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462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT 401 W TOWN ST
COLUMBUS, OH 43215 p 614.321.5128 LAIARCHITECT.COM
architect of record
Sol Harris / Day
6677 FRANK AVENUE NW
NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer
77 WATER ST
NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer
ATWELL
7100 E PLEASANT VALLEY RD
INDEPENDENCE, OH 44131
p 440.349.2000 ATWELL-GROUP.COM
TEC STUDIO INC. 7510 SLATE RIDGE BLVD
COLUMBUS, OH 43068
p 614.866.2868 TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC.
150 HILDEN RD SUITE 305
PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES
p 330.659.6688 THORSONBAKER.COM



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- * * WASTE RECEPTACLE LARGE MIRROR

TOILET & ACCESSORIES











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ABBREVIATIONSWCWATER CLOSETGBGRAB BARRHTOILET ROLL HOLDERNDSANITARY NAPKIN DISPOSALURURINALUSURINAL SCREENFVFLUSH VALVEMRMIRRORSDSOAP DISPENSERLAVLAVATORYWRWASTE RECEPTACLEHDHAND DRYERNVNAPKIN VENDORMHMOP HOLDERPJSPROJECTION SCREENTBTACK BOARDCBCHALK BOARDGCFIRE EXTINGUISHERFECFIRE EXTINGUISHERFECFIRE EXTINGUISHERFECFIRE EXTINGUISHERFEFIRE EXTINGUISHERADOM SIGNHSHAT SHELFCHCOAT HOOKSPSPENCIL SHARPENER & SUPPORT

DIMENSIONAL CATEGORIES

NOTED OTHERWISE.

LEGEND

ADOLESCENT STANDARD HEIGHTS CHILD HANDICAPPED HEIGHTS CHILD STANDARD HEIGHTS

ABBREVIATIONS

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MOP HOLDER

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civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM
lighting design / engineer
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THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM



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Tim Lai ArchitecT
401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 LAIARCHITECT.COM
architect of record
Sol Harris / Day
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structural engineer
ARUP
77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
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ATWELL
7100 E PLEASANT VALLEY RD
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7510 SLATE RIDGE BLVD
COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
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150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904 824 1110 L SAIEOUINTAINS COM
cafe engineer
THORSON BAKER + ASSOCIATES
3030 W. STREETSBORO ROAD
RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM



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project address 301-399 Canton,	Market Av OH 44702	ve N,	
architect			
Tim Lai Arc 401 W TOW COLUMBUS p 614.321.5	hitecT /N ST 5, OH 43215 128 LAIARCHI	TECT.COM	
architect of reco Sol Harris / 6677 FRAN NORTH CA p 330.493.3	rd ['] Day K AVENUE NW NTON, OH 4472 722 SOLHARR	0 ISDAY.COM	
structural engine ARUP 77 WATER NEW YORK p 212.896.3	er ST (, NY 10005 000 ARUP.COI	М	
civil engineer			
ATWELL 7100 E PLE SUITE 220 INDEPEND p 440.349.2	ASANT VALLEY ENCE, OH 4413 000 ATWELL-C	rd 1 Group.com	
lighting design / TEC STUD 7510 SLATE COLUMBUS p 614.866.2	engineer I <mark>IO INC.</mark> E RIDGE BLVD S, OH 43068 868 TECSTUD	IOINC.COM	
water feature			
SOUTHER 150 HILDEN SUITE 305 PONTE VEL p 904.824.1	N AQUATICS N RD DRA BEACH, FL 110 SAIFOUNT	5, INC. 32081 AINS.COM	
cafe engineer			
THORSON 3030 W. ST RICHFIELD p 330.659.6	BAKER + A REETSBORO R , OH 44286 688 THORSON	SSOCIATES OAD IBAKER.COM	



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FINISH PLAN SCHEDULE	AND NOTES												

/---- WALL FINISH BASE MATERIAL ┌ FLOOR FINISH

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WIBI		
FLOC	DR	
CODE	MANUFACTURER/STYLE	COLOR
-T1	PORCELAIN FLOOR TILE - 12" X 24" CAESAR CORP.	COLLECTION: FOUNDRY 26 COLOR: RAIL
SC	SEALED CONCRETE	-
BASE	E	
CODE	MANUFACTURER/STYLE	COLOR
RB1	4" RUBBER BASE JOHNSONITE	BURNT UMBER #63
WAL	L	
CODE	MANUFACTURER/STYLE	COLOR
P1	SHERWIN WILLIAMS INTERIOR PAINT	COTTON WHITE #7104
P2	SHERWIN WILLIAMS SEE SPECIFICATIONS FOR PAINT TYPE	IRON ORE #7069
WT1	4" X 12" GLAZED CERAMIC WALL TILE DALTILE	COLLECTION: LINEAR - COLOR WHEEL COLOR: MATTE BISCUIT K775
SOLI	D SURFACE/PLASTIC LAMINA	TE
SS1	SOLID SURFACE	SILVER LINEA
GRO	UT	
		001.00

CODE MANUFACTURER/STYLE COLOR MAPEI - TO BE USED WITH WT1 TBD MAPEI - TO BE USED WITH FT1 TBD

GENERAL NOTES:

1. HOLLOW METAL DOORS SHALL BE PAINTED P2 U.N.O.

2. CONTRACTOR IS RESPONSIBLE FOR FLOOR PREP/MOISTURE LEVELS PER MFG. REQUIREMENTS.

3. ALL SWITCH/FACE PLATES TO MATCH WALL PAINT WHERE INSTALLED; VERIFY WITH ARCHITECT BEFORE PURCHASE & INSTALLATION.

4. SEE REFLECTED CEILING PLAN FOR CEILING PAINT COLORS.

5. ALL EXPOSED STRUCTURAL STEEL, BEAMS, JOISTS, GIRTS, COLUMNS, BRACING, CONNECTIONS, ETC. TO BE PAINTED P2 U.N.O.











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architect of record
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM



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GROUND FLOOR LEVEL RCP SCALE: 1/4" = 1'-0"

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client / ov City project n: CE	v of Canton ame ENTENNIAL PLAZA
project a 301 Car	^{ddress} -399 Market Ave N, hton, OH 44702
architect	
Tim L 401 COL p 61	ai ArchitecT W TOWN ST UMBUS, OH 43215 4.321.5128 LAIARCHITECT.COM
architect	of record
Sol H 6677 NOF p 33	arris / Day 7 FRANK AVENUE NW RTH CANTON, OH 44720 0.493.3722 SOLHARRISDAY.COM
structura	l engineer
ARUF 77 W NEW p 21	D VATER ST V YORK, NY 10005 2.896.3000 ARUP.COM
civil engi	neer
ATWE 7100 SUIT INDE p 44	ELL) E PLEASANT VALLEY RD FE 220 EPENDENCE, OH 44131 0.349.2000 ATWELL-GROUP.COM
lighting d	lesign / engineer
TEC 5 7510 COL p 61	STUDIO INC.) SLATE RIDGE BLVD .UMBUS, OH 43068 4.866.2868 TECSTUDIOINC.COM
water fea	ture
SOUT 150 SUIT PON p 90	THERN AQUATICS, INC. HILDEN RD TE 305 ITE VEDRA BEACH, FL 32081 4.824.1110 SAIFOUNTAINS.COM
cafe engi	ineer
THOF 3030 RICF p 33	RSON BAKER + ASSOCIATES) W. STREETSBORO ROAD HFIELD, OH 44286 0.659.6688 THORSONBAKER.COM



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- ____ 2 ROOF LEVEL +12'-0"
- I ____
- 1 GROUND FLOOR LEVEL ±0" н -1 FOUNDATION LEVEL -2'-8"
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- 2 ROOF LEVEL +12'-0"
- 1 GROUND FLOOR LEVEL ±0"
- -1 FOUNDATION LEVEL -2'-8" В
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NORTH ELEVATION SCALE: 1/4" = 1'-0"

SOUTH ELEVATION

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



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- 2 ROOF LEVEL +12'-0"
- 1 GROUND FLOOR LEVEL ±0" -1 FOUNDATION LEVEL -2'-8"

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> EAST ELEVATION SCALE: 1/4" = 1'-0"

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当 BRICK VENNER, TYPICAL 古



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cafe engineer
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1 GROUND FLOOR LEVEL

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NORTH-SOUTH BUILDING SECTION SCALE: 3/8" = 1'-0"

SKYLIGHT FRAME & DOME ASSEMBLY MOUNTED TO CURB -ROOF MEMBRANE, RUN OVER CURB FRAMING & _____ EXTEND DOWN OVER REGLET FLASHING ______ ALUMINUM REGLET FLASHING -SEAL JOINT WITH BACKER ROD & CAULK SEALANT -INSTALL ALUMINUM "J" FLASHING AT CURB, TYPICAL RUN GREEN ROOF ROOFING MEMBRANE UP CURB & INTO FLASHING GREEN ROOF SOIL MEDIA & PLANTINGS -GREEN ROOF DRAINAGE BOARD -ROOFING MEMBRANE -**ROOF SUBSTRATE &** PROTECTION BOARD ROOF INSULATION -<u>\\Y//A\Y//A\Y//A\Y/</u> 3" ROOF DECKING, REFER TO STRUCTURAL DRAWINGS STEEL ROOF FRAMING BEAM, REFER TO STRUCTURAL DRAWINGS 18GA FRAMING ATTACHED TO BEAM FROM EACH STUD, REFER TO STRUCTURAL DRAWINGS PROVIDE ADDITIONAL LIGHT GUAGE FRAMING SUPPORT TO ROOF STRUCTURE LIGHT GUAGE FRAMING LEAVE OPEN FOR VENTILATION VERIFY HEIGHT DIMENSION WITH CURVED LIGHT HOUSING 3/4" FIRE TREATED PLYWOOD _____ CURB BOTTOM BAND 1/4" PLASTER BASE DRYWALL -CURVED LED LIGHT FIXTURE, REFER ____ TO ELECTRICAL DRAWINGS

CENTER LINE OF CURVED LIGHT FIXTURE

SKYLIGHT DETAIL

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

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p 330.659.6688 THORSONBAKER.COM

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WALL SECTION SCALE: 3/4" = 1'-0" 304

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TYPICAL INTERIOR WALL 304 SCALE: 3/4" = 1'-0"

LINE OF FUTURE SLAB ON GRADE, _____

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3" ROOF DECKING,

REFER TO STRUCTURAL DRAWINGS

- 5/8" ROOF PROTECTION BOARD 7 1/2" ROOF INSULATION ABOVE OUTRIGGER FRAMING FOR RAISED ROOF MECHANICAL AREA

OUTRIGGER BEAM & ROOF FRAMING,

REFER TO STRUCTURAL DRAWINGS

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DOOR SCHEDULE										
No.	SIZE	TYPE	MAT'L	FINISH	CORE	HARDWARE	FRAME TYPE	REMARKS		
101.1	3-0 x 8-4 x 1-3/4"	CW	ALUM.	ANODIZED	INSUL.	01	C1	COORDINATE HARDWARE W/ CURTAIN WALL INSTALLER		
101.2	3-0 x 8-4 x 1-3/4"	CW	ALUM.	ANODIZED	INSUL.	02	C4	COORDINATE HARDWARE W/ CURTAIN WALL INSTALLER		
101.3	3-0 x 7-0 x 1-3/4"	NL	НМ	PAINT	INSUL.	04	F2	-		
102.1	3-0 x 7-0 x 1-3/4"	F	НМ	PAINT	INSUL.	03	F1	-		
103.1	3-0 x 7-0 x 1-3/4"	F	НМ	PAINT	INSUL.	03	F1	-		
104.1	3-8 x 7-0 x 1-3/4"	G	VINYL	-	-	06	-	EXIT DEVICE MOUNTED ON VINYL GATE ASSEMBLY		
105.1	3-0 x 7-0 x 1-3/4"	NL	НМ	PAINT	INSUL.	05	F2	-		
106 1	3-0 x 7-0 x 1-3/4"	NI	НМ	PAINT	INSUL	05	F2	_		

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

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FRAME TYPES

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GROUND FLOOR LEVEL SCALE: 1/4" = 1'-0"

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δ 14 13 12 11 10 **ΓΙΟΓΟ**

								MECHANIC	AL EQUIPMENT ELECTRICAL CONNECTION	SCHEDULE	-
М	MARK LOAD										
		VOLTAGE	PHASE	LOAD	KW	CLASSIFICATION	PANEL	CKT #	CONNECTION	FEEDER SIZE	COMMENT(S)
EUH	1	208 V	1	3000 VA	3.0	Heating	EQP	32,34	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	2	208 V	1	3000 VA	3.0	Heating	EQP	36,38	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	3	208 V	1	3000 VA	3.0	Heating	EQP	40,42	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	4	208 V	1	3000 VA	3.0	Heating	A	20,22	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	5	208 V	1	5000 VA	5.0	Heating	A	24,26	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	6	208 V	1	3000 VA	3.0	Heating	A	28,30	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	7	208 V	1	3000 VA	3.0	Heating	A	32,34	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	8	208 V	1	2000 VA	2.0	Heating	A	36,38	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	
EUH	9	208 V	1	2000 VA	2.0	Heating	A	40,42	PROVIDED WITH DISCONNECT SWITCH.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	

MA	RK	
		VOLTAGE
CU	1	208 V
DS	1	208 V

REQUIREMENTS AND PROVIDE ALL ADDITIONAL COMPONENTS/EQUIPMENT AS REQUIRED PER MANUFACTURER'S INSTRUCTIONS. 5. PROVIDE 208V 3P CONNECTION FOR FOG PUMP. TO BE POWERED FROM SITE

- ELECTRICAL CONTROLS. VERIFY EXACT REQUIREMENTS PER MANUFACTURER'S INSTRUCTIONS. 6. E.C. TO PROVIDE (1) 2" CONDUIT AND PULLSTRING ROUTED UNDERGROUND FROM PANEL "MDP" TO DISCONNECT SWITCH FOR 75KVA TRANSFORMER. 7. E.C. TO PROVIDE (2) 2", (1) 1-3/4", (1) 1-1/2", AND (4) 1/2" CONDUITS AND
- PULLSTRINGS ROUTED UNDERGROUND FROM AUDIO JUNCTION BOX IN ELECTRICAL ROOM TO SITE PAVILLION SPEAKERS. 8. E.C. TO PROVIDE (1) 2-1/2" CONDUIT AND PULLSTRING ROUTED UNDERGROUND
- FROM PANEL "MDP" TO ELECTRICAL ROOM FOR PANEL "CCP". 9. ELECTRICAL COMPONENTS AND REQUIREMENTS OF SITE RELATED EQUIPMENT IN DESIGNTED SPACE TO BE PROVIDED IN SEPERATE CONSTRUCTION DOCUMENT
- PACKAGE. 10. E.C. TO PROVIDE (1) 1" CONDUIT AND PULLSTRING FROM PANEL "EQP" AND (1) 3/4" CONDUIT AND PULLSTRING FROM DATA CABINET ROUTED UNDERGROUND TO
- LOCATION OF SITE ELECTRICAL CONTROLS IN EQUIPMENT ROOM. 11. E.C. TO PROVIDE (1) 2-1/2" CONDUIT AND PULLSTRING ROUTED UNDERGROUND FROM 75KVA TRANSFORMER TO LOCATION OF PANEL "SPKR". SEE SITE PLAN UNDER SEPERATE CONSTRUCTION DOCUMENT PACKAGE FOR MORE

INFORMATION.

------ INDICATES EQUIPMENT/CONDUIT/WIRE INSTALLED UNDER THIS CONTRACT

----- INDICATES FUTURE EQUIPMENT/CONDUIT/WIRE

MEC	CHANICAL E	QUIPMENT ELECTRICAL CONNECTION SC	HEDULE

			LOAD					
HASE	LOAD	WATTS	CLASSIFICATION	PANEL	CKT #	CONNECTION	FEEDER SIZE	COMMENT(S)
1	44 VA	44 W	Ventilation	A	6	MANUAL STARTER/DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION AT UNIT.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	FAN TO BE CIRCUITED WITH RESTROOM LIGHTS. CONTROLED BY LOCAL LIGHTING CONTROLS.
1	44 VA	44 W	Ventilation	A	6	MANUAL STARTER/DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION AT UNIT.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	FAN TO BE CIRCUITED WITH RESTROOM LIGHTS. CONTROLED BY LOCAL LIGHTING CONTROLS.
1	56 VA	56 W	Ventilation	EQP	31	MANUAL STARTER/DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION AT UNIT.	(2) #12 & (1) #12 GND IN 3/4" CONDUIT.	

	MECHANICAL EQUIPMENT ELECTRICAL CONNECTION SCHEDULE								
PHASE	LOAD	MCA	MOCP	LOAD CLASSIFICATION	PANEL	CKT #	CONNECTION	FEEDER SIZE	COMMENT(S)
1	3744 VA	18.0	30	Cooling	EQP	33,35	PROVIDED WITH DISCONNECT SWITCH.	(2) #10 & (1) #10 GND IN 1" CONDUIT.	
1	0 VA	1.0	30	Other	EQP	33,35	PROVIDED WITH DISCONNECT	(2) #10 & (1) #10 GND IN 1"	DS-1 TO BE POWERED THROUGH CONDENSING SECTION

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client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 LAIARCHITECT.COM
architect of record Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM lighting design / engineer TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
water feature SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM cafe engineer THORSON BAKER + ASSOCIATES 3030 W STREETSBORD ROAD
RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM

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					LIGHTI	NG FIXTURE SCHEDULE		
	APPARENT		l	_AMP(S)				
TYPE	LOAD	VOLTAGE	NO.	LAMP	MANUFACTURER	CATALOG NUMBER	ACCESSORIES	DESCRIPTION
EX-1	5 VA	120 V	-	LED	LITHONIA Eaton The exit light co.	EDG-1-R-ELSD ES7-1-70-S-R-P/W ELCELSM-R-A-BBST-S	ELA US12	EDGE-LIT EXIT SIGN
G-1	31 VA	120 V	-	LED	METALUX LITHONIA COLUMBIA	4-SNLED-LD5-44SL-UNV-L840-CD-1-U MNSL-L96-2LL-MVOLT-GZN-40K-80CRI CSL8-8040		LINEAR SUSPENDED LIGHT. VERIFY ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
0-1	24 VA	120 V	-	LED	MARK LIGHTING ALW LIGHTNET	FCL-CIR-8DIA-FLP-GB-80CRI-40K-1000LMF-MIN1-120-2T LP1/MR1SMB-D8-DECOR/4000-0/10V/1%-EXT/F-WH-UNV 1RA10WD-840M-D2500		RECESSED CIRCULAR OCCULUS LIGHT.
P-1/EM	47 VA	120 V	-	LED	EATON LITHONIA COLUMBIA	HVSL8-4-LD4-2-LO-40-UNV-O-EDC-1-EL14W BLWP4-48L-SDP-120-EZ1-LP840-NOC-EL14L LPT-4-40-LW-E-U-ELL14		LINEAR FIXTURE. STEEL HOUSING. VERIFY ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
R-1	13 VA	120 V	-	LED	XAL CL!CK ZUMTOBEL	LENO-1-K-7-2-1-7-2-6-0-H-7-0050 CLKLED-900-80-40-SO-2.5-C-UNV-DP-1-AC-FW 42-183-191		RECESSED LINEAR FIXTURE. VERIFY ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
R-1/EM	13 VA	120 V	-	LED	XAL CL!CK ZUMTOBEL	LENO-1-K-7-2-1-7-2-6-1-H-7-0050 CLKLED-900-80-40-SO-2.5-C-UNV-DP-E1-AC-FW 42-183-191		RECESSED LINEAR FIXTURE. EMERGENCY BACKUP. VERIF ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
R-2	13 VA	120 V	-	LED	XAL CL!CK ZUMTOBEL	LENO-1-K-7-2-1-7-2-6-0-H-7-0025 CLKLED-900-80-40-SO-2.5-C-UNV-DP-1-AC-FW 42-183-193		RECESSED LINEAR FIXTURE. VERIFY ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
R-2/EM	13 VA	120 V	-	LED	XAL CLICK ZUMTOBEL	LENO-1-K-7-2-1-7-2-6-1-H-7-0025 CLKLED-900-80-40-SO-2.5-C-UNV-DP-E1-AC-FW 42-183-193		RECESSED LINEAR FIXTURE. EMERGENCY BACKUP. VERIF ALL FINISHES, TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING.
T-1	55 VA	120 V	-	LED	Core Lighting Aspect Led Tube Lighting	LSM-25FX-40K-PF-24 AL-SL-NN-S-NW-24 DSH-S-24V-W40		FLEXIBLE TAPE LIGHT TO BE INSTALLED INSIDE OCULUS DOME. FIELD VERIFY EXACT LENGTH REQUIRED AND ORDER FIXTURE ACCORDINGLY. CONFIRM EXACT ACCESSORIES REQUIRED FOR DRIVER POWER, DIMMING, MOUNTING, ETC. WITH MANUFACTURER'S INSTRUCTIONS AND PROVIDE AS REQUIRED.
W-2	59 VA	120 V	-	LED	EATON LITHONIA HOLOPHANE	GWC-AF-01-LED-E1-T3 DSXW1-LED-10C-1000-40K-T3M-120-ELCW HI WPC2-P10-40K-12-T3M80CRI-FM	BBB	BUILDING MOUNTED LED WALLPACK.VERIFY ALL FINISHES TRIM, STYLE, COLORS, ETC. WITH ARCHITECT PRIOR TO ORDERING

LIGHTING FIXTURE SCHEDULE NOTES

- . REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND/OR ROOM FINISH SCHEDULE TO DETERMINE PROPER TYPE OF LIGHT FIXTURE REQUIRED FOR THE CEILING CONSTRUCTION PRIOR TO ORDERING THE FIXTURES & PROVIDE FIXTURES THAT ARE COMPATIBLE WITH THE CEILING SYSTEM. ALL BALLASTS FOR LINEAR AND COMPACT FLUORESCENT LAMPS SHALL BE INSTANT START WITH LESS THAN 10% THD. ALL SUCH BALLASTS FOR EXTERIOR FIXTURES SHALL BE COLD WEATHER BALLASTS RATED FOR 0°F OR LOWER. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ALL LIGHTING FIXTURES UTILIZING DOUBLE ENDED FLUORESCENT LAMPS SHALL BE PROVIDED WITH AN INTEGRAL DISCONNECTING MEANS INSTALLED BY THE FIXTURE MANUFACTURER. FOR SAID FIXTURES WHERE AN INTEGRAL DISCONNECTING MEANS IS NOT AVAILABLE BY THE MANUFACTURER, THE E.C. SHALL FURNISH AND INSTALL A LOCAL
- EXTERNAL DISCONNECTING MEANS AS REQUIRED PER NEC 410. . ALL MR16 LAMPS SHALL BE 10,000 HOUR LAMPS. LIGHTING FIXTURE TYPES WITH THE FOLLOWING SUFFIXES SHALL BE PROVIDED AS FOLLOWS. NOTE THAT SOME FIXTURE TYPES COULD HAVE MULTIPLE SUFFIXES (E.G., TYPE "A3DE" MEANS THAT FIXTURE TYPE "A3" SHALL BE PROVIDED WITH A DIMMING BALLAST AND EMERGENCY BATTERY.) • "D" = DIMMING BALLAST. PROVIDE 100% TO 10% CONTINUOUS DIMMING BALLAST, U.N.O. COORDINATE VOLTAGE AND EXACT BALLAST TYPE WITH LIGHTING CONTROLS PRIOR TO ORDERING. IF LOW VOLTAGE DIMMING, PROVIDE LOW VOLTAGE WIRING TO ALL DIMMING BALLASTS IN ADDITION TO LINE VOLTAGE WIRING SHOWN ON PLANS. • "EM" = EMERGENCY BATTERY. PROVIDE WITH INTEGRAL EMERGENCY BATTERY PACK. EMERGENCY BATTERY PACKS SHALL PROVIDE A MINIMUM OF NINETY (90) MINUTES OF CODE REQUIRED EMERGENCY LIGHTING. EACH BATTERY PACK PROVIDED SHALL PRODUCE THE MAXIMUM LUMEN OUTPUT AVAILABLE WITH THE MAXIMUM NUMBER OF LAMPS. BODINE OR APPROVED EQUAL. CIRCUIT BATTERY PACK AHEAD OF ALL LIGHTING CONTROLS.
- "NL" = NIGHT LIGHT. PROVIDE UN-SWITCHED HOT WIRE TO POWER ENTIRE FIXTURE. PHOTOMETRIC CALCULATIONS MAY BE REQUIRED FOR SOME FIXTURE TYPES AS PART OF SHOP DRAWING SUBMITTALS AS DETERMINED BY THE ENGINEER. WHERE LIGHT FIXTURES ARE NOTED TO HAVE EMERGENCY BALLASTS THE EMERGENCY BALLASTS SHALL PROVIDE A MINIMUM OF NINETY (90) MINUTES OF CODE REQUIRED EMERGENCY LIGHTING. EACH EMERGENCY BALLAST PROVIDED SHALL PRODUCE THE MAXIMUM LUMEN OUTPUT AVAILABLE FOR THE LAMP USED. EMERGENCY LIGHTING BALLASTS SHALL BE BODINE OR APPROVED EQUAL.

CODED NOTES: (#)

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- 1. E.C. TO LOCATE REMOTE DRIVER IN ACCESSIBLE AREA AWAY FROM PUBLIC SIGHT. PROVIDE ACCESS PANEL AND COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN AS NECESSARY. VERIFY THE EXACT LENGTH OF FIXTURE AND PROVIDE THE APPROPRIATE AMOUNT OF REMOTE DRIVERS AS
- REQUIRED BY MANUFACTURER PRIOR TO ORDERING. 2. PROVIDE PARADIGM INSPIRE CONTROL STATIONS FOR CONTROL OF FUTURE CAFÉ LIGHTING. VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN. RELOCATE DURING TENANT FIT-OUT CONSTRUCTION DOCUMENTS AS REQUIRED. ROUTE 3/4" CONDUIT FROM CONTROLLER TO LOCATION OF LIGHTING EQUIPMENT RACK IN SITE ELECTRICAL ROOM AND CONNECT COMPLETE TO
- LIGHTING CONTROL SYSTEM. REFER TO "LIGHTING CONTROL DIAGRAMS", DRAWING E0.02 ON OVERALL SITE CONSTRUCTION DOCUMENTS FOR ADDITIONAL INFORMATION. SEE CODED NOTE 3 FOR MORE INFORMATION. 3. E.C. TO PROVIDE (2) 3/4" CONDUITS AND PULLSTRINGS ROUTED UNDERGROUND
- FROM LIGHTING EQUIPMENT RACK TO LOCATION AT WALL AS SHOWN. STUB UP TO CEILING SPACE AND ROUTE OVERHEAD INSIDE SPACE TO CONTROL STATION LOCATIONS. 4. ELECTRIC MIRROR QUA-36.00x24.00. MIRROR WITH INTEGRATED LIGHT. E.C. TO MAKE FINAL CONNECTIONS TO FIXTURE THROUGH MANUFACTURER PROVIDED
- CHASSIS KNOCKOUT. VERIFY EXACT ELECTRICAL CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH IN.

GENERAL NOTES:

- 1. REFERENCE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO THE ELECTRICAL INSTALLATION. COORDINATE LIGHT FIXTURE
- LOCATIONS AND MOUNTING OPTIONS WITH CEILING TYPE BEING INSTALLED. 2. ARCHITECTURAL DRAWINGS HAVE PRIORITY OVER MEP DRAWINGS WITH REGARD TO LOCATIONS OF ALL VISIBLE ELEMENTS AND DEVICES. COORDINATE EXACT
- DEVICE LOCATION WITH ARCHITECTURAL DRAWINGS. 3. REFERENCE MECHANICAL, PLUMBING, FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE ELECTRICAL CONDUIT, WIRE, LIGHT FIXTURE AND EQUIPMENT LOCATIONS WITH MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT.
- 4. WHERE EMERGENCY AND EXIT FIXTURES WITH AN INTEGRAL BATTERY PACK ARE USED, WIRE FIXTURES AHEAD OF ALL SWITCHING ON CIRCUIT INDICATED. EMERGENCY BATTERY BALLAST'S ASSOCIATED WITH THE LIGHT FIXTURES SHALL BE WIRED FOR SWITCHED OPERATION, UNLESS INDICATED OTHERWISE. PROVIDE AN ADDITIONAL HOT WIRE TO EMERGENCY BALLAST FOR SWITCHED OPERATION.
- 5. WHERE STANDARD LIGHT FIXTURES ARE USED FOR EMERGENCY LIGHTING POWERED FROM GENERATOR OR INVERTER CIRCUITS, WIRE FIXTURES TO ALLOW FOR SWITCHED OPERATION, UNLESS OTHERWISE NOTED. PROVIDE THE REQUIRED LIGHTING CONTROL EQUIPMENT AND/OR DEVICES THAT ARE UL 924 LISTED TO ENABLE FIXTURES WIRED TO EMERGENCY POWER CIRCUITS TO
- OPERATE AT FULL RATED LUMEN OUTPUT. 6. LIGHT FIXTURES DESIGNATED AS NIGHT LIGHTS (NL) SHALL BE WIRED FOR 24 HOUR OPERATION (NON-SWITCHED). 7. FURNISH AND INSTALL OCCUPANCY AND DAYLIGHT SENSORS PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH THE G.C., OWNER
- AND/OR OWNER'S REPRESENTATIVE TO COMMISSION AND ADJUST THE SETTINGS OF EACH SENSOR. 8. PROVIDE TEMPORARY POWER AND TEMPORARY EMERGENCY, EXIT AND
- GENERAL LIGHTING FOR ALL AREAS OF CONSTRUCTION AS REQUIRED. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR. 9. REFERENCE LIGHTING CONTROL DETAILS AND NOTES, DRAWINGS E4.X THRU E4.X. 10. ALL LOW VOLTAGE CABLING AND WIRING LOCATED OUTSIDE OF TENANT'S

LEASED SPACE SHALL BE INSTALLED IN RIGID CONDUIT.

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client / owner City of Canton project name CENTENNIAL PLAZA	
project address 301-399 Market Ave N, Canton, OH 44702	
architect	
Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 LAIARCHITECT.COM	
architect of record	
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM	
structural engineer	
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM	
civil engineer	
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM	
lighting design / engineer	
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM	
water feature	
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM	
cafe engineer	
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM	

	$\frac{\text{LIGHTING PLAN}}{1/4" = 1'-0"}$		revision date issued
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PAI	NELBOAR	RD DE	S	GN.	ATI	ON:	<u>A</u>						(NE	ΞW	')
Location: <u>Tenant Area 101</u> PLY FROM: <u>MDP</u> MOUNTING: <u>SURFACE</u> REMENTS:				VOLTS: <u>120/208 Wye</u> PHASES: <u>3</u> WIRES: <u>4</u>							A.I.C. RATING: MAINS TYPE: <u>MLO</u> MAINS RATING: <u>400A</u> BUS RATING: <u>400A</u>				
DF	SCRIPTION	-Δ	-P		Δ	C -P		-Δ	DESCRIPTION		СКТ	NOTE			
2YFR 102			1	1.4	0.3		_		-	1	20	LTG - CAFE SPACE		2	6
RYER	103	20	1			1.4	0.2			1	20	LTG - EXTERIOR SOFFIT		4	6
OR		20	1					0.4	0.2	1	20	LTG - RESTROOMS/EFs		6	6
ELE E	BOARD	20	1	0.4	0.1					1	20	LTG - COVE TAPE		8	
ESTF	ROOMS	20	1			0.4	0.0			1	20	LTG - OCULUS		10	
		20	1					0.0	0.0	1	20	SPARE		12	
		20	1	0.0	0.0					1	20	SPARE		14	
		20	1			0.0	0.0			1	20	SPARE		16	
		20	1					0.0	0.0	1	20	SPARE		18	
		20	1	0.0	1.5					2	20	EUH-4		20	
		20	1			0.0	1.5							22	
		20	1					0.0	2.5	2	30	EUH-5		24	
		20	1	0.0	2.5									26	
		20	1			0.0	1.5			2	20	EUH-6		28	
		20	1					0.0	1.5					30	
		20	1	0.0	1.5					2	20	EUH-7		32	
		20	1			0.0	1.5							34	
		20	1					0.0	1.0	2	20	EUH-8		36	
		20	1	0.0	1.0									38	
		20	2			1.3	1.0			2	20	EHU-9		40	
								1.3	1.0					42	
	KVA AMPS	SUB TOT	ALS ALS	8	.6 '2	8	.7 4	6	.8 5]					
DN CONNECTED N			IEC FA	CTOR			EST DE	imatei Mand	D	PANEL TOTALS					
641 VA X 1.25					80	02 VA									
720 VA 1ST 10KW X			(1.0 + F	REMAI	VING X	0.5	72	20 VA			CONNECTED LOAD:	25149 VA			
0 VA			X 1	.0			() VA		E	ESTIMATED DEMAND LOAD:	25310 VA			
	0 VA	Х	1.25	LARGE	EST MC	TOR		() VA			CONNECTED CURRENT:	70 A		
	18000 VA			X 1	.0			180	000 VA		ESTI	MATED DEMAND CURRENT:	70 A		
	88 VA			X 1	.0			8	8 V A						
	0 VA			X 1	.0			(AV C						

	ELECTRICAL SYMBOL LEGEND	ELECT	RICAL ABBREVIATIONS
SYMBOL	DESCRIPTION	A AC	AMPS AIR CONDITIONING UNIT
•	20A - 125V GROUNDING TYPE DUPLEX RECEPTACLE MOUNTED 18" AFF TO TOP OF BOX,	AFC AFF	ABOVE FINISH COUNTER ABOVE FINISH FLOOR
" ⊕	20A - 125V GROUNDING TYPE QUADRAPLEX RECEPTACLE MOUNTED 18" AFF TO TOP OF BOX,	AFG AHU AIC	ABOVE FINISH GRADE AIR HANDLING UNIT ASYMMETRICAL INTERRUPTING CURRENT
₩ M ^{GFI}	UNLESS NOTED OTHERWISE 20A - 125V GROUND FAULT INTERRUPTING TYPE DUPLEX RECEPTACLE MOUNTED, 18" AFE	ARCH ASTM AT	ARCHITECTURAL AMERICAN SOCIETY FOR TESTING AND MATERIALS AMP TRIP
₩ GEIM/P	TO TOP OF BOX, UNLESS NOTED OTHERWISE	ATS AWG	AUTOMATIC TRANSFER SWITCH AMERICAN WIRE GAGE
\$ Gerlinger	20A - 125V GROUND FAULT INTERRUPTING TYPE DUPLEX RECEPTACLE, WEATHER RESISTANT LISTED WITH DIE-CAST ALUMINUM "WHILE IN-USE COVER" AND MOUNTED 18" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE	BKR BLDG C	BREAKER BUILDING CONDUIT
0	J-BOX - TYPE AND SIZE AS REQUIRED BY NEC	CATV CCTV	CABLE TELEVISION CLOSED CIRCUIT TELEVISION
	DISCONNECT SWITCH - TYPE AND RATING AS INDICATED ON PLANS	CONTR CT	CONTRACTOR COOLING TOWER
\$ _M	MANUAL MOTOR STARTER TOGGLE SWITCH WITH THERMAL OVERLOAD PROTECTION - TYPE AND RATING PER EQUIPMENT BEING SERVED. PROVIDE ENCLOSURE WITH LOCK-OUT ACCESSORY. THERMAL OVERLOADS SIZED PER EQUIPMENT NAMEPLATE RATING.	CU CUH DE DN	COPPER CABINET UNIT HEATER DUAL ELEMENT DOWN
\$ _x	20A - 120V/277V SINGLE POLE TOGGLE SWITCH MOUNTED 48" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE. IF APPLICABLE, LOWER CASE SUBSCRIPT "x" - KEYS SWITCH TO FIXTURES BEING CONTROLLED (TYPICAL OF ALL SWITCH SYMBOLS)	DS DWG (E) or EXIST EBB	DISCONNECT SWITCH DRAWING EXISTING ELECTRIC BASEBOARD
\$ ₃	20A - 120V/277V THREE WAY SWITCH MOUNTED 48" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE.	E.C EF EH	ELECTRICAL CONTRACTOR EXHAUST FAN ELECTRIC HEATER
\$ ₀₀	LINE VOLTAGE PASSIVE INFRARED WALL SWITCH OCCUPANCY SENSOR MOUNTED 48"AFF TO	EMT	EMERGENCY ELECTRICAL METALLIC TUBING
00	WATTSTOPPER, HUBBELL, SENSOR SWITCH, COOPER CONTROLS, OR LUTRON.	EOR EQ EQUIP	ENGINEER OF RECORD EQUAL EQUIPMENT
PB	PUSH-BUTTON ASSEMBLY MOUNTED AT 48" AFF TO TOP OF BOX. TYPE AND RATINGS PER LOAD BEING SERVED. MAKE CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S	ETR EUH	EXISTING TO REMAIN ELECTRIC UNIT HEATER
	DISTRIBUTION PANEL. SEE SPECIFICATIONS, PANEL SCHEDULES AND ONE-LINE DIAGRAM FOR	EWC EWH F FA	ELECTRIC WATER COOLER ELECTRIC WATER HEATER FUSE FIRE ALARM
_	PANELBOARD RECESSED MOUNTED 6'-6" TO TOP. SEE PANEL SPECIFICATIONS, PANEL	FACP FC	FIRE ALARM CONTROL PANEL
_	SCHEDULES AND ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.	FLOOR FPB F.P.C	FAN POWER BOX (VAV) FIRE PROTECTION CONTRACTOR
_ \	IN UNFINISHED AREAS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS (#12 AWG - MINIMUM). PROVIDE A CODE-SIZED GROUND WIRE IN ALL CONDUITS IN ADDITION TO THE	FS FT G.C	FLOW SWITCH FOOT/FEET GENERAL CONTRACTOR
	CONDUCTORS SHOWN. SHADED DOT INDICATES CODE-SIZED ISOLATED GROUND WIRE IN CONDUIT.	GFI GND	GROUND FAULT INTERRUPTING PROTECTION GROUND
	CONDUIT WITH WIRING RUN CONCEALED BELOW FLOOR. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS (#12 AWG - MINUMUM). PROVIDE A CODE-SIZED GROUND WIRE IN ALL CONDUITS IN ADDITION TO THE CONDUCTORS SHOWN.	HDA HOA HPS	HAND-OFF-AUTOMATIC HORSEPOWER HIGH PRESSURE SODIUM
ECTRICAL SYMBO	L LEGEND NOTES:	HVAC IG	HEATING, VENTILATION, AIR CONDITIONING ISOLATED GROUND
NOT ALL SYMBOL WHERE CEILINGS	S SHOWN IN THIS LEGEND MAY APPEAR ON THE DRAWINGS. DO NOT EXIST TO STUB CONDUITS ABOVE FOR LOW VOLTAGE, CONDUITS SHALL BE STUBBED UP	JB or J-BOX KCMIL	JUNCTION BOX ONE THOUSAND CIRCULAR MILS
INCLUDING PULL-	ABOVE STRUCTURE ABOVE. IN FINISHED AREAS, PROVIDE COMPLETE CONDUIT PATHWAYS, BOXES, UNLESS OTHERWISE DIRECTED. CONDUIT, J-BOXES AND THE LIKE SHALL BE PAINTED TO ISHES. ALL CONDUIT SHALL BE ROUTED IN STRAIGHT RUNS WITH 90 DEGREE BENDS.	K.E.C KVA	KITCHEN EQUIPMENT CONTRACTOR KILOVOLT AMPERE
WHERE HARD INA PULL-BOXES, AND	ACCESSIBLE CEILINGS EXIST, PROVIDE COMPLETE CONTINUOUS CONDUIT PATHWAYS, INCLUDING D ACCESS PANELS, FOR LOW VOLTAGE UNLESS OTHERWISE DIRECTED, PROVIDE CONDUIT	KW LTG	KILOWATT LIGHTING
SLEEVES TRAVER	RSING OVER INACCESSIBLE CEILINGS BETWEEN AREAS WITH ACCESSIBLE CEILINGS, AS Y J-BOXES ABOVE INACCESSIBLE CEILINGS ARE WITHIN REACH OF THE ACCESS PANEL AND CAN	MATV MAU or MUA	MASTER ANTENNA TV MAKE-UP AIR UNIT
BE ACCESSIBLE F	PER N.E.C. AND LOCAL CODE.	MAX MCB	MAXIMUM MAIN CIRCUIT BREAKER
		MCC	MOTOR CONTROL CENTER
REC	EPTACLE TYPE DESIGNATIONS:	MECH	MECHANICAL CONTRACTOR
С	-RECESSED MOUNTED FLUSH IN FINISHED CEILING, RECEPTACLE AND FACEPLATE FINISH TO MATCH FINISH OF CEILING	MFR	MANUFACTURER
GFI	-GROUND FAULT INTERRUPTING TYPE	MIN	MINIMUM
	SHALL BE RED, UNLESS NOTED OTHERWISE	MLO	MAIN LUGS ONLY
H	-HORIZONTAL	MSB	MAIN SWITCHBOARD
WP	-WEATHER RESISTANT LISTED WITH DIE-CAST ALUMINUM "WHILE IN-USE COVER"	MTD	
		NEC	NON FUSED
		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		N.I.C NL	NIGHTLIGHT
		NRTL	NATIONALLY RECOGNIZED TESTING LABORITORY
		N.T.S	NOT TO SCALE
		Ø or PH	PHASE
		P	POLE
		PB	PULL BOX PLUMBING CONTRACTOR
		PNL	PANEL
	LOCATION OF NAMEPLATE FOR SURFACE MOUNTED	PRE	
	PANELS. FOR FLUSH-MOUNTED PANELS, INSTALL	REC or RCPT	RECEPTACLE
	NAMEPLATE BEHIND DOOR.	RTU	ROOF TOP UNIT
Г		SPKR	
			MULTIPLE OUTLETS WIRED ON SAME BRANCH CIRCUIT
		TR	TAMPER RESISTANT
	ENGRAVED LAMACOID, 5/32" LETTERS, SECURE TO PANEL BOARD COVER WITH	TS TTR	IAMPER SWITCH TELEPHONF TERMINAL BOARD
	ADHESIVE TYPE FASTENER.	TV	TELEVISION
		TYP	
		UH UI	UNDERWRITER'S LABORATORY

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ALL BREAKERS SHALL BE "HACR" RATED. NOTE: NOT ALL NOTES BELOW MAY APPLY TO THIS PROJECT.

INDICATES BREAKER SHALL BE "SWD" RATED. INDICATES BREAKER SHALL BE COMBINATION "ARC-FAULT / GFI" TYPE.

ALL BREAKERS SHALL BE 20A/1P, UNLESS NOTED OTHERWISE.

INDICATES BREAKER SHALL BE "GFI" TYPE WITH RATING AS REQUIRED BY NEC PER APPLICATION. PROVIDE 5 mA RATING FOR PERSONNEL PROTECTION. PROVIDE 30mA RATING FOR EQUIPMENT PROTECTION. INDICATES BREAKER SHALL BE SHUNT-TRIP TYPE.

PANELBOARD SCHEDULE NOTES

- INDICATES BREAKER TO BE "ARC-FAULT" TYPE. - INDICATES BREAKER TO HAVE LOCK-ON CLIP.
- · INDICATES BREAKER TO HAVE LOCK-ON CLIP AND RED MARKING. INDICATES CIRCUIT TO HAVE REMOTE 5mA GFI PROTECTION MODULE MOUNTED IN
- JUNCTION BOX WITH HINGED COVER ADJACENT TO PANELBOARD. MODULE SHALL BE LABELED AS TO THE CIRCUIT AND EQUIPMENT THAT IS BEING PROTECTED.
- INDICATES BREAKER CIRCUIT ROUTED THROUGH EMERGENCY LIGHTING INVERTER. 0- INDICATES TO FURNISH AND INSTALL HANDLE TIES FOR MULTIPLEX CIRCUITS. - INDICATES BREAKER CIRCUITED THROUGH CONTACTOR. SEE CONTACTOR SCHEDULE.
- 2- INDICATES BREAKER CIRCUITED THROUGH LIGHTING RELAY PANEL. SEE RELAY PANEL SCHEDULES.

JUNCTION BOX DETAIL FOR WALL MOUNTED EXTERIOR FIXTURES

TYPICAL DATA/TELEPHONE/TV/OUTLET DETAIL

GENERAL NOTES FINAL CONNECTIONS TO LIGHT FIXTURES SHALL BE MADE WITH GREENFIELD FLEXIBLE CONDUIT. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL BE 6'-0". REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHT FIXTURES. CONTRACTORS TO COORDINATE LOCATIONS OF LIGHTING, SPEAKERS, AIR DIFFUSERS, GRILLES, SPRINKLER HEADS & THE LIKE, WITH REFLECTED CEILING LAY-OUTS AS REQUIRED & DIRECTED BY THE ARCHITECT. ALL DEVICES, EQUIPMENT, FIXTURES, & THE LIKE, MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED. REFER TO MECHANICAL. PLUMBING, AND FIRE PROTECTION PLANS FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT. COORDINATE LOCATION OF DISCONNECT SWITCH ASSOCIATED WITH EACH PIECE OF EQUIPMENT WITH RESPECTIVE CONTRACTOR AND INSTALL IN ACCORDANCE WITH THE NEC. REFER TO DIVISION 15 (21, 22 & 23) SPECIFICATIONS, HVAC, PLUMBING AND FIRE PROTECTION PLANS FOR ADDITIONAL ELECTRICAL WORK REQUIREMENTS & COORDINATION. ALL RECEPTACLES SHOWN BACK-TO-BACK IN WALLS SHALL BE SEPARATED HORIZONTALLY BY 8" MINIMUM. WHERE OPEN WIRING METHODS FOR LOW VOLTAGE SYSTEMS ARE PERMITTED BY THE CONTRACT DOCUMENTS AND LOCAL AUTHORITY, THE CONDUCTOR INSULATION MUST BE PLENUM RATED. BRANCH CIRCUIT CONDUCTOR SIZES (& CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL & THE LOADS DO NOT EXCEED A LIMIT OF 3%. REGARDLESS OF THE TEMPERATURE RATING OF THE CONDUCTOR INSULATION. ALL CONDUCTOR AMPACITY RATINGS FOR THIS PROJECT SHALL BE DETERMINED FROM THE 75° C CONDUCTOR TEMPERATURE RATINGS INDICATED IN THE NEC TABLES. WHERE EQUIPMENT OR DEVICES ARE PROVIDED WITH TERMINALS/LUGS RATED FOR 60°C, THE AMPACITY RATING OF THE 75°C CONDUCTOR SHALL BE LIMITED TO ITS ASSOCIATED 60°C RATING AS INDICATED IN THE NEC TABLES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO INCREASE THE CONDUCTORS AND CONDUIT SIZE AS REQUIRED. 10. ALL 120V AND 277V BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTORS. SHARED NEUTRALS WILL NOT BE PERMITTED FOR MULTI-CIRCUIT INSTALLATIONS. WHERE MULTIPLE CIRCUITS ARE RUN IN A COMMON RACEWAY, THE AMPACITY OF THE CONDUCTORS SHALL BE PROPERLY DERATED & CONDUIT SHALL BE SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN SIX (6) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT. REFERENCE NEC ARTICLE AND TABLE 310.15(B)(3)(a). 1. ALL CONDUITS SHALL CONTAIN A GROUND CONDUCTOR SIZED PER NEC TABLE #250.122. IN ADDITION, WHERE AN ISOLATED, INSULATED GROUND IS REQUIRED, A SEPARATE GROUND CONDUCTOR WITH GREEN INSULATION SHALL BE RUN FROM THE PANEL GROUND BUS TO THE ISOLATED GROUND CONNECTION OF THE DEVICE. IN NO CASE SHALL THE SYSTEM GROUND (CONDUCTOR & ASSOCIATED OUTLET BOXES, CONDUIT & BUILDING STEEL) BE ALLOWED TO CONTACT THE ISOLATED GROUND (CONDUCTOR & DEVICE). WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR ANY REASON (I.E. VOLTAGE DROP, DERATING, ETC.), THE GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250.122. . ELECTRICAL INSTALLATION REQUIREMENTS FOR ALL HVAC, PLUMBING, FIRE PROTECTION, SPECIAL SYSTEMS AND OWNER EQUIPMENT BEING FURNISHED BY OTHERS SHALL BE REVIEWED AND COORDINATED WITH OTHER TRADES PRIOR TO ROUGH-IN. OBTAIN EQUIPMENT SHOP DRAWINGS FROM INSTALLER/SUPPLIER/CONTRACTOR/OWNER FURNISHING EQUIPMENT, AS REQUIRED, FOR REVIEW AND COORDINATION. CONTACT ARCHITECT/ENGINEER WITH ANY DISCREPANCIES FOUND BETWEEN CONSTRUCTION DRAWINGS AND EQUIPMENT BEING FURNISHED PRIOR TO ROUGH-IN. . THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL ACCESS PANELS, AS REQUIRED FOR SERVICING AND TESTING, FOR EQUIPMENT AND/OR DEVICES FURNISHED UNDER HIS CONTRACT. THE GENERAL CONTRACTOR SHALL INSTALL ACCESS PANELS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF EACH ACCESS PANEL WITH THE ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN. 4. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID ALL CUTTING, TRENCHING AND PATCHING ASSOCIATED WITH THE ELECTRICAL INSTALLATION. 5. ALL PENETRATIONS THROUGH FIRE RATED WALLS ASSOCIATED WITH THE ELECTRICAL INSTALLATION SHALL BE SLEEVED AND FIRE-STOPPED USING A UL APPROVED METHOD. UL APPROVED METHOD SHALL MEET OR EXCEED FIRE RATING OF STRUCTURE BEING PENETRATED. REFERENCE ARCHITECTURAL PLANS FOR FIRE RATED STRUCTURES. 6. NO CONDUIT, BOXES, WIRING, OR CABLES SHALL BE INSTALLED WITHIN 1 1/2" OF THE LOWEST POINT OF THE UNDERSIDE OF THE ROOF DECKING, NOR SHALL THEY BE INSTALLED CONCEALED WITHIN METAL-CORRUGATED ROOF DECKING. FOR EXISTING INSTALLATIONS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT, BOXES, WIRING, AND CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT 7. ALL ELECTRICAL EQUIPMENT AND DEVICES FOR THIS PROJECT MUST BE UL LISTED. DEVICES, EQUIPMENT, SYSTEMS SHALL BE INSTALLED PER N.E.C. REQUIREMENTS AND MANUFACTURER'S INSTRUCTIONS. 8. ALL CONDUIT AND CABLING SHALL BE PROPERLY SUPPORTED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. FOR EXISTING INSTALLATIONS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND/OR REWORK EXISTING CONDUIT AND/OR CABLING THAT IS NOT IN COMPLIANCE WITH THIS REQUIREMENT. 9. CONTRACTOR SHALL FIELD VERIFY SLAB ON GRADE FLOOR CONSTRUCTION TYPE PRIOR TO CUTTING. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR CUT A STRUCTURAL FLOOR SLAB THICKER THAN FOUR (4") INCHES WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEER OF RECORD. NOTIFY ENGINEER OF RECORD OF ANY SLAB THICKNESS GREATER THAN FOUR (4") INCHES PRIOR TO PROCEEDING WITH ANY SAW CUTTING

UV----- UNIT VENTILATOR

----- TRANSFORMER

WP ------ WEATHERPROOF TYPE DEVICE (NEMA 3R RATED)

V----- VOLTS

W ----- WATTS

X'FMR ----

WG ----- WIREGUARD

-3/4" CONDUIT WITH PULL STRING 2 GANG 3-1/2" MASONRY BOX STEEL

CITY #GW-235-G OR APPROVED EQUAL PROVIDE WITH BLANK COVERPLATE. REFER TO ARCHITECTURAL SECTION FOR LOCATIONS & ELEVATIONS.

LANDSCAPE ARCHITECTURE + URBAN PLANNING

462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614 321 5128 LI AIARCHITECT COM
architect of record Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE. OH 44131
p 440.349.2000 ATWELL-GROUP.COM
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM

BID SET Not For Construction

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DESIGN CRITERIA

- 1. Applicable Building Codes A. Building: OBC 2017 a. Construction classification type: TYPE II, B
- b. Primary use and occupancy classification: Business: Group B
- B. Mechanical: OMC 2017 C. Plumbing: OPC 2017
- D. Electrical: NEC 2017 E. Energy: OFC 2017
- F. Gas: IGC 2015 G. NFPA: latest edition 13.
- H. Local Building Code and Revisions. I. Seismic Design Category
- a. Occupancy Category: I
- b. Design Category: A c. Importance Factor: 1.0

<u>GENERAL</u>

- 1. The term General Contractor (GC), as used in these documents, refers to the Contractor / Construction Manager in responsible charge of the project in terms of coordination, scheduling, subcontractor coordination, etc. This term refers to, but is not limited to, General Contractor, Construction Manager, Design Build Contractor, Prime Contractor, etc. The term is referencing the entity that coordinates the work of other trades.
- 2. These drawings are diagrammatic and indicate the general extent of the work. The contractor shall be responsible for the coordination and proper installation of all mechanical systems. The contractor shall provide all necessary offsets and fittings which may be required due to space constraints or other conditions.
- 3. The mechanical systems or its modifications are designed to be a complete operating system and stable after the building or its modifications are fully completed. It is solely the contractor's responsibility to determine construction, installation, and programming procedures and sequences to have a complete and working system and to insure the safety of the construction personnel, public, building and its component parts, and adjacent buildings and properties. This includes the addition of whatever temporary or permanent bracing, etc. that may be necessary to brace new or existing construction, walls, and framing to remain so that the structure is braced for construction loads, etc. and that no horizontal or vertical settlement or any damage occurs to the adjacent new or permanent supports and bracing that are installed. Design of these supports shall be provided by the contractor. Provide all materials, labor, equipment, and accessories required to furnish and install the systems identified in specifications and drawings.
- 4. It is the contractor's responsibility to enforce all applicable safety codes and regulations during all phases of construction. 5. Construction loads shall not exceed structural design live loads. The contractor shall be responsible for all design required
- to support construction equipment used in constructing this project. Verify and coordinate with structural drawings. 6. The contractor shall perform all construction for the project in a manner and sequence that are based on accepted
- industry standards that recognize the interaction of the components that comprise the systems, without causing distress, unanticipated movements or irregular load paths as a result of the construction means and methods employed. 7. The contractor shall provide all miscellaneous supporting steel, etc. for the proper installation of all mechanical systems.
- 8. Before fabrication and/or installing any work, contractor shall see that it does not interfere with clearance required for finish on beams, columns, pilasters, walls, or other structural or architectural members, as shown on architectural drawings. If any work is so installed and it later develops that architectural design cannot be followed, contractor shall, at his own expense, make such changes in his work as architect may direct to permit completion of architectural work in accordance with plans and specifications.
- 9. All piping shall be protected as required by the applicable Mechanical, Plumbing, Fire Protection and Building Codes: " General Regulations" and other Code Chapters.
- 10. Pipes passing through or under walls shall be protected from breakage. Pipes passing through studs, joist, rafters or similar members less than 1 1/2" from the nearest edge of the members shall be protected by steel shield plates.
- 11. Piping shall be installed to prevent strains and stresses that exceed the structural strength of the pipe. Where necessary, provisions shall be made to protect piping from the damage resulting from pipe expansion and contraction and structural/soil settlement. Expansion joint fittings shall be used where necessary to provide for expansion and contraction of the pipes. Sleeved openings shall be sized appropriately to accommodate pipe movement and structural/soil settlement. Expansion joint fittings shall be of the typical material suitable for use with the type of piping in which fittings are installed. At a minimum install rubber mechanical joint couplings or CSA-certified expansion joints on all vertical piping at every other floor of the building and rigidly support the stack pipe on alternating floors to direct any movement into the appropriate expansion compensator. Design of these expansion fittings shall be provided by the contractor. Any analysis which requires additional support or expansion detailing shall be shared with the mechanical design professional and any stresses or point loads created by the engineered system shall be shared with the structural designer for review.
- 12. Install additional offsets on piping or ductwork where required to obtain maximum headroom or to avoid conflict with other work without additional cost to owner.
- 13. Report any interferences between work under this division and that of any other contractors to architect as soon as they are discovered. Architect will determine which equipment shall be relocated, regardless of which was first installed, and his decision shall be final.
- 14. The contractor shall coordinate floor, wall, and roof penetrations, louver sizes, etc. with general trades.
- 15. Principal openings on these drawings through the framing are shown on the structural drawings. The mechanical contractor shall examine the structural and mechanical drawings for the required openings and shall verify size and location of all openings with the general contractor. General contractor shall provide all openings required through the framing by the mechanical, electrical, plumbing, or other trades, whether or not shown on the structural drawings. Any deviation from the openings shown on the structural drawings shall be brought to the engineer's attention for review.
- 16. All mechanical and electrical work: Ductwork, plumbing, piping, wiring, lighting, etc. and all architectural items that need to be removed during the modification of or reinforcing of, existing structure shall be replaced in kind by the respective contractor. The contractors shall keep all existing systems in operation during the construction phase of the project.
- 17. All contractors are required to examine the drawings and specifications carefully, visit the site and fully inform themselves as to all existing conditions and limitations, prior to agreeing to perform the work. Failure to visit the site and familiarize themselves with the existing conditions and limitations will in no way relieve the contractor from furnishing any materials or performing any work in accordance with drawings and specification without additional cost to the owner to have a complete and working system.
- 18. Details labeled "Typical Details" or "Typical" on drawings apply to situations occurring on the whole project that are the same or similar to those specifically detailed. Such details apply whether or not details are referenced at each location on drawings. Notify engineer for clarifications regarding applicability of "Typical Details".
- 19. Work and coordinate these drawings with architectural, civil, structural, mechanical, plumbing, fire protection, electrical, and technology drawings.
- 20. Do not scale drawings.
- 21. Any discrepancies between mechanical and architectural drawings shall be brought to the attention of the architect and mechanical engineer.
- 22. Should any of the general notes conflict with any details or instructions on plans, or in the specifications, the strictest provision shall govern. 23. Shop drawings and submittals
- A. Shop drawings and submittals shall be checked and coordinated with other materials and contracts by the general, mechanical and electrical contractors and shop drawings and submittals shall bear the prime contractor's review stamp with the checker's initials before being submitted to the architect for approval.
- B. When the contractor has been authorized to use the architect and engineer's drawings as construction coordination drawings, the contractor must remove all title blocks, professional seals and any other references to the architect and engineer from those drawings. The contractors name and title shall be placed on the drawings. C. Where voltage, amp draw, dimensions and elevations of existing construction could affect the new construction, it is the contractor's responsibility to make field verifications and measurements in time for their incorporation into the shop drawings.

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- and directed by the architect.
- 27. Cutting, Patching and Drilling
- opening.

- any premium time in bid.
- engineer.
- contractor's expense.
- with electrical contractor.
- contractor prior to rough-in.
- 31. Firestopping
- penetration details.

- this requirement.

- 36. Shop Areas and Material Storage
- 37. Temporary Heat
- **EXCAVATING / BACKFILLING**

- drawings and architectural drawings (uno).

- ASTM D698 is achieved.

24. Refer to architectural and electrical reflected ceiling plans for exact location of light fixtures. Contractors to coordinate locations of lighting, speakers, air diffusers, grilles, sprinkler heads and the like, with reflected ceiling lay-outs as required

25. Ductwork or piping shall not be located over the top of any electrical panels or equipment. 26. Contractor shall include in his bid all cutting, trenching, and patching associated with the installation of this projects work.

A. All cutting and patching of the building construction required for this work shall be by this contractor unless shown on architectural drawings and confirmed as to size and location prior to new construction. Cutting shall be in a neat and workmanlike manner. B. Neatly saw cut all rectangular openings, set sleeve through opening, and finish patch or provide trim flange around

Neatly saw cut floors and patch floor to match existing, including floor covering. D. Contractor shall field verify slab-on-grade or supported floor construction type prior to cutting. Under no circumstances shall this contractor cut a floor thicker than 4 inches, a structural floor slab, whether on grade or supported, without prior written approval from the architect. If floor slab indicated to be cut on mechanical plans is found to be structural in nature, do not cut. Contact architect immediately for further directions. E. Core drill and sleeve all round openings.

F. Do not cut any structural components without architect's written approval, including, but not limited to roof joists, columns, floor joists, beams, girders, structural floor slabs, rebar, etc. G. Patch, and finish to match adjacent areas that have been cut, damaged or modified as a result of the installation of the mechanical systems. Fire-stop all penetrations of fire rated construction in a code approved manner. H. All contractors shall confirm with owner, prior to bid, times available for noise producing work such as cutting and core drilling of floors, walls, etc. as well as times for work which requires access into adjoining tenant spaces. Include

I. Exact location of roof top air conditioning units shall be approved by the structural engineer. Mechanical contractor shall furnish and install all supplemental support steel for equipment and roof penetrations after approval of structural J. The mechanical contractor shall coordinate work with the general contractor prior to construction. The mechanical contractor shall provide information regarding openings in walls, floors, etc., concrete equipment pads and

foundations to the general contractor. If the mechanical contractor fails to comply with this request, or if incorrect information is given, the necessary cutting and patching will be performed by the general contractor at the mechanical K. All openings required for this branch of work shall be accomplished in time to be incorporated in, and be compatible with the construction program; otherwise this contractor shall be responsible and pay for all changes made necessary for his failure to do so. Pipe holes in floors and walls shall be core drilled if not sleeved during construction.

28. Refer to mechanical, plumbing, fire protection, and electrical plans for location of mechanical, plumbing, and electrical equipment. Coordinate location of disconnect switch associated with each piece of mechanical and plumbing equipment

29. Installation requirements for all HVAC, plumbing, and fire protection systems shall be reviewed and coordinated with all other trades involved prior to rough-in. Give equipment shop drawings from installer/supplier/contractor equipment, as required, for review and coordination to all other trades involved. Contact architect/engineer with any discrepancies found between construction drawings and equipment being furnished prior to rough-in.

30. The contractor shall furnish all access panels or doors in hard ceilings and walls with a size as required for servicing and testing, for equipment, valves and/or devices furnished under this contract. The general contractor shall install access panels. The contractor shall coordinate the size and location of each access panel with the architect and general

A. All penetrations through fire rated walls associated with the installation shall be sleeved and fire-stopped using a UL approved method. UL approved method shall meet or exceed fire rating of structure being penetrated. Reference architectural plans for fire rated structures. If shown, reference architectural, mechanical and electrical drawings for

B. All openings through fire rated walls, floors, and/or roofs for ductwork, piping, conduit, etc., shall be fire sealed with a calcium salicate, silicone "RTV" foam, "3M" fire rated sealants, Hilti Firestop Systems, or approved equal to maintain the intended fire rating and associated UL ratings as recommended by the architect and/or sealant manufacturer. C. All fire stopping sealants shall be thixotropic so as not so slump or sag and shall be trowelable. Fire stopping sealants shall be intumescent and shall be free of asbestos, halogens, and volatile solvents. D. Fire stopping materials shall be classified in the Underwriters Laboratories (UL) fire resistance directory or listed in the Warnock Hersey International Directory.

32. All equipment and devices for this project must be UL listed. Devices, equipment, systems shall be installed per National Electrical Code requirements and manufacturer's instructions.

33. All conduit and cabling shall be properly supported as required by the National Electrical Code. For existing installations, the contractor shall be responsible to replace and/or rework existing conduit and/or cabling that is not in compliance with

34. All materials and work in the ceiling return air plenum shall be approved for plenum rated application in accordance to the current building code. Where open wiring methods for low voltage systems is permitted by the contract documents and local authority, the conductor insulation must be plenum rated.

35. All hot water heating supply and return branch run-out piping shall be 3/4 inches unless otherwise noted on drawing.

A. No plumbing or mechanical trade is permitted to use as shop working area, any concrete slab that is to receive metallic waterproofing, asphalt tile, plastic tile, etc., except by express permission of the architect. B. The contractor shall make provisions for the delivery and safe storage of his materials and equipment in coordination with the work of others. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected. The arrival and placing of large equipment items shall be scheduled early enough to permit entry and setting when there is no restriction or problem due to size and weight.

A. The HVAC contractor under this division shall set up temporary heat and other services as may be required and/or requested by the general contractor. See "General Conditions" and "Special Conditions." This contractor shall pay expenses resulting from temporary heat and services used solely by him.

1. The contractor shall familiarize himself with the survey and the geotechnical investigation report before starting construction. All underground work shall be in accordance with the recommendations of the geotechnical report except where noted otherwise on drawings or specifications.

2. All building pad preparation and patching shall follow the recommendations of the geotechnical report and the structural

3. All objectionable materials encountered are to be removed from excavated areas of the site per the geotechnical report. 4. If unstable subgrade sectors cannot be stabilized by excavation and re-compaction, then crushed stone or similar coarse aggregate materials shall be rolled into the subgrade until a firm subgrade reaction is achieved.

5. The geotechnical engineer shall determine on site or off site imported material that can be used for engineered fill. All fill material shall be approved by the geotechnical engineer.

6. The proposed engineered fill materials are to be placed in lifts not exceeding eight (8) inches in loose measured thickness. Each lift is to be compacted as follows: A. Slab on grade: Minimum of 95 percent maximum density by ASTM D698.

7. All fill materials shall be free of organic contaminations and other deleterious matter.

8. For back fill against basement walls, retaining walls, footings, etc., place in 8 inch thick layers, with each lift compacted at near optimum moisture content, until a minimum in place density of 95 percent of the maximum density as determined by

9. All soil surrounding and under footing shall be protected from frost action and freezing during the course of construction.

10. Notify structural engineer of any unusual soil conditions that are in variance with the geotechnical report.

MECHANICAL LEGEND

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DOMESTIC COLD WATER PIPING DOMESTIC HOT WATER PIPING GAS PIPING GREASE WASTE GREASE WASTE VENT OVERFLOW RAIN CONDUCTOR RAIN CONDUCTOR REFRIGERANT LIQUID REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - CHECK VALVE VALVE - SHUTOFF VALVE VALVE - SHUTOFF VALVE VALVE - SHUTOFF VALVE DRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	
DOMESTIC HOT WATER PIPING GAS PIPING GREASE WASTE GREASE WASTE VENT OVERFLOW RAIN CONDUCTOR RAIN CONDUCTOR REFRIGERANT LIQUID REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - CHECK VALVE VALVE - SHUTOFF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	DOMESTIC COLD WATER PIPING
GAS PIPINGGREASE WASTEGREASE WASTE VENTOVERFLOW RAIN CONDUCTORRAIN CONDUCTORREFRIGERANT LIQUIDREFRIGERANT SUCTIONSANITARY SEWER PIPINGSTORM PIPINGVENT PIPINGPIPING ABOVE GRADE/FLOORVALVE - CHECK VALVEVALVE - SHUTOFF VALVEVALVE - SHUTOFF VALVEPIPE UNIONUTILITY METERIHERMOSTATEQUIPMENT TAG	DOMESTIC HOT WATER PIPING
GREASE WASTEGREASE WASTE VENTOVERFLOW RAIN CONDUCTORRAIN CONDUCTORREFRIGERANT LIQUIDREFRIGERANT SUCTIONSANITARY SEWER PIPINGSTORM PIPINGVENT PIPINGPIPING ABOVE GRADE/FLOORPIPING BELOW GRADE/FLOORVALVE - CHECK VALVEVALVE - SHUTOFF VALVEVALVE - SHUTOFF VALVEPIPE UNIONUTILITY METERTHERMOSTATEQUIPMENT TAG	GAS PIPING
GREASE WASTE VENTOVERFLOW RAIN CONDUCTORRAIN CONDUCTORREFRIGERANT LIQUIDREFRIGERANT SUCTIONSANITARY SEWER PIPINGSTORM PIPINGVENT PIPINGPIPING ABOVE GRADE/FLOORPIPING BELOW GRADE/FLOORVALVE - CHECK VALVEVALVE - SHUTOFF VALVEVALVE - SHUTOFF VALVEPIPE UNIONUTILITY METERTHERMOSTATEQUIPMENT TAG	GREASE WASTE
OVERFLOW RAIN CONDUCTOR RAIN CONDUCTOR REFRIGERANT LIQUID REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - CHECK VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	GREASE WASTE VENT
RAIN CONDUCTOR REFRIGERANT LIQUID REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	OVERFLOW RAIN CONDUCTOR
REFRIGERANT LIQUID REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	RAIN CONDUCTOR
REFRIGERANT SUCTION SANITARY SEWER PIPING STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	REFRIGERANT LIQUID
SANITARY SEWER PIPING STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	REFRIGERANT SUCTION
STORM PIPING VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	SANITARY SEWER PIPING
VENT PIPING PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT	STORM PIPING
PIPING ABOVE GRADE/FLOOR PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	VENT PIPING
PIPING BELOW GRADE/FLOOR VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	PIPING ABOVE GRADE/FLOOR
VALVE - CHECK VALVE VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	PIPING BELOW GRADE/FLOOR
VALVE - RELIEF VALVE VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	VALVE - CHECK VALVE
VALVE - SHUTOFF VALVE PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	VALVE - RELIEF VALVE
PRESSURE GAUGE W/COCK STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	VALVE - SHUTOFF VALVE
STRAINER PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	PRESSURE GAUGE W/COCK
PIPE UNION UTILITY METER THERMOSTAT EQUIPMENT TAG	STRAINER
UTILITY METER THERMOSTAT EQUIPMENT TAG	PIPE UNION
THERMOSTAT EQUIPMENT TAG	UTILITY METER
EQUIPMENT TAG	THERMOSTAT
	EQUIPMENT TAG

ABBREVIATIONS

HEATING, VENTILATION, AIR CONDITIONING NATIONAL FIRE PROTECTION ASSOCIATION

REDUCED PRESSURE ZONE ASSEMBLY

VENT THRU ROOF WATTS WATER CLOSET WALL CLEANOUT WALL HYDRANT

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client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215
p 614.321.5128 LAIARCHITECT.COM
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM

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seal	PROFILE	E-71263
issue dat	te 4.2019	project number c18514

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seal	THE PROFESSION	E-71263
issue da 06.04	^{te} 4.2019	project number c18514 SHD19.039
sheet na ME(^{me} CHAN	NICAL PLANS

				PLL	JMBII	NG F	FIXTURE CONNECTION SCHEDULE	FAN SCHEDULE														
DESIGNATION	MANUFACTURE	<u>R</u> <u>MODEL</u>	CW	HW	<u>SAN</u>	VENT	<u>T</u> <u>DESCRIPTION</u>	MARK		R MODEL	SERVICE	TYPF	CAPACITY (CFM)	RPM	STATIC PRESSURE	OUTLET	WHEEL DIAMETER (IN		MOTOR POWE (WATTS)	R ELECTRICAL (DPER. WT.	MARKS
HYDRANT								EF 1	COOK	GC-148	RESTROOM	CLG MTD.	100	1075	0.5	2147	N/A	DIRECT	44	120 1	12	1,2
WH-1	J.R. SMITH	5509QT	3/4"	-	-	-	CONCEALED, CHROME PLATED QUARTER TURN NON-FREEZE HYDRANT WITH 3/4" HOSE CONNECTION, BACKER PLATE, VACUUM BREAKER, "T" HANDLE KEY.	EF 2 EF 3	COOK COOK	GC-148 12XPHD	RESTROOM EQUIPMENT ROOM	CLG MTD.	100 500	1075 1448	0.5 0.25	2147 592	N/A N/A	DIRECT DIRECT	44 57	120 1 120 1	12 46	1,2 1,2
WATER CLOSE WC-1	AMERICAN STANDARD	"MADERA" 3461.528	1-1/4"	-	4"	2"	VITEREOUS CHINA, ELONGATED BOWL, SIPHON JET FLUSH ACTION, 1.28 GPF, FLOOR MOUNTED, AMERICAN STANDARD 6065.121 FLUSH VALVE, CHURCH MODEL 295SSCT HEAVY DUTY PLASTIC, OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE.	REMARKS 1. ACCEF 2. PROVI	: PTABLE MANUFACT DE WITH BACKDRA	URERS: GREENH FT DAMPER.	HECK, LOREN COOK, OR TW	NCITY.										
LAVATORY	_					1												F				
L-1	AMERICAN STANDARD	"MOMENTS" 205B.102 - PK00.WRK	1/2"	1/2"	1-1/2"	1-1/2"	BOWL PROVIDED BY OTHERS WITH AMERICAN STANDARD 250B.102 CHROME PLATED DECK MOUNTED SENSOR OPERATED BATTERY POWERED FAUCET AND AMERICAN STANDARD 2411.015 GRID DRAIN AND TAIL PIECE. INSULATE ALL EXPOSED WASTE AND WATER SUPPLY PIPING UNDER LAVATORY WITH SAFETY COVERS PER ADA REQUIREMENTS AS MANUFACTURED BY PLUMBEREX, MCGUIRE, OR TRUEBRO. PROVIDE WITH ASSE 1070 TEMPERING VALVE.	MARK	NOMINAL TOP	IS MANUFACT	TURER MODEL	SERVICE C.		EFRIGERANT TYPE	SUCTION TEMPERATUR E (°F)	AMBIENT TEMPERATURE (°F	COMPRESS	GOR No. O STAGE	F ES MCA	ELECTRICAL MOCP VOLT.	OPER. W PH. (LBS)	T. REMARKS
DRINKING FOU	NTAIN							CU 1 REMARKS	. 2	MITSUBI	ISHI PUY-A24NHA7	DS-1	24	R-410A	45	95	1/12	1	18.00	30 208	1 163	1,2,3,4
DF-1	ELKAY	EDFPB114FPK	1/2"	-	1-1/2"	1-1/2"	2" SINGLE FOUNTAIN WALL MOUNTED NON-REFRIGERATED, FREEZE RESISTANT STAINLESS WITH ELKAY LKFRB1 FREEZE RESISTANT PACKAGE. PROVIDE WITH VANDAL RESISTAND BUBBLER AND FILTRATION KIT. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.	1. ACCEF 2. MOUN	PTABLE MANUFACT T ON VIBRATION SF	URERS: TRANE, (PRING ISOLATORS	CARRIER, LENNOX, DAIKIN. S ON PREFABRICATION CUF	RB.										
MOP BASIN	_							3. PROVI 4. PROVI	DE WITH DISCONNI DE W/ LOW AMBIEN	ECT SWITCH. IT CONTROL DOV	WN TO 0 °F.											
MB-1	FIAT	MSB-2424	1/2"	1/2"	3"	1-1/2"	MOLDED STONE BASIN WITH TILING FLANGES, STAINLESS STEEL CAP, STAINLESS STEEL SPLASH PANELS, MOP HANGER, HOSE WITH WALL HOOK, 3" DRAIN WITH DOME STRAINER AND LINT BASKET, CHICAGO MODEL 897 FAUCET WITH VACUUM BREAKER SPOUT, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD OUTLET.		[DUCTL	ESS SPLIT	SYSTE	EM A/C	C UNI	IT SCHE	DULE						
HYDRANT								MARK			FAN FAN			INDOOI	R OUTDOOR	ELECTRIC	AL					
WH-1	J.R. SMITH	5509QT	3/4"	-	-	-	CONCEALED, CHROME PLATED QUARTER TURN NON-FREEZE HYDRANT WITH 3/4" HOSE CONNECTION, BACKER PLATE, VACUUM BREAKER, "T" HANDLE KEY.	DS 1	TONS MANUFA	ACTURER MO JBISHI PKA- <i>I</i>	ODEL HIGH LOW C A24KA7 775 635	APACITY (MBH) 24	REFRIGERAN R-410A	NT (FLA) 0.36	(FLA) R 0.75	A MOCP VC 1.00 30 20	DLT. PH. REMA	RKS 3				
FLOOR DRAIN	_							<u>REMARKS</u> 1. ACCEF	: PTABLE MANUFACT	URERS: CARRIER	R, MITSUBISHI, DAIKEN, TRA	NE, JCI.										
FD-1	J.R. SMITH	2005	-	- S	EE PLANS	SEE PLA	ANS DUCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE ROUND NICKEL BRONZE STRAINER HEAD, TRAP PRIMER CONNECTION.	2. PROVI 3. REMO	DE WITH DISCONNI TE TEMPERATURE/	ECT SWITCH. HUMIDITY SENSC	DR.											
CLEANOUT	1		· · · · ·																			
CO-1	J.R. SMITH	4020	-	- S		SEE PLA	ANS DUCO CAST IRON CLEANOUT WITH ROUNDADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP.		D	OMES	TIC WATER	R HEAT	ER SC	CHED	DULE (EL	ECTRIC	;)				LOUVE	ER SC
<u> </u>	J.K. SIVILIH	4402	-	- 5	DEE PLANS	SEE PLA	AND DUCU CAST IKUN CAULK FERKULE AND CAST IKUN LEAD SEAL PLUG WITH STAINLESS STEEL KUUND CUVER AND SCREW.												N40	עס		

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	DOMESTIC WATER HEATER SCHEDULE (ELECTRIC)											
							<u> </u>	<u> </u>	_ • · · · ·	<u> </u>		
MA	RK				RECOVERY AT	STORAGE	No. OF	RELIEF VALVE	MAX. OPER.	ELECTF	RICAL	
		MANUFACTURER	MODEL	TYPE	100°F (GPH)	(GAL)	ELEMENTS	SETTING (PSI)	KW	VOLT.	PH.	REMARKS
EWH	1	A.O. SMITH	DEL-10	SHELF MOUNT	10		1	150	2.5	208	1	1,2
REMA	REMARKS:											
1. RE	. RECOVERY RATE BASED ON 40 DEGREE ENTERING WATER TEMP.											
2. AP	PROV	ED EQUALS: BRADFO	RD-WHITE, RH	HEEM, AND STATE.								

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WALL CLEANOUT DETAIL N.T.S.

SECURE RIM FLUSH

EIGHTH BEND

FINISHED FLOOR¬

N.T.S.

VENT THRU ROOF DETAIL N.T.S.

NOTE: CLEANOUT SHALL BE THE SAME SIZE AS THE PIPE TO WHICH IT IS CONNECTED UP TO 4". FOR PIPES LARGER THAN 4", THE MINIMUM SIZE OF THE CLEANOUT IS 4".

FLOOR CLEANOUT DETAIL N.T.S.

FLOOR/GRADE CLEANOUT DETAIL

WYE FITTING-

NOTE: CLEANOUT SHALL BE THE SAME SIZE AS THE PIPE TO WHICH IT IS CONNECTED UP

TO 4". FOR PIPES LARGER THAN 4", THE MINIMUM SIZE OF THE CLEANOUT IS 4".

-SECURE RIM FLUSH

WITH FINISHED GRADE

- REINFORCED CONCRETE SLAB

(12"x12"x6" DEEP SQUARE PAD)

-ADJUSTABLE HOUSING

- "NO-HUB" CLAMP ASSEMBLY

(CAST IRON; FUSED JOINT

(PVC) (TYP.)

- PIPE EXTENSION

FINISHED GRADE

WALL HYDRANT DETAIL N.T.S.

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 10
 9
 8
 7
 6
 3
 2

FLOW_

-SANITARY/STORM PIPING

BACKFLOW	PRE\	/ENTE	R S	CHED	ULE

MA	RK						
		MANUFACTURER	MODEL	SERVICE	TYPE	SIZE	REMARKS
BFP	1	WATTS	LF909	DOMESTIC	RFZ	2"	1,2
BFP	2	WATTS	LF909	IRRIGATION	RFZ	1-1/2"	1,2
BFP	3	WATTS	LF909	FOG PUMP	RFZ	1"	1

1. ACCEPTABLE MANUFACTURERS: AMES, CONBRACO, FEBCO, WATTS, OR ZURN. 2. PROVIDE AIR GAP FITTING WITH INDIRECT CONNECTION TO FLOOR DRAIN.

ELECTRIC UNIT HEATER SCHEDULE

MARK	Ś						HEATING	ELECT	RICAL	
		MANUFACTURER	MODEL	TYPE	FAN CFM	FAN HP	CAPACITY (KW)	VOLT.	PH.	REMARKS
EUH	1	QMARK	MUH0381	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	2	QMARK	MUH0381	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	3	QMARK	MUH0381	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	4	QMARK	MUH0381	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	5	QMARK	MUH0581	HORIZONTAL	350	1/100	5.0	208	1	1,2,3,4
EUH	6	QMARK	MUH0581	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	7	QMARK	MUH0581	HORIZONTAL	350	1/100	3.0	208	1	1,2,3,4
EUH	8	QMARK	MCSSAR4808AL	WALL RECESSED	100		2.0	208	1	1,2,4
EUH	9	QMARK	MCSSAR4808AL	WALL RECESSED	100		2.0	208	1	1,2,4

1. ACCEPTABLE MANUFACTURERS: BERCO, BRASCH, CHROMALOX, INDEECO MARKEL, QMARK, OR TRANE. 2. PROVIDE WITH DISCONNECT SWITCHES. 3. PROVIDE WITH HORIZONTAL WALL MOUNTING BRACKET.

4. PROVIDE WITH INTEGRAL THERMOSTAT.

2. APPROVED EQUALS: BRADFORD-WHITE, RHEEM, AND STATE.

INCOMING WATER SERVICE PIPING DIAGRAM

TRAP PRIMER DETAIL (MULTIPLE DRAINS) N.T.S.

-ACCESS DOOR -KEY OPERATED VALVE

-VACUUM BREAKER

_____FINISHED GRADE

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DETAILS sheet number

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Des							
Appli	<u>ign Cri</u>	<u>iteria</u>					
Аррію 1.	cable Bu Desi	gn live loads	Οπιο Βαιιαιης	g Code			
	Α.	Floor loads a. Retail					
	B.	• Roof loads	First floor				=100 psf
	٦.	a. Minim b. Groun	um roof live lo d snow load	bad by code	e)		= 20 psf = 20 psf = 1 0
		•	Snow expo Snow impo Thermal Fa	osure factor (c ortance factor actor (Ct)	e) (Is)		= 1.0 = 1.0 = 1.0
		c. Flat ro d. Rain o e. Total o	of snow load on snow design snow l	(Pf) cad			= 19 psf = 5 psf = 25 psf + drifting
		f. Roof o + drifti	design is gove ng whichever	rned by the n is more string	ninimum roof gent.	live load or to	otal design snow lo
2.	Desi	gn wind loads					
	A.	Basic wind spe a. Expos b. Risk 0	ed (3 second sure Category	gust) (Ultima	te)		= 115 mph = B = II
	В.	Main wind-prin	nary frame (U	ltimate)			
		<u>Heigh</u> 1. 0-15'	t Interior Z 13.9 pt	one End Z sf 21.0	<u>one</u> psf		
	C.	Components a	nd Cladding V	Vind Loads (F	PSF) (Ultimat	e)	
		WALLS	- WINDW	ARD COM	PONENT	S AND CL a(sq.ft.)	_ADDING
		<u>Height</u>	10	nterior Zone 20 50	100 1	<u>Exteri</u> 0 20	<u>or Zone</u> 50 100
		0-20	21.8 2	20.9 19.5	18.6 2	1.8 20.9	19.5 18.6
		WALLS	S - LEEWA			SAND CL	ADDING
		<u>Height</u>	10	nterior Zone		<u>Exteri</u>	or Zone
		0-20	23.6 2	2.7 21.3	20.4 29	9.0 27.2	24.5 22.7
		ROOF UPLIF	T - COMF	PONENTS	AND CLA]
		Zone		Effective A	vrea(sq.ft.) <u>s</u>		-
		Interior Zone	10 23.8	20 23.3	50 22.3	100 21.8	-
		Perimeter (5.5' Wide)	39.9	35.9	29.8	25.8	-
		Corner (5.5'x5.5')	60.0	50.0	35.9	25.8	-
	D.	Overhang Components a	98.0 nd cladding: ι	use the most s	stringent wind	j load obtaine	∫ ∍d from code, unde
		criteria (Factor increased pres	y Mutual, etc. sure coefficie), and the proj nts at building	ject specifica) perimeter, c	tions. Claddir orners, eave	ng manufacturer s s, and rakes. Load
3.	Seisr	nic	are obtained i	rom code.			
	\mathbf{S}_{S}	= 0.107					
	S ₁	= 0.048					
	S _{DS}	= 0.077					
	Seisr Risk	mic importance fac Category	tor (le)		1.0 II)	
	Seisr Seisr Resp	mic site class mic design categor oonse Modification	y factor (R)		D B 2		
	Seisr Basic	mic Response Coe	efficient (Cs)		/		
	Baok	c seismic force res	istance syste	m	0.0 Ore	57 dinary reinfor	ced -
	Analy	c seismic force res ysis procedures gn base shear (v)	istance syste	m	0.0 Oro ma Eq 11	57 dinary reinford isonry shear v uivalent latera kips (ultimate	ced - walls al force method e)
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	Subgrade rolled. Ar carefully	e sectors which will exist eas exhibiting instability a compacted.	in cut and the are to be und	ose whi ercut ar
	lf unstabl or similar achieved	e subgrade sectors cann coarse aggregate mater	ot be stabiliz ials shall be	ed by e rolled in
	The geote engineer	echnical engineer shall d ed fill. All fill material shal	etermine on I be approve	site or c d by the
	The prop measure	osed engineered fill mate d thickness. Each lift is to	erials are to b be compact	e place ed as fo
	A. 8 B. F	Slab on grade: Minimum Footings bearing on fill: M	of 98% maxii 1inimum of 98	mum de 3% max
	The earth	work program shall be c	onducted une	der the s
nunc	lation		, ronnoù by t	
June	The cont	ractor shall familiarize the	amselves wit	h the su
	before sta geotechn dated Ma specificat	arting construction. All fo ical report by Profession y 1, 2019, and pending a ions.)	undation wor al Service Ind addendum. (E	k shall k ductries Except v
	A soils te conforma the projec	sting laboratory shall be ince with the constructior ct.	retained by tl n documents	ne owne during f
	The soils	testing laboratory shall:		
	• [Discuss with the enginee procedures used to ensur- begins. nform the engineer of an	r the design i re conformar y variance in	ntent of ice with these p
	lt shall be	e the responsibility of the	soils testing	laborato
	• [•]	Determine topsoil and ex nspect all subsoil expose Approve fill materials, per equirements;	cavation strip ed during strip form density	oping de oping, s tests o
	• I Foundatio	nspect foundation bearin	g surfaces. 00 psf bearir	na press
	Top of fo	oting elevations, footing s	steps and thi	ckness
	based up design. T Frost der	on the information from t he top and bottom of foo th shall be maintained au	he geotechni ting may vary nd coordinate	ical repo y depen ed with f
	foundatio thickened shall sub elevation other trac	n bearing is found to be of I maintaining the top of for mit unit prices for such w s need to vary for final si les.	deeper than to ooting elevati ork and shall te conditions	that sho on to as qualify then th
	Step foot step of 2'	ings, where required, at a -0" unless noted otherwis	a ratio of one se.	(1) verl
	Inundatio formation bearing s	n and long term exposur is, shall be prevented. Fo urface inspection.	e of bearing s ootings shall l	surfaces be place
	Back fillir and are a otherwise may be u temporar	g against basement or p ble to resist the imposed on drawings, the walls a sed in lieu of the floor su y bracing is the total resp	it walls shall I lateral force are supported pport based ponsibility of t	not be p s. Exce d by the upon the he cont
	All fill ma	terials shall be free of orc	ganic contam	inations
	For back compacte density a	fill against basement wa ed at near optimum mois s determined by ASTM D	lls, retaining t ture content, 0698 is achie	walls, fo until a r ved.
•	All soil su	rrounding and under foo uction.	tings shall be	e protec
•	Notify str	uctural engineer of any u	nusual soil c	ondition
oncr	<u>ete</u>			
	All concre ACI 306.	ete construction shall cor 1 unless noted otherwise	nform to ACI	301, "S
	All detaili "Building	ng, fabrication and placin Code Requirements for s	ig of reinforci Structural Co	ng bars ncrete"
	Turner of (Non oneto		
	rype or c	Joncrete	Cementitious Content (lb./cu.yd.)	Cement (by wei
	• 5 • F	Spread footings Piers below grade	470	0.6
	• 1	nterior concrete	564	0.4
	•	Concrete permanently exposed to the weather or vulnerable to de-icers or freeze thaw cycles	564	0.4
	A. /	All cement shall be Type	l or Type III F	Portland
	B. 1	acceptable. Use one brar Minimum cementitious co	nd of cement	through onsist o
	С. Г	ber Note D. Fly Ash shall Fly Ash is permitted and s	not be used shall conform	in comb to AST
	(cementitious content by v vater-to-cement ratio. If F	veight indicat	ed aboved, the r
	D. (same amount of Fly Ash. Ground granulated blast t	The contract furnace slag	tor's scł (GGBF
	⊑. (i	concrete used for floors s dentified on the mix designation water reducer	snall nave 18 gn submittal.	ou psi, All pum
	F. /	All admixtures other than lesigned for addition to the	superplastic ne mix at the	izers sh plant, n
	1	rom the structural and in -	or and varifi	ontione

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and plumbing drawings, along with all		permitted.
nents.	4.	All pipe sleeve openings through concrete slabs shall be formed with standard steel pipe.
	5.	No electrical conduit shall be placed above the welded wire fabric or top reinforcing of slabs.
s shall be brought to the attention of the	6.	All aluminum in contact with concrete or dissimilar metals shall be coated with two coats coa approved by the architect, unless otherwise noted.
uctions on plans, or in the specifications,	7.	Concrete shall be discharged at the site within 1 1/2 hours after water has been added to the aggregates. Addition of water to the mix at the project site will not be permitted. All water mu the batch plant. Slump may be adjusted only through the use of additional water reducing ad high range water reducing admixture.
other materials and contracts by the hall bear the contractor's review stamp architect for approval.	8.	All concrete shall be placed without horizontal construction joints, except where specifically r Horizontal reinforcement shall be continuous through vertical construction joints.
chitect's and engineer's drawings as locks, professional seals and any other		

the batch plant. Slump may be adjusted only through the use of additional water reducing admixture or high range water reducing admixture.

reducing admixture (ASTM C494).

batch plant.

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	Foundation design is based upon the removal of the upper 19 inches of evicting fill materials and							
	replacement with engineered fill per the geotechnical report.							
	All trees, brush, roots, topsoil, rubble, organically contaminated or otherwise objectionable materials encountered are to be removed from structural areas of the site per the geotechnical report.							
	Subgrade sectors which will exist in cut and those which are to support fill structures are to be proof rolled. Areas exhibiting instability are to be undercut and back filled on a lift-by-lift basis with each lift carefully compacted.							
	If unstable subgrade sectors cannot be stabilized by excavation and recompaction, then crushed stone or similar coarse aggregate materials shall be rolled into the subgrade until a firm subgrade reaction is achieved.							
	The geotechnical engineer shall determine on site or off site imported material that can be used for engineered fill. All fill material shall be approved by the geotechnical engineer.							
	The proposed engineered fill materials are to be placed in lifts not exceeding eight (8) inches in loose measured thickness. Each lift is to be compacted as follows:							
	 A. Slab on grade: Minimum of 98% maximum density by ASTM D698. B. Footings bearing on fill: Minimum of 98% maximum density by ASTM D698. 							
	The earthwork program shall be conducted under the supervision of a soils testing laboratory. The in- place densities achieved are to be verified by tests.							
oune	dation							
	The contractor shall familiarize themselves with the survey and the geotechnical investigation report before starting construction. All foundation work shall be in accordance with the recommendations of the geotechnical report by Professional Service Inductries, Inc.(PSI), dated March 17,2017 and an email dated May 1, 2019, and pending addendum. (Except where noted otherwise on drawings or specifications.)							
	A soils testing laboratory shall be retained by the owner to provide construction review to insure conformance with the construction documents during the excavation, back fill, and foundation phases of the project.							
	The soils testing laboratory shall:							
	 Discuss with the engineer the design intent of the construction documents and the testing procedures used to ensure conformance with the construction documents before construction begins. Inform the engineer of any variance in these procedures. 							
	It shall be the responsibility of the soils testing laboratory to:							
	 Determine topsoil and excavation stripping depth; Inspect all subsoil exposed during stripping, site grading, and excavation operations; Approve fill materials, perform density tests of fills to insure placement per specification requirements; Inspect foundation bearing surfaces. 							
	Foundation design is based on 2000 psf bearing pressure on firm, undisturbed soil, or engineered fill.							
	Top of footing elevations, footing steps and thickness of footings are shown on the drawings and are based upon the information from the geotechnical report and the civil drawings available at the time of design. The top and bottom of footing may vary depending on the conditions encountered at the site. Frost depth shall be maintained and coordinated with final grading and location of footing steps. If proper foundation bearing is found to be deeper than that shown on the drawings then foundations shall be thickened maintaining the top of footing elevation to assure proper foundation bearing. The contractor shall submit unit prices for such work and shall qualify the extent of work in the base bid. If top of footing elevations need to vary for final site conditions then the general contractor shall coordinate the effort of other trades.							
	Step footings, where required, at a ratio of one (1) vertical to two (2) horizontal with a maximum vertical step of 2'-0" unless noted otherwise.							
	Inundation and long term exposure of bearing surfaces, which will result in deterioration of bearing formations, shall be prevented. Footings shall be placed immediately following footing excavations and bearing surface inspection.							
	Back filling against basement or pit walls shall not be permitted until the supporting floors are in place and are able to resist the imposed lateral forces. Except for cantilever retaining walls or unless noted otherwise on drawings, the walls are supported by the floor above and below. Proper temporary bracing may be used in lieu of the floor support based upon the design by a professional engineer. The design of temporary bracing is the total responsibility of the contractor.							
	All fill materials shall be free of organic contaminations and other deleterious matter.							
	For back fill against basement walls, retaining walls, footings, etc., place in 8" thick layers, with each lift compacted at near optimum moisture content, until a minimum in place density of 98% of the maximum density as determined by ASTM D698 is achieved.							
	All soil surrounding and under footings shall be protected from frost action and freezing during the course of construction.							
	Notify structural engineer of any unusual soil conditions that are in variance with the geotechnical report.							
onc	rete							
	All concrete construction shall conform to ACI 301, "Specifications for Structural Concrete", ACI 305.1, and ACI 306.1 unless noted otherwise.							
	All detailing, fabrication and placing of reinforcing bars, unless otherwise noted, shall conform to ACI 318, "Building Code Requirements for Structural Concrete", ACI 117, and the ACI Detailing Manual.							
	Concrete Types Schedule Type of Concrete Minimum Maximum Water// Specified Specified Specified Maximum							

eight)	Compressive Strength (psi)	Placement with W.R. (inches)	Range (% by volume)	Aggregate (inches)
60	3000	5	0-3 Entrapped	1 1/2
48	4000	3-5	0-3 Entrapped	1
45	4500	5-6	6 ±1.5%	1

d Cement per ASTM C150. Types IA and IP are not phout the project. of 100% cement or a combination of cement and Fly and ground granulated blast furnace slag (GGBFS) bination with GGBFS as a substitute for cement. STM C618 Type C or F, but shall not exceed 20% of ove on a substitution basis and shall be included in the mix design submittals shall have tests using the

chedule shall account for the use of Fly Ash. FS) is not permitted. , 3 day strength. Mixes to be pumped shall be so mped mixes shall have a mid-range or high-range

hall be added at the batch plant. Superplasticizers, may be added at the batch plant with verifications from the structural engineer and verifications that the water-to-cement ratio has not been exceeded. Superplasticizers added at the site shall be sent in pre-measured containers from the

All concrete used for cast-in-place concrete slabs shall contain the specified water reducing or water reducing/retarding admixture. All concrete slabs, placed at air temperature below 50°F shall contain the specified non-corrosive, non-chloride accelerator. All concrete placed at air temperature above 80° shall contain specified water-reducing/retarder admixture. All concrete required to be air-entrained shall contain an approved air-entraining admixture. All pumped concrete shall contain the specified high-range water-reducing admixture. Concrete with a watercement ratio above 0.40 to 0.60 shall contain the specified water reducer.

All concrete requiring a high slump for placement (e.g. pumping, drilled piers, etc.) shall contain mid-range and high-range superplasticizer. Increased slump may not be achieved by exceeding the specified maximum water cement ratio. Maximum slump is 8 inches with use of water

Calcium chloride shall not be permitted, nor shall any admixture containing calcium chloride be

All aluminum in contact with concrete or dissimilar metals shall be coated with two coats coal tar epoxy,

Concrete shall be discharged at the site within 1 1/2 hours after water has been added to the cement and aggregates. Addition of water to the mix at the project site will not be permitted. All water must be added at

All concrete shall be placed without horizontal construction joints, except where specifically noted. Horizontal reinforcement shall be continuous through vertical construction joints.

<text></text>	drawings sh	pansion joint and owing intended pla	control joint locat cing sequences alls_construction	ions are mandato and location of co	y as shown. Contr nstruction joints to	actor shall submit the engineer for ide a 60'-0" maximum	othe	rwise in sections or det	ails in the drawings:	-
	approval. A horizontal le	poured in place w ngth of concrete pl	alis, construction acement in any c	joints shall be loc lirection.	ated so as to provi	de a 60'-0" maximum			CONCRETE ANCHOR (CRACKED AND UNCRACKED C	S CONCRETE)
	All exposed drawings.	edges of concrete	members shall b	e chamfered 3/4"	unless shown othe	erwise on architectural		ANCHOR TYPE	ADHESIVE TYPE	ROD TYPE
	See archite plates, bolts	ctural drawings for , anchors, angles,	concrete finishes etc.	, masonry anchor	s, and for miscella	neous embedded		Adhesive Mechanical	Hilti HIT-HY200 SafeSet System	Hilti HIT-Z Rod
	The placem plumbing tra details in the	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.						Mechanical	-	Hilti KWIK Bolt-TZ Mechanical Safe-Set with AT tool
	The genera mechanical openings ar	contractor shall co electrical, and plu d sleeves shall be	ordinate location mbing penetration submitted for rev	s and dimensions ns before concrete view by structural	of all openings an e is placed. Shop c engineer. Opening	d sleeves required for Irawings of all slab s shall not be cut or			CONCRETE REINFORC (CRACKED AND UNCRACKED C	ING CONCRETE)
 Mail Difference in the state of the	Reinforcing	bars shall conform	to ASTM A615,	grade 60. No tack	welding of reinford	ing in the field will be		ANCHOR TYPE	ADHESIVE TYPE	REINFORCING
<text></text>	permitted. Reinforcina	bars for welded ap	plications shall c	onform to ASTM A	706. 60 ksi vield s	trenath.	H	edium Duty Adhesive leavy Duty Adhesive	Hilti HIT-HY100 SafeSet System Hilti HIT-HY200 SafeSet System	As indicated on drawings. As indicated on drawings.
	Deformed b	ar anchors (DBA) s	shall conform to <i>F</i>	ASTM A496, 70 ks	i yield strength.	C .				
 And any defining a first and a first and a reaction reacting the spectra reaction of the	Welded wire on chairs.	abric reinforcing	shall conform to <i>i</i>	ASTM A1064 and	be furnished in fla	t sheets and installed	(MA	SONRY SHALL BE SO	MASONRY ANCHOR DLID GROUTED A DISTANCE OF	RS 8" FROM ANCHOR IN ALL DIRECTIONS)
	Reinforcing above 32°.	bar sizes #3 throug For other bar sizes	gh #5 may be ber preheat reinforc	nt cold the first tim ing bars before be	e, provided reinfor nding. See procec	cing bar temperature is lures as outlined in		ANCHOR TYPE	ADHESIVE TYPE	ROD TYPE
	Wire bar su bars in slab	oports shall be furr s on grade may be	ished for all reinf supported by oth	orcing within slab er suitable suppo	s, inclusive of weld ts. Reinforcing sha	ed wire fabric. Bottom all be properly		Adhesive	Hilti HIT-HY270 SafeSet System	3/8"Ø Hilti HAS-E Continuous Threaded (3 3/8" embed)
 Abelender er under einer auf der einer Aufer der aus abereiten auf der einer Aufer aus abereiten aus ab	positioned p begun. Wire Institute Ma	rior to concrete pla bar and other type nual of Standard P	cement and may es of supports sha ractice.	not be re-position all be in accordan	ed once concrete ce with the Concre	operations have te Reinforcing Steel		Adhesive	Hilti HIT-HY270 SafeSet System	1/2"Ø Hilti HAS-E Continuous Threaded (4 1/2" embed)
Velocity of velocit	Reinforcem	ent shall be continu	ious through all c	onstruction joints	unless otherwise r	noted on drawings.		Adhesive	Hilti HIT-HY270 SafeSet System	5/8"Ø Hilti HAS-E Continuous Threaded (5 3/8" embed)
 A can be denoted a planetic state of a planetic state and a planetic structure and planetic structure and	All hooks sh Where cont	own on drawings s nuous bars are ca	hall be standard led for, they shal	hooks unless othe	erwise noted. around corners ar	d be lapped at		Adhesive	Hilti HIT-HY270 SafeSet System	3/4"Ø Hilti HAS-E Continuous Threaded (6 3/4" embed)
<form> And a standard of a</form>	necessary s developmer noted.	plices, or hooked a t table. Lap beam	at discontinuous e top bars at mid-s	ends. Lap lengths pan and beam bo	snall be as given i tom bars at suppo	n tne splice and rts, unless otherwise		Mechanical	-	Hilti KWIK HUS-EZ (Note: anchors may not be installed within 1" of vertical mortar joints.)
	Provide add typical detai	itional reinforcing a ls. Extend bars a n	t the sides and c ninimum of 2'-0" b	orners of all open beyond openings.	ngs in concrete in hook where extens	accordance with the sion is not possible.	Note	e: For applications into	existing masonry / brick that may b	e ungrouted provide screen tube insert.
 1. Impacts do late the base base base base base base base bas	Minimum ac • (2)·	ditional requireme #5 top and bottom	nts are as follows in slabs			·	Masonry			
 Provide a start of a	• (2)•	#5 x 4'-0" long dia	gonally each corn	er of opening	forme start	aning on heritary to t	1. All m 5/TN	nasonry shall conform to IS 402) and "Specificat	o "Building Code Requirements for I ion for Masonry Structures" (ACI 53	Masonry Structures" (ACI 530/ASCE 0.1/ASCE 6/TMS 602).
$\frac{1}{12} + \frac{1}{12} $	reinforcing.	and Anchorage D	a class "b" lap wi	th horizontal reinf	r same size and sp prcing in each dire	ction.	2. All bi Asso	rick and concrete masc ociation (BIA) and the N	nry construction shall comply with t ational Concrete Masonry Associat	he recommendations of the Brick Industry ion (NCMA) and minimum requirements
$\frac{\log \log 2}{\log 2} = \frac{\log 2}{\log 2} = \frac{\log 2}{\log 2} = $	3000 psi no	mal weight concre	te, Fy=grade 60,	non-coated bars			estal 3. Grou	blished in the applicable it to fill cores shall be A	e building code. STM C476, coarse grout (3/8" maxi	mum aggregate) with a minimum
$\frac{1}{2} \frac{1}{2} \frac{1}$	Bar size	Top Bars Lap	Anchorage	Bar Size	Other Bars Lap	Anchorage	com 4. Conc	pressive strength of 25	ບບ psi in 28 days. MU) shall be medium weight units ດ	onforming to ASTM C90.
$ \frac{6}{12} \frac{6}{2} \frac{1}{2} $	#3 #4 #5	28" 37" 47"	22" 29" 36"	#3 #4 #5	22" 29" 36"	17" 22" 28"	5. Mort	ar for all concrete maso	onry units shall be either Portland ce	ement (ASTM C150, Type I or III) and
 A STIC C271 Type Forether able to active the statute management of the statute mana	#6	56"	43"	#6	43"	33"	hydra C270	ated time (ASTM C207 0 Proportion Specificati	, rype ຣ) or Mortar cement (ASTM on.	u الالالان). Mortars shall conform to ASTM
$\frac{1}{1} = \frac{1}{1} $		Top Bars	.e, ry=grade 60,		Other Bars	Amelia	6. AST minir	M C270 Type S mortar mum compressive stre	shall be used for all structural maso ngth (f'm) = 1,900 psi unless otherw	onry. Structural masonry shall have a ise noted.
$ \frac{1}{9} + \frac{47}{9} + \frac{37}{9} + \frac{49}{9} + \frac{37}{9} $	ваr Size #3 #4	∟ар 24" 33"	Anchorage 19" 25"	ваr Size #3 #4	∟ар 19" 25"	Ancnorage 15" 19"	7. Rein	forcing bars shall confo	orm to ASTM A615, grade 60.	kei vield etrenath
 A gradient de la construit de la	#5 #6	41" 49"	31" 37"	#5 #6	31" 37"	24" 29"	o. Defo 9. All co	oncrete masonry units	אין snail conform to ASTM A496, 70 shall have galvanized horizontal ioir	אסו אופוט strengtn. It reinforcement as follows:
 a. 9gs add and errors not backed type; spaced f¹ are worked by program. b. 9gs add and errors not backed bype; spaced f¹ are worked by program. c. 9gs add and errors not backed bype; spaced f¹ are worked bype; space	"Top Bars" a than 12 incl	as noted in the tabl es of fresh concre	es indicates the c te is cast below the	condition where he	orizontal bars are s	o placed that more	A.	9 ga. side and cros	s rods (ladder type) spaced 16" o.c.	. vertically.
 take is a strategy muture and your and my be specification of the strategy definition of the	Where mec	nanical splice, "ms	', is specified in t	he tables, use a n	nechanical splice ti	nat develops 125	В.	9 ga. side and cros	s rods (ladder type) spaced 8" o.c.	vertically in parapets.
with a large at use with the with t	percent of the When lapping the When lap	וב שמו צופום strengt ng two different size	e bars, use the la	p dimension of th	ວອກເອດ. e smaller bar or the	e anchorage dimension	10. Lap j	joint reinforcing as show	vn in the table below:	th
 pheles moted absender. Landre data products contracted with program must be provide protection. pheles moted absender. Landre data products are moted by program must be provide protection. pheles moted absender. Landre data products are moted by provide must be provide protection. pheles moted absender. Landre data products are moted by provide must be provide protection. pheles moted absender. Landre data products are moted by provide must be provide provide must be provide protection. pheles moted absender. Landre data products are moted by provide must be provide and provide must be provide must be provide and provide must be provide and provide must be provide and provide must be provide must be provide and provide must be provide and provide must be provide and provide must be provide mus	of the larger	bar. Use whicheve Cover for Reinforcie	er dimension is la ng	rger.			W1.7 W1.7	1 (11 ga.) 7 (9 ga.) 1 (8 ga.)	6" 7"	
cale Mailuon Cover (More Figure of grade harms cale against and strained by down of each strained by down	Unless note	d otherwise, concr with ACI 318, and	ete reinforcing sh within deviation t	all be placed with olerances listed in	proper cover to pr ACI 117.	ovide protection in	W2.8 W2.8 W4.9	8 (3/16 wire) 9 (1/4 wire)	8" 9" 12'	
 Place left/ording base for grants barrie cost against and grant barries of events of the second of setting base of grants (WW F) Place left/ording base for grants (WW F) <li< td=""><td>Location</td><td></td><td></td><td></td><td>Minimum Cove</td><td>er l</td><td>11. All co vibra</td><td>ores with reinforcement ation to insure complete</td><td>shall be filled solid with grout. All g filling of cells.</td><td>rout shall be consolidated in place by</td></li<>	Location				Minimum Cove	er l	11. All co vibra	ores with reinforcement ation to insure complete	shall be filled solid with grout. All g filling of cells.	rout shall be consolidated in place by
In the during study would be write a weight of state If is east bulkers Bales on grade (vp W/F) If is east bulkers If is east bulkers If is east bulkers Bales on grade (vp W/F) If is east bulkers If is east bulkers If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers Bales on grade (vp W/F) If is east bulkers	Footings an	d grade beams cas	t against and		3"	<u> </u>	12. Place	e reinforcing bars befor	e grouting. Properly secure reinforc	ing bars to maintain the positions indicated
Inter relation Inter relation State Relation states (f) and another (f) and larger 1/2" Relation states (f) and another (f) and larger 1/2" Relation states (f) and another (f) and larger 2" Relation states (f) and another (f) and larger 2" Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and public light may be hundling contillations are mell. Relation states (f) and maximum with of grant states are mell to an accountil of ACISD 1/ASCE 6 (TMS 602). Relation states (f) and maximum with of grant states are melling may be hundling contillations and public light may be hundling contillatin statations and public light may be hundling contillati	permanently Slabs on or	exposed to earth ade (W.W.F.)			1/3 slab thickne	ess	13. Mort	ar protrusions, extendir	ng into cells or cavities to be reinford	ced and filled, shall be removed.
Number of the stand Unit Statutor state # 6 and larger 1 (2°) Parts (retr. reinf.) 2°	Interior al-l-	· /			from top of slat		14. Place Reco	e grout with pour heigh onsolidate after initial w	t not exceeding 5 feet. Consolidate ater loss and settlement has occurre	each pour by mechanical vibration. ed.
Bit and larger 2* Parts (vart, roint,) 2* Parts (vart, roint,) 2* Parts the 11/2* Stalled Anchors and Reinforcing Dowels 0 Design of anchors, adhonives, roid microbiols should be environ values published in the Hill Varth American Product Technical Suide. 0 Stalled Anchors and Reinforcing Dowels 0 Design of anchors, adhonives, raid environ values published in the Hill Varth American Product Technical Suide. 0 Stalled Anchors and Reinforcing Dowels 0 Design of anchors, adhonives, raid environ values published in the Hill Varth American Product Technical Suide. 0 Desprese installed anchors walue tension values published in the Hill Varth American Product Technical Suide. 0 Provide an inspection point (deancul) at each call to be ground at the base of each poor. 0 Desprese installed anchors walue tension values published in the Hill Varth American Product Technical Suide. 0 Provide an inspection point (deancul) at each call to be ground at the base of each poor. 0 Description (Deancul) at each and the product Technical Suide. 0 Description (Deancul) at each and walue at east three (B) years of product Technical Suide. 0 Description (Deancul) at each and the pr	Exterior slab) 95:	#5 and small	er	1 1/2"	_	15. Grou	It pour height may be ir	creased where the following conditi	ons are met:
 It is is in the second of the s	Piers (vert	einf.)	#6 and larger		2"		Α.	Limit pour height ba ACI530.1/ASCE 6	ased on a minimum width of grout s /TMS 602.	pace in accordance with Table 7 of
 stalled Anchors and Reinforcing Dowels stalled Anchors and allowable tension values published in the Hill worth American Product Technical Guide. For contrador shall submit ICC ES Evaluation reports and manufacture installation instructors for all obstinatidia anchors head in the rapidet. The contrador shall ensure the installations of phase installation instructors for all operiorie installation and plasters, and where adjacent to eath covarias to be randor and plasters, and where adjacent to eath covarias to be randor and plasters, and where adjacent to eath covarias to be rain and covariation of any requests for substitution for review on the EOR for compliance with the contrad documents. The contrador shall provide indemation to rany requests for substitution for review on the EOR for compliance with the contrad. documents. Provide 8' origit masonry under wall bearing bears unall bittore optical documents. Provide 8' origit masonry under wall bearing bears and to the application of rany requests for substitution of review optical substitution, For each application with the genestical point in multications on the project. All comers to be led by masonry bord. All ansonry walls shall heve vectored the corter provide distance. Provide 8' origit masonry under wall bearing optical. All constructed. All ansonry walls beard on the appropris jurisdiction of the project. All ansonry walls be	Pier ties				1 1/2"		В.	Place grout in lifts ı	not exceeding the limitations specifie	ed in ACI530.1/ASCE 6 /TMS 602.
stalled Anchors and Reinforcing Dowels D. Form a grout key between pours according to ACIS30.11ASCE 6 /TMS 602. Design of anchors, and method ments specified on the drawings is based on Hill products Anthor Acits and allowable tension values published in the Hill worth American Product Technical Guide. E. Forvide an inspection port (desnout) at each cell to be grouted at the base of each pour. Networks of the contractor shall submit ICC ES Evaluation reports and manufacturer installation instructions for all installation and installation andiverse andochore withe required baco installating installation. T			_				C.	Consolidate each p settlement has occ	our by mechanical vibration. Recon urred.	solidate after initial water loss and
 Beign of anchors, adhesives, and embedments specified on the drawings is based on Hilli products. Any usaturus shall meet or exceed the allowable shart and allowable tension values published in the Hilli Meet and the base of each pour. Beign of anchors, adhesives, and embedments specified on the drawings is based on Hilli products. Any usaturus is hall exceed an top project. Beign of anchors, adhesives, and the allowable shart and allowable tension values published in the Hilli products. Any usaturus is the full metric coverage on horizontal and vertical tace shells. Bed webs in more statistical and not be limited to proper hold diffing procedure, show the pregrated on the ave frequence dependence with the manufacturer product information for any requests for substitution for reach application, for any product product information for any requests for substitution for reach application, for each application, for each application, for any product and provide and substitute. Submit the specific product information for any requests for substitution for the experimence with the equivalence of the experimence with the equivalence of the substitute of product information for any requests for substitution for reach application, for each application, for each application, for any product equipting substitution. For each application, for each application, for any product equipting substitution. For each application being substitution, provide anchor by e. embedment diptic, equipting substitute, for each application indicated to an each call to substitute and and weeks were equipting estimates with the experiment. Beign Conditions and Link application indicated to a each call to be substitute and and weeks were equiptione application indicated to a reactive the experiment with the experiment. Beign Conditions and the provide is a maximum spacing of 25. Coordinate with reactive the experiment with the experiment with the experiment with the experiment with the substitute of prov	t-Installed A	nchors and R	einforcing Do	wels			D.	Form a grout key b	etween pours according to ACI530.	1/ASCE 6 /TMS 602.
 The contractor shall submit ICC ES Evaluation reports and manufacturer installation instructions for all coat-installed anchors being used on the project. The contractor shall ensume the installers of post-installed anchors shall have at least three (3) years of systemice installating procedures, block proper hole finding procedures, hole properties at maining <i>x</i> manufacturer product a thorough training with the manufacturer's representative. Training the installations and provide agreement with the manufacturer's representative injection to be limited to proper hole milling procedures, hole properties at maining <i>x</i> maintenance, rebar dowel preparation and provide the maintenance, rebar dowel preparation and provide the maintenance, rebar dowel preparation and provide manufacturer product information for any requests for substitution for review of the simulations. Do not provide generic product date, only specific values for each application, for any product attering uses in diviny be used in the appropriate generic resource in the submittal will be mendiately rejected. Post-installed anchors and dowels shall be used only where specifically indicated on the drawings or for with provide to be reactive uses the substitution will be expressive interval that use on the specific value in formation. For anthe appropriate generic trans that be associated with the governing building for lateral design loads until permanent restantis have been installed. Temporary bracing is the soil with the site installed anchors and dowels shall be used only where specifically indicated on the project. Post-installed anchors and dowels shall be used only where specifically indicated on the drawings or for interval design loads until permanent restantis have been installed. Temporary bracing is the soil with site installed anchor in leas of advarts. STM A633 Carbon Steel Tware and Na No Steel Nuts. STM F1564, GR 36 Carbon Steel Tware and Stall be sole on the second on the second	Design of an substitutions	nchors, adhesives, s shall meet or exc can Product Tech	and embedment eed the allowable nical Guide	s specified on the shear and allowa	drawings is based ble tension values	l on Hilti products. Any published in the Hilti	E. F	Provide an inspect	on port (cleanout) at each cell to be	grouted at the base of each pour.
 All correst or shall ensure the installers of post-installed anchors shall have at least three (3) years of specience installing anchors in similar installations. If installers do not have the required experience with infair installations they must conduct a thorough training with the manufacture's representative. Thinking the manufacture's representative. Provide 16° of soild masonry under wall bearing beams unless noted otherwise. All corners to be lied by masonry bond. Grout cores solid a minimum of one course below any change in wall thickness. Provide 16° of soild masonry 24° wide minimum under wall bearing joists. All corners to be lied by masonry bond. Grout cores solid a minimum of one course below any change in wall thickness. Provide 66° solid masonry 24° wide minimum under wall bearing joists. All corners to be lied by masonry bond. Grout cores solid a minimum of one course below any change in wall thickness. Provide 66° solid masonry 24° wide minimum under wall bearing joists. All corners to be lead by masonry bond. Grout cores solid a minimum of one course below any change in wall thickness. Provide 66° solid masonry 24° wide minimum under wall bearing joists. All corners to be any provide generic product data: only specific values for each substitution will be every difficult drawings. Control joints shall extend through the entire wall thickness, extend information in lead or cash-nakce there application to the propriate jurisdiction of the project shall be provided by an engineer transmiticated as "High Strength") Carbon Steel Twates Add and Stor ASTM F433 Carbon Steel Twates Add Add Add Add Add Add Add Add Add Ad	The contrac	tor shall submit IC	C ES Evaluation	reports and manu t.	facturer installatior	instructions for all	16 <i>.</i> Lavr	previous successfu	nortar coverage on horizontal and v	vertical face shells. Bed webs in morter in
 Provide 16° of solid masonry under wall bearing beams unless noted otherwise. Provide 16° of solid masonry under wall bearing beams unless noted otherwise. Provide 16° of solid masonry under wall bearing beams unless noted otherwise. Provide 16° of solid masonry under wall bearing beams unless noted otherwise. Provide 16° of solid masonry under wall bearing beams unless noted otherwise. Provide 16° of solid masonry under wall bearing beams unless noted otherwise. All corners to be tied by masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 8° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 18° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Provide 18° solid masonry 24° wide minimum under wall bearing beams unless noted otherwise. Prov	The contrac	tor shall ensure the	e installers of pos	t-installed anchor	s shall have at leas	st three (3) years of	starti	ing course on footing a ties to be reinforced or	nd in all courses of columns and pile filled with concrete grout.	asters, and where adjacent to cells or
 All corrers to be tied by masonry bond. All corrers to be tied by masonry bond. Grout corres solid a minimum of one course below any change in wall thickness. Beochractor shall submit the specific product information, for each application, for any product information, for each application, for any product degressing substitution. For each application being substituted, provide anchor type, embedment depth, thesis verye, etc.; along with the allowable shear and tension capacity for the requested edistances, etc.; along with the allowable shear and tension capacity for the requested eviewed. If this information is not fully provide (the submittately rejected. All CM assonry walls shall have vertical control joints at a maximum spacing of 25. Coordinate with loc indicated on architectural drawings. Control joints shall extend through the entire wall thickness, ext control uses that be scored only. All CMU shall be temporarily braced during construction in accordance with the governing building if relateral design loads until permanent restraints have been installed. Temporary bracial with perpetition of the provide by the engineer. When requesting a substitution of a post-installed anchor in lieu of cast-in-place shall not be substituted with performance in its officient bracing. The collar joint in multi-wythe walls being uspected in the appropriate jurisdiction of the provide by an engineer registered in the appropriate jurisdiction of the provide shall be single-wythe. CMU walls greater than 12° wide may be course to maximum vertically and header overlaps the collar joint is on maximum seried by or low. Carbon Steel Threade Rod: ASTM F1564, GR 36 Wedge Anchors: ASTM A510 or ASTM A108 Stainless Steel Bots, HA CGap Screws, and Studs: ASTM F593 Stainless Steel Bots, HA CGap Screws, and Studs: ASTM F593 Stainless Steel Bots ABG 38 Hoh-Dip Galwanizin	experience similar insta shall consis	llations they must of of but not be limited	າ ຣແນແລະ installati conduct a thorouç ed to, proper hole	ons. It installers d gh training with the drilling procedure	e mor nave the req e manufacturer's re es, hole preparation	ened experience with epresentative. Training n and cleaning	17. Prov	ide 16" of solid masonr	y under wall bearing beams unless	noted otherwise.
 The contractor shall provide manufacturer product information for any requests for substitution for review of the EOR for compliance with the contract documents. Provide 8" solid masonry 24" wide minimum under wall bearing joists. Provide 8" solid masonry 24" wide minimum under wall bearing joists. All masonry walls shall have vertical control joints shall bearing joists. All masonry walls shall have vertical control joints shall bearing joists. All masonry walls shall have vertical control joints shall bearing joists. All masonry walls shall have vertical control joints shall bearing joists. All CMU shall be temporarily braced during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily braced during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily braced during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily braced during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily braced during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily brace during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily brace during construction in accordance with the governing building for lateral design loads until permanent retraints have been installed. All CMU shall be temporarily brace during construction in accordance with the governing building for lateral design loads u	techniques, and installat	adhesive injection ion and proof loadi	techniques and on ng/torquing.	lispenser training	/ maintenance, ret	par dowel preparation	18. All co	orners to be tied by ma	sonry bond. n of one course below any change i	in wall thickness.
 All masony walls shall have vertical control joints at a maximum spacing of 25°. Coordinate with load provide generic product data, only specific values for each substitution will be explored. If this information is not fully provided, the submittal will be immediately rejected. 21. All masony walls shall have vertical control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control drawings. Control joints at a maximum spacing of 25°. Coordinate with load indicated on architectural drawings. Control continuous bond beams where the masonry shall be scored any. 21. All masonry walls shall have vertical drawings. Control joints at a maximum spacing in the soletural design loads until permanent restariants. Are provided is united architectural design loads until permanent restariants. Are provided is united architectural design loads untit per	The contract to the EOR	tor shall provide m for compliance with	anufacturer produnt the contract doo	uct information for cuments.	any requests for s	substitution for review	20. Prov	ide 8" solid masonry 24	" wide minimum under wall bearing	joists.
 annesw type, edge austances, etc.; along with the allowable shear and tension capacity for the requested applications. Do not provide generic product data; only specific values for each substitution will be veriwed. If this information is not fully provided, the submittal will be immediately rejected. Cost-installed anchors and dowels shall be used only where specifically indicated on the drawings or for specific conditions approved by the engineer. Items indicated to be cast-in-place shall not be substituted with post-installed anchor in lieu of cast-in-place anchor, calculations, for a post-installed anchor in lieu of cast-in-place anchor, calculations, for a post-installed anchor in lieu of cast-in-place anchor, calculations, for a post-installed anchor in the appropriate jurisdiction of the project. Fastener and anchor material shall be as follows: Eastener and anchor material shall be as follows: Carbon Steel Washers: ASTM F436 Carbon Steel Nust: ASTM F436 Stainless Steel Nust: ASTM F534, GR.36 Zinc Plating: ASTM B633 Hot-Dip Galvanizing: ASTM A615 Reinforcing Dowels: ASTM A615 	The contract requesting s	tor shall submit the ubstitution. For ea	specific product	information, for e	ach application, for ovide anchor type,	any product embedment depth,	21. All m indic	nasonry walls shall have ated on architectural di	e vertical control joints at a maximul awings. Control joints shall extend t	m spacing of 25'. Coordinate with locations through the entire wall thickness, except at
 Post-installed anchors and dowels shall be used only where specifically indicated on the drawings or for specific conditions approved by the engineer. Items indicated to be cast-in-place shall not be substituted with post-installed anchor in lieu of cast-in-place shall not be substituted alternate, shall be provided by an engineer registered in the appropriate jurisdiction of the project. Botts and Studis: ASTM A307; ASTM A449 (where inidcated as 'High Strength') Carbon and Alloy Steel Nuts: ASTM A563 Carbon Steel Washers: ASTM A361 or ASTM F1554, GR.36 Wedge Anchors: ASTM A510 or ASTM A108 Stainless Steel Bolts, Hex Cap Screws, and Studs: ASTM F593 Stainless Steel Bolts, Hex Cap Screws, and Studs: ASTM F593 Stainless Steel Nuts: ASTM A108 Stainless Steel Nuts: ASTM A133 Hot-Dip Galvanizing: ASTM A153 Reinforcing Dowels: ASTM A615 ASTM A615 	adhesive ty applications reviewed. If	be, edge distances . Do not provide ge this information is	, etc.; along with eneric product da not fully provided	ine allowable she ta; only specific va , the submittal wil	ar and tension cap alues for each subs be immediatelv re	acπy τor the requested stitution will be ejected.	conti 22. All C	inuous bond beams wh :MU shall be temporaril	ere the masonry shall be scored on y braced during construction in acco	iy. ordance with the governing building code
 23. The collar joint in multi-wythe walls below grade shall be fully grouted as the wall is constructed. 24. CMU walls 12" or less in width shall be single-wythe. CMU walls greater than 12" wide may be constructed as multi-wythe, provided the collar joint is continuously grouted solid, continuous header correct is provided at 40" or c. maximum vertically and header overlaps the collar joint is continuously grouted solid, continuous header correct is provided at 40" or c. maximum vertically and header overlaps the collar joint is continuously grouted solid, continuous header correct is provided at 40" or c. maximum vertically and header overlaps the collar joint is greater than 12" and exposed to view. 25. Miscellaneous Steel Nuts: ASTM A510 or ASTM A108 26. Stainless Steel Nuts: ASTM F594 27. Stainless Steel Nuts: ASTM F594 28. The collar joint in multi-wythe walls below grade shall be fully grouted as the wall is constructed. 29. CMU walls 12" or less in width shall be single-wythe. CMU walls greater than 12" wide may be constructed as multi-wythe, provided the collar joint is continuously grouted solid, continuous header corres is provided at 40" or c. maximum vertically and header overlaps the collar joint by 3" minimu single wythe for walls greater than 12" and exposed to view. 25. Miscellaneous Steel Lintel Schedule 26. A. For masonry walls 8" or thicker: For openings trom 4-0" to 5-0" use L3 1/2x5/16. LLV. For openings from 5-0" to 6-0" use L5x3 1/2x5/16 LLV. Use one angle for each 4" wythe of masonry. Angles shall be oriented with vertical legs back-to-back. 	Post-installe specific con with post-in	d anchors and dov ditions approved b	vels shall be used y the engineer. Ite	d only where specessing indicated to b	ifically indicated or e cast-in-place sha	n the drawings or for all not be substituted er. When requesting a	for la respo from	ateral design loads until onsibility of the contrac improper or insufficien	permanent restraints have been instor. The contractor is responsible fo t bracing.	stalled. Temporary bracing is the sole r all costs associated with repairs resulting
 CMU walls 12" or less in width shall be single-wythe. CMU walls greater than 12" wide may be constructed as multi-wythe, provided the collar joint is continuously grouted solid, continuous heade course is provided at 40" o.c. maximum vertically and header overlaps the collar joint by 3" minimu single wythe for walls greater than 12" and exposed to view. Carbon Steel Washers: ASTM F436 Carbon Steel Threaded Rod: ASTM F1554, GR.36 Stainless Steel Bolts, Hex Cap Screws, and Studs: ASTM F593 Stainless Steel Nuts: ASTM F594 Zinc Plating: ASTM B633 Hot-Dip Galvanizing: ASTM A153 Reinforcing Dowels: ASTM A615 24. CMU walls 12" or less in width shall be single-wythe. CMU walls greater than 12" wide may be constructed as multi-wythe, provided the collar joint is continuously grouted solid, continuous header ourse is provided at 40" o.c. maximum vertically and header overlaps the collar joint by 3" minimum single wythe for walls greater than 12" and exposed to view. 25. Miscellaneous Steel Lintel Schedule A. For masonry walls 8" or thicker: For openings up to 4'-0" use L3 1/2x3 1/2x5/16. For openings from 4'-0" to 5'-0" use L4x3 1/2x5/16 LLV. For openings from 5'-0" to 6'-0" use L5x3 1/2x5/16 LLV. Use one angle for each 4" wythe of masonry. Angles shall be oriented with vertical legs back-to-back. 	substitution alternate, sh	of a post-installed all be provided by	anchor in lieu of c an engineer regis	cast-in-place anch stered in the appro-	or, calculations, fo ppriate jurisdiction	r a post-installed of the project.	23. The	collar joint in multi-wyth	e walls below grade shall be fully gr	routed as the wall is constructed.
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 Stainless Steel Nuts: ASTM F594 Zinc Plating: ASTM B633 Hot-Dip Galvanizing: ASTM A153 Reinforcing Dowels: ASTM A615 For openings up to 4'-0" use L3 1/2x3 1/2x5/16. For openings from 4'-0" to 5'-0" use L4x3 1/2x5/16 LLV. For openings from 5'-0" to 6'-0" use L5x3 1/2x5/16 LLV. Use one angle for each 4" wythe of masonry. Angles shall be oriented with vertical legs back-to-back. 	 Cal We State 	סטו סנפפו ו hreade dge Anchors: AST inless Steel Bolts.	u Roa: ASTM F M A510 or ASTM Hex Cap Screws	and Studs: AST , and Studs: AST	M F593		∠ə. <u>Misc</u> A.	For masonry walls	8" or thicker:	
 Angles shall be oriented with vertical legs back-to-back. 	• Sta • Zin • Ho • Re	inless Steel Nuts: c Plating: ASTM B -Dip Galvanizing: nforcing Dowels: A	ASTM F594 633 ASTM A153 STM A615					 For openir For openir For openir For openir Use one a 	gs up to 4'-0" use L3 1/2x3 1/2x5/1 gs from 4'-0" to 5'-0" use L4x3 1/2x gs from 5'-0" to 6'-0" use L5x3 1/2x ngle for each 4" wythe of masonry.	6. 5/16 LLV. 5/16 LLV.
							-	Angles sha	all be oriented with vertical legs bac	k-to-back.

10 9 8 7 6 5 4 3

For openings from 5'-0" to 6'-0" use L5x3 1/2x5/16 LLV. All lintels shall have a bearing length at each end of 1 inch per foot of opening with a minimum of

D. All lintels shall bear on 16" solid masonry extending 16" beyond end of lintel.

E. All lintels on the building exterior shall be galvanized.

C.

F.

Where sufficient bearing is not available, provide attachment of the lintel to the structure. Refer to the architectural and mechanical drawings for all masonry wall opening dimensions and

locations. Any conflict with framing shall be brought to the engineer's attention for review.

<u>Masonry (cont.)</u>

26. Quality Assurance

An independent testing laboratory shall be retained to periodically inspect and perform material testing of masonry materials and construction to comply with the building code and minimum testing and submittals as required by the Special Inspections section of the General Notes.

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<u>Structural Steel</u>

- DOMESTIC STEEL USE REQUIREMENTS AS SPECIFIED IN SECTION 153.011 OF THE OHIO REVISED CODE APPLY TO THIS PROJECT. COPIES OF SECTION 153.011 OF THE OHIO REVISED CODE CAN BE OBTAINED FROM THE 'OFFICE OF THE OHIO FACILITIES **CONSTRUCTION COMMISSION.'**
- Detailing, fabrication, and erection shall conform to the latest edition as referenced by the applicable building code, of the AISC "Steel Construction Manual" and AISC 360 "Specification for Structural Steel Buildings", herein referred to as "AISC Manual" and "AISC Specification". Structural Steel: (W shapes) ASTM A992 (Fy=50ksi)
 - (Plate Girders) ASTM A572 Grade 50 (Fy=50ksi) (M, S, C shapes) ASTM A36 uno (Plate, Angles) ASTM A36 uno
- HSS: (tubular shapes) ASTM A500 grade C (Fy=50ksi)
- (round shapes) ASTM A500 grade C (Fy=46ksi)
- Pipe Sections: ASTM A53, type E or S, grade B (Fy=35ksi)
- All anchor rods shall be ASTM F1554 grade 36, uno.
- All structural steel not to receive spray fire-proofing shall be primed white or light gray; asphaltic paints are not acceptable.
- All column base plates shall have a minimum of four anchor rods.
- Connections shown on these drawings are generally schematic. They are intended to define the spatial relationship of the framed members and show a feasible method of making the connection. Any connection that is not shown or is not completely detailed on the structural drawings shall be designed by a registered professional engineer, retained by the fabricator. Details and connections may be designed to conform to AISC Manual. Completely detailed means the following information is shown on the shop detail drawings:
- A. All plate dimensions and grade. All weld sizes, lengths, pitches and returns.
- All hole sizes and spacings.
- Number and type of bolts: where bolts are shown but no number is given, the connection has not been completely detailed. Where partial information is given, it shall be the minimum requirement for connection. Method of design.
- 4. Submit calculations stamped & signed by an engineer registered in the appropriate jurisdiction of the project including, but not limited to, moment connections (flexible and fully restrained moment connections), bracing gusset plates and connection to beam/column assembly, web-to-chord connection at trusses, and any unique connections that are not completely detailed on these drawings.
- Details and connections completely detailed in the contract drawings may not be altered without written approval by the engineer. Where approved, altered connections shall be completely detailed by the fabricator's engineer clearly on the shop drawings.
- Alterations of schematic connection details may impact architectural concept and shall not be made without prior written approval of the engineer.
- Minimum connection plate thickness shall be 3/8", unless otherwise indicated in the contract drawings.
- 8. For W, M, S, and C shapes, unless otherwise noted, beam to beam connections and beam to column connections shall be one of the following double angle (t min=5/16") framed beam connections:
 - A. Shop welded per Table 10-2, AISC Manual for using weld A, and using 3/4"diameter A325-N bolts in standard or horizontally slotted holes for the field connection
 - All bolted connections per Table 10-1, AISC Manual. Controlling strength of connection shall be least of bolt / angle strength or beam web strength taking into account coped flanges.

The minimum length of connection angles shall be equal to one-half the depth of the member to be supported.

9. Unless otherwise noted, all connections at HSS sections shall be designed and detailed in accordance with the AISC Manual and AISC Specification.

The connections shall be designed to support the reactions due to the maximum allowable uniform load as indicated in the load tables of the AISC Manual, Part 3 for the given beam size and span. For beams and girders not uniformly loaded see plan for reaction; if no reaction is shown, contact Engineer of Record for reactions.

11. Slip critical bolts (friction bolts) shall be used at the following locations:

- A. Moment connections
- 12. Slip critical bolts shall be tightened per AISC specifications.
- 13. All other bolts not designated as slip critical bolts shall be considered bearing bolts. Do not over tighten bearing bolts, especially for beams to support concrete slabs. Tighten bearing bolts to a snug condition only, per AISC specifications.
- 14. Twist-off type tension control bolts are not permitted to be used as bearing bolts.
- 15. All moment plate connections shall be designed for the full moment capacity (as tabulated in the AISC Manual, Part 3) of the beam, unless noted otherwise. Local stresses at bolt holes do not govern. All connections to tubes and pipes shall use thru plates unless noted otherwise. 16. All welding shall be done using E-70xx electrodes in accordance with the latest AWS
- specifications.
- 17. Work these drawings with architectural drawings for nailer holes and architectural clearances. 18. General contractor shall verify all structural beam locations, mechanical unit weights and opening sizes and locations with mechanical contractor and vendor's drawings for actual mechanical unit
- purchased. 19. Splicing of structural members where not detailed on the drawings is prohibited without prior approval of the structural engineer.
- 20. Screed plates, pour stops and slab supports at slab openings, at slab edges and supports for metal deck around columns shall be furnished by the contractor as required to complete the work.
- 21. Cuts, holes, coping, etc. required for work of other trades shall be shown on the shop drawings and made in the shop. Cuts or burning of holes in structural steel members in the field will not be permitted, unless specifically approved in each case by the structural engineer.
- 22. All HSS shapes (round, square, rectangular, etc.) are to have a 1/4" cap plate at all exposed ends. Cap plates to be seal welded all around, uno. Provide 3/8"Ø weep holes in the center of the plate. 23. All weld sizes not shown in details herein shall be the minimum required size based on thickness
- of thinner part as per AISC Specification, Tables J2.3 & J2.4. Exception: At member splices welds or bolts shall develop full strength of the member or components being connected.
- 24. All around welds indicated herein shall be discontinuous at the flange tips of open sections. 25. All structural steel, including base plates and tops of anchor bolts, to be exposed to soil are to be coated with an approved coal tar epoxy, 16 mils minimum thickness.
- 26. Any alteration made by the detailer on the structural steel shop drawings to schematic or completely detailed connections shown on the contract drawings must be clearly identified by clouding or by direct note on the shop drawing by the detailer prior to submission to the engineer.
- 27. Any member sizes shown on the plans, and currently listed in the AISC Manual, which are not currently available must be brought to the architect's and structural engineer's attention prior to award of steel contract. No claim for additional cost will be accepted after the award, for member/built up member substitutions for these sizes.
- 28. Filler beams shall be spaced equally between established dimensions, unless noted otherwise. 29. All supplemental steel angles required for roof units and roof openings over 12"x12" to be supplied
- by structural steel fabricator and be coordinated by general contractor with the joist fabricator, mechanical drawings and mechanical equipment supplier. 30. All structural steel beams and columns adjacent to masonry shall have adjustable masonry
- anchors at 2'-0" o.c. 31. Hot dip galvanize per ASTM A123 after fabrication the following structural steel members:
- Shelf angles supporting masonry. Lintels supporting single or multiple wythe exterior masonry walls. Items identified on the architectural and structural drawings. All steel permanently
- exposed to weather shall be hot dipped galvanized unless specified otherwise on the architectural drawings. For members shown to be galvanized, all connection material shall also be galvanized.
- The concrete slabs and/or steel decks are part of the stability system for a completed structure. The contractor shall provide temporary erection bracing to maintain structural steel in proper position until permanently secured. Remove temporary bracing and their connections only after erection of permanent members is complete and all concrete slabs have been placed and cured _____ and steel decks are properly fastened. A completed structure has its boundaries defined by the building exterior and/or interior expansion joints where they exist between building segments.

LANDSCAPE ARCHITECTURE + URBAN PLANNING

462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 LAIARCHITECT.COM
architect of record
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000 ARUP.COM
civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110 SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688 THORSONBAKER.COM

BID SET Not For Construction

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issue date 06.04.2019

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project number c18514 SHD19.039

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<u>GE</u>	NERAL NOTES (CONT.)								
<u>Meta</u>	al Roof Decking	Spe	cial Ins	spection	<u>S</u>				
1.	All metal roof decking shall comply with the provisions of the latest edition of SDI-RD "Standard for Steel Roof Deck" and underwriter requirements (Factory Mutual, etc.).	1.	Spec and s	ial inspect	ion is to be p construed t	rovided in addi o relieve the ov	tion to the inspectior vner or his authorize	ns conducted by the de d agent from requestir	epartment of building
2.	Deck and accessories shall be shop primed with white or light gray rust inhibitive primer.		inspe perfo	ctions req rm special	uired by the inspections	applicable build	ling code. Owner sh	all engage and ay for a	a qualified testing age
3.	Deck and accessories that are to receive spray fireproofing shall be galvanized.	Requ	red Spe	, cial Inspec	tions				
4.	No light gage framing, mechanical, electrical or other equipment shall be suspended from or attached to any metal roof deck.	1.	In add the a	dition to the pplicable b	e regular ins ouilding code	pections, the fo	llowing items will als	so require special insp	ection in accordance
5.	See plans for deck attachment.		A.	Soils c	ompliance p	rior to foundatio	on inspection (compa	acting fill, special gradi	ng)
<u>Colc</u>	d-Formed Metal Framing		В. С.	Structu Structu	ral concrete ral steel fab	over 2,500 psi rication			
1.	The design, installation and construction of cold-formed carbon or low-alloy steel, structural and nonstructural exterior steel framing, shall be in accordance with "The Standard for Cold-Formed Steel Framing-General Provisions, American Iron and Steel Institute" (AISI-general) and AISI-NASPEC.		D. E. F. G. H.	Field w High st Structu Fabrica Cold Fe	elding rength bolts iral masonry ated light gau ormed Steel	ige elements Deck			
2.	The cold-formed metal framing shall be considered a delegated design. The cold-formed framing supplier shall submit shop drawings and calculations stamped and signed by an engineer registered in the appropriate jurisdiction of the project. See specifications for additional information.	2.	Spec duties docu	ial inspect s and resp mentation	or shall mee onsibilities a to the buildir	t the qualifications outlined in the og official demo	ons as stated in the a e applicable building nstrating his or her o	applicable building cod code. The special insp competence and releva	e and shall perform the pector shall provide want experience or train
3.	Design of cold-formed metal stud framing shown is based on SSMA studs with section properties and allowable resisting moment capacities as defined in AISI manual, Cold-Formed Steel Design.		comp qualit	blexity to th	e same type qualificatior	of special insp s are in additic	pection activities for point to qualifications sp	projects of similar com projects in others section	plexity and material ons of the applicable
4.	All cold-formed metal framing components and connections shall be designed by the cold-formed metal framing supplier. See architectural drawings for additional cold-formed metal framing and components not shown on structural drawings. Depth and spacing of members and attachment requirements shown on drawings shall be maintained.	3.	Spec by the speci	ial inspecti e owner to al inspection	ion shall mee perform the ons shall be	et the requirem required specia forwarded to the	ents of the applicabl al inspections. The r le building official for	e building code. Specia names of persons or fir approval. The special	al inspector(s) shall b ms who are to perfor l inspector(s) shall co
5.	Minimum thickness of exterior cold-formed wall studs and tracks shall be 18 ga. at masonry veneer and 20 ga. at other locations. Minimum stud flange width shall be 1 5/8". Increase gauge thickness as required by finish system manufacturer (e.g. metal panel system, etc.). G.C. to coordinate requirements with selected manufacturers.	4.	Acces	ss for spec ssible and	cial inspectio exposed for	n: The constru special inspect	iction or work for wh	ich special inspection i ompletion of the requir	is required shall rema ed special inspection
6.	Member sizes given or connections specifically detailed on the drawings shall be considered a minimum requirement.	5.	The s A.	special insp Observ	pector(s) sha ve the work a	all: assigned for co	nformance to the ap	proved drawing and sp	pecifications.
7.	All framing members 16 ga. and heavier shall be formed from steel with a minimum yield strength of 50 ksi. All other framing shall be formed from steel with a minimum yield strength of 33 ksi.		В.	Furnish brough and the	n inspection t to the imme building de	reports to the e ediate attention partment.	ngineer of record an of the contractor for	d building department. correction, then, if no	. Discrepancies shall t corrected to the eng
8.	All framing shall be galvanized, G90 coating at masonry veneer and G60 at other locations.		C.	Submit was in	to the engine	eer of record a e with the appro	nd the building depa oved drawings and s	rtment a signed final re pecifications and the a	eport stating that the applicable workmans
9.	All connections shall be screwed or welded. Powder driven fasteners are not acceptable for any			provisi	ons of the ap	plicable buildin	g code.		
4.0	structural applications without prior approval of engineer of record.	6.	Spec	ial Inspect	ion Notes:				
10.	Member web openings shall be positioned a minimum of 10" from connections.		A.	Continu noted b	uous special pelow.	inspection is a	lways required durin	g the performance of t	he work unless spec
11.	All weids shall be touched up with zinc-rich paint.		В.	Where	fabrication of a fabric	of structural load cator's shop, co	d-bearing members Intinuous special ins	and assemblies is beir pection is required dur	ng performed on the ring the performance
12.	cold-formed metal framing components and connections indicated on the contract drawings. Any deviation from cold-formed metal framing layout and arrangement shown on the architectural and structural drawings shall be approved by the architect/engineer and additional review costs shall be the responsibility of the contractor.		C.	WORK 6 It is the than or perforn	xcept as allo e responsibili ne working d ned without i	wed in the app ty of the contra ay, of the initiat required specia	Icable building code ctor to provide the s ion of any work requ l inspection will be s	and unless specificall pecial inspector(s) with ired to have special in ubject to removal.	y noted below. n advance notice, no spections. All work
13.	Contractor shall design and furnish cold-formed metal framing for all exterior soffits and ceilings indicated on architectural drawings, designed to resist lateral wind loads and uplift wind pressure.	7.	Type: A.	s of work r Structu applica	equiring spe Iral steel elei ble building	cial inspections ments of buildir code, see Tabl	are: lgs and structures as e 1.	s required by AISC 360	0 as referenced in the
14.	OSB or plywood sheathing shall be attached to light gauge framing with #10 TEK screws at 8" o.c. (uno). The screws shall be of sufficient length to penetrate through the cold-formed steel framing member by at least three exposed threads. All screws shall be hot dipped galvanized per ASTM A153 when sheathing is preservative treated or fire retardant treated.			1.	a. Sp dc th	becial Inspection bes not perform e fabrication protection	n of steel fabrication any welding, therma ocess. In such cases re for material contro	process shall not be r al cutting or heating op s, the fabricator shall b of that demonstrates th	required where the fa peration of any kind a pe required to submit the fabricator's ability t
15.	All sheathing shall be APA rated sheathing.				m pr ca	aintain suitable ocess, the mat pable of being	records and proced erial specification, and determined. Mill test	ures such that, at any nd grade for the main s t reports shall be ident	time during the fabric stress-carrying eleme ifiable to the main str
<u>Skyl</u>	light Design Criteria		В.	Cold fo	ca rmed steel c	errying elements leck as require	s required by the ap d by SDI (Steel Decl	proved construction do (Institute) QA/QC as r	ocuments. reference in the appli
1.	Skylight structure shall be designed for all appropriate loading combinations of dead, live, wind and wind uplift. Design shall be based upon the most stringent criteria of each of the following: project specifications, criteria on structural drawings, underwriter requirements and the applicable building code.		C.	building Concre 1.	g code,see T te construct Isolated sp fully suppo	able 2. ion as required read concrete rted on earth o	by applicable buildir footings of buildings r rock.	ng code and Table 4. E three stories or less a	Exceptions are as foll bove grade plane that
2.	The skylight manufacturer shall submit shop drawings and calculations stamped by an engineer registered in the appropriate jurisdiction of the project for review.			2.	Continuous plane that constructio	s concrete footi are fully suppoi m.	ngs supporting walls ted on earth or rock	s of buildings three sto where the footings su	ries or less above gr pport walls of light-fra
3.	It shall be the responsibility of the skylight manufacturer to design and furnish all material required for a complete job. This shall include but not be limited to, all skylight elements, embedded connection material, loose connection material including erection to building structure and miscellaneous items as required by the architectural drawings and specifications. Also included is all materials not shown on the construction		D.	3. 4. Mason	Nonstructu grade whe Concrete p ry constructi	Iral concrete sla re the effective patios, driveway on as required as allowed in th	abs supported direct prestress in a concr /s and sidewalks, on in the applicable building e applicable building	ly on the ground, inclu rete is least than 150 p grade. Iding code and Table 5 grode	ding prestressed sla osi (1.03 MPa). 5, Level B, special
	documents that are required for support, shimming, and attachment of skylights, mullions, and their glazing to the structure.		E.	Specia load-be applica	l inspection f earing require ble building	for existing site ements in comp code.	soil conditions, during	ng site preparation and le building code and T	fill placement, to er able 7 except as all
4.	The skylight manufacturer shall notify the general contractor in writing of any items required to facilitate his work and which is not included in his contract. The general contractor shall assign these items to the appropriate subcontractors. Failure of the skylight manufacturer to notify the general contractor of additional items required to do work shall imply that these items are included in his contract price.		F.	Fabrica assem fabrica 1.	ated items: N blies is being ted items sh Exceptions	where fabrication conducted on all be performe include:	on of structural, load- the premises of a fa d during fabrication.	bearing or lateral load	-resisting members al inspection of the
5.	Attachment of skylight to the structure shall be through direct attachment to structural steel. Attachment through wood blocking or nailers is unacceptable, unless specifically noted on structural drawings. Attachment shall be adequate to transfer all reactions including wind uplift from the skylight to the structure.				a. Si ap cc cc re	pecial inspectio proved detailed introl of the word instruction docu view of fabricat	ns during fabrication d fabrication and qua kmanship and the fa uments and the appl ion and quality contr ces by the building o	are not required wher ality control procedures abricator's ability to con icable building code. A rol procedures and per fficial	e the fabricator mai s that provide a basi nform to approved approval shall be ba iodic inspection of
6.	The skylight curbs are not designed to resist thrust from skylight rafters except where specifically shown on the drawings. The structure is designed to conform to normal building code deflection criteria. Therefore, when modeling skylights for analysis, appropriate support movements shall be considered such as horizontal deflection of skylight supports, when critical to the skylights design, stability, or				b. Sp pr in: ar	pecial inspectio emises of a fab spection. Appro	ns during fabrication pricator registered ar oval shall be based u ol manuals and perio	are not required when a approved to perform pon review of the fabrodic auditing of fabricat	re the work is done on a such work without icator's written proc tion practices by an

7. Coordinate all details and dimensions with architectural.

> Special inspections for seismic resistance shall be required as specified. A. Exceptions to special inspections for seismic resistance include: exceed 35 feet. 2

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the building official.

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certificate of compliance to the owner or the owner's authorized agent for submittal to

The structure consists of light-frame construction; the design of spectral response acceleration at short period, S/DS, does not exceed 0.5; and the building height of the structure does not The seismic force-resisting system of the structure consists of reinforced masonry of reinforced concrete; the design spectral response acceleration at short periods, S/DS, does not exceed 0.5, and the building height of the structure does not exceed 25 feet.

TABLE 1 REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION APPLICABLE VERIFICATION AND INSPECTION PERFORM TO PROJECT MATERIAL TEST REPORTS AND CERTIFICATIONS AS LISTED IN AISC 360 Х Х FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. 2. INSPECTION PRIOR TO WELDING: Х a. WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE. Х b. MANUFACTURERS CERTIFICATIONS FOR WELDING Х Х CONSUMABLES AVAILABLE. c. MATERIAL IDENTIFICATION (TYPE/GRADE) Х -d. WELDER IDENTIFICATION SYSTEM. Х -e. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) JOINT PREPARATION - DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION) - BACKING TYPE AND FIT (IF APPLICABLE) f. CONFIGURATION AND FINISH OF ACCESS HOLES. Х -g. FIT-UP OF FILLET WELDS - DIMENSIONS (ALIGNMENT, GAPS AT ROOT) Х - CLEANLINESS (CONDITION OF STEEL SURFACES) - TACKING (TACK WELD QUALITY AND LOCATION) h. CHECK WELDING EQUIPMENT. Х --3. INSPECTIONS DURING WELDING a. USE OF QUALIFIED WELDERS Х -b. CONTROL AND HANDLING OF WELDING CONSUMABLES - PACKAGING Х - EXPOSURE CONTROL c. NO WELDING OVER CRACKED TACK WELDS Х -d. ENVIRONMENTAL CONDITIONS WIND SPEED WITHIN LIMITS Х - PRECIPITATION AND TEMPERATURE e. WPS FOLLOWED SETTINGS ON WELDING EQUIPMENT TRAVEL SPEED - SELECTED WELDING MATERIALS Х ---- SHIELDING GAS TYPE/FLOW RATE PREHEAT APPLIED - INTERPASS TEMPERATURE MAINTAINED (MIN/MAX.) - PROPER POSITION (F, V, H, OH) f. WELDING TECHNIQUES - INTERPASS AND FINAL CLEANING Х --- EACH PASS WITHIN PROFILE LIMITATIONS - EACH PASS MEETS QUALITY REQUIREMENTS 4. INSPECTIONS AFTER WELDING a. WELDS CLEANED Х -b. SIZE, LENGTH AND LOCATION OF WELDS Х Х c. WELDS MEET VISUAL ACCEPTANCE CRITERIA CRACK PROHIBITION - WELD/BASE-METAL FUSION - CRATER CROSS SECTION Х - WELD PROFILES WELD SIZE UNDERCUT POROSITY Х d. ARC STRIKES Х Х e. k-AREA Х f. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED) Х Х g. REPAIR ACTIVITIES Х Х h. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED Х Х JOINT OR MEMBER WHEN REQUIRED BY AISC 360 APPENDIX 3, SECTION N WELDED JOINTS REQUIRING WELD SOUNDNESS TO BE ESTABLISHED BY RADIOGRAPHIC OR ULTRASONIC INSPECTION SHALL BE TESTED BY SPECIAL INSPECTOR AS PRESCRIBED IN AISC 360. 6. INSPECTIONS PRIOR TO BOLTING a. MANUFACTURERS CERTIFICATIONS AVAILABLE FOR FASTENER Х Х MATERIALS b. FASTENERS MARKED IN ACCORDANCE WITH ASTM Х --REQUIREMENTS c. PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS ARE TO BE Х --EXCLUDED FROM SHEAR PLANE) d. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL Х -e. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE Х FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS f. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER Х ASSEMBLIES AND METHODS USED. g. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS Х AND OTHER FASTENER COMPONENTS INSPECTIONS DURING BOLTING a. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS Х --REQUIRED b. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO Х --THE PRE-TENSIONING OPERATION c. FASTENER COMPONENT NOT TURNED BY THE WRENCH Х --PREVENTED FROM ROTATING d. FASTENERS ARE PRE-TENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TO THE FREE EDGES. 8. INSPECTIONS AFTER BOLTING a. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT a. PLACEMENT AND INSTALLATION OF DECK b. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS c. DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS Х

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'OBSERVE' SHALL MEAN TO INSPECT THESE ITEMS ON AN INTERMITTENTS BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPLICABLE DOCUMENTS. IN THE EVENT THAT OBSERVATIONS DETERMINE THAT THE MATERIALS AND/OR WORKMANSHIOP ARE NOT IN CONFORMANCE WITH THE APPLICABLE DOCUMENTS, ADDTIONAL INSPECTIONS SHALL BE PERFOMED TO DETERMINE THE EXTENT OF NON-CONFORMANCE.

'PERFORM' SHALL MEAN TO PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH ITEM OR ELEMENT. •

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	TABLE 2 REQUIRED VERIFICATION AND INSPECTION OF COL	.D FORMED STEEL DE	СК
	VERIFICATION AND INSPECTION	PERFORM	OBSERVE
TOPROJECT	1. INSPECTION OR EXECUTION TASKS PRIOR TO DECK PLACEMENT:		
х	a. VERIFY COMPLIANCE OF MATERIALS (DECK AND DECK ACCESSORIES) WITH CONSTRUCTION DOCUMENTS, INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS.	x	
Х	b. DOCUMENT ACCEPTABNCE OR REJECTION OF DECK AND DECK ACCESSORIES.	Х	
	2. INSPECTION OR EXECUTION TASTS AFTER DECK PLACEMENT:		
Х	a. VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONTRUCTION DOCUMENTS	x	
Х	b. VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS.	x	
Х	c. DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF DECK AND DECK ACCESSORIES.	X	
	3. INSPECTION OR EXECUTION TASKS AFTER DECK PLACEMENT:		-
Х	a. WELDING PROCEDURE SPECIFICATION (WPS) AVAILABLE		x
Х	b. MANUFACTUREER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE		x
Х	c. MATERIAL IDENTIFICATION (TYPE / GRADE)		x
Х	d. CHECK WELDING EQUIPMENT		х
	4. INSPECTION OR EXECUTION TASKS DURING WELDING:		
Х	a. USE OF QUALIFIED WELDERS		x
х	b. CONTROL AND HANDLING OF WELDING CONSUMABLES		х _
х	c. ENVIRONMENTAL CONDITIONS (WIND SPEED, MOISTURE, TEMPERATURE)		Х
х	d. WPS FOLLOWED		х
	5. INSPECTION OR EXECUTION TASKS AFTER WELDING:		
х	a. VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS.	x	
х	b. WELDS MEET VISUAL ACCEPTANCE CRITERIA	x	
х	c. VERIFY REPAIR ACTIVITIES	x	
х	d. DOCUMENT ACCEPTANCE OR REJECTION OF WELDS	X	
	6. INSPECTION OR EXECUTION TASKS PRIOR TO MECHANICAL FASTENING:		
Х	a. MANUFACTURER INSTALLATION INSTRUCTIONS AVAILBALE FOR MECHANICAL FASTENERS.		х
Х	b. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION		х
х	c. PROPER STORAGE FOR MECHANICAL FASTENERS		x
	7. INSPECTION OR EXECUTION TASKS DURING MECHANICAL FASTENING		
х	a. FASTENERS ARE POSITIONED AS REQUIRED		Х
х	b. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS		X -
	8. INSPECTION OR EXECUTION TASKS DURING MECHANICAL FASTENING		
Х	a. CHECK SPACING, TYPE, AND INSTALLATION OF SUPPORT FASTENERS	x	
х	b. CHECK SPACING, TYPE, AND INSTALLATION OF SIDELAP FASTENERS	x	
Х	c. CHECK SPACING, TYPE, AND INSTALLATION OF PERIMETER FASTENERS	Х	
x	d. VERIFY REPAIR ACTIVITIES	x	
Х	e. DOCUMENT ACCEPTANCE OR REJECTION OF MECHANICAL FASTENERS	х	

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'OBSERVE' SHALL MEAN TO INSPECT THESE ITEMS ON AN INTERMITTENTS BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPLICABLE DOCUMENTS. IN THE EVENT THAT OBSERVATIONS DETERMINE THAT THE MATERIALS AND/OR WORKMANSHIOP ARE NOT IN CONFORMANCE WITH THE APPLICABLE DOCUMENTS, ADDTIONAL INSPECTIONS SHALL BE PERFOMED TO DETERMINE THE EXTENT OF NON-CONFORMANCE.

'PERFORM' SHALL MEAN TO PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH ITEM OR ELEMENT.

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# LANDSCAPE ARCHITECTURE + URBAN PLANNING

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA
project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128   LAIARCHITECT.COM
architect of record
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722   SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000   ARUP.COM
civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000   ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

## **BID SET** Not For Construction

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issue date 06.04.2019

^{project number} c18514 SHD19.039

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## GENERAL NOTES (CONT.)

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APPLICABLE	VERIFICATION AND INSPECTION	CONTINUOUS DURING	PERIODICALLY DURING	REFERENCED STANDARD (a)	APPLICABLE CODE
X	1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.			ACI 318 CH. 20, 25.2, 25.3,	1908.4
				26.5.1-26.5.3	
	2. REINFORCING BAR WELDING:				
Х	a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706;	-	x		
Х	b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"		x	AWS D1.4 ACI 318: 26.5.4	
Х	c. INSPECT ALL OTHER WELDS	Х			
X	3. INSPECT ANCHORS CAST IN CONCRETE.		X	ACI 318: 17.8.2	
	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
Х	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS:	Х		ACI 318: 17.8.2.4	
х	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4a.		x	ACI 318:17.8.2	
х	5. VERIFY USE OF REQUIRED DESIGN MIX.		x	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	Х		ASTM C 172 ASTM C 31 ACI 318: 26.4.5, 26.12	1908.10
х	7. INSPECT CONCRETE PLACEMENT AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	Х		ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
Х	8. INSPECT FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		x	ACI 318: 26.4.7-26.4.9	1908.9
	9. INSPECTION OF PRESTRESSED CONCRETE:		-		
	a. APPLICATION OF PRESTRESSING FORCES.	Х		ACI 318: 26.9.2.1	
	b. GROUTING OF BONDED PRESTRESSING TENDONS.	Х		ACI 318: 26.9.2.3	
	10. ERECTION OF PRECAST CONCRETE MEMBERS.		Х	ACI 318: 26.8	
	11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.		X	ACI 318: 26.10.2	1906.2
X	12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED.		x	ACI 318: 26.10.1(b)	

(b) Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with ACI 355.2 or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

## TABLE 5 LEVEL B REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

APPLICABLE TO PROJECT	MINIMUM TEST			
Х	VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE IN ACCORDANCE WITH ARTICLE 1.5 B.1.b.3 FOR SELF-CONDOLIDATING GROUT.			
Х	EXCEPT FOR MASONRY THAT IS EXEMPT, PRE-CONSTRUCTION VERIFICATION	N OF f'm AND f'AAC IN ACCORDA	NCE WITH ARTICLE 1.4B	
	MINIMUM INSPEC	TION		
	VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	
Х	1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS		Х	
	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:			
Х	a. PROPORTION OF SITE-PREPARED MORTAR.		Х	
Х	b. CONSTRUCTION OF MORTAR JOINTS		Х	
	c. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		Х	
Х	d. LOCATION OF REINFORCEMENT, CONNECTORS AND ANCHORAGES.		Х	
Х	e. PRESTRESSING TECHNIQUE.		Х	
	3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE	Ξ:		
Х	a. GROUT SPACE.		Х	
х	<ul> <li>b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS, AND ANCHORAGES.</li> </ul>		х	
х	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES.		Х	
Х	d. PROPORTIONS OF SITE-PREPARED GROUT.		Х	
Х	e. CONSTRUCTION OF MORTAR JOINTS.		Х	
	4. VERIFY DURING CONSTRUCTION:			
Х	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		Х	
х	<ul> <li>b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION</li> </ul>		х	
Х	c. WELDING OF REINFORCEMENT.	Х		
х	d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F).		Х	
Х	e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE.	Х		
х	f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE.	Х		
Х	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.		Х	

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#### TABLE 7 REQUIRED VERIFICATION AND INSPECTION OF SOILS

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APPLICABLE TO PROJECT	VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
х	1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
х	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		Х
х	3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		Х
х	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	Х	
х	5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUB-GRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

![](_page_21_Figure_8.jpeg)

Structural 3D Iso View (FOR REFERENCE ONLY)

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**ABBREVIATIONS** 

A.B.		
/\ I \I \'I		ANCHOF
AFF		ABOVE F
ARCH.		ARCHITE
BLDG.		BUILDIN
BLK. BM.		BLOCK BEAM
BOT.		BOTTON
BRDG. BRG.		BRIDGIN
BTJ.		BOLTED
CANT'L CFMF		CANTILE COLD-F(
CFS		COLD-FO
C.I.P. C.J.		
CL.		CENTER
CLR. CMU		CLEAR
COL.		COLUMN
CONC.	 R	CONCRE
CONT.		
DBA		DEFORM
DET.		
Ø / DIA		DIAGON
DJ		DOUBLE
D.L.		DEAD LC
DWG. DWLS		DRAWIN
EA.		EACH
E.F. F.I		EACH FA
EL.		ELEVATI
ELEV. F S		ELEVATO
EQ.		EQUAL
EQUIP. F W		EQUIPMI FACH W
EXP.		EXPANS
(E) / EX FXT	(IST	EXISTIN
F/BLDC	<u>.</u>	FACE OF
F/CON F.D.	C	FACE OF
FIN.		FINISH
FLG. FLR.		FLANGE FLOOR
F.S.		FAR SID
FT.		FOOTING
FTG.		FOOTING
GA. G B		GAUGE GRADE F
G.C.		GENERA
GALV. HD'D		GALVAN
HORIZ.		
		HORIZOI
I.F. INT.		INSIDE F
I.F. INT. J/B		INSIDE F INTERIO JOIST BE
I.F. INT. J/B JST. JT.		HORIZOI INSIDE F INTERIO JOIST BE JOIST JOINT
I.F. INT. J/B JST. JT. k	 	HORIZOI INSIDE F INTERIO JOIST BE JOIST JOINT KIP
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I.F. INT. J/B JST. JT. k LG. L.L. (LLH) (LLV) (LSH) (LSV) LW MAS. MC MECH. MFR.		HORIZOI INSIDE F INTERIO JOIST BE JOIST JOINT KIP LONG LIVE LOA LONG LE LONG LE LONG SI LONG SI LONG W MASONF MOMENT MECHAN MANUFA
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I.F. INT. J/B JST. JT. k LG. L.L. (LLH) (LLV) (LSH) (LSV) LW MAS. MECH. MFR. MFR. (N) (NIC)		HORIZOI INSIDE F INTERIO JOIST BE JOIST JOINT KIP LONG LIVE LOA LONG LE LONG SI LONG SI LONG SI LONG SI LONG W MASONF MOMEN ^T MECHAN MANUFA METAL NEW NOT IN CO
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I.F. INT. J/B JST. LG. LLH) (LLV) (LSV) LW MAS. MFR. MIL. (NIC) NTS O.F. O/O PL. S.F. RAD. REEQ'D RET. SIM. S.O.G. STIFF. SIM. STL. STL. STL. STL. SYM. TYP. VEPT		HORIZOI INSIDE F INTERIO JOIST BE JOIST JOINT KIP LONG LIVE LOA LONG LE LONG LE LONG SI LONG SI DONG SI POLONG SI PLATE PLACES POUNDS RADIUS ROOF DI REINFOF REQUIRE RETAINII SECTION SIMILAR SLAB ON SPACES SQUARE STIFFEN STEEL STRUCT SYMMET
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OR BOLTS IONAL E FINISH FLOOR TECTURAL PLATE NG D TIE JOIST EVER FORMED METAL FRAMING FORMED STEEL -IN-PLACE ROL JOINT ERLINE RETE MASONRY UNIT /N ETE RUCTION INUOUS CYARD RMED BAR ANCHOR NAL IER E JOIST LOAD FACE **ISION JOINT** TION TOR SIDE MENT WAY ISION F BUILDING OF CONCRETE R DRAIN SIDE OR NG E BEAM RAL CONTRACTOR ONTAL FACE OR EARING DAD LEG HORIZONTAL LEG VERTICAL SIDE HORIZONTAL SIDE VERTICAL VAY IRY ENT CONNECTION ANICAL FACTURER CONTRACT SIDE O SCALE ENTER IDE FACE AST CONCRETE DS/SQUARE FOOT DS/SQUARE INCH DRAIN ORCING RED ING R TO ON GRADE NER JCTURAL RT WAY S NOTED OTHERWISE TICAL ™ IN FIELD © POINT ED WIRE FABRIC

# LANDSCAPE ARCHITECTURE + URBAN PLANNING

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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client / owner City of Canton project name <b>CENTENNIAL PLAZA</b> project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128   LAIARCHITECT.COM
architect of record
Sol Harris / Day 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722   SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000   ARUP.COM
civil engineer
ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000   ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

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project number c18514 SHD19.039 issue date 06.04.2019

sheet name GENERAL NOTES

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4 S201-C 1056.39' (4) (S201-C)

![](_page_22_Figure_22.jpeg)

# FOUNDATION PLAN SCALE: 1/4" = 1'-0"

NOTES

- DENOTES FLOOR CONSTRUCTION: 4" CONCRETE SLAB ON GRADE WITH ONE LAYER OF 6x6-W2.1xW2.1 W.W.F. PROVIDE 10 MIL VAPOR BARRIER AND 4" LAYER OF GRANULAR FILL BELOW SLAB (UNO) •
- DENOTES EXTERIOR SLAB CONSTRUCTION: 6" CONCRETE SLAB ON GRADE WITH #4 @ 12" O.C. EACH WAY CENTERED IN SLAB THICKNESS. PROVIDE 6" LAYER OF GRANULAR FILL BELOW SLAB. •
- TOP OF SLAB ELEVATION = 0'-0", PROJECT DATUM ELEVATION = 1056.4' USGS.
- ELEVATIONS NOTED THUS (+X'-X") ARE TO TOP OF FOOTING REFERENCED FROM SLAB ON GRADE ELEVATION (UNO).
- TOP OF INTERIOR FOOTING ELEVATION = (-2'-0") (UNO).
- TOP OF EXTERIOR FOOTING ELEVATION = (-2'-0") (UNO).
- CONTINUOUS FOOTINGS ARE MARKED THUS: <u>WIDTH x DEPTH</u>
   (TOP OF FTG. EL.)
- PROVIDE (2) #4x3'-0" LONG AT ALL REENTRANT CORNERS.
- SEE ARCHITECTURAL DRAWINGS FOR EXTENT AND FINISH OF SLAB ON GRADE AND ANY FLOOR DEPRESSIONS, UNDERFLOOR CONDUITS, DRAINS, ETC.
- SEE SHEET S001, S002 & S003 FOR GENERAL NOTES.
- SEE SHEET S201 FOR TYPICAL DETAILS.
- FX.X DENOTES SPREAD FOOTINGS. SEE FOOTING SCHEDULE THIS SHEET.
- PX.X DENOTES CONCRETE PIER. SEE CONCRETE PIER SCHEDULE ON THIS SHEET.
- XXXX DENOTES PRESUMED FINISH GRADE AT LOCATION SHOWN. VERIFY VALUE WITH FINAL SITE PLAN AND NOTIFY ENGINEER OF ANY DISCREPANCIES. •

COLUMN FOOTING SCHEDULE			2000 PSF
MARK	FOOTING SIZE LENGTH x WIDTH x DEPTH		REINFORCING
F5.0	5'-0"x5'-0"x1'-6"		(5) - #6 E.W. BOT.
F5.5	5'-6"x5'-6"x1'-6"		(5) - #6 E.W. BOT.
F6.0	6'-0"x6'-0"x1'-2"		(6) - #5 E.W. BOT.

# ANDSCAPE ARCHITECTURE + URBAN PLANNING

# 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT
401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128   LAIARCHITECT.COM
architect of record
Sol Harris / Day
6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722   SOLHARRISDAY.COM
structural engineer
ARUP 77 WATER ST NEW YORK, NY 10005 p 212.896.3000   ARUP.COM
civil engineer
ATWELL
7100 E PLEASANT VALLEY RD
INDEPENDENCE, OH 44131 p 440.349.2000   ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC.
7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC.
150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES
3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

## **BID SET** Not For Construction

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issue date project number 06.04.2019 c18514 SHD19.039 sheet name FOUNDATION PLAN sheet number S101-C

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![](_page_23_Figure_1.jpeg)

RPENDICULAR O SUPPORT	PARALLEL TO SUPPORT	SEAMS
DLE WELD AT 8" O.C. (24/4 PATTERN)	PUDDLE WELD AT 8" O.C.	(2)-#10 TEK SCREW PER SPAN
DLE WELD AT 8" O.C. (24/4 PATTERN)	PUDDLE WELD AT 8" O.C.	(4)-#10 TEK SCREWS PER SPAN

• ALL PUDDLE WELDS TO BE 5/8"Ø FUSION TYPE (UNO.). WELDS TO BE MADE FOLLOWING AWS D1.3 SPECIFICATIONS BY QUALIFIED WELDING OPERATORS.

# • 4'-0'

B

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- T/S = TOP OF STEEL ELEVATION (BOTTOM OF DECK) REFERE
- ELEVATION OF 0'-0". COORDINATE ALL OPENINGS AND EDGE CONDITIONS WITH A
- ANDMECHANICAL DRAWINGS. SEE SHEET S301 FOR TYPICAL • SEE SHEET S001, S002 & S003 FOR GENERAL NOTES.
- SEE SHEET S301 FOR TYPICAL DETAILS.
- C-X DENOTES COLUMNS. SEE THIS SHEET FOR SCHEDULE.
- L-X DENOTES MISC. STEEL LINTEL. SEE SCHEDULE ON S001, TYP (UNO). H DENOTES MOMENT CONNECTION. SEE SHEET S301 FOR DETAILS. •
- BEAMS ARE DESIGNED TO SUPPORT EQUIPMENT INDICATED ON PLAN. IF EQUIPMENT • LOCATION VARIES OR WEIGHT EXCEEDS THAT NOTED THEN NOTIFY ENGINEER.
- DENOTES TENANT ROOFTOP UNIT ZONE.

#### AREA DESIGNED FOR 100 PSF LIVE LOAD. • STEEL CHANNELS & STEEL TUBES SHALL BE PLACED ON TOP OF THE ROOF TO SUPPORT EACH UNIT. SEE TYPICAL MECHANICAL ROOFTOP UNIT SUPPORT DETAIL ON S301.

(1) PROVIDE FULL DEPTH SHEAR CONNECTION FROM W12 TO W16.

**(** A )

ENCED FROM SLAB ON GRADE		COLUMN	SCHEDULE	
ARCHITECTURAL	MARK	COLUMN SIZE	BASEPLATE	ANCHOR RODS
L OPENING DETAIL.	C-1	HSS5X5X1/4	PL.3/4"x11"x0'-11"	(4)-3/4"Ø
	C-2	5"Ø STD PIPE	PL.3/4"x11"x0'-11"	(4)-3/4"Ø
	C-3	HSS4X4X3/8	SEE SECTION	SEE SECTION
	• SEE T • SEE T	YPICAL BASE PLATE DETAIL YPICAL ANCHOR ROD DETA	-S ON S301. NLS ON S201.	

# LANDSCAPE ARCHITECTURE + URBAN PLANNING

# 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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client / owner City of Canton project name <b>CENTENNIAL PLAZA</b> project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT
401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128   LAIARCHITECT.COM
architect of record
Sol Harris / Day
6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722   SOLHARRISDAY.COM
structural engineer
ARUP
77 WATER ST NEW YORK, NY 10005 p 212.896.3000   ARUP.COM
civil engineer
ATWELL
7100 E PLEASANT VALLEY RD
INDEPENDENCE, OH 44131 p 440.349.2000   ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC.
7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC.
150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904 824 1110 J SAIEOLINTAINS COM
cafe engineer
3030 W. STREETSBORO ROAD
RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

## BID SET Not For Construction

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issue da 06.0	^{ate} )4.2019		project number c18514

sheet name ROOF FRAMING PLAN sheet number

S102-C

SHD19.039

![](_page_24_Figure_0.jpeg)

# LANDSCAPE ARCHITECTURE + URBAN PLANNING

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lighting design / engineer
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150 HILDEN RD SUITE 305 PONTE VEDRA BEACH. FL 32081
p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

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![](_page_24_Picture_11.jpeg)

issue date 06.04.2019

^{project number} c18514 SHD19.039

![](_page_24_Picture_14.jpeg)

## ORDINARY REINFORCED MASONRY WALL ELEVATION

## NOTES:

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- VERTICAL REINFORCING:
- PROVIDE TYPICAL REINFORCING SHOWN IN TYPICAL WALL SECTION. • ALL VERTICAL BARS SPECIFIED BELOW ARE #5 BARS UNO. • PROVIDE (2) BARS FULL HEIGHT AT EACH SIDE OF WALL OPENING UNLESS SHOWN ON PLAN •
- REINFORCING TO CLEAR END OF LINTEL. PROVIDE (2) BAR AT EACH CORNER. •
- PROVIDE (2) BAR AT EACH SIDE OF A CONTROL JOINT. • PROVIDE (2) BAR WITHIN 8" OF ENDS OF WALLS. •
- ALL VERTICAL BARS SHALL HAVE DOWELS TO MATCH. •
- HORIZONTAL REINFORCING:
- PROVIDE HORIZONTAL JOINT REINFORCING GALVANIZED 9 GA. SIDE AND CROSS RODS SPACED @ 16" • O.C. VERTICALLY, LADDER TYPE. • PROVIDE (2)-#4 AT THE TOP & BOTTOM OF ALL OPENINGS 1'-4" OR LARGER. EXTEND 24" OR 40db WHICHEVER IS GREATER PAST THE EDGE OF OPENING.

## GENERAL:

•

•

•

- LAP LENGTHS SHALL COMPLY W/MASONRY SPLICE TABLE. REINFORCING SHALL BE COORDINATED W/ARCHITECTURAL ELEVATIONS, PLANS & DETAILS. •
- MASONRY PIERS SHALL BE SIZED AND LOCATED AS DETAILED ON THE PLANS. FOR CONDITIONS AT BEAM BEARINGS AND LINTELS, SEE TYPICAL DETAILS. PROVIDE BOND BEAMS AS SHOWN IN SECTIONS.

![](_page_25_Figure_13.jpeg)

TYPICAL TUBE TO TUBE CONNECTION

![](_page_25_Figure_14.jpeg)

![](_page_25_Figure_15.jpeg)

## **CONNECTION TO HSS OR PIPE** <u>COLUMN</u>

![](_page_25_Figure_17.jpeg)

![](_page_25_Figure_18.jpeg)

WIDTH.

**TYPICAL BEAM TO BEAM** 

MOMENT CONNECTIONS

![](_page_25_Figure_19.jpeg)

## **TYPICAL WALL SECTION**

REACTION (k)

84.7

74.2

63.6

53.0

42.4

31.8

20.4

WF, SEE PLAN

TYP. 3/16

![](_page_25_Figure_21.jpeg)

![](_page_25_Figure_23.jpeg)

DO NOT CONTINUE CONTROL JOINT THRU BOND BEAM AT ROOF.

BOND BEAM TO BE CONTINUOUS ACROSS SCORED JOINT.

MASONRY CONTROL JOINT

SPACE @ 25'-0" O.C. MAX.

______ TYP.

_____,

COORDINATE LOCATIONS WITH ARCHITECTURAL ELEVATIONS

SCORE MASONRY AT ROOF BOND BEAM. REINFORCEMENT IN ROOF

MASONRY SPLICE TABLE				
REINFORCING	LAP			
SIZE	LENGTH			
#3	18"			
#4	24"			
#5	30"			
#6	36"			
#7	42"			

 11
 10
 9
 3
 1
 1

## TYPICAL COLUMN BASE PLATE DETAILS

![](_page_25_Figure_31.jpeg)

# **TYPICAL CONDENSING** UNIT CURB SUPPORT

![](_page_25_Figure_33.jpeg)

## TYPICAL ROOF OPENING DETAIL

![](_page_25_Figure_35.jpeg)

![](_page_25_Figure_36.jpeg)

FUTURE ROOFTOP

MECHANICAL UNIT SUPPORTS

![](_page_25_Figure_37.jpeg)

CHANGE IN BOND BEAM ELEVATION

NOTE: PROVIDE MINIMUM 8" DEEP BOND BEAM

![](_page_25_Figure_38.jpeg)

![](_page_25_Figure_39.jpeg)

— BOND BEAM REINFORCING SEE WALL SECTIONS AND

# LANDSCAPE ARCHITECTURE + URBAN PLANNING

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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G

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702
architect
Tim Lai ArchitecT
401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128   LAIARCHITECT.COM
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7100 E PLEASANT VALLEY RD
SUTE 220 INDEPENDENCE, OH 44131 p 440.349.2000   ATWELL-GROUP.COM
lighting design / engineer
TEC STUDIO INC.
7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC.
SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES
3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

## **BID SET** Not For Construction

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![](_page_25_Picture_46.jpeg)

issue date 06.04.2019

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project number c18514 SHD19.039

![](_page_25_Picture_49.jpeg)

S301-C

![](_page_26_Figure_0.jpeg)

![](_page_26_Figure_1.jpeg)

# LANDSCAPE ARCHITECTURE + URBAN PLANNING

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name <b>CENTENNIAL PLAZA</b> project address 301-399 Market Ave N, Canton, OH 44702
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TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868   TECSTUDIOINC.COM
water feature
SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110   SAIFOUNTAINS.COM
cafe engineer
THORSON BAKER + ASSOCIATES 3030 W. STREETSBORO ROAD RICHFIELD, OH 44286 p 330.659.6688   THORSONBAKER.COM

## **BID SET** Not For Construction

revision	date	issued

![](_page_26_Picture_12.jpeg)

issue date 06.04.2019

project number c18514 SHD19.039

![](_page_26_Picture_15.jpeg)

![](_page_26_Picture_16.jpeg)

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![](_page_27_Picture_26.jpeg)

![](_page_27_Picture_27.jpeg)

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![](_page_27_Picture_28.jpeg)

![](_page_27_Picture_29.jpeg)

8 7 6 5 4

STRUCTURAL DRAWING LIST					
SHEET NUMBER	SHEET NAME	SCALE			
S-00-001	STRUCTURAL. DRAWINGS LIST	N.T.S.			
S-00-002	STRUCTURAL. GENERAL NOTES	N.T.S.			
S-00-003	STRUCTURAL. SYMBOLS AND ABBREVIATIONS	N.T.S.			
S-01-001	STRUCTURAL, GENERAL ARR., SITE PLAN	1" = 10'-0"			
S-02-101	STRUCTURAL. PAVILION LOADING	AS NOTED			
S-03-001	STRUCTURAL, ROTUNDA PLANS & ELEVATIONS	1/8" = 1'-0"			
S-03-301	STRUCTURAL, ROTUNDA DETAILS	1" = 1'-0"			
S-03-302	STRUCTURAL, ROTUNDA DAMPER DETAILS	3" = 1'-0"			
S-03-303	STRUCTURAL, ROTUNDA FOUNDATION DETAILS	AS NOTED			
S-04-001	STRUCTURAL, PAVILION FOUNDATIONS	3/16" = 1'-0"			
S-04-101	STRUCTURAL, PAVILION, FRAMING PLAN	3/16" = 1'-0"			
S-04-211	STRUCTURAL, PAVILION ELEVATIONS, SHEET 1	1/4" = 1'-0"			
S-04-212	STRUCTURAL, PAVILION ELEVATIONS, SHEET 2	1/4" = 1'-0"			
S-04-213	STRUCTURAL, PAVILION ELEVATIONS, SHEET 3	1/4" = 1'-0"			
S-04-301	STRUCTURAL, PAVILION DETAILS, SHEET 1	AS NOTED			
S-04-302	STRUCTURAL, PAVILION DETAILS, SHEET 2	AS NOTED			
S-04-303	STRUCTURAL, PAVILION DETAILS, SHEET 3	AS NOTED			
S-04-304	STRUCTURAL, PAVILION FOUNDATION DETAILS	AS NOTED			

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![](_page_27_Picture_32.jpeg)

# 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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# BID SET Not For Construction

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![](_page_27_Picture_39.jpeg)

project number c267125-00 issue date sheet name STRUCTURAL DRAWINGS LIST sheet number S-00-001

]	1	4		13		12		11	
	C								
	1.	WHERE D APPLICAB	OCUMENTS ARE		N THE GENERAL A SE NOTED.	AND DESIGN NOTES	6, THEY SHALL BE	THE LATEST	
	2.	ALL WORI STANDAR	K SHALL CONFO DS, ADDENDA A	RM TO THE REQUND APPENDICES.	UIREMENTS OF T	HE OHIO BUILDING	CODE, INCLUDING	REFERENCE	
	3.	IN ADDITIC AS MODIF	ON, THE FOLLOV IED BY THE BUIL	VING CODES, STA DING CODE:	ANDARDS AND SF	PECIFICATIONS SHA	ALL APPLY WHERE	MORE STRINGENT A	ND
		A. ACI B. AISC C. AISC D. AISC E. AWS F. AWS	318 "BUILDING C C "STEEL CONST CODE OF STA C "SPECIFICATIO D1.1 "STRUCTU D1.4 FOR STAII	ODE REQUIREME RUCTION MANUA NDARD PRACTIC NS FOR STRUCT JRAL WELDING C NLESS STEEL AS	ENTS FOR REINFO AL" AND AISC 360 E FOR STEEL BUI URAL JOINTS USI ODE" APPLICABLE	DRCED CONCRETE "SPECIFICATION FO LDINGS AND BRIDG NG ASTM A 325 OR	AND COMMENTAF DR STRUCTURAL S SES" A 490 BOLTS" ANI	RY" STEEL BUILDINGS" D AISC SPEC	
	Р	ROJE	CT DOCL	JMENTS					
	1.	THIS SET ALL WORK	OF DRAWINGS, { IS TO BE CARF	TOGETHER WITH	H THE SPECIFICAT	IONS, CONSTITUTE	ES THE COMPLET	E DOCUMENT BY WHI	СН
-	2.	THE CONT USE STRU PROTECT SHALL NO ENGINEEF	TRACTOR SHALL ICTURAL DRAW ION AND ALL OT ITIFY THE ARCH R OF ANY DISCR	VERIFY ALL EXIS INGS IN CONJUNG THER RELEVANT ( ITECT AND COMM EPANCIES REQU	STING CONDITION CTION WITH ARCI CONSULTANTS D MENCING WITH TH IRING CLARIFICA	IS AND DIMENSION HITECTURAL, MECH RAWINGS BEFORE HE WORK AND SHA FION OR REVISION.	S AT JOB SITE. TH IANICAL, ELECTRI COMMENCING WI LL NOTIFY THE AF	HE CONTRACTOR SHA CAL, PLUMBING, FIRE TH THE WORK AND RCHITECT AND	ALL.
	3.	SCALES N OBTAINED	OTED ON THE D BY SCALING FF	RAWINGS ARE F	OR GENERAL INF NGS.	ORMATION ONLY. I	NO DIMENSIONAL	INFORMATION SHALL	BE
	4.	IN THE EV THEIR CO SUBJECT	ENT THAT CERT NSTRUCTION SE TO THE STRUCT	TAIN DETAILS OF HALL BE OF THE S FURAL ENGINEER	THE CONSTRUCT SAME TYPE AS FO R'S APPROVAL.	TION ARE NOT FULL DR SIMILAR CONDIT	Y SHOWN OR NO	TED ON DRAWINGS, SHOWN OR NOTED,	
	5.	REFER TC	) LANDSCAPE AF	RCHITECT'S DRAV	WINGS FOR THE	FOLLOWING:			
		A. GRA B. SIZE C. FINIS	DING PLANS AND LOCATION SHES		ETE CURBS, DRAI	NS, SLOPES, INSER	TS, ETC. EXCEPT	AS SHOWN.	
	6	D. DIME REFER TC		S FOR THE FOLL	.OWING:	.5.			
		A. PIPE NOT B. ELEC C. CON D. SIZE	E AND DUCT RUN ED. CTRICAL CONDU ICRETE INSERTS AND LOCATION	NS, SLEEVES, HAI JIT RUNS, BOXES S FOR ELECTRIC/ I OF MACHINE OF	NGERS, TRENCHE 6, OUTLETS IN WA AL, MECHANICAL R EQUIPMENT BAS	ES, WALL AND SLAE LLS AND SLABS. OR PLUMBING FIXT SES, ANCHOR BOLT	3 OPENINGS, EXCE TURES. TS FOR MOTOR MO	EPT AS SHOWN OR DUNTS, EXCEPT AS	
	7.	IT IS THE CONSTRU	RESPONSIBILITY	OF THE CONTR	ACTOR TO PROV	DE PROPER SHORI DT BE REMOVED AS	ING AND BRACING S LONG AS REQUI	DURING RED FOR SAFETY.	
	S	UBMIT	TALS						
	1.	CONTRAC PROFESS	TOR SHALL SUE	BMIT SHOP DRAW	VINGS AND CALCU BY THE SPECIFIC	JLATIONS AS BOTH ATIONS, FOR ENGI	SIGNED AND STA NEER'S APPROVAL	MPED BY A 	
	2.	ONLY SHO USED BY ( CORRECT WORK.	OP DRAWINGS M CONTRACTOR II ED AND COMPL	IARKED "NO EXCI N THE WORK. SHI ETED AS REQUIR	EPTIONS TAKEN" OP DRAWINGS M RED AND RESUBM	"REVISE AS NOTEI ARKED "REJECTED ITTED TO THE ARC	D" OR "SEE COMM " OR "RESUBMIT F HITECT BEFORE 1	ENTS NOTED" MAY BE OR REVIEW" SHALL B "HEY ARE USED IN TH	E E
	3.	CONTRAC SUBMISSI	TOR SHALL PRE	EPARE AND MAIN R OF DRAWINGS	TAIN A SCHEDULI	E OF ALL SUBMITTA D EACH WEEK.	ALS INCLUDING INT	TENDED DATES OF	
	4.	THE CONT RECEIVED	RACTOR SHALL	BE AWARE THA	T SUBMITTALS W N ACCORDINGLY.	ILL BE REVIEWED II	N THE ORDER IN V	VHICH THEY ARE	
	5.	SUBMIT A ANY OTHE	LL ITEMS IN ACC ER ITEMS.	CORDANCE WITH	THE SPECIFICAT	IONS. THE ENGINE	ER RESERVES THE	E RIGHT TO NOT REVI	EW
	Т	ESTIN	g and II	NSPECTI	ONS				
	1.	SPECIAL I ALL APPLI THE WOR INSPECTO TESTS. TH CONTRAC CORRECT SHALL SU COMPLET OF THE CO	NSPECTIONS SH CABLE LOCAL C K FOR CONFOR OR CERTIFIED B TE SPECIAL INSP TOR AND OWNE TON. WHEN WO BMIT A FINAL SH ED IN CONFORM ODES.	HALL BE PROVIDE ORDINANCES, AND MANCE WITH CO Y THE LOCAL BUI PECTOR SHALL S ER. ALL DISCREP, RK IS DONE TO T GNED REPORT S MANCE WITH THE	ED BY AN INDEPE D THE PROJECT S INSTRUCTION DO LDING OFFICIAL T END REPORTS TO ANCIES SHALL BE THE SATISFACTION TATING THAT, TO E PLANS, SPECIFIC	NDENT TESTING LA SPECIFICATIONS. TH CUMENTS. THIS WO TO PERFORM THE S D THE BUILDING OF BROUGHT TO THE N OF THE BUILDING THE BEST OF THE CATIONS, AND THE	B IN ACCORDANC HE SPECIAL INSPE ORK TO BE PERFC SPECIFIED TYPES FICIAL, ARCHITEC ATTENTION OF T OFFICIAL, THE SI IR KNOWLEDGE, 1 APPLICABLE WOR	E WITH THE CODE AN CTOR SHALL OBSERV ORMED BY A SPECIAL OF INSPECTIONS AND CT, ENGINEER, HE CONTRACTOR FO PECIAL INSPECTOR THE WORK WAS CKMANSHIP PROVISIO	D /E NS
-	2	FOR THIS IN ACCOR	PROJECT INSPE DANCE WITH IB	ECTION OF THE F C CHAPTER 17 AI	OLLOWING STRUND THE OHIO BUI	CTURAL RELATED	CONSTRUCTION A	ACTIVITIES IS REQUIRI	ΞD
				ITEM SOILS	СО	NT PERIODIC	COMMENTS		
			GRADIN FINAL FOUNDA	G, EXCAVATION &	& FILL	BY G			

FINAL FOUNDATION PREPARATION			BY GEOTECHNICAL
CONCRETE			
REBAR PLACEMENT		Х	
REBAR MECHANICAL COUPLING		Х	
ANCHOR ROD EMBEDMENT/PLACEMENT		Х	
PREPARATION OF TEST SPECIMENS	Х		
CONCRETE PLACEMENT	Х		
EXPANSION OR ADHESIVE ANCHOR PLACEMENT	Х		PER ICC-ES REPORT
STEEL CONSTRUCTION			
MATERIAL VERIFICATION OF HIGH- STRENGTH BOLTS, NUTS AND WASHERS		Х	
INSPECTION OF HIGH-STRENGTH BOLTING		Х	
MATERIAL VERIFICATION OF STRUCTURAL STEEL		Х	
MATERIAL VERIFICATION OF WELD FILLER MATERIALS		Х	
<ul> <li>INSPECTION OF WELDING</li> <li>I) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS</li> <li>II) MULTI-PASS FILLET WELDS</li> <li>III) SINGLE-PASS FILLET WELDS &gt; 5/16</li> </ul>	X X X		AWS D1.1
IV)SINGLE-PASS FILLET WELDS < 5/16		X	
INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS		х	

## STRUCTURAL DESIGN CRITERIA

1. DESIGN IN ACCORDANCE WITH THE APPLICABLE CODE AND ALL APPLICABLE LOCAL ORDINANCES.

2. FOR GRAVITY LOADING INCLUDING SUPERIMPOSED DEAD LOAD AND LIVE LOAD, SEE THE LOADING DIAGRAMS.

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3.	SNOW LOADING:	

0. ONOW E			
	GROUND SNOW LOAD	Pg =	25 PSF
	IMPORTANCE FACTOR (FOR SNOW)	ls =	1.0
	EXPOSURE CATEGORY (FOR SNOW)	) Ce =	1.0
	ROOF SLOPE FACTOR	Cs =	1.0
THERMAL FACTOR			1.2
	UNBALANCED DRIFT	PER	CODE
4. WIND LC	ADING:		
	DESIGN WIND SPEED (3 SEC GUST)		90 MPH
	IMPORTANCE FACTOR (FOR WIND)	lw =	1.0
	EXPOSURE CATEGORY (FOR WIND)		С
	INTERNAL PRESSURE COEFFICIENT	Gcpi =	+/-0.18 (ENCLOSED)
			+/-0.55 (PARTIALLY ENCLOSE
	DIRECTIONALITY FACTOR	Kd =	0.85
	DIRECTIONALITY FACTOR	Kd =	0.85
	WIND TUNNEL REPORT	NONE	

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#### 5. SEISMIC LOADING

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IMPORTANCE FACTOR (SEISMIC)	=	1.0
SITE CLASS	D	(PER GEOTECHNICAL REPORT)
MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS	Ss = 0.107	S1 = 0.049
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS	Sds = 0.114	Sd1 = 0.078
SITE COEFFICIENTS	FA = 1.6	FV = 2.4
SEISMIC DESIGN CATEGORY	В	
		PAVILION

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		PAVILION	ROTUNDA
LATERAL SYSTEM		NON-BUILDING - INVERTED PENDULUM	NON-BUILDING - MONUMENT
RESPONSE MODIFICATION COEFFICIENT	R =	2	2
SYSTEM OVERSTRENGTH FACTOR	ψ=	2	2
DEFLECTION AMPLIFICATION FACTOR	Cd	1.25	2
ANALYSIS METHOD		LINEAR RESPONSE SPECTRUM MODAL ANALYSIS	LINEAR RESPONSE SPECTRUM MODAL ANALYSIS
DESIGN BASE SHEAR	V =	13.2 KIPS (X-DIRECTION)	0.55 KIPS (EACH LEG,
		19.6 KIPS (Y-DIRECTION)	ANY DIRECTION)

8

## FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY INTERTEK PSI, DATED MARCH 17, 2017. COPIES ARE AVAILABLE FOR REVIEW AT THE ARCHITECT'S OFFICE.

2. THE FOLLOWING ALLOWABLE SOIL BEARING PRESSURES WERE USED IN THE PREPARATION OF THESE DRAWINGS: A. ALLOWABLE CAISSON END BEARING PRESSURE = 6000 PSF

B. ALLOWABLE SHALLOW FOUNDATION BEARING PRESSURE = 3000 PSF

3. CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SURFACE AND SUBSURFACE CONDITIONS IN ADDITION TO THE INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT.

4. CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, SEEPAGE, ETC. SUCH ACTIVITIES SHALL NOT DAMAGE ADJACENT STRUCTURES.

5. CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION AND DESIGN OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN EXCAVATIONS, EARTH BANKS AND SUPPORT ANY EXISTING STRUCTURES.

6. FOOTINGS SHALL BE PLACED ACCORDING TO DEPTH SHOWN IN THE STRUCTURAL DRAWINGS. ALL FOUNDATION BASES SHALL BE INSPECTED WHEN THE DEPTH INDICATED HAS BEEN ACHIEVED. THE GEOTECHNICAL ENGINEER WILL DETERMINE THE SUITABILITY OF THE SOIL AT THIS LEVEL FOR THE PROPOSED IMPOSED LOADS AND MAY INSTRUCT FURTHER EXCAVATION UNTIL A SUITABLE BEARING SURFACE IS ATTAINED. THE GEOTECHNICAL ENGINEER SHALL GIVE THE FINAL APPROVAL FOR ANY CHANGES IN FOOTING DEPTH, AND SHALL GIVE WRITTEN NOTIFICATION TO THE ARCHITECT AND ENGINEER. NO FOOTINGS SHALL BE CAST WITHOUT THE APPROVAL OF THE GEOTECHNICAL ENGINEER.

7. FOOTINGS SHALL BE FORMED TO DIMENSIONS SHOWN IN DRAWINGS. WHERE SOIL CONDITIONS ARE ADEQUATE FOOTINGS MAY BE CAST IN NEAT TRENCHED EXCAVATIONS. WHERE FOOTINGS ARE CAST IN TRENCHED EXCAVATIONS THE FOOTING DIMENSIONS SHALL BE INCREASED BY 3 INCHES. WATER SHALL NOT BE ALLOWED TO STAND IN TRENCHES BEFORE OR AFTER CONCRETE IS PLACED. IF TRENCHES BECOME SOFTENED DUE TO RAIN OR OTHER WATER BEFORE THE FOOTINGS ARE CAST, THE CONTRACTOR SHALL EXCAVATE THE SOFTENED MATERIAL AND REPLACE WITH CONCRETE. LOOSE MATERIAL SHALL BE REMOVED FROM THE BASE OF THE FOOTING PRIOR TO CASTING.

8. NEW FOOTINGS, WHICH ARE LOCATED IMMEDIATELY ADJACENT TO EXISTING FOOTINGS, SHALL BE FOUNDED AT THE SAME ELEVATION AS THE EXISTING FOOTINGS, UNLESS OTHERWISE NOTED. EXISTING ADJACENT FOOTINGS SHALL NOT BE UNDERMINED BY EXCAVATION OR NEW CONSTRUCTION.

9. EXTERIOR FOOTINGS, AND OTHER FOOTINGS SUSCEPTIBLE TO DAMAGE RESULTING FROM FROST ACTION, SHALL BE FOUNDED AT A MINIMUM DEPTH OF 36 INCHES BELOW FINAL GROUND LEVEL, UNLESS OTHERWISE NOTED. 10. TEMPORARY FROST PROTECTION SHALL BE PROVIDED DURING COLD WEATHER CONSTRUCTION FOR ALL FOOTINGS.

11. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE SITE'S PERIMETER SHALL BE MECHANICALLY COMPACTED IN LAYERS, TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER.

12. BACKFILLING AGAINST FOUNDATION WALLS, WHERE THERE IS GRADE ON BOTH SIDES OF THE WALL, SHALL BE CARRIED OUT IN SUCH A MANNER THAT THE DIFFERENCE IN SOIL LEVELS IS NEVER MORE THAN 2 FEET.

## **REINFORCED CONCRETE**

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LOCATION IN STRUCTURE	f'c (PSI)	AGGREGATE
FOOTINGS, CAISSONS	4000	NORMAL WEIGHT
SLAB ON GRADE	4000	NORMAL WEIGHT
LEAN CONCRETE	2500	LIGHTWEIGHT

#### 2. ALL CONCRETE MIXES SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE AND THE ACI 318. MIX DESIGNS FOR EACH TYPE AND STRENGTH SHALL BE PREPARED BY CONTRACTOR AND TESTED BY AN INDEPENDENT TESTING LABORATORY. THE MIX DESIGNS SHALL THEN BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL

3. PORTLAND CEMENT SHALL CONFORM TO ASTM C150. WHERE CONCRETE IS IN CONTACT WITH SOIL, THE TYPE OF EXPOSURE SHALL DETERMINE THE CEMENT TYPE:

A. S0 - NO TYPE RESTRICTION B. S1 - TYPE II

C. S2 - TYPE V D. S3 - TYPE V PLUS POZZOLAN OR SLAG CEMENT

CONTRACTOR SHALL DETERMINE THE LEVEL OF EXPOSURE BY TESTING OR OTHER SUITABLE MEANS. 4. FLY ASH MAY BE USED IN CONCRETE MIXES. THE FLY ASH SHALL CONFORM TO ASTM C618, CLASS F AND ITS ADDITION SHALL NOT EXCEED 15% OF THE CEMENT WEIGHT.

NORMAL WEIGHT AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33.

6. LIGHTWEIGHT AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C330 AND ASTM C157. 7. CONCRETE FORMS SHALL BE LAID OUT AND CONSTRUCTED TO PROVIDE THE SPECIFIED CAMBERS INDICATED ON THE STRUCTURAL DRAWINGS, AND SHALL COMPLY WITH REQUIREMENTS OF ACI 318

8. THE PROJECTING CORNERS OF COLUMNS, BEAMS, WALLS, ETC. SHALL BE FORMED WITH 3/4 INCH CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.

9. CONSTRUCTION JOINTS SHALL BE DOWELED, KEYED AND THE SURFACES SHALL BE CLEANED AND LAITANCE REMOVED. ALTERNATIVELY, WHERE APPROVED BY ENGINEER, PROVIDE JOINTS CLEANED AND ROUGHENED TO 1/4 INCH AMPLITUDE BY MECHANICAL METHODS.

10. LOCATION OF CONSTRUCTION JOINTS SHALL BE AS INDICATED ON STRUCTURAL DRAWINGS. PROVIDE WATERSTOPS FOR ALL CONSTRUCTION JOINTS BELOW WATER TABLE. 11. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. REINFORCING BARS, WHICH ARE TO BE WELDED, SHALL CONFORM TO APPLICABLE ASTM AND AWS SPECIFICATIONS.

12. ALL REINFORCING BARS MARKED "CONTINUOUS" SHALL BE TENSION SPLICED, UNLESS OTHERWISE SHOWN ON DRAWINGS.

13. ALL BARS AT NON-CONTINUOUS ENDS SHALL HAVE A STANDARD HOOK.

14. PROVIDE DEVELOPMENT AND SPLICES OF REINFORCEMENT ACCORDING TO THE TYPICAL DETAIL TABLES. 15. UNLESS OTHERWISE NOTED, ALL DOWELS SHALL BE FULLY DEVELOPED IN TENSION, UNLESS OTHERWISE NOTED.

16. DOWEL TO WALLS AND COLUMNS SHALL MATCH THE CORRESPONDING REINFORCING OF THE WALL OR COLUMN. 17. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. USE ONLY FLAT SHEETS.

18. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 6 INCHES OR ONE FULL MESH, WHICHEVER IS GREATER. 19. ALL REINFORCING STEEL SHALL BE SECURELY HELD IN ORDER TO MAINTAIN ITS POSITION WHILE CONCRETE IS POURED. CHAIRS, TIES, SPACERS, ADDITIONAL BARS AND STIRRUPS, ETC. SHALL BE PROVIDED BY THE CONTRACTOR.

20. CONTRACTOR SHALL COORDINATE AND INSTALL ALL REQUIRED EMBEDDED ITEMS, SLEEVES, POCKETS, ETC. PRIOR TO CONCRETE PLACEMENT. REFER TO TYPICAL DETAILS OF PENETRATIONS FOR LIMITATIONS ON THEIR POSITIONING IN RESPECT TO REINFORCING. DO NOT CUT ANY REINFORCING THAT MIGHT INTERFERE WITH EMBEDDED ITEMS PLACEMENT.

21. MECHANICAL PIPES AND/OR ELECTRICAL CONDUITS SHALL NOT PASS THROUGH CONCRETE COLUMNS AND BEAMS, UNLESS SPECIFICALLY DETAILED ON DRAWINGS. 22. NO ALUMINUM SHALL BE EMBEDDED IN CONCRETE.

23. CONTRACTOR SHALL NOTIFY TESTING AGENCY AND OWNER. 24 HOURS BEFORE POURING OF CONCRETE. FOR INSPECTION OF REINFORCEMENT LAYOUT. NO CONCRETE SHALL BE POURED UNLESS ALL REINFORCEMENT AND INSTALLATIONS HAVE BEEN INSPECTED AND APPROVED BY THE TESTING AGENCY.

24. CONCRETE CAST ON SLOPED SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHER ELEVATION.

## **STRUCTURAL STEEL - PAVILION** 1. STRUCTURAL STEEL SHALL BE PROVIDED AS FOLLOWS

SHAPE	ASTM STANDARD	Fy (KSI)
WIDE FLANGES	A992	50
CHANNELS	A572 GRADE 50	50
HSS (RECTANGULAR AND SQUARE)	A500 GRADE B	46
HSS (ROUND)	A500 GRADE B	42
PIPES	A53 GRADE B	35
PLATE AND BAR	A36	50
TIE RODS	A36	36

5 4

Fy IS THE MINIMUM TENSILE YIELDING STRESS TO BE PROVIDED UNLESS OTHERWISE NOTED. ALL BOLTED CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS CONFORMING TO ASTM A 325 OR ASTM A 490. ALL CONNECTIONS SHALL BE TYPE N UNLESS OTHERWISE NOTED ON DRAWINGS.

EACH THREADED ROD OR BOLT.

7 6

- WASHERS 3"x 3"x 3/8" THICK MINIMUM.
- THREADS).
- KSI AND BE LOW-HYDROGEN TYPE.

## STRUCTURAL STEEL - ROTUNDA 1. STRUCTURAL STEEL SHALL BE PROVIDED AS FOLLOWS:

STAINLESS S
CARBON STE

- 4. SULFUR CONTENT FOR TYPE 316L STAINLESS STEEL CANNOT EXCEED 0.005.

- THREADS).
- STRENGTH OF 70 KSI AND BE LOW-HYDROGEN TYPE.
- STAINLESS WELDING PROCESSES MEETING AWS 316L SPECIFICATIONS A5.9, A5.4, AND A5.22 SHALL BE USED WITH A 8. MAXIMUM SULFUR CONTENT OF 0.005.
- SPLICES REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
- COMPLETION OF THE WELDS.
- TRANSPORT AND ERECTION.
- THE SAME STANDARD AS THE MOCK-UP
- 16

## STRUCTURAL STEEL CONNECTIONS

- DESIGN SUCH CONNECTIONS. 2.
- ADDITIONAL INFORMATION.
- INDICATED.
- MEMBERS.
- NOTED.

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NUTS SHALL CONFORM TO ASTM A563, DH OR ASTM A194, 2H. PROVIDE WASHERS CONFORMING TO ASTM F436 AT

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BOLT HOLES IN STEEL MEMBERS, WITH THE EXCEPTION OF BASE PLATES, SHALL BE 1/16 INCH LARGER IN DIAMETER THAN THE NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE ON DRAWINGS. BOLT HOLES IN STEEL BASE PLATES SHALL BE OF THE SIZE MARKED ON DRAWINGS. PROVIDE WELDED PLATE

ANCHOR BOLTS SHALL BE ROUND BAR STOCK, THREADED, CONFORMING TO ASTM F1554, GRADE 36 UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE SUPPLIED WITH CORRESPONDING NUTS AND WASHERS. THREADED RODS SHALL HAVE THREADS CONFORMING TO UNC CLASS 2A (EXTERIOR THREADS) AND 2B (INTERNAL

WELDING MATERIALS SHALL CONFORM TO AWS D1.1. ELECTRODES SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70

9. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTHS REQUIRED. 10. AT PARTIAL PENETRATION WELDS THE SIZE GIVEN IS THE MINIMUM EFFECTIVE THROAT. FABRICATOR SHALL PROVIDE PROPER JOINT PREPARATION TO ACHIEVE THE MINIMUM EFFECTIVE THROAT AS REQUIRED BY THE AWS CODE.

11. SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF SPLICE. SPLICES SHALL BE MADE ONLY AT LOCATIONS INDICATED ON DRAWINGS. FULL DETAIL AND BACK-UP CALCULATIONS OF SPLICES REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.

12. SHAPE AND SIZE GUSSET PLATES IN SUCH A MANNER AS TO CLEAR ALL ARCHITECTURAL FINISHES AND MECHANICAL FIXTURES (DUCTS, PIPES, ETC.). SUBMIT THE CONFIGURATION OF ALL GUSSET PLATES EXPOSED TO VIEW TO ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL.

13. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING, GUYING AND CONNECTING MEMBERS REQUIRED TO ERECT THE STRUCTURE, MAINTAIN CORRECT ALIGNMENT AND SAFELY RESIST ALL POSSIBLE COMBINATIONS OF DEAD, CONSTRUCTION, ERECTION, WIND AND OTHER LATERAL LOADS.

14. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL STRUCTURAL STEELWORK FORMING THE PAVILION IS DEFINED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL CATEGORY 2, ACCORDING TO ANSI/AISC 303 SECTION 10.

15. ALL STEEL IS TO BE PAINTED ACCORDING TO THE FOLLOWING SPECIFICATION:

SURFACE PREPARATION: ABRASIVE BLAST CLEAN TO SSPC SPECIFICATION SP10 PRIMER: EPOXY ANTI CORROSIVE PRIMER, 2 TO 3 MIL THICKNESS, SHOP APPLIED

INTERMEDIATE: EPOXY INTERMEDIATE, 4 TO 5 MIL THICKNESS, SHOP APPLIED

FINISH: POLYURETHANE, 2 TO 3 MIL THICKNESS, SITE APPLIED, PURE WHITE RAL 9010

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SHAPE	ASTM STANDARD	Fy (KSI)			
STEEL PLATES	A240 S31603 GRADE 316L	35			
EEL PLATES	A36	36			

2. Fy IS THE MINIMUM TENSILE YIELDING STRESS TO BE PROVIDED UNLESS OTHERWISE NOTED.

3. Fy NOTED FOR 316L STAINLESS STEEL SHALL BE DETERMINED BY THE 0.2% OFFSET METHOD.

ANCHOR BOLTS SHALL BE ROUND BAR STOCK, THREADED, CONFORMING TO ASTM F1554, GRADE 36 UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE SUPPLIED WITH CORRESPONDING NUTS AND WASHERS.

THREADED RODS SHALL HAVE THREADS CONFORMING TO UNC CLASS 2A (EXTERIOR THREADS) AND 2B (INTERNAL

CARBON STEEL WELDING MATERIALS SHALL CONFORM TO AWS D1.5. ELECTRODES SHALL HAVE A MINIMUM TENSILE

SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF SPLICE. SPLICES SHALL BE MADE ONLY AT LOCATIONS INDICATED ON DRAWINGS. FULL DETAIL AND BACK-UP CALCULATIONS OF

10. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING, GUYING AND CONNECTING MEMBERS REQUIRED TO ERECT THE STRUCTURE, MAINTAIN CORRECT ALIGNMENT AND SAFELY RESIST ALL POSSIBLE

COMBINATIONS OF DEAD, CONSTRUCTION, ERECTION, WIND AND OTHER LATERAL LOADS. 11. WHERE STEEL THICKNESS EXCEEDS 1", PLATES SHALL BE TESTED PER THE SPECIFICATION FOR LAMINATIONS. 12. ALL GROOVE WELDS AND FILLET WELDS WITH LEG LENGTH OVER 3/8" IN MATERIAL GREATER THAN OR EQUAL TO 3/4" FOR THE ROTUNDA SHALL BE ULTRASONICALLY INSPECTED A SECOND TIME A MINIMUM OF 2 WEEKS AFTER

13. CONTRACTOR SHALL ENSURE THAT THE EXTERIOR SURFACE OF THE ROTUNDA IS PROTECTED FROM DAMAGE DURING

14. STEEL PLATE FORMING THE ROTUNDA EXTERIOR AND INTERIOR SHALL NOT BE DRILLED, TAPPED, OR OTHERWISE MACHINED EXCEPT AS NOTED ON THE DRAWINGS.

15. DAMAGE TO STAINLESS STEEL FINISH DURING INSTALLATION AND ERECTION MUST BE MINIMIZED, WE SUGGEST FULLY WRAPPING THE STRUCTURE IN PROTECTION FOR AS LONG AS POSSIBLE. ANY DAMAGE IS TO BE REPAIRED TO MEET

PRIOR TO ANY MANUFACTURE THE CONTRACTOR SHALL COMPLETE THE MOCK-UP AND MAKE IT AVAILABLE FOR REVIEW BY ENGINEER, OWNER, ARCHITECT. THESE PARTIES MAY APPROVE OR REJECT THE MOCK-UP BASED ON THE REQUIREMENTS OF THESE DOCUMENTS AND INDUSTRY STANDARDS FOR STAINLESS STEEL FINISHES. THE MOCK-UP SHALL BECOME THE REFERENCE STANDARD FOR THE FINAL CONSTRUCTION'S TOLERANCES AND FINISHES.

CONTRACTOR SHALL PROVIDE THE DESIGN FOR ALL STRUCTURAL STEEL CONNECTIONS NOT COMPLETELY DEFINED IN THE DRAWINGS. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO TO

REFER TO STEEL CONNECTION TYPICAL DETAILS FOR STEEL CONNECTION REQUIREMENTS, MINIMUM REACTIONS AND

## STRUCTURAL STEEL FRAMING

1. STEEL MEMBERS ARE ASSUMED TO BE VERTICAL AND DIMENSIONED TO THEIR CENTERLINE UNLESS OTHERWISE

STEEL MEMBERS NOT LOCATED IN PLAN BY A DIMENSION LINE SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED

3. FOR SLOPING MEMBERS, THE TOP OF STEEL ELEVATIONS AT THE LOW AND HIGH POINTS SHALL COINCIDE WITH THE TOP OF STEEL ELEVATIONS OF THE MEMBERS THEY ARE FRAMING TO AT THESE LOCATIONS. UNLESS OTHERWISE

![](_page_28_Picture_116.jpeg)

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N Canton, OH 44702

architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS. OH 43215 p 614.321.5128 architect of record Sol Harris / Day Architecture 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 structural engineer ARUP Arup USA, Inc. 77 Water Street New York, NY 10005 T +1 212 896 3000 civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 lighting design / engineer TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 water feature SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110

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![](_page_28_Picture_123.jpeg)

![](_page_28_Picture_124.jpeg)

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SYMBOLS			
SYMBOL	DESCRIPTION		
[]	CAMBER		
<>	NUMBER OF STUDS		
()	TOP ELEVATION OF STRUCTURAL ELEMENT		
( <del>, , , , , , , , , , , , , , , , , , , </del>	STEEL BEAM		
$\overline{}$	STEEL JOIST		
	BRACE FRAME-East Coast		
	BRACE, BRACE FRAME STARTS AT THIS LEVEL -West		
	BRACE, BRACE FRAME BELOW THIS LEVEL-West Coa		
$\leftarrow$	MOMENT CONNECTION		
	CANTILEVER MOMENT CONNECTION		
•	DRAG CONNECTION		
	PLATE CONNECTION		
٦	STIFFENER PLATE CONNECTION		
$\overline{ - } + \overline{ - } $	SPLICE		
	COLUMN STARTS ON THIS LEVEL		
	COLUMN FINISHES BELOW THIS LEVEL		
(H) t	COLUMN HANGER		
P	COLUMN POST		
S	SLOPED COLUMN STARTS ON THIS LEVEL		
s •	SLOPED COLUMN FINISHES BELOW THIS LEVEL		
S	SLOPED COLUMN CONTINUES THROUGH THIS LEVEL		
,7777	SLAB DROP		
7777777	SLAB SLOPE		
<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	CHANGE IN SLAB THICKNESS		
	GROUND		
	ONE WAY SPANNING SLAB		
	TWO WAY SPANNING SLAB		
T/SL = X'-XX"	TOP OF SLAB ELEVATION		
	WELD TYPE		
	CONCRETE WALL (PLAN VIEW)		
	CONCRETE BEAM (PLAN VIEW )		
•	SETTING OUT POINT/WORK POINT		
LEVEL			

V INDICATES CONNECTION DETAIL TO BE PROPORTIONED FOR THE GIVEN REACTION WHERE VINDICATES VERTICAL REACTION OTHERWISE USE MINIMUM REACTION SCHEDULE ASSUME FACTORED LOAD UNLESS OTHERWISE NOTED

M INDICATES CONNECTION DETAIL TO BE PROPORTIONED FOR THE GIVEN REACTION WHERE MINDICATES BENDING MOMENT ASSUME FACTORED LOAD UNLESS OTHERWISE NOTED

P INDICATES CONNECTION DETAIL TO BE PROPORTIONED FOR THE REACTION WHERE P INDICATES AXIAL FORCE IN MEMBER. ASSUME FORCE CAN BE COMPRESSION OR TENSION ASSUME FACTORED LOAD UNLESS OTHERWISE NOTED POSITIVE (+) INDICATES TENSION, NEGATIVE (-) INDICATES COMPRÉSION

ŀ	ABBREVIATIONS
ABV	DESCRIPTION
	ALTERNATE
BET	BETWEEN
BF	BOTH FACES
BLDG	BUILDING
BM	BEAM
ВОТ	воттом
BPL	BASE PLATE
BS	BOTH SIDES
B/ST	BOTTOM OF STEEL
С	CHANNEL
CANT	CANTILEVER
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION (WELD)
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	
	CONTROL JOINT
D	DEPTH, DEEP. DECK
DEMO	DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DJ	DOWEL JOINT
DL	DEAD LOAD
DO	DITTO
DWG	DRAWING
E	
EA	EACH
EF	
EJ	
FQ	FOUAL
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FF	FAR FACE
FFL	FINISH FLOOR LEVEL
FDN	FOUNDATION
FIN	FINISHED
FL	FLOOR
FS	
11	
GA	GAUGE
GALV	GALVANISED
GR	GRADE
Н	AXIAL FORCE, SEE P
HEX	HEXAGON, HEXAGONAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HSB	HIGH-STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
HI	HEIGHT
חו	
ت IF	
IN	INCH
INT	INTERIOR
JT	JOINT
K	KIP = 1000 LBS
KSF	KIPS PER SQUARE FOOT

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ABBREVIATIONS			
ABV.	DESCRIPTION		
L	LENGTH		
LB	POUND		
LG	LONG		
LIN	LINEAR OR LINEAL		
I P			
LSL	LONG SLOTTED (BOLT HOLE)		
LT	LIGHT		
LW	LIGHT WEIGHT		
М	MOMENT FORCE		
MD	METAL DECK		
MF			
IVIJ			
NF	NEAR FACE		
NIC	NOT IN CONTRACT		
NO	NUMBER		
NOM	NOMINAL		
NS	NEAR SIDE		
NTS	NOT TO SCALE		
NVV	NORMAL WEIGHT		
00			
OD			
OF	OUTSIDE FACE		
ОН	OPPOSITE HAND		
OPNG	OPENING		
OPP	OPPOSITE		
OVS	OVERSIZE (BOLT HOLE)		
Р			
PCF			
PL	PLATE		
PP	PARTIAL PENETRATION (WELD)		
PSF	POUNDS PER SQUARE FOOT		
PSI	POUNDS PER SQUARE INCH		
PT	POINT		
REINF	REINFORCE(ING)		
REV	REVISION		
S	SLAB		
SIM	SIMILAR		
SL			
SO ET	SLAB ON GRADE		
SQ IN	SQUARE INCH		
SS	STAINLESS STEEL		
SSL	SHORT SLOTTED (BOLT HOLE)		
STD	STANDARD		
STIFF	STIFFENER		
ST	STEEL		
SIRUUI	STRUCTURAL		
T&B	TOP & BOTTOM		
ТНК	ТНІСК		
T/CONC	TOP OF CONCRETE		
T/D	TOP OF METAL DECK		
TOPG	TOPPING		
T/SL	TOP OF SLAB		
T/WALL	TOP OF WALL		
TYP	TYPICAL		
UON	UNLESS OTHERWISE NOTED		
V	SHEAR FORCE		
VERT, V			
VIF			
·····	WITH		
W/O	WITHOUT		
WP	WORK POINT		
WWF	WELDED WIRE FABRIC		
XS	EXTRA STRONG (PIPE)		
XXS	DOUBLE EXTRA STRONG (PIPE)		

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![](_page_29_Picture_11.jpeg)

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702

_____

architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 architect of record Sol Harris / Day Architecture 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 structural engineer ARUP Arup USA, Inc. 77 Water Street New York, NY 10005 T +1 212 896 3000 civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 lighting design / engineer TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 water feature SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110

## **BID SET** Not For Construction

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	 BID SET	06/04/2019	
_		06/04/2019	

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![](_page_29_Picture_18.jpeg)

![](_page_29_Picture_19.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_30_Picture_3.jpeg)

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![](_page_30_Picture_11.jpeg)

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MAX. OFFSET 

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# 1 PAVILION ROOF CLADDING LOADS

4 S-02-101 3 6 CLADDING LOAD ALLOWANCE 15PSF 2 S-02-101 (11)

![](_page_31_Picture_11.jpeg)

![](_page_31_Picture_12.jpeg)

#### 2000 LBS LOAD ALLOWANCE AT SINGLE POINT ON COLUMN ARM

2000 LBS LOAD ALLOWANCE

3 TYPICAL SECTION AT STAGE AREA

![](_page_31_Picture_17.jpeg)

(7)

![](_page_31_Figure_19.jpeg)

![](_page_31_Figure_20.jpeg)

# 2 STAGE AREA RIGGING LOADS 3/16" = 1'-0"

![](_page_31_Picture_22.jpeg)

## LOADING NOTES:

- 1. PAVILION ROOF CLADDING LOAD ASSUMPTIONS ARE BASED UPON THE TIM LAI ARCHITECTS DESIGN DEVELOPMENT DRAWINGS. 2. CLADDING SLATS ARE ASSUMED TO BE ON 1' CENTERS ON PLAN WITH A
- MAXIMUM DEPTH OF 6". 3. DURING THE DEVELOPMENT OF THE CLADDING ANY VARIATION IN EITHER THE
- SELF WEIGHT OR POROSITY OF THE PANELS SHOULD BE VERIFIED WITH THE STRUCTURAL ENGINEER. 4. A REDUCTION IN THE WIND LOAD ON THE ROOF CLADDING HAS BEEN TAKEN BASED UPON THE POROSITY OF THE DESIGN. WIND LOADS SHALL BE
- REVIEWED ON FURTHER DEVELOPMENT OF THE CLADDING DESIGN. 5. CLADDING PANELS ARE ASSUMED TO SPAN BETWEEN THE SECONDARY ROOF BEAMS AND TO BE SELF-SUPPORTING.
- 6. LOADS FOR TECHNICAL EQUIPMENT SUCH AS LIGHTING AND THE SCREENS ARE ALLOWANCES BASED ON PROVIDED INFORMATION. THE ENGINEER SHALL BE ADVISED AS EQUIPMENT SPECIFICATIONS AND OWNER REQUIREMENTS ARE DEVELOPED.

# 4 TYPICAL SECTION AT OPEN PAVILION

![](_page_31_Picture_31.jpeg)

## 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702

architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 architect of record Sol Harris / Day Architecture 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 structural engineer ARUP Arup USA, Inc. 77 Water Street New York, NY 10005 T +1 212 896 3000 civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 lighting design / engineer TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 water feature SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110

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![](_page_31_Picture_38.jpeg)

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![](_page_32_Figure_0.jpeg)

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![](_page_32_Figure_3.jpeg)

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![](_page_32_Picture_11.jpeg)

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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revision	date	issued
	06/04/2019	BID SET

![](_page_32_Picture_18.jpeg)

![](_page_32_Picture_19.jpeg)

![](_page_33_Figure_0.jpeg)

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STEELWORK. CONTRACTOR TO PROVIDE DOOR HARDWARE INCLUDING INTERIOR HINGES, LOW PROFILE LOCKING LATCH,

![](_page_33_Figure_5.jpeg)

![](_page_33_Figure_6.jpeg)

![](_page_33_Picture_7.jpeg)

![](_page_33_Figure_8.jpeg)

a STIFFENER DETAIL

![](_page_33_Figure_12.jpeg)

![](_page_33_Picture_13.jpeg)

## - PLANE OF CURVATURE

1'-0" - 48"x48"x2" THICK BASE PLATE CJF - 20NO. F1554 GR. 36 ANCHOR BOLTS, GALVANIZED

⁻⁻ ½" Cap Plate, to Match Surrounding STEELWORK ↔ 1/4 <u>\</u>

6 CAP PLATE DETAIL

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![](_page_33_Picture_27.jpeg)

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revision	date	issued
	06/04/2019	BID SET

![](_page_33_Picture_34.jpeg)

![](_page_33_Picture_35.jpeg)

![](_page_34_Figure_0.jpeg)

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DAMPER PERFORMANCE ASSURANCE:-CONTRACTOR SHALL:

- 1. PROVIDE COMPLETED DETAILS FOR SUPPLYING, FABRICATING AND INSTALLING ALL DAMPER PARTS INTERIOR TO THE STRUCTURAL BOX, BASED ON THE SCHEMATIC DESIGN SHOWN ON THIS DRAWING
- 2. SUBMIT FABRICATION DRAWINGS FOR APPROVAL BY ENGINEER 3. INVITE ENGINEER TO FABRICATION SHOP FOR DAMPER INSPECTION, WITH SUFFICIENT SCHEDULE TO ALLOW FOR ADJUSTMENTS BY CONTRACTOR PRIOR
- TO SHIPPING 4. INVITE ENGINEER TO SITE FOR DAMPER INSPECTION (VIA A LIFT PROVIDED BY CONTRACTOR), WITH SUFFICIENT SCHEDULE TO ALLOW FOR ADJUSTMENTS TO BEARING PAD RESTING POSITION BY CONTRACTOR AFTER INSPECTION 5. KEY FIXED PARAMETERS OF THE DAMPER ARE AS FOLLOWS:
- 5.1. MASS = 130LB 5.2. MINIMUM LENGTH OF HANGER, L = 1'-8"
- 5.3. FREE SWINGING IN BOTH DIRECTIONS WITH MINIMAL FRICTION 5.4. IMPACT PADS AS SHOWN OR SIMILAR APPROVED ON 4 SIDES
- 5.5. FREE RESTING POSITION LOCATION (IN RELATION TO 2 ORTHOGONAL PADS) SHOWN ON DETAIL 2.
- 5.6. DAMPER POSITION ABOVE ²/₃ HEIGHT 5.7. ACCESSIBLE FOR INSPECTION

![](_page_34_Figure_13.jpeg)

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![](_page_34_Picture_15.jpeg)

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# 1 ROTUNDA FOOTING SECTION

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# 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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	06/04/2019	BID SET

![](_page_35_Picture_20.jpeg)

![](_page_35_Picture_21.jpeg)

K ____ J 6 1 <u>8'</u>-0_{3/8"} 3x3 FOUNDATION, 3' DEEP MIN. TYP. Н Ð 8 -(**O**)-E STAGE WALL - REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR SETTING OUT 3' DEEP MIN. FOUNDATION 3 S-04-304 FI 1' - 6" 3'-0 3' DEEP MIN. FOUNDATION SLAB, TYP. (10)  $\langle \rangle$ (11) В | 13 14

![](_page_36_Figure_1.jpeg)

![](_page_36_Picture_2.jpeg)

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revision	date	issued
	06/04/2019	BID SET

![](_page_36_Picture_9.jpeg)

![](_page_36_Picture_10.jpeg)

![](_page_37_Figure_0.jpeg)

![](_page_37_Picture_4.jpeg)

## 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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	06/04/2019	BID SET

![](_page_37_Picture_11.jpeg)

![](_page_37_Picture_12.jpeg)

![](_page_38_Figure_0.jpeg)

 

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![](_page_38_Picture_4.jpeg)

# 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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revision	date	issued
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![](_page_38_Picture_11.jpeg)

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![](_page_39_Figure_0.jpeg)

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![](_page_39_Picture_2.jpeg)

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![](_page_39_Picture_9.jpeg)

![](_page_39_Picture_10.jpeg)

![](_page_40_Figure_0.jpeg)

![](_page_40_Figure_1.jpeg)

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![](_page_40_Picture_4.jpeg)

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revision	date	issued
	06/04/2019	BID SET

![](_page_40_Picture_11.jpeg)

![](_page_40_Picture_12.jpeg)

![](_page_41_Figure_0.jpeg)

![](_page_41_Figure_3.jpeg)

![](_page_41_Figure_5.jpeg)

![](_page_41_Figure_6.jpeg)

![](_page_41_Figure_7.jpeg)

![](_page_41_Figure_8.jpeg)

![](_page_41_Figure_9.jpeg)

![](_page_41_Figure_10.jpeg)

![](_page_41_Figure_11.jpeg)

# 3 WORK POINT SCHEDULE

NOTES:

ARCHITECT'S DRAWINGS FOR OVERALL SETTING OUT ON SITE. 3. r AND z COORDINATES GIVEN IN UNITS OF FEET. 5. WP'S 4, 5, 6 & 7 MAY NEED ADJUSTMENT FOLLOWING FINAL COORDINATION WITH CLADDING SUPPLIER. CONTRACTOR TO PROVIDE FINAL ADJUSTMENTS AND SUBMIT TO ENGINEER FOR REVIEW.

COLUMN GRID R1 R2 0.5/16.5 1/16 0.35 0.29 1.5/15.5 2/15 0.35 0.29 2.5/14.5 3/14 0.32 0.33 3.5/13.5 4/13 0.32 0.33 4.5/12.5 5/12 0.28 0.37 5.5/11.5 6/11 0.28 0.37 6.5/10.5 7/10 0.28 0.37 7.5/9.5 8/9 0.28 0.37

V	VP1	V	VP2	\ \	VP3	WP	4	WP5		WP	6	WP	7
r	Z	r	Z	r	z	r	z	r	z	r	z	r	z
						74.9862	19.3619	75.3002	18.8902	52.5625	11.3914	52.2490	10.6970
62.0283	10.0394	62.4384	18.9968	54.6182	13.9884	70.7173	19.4291	71.0513	18.4042	50.3047	12.5307	50.0716	11.5226
						66.2659	19.5335	66.6253	17.7382	47.8793	14.1422	47.6942	12.9149
56.0035	12.5443	62.5165	19.3401	49.4905	16.3380	63.8320	19.6433	64.2110	17.1224	46.5791	15.6670	46.3877	14.3369
						63.2256	19.7706	63.6094	16.4793	46.4360	17.2756	46.2079	15.7866
56.8669	14.4548	63.2532	19.8275	50.4807	19.0838	64.6032	19.9061	64.9735	15.8284	47.6050	18.9164	47.3012	17.2178
						67.5459	20.0324	67.8819	15.2193	49.8161	20.4637	49.3905	18.5578
64.1197	15.5124	70.9659	20.3067	57.2582	21.7444	72.3238	20.1642	72.5985	14.5564	53.2903	22.1606	52.6675	20.0094
						77.6128	20.2714	77.8156	13.9781	57.0766	23.6521	56.2195	21.2563
75.6106	16.0242	83.0252	20.6795	68.1490	23.9312	84.3911	20.3809	84.4939	13.3423	61.8795	25.3016	60.6678	22.6007
						90.8629	20.4690	90.8623	12.7959	66.4322	26.7253	64.8082	23.7327
89.0592	16.4406	96.7410	20.9468	81.3200	25.3920	98.0955	20.5563	97.9753	12.2257	71.5178	28.2176	69.3547	24.8967
						104.6343	20.6280	104.3987	11.7362	76.0976	29.4991	73.3895	25.8836
102.4495	16.8408	110.0617	21.1262	94.7824	26.0682	111.4012	20.6930	111.0302	11.2601	80.4899	30.6910	77.2073	26.7905
						117.6935	20.7440	117.2036	10.8451	84.0458	31.6333	80.2520	27.4971
113.6936	17.2192	120.8806	21.2044	106.4635	25.8383	122.2089	20.7775	121.6633	10.5513	86.4579	32.2683	82.3159	27.9713
						123.7371	20.7890	123.1795	10.4484	87.3016	32.4958	83.0471	28.1426

1. SEE 1/S-04-301 FOR CONSTRUCTION OF WORK POINTS

2. WORKING POINTS ARE LOCATED USING POLAR COORDINATES (r,  $\theta$ , z). SEE S-04-101 FOR  $\theta$  VALUES AND CENTER OF COORDINATE SYSTEM. REFER TO LANDSCAPE

4. SUPPLEMENTARY 3D MODEL MAY BE SUBMITTED IN LIEU OF SCHEDULE AND 1/S-04-301 FOR WORKING POINT LOCATIONS.

| 1 4 5 3 2

![](_page_41_Picture_22.jpeg)

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![](_page_41_Picture_29.jpeg)

![](_page_41_Picture_30.jpeg)

![](_page_42_Figure_0.jpeg)

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![](_page_42_Figure_7.jpeg)

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![](_page_42_Figure_8.jpeg)

6A SKIRT CONNECTION DETAIL 6 - ELEVATION VIEW

![](_page_42_Figure_10.jpeg)

9A COLUMN ARM CONNECTION DETAIL

## NOTES:

- 1. CONTRACTOR TO PROVIDE CONNECTIONS TO RESIST ALL INDICATED FORCES. CONNECTIONS SHOWN ARE INDICATIVE AND TO BE DEVELOPED FOR VARIOUS PAVILION ELEMENT GEOMETRIES. 2. CONTRACTOR TO PROVIDE CALCULATION PACKAGES SIGNED AND SEALED BY AN OHIO LICENSED
- ENGINEER. 3. SEE 10/S-04-302 FOR CONNECTION FORCE SCHEDULE. THIN WALLED HSS TUBES MAY REQUIRE STIFFENERS.
- 4. UNLESS NOTED OTHERWISE, ALL WELDS ARE TO BE MINIMUM REQUIRED FILLET WELDS TO AWS D1.1 5. ALL STRUCTURAL STEELWORK AND CONNECTIONS ARE TO BE FINISHED TO AESS CATEGORY 2, UNLESS NOTED OTHERWISE.
- 6. BOLTS SHALL BE A325 OR A490 IN BEARING TYPE CONNECTION. PROVIDE SLIP CRITICAL BOLTS FOR ALL CONNECTIONS WITH AXIAL LOADS CALLED OUT.
- 7. BRACING ELEMENTS ARE TO BE PROPRIETARY TENSION ROD PRODUCTS, WITH ASSOCIATED CONNECTIONS. BRACING CONNECTIONS SHOWN ARE INDICATIVE AND SUBJECT TO VARIATION FOLLOWING SELECTION OF A TENSION ROD SUPPLIER.
- 8. BRACING ELEMENTS SHALL BE TENSIONED TO ELIMINATE SLACK UNDER SELF WEIGHT. 9. IT IS ASSUMED THAT COLUMNS AND RADIAL BEAMS WILL BE FABRICATED AS SINGLE PIECES IN THE SHOP. SIMILARLY, ROOF ELEMENTS BETWEEN GRID LINES WILL BE FABRICATED AND DELIVERED TO SITE AS SINGLE PIECES. ALL FIELD CONNECTIONS ARE SHOWN AS BOLTED, BUT MAY BE FIELD WELDED SUBJECT TO APPROPRIATE PROCEDURES. CONTRACTOR PREFERENCE ON INSTALLATION SEQUENCE, RESTRICTIONS ON DELIVERY TO SITE, AND ARCHITECTURAL PREFERENCE WILL DETERMINE CONNECTION TYPOLOGIES.

# 6B SKIRT CONNECTION DETAIL 6 - TOP VIEW

![](_page_42_Picture_22.jpeg)

# 9B COLUMN ARM CONNECTION DETAIL - SECTION

	1	1	1	
Connection	Fx (kip)	Fz (kip)	Myy (k-ft)	Mzz (k-ft)
1/S-04-302 7/S-04-302	60	5	-	-
2/S-04-302 4/S-04-302	29	5	-	-
3/S-04-302	25 ^{1.}	14 ^{1.}	43 ^{1.}	10 ^{1.}
5/S-04-302	25	5	-	-
8/S-04-302	11	5	21	-
9/S-04-302	40	15	-	-

NOTES: 1. THESE FORCES APPLY TO 3/S-04-302 AT PB2 ONLY. USE FULL CAPACITY FORCES AT PB1

## 10 MINIMUM CONNECTION FORCES SCHEDULE

8 7 6 5 4 

![](_page_42_Picture_28.jpeg)

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![](_page_42_Picture_35.jpeg)

![](_page_42_Picture_36.jpeg)

![](_page_43_Figure_0.jpeg)

- EXTRUDED ALUMINUM CLADDING FINS WITH INTEGRAL CLAMPING STRIP FOR ROOFING SYSTEM

- ALIGN AT BASE

![](_page_43_Figure_28.jpeg)

4 FIN CONNECTION AT JOINT - SECTION

ATTACHMENT TO DISPLAY TO

BE PROVIDED OTHERS, SEE 3/S-

02-101 FOR LOAD ALLOWANCES

—3' - 0" MAX OFFSET - MONOLITHIC POLYCARBONATE GLAZING. TO BE COORDINATED BY CONTRACTOR AS PART OF CLADDING PACKAGE HSS6x4x1/4 NOTES: 1. DISPLAY TO BE ATTACHED TO COLUMNS AT GRIDLINES 8&9 AS SHOWN. 2. ADDITIONAL STEEL FOR BACKING FRAME TO SCREEN MAY BE REQUIRED DEPENDING ON SCREEN SELECTION, ALLOW FOR 2000LBS OF STEEL. BACK-UP FRAMING DESIGN TO BE PROVIDED TO THE STRUCTURAL ENGINEER FOR

APPROVAL.

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5

DISPLAY ATTACHMENT DETAIL 8 DISPL 1/2" = 1'-0"

![](_page_43_Picture_34.jpeg)

#### 462 SOUTH LUDLOW ALLEY COLUMBUS, OHIO 43215 614 6212796 MKSKSTUDIOS.COM

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client / owner City of Canton project name CENTENNIAL PLAZA project address 301-399 Market Ave N, Canton, OH 44702

architect Tim Lai ArchitecT 401 W TOWN ST COLUMBUS, OH 43215 p 614.321.5128 architect of record Sol Harris / Day Architecture 6677 FRANK AVENUE NW NORTH CANTON, OH 44720 p 330.493.3722 structural engineer ARUP Arup USA, Inc. 77 Water Street New York, NY 10005 T +1 212 896 3000 civil engineer ATWELL 7100 E PLEASANT VALLEY RD SUITE 220 INDEPENDENCE, OH 44131 p 440.349.2000 lighting design / engineer TEC STUDIO INC. 7510 SLATE RIDGE BLVD COLUMBUS, OH 43068 p 614.866.2868 water feature SOUTHERN AQUATICS, INC. 150 HILDEN RD SUITE 305 PONTE VEDRA BEACH, FL 32081 p 904.824.1110

## **BID SET** Not For Construction

revision	date	issued
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	06/04/2019	BID 2E1

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![](_page_43_Picture_41.jpeg)

![](_page_43_Picture_42.jpeg)

![](_page_44_Figure_0.jpeg)

![](_page_44_Figure_1.jpeg)

GR. 36, 1" THICK, 2" SQUARE ANCHOR PLATE ON EACH BOLT (OR TEMPLATE PROPOSED BY CONTRACTOR, TO BE APPROVED BY ENGINEER)

BEARING SURFACE TO BE INSPECTED AND APPROVED BY

GEOTECHNICAL ENGINEER

2A S-04-304

BACKFILL BY GEOTECHNICAL – REQUIREMENTS. ENGINEERS REQUIREMENTS IF REQUIRED.

![](_page_44_Figure_2.jpeg)

AM A I

14

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12

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![](_page_44_Figure_4.jpeg)

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![](_page_44_Figure_5.jpeg)

 

 13
 12
 1
 1
 1

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![](_page_44_Picture_8.jpeg)

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## **BID SET** Not For Construction

revision	date	issued
	06/04/2019	BID SET

Α

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![](_page_44_Picture_15.jpeg)

![](_page_44_Picture_16.jpeg)