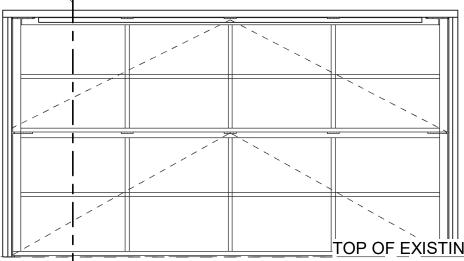
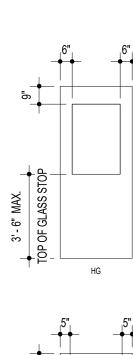


DOOR									ULC	
NO.	ROOM NAME	WIDTH	HEIGHT	тнк.	TYPE	MAT'L	TYPE	MAT'L	JAMB	HEA
00	VESTIBULE	6' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF3	ALUM	J1/J2	H2
)2	FITNESS	6' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF23	ALUM	J1/J2	H1
03	RECEPTION	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
)4	COUNSELING	3' - 0"	7' - 0"	1 3/4"	HG	SCWD	HM2	HM	J5	H5
)5	ADMIN GROUP OFFICE	3' - 0"	7' - 0"	1 3/4"	FG	SCWD	HM2	НМ	J5	H5
)5A	STORAGE	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
)5B	SAFE	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
05C	ELEC CLOSET	5' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
06	OFFICE	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
)7	OFFICE	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
10	WOMEN	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
11	MEN	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	HM	J5	H5
12	VESTIBULE	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF17	ALUM	J2	H2
13	CLASSROOM	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF24	ALUM	J1/J2	H2
14	CLASSROOM	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF24	ALUM	J1/J2	H2
15	MULTIPURPOSE 1	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF24	ALUM	J1/J2	H2
16	MULTIPURPOSE 2	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF24	ALUM	J1/J2	H2
17	KITCHEN	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
17.1	KITCHEN	4' - 8"	4' - 0"						K2	L5
18.1	ART / MAKER	3' - 0"	8' - 0"	1 3/4"	SG	ALUM	SF24	ALUM	J1/J2	H2
18.2	ART / MAKER	3' - 3"	8' - 0"	1 3/4"	FG	ALUM	SF24	ALUM	J1/J2	H2
18.3	ART / MAKER	6' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
19	CHAIR STORAGE	6' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
20	HOUSEKEEPING	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
21	COMPUTER	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF28	ALUM	J1/J2	H2
25	WOMEN	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
25A	W SHOWER	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
26	MEN	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
26A	M SHOWER	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
27	GAME	6' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF30	ALUM	J1/J2	H2
28	DATA	3' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J5	H5
29A	PUMP	3' - 0"	7' - 0"	1 3/4"	F	НМ	HM2	НМ	J5	H5
30	VESTIBULE	6' - 0"	7' - 10"	1 3/4"	FG	ALUM	SF16	ALUM	J1	H1
31	GYMNASIUM	6' - 0"	8' - 0"	1 3/4"	FG	SCWD	НМЗ	НМ	J2	H1
31.1	GYMNASIUM	6' - 0"	8' - 0"	1 3/4"	FG	SCWD	HM3	НМ	J2	H1
32	GYM STORAGE	6' - 0"	7' - 0"	1 3/4"	F	SCWD	HM2	НМ	J6	H6
100	VESTIBULE	6' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF1	ALUM	J1	H1
112	VESTIBULE	3' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF18	ALUM	J6/A460	H6/A460
117	KITCHEN	3' - 0"	8' - 0"	1 3/4"	HG	HM A A	HM4	HM	J6/A460	H6/A460
127.1	GAME	3' - 0"	8' - 0"	1 3/4"	FG	AL 3	SF19	AL	J6/A460	H6/A460
127.2	GAME	3' - 0"	8' - 0"	1 3/4"	HG	HM	HMA	НМ	J6/A460	H6/A460
129	ELEC	3' - 0"	7' - 0"	1 3/4"	F	HM	HM1	НМ	J6/A460	H6/A460
130	VESTIBULE	6' - 0"	8' - 0"	1 3/4"	FG	ALUM	SF14	ALUM	J1	F12/A458
132	GAME	18' - 5 3/4"	9' - 11"	2"			+		J12/A459	E12/A459
132	FIRE PUMP	3' - 0"	7' - 0"	1 3/4"	F	НМ	HM1	НМ	J18/A459	F18/A459
136	GYMNASIUM	6' - 0"	7' - 9"	1 3/4"	FG	ALUM	CW3	ALUM	F13/A461& F5/A503	H1
		5 0	1 0				0000	1, 10101		

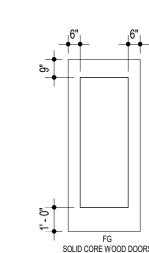


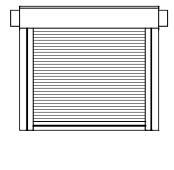


OVERHEAD BIFOLD HANGAR DOOR



ALUMINUM DOORS





OVERHEAD ROLLING DOOR SEE SCHED. FOR SIZE

NOTE: (UNLESS OTHERWISE NOTED)

1. ALL GLASS IN EXTERIOR DOORS TO BE G-3

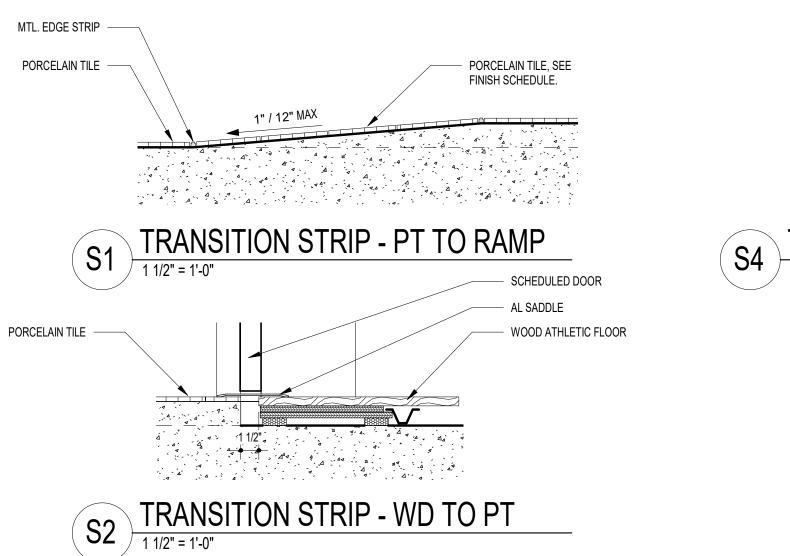
2. ALL GLASS IN INTERIOR DOORS TO BE G-1

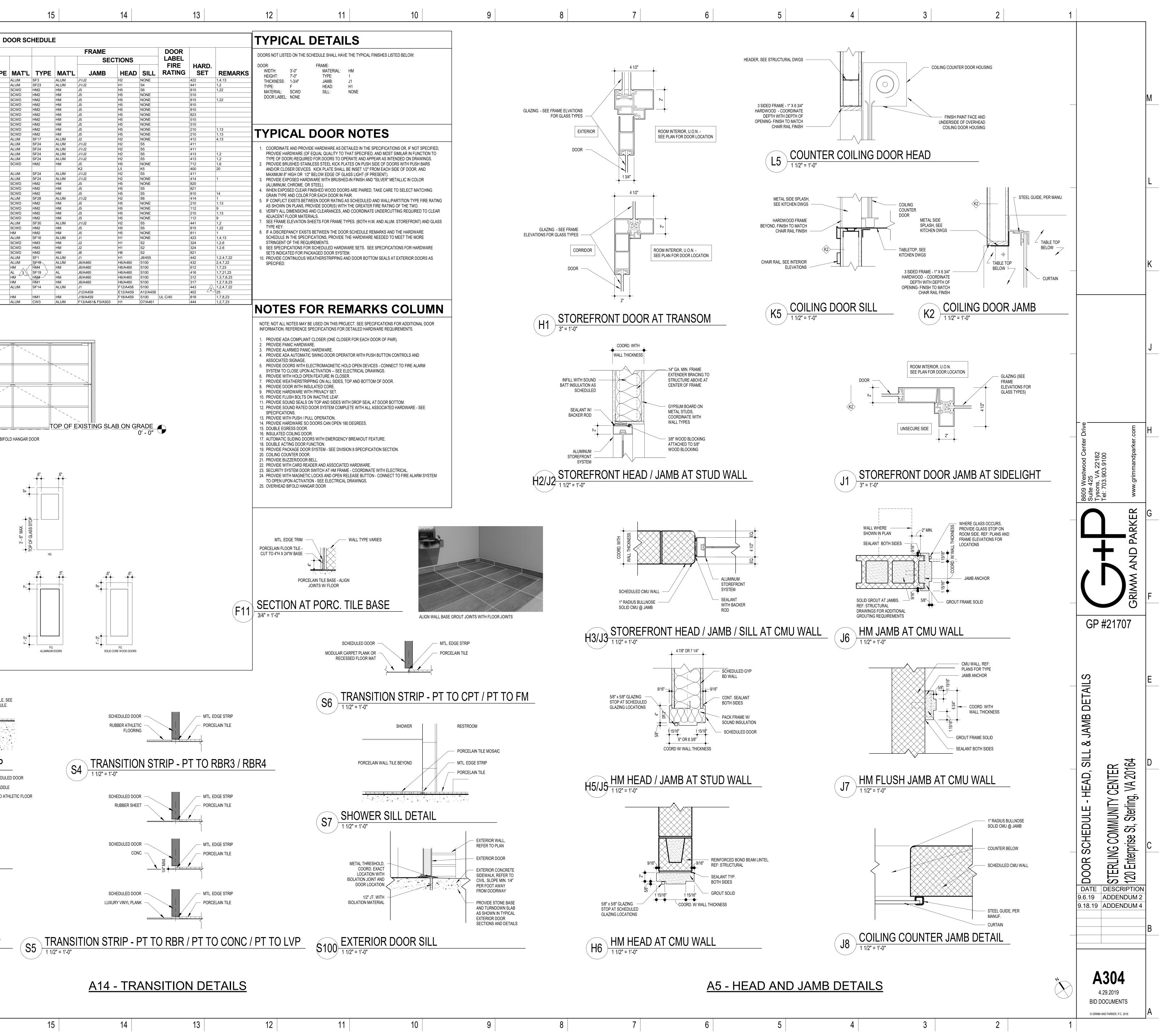


SCHEDULED DOOR

LUXURY VINYL PLANK

(S3) IRANS





18	17	16	15	14

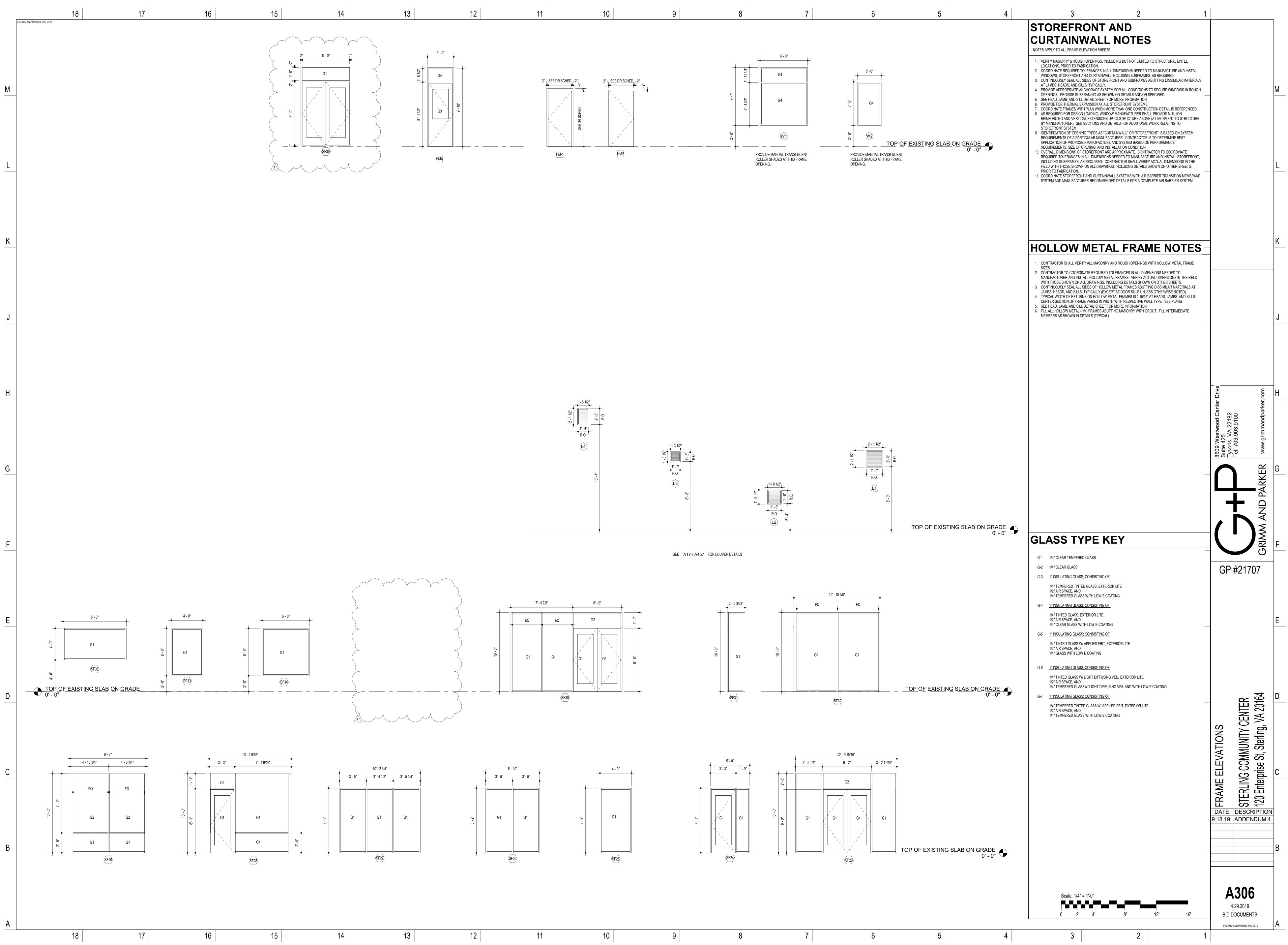
- MTL. EDGE STRIP

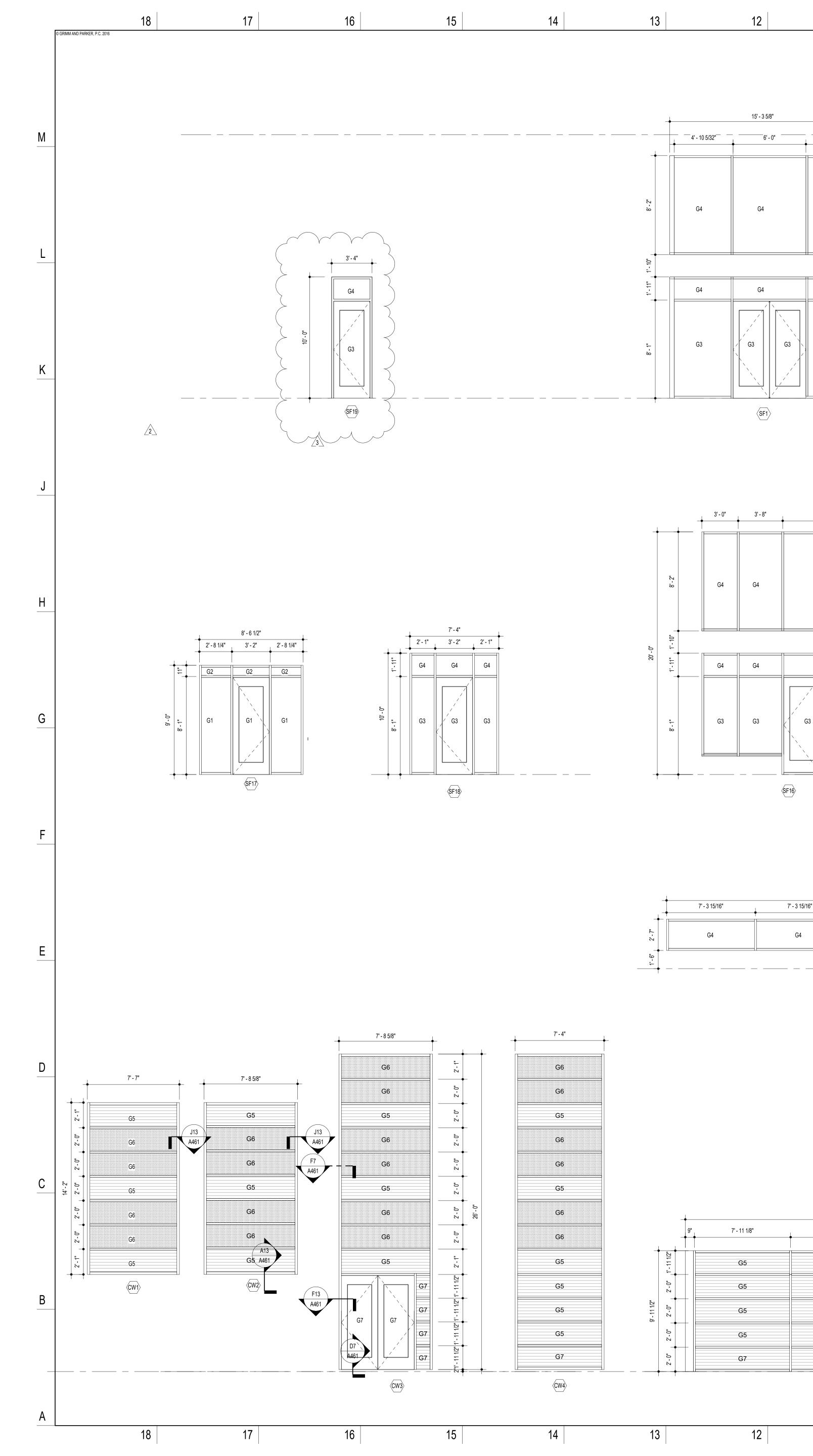
CARPET PLANK

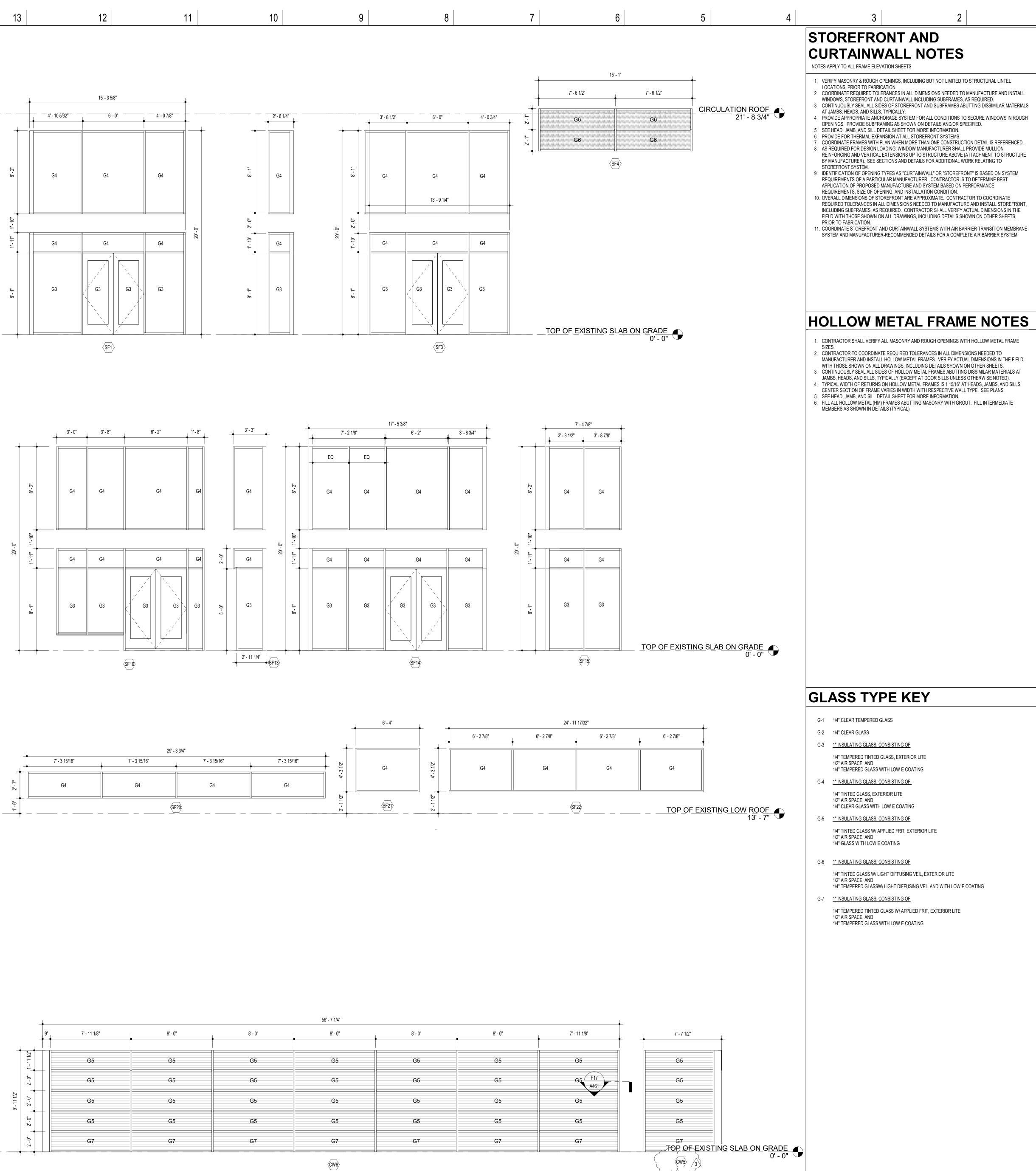
- MODULAR

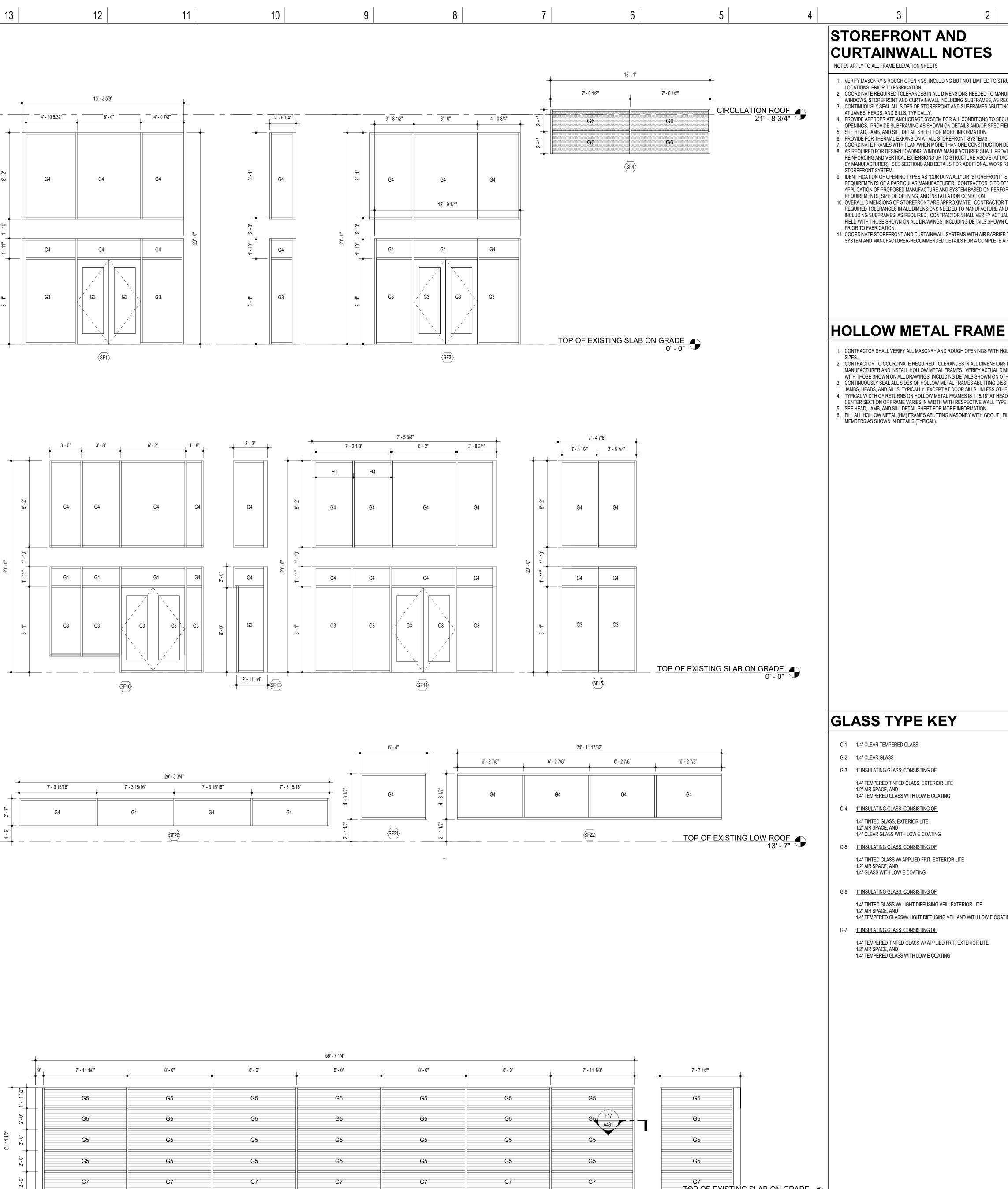
TRANSITION STRIP - CPT TO LVP

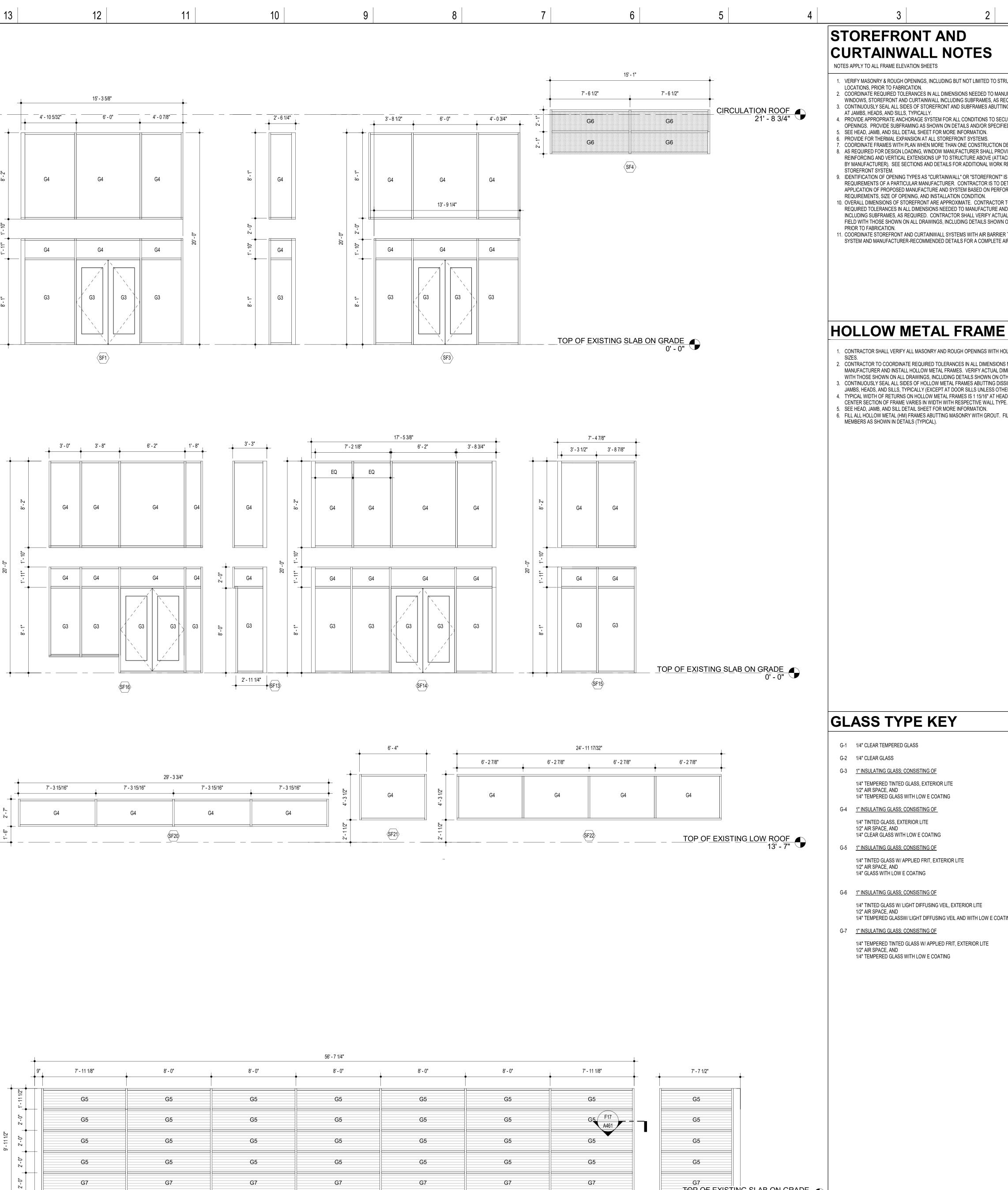
7	6	5	4	3	2











		•				56' - 7 1/4"		
	-	9"	7' - 11 1/8"	8' - 0"	8' - 0"	8' - 0"	8' - 0"	8' - 0"
_								
	1'-111/2"		G5	G5	G5	G5	G5	G5
	2'-0"		G5	G5	G5	G5	G5	G5
9' - 11 1/2"	2'-0"		G5	G5	G5	G5	G5	G5
	2'-0"		G5	G5	G5	G5	G5	G5
	2'-0"		G7	G7	G7	G7	G7	G7
	††							

CW6





	18	17	16	15	14	13
	© GRIMM AND PARKER, P.C. 2016	DTES				
	A. WO VIR	GINIA UNIFORM STATEWIDE BUIL	ITH REQUIREMENTS OF THE LOCA DING CODE, AND THE INTERNATIO		MEMBERS.	N SHALL BE MULITIPLIED BY TH
М	A. ALL A D B. SNO	N AND LOADING CRITERIA L CODES, REFERENCES AND STAI IFFERENT VERSION IS LISTED IN OW LOAD GROUND SNOW LOAD: (PG)	NDARDS REFERRED TO SHALL BE ⁻ THE BUILDING CODE. = 25.0 PSF	THE CURRENT VERSION UNLESS	CAP-TRUSSES	NG SHALL BE LAID BETWEEN T (DORMER FRAMING) AND OTHE OUSLY ON ROOF SHEATHING A
	2. 3. 4. 5. C. SEI 1. 2.	SNOW EXPOSURE FACTOR (CE): IMPORTANCE FACTOR (I): THERMAL FACTOR (CT): FLAT ROOF SNOW LOAD (PF): SMIC LOAD RISK CATEGORY: SEISMIC IMPORTANCE FACTOR (= 1.0 = 1.1 = 1.0 = 22 PSF = III I): = 1.25		STRUCTURAL O B. CONCRETE DE C. ALL CONCRETE	EINFORCING RK SHALL BE IN ACCORDANCE CONCRETE", ACI 318. AS MODIFI SIGN IS IN ACCORDANCE WITH E EXPOSED TO FREEZE THAW S PRESSIVE STRENGTH OF CON
L	4. 5. 6. 7. 8. 9. 10.	ANALYSIS PROCEDURE USED:	S _{DS} = 0.131, S _{D1} = 0. = C = A	083 SONRY SHEAR WALLS	 AGGREGAT AIR-ENTRAI 	ASTM C-150 TYPE IBSTITUTES: ASTM C-595 TYPE BY WEIGHT.)
K	1. 2. 3. 4.	ND LOAD ULTIMATE WIND SPEED: [RISK CATEGORY: EXPOSURE: INTERNAL PRESSURE COEFF: COMPONENT AND CLADDING: FOR WALL FOR ROOF	= 120 MPH = III (IBC 2012) = B = +/-0.18 = 31.6 PSF MAX = 54.1 PSF MAX		F. CONCRETE SH EMBEDDED ITE G. CONTRACTOR ENSURE THAT H. DEPRESSIONS	ANT: ASTM D-1190 POSED TO WEATHER SHALL BE ALL BE THOROUGHLY COMPAC MS AND INTO CORNERS OF FO SHALL BE RESPONSIBLE FOR A ALL ARE ACCURATELY LOCATE SHALL BE LOCATED FROM ARC PLUMBING AND ELECTRICAL WC
	1. 2. 3. 4.	OTHER DESIGN PRESS ARE SUBMITTED FOR OOR DESIGN MINIMUM LIVE LOAD OFFICES: ASSEMBLY STAIRS: MECHANICAL ROOM FLOORS: ROOFS:	S: = 50 PSF + 20 PAR = 100 PSF = 100 PSF = 150 PSF OR EQU	TITION IP WT. STORAGE: = 150 PSF ION TO APPLICABLE SNOW	PLUMBING AND INDICATED ON I. CONTRACTOR PRIOR TO POU J. FOUNDATION V CONCRETE PL/ PRIOR TO CAS	ELECTRICAL ENGINEERING AN STRUCTURAL PLANS. SHALL SUBMIT PROPOSED CON
J	1. 3 2. 3	31, 2019. DESIGN LATERAL PRESSURE FO 31, 2019. , , , ,			L. KEEP HEAVY C M. EXPOSED CONO SPACED. N. CONCRETE SLU O. ALL PRECAST C STRENGTH = 4,	NOT WALLS ARE BRACED. ONSTRUCTION EQUIPMENT AW RETE WALLS SHALL HAVE CON MP SHALL = 4" PLUS OR MINUS ONCRETE LINTELS SHALL BE AN 500 PSI, AND HAVE A MINIMUM D AS FOLLOWS FOR EACH 4" ON G SIZE DEPTH REINFO
H	1. 2. 3.	"NATIONAL DESIGN SPECIFICATIONAL DESIGN SPECIFICATIONAL DESIGN SPECIFICATIONAL DESIGN SOFTWOOD LUMBER	D POSTS SHALL BE HEM-FIR#1, WI		UP TO 4 4'1" TO 6 6'1" TO 8 8'1" TO 1 P. PROVIDE KEYED J CONCRETE JOINTS Q. GROUT SHALL BE 1	0" 8" 1 #4, T&B 3'0" 8" 1 #4, T& 3'0" 8" 1 #4, T& 3'0" 8" 1 #5, T& 0'0" 8" 1 #6, T& DINTS BETWEEN ALL NON-MON
G	2. 3.	LINTELS, JOISTS AND BEAMS [HE a) FLEXURE: b) SHEAR: c) MODULUS OF ELASTICITY POSTS [HEM FIR NO.1] a) COMPRESSION PARALLEL b) MODULUS OF ELASTICITY WALL STUDS [HEM FIR NO.1] a) FLEXURE: b) COMPRESSION PARALLEL c) MODULUS OF ELASTICITY	FB=975 PSI FV=150 PSI E=1,500,000 PSI TO GRAIN: FC"=1150 PSI E=1,400,000 PSI FB=675 PSI FB=675 PSI FC"=405 PSI		NOT BE PERMITTE R. FORM CONTRACTI ABRASIVE OR DIAM ACTION WILL NOT DEVELOPS RANDO POUR. S. REINFORCING BAR FOR DEFORMED A GRADE 60 KSI. WH T. SUBMIT SHOP DRA DRAWINGS UNDER	
F	PEF C. LAN PRO	R THE "AMERICAN PLYWOOD ASS /INATED VENEER LUMBER(LVL) S	HALL CONFORM TO "AMERICAN NA /INATED TIMBER" ANSI/SITC A190.1 ALL BE AS FOLLOWS" FB=2600 PSI FV=285 PSI	TIONAL STANDARD FOR WOOD	SCHEDULES, STIRI REINFORCEMENT. STRUCTURES. U. WELDED WIRE FAE STEEL WELDED WI EPOXY COAT WWF V. BARS MARKED CO SPLICES AS DEFIN	COMPLY WITH ACI 315 AND AC RUP SPACING, BENT BAR DIAGE INCLUDE SPECIAL REINFORCIN RE REINFORCEMENT, PLAIN, FO IN ACCORDANCE WITH ASTM A NTINUOUS (CONT) SHALL BE LA ED IN ACI 318, MINIMUM 50 BAR
	THE STA LOA TRU E. PRE	E MANUFACTURER FOR THE LOAI ANDARD FOR METAL-PLATE-CONI ADING CONDITIONS. REFER TO TH JSS CONFIGURATIONS. SHOP DR E- ENGINEERED WOOD TRUSSES	SSES AND TRUSS LATERAL BRACH DS GIVEN IN CONFORMANCE WITH NECTED WOOD TRUSS CONSTRUC HE ARCHITECTURAL DRAWINGS FO AWINFS SHALL INCLUDE A TRUSS I SHALL BE OF METAL PLATE CONN METAL PPLATE CONNECTED WOOL	ANSI/TPI 1 "NATIONAL DESIGN TION" AND ALL CODE REQUIRED R ALL TRUSS DIMESNIONS AND AYOUT DRAWING.	 W. BAR LENGTHS SHO PROVIDE STANDAI X. PROVIDE WWF 6 X LAP A MINIMUM OF Y. MINIMUM CONCRE SHALL BE AS FOLL 1. CONCRETE CA 2. FORMED CONC 	ST AGAINST EARTH = 3" RETE EXPOSED TO WEATHER (
E	F. PRI PEF REC TRU ME BUI SH/	RMANENT LATERAL BRACING. IN A COMMENDATIONS FOR HANDLING JSSES", AND TPI DSB "RECOMME TAL PLATE CONNECTED WOOD T ILDING STRUCTURE SHALL BE CL	SS SHOP DRAWINGS SHALL INDICA ACCORDANCE WITH TPI HIB "COMM , INSTALLING & BRACING OF META NDED DESIGN SPECIFICATION FOR RUSSES." LATERAL BRACING LOAD EARLY INDICATED ON SHOP DRAW PROFESSIONAL ENGINEER REGIS ECT FOR APPROVAL.	IENTARY AND IL PLATE CONNECTED I TEMPORARY BRACING OF IS IMPOSED ON TO THE INGS. ALL SHOP DRAWINGS	a) S b) E Z. PROVIDE CORNER F HORIZONTAL WAL AA. RIGID INSULATIO PROPERTIES: 1. EXTRUDED PO	
D	AS H. PRI DR/ ALL REC ENC	REQUIRED BY APPLICABLE CODE E-ENGINEERED TRUSS JOISTS SH AWINGS CONTAINING A JOIST LA` . TRUSSES. SHOP DRAWINGS SH/ QUIREMENTS. ALL SHOP DRAWIN	GINEER SHALL CONSIDER ALL APP S. IALL BE DESIGNED FOR THE LOADS YOUT INDICATING LOCATION AND E ALL INCLUDE BOTH TEMPORARY AI IGS SHALL BE SIGNED AND SEALEI IMONWEALTH OF VIRGINIA AND SH	S GIVEN. SUBMIT SHOP BRACING REQUIREMENTS FOR ND PERMANENT BRACING D BY A PROFESSIONAL	5. DENSITY: 2.4 P V. STRUCTURAL STE A. STRUCTURAL S "SPECIFICATIO FOURTEENTH F B. STRUCTURAL S	CF EL STEEL SHALL BE DESIGNED, FA N FOR STRUCTURAL STEEL BUI EDITION.
C	ASS 1. J. ANG WE K. PRG	SOCIATION." TIMBER & LUMBER CHOR RODS FOR WOOD FRAMING LDABILITY SUPPLEMENT, S1.	VITH REQUIREMENTS OF THE "WOO AWPA U1 G SHALL BE INACORDANCE WITH AS AMINATED VENEER VEAMS, 2" BEA	STM F-1554, GR WITH	 BALANCE O STRUCTUR, HOLLOW ST HIGH STREI ANCHOR RO SMOOTH, T SHEAR CON GALVANIZIN 	F STRUCTURAL STEEL SHAPES AST AL PIPE: AST RUCTURAL SECTIONS SQUARE NGTH BOLTS: AST DDS: ASTM F-1554 GR36 OR GR HREADED ROD: AST INECTORS: ASTM A-108, GRADE IG (HOT-DIP): AST
В	M. ALL ABC	. WALL SHEATHING SHALL BE CO OVE.	LL BE STAGGERED 6'-0" MINIMUM. NTINUOUS BETWEEN TOP PLAYES TENED TOGETHER WITH 16D NAILS ONE ROW STAGGERE TWO ROWS	@ 12" O.C. AS FOLLOWS	THE AISC MANU WITH ASTM A-3 GIVEN ON PLAN FILLER BEAMS LOAD FOR SPA MINIMUM NUME SHALL BE AS F	SECTIONS; MC, C, S, M & WF)
	3. O. PRO	GREATE THAN 13" DEEP DVIDE JOIST HANGERS WITH CAP <u>PPORTED MEMBER</u> 2 X 6 2 X 8 2 X 10 2 X 12	THREE ROWS ACITY AS FOLLOWS: <u>REQUIRED HANGER CAPACITY</u> 650 LBS 650 LBS 825 LBS 1000 LBS			0 = 4" - 6": 2 BOLTS HORIZONTAL 0 = 8" - 10": 2 BOLTS VERTICAL 0 = 12" - 15": 3 BOLTS VERTICAL 0 = 16" - 21": 4 BOLTS VERTICAL 0 = 24" 5 BOLTS VERTICAL 0 = 27" 6 BOLTS VERTICAL 0 = 30" 7 BOLTS VERTICAL 0 = 33" 8 BOLTS VERTICAL 0 = 36" 9 BOLTS VERTICAL
A	18	1-3/4" X 9-1/2" L.V.L. 1-3/4" X 11-7/8" L.V.L. 1-3/4" X 14" L.V.L. 17	3150 LBS 3925 LBS 4650 LBS 16	15		SOLTS VERTICAL. SOLT SPACING SHALL BE 3" O/C.

13	12	11	10	9	8	

IN SHALL BE MULITIPLIED BY THE NUMBER OF MEMBERS IN MULTIPLE FRAMING

IING SHALL BE LAID BETWEEN THE EDGES OF THE ROOFM CONTINUOUSLY UNDER ROOF (DORMER FRAMING) AND OTHER OVER-BUILDS. CAP-TRUSS LOWER CHORD SHALL JOUSLY ON ROOF SHEATHING AND BE SECURELY FASTENED TO ROOF TRUSSES

ORK SHALL BE IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR

CONCRETE", ACI 318. AS MODIFIED BY IBC CODE. ESIGN IS IN ACCORDANCE WITH "STRENGTH DESIGN METHOD."

E EXPOSED TO FREEZE THAW SHALL BE MINIMUM 4500 PSI WITH MAX W/C RATIO 0.45. MPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS (F'C) ELSEWHERE SHALL BE 4000

ASTM C-150 TYPE I/II UBSTITUTES: ASTM C-595 TYPE '1P' (LIMIT TO 25% MAXIMUM CEMENTITIOUS CONTENT BY WEIGHT.)

ASTM C-33 (NORMAL WEIGHT) TES: ASTM C-330 (STRUCTURAL LIGHTWEIGHT)

(POSED TO WEATHER SHALL BE AIR-ENTRAINED 6%, +/- 1.5%. IALL BE THOROUGHLY COMPACTED DURING PLACEMENT AND WORKED AROUND EMS AND INTO CORNERS OF FORMS.

SHALL BE RESPONSIBLE FOR ALL ITEMS EMBEDDED IN CONCRETE AND SHALL ALL ARE ACCURATELY LOCATED AND SECURE. S SHALL BE LOCATED FROM ARCHITECTURAL PLANS. PENETRATIONS FOR

PLUMBING AND ELECTRICAL WORK SHALL BE COORDINATED WITH MECHANICAL, D ELECTRICAL ENGINEERING AND ARCHITECTURAL DRAWINGS. WHERE NOT STRUCTURAL PLANS.

SHALL SUBMIT PROPOSED CONTRACTION JOINT LAYOUT DRAWING FOR REVIEW. JRING SLAB.

WALLS SHALL BE POURED IN LENGTHS NOT EXCEEDING 40 FEET. ABUTTING ACEMENT SHALL BE MADE NOT EARLIER THAN 48 HOURS. ROUGHEN WALL SURFACES TING ADJACENT SECTIONS.

FILL AGAINST WALLS UNTIL CONCRETE HAS ACHIEVED 75% OF 28 DAY STRENGTH NOT WALLS ARE BRACED. CONSTRUCTION EQUIPMENT AWAY FROM WALLS, DISTANCE OF WALL HEIGHT

CRETE WALLS SHALL HAVE CONTROL JOINTS AT 20 FEET ON CENTERS EQUALLY

JMP SHALL = 4" PLUS OR MINUS 1". CONCRETE LINTELS SHALL BE AIR-ENTRAINED, HAVE A MINIMUM 28-DAY COMPRESSIVE 500 PSI, AND HAVE A MINIMUM BEARING WIDTH OF 8". LINTELS SHALL BE TO AS FOLLOWS FOR FACH 4" OF WALL WIDTH.

ED AS FU	JLLUWS	FUR EAUT 4 OF WALL V
IG SIZE	DE	PTH REINFORCEMEN
1'0"	8"	1 #4, T&B
6'0"	8"	1 #4, T&B
8'0"	8"	1 #5, T&B
10'0"	8"	1 #6, T&B

OINTS BETWEEN ALL NON-MONOLITHIC INTERSECTING CONCRETE WALLS AND ALL

NON-SHRINKABLE, NON-METALLIC CONFORMING TO ASTM C1107, AND SHALL HAVE A RESSIVE STRENGTH AT 28 DAYS OF **7,000 PSI**. PREGROUTING OF BASE PLATES SHALL

ION JOINTS WITH AN EARLY ENTRY DRY-CUT SAW EQUIPPED WITH SHATTERPROOF MOND-RIMMED BLADES. CUT 1/8-INCH WIDE JOINTS INTO CONCRETE WHEN CUTTING TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE CONCRETE OM CONTRACTION CRACKS. BUT IN NO CASE LATER THAN 4 HOURS AFTER START OF

RS #3 THRU #11 SHALL BE DEFORMED AND IN ACCORDANCE WITH "SPECIFICATIONS AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT" ASTM A-615. IERE INDICATED, EPOXY COAT BARS IN ACCORDANCE WITH ASTM A-775. \WINGS FOR REINFORCEMENT TO THE **ARCHITECT** FOR APPROVAL. PREPARE R THE SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN DICTION DETAILING FABRICATING, BENDING, AND PLACING CONCRETE . COMPLY WITH ACI 315 AND ACI DETAILING MANUAL SP-66, SHOWING BAR RUP SPACING, BENT BAR DIAGRAMS, AND ARRANGEMENT OF CONCRETE

INCLUDE SPECIAL REINFORCING REQUIRED FOR OPENINGS THROUGH CONCRETE

BRIC NOTED "WWF" SHALL BE IN ACCORDANCE WITH "STANDARD SPECIFICATION FOR /IRE REINFORCEMENT, PLAIN, FOR CONCRETE" ASTM A-185. WHERE INDICATED, F IN ACCORDANCE WITH ASTM A-884.

DNTINUOUS (CONT) SHALL BE LAPPED IN ACCORDANCE WITH REQUIREMENTS FOR NED IN ACI 318, MINIMUM 50 BAR DIAMETERS, UNLESS INDICATED OTHERWISE REINFORCING SHALL BE SPLICED AS SHOWN IN COLUMN DETAILS. OWN ON PLAN DO NOT INCLUDE LENGTH OF HOOK WHERE A HOOK IS INDICATED.

RD HOOK UNLESS DETAILED OTHERWISE. . 6 W2.9 X W 2.9 IN TOP 1/3 OF ALL SLAB ON GRADE U.N.O. ALL MESH EDGES SHALL F TWO (2) SQUARES.

ETE COVER BETWEEN FACE OF REINFORCING BAR AND FACE OF CONCRETE .OWS: AST AGAINST EARTH = 3"

CRETE EXPOSED TO WEATHER OR EARTH = 2"

CRETE NOT EXPOSED TO WEATHER: SLABS AND JOISTS = 3/4"

BEAMS, COLUMNS = 1-1/2" BARS AT ALL WALL INTERSECTIONS WITH SIZE AND SPACING TO MATCH

_ REINFORCEMENT. ON SUPPORTING NEW CONCRETE SLABS SHALL HAVE THE FOLLOWING MINIMUM

DLYSTYRENE ASTM D6817

STRENGTH: 50 PSI (@10% DEFORMATION PER ASTM D-1621) ULUS: 1500 PSI

STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH IN FOR STRUCTURAL STEEL BUILDINGS AND THE "MANUAL OF STEEL CONSTRUCTION" EDITION.

STEEL: RAL "W" & "T" SHAPES: ASTM A-992 FY = 50,000 PSI OF STRUCTURAL STEEL SHAPES & PLATES: ASTM A-36 FY = 36,000 PSI

ASTM A-53B FY = 35.000 PSI

TRUCTURAL SECTIONS SQUARE & RECTANGULAR ASTM A-500B FY = 46,000 PSI ASTM A-325 CONN TYPE-N NGTH BOLTS:

DDS: ASTM F-1554 GR36 OR GR 55 WITH WELDABILITY SUPPLEMENT S1. HREADED ROD: ASTM A-36

NNECTORS: ASTM A-108, GRADES 1015 THRU 1020, HEADED STUD TYPE.

NG (HOT-DIP): ASTM A-123 SHALL BE DESIGNED IN ACCORDANCE WITH "BEAM CONNECTIONS" AS DESCRIBED IN UAL. CONNECTIONS SHALL BE MADE USING HIGH STRENGTH BOLTS IN ACCORDANCE 325. SHOP CONNECTIONS MAY BE WELDED IN LIEU OF BOLTING. WHERE REACTION NOT NS AND SECTIONS CONNECTIONS SHALL BE DESIGNED FOR A MINIMUM OF 60% FOR AND 70 % FOR GIRDERS OF MAXIMUM BEAM CARRYING CAPACITY UNDER UNIFORM AN SHOWN. SEE PLANS AND SECTIONS FOR OTHER THAN STANDARD CONNECTIONS. BER OF BOLTS IN EACH OF BEAM WEB CONNECTION AND TO SUPPORTING MEMBER OLLOWS:

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(SECTIONS; MC, C, S, M & WF) D = 4" - 6": 2 BOLTS HORIZONTA D = 8" - 10": 2 BOLTS VERTICAL D = 12" - 15": 3 BOLTS VERTICAL D = 16" - 21": 4 BOLTS VERTICAL D = 24" 5 BOLTS VERTICAL D = 27" 6 BOLTS VERTICAL

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- D. ALTERNATE CONNECTIONS TO THOSE SHOWN ON PLANS AND DETAILS WILL BE ALLOWED ONLY WITH THE APPROVAL OF THE ARCHITECT. IF SUCH APPROVAL IS GRANTED, CONNECTIONS, ETC. NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS (FABRICATOR'S REDESIGN) SHALL BE SUBMITTED WITH SHOP DRAWINGS UNDER THE SEAL OF LICENSURE OF THE FABRICATOR'S ENGINEER FOR THE LOCAL JURISDICTION.
- E. UNLESS OTHERWISE NOTED, A-325 BOLTS SHALL BE TIGHTENED TO THE "SNUG TIGHT" CONDITION DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. THE SNUG-TIGHT CONDITION MUST ENSURE THAT THE PLIES OF THE CONNECTED MATERIAL HAVE BEEN BROUGHT INTO FIRM CONTACT.
- F. WELDING SHALL CONFORM TO REQUIREMENTS OF THE "STRUCTURAL WELDING CODE" AWS D1.1-08. USE 70 KSI LOW-HYDROGEN ELECTRODES. G. GROUT UNDER BEAM BEARING PLATES AND COLUMN BASE PLATES SHALL BE NON-SHRINK, NON-
- METALLIC AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C = 7000 PSI. H. UNLESS GALVANIZED OR TO RECEIVE SPRAY-APPLIED FIREPROOFING, STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT AND ONE FIELD TOUCH-UP COAT OF RUST-INHIBITING PAINT AFTER ERECTION.
- I. ALL STEEL LINTELS SHALL HAVE A MINIMUM OF 8" BEARING AND SHALL BE PROPORTIONED AS FOLLOWS FOR EACH 4" OF WALL WIDTH. <u>OPENING SIZE</u>

UP TO 4'-0"	L 4 X 3-1/2 X 5/16
4'-1" TO 5'-0"	L 5 X 3-1/2 X 5/16
5'-1" TO 6'-0"	L 5 X 3-1/2 X 3/8

- J. NO FABRICATION SHALL PROCEED PRIOR TO SHOP DRAWINGS APPROVAL K. NO OPENINGS IN BEAMS OR COLUMNS ARE PERMITTED WITHOUT THE APPROVAL OF THE ARCHITECT. L. SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.
- M. ALL EXTERIOR EXPOSED (INCLUDING IN EXTERIOR WALL WYTHE'S) STRUCTURAL STEEL SHAPES, PLATES AND BOLTS SHALL BE HOT DIPPED GALVANIZED TO ASTM A123 GRADE Z350. TOUCH UP ALL DAMAGED AREAS, INCLUDING FIELD WELDS
- N. DEVELOPMENT OF STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUPERVISED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN PROJECT JURISDICTION AND SHALL INCLUDE DETAILS FOR APPLICATION AND ASSEMBLY OF ALL STRUCTURAL MEMBERS. INCLUDE DETAILS OF CUTS, CONNECTIONS, HOLES, AND OTHER PERTINENT DATA. INDICATE WELDS BY STANDARD AWS 2.1 SYMBOLS SHOWING SIZE, LENGTH AND TYPE OF EACH WELD. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.
- O. ALL MISCELLANEOUS STEEL CONNECTIONS SHALL BE WELDED ALL AROUND WITH ONE-QUARTER-INCH FILLET WELD UNLESS OTHERWISE NOTED, EXCEPT FOR SLOTTED CONNECTIONS.
- P. HANDRAILS, GUARDRAILS, AND LADDERS SHALL BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR THE MOST RESTRICTIVE OF THE LOADS GIVEN AND APPLICABLE DESIGN CODE. IN NO CASE SHALL TOTAL COMBINED POST/RAILING DEFLECTION EXCEED 0.75", THE LIMITS IN ASTM E985 OR LIMITATION OF MATERIAL USED AS INFILL, WHICHEVER IS MORE RESTRICTIVE. SUBMIT SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA TO THE ARCHITECT INDICATING ALL MEMBERS AND CONNECTIONS.
- Q. PROVIDE A MINIMUM BEARING LENGTH OF 6" FOR ALL BEAMS SUPPORTED ON MASONRY. R. FULL PENETRATION WELDS SHALL BE MADE AGAINST A 1/8" X 1" BACKER PLATE TACK WELDED IN PLACE BELOW THE WELD. PENETRATION WELDS SHALL BE EQUIVALENT IN DEPTH AND LENGTH TO THE PARTS JOINED.
- S. CONTRACTOR SHALL NOT RELEASE BEAMS OR DIAGONAL BRACING FROM HOISTING CABLES UNTIL ALL MEMBERS ARE SECURE WITH AT LEAST (2) BOLTS. ALL FIELD WELDED CONNECTIONS SHALL BE COMPLETED BEFORE RELEASING CABLES.
- T. WHERE DOUBLE BEAM CONNECTIONS OCCUR ON EACH SIDE OF A COLUMN WEB OR TO THE WEB OF A VIII. MASONRY BEAM OVER A COLUMN, THERE MUST BE AT LEAST ONE BOLT WITH A WRENCH-TIGHT NUT SECURING THE FIRST BEAM CONNECTED AT ALL TIMES.
- VI. POST- INSTALLED ANCHORS
- A. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. OR AN EQUIVALENT MANUFACTURER APPROVED BY THE ARCHITECT. B. ANCHORAGE TO CONCRETE:
- a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE: 1. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD (OR EQUAL) PER ICC ESR-3187 FOR FAST CURE APPLICATIONS
- b) MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE: 1. HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917, DEWALT/POWERS POWER-STUD+SD2 EXPANSION ANCHOR PER ICC ESR-2502, OR EQUAL).
- 1. REBAR DOWELING INTO CONCRETE: a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE: 1. HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-2322, DEWALT/POWERS PURE 110+ EPOXY ADHESIVE ANCHORING
- SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3298, (OR EQUAL). 2. ANCHORAGE TO SOLID GROUTED MASONRY: a. ADHESIVE ANCHORS USE:
- HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM, DEWALT/POWERS AC100+GOLD MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3200, (OR EQUAL.). 2. STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD, ASTM
- GRADE 36 STANDARD THREADED ROD, OR CONTINUOUSLY DEFORMED STEEL REBAR.
- 4. ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY: a. ADHESIVE ANCHORS USE:
- 1. HILTI HIT-HY 70 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3442, DEWALT/POWERS AC100+GOLD MASONRY ADHESIVE ANCHORING SYSTEM PER ICC
- ESR-3200, (OR EQUAL) 2. STEEL ANCHOR ELEMENT SHALL BE HILTI HAS-E CONTINUOUSLY THREADED ROD, ASTM GRADE 36 STANDARD THREADED ROD, OR CONTINUOUSLY DEFORMED STEEL REBAR.
- 3. THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION
- B. SUBSTITUTION REQUESTS FOR ALTERNATE POST INSTALLED ANCHOR PRODUCTS MUST BE APPROVED IN WRITING BY THE **ARCHITECT** PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. C. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR
- PACKAGING D. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFI SYSTEM (OR EQUAL)
- E. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE **ARCHITECT** MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
- F. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS
- G. CONCRETE AT TIME OF ANCHOR INSTALLATION SHALL HAVE A MINIMUM AGE OF 21 DAYS AND A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI. H. CONCRETE SHALL BE AT LEAST 50 DEGREES AT THE TIME OF ANCHOR INSTALLATION.
- CONCRETE AT INDOOR ANCHOR APPLICATIONS SHALL BE DRY AT THE TIME OF ANCHOR INSTALLATION. J. EXISTING REINFORCING BARS, EMBEDED CONDUIT OR OTHER ITEMS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH PROPOSED ANCHOR LOCATIONS. THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL LOCATE THE POSITION OF THE REINFORCING BARS OR ANY OTHER EMBEDDED ITEMS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN GPR, X-RAY PACHOMETER, CHIPPING OR OTHER MEANS. MARK THE EXISTING REBAR OR OTHER ITEMS LOCATIONS AND THE PROPOSED ANCHOR LOCATIONS ON THE CONCRETE STRUCTURE AND NOTIFY THE **ARCHITECT** IF THERE APPEARS TO BE A CONFLICT. EXERCISE CARE IN CORING OR DRILLING TO AVOID DAMAGING EXISTING REINFORCING OR EMBEDDED ITEMS BY FIRST DRILLING A SMALL PILOT HOLE. NOTIFY THE **ARCHITECT** IF REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED DURING DRILLING. TAKE PRECAUTIONS AS NECESSARY TO ALSO AVOID DAMAGING ANY
- ACTIVE ELECTRICAL AND TELECOMMUNICATIONS CONDUIT. K. MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USEIN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC 193 FOR CRACED, UNCRACKED AND SEISMIC CONCRETE RECOGNITION
- L. ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED, UNCRACKED AND SEISMIC CONCRETE RECOGNITION.
- M. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL TO VERTICAL OVERHEAD ORIENTATIONS TO SUPPORT SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI/CRSI (ACI 318-11 D.9.2.2). PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.
- N. PROVIDE SPECIAL INSPECTION FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE BUILDING CODE AND PER THE CURRENT ICC-ES REPORT (IBC 2012 TABLE 1705.3 NOTE B).

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VII. OPEN WEB STEEL JOISTS (ALSO REFERRED TO AS TRUSSES)

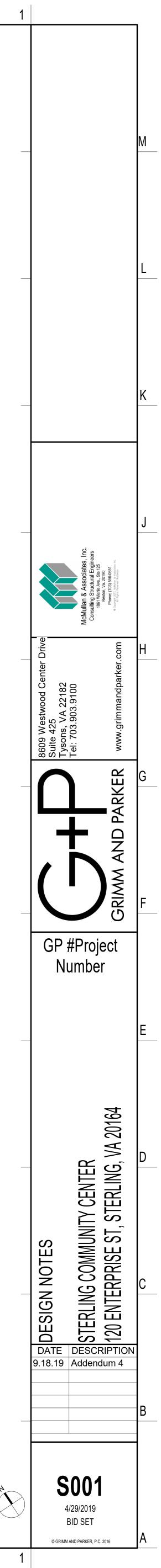
- A. STEEL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH SPECIFICATIONS OF THE STEEL JOIST INSTITUTE. HORIZONTAL JOIST BRIDGING SHALL BE INSTALLED PER SJI REQUIREMENTS.
- B. STEEL JOISTS AND JOIST GIRDERS SHALL BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR THE LOADS GIVEN IN ACCORDANCE WITH THE LATEST EDITION OF THE STEEL JOIST INSTITUTE'S STANDARD SPECIFICATIONS, LOAD TABLES, AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS. SUBMIT BAR JOISTS SHOP DRAWINGS PREPARED UNDER AND BEARING THE STAMP OF A STRUCTURAL ENGINEER REGISTERED IN THE PROJECT JURISDICTION.
- C. SPECIAL JOISTS (NOTED "SP JST" ON PLAN) HAVE SPECIAL DESIGN LOAD REQUIREMENTS. SEE PLANS AND DETAILS FOR LOADING DIAGRAMS. JOIST GIRDERS (NOTED 48G-8N-8.8K) INDICATE JOIST GIRDER DEPTH, NUMBER OF NODES AND LOAD AT EACH UPPER PANEL POINT, IN KIPS
- D. PROVIDE BRIDGING ANCHORS FOR ENDS OF BRIDGING LINES TERMINATING AT WALLS OR BEAMS. E. BRIDGING AND ANCHORING SHALL BE SECURED IN PLACE PRIOR TO THE APPLICATION OF ANY CONSTRUCTION LOADS. ANY TEMPORARY LOADS SHALL BE DISTRIBUTED SO THAT THE LIVE LOAD CAPACITY OF ANY JOIST IS NOT EXCEEDED.
- F. BRIDGING SHOWN ON PLAN IS MINIMUM. PROVIDE BRIDGING IN ACCORDANCE WITH SPECIFICATIONS OF THE SJI. G. ROOF JOISTS ARE SUBJECT TO UPLIFT FORCES, MANUFACTURER SHALL CONSIDER A NET UPLIFT
- FORCE OF **10** PSF IN THE DESIGN AND SHALL PROVIDE BOTTOM CHORD BRIDGING ADJACENT THE FIRST BOTTOM CHORD PANEL POINT, MINIMUM.
- H. WHERE ROOFTOP UNITS OR SUSPENDED MECHANICAL EQUIPMENT AND PIPING ARE HUNG FROM JOISTS, PROVIDE SUCH SUPPORT DIRECTLY TO JOIST PANEL POINT UNLESS JOIST TOP AND/OR BOTTOM CHORD IS DESIGNED BY THE JOIST MANUFACTURER FOR INTERPANEL LOADING. ALL CONCENTRATED LOADS ON OPEN WEB STEEL JOISTS EXCEEDING 100 LBS SHALL BE LOCATED AT JOIST PANEL POINTS. THE GENERAL CONTRACTOR SHALL LOCATE ALL JOISTS TO CARRY POINT LOADS IN EXCESS OF 500 LBS AND PROVIDE THIS INFORMATION TO THE JOIST MANUFACTURER FOR DESIGN.
- I. JOISTS SHALL RECEIVE ONE SHOP COAT OF RUST INHIBITIVE PRIMER. UNLESS SHOWN OTHERWISE IN SPECIFICATIONS, PROVIDE MANUFACTURER'S STANDARD SHOP PRIMER.
- J. WHERE STRUT JOISTS ARE SPECIFIED IN A SYSTEM THAT INCLUDED BAR JOIST AND CONCRETE FILL THE BOTTOM CHORD EXTENSION SHALL NOT BE WELDED UNTIL AFTER THE CONCRETE IS POURED. K. FURNISH ALL REQUIRED JOIST BEARING AND CONNECTION ACCESSORIES TO SUPPORT SLOPED
- JOISTS.
- VIII. STEEL STAIRS A. ALL STEEL STAIR STRINGERS SHALL BE CONTINUOUS MC 12 X 10.6 MINIMUM, UNLESS NOTED
- OTHERWISE. STRINGERS SHALL BE MITERED AND WELDED WITH FULL PENETRATION WELDS B. PLATFORMS SHALL HAVE MINIMUM 10-GAUGE FLOOR PLATES WITH L 2 X 2 X 1/4 MINIMUM, SHELF
- ANGLES ON ALL UNSUPPORTED SIDES. PLATFORM PLATES SHALL HAVE SUPPORTS SPACED AT 18" O.C. MAXIMUM. SUPPORTS SHALL BE L 2-1/2 X 2-1/2 X 1.4 OR WT 3 X 4.25 MINIMUM. C. TREAD AND RISER PLATES SHALL BE 10-GAUGE MINIMUM.
- D. ALL STEEL STAIRS ARE TO BE PRE-ENGINEERED BY THE CONTRACTOR'S FABRICATOR FOR THE LOADS GIVEN AND ALL APPLICABLE CODES WITH SHOP DRAWINGS STAMPED BY THE MANUFACTURER'S REGISTERED IN THE COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER AND SUBMITTED TO THE ARCHITECT FOR APPROVAL.

- A. MASONRY SHALL BE DESIGNED, MANUFACTURED AND ERECTED IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", (ACI 530/ASCE 5/TMS 402); AND "SPECIFICATIONS FOR MASONRY STRUCTURES", (ACI 530.1/ASCE 6/TMS 602). B. MASONRY INSPECTION FOR QUALITY ASSURANCE SHALL BE LEVEL C AS DEFINED IN THE MASONRY
- SPECIFICATIONS.
- C. UNIT SPECIFICATIONS: 1. LOAD-BEARING, HOLLOW OR SOLID CMU: ASTM C- 90 LIGHTWEIGHT
- 2. MIN COMPR STRENGTH ON NET AREA = 1,900 PSI
- . SOLID CLAY OR SHALE FACING BRICK: ASTM C-216
- 4. MIN COMPR STRENGTH GROSS AREA TYPE "SW": = 3.000 PS
- 5. MIN COMPR STRENGTH GROSS AREA TYPE "MW": = 2,500 PSI USE TYPE "SW" WHERE UNITS ARE EXPOSED TO WEATHER OR ARE BELOW GROUND SURFACE.
- OTHER AREAS SHALL BE UNITS TYPE "MW" 7. MORTAR TYPE "M" OR "N": ASTM C-270
- 8. USE TYPE "N" WHERE EXPOSED TO WEATHER AND TYPE M BELOW GROUND SURFACE. ALL OTHER AREAS SHALL BE OF TYPE "M". GROUT FOR BEAM BEARING AND COLUMN BASE PLATES
- NON-SHRINK NON METALLIC ASTM C-1107 GRADE "C", F'C = 5,000 PSI.
- 10. GROUT FOR FILLING CELLS OF MASONRY & BOND BEAMS:
- a. ASTM C-476 COARSE. F'C = 2,500 PSI D. DESIGN MINIMUM STRENGTH F'M=1500 PSI
- E. WYTHE'S OF MASONRY WALLS SHALL BE BONDED TOGETHER EACH 16" VERTICALLY (TWO BLOCK COURSES) USING CONTINUOUS HORIZONTAL WALL REINFORCING. F. CONTINUOUS HORIZONTAL WALL REINFORCING SHALL BE TRUSS TYPE, BUTT WELDED SIDE AND WEB
- BARS OF GALVANIZED W1.7 WIRES. PROVIDE PREFABRICATED CORNERS AND TEES FOR WALL INTERSECTIONS. LAP 6" AT SPLICES.
- G. PROVIDE MASONRY ANCHORS AT 16" O.C. SET ON COURSING AND ATTACHED TO ALL BEAMS AND COLUMNS EMBEDDED IN MASONRY. H. FILL MASONRY UNIT CELLS WITH COARSE GROUT WHERE CELLS CONTAIN REINFORCEMENT
- I. PROVIDE BOND BEAM COURSE WHERE SHOWN. BOND BEAM SHALL BE 8" DEEP MINIMUM U.N.O. FILLED WITH COARSE GROUT AND REINFORCED WITH 2 #4 U.N.O. CONTINUOUS HORIZONTAL REINFORCING BARS, UNLESS SHOWN OTHERWISE.
- J. PROVIDE ADEQUATE BRACING AND SUPPORT FOR MASONRY WORK UNTIL PERMANENT CONSTRUCTION IS IN PLACE.

K. WHERE REQUIRED FOR MASONRY OPENINGS, BUT NOT SHOWN ON PLAN, PROVIDE PRECAST CONCRETE LINTELS AS FOLLOWS:

" WALL	6" X 8" UNIT	2#4 T&B UP TO 6'-0"	
" WALL	8" X 8" UNIT	2#5 T&B UP TO 8'-0"	
0" WALL	10" X 8" UNIT	2#6 T&B UP TO 8'-0"	
2" WALL	12" X 8" UNIT	3#5 T&B UP TO 8'-0"	
	IN ALL PRECAS	STINTELS MAX CU	F

- PROVIDE #2 TIES @ 8" O.C. IN ALL PRECAST LINTELS. MAX CLEAR SPAN 8'-0". PROVIDE MINIMUM 8" 100% SOLID MASONRY BEARING EA END. PLACE NO OPENINGS ABOVE LINTEL WITHIN A HEIGHT LESS THAN THE WIDTH OF THE CLEAR OPENING BELOW LINTEL, UNLESS SHOWN OR APPROVED BY THE ENGINEER
- ... PROVIDE #5 CORNER BARS AT ALL BOND BEAM CORNERS TO LAP A MINIMUM OF 40 BAR DIAMETERS M. PROVIDE ADJUSTABLE MASONRY ANCHORS TO STEEL BEAMS AND COLUMNS WHICH ARE EMBEDDED IN MASONRY AT 2'-0" O.C. MAXIMUM. N. INSPECTION HOLES SHALL BE DRILLED AT THE BOTTOM INSIDE FACE OF ALL BLOCK TO VERIFY THAT
- THE GROUT HAS FILLED ALL MASONRY VOIDS. HOLES SHALL BE 2" IN DIAMETER SPACED AT 4'-0" O.C. (MAX.) HORIZONTALLY
- O. PROVIDE TWO (2) COURSES OF SOLID CMU PER ASTM C 90 OR GROUT-FILLED CMU BENEATH ALL BEAM AND HEADER BEARING POINTS. P. PROVIDE DOWELS WITH STANDARD BAR HOOK IN FOOTING TO MATCH DIAMETER AND SPACING OF
- VERTICAL REINFORCEMENT. MINIMUM SPLICE LENGTH = 24" Q BRICK TIES SHALL BE ATTACHED TO ALL BRICK VENEER SPACED AT 24" O.C. HORIZONTALLY AND 16" O.C. VERTICALLY (MAXIMUM). CORRUGATED TIES ARE PROHIBITED FOR WALLS WITH CAVITIES OVER 1
- TIES SHALL EXTEND 3" INTO BRICK AND/OR CMU. R. VERTICAL AND HORIZONTAL REINFORCING BARS SHALL BE SECURELY HELD IN PROPER ALIGNMENT AND POSITION DURING GROUTING OPERATIONS BY USING HOT DIPPED GALVANIZED REBAR POSITIONERS.



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Μ	A. B. C.	INSTITUTE'S "DESIGN MANUAL FOR PROPERTIES SHALL BE COMPUTED "DESIGN OF COLD-FORMED STEEL METAL ROOF DECKING SHALL BE O YIELD STRESS = 33 KSI. GALVANIZI DEPTH AND GAUGE SHALL BE AS IN COMPOSITE METAL FLOOR DECKIN	COMPOSITE DECKS, FORM D O USING THE LATEST EDITION STRUCTURAL MEMBERS." GALVANIZED STEEL, CONFORM NG SHALL CONFORM TO ASTM NDICATED ON PLANS. NG SHALL BE GALVANIZED STM KSI. GALVANIZING SHALL COM ALL BE AS INDICATED ON PLA GE, DEPTH = 3". VELDED TO STRUCTURAL STE T. SIDE LAPS FOR METAL DEC	OF AISI SPECIFICATION FOR THE MING TO ASTM A653 WITH MINIMUM M A924 COATING CLASS G60. DECK EEL, CONFORMING TO ASTM A653 NFORM TO ASTM A924 COATING CLASS NS.	
L	F. G. H.	ALL 3 INCH DECKING SHALL BE WE TO ACHIEVE A 24/4 LAYOUT.SIDE L/ 10 TEK SCREWS PER SPAN. ALL EPICORE ROOF DECK (ER2RA & X-ENP-19 L15 (OR EQUAL) TO ACHIE SCREWS AT 18 INCHES ON CENTER PROVIDE: WELDED WIRE, FABRIC F 6 - W2.9 X W2.9 CONDUIT SHALL NOT BE EMBEDDE	LDED TO STRUCTURAL STEEL APS FOR METAL DECK DIAPHF & ER3.5A) SHALL BE FASTENE EVE A 24/4 LAYOUT. SIDE LAPS R REINFORCEMENT IN ALL CONC ED IN CONCRETE FILL ON MET	CRETE FILL ON METAL DECK - WWF 6 X	
K	Sł J. K. L. M	HALL BEAR AT LEAST 2" ON STEEL OF FURNISH AND INSTALL CONTINUOU OPENINGS WHERE NO STEEL ANG PROVIDE COMPOSITE DECK WHER PROVIDE SUPPLEMENTAL FRAMING SUPPORT OF METAL DECK WHERE PROVIDE ADDITIONAL CONCRETE, FLOOR BEAMS AND DECK DURING SUPPORTS FOR DECK OPENINGS S OVER THE OPENING. DECK SHALL	N STEEL SUPPORTS. JS CLOSURES AND POUR STO LE IS SPECIFIED. G L4 X 4 X 3/8 OR TS 2 1/2 X 2 1 NOT SHOWN ON DRAWINGS, WHICH MAY BE REQUIRED AS PLACEMENT OF CONCRETE. SHALL BE FABRICATED SO TH, BE CUT FROM THE OPENING I	DPS AT DECK ENDS, EDGES AND ED. 1/2 X ¼ AS NECESSARY FOR THE UNLESS OTHERWISE INDICATED.	
J	А.	DRAWINGS UNDER THE SEAL AND	EEL INSTITUTE "SPECIFICATIO AS-01 WITH 2004 SUPPLEMEN FOR LIGHTGAGE FRAMING AN SIGNATURE OF AN ENGINEER SIGN LIGHT GAGE MEMBERS STITUTE, "LIGHT GAGE STRUC SION SHALL ALSO INCLUDE: ELEVATIONS. IG REQUIRED SCREWS/WELD:	ON FOR DESIGN OF COLD-FORMED IT. D SUBMIT CALCULATIONS AND SHOP & LICENSED TO PRACTICE IN THE IN ACCORDANCE WITH MANUAL OF TURAL STEEL FRAMING SYSTEM	
Η	D. E. F. G.	5. BRIDGING LOCATIONS. LIGHTGAGE FRAMING MEMBERS: S ALL WELDING SHALL BE IN ACCORI STRUCTURAL WELDING CODE FOR WELDED CONNECTIONS. ALL WELE ALL AXIALLY LOADED STUDS SHAL NO SPLICES IN LOADED STUDS ARI WALL STUD BRACING SHALL BE INS HEIGHT IN NON-LOAD BEARING PAI	DANCE WITH THE "AMERICAN SHEET STEEL." MIN. 14 GAUG OS SHALL BE TOUCHED UP WI L HAVE FULL BEARING INSIDE E PERMITTED. STALLED AT THIRD POINTS IN RTITIONS. ERS SHALL BE PROVIDED AT	GE MEMBERS SHALL BE USED AT TH ZINC RICH PAINT. TRACK WEB PRIOR TO ATTACHMENT. ALL BEARING PARTITIONS; AT MID- ALL JOIST HEADER BEARING POINTS.	
G	I.	ROTATION. ALL LIGHT GAGE FRAMING SHALL E	BE DESIGNED BY THE MANUFA RTING MASONRY VENEER SHA PREPARED UNDER AND STAM TERED IN THE PROJECT JURIS CING: = 24" MAX DEFL = $L/3$ " = 3 5/8" " = 4"	ACTURER'S ENGINEER FOR THE CODE ALL LIMIT LATERAL DEFLECTION TO IPED BY THE CONTRACTOR'S DICTION SUBMITTED TO THE	
F	A. B. C.	20'-1" TO 26'-0 GENERAL INFORMATION SHOWN REGARDING OBSERVATIONS OR FROM DRAWIN ASSUMED TYPICAL WITH OBSERVE MEASURE AND PROVIDE ALL DIMEI TO CONSTRUCTION AND THE SUBN IMMEDIATELY OF ANY DISCREPANG PRIOR TO THE START OF WORK SO DELAYING THE PROJECT SCHEDUL DETAILS, SECTIONS, AND NOTES S SHALL APPLY TO SIMILAR CONDITION SHOP DRAWINGS SUBMITTED TO A	" = 8" EXISTING CONDITIONS HAS IGS PROVIDED BY THE OWNER DEXISTING CONDITIONS. NSIONS, ELEVATIONS AND CO MISSION OF SHOP DRAWINGS CIES. VERIFICATION AND NOT D THAT ANY NECESSARY CHAI E. HOWN ON THESE DRAWINGS ONS ELSEWHERE UNLESS OT ACHITECT SHALL BEAR THE (R. AREAS NOT VISIBLE HAVE BEEN ONDITIONS AT THE JOB SITE PRIOR , AND NOTIFY THE ARCHITECT IFICATION SHALL PROCEED 2 WEEKS NGES CAN BE MADE WITHOUT ARE INTENDED TO BE TYPICAL AND THERWISE SHOWN OR NOTED.	
E	F. G. H. I.	TO AND COORDINATION WITH CON FABRICATION SHALL PROCEED ON DO NOT REPRODUCE ANY PORTION INSPECTION REPORTS AND MATER IN A TIMELY MANNER SUCH THAT ON MEANS AND METHODS OF CONSTR FILL ALL FLOOR AND ROOF OPENIN OPENINGS ARE TO BE ABANDONED QUANTITY OF EXISTING OPENINGS SIZE OF EXISTING SYSTEM COMPO WHERE THE CONTRACTOR IS REQU SUBMIT CALCULATIONS, AND WHEI	TRACT DOCUMENTS. ILY AFTER SHOP DRAWING AP N OF CONTRACT DOCUMENTS RIALS TESTING REPORTS SHA CONSTRUCTION DELAY WILL E RUCTION ARE THE SOLE RESP NGS WHERE EXISTING MECHA D. SEE APPROPRIATE DEMOLT S. ASSUME ALL EXISTING OPEN INENT TO BE REMOVED. UIRED TO ENGAGE A PROFES RE THE PROFESSIONAL ENGI	PPROVAL BY THE ENGINEER. S IN THE SHOP DRAWINGS. LL BE SUBMITTED TO THE ENGINEER BE AVOIDED. PONSIBILITY OF THE CONTRACTOR. NICAL, ELECTRICAL OR PLUMBING TION DRAWINGS FOR LOCATION AND NINGS ARE 6 INCHES WIDER THAN SIONAL ENGINEER TO DESIGN AND NEER PREPARES THE	
D	A. B.	DRAWINGS DO NOT SHOW ALL OPE SLEEVES MAY BE REQUIRED BY OT TYPICAL DETAILS AND/OR THE CRI NOT SHOWN ON THE STRUCTURAL ALL NEW OPENINGS THROUGH EXI	STRUCTURAL ENGINEERING (ING CONCRETE REPAIRS) ELY REMOVING EXISTING COL CTOR. ALL OPENING SIZES AND LOC ENINGS REQUIRED. ADDITION THER DISCIPLINES AND SHALL TERIA INCIDATED ON THE DR/ DRAWINGS MUST BE APPRO STING STRUCTURE SHALL BE	COMMERICAL SYSTEM IN COMMON NSTRUCTION SHALL BE THE SOLE ATIONS WITH OTHER DISCIPLINES. THE AL OPENINGS, BLOCKOUTS AND BE CONSTRUCTED USING THE AWINGS. OPENINGS REQUIRED BUT VED BY THE STRUCTURAL ENGINEER. E LOCATED AND MARKED BY THE	
С	E. F.	OF THE REINFORCEMENT. DO NOT WHERE NEW OPENINGS IN EXISTIN DEMOLITION CONTRACTOR SHALL PRIOR TO DEMOLITION. SAW-CUT A ALL REQUIRED NEW STRUCTURAL CUTTING SHALL BE STRAIGHT AND BEYOND THE HOLES CORED AT TH THE EXISTING BUILDINGS WILL NO AND ACTIVITIES WITH THE ARCHIT	CUT OPENINGS UNTIL APPRO IG CONCRETE SLAB OR WALL CORE HOLES AT THE OUTSID AND DEMOLISH SLAB OR WALL FRAMING AND/OR REINFORCH SHALL NOT EXTEND INTO EX IE CORNERS OF THE NEW OPH T BE OCCUPIED DURING THE ECT. DEBRIS TO ENTER MECHANICA NSTRUCTION.	S ARE TO BE CREATED, THE DE CORNERS OF THE NEW OPENING L ONLY AFTER THE INSTALLATION OF EMENT IN PLAN OR SECTION, UNO. SAW SISTING SLAB OR WALL TO REMAIN NOR ENING. WORK. COORDINATE WORK SCHEDULE AL SYSTEMS. CLEAN ALL EQUIPMENT	
В	H. I.	ENTRY" INTO WORK AREAS. PROVI BARRICADE PLAN TO ARCHITECT F PROVIDE TEMPORARY VENTILATIO MINUTE PER 100 SQUARE FEET OF PROTECT ALL EXISTING UTILITIES SEWER LINES, SPRINKLER LINES, S LIGHTS, SENSORS, SIGNAGE, AIR D THE CONTRACTOR IS RESPONSIBL REMAIN AND THAT HAS BEEN DAM, AT NO EXPENSE TO THE OWNER AI THE OWNER. ALL REPAIR WORK SF JURISDICATION AND SUBMITTED TO	DE CONSTRUCTION SIGNAGE FOR APPROVAL. IN TO INSIDE THE ENCLOSURE ENCLOSED AREA, FRESH AIR INCLUDING, BUT NOT LIMITED STEAM AND CONDENSATE LIN DUCTS, AIR VENTS, MECHANIC LE FOR REPAIRS TO ANY STRU AGED DURING THE DEMOLITIC ND SHALL BE PERFORMED TO HALL BE DESIGNED BY A LICED O THE STRUCTURAL ENGINEE	EVERY 15 FEET. SUBMIT SIGNAGE AND E WITH A MINIMUN 50 CUBIC FEET PER EXCHANGE. TO: FLOOR DRAINS, WATER AND ES, ELECTRICAL, COMMUNICATIONS, CAL AND HEATING UNITS. JCTURAL ELEMENT WHICH IS TO ON PROCESS. THE REPAIRS SHALL BE O THE COMPLETE SATISFACTION OF NSED STRUCTURAL ENGINEER IN THE	
Α	18	APPROVAL PRIOR TO COMMENCIN	G REPAIR WORK.	15	14

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K. ALL DEBRIS FROM DEMOLITION AND/OR REPAIR WORK SHALL BE LEGALLY TRANSPORTED AND DISPOSED OF OFF SITE. DO NOT STORE DEBRIS ON THE STRUCTURE. XIV. SHORING AND BRACING

- A. ENGAGE A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA TO PERFORM AN ENGINEERING SURVEY OF THE BUILDING TO DETERMINE WHETHER REMOVING ANY ELEMENT COULD RESULT IN A STRUCTURAL DEFICIENCY OR UNPLANNED COLLAPSE OF ANY PORTION OF STRUCTURE OR ADJACENT STRUCTURES DURING DEMOLITION OPERATIONS.
- 1. SUBMIT SURVEY A MINIMUM OF TWO WEEKS BEFORE SCHEDULED START OF WORK OR EARLIER IF NECESSARY TO AVOID DELAYS. 2. ENGINEER SHALL PREFORM SURVEYS AS THE WORK PROGRESSES TO DETECT HAZARDS
- RESULTING FROM STRUCTURAL DEMOLITION ACTIVITIES AND MONITOR EXISTING STRUCTURE TO REMAIN. B. AS A MINIMUM, THE CONTRACTOR SHALL SHORE AND BRACE THE EXISTING STRUCTURE TO THE
- EXTENT INDICATED IN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL INSTALL ADDITIONAL SHORING AND BRACING AS DETERMINED BY THE CONTRACTOR'S PROFESSIONAL ENGINEER C. CONTRACTOR'S PROFESSIONAL ENGINEER SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR
- THE DESIGN OF ALL REQUIRED SHORING AND BRACING. TO ENSURE STABILITY OF EXISTING AND NEW STRUCTURE AND COMPLIANCE WITH DESIGN CRITERIA D. DESIGN TEMPORARY SHORING AND BRACING FOR SELF WEIGHT OF STRUCTURE, CODE WIND LOADS,
- AND A MINIMUM CONSTRUCTION LOAD OF 100 PSF OR 3,000 LBS POINT LOAD OR ACTUAL LOAD WHICHEVER PRODUCES GREATER STRESSES. THE DESIGN PROCEDURES SHALL COMFORM TO ALL GOVERNING CODES AND SAFETY REQUIREMENTS.
- E. SHORE AND BRACE EXISTING STRUCTURE PRIOR TO DEMOLITION WORK AND UNTIL PERMANENT NEW STRUCTURE OR REPAIRED EXISTING STRUCTURE CAN SUPPORT LOADS. F. PROVIDE ADEQUATE TEMPORARY BRACING AND SUPPORT FOR ALL NEW WORK INCLUDING BUT NOT
- LIMITED TO UNBRACED MASONRY WORK UNTIL PERMANENT CONSTRUCTION IN PLACE. G. MAINTAIN INTERIOR AND EXTERIOR SHORING, BRACING, AND STRUCTURAL SUPPORTS TO PRESERVE STABILITY AND PREVENT MOVEMENT OR COLLAPSE OF ANY PART OF STRUCTURE.
- 1. STRENGTHEN OR ADD NEW SUPPORTS WHEN REQUIRED DURING PROGRESS OF DEMOLITION. H. BRACING 1. BRACING: LOCATE BRACING TO CLEAR COLUMNS, FLOOR FRAMING CONSTRUCTION, AND OTHER
- PERMANENT WORK. IF NECESSARY TO MOVE BRACE, INSTALL NEW BRACING BEFORE REMOVING ORIGINAL BRACE.
 - A. DO NOT PLACE BRACING WHERE IT WILL BE CAST INTO OR INCLUDED IN PERMANENT CONCRETE WORK.
- B. INSTALL INTERNAL BRACING IF REQUIRED TO PREVENT SPREADING OR DISTORTION OF **BRACED FRAMES**
- MAINTAIN BRACING UNTIL STRUCTURAL ELEMENTS ARE SUPPORTED BY OTHER BRACING OR UNTIL PERMANENT CONSTRUCTION IS ABLE TO WITHSTAND DESIGN LOADS.

XV. TESTING AND INSPECTION

THE OWNER WILL RETAIN THE SERVICES OF A TESTING AND INSPECTION AGENCY TO PERFORM THE SERVICES SPECIFIED. A. MINIMUM SERVICES PROVIDED SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE LOCAL

- JURISDICTION. B. FAILURE TO RETAIN A TESTING AGENCY TO PROVIDE REQUIRED SERVICES OR A FAILURE TO SUBMIT SIGNED AND SEALED REPORTS SHALL BE CONSIDERED NON-COMPLIANCE WITH CONTRACT
- DOCUMENTS. C. CONSTRUCTION CONSIDERED NON-COMPLIANT SHALL BE REMOVED AND REPLACED. D. ALL TESTING AND INSPECTION SHALL BE UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER
- LICENSED TO PRACTICE IN THE LOCAL JURISDICTION. PRELIMINARY HAND WRITTEN SITE VISIT REPORTS CONFIRMING VERBAL DISCUSSIONS SHALL BE
- PROVIDED TO THE CONTRACTOR ON RESULTS OF INSPECTIONS PRIOR TO LEAVING JOB SITE. F. FINAL REPORTS SHALL BE SUBMITTED TO THE ARCHITECT IN A TIMELY MANNER, BUT NO LATER THAN TEN (10) DAYS FOLLOWING INSPECTION OR TESTING. UNDER THE NAME AND SIGNATURE OF THE INSPECTOR AND LICENSURE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER RESPONSIBLE
- FOR TESTING AND INSPECTION. G. INSPECTION SHALL MINIMALLY INCLUDE THE FOLLOWING:
- 1. FOUNDATIONS & EARTHWORK: FOOTINGS AND DEEP FOUNDATIONS. FILLS. SLAB SUB-GRADE. PERIMETER AND UNDERFLOOR DRAINAGE SYSTEMS.
- REINFORCING: LOCATION, ASTM DESIGNATION, BAR SIZES, TYPE (PLAIN OR EPOXY COATED). QUANTITY, PLACEMENT, SPACING, AND CLEARANCES.
- 3. CONCRETE: ALL STRUCTURAL CONCRETE; LOCATION, STRENGTH, TYPE (NORMAL OR LIGHTWEIGHT), SLUMP, PLACEMENT, AIR TEMPERATURE, CURING AND WEATHER ACCOMMODATIONS AND CONCRETE ADDITIVES
- 4. STRUCTURAL STEEL: LOCATION, ASTM DESIGNATION, MEMBER SIZES, TYPE (PLAIN, PAINTED, GALVANIZED, STAINLESS), PLACEMENT AND CONNECTIONS INCLUDING WELDS AND BOLTS, STUDS IN COMPOSITE CONSTRUCTION, POST INSTALLED ANCHORS, ANCHOR BOLTS AND GROUTING. 5. MASONRY: MASONRY INSPECTION FOR QUALITY ASSURANCE SHALL BE LEVEL C AS DEFINED IN THE MASONRY SPECIFICATIONS AND SHALL MINIMALLY INCLUDE INSPECTION OF UNITS, GROUT,
- REINFORCING, ANCHOR BOLTS AND LINTELS. AS MASONRY CONSTRUCTION BEGINS, VERIFY THE FOLLOWING ARE IN COMPLIANCE: PROPORTIONS OF SITE PREPARED MORTAR, CONSTRUCTION OF MORTAR JOINTS. LOCATION OF REINFORCEMENT AND CONNECTORS. PRIOR TO GROUTING, VERIFY THE FOLLOWING ARE IN COMPLIANCE: GROUT SPACE, GRADE AND SIZE OF REINFORMENT, PLACEMENT OF REINFORCEMENT, ANCHORS, TIES, AND CONNECTORS, PROPORTIONS OF SITE PREPARED GROUT, AND CONSTRUCTION OF MORTAR JOINTS. VERIFY PLACEMENT OF GROUT, PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.
- WOOD: LUMBER, FOR IMPERFECTIONS THAT ARE CAUSE FOR REJECTION, NAILING, LIGHT GAUGE CONNECTION PLATES, BOLTED PLATES, OTHER CONNECTIONS AND FOUNDATION ANCHORAGE.
- H. MATERIAL TESTING SHALL MINIMALLY INCLUDE THE FOLLOWING: 1. FOUNDATION & EARTHWORK: SOIL BEARING CAPACITIES AND COMPACTION DENSITIES.
 - 2. REINFORCING: YIELD AND ULTIMATE STRENGTHS. (MILL REPORTS ARE ACCEPTABLE.) 3. CONCRETE: SLUMP TESTS; EVERY THIRD TRUCKLOAD OF CONCRETE AND IN ADDITION, ONE FOR EACH SET OF STRENGTH-TEST CYLINDERS AT PREPARATION. STRENGTH TESTS; ONE SET OF CYLINDERS FOR MAXIMUM OF EACH 50 CY OF CONCRETE PLACEMENT. ONE SET OF CYLINDERS FOR EACH 2500 SQUARE SLAB AREA.
- STRUCTURAL STEEL: YIELD AND ULTIMATE STRENGTHS. (MILL REPORTS ARE ACCEPTABLE.) 5. MASONRY: MATERIALS CERTIFICATES AND VERIFICATION OF F'M PRIOR TO CONSTRUCTION. I. COMPLY WITH CODE REQUIREMENTS AND THE FOLLOWING:
- 1. CONCRETE CYLINDERS: ONE SET OF 6 LABORATY CURED 6x12 CYLINDERS SHALL BE TAKEN FOR EACH DAY'S POUR FOR EACH MIX: (2) 7-DAY, (2) 28-DAY, (2) HOLD;
- ONE SET OF 4 FIELD CURED 6x12 CYLINDERS SHALL BE TAKEN FOR EACH DAY'S POUR FOR EACH MIX (2) 7 – DAY, (2) 28-DAY.
- J. FIELD CURED CYLINDERS SHALL BE CURED IN ACCORDANCE WITH CODE REQUIREMENTS OR IF NOT APPLICABLE THEN CURED IN SAME CONDITIONS AS CONCRETE IN WORK.

K. ONE SET OF MORTAR CUBES FOR COMPRESSIVE STRENGTH TESTING SHALL BE MADE IN ACCORDANCE WITH ASTM C91 AND C270 AT A FREQUENCY OF ONE TEST PER WEEK. L. MASONRY PRISM TESTS IN CONFORMANCE WITH ASTM E447 METHOD B SHALL BE CONDUCTED AT A

FREQUENCY OF ONE TEST PER WEEK. M. PROOF LOADS FOR POST-INSTALLED ANCHORS, AS SHOWN ON THE DRAWINGS, SHALL BE USED FOR TESTING TENSION IN POST-INSTALLED ANCHORS AND SHALL BE APPLIED WITH A CALIBRATED HYDRAULIC RAM. THE TESTING AGENCY SHALL PROVIDE A CALIBRATION CHART DATED WITHIN ONE YEAR. DISPLACEMENT OF ADHESIVE AND CAPSULE ANCHORS AT PROOF LOAD SHALL NOT EXCEED D/10, WHERE D IS THE NOMINAL ANCHOR DIAMETER.

XVI. EXCAVATION SUPPORT AND PROTECTION

- A. COMPLY WITH THE REQUIREMENTS AS NOTED BELOW. B. PERFORM A DETAILED SURVEY OF ADJACENT BUILDINGS AND SITE IMPROVEMENTS BY CONTRACTOR'S INDEPENDENT PROFESSIONAL STRUCTURAL ENGINEER. PHOTOGRAPH, MEASURE AND RECORD ALL VISIBLE DAMAGE INCLUDING CRACKS, SETTLEMENT OR DISTRESS SECURLY ATTACH CRACK MONITORING GAGES OR SURVEY TARGETS TO ADJACENT PROPERTY WITH PERMSSION FROM PROPERTY OWNER. ARRANGE TO HAVE ADJACENT OWNER'S REPRESENTATIVE PRESENT DURING
- SURVEY AND CONCURR WITH FINDINGS. SUBMIT REPORT TO ARCHITECT BEFORE WORK BEGINS. C. SUBMIT SIGNED AND SEALED CALCULATIONS FOR EXCAVATION SUPPORT SYSTEM BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN JURISDICATION OF PROJECT. PROFESSIONAL ENGINEER SHALL HAVE MINIMUM TEN YEARS EXPERIENCE IN DESIGNING EXCAVATION SUPPORT SYSTEMS OF COMPARABLE SIZE AND COMPLEXITY.

D. SUBMIT SIGNED AND SEALED SHOP DRAWINGS: FOR EXCAVATION SUPPORT AND PROTECTION SYSTEM, PREPARED BY OR UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN JURISDICATION OR PROJECT.

- 1. INCLUDE PLANS. ELEVATIONS, SECTIONS, AND DETAILS. 2. SHOW ARRANGEMENT, LOCATIONS, AND DETAILS OF SOLDIER PILES, PILING, LAGGING, TIEBACKS, BRACING, AND OTHER COMPONENTS OF EXCAVATION SUPPORT AND PROTECTION SYSTEM ACCORDING TO ENGINEERING DESIGN.
- 3. INDICATE TYPE AND LOCATION OF WATERPROOFING.

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4. DO NOT PROCEED WITH WORK UNTIL ARCHITECT HAVE NO FUTHER COMMENTS.

- E. FIELD QUALITY CONTROL
- 1. RESURVEY BENCHMARKS CRACK MONITORS, SURVEY TARGETS DAILY DURING EXCAVATION PROGRESS, INSTALLATION OF EXCAVATION SUPPORT AND PROTECTION SYSTEMS AND FOR AS LONG AS EXCAVATION REMAINS OPEN. MAINTAIN AN ACCURATE LOG OF SURVEYED ELEVATIONS
- AND POSITIONS FOR COMPARISON WITH ORIGINAL ELEVATIONS AND POSITIONS. PROMPTLY NOTIFY ARCHITECT IF CHANGES IN ELEVATIONS OR POSITIONS OCCUR OR IF CRACKS, SAGS, OR OTHER DAMAGE IS EVIDENT IN ADJACENT CONSTRUCTION.
- 2. PROMPTLY CORRECT DETECTED BULGES, BREAKAGE, OR OTHER EVIDENCE OF MOVEMENT TO ENSURE THAT EXCAVATION SUPPORT AND PROTECTION SYSTEM REMAINS STABLE.
- 3. PROMPTLY REPAIR DAMAGES TO ADJACENT FACILITIES CAUSED BY INSTALLATION OR FAULTY PERFORMANCE OF EXCAVATION SUPPORT AND PROTECTION SYSTEMS.

XVII. EARTH WORK

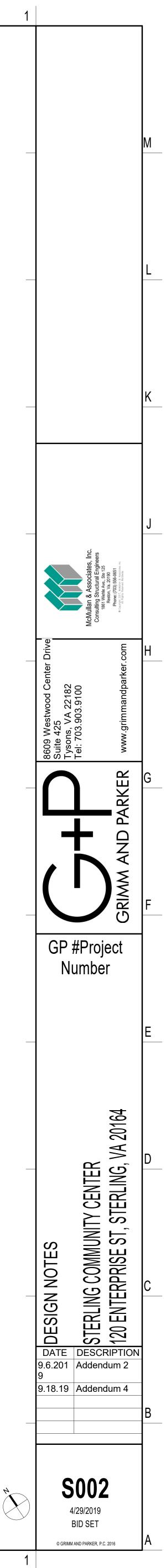
- A. ALLOWABLE SOIL BEARING PRESSURE FOR ALL SHALLOW FOOTINGS IS 3000 PSF PER THE GEOTECHNICAL REPORT PREPARED BY ECS MID ATLANTIC, LLC DATED AUGUST 29, 2018. SHOULD UNSUITABLE MATERIAL BE ENCOUNTERED, FOOTINGS SHALL BE OVER EXCAVATED AND REPLACED COMPACTÆD∕FILL TØ 98% MAXIMUM DRY ÆNSITY, ALLOWABLE SOIL BÉARING PRESSRURE FOR THE RETAINING WALL IS 6000 PSF WITH PASSIVE PRESSURE OF 498 PSF ON THE KEY PER THE
- GEOTECHNICAL ADDENDUM LETTER PREPARED BY ECS MID ATLANTIC, LLC DATED MAY 31, 2019. B. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6' BELOW EXTERIOR GRADE,
- UNLESS NOTED OTHERWISE. C. FILL WILL BE REQUIRED FOR SITE GRADING IN BUILDING AREAS, AND AS BACKFILL AGAINST WALLS
- BELOW GRADE. D. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED
- GRAVEL, CRUSHED STONE, NATION OR CRUSHED SAND, VDOT 21-A E. UNSUITABLE EXISTING FILL, SOFT OR LOOSE NATURAL SOILS, ORGANIC MATERIAL, AND RUBBLE SHALL BE STRIPPED TO APPROVED SUBGRADES AS DETERMINED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER AND APPROVED BY THE ARCHITECT. THE ACTUAL DEPTH OF STRIPPING NECESSARY TO PROVIDE A SUITABLE BASE FOR PLACEMENT AND COMPACTION OF EARTHWORK MAY INCLUDE TOPSOIL AND OTHER SOFT SURFICIAL LAYERS WITH OR WITHOUT ORGANIC MATTER.
- F. SUBGRADES SHALL BE PROOF ROLLED WITH A MINIMUM 10 TON, LOADED DUMP TRUCK OR SUITABLE RUBBER TIRE CONSTRUCTION EQUIPMENT APPROVED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER, PRIOR TO THE PLACEMENT OF NEW FILL G. FOR BUILDING AREAS, THE NEW FILL SHALL EXTEND AT LEAST 10 FEET OUTSIDE BUILDING LINES.
- H. FILL MATERIAL SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 8 INCHES LOOSE THICKNESS, TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D-698. I. [SOILS EXCAVATED AT THE SITE MAY BE SUITABLE FOR RE-USE AS FILL BASED ON CLASSIFICATION BUT WILL LIKELY BE WET AND WILL REQUIRE DRYING BY SPREADING AND AERATING TO OBTAIN
- PROPER COMPACTION. J. INDIVIDUAL BORROW AREAS, BOTH FROM ON-SITE AND OFF-SITE SOURCES, SHALL BE SAMPLED AND TESTED TO VERIFY CLASSIFICATION OF MATERIALS PRIOR TO THEIR USE AT FILL.
- K. AFTER COMPLETION OF COMPACTED FILL OPERATION IN BUILDING AREAS, CONSTRUCTION OF BUILDING ELEMENTS SHALL BEGIN IMMEDIATELY, OR THE FINISHED SUBGRADE SHALL BE PROTECTED FROM EXPOSURE TO INCLEMENT WEATHER CONDITIONS.
- L. PLACE SLABS ON GRADE ON TWO LAYERS OF VAPOR BARRIERS OVER MINIMUM OF SIX INCHES OF COMPACTED GRANULAR FILL WITH 1/2 INCH OF FINE GRADED GRANULAR MATERIAL ON TOP M. GRANULAR FILL; CLEAN MIXTURE OF CRUSHED STONE OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448, SIZE 57, WITH 100 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND 0 TO 5 PERCENT
- PASSING A NO. 8 (2.36-MM) SIEVE. N. FINE- GRADED GRANULAR MATERIAL; CLEAN MIXTURE OF CRUSHED STONE, CRUSHED GRAVEL, AND MANUFACTURED OR NATURAL SAND; ASTM D 448, SIZE 10, WITH 100 PERCENT PASSING A 3/8-INCH (9.5-MM) SIEVE, 10 TO 30 PERCENT PASSING A NO. 100 (0.15-MM) SIEVE, AND AT LEAST 5 PERCENT PASSING
- NO. 200 (0.075-MM) SIEVE; COMPLYING WITH DELETERIOUS SUBSTANCE LIMITS OF ASTM C 33 FOR FINE
- O. PROVIDE TEMPORARY BRACING AND SHORING, AS REQUIRED, TO ENSURE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF DURING CONSTRUCTION
- P. ALL WALLS ARE DESIGNED AS LATERALLY BRACED BY THE FLOOR AND ROOF SYSTEMS U.N.O.
- CONTRACTOR SHALL ENSURE THAT WALLS ARE ADEQUATELY BRACED DURING CONSTRUCTION Q. TEMPORARY BRACING SHALL BE PROVIDED FOR ALL WALLS SUBJECT TO UNBALANCED BACKFILL
- BRACE WALL PLUMB UNTIL STABILIZING ELEMENT ABOVE IS IN PLACE. R. ANY REQUIRED TEMPORARY SHORING SHALL BE IN CONFORMANCE WITH OSHA REGULATIONS.
- UNBRACED EXCAVATIONS SHALL BE SLOPED NO GREATER THAN (1.5) HORIZONTAL TO (1) VERTICAL S. LOCATE ALL UNDERGROUND UTILITIES IN VICINITY OF FOUNDATIONS AND DETERMINE IF A CONFLICT EXISTS. PROVIDE INFORMATION ON LOCATION SIZE AND ELEVATION OF UTILITIES PRIOR TO START OF WORK SO THAT ANY NECESSARY CHANGES CAN BE MADE WITHOUT DELAYING THE PROJECT
- XVIII. UNDERPINNING
- A. UNDERPINNING DESIGN AND PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR B. UNDERPINNING CONTRACTOR SHALL PREPARE AND SUBMIT FOR INFORMATION - DRAWINGS STAMPED, SEALED AND PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN PROJECT JURISDICTION SHOWING PLAN'S, DETAILS OF THE UNDERPINNING SCHEME, WORK PROCEDURE AND PROPOSED TIME SCHEDULE FOR REVIEW.
- C. BOTTOM OF EXISTING FOOTING ELEVATIONS SHOWN ON PLAN THUS: (XX.XX) AND HAVE BEEN APPROXIMATED FROM AVAILABLE INFORMATION PROVIDED TO THE ENGINEER.
- D. EXTEND UNDERPINNING TO ELEVATIONS SHOWN. E. UNDERPIN EXISTING FOOTING IN SEQUENCE SUCH THAT CONCRETE ADJACENT TO NEW EXCAVATION
- SHALL HAVE BEEN IN PLACE NO LESS THAN 72 HOURS. F. AFTER UNDERPINNING CONCRETE IS IN PLACE 24 HOURS, DRY PACK TOP 3" BETWEEN UNDERPINNING CONCRETE AND EXISTING FOOTING WITH NON-SHRINK GROUT
- G. UNDERPINNING CONCRETE F'C = 3,500 PSI MIN. NON-SHRINK GROUT F'C = 5,000 PSI MIN.
- H. CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF INSTALLING UNDERPINNING AND SHALL ADEQUATELY SUPPORT EXISTING STRUCTURES AS IS NECESSARY TO MAINTAIN STABILITY.
- I. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITY SERVICES AND STRUCTURES SHALL BE LOCATED BY THE CONTRACTOR AND PROTECTED AT ALL TIMES.

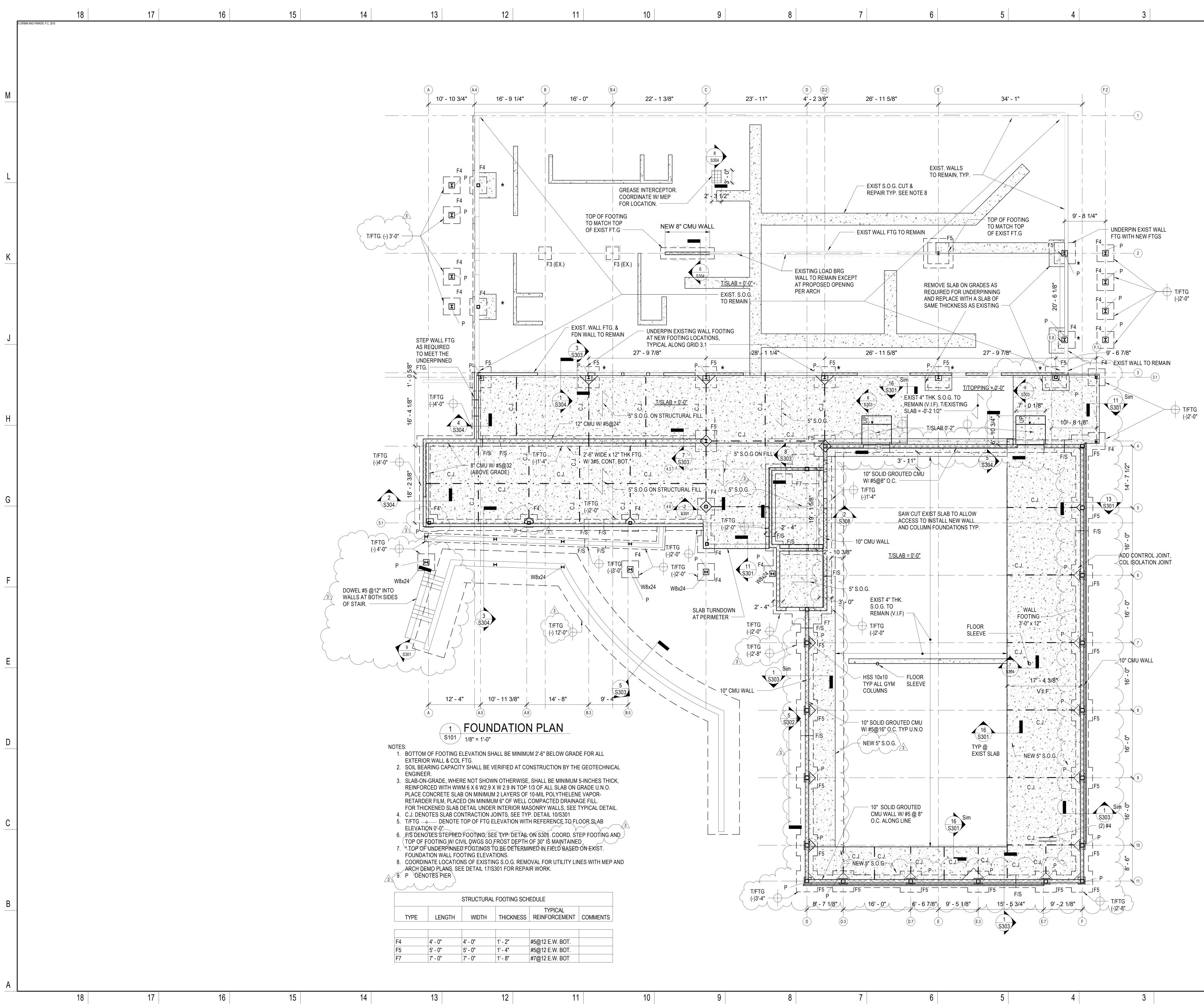
ABBREVIATION INDEX FOR STRUCTURAL DRAWINGS

)	AT
, DD'L	ADDITIONAL
OR LB	POUNDS
LT.	ALTERNATE
В.	ANCHOR BOLT
RCH.	ARCHITECT
М	BEAM
RG	BEARING
P	BEARING PLATE
TWN	BETWEEN
B.	BOND BEAM
OT.	BOTTOM
LR.	
MU	CONCRETE MASONRY UNIT
.J. OL.	CONTRACTION JOINT OR CONTROL JOINT COLUMN
OL. ONC.	CONCRETE
ONC. ONN.	CONNECTION
ONT.	CONTINUOUS
IAG	DIAGONAL
IA.	DIAMETER
WG.	DRAWING
	ELEVATION
W.	EACH WAY
LEC.	ELECTRICAL
X	EXISTING
XP.	EXPANSION
Γ.	FEET
TG.	FOOTING
DN .	FOUNDATION
A.	GAUGE
.C.	GENERAL CONTRACTOR HIGH
ORIZ.	HORIZONTAL
	HOLLOW STEEL SECTION
	LIGHT GAUGE
G D	LOW
	LONG LEG HORIZONTAL
V	LONG LEG VERTICAL
SH	LONG SIDE HORIZONTAL
	LONG SIDE VERTICAL
	LIGHT GAUGE
N	LIGHTWEIGHT
AX.	MAXIMUM
FR.	
EP. ECH.	MECHANICAL, ELECTRICAL OR PLUMBING MECHANICAL
.S.	NON SHRINK
	NOT TO SCALE
.C.	ON CENTER
PNG	OPENING
PP	OPPOSITE
	PLATE
SF	POUNDS PER SQUARE FOOT
EINF.	REINFORCEMENT
CHED	SCHEDULE
M	SIMILAR
.0.G	SLAB ON GRADE
	SPECIFICATIONS STEEL
TL. TIFF	STEEL
HK.	THICK
ак. & В	TOP AND BOTTOM
FTG	TOP OF FOOTING
SLAB	TOP OF SLAB
0.S.	TOP OF STEEL
YP.	TYPICAL
.N.O	UNLESS NOTED OTHERWISE
F	VERIFY IN FIELD
ERT.	VERTICAL
T	WEIGHT
// \\\\\\\	
'WM	WELDED WIRE MESH

WELDED WIRE MESH

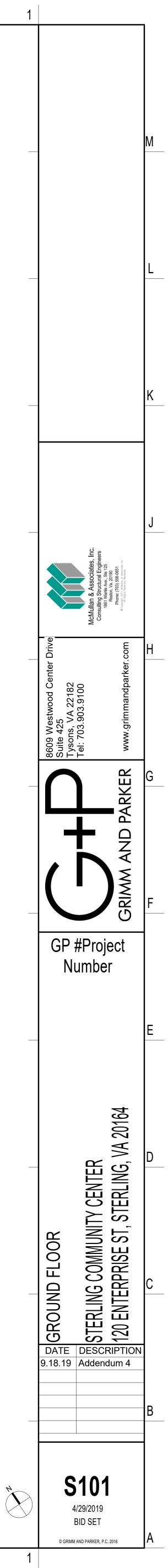
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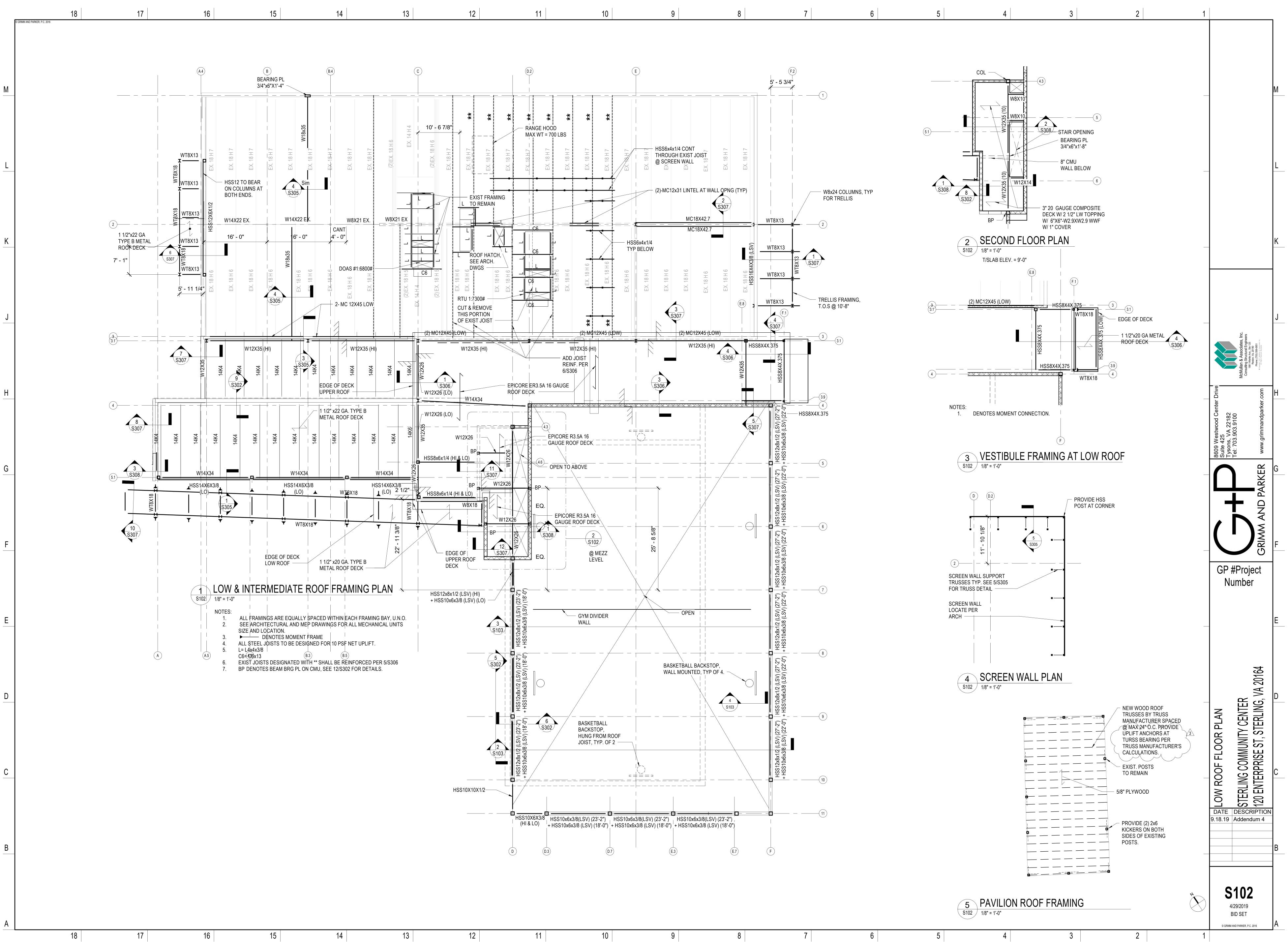




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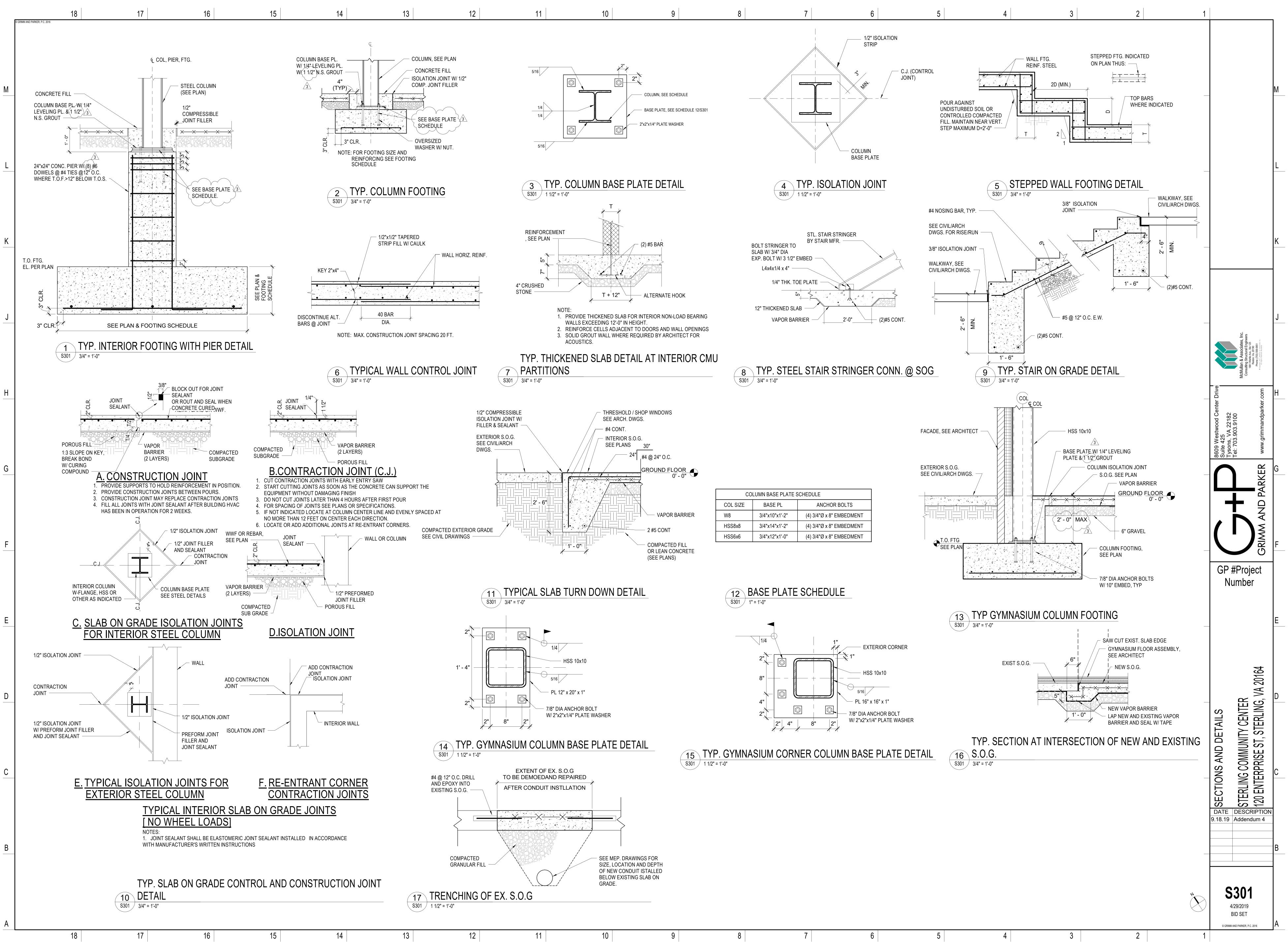
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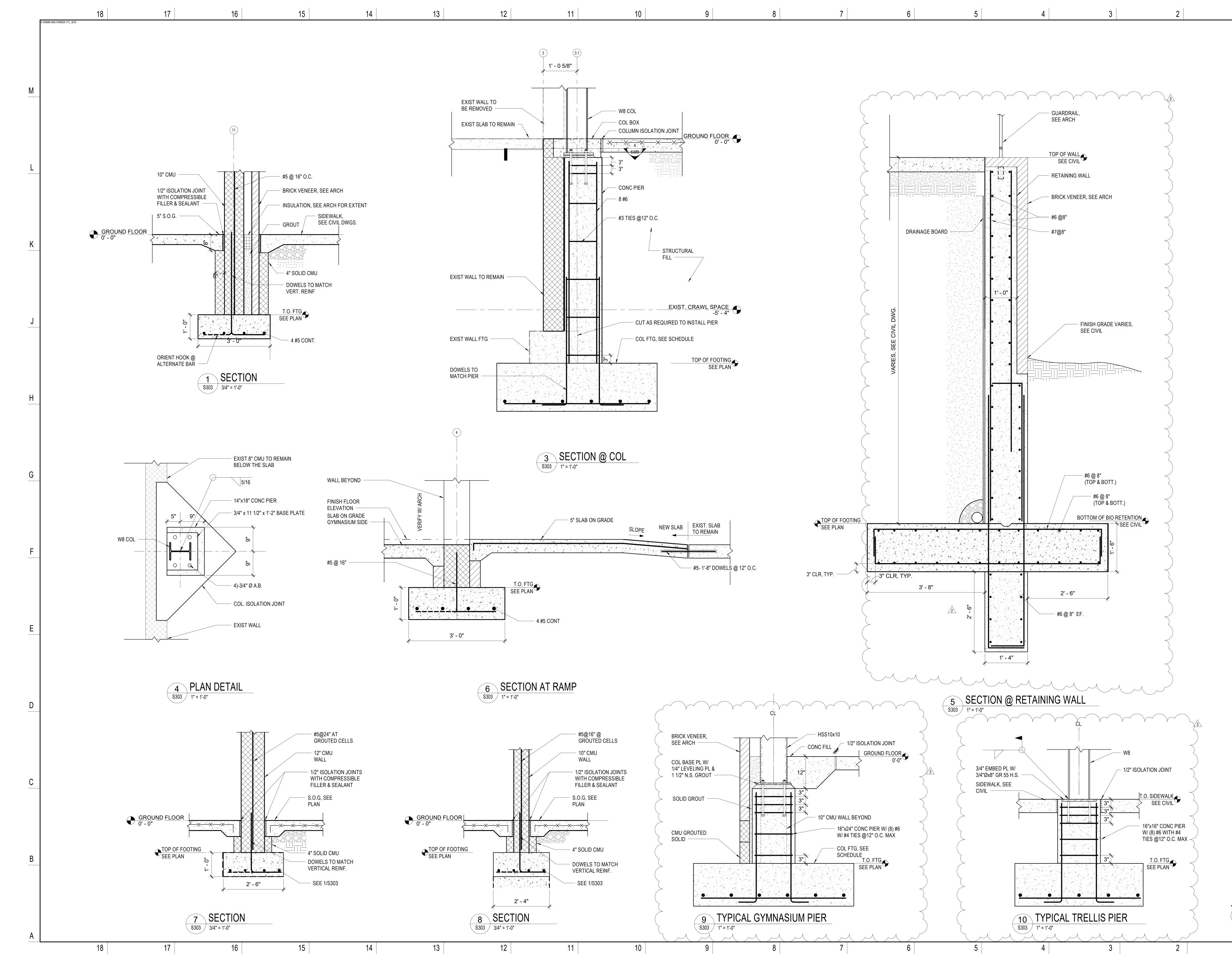


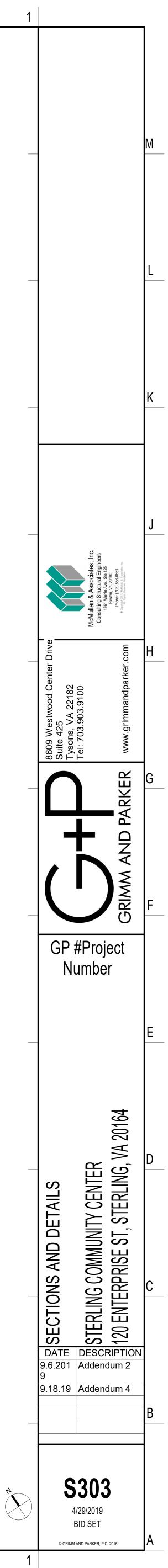


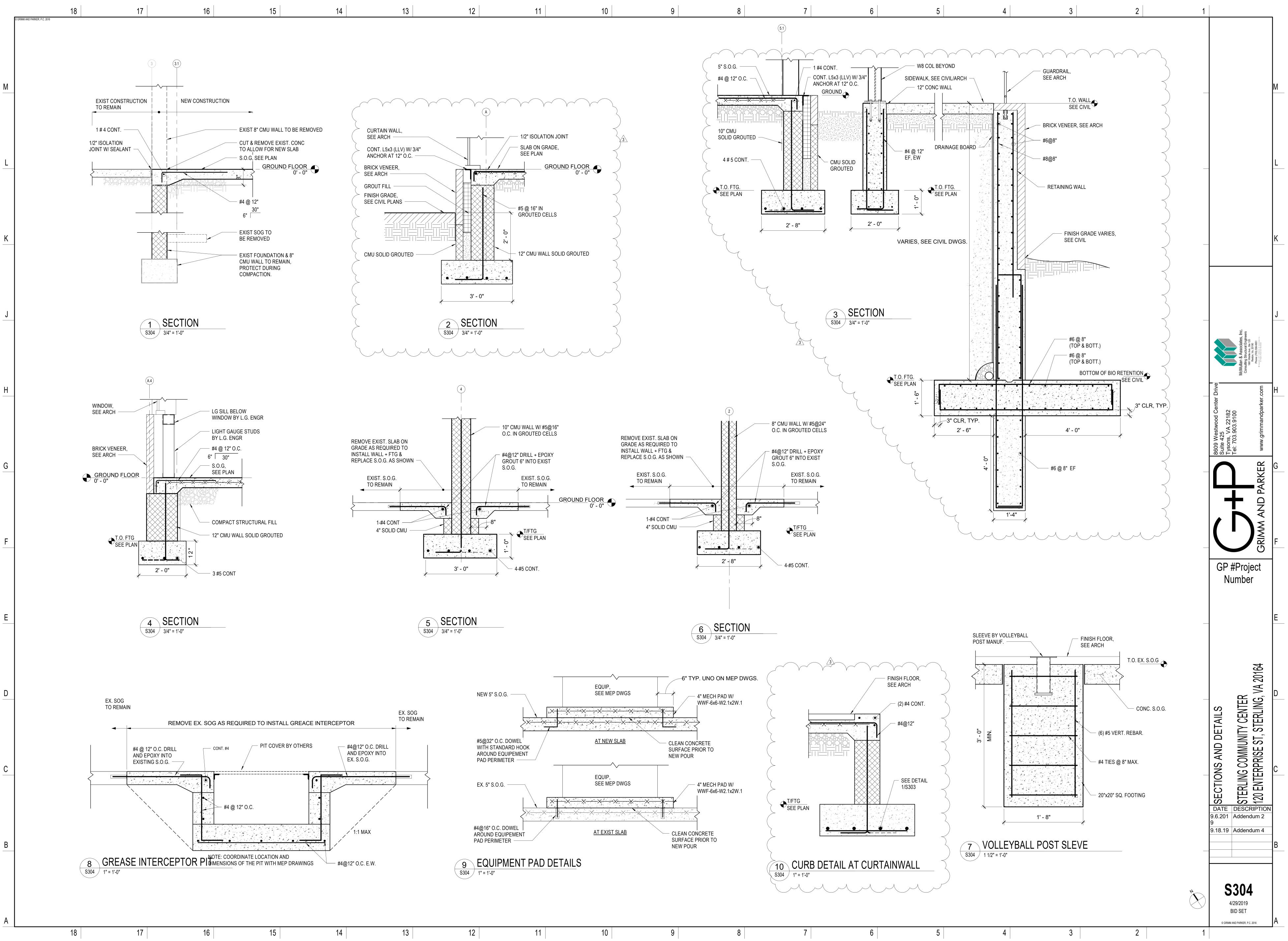
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7	6	5	4	3	2



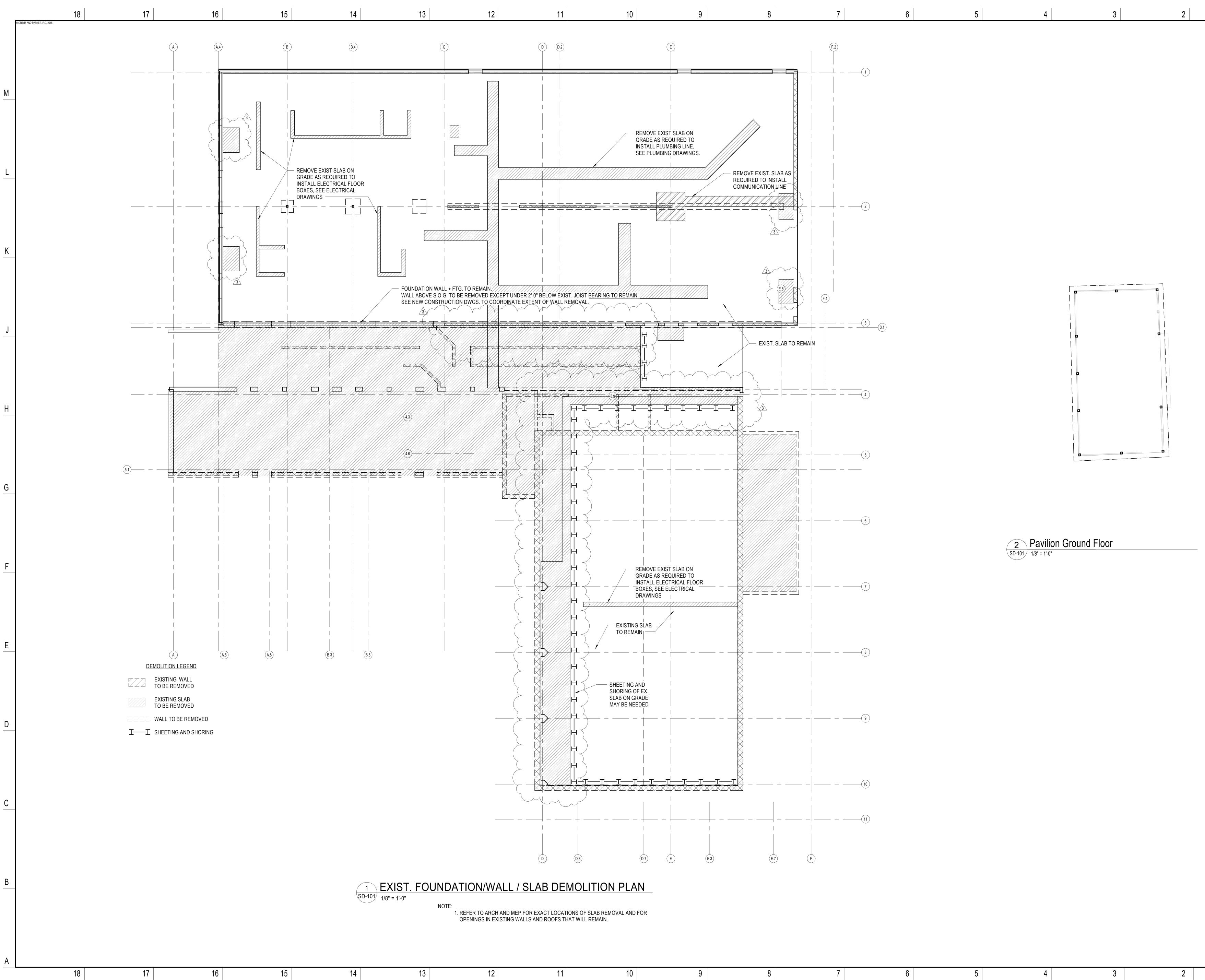






13	12	11	10	9	8

7	6	5	4	3	2



13	12	11	10	9	8

7	6	5	4	3	

