dioxide levels present in diesel exhaust in the parking garage. The sensors shall be electrochemical type and have plug-in technology. The sensor range shall be 0-10 ppm Nitrogen Dioxide. Each sensor/transmitter shall cover 7,500 square feet of the garage floor and placement shall be applied strategically and appropriately per floor plan requirement. The sensor/transmitter shall be contained in a NEMA 4X enclosure. The enclosure with the sensor/transmitter shall be installed on walls or columns approximately 5 feet above the floor. If the level of NO2 reaches 2 PPM, the low alarm shall activate. If the level of NO2 increases to 5 PPM, the high alarm shall activate.

GARAGE EXHAUST FAN

TAG	LOCATION	SERVICE	TYPE	DRIVE	CFM	SP	RPM	HP	V/ø	ROOF OPENING&DIMENSIONS	GREENHECK MODEL	CONTROLS
GEF-1	GARAGE	EXHAUST	ROOF	BELT	2,500	.375"	890	3/4	208/1	18-1/2" X 18-1/2"	GB-161-7	CO SENSOR/MANUAL
GEF-2	GARAGE	EXHAUST	WALL	BELT	5,000	0.375	830	3/4	208/1	38X38X40" DEEP	SB-2H30-7	CO SENSOR/MANUAL
GEF-3	GARAGE	EXHAUST	WALL	BELT	5,000	0.375	830	3/4	208/1	38X38X40" DEEP	SB-2H30-7	CO SENSOR/MANUAL

NOTE:
1. PROVIDE WALL HOUSING WITH GUARD, MOTORIZED DAMPER, DAMPER GUARD, DISCONNECT SWITCH AND STARTER WITH ALL FANS.
2. INTERLOCK WITH CO DETECTION SYSTEM
3. PROVIDE INSULATED CURB WITH GEF-1
4. PROVIDE VFD FOR GEF-1&2 FOR LOW SPEED CONTINUOUS OPERATION AND HIGH ON ACTIVATION ON CO SENSOR

VEHICULAR EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	TYPE	DRIVE	CFM	SP	RPM	HP	V/ø	EQUIPMENT DIMENSION	CARMON MODEL	CONTROLS
VEF-1	AS SHOWN	GARAGE	ROOF	BELT	1,500	1.5"	1403	2	208/3ø	33"x36"x35"	CMB-25	CONTROL PANEL

NOTE:
1. PROVIDE WEATHER GUARD, DAMPER GUARD, DISCONNECT SWITCH AND STARTER WITH ALL FANS.
2. WITH THE VEHICULAR EXHAUST SYSTEM PROVIDE THE FOLLOWING FOR EACH GARAGE BAY
   –HOSE ASSEMBLY WITH LFT RETRACTOR

GAS FIRED UNIT HEATER SCHEDULE

TAG	LOCATION	TYPE	MBH INPUT	MBH OUTPUT	CFM	HP	RPM	V/O	VENT	DIM-WEIGHT	MODEL (REZNOR)
UH-1	AS SHOWN	GAS FIRED	100	97	1350	1/4	1750	115/1	4" INL./4" EXH.	20HX50WX40L-230LBS	UDAS-100
UH-2	AS SHOWN	GAS FIRED	75	62	960	.06	1750	115/1	4" INL./4" EXH.	20HX50WX40L-230LBS	UDAS-75
UH-3	AS SHOWN	GAS FIRED	250	234	3202	1/4	1750	115/1	6" INL./4" EXH.	20HX50WX40L-230LBS	UEAS-250

NOTE:
1) PROVIDE COMPLETE VERTICAL OR HORIZONTAL VENT/COMBUSTION AIR KIT
2) PROVIDE WALL MOUNTED THERMOSTAT.

SPLIT SYSTEM GAS FIRED HVAC UNIT SCHEDULE (VFD INDOOR-TWO STAGE COMP) 90% FURNACE

INDOOR SECTION (VFD)											CONDENSING SECTION									
TAG	NOM. CAP. TON	CFM	ESP IN	FAN HP	TOT. MBH	SENS. MBH	GAS FURN(MBH) INPUT	GAS FURN(MBH) OUTPUT	FLUE	V/ø	FLA	MCA	MOCP	V/ø	EER	SEER	STRETCH SEER	DB	MODEL (BASED ON CARRIER)	INDOOR
HVAC-5	5	1800	.5	3/4	57	41	80	72	70 FT	115/1	29.6	35	50	208/1	12.6	15.5	15.0-YES	72	58MVC120-20 W/24APA7-060 AND MATCHING COIL	18"WX28"DX40"H+12" COIL

WITH EACH INDOOR UNIT PROVIDE
–HONEYWELL T-7300 THERMOSTAT, ACID NEUTRALIZER, AIR FILTER, COMBUSTION AIR INTAKE AND EXHAUST FLUE PIPES, CONDENSATE DRAINS SHALL BE TYPE "L" COPPER
WITH 1 ½" FIBERGLASS INSULATION RUN TO INDIRECT WASTE ABOVE BATHROOM CEILING.
PROVIDE ZONE CONTROL AS REQUIRED TO MATCH NUMBER OF MOTORIZED DAMPERS
WHEN RUN IN UNCONDITIONED SPACES PROVIDE MINIMUM 1" INSULATION FOR THE FLUE/VENT PIPES TO MATCH MAXIMUM LENGHTS ON FLUE LENGHT (INCLUDES 6 ELBOWS)
PROVIDE REFRIGERANT LINES BETWEEN INDOOR AND OUTDOOR UNITS AS REQUIRED PER MANUFACTURER'S RECOMMENDATIONAS. PROVIDE 3/4" ARMORFLEX INSULATION ON REFRIGERANT LINES
PROVIDE MERV 8 FILTER (MERV 6 FOR ESTAR) AND MERV 13 FOR LEED PROJECTS

ELECTRIC HEATER SCHEDULE

TYPE	KW	VOLT/PH	DIMENSIONS	MODEL NUMBER-COLOR BY ARCH
RWH-1	1	120/1		Q'MARK#CRA 1512-T2
RWH-2	2	120/1	19"HX16"WX4"D	Q'MARK# MCSSARWH1802/HTWHS1
RWH-4	4	208/1	19"HX16"WX4"D	Q'MARK# MCSSARWH4808/HTWHS1
SWH-4	4	208/1	19"HX16"WX4"D	Q'MARK# MCSSARWH4808/HTWHSM
EBB-2	0.4	120/1		Q'MARK#QMK-2512W-W/T'STAT
EBB-3	0.75	120/1		Q'MARK#QMK-2513W-W/T'STAT
EBB-4	1	120/1		Q'MARK#QMK-2514W-W/T'STAT
EBB-6	1.5	120/1		Q'MARK#QMK-2516W-W/T'STAT
UH-5	5	208/1		Q'MARK#MUH-35-W/T'STAT
CCH-4	4	208/1		Q'MARK#CDF548-W/T'STAT

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REGISTRATION

COMMONWEALTH OF MASSACHUSETTS
MOHAMMED ZADE
No. 27233
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

NO.	BY	DESCRIPTION	DATE

PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

HVAC NOTES & SCHEDULES

DRAWN:
SCALE: NOTED
DATE: 07-17-23
CHECKED:

DRAWING NO: H2.1

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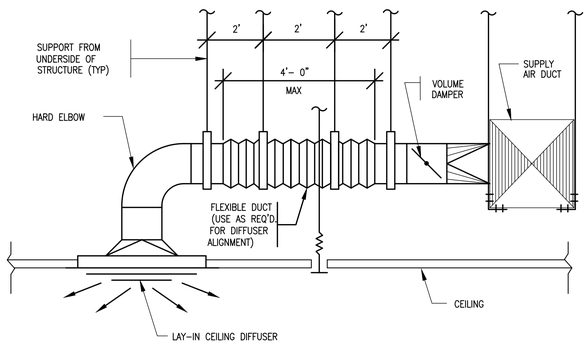
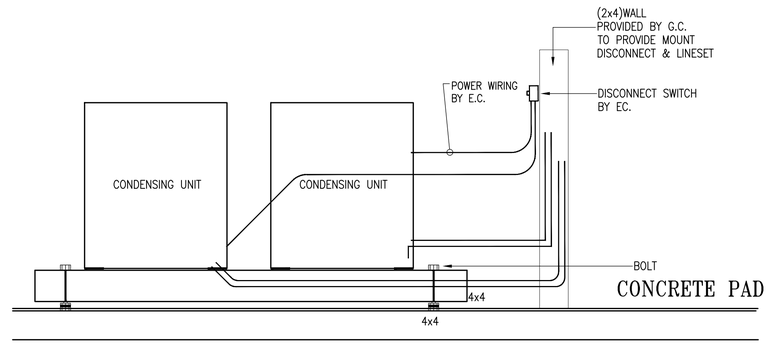


NOTES:

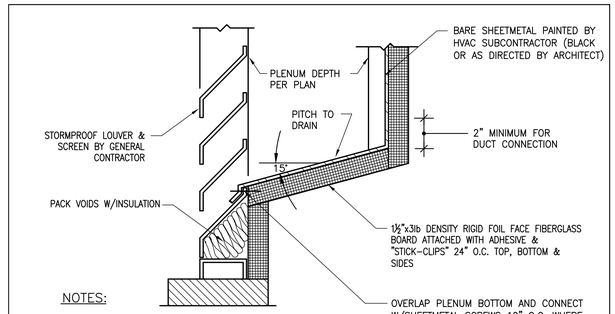
1. MAXIMUM SAG 1/2" PER FOOT.

CEILING DIFFUSER BRANCH DUCTS — N.T.S.



- CAPACITY RANGE: 130 TO 200 LB.
- ISOLATOR TYPE: SPRING
- BOLT SIZE: 3/8x4" ←—— 3/8"x10" BOLT

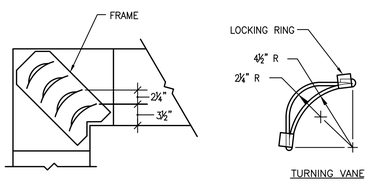
CONDENSING UNIT MOUNTING DETAIL — N.T.S.



NOTES:

1. SHEETMETAL CONSTRUCTION PER SMACNA.
2. SUPPORT PLENUM FROM FLOOR OR STRUCTURE ABOVE W/GALVANIZED STEEL ANGLES AND CHANNELS, CROSS BREAK ALL PANELS FOR RIGIDITY.

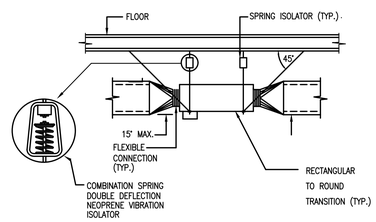
PLENUM AT LOUVER DETAIL — N.T.S.



NOTES:

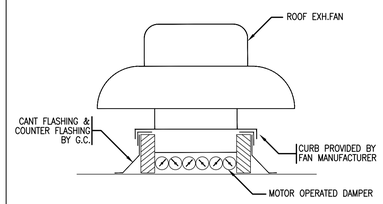
1. LOCKING LUGS INTEGRAL WITH VANE.
2. MAXIMUM UNSUPPORTED VANE LENGTH 48".
3. FRAMES–BOLTED OR RIVETED TO ELBOW.
4. VANES AND FRAMES–SAME GAUGE AS ELBOW.

DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOW — N.T.S.

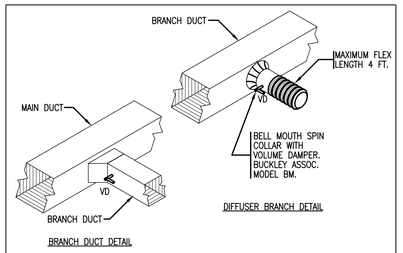


ELEVATION

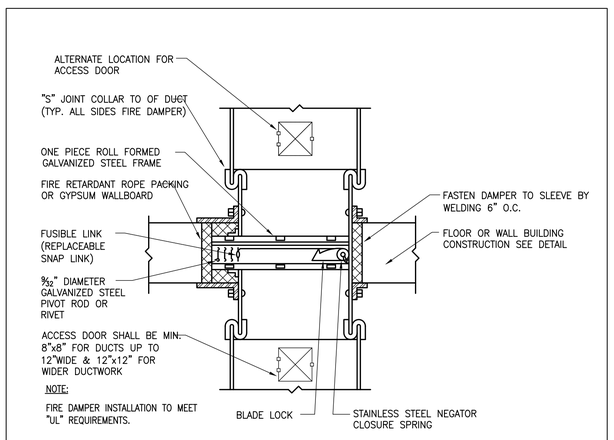
HRV HANGER DETAIL — N.T.S.



ROOF EXHAUST FAN DETAIL — N.T.S.



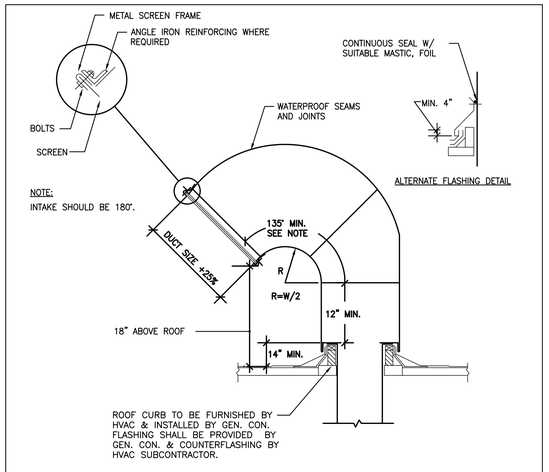
DUCT WORK DETAILS — N.T.S.



NOTE:

FIRE DAMPER INSTALLATION TO MEET "UL" REQUIREMENTS.

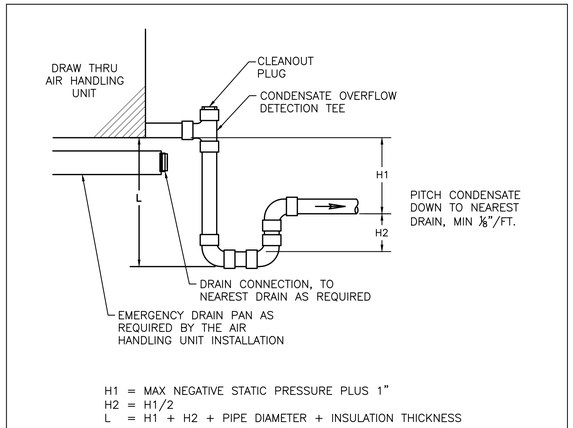
FIRE DAMPER W/BLADES OUTSIDE THE AIR STREAM — N.T.S.



NOTE:

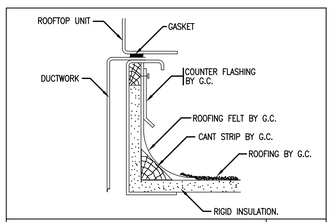
INTAKE SHOULD BE 180°.

EXHAUST/INTAKE GOOSENECK DETAIL — N.T.S.



H1 = MAX NEGATIVE STATIC PRESSURE PLUS 1"
H2 = H1/2
L = H1 + H2 + PIPE DIAMETER + INSULATION THICKNESS

CONDENSATE DRAIN DETAIL — NTS



CONCRETE PAD DETAIL — N.T.S.

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PROJECT NO. 21217

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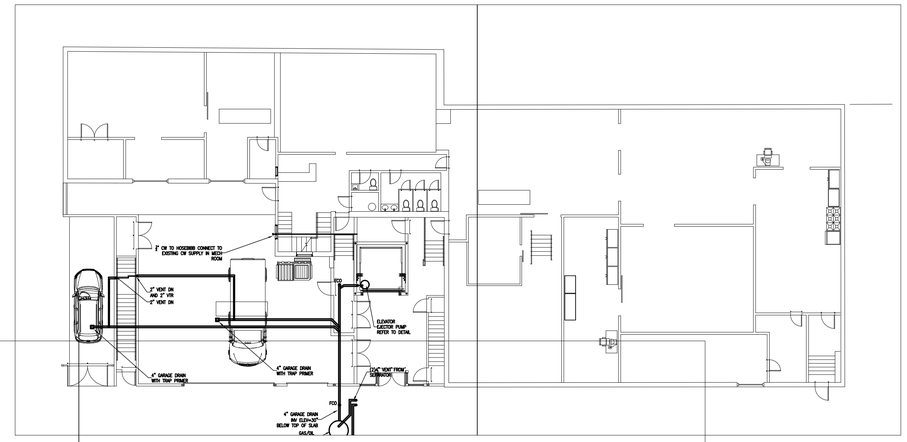
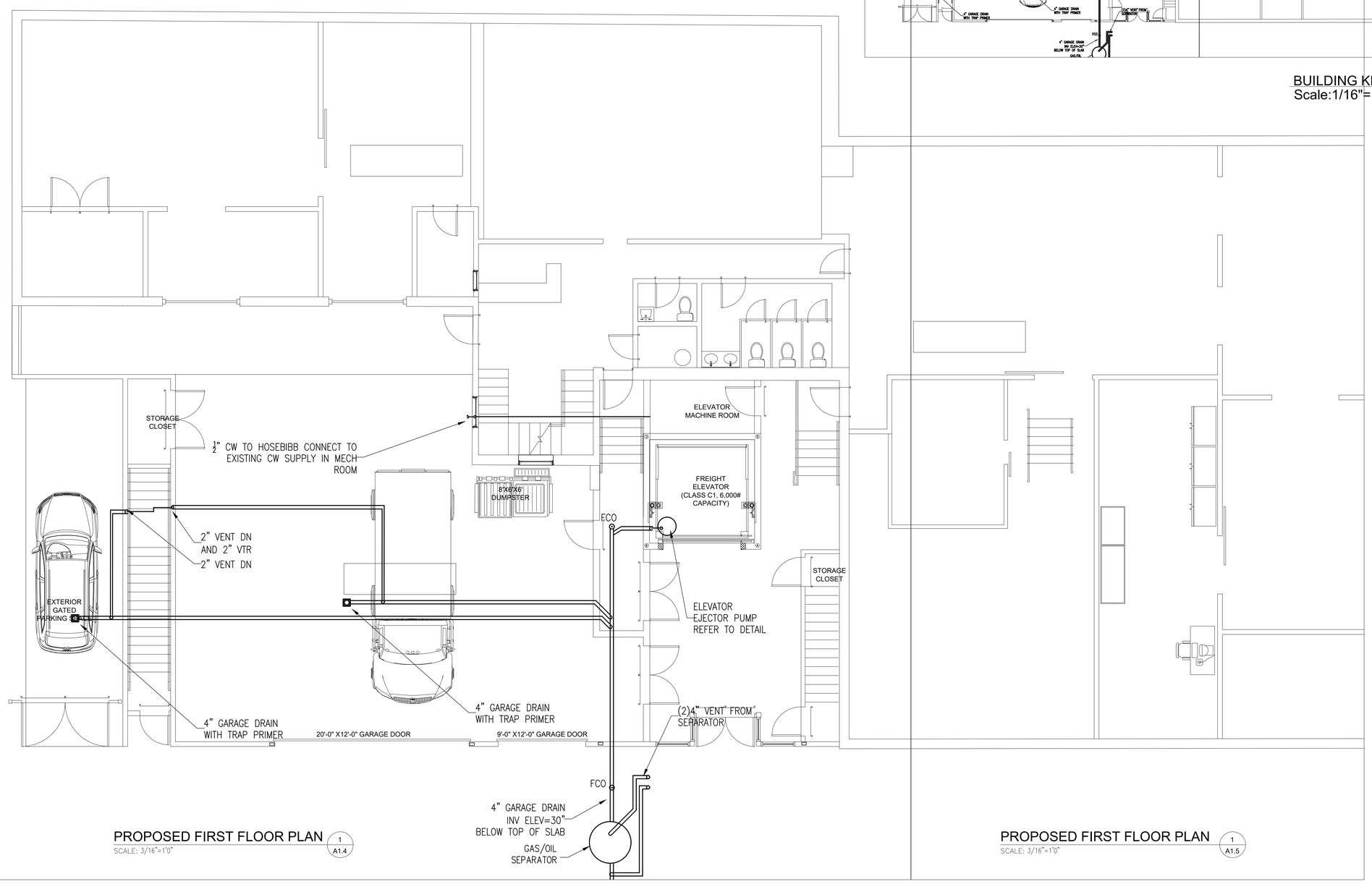


BUILDING KEY PLAN
Scale:1/16"=1'-0"



PROPOSED FIRST FLOOR PLAN 1 A1.4
SCALE: 3/16"=1'0"

PROPOSED FIRST FLOOR PLAN 1 A1.5
SCALE: 3/16"=1'0"

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PROPOSED PLUMBING PLAN

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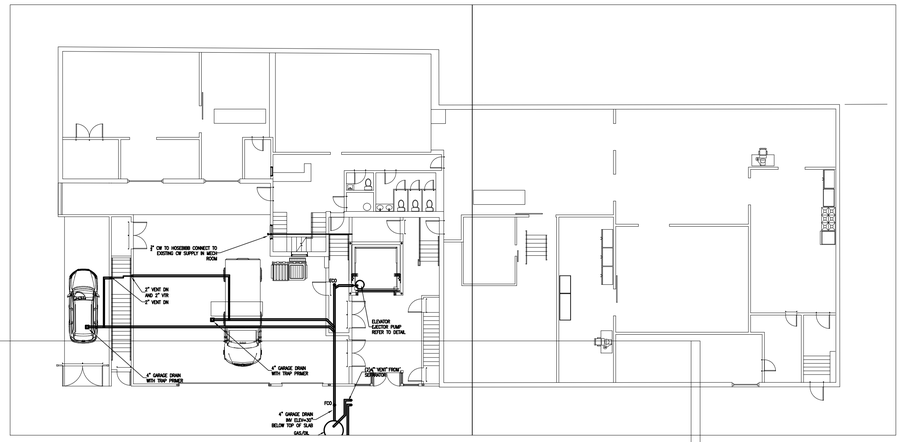
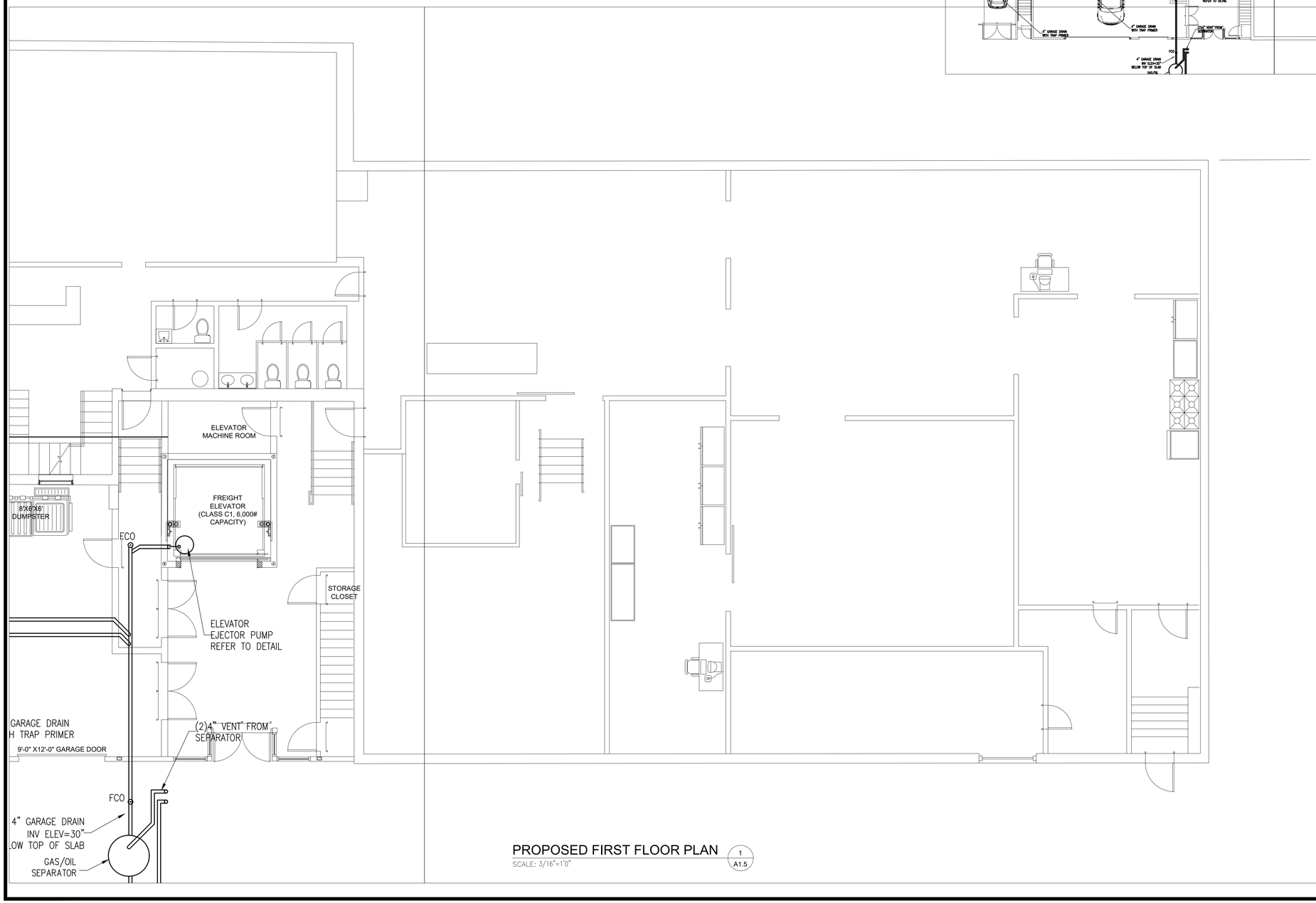


BUILDING KEY PLAN
Scale:1/16"=1'-0"



PROPOSED FIRST FLOOR PLAN
SCALE: 3/16"=1'0"
1
A1.5

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PROPOSED
PLUMBING
PLAN

DRAWN:	DRAWING NO:
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DATE: 07-17-23	
CHECKED:	P1.1

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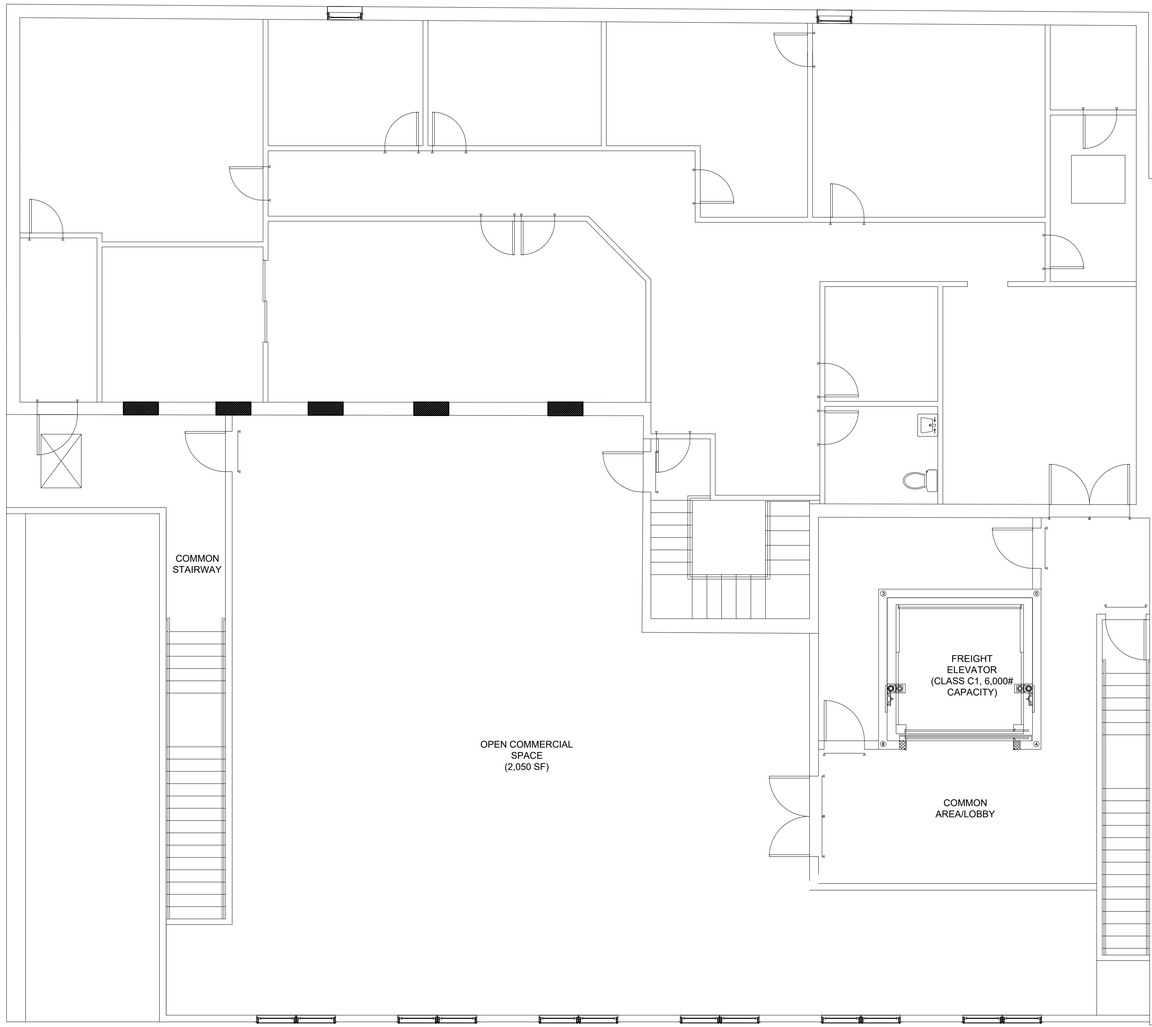

PROPOSED SECOND FLOOR PLAN (1 / A1.6)

SCALE: 3/16"=1'0"

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SHEET TITLE

PROPOSED
PLUMBING
PLAN

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GENERAL NOTES

1) FOR EXACT LOCATION OF PLUMBING FIXTURES SEE ARCHITECTURAL DRAWINGS.
2) EXAMINE ALL CONTRACT DRAWINGS, GERNERAL CONDITIONS AND SPECIFICATIONS WHICH MAY AFFECT THE WORK.
3) ALL PLUMBING WORK MUST BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
4) CHECK INVERT ELEVATIONS AND EXACT LOCATIONS OF ALL OUTSIDE UTILITIES BEFORE INSTALLING ANY UNDERGROUND.
5) NO CHANGES ARE TO BE MADE IN PLUMBING LAYOUT WITHOUT WRITTEN PERMISSION OF THE ARCHITECT.
6) NO PIPING SHALL RUN EXPOSED IN FINISHED AREAS.
7) ALL PLUMBING SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LOCAL AND STATE PLUMBING CODES.
8) ROUGHING DIMENSIONS OF TOILET FIXTURES MUST BE COORDINATED WITH GENERAL CONTRACTOR.
9) INSTALL ALL HOT AND COLD WATER PIPING AS PER SPECIFICATIONS.
10) INSTALL SHUTOFF GATE VALVES ON ALL BRANCH SUPPLY LINES AND AT THE BASE OF HOT AND COLD WATER RISERS.
11) PLUMBING CONTRACT SHALL REQUIRES PANELS TO ACCESS THE CONCEALED PLUMBING CLEANOUTS, DRAINS, DEVICES AND CONTROLS. ACCESS PANELS SHALL BE FIRE RATED TO MATCH THE PENETRATING PARTITION OR CEILING TYPE. GENERAL CONTRACTOR SHALL INSTALL THE ACCESS PANELS.
12) INSTALL ALL FLOOR CLEANOUTS TO CLEAR EQUIPMENT.
13) PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES AND CHARGES IN CONNECTION WITH THE WORK.
14) PLUMBING CONTRACTOR SHALL PROVIDE WATERTIGHT SLEEVES FOR ALL PIPES PASSING THRU BASEMENT WALLS.
15) INSTALL CLEANOUTS AT THE BASE OF ALL SANITARY STACKS.
16) INSTALL ALL HORIZONTAL RUNS OF PIPING AS HIGH AS POSSIBLE, PITCH ALL WATER PIPING TO DRAIN, DRAW OFFS AT ALL POINTS.
17) PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO OUTSIDE UTILITIES.
18) FOR PIPE SIZES NOT SHOWN ON PLANS SEE DETAILS & RISER DIAGRAMS.

	SANITARY ABOVE FLOOR
	SANITARY UNDER FLOOR
	VENT
	VENT BURIED
	COLD WATER
	HOT WATER
	HOT WATER CIRCULATION
	SHUT OFF VALVE
	CHECK VALVE
	FLOOR CLEANOUT
CO	CLEANOUT
WCO	WALL CLEANOUT
VR	VENT RISER
VTR	VENT THRU ROOF
HD	HUB DRAIN
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT
	UNION
HB	HOSE BIBB
RD	ROOF DRAIN
VS	VENT STACK
WB	WASHER BOX
WC	WATER CLOSET
LAV	LAVATORY SINK
SH	SHOWER
KS	KITCHEN SINK

– PLUMBING LEGEND N.T.S.

PIPING MATERIAL NOTES

SANITARY AND VENT: BELOW GROUND: SWCI WITH PUSH ON JOINTS.
ABOVE GROUND:
–SWCI WITH HUSKY 4–BAND CLAMPS

WATER PIPING: TYPE "L" COPPER WITH 95–5 SOLDER JOINTS

GAS PIPING: SCHEDULE 40 ER/ERW BLACK STEEL WITH THREADED JOINTS OR WELDED.

GENERAL NOTES:

1. SHOULD ANY CONTRADICTION, AMBIGUITY, ERROR, INCONSISTENCY, OMISSION OR INCOMPLETE SYSTEM APPEAR IN OR BETWEEN ANY OF CONTRACT DOCUMENTS THE CONTRACTOR SHALL, BEFORE SUBMITTING THE FINAL BID AND SIGNING THE CONTRACT FOR CONSTRUCTION, NOTIFY THE ARCHITECT AND REQUEST A WRITTEN RESOLUTION AS TO WHICH METHODS OR MATERIALS WILL BE REQUIRED. IN THE EVENT OF CONFLICTING REQUIREMENTS OF STANDARDS , DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL COMPLY WITH THE MORE STRINGENT REQUIREMENTS. BEFORE SUBMITTING THE FINAL BID AND THE SIGNING THE CONTRACT FOR THE CONSTRUCTION THE CONTRACTOR SHALL OBTAIN A WRITTEN INTERPRETATION FROM THE ARCHITECT. IN NO CASE SHALL THE CONTRACTOR PROCEED WITH THE AFFECTED WORK UNTIL ADVISED BY THE ARCHITECT.

IF THE CONTRACTOR FAILS TO MAKE A REQUEST FOR INTERPRETATION OR RESOLUTION NO EXCUSE WILL BE ACCEPTED FOR FAILURE TO CARRY OUT THE WORK IN A SATISFACTORY MANNER, AS INTERPRETED BY THE ARCHITECT. THIS GENERALLY MEANS THE USE OF THE HIGHEST QUALITY MATERIAL, MOST EXPENSIVE WAY OF PERFORMING WORK AND PROVIDING COMPLETE FUNCTIONING SYSTEM FOR PROPER OPERATION.

EACH AND EVERY TRADE OR SUBCONTRACTOR WILL BE DEEMED TO HAVE FAMILIARIZED THEMSELVES WITH ALL THE CONTRACT DOCUMENTS OF THIS PROJECT, INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND SITE WORK, AND TO HAVE VISITED THE SITE, SO AS TO AVOID ERROR, OMISSIONS AND MISINTERPRETATIONS. RELATED INFORMATION MAY BE PROVIDED ON CONTRACT DOCUMENTS OTHER THAN THOSE ASSOCIATED WITH THE SUBCONTRACTOR'S TRADE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RELATED WORK OF ALL THE CONTRACT DOCUMENTS. NO ADDITIONAL COMPENSATION WILL BE AUTHORIZED FOR ALLEGED ERRORS, OMISSIONS AND MISINTERPRETATIONS WHETHER THEY ARE A RESULT OF FAILURE TO OBSERVE THIS REQUIREMENT OR NOT.

2. ALL PENETRATIONS OF ASSEMBLIES EXPOSED TO THE EXTERIOR ENVIRONMENT SHALL BE SEALED WITH FOAM SEALANT OR EQUIVALENT SEALER TO PROVIDE ZERO AIR INFILTRATION. COORDINATE WITH FIRE STOPPING REQUIREMENTS.

3. NO COMPONENT OF ANY SYSTEM SHALL RUN THROUGH THE STAIR ENCLOSURE THAT DOES NOT RELATE TO OR SERVE THE STAIR ENCLOSURE.

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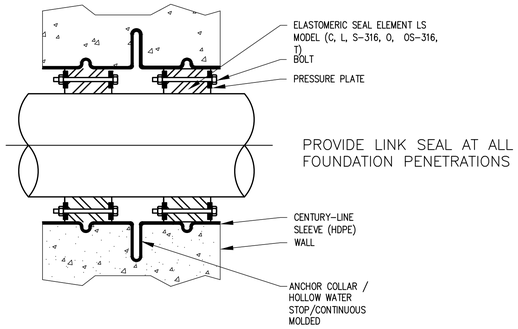
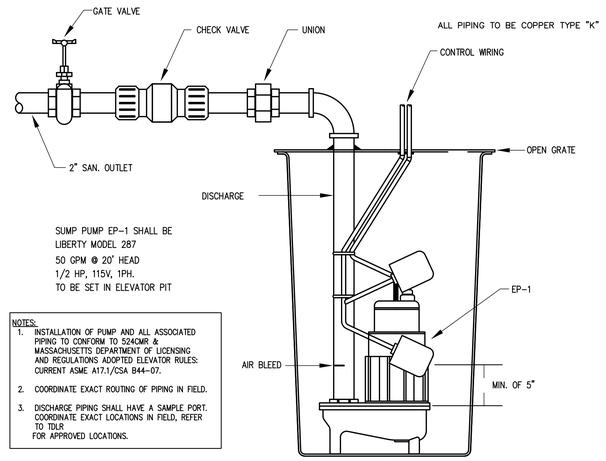


LS Model	Seal Element	Bolts/Nuts	Pressure Plate
C	EPDM (Black)	Zinc Dichromate/Organic Coated Carbon Steel Bolt	Reinforced Nylon
Polymer			

Sleeve Model	Description	Material
CS	Century-Line Sleeve	HDPE

LINK SEAL DETAIL — N.T.S.



SUMP PUMP EP-1 SHALL BE
LIBERTY MODEL 287
50 GPM @ 20' HEAD
1/2 HP, 115V, 1PH.
TO BE SET IN ELEVATOR PIT

NOTES:
1. INSTALLATION OF PUMP AND ALL ASSOCIATED PIPING TO CONFORM TO 524CMR & MASSACHUSETTS DEPARTMENT OF LICENSING AND REGULATIONS ADOPTED ELEVATOR RULES: CURRENT ASME A17.1/CSA B44-07.
2. COORDINATE EXACT ROUTING OF PIPING IN FIELD.
3. DISCHARGE PIPING SHALL HAVE A SAMPLE PORT. COORDINATE EXACT LOCATIONS IN FIELD, REFER TO TDLR FOR APPROVED LOCATIONS.

– ELEVATOR EJECTOR PUMP DETAIL — N.T.S.

INLET	D	A	B
4"	3'-6"ø	3'-0"	2'-6"
5"	3'-6"ø 3'-6"x3'-6" 4'-0"ø 4'-0"x4'-0" 4'-6"ø	5'-0" 5'-0" 3'-6" 3'-0" 3'-0"	4'-6" 4'-6" 3'-0" 2'-6" 2'-0"
6"	4'-0"ø 3'-0"x4'-0" 4'-6"ø 4'-6"x4'-6" 5'-0"ø 5'-0"x5'-0"	5'-0" 4'-0" 4'-0" 3'-6" 3'-0" 3'-0"	4'-6" 3'-6" 3'-6" 3'-0" 2'-6" 2'-6"
8"	5'-0"ø 5'-6"x5'-0" 6'-0"ø 6'-0"x5'-0" 6'-6"ø 6'-6"x6'-6"	6'-0" 4'-6" 4'-0" 3'-0" 3'-6" 3'-0"	5'-0" 4'-0" 3'-6" 2'-0" 3'-0" 2'-6"

NOTES:
- ALL INLET TRAPS TO BE PROVIDED IN ACCORDANCE WITH 248 CMR 10.00
- FOR INLETS LARGER THAN 10" THE DESIGN AND DIMENSIONS WILL BE DETERMINED FOR EACH PARTICULAR CASE.
- PRE-CAST SEPERATORS ARE TO HAVE ALL SPECIFIED HOLES EITHER CORE-BORED OR CAST IN PLACE.
- CIRCULAR BASINS ARE RECOMMENDED.

GENERAL CONSTRUCTION NOTES:

BASIN TO BE LOCATED OUTSIDE OF BUILDING WHERE POSSIBLE, COVER TO HAVE A CENTER HOLE.

A THIGHT COVER MUST BE USED IF BASIN IS LOCATED INSIDE OF BUILDING.

OPENING SHALL BE NOT LESS THAN 24" DIAMETR.

THE CATCH BASIN SHALL BE SO LOCATED AND CONSTRUCTED THAT SURFACE WATER SHALL BE EXLUDED.

INLET PIPE SHALL BE AT LEAST FOUR INCHES ABOVE NORMAL WATER LINE.

WHERE SUBJECT TO FROST OR CRUSHING CONDITIONS, OUTLET SHALL BE AT LEAST THREE FEET BELOW THE SURFACE.

THE NEW CATCH BASIN MUST BE FILLED WITH CLEAN WATER BEFORE USING, AND AFTER BEING EMPTIED FOR PERIODIC CLEANING.

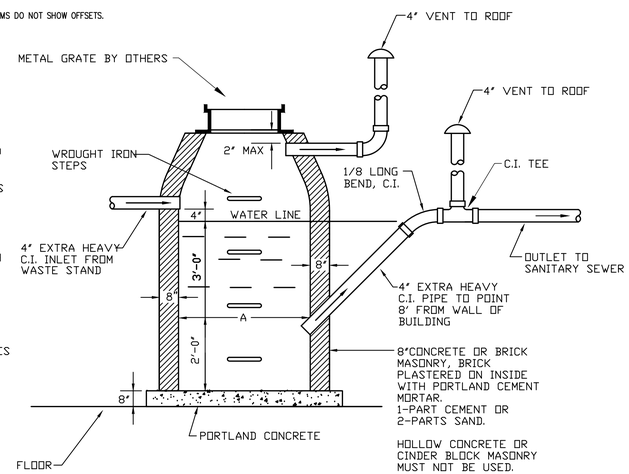
ALL OIL AND GASOLINE MUST BE REMOVED BEFORE CLEANING OUT THE BASIN AND MUST NOT BE DISCHARGED INTO THE SEWER THROUGH OTHER FIXTURES.

SPECIFICATIONS FOR COVERING SPECIAL CASES OR CONDITIONS SHALL BE APPROVED BY THE LOCAL AUTHORITIES.

WROUGHT IRON STEPS SHALL BE SPACED ABOUT 18" APART.

BOTH VENTS SHALL BE EXTENDED INDEPENDENTLY 18" ABOVE THE ROOF, OR AS APPROVED BY THE LOCAL AUTHORITIES.

RISER DIAGRAMS DO NOT SHOW OFFSETS.



GASOLINE AND SAND TRAP — N.T.S.

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COMMONWEALTH OF MASSACHUSETTS
MOHAMMED ZADE
No. 27233
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

NO.	BY	DESCRIPTION	DATE

PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PLUMBING DETAILS

DRAWN:
SCALE: NOTED
DATE: 07-17-23
CHECKED:

DRAWING NO: P2.1

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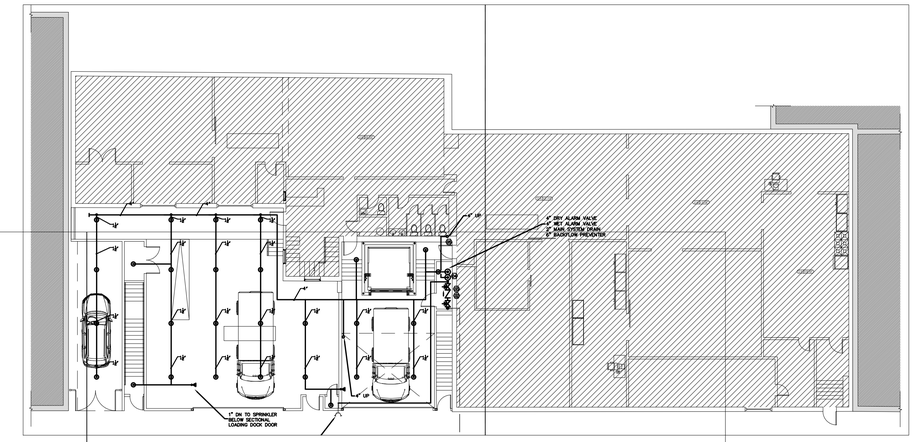

BUILDING KEY PLAN
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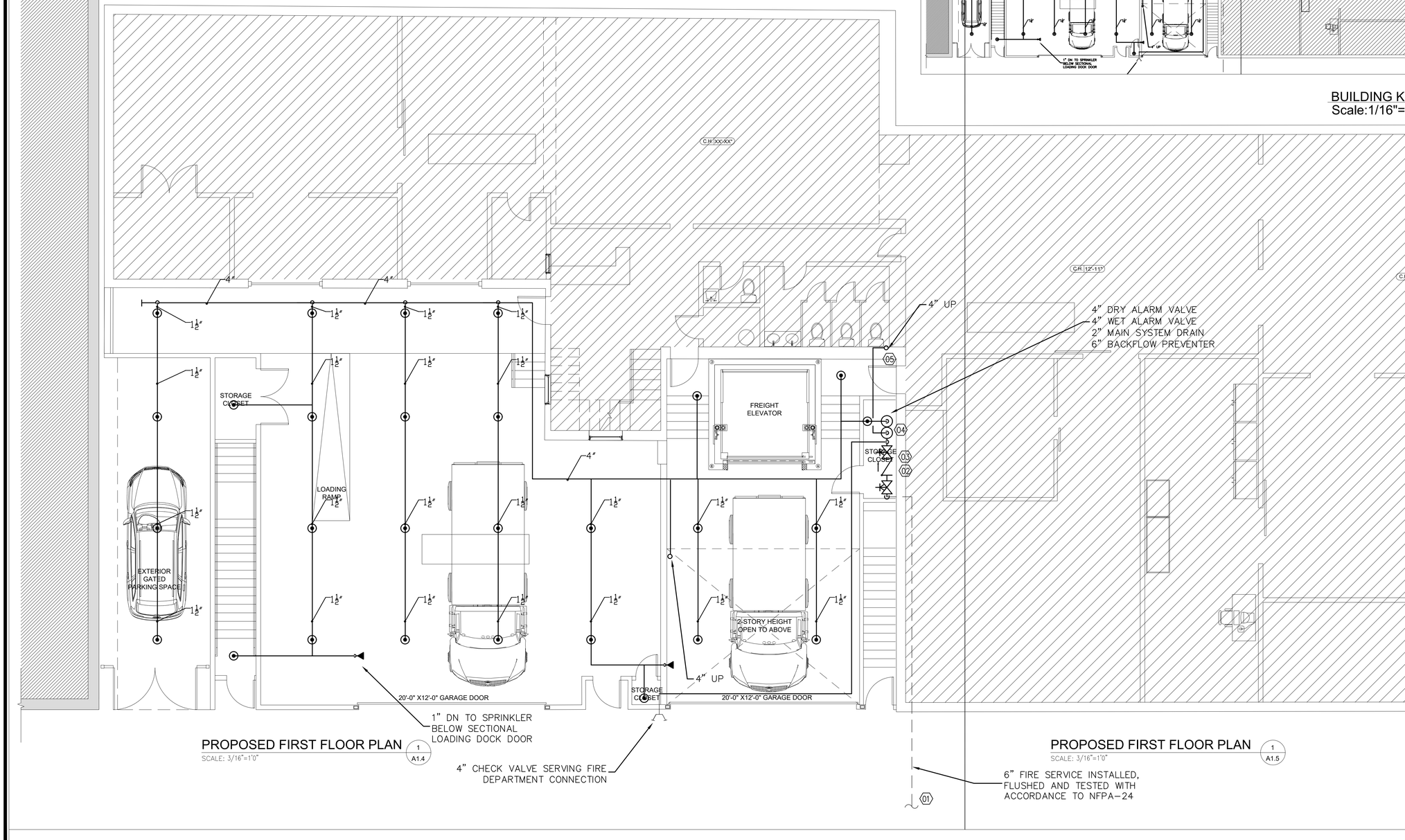

PROPOSED FIRST FLOOR PLAN (1 / A1.4)
SCALE: 3/16"=1'0"

PROPOSED FIRST FLOOR PLAN (1 / A1.5)
SCALE: 3/16"=1'0"

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PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

PROPOSED
FIRE PROTECTION
PLAN

DRAWN: JD	DRAWING NO:
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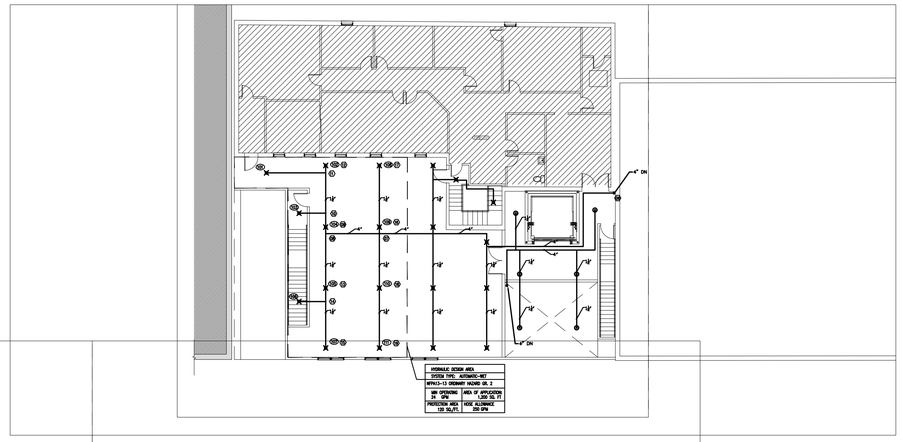

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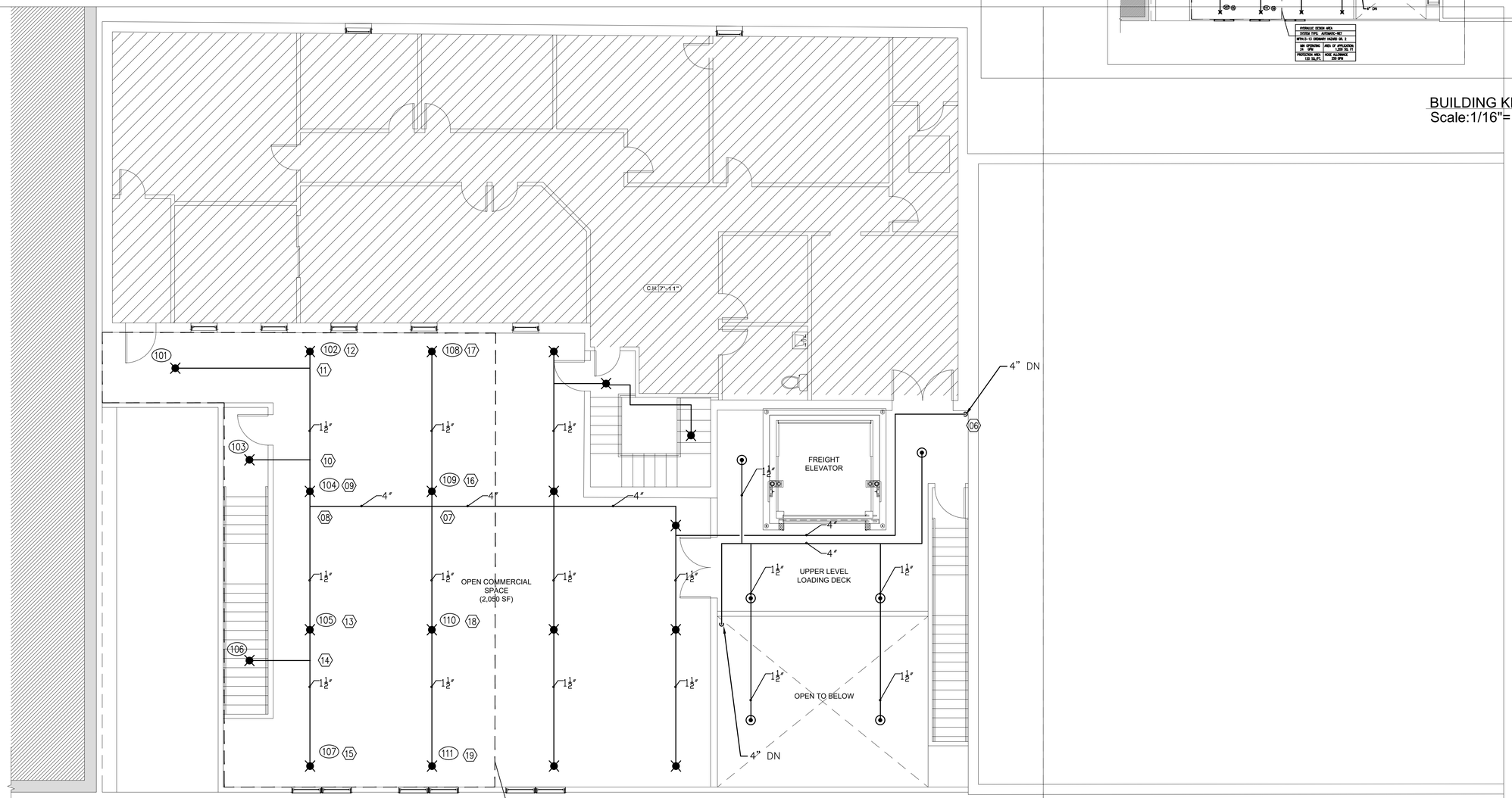

HYDRAULIC DESIGN AREA	
SYSTEM TYPE: AUTOMATIC-WET	
NFPA13-13 ORDINARY HAZARD GR. 2	
MIN OPERATING 24 GPM	AREA OF APPLICATION: 1,200 SQ. FT
PROTECTION AREA 120 SQ./FT.	HOSE ALLOWANCE 250 GPM

PROPOSED SECOND FLOOR PLAN
SCALE: 3/16"=1'0"
1 / A1.6

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PROPOSED
FIRE PROTECTION
PLAN

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DESIGN CRITERIA

THE AUTOMATIC FIRE SUPPRESSION SYSTEM HAS BEEN DESIGNED PER NFPA-13 2013, CMR 780 WITH AMENDMENTS

1. THE DRAWINGS ARE INTENDED TO BE DIAGRAMMATIC IN NATURE AND MAY NOT DEPICT EVERY COMPONENT REQUIRED TO FURNISH A FULLY CODE COMPLIANT SYSTEM. THE FIRE PROTECTION CONTRACTOR IS REQUIRED TO PROVIDE ALL MATERIAL AND LABOR TO FURNISH A FULLY CODE COMPLIANT SYSTEM PER NFPA-13 2013

PIPE, FITTINGS AND JOINTS

1. PIPE AND FITTINGS SHALL CONFORM TO THE LATEST ANSI, ASTM, NFPA AND AWWA STANDARDS INCLUDING LATEST AMENDMENTS AND SHALL BE LISTED FOR USE WITH FIRE SPRINKLER SYSTEMS

2. SEE MATERIAL SCHEDULE ON DETAIL SHEET

HANGERS AND SUPPORTS

1. HANGERS AND SWAY BRACING WHERE REQUIRED , SHALL BE INSTALLED TO MEET NFPA AND LOCAL STATE BUILDING CODE COMPLIANCE AS TO LOCATION, SPACING, AND MAXIMUM LOADS.

2. HANGER MATERIAL SHALL BE COMPATIBLE WITH PIPING MATERIALS WITH WHICH IT COMES INTO CONTACT.

3. HANGERS SHALL BE INSTALLED, IN ADDITION TO THE ABOVE, AT ALL CHANGES OF DIRECTION (HORIZONTAL AND VERTICAL), VALVES AND EQUIPMENT CONNECTIONS. HANGERS SHALL BE LOCATED SO THAT THEIR REMOVAL IS NOT REQUIRED TO SERVICE, ASSEMBLE OR REMOVE EQUIPMENT.

4. HORIZONTAL RUNS MAY USE BAND HANGERS UP TO 4" SIZE. PIPING LARGER THAN 4" SHALL BE PROVIDED WITH CLEVIS TYPE.

5. ALL RODS, CLAMPS, NUTS, WASHERS, SHIELDS AND HANGERS IN ALL AREAS SHALL BE ELECTRO-GALVANIZED COATED STEEL.

VALVES AND SUNDRIES

1. SHUTOFF VALVES ON THE ABOVEGROUND FIRE PROTECTION SYSTEM SHALL BE UL, FM BUTTERFLY OR OS&Y GATE VALVES, AS INDICATED, ON SIZES 2-1/2" AND LARGER, VALVES UP TO 2" SHALL BE UL, FM BALL VALVES. ALL ISOLATION / CONTROL VALVES SHALL BE MONITORED.

2. CHECK VALVES SHALL BE 175-POUND CLASS FOR FIRE PROTECTION.

3. VALVES SHALL BE PROVIDED WITH SEATS SUITABLE FOR THE SERVICE INTENDED.

4. VALVES SHALL BE AS MANUFACTURED BY NIBCO, VICTAULIC, WALLWORTH, MILWAUKEE OR APPROVED EQUAL. MANUFACTURERS MODEL NUMBERS REFERENCED BELOW ARE USED TO INDICATE A TYPE, MATERIAL AND QUALITY TO BE PROVIDED.

5. ALL VALVES SPECIFIED HEREIN SHALL BE UL/FM APPROVED, 175 PSI MINIMUM WORKING PRESSURE. ALL CONTROL VALVES SHALL BE PROVIDED WITH TAMPER SWITCH.

AUTOMATIC SPRINKLERS

1. SPRINKLER HEADS: QUICK RESPONSE, BULB TYPE, AND STYLE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE INDICATED.

2. IN ALL OPEN AREAS, WHERE ELECTRICAL EQUIPMENT IS LOCATED, AN APPROVED TYPE SHIELD, TO KEEP WATER OFF THE ELECTRICAL EQUIPMENT, SHALL BE PROVIDED.

3. PROVIDE ALL SPRINKLER HEADS WITH PROTECTIVE CAGE.

4. PROVIDE IN THE VALVE ROOM, A FINISHED STEEL CABINET SUITABLE FOR WALL MOUNTING, WITH HINGED COVER AND SPACE FOR 6 SPARE SPRINKLER HEADS PLUS SPRINKLER HEAD WRENCH.

SPRINKLER SHOP DRAWINGS

1. PRIOR TO INSTALLATION FIRE PROTECTION CONTRACTOR SHALL FURNISH COMPLETE TIER II SHOP DRAWINGS AND HYDRAULIC CALCULATIONS BASED ON A RECENT HYDRANT FLOW TEST FOR APPROVAL BY THE ENGINEER OF RECORD. FINAL AFFIDAVITS CANNOT BE ISSUED WITHOUT APPROVED SHOP DRAWINGS

FLUSHING AND TESTING

1. ALL LABOR, MATERIALS, INSTRUMENTS, DEVICES AND POWER REQUIRED FOR TESTING SHALL BE PROVIDED BY THIS CONTRACTOR. THE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF THE ENGINEER, GENERAL CONTRACTOR AND THE LOCAL FIRE DEPARTMENT AND SUCH OTHER PARTIES, AS MAY HAVE LEGAL JURISDICTION. NO PIPING IN ANY LOCATION SHALL BE CLOSED UP, FURRED IN, OR COVERED BEFORE TESTING.

2. WHERE PORTIONS OF PIPING SYSTEMS ARE TO BE COVERED OR CONCEALED BEFORE COMPLETION OF THE PROJECT, THOSE PORTIONS SHALL BE TESTED SEPARATELY IN THE MANNER SPECIFIED HEREIN FOR THE RESPECTIVE ENTIRE SYSTEM.

3. ANY PIPING OR EQUIPMENT THAT HAS BEEN LEFT UNPROTECTED AND SUBJECT TO MECHANICAL OR OTHER INJURY IN THE OPINION OF THE GENERAL CONTRACTOR SHALL BE RE TESTED IN PART OR IN WHOLE AS DIRECTED.

4. THE ENGINEER RETAINS THE RIGHT TO REQUEST A RECHECK OR RESETTING OF ANY PUMP OR INSTRUMENT BY THIS CONTRACTOR DURING THE GUARANTEE PERIOD AT NO ADDITIONAL COST TO THE CONTRACTOR.

5. REPAIR, OR IF DIRECTED, REPLACE ANY DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE CONTRACT. REPEAT TESTS AS DIRECTED, UNTIL THE WORK IS PROVEN TO MEET THE REQUIREMENTS SPECIFIED HEREIN.

6. RESTORE TO ITS FINISHED CONDITION ANY WORK, DAMAGED OR DISTURBED, PROVIDED BY OTHER CONTRACTORS AND ENGAGE THE ORIGINAL CONTRACTOR TO DO THE WORK OF RESTORATION TO THE DAMAGED OR DISTURBED WORK.

7. THIS CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND ANY INSPECTORS HAVING JURISDICTION, A MINIMUM OF 48 HOURS IN ADVANCE OF MAKING ANY REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS HIS SCHEDULED TESTS.

8. TESTING SHALL BE IN ACCORDANCE WITH NFPA-13 "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS".

9. EACH SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 200 PSI FOR TWO HOURS.

10. FLUSHING OF ALL BURIED SUPPLY PIPING SHALL BE PERFORMED AT A MINIMUM RATE OF 880 GPM FOR SYSTEMS WITH A 6" SERVICE.

11. ALL WATER FLOW DETECTING DEVICES AND CIRCUITS SHALL BE FLOW TESTED THROUGH THE INSPECTOR'S TEST CONNECTION AND ACTIVATE WITHIN FIVE MINUTES OF INITIATION.

12. ALL FLOW TESTS ON THE FIRE PROTECTION SYSTEMS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION.

13. SPRINKLER FLOW TEST DISCHARGE AND FLUSHING WATER DISCHARGE SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND THE LOCAL FIRE DEPARTMENT OR PUBLIC WORKS AS TO ACCEPTABLE DISCHARGE POINTS PRIOR TO SCHEDULING OF FLUSHING AND TESTS. THIS CONTRACTOR SHALL PROVIDE ALL HOSE AND EQUIPMENT NECESSARY TO PERFORM THE REQUIRED TESTING AND FLUSHING.

AS BUILT DRAWINGS AND CONTRACTOR CERTIFICATES

1. CONTRACTOR SHALL HAVE, ON HAND, AT TIME OF FINAL INSPECTION BY THE AUTHORITY HAVING JURISDICTION, FOR TEMPORARY / FINAL CERTIFICATE OF OCCUPANCY, ALL COMPLETED CERTIFICATES OF MATERIAL AND TESTING FOR ABOVEGROUND AND UNDERGROUND PIPING AS WELL AS THE AS- BUILT DRAWINGS OF THE FIRE PROTECTION INSTALLATION.

2. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEER OF RECORD AT SUCH A TIME WHERE THE INSTALLATION HAS PROGRESSED TO 90% AND PRIOR TO WALLS BEING CLOSED FOR INSPECTION.

PATCHING, REPLACEMENT AND MODIFICATION OF EXISTING WORK

1. AFTER INSTALLATION OF PIPELINES, THE CONTRACTOR SHALL NEATLY PATCH, REPAIR, AND/OR REPLACE EXISTING WORK WHERE DAMAGED, REMOVED OR ALTERED FOR PIPE LINE INSTALLATION. THIS WORK SHALL BE SIMILAR AND EQUAL IN QUALITY TO THE WORK REMOVED OR DAMAGED, UNLESS OTHERWISE SHOWN OR SPECIFIED. SUCH WORK SHALL INCLUDE PATCHING AND REPLACEMENT OF EXISTING PIPING AT POINTS OF CONNECTION TO NEW PIPING, PATCHING OF INSULATION, AND WHEREVER ANY SUCH PATCHING WORK IS INDICATED ON THE DRAWINGS OR OTHERWISE REQUIRED.

INSTALLATION

1. GENERAL: INSTALL FIRE PROTECTION SPECIALTY VALVES, FITTINGS, AND SPECIALTIES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, NFPA 13 AND 14, AND THE AUTHORITY HAVING JURISDICTION.

2. USE PROPER TOOLS TO PREVENT DAMAGE DURING INSTALLATIONS.

3. ALL PENDENT MOUNTED SPRINKLERS SHALL BE INSTALLED ON RETURN BENDS.

4. ALL SPRINKLERS INSTALLED IN ACOUSTICAL CEILING TILES SHALL BE CENTERED IN TILES WHERE APPLICABLE.

5. COORDINATE AND VERIFY DRAFT CURTAINS ARE INSTALLED AS REQUIRED BY SPRINKLER HEAD SPECIFICATIONS

6. CONTRACTOR IS RESPONSIBLE TO PROVIDE 100% SPRINKLED BUILDING INCLUDING ALL COMBUSTIBLE CONCEALED SPACES WHETHER SHOWN ON THIS PLAN OR NOT

7. NO WORK SHALL COMMENCE BEFORE HAVING FULL APPROVAL FROM THIS OFFICE

FIRE PROTECTION SPECIFICATION

FIRE PROTECTION SPECIFICATION

1. THIS IS A PERFORMANCE SPECIFICATION AND REQUIRES THE FIRE PROTECTION CONTRACTOR TO FURNISH A FULL SET OF NFPA-13-13 WORKING DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD PRIOR TO INSTALLATION

2. SPRINKLER PIPING SHALL BE SCH.10/40 BLACK STEEL WITH 125 LB. CAST IRON THREADED/GROOVED JOINTS WHERE EXPOSED.

3. SPRINKLER HEADS IN UNFINISHED AREAS SHALL BE UPRIGHT TYPE SPRINKLERS WITH HEAD CAGES

4. APPLY AND OBTAIN PERMIT AND APPROVAL FROM LANDLORD'S INSURANCE COMPANY, FIRE DEPARTMENT AND STATE AND LOCAL AUTHORITIES.

5. COORDINATE WITH FULL PLAN SET AND ARCHITECTURAL REFLECTED CEILING PLAN FOR THE LOCATION OF SPRINKLER HEADS.

6. COORDINATE SPRINKLER WORK WITH OTHER DISCIPLINES. SINCE PERFORMANCE OF SPRINKLER SYSTEM IS AFFECTED BY OBSTRUCTIONS AND NOT OTHER WAY AROUND, THIS CONTRACTOR SHALL COORDINATE ALL LIGHTING FIXTURE LOCATIONS AND TYPES AND OTHER OBSTRUCTIONS PRIOR TO ANY WORK DONE.

7. THE SYSTEM SHALL BE HYDROSTATICALLY TESTED AT NOT LESS THAN 200 PSI PRESSURE FOR 2 HOURS. THERE WILL BE NO VISIBLE LEAKAGE WHEN THE SYSTEM IS SUBJECTED TO THE HYDROSTATIC PRESSURE TEST.

8. GUARANTEE ALL WORK AND MATERIAL FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.

FIRE PROTECTION MATERIAL SCHEDULE

SYSTEM	PIPE										FITTINGS						JOINTS			
NOTES: 1. COMPONENT PRESSURE RATING TO MATCH EXISTING 2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE ENGINEER & LOCAL AUTHORITIES 2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE ENGINEER & LOCAL AUTHORITIES	BLAZEMASTER CPVC	DUCTILE IRON	EXTRA HEAVY CAST IRON	STEEL SCHED 10	STEEL SCHED 30	STEEL SCHED 40	STEEL SCHED 80	BLACK	GALVANIZED	CEMENT LINED	MALLEABLE IRON	BLAZEMASTER CPVC	LINED	BLACK	GALVANIZED	VICTAULIC	DUCTILE IRON	THREADED	MECH.JOINT-FLANGED	GROOVED	SLIP
BURIED BUILDING FIRE SERVICE		●						●		●									●		
RESIDENTIAL CROSS MAINS	●											●									●
RESIDENTIAL BRANCH LINES	●											●									●
ARM-OVER & DROPS	●											●									●
SPRINKLER DRAIN PIPE						●			●							●		●		●	
DRY SPRINKLER SYSTEM						●		●						●				●		●	

FLOW TEST DATA

STATIC ----- 90 PSI
RESIDUAL ----- 87 PSI
FLOW ----- 1,584 GPM

DATE: 3/10/2021

LOCATION: 145 HOWARD ST.

PREPARATION OF SHOP DRAWINGS:

PER 780CMR 901.2.1
SPRINKLER CONTRACTOR SHALL PREPARE TIER ii SHOP DRAWINGS INCLUDING PIPING & HYDRAULIC CALCULATIONS, AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. ENGINEER SHALL CERTIFY SYSTEM INSTALLATION FOR CODE COMPLIANCE AT PROJECT COMPLETION.

FIRE SPRINKLER LEGEND

SYM	POSITION	FINISH	TEMP	K	NPT
◎	UPRIGHT	BRASS	155°	5.60	1/2"
⊠	UPRIGHT	BRASS	155°	16.8	3/4"
●	PENDENT	CONCEALED	155°	5.60	1/2"
▷	DRY SIDEWALL	CONCEALED	155°	5.60	1/2"
⦿	DRY PENDENT	CONCEALED	155°	5.60	1/2"

FIRE PROTECTION ABBREVIATIONS

DSW	DRY SIDEWALL
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DIA	DIAMETER
DR	DRAIN
ETR	EXISTING TO REMAIN
FHV	FIRE HOSE VALVE
IT	INTERMEDIATE TEMPERATURE
FP	FIRE PROTECTION
FS	FLOW SWITCH
SP	STANDPIPE
GV	GATE VALVE
GAL	GALLONS
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
DN	PIPE DROP
PSI	POUNDS PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE
RV	RELIEF VALVE
SPK	SPRINKLER
TS	TAMPER SWITCH
UP	PIPE RISE
VIF	VERIFY IN FIELD

FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION
	SUPERVISED BUTTERFLY VALVE
	DOUBLE CHECK VALVE ASSEMBLY
	SUPERVISED OS&Y GATE VALVE
FS	FLOW ALARM SWITCH
	SPRINKLER ZONE CONTROL ASSEMBLY (SEE DETAIL)
	PUMP (FIRE OR JOCKEY)
	DRY ALARM VALVE
	WET ALARM VALVE
	CHECK VALVE
	DRAIN VALVE
	FIRE VALVE ASSEMBLY 2-1/2"W X 2-1/2" X 1-1/2"
	PRESSURE GAUGE
XX	HYDRAULIC JUNCTION POINT
XXX	HYDRAULIC DISCHARGE NODE

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FIRE PROTECTION NOTES

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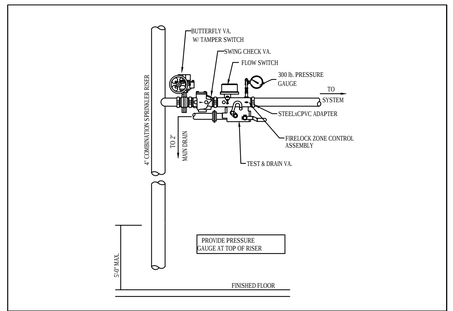
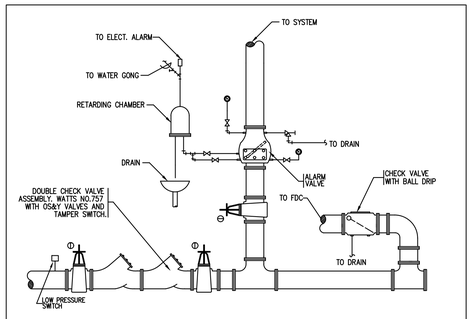
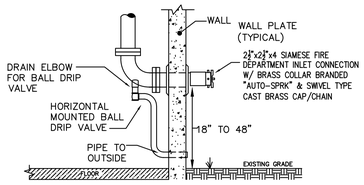


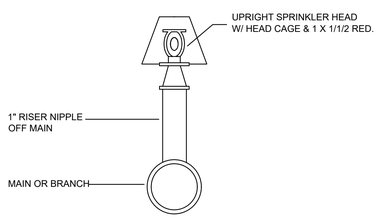
FIRE SPRINKLER RISER | NTS



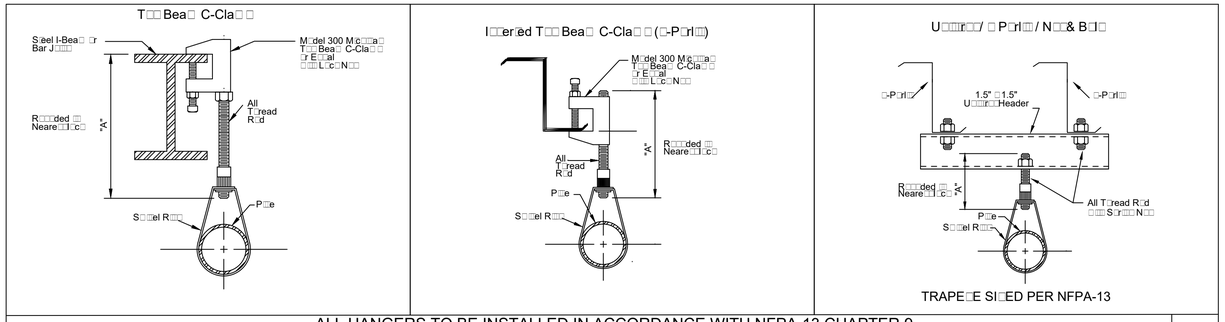
WET ALARM VALVE DETAIL
N.T.S.



FIRE DEPARTMENT CONNECTION | NTS



TYPICAL UPRIGHT SPRINKLER | NTS



TYPICAL HANGER DETAILS

ALL HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA-13 CHAPTER 9
REFER TO STRUCTURAL DRAWINGS FOR SPECIFIC HANGER RE□UIREMENT

NTS

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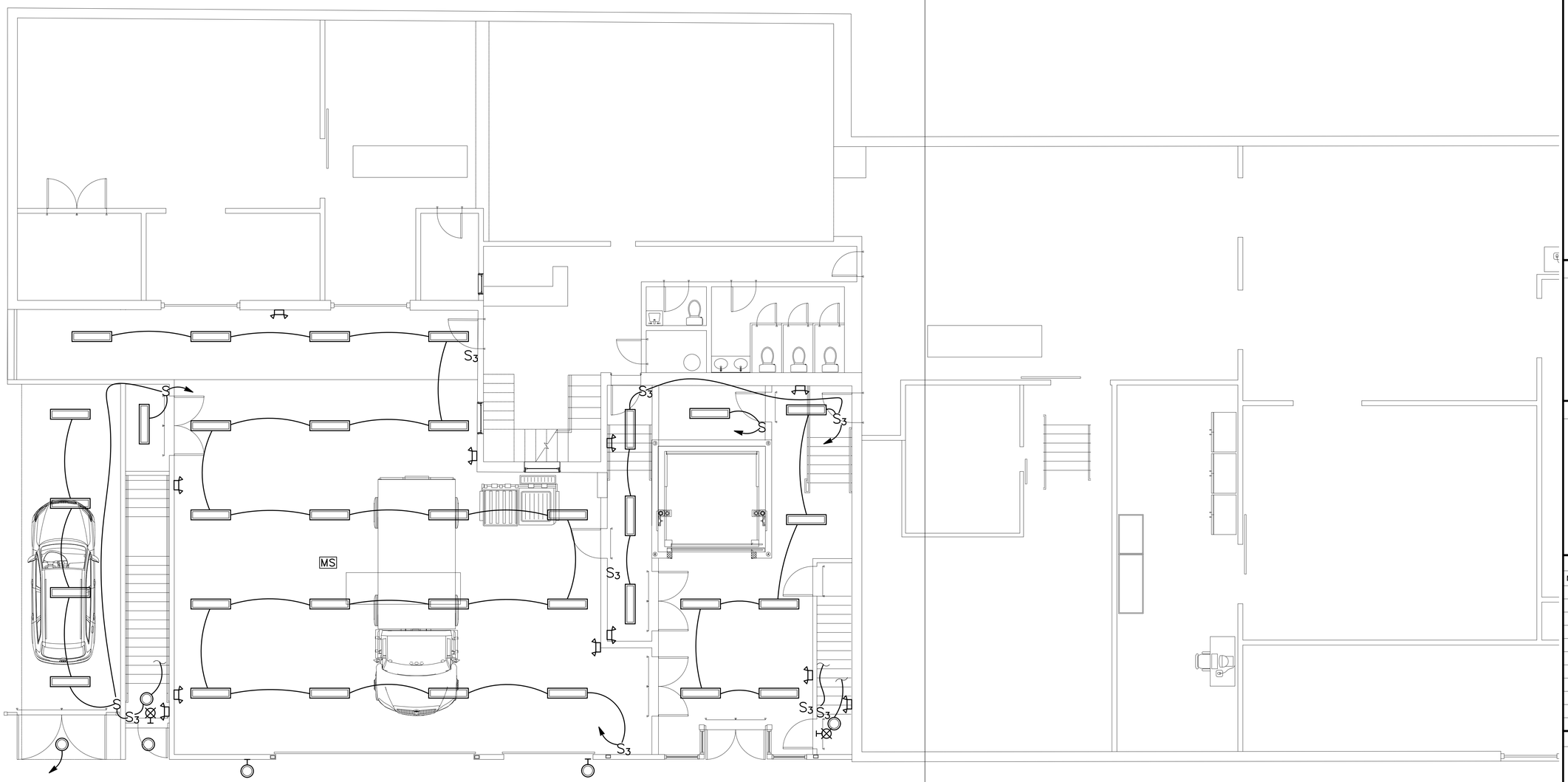

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FIRST
FLOOR PLAN
(LIGHTING)

DRAWN: MP	DRAWING NO:
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SHEET OF	

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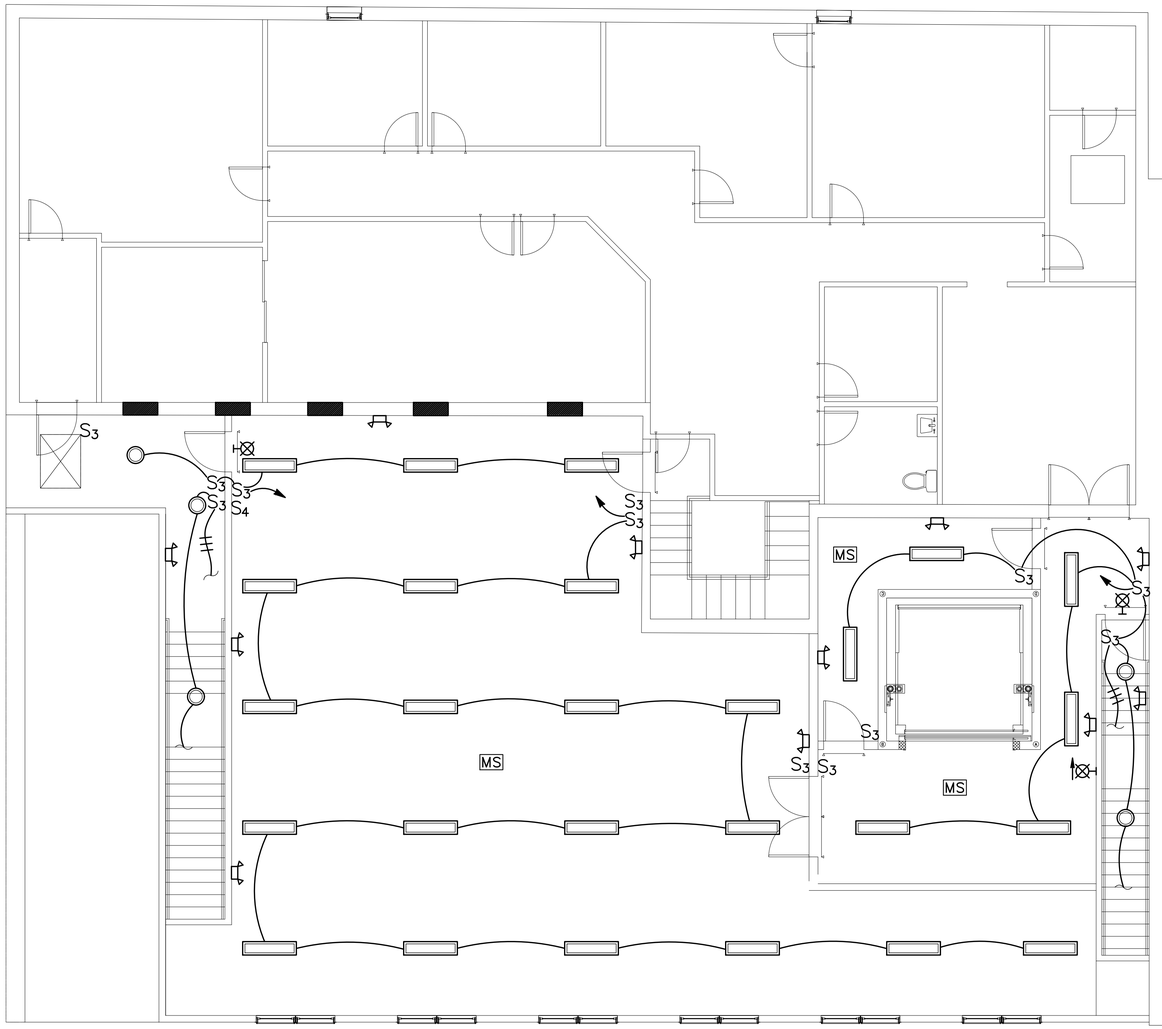

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SECOND
FLOOR PLAN
(LIGHTING)

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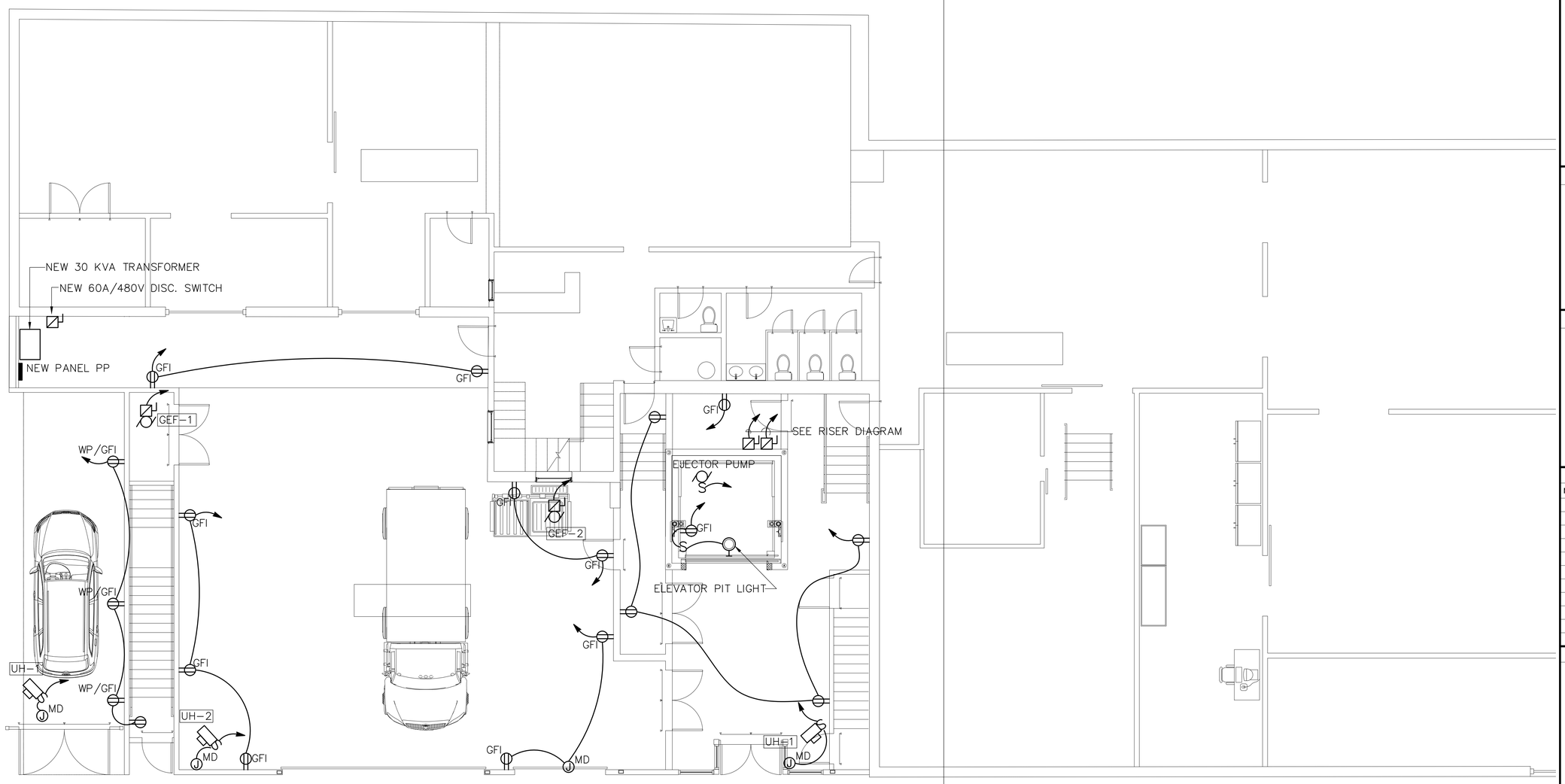

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PROJECT NO. 21217

SHEET TITLE

FIRST
FLOOR PLAN
(POWER)

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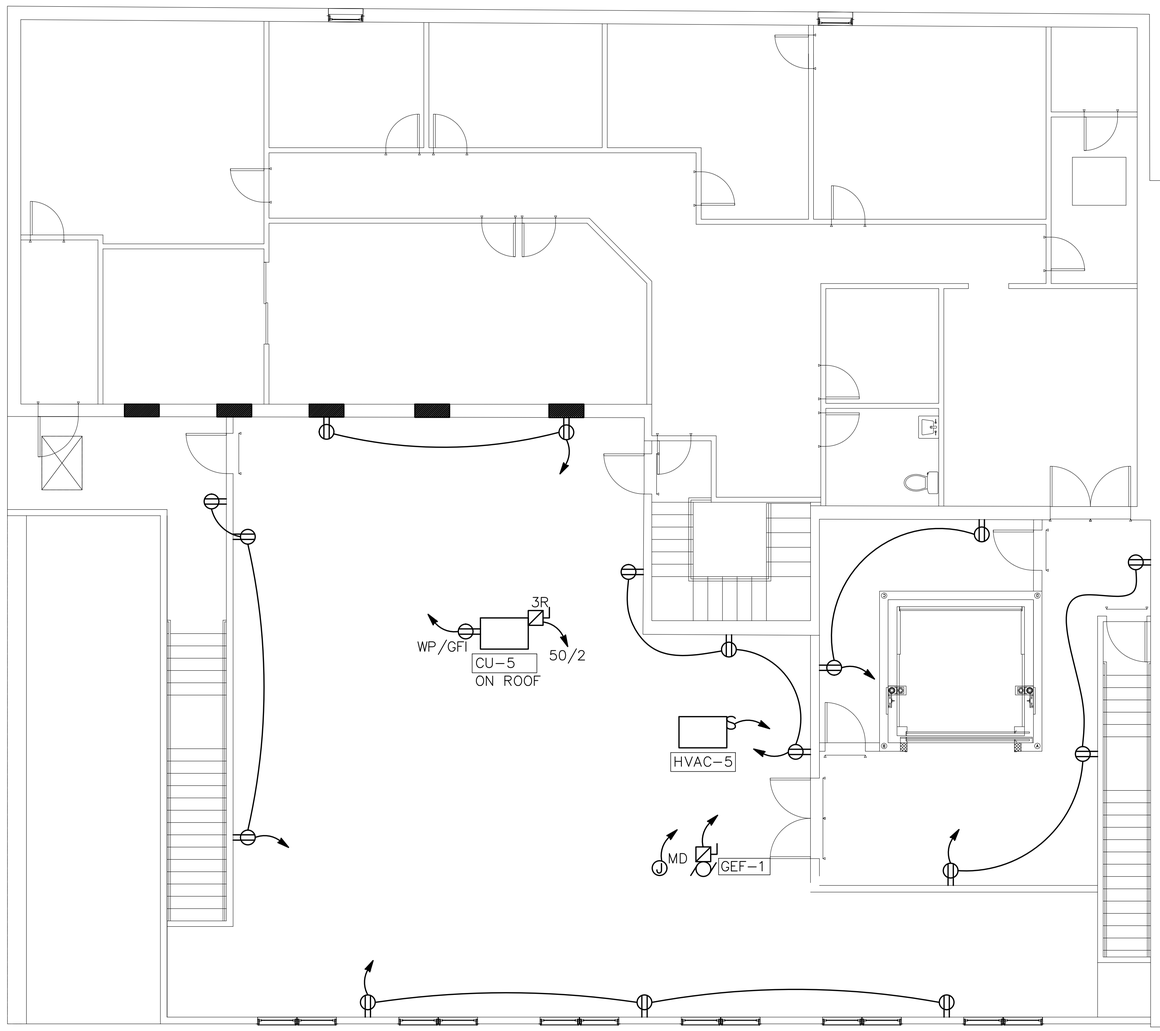

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COMMONWEALTH OF MASSACHUSETTS
MUZAFFER MUCTEHIZADE
ELECTRICAL
No 32579
REGISTERED PROFESSIONAL ENGINEER

REVISIONS

NO.	BY	DESCRIPTION	DATE

PROJECT

SHANGHAI CORP
FACTORY ADDITION

25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

SHEET TITLE

SECOND
FLOOR PLAN
(POWER)

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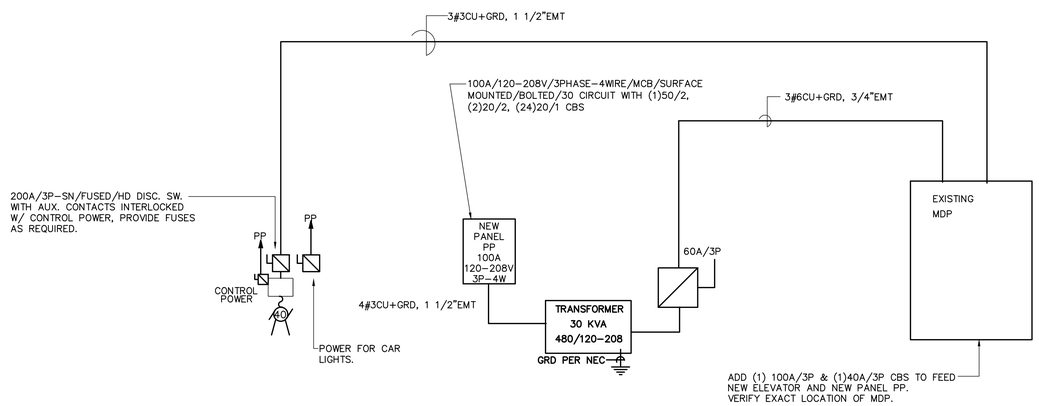
FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP	DESCRIPTION
	LITHONIA	ZL1D L48 3000LM FST 40K	120	LED	4' PENDANT MOUNTED
	CARRY $100/-	PER FIXTURE	120	LED	SURFACE MOUNTED DOWN LIGHT
	CARRY $100/-	PER FIXTURE	120	LED	EXTERIOR WALL SCONCE
	EMERGI-LITE	PRO2VM	120		EMERGENCY LIGHT WITH BUILT-IN BATTERY
	EMERGI-LITE	LEDPXN1/2R	120		EXIT SIGN

LAMPS AND BALLASTS SHALL BE IN COMPLIANCE WITH LOCAL UTILITY COMPANY REBATE PROGRAMS, SPECIFICATIONS ABOVE FOR THE FIXTURE TYPE ONLY. FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS THD LESS THAN %15 FIXTURES MOUNTED IN INSULATED CEILINGS, EC SHALL PROVIDE HOODS TO KEEP INSULATION AWAY



POWER RISER DIAGRAM

NTS

LOCATION OF ALL MECHANICAL EQUIPMENTS AND ELECTRICAL CHARACTERISTICS SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR PRIOR TO ANY WORK DONE. ALL EQUIPMENT RELATING TO MECHANICAL COMPONENTS SHALL BE ORDERED ONLY AFTER THE APPROVAL OF MECHANICAL EQUIPMENT SHOP DRAWINGS

UNLESS NOTED OTHERWISE ALL WIRING SHALL BE #12AWG, Cu, AND FED FROM PANEL PP VIA 20A/1P C.B. CIRCUITS LONGER THAN 100FT SHALL BE #10 CU

NO EXPOSED WIRING IS ALLOWED, ALL CONCEALED WIRING UNLESS NOTED SHALL BE "MC". ALL WIRING IN BLOCK WALLS SHALL BE CONCEALED, RUN IN CONDUIT.

WIRING IN ALL EXPOSED AREAS SHALL BE IN METALLIC RACEWAYS AS WIREMOLD OR EQUAL. RACEWAYS SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. SURFACE RACEWAYS SHALL CLOSELY FOLLOW THE SURFACE AND WRAP AROUND THE BEAMS AS REQUIRED. PRIOR TO ANY INSTALLATION, SUBMIT LAYOUT SKETCH INDICATING PROPOSED ROUTING FOR APPROVAL. ARCHITECT HAS THE RIGHT TO MODIFY OR CHANGE LAYOUT AS NEEDED. ANY CHANGES PRIOR TO ANY INSTALLATION SHALL BE AT NO CHANGE TO CONTRACT PRICE.

EXACT LOCATION AND TYPES OF ALL LIGHTING FIXTURES, MOUNTING HEIGHTS AND MOUNTING DETAILS SHALL BE COORDINATED WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ANY CONFLICTS SHALL BE BROUGHT TO ARCHITECT'S ATTENTION PRIOR TO ANY WORK DONE. OBTAIN LATEST COPY OF THE CEILING PLAN FROM ARCHITECT PRIOR TO ANY WORK DONE.

TO MEET IECC CONTRACTOR SHALL PROVIDE IN EACH SPACE (EXCEPT CORRIDORS, BATHROOMS AND UTILITY/MECHANICAL ROOMS), CEILING MOUNTED OCCUPANCY SENSOR TO CONTROL LIGHTS IN THE SPACE. INSTALL SELF CONTAINED TYPE OR RELAY TYPE CEILING MOUNT SENSORS AS REQUIRED TO MATCH LOAD AND VOLTAGE CHARACTERISTICS. LOCATE SENSOR IN CEILING AWAY FROM THE DOOR NOT TO PICK UP NUICANCE ACTIVATION.

IN AREAS WHERE FIXTURES ARE MOUNTED INTO INSULATED CEILINGS, THIS CONTRACTOR SHALL PROVIDE HOODS, 3" LARGER THAN FIXTURES TO KEEP INSULATION AWAY FROM THE FIXTURES AND TO MAINTAIN INSULATION INTEGRITY OF THE CEILING, SEE ARCHITECTURAL DRAWINGS FOR AREAS WHERE THESE HOODS MAY BE REQUIRED.

CONNECT ALL EXIT SIGNS AND EMERGENCY BATTERIES TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY CONTROLS TYPICAL FOR ALL AREAS

WHERE CEILING IS FIRE RATED, ALL RECESSED FIXTURES AND EXHAUST FANS SHALL BE INSTALLED WITH FIRE RATED ENCLOSURES 3" MINIMUM LARGER THAN FIXTURES TO MAINTAIN INTEGRITY OF CEILING FIRE RATING AND COOLING OF THE FIXTURES.

COORDINATE LOCATION OF SURFACE MOUNTED LIGHT FIXTURES WITH SPRINKLER CONTRACTOR PRIOR TO ANY INSTALLATION

SYMBOL LIST

- CEILING MOUNTED LIGHT FIXTURE.
- WALL MOUNTED LIGHT FIXTURE.
- 2'X2' OR 2'X4' FLUORESCENT LIGHT FIXTURE.
- 1'x4' FLUORESCENT WALL/CEILING MOUNTED LIGHT FIXTURE.
- S — SINGLE POLE LIGHT SWITCH
- S_3 — THREE-WAY LIGHT SWITCHES
- S_D — DIMMER SWITCH MINIMUM 1000W OR AS REQUIRED PER CIRCUIT
- DUPLEX RECEPTACLE, 120V,18" AFF.
- GFI — DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER 8" ABOVE COUNTER TO ℄
- 120V DOUBLE DUPLEX CONVENIENCE RECEPTACLE
- DUPLEX RECEPTACLE ABOVE COUNTER, 8" ABOVE COUNTER TO ℄.
- W — TELEPHONE JACK COMPLETE W/JACK AND COVER, ('W' WALL MOUNTED @ 4'-0" A.F.F)
- TELE/DATA OUTLETS, COMPLETE W/JACK AND COVER, HEIGHT AT 18" TO C AFF.
- TV — CABLE TV OUTLET, COMPLETE W/JACK AND COVER, HEIGHT AT 18" TO ℄ AFF.
- MOTOR
- 3R, J — FUSED DISCONNECT SWITCH, (3R RAIN-PROOF).
- STARTER
- S — SYSTEM TYPE SMOKE DETECTOR
- S_D — DUCT SMOKE DETECTOR W/REMOTE TEST SWITCH
- H — HEAT DETECTOR
- F — FIRE ALARM PULL AND A/V DEVICE
- F — FIRE ALARM PULL STATION CENTERLINE 4'-0" AFF
- F — FIRE ALARM AUDIO/VISUAL UNIT. MTD. @ 6'-8" AFF
- L — FIRE ALARM LIGHT. MTD. @ 6'-8" AFF
- TYPICAL WIRING, DIAGONAL LINES INDICATES QUANTITY OF CONDUCTORS.
- HOMERUN TO PANEL WITH CONDUCTOR.(HOT, NEUTRAL, GROUND)
- J — JUNCTION BOX
- LIGHTING & POWER PANEL, RECESSED
- FACP — FIRE ALARM CONTROL PANEL
- ANN — FIRE ALARM ANNUNCIATOR
- TS — TAMPER SWITCH
- FS — FLOW SWITCH
- RACEWAY CONCEALED IN CEILING, PLENUM OR WALLS
- RACEWAY CONCEALED IN SLAB (FLOOR)
- UNIVERSAL MOUNTING EXIT SIGN (DOUBLE FACED), ARROWS AS INDICATED.
- EMERGENCY LIGHT WITH BUILT-IN BATTERY.
- MS — OCCUPANCY SENSOR

ELECTRICAL SPECIFICATIONS

1.1 General

A. The General Conditions and Drawings issued for this Project shall be considered as part of the Electrical Specifications.
B. The term "This Contractor" as used under this Section and wherever used on the Drawings shall mean the Electrical Contractor.

1.2 Scope of Work

A. The work under this Specification includes the furnishing of all labor and material as specified herein and as shown on the Drawings necessary to install a complete and ready for operation. Manufacturer's catalogue numbers are shown for reference purposes only. They are meant to provide a general description of the design and quality of materials required. Equivalent products by other manufacturers will be considered.

1.3 Codes and Specifications

A. The work shall be conducted in accordance with the latest rules and regulations of the State of MASSACHUSETTS and the local codes as most recently issued, OSHA codes, National Electrical Codes and NFPA.
B. All exposed wiring shall be in electric metallic tubing. All concealed wiring shall be in accordance with local codes.
C. All branch circuit conductors shall be copper, minimum #12 AWG size THHN or THWH as required, 600V rated.
D. All feeder conductors shall be copper, AWG size as noted XHHW insulation, 600V.

1.4 Coordination of Work

A. The Contractor shall schedule and coordinate his work with all trades involved to insure proper installation and operation.
B. The Contract Drawings are diagrammatic only and indicate the extent, general locations and arrangement of the piping and wiring of equipment. The exact locations shall be coordinated with Architectural Drawings and Documents of other trades.
C. This Contractor shall verify fixture mounting and location against plans, elevations and detail drawings. Exact location of all fixtures shall be confirmed with owner's representative prior to rough-in.
D. Submit Shop Drawings and product data within thirty (30) days after award of the Contract. Check, stamp and mark with project name submittals before transmitting to Architect. Indicate deviations from Contract Documents.
E. This Contractor shall give notices, file plans, obtain permits and licenses, pay fees and back charges, and obtain the necessary approvals from authorities that have jurisdiction.
F. Material and equipment shall be UL, ASME and AGA approved for intended service.
G. Guarantee work in writing for one year from date of final acceptance. Repair or replace defective materials or installation at no cost to Owner. Correct damage caused in making necessary repairs and replacements under guarantee at no cost to the Owner.
H. Submit guarantee to Architect before final payment.

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PROJECT

SHANGHAI CORP
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25 HOWARD ST.
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PROJECT NO. 21217

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ELECTRICAL DETAILS

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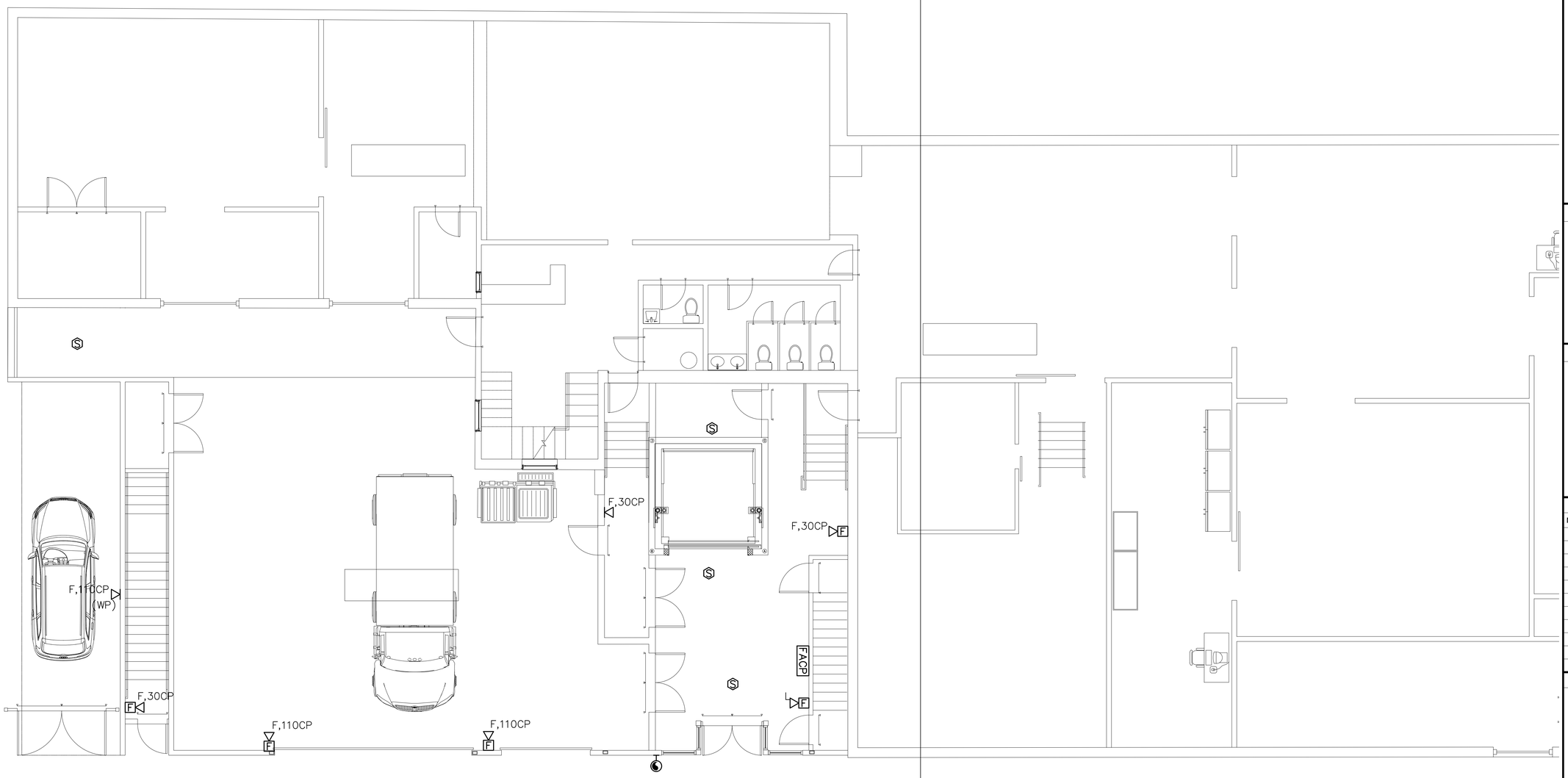

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PROJECT

SHANGHAI CORP
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25 HOWARD ST.
ROXBURY, MA

PROJECT NO. 21217

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FIRST
FLOOR PLAN
(FIRE ALARM)

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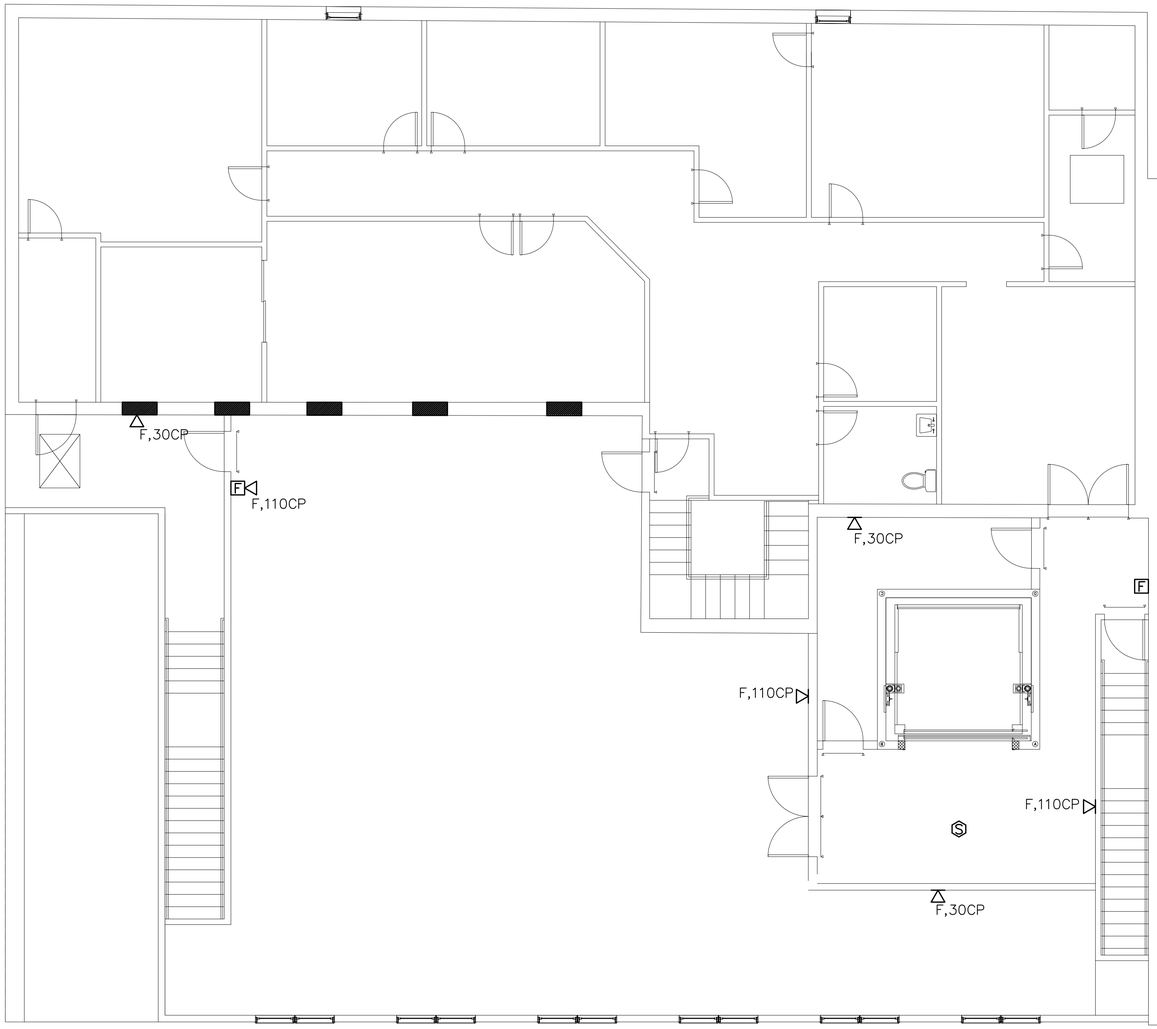

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PROJECT NO. 21217

SHEET TITLE

SECOND
FLOOR PLAN
(FIRE ALARM)

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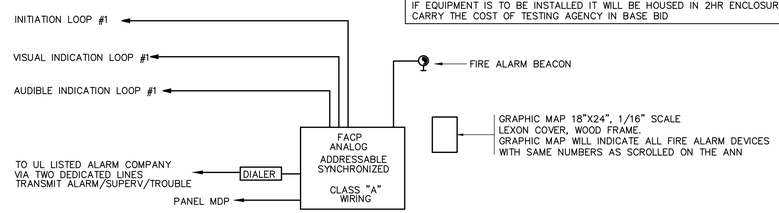
CARRY THE COST OF BDA SYSTEM AS DEDUCT ALTERNATE BUT MINIMUM PROVIDE ALL NECESSARY STRUCTURE AND RACEWAYS TO BE ABLE TO INSTALL BDA SYSTEM PER IBC 915.2&3 UPON COMPLETION OF THE BUILDING EMPLOY A THIRD PARTY TESTING AGENCY TO ESTABLISH THE NEED TO INSTALL HEAD END EQUIPMENT OF A BDA SYSTEM TO MEET EMERGENCY SERVICES COMMUNICATION NEEDS AS TO BE DETERMINED BY THE FD.
PROVIDE ADD ALTERNATE COST FOR ALL HARDWARE COMPONENTS AND INSTALLATION.
RUN CONDUITS IN 2HR RATED ENCLOSURE.
IF EQUIPMENT IS TO BE INSTALLED IT WILL BE HOUSED IN 2HR ENCLOSURE
CARRY THE COST OF TESTING AGENCY IN BASE BID



NOTES

SEE FLOOR PLANS FOR DETECTOR TYPES AND LOCATIONS AND QUANTITIES.
PROVIDE BATTERY CALCULATIONS AND ONE LINE WIRING DIAGRAM
PROVIDE RADIO SIGNAL COVERAGE THROUGHOUT BUILDING AS REQUIRED PER 915.2&3
PROVIDE TIER 2 DRAWINGS WITH COMPLETE WIRING DIAGRAMS AND DEVICE ADDRESSES AS REQUIRED FOR FIRE DEPARTMENT APPLICATION
PROVIDE POWER BOOSTERS AS REQUIRED, PROVIDE SMOKE DETECTOR AT EACH BOOSTER LOCATION AND FACP LOCATION
PROVIDE ADDRESS MODULES FOR ALL FLOW & TAMPER SWITCHES
SEE SPRINKLER DRAWINGS FOR FLOW/TAMPER SWITCH LOCATIONS AND QUANTITIES.

SEQUENCE OF OPERATION

UPON ACTIVATION OF ANY FIRE DETECTOR, MANUAL PULL STATION OR FLOW SWITCH
–FIRE ALARM PANEL WILL TRIP AND CALL FIRE DEPARTMENT
–ALL AUDIO DEVICES WILL INITIATE ALARM SIGNAL TO ALERT ALL OCCUPANTS FOR ALARM CONDITION IN THE BUILDING FOR FULL EVACUATION.
–ALL VISUAL DEVICES WILL ACTIVATE, THEY SHALL BE SYNCHRONIZED TYPE.

FIRE ALARM SYSTEM RISER DIAGRAM

SYMBOL LIST

(S)	SYSTEM TYPE SMOKE DETECTOR
(S)D	DUCT SMOKE DETECTOR W/REMOTE TEST SWITCH
(H)	HEAT DETECTOR
F	FIRE ALARM PULL AND A/V DEVICE
F	FIRE ALARM PULL STATION CENTERLINE 4'–0" AFF
F	FIRE ALARM AUDIO/VISUAL UNIT. MTD. @ 6'–8" AFF
L	FIRE ALARM LIGHT. MTD. @ 6'–8" AFF
←	HOMERUN TO PANEL WITH CONDUCTOR.(HOT, NEUTRAL, GROUND)
FACP	FIRE ALARM CONTROL PANEL

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