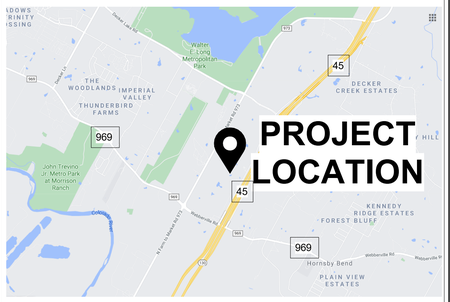
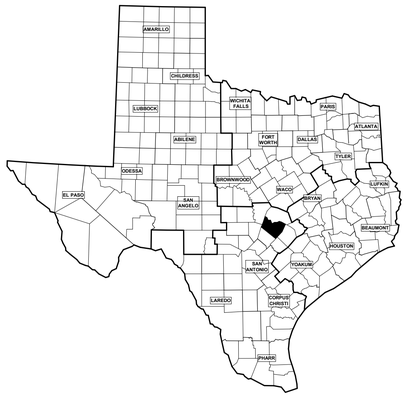
973 OPERATIONS CENTER



VICINITY MAP

NORTH



TRAVIS COUNTY, TX

BUILDING SUMMARY:

ADMIN OFFICE:	11,857 SQFT.
PRODUCTION SHOP:	32,515 SQFT.
MAINTENANCE SHOP:	13,149 SQFT.
PAVEMENT ASSET:	5,566 SQFT.
RADIO TRANSMISSION:	3,119 SQFT.
EQUIPMENT STORAGE:	3,547 SQFT.
TRUCK WASH / EQUIP. ROOM:	2,752 SQFT.
TOTAL SCOPE:	**72,505 SQFT.**
TOTAL STAFF:	**62 FTEs**

BUILDING CODES:

INTERNATIONAL BUILDING CODE	IBC - 2018
AMERICANS W/ DISABILITIES ACT	ADAAG - 2010
TEXAS ACCESSIBILITY STANDARDS	TAS - 2012
INTERNATIONAL ENERGY CODE	IECC - 2018
INTERNATIONAL MECHANICAL CODE	IMC - 2018
	ASHRAE 62.1 - 2016
INTERNATIONAL PLUMBING CODE	IPC - 2018
NATIONAL ELECTRIC CODE	NEC - 2020
NATIONAL FIRE CODE	NFPA 1 - 2018
NATIONAL LIFE SAFETY CODE	NFPA 101 - 2018
TxDOT STANDARD SPECS FOR ...	STREETS - 2014

TDLR REGISTRATION:

EABPRJ########

SCOPE OF WORK:

THIS PROJECT INCLUDES A CONSOLIDATED SHARED OPERATIONS CENTER WITHIN A SHARED FACILITY THAT CURRENTLY INCLUDES PROGRAM FOR 11,857 SQUARE FEET OF ADMINISTRATION AREA; 32,515 SQUARE FOOT PRODUCTION SPACE; 13,149 SQUARE FEET TOTAL OF TWO-PHASED MAINTENANCE FACILITY; 5,566 SQUARE FOOT PAVEMENT ASSET AREA; 3,119 SQUARE FOOT OF RADIO TRANSMISSION WITH 300' PLUS RADIO TOWER; PARKING FOR FLEET VEHICLES; STORAGE AREAS; WASH BAY AND BACKUP POWER STATION FOR MISSION CRITICAL ASPECTS OF SOME DIVISIONS.

Texas Department of Transportation

Support Services Division / Facilities Planning & Management

150 E. Riverside Drive
Austin, Texas 78701-2483
(512) 416-2257

PROJECT:

SITE # 299006

BUILDING # 298210

5501 NORTH F.M. 973, AUSTIN, TEXAS 78724

STATES HEADQUARTERS (29)

PROJECT NUMBER: 38-470420062

INDEX OF DRAWINGS

*******DUE TO THE AMOUNT OF SHEETS ON THIS PROJECT, THE INDEX OF DRAWINGS IS LOCATED ON SHEET G0.2*******

PROFESSIONAL SEALS

9/24/2021

9/24/2021

09/24/2021

09.24.21

09/21/2021

Sept. 24, 2021

9-24-2021

GENERAL NOTES

1. WORK SHALL CONFORM TO THE CONSTRUCTION DOCUMENTS & APPLICABLE BUILDING CODES (INCLUDING FEDERAL & STATE CODES, ORDINANCES, REGULATIONS, ETC.) CONSTRUCTION DOCUMENTS INCLUDE DRAWINGS & SPECIFICATIONS PLUS ANY ADDENDA TO THE AFOREMENTIONED.
2. CONSTRUCTION DOCUMENTS ARE INTENDED TO INCLUDE ITEMS NECESSARY TO CONVEY DESIGN INTENT OF THE WORK. MANUFACTURERS' INSTRUCTIONS SHALL BE CONSIDERED AS PART OF THE SPECIFICATIONS WHETHER INCLUDED OR NOT IN THE SPECIFICATION MANUAL.
3. PERIODIC SITE VISITS BY OWNER'S REPRESENTATIVE SHALL NOT BE CONSTRUED AS SUPERVISION OF MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR CONSTRUCTION, NOR IMPLY RESPONSIBILITY FOR PROVIDING A SAFE PLACE FOR PERFORMANCE OF WORK BY CONTRACTOR OR CONTRACTOR'S EMPLOYEES, OR EMPLOYEES OF SUPPLIERS, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL, OR OCCUPANCY BY ANY PERSON.
4. CONTRACTOR IS RESPONSIBLE FOR CONTINUOUS SECURITY AT AFFECTED OPENINGS FOR THE DURATION OF THE COSNTRUCTION CONTRACT. COORDINATE SECURITY STATUS CHANGES W/ DISTRICT REPRESENTATIVE PRIOR TO IMPLEMENTING CHANGES.
5. CONTRACTOR SHALL:
   - VERIFY DIMENSIONS & FIELD CONDITIONS BEFORE PROCEEDING.
   - NOTIFY ARCHITECT OF FIELD CONDITIONS REQUIRING DEVIATIONS FROM CONSTRUCTION DOCUMENTS BEFORE THE CONSTRUCTION OF ANY MODIFICATION.
   - PROVIDE ADEQUATE BRACING & SHORING AS NECESSARY UNTIL PERMANENT SUPPORTS & STIFFENERS ARE INSTALLED.
   - IMMEDIATELY REPAIR OR REPLACE DAMAGED OR DEFECTIVE WORK TO THE APPROVAL OF (AND AT NO ADDITIONAL COST TO) THE OWNER
   - NOTIFY ARCHITECT & APPROPRIATE INSPECTORS AT CRITICAL CONSTRUCTION MILESTONES IN ORDER TO OBTAIN NECESSARY APPROVALS & INSPECTIONS PRIOR TO COMMENCEMENT OF SUBSEQUENT WORK.
   - TAKE REASONABLE PRECAUTIONS FOR THE SAFETY OF, AND PROVIDE REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO:
     a) EMPLOYEES & ALL OTHER AFFECTED PERSONS
     b) ALL WORK, MATERIALS & EQUIPMENT
     c) OTHER PROPERTY AT SITE OR ADJACENT THERETO.
   - UPON COMPLETION OF THE WORK, REMOVE MATERIALS, TOOLS & EQUIPMENT AND LEAVE SITE IN A CONDITION ACCEPTABLE TO OWNER.

CIVIL:

JONES CARTER
Joe York
4350 Lockhill Selma Rd. Suite 100
San Antonio, TX 78249

Phone: (210) 494-5511
E-mail: jyork@jonescarter.com

LANDSCAPE:

ASAKURA ROBINSON
Brendan Wittstruck
1224 East 12th Street, Suite 310
Austin, TX 78702

Phone: (512) 351-9601
E-mail: brendan@asakurarobinson.com

ARCHITECTURE:

MARMON MOK
Stephen Lara
1020 NE Interstate 410 Loop
San Antonio, TX 78209

Phone: (210) 223-9492
E-mail: lara@marmonmok.com

STRUCTURE:

JQ ENGINEERING
Tom Herrin
84 NE Interstate 410 Loop, Suite 245
San Antonio, TX 78216

Phone: (210) 858-9803
E-mail: therrin@jqeng.com

MEP:

ENCOTECH ENGINEERING CONSULT.
Gene Raanes
700 E. Sonterra Blvd
San Antonio, TX 78258

Phone: (210) 545-3558
Email: sarah.migl@eec-tx.com

FIRE PROTECTION:

FIRE PROTECTION CONSULT. GROUP
Gilead R. Ziemba
14439 NW Military Hwy, Suite 108 #430
San Antonio, TX 78231

Phone: (210) 858-2389
E-mail: gilead@firepcg.com

TECHNOLOGY:

COMBS CONSULTING GROUP
Matt Thrasher
8200 Frontage Rd.
San Antonio, TX 78230

Phone: (210) 698-7887
E-mail: matt.thrasher@combs-group.com

SECURITY:

COMBS CONSULTING GROUP
Ray Navaro
8200 Frontage Rd.
San Antonio, Tx 78230

Phone: (210) 698-7887
E-mail: ray.navarro@combs-group.com

COST ESTIMATING:

PROJECT COST RESOURCE, INC.
Greg Edwards
410 W Grand Parkway South, Suite 390
Katy, TX 77494

Phone: (281) 497-4171
E-mail: gedwards@pcrcost.com

GEOTECHNICAL:

RKCI
Endeson Juanda
12821 W Golden Ln
San Antonio, TX 78249

Phone: (210) 699-9090
E-mail: ejuanda@rkci.com

MEP ABBREVIATIONS

AMPERE	A(AMP)
ABOVE FINISHED FLOOR	AFF
ADDENDUM	ADD
ADJUSTABLE	ADJ
AIR CONDITIONING	A/C
AIR HANDLER UNIT	AH, AHU
APPROXIMATE(LY)	APPROX
ARCHITECT(URAL)	ARCH
BACKDRAFT DAMPER	BDD
BUILDING	BLDG
BOTTOM OF JOIST	BOJ
BAR SINK	BS
BRITISH THERMAL UNIT	BTU
BRITISH THERMAL UNIT/HOUR	BTUH
CARBON DIOXIDE	CO2
CAST IRON	C.I.
CENTER	CTR
CHILLED WATER SUPPLY	CHWS
CHILLED WATER RETURN	CHWR
CIRCLE	CIR
CLEAN OUT,CARBON MONOXIDE	CO
COLD WATER,CHILLED WATER	CW
CONCRETE	CONC
CONCRETE MASONRY UNIT	CMU
CONDENSATE DRAIN	CD
CONDENSING UNIT	CU
CONDUIT	C
CONSTRUCTION	CONST
CORRIDOR	CORR
CUBIC FOOT PER HOUR	CFH
DEGREE FAHRENHEIT	DEGF
DEMOLISH(ITION)	DEMO
DEPARTMENT	DEPT
DETAIL	DET
DIAMETER	DIA, Ø
DIMENSION	DIM
DISCONNECT	DISC
DIVISION	DIV
DOOR	DR
DOUBLE	DBL
DRAWING(S)	DWG(S)
DRY BULB	DB
DUCTLESS SPLIT	DS
EAST	E
EACH	E/A
EACH,EXHAUST AIR	EA
EFFICIENCY	EFF
ELECTRIC(AL)	ELEC
ELECTRIC WATER COOLER	EWC
ELEVATION	EL
ELEVATOR	ELEV
ELEVATOR SUMP PUMP WASTE	EW
ENERGY EFFICIENCY RATIO	EER
ENGINEER	ENGR
EQUAL	EQ
EQUIPMENT	EQPT
ETCETERA	ETC
EXHAUST FAN	EF
EXISTING	EXIST
EXPOSED	EXP
EXTERIOR	EXT
EXTERIOR INSULATION FINISH SYSTEM	EIFS
EXTERNAL STATIC PRESSURE	ESP
FIRE ALARM	FA
FIRE DEPARTMENT CONNECTION	FDC
FIRE EXTINGUISHER	FE
FIRE PROOF(ING)	FP
FIRE RATED	FR
FIRE-SMOKE DAMPER	F/SD
FINISH(ED)	FIN('D)
FINISH FLOOR	FF
FIXTURE	FIXT
FIXTURE UNIT	FU
FLEXIBLE	FLEX
FLOOR	FL
FLOOR CLEAN OUT	FCO
FLOOR DRAIN	FD
FLUSH VALVE	FV
FOOT/FEET	FT
GALLONS PER MINUTE	GPM
GALVANIZED	GALV
GAS FURNACE UNIT	GFU
GAS HEATER	GH
GAUGE	GA
GENERAL CONTRACTOR	GC
GROUND	GND
GYPSUM BOARD	GYP BD
HEATER	HTR
HEAT PUMP UNIT/HORSEPOWER	HP
HEAT SEASONAL PERFORMANCE FACTOR	HSPF
HEATING, VENTILATION & AIR CONDITIONING	HVAC
HEATING HOT WATER RETURN	HHWR
HEATING HOT WATER SUPPLY	HHWS
HOSE BIBB	HB
HOT WATER	HW
HOT WATER RETURN	HWR
INFORMATION	INFO
INLET	IN
INSULATION	INSUL
INTERIOR	INT
JANITOR	JAN
JUNCTION BOX	JB(J-BOX)
KNOCK OUT	K/O
KILOWATTS	KW
LAVATORY	LAV
LOUVER	L
BACnetG RADIUS ELBOW	LRE
MAN HOLE	MH
MANUFACTURE(R)	MFR
MAXIMUM	MAX
MAXIMUM OVERCURRENT PROTECTION	MOCP
MECHANICAL	MECH
METAL	MTL
MEZZANINE	MEZZ
MINIMUM	MIN
MINIMUM CURRENT AMPACITY	MCA
MISCELLANEOUS	MISC
MOP SINK	M.S
MULTIPLE	MULT
NOT APPLICABLE	N/A
NATURAL	NAT
NOMINAL	NOM
NORTH	N
NOT IN CONTRACT	NIC
NOT TO SCALE	NTS
NUMBER	NO/#
OUTSIDE AIR	OA
OUTLET	OUT
PANEL	PNL
PHASE	PH/Ø
POLYVINYL CHLORIDE	PVC
POUND(S)	LBS
POUNDS PER SQUARE INCH	PSI
PRESSURE GAS	PG
QUANTITY	QTY
RADIUS	R
RECEPTACLE	RECEP
RECESSED	REC
REFRIGERANT GAS	RG
REFRIGERANT LIQUID	RL
REFRIGERANT SUCTION	RS
REINFORCE(ING)(ED)(MENT)	REINF
RETURN/RELIEF AIR	RA
REQUIRE(D)	REQ('D)
RIGID GALVANIZED STEEL	RGS
ROOF DRAIN	RD
ROOF TOP UNIT	RTU
ROOM	RM
SANITARY SEWER	SS
SCHEDULE	SCH
SEASONAL ENERGY EFFICIENCY RATIO	SEER
SECTION	SECT
SHOWER	SHWR
SMOKE DETECTOR	SD
SOUTH	S
SPECIFICATION(S)	SPEC('S)
SPRINKLER	SPRINK
SQUARE	SQ
SQUARE FEET	SF
STAINLESS STEEL	SST
STEEL	STL
SWITCH	SW
TELEPHONE	TEL
TELEVISION	TV
TEMPORARY	TEMP
TEXAS	TX
THOUSAND BTU PER HOUR	MBH
THROUGH	THRU
TOP OF STEEL	TOS
TROUGH DRAIN	TD
TYPICAL	TYP
UNDERGROUND	UG
UNDERWRITER LABORATORIES INC.	UL
UNIT HEATER	UH
UNLESS NOTED OTHERWISE	UNO
URINAL	UR
UTILITY	UTIL
VENT THROUGH ROOF	VTR
VOLTAGE	V
VOLUME	VOL
WASTE WATER	WW
WATER CLOSET	WC
WATER HEATER	WH
WEIGHT	WT
WET BULB	WB
WITH	W/
WITHOUT	W/O

DESIGN CRITERIA	SUMMER	WINTER
OUTDOOR CONDITIONS	99 DB/ 74 WB	26 F
INDOOR CONDITIONS	75 F DB/50% RH	70 F

APPLICABLE CODES
2018 IMC
2020 NEC
2015 IECC
2012 TAS

MECHANICAL SYMBOL LEGEND

- S#/CFM — SUPPLY AIR GRILLE
- R#/CFM — RETURN AIR GRILLE
- E#/CFM — EXHAUST AIR GRILLE
- SUPPLY UP
- SUPPLY DOWN
- EXHAUST/RETURN UP
- EXHAUST/RETURN DOWN
- T — THERMOSTAT
- H — HUMIDISTAT
- SD — DUCT SMOKE DETECTOR
- SP — STATIC PRESSURE SENSOR
- S/FD — SMOKE/FIRE DAMPER
- FD — FIRE DAMPER
- FLEXIBLE DUCT WORK
- MANUAL DAMPER
- MOTORIZED DAMPER
- TAKEOFF WITH DAMPER
- TAKEOFF WITHOUT DAMPER
- SIDEWALL GRILLE, SUPPLY AIR
- SIDEWALL GRILLE, RETURN / EXHAUST AIR
- MECHANICAL EQUIPMENT, SEE SCHEDULES
- TRANSITION RECTANGULAR TO ROUND DUCT
- RECTANGULAR ELBOW
- RADIUS ELBOW
- DOUBLE WALL SPIRAL DUCT
- CONNECT TO EXISTING
- DISCONNECT FROM EXISTING
- X#/## — DIFFUSER TYPE / CFM
- ##/## — FIRST NUMBER INDICATES WIDTH AND SECOND NUMBER INDICATES VERTICAL DIMENSION
- ## Ø — DIAMETER OF ROUND DUCT
- 1" UNDERCUT DOOR
- C — CONDENSATE DRAIN PIPE

NOTE: NOT ALL SYMBOLS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

MECHANICAL CONTROLS SYMBOL LIST

- CO_2 — CARBON DIOXIDE
- CO — CARBON MONOXIDE
- T — TEMPERATURE SENSOR
- T — THERMOSTAT
- H — HUMIDITY SENSOR
- H — HUMIDISTAT
- $ — LIGHT SWITCH
- CP — CONTROL PANEL
- CT — CURRENT SWITCH
- DS — DOOR SWITCH
- DP — DIFFERENTIAL PRESSURE
- FS — FLOW SWITCH
- P — WELL PRESSURE SENSOR
- T — WELL TEMPERATURE SENSOR
- T — LOW TEMPERATURE LIMIT SWITCH
- S — STARTER
- T — AVERAGING TEMPERATURE SENSOR
- T — SINGLE POINT TEMPERATURE SENSOR
- SP — DUCT STATIC PRESSURE SENSOR
- SD — SMOKE DETECTOR
- FILTER
- M — MOTOR
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER
- D/X — DIRECT EXPANSION EVAPORATOR COIL
- ELECTRIC RESISTIVE HEAT COIL
- MOTORIZED DAMPER

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

PIPING SYMBOL LEGEND

- CD — CONDENSATE DRAIN PIPE
- A.A.V. — AUTOMATIC AIR VENT
- FLEX
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE, SWING GATE
- DIRECTION OF FLOW
- FLOW CONTROL VALVE
- FM — FLOW METER
- FS — FLOW SWITCH
- M — TWO WAY MODULATING CONTROL VALVE
- GATE VALVE
- OS&Y GATE VALVE
- PIPE UNION
- PRESSURE GAUGE ASSEMBLY
- PRESSURE RELIEF VALVE
- STRAINER
- PIPING UP
- PIPING DOWN
- PIPING TEE DOWN

NOTE: NOT ALL SYMBOLS ON THIS LIST MAY BE APPLICABLE TO THIS PROJECT.

HVAC EQUIPMENT TAGS

- S1/200 — AIR DISTRIBUTION DEVICE; CFM; TAG
- AHU-1-1 — AIR HANDLING UNIT; AHU NUMBER; CU NUMBER
- VAV-1-1 — SINGLE DUCT TERMINAL UNIT; TERMINAL NUMBER; AHU NUMBER
- DS-1-1 — FAN COIL UNIT; DS NUMBER; CU NUMBER
- EF-1-1 — EXHAUST FAN; FAN NUMBER; FAN TYPE

DRAFTING SYMBOLS

SECTION MARK

X/SXXX — SHEET NUMBER; SECTION NUMBER; DIRECTION OF VIEW FOR SECTION CUT

ELEVATION MARK

X/SXXX — DIRECTION OF VIEW FOR ELEVATION; SHEET NUMBER; SECTION NUMBER

PLAN/DETAIL DESIGNATION

PLAN NAME/DETAIL TITLE — 1 SCALE — SCALE; VIEW NUMBER

1 / XXX — DETAIL NUMBER; SHEET NUMBER; DETAIL REFERENCE

SHEET LIST - MECHANICAL	
Sheet Number	Sheet Name
M0.1	MECHANICAL ABBREVIATIONS AND SYMBOLS
M0.2	MECHANICAL GENERAL NOTES
M2.0	MECHANICAL PLAN - HVAC- OVERALL
M2.1	MECHANICAL PLAN - HVAC- SEGMENT A
M2.2	MECHANICAL PLAN - HVAC- SEGMENT B
M2.3	MECHANICAL PLAN - HVAC- SEGMENT C
M2.4	MECHANICAL PLAN - HVAC- SEGMENT D
M2.5	MECHANICAL PLAN - HVAC- SEGMENT E
M2.6	MECHANICAL PLAN - HVAC- SEGMENT F
M2.7	MECHANICAL PLAN - HVAC- SEGMENT G
M2.8	MECHANICAL PLAN - HVAC- SEGMENT H
M2.9	MECHANICAL PLAN - HVAC- SEGMENT K
M2.10	MECHANICAL PLAN - HVAC - ROOF PLAN
M3.1	MECHANICAL PLAN - BUILDING PRESSURIZATION PLAN
M3.2	MECHANICAL SECTIONS
M4.1	MECHANICAL SCHEDULES
M4.2	MECHANICAL SCHEDULES
M4.3	MECHANICAL SCHEDULES
M5.1	MECHANICAL DETAILS
M5.2	MECHANICAL DETAILS
M5.3	MECHANICAL DETAILS
M6.1	MECHANICAL CONTROLS
M6.2	MECHANICAL CONTROLS
M6.3	MECHANICAL CONTROLS
M6.4	MECHANICAL CONTROLS
M6.5	MECHANICAL CONTROLS
M6.6	MECHANICAL CONTROLS

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL ABBREVIATIONS AND SYMBOLS

Texas Department of Transportation

STATE OF TEXAS — EUGENE W. RAANES — 62200 — LICENSED PROFESSIONAL ENGINEER — 09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M0.1
7001

MECHANICAL GENERAL NOTES

A. THE MECHANICAL WORK CONSISTS OF PROVIDING LABOR, MATERIALS, PRODUCTS, AND IN PERFORMING ALL OPERATIONS REQUIRED FOR THE COMPLETE OPERATING INSTALLATION OF ALL MECHANICAL SYSTEMS IN ACCORDANCE WITH SPECIFICATIONS, APPLICABLE DRAWINGS, TERMS, CONDITIONS OF THE CONTRACT AND ALL APPLICABLE CODES AND ORDINANCES GOVERNING THE INSTALLATION OF THE VARIOUS MECHANICAL SYSTEMS. ALL WORK SHALL BE FULLY CORRELATED WITH THE WORK OF OTHER CRAFTS.

B. EACH CONTRACTOR SHALL STUDY THE CONTRACT DOCUMENTS TO DETERMINE THE EXTENT OF WORK PROVIDED UNDER THIS CONTRACT, AS WELL AS TO ASCERTAIN THE DIFFICULTY TO BE ENCOUNTERED IN PERFORMING THE WORK ON THE DRAWINGS AND OUTLINED HERE-IN-AFTER AND IN MAKING CONNECTIONS TO EXISTING UTILITIES, INSTALLING NEW EQUIPMENT AND SYSTEMS AND COORDINATING THE WORK WITH THE OTHER TRADES.

C. EXAMINATION OF SITE: THE CONTRACTOR SHALL THOROUGHLY EXAMINE SITE AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL MEASUREMENTS AFFECTING HIS WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS NEGLECT TO EXAMINE OR FAILURE TO DISCOVER CONDITIONS WHICH AFFECT HIS WORK. NO EXTRA COMPENSATION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE INDICATED ON THE DRAWINGS.

D. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.

E. SHOULD DISCREPANCIES OCCUR WITHIN THE CONTRACT DOCUMENTS, THE MORE STRINGENT AND MORE COSTLY APPROACH SHALL APPLY FOR BIDDING PURPOSES. THE CONTRACTOR IS TO NOTIFY THE OWNER'S REPRESENTATIVE OF DISCREPANCIES FOR CLARIFICATION. CLARIFICATIONS ISSUED AFTER THE CONTRACT IS AWAREDED ARE TO BE INCORPORATED BY THE CONTRACTOR AT NO ADDITIONAL COSTS AND ARE TO BE REVIEWED BY THE OWNER'S REPRESENTATIVE TO DETERMINE IF A REDUCTION IN COST IS JUSTIFIED.

F. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES TO ALL LOCAL AND OTHER RELATED AGENCIES AS REQUIRED.

G. DRAWINGS ARE DIAGRAMMATIC ONLY. DO NOT SCALE DRAWINGS FOR EXACT LOCATION OF ITEMS SHOWN. COORDINATE WITH STRUCTURE AND OTHER TRADES IN THE FIELD.

H. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

I. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.

J. MAINTAIN AN ADEQUATE CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN ATTIC SPACES.

K. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.

L. ALL MATERIALS, EQUIPMENT, AND APARATUS INSTALLED ON THE PROJECT SHALL BE NEW AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS. THE MANUFACTURER OR HIS/HER AUTHORIZED REPRESENTATIVE, SHALL CERTIFY IN WRITING TO THE OWNER AND THE OWNER'S REPRESENTATIVE, THAT THE INSTALLATION HAS BEEN MADE IN ACCORDANCE WITH SUCH PRINTED REQUIREMENTS.

M. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.

N. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 26 OF THE SPECIFICATION.

O. DO NOT CUT BEAMS WITHOUT PRIOR AUTHORIZATION FROM STRUCTURAL ENGINEER. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING CONTACT STRUCTURAL ENGINEER FOR APPROVAL AND COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.

P. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.

Q. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.

R. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

S. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.

T. LOCATIONS AND SIZES OF ALL FLOOR AND WALL PENETRATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

U. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE LOCATION SHOWN ON DRAWINGS. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.

V. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

W. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. COORDINATE WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.

HVAC GENERAL NOTES

A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED AND REQUIRED BY CODE.

B. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.

C. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS 48" (CENTERLINE) ABOVE THE FINISHED FLOOR AND NEXT TO THE LIGHT SWITCH WHERE APPLICABLE. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE PRECEDING LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.

D. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.

E. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.

F. UNLESS OTHERWISE NOTED OR SHOWN ON THE FLOOR PLAN, THE SUPPLY, EXHAUST, OUTSIDE AIR, AND RETURN AIR DUCTWORK SHALL BE RECTANGULAR GALVANIZED SHEET METAL DUCT.

G. FURNISH RECTANGULAR SINGLE THICKNESS TURNING VANES OR 1.5D RADIUS ELBOWS AT ALL 90 DEGREE TURNS. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.

H. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.

I. PROVIDE CONCRETE HOUSEKEEPING PAD UNDER ALL FLOOR-MOUNTED EQUIPMENT. REFER TO SPECIFICATIONS FOR DETAILED REQUIREMENTS.

J. ALL AIR HANDLING UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.

K. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.

L. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.

M. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

N. PROVIDE MANUAL BALANCING DAMPER IN EACH BRANCH DUCT TAKE-OFF. REFER TO THE BRANCH DUCT DETAILS ON THE DETAIL SHEET.

O. PROVIDE FIRE DAMPERS AT SUPPLY AIR AND RETURN AIR DUCT PENETRATIONS THROUGH RATED CEILING AND WALLS.

P. PROVIDE ACCESS DOORS IN DUCTWORK FOR THE OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENT.

Q. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.

R. GUARDS MUST BE PROVIDED WHERE AN APPLIANCE, EQUIPMENT, FAN, OR OTHER COMPONENTS REQUIRE SERVICE AND ARE LOCATED WITHIN 10 FEET OF A ROOF EDGE.

S. PROVIDE BALANCING DAMPERS AT DUCT TAKEOFFS.

T. PROVIDE SMOKE DETECTORS ON DUCTWORK LEADING TO ALL AIR HANDLING EQUIPMENT PER NFPA REQUIREMENTS.

U. ALL HVAC DUCTWORK OR FAN SYSTEMS LOCATED WITHIN CORROSIVE ENVIRONMENT, OR DIRECTLY DRAWING AIR FROM A CORROSIVE ENVIRONMENT SHALL BE APPROPRIATELY POWDER COATED OR GALVANIZED.

MECHANICAL PIPING GENERAL NOTES

A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED AND REQUIRED BY CODE.

B. ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO THE BOTTOM OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING UNLESS OTHERWISE NOTED.

C. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE OR SLAB, WITH SPACE FOR INSULATION IF REQUIRED.

D. INSTALL PIPING SO ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

E. ALL VALVES SHALL BE INSTALLED SO THAT THE VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.

F. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND THE MAXIMUM ADJUSTABLE STOPS.

G. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE THE FULL SIZE OF THE PIPE BEFORE REDUCING IN SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.

H. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

I. ALL PIPING SHALL CLEAR DOORS AND WINDOWS.

J. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

K. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

L. PROVIDE A LINE SIZE STRAINER UPSTREAM OF EACH AUTOMATIC VALVE.

M. SLEEVE AND SEAL ALL PIPING PENETRATIONS THROUGH BUILDING PARTITIONS. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN CHILLED WATER.

N. PIPING, DUCTWORK, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, OR MOTOR CONTROL CENTERS SHALL BE NOT INSTALLED WITHIN THE REQUIRED SPACE FOR WORKING CLEARANCES OR DEDICATED SPACES OF THE ELECTRICAL EQUIPMENT, EXTENDING IN FRONT OF AND FROM FLOOR TO STRUCTURAL CEILING WITH A WIDTH AND DEPTH OF THE ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC-110.26.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

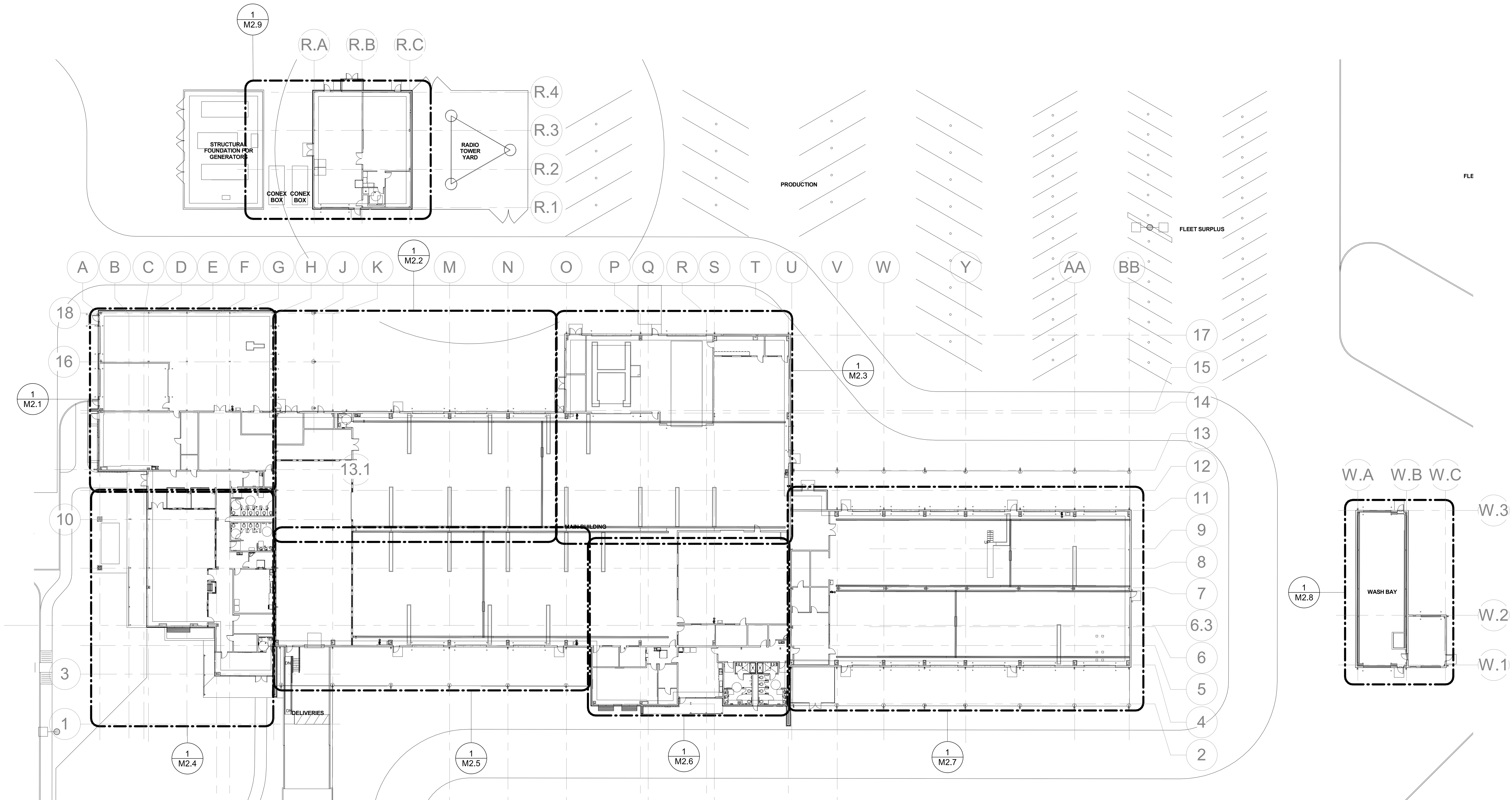
ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL GENERAL NOTES

M0.2
7002

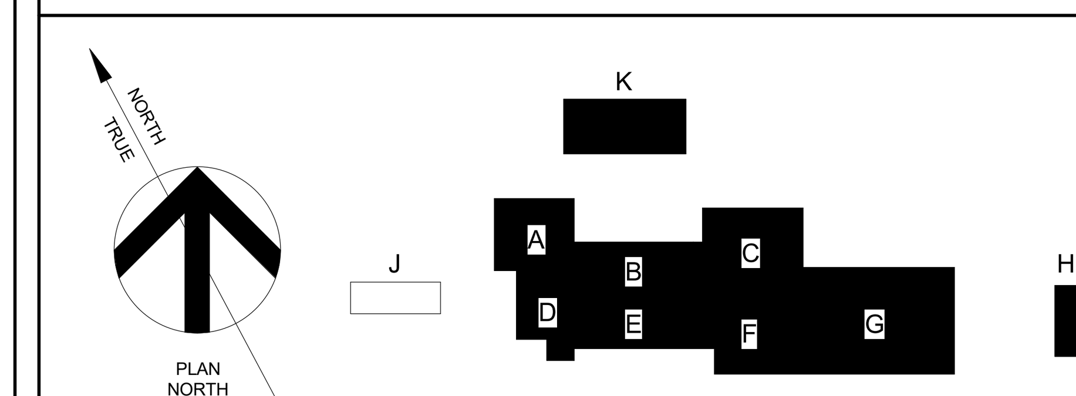
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21



1 MECHANICAL PLAN - HVAC - OVERALL
1/32" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 20' 40' 80'

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

MECHANICAL PLAN - HVAC- OVERALL

M2.0
7200

GENERATED ON: 9/21/2021 12:32:33 PM
C:\Users\Robert.Belfiore\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_robert.belfioreVJALR.rvt

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

(#) KEYNOTE LEGEND

1 PROVIDE GAS-FIRED INFRARED TUBE HEATER DIRECTED AT 45 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. PROVIDE 4" FLUE DUCT FROM DRAFT INDUCER UP TO ROOF. PROVIDE 4" COMBUSTION AIR DUCT TO BURNER BOX FROM INTAKE ON ROOF. EXTEND MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL B2/M5.1.

2 MOUNT INDOOR UNIT 7'-6" ABOVE FINISHED FLOOR TO THE BOTTOM OF THE UNIT. COORDINATE WITH TRADES TO ENSURE UNIT DOES NOT OBSTRUCT OTHER EQUIPMENT IN ROOM. REFER TO DETAIL B1/M5.1.

3 PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO NEAREST HUB DRAIN, TAILPIECE OR FLOOR SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3

4 MOUNT INDOOR UNIT 8 FEET ABOVE FINISHED FLOOR TO THE BOTTOM OF THE UNIT. COORDINATE WITH TRADES TO ENSURE UNIT DOES NOT OBSTRUCT OTHER EQUIPMENT IN ROOM. REFER TO DETAIL B1/M5.1

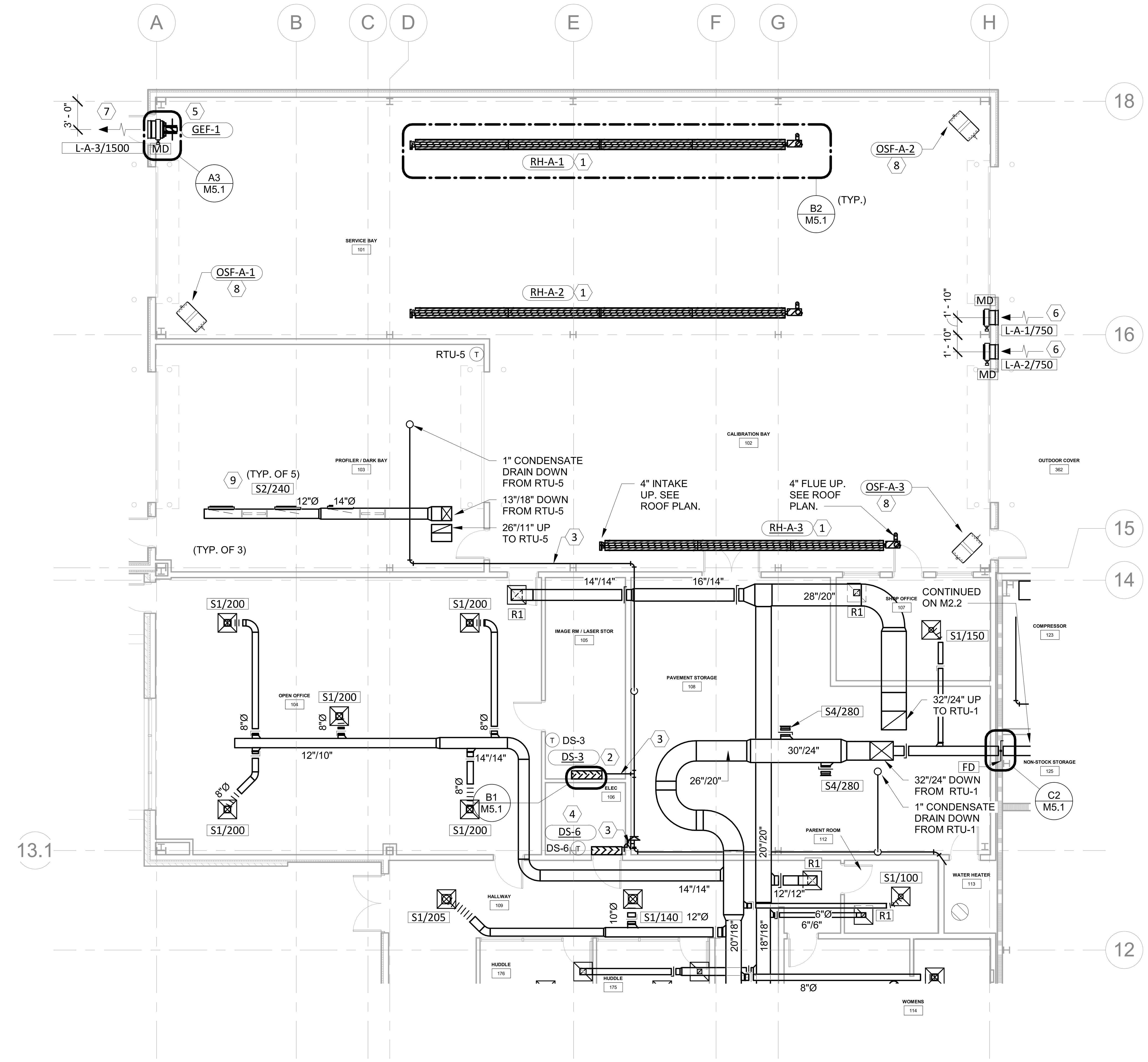
5 PROVIDE WALL MOUNTED EXHAUST FAN MOUNTED SUCH THAT FAN IS ON CENTER WITH ASSOCIATED LOUVER IN VERTICAL AND HORIZONTAL PLANES. INSTALL PER MANUFACTURERS RECOMMENDATIONS. REFER TO DETAIL C4/M5.2

6 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 14'-0" AFF.

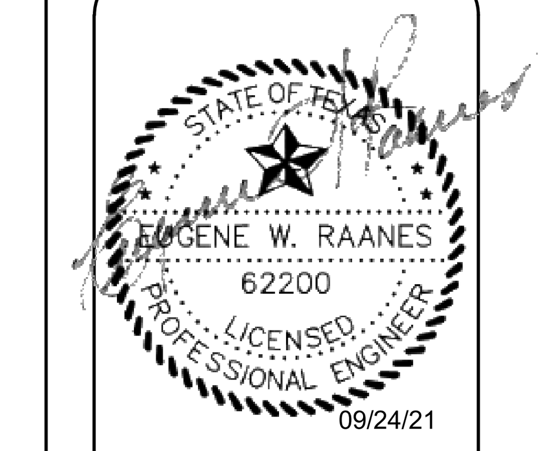
7 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 14'-6 1/2" AFF. MOUNT FAN SUCH THAT CENTER LINE OF EQUIPMENT IS ALIGNED WITH CENTER LINE OF LOUVER.

8 MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 12'-4 1/2" AFF.

9 PROVIDE ANGLED DIFFUSER IN SPIRAL DUCTWORK AS SHOWN. REFER TO DETAIL A3/M5.3 FOR INSTALLATION DETAILS



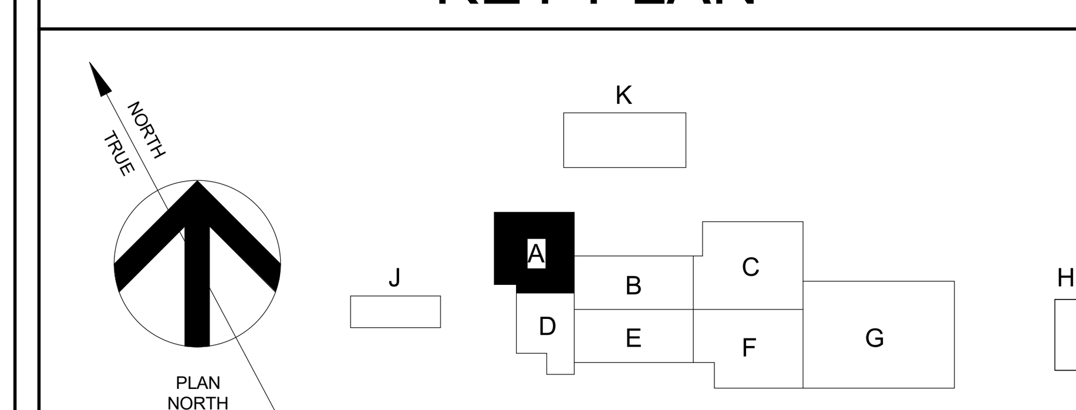
1 MECHANICAL PLAN - HVAC - SEGMENT A
1/8" = 1'-0"



973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47042062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

KEY PLAN

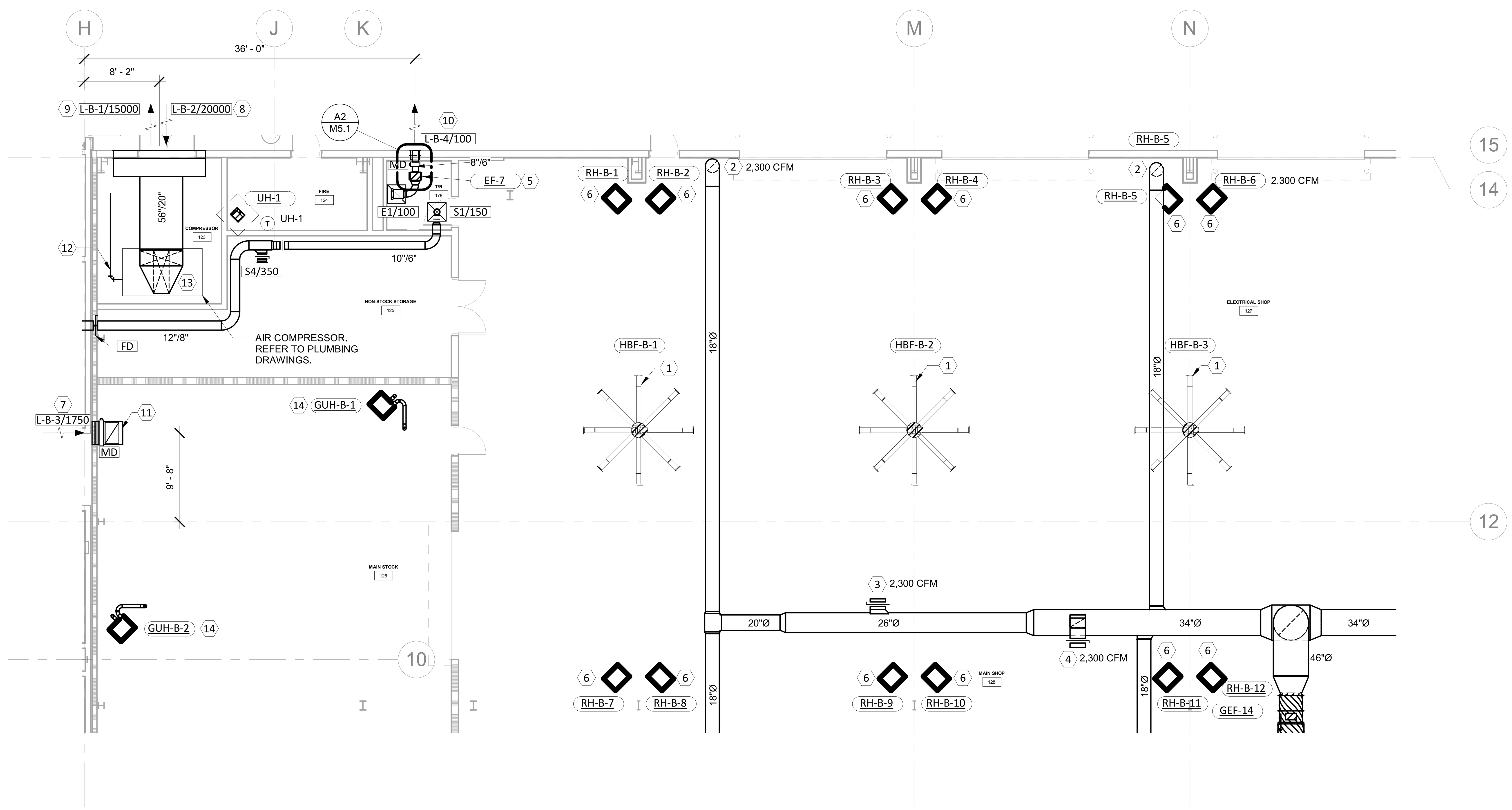


ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT A

M2.1
7201



1 MECHANICAL PLAN - HVAC - SEGMENT B
1/8" = 1'-0"

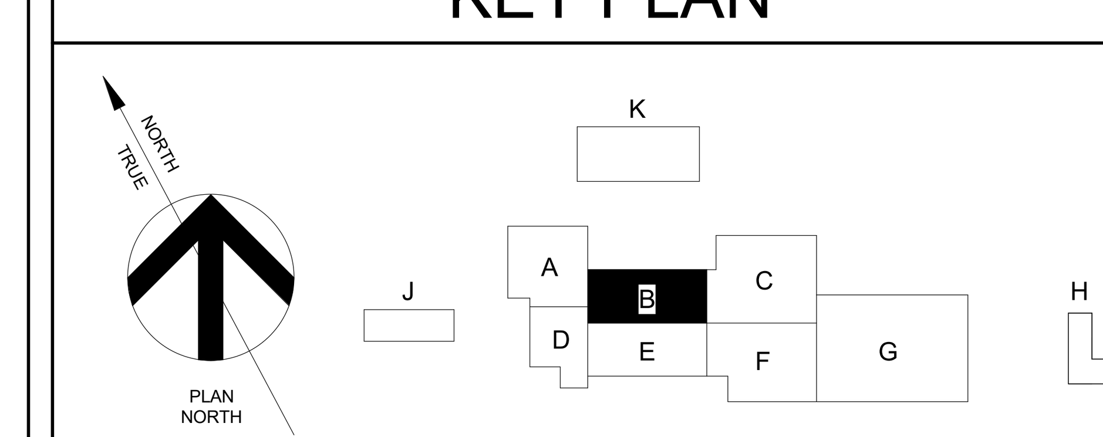
GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

KEYNOTE LEGEND

1 INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
2 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 1'-0" AFF. (2,300 CFM)
3 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 29'-0" AFF. (2,300 CFM)
4 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK WITHIN 18" OF ROOF DECK. (2,300 CFM)
5 PROVIDE INLINE FAN. REFER TO DETAIL A2/M5.1.
6 PROVIDE INDIRECT VENT GAS-FIRED INFRARED CERAMIC SPOT HEATER SUSPENDED FROM STRUCTURE AT 14'-0" AFF. ANGLE HEATER DOWNWARD AT 35 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. COMPLY WITH MANUFACTURER INSTALLATION REQUIREMENTS, INCLUDING CLEARANCE DISTANCE TO ALL COMBUSTIBLES. SEE DETAIL A4/M5.2 FOR HANGING AND INSTALLATION REQUIREMENTS.
7 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 25'-7 1/2" AFF.
8 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 16'- 2" AFF.
9 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 30'- 7" AFF. EXTEND SHEET METAL PLENUM 24" AND CONNECT TO COMPRESSOR EXHAUST DISCHARGE DUCTWORK.
10 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 10'-10 3/4" AFF.
11 EXTEND 30"X18" DUCT FROM LOUVER. CUT 12"X12" OPENING IN DUCT WITH WIRE MESH SCREEN FOR HIGH LEVEL MAKEUP AIR. TAP 12"X12" DUCT AT BOTTOM OF 28"X18" AND RUN DUCT DOWN TO 12" AFF. INSTALL WIRE MESH SCREEN AT DUCT OPENING FOR LOW LEVEL MAKEUP AIR.
12 ROUTE 1" CONDENSATE PIPING TO FLOOR DRAIN. CONNECT DRAIN MAIN TO (4) SEPARATE COMPRESSOR CONDENSATE CONNECTIONS AT END OF UNIT. PVC DRAIN PIPING IS NOT PERMITTED FOR THIS APPLICATION.
13 CONNECT 56"W/20"H" DUCTWORK TO COMPRESSOR EQUIPMENT DISCHARGE OPENING. PROVIDE FLEXIBLE CANVAS CONNECTION AT OPENING, REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
14 PROVIDE GAS UNIT HEATER SUSPENDED FROM STRUCTURE AT 25'-0" AFF. INSTALL PER MANUFACTURER RECOMMENDATIONS. PROVIDE 4" FLUE DUCT FROM DRAFT INDUCER UP TO ROOF. PROVIDE 4" COMBUSTION AIR DUCT TO BURNER BOX FROM INTAKE ON ROOF. EXTEND MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL C2/M5.3.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT B

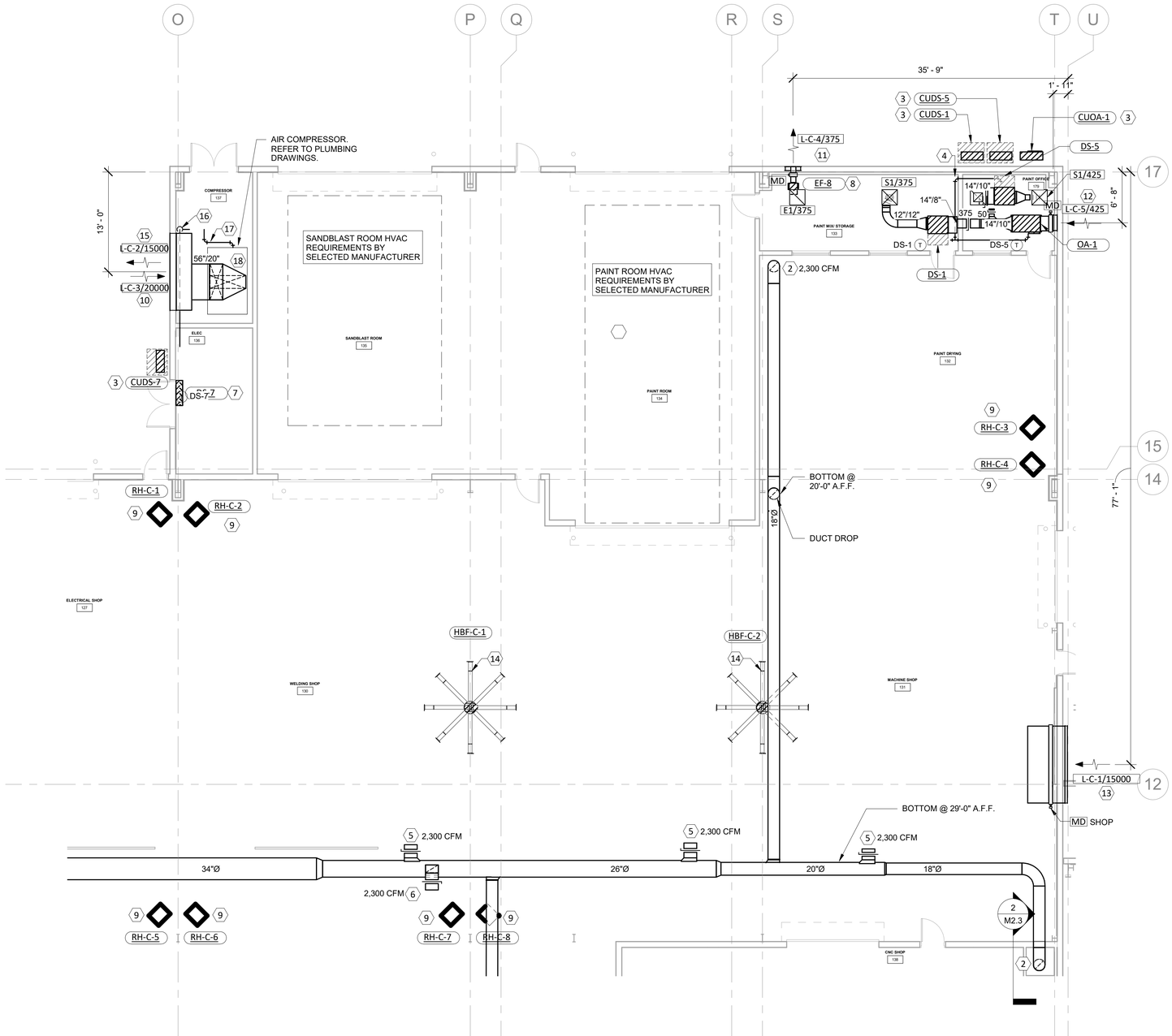
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M2.2
7202



1 MECHANICAL PLAN - HVAC - SEGMENT C
1/8" = 1'-0"

2 SECTION VIEW - GENERAL EXHAUST
1/8" = 1'-0"

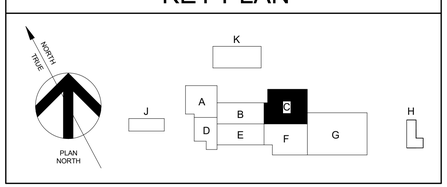
GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

(#) KEYNOTE LEGEND

1 MECHANICAL DESIGN TBD PENDING SPECIAL REQUIREMENTS BY OTHERS.
2 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 1'-0" AFF. (2,300 CFM)
3 PROVIDE CONDENSING UNIT ON COMMON 6"-HIGH CONCRETE PAD ON TOP OF EXISTING PAVEMENT. PAD BY GENERAL CONTRACTOR. COORDINATE WITH MANUFACTURER FOR EXACT REQUIREMENTS AND SIZING OF REFRIGERANT LINES. SEAL ALL WALL PENETRATIONS. SIZING AND ROUTING OF REFRIGERANT LINES TO BE COORDINATED BETWEEN EQUIPMENT MANUFACTURER AND MECHANICAL CONTRACTOR. REFER TO DETAIL A1/M5.1.
4 PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO NEAREST HUB DRAIN, TAILPIECE OR FLOOR SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
5 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 29'-0" AFF. (2,300 CFM)
6 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK WITHIN 18" OF ROOF DECK. (2,300 CFM)
7 MOUNT INDOOR UNIT 8 FEET ABOVE FINISHED FLOOR TO THE BOTTOM OF THE UNIT. COORDINATE WITH TRADES TO ENSURE UNIT DOES NOT OBSTRUCT OTHER EQUIPMENT IN ROOM. REFER TO DETAIL B1/M5.1
8 PROVIDE INLINE FAN. REFER TO DETAIL A2/M5.1.
9 PROVIDE INDIRECT VENT GAS-FIRED INFRARED CERAMIC SPOT HEATER SUSPENDED FROM STRUCTURE AT 14'-0" AFF. ANGLE HEATER DOWNWARD AT 35 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. COMPLY WITH MANUFACTURER INSTALLATION REQUIREMENTS, INCLUDING CLEARANCE DISTANCE TO ALL COMBUSTIBLES. SEE DETAIL A4/M5.2 FOR HANGING AND INSTALLATION REQUIREMENTS.
10 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 6'- 1 1/2" AFF.
11 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 10'-0" AFF.
12 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 16'-0" AFF.
13 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 28'-6" AFF.
14 INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
15 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 20'- 9" AFF. EXTEND SHEET METAL PLENUM 24" AND CONNECT TO COMPRESSOR EXHAUST DISCHARGE DUCTWORK.
16 PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO FLOOR DRAIN IN ADJACENT ROOM. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
17 ROUTE 1" CONDENSATE PIPING TO FLOOR DRAIN. CONNECT DRAIN MAIN TO (4) SEPARATE COMPRESSOR CONDENSATE CONNECTIONS AT END OF UNIT. PVC DRAIN PIPING IS NOT PERMITTED FOR THIS APPLICATION.
18 CONNECT 56"W/20"H" DUCTWORK TO COMPRESSOR EQUIPMENT DISCHARGE OPENING. PROVIDE FLEXIBLE CANVAS CONNECTION AT OPENING, REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

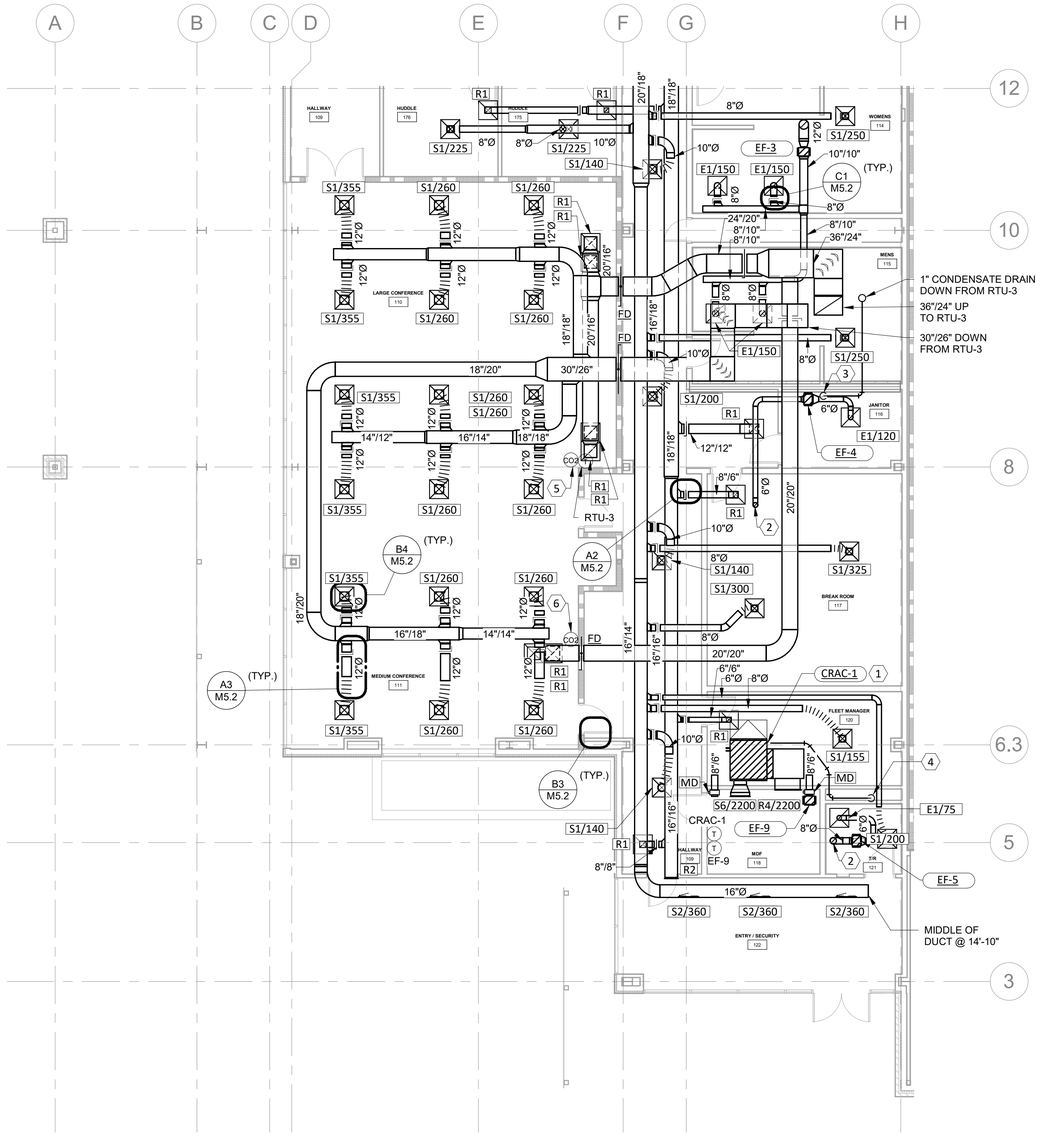
MECHANICAL PLAN - HVAC- SEGMENT C

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M2.3
7203



1 MECHANICAL PLAN - HVAC - SEGMENT D
1/8" = 1'-0"

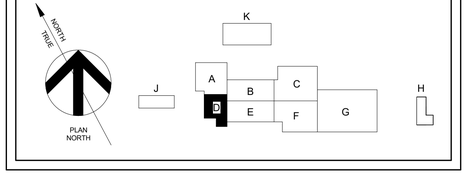
GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

KEYNOTE LEGEND

#	
1	PROVIDE COMPUTER ROOM AIR CONDITIONING UNIT SUSPENDED FROM CEILING.. PROVIDE WITH DRAIN PAD WITH LEAK DETECTOR TO ALARM/SHUTOFF AND SECONDARY DRAIN PAN. ROUTE 3/4" CONDENSATE DRAIN TO NEAREST INDIRECT WASTE STANDPIPE.
2	EXHAUST DUCT UP THROUGH ROOF. TERMINATE IN GOOSENECK AND WIRE MESH SCREEN.
3	PROVIDE MINIMUM 1-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO MOP SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
4	PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO NEAREST HUB DRAIN, TAILPIECE OR FLOOR SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
5	PROVIDE CARBON DIOXIDE SENSOR ON WALL ADJACENT TO THERMOSTAT AT 48" AFF.
6	PROVIDE CARBON DIOXIDE SENSOR ON WALL IN LOCATION INDICATED AT 48" AFF.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT D

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

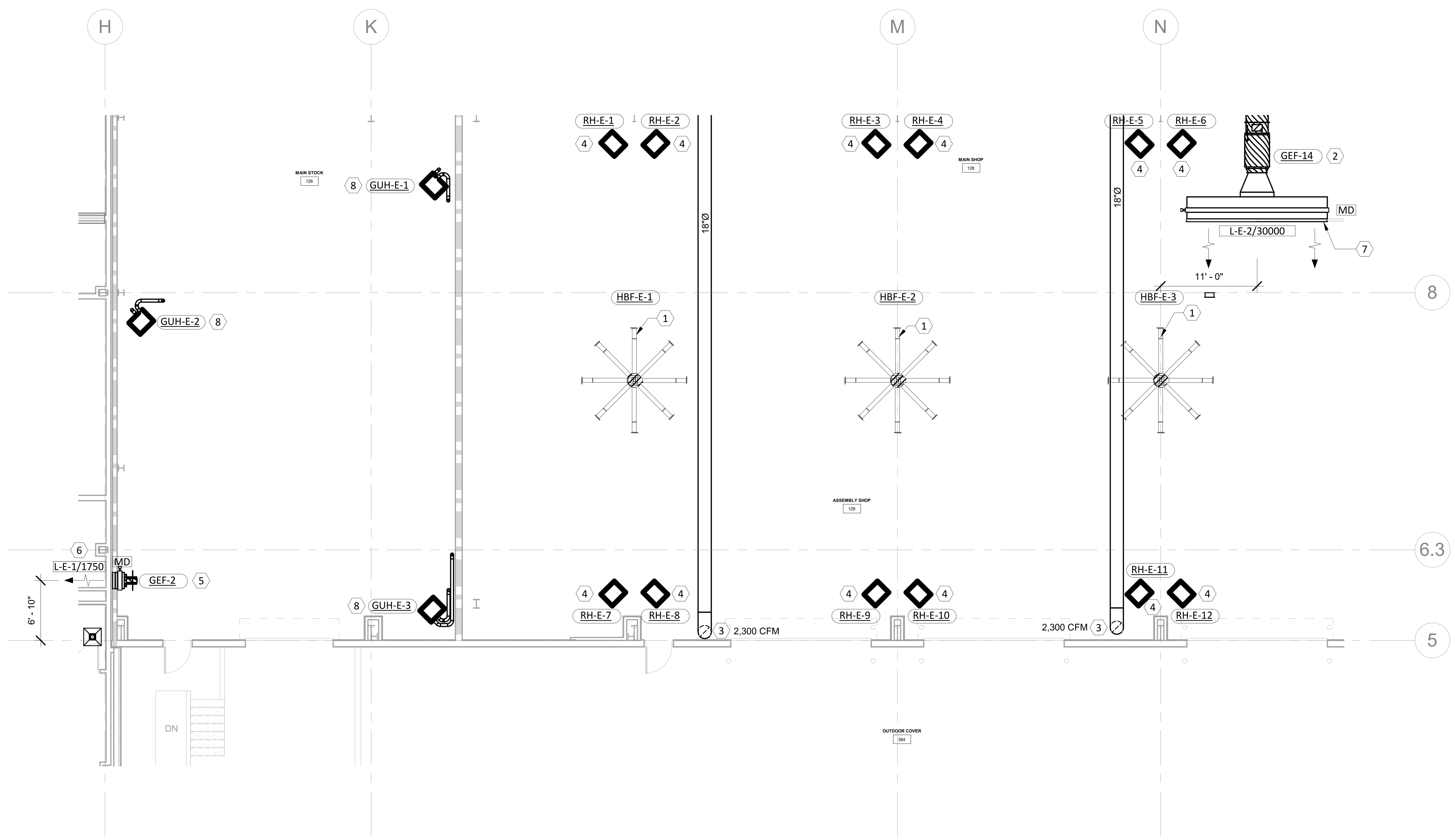
M2.4
7204

GENERAL SHEET NOTES

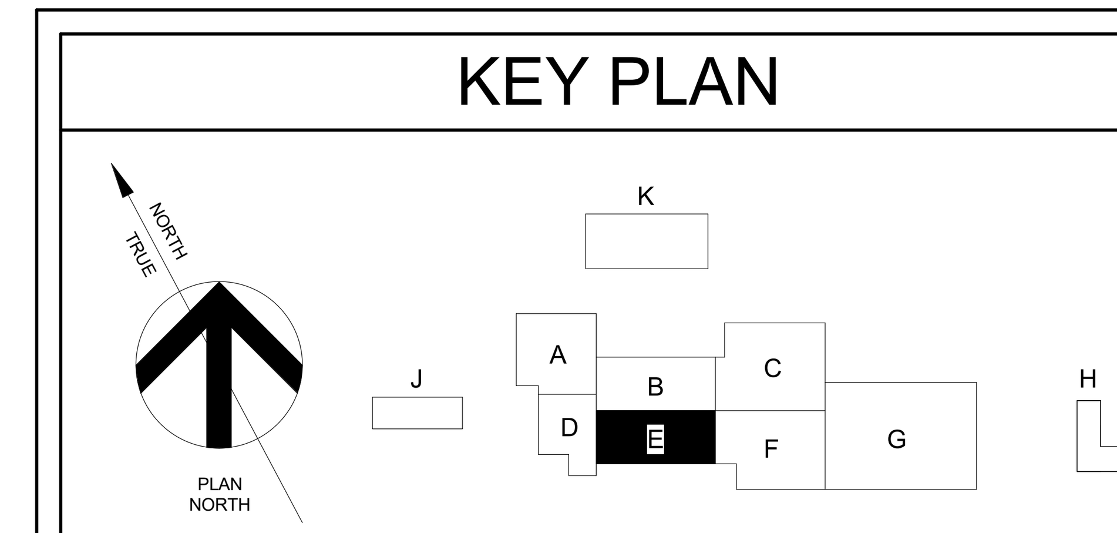
A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

KEYNOTE LEGEND

1 INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
2 PROVIDE INLINE FAN. REFER TO DETAIL A2/M5.1.
3 PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 1'-0" AFF. (2,300 CFM)
4 PROVIDE INDIRECT VENT GAS-FIRED INFRARED CERAMIC SPOT HEATER SUSPENDED FROM STRUCTURE AT 14'-0" AFF. ANGLE HEATER DOWNWARD AT 35 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. COMPLY WITH MANUFACTURER INSTALLATION REQUIREMENTS, INCLUDING CLEARANCE DISTANCE TO ALL COMBUSTIBLES. SEE DETAIL A4/M5.2 FOR HANGING AND INSTALLATION REQUIREMENTS.
5 PROVIDE WALL MOUNTED EXHAUST FAN MOUNTED SUCH THAT FAN IS ON CENTER WITH ASSOCIATED LOUVER IN VERTICAL AND HORIZONTAL PLANES. INSTALL PER MANUFACTURERS RECOMMENDATIONS. REFER TO DETAIL A3/M5.1
6 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 25'-7 1/2" AFF.
7 EXHAUST LOUVER LOCATED AT ROOF CUPOLA MOUNTED 37'-8" AFF.
8 PROVIDE GAS UNIT HEATER SUSPENDED FROM STRUCTURE AT 25'-0" AFF. INSTALL PER MANUFACTURER RECOMMENDATIONS. PROVIDE 4" FLUE DUCT FROM DRAFT INDUCER UP TO ROOF. PROVIDE 4" COMBUSTION AIR DUCT TO BURNER BOX FROM INTAKE ON ROOF. EXTEND MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL C2/M5.3.



1 MECHANICAL PLAN - HVAC - SEGMENT E
1/8" = 1'-0"



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

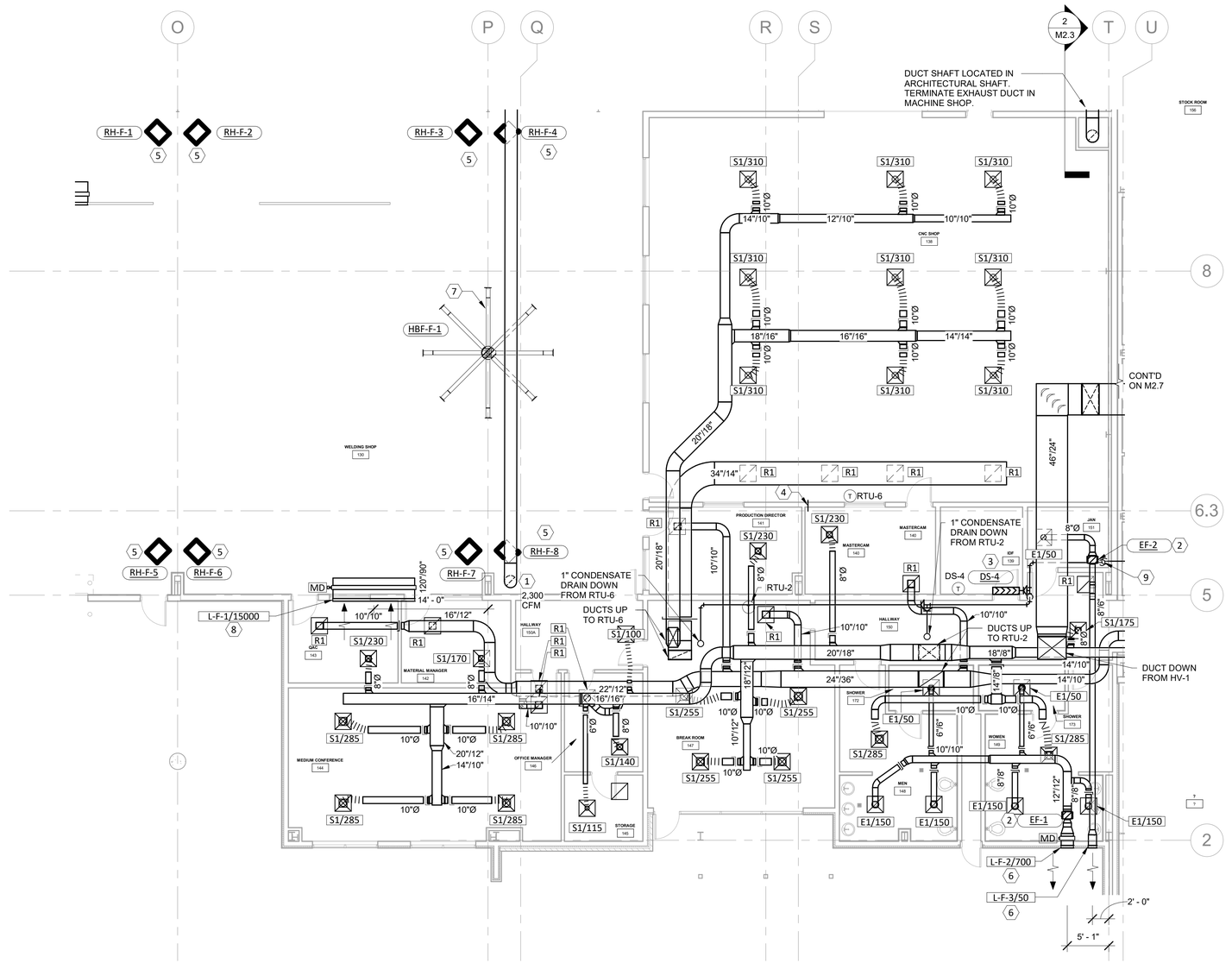
MECHANICAL PLAN - HVAC- SEGMENT E

STATE OF TEXAS EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER 09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M2.5
7205



1 MECHANICAL PLAN - HVAC - SEGMENT F
1/8" = 1'-0"

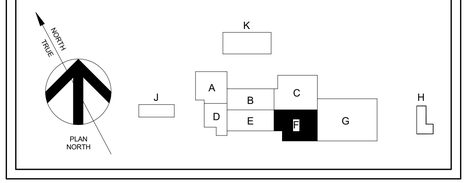
GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

KEYNOTE LEGEND

#	
1	PROVIDE WIRE MESH SCREEN WITH VOLUME DAMPER FOR OPEN END OF DUCTWORK AT 1'-0" AFF. (2,300 CFM)
2	PROVIDE INLINE FAN. REFER TO DETAIL A2/M5.1.
3	MOUNT INDOOR UNIT 8 FEET ABOVE FINISHED FLOOR TO THE BOTTOM OF THE UNIT. COORDINATE WITH TRADES TO ENSURE UNIT DOES NOT OBSTRUCT OTHER EQUIPMENT IN ROOM. REFER TO DETAIL B1/M5.1
4	PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO NEAREST HUB DRAIN, TAILPIECE OR FLOOR SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
5	PROVIDE INDIRECT VENT GAS-FIRED INFRARED CERAMIC SPOT HEATER SUSPENDED FROM STRUCTURE AT 14'-0" AFF. ANGLE HEATER DOWNWARD AT 35 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. COMPLY WITH MANUFACTURER INSTALLATION REQUIREMENTS, INCLUDING CLEARANCE DISTANCE TO ALL COMBUSTIBLES. SEE DETAIL A4/M5.2 FOR HANGING AND INSTALLATION REQUIREMENTS.
6	MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 12'-9 3/4" AFF.
7	INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
8	MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 30'-1 1/2" AFF.
9	PROVIDE MINIMUM 1-1/2-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO FLOOR DRAIN IN ADJACENT ROOM. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.388.1101

0 4" 8" 16"

MECHANICAL PLAN - HVAC- SEGMENT F

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

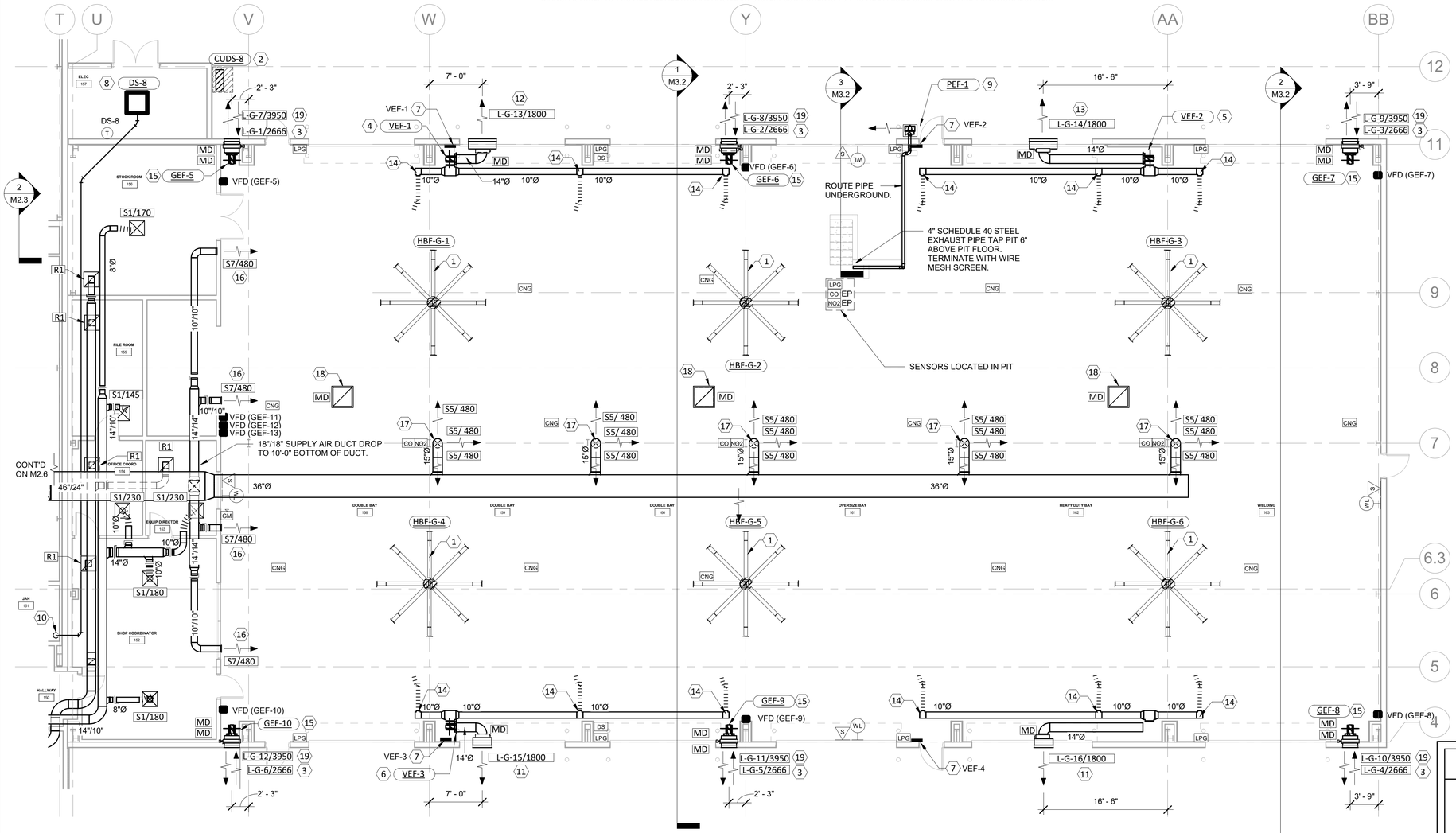
ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M2.6
7206

LIQUID PETROLEUM GAS DETECTION SYSTEM SYMBOLS LEGEND

SYMBOL	MANUFACTURER/MODEL	MOUNTING HEIGHT	DESCRIPTION
GM	ARMSTRONG AMC-1DB1-300000H	4'-0" AFF	DIGITAL GAS DETECTION MONITOR WITH HIGH AND LOW ALARM. LED STATUS LIGHTS FOR LOW, HIGH, AND FAIL ALARM STATE. PROVIDE RELAYS TO, SIREN, STROBE LIGHT, GEF-5 THRU GEF-12. INSTALL PER MANUFACTUER RECOMMENDATIONS.
CNG	ARMSTRONG AMC-CSA-CAT	1'-0" BELOW ROOF DECK	EXPLOSION PROOF COMPRESSED NATURAL GAS (CNG) 0-100% LEL, GAS DETECTOR.
LPG	ARMSTRONG AMC-CSA-CAT	18" AFF	EXPLOSION PROOF LIQUID PETROLEUM GAS (LPG) 0-100% LEL, GAS DETECTOR.
CO	ARMSTRONG AMC-400-CO	4'-5" AFF	ELECTROCHEMICAL CARBON MONOXIDE (CO) DETECTOR. 0-200 PPM
CO EP	ARMSTRONG AMC-291CM8	2'-0"	EXPLOSION PROOF ELECTROCHEMICAL CELL CARBON MONOXIDE (CO) DETECTOR. 0-1000 PPM. LOCATED IN REPAIR PIT.
NO_2	ARMSTRONG AMC-400-NO2	4'-5" AFF	ELECTROCHEMICAL NITROGEN DIOXIDE (NO_2) DETECTOR. 0-10 PPM
NO_2 EP	ARMSTRONG AMC-298CC8	2'-0"	EXPLOSION PROOF ELECTROCHEMICAL CELL NITROGEN DIOXIDE (NO_2) DETECTOR. 0-50 PPM. LOCATED IN REPAIR PIT.
WL	FEDERAL SIGNAL CORPORATION ELECTRAFLASH 141ST	10'-0"AFF	STROBE TYPE WARNING LIGHT. 0.1A, 120V, 1PH. PROVIDE WITH MOUNTING KIT. BLUE LENS COLOR.
S	FEDERAL SIGNAL CORPORATION GENERAL ALARM MODEL A	10'-0" AFF	GENERAL INDUSTRIAL ELECTRO-MECHANICAL SIREN. 1.8A, 120V, 1PH. RATED AT 108dB AT 10'.

*MANUFACTURER TO PROVIDE ALL ADDITIONAL ANCILLARY SYSTEM COMPONENTS TO PROVIDE A CODE COMPLIANT AND FUNCTIONAL SYSTEM



1 MECHANICAL PLAN - HVAC - SEGMENT G
1/8" = 1'-0"

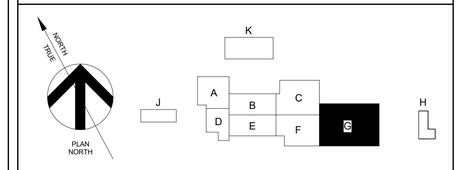
GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

KEYNOTE LEGEND

1 INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
2 PROVIDE CONDENSING UNIT ON COMMON 6"-HIGH CONCRETE PAD ON TOP OF EXISTING PAVEMENT. PAD BY GENERAL CONTRACTOR. COORDINATE WITH MANUFACTUER FOR EXACT REQUIREMENTS AND SIZING OF REFRIGERANT LINES. SEAL ALL WALL PENETRATIONS. SIZING AND ROUTING OF REFRIGERANT LINES TO BE COORDINATED BETWEEN EQUIPMENT MANUFACTURER AND MECHANICAL CONTRACTOR. REFER TO DETAIL A1/M5.1.
3 MOUNT LOUVER IN WALL MOUNTED SUCH THAT BOTTOM OF LOUVER IS AT 18" AFF. (LOW EXHAUST)
4 MOUNT VEHICLE EXHAUST SYSTEM ON UNISTRUT CHANNEL FRAME HUNG FROM STRUCTURE MOUNTED AT 20'-4" AFF BOTTOM OF EQUIPMENT. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.
5 MOUNT VEHICLE EXHAUST SYSTEM ON UNISTRUT CHANNEL FRAME HUNG FROM STRUCTURE MOUNTED AT 20'-2" AFF BOTTOM OF EQUIPMENT. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.
6 MOUNT VEHICLE EXHAUST SYSTEM ON UNISTRUT CHANNEL FRAME HUNG FROM STRUCTURE MOUNTED AT 21'-6" AFF BOTTOM OF EQUIPMENT. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.
7 PROVIDE CONTROL PANEL ON WALL WITH OVERHEAD PROTECTION FOR VEHICLE EXHAUST EXTRACTION SYSTEM. MOUNT PANEL AT 5'-0" AFF.
8 PROVIDE CASSETTE AIR CONDITIONING UNIT INSTALLED IN EXPOSED CEILING SUSPENDED FROM STRUCTURE AT 10'AFF. REFER TO INSTALLATION DETAIL B2/M5.3. INSTALL PER MANUFACTURER REQUIREMENTS.
9 PROVIDE PIT EXHAUST FAN ON WEATHERPROOF UNISTRUT BASE SUSPENDED FROM CANOPY STRUCTURE MOUNTED AT 15'-8" BOTTOM OF EQUIPMENT. CONNECT 4" SCHEDULE 40 STEEL PIPE TO FAN INLET. REFER TO DETAIL D1/M5.2
10 PROVIDE MINIMUM 1-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO MOP SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
11 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 23'- 6" AFF.
12 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 21'- 8" AFF.
13 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 22'- 5" AFF.
14 PROVIDE 6" FLEXIBLE HOSE REEL.
15 PROVIDE WALL MOUNTED EXHAUST FAN MOUNTED SUCH THAT FAN IS ON CENTER WITH ASSOCIATED LOUVER IN VERTICAL AND HORIZONTAL PLANES. INSTALL PER MANUFACTURERS RECOMMENDATIONS. REFER TO DETAIL A3/M5.1
16 PROVIDE WALL MOUNTED SIDEWALL DIFFUSER AS SHOWN. BOTTOM OF GRILLE TO BE MOUNTED AT 10'-0" AFF.
17 DROP 15" DIAMETER SPIRAL DUCT DOWN SECURED TO COLUMN/STRUCTURE. TERMINATE DUCT WITH END CAP 2'-6" AFF. MOUNT (3) DUCT MOUNTED DIFFUSERS AS SHOWN.
18 30"x30" EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN. PROVIDE MOTORIZED DAMPER AND INSTALL WIRE MESH SCREEN AT OPENING.
19 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 27'-5" AFF. (HIGH EXHAUST)

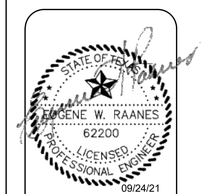
KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT G



973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

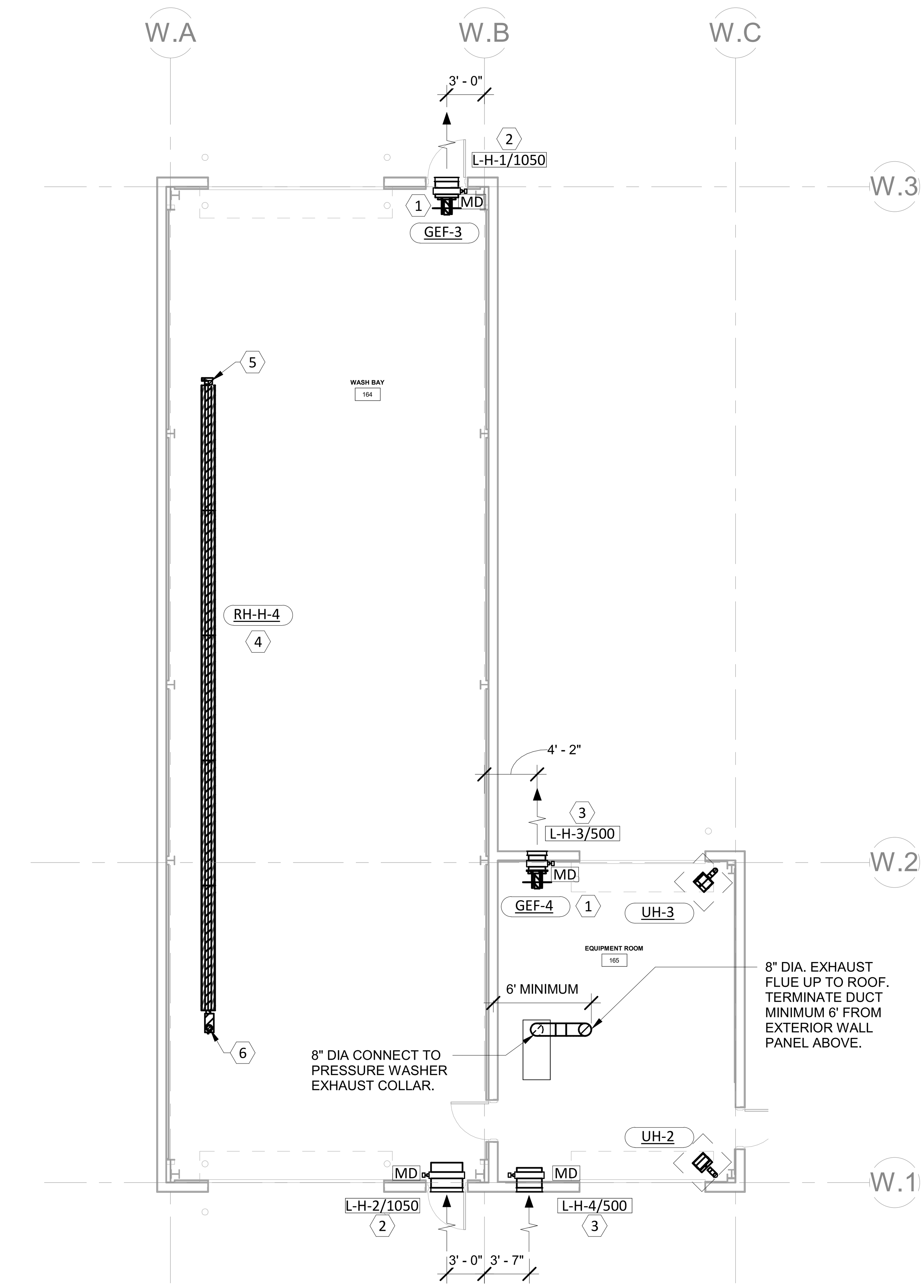
M2.7
7207

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

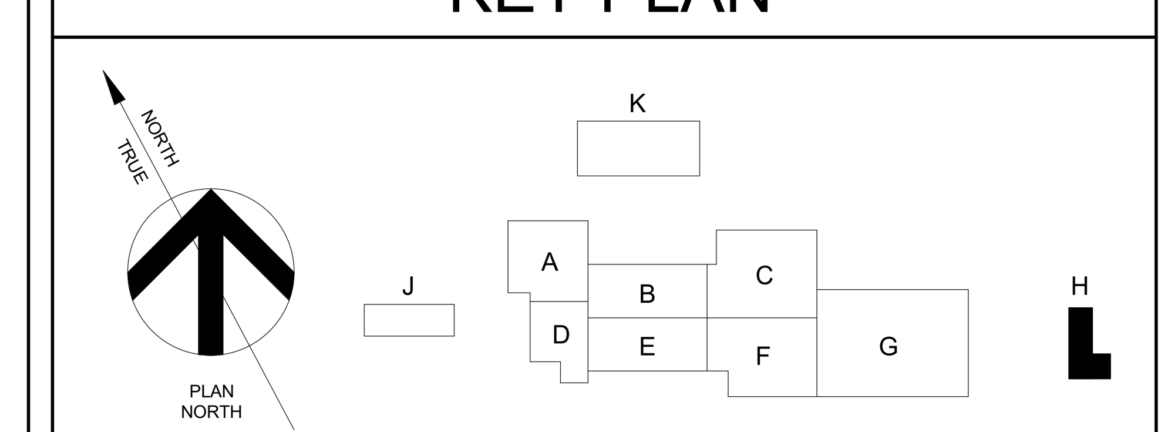
KEYNOTE LEGEND

1 PROVIDE WALL MOUNTED EXHAUST FAN MOUNTED SUCH THAT FAN IS ON CENTER WITH ASSOCIATED LOUVER IN VERTICAL AND HORIZONTAL PLANES. INSTALL PER MANUFACTURERS RECOMMENDATIONS. REFER TO DETAIL C4/M5.2
2 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 15'-6 1/2" AFF.
3 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 12'-3" AFF.
4 PROVIDE GAS-FIRED INFRARED TUBE HEATER DIRECTED AT 45 DEGREES. REFER TO RADIANT HEATER SCHEDULE ON M4.1 FOR ADDITIONAL DETAILS AND MOUNTING HEIGHTS. PROVIDE 4" FLUE DUCT FROM DRAFT INDUCER UP TO ROOF. PROVIDE 4" COMBUSTION AIR DUCT TO BURNER BOX FROM INTAKE ON ROOF. EXTEND MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL B2/M5.1.
5 TERMINATE 4" FLUE AT ROOF, MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL B1/M5.3.
6 TERMINATE 4" INTAKE IN GOOSENECK.



1 MECHANICAL PLAN - HVAC - SEGMENT H
1/8" = 1'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

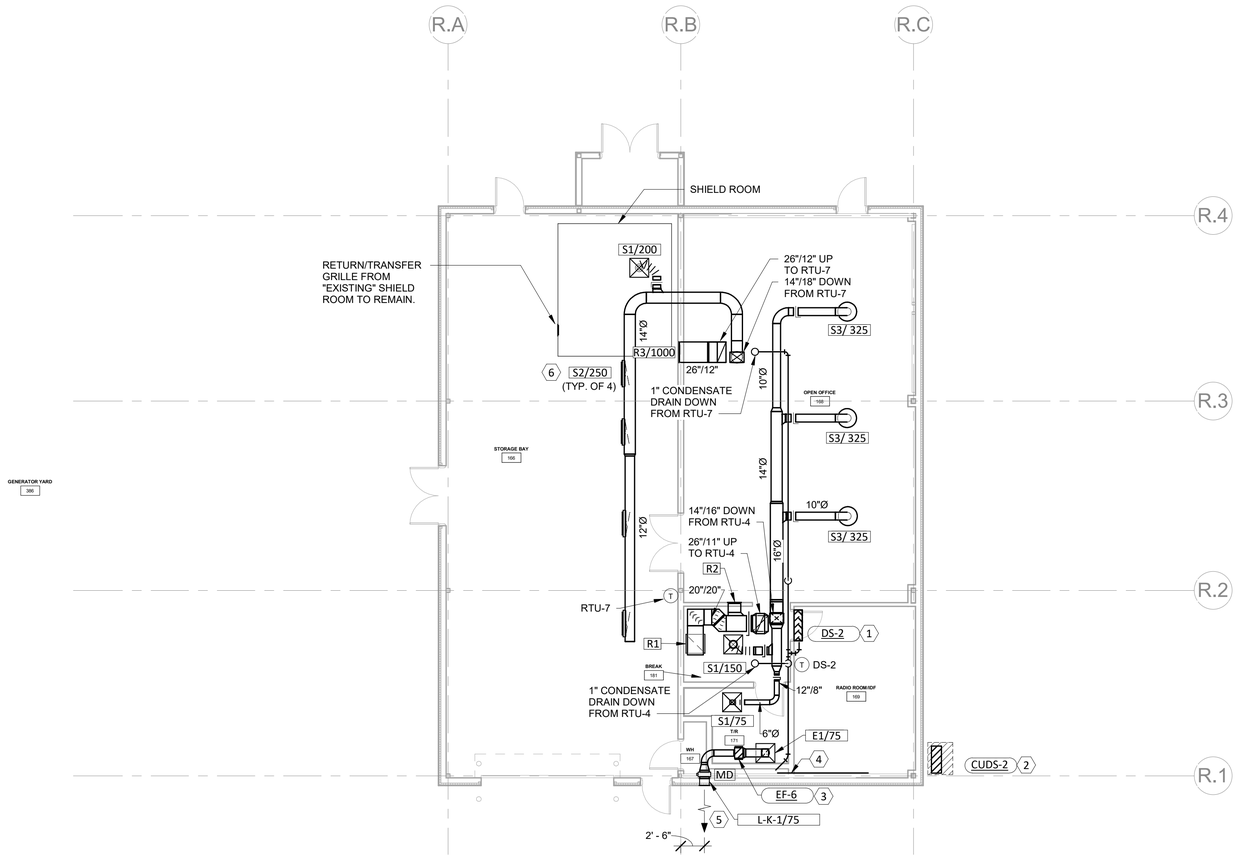
0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT H

M2.8
7208

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 3:38:56 PM C:\Users\Robert.Belfiore\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_robert.belfiore\VJALR.rvt



1 MECHANICAL PLAN - HVAC - SEGMENT K
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

(#) KEYNOTE LEGEND

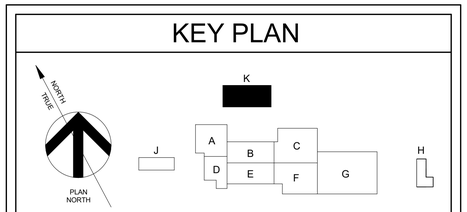
1 MOUNT INDOOR UNIT 8 FEET ABOVE FINISHED FLOOR TO THE BOTTOM OF THE UNIT. COORDINATE WITH TRADES TO ENSURE UNIT DOES NOT OBSTRUCT OTHER EQUIPMENT IN ROOM. REFER TO DETAIL B1/M5.1
2 PROVIDE CONDENSING UNIT ON COMMON 6"-HIGH CONCRETE PAD ON TOP OF EXISTING PAVEMENT. PAD BY GENERAL CONTRACTOR. COORDINATE WITH MANUFACTUER FOR EXACT REQUIREMENTS AND SIZING OF REFRIGERANT LINES. SEAL ALL WALL PENETRATIONS. SIZING AND ROUTING OF REFRIGERANT LINES TO BE COORDINATED BETWEEN EQUIPMENT MANUFACTURER AND MECHANICAL CONTRACTOR. REFER TO DETAIL A1/M5.1.
3 PROVIDE INLINE FAN. REFER TO DETAIL A2/M5.1.
4 PROVIDE MINIMUM 3/4-INCH CONDENSATE PIPING WITH 1-INCH ELASTOMERIC INSULATION TO NEAREST HUB DRAIN, TAILPIECE OR FLOOR SINK. SLOPE CONDENSATE PIPING MINIMUM 1/8-INCH PER LINEAR FOOT TOWARDS DRAIN. REFER TO DETAIL C1/M5.3
5 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 13'-0" AFF.
6 PROVIDE ANGLED DIFFUSER IN SPIRAL DUCTWORK AS SHOWN. REFER TO DETAIL A3/M5.3 FOR INSTALLATION DETAILS

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

MECHANICAL PLAN - HVAC- SEGMENT K

M2.9
7209

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

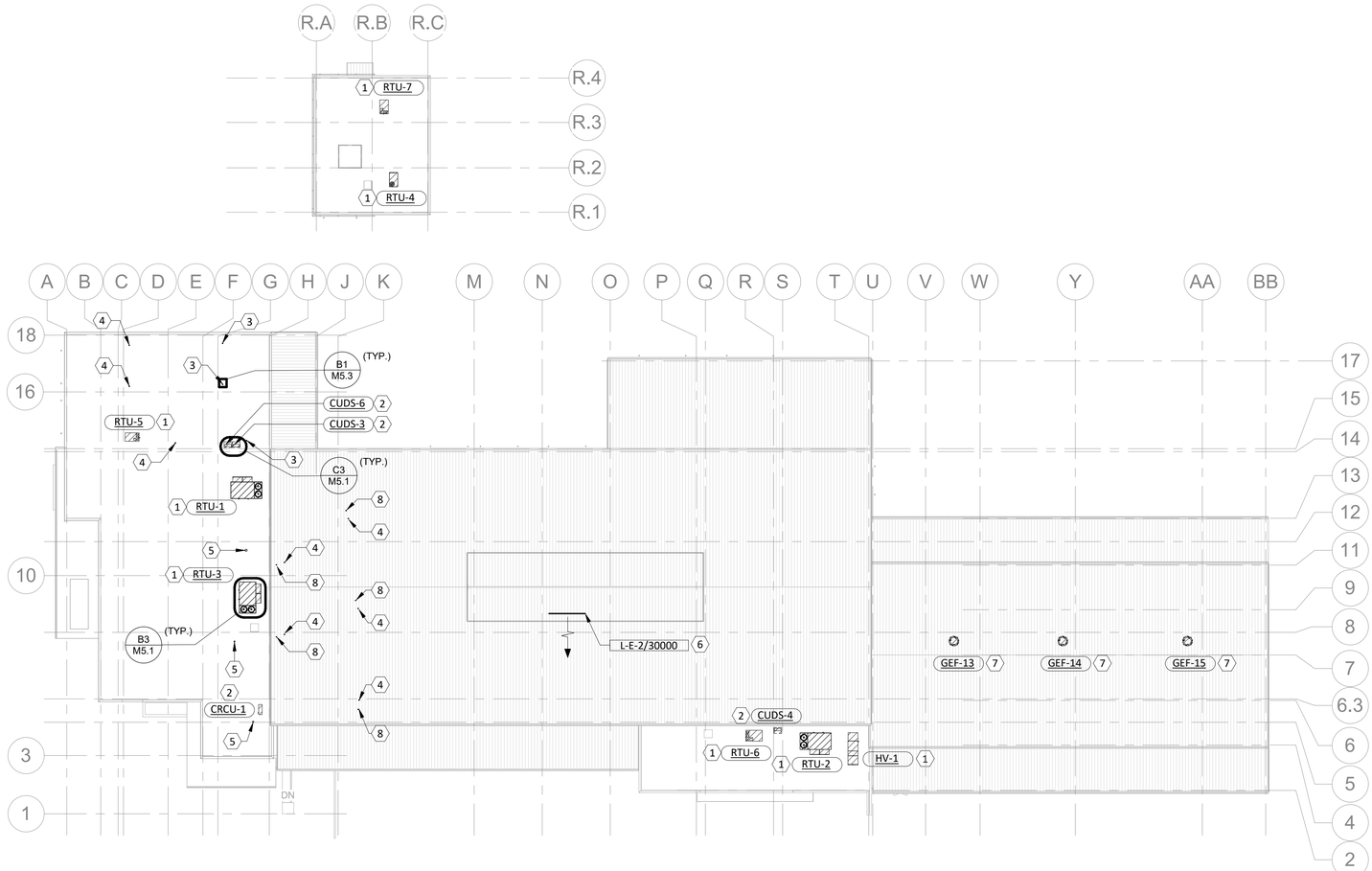
GENERATED ON: 10/1/2021 12:32:47 PM C:\Users\Robert Bellford\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_robert.bellford.ULR.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.

(#) KEYNOTE LEGEND

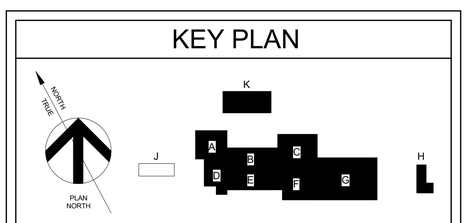
1 PROVIDE ROOFTOP UNIT ON MANUFACTURER RECOMMENDED 14"-HIGH ROOF CURB. INSTALL EQUIPMENT PER MANUFACTURER REQUIREMENTS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS AND ALL OTHER TRADES TO ENSURE PROPER CLEARANCES AND FALL PROTECTION. REFER TO DETAIL B3/M5.1. ROUTE 1" CONDENSATE DRAIN FROM UNIT DOWN THROUGH ROOF. REFER TO DETAIL A2/M5.3 FOR ROOF CURB CONSTRUCTION DETAIL.
2 PROVIDE CONDENSING UNIT ON ROOF EQUIPMENT RAILS. COORDINATE WITH MANUFACTUER FOR EXACT REQUIREMENTS AND SIZING OF REFRIGERANT LINES. SEAL ALL ROOF PENETRATIONS. SIZING AND ROUTING OF REFRIGERANT LINES TO BE COORDINATED BETWEEN EQUIPMENT MANUFACTURER AND MECHANICAL CONTRACTOR. REFER TO DETAIL C3/M5.1.
3 TERMINATE 4" FLUE AT ROOF, MINIMUM 24" ABOVE ROOF LEVEL. REFER TO DETAIL B1/M5.3.
4 TERMINATE 4" INTAKE IN GOOSENECK.
5 TERMINATE EXHAUST DUCT IN GOOSENECK.
6 EXHAUST LOUVER LOCATED AT ROOF CUPOLA MOUNTED 37'-8" AFF.
7 ROOF MOUNTED EXHAUST FAN WITH 14" ROOF CURB. REFER TO DETAIL C3/M5.2.
8 TERMINATE 4" FLUE AT ROOF, MINIMUM 24" ABOVE ROOF LEVEL. MAINTAIN MINIMUM 3' DISTANCE FROM INTAKE FLUE. REFER TO DETAIL C2/M5.3.



1 MECHANICAL PLAN - HVAC - OVERALL ROOF
1/32" = 1'-0"

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 20' 40' 80'

MECHANICAL PLAN - HVAC - ROOF PLAN

09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M2.10
7210

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

973 OPERATIONS CENTER AIR BALANCE - SEGMENT K

MARK (SUPPLY AI...	OUTSIDE AIRFLOW...	RETURN AIRFLOW...	SUPPLY AIRFLOW...	OA/SA (%)
RTU-4	110	1,090	1,200	9%
TOTAL	**110**	**1,090**	**1,200**	**9%**

MARK (EXHAUST...	EXHAUST AIRFLOW...
EF-6	75
TOTAL	**75**

RESULTING BUILDING PRESSURIZATION = 35
PRESSURIZATION PERCENTAGE = 3%

NOTES:
* REFER TO OUTSIDE AIR CALCULATION SCHEDULE AND AHU SCHEDULE FOR OUTSIDE AIR RATES.
** EXHAUST VALUES BASED UPON ORIGINAL MECHANICAL SCHEDULES. ACTUAL EXHAUST CFM MAY VARY SLIGHTLY.

973 OPERATIONS CENTER AIR BALANCE - SEGMENTS A & D

MARK (SUPPLY AI...	OUTSIDE AIRFLOW...	RETURN AIRFLOW...	SUPPLY AIRFLOW...	OA/SA (%)
RTU-1	795	5,205	6,000	13%
RTU-3	1,000	4,250	5,250	19%
TOTAL	**1,795**	**9,455**	**11,250**	**16%**

MARK (EXHAUST...	EXHAUST AIRFLOW...
EF-3	600
EF-4	120
EF-5	75
TOTAL	**795**

RESULTING BUILDING PRESSURIZATION = 1,000
PRESSURIZATION PERCENTAGE = 9%

NOTES:
* REFER TO OUTSIDE AIR CALCULATION SCHEDULE AND AHU SCHEDULE FOR OUTSIDE AIR RATES.
** EXHAUST VALUES BASED UPON ORIGINAL MECHANICAL SCHEDULES. ACTUAL EXHAUST CFM MAY VARY SLIGHTLY.

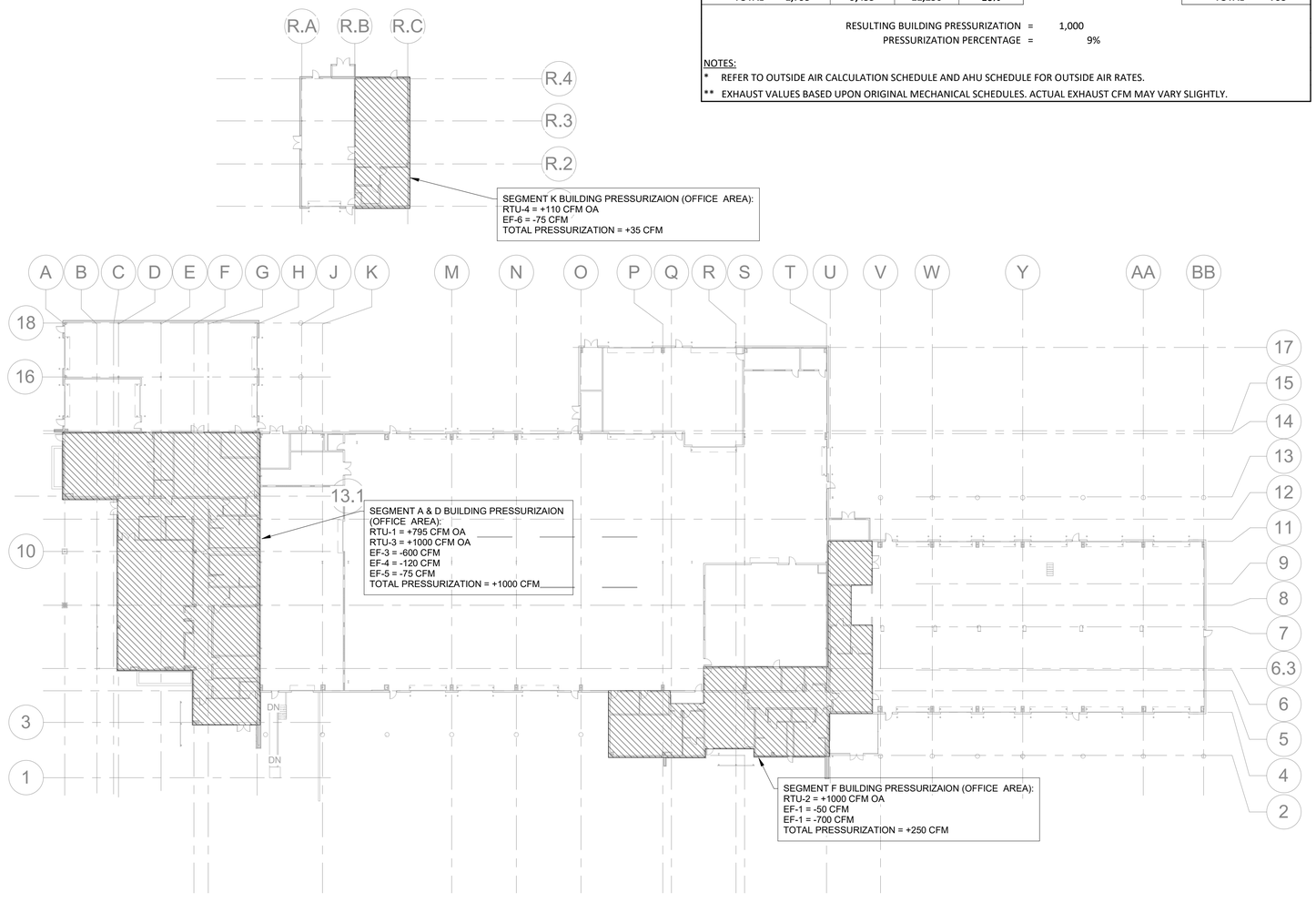
973 OPERATIONS CENTER AIR BALANCE - SEGMENTS F & G

MARK (SUPPLY AI...	OUTSIDE AIRFLOW...	RETURN AIRFLOW...	SUPPLY AIRFLOW...	OA/SA (%)
RTU-2	1,000	4,250	5,250	19%
TOTAL	**1,000**	**4,250**	**5,250**	**19%**

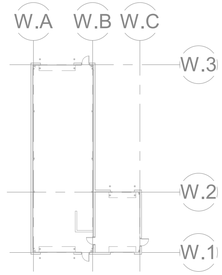
MARK (EXHAUST...	EXHAUST AIRFLOW...
EF-1	700
EF-2	50
TOTAL	**750**

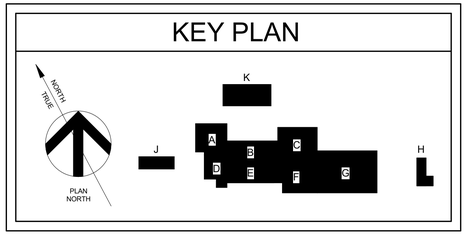
RESULTING BUILDING PRESSURIZATION = 250
PRESSURIZATION PERCENTAGE = 5%

NOTES:
* REFER TO OUTSIDE AIR CALCULATION SCHEDULE AND AHU SCHEDULE FOR OUTSIDE AIR RATES.
** EXHAUST VALUES BASED UPON ORIGINAL MECHANICAL SCHEDULES. ACTUAL EXHAUST CFM MAY VARY SLIGHTLY.



1 MECHANICAL PLAN - HVAC - PRESSURIZATION PLAN
1/32" = 1'-0"





ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL PLAN - BUILDING PRESSURIZATION PLAN

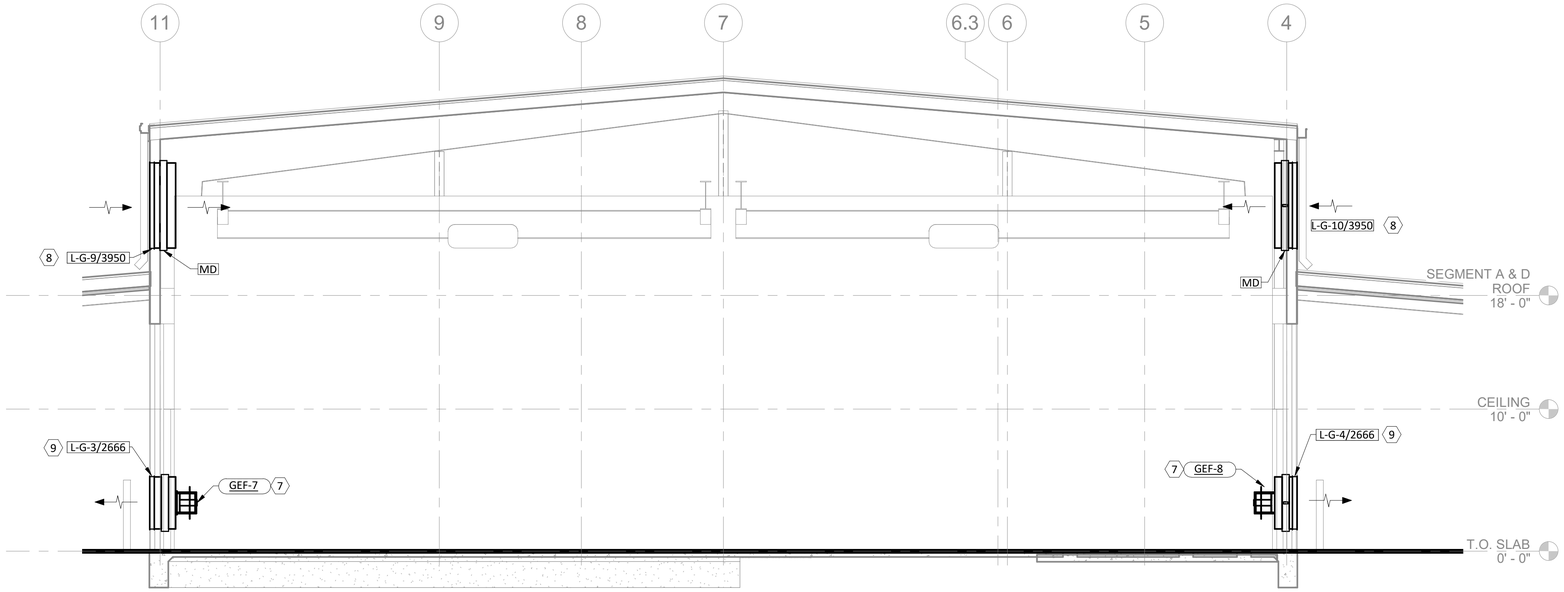
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

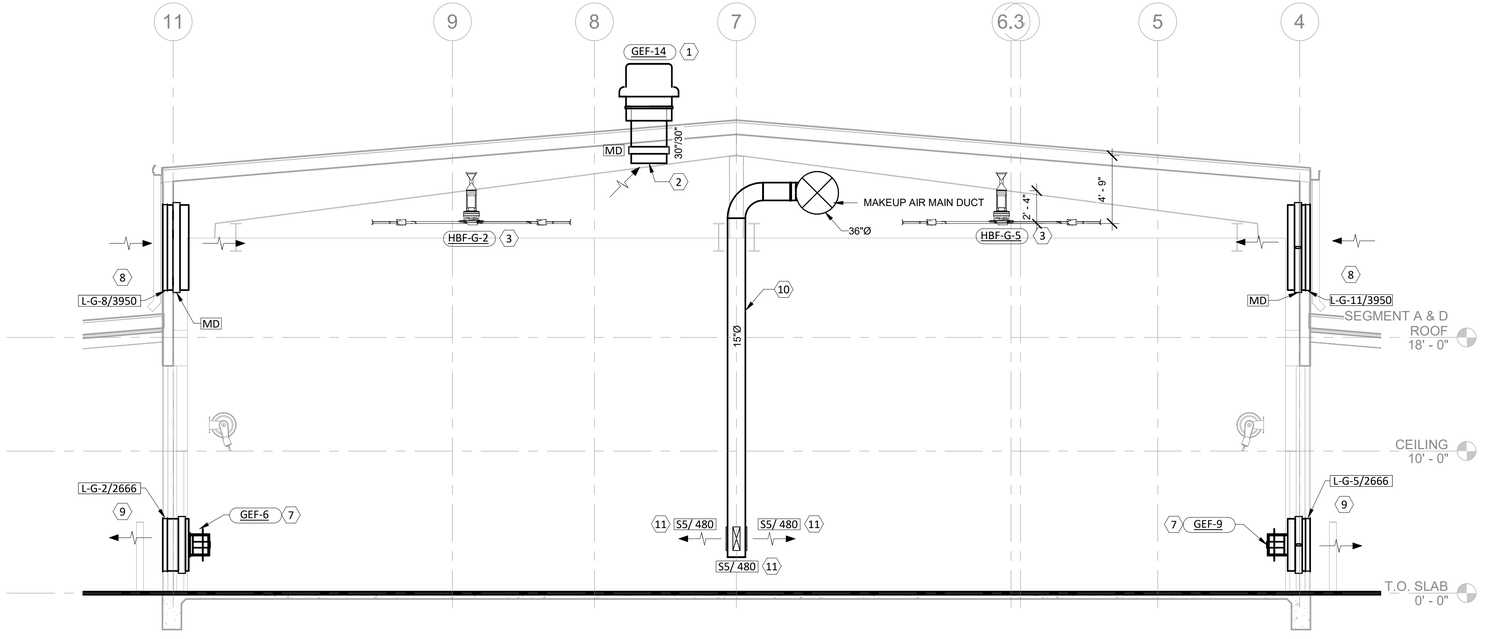
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

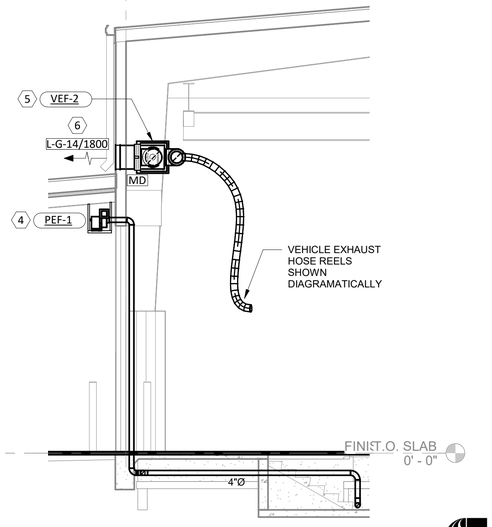
M3.1
7301



2 SEGMENT G GENERAL EXHAUST FAN SECTION
3/16" = 1'-0"



1 SEGMENT G VEHICLE EXHAUST SECTION
3/16" = 1'-0"



3 SEGMENT G PIT EXHAUST SECTION
3/16" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET M0.1 AND M0.2 FOR MORE INFORMATION.
B. PROVIDE CODE AND MANUFACTURER REQUIRED SERVICE CLEARANCES.
C. SEAL ALL PENETRATIONS WATER AND AIR TIGHT THROUGHOUT THE ROOF.
D. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
E. MECHANICAL CONTRACTOR SHALL COORDINATE ALL DUCTWORK AND EQUIPMENT IN RESTROOMS WITH PLUMBING DRAWINGS.
F. MAINTAIN A MINIMUM OF 10'-0" BETWEEN ALL MECHANICAL AIR INTAKES AND ANY EXHAUST TERMINATIONS OR PLUMBING VENTS.
G. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5'-0".
H. SEAL ALL JOINTS ON POSITIVELY PRESSURIZED EXHAUST DUCT INSIDE THE BUILDING AIR TIGHT.
I. DO NOT ROUTE DUCT OR PIPING ABOVE ELECTRICAL PANEL.

(#) KEYNOTE LEGEND

1 ROOF MOUNTED EXHAUST FAN WITH 14" ROOF CURB. REFER TO DETAIL C3/M5.2.
2 30"x30" EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN. PROVIDE MOTORIZED DAMPER AND INSTALL WIRE MESH SCREEN AT OPENING.
3 INSTALL INDUSTRIAL SPACE FAN (HIGH BAY FAN) AS SHOWN. MOUNT FAN SUCH THAT BOTTOM OF FAN IS AT 26'-0" BOTTOM OF BLADE. PROVIDE ON/OFF/VARIABLE CONTROLLER AT BAY ENTRANCE FOR USER CONTROL.
4 PROVIDE PIT EXHAUST FAN ON WEATHERPROOF UNISTRUT BASE SUSPENDED FROM CANOPY STRUCTURE MOUNTED AT 15'-8" BOTTOM OF EQUIPMENT. CONNECT 4" SCHEDULE 40 STEEL PIPE TO FAN INLET. REFER TO DETAIL D1/M5.2
5 MOUNT VEHICLE EXHAUST SYSTEM ON UNISTRUT CHANNEL FRAME HUNG FROM STRUCTURE MOUNTED AT 20'-4" AFF BOTTOM OF EQUIPMENT. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.
6 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 22'- 5" AFF.
7 PROVIDE WALL MOUNTED EXHAUST FAN MOUNTED SUCH THAT FAN IS ON CENTER WITH ASSOCIATED LOUVER IN VERTICAL AND HORIZONTAL PLANES. INSTALL PER MANUFACTURERS RECOMMENDATIONS. REFER TO DETAIL A3/M5.1
8 MOUNT LOUVER IN WALL MOUNTED SUCH THAT TOP OF LOUVER IS AT 27'-5" AFF. (HIGH EXHAUST)
9 MOUNT LOUVER IN WALL MOUNTED SUCH THAT BOTTOM OF LOUVER IS AT 18" AFF. (LOW EXHAUST)
10 DROP 15" DIAMETER SPIRAL DUCT DOWN SECURED TO COLUMN/STRUCTURE. TERMINATE DUCT WITH END CAP 2'-6" AFF. MOUNT (3) DUCT MOUNTED DIFFUSERS AS SHOWN.
11 DUCT MOUNTED DIFFUSER MOUNTED AT 3'-0" BOTTOM OF DIFFUSER. REFER TO DETAIL C3/M5.3 FOR INSTALLATION DETAILS.

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL SECTIONS

M3.2

ROOFTOP UNIT SCHEDULE

MARK	AREAS SERVED	SUPPY AIRFLOW (CFM)	OUTSIDE AIR MAX./MIN. (CFM)	ACTUAL TOTAL CAPACITY (MBH)	ACTUAL SENS CAPACITY (MBH)	NO. OF COMPRESSORS	EDB (F)	EWB (F)	LDB (F)	LWB (F)	CAPACITY INPUT (MBH)	CAPACITY OUTPUT (MBH)	EAT (F)	LAT (F)	MINIMUM THERMAL...	ESP (IN)	HP (EACH)	NO. OF FANS	ELECTRICAL DATA					SEER	EER	OPERATING WEIGHT (LBS)	MFGR	MODEL	NOTES
																			VOLT	PHASE	HZ	MCA	MOCP						
RTU-1	OFFICE SPACES	6,000	795	215.7	167.5	2	77.5	63.5	51.7	50.9	305.0	251.0	63.8	99.2	82	1.5			460	3	60	70	80	-	12.0	3,263	CARRIER	48LCDA24A3M6-1S0A0	1-13
RTU-2	OFFICE SPACES	5,250	1,000	178.4	142.0	2	80.5	65.3	55.5	54.0	245.0	201.0	58.6	99.4	82	1.0			460	3	60	53.5	60	-	12.0	3,113	CARRIER	48LCDA20A3M6-1S0A0	1-13
RTU-3	CONFERENCE ROOMS	5,250	750	175.4	135.8	2	78.5	64.4	54.6	53.1	217.0	178.0	65.7	105.0	82	1.0			460	3	60	53.5	60	-	12.0	3,113	CARRIER	48LCDA20A3M6-1S0A0	1-13
RTU-4	RADIO TOWER	1,200	110	31.9	26.1	1	76.3	63.0	56.2	53.9	72.0	54.0	68.0	110.0	82	0.7			460	3	60	13	15	15.5	-	818	CARRIER	48LCDA04A2M6-1R0A0	1-13
RTU-5	PROFILER/DARK BAY	1,200	110	31.9	26.1	1	76.3	63.0	56.2	53.9	72.0	54.0	68.0	110.0	82	0.7			460	3	60	13	15	15.5	-	818	CARRIER	48LCDA04A2M6-1R0A0	1-12
RTU-6	CNC MACHINE	2,800	200	79.2	64.0	2	77.6	63.8	56.5	54.3	126.0	103.0	70.0	104.0	82	1.0			460	3	60	25	30	-	12.8	2154	CARRIER	48LCDA08A2M6-1R0A0	1-12
RTU-7	RADIO TOWER STORAGE BAY	1,200	110	31.9	26.1	1	76.3	63.0	56.2	53.9	72.0	54.0	68.0	110.0	82	0.7			460	3	60	13	15	15.5	-	818	CARRIER	48LCDA04A2M6-1R0A0	1-12
HV-1	VEHICLE MAINTENANCE SHOP	9,100	9,100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	684.0	629.0	26.0	90.0	92	1.0	10.0	1	460	3	60	18.4	30	-	-	1,468	GREENHECK	DGX-P214-H32-MF	1-6, 8,9 ,10, 12

NOTES:
1. PROVIDE DISCONNECT, TO BE FIELD-MOUNTED BY ELECTRICAL CONTRACTOR.
2. PROVIDE UNIT WITH HIGH EFFICIENCY FAN MOTOR AND 5-YEAR PARTS AND LABOR WARRANTY.
3. PROVIDE UNIT WITH MFGR RECOMMENDED 2" REPLACEABLE FILTER EQUAL TO OR GREATER THAN MERV 8 DURING CONSTRUCTION. REPLACE FILTERS WITH MERV 13 AT CONCLUSION OF CONSTRUCTION AND PRIOR TO OCCUPANCY.
4. TSP VALUES SHOWN IN SCHEDULE IS BASED UPON BASIS OF DESIGN EQUIPMENT AND INCLUDES ALL INTERNAL COMPONENTS AND FILTERS. ALTERNATE EQUIPMENT SHALL MEET ESP VALUES, BUT TPS VALUES MAY VARY BY MFGR.
5. PROVIDE WITH INTERNAL VIBRATION ISOLATION BY MFGR FOR VIBRATION-FREE OPERATION. MOUNT EQUIPMENT ON FIBERGLASS ISOLATION PAD STRIPS EQUAL TO KINETICS KIP.
6. PROVIDE ECONOMIZER FOR UNITS 54,000 BTU AND GREATER.
7. PROVIDE HAIL GUARDS.
8. PROVIDE ROOF CURB.
9. UNIT SHALL COME EQUIPPED WITH INTEGRAL AUTOMATIC OUTSIDE AIR DAMPERS WHICH SHALL CLOSE WHEN UNIT IS IN OFF MODE.
10. FURNISH AND INSTALL THERMOSTATS AND UNIT CONTROLLERS; PROVIDE MANUFACTURER BAS INTERFACE AS NEEDED PER SEQUENCE OF OPERATIONS.
11. PROVIDE POWERED EXHAUST/RELIEF FAN.
12. PROVIDE VFD
13. PROVIDE HOT GAS REHEAT

SPLIT SYSTEM - INDOOR AND OUTDOOR UNIT SCHEDULE

MARK	SERVICE	AIR DATA				COOLING DATA							ELECTRICAL DATA			INDOOR UNIT DATA			OUTDOOR UNIT DATA			NOTES
		TOTAL CFM	OA CFM	% OA	UNIT TYPE	AMBIENT		ENTERING		SCHEDULE	SEER	INPUT POWER (KW)	MCA	MOC	VOLT/PH	MAKE	MODEL	WEIGHT (LBS.)	MAKE	MODEL	WEIGHT (LBS.)	
						D.B.	W.B.	D.B.	W.B.	NOM TONS												
DS-1 / CUDS-1	133 PAINT MIX/STORAGE	425	425	100%	DUCTED HORIZONTAL	75	63	75	63	1.0	19.40	0.13	9.1	15.0	208 / 230V / 1PH	DAIKIN	FDMQ12RVJU	64	DAIKIN	RX12RMVJU9	60	1-12
DS-2 / CUDS-2	169 RADIO ROOM	400	0	0%	WALL MOUNT	105	78	80	67	0.8	19.00	0.02	12.0	15	208 / 230V / 1PH	DAIKIN	FTK09AXVJU	18	DAIKIN	RK09AXVJU	55	1-11, 13
DS-3 / CUDS-3	105 IMAGE RM / LASER STOR	400	0	0%	WALL MOUNT	105	78	80	67	0.8	19.00	0.02	12.0	15	208 / 230V / 1PH	DAIKIN	FTK09AXVJU	18	DAIKIN	RK09AXVJU	55	1-11, 13
DS-4 / CUDS-4	139 IDF	400	0	0%	WALL MOUNT	105	78	80	67	0.8	19.00	0.02	12.0	15	208 / 230V / 1PH	DAIKIN	FTK09AXVJU	18	DAIKIN	RK09AXVJU	55	1-11, 13
DS-5 / CUDS-5	179 PAINT OFFICE	343	50	15%	DUCTED HORIZONTAL	105	78	80	67	0.8	17.80	0.13	9.0	15	208 / 230V / 1PH	DAIKIN	FDMQ09RVJU	64	DAIKIN	RX09RMVJU9	60	1-12
DS-6 / CUDS-6	106 ELEC	716	0	0%	WALL MOUNT	105	78	80	67	1.5	18.50	0.02	13.4	20	208 / 230V / 1PH	DAIKIN	FTK18AXVJU	31	DAIKIN	RK12AXVJU	99	1-11, 13
DS-7 / CUDS-7	136 ELEC	915	0	0%	WALL MOUNT	105	78	80	67	3.0	15.90	0.02	17.0	20	208 / 230V / 1PH	DAIKIN	FTK36AXVJU	38	DAIKIN	RK36AXVJU	133	1-11, 13
DS-8 / CUDS-8	157 ELEC	1,218	0	0%	CASSETTE	105	78	80	67	3.5	17.00	0.02	DS: 1.8 CUDS: 29.1	DS: 15 CUDS: 35	208 / 230V / 1PH	DAIKIN	FCQ42TAVJU	70	DAIKIN	RZR42TAVJU	225	1-11, 13
OA-1 / CUOA-1	133 PAINT MIX/STORAGE	425	425	100%	100% OA DUCTED HORIZONTAL	105	78	105	78	4.0	16.00	-	OA: 1.8 CUOA: 29.1	OA: 15 CUOA: 35	208 / 230V / 1PH	DAIKIN	FXMQ48MFVJU	190	DAIKIN	RXTQ48TAVJU	176	1-12, 14

NOTES
1. PROVIDE FIELD INSTALLED HAIL GUARD ACCESSORY ON OUTDOOR UNIT.
2. OUTDOOR UNIT SHALL MEET OR EXCEED MINIMUM SCHEDULED SEER VALUES PER AHRI 210/240.
3. PROVIDE INTERNAL CONDENSATE PUMPS ON ALL INDOOR UNITS.
4. PROVIDE WALL MOUNTED 7-DAY PROGRAMABLE WIRED THERMOSTAT AT 48" A.F.F.
5. PROVIDE CONDENSING UNIT WITH LOW AMIBIENT TEMPERATURE OPTION.
6. PROVIDE 5 YEAR PARTS, 5 YEAR COMPRESSOR WARRANTY.
7. REFRIGERANT SIZE TO BE PROVIDED BY MANUFACTURER AND CONTRACTOR BASED ON EXACT LOCATION OF EQUIPMENT AND FIELD VERIFIED ROUTING.
8. PROVIDE OUTDOOR UNIT WITH 6" CONCRETE PAD EXTENDING 6" BEYOND EACH DIMENSION OF THE CONDENSING UNIT.
9. PROVIDE SELECTION THAT HAS BEEN DERATED TO 105 DEF OUTSIDE AMBIENT TEMPERATURE.
10. MECHANICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH WHICH IS TO BE FIELD INSTALLED BY ELECTRICAL CONTRACTOR.
11. PROVIDE BACNET INTERFACE FOR CONNECTION TO BMS SYSTEM.
12. PROVIDE WITH MANUFACTURER RECOMMENDED 1" REPLACABLE FILTER WITH FILTRATION EQUALING MERV 7 OR GREATER DURING CONSTRUCTION. REPLACE WITH 4" FILTER WITH FILTRATION EQUALING MERV 13 OR GREATER.
13. PROVIDE WASHABLE FILTER.
14. PROVIDE SCR ELECTRIC DUCT HEATER MOUNTED AT SUPPLY DISCHARGE OF OUTSIDE AIR AIR HANDLING UNIT. 3 KW, 208V/1PH, MCA = 18A, MOP = 20A

OSCILLATING FAN SCHEDULE

TAG	MAKE	MODEL	HP	VOLTS/PHASE/HZ	BREAKER SIZE	INSTALLATION	NOTES
OSF-A-1	BIG ASS FANS	YELLOW JACKET	0.5	120/1/60	20A	COLUMN	1,2,3
OSF-A-2	BIG ASS FANS	YELLOW JACKET	0.5	120/1/60	20A	COLUMN	1,2,3
OSF-A-3	BIG ASS FANS	YELLOW JACKET	0.5	120/1/60	20A	COLUMN	1,2,3

NOTES:

1. PROVIDE FACTORY SUPPLIED SWITCH TO OPERATE WITH VARIABLE SPEEDS. INSTALL ON WALL WHERE INDICATED.
2. PROVIDE COLUMN MOUNTING HARDWARE
3. PROVIDE OSCILLATOR KIT

RADIANT HEATER SCHEDULE

TAG	MAKE	TYPE	MODEL	MBH	VOLTS/PHASE/HZ	WEIGHT (LBS.)	MOUNTING	NOTES
RH-A-1, RH-A-2	SPACERAY	INFRARED TUBE HEATER	LTS-80-40	80	120/1/60	235	13'	1,2
RH-A-3	SPACERAY	INFRARED TUBE HEATER	LTS-50-30	50	120/1/60	185	11'	1,2
RH-B-1 THRU RH-B-12	SPACERAY	CERAMIC INFRARED SPOT HEATER	DK-80	80	120/1/60	41	14'	2,3,4
RH-C-1 THRU RH-C-8	SPACERAY	CERAMIC INFRARED SPOT HEATER	DK-80	80	120/1/60	41	14'	2,3,4
RH-E-1 THRU RH-E-12	SPACERAY	CERAMIC INFRARED SPOT HEATER	DK-80	80	120/1/60	41	14'	2,3,4
RH-F-1 THRU RH-F-8	SPACERAY	CERAMIC INFRARED SPOT HEATER	DK-80	80	120/1/60	41	14'	2,3,4
RH-H-1	SPACERAY	INFRARED TUBE HEATER	LTS-200-50	200	120/1/60	285	18'	1,2

NOTES:

1. HEAVY DUTY METAL SHEATH INFRA-RED HEATER WITH WIRE GUARD. COMPLETE WITH CHAIN SUSPENSION HARDWARE. NOTE TO ELECTRICAL GROUND FAULT CIRCUIT INTERRUPTING CIRCUIT BREAKERS ARE REQUIRED.
2. PROVIDE WALL MOUNTED 7-DAY PROGRAMMABLE THERMOSTAT SET TO 55 DEG F. MOUNT THERMOSTAT AT 48" A.F.F.
3. PROVIDE INDIRECT VENTED INSTALLATION.
4. PROVIDE HORIZONTAL MOUNT INSTALLATION AND APPLICABLE HARDWARE.

FLEX DUCT SCHEDULE

AIRFLOW (CFM)	NECK SIZE
0-100	6
101-200	8
201-275	10
276-375	12
376-475	14
476-600	16

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL SCHEDULES

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M4.1
7401

LOUVER SCHEDULE

MARK	TYPE	CFM	REQUIRED FREE AREA (SF)	LOUVER NOMINAL SIZE	MAKE	MODEL	NOTES
L-A-1	INTAKE	750	1.5	18" X 24"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-A-2	INTAKE	750	1.5	18" X 24"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-A-3	EXHAUST	1,500	1.6	22" X 22"	GREENHECK	SEE ASSOCIATED FAN SCHEDULE. EDJ-430 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-B-1	EXHAUST	15,000	30	120" X 48"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-B-2	INTAKE	20,000	33.3	120" X 72"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-B-3	INTAKE	1,750	3.5	30" X 18"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-B-4	EXHAUST	100	0.2	12" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-C-1	INTAKE	15,000	30	120" X 90"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-C-2	EXHAUST	15,000	30	120" X 48"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-C-3	INTAKE	20,000	33.3	120" X 72"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-C-4	EXHAUST	375	0.6	24" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-C-5	INTAKE	425	0.85	24" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-E-1	EXHAUST	1,750	1.6	22" X 22"	GREENHECK	SEE ASSOCIATED FAN SCHEDULE. EDJ-430 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-E-2	EXHAUST	30,000	50.0	192" X 52"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR. TWO (2) LOUVERS REQUIRED.	1, 2, 3, 4, 5, 6, 7
L-F-1	INTAKE	15,000	30	120" X 90"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-F-2	EXHAUST	700	1.2	18" X 18"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-F-3	EXHAUST	50	0.1	12" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-G-1	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-2	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-3	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-4	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-5	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-6	INTAKE	2,666	5.3	26" X 44"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-7	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-8	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-9	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-10	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-11	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-12	EXHAUST	3,950	5.3	24" X 72"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-13	EXHAUST	1,800	2.4	44" X 20"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-14	EXHAUST	1,800	2.4	44" X 20"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-15	EXHAUST	1,800	2.4	30" X 30"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-G-16	EXHAUST	1,800	2.4	30" X 30"	RUSKIN	BL52ODD EXPLOSION PROOF TYPE W/ 110-VOLT ELECTRIC ACTUATOR. 39% FREE AREA OPEN	1, 2, 3, 4, 5, 6
L-H-1	EXHAUST	1,050	1.6	22" X 22"	GREENHECK	SEE ASSOCIATED FAN SCHEDULE. EDJ-430 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-H-2	INTAKE	1,050	2.1	30" X 24"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-H-3	EXHAUST	500	1	16" X 16"	GREENHECK	SEE ASSOCIATED FAN SCHEDULE. EDJ-430 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-H-4	INTAKE	500	0.8	24" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7
L-K-1	EXHAUST	75	0.15	12" X 12"	RUSKIN	ELF375DXH & CD50 W/ 110-VOLT ELECTRIC ACTUATOR	1, 2, 3, 4, 5, 6, 7

NOTES:
* REFER TO PLANS
1. COORDINATE EXACT LOCATION AND MOUNTING OF LOUVER WITH ARCHITECTURAL ELEVATION.
2. COORDINATE COLOR AND FINISH WITH ARCHITECT.
3. AIRFLOW QUANTITIES AS NOTED ON MECHANICAL DRAWINGS.
4. PROVIDE AND INSTALL TRANSITION AS REQUIRED TO CONNECT DUCT TO LOUVER.
5. PROVIDE DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
6. PROVIDE WITH HINGED BASE.
7. FREE AREA TO BE MINIMUM 50%

OUTSIDE AIR VENTILATION CALCULATION

MARK	SPACE	TOTAL NO. OF PEOPLE	O/A REQUIRED (CFM/PERSON)	SQUARE FOOTAGE (S.F.)	O/A REQUIRED (CFM/S.F.)	EFFECTIVENESS	REQUIRED O/A SUB-TOTAL (CFM)	SUB-TOTAL O/A SCHEDULED (CFM)
RTU-1	104 - OPEN OFFICE	8	5	1218	0.06	0.8	131	133
	108 - PAVEMENT STORAGE	0	5	937	0.06	0.8	70	74
	107 - SHOP OFFICE	1	5	179	0.06	0.8	18	20
	125 - NON STOCK STORAGE	0	5	567	0.06	0.8	43	46
	109 - HALLWAY	0	0	1243	0.06	0.8	93	110
	112 - PARENT ROOM	1	5	84	0.06	0.8	11	13
	114 - WOMENS	0	0	315	0	0.8	0	33
	115 - MENS	0	0	313	0	0.8	0	33
	117 - BREAK ROOM	3	5	455	0.12	0.8	83	83
	119 - T/R	0	0	57	0	0.8	0	10
	178 - T/R	0	0	57	0	0.8	0	7
	120 - FLEET MANAGER	2	5	105	0.06	0.8	18	21
	122 - ENTRY/SECURITY	3	5	373	0.06	0.8	43	143
	175 - HUDDLE	4	5	122	0.06	0.8	29	30
	176 - HUDDLE	4	5	122	0.06	0.8	29	30
	RTU-1 SUB TOTAL						570	795
RTU-2	156 - STOCK ROOM	0	0	390	0.06	0.8	29	32
	155 - FILE ROOM	0	0	170	0.06	0.8	13	27
	152 - SHOP COORDINATOR	2	5	497	0.06	0.8	47	68
	153 - EQUIP DIRECTOR	2	5	118	0.06	0.8	19	43
	154 - OFFICE COORD	2	5	117	0.06	0.8	19	43
	139 - MASTERCAM	2	5	170	0.06	0.8	23	43
	141 - PRODUCTION DIRECTOR	2	5	197	0.06	0.8	25	43
	142 - MATERIAL MANAGER	2	5	137	0.06	0.8	20	32
	143 - QAC	2	5	137	0.06	0.8	20	43
	145 - STOR	0	0	105	0.06	0.8	8	22
	144 - MEDIUM CONFERENCE	6	5	652	0.06	0.8	79	217
	146 - OFFICE MANAGER	2	5	118	0.06	0.8	19	27
	147 - BREAK ROOM	6	5	556	0.12	0.8	113	195
	182 - HALLWAY	0	0	131	0.06	0.8	10	19
	148 - MEN	0	0	254	0	0.8	0	54
	149 - WOMEN	0	0	264	0	0.8	0	54
	RTU-2 SUB TOTAL						444	1000
RTU-3	111 - MEDIUM CONFERENCE	35	5	685	0.06	0.8	226	225
	110 - LARGE CONFERENCE	82	5	1636	0.06	0.8	533	525
	RTU-3 SUB TOTAL						226	750
RTU-4	168 - OPEN OFFICE	6	5	1045	0.06	0.8	93	100
	171 - T/R	0	0	75	0.06	0.8	5	10
	RTU-4 SUB TOTAL						97	110
RTU-5	103 - PROFILER/DARK BAY	3	5	860	0.06	0.8	67	110
	RTU-5 SUB TOTAL						67	110
RTU-6	138 - CNC SHOP	4	5	2647	0.06	0.8	179	200
	RTU-6 SUB TOTAL						179	200
RTU-7	166 - STORAGE BAY	5	5	1458	0.06	0.8	112	110
	RTU-7 SUB TOTAL						112	110

NOTES:
* OUTSIDE AIR CALCULATIONS BASED ON NUMBER OF PEOPLE SUBMITTED BY OWNER
** THE OUTSIDE AIR QUANTITIES LISTED IN THIS TABLE HAVE BEEN CALCULATED ACCORDING TO THE VENTILATION RATES PROVIDED IN ASHRAE 62.1.

EXHAUST AIR CALCULATIONS

SPACE	SPACE TYPE	SQUARE FOOTAGE (S.F.)	SPACE HEIGHT (FT)	SPACE VOLUME (CF)	NORMAL CODE REQUIRED EXHAUST RATE (CFM/SQ.FT)	NORMAL REQUIRED EXHAUST RATE (CFM)	NORMAL DESIGN EXHAUST RATE (CFM)	PURGE REQUIRED (ACH)	PURGE REQUIRED EXHAUST RATE (CFM)	PURGE DESIGN EXHAUST RATE (CFM)
ASSEMBLY SHOP (SEGMENT B/C/E/F)	AUTOMOTIVE SERVICE STATION	17,537	36	631,332	1.5	26,306	30,000	N/A	N/A	N/A
SERVICE/CALIBRATION BAY (SEGMENT A)	WAREHOUSE	3,664	19	69,616	0.06	220	1,500	N/A	N/A	N/A
MAIN STOCK (SEGMENT B)	WAREHOUSE	3,638	33	120,054	0.06	218	1,750	N/A	N/A	N/A
VEHICLE MAINTENANCE SHOP (SEGMENT G)	AUTOMOTIVE SERVICE STATION	12,130	30	363,900	2	24,260	25,600	4.5	27,293	32,000
REPAIR PIT (SEGMENT G)	AUTOMOTIVE SERVICE STATION	72	4	288	N/A	N/A	N/A	4.5	22	100
WASH BAY (SEGMENT H)	WAREHOUSE	1,996	21.5	42,914	0.06	120	1,050	N/A	N/A	N/A
WASH BAY EQUIPMENT ROOM (SEGMENT H)	STORAGE	484	15.5	7,502	0.12	58	500	N/A	N/A	N/A

*NORMAL VENTILATION RATES PER ASHRAE 62.1, PURGE RATES PER NFPA

GAS UNIT HEATER SCHEDULE

TAG	UNIT DATA				HEATING DATA		ELECTRICAL DATA			NOTES
	MAKE	MODEL	CFM	LBS	INPUT MBH	OUTPUT MBH	MCA	MOCP	VOLT/PH	
GUH-B-1	REZNOR	UDAS-30	460	63	30	24.6	1.9	15	208/1	1, 2
GUH-B-2	REZNOR	UDAS-30	460	63	30	24.6	1.9	15	208/1	1, 2
GUH-E-1	REZNOR	UDAS-30	460	63	30	24.6	1.9	15	208/1	1, 2
GUH-E-2	REZNOR	UDAS-30	460	63	30	24.6	1.9	15	208/1	1, 2
GUH-E-3	REZNOR	UDAS-30	460	63	30	24.6	1.9	15	208/1	1, 2

NOTES:
1. PROVIDE UNIT WITH DISCONNECT SWITCH, HEAT PURGE SWITCH, DOWNTURN NOZZLE, CEILING SUSPENSION, AND VERTICAL COMBUSTION AIR/VENT KIT INCLUDING CONCENTRIC ADAPTER.
2. UNITS TO BE CONTROLLED BY INTEGRAL THERMOSTAT SET TO 50°F.

INDUSTRIAL OVERHEAD FAN SCHEDULE

TAG	MAKE	MODEL	SIZE (FT. DIA)	HP	VOLTS/PHASE/HZ	BREAKER SIZE	INSTALLATION	NOTES
HBF-B-1	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-B-2	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-B-3	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-C-1	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-C-2	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-E-1	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-E-2	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-E-3	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-F-1	BIG ASS FANS	BASIC 6	12	1.5	208/1/60	25A	STRUCTURE	1,2,3,4,5
HBF-G-1	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6
HBF-G-2	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6
HBF-G-3	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6
HBF-G-4	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6
HBF-G-5	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6
HBF-G-6	BIG ASS FANS	POWERFOIL X3.0 C1D1	14	1.5	208/1/60	30A	STRUCTURE	1,2,3,4,5,6

NOTES:
1. PROVIDE FACTORY SUPPLIED SWITCH TO OPERATE WITH VARIABLE SPEEDS. INSTALL ON WALL WHERE INDICATED.
2. SUPPLY FAN WITH FACTORY STANDARD ANODIZED ALUMINUM FINISH.
3. MOTOR SHALL BE PERMANENTLY LUBRICATED AND SHALL BE PROVIDED WITH THERMAL PROTECTION.
4. FANS SHALL BE INSTALLED WITH FACTORY MANUFACTURED STRUCTURE AND SHALL STABILIZE FAN TO PREVENT WOBBLING.
5. FANS SHALL BE INSTALLED BY FACTORY TECHNICIANS WITH MANUFACTURER RECOMMENDED CLEARANCES TO SATISFY REQUIREMENTS FOR 10 YEAR MANUFACTURER'S WARRANTY.
6. PROVIDE EXPLOSION PROOF MOTOR, SPARK RESISTANT (COMPLIANT FOR DIESEL AND CNG FUELING).

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL SCHEDULES

STATE OF TEXAS EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER 09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M4.2
7402

VEHICLE EXHAUST FAN SCHEDULE

MARK	AREAS SERVED	TYPE	INSTALLATION	AIRFLOW (CFM)	DRIVE TYPE	FAN/MOTOR DATA			ELECTRICAL DATA			MFGR	MODEL	NOTES
						ESP (IN)	HP	RPM	VOLTS	PHASE	HZ			
VEF-1	SEGMENT G	VEHICLE EXHAUST	SEE DWGS	1,800	DIRECT		5	3,515	460	3	60	PLYMOVENT	TEV-559	1,2,3,4,5,6
VEF-2	SEGMENT G	VEHICLE EXHAUST	SEE DWGS	1,800	DIRECT		5	3,515	460	3	60	PLYMOVENT	TEV-559	1,2,3,4,5,6
VEF-3	SEGMENT G	VEHICLE EXHAUST	SEE DWGS	1,800	DIRECT		5	3,515	460	3	60	PLYMOVENT	TEV-559	1,2,3,4,5,6
VEF-4	SEGMENT G	VEHICLE EXHAUST	SEE DWGS	1,800	DIRECT		5	3,515	460	3	60	PLYMOVENT	TEV-559	1,2,3,4,5,6

NOTES:
1. PROVIDE EXHAUST HOSES, HOSE REEL, NOZZLE ACCESSORIES AS PER DESIGN DRAWINGS.
2. PROVIDE MOTORIZED BACKDRAFT DAMPER.
3. PROVIDE CONTROL BOX
4. PROVIDE DISCONNECT SWITHCH.
5. PROVIDE EXPLOSION PROOF MOTOR AND SPARK RESISTANT COATING.
6. REFER TO SEQUENCE OF OPERATION FOR CONTROL DETAILS.

ELECTRIC UNIT HEATER SCHEDULE

MARK	AREAS SERVED	ACTUAL CAPACITY (MBH)	AIRFLOW (CFM)	VOLTS	PHASE	HZ	OPERATING WEIGHT (LBS)	MFGR	MODEL	NOTES
UH-1	124 - FIRE	45.0	630	115	1	60	60	REZNOR	UDAS	1,2,3,4
UH-2	165 - EQUIPMENT ROOM	45.0	630	115	1	60	60	REZNOR	UDAS	1,2,3,4
UH-3	165 - EQUIPMENT ROOM	45.0	630	115	1	60	60	REZNOR	UDAS	1,2,3,4

NOTES:
1. PROVIDE DISCONNECT, TO BE FIELD-MOUNTED BY ELECTRICAL CONTRACTOR.
2. PROVIDE WALL MOUNTED 7-DAY PROGRAMMABLE THERMOSTAT AT 48" A.F.F.; PROVIDE BAS INTERFACE AS NEEDED PER SEQUENCE OF OPERATIONS.
3. PROVIDE ALL REQUIRED MOUNTING BRACKETS; COORDINATE WITH CONSTRUCTION TYPE.
4. PROVIDE AIRFLOW SAFETY SWITCH INTERLOCKED TO HEATER.

COMPUTER ROOM AIR CONDITIONING UNIT SCHEDULE

MARK	CONNECTED TO	AIR DATA								ELECTRICAL DATA				UNIT DATA		WEIGHT (LBS.)	NOTES
		TOTAL CFM	ESP	UNIT TYPE	ENTERING		LEAVING		DESIGN		TONS	MCA	MOCP	VOLT/PH	MAKE	MODEL	
					D.B.	W.B.	D.B.	W.B.	SENS. (MBH)	TOT. (MBH)							
CRAC-1	CRCU-1	2,200	0.2	CEILING SUSPENDED DUCTED	80	63	55	46	51.2	51.2	4.0	15.8	20	460V/3PH	LIEBERT	MT048	498	1-9

NOTES
1. PROVIDE WITH MANUFACTURER DDC CONTROLS OR EQUIVALENT. CONTROLS SHALL BE CAPABLE OF BACNET INTEGRATION.
2. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR.
3. PROVIDE UNIT WITH MANUFACTURER RECOMMENDED 4" MERV 8 FILTER
4. PROVIDE 5 YEAR PART AND LABOR WARRANTY.
5. PROVIDE FACTORY OR FIELD MOUNTED CONDENSATE PUMPS ON ALL AHU'S.
6. PROVIDE DUCT MOUNTED SMOKE DETECTOR ON SUPPLY DUCT.
7. BACNET INTERFACE
8. PROVIDE ELECTRIC REHEAT OPTION FOR HUMIDITY CONTROL
9. REFRIGERANT SIZE TO BE PROVIDED BY MANUFACTURER AND CONTRACTOR BASED ON EXACT LOCATION OF EQUIPMENT AND FIELD VERIFIED ROUTING.
10. PROVIDE BOTTOM DISCHARGE GRILLE KIT.

COMPUTER ROOM CONDENSING UNIT SCHEDULE

MARK	CONNECTED TO	COOLING	ELECTRICAL DATA						NOTES
		TOTAL MBH	FLA	MOCP	VOLT/PH	MAKE	MODEL	LBS.	
CRCU-1	CRAC-1	48	10.3	20	460V / 3PH	LIEBERT	PFD054A	351	1, 2, 3, 4, 5,6,7

NOTES
1. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR.
2. UNIT TO BE PROVIDED LOW AMBIENT KIT FOR OPERATION DOWN TO 0^{o}F.
3. COMPRESSOR SHALL BE PROVIDED WITH 10 YEARS WARRANTY.
4. PROVIDE FIELD INSTALLED COIL HAIL GUARD.
5. UNITS SHALL MEET OR EXCEED MINIMUM SCHEDULED IEER VALUES PER AHRI 1230.
6. PROVIDE HEAT PUMP UNIT ON 6" HIGH CONCRETE PAD EXTENDING 6" BEYOND EACH DIMENSION OF THE HEAT PUMP UNIT.

FAN SCHEDULE

MARK	LOCATION	TYPE	INSTALLATION	AIRFLOW (CFM)	DRIVE TYPE	FAN/MOTOR DATA			ELECTRICAL DATA			MFGR	MODEL	NOTES
						ESP (IN)	HP	RPM	VOLTS	PHASE	HZ			
EF-1	RESTROOMS - SEGMENT F	IN-LINE	SUSPENDED	700	DIRECT	0.4	1/6	1,725	120	1	60	GREENHECK	SQ-95-VG	DISC, BDD, ECM
EF-2	JANITOR - 151	IN-LINE	SUSPENDED	50	DIRECT	0.4	1/15	1,725	120	1	60	GREENHECK	SQ-60-VG	DISC, BDD, ECM
EF-3	RESTROOMS - SEGMENT D	IN-LINE	SUSPENDED	600	DIRECT	0.4	1/10	1725	120	1	60	GREENHECK	SQ-90-VG	DISC, BDD, ECM
EF-4	JANITOR - 116	IN-LINE	SUSPENDED	120	DIRECT	0.3	1/15	1725	120	1	60	GREENHECK	SQ-60-VG	DISC, BDD, ECM
EF-5	T/R - 121	IN-LINE	SUSPENDED	75	BELT	0.3	1/4	1725	120	1	60	GREENHECK	SQ-97-VG	DISC, BDD, ECM
EF-6	T/R - 171	IN-LINE	SUSPENDED	75	DIRECT	0.3	1/15	1,725	120	1	60	GREENHECK	SQ-60-VG	DISC, BDD, ECM
EF-7	T/R - 178	IN-LINE	SUSPENDED	100	DIRECT	0.2	1/15	1,725	120	1	60	GREENHECK	SQ-60-VG	DISC, BDD, ECM
EF-8	PAINT MIX/STORAGE - 178	IN-LINE	SUSPENDED	375	DIRECT	0.2	1/15	1,725	120	1	60	GREENHECK	SQ-85-VG	DISC, BDD, ECM, VOC
EF-9	MDF-118	CEILING CABINET	CEILING	189	DIRECT	0.2	1/15	1,725	120	1	60	GREENHECK	SP-A190	DISC,BDD
PEF-1	SEGMENT G	INDUSTRIAL PROCESS BLOWER	FLOOR	100	DIRECT	0.9	1/4	1,486	120	1	60	GREENHECK	IP-5	DISC, BS

NOTES:
1. FEATURE NOTES:

DISC = DISCONNECT SWITCH
BDD = BACKDRAFT DAMPER
BS = BIRD SCREEN
VOC = AIR QUALITY CONTROL SENSOR
ECM = ECM MOTOR

BAY FAN SCHEDULE

MARK	AREAS SERVED	TYPE	INSTALLATION	AIRFLOW (CFM)	DRIVE TYPE	FAN/MOTOR DATA			ELECTRICAL DATA			MFGR	MODEL	NOTES
						ESP (IN)	HP	RPM	VOLTS	PHASE	HZ			
GEF-1	SERVICE BAY/CALIBRATION BAY	GENERAL EXHAUST	WALL MOUNTED	1,500	DIRECT	0.3	1/4	1750	460	3	60	GREENHECK	SDPHE-16-3-A4	1,2,3,4,7,8
GEF-2	MAIN STOCK	GENERAL EXHAUST	WALL MOUNTED	1,750	DIRECT	0.3	1/4	1750	460	3	60	GREENHECK	SDPHE-16-3-A4	1,2,3,4,7,8
GEF-3	WASH BAY	GENERAL EXHAUST	WALL MOUNTED	1,050	DIRECT	0.3	1/4	1750	208	3	60	GREENHECK	SDPHE-12-3-A4	1,2,3,4,7,8
GEF-4	WASH BAY EQUIPMENT ROOM	GENERAL EXHAUST	WALL MOUNTED	500	DIRECT	0.3	1/4	1750	208	3	60	GREENHECK	SDPHE-12-3-A4	1,2,3,4,7,8
GEF-5	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-6	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-7	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-8	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-9	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-10	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	WALL MOUNTED	2,140 NORMAL/ 2,666 PURGE	DIRECT	0.6	3/4	1,554	460	3	60	GREENHECK	AER-E20C-615-A7	1,2,3,4,5,6,9
GEF-11	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	ROOF MOUNTED	4,270 NORMAL/ 5,333 PURGE	DIRECT	0.3	2	1,048	460	3	60	GREENHECK	GB-200-20	1,2,4,5,6,9,10
GEF-12	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	ROOF MOUNTED	4,270 NORMAL/ 5,333 PURGE	DIRECT	0.3	2	1,048	460	3	60	GREENHECK	GB-200-20	1,2,4,5,6,9,10
GEF-13	REPAIR BAY	GENERAL EXHAUST/CO DETECTION/LPG	ROOF MOUNTED	4,270 NORMAL/ 5,333 PURGE	DIRECT	0.3	2	1,048	460	3	60	GREENHECK	GB-200-20	1,2,4,5,6,9,10
GEF-14	MAIN SHOP	GENERAL EXHAUST	CEILING SUSPENDED	30,000	DIRECT	2.0	25	1770	460	3	60	GREENHECK	AX-90-275-0629-A250	1,2,4,9

NOTES:
1. PROVIDE REMOTE DISCONNECT SWITCH.
2. MANUFACTURER TO FURNISH INCLUDED MOTORIZED DAMPER OPTION (110V), TO BE INSTALLED BY MECHANICAL CONTRACTOR.
3. PROVIDE OSHA MOTOR SIDE GUARD, WALL COLLAR, AND WEATHER HOOD.
4. REFER TO SEQUENCE OF OPERATIONS FOR CONTROL DETAILS.
5. PROVIDE EXPLOSION PROOF MOTOR AND SPARK RESISTANT COATING.
6. PROVIDE 2 SPEED FAN FOR AIRFLOWS SCHEDULED.
7. MANUFACTURER TO FURNISH INCLUDED EXTERIOR LOUVER, TO BE INSTALLED BY MECHANICAL CONTRACTOR.
8. PROVIDE SPEED CONTROLLER.
9. VFD FURNISHED BY MECHANICAL CONTRACTOR.
10. 14" ROOF CURB

AIR DEVICE SCHEDULE

MARK	SIZE	MOUNTING	INLET	CFM	NC @ MAX CFM	DESCRIPTION	MAKE	MODEL	NOTES
S1	24" x 24"	GYP CEILING / LAY-IN	*	101-535	25	4-WAY ALUMINUM SUPPLY DIFFUSER, ROUND NECK	TITUS	TMS-AA	1, 2, 4, 5
S2	18" x 6"	DUCT MOUNTED	DWG	VARIES	25	EXPOSED DUCT MOUNTED SPIRAL	TITUS	S300-FL	2, 3, 4
S3	22" x 22"	EXPOSED	N/A	0-555	25	EXPOSED CIRCULAR DIFFUSER	TITUS	R-OMNI	1, 2, 5
S4	8" x 8"	DUCT MOUNTED	DWG	250-400	25	DUCT SUPPLY DIFFUSER	TITUS	300-FL	2, 3, 4
S5	20" x 6"	DUCT MOUNTED	DWG	480	30	DUCT MOUNTED SUPPLY DIFFUSER	TITUS	S300-FL	2,3,4
S6	24" x 24"	DUCT MOUNTED	DWG	2200	30	DUCT SUPPLY DIFFUSER	TITUS	300-FL	2, 3, 4
S7	10" x 10"	SIDEWALL	DWG	480	30	SIDEWALL SUPPLY DIFFUSER	TITUS	300-FL	2,4
R1	24" x 24"	GYP CEILING / LAY-IN	VARIES	0-1800	25	ALUMINUM EGGCRATE CEILING RETURN GRILLE	TITUS	50F	1, 2, 4,5
R2	16" x 16"	SIDEWALL	DWG	900	25	SIDEWALL RETURN GRILLE	TITUS	350RL	1, 4
R3	26" x 12"	SIDEWALL	DWG	1,000	25	SIDEWALL RETURN GRILLE	TITUS	350RL	1, 4
R4	32" x 18"	SIDEWALL	DWG	2,200	30	SIDEWALL RETURN GRILLE	TITUS	350RL	1, 4
E1	24x24	GYP CEILING / LAY-IN	*	0-350	25	ALUMINUM EGGCRATE EXHAUST GRILLE	TITUS	50F	1,2,4,5

NOTES:
* = NECK SIZES SHALL BE SIZED AS PER FLEX DUCT SCHEDULE
1. COORDINATE EXACT LOCATION OF DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
2. AIRFLOW QUANTITIES AS NOTED ON MECHANICAL DRAWINGS.
3. PROVIDE DIFFUSER WITH INTEGRAL BALANCING DAMPER .
4. THE BORDER TYPE OF AIR DISTRIBUTION DEVICES SHALL MATCH THE CEILING IN WHICH IT IS BEING MOUNTED.
5. PROVIDE MANUAL BALANCING DAMPER WITH LOCKING QUADRANT AT TAKE-OFF TO DIFFUSER. COORDINATE EXACT LOCATION WITH FLOOR PLAN.

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

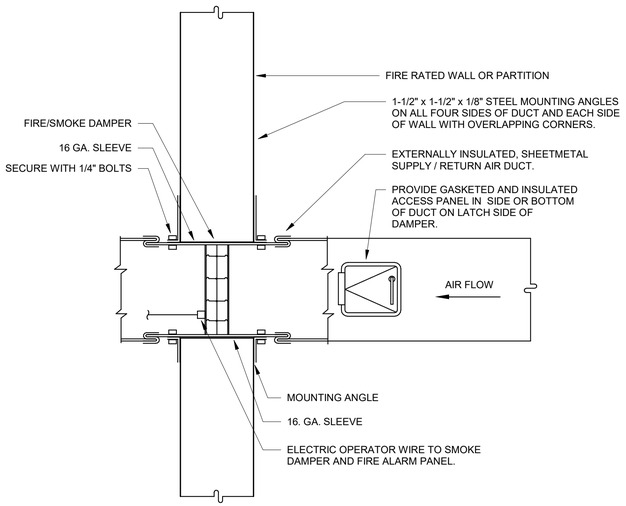
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-4704200062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

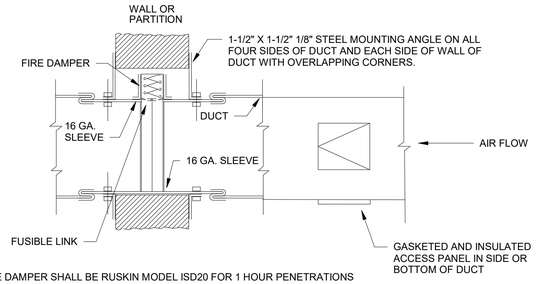
MECHANICAL SCHEDULES

M4.3
7403



NOTE:
COMBINATION FIRE AND SMOKE DAMPER SHALL BE MULTIBLADE WITH FUSIBLE LINK AND ELECTRIC OPERATOR RUSKIN MODEL FSD-35 OR APPROVED EQUAL.

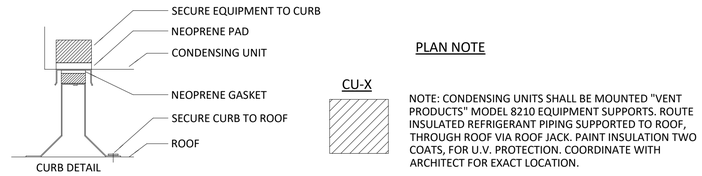
C1 DUCT FIRE/SMOKE DAMPER THROUGH WALL DETAIL
NTS



FIRE DAMPER SHALL BE RUSKIN MODEL ISD20 FOR 1 HOUR PENETRATIONS AND MODEL ISD230 FOR 2 HOUR PENETRATIONS OR APPROVED EQUIVALENT.

NOTE:
DAMPER INSTALLATION ASSEMBLY SHALL BE APPROVED BY LOCAL INSPECTOR BEFORE BEING INSTALLED

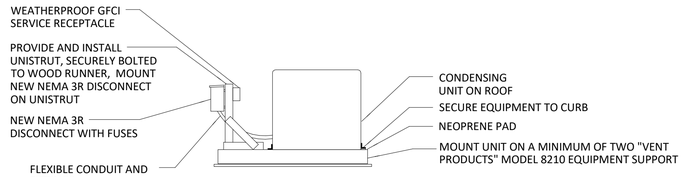
C2 DUCT FIRE DAMPER DETAIL1
NTS



PLAN NOTE

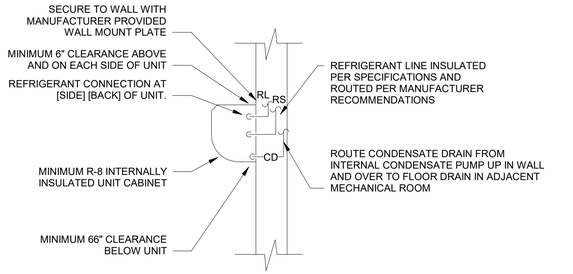
CU-X

NOTE: CONDENSING UNITS SHALL BE MOUNTED "VENT PRODUCTS" MODEL 8210 EQUIPMENT SUPPORTS. ROUTE INSULATED REFRIGERANT PIPING SUPPORTED TO ROOF, THROUGH ROOF VIA ROOF JACK. PAINT INSULATION TWO COATS, FOR U.V. PROTECTION. COORDINATE WITH ARCHITECT FOR EXACT LOCATION.



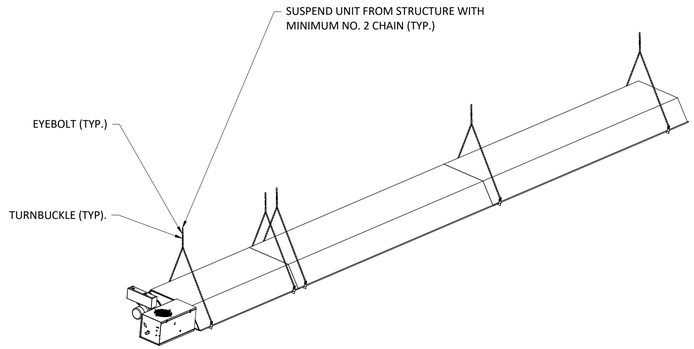
NOTES
1) PAINT PIPING INSULATION WITH 2 COATS, PER INSULATION MANUFACTURER'S REQUIREMENT AND INSTRUCTIONS.
2) PROVIDE AND INSTALL LINE DRYER IN LIQUID REFRIGERANT LINE
3) COORDINATE WITH ROOFING WATERPROOF MEMBRANE TO NOT COMPROMISE SEAL AND/OR WARRANTY.

C3 CONDENSING UNIT ON ROOF
NTS

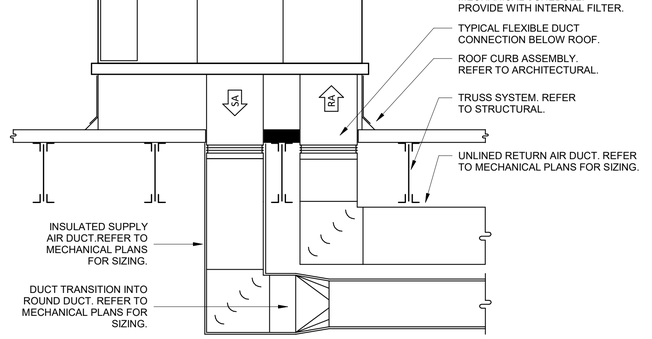


NOTE:
1. PROVIDE WITH MOTOR RATED SWITCH. ELECTRICAL POWER CONNECTION BY OUTDOOR UNIT. REFER TO ELECTRICAL DRAWINGS

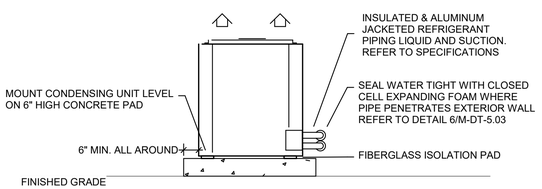
B1 WALL MOUNTED DUCTLESS SPLIT-SYSTEM DETAIL
NTS



B2 RADIANT HEATER MOUNTING
12" = 1'-0"

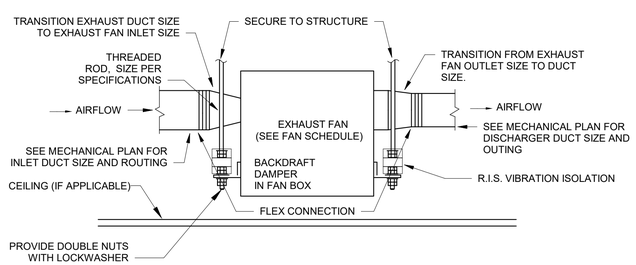


B3 ROOF TOP UNIT INSTALLATION DETAIL
NTS

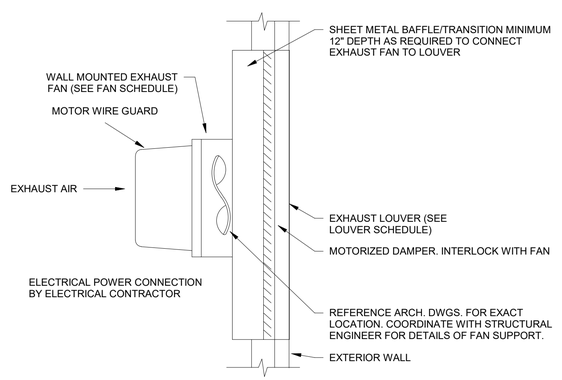


REFRIGERANT PIPING INSULATION NOTES:
1. ALL CLOSED CELL POLYMER INSULATION SHALL HAVE GLUED JOINTS WITH COMPLETE COVERAGE OF ALL METAL SURFACES.
2. PROVIDE INSULATION SHIELD AT ALL SUPPORTS.

A1 GROUND MOUNTED CONDENSING UNIT DETAIL
NTS



A2 INLINE EXHAUST FAN DETAIL
NTS



A3 WALL MOUNTED EXHAUST FAN DETAIL (SEGMENT G)
NTS

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

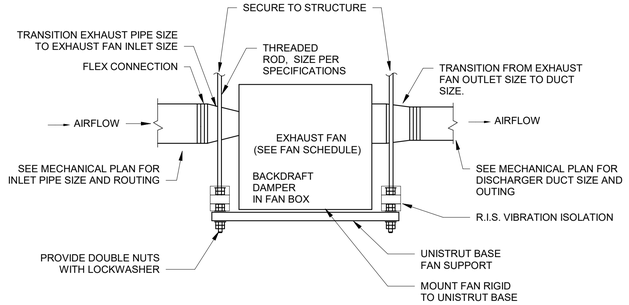
ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL DETAILS

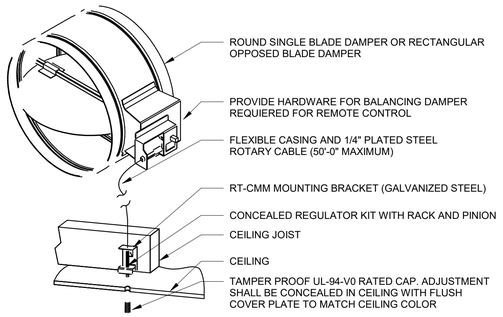
M5.1
7501

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



NOTES:
1. FAN AND ALL FAN HANGING COMPONENTS SHALL BE RATED FOR EXTERIOR USAGE.

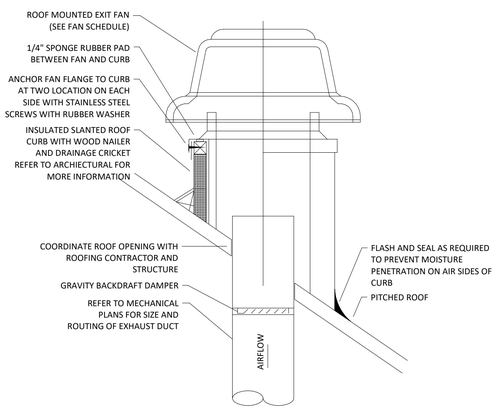
D1 INLINE PIT EXHAUST FAN DETAIL
NTS



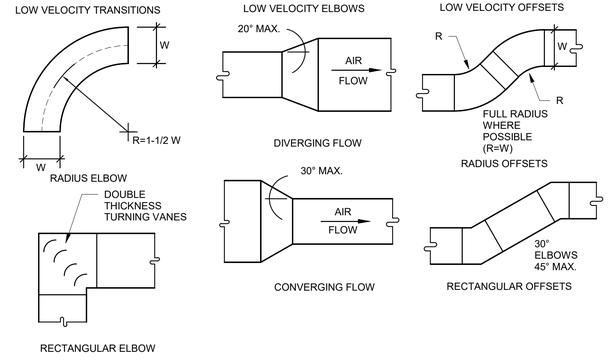
NOTES:

1. COORDINATE EXACT LOCATION OF CEILING MOUNTED CONCEALED REGULATOR WITH ARCHITECT PRIOR TO INSTALLATION.
2. THE CABLE CONTROLS SYSTEM IS DESIGNED TO BE EMBEDDED IN THE CEILING FLUSH WITH THE FINISHED SURFACE.
3. CABLE SHALL CONSIST OF 0.054" STAINLESS STEEL CONTROL WIRE ENCAPSULATED IN 0.06" FLEXIBLE GALVANIZED SPIRAL WIRE SHEATH
4. LOCKING RACK AND PINION GEAR DRIVE SHALL BE CONSTRUCTED OF 14 GAUGE STEEL AND SHALL BE USED TO CONVERT ROTARY MOTION INTO PUSH-PULL MOTION.
5. CONTROL SHAFT SHALL BE "D"-STYLE FLATTENED 1/4" DIAMETER WITH 256° ROTATION PROVIDING 1-1/2" LINEAR TRAVEL CAPABILITY.

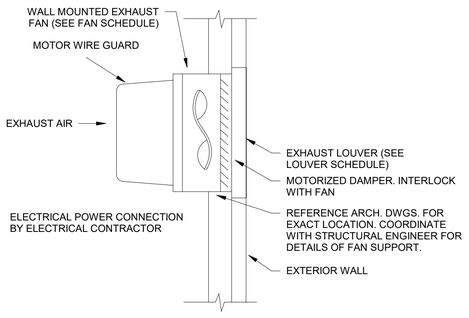
C1 REMOTE BALANCING DAMPER DETAIL
NTS



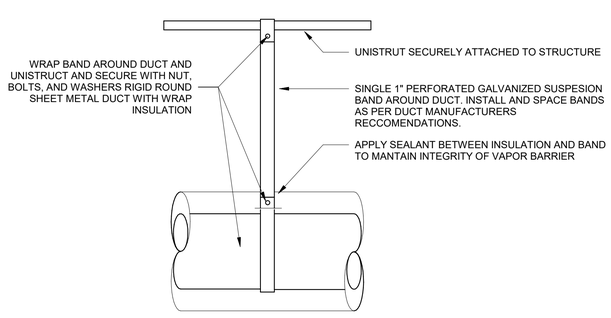
C2 PITCHED ROOF MOUNTED EXHAUST FAN DETAIL
NTS



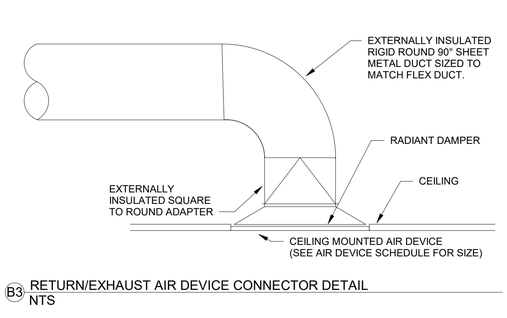
C3 LOW VELOCITY TRANSITIONS, OFFSETS, AND ELBOWS DETAIL
NTS



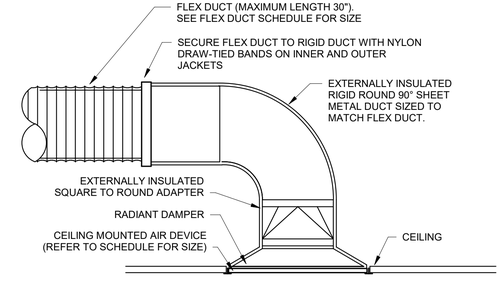
B1 WALL MOUNTED EXHAUST FAN DETAIL
NTS



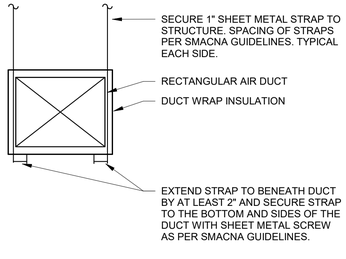
B2 RIGID ROUND INSULATED DUCT HANGER DETAIL
NTS



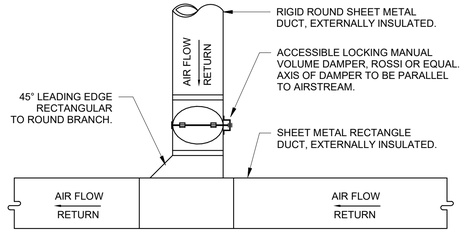
B3 RETURN/EXHAUST AIR DEVICE CONNECTOR DETAIL
NTS



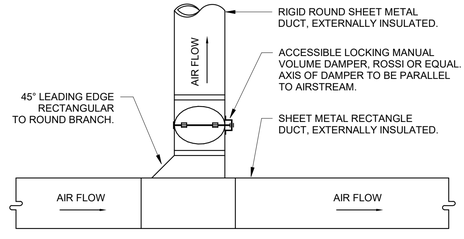
B4 SUPPLY AIR DEVICE CONNECTOR DETAIL
NTS



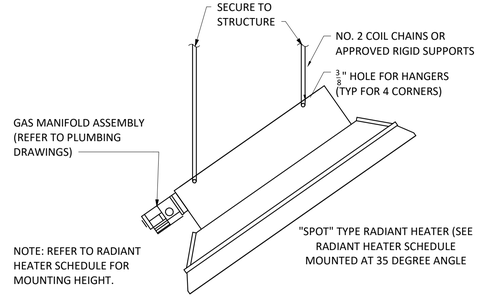
A1 RECTANGULAR DUCT HANGER DETAIL
NTS



A2 RETURN AIR BRANCH DUCT DETAIL
NTS



A3 SUPPLY AIR BRANCH DUCT DETAIL
NTS



A4 INDIRECT VENT RADIANT HEATER HANGING DETAIL
NTS

MECHANICAL DETAILS

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

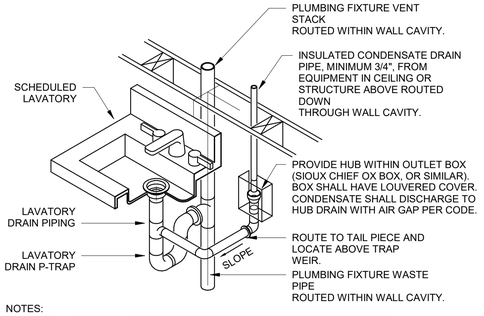
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

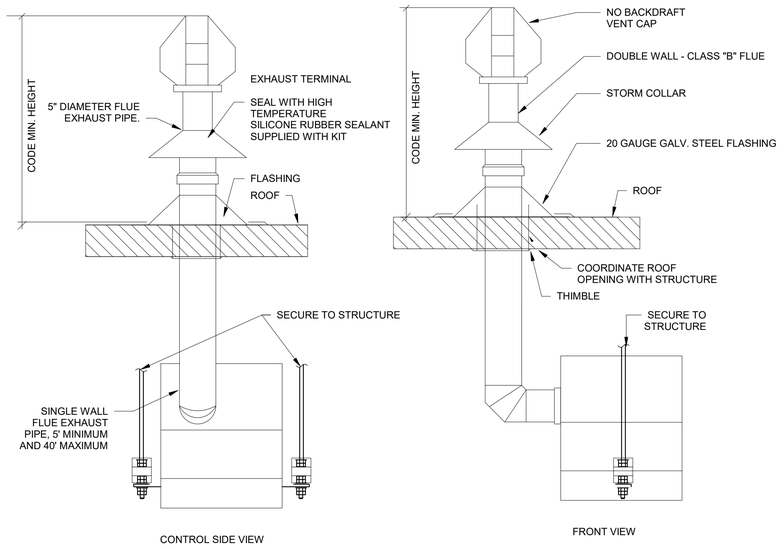
ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

M5.2
7502

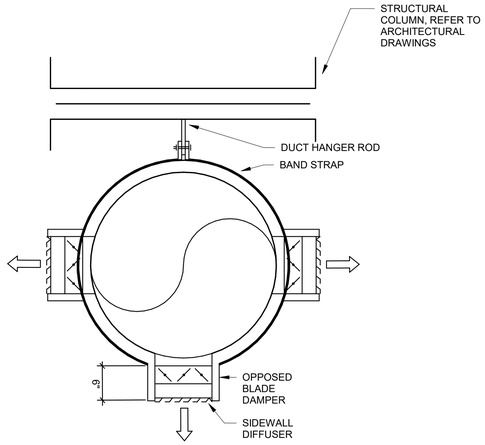


NOTES:
1. INSTALL HUB DRAIN AND OUTLET BOX UNDER SINK ALLOWING ROOM FOR WATER SUPPLY SHUTOFF VALVES. PIPING, AND FITTINGS.
2. INSTALL CONDENSATE DRAIN LINE AT TAILPIECE ABOVE TRAP WEIR TO AVOID VAPOR FLOR THROUGH LAVATORY DRAIN.

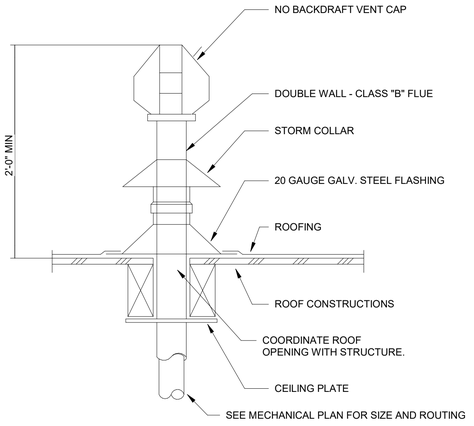
C1 CONDENSATE DRAIN - 3D LAVATORY TAILPIECE DETAIL
NTS



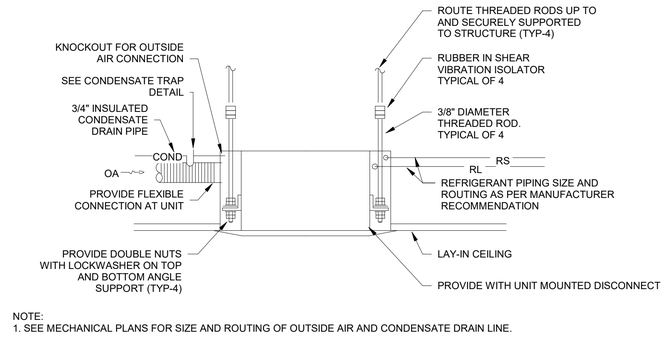
C2 GAS UNIT HEATER VERTICAL VENT TERMINAL/COMBUSTION AIR INLET ASSEMBLY DETAIL
NTS



C3 ANGLE SIDEWALL DIFFUSER DETAIL (SEGMENT G)
NTS

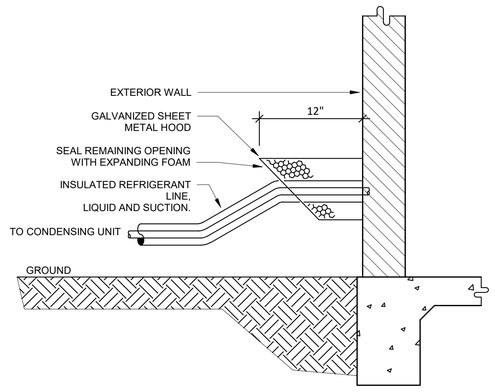


B1 GAS FIRED HEATER FLUE/COMBUSTION AIR THROUGH ROOF DETAIL
NTS



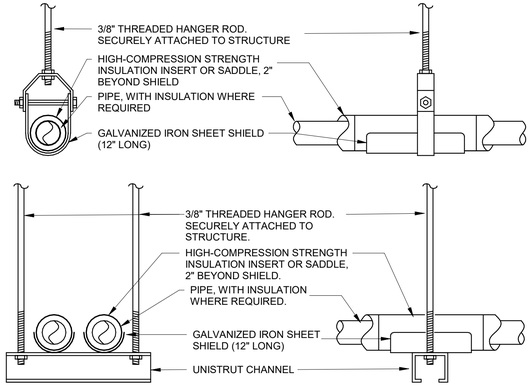
NOTE:
1. SEE MECHANICAL PLANS FOR SIZE AND ROUTING OF OUTSIDE AIR AND CONDENSATE DRAIN LINE.

B2 DX CASSETTE UNIT DETAIL
NTS



NOTE:
HOOD OPENING TO ALLOW FOR PIPE SIZES, INSULATION, 1/2" BETWEEN PIPING INSULATION AND 2" CLEARANCE.

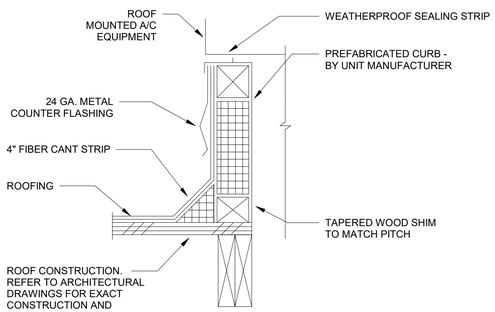
B3 REFRIGERANT LINE DETAIL
NTS



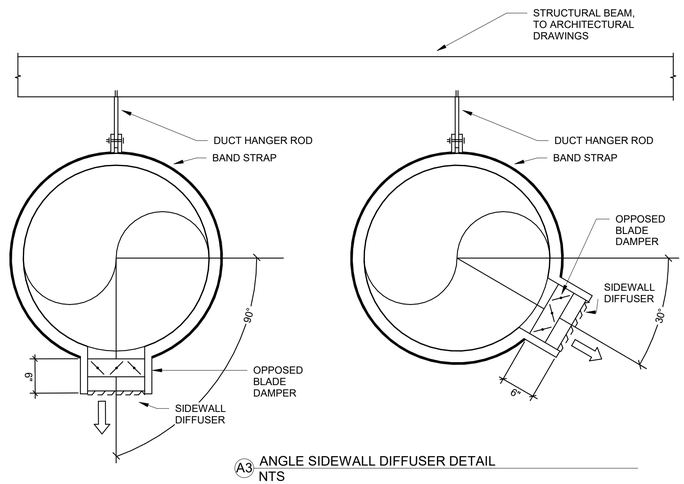
NOTES:

1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAM.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

A1 PIPE HANGER DETAILS
NTS



A2 ROOF CURB DETAIL
NTS



A3 ANGLE SIDEWALL DIFFUSER DETAIL
NTS

MECHANICAL DETAILS

Texas Department of Transportation

EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

M5.3
7503

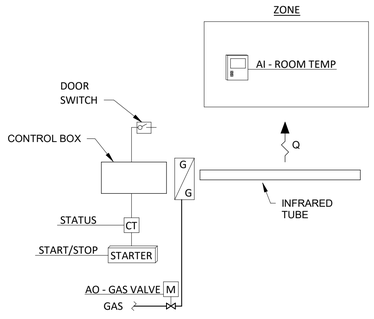
GAS FIRED RADIANT HEATER SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
- CEILING HUNG NATURAL GAS FIRED INFRARED TUBE OR CERAMIC SPOT HEATER.

SET POINTS
- ROOM TEMPERATURE SETPOINT HEATING 55°F (ADJ.)

HEATING MODE
1. WHEN THE ROOM TEMEPRATURE DROPS 3°F (ADJ.) BELOW THE ROOM TEMPERATURE SET POINT THE RADIANT HEATER SHALL ENTER HEATING MODE.
2. WHEN HEATING MODE IS ACTIVATED THE GAS VALVE SHALL OPEN AND MODULATE IN STAGES TO MAINTAIN THE ROOM HEATING TEMPERATURE SET POINT.
3. THE GAS FIRED HEATER SHALL OPERATE CONTINUOUSLY UNTIL THE SET POINT IS REACHED.
4. WHEN THE ROOM TEMPERATURE RISES 3°F ABOVE THE SET POINT GAS VALVE SHALL CLOSE AND THE SYSTEM SHALL DE-ENERGIZE.

SAFETIES AND SHUTDOWN
1. RADIANT HEATERS SHALL BE INTERLOCKED WITH ASSOCIATED ZONE EXHAUST FANS. IF FANS ARE NOT ENERGIZED, RADIANT HEATERS SHALL NOT RUN.

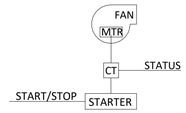


B1 GAS FIRED RADIANT HEATER CONTROL DIAGRAM
NTS

INDUSTRIAL OVERHEAD FAN (HBF-X) & OSCILLATING FAN (OSF-X) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
INDUSTRIAL OVERHEAD CEILING FAN / OSCILLATING FAN.

FAN MOTOR - ON/OFF CONTROL:
1. THE FAN SHALL BE CONTROLLED BY MANUAL SWITCH WITH ON/OFF/VARIABLE CONTROLS.



C1 INDUSTRIAL OVERHEAD FAN CONTROL DIAGRAM
NTS

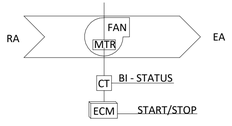
SIDEWALL PROPELLER EXHAUST FAN (GEF-1,2,3,4) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
CONSTANT VOLUME EXHAUST FAN SERVING VARIOUS EQUIPMENT/STORAGE BAYS. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:
1. THE EXHAUST FAN SHALL BE INTERLOCKED WITH THE BUILDING TIME CLOCK AND SHALL OPERATE CONTINUOUSLY DURING SCHEDULED OCCUPIED HOURS.
   A. EXHAUST FAN START/STOP SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPER SUCH THAT DAMPER OPENS UPON CALL FOR FAN TO START.
2. THE EXHAUST FAN SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPERS CONNECT TO ZONE INTAKE LOUVERS.

EXHAUST FAN POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



B2 EQUIPMENT BAY GENERAL EXHAUST FAN CONTROL DIAGRAM
NTS

ELECTRIC UNIT HEATER SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
- CEILING HUNG/WALL MOUNTED AXIAL FAN UNIT HEATER WITH ELECTRIC HEAT. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

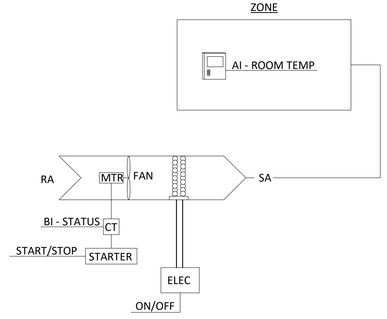
SET POINTS
- ROOM TEMPERATURE SETPOINT HEATING 55°F (ADJ.)

SUPLLY FAN
1. THE FAN SHALL OPERATE ANYTIME THERE IS A DEMAND FOR HEATING.
2. THE FAN AND HEATING ELEMENT SHALL BE INTERLOCKED SUCH THAT NEITHER SHALL OPERATE INDEPENDANTLY.

HEATING MODE
1. WHEN THE ROOM TEMEPRATURE DROPS 3°F (ADJ.) BELOW THE ROOM TEMPERATURE SET POINT THE HEATER SHALL ENTER HEATING MODE.
2. THE UNIT HEATER SHALL OPERATE CONTINUOUSLY UNTIL THE SET POINT IS REACHED.
3. WHEN THE ROOM TEMPERATURE RISES 3°F ABOVE THE SET POINT THE SYSTEM SHALL DE-ENERGIZE.

ELECTRIC UNIT HEATER POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
HEATER STATUS	STATUS	●					



12 ELECTRIC UNIT HEATER CONTROL DIAGRAM
NTS

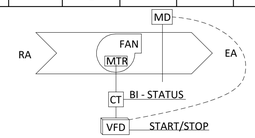
IN-LINE EXHAUST FAN (GEF-14) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
IN-LINE CONSTANT VOLUME GENERAL EXHAUST FAN. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:
1. THE EXHAUST FAN SHALL BE INTERLOCKED WITH THE BUILDING TIME CLOCK AND SHALL OPERATE CONTINUOUSLY DURING SCHEDULED OCCUPIED HOURS.
   A. EXHAUST FAN START/STOP SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPERS (INCLUDING ZONE INTAKE AIR LOUVER SYSTEM MOTORIZED DAMPERS) SUCH THAT DAMPER OPENS UPON CALL FOR FAN TO START.
2. UPON START THE FAN SHALL SLOWLY INCREASE CFMS TO THE SCHEDULED AIRFLOW.

EXHAUST FAN POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A1 MAIN SHOP GENERAL EXHAUST FAN CONTROL DIAGRAM
NTS

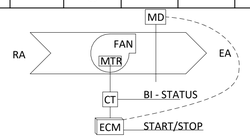
IN-LINE EXHAUST FAN (EF-9) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
IN-LINE CONSTANT VOLUME EXHAUST FAN ACTING AS EMERGENCY FAIL SAFE FOR MDF COOLING UNIT CRAC-1. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:
1. THE EXHAUST FAN SHALL BE INTERLOCKED WITH THE OPERATION OF MDF COOLING UNIT CRAC-1. IF CRAC-1 UNIT FAILS, THEN EXHAUST FAN SHALL BE COMMANDED ON.
   A. EXHAUST FAN START/STOP SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPERS SUCH THAT THE DAMPERS OPENS UPON CALL FOR FAN TO START.

EXHAUST FAN POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A2 MDF ROOM BACKUP EXHAUST FAN CONTROL DIAGRAM
NTS

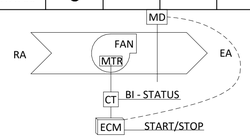
IN-LINE EXHAUST FAN (EF-1, EF-2, EF-3, EF-4, EF- 5, EF-6) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
IN-LINE CONSTANT VOLUME EXHAUST FAN SERVING RESTROOMS OR JANITOR'S CLOSETS. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:
1. THE EXHAUST FAN SHALL BE INTERLOCKED WITH ASSOCIATED ZONE ROOF TOP UNIT.

EXHAUST FAN POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A3 EXHAUST FAN RTU INTERLOCK CONTROL DIAGRAM
NTS

MECHANICAL CONTROLS

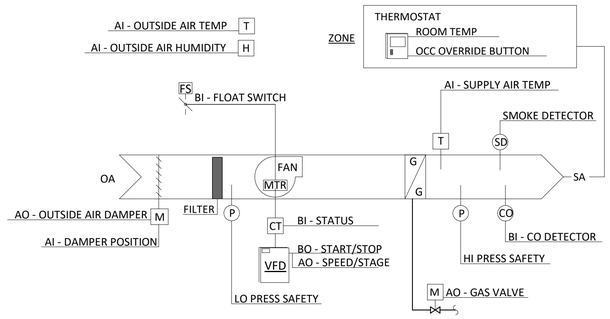
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: RB
CHECKED BY: ER
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

M6.1
7601

HV POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
OCCUPIED/UNOCCUPIED	SCHEDULE/STATUS					●	PER SCHEDULE OR ZONE OVERRIDE
OA HUMIDITY	HUMIDITY			●			
SUPPLY AIR TEMP				●			
OUTSIDE AIR TEMP	TEMPERATURE			●			
OUTSIDE AIR DAMPER COMMAND	POSITION COMMAND				●		
OUTSIDE AIR DAMPER POS	STATUS			●			
GAS VALVE	POSITION COMMAND				●		
GENERAL FIRE ALARM	SAFETY	●					PICK UP FROM FIRE ALARM PANEL OR FIRE ALARM RELAY
SUPPLY FAN START/STOP	START/STOP		●				
SUPPLY FAN STATUS	STATUS	●					
SUPPLY FAN SPEED / STAGE	SPEED				●		
DRAIN PAN FLOAT SWITCH	SAFETY	●					ALARM BAS
INDUCTION FAN GAS HEAT STATUS	STATUS	●					
SMOKE DETECTOR X2	STATUS	●					
LO PRESSURE SAFETY	SAFETY	●					
HI PRESSURE SAFETY	SAFETY	●					



SEQUENCE OF OPERATION (HV-1)

SYSTEM DESCRIPTION

SINGLE ZONE CONSTANT AIR VOLUME ROOFTOP HEATING AND VENTILATION UNIT. UNIT IS EQUIPPED WITH NATURAL GAS FURNACE FOR HEATING AIR. UNIT SHALL BE INTERLOCKED WITH SIDEWALL PROPELLER FANS GEF-5,6,7,8,9,10,11,12. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS. PROVIDE BACNET INTERFACE FOR BMS CONNECTION.

SET POINTS

- SUPPLY AIR TEMPERATURE HEATING SET POINT: 60°F
- ROOM TEMPERATURE SET POINT: / HEATING 60°F (ADJ.) (MAINTAIN A 3°F DEADBAND)

SUPPLY FANS

1. THE FAN SHALL OPERATE ANYTIME SIDE PROPELLER FANS GEF-5,6,7,8,9,10,11,12 ARE COMMANDED ON.
2. UPON START THE FAN SHALL SLOWLY INCREASE CFM TO 50% THEN START OPERATING PER SEQUENCE.
3. THE FAN SHALL MAINTAIN CONSTANT AIR VOLUME TO MAINTAIN THE ROOM TEMPERATURE SET POINT.
4. REFER TO SAFETY SHUT DOWN SECTION.

OUTSIDE AIR DAMPER CONTROL

1. DURING NORMAL OPERATION THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE SCHEDULED OUTSIDE AIR FLOW .
2. DURING EQUIPMENT STARTUP THE OUTSIDE AIR DAMPER SHALL BE INITIALLY CLOSED UNTIL THE SUPPLY AIR FAN ENTERS NORMAL OPERATION. THIS IS TO PREVENT FALSE POSITIVE FOR EQUIPMENT SAFETIES.
3. DURING UNOCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL BE CLOSED.

NATURAL GAS FURNACE CONTROL

1. WHILE IN HEATING MODE THE GAS VALVE SHALL OPERATE IN STAGES WITH THE FURNACE BURNER TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 60°F.

ALARMS

AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE

1. THE SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. THE SUPPLY FAN IS COMMANDED OFF BUT STATUS IS ON.
3. PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.

SAFTIES AND SHUTDOWN

THE FAN SHALL DE-ENERGIZE, OUTSIDE AIR DAMPER SHALL CLOSE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

1. SMOKE IS DETECTED IN THE SUPPLY AIR DUCT
2. GENERAL FIRE ALARM IS TRIGGERED.

A1 SEGMENT G HEATING AND VENTILATION UNIT CONTROL DIAGRAM
NTS

DX DUCTLESS SPLIT SYSTEM (DS-1 / DS-2 / DS-3 / DS-4 / DS-6 / DS-7 / DS-8) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

- DUCTLESS MINI-SPLIT SYSTEM AIR HANDLING UNIT SERVING ELECTRICAL/IDF ROOMS WITH DIRECT EXPANSION CONDENSING UNIT (LOCATED ON GROUND), FLOAT SWITCH AND FILTER. AIR HANDLING UNIT SHALL OPERATE PER MANUFACTURER CONTROLS AND SAFETIES TO MAINTAIN ROOM TEMPERATURE SET POINT. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

SET POINTS

- ROOM TEMPERATURE SET POINT / COOLING: 80°F (ADJ.)

SUPPLY FAN

1. THE SUPPLY FAN SHALL OPERATE ANYTIME THERE IS A CALL FOR COOLING IN THE SPACE.

COOLING

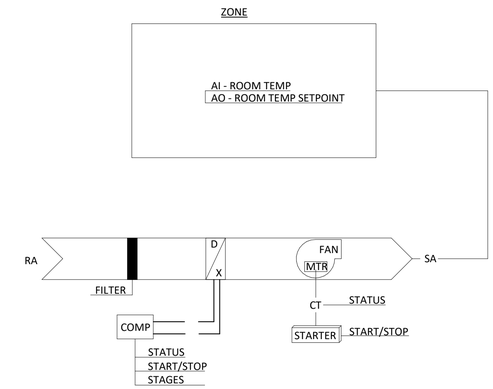
1. UPON A CALL FOR COOLING THE CONDENSING UNIT COMPRESSOR SHALL ENERGIZE AND MODULATE SPEED TO MAINTAIN THE ROOM TEMPERATURE SET POINT. COMPRESSOR SHALL OPERATE FOR A MINIMUM OF FIVE MINUTES TO PREVENT SHORT CYCLING.
2. AIR HANDLING UNIT SHALL OPERATE IN A +/- 3°F DEAD BAND WHILE IN COOLING MODE

ALARMS

1. SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. INLINE CONDENSATE SWITCH IS ACTIVATED.
3. THE INDOOR UNIT IS IN COOLING MODE BUT THE ROOM AIR TEMPERATURE CONTINUES TO RISE TO MORE THAN 5°F (ADJ.) ABOVE THE ROOM TEMPERATURE COOLING SET POINT.

SAFETIES AND SHUTDOWN

1. FLOAT SWITCH.
2. GENERAL FIRE ALARM RELAY (AS AVAILABLE)



B1 DX DUCTLESS SPLIT CONTROL DIAGRAM
NTS

IN-LINE EXHAUST FAN (EF-7) SEQUENCE OF OPERATION

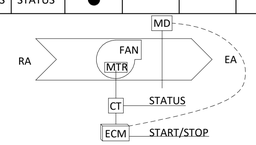
SYSTEM DESCRIPTION

IN-LINE CONSTANT VOLUME EXHAUST FAN SERVING SINGLE RESTROOM IN WORK SHOP AREA. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:

1. INTERLOCK WITH LIGHT IN REST ROOM.

EXHAUST FAN POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A2 EXHAUST FAN MANUAL SWITCH CONTROL DIAGRAM
NTS

COMPUTER ROOM AIR CONDITIONING UNIT (CRAC-1 / CRCU-1) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

- CEILING MOUNTED COMPUTER ROOM AIR CONDITIONING UNIT SERVING MDF ROOM WITH DIRECT EXPANSION CONDENSING UNIT (LOCATED ON GROUND), FLOAT SWITCH AND FILTER. UNIT SHALL OPERATE PER MANUFACTURER CONTROLS AND SAFETIES TO MAINTAIN ROOM TEMPERATURE SET POINT. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

SET POINTS

- ROOM TEMPERATURE SET POINT / COOLING: 80°F (ADJ.)
- ROOM HUMIDITY SET POINT / 50%RH MAX (ADJ.)

SUPPLY FAN

1. THE SUPPLY FAN SHALL OPERATE ANYTIME THERE IS A CALL FOR COOLING OR DEHUMIDIFICATION IN THE SPACE.

COOLING

1. UPON A CALL FOR COOLING OR DEHUMIDIFICATION THE CONDENSING UNIT COMPRESSOR SHALL ENERGIZE AND MODULATE SPEED TO MAINTAIN THE ROOM TEMPERATURE SET POINT AND/OR HUMIDIFICATION SET POINT. COMPRESSOR SHALL OPERATE FOR A MINIMUM OF FIVE MINUTES TO PREVENT SHORT CYCLING.
2. AIR HANDLING UNIT SHALL OPERATE IN A +/- 3°F/ +\- 5%RH DEAD BAND WHILE IN COOLING/DEHUMIDIFICATION MODE

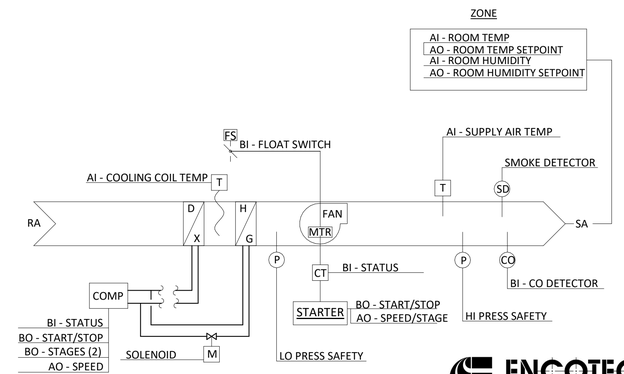
ALARMS

1. SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. INLINE CONDENSATE SWITCH IS ACTIVATED.
3. THE INDOOR UNIT IS IN COOLING MODE BUT THE ROOM AIR TEMPERATURE CONTINUES TO RISE TO MORE THAN 5°F (ADJ.) ABOVE THE ROOM TEMPERATURE COOLING SET POINT.
4. ROOM TEMPERATURE SETPOINT RISES TO 80°F.
5. ROOM HUMIDITY SET POINT RISES TO 60%RH.

SAFETIES AND SHUTDOWN

1. FLOAT SWITCH.
2. GENERAL FIRE ALARM RELAY (AS AVAILABLE)

CRAC POINT LIST						
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	NOTES
SUPPLY AIR TEMP				●		
COMPRESSOR SPEED	SPEED				●	
COMPRESSOR STATUS	SPEED FEEDBACK	●				
COMPRESSOR START/STOP	COMMAND		●			ALARMABLE
COMPRESSOR STAGES (2)			●			
GENERAL FIRE ALARM	SAFETY	●				PICK UP FROM FIRE ALARM PANEL OR FIRE ALARM RELAY
SUPPLY FAN START/STOP	START/STOP		●			
SUPPLY FAN STATUS	STATUS	●				
SUPPLY FAN SPEED / STAGE	SPEED				●	
DRAIN PAN FLOAT SWITCH	SAFETY	●				ALARM BAS
SMOKE DETECTOR	STATUS	●				
LO PRESSURE SAFETY	SAFETY	●				
HI PRESSURE SAFETY	SAFETY	●				
COOLING COIL TEMP	TEMPERATURE			●		
ROOM TEMP	TEMPERATURE			●		
ROOM TEMP SETPOINT	TEMPERATURE				●	
ROOM HUMIDITY	HUMIDITY			●		
ROOM HUMIDITY SETPOINT	HUMIDITY				●	



B2 MDF ROOM AIR CONDITIONING UNIT CONTROL DIAGRAM
NTS

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

MECHANICAL CONTROLS

M6.2
7602

OUTSIDE AIR UNIT SLIT SYSTEM SEQUENCE OF OPERATION (OA-1 / CUOA-1)

SYSTEM DESCRIPTION
CONSTANT VOLUME DEDICATED OUTSIDE AIR SYSTEM SERVING PAINT MIX AND PAINT OFFICE. OPERATION INTERLOCKED TO PAINT MIX EXHAUST FAN. COMPONENTS INCLUDE SCR ELECTRIC HEAT, HEAT PUMP, VARIABLE SPEED COMPRESSOR, AND SUPPLY AIR AND HUMIDITY CONTROL. PROVIDE WITH MANUFACTUR CONTROLLER CAPABLE OF INTEGRATION TO BACNET SYSTEM.

SET POINTS

- SUPPLY TEMPERATURE SETPOINT: COOLING: 55°F (ADJ.)
- SUPPLY TEMPERATURE SETPOINT: HEATING: 70°F (ADJ.)

OUTDOOR UNIT
1. EXTERIOR UNIT SHALL OPERATE WITH INDOOR UNITS VARYING COMPRESSOR SPEED TO MAINTAIN THE REFRIGERANT SUCTION AND LIQUID LINE TEMPERATURES IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS AND SET POINTS.
2. OUTDOOR UNIT SHALL BE CAPABLE OF OPERATING IN A HEATING AND COOLING MODE AND SHALL BE EQUIPPED WITH REVERSING VALVE. HEATING PUMP MODE SHALL ONLY BE MANAGED BY THE VRF CONTROLLER. SIMULTANEOUS HEATING AND COOLING SHALL BE MANAGED BY THE BRANCH SELECTOR LOCATED BY THE INSTALLER.
3. OUTDOOR UNIT SHALL BE ACTIVE WHEN ANY OF THE INDOOR UNITS ARE SCHEDULED ON. OUTDOOR UNIT SHALL DEACTIVATE IF ALL INDOOR UNITS ARE SET TO "OFF".
4. COMPRESSOR SHALL AVOID SHORT CYCLING IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

INDOOR UNIT
SUPPLY FAN
1. THE SUPPLY FAN SHALL BE INTERLOCKED WITH THE OPERATION OF PAINT MIX EXHAUST FAN EF-8.
2. FAN SHALL OPERATE AT CONSTANT VOLUME PER SCHEDULE TO MEET SYSTEM OUTSIDE AIR/MAKE UP AIR REQUIREMENTS.

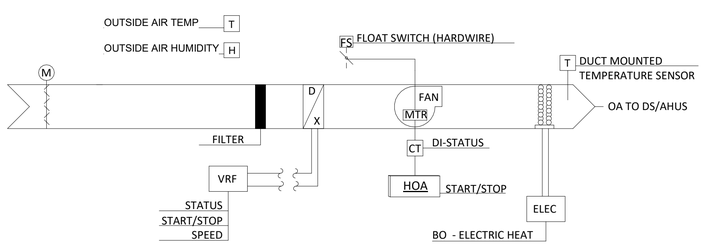
OUTSIDE AIR DAMPER CONTROL
1. UPON CALL FOR OPERATION OF SUPPLY FAN THE OUTSIDE AIR DAMPER SHALL OPEN. DAMPER SHALL PROVE OPEN PRIOR TO START OF SUPPLY FAN.
2. IF PAINT MIX EXHAUST FAN EF-8 IS COMMANDED OFF, THE OUTSIDE AIR DAMPER SHALL BE CLOSED.

COOLING MODE
1. COOLING MODE SHALL BE ACTIVE WHEN THE OUTDOOR ENTHALPY IS ABOVE 26 BTU/LB.
2. UPON A CALL FOR COOLING THE DOAS SHALL OPERATE TO MAINTAIN THE COOLING SUPPLY AIR TEMPERATURE SET POINT.
3. THE ELECTRIC HEAT SHALL BE OFF IN COOLING MODE.

HEATING MODE
1. HEATING MODE SHALL BE ACTIVE WHEN THE OUTDOOR ENTHALPY IS BELOW 26 BTU/LB.
2. UPON A CALL FOR HEATING DOAS SHALL OPERATE TO MAINTAIN THE HEATING SUPPLY AIR TEMPERATURE SET POINT.
3. IF THE HEAT PUMP PROVES TO BE INADEQUATE OR THE COMPRESSOR ENTERS DEFROST MODE THE ELECTRIC HEAT SHALL ENABLE AND THE SCR CONTROLLER SHALL MODULATE THE ELECTRIC HEAT TO MAINTAIN THE SUPPLY TEMPERATURE.
4. THE ELECTRIC HEATER SHALL BE PROVIDED WITH HARDWARE INTERLOCK SUCH THAT HEATER SHALL NOT OPERATE IF FAN IS OFF.

ALARMS
1. SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. CONDENSATE PAN FLOAT SWITCH IS ACTIVATED. IF CONDENSATE PAN SWITCH IS ACTIVATED SYSTEM SHALL SHUT DOWN VIA SAFETY RELAY.
3. THE INDOOR UNIT IS IN COOLING MODE BUT THE SUPPLY AIR TEMPERATURE CONTINUES TO RISE MORE THAN 5°F (ADJ.) ABOVE THE COOLING SET POINT.
4. THE INDOOR UNIT IS IN HEATING MODE BUT THE SUPPLY AIR TEMPERATURE CONTINUES TO FALL MORE THAN 5°F (ADJ.) BELOW THE HEATING SET POINT.

SAFETIES AND SHUTDOWN
1. FLOAT SWITCH.
2. GENERAL FIRE ALARM RELAY (AS AVAILABLE)



A1 PAINT MIX/PAINT OFFICE DEDICATED OUTSIDE AIR UNIT CONTROL DIAGRAM
NTS

PAINT OFFICE DX SPLIT SYSTEM SEQUENCE OF OPERATION (DS-5/CUDS-5)

SYSTEM DESCRIPTION

CONSTANT VOLUME HEAT PUMP SPLIT SYSTEM WITH MULTI-STAGE DIRECT EXPANSION COMPRESSOR. SYSTEM SHALL PROVIDE COOLING OR HEATING TO THE PAINT OFFICE ROOM. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. UNIT SHALL BE INTERLOCKED WITH OPERATION OF PAINT MIX ROOM EXHAUST FAN EF-8. PROVIDE WITH MANUFACTURER CONTROLER CAPABLE OF INTEGRATION TO BACNET SYSTEM.

SET POINTS

- SUPPLY TEMPERATURE SETPOINT: COOLING: 75°F (ADJ.)
- SUPPLY TEMPERATURE SETPOINT: HEATING: 70°F (ADJ.)

SUPPLY FAN

1. THE FAN SHALL OPERATE ANYTIME THE PAINT MIX ROOM FAN EF-8 IS COMMANDED ON.

COOLING MODE

1. COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT.
2. UPON A CALL FOR COOLING THE VRF INDOOR UNIT SOLINOID SHALL OPERATE IN CONJUNCTION WITH OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE COOLING SET POINT.

HEATING MODE

1. HEATING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE FALLS BELOW THE HEATING SET POINT.
2. UPON A CALL FOR HEATING THE VRF INDOOR UNIT SOLINOID SHALL OPERATE IN CONJUNCTION WITH OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE HEATING SET POINT.

SCHEDULE AND OEPRATING MODE

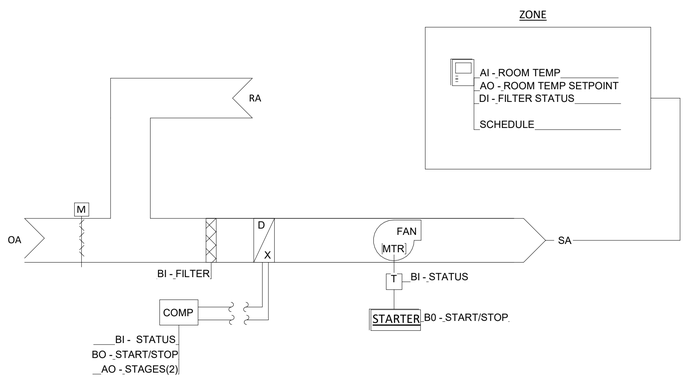
1. SCHEDULE AND OPERATION MODE SHALL BE OVERRIDABLE AT THE T-STAT AND MAIN VRF CONTROLLER.
2. WHEN SET TO "AUTO" THE VRF SYSTEM SHALL CHOOSE THE OPERATION MODES NECESSARY TO MAINTAIN THE ROOM TEMPERATURE SET POINTS.

ALARMS

1. SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. CONDENSATE PAN FLOAT SWITCH IS ACTIVATED. IF CONDENSATE PAN SWITCH IS ACTIVATED SYSTEM SHALL SHUT DOWN VIA SAFETY RELAY.
3. THE FILTER STATUS READS HIGH STATIC PRESSURE.

SAFETIES AND SHUTDOWN

1. FLOAT SWITCH.
2. GENERAL FIRE ALARM RELAY (AS AVAILABLE)



A2 PAINT OFFICE SPLIT SYSTEM CONTROL DIAGRAM
NTS

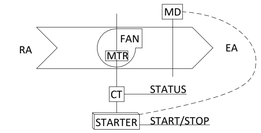
INLINE EXHAUST FAN (EF-8) SEQUENCE OF OPERATION

SYSTEM DESCRIPTION
IN-LINE CONSTANT VOLUME EXHAUST FAN SERVING PAINT MIXING ROOM. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING.

FAN MOTOR - ON/OFF CONTROL:
1. THE EXHAUST FAN SHALL BE INTERLOCKED WITH THE BUILDING TIME CLOCK AND SHALL OPERATE CONTINUOUSLY DURING SCHEDULED OCCUPIED HOURS.
   A. EXHAUST FAN START/STOP SHALL BE INTERLOCKED WITH ASSOCIATED MOTORIZED DAMPER SUCH THAT DAMPER OPENS UPON CALL FOR FAN TO START.

EXHAUST FAN POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



C1 PAINT MIX ROOM EXHAUST FAN CONTROL DIAGRAM
NTS

PAINT MIX ROOM DX SPLIT SYSTEM SEQUENCE OF OPERATION (DS-9/CUDS-9)

SYSTEM DESCRIPTION

CONSTANT VOLUME HEAT PUMP SPLIT SYSTEM WITH MULTI-STAGE DIRECT EXPANSION COMPRESSOR. SYSTEM SHALL PROVIDE COOLING OR HEATING TO THE PAINT MIX ROOM. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. UNIT SHALL BE INTERLOCKED WITH OPERATION OF PAINT MIX ROOM EXHAUST FAN EF-8. PROVIDE WITH MANUFACTURER CONTROLER CAPABLE OF INTEGRATIONTO BACNET SYSTEM.

SET POINTS

- SUPPLY TEMPERATURE SETPOINT: COOLING: 75°F (ADJ.)
- SUPPLY TEMPERATURE SETPOINT: HEATING: 70°F (ADJ.)

SUPPLY FAN
1. THE FAN SHALL OPERATE ANYTIME THE PAINT MIX ROOM FAN EF-8 IS COMMANDED ON.

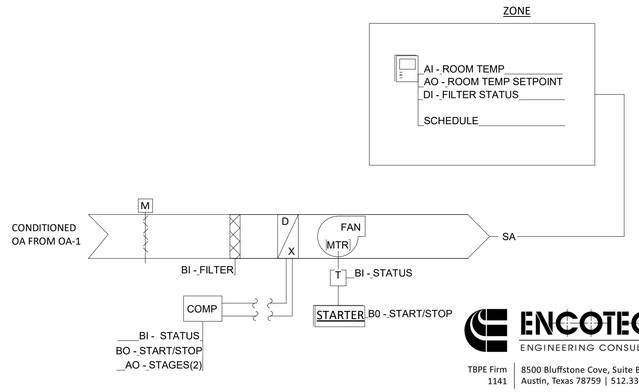
COOLING MODE
1. COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT.
2. UPON A CALL FOR COOLING THE VRF INDOOR UNIT SOLINOID SHALL OPERATE IN CONJUNCTION WITH OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE COOLING SET POINT.

HEATING MODE
1. HEATING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE FALLS BELOW THE HEATING SET POINT.
2. UPON A CALL FOR HEATING THE VRF INDOOR UNIT SOLINOID SHALL OPERATE IN CONJUNCTION WITH OUTDOOR UNIT TO MAINTAIN THE ROOM TEMPERATURE HEATING SET POINT.

SCHEDULE AND OPERATING MODE
1. SCHEDULE AND OPERATION MODE SHALL BE OVERRIDABLE AT THE T-STAT AND MAIN VRF CONTROLLER.
2. WHEN SET TO "AUTO" THE VRF SYSTEM SHALL CHOOSE THE OPERATION MODES NECESSARY TO MAINTAIN THE ROOMTEMPERATURE SET POINTS.

ALARMS
1. SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. CONDENSATE PAN FLOAT SWITCH IS ACTIVATED. IF CONDENSATE PAN SWITCH IS ACTIVATED SYSTEM SHALL SHUT DOWN VIA SAFETY RELAY.
3. THE FILTER STATUS READS HIGH STATIC PRESSURE.

SAFETIES AND SHUTDOWN
1. FLOAT SWITCH.
2. GENERAL FIRE ALARM RELAY (AS AVAILABLE)



A3 PAINT MIX ROOM SPLIT SYSTEM CONTROL DIAGRAM
NTS

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL CONTROLS

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

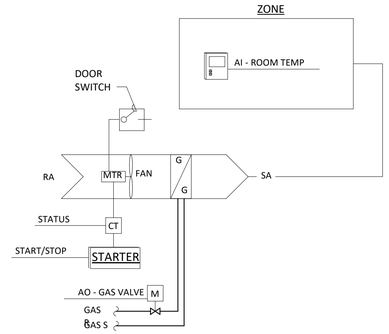
ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

M6.3
7603

GAS DETECTION SYSTEM SEQUENCE OF OPERATION
SYSTEM DESCRIPTION GAS DETECTION MONITORING AND ALARM SYSTEM. DETECTS COMPRESSED NATURAL GAS (CNG), LIQUID PETROLEUM GAS (LPG), CARBON MONOXIDE (CO2) AND NITROGEN DIOXIDE (NO2). ALL SYSTEM COMPONENTS, SENSORS AND CONTROL SEQUENCES TO BE PROVIDED BY MANUFACTURER. REFER TO DRAWING PLANS FOR QUANTITY AND LOCATION OF SENSORS AND ANCILLARY SYSTEM COMPONENTS. SYSTEM TO COMMUNICATE WITH ALL EXHAUST FANS IN SEGMENT G ANY TIME THE GAS MONITORING SYSTEM ENTERS LOW OR HIGH LEVEL ALARM AS A RESULT OF DETECTION OF CO, NO_2, CNG, OR LPG. REFER TO A3/M6.4 FOR FAN CONTROL INTEGRATION DETAILS. PROVIDE MANUAL SHUTOFF FOR ALL FANS AVAILABLE AT PANEL.

B1 GAS DETECTION SYSTEM CONTROL DIAGRAM
NTS

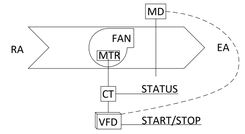
GAS FIRED UNIT HEATER (GUH-B-1, GUH-B-2, GUH-E-1, GUH-E-2, GUH-E-3) SEQUENCE OF OPERATION
SYSTEM DESCRIPTION CEILING HUNG MOUNTED AXIAL FAN UNIT HEATER WITH GAS HEAT WITH INTEGRAL THERMOSTAT. FREEZE PROTECTION FOR WET FIRE PROTECTION PIPING IN MAIN STOCK ROOM. SET POINTS · ROOM TEMPERATURE SETPOINT HEATING 50°F (ADJ.) SUPPLY FAN 1. THE FAN SHALL OPERATE ANYTIME THERE IS A DEMAND FOR HEATING. 2. THE FAN, GAS VALVE, AND PILOT LIGHT SHALL BE INTERLOCKED SUCH THAT NONE SHALL OPERATE INDEPENDENTLY. HEATING MODE 1. WHEN THE ROOM TEMEPRATURE DROPS 3°F (ADJ.) BELOW THE ROOM TEMPERATURE SET POINT THE UNIT HEATER SHALL ENTER HEATING MODE. 2. WHEN HEATING MODE IS ACTIVATED THE FAN SHALL START THEN THE GAS VALVE SHALL MODULATE TO MAINTAIN THE ROOM HEATING TEMPERATURE SET POINT. 3. THE FAN AND GAS FIRED HEATER SHALL OPERATE CONTINUOUSLY UNTIL THE SET POINT IS REACHED. 4. WHEN THE ROOM TEMPERATURE RISES 3°F ABOVE THE SET POINT GAS VALVE SHALL CLOSE AND THE FAN SHALL STOP.



B2 GAS FIRED UNIT HEATER CONTROL DIAGRAM
NTS

SIDEWALL PROPELLER EXHAUST FAN (GEF-11, 12, 13) SEQUENCE OF OPERATION
SYSTEM DESCRIPTION 2 SPEED ROOF MOUNTED EXHAUST FAN IN VEHICLE MAINTENANCE SHOP (SEGMENT G). EACH FAN PROVIDES A "NORMAL" CONSTANT EXHAUST RATE OF 4,270 CFM. UNDER "PURGE" CONDITIONS, THE "PURGE" EXHAUST RATE SHALL BE 5,333 CFM. "PURGE" CONDITION SHALL BE SET AT THE GAS DETECTION SYSTEM. REFER TO GAS DETECTION SYSTEM CONTROL SEQUENCE B1/M6.4 AND DRAWING DETAILS. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING. FAN MOTOR - ON/OFF CONTROL: PROVIDE MOTORIZED DAMPERS IN DUCTWORK BETWEEN FAN AND EXHAUST LOUVER. DAMPERS SHALL BE INTERLOCKED WITH FANS AND SHALL OPEN ANY TIME THE ASSOCIATED FAN IS ENERGIZED. 1. FANS SHALL RUN AT "NORMAL" AIRFLOW DURING NORMAL OPERATION MODE. 2. FANS SHALL RUN SIMULTANEOUSLY IN PURGE MODE ANY TIME THE GAS MONITORING SYSTEM ENTERS LOW OR HIGH LEVEL ALARM AS A RESULT OF DETECTION OF CO, NO_2, CNG, OR LPG. 3. FANS SHALL BE AVAILABLE FOR MANUAL SHUTDOWN AT THE GAS DETECTION SYSTEM PANEL.

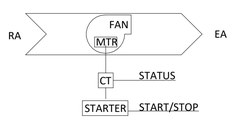
EXHAUST FAN POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



1 GAS DETECTION EXHAUST FAN CONTROL DIAGRAM 2
NTS

PIT EXHAUST FAN (PEF-1) SEQUENCE OF OPERATION
SYSTEM DESCRIPTION IN-LINE CONSTANT VOLUME EXHAUST FAN SERVING SEGMENT G REPAIR PIT. UNIT OPERATES AT 100 CFM (20 ACH). PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING. FAN MOTOR - ON/OFF CONTROL: PROVIDE MOTORIZED DAMPERS IN DUCTWORK BETWEEN FAN AND EXHAUST LOUVER. DAMPERS SHALL BE INTERLOCKED WITH FANS AND SHALL OPEN ANY TIME THE ASSOCIATED FAN IS ENERGIZED. 1. FAN SHALL RUN AT "NORMAL" AIRFLOW DURING NORMAL OPERATION MODE. 2. FAN SHALL RUN IN PURGE MODE ANY TIME THE GAS MONITORING SYSTEM ENTERS LOW OR HIGH LEVEL ALARM AS A RESULT OF DETECTION OF CO, NO_2, CNG, OR LPG. 3. FAN SHALL BE AVAILABLE FOR MANUAL SHUTDOWN AT THE GAS DETECTION SYSTEM PANEL.

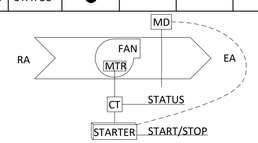
EXHAUST FAN POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A1 PIT VENTILATION CONTROL DIAGRAM
NTS

IN-LINE EXHAUST FAN (VEF-1 / VEF-2 / VEF-3 / VEF-4) SEQUENCE OF OPERATION
SYSTEM DESCRIPTION IN-LINE CONSTANT VOLUME EXHAUST FAN FOR VEHICLE EXHAUST EXTRACTION. UNIT TO OPERATE VIA MANUFACTURER CONTROLS. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING. FAN MOTOR - ON/OFF CONTROL: 1. PROVIDE WITH MANUFACTURER CONTROLS. 2. PROVIDE MOTORIZED DAMPERS IN DUCTWORK BETWEEN FAN AND EXHAUST LOUVER. DAMPERS SHALL BE INTERLOCKED WITH FANS AND SHALL OPEN ANY TIME THE ASSOCIATED FAN IS ENERGIZED.

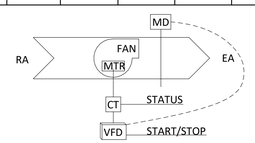
EXHAUST FAN POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A2 VEHICLE EXHAUST FAN CONTROL DIAGRAM
NTS

SIDEWALL PROPELLER EXHAUST FAN (GEF-5, 6, 7, 8, 9, 10) SEQUENCE OF OPERATION
SYSTEM DESCRIPTION 2 SPEED SIDEWALL EXPLOSION PROOF PROPELLER EXHAUST FAN IN VEHICLE MAINTENANCE SHOP (SEGMENT G). EACH FAN PROVIDES A "NORMAL" CONSTANT EXHAUST RATE OF 2,140 CFM. UNDER "PURGE" CONDITIONS, THE "PURGE" EXHAUST RATE SHALL BE 2,666 CFM. "PURGE" CONDITION SHALL BE SET AT THE GAS DETECTION SYSTEM. REFER TO GAS DETECTION SYSTEM CONTROL SEQUENCE B1/M6.4 AND DRAWING DETAILS. PROVIDE CONNECTION TO BACNET BMS FOR STATUS & MONITORING. FAN MOTOR - ON/OFF CONTROL: PROVIDE MOTORIZED DAMPERS IN DUCTWORK BETWEEN FAN AND EXHAUST LOUVER. DAMPERS SHALL BE INTERLOCKED WITH FANS AND SHALL OPEN ANY TIME THE ASSOCIATED FAN IS ENERGIZED. 1. FANS SHALL RUN AT "NORMAL" AIRFLOW DURING NORMAL OPERATION MODE. 2. FANS SHALL RUN SIMULTANEOUSLY IN PURGE MODE ANY TIME THE GAS MONITORING SYSTEM ENTERS LOW OR HIGH LEVEL ALARM AS A RESULT OF DETECTION OF CO, NO_2, CNG, OR LPG. 3. FANS SHALL BE AVAILABLE FOR MANUAL SHUTDOWN AT THE GAS DETECTION SYSTEM PANEL.

EXHAUST FAN POINT LIST							
POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
EXHAUST FAN STATUS	STATUS	●					



A3 GAS DETECTION EXHAUST FAN CONTROL DIAGRAM 1
NTS

MECHANICAL CONTROLS

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

M6.4
7604

BAY ROOF TOP UNIT SEQUENCE OF OPERATION (RTU-5, RTU-6, RTU-7)

SYSTEM DESCRIPTION

SINGLE ZONE CONSTANT AIR VOLUME ROOFTOP AIR HANDLING UNIT SYSTEM. RTU EQUIPPED WITH DIRECT EXPANSION COOLING COIL, NATURAL GAS FURNACE FOR HEATING, ECONOMIZER CONTROL AND BAROMETRIC RELIEF. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. OPERATION SCHEDULE, TEMPERATURE SET POINT, AND ALARMS SHALL BE AVAILABLE AT THE ZONE THERMOSTAT. PROVIDE BACNET INTERFACE FOR CONNECTION TO BMS SYSTEM.

SET POINTS

- SUPPLY AIR TEMPERATURE COOLING SET POINT: 54˚F (ADJ.)
- SUPPLY AIR TEMPERATURE HEATING SET POINT: 95°F
- SUPPLY AIR HUMIDITY LIMIT: 60% RH (ADJ.)
- ROOM TEMPERATURE SET POINT: COOLING 75°F (ADJ.) / HEATING 72°F (ADJ.) (MAINTAIN A 3°F DEADBAND)

SUPPLY FAN

1. THE FAN SHALL OPERATE ANYTIME THE AIR HANDLING UNIT IS SET TO OCCUPIED MODE.
2. UPON START THE FAN SHALL SLOWLY INCREASE CFM TO 50% THEN START OPERATING PER SEQUENCE.
3. REFER TO SAFETY SHUT DOWN SECTION.

OUTSIDE AIR DAMPER CONTROL

1. DURING NORMAL OPERATION THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE SCHEDULED OUTSIDE AIR FLOW .
2. DURING EQUIPMENT STARTUP THE OUTSIDE AIR DAMPER SHALL BE INITIALLY CLOSED UNTIL THE SUPPLY AIR FAN ENTERS NORMAL OPERATION. THIS IS TO PREVENT FALSE POSITIVE FOR EQUIPMENT SAFETIES.
3. DURING ECONOMIZER MODE THE OUTSIDE AIR DAMPER SHALL OPERATE PER THE ECONOMIZER SEQUENCE.
4. DURING UNOCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL BE CLOSED.

RELIEF AIR DAMPER CONTROL

1. DURING NORMAL AND ECONOMIZER OPERATION THE RETURN AIR DAMPER SHALL MODULATE OPPOSITE OF THE OUTSIDE AIR DAMPER.

DIRECT EXPANSION CIRCUIT (COMPRESSOR)

1. THE COMPRESSOR SHALL NOT OPERATE WHEN THE GAS FURNACE SYSTEM IS ON. CHANGE OVER TO COOLING MODE SHALL OCCUR WHEN THE ROOM AIR TEMPERATURE RISES ABOVE THE COOLING ROOM AIR TEMPERATURE SET POINT.
2. THE 3 STAGE COMPRESSOR SHALL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT.
3. IF THE COMPRESSOR MUST CYCLE OFF TO MAINTAIN SET POINT THE COMPRESSOR SHALL REMAIN OFF FOR A MINIMUM PERIOD OF TIME (DETERMINED BY THE MANUFACTURER) TO AVOID SHORT CYCLING.
4. PROVIDE LOGIC IN THE COMPRESSOR MODULATION TO ENSURE THE EITHER COIL DOES NOT FREEZE DUE TO LOW AIR FLOW.

HUMIDITY CONTROL

1. IF THE RETURN AIR HUMIDITY RISES ABOVE 60% RELATIVE HUMIDITY THE RTU SHALL ENTER HUMIDITY CONTROL MODE. AN ALARM SHALL BE ISSUED AT THE THERMOSTAT WHEN THE RTU ENTERS HUMIDITY CONTROL MODE.
2. DURING HUMIDITY CONTROL MODE THE COOLING COIL SHALL MAINTAINA COIL DISCHARGE AIR TEMPERATURE OF 51°F ADJ. (THE COIL DISCHARGE TEMPERATURE WILL BE LIMITED TO THE CAPABILITIES OF THE EXPANSION SYSTEM).
3. THE HOT GAS BYPASS VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE.
4. IF THE RETURN AIR HUMIDITY STILL READS 60% THE SUPPLY FAN SHALL MODULATE DOWN BY 5%.
5. IF THE RETURN AIR HUMIDITY READS GREATER THAN 85% ALARM THE B.A.S. OF POTENTIAL HARDWARE FAILURE AND RETURN TO NORMAL OPERATION.
6. IF ANY SPACE TEMPERATURE DROPS 2°F BELOW THE HEATING SET POINT EXIT DEHUMIDIFICATION MODE.

NATURAL GAS FURNACE CONTROL

1. THE NATURAL GAS FURNACE SHALL NOT OPERATE WHEN THE DIRECT EXPANSION SYSTEM IS ON. CHANGE OVER TO HEATING MODE SHALL OCCUR WHEN THE ROOM AIR TEMPERATURE DROPS BELOW THE HEATING ROOM TEMPERATURE SET POINT.
2. WHILE IN HEATING MODE THE GAS VALVE SHALL OPERATE IN STAGES WITH THE FURNACE BURNER TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 95°F.

ECONOMIZER MODE

1. ECONOMIZER MODE SHALL BE ACTIVATED WHEN ROOFTOP UNIT IS IN COOLING MODE AND THE OUTSIDE AIR ENTHALPY DROPS BELOW THE RETURN AIR ENTHALPY.
2. WHILE IN ECONOMIZER MODE THE DIRECT EXPANSION COIL AND COMPRESSOR SHALL BE OFF, AND THE GAS HEATING VALVE SHALL BE CLOSED.
3. THE BAROMETRIC RELIEF AIR DAMPER SHALL RELIEVE PRESSURE FROM THE BUILDING BASED UPON MECHANICAL SETTING SET BY TESTING AND BALANCING AGENT.
4. THE OUTSIDE AIR DAMPER SHALL MODULATE BETWEEN MINIMUM POSITION AND 100% OPEN TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT.
5. THE RETURN AIR DAMPER SHALL MODULATE OPPOSITE OF THE OUTSIDE AIR DAMPER.
6. THE SUPPLY FAN SHALL CONTINUE TO MAINTAIN THE ROOM AIR TEMPERATURE SET POINT.
7. WHEN THE OUTSIDE AIR ENTHALPY RISES ABOVE THE RETURN AIR ENTHALPY OR WHEN THERE IS A CALL FOR HEATING THE ECONOMIZER MODE SHALL END, THE OUTSIDE AIR DAMPER SHALL RETURN TO MINIMUM POSITION AND THE AIR HANDLING UNIT SHALL RESUME NORMAL OPERATION.

DEFROST MODE

1. IF THE CONDENSER COIL FREEZES DUE TO LOW TEMPERATURE THE DIRECT EXPANSION SYSTEM SHALL ENTER DEFROST MODE TO DEFROST THE COIL. ISSUE AN ALARM TO THE THERMOSTAT IF THE UNIT ENTERS DEFROST MODE.

ALARMS

AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE

1. THE SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. THE SUPPLY FAN IS COMMANDED OFF BUT STATUS IS ON.
3. PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.
4. HUMIDITY IN SPACE RISES ABOVE 80% RH.
5. THE MIXED AIR TEMPERATURE DROPS BELOW 42°F
6. THE RTU ENTERS DEFROST MODE.

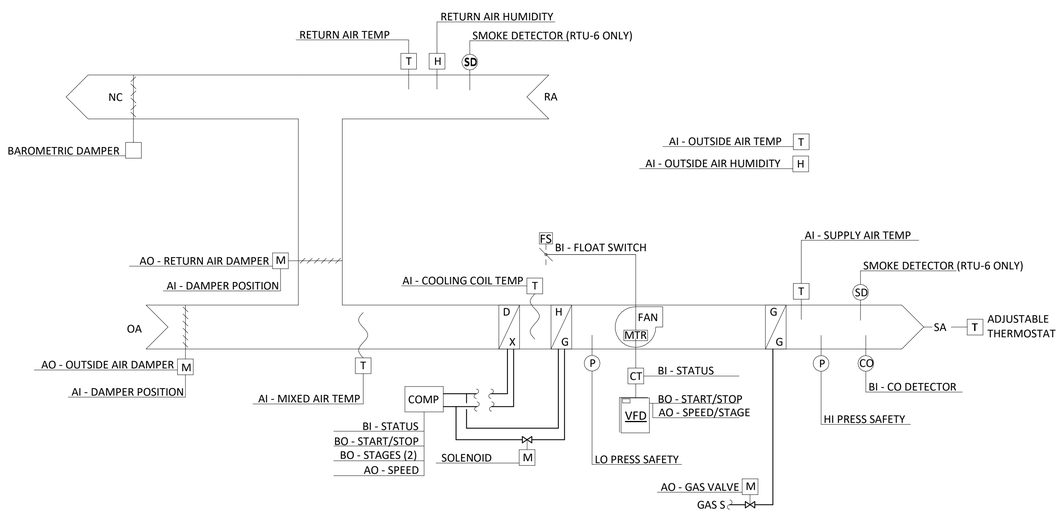
SAFTIES AND SHUTDOWN

THE FAN SHALL DE-ENERGIZE, OUTSIDE AIR DAMPER SHALL CLOSE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

1. SMOKE IS DETECTED IN THE SUPPLY AIR DUCT
2. SMOKE IS DETECTED IN THE RETURN AIR DUCT
3. GENERAL FIRE ALARM IS TRIGGERED.

RTU POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
OCCUPIED/UNOCCUPIED	SCHEDULE/STATUS					●	PER SCHEDULE OR ZONE OVERRIDE
OA HUMIDITY	HUMIDITY			●			
SUPPLY AIR TEMP				●			
OUTSIDE AIR TEMP	TEMPERATURE			●			
RETURN DAMPER COMMAND	POSITION COMMAND				●		
RETURN AIR DAMPER POS	STATUS			●			
OUTSIDE AIR DAMPER COMMAND	POSITION COMMAND				●		
OUTSIDE AIR DAMPER POS	STATUS			●			
COMPRESSOR SPEED	SPEED				●		
COMPRESSOR STATUS	SPEED FEEDBACK	●					
COMPRESSOR START/STOP	COMMAND		●				ALARMABLE
COMPRESSOR STAGES (2)			●				
GAS VALVE	POSITION COMMAND				●		
GENERAL FIRE ALARM	SAFETY	●					PICK UP FROM FIRE ALARM PANEL OR FIRE ALARM RELAY
SUPPLY FAN START/STOP	START/STOP		●				
SUPPLY FAN STATUS	STATUS	●					
SUPPLY FAN SPEED / STAGE	SPEED				●		
ENERGY USAGE	kW			●			
DRAIN PAN FLOAT SWITCH	SAFETY	●					ALARM BAS
RELIEF FAN START/STOP	START/STOP		●				
RELIEF FAN STATUS	STATUS	●					
RELIEF FAN SPEED/STAGE	SPEED				●		
RELIEF FAN ENERGY USE	KW			●			
INDUCTION FAN GAS HEAT STATUS	STATUS	●					
SMOKE DETECTOR X2	STATUS	●					RTU-6 ONLY
LO PRESSURE SAFETY	SAFETY	●					
HI PRESSURE SAFETY	SAFETY	●					
COOLING COIL TEMP	TEMPERATURE			●			
MIXED AIR TEMP	TEMPERATURE			●			
MIXED AIR DAMPER	COMMAND				●		
MIXED AIR DAMPER POS	STATUS			●			
RETURN AIR TEMP	TEMPERATURE			●			
RETURN AIR HUMIDITY	HUMIDITY			●			



A1 BAY RTU CONTROL DIAGRAM
NTS

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL CONTROLS

M6.5
7605

OFFICE/CONFERENCE ROOF TOP UNIT SEQUENCE OF OPERATION (RTU-1, RTU-2, RTU-3, RTU-4)

SYSTEM DESCRIPTION

SINGLE ZONE CONSTANT AIR VOLUME ROOFTOP AIR HANDLING UNIT SYSTEM. RTU EQUIPPED WITH DIRECT EXPANSION COOLING COIL, POWERED EXHAUST/RELIEF, DEMAND CONTROL VENTILATION (RTU-3 ONLY) AND HOT GAS RE-HEAT (FOR HUMIDITY CONTROL). UNIT EQUIPPED WITH NATURAL GAS FURNACE FOR HEATING. UNIT SHALL BE EQUIPPED WITH ECONOMIZER CONTROL.UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. OPERATION SCHEDULE,TEMPERATURE SET POINT, AND ALARMSSHALL BE AVAILABLE AT THE ZONE THERMOSTAT. PROVIDE BACNET INTERFACEFOR CONNECTION TO BMS SYSTEM.

SET POINTS

- SUPPLY AIR TEMPERATURE COOLING SET POINT: 54˚F (ADJ.)
- SUPPLY AIR TEMPERATURE HEATING SET POINT: 95°F
- SUPPLY AIR HUMIDITY LIMIT: 60% RH (ADJ.)
- ROOM TEMPERATURE SET POINT: COOLING 75°F (ADJ.) / HEATING 72°F (ADJ.) (MAINTAIN A 3°F DEADBAND)

SUPPLY FAN

1. THE FAN SHALL OPERATE ANYTIME THE AIR HANDLING UNIT IS SET TO OCCUPIED MODE.
2. UPON START THE FAN SHALL SLOWLY INCREASE CFM TO 50% THEN START OPERATING PER SEQUENCE.
3. REFER TO SAFETY SHUT DOWN SECTION.

OUTSIDE AIR DAMPER CONTROL

1. DURING NORMAL OPERATION THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE SCHEDULED OUTSIDE AIR FLOW .
2. DURING EQUIPMENT STARTUP THE OUTSIDE AIR DAMPER SHALL BE INITIALLY CLOSED UNTIL THE SUPPLY AIR FAN ENTERS NORMAL OPERATION. THIS IS TO PREVENT FALSE POSITIVE FOR EQUIPMENT SAFETIES.
3. DURING ECONOMIZER MODE THE OUTSIDE AIR DAMPER SHALL OPERATE PER THE ECONOMIZER SEQUENCE.
4. DURING UNOCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
5. (RTU-3 ONLY)THE MINIMUM OUTSIDE AIR VOLUME SET POINT SHALL BE THE MINIMUM VALUE SCHEDULED AND SHALL BE INCREASED WHEN A ZONE REQUESTS DEMAND CONTROL VENTILATION (DCV). DCV IS INITIATED BY A ZONE WHEN THE ZONE'S CO2 LEVEL RISES ABOVE THE DCV SET POINT. UPON RECIEPT OF A DCV REQUEST FROM ANY ZONE THE OUTSIDE AIR VOLUME SET POINT SHALL INCREASE BY 10% INCREMENTS EVERY 5 MINUTES (ADJ.) (UP TO THE MAXIMUM OUTSIDE AIR VOLUME SCHEDULED) UNTIL THE ZONE EXITS DCV. WHEN NO ZONES CALL FOR DCV THE OUTSIDE AIR VOLUME SET POINT SHALL RESET TO MINIMUM SCHEDULED VALUE, STAGING DOWN IN 10% INCREMENT.

RETURN/RELIEF FAN

1. THE FAN SHALL OPERATE ANYTIME THE AIR HANDLING UNIT IS SET TO OCCUPIED MODE.
2. UPON START THE FAN SHALL SLOWLY INCREASE CFM TO 50% THEN START OPERATING PER SEQUENCE.
3. REFER TO SAFETY SHUT DOWN SECTION.

RETURN/RELIEF AIR DAMPER CONTROL

1. DURING NORMAL AND ECONOMIZER OPERATION THE RETURN AIR DAMPER SHALL MODULATE OPPOSITE OF THE OUTSIDE AIR DAMPER.

DIRECT EXPANSION CIRCUIT (COMPRESSOR)

1. THE COMPRESSOR SHALL NOT OPERATE WHEN THE GAS FURNACE SYSTEM IS ON. CHANGE OVER TO COOLING MODE SHALL OCCUR WHEN THE ROOM AIR TEMPERATURE RISES ABOVE THE COOLING ROOM AIR TEMPERATURE SET POINT.
2. THE 3 STAGE COMPRESSOR SHALL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT.
3. IF THE COMPRESSOR MUST CYCLE OFF TO MAINTAIN SET POINT THE COMPRESSOR SHALL REMAIN OFF FOR A MINIMUM PERIOD OF TIME (DETERMINED BY THE MANUFACTURER) TO AVOID SHORT CYCLING.
4. PROVIDE LOGIC IN THE COMPRESSOR MODULATION TO ENSURE THE EITHER COIL DOES NOT FREEZE DUE TO LOW AIR FLOW.

HUMIDITY CONTROL

1. IF THE RETURN AIR HUMIDITY RISES ABOVE 60% RELATIVE HUMIDITY THE RTU SHALL ENTER HUMIDITY CONTROL MODE. AN ALARM SHALL BE ISSUED AT THE THERMOSTAT WHEN THE RTU ENTERS HUMIDITY CONTROL MODE.
2. DURING HUMIDITY CONTROL MODE THE COOLING COIL SHALL MAINTAINA COIL DISCHARGE AIR TEMPERATURE OF 51°F ADJ. (THE COIL DISCHARGE TEMPERATURE WILL BE LIMITED TO THE CAPABILITIES OF THE EXPANSION SYSTEM).
3. THE HOT GAS BYPASS VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE.
4. IF THE RETURN AIR HUMIDITY STILL READS 60% THE SUPPLY FAN SHALL MODULATE DOWN BY 5%.
5. IF THE RETURN AIR HUMIDITY READS GREATER THAN 85% ALARM THE B.A.S. OF POTENTIAL HARDWARE FAILURE AND RETURN TO NORMAL OPERATION.
6. IF ANY SPACE TEMPERATURE DROPS 2°F BELOW THE HEATING SET POINT EXIT DEHUMIDIFICATION MODE.

NATURAL GAS FURNACE CONTROL

1. THE NATURAL GAS FURNACE SHALL NOT OPERATE WHEN THE DIRECT EXPANSION SYSTEM IS ON. CHANGE OVER TO HEATING MODE SHALL OCCUR WHEN THE ROOM AIR TEMPERATURE DROPS BELOW THE HEATING ROOM TEMPERATURE SET POINT.
2. WHILE IN HEATING MODE THE GAS VALVE SHALL OPERATE IN STAGES WITH THE FURNACE BURNER TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 95°F.

ECONOMIZER MODE

1. ECONOMIZER MODE SHALL BE ACTIVATED WHEN ROOFTOP UNIT IS IN COOLING MODE AND THE OUTSIDE AIR ENTHALPY DROPS BELOW THE RETURN AIR ENTHALPY.
2. WHILE IN ECONOMIZER MODE THE DIRECT EXPANSION COIL AND COMPRESSOR SHALL BE OFF, AND THE GAS HEATING VALVE SHALL BE CLOSED.
3. THE BAROMETRIC RELIEF AIR DAMPER SHALL RELIEVE PRESSURE FROM THE BUILDING BASED UPON MECHANICAL SETTING SET BY TESTING AND BALANCING AGENT.
4. THE OUTSIDE AIR DAMPER SHALL MODULATE BETWEEN MINIMUM POSITION AND 100% OPEN TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT.
5. THE RETURN AIR DAMPER SHALL MODULATE OPPOSITE OF THE OUTSIDE AIR DAMPER.
6. THE SUPPLY FAN SHALL CONTINUE TO MAINTAIN THE ROOM AIR TEMPERATURE SET POINT.
7. WHEN THE OUTSIDE AIR ENTHALPY RISES ABOVE THE RETURN AIR ENTHALPY OR WHEN THERE IS A CALL FOR HEATING THE ECONOMIZER MODE SHALL END, THE OUTSIDE AIR DAMPER SHALL RETURN TO MINIMUM POSITION AND THE AIR HANDLING UNIT SHALL RESUME NORMAL OPERATION.

DEFROST MODE

1. IF THE CONDENSER COIL FREEZES DUE TO LOW TEMPERATURE THE DIRECT EXPANSION SYSTEM SHALL ENTER DEFROST MODE TO DEFROST THE COIL. ISSUE AN ALARM TO THE THERMOSTAT IF THE UNIT ENTERS DEFROST MODE.

ALARMS

AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE

1. THE SUPPLY FAN IS COMMANDED ON BUT STATUS IS OFF.
2. THE SUPPLY FAN IS COMMANDED OFF BUT STATUS IS ON.
3. PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.
4. HUMIDITY IN SPACE RISES ABOVE 80% RH.
5. THE MIXED AIR TEMPERATURE DROPS BELOW 42°F
6. THE RTU ENTERS DEFROST MODE.

OFFICE/CONFERENCE ROOF TOP UNIT SEQUENCE OF OPERATION (CONTINUED)

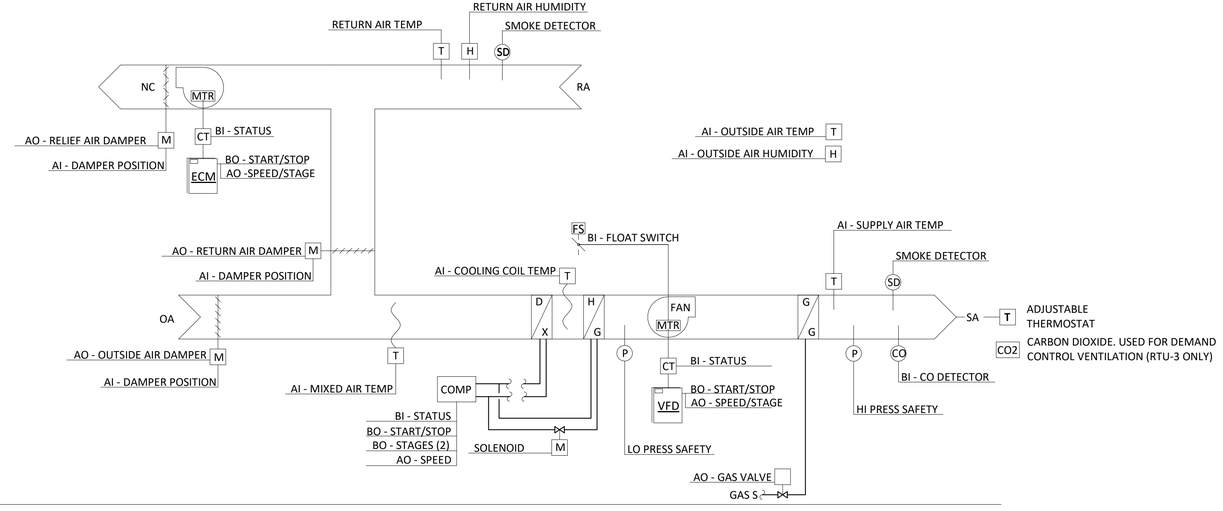
SAFTIES AND SHUTDOWN

THE FAN SHALL DE-ENERGIZE, OUTSIDE AIR DAMPER SHALL CLOSE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

1. SMOKE IS DETECTED IN THE SUPPLY AIR DUCT
2. SMOKE IS DETECTED IN THE RETURN AIR DUCT
3. GENERAL FIRE ALARM IS TRIGGERED.

RTU POINT LIST

POINT DESCRIPTION	TYPE	BINARY INPUT	BINARY OUTPUT	ANALOG INPUT	ANALOG OUTPUT	CALCU-LATED	NOTES
OCCUPIED/UNOCCUPIED	SCHEDULE/STATUS					●	PER SCHEDULE OR ZONE OVERRIDE
OA HUMIDITY	HUMIDITY			●			
SUPPLY AIR TEMP				●			
OUTSIDE AIR TEMP	TEMPERATURE			●			
RETURN DAMPER COMMAND	POSITION COMMAND				●		
RETURN AIR DAMPER POS	STATUS			●			
OUTSIDE AIR DAMPER COMMAND	POSITION COMMAND				●		
OUTSIDE AIR DAMPER POS	STATUS			●			
COMPRESSOR SPEED	SPEED				●		
COMPRESSOR STATUS	SPEED FEEDBACK	●					
COMPRESSOR START/STOP	COMMAND		●				ALARMABLE
COMPRESSOR STAGES (2)			●				
GAS VALVE	POSITION COMMAND				●		
GENERAL FIRE ALARM	SAFETY	●					PICK UP FROM FIRE ALARM PANEL OR FIRE ALARM RELAY
SUPPLY FAN START/STOP	START/STOP		●				
SUPPLY FAN STATUS	STATUS	●					
SUPPLY FAN SPEED / STAGE	SPEED				●		
ENERGY USAGE	kW			●			
DRAIN PAN FLOAT SWITCH	SAFETY	●					ALARM BAS
RELIEF FAN START/STOP	START/STOP		●				
RELIEF FAN STATUS	STATUS	●					
RELIEF FAN SPEED/STAGE	SPEED				●		
RELIEF FAN ENERGY USE	KW			●			
INDUCTION FAN GAS HEAT STATUS	STATUS	●					
SMOKE DETECTOR X2	STATUS	●					
LO PRESSURE SAFETY	SAFETY	●					
HI PRESSURE SAFETY	SAFETY	●					
COOLING COIL TEMP	TEMPERATURE			●			
MIXED AIR TEMP	TEMPERATURE			●			
MIXED AIR DAMPER	COMMAND				●		
MIXED AIR DAMPER POS	STATUS			●			
RETURN AIR TEMP	TEMPERATURE			●			
RETURN AIR HUMIDITY	HUMIDITY			●			



A1 OFFICE/CONFERENCE ROOM RTU CONTROL DIAGRAM
NTS

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

MECHANICAL CONTROLS

EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

M6.6
7606

PLUMBING ABBREVIATIONS

AMPERE	A(AMP)	EMERGENCY SHOWER	ES	INVERT	INV.	ROOF DRAIN	RD
ABOVE FINISHED FLOOR	AFF	ENGINEER	ENGR.			ROOF TOP UNIT	RTU
ADJUSTABLE	ADJ.	EQUAL	EQ.	JANITOR	JAN.	ROOM	RM
AIR CONDITIONING	A/C	EQUIPMENT	EQPT.				
AIR HANDLER UNIT	AHU	ETCETERA	ETC.	LAVATORY	LAV	SANITARY SEWER	SS
APPROXIMATE(LY)	APPROX.	EXHAUST FAN	EF	LONG RADIUS ELBOW	LRE	SCHEDULE	SCH
ARCHITECT(URAL)	ARCH('L)	EXISTING	EXIST.			SECTION	SECT.
		EXTERIOR CLEANOUT	ECO	MAN HOLE	MH	SHOWER	SH
BUILDING	BLDG	EXPOSED	EXP.	MANUFACTURE(R)	MFR.	SOUTH	S
BRITISH THERMAL UNIT	BTU	EYE WASH	EW	MAXIMUM	MAX	SPECIFICATION(S)	SPEC(S)
				MAXIMUM OVERCURRENT PROTECTION	MOCP	SPRINKLER	SPRINK.
CAST IRON	CI	FIRE DEPARTMENT CONNECTION	FDC			SQUARE	SQ.
CENTER	CTR	FIRE PROTECTION	FP	MECHANICAL	MECH	SQUARE FEET	SF
CLEAN OUT	CO	FINISH(ED)	FIN.('D)	MEDIUM PRESSURE GAS	MPG	STAINLESS STEEL	SST
COLD WATER	CW	FINISH FLOOR	FF	MEZZANINE	MEZZ	STEEL	STL.
CONCRETE	CONC.	FIXTURE	FIXT.	MINIMUM	MIN	STORM DRAIN	SD
CONCRETE MASONRY UNIT	CMU	FIXTURE UNIT	FU	MINIMUM CURRENT AMPACITY	MCA	SUPPLY FIXTURE UNIT	SFU
CONDENSATE DRAIN	COND	FLEXIBLE	FLEX	MISCELLANEOUS	MISC.		
CONDENSING UNIT	CU	FLOOR	FL.	MOP SINK	MS	TEMPORARY	TEMP.
CONSTRUCTION	CONST.	FLOOR CLEAN OUT	FCO	MULTIPLE	MULT.	TEXAS	TX
CORRIDOR	CORR.	FLOOR DRAIN	FD			THROUGH	THRU.
CUBIC FOOT PER HOUR	CFH	FLOOR SINK	FS	NOT APPLICABLE	N/A	TOTAL DEVELOPED LENGTH	TDL
		FLUSH VALVE	FV	NATURAL	NAT.	TO FLOOR ABOVE	TFA
DEGREE FAHRENHEIT	DegF.	FOOT/FEET	FT	NATURAL GAS	NG	TO FLOOR BELOW	TFB
DEMOLISH(ITION)	DEMO	FROM FLOOR ABOVE	FFA	NOMINAL	NOM.	TOP OF STEEL	TOS
DETAIL	DET.	FROM FLOOR BELOW	FFB	NON-FREEZE WALL HYDRANT	NWH	TRENCH DRAIN	TD
DIAMETER	DIA./Ø			NORTH	N	TYPICAL	TYP.
DISCONNECT	DISC.	GALLONS PER FLUSH	GPF	NOT IN CONTRACT	N.I.C.		
DISHWASHER BOX	DB	GALLONS PER MINUTE	GPM	NOT TO SCALE	N.T.S.	UNDERGROUND	UG
DIVISION	DIV.	GALVANIZED	GALV.	NUMBER	NO./#	UNDERWRITER LABORATORIES INC.	UL
DOMESTIC COLD WATER	DCW	GAS HEATER	GH				
DOMESTIC HOT WATER	DHW	GAS PIPING	G	OUTSIDE AIR	OA	UNIT HEATER	UH
DOMESTIC HOT WATER RECIRCULATION	DHWR	GAS PRESSURE REGULATOR	GPR	OUTLET	OUT.	UNLESS NOTED OTHERWISE	U.N.O.
DOUBLE	DBL.	GAUGE	GA.	OVERFLOW ROOF DRAIN	ORD	URINAL	UR
DOUBLE CLEAN OUT	DCO	GENERAL CONTRACTOR	G.C.	OVERFLOW STORM DRAIN	OSD	UTILITY	UTIL.
DOWN	DN	GREASE WASTE	GW				
DOWNSPOUT BOOT	DSB	GROUND	GND.	PANEL	PNL.	VENT	V
DOWNSPOUT NOZZLE	DSN	GROUND CLEANOUT	GCO	PARTIAL	PART.	VENT THROUGH ROOF	VTR
DRAINAGE FIXTURE UNIT	DFU	GYPSUM BOARD	GYP.	PHASE	PH./Ø	VOLUME	VOL.
DRAWING(S)	DWG(S)			POINT OF CONNECTION	POC		
		HEATER	HTR	POLYVINYL CHLORIDE	PVC	WALL CLEANOUT	WCO
EACH	EA.	HEAT PUMP UNIT/HORSEPOWER	HP	POUND(S)	LBS	WASTE WATER	WW
EFFICIENCY	EFF.	HEATING, VENTILATION & AIR CONDITIONING	HVAC	POUNDS PER SQUARE INCH	PSI		
ELECTRIC(AL)	ELEC.					WATER CLOSET	WC
ELECTRIC WATER COOLER	EWC	HOSE BIBB	HB	QUANTITY	QTY.	WATER HAMMER ARRESTOR	WHA
ELEVATION	ELEV.	HOT WATER	HW			WATER HEATER	WH
ELEVATOR SUMP PUMP WASTE	EW	HOT WATER RETURN	HWR	RADIUS	RAD	WEIGHT	WT.
EMERGENCY EYE WASH	EEW			REFRIGERATOR BOX	RB	WITH	W/
EMERGENCY EYE WASH & SHOWER	EEW/S	INFORMATION	INFO	RECESSED	REC.	WITHOUT	W/O
EMERGENCY MIXING VALVE	EMV	INLET	IN.	REINFORCE(ING)(ED)(MENT)	REINF.		
		INSPECTION PORTAL	IP	RETURN AIR	RA		
		INSULATION	INSUL.	REQUIRE(D)	REQ.('D)		

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

PLUMBING LINE TYPES

- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RETURN PIPING
- WASTE WATER PIPING
- VENT PIPING
- STORM PIPING

PLUMBING SYMBOLS

	POINT OF CONNECTION
FCO	FLOOR CLEAN OUT - SEE SCHEDULE
DCO	DOUBLE EXTERIOR CLEAN OUT
CO	CLEAN OUT
WCO	WALL CLEAN OUT
FD	FLOOR DRAIN
WHA	WATER HAMMER ARRESTER
HB	HOSE BIBB
NWH	NON-FREEZE WALL HYDRANT
FS	FLOOR SINK
	BALL VALVE
	CHECK VALVE
	FLOW CONTROL VALVE
	GAS COCK
	GAS REGULATOR
	GATE VALVE
	OS&Y GATE VALVE
	STRAINER
	INSPECTION PORTAL
	PIPING UP
	PIPING DOWN
	PIPING TEE DOWN
BFP	BACKFLOW PREVENTER

NOTE: NOT ALL SYMBOLS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

PLUMBING RISER SYMBOLS

- RISER COLD WATER GENERAL
- RISER COLD/HOT WATER LAVATORY
- RISER COLD WATER HOSE BIBB
- RISER WASTE WATER WATER CLOSET
- RISER WASTE WATER LAVATORY
- RISER WASTE WATER FLOOR DRAIN
- RISER WASTE WATER FLOOR SINK
- RISER WASTE WATER HUB DRAIN
- RISER WASTE WATER VENT THROUGH ROOF

DRAFTING SYMBOLS

PLAN/DETAIL DESIGNATION

1 PLAN NAME/DETAIL TITLE
SCALE

SCALE
VIEW NUMBER
VIEW NUMBER
SHEET NUMBER

SHEET LIST - PLUMBING

Sheet Number	Sheet Name
P0.1	PLUMBING GENERAL NOTES
P2.0	PLUMBING PLAN - WASTE AND VENT - OVERALL
P2.1	PLUMBING PLAN - WASTE AND VENT - SEGMENT A
P2.2	PLUMBING PLAN - WASTE AND VENT - SEGMENT B
P2.3	PLUMBING PLAN - WASTE AND VENT - SEGMENT C
P2.4	PLUMBING PLAN - WASTE AND VENT - SEGMENT D
P2.5	PLUMBING PLAN - WASTE AND VENT - SEGMENT E
P2.6	PLUMBING PLAN - WASTE AND VENT - SEGMENT F
P2.7	PLUMBING PLAN - WASTE AND VENT - SEGMENT G
P2.8	PLUMBING PLAN - WASTE AND VENT - SEGMENT H
P2.9	PLUMBING PLAN - WASTE AND VENT - SEGMENT K
P2.10	PLUMBING PLAN - DOMESTIC WATER- OVERALL
P2.11	PLUMBING PLAN - DOMESTIC WATER - SEGMENT A
P2.12	PLUMBING PLAN - DOMESTIC WATER - SEGMENT B
P2.13	PLUMBING PLAN - DOMESTIC WATER - SEGMENT C
P2.14	PLUMBING PLAN - DOMESTIC WATER - SEGMENT D
P2.15	PLUMBING PLAN - DOMESTIC WATER - SEGMENT E
P2.16	PLUMBING PLAN - DOMESTIC WATER - SEGMENT F
P2.17	PLUMBING PLAN - DOMESTIC WATER - SEGMENT G
P2.18	PLUMBING PLAN - DOMESTIC WATER - SEGMENT H
P2.19	PLUMBING PLAN - DOMESTIC WATER - SEGMENT K
P2.20	PLUMBING PLAN - NATURAL GAS - OVERALL
P2.21	PLUMBING PLAN - NATURAL GAS - SEGMENT A
P2.22	PLUMBING PLAN - NATURAL GAS - SEGMENT B
P2.23	PLUMBING PLAN - NATURAL GAS - SEGMENT C
P2.24	PLUMBING PLAN - NATURAL GAS - SEGMENT D
P2.25	PLUMBING PLAN - NATURAL GAS - SEGMENT E
P2.26	PLUMBING PLAN - NATURAL GAS - SEGMENT F
P2.27	PLUMBING PLAN - NATURAL GAS - SEGMENT G
P2.28	PLUMBING PLAN - NATURAL GAS - SEGMENT H
P2.29	PLUMBING PLAN - NATURAL GAS - SEGMENT K
P2.30	PLUMBING PLAN - COMPRESSED AIR - OVERALL
P2.31	PLUMBING PLAN - COMPRESSED AIR - SEGMENT A
P2.32	PLUMBING PLAN - COMPRESSED AIR - SEGMENT B
P2.33	PLUMBING PLAN - COMPRESSED AIR - SEGMENT C
P2.34	PLUMBING PLAN - COMPRESSED AIR - SEGMENT D
P2.35	PLUMBING PLAN - COMPRESSED AIR - SEGMENT E
P2.36	PLUMBING PLAN - COMPRESSED AIR - SEGMENT F
P2.37	PLUMBING PLAN - COMPRESSED AIR - SEGMENT G
P2.38	PLUMBING PLAN - COMPRESSED AIR - SEGMENT H
P2.39	PLUMBING PLAN - COMPRESSED AIR - SEGMENT K
P2.47	PLUMBING PLAN - PROCESS PIPING - SEGMENT G
P2.50	PLUMBING ROOF PLAN
P3.1	PLUMBING RISERS
P3.2	PLUMBING RISER
P3.3	PLUMBING RISERS
P3.4	PLUMBING RISER
P3.5	PLUMBING RISER
P3.6	PLUMBING RISERS
P3.7	PLUMBING RISERS
P3.8	PLUMBING RISERS
P4.1	PLUMBING SCHEDULES
P4.2	PLUMBING SCHEDULES
P4.3	PLUMBING SCHEDULES
P5.1	PLUMBING DETAILS
P5.2	PLUMBING DETAILS
P5.3	PLUMBING DETAILS
P5.4	PLUMBING DETAILS
P5.5	PLUMBING DETAILS

PLUMBING GENERAL NOTES

A. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATION OF FIXTURES & EQUIPMENT.

B PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PLUMBING SYSTEMS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED AND REQUIRED BY CODE.

C. RUN ALL WASTE AND VENT PIPING WITH 2 PERCENT MINIMUM SLOPE.

D. VENT PIPING SHALL BE 2" MINIMUM UNLESS OTHERWISE NOTED.

E. UNLESS OTHERWISE NOTED, ELEVATIONS AS SHOWN ON THE DRAWINGS ARE THE MIDDLE OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING.

F. ADJUST SEWER INVERTS TO KEEP THE TOPS OF PIPES IN LINE WHERE THE PIPE'S SIZE CHANGES.

G. MAINTAIN A MINIMUM OF 2 FEET OF GROUND COVER OVER ALL UNDERGROUND WATER MAINS AND UNDERGROUND SEWERS AND DRAINS.

H. PROVIDE SHUTOFF VALVES IN ALL DOMESTIC WATER PIPING SYSTEM BRANCHES.

I. UNLESS OTHERWISE NOTED, ALL DOMESTIC COLD WATER PIPING SHALL BE A MINIMUM OF 3/4" SIZE.

J. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE SLAB, WITH SPACE FOR INSULATION IF REQUIRED.

K. INSTALL PIPING SO ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

L. WHERE DOMESTIC COLD WATER PIPING DROPS INTO A PIPE CHASE, THE SIZE SHOWN FOR THE PIPE DROPS SHALL BE USED TO THE LAST FIXTURE.

M. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

N. ALL PIPING SHALL CLEAR DOORS AND WINDOWS.

O. ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.

P. UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FT. OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

Q. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

R. ALL VALVES AND STRAINERS SHALL BE THE FULL SIZE OF THE PIPE BEFORE REDUCING THE SIZE TO MAKE CONNECTIONS TO THE EQUIPMENT.

S. PROVIDE ALL PLUMBING FIXTURES AND EQUIPMENT WITH ACCESSIBLE STOPS.

T. UNLESS OTHERWISE NOTED, DRAINS SHALL BE INSTALLED AT THE LOW POINT OF AREAWAYS AND FLOORS, ETC.

U. PROVIDE CLEANOUTS IN SANITARY SYSTEMS AT ENDS OF RUNS, AT CHANGES IN DIRECTION, NEAR THE BASE OF STACKS, NO MORE THAN EVERY 75 FT. IN HORIZONTAL RUNS AND ELSEWHERE AS INDICATED.

V. ALL CLEANOUTS SHALL BE THE FULL SIZE OF THE PIPE FOR PIPE SIZES 4 IN. AND SMALLER, AND SHALL BE 4 IN. FOR PIPE SIZES LARGER THAN 4 IN.

W. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).

X. ALL VALVES SHALL BE INSTALLED SO THE VALVE REMAINS IN SERVICE WHEN THE EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.

Y. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED PRIOR TO INSTALLATION. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

Z. PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.

AA. PROVIDE BACKFLOW PREVENTERS AT ALL LOCATIONS REQUIRED BY THE LATEST ADOPTED CODES AND ORDINANCES (EXAMPLE: ICE MACHINES).

AB. DIRT LEGS AND FLEXIBLE GAS HOSE SHALL BE REQUIRED AT ALL CONNECTIONS TO NATURAL GAS APPLIANCES AND POINTS OF USE.

AC. SANITARY CLEANOUTS IN OR NEAR RESTROOMS SHALL BE A MINIMUM OF 6" ABOVE THE FLOOD RIM OF THE SURROUNDING WATER CLOSET FIXTURES.

AD. ALL WATER AND COMPRESSED AIR PIPING SHALL BE SLOPED AND ROUTED TO ALLOW DRAINAGE. ALL PIPING SHALL BE DRAINABLE.

AE. CONTRACTOR SHALL PROVIDE A TRENCHING PLAN, SEALED BY A CIVIL ENGINEER, FOR TRENCHES DEEPER THAN FIVE FEET.

AF. ASBESTOS IS PROHIBITED FOR ALL MATERIALS AND EQUIPMENT. THIS INCLUDES ASBESTOS IN ANY FORM. CONTRACTOR SHALL PROVIDE CERTIFICATION/AFFADAVIT FORM THAT NO ASBESTOS IS INCLUDED IN THE PROJECT.

AG. THE FOLLOWING PIPE SIZES ARE PROHIBITED FOR USE IN ANY SYSTEM: 1-1/4", 2-1/4", 3-1/2" AND 5".

AH. MINIMUM PIPING SIZES FOR ALL SYSTEMS SHALL BE 3/4". FAUCETS WITH SMALLER CONNECTION SIZES SHALL HAVE TRANSITIONS AT THE POINT OF CONNECTION, MINIMIZING THE LENGTH OF SMALLER PIPING.

AI. THE MAXIMUM ALLOWABLE 3/4" PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE 0'-6" FOR PUBLIC LAVATORY FAUCETS AND 21'-0" FOR ALL OTHER FIXTURES AND APPLIANCES. THE MAXIMUM ALLOWABLE 1/2" PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPPLY PIPE SHALL BE 2'-0" FOR PUBLIC LAVATORY FAUCETS AND 43'-0" FOR ALL OTHER FIXTURES AND APPLIANCES.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING GENERAL NOTES

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P0.1
8001

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

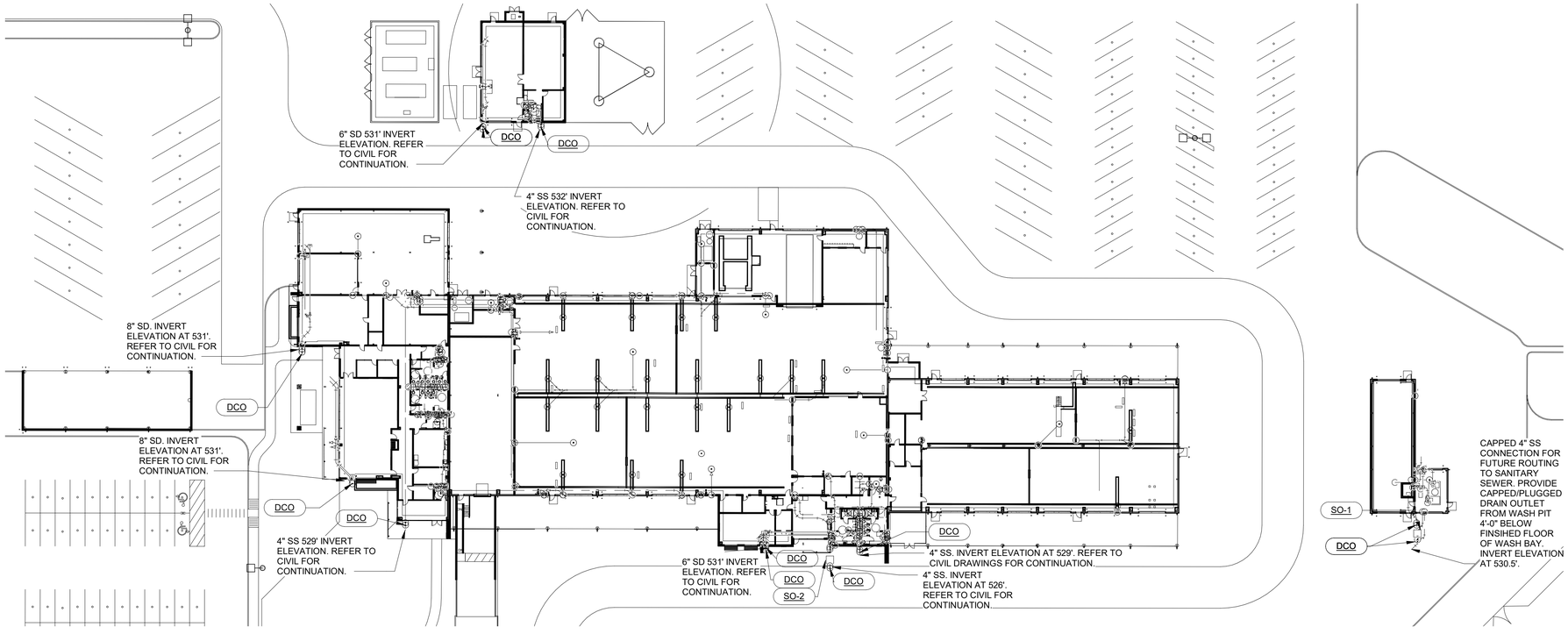
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

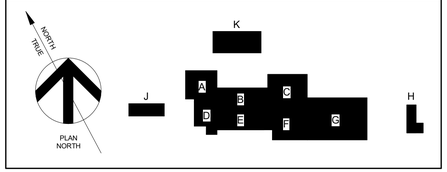
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - WASTE AND VENT - OVERALL
1" = 40'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 20' 40' 80'

PLUMBING PLAN - WASTE AND VENT - OVERALL

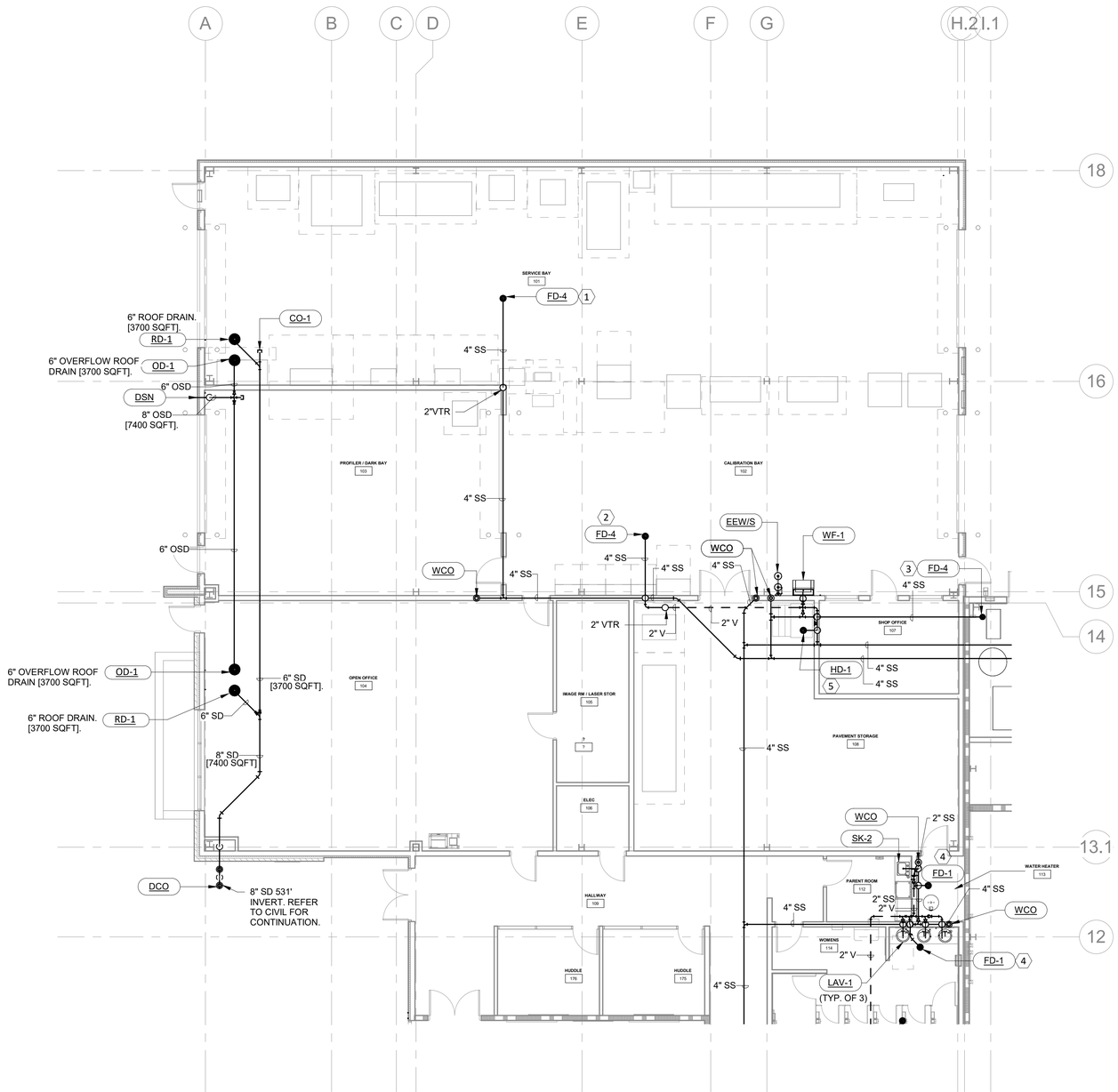
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.0
802



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

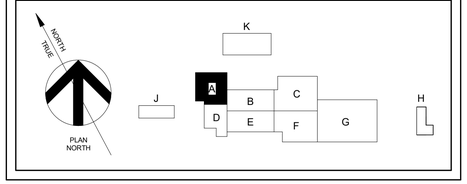
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN CALIBRATION BAY 102.
2 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN PARENT ROOM 112.
3 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN ELECTRICAL SHOP 127.
4 PROVIDE WATER SAVING TRAP PRIMER FROM LAVATORY IN WOMENS 114.
5 PROVIDE FLOOR DRAIN WIHT J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT A

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.1
8201

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

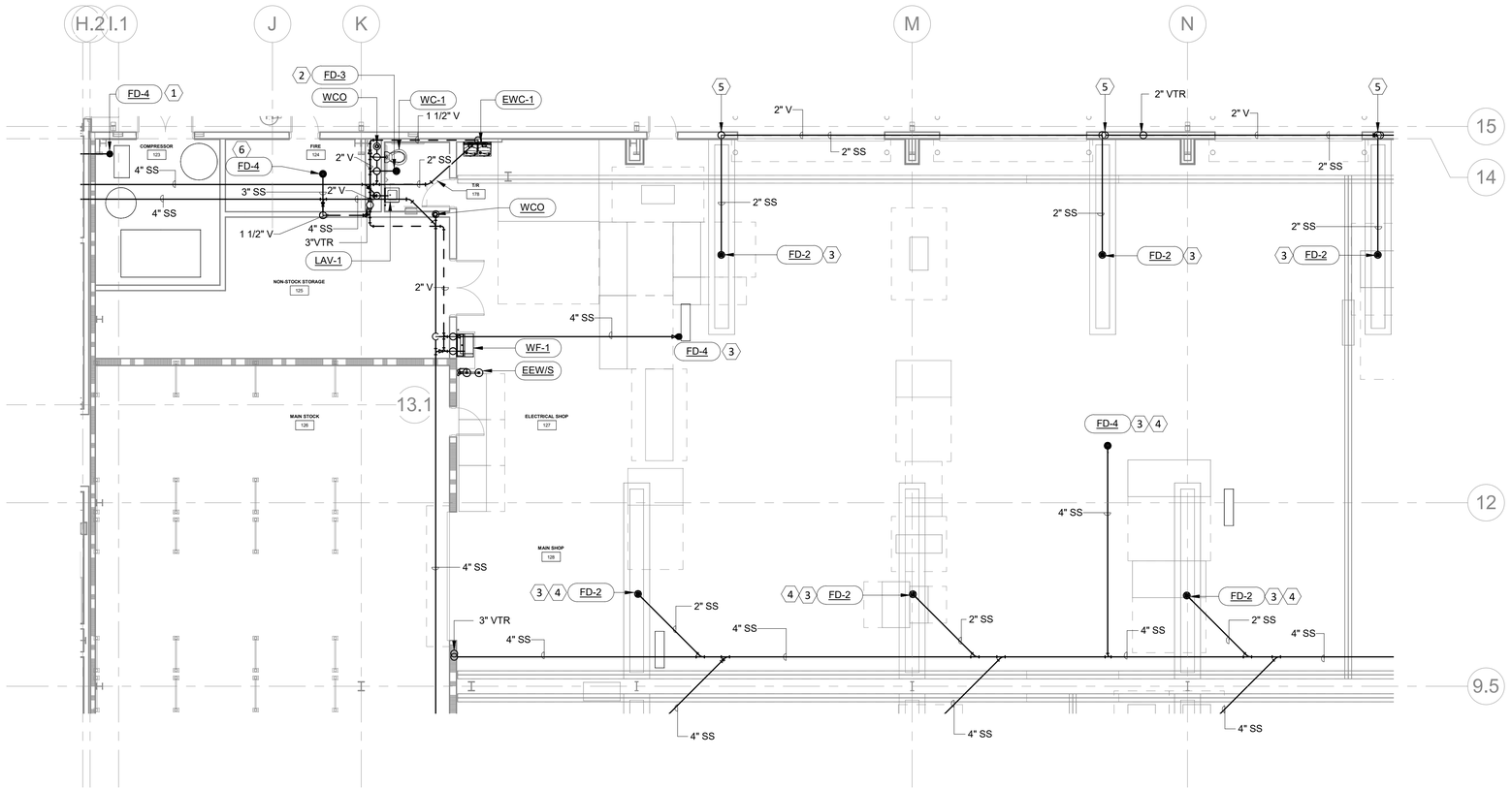
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

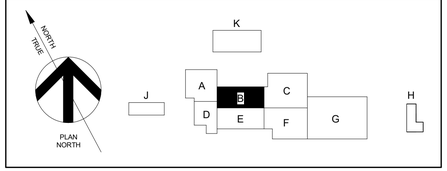
1 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN ELECTRICAL SHOP 127.
2 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN RESTROOM 178.
3 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
4 PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
5 TRANSITION WATER RECLAMATION LINE DOWN TO SUMP PUMP LOCATED IN PIT.
6 PROVIDE FLOOR DRAIN WIHT J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT B
1/8" = 1'-0"

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512-338.1101

KEY PLAN



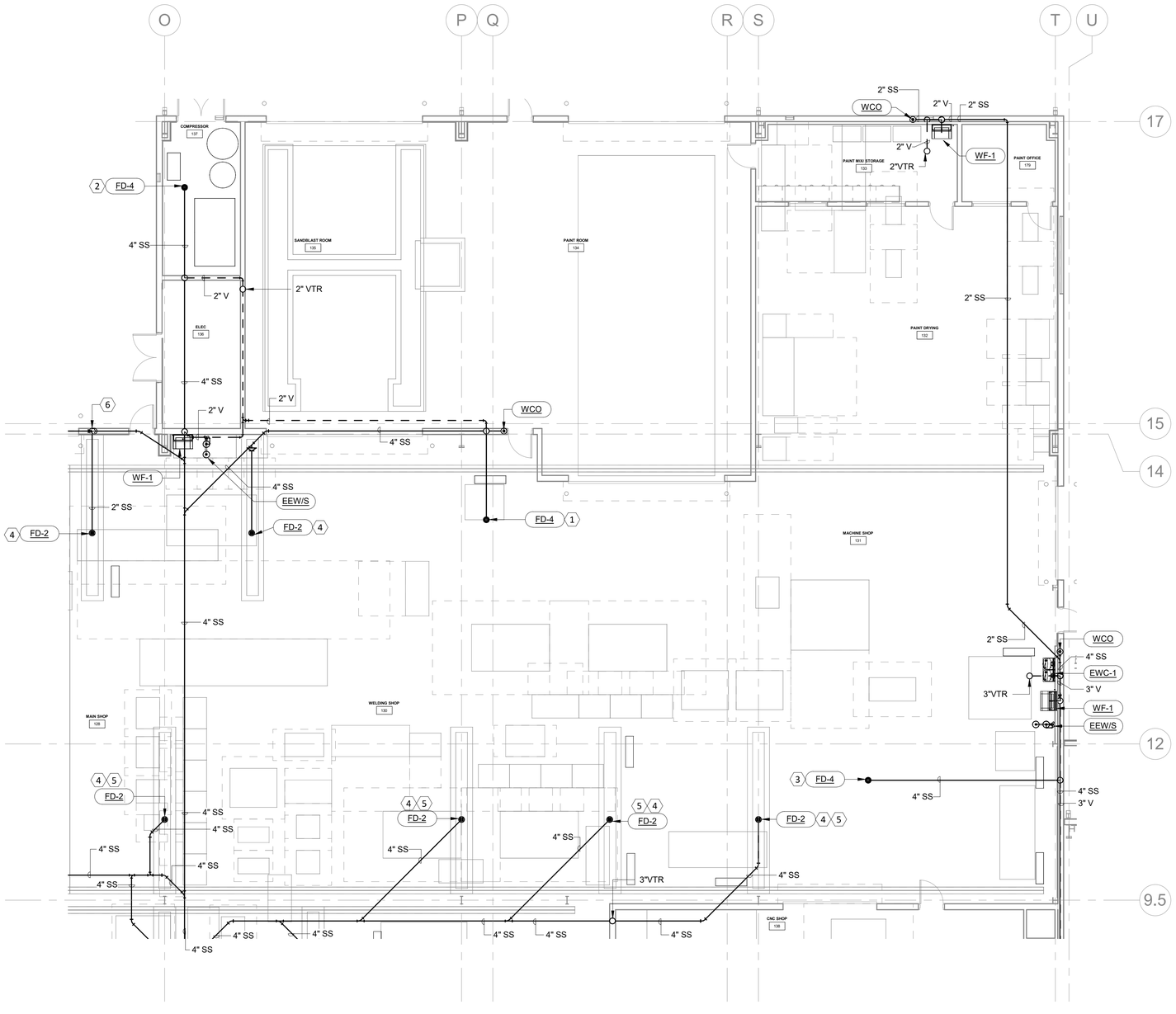
0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT B

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

P2.2
8202

GENERATED ON: 9/21/2021 12:35:00 PM C:\Users\Wilson Eland\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_Wilson Eland.rvt



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

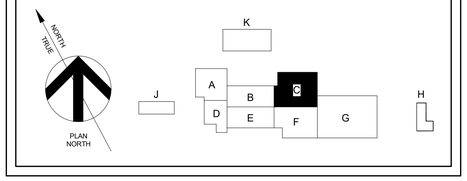
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN MAIN SHOP.
2 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN PAINT MIX/STORAGE 133.
3 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN MACHINE SHOP 131.
4 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
5 PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
6 TRANSITION WATER RECLAMATION LINE DOWN TO SUMP PUMP LOCATED IN PIT.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN

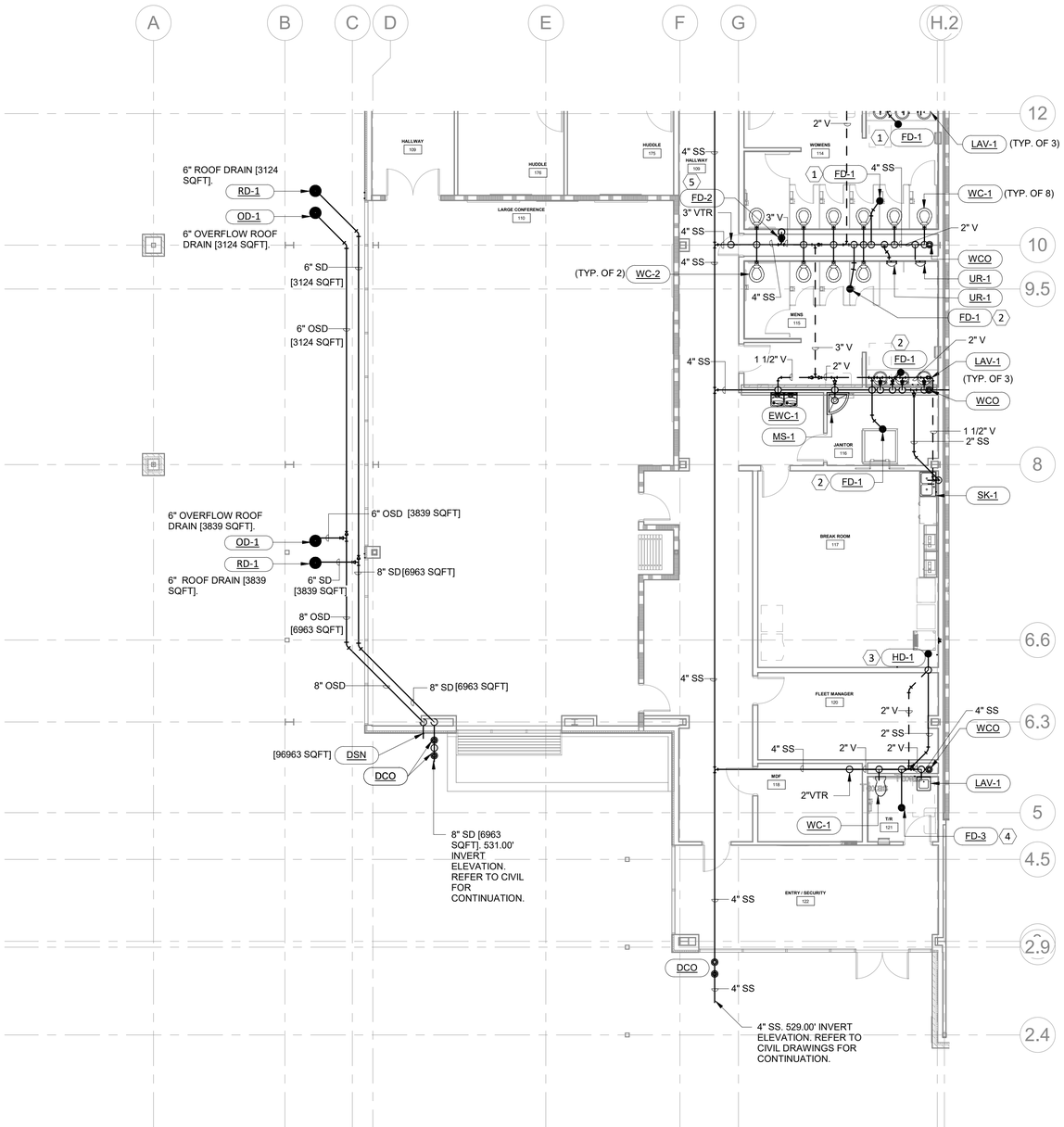


0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT C

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.3
8203



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT D
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

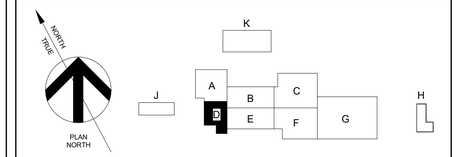
1 PROVIDE WATER SAVING TRAP PRIMER FROM LAVATORY IN WOMENS 114.
2 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN MENS 115.
3 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN BREAKROOM 117.
4 PROVIDE SUCTION HOSE WITH STRAINER AND FLOATS SHALL BE ROUTED DOWN INTO THE CONCRETE OIL SEPARATOR PIT AND SECURELY FASTENED TO RESIST MOVEMENT.
5 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



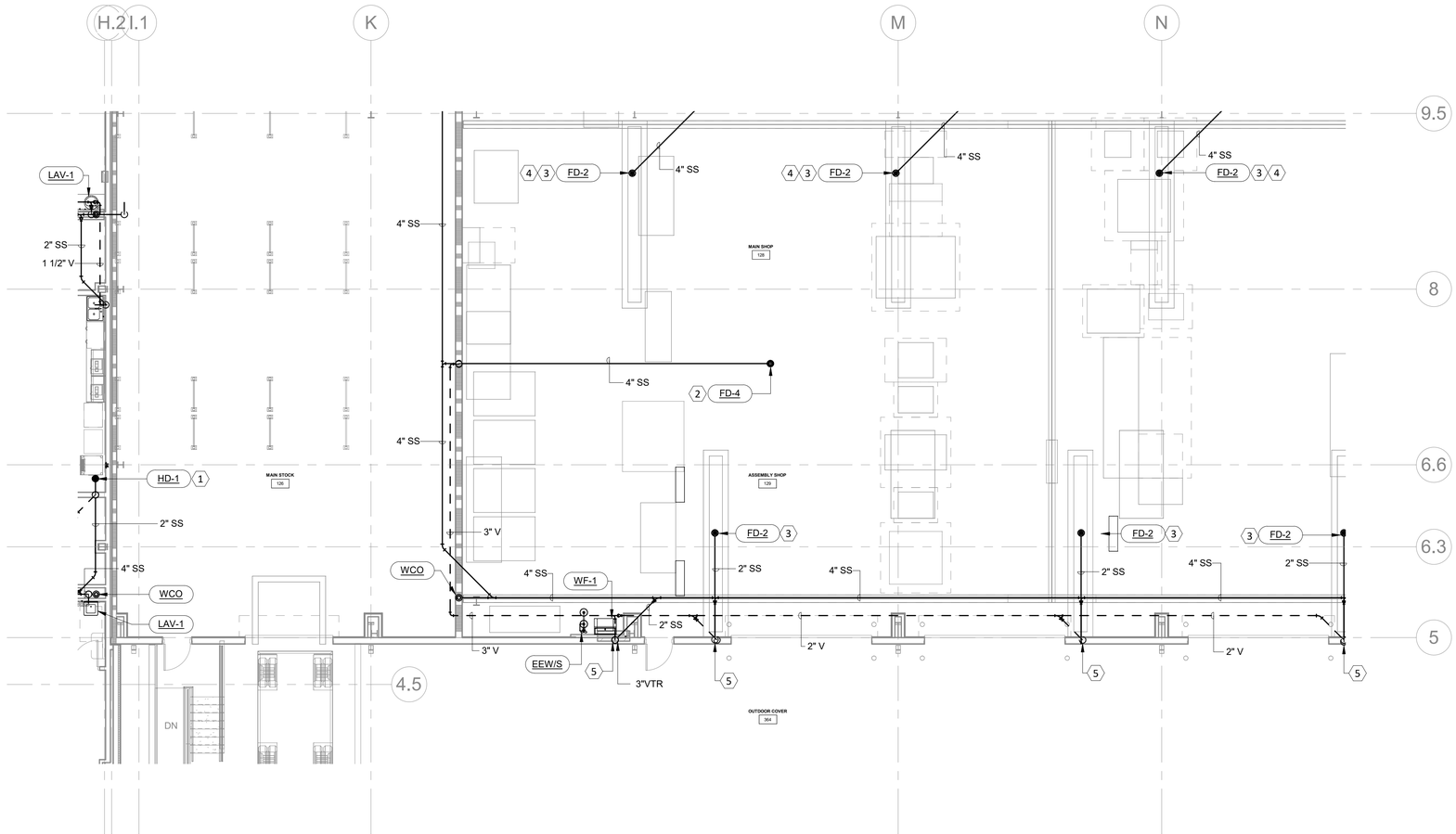
ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT D

P2.4
8204

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 10/1/2021 12:36:02 PM C:\Users\Wilson.Eland\Documents\20088.MEP-AUS.TxDOT 973 Operations Center R20_Wilson.Eland.rvt



GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1	PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN BREAKROOM 117.
2	PROVIDE WATER SAVER TRAP PRIMER FORM SINK IN ASSEMBLY SHOP 129.
3	PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
4	PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
5	TRANSITION WATER RECLAMATION LINE DOWN TO SUMP PUMP LOCATED IN PIT.

A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT E
1/8" = 1'-0"

KEY PLAN

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
PLUMBING PLAN - WASTE AND VENT - SEGMENT E

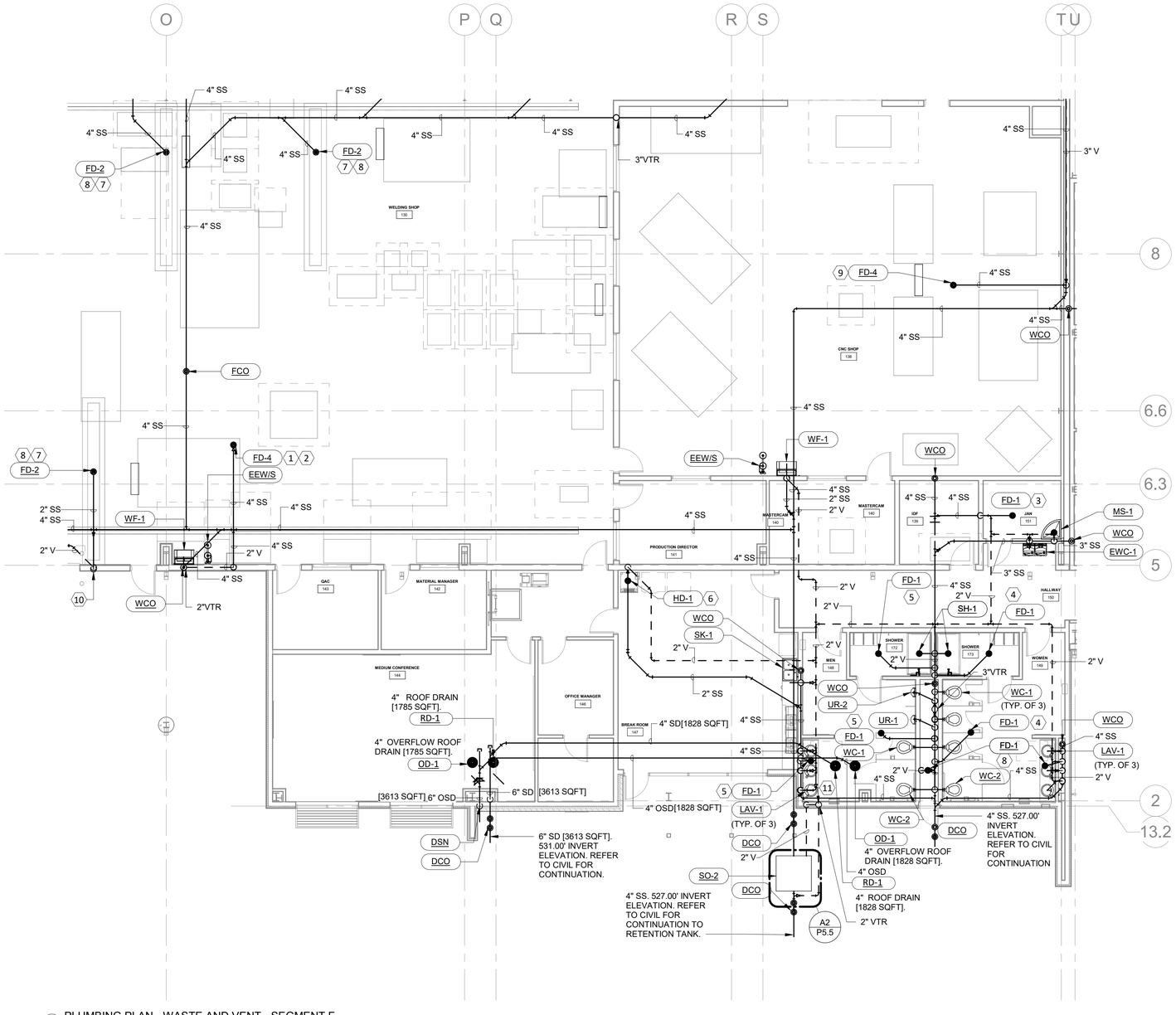
Texas Department of Transportation

EUGENE W. RAANES
62200
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.5
8205



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

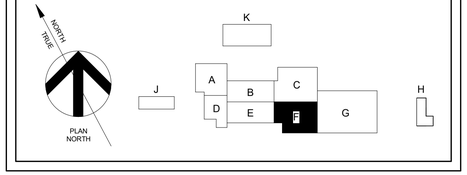
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN WELDING SHOP 130.
2 3" FLOOR DRAIN BODY. PIPING BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
3 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN CNC SHOP 138.
4 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATROY IN WOMEN 149.
5 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN MEN 148.
6 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN BREAK ROOM 147.
7 PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
8 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
9 PROVIDE FLOOR DRAIN WIHT J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
10 TRANSITION WATER RECLAMATION LINE DOWN TO SUMP PUMP LOCATED IN PIT.
11 VENT LINES SHALL COMBINE 6" B.F.F.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT F

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4170420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

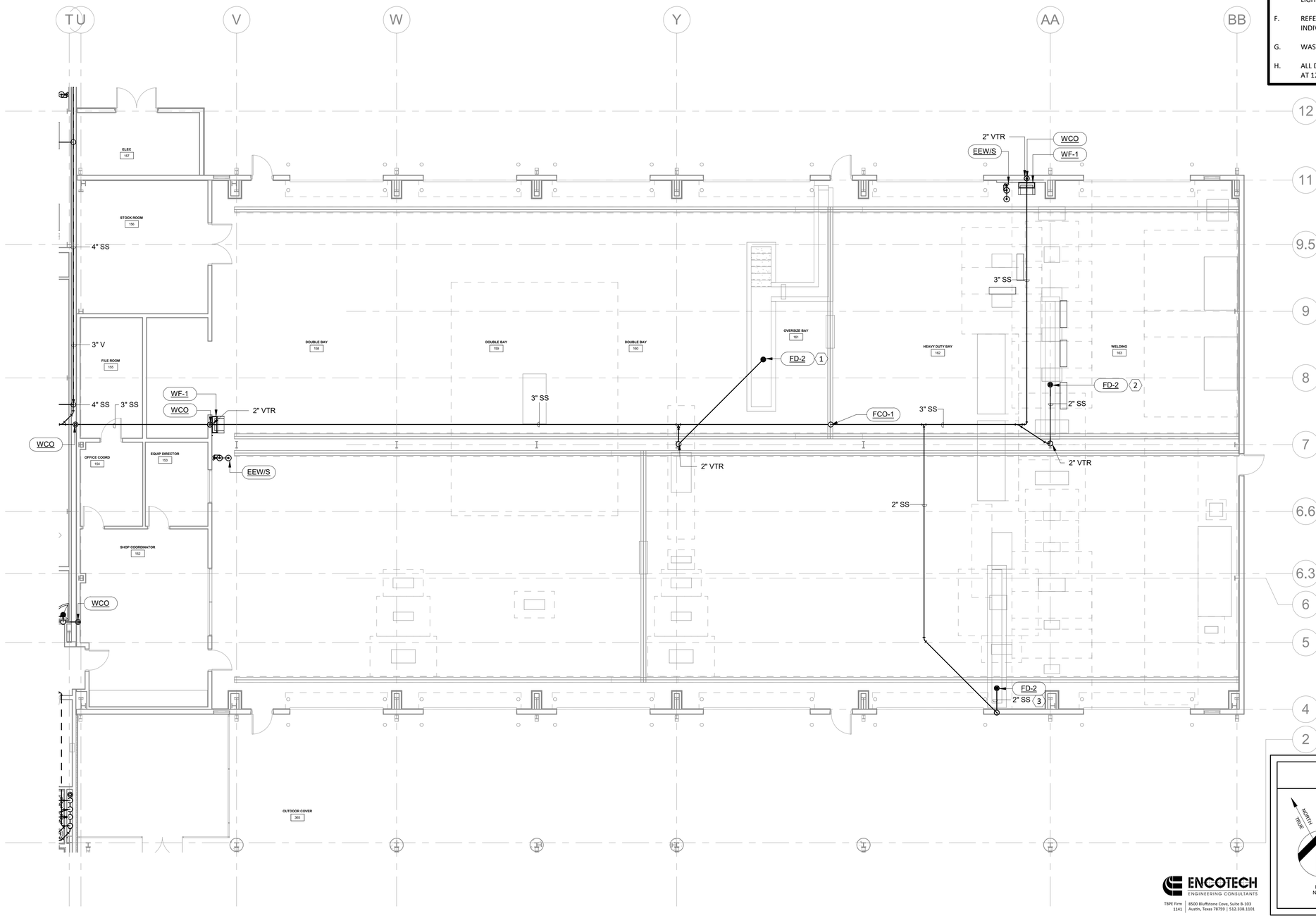
P2.6
8206

KEYNOTE LEGEND

1 PROVIDE BALL VALVE ON TRUCK FILL LINE AT 5'-0" A.F.F.. PROVIDE DRAIN VALVE AT BASE OF TRUCK FILL LINE FOR FREEZE PROTECTING THE SYSTEM.
2 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN HEAVY DUTY BAY 162.
3 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.
B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.
C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.
E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

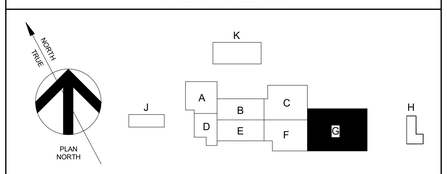


A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT G
1/8" = 1'-0"

0 4' 8' 16'

PLUMBING PLAN - WASTE AND VENT - SEGMENT G

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

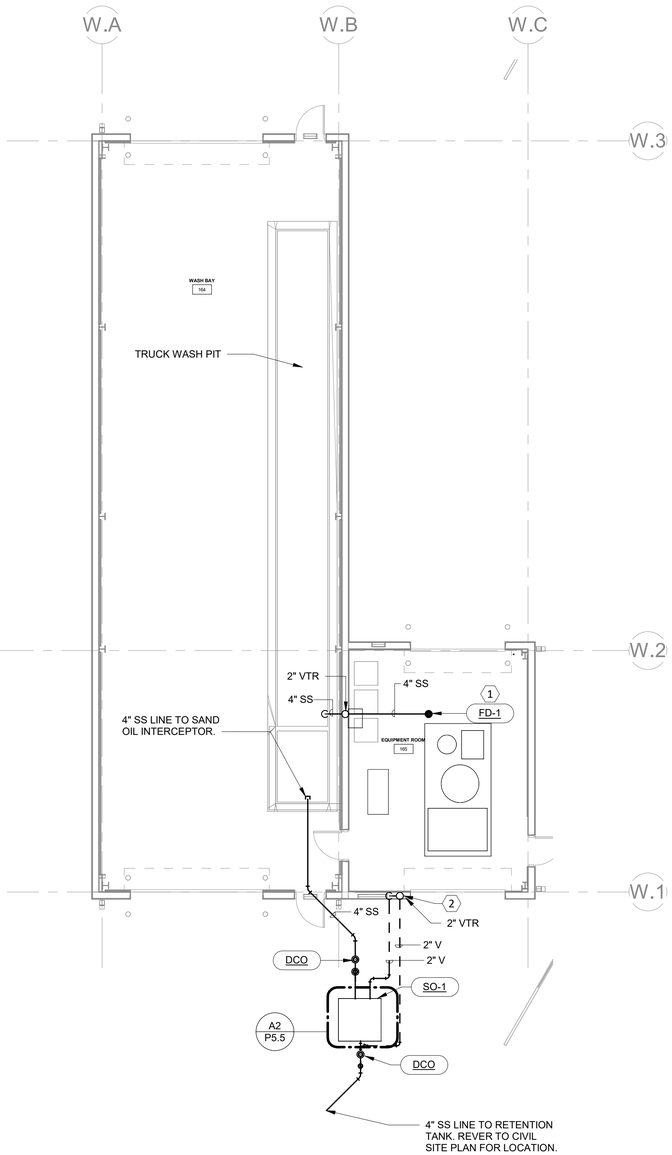
Texas Department of Transportation

EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.7
8207



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT H
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

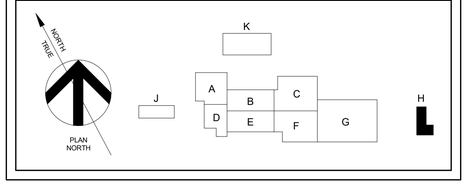
1 PROVIDE FLOOR DRAIN WIHT J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
2 VENT LINES SHALL COMBINE 6" B.F.F.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - WASTE AND VENT - SEGMENT H

P2.8
8208

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:04 PM C:\Users\Wilson Eiland\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_Wilson Eiland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

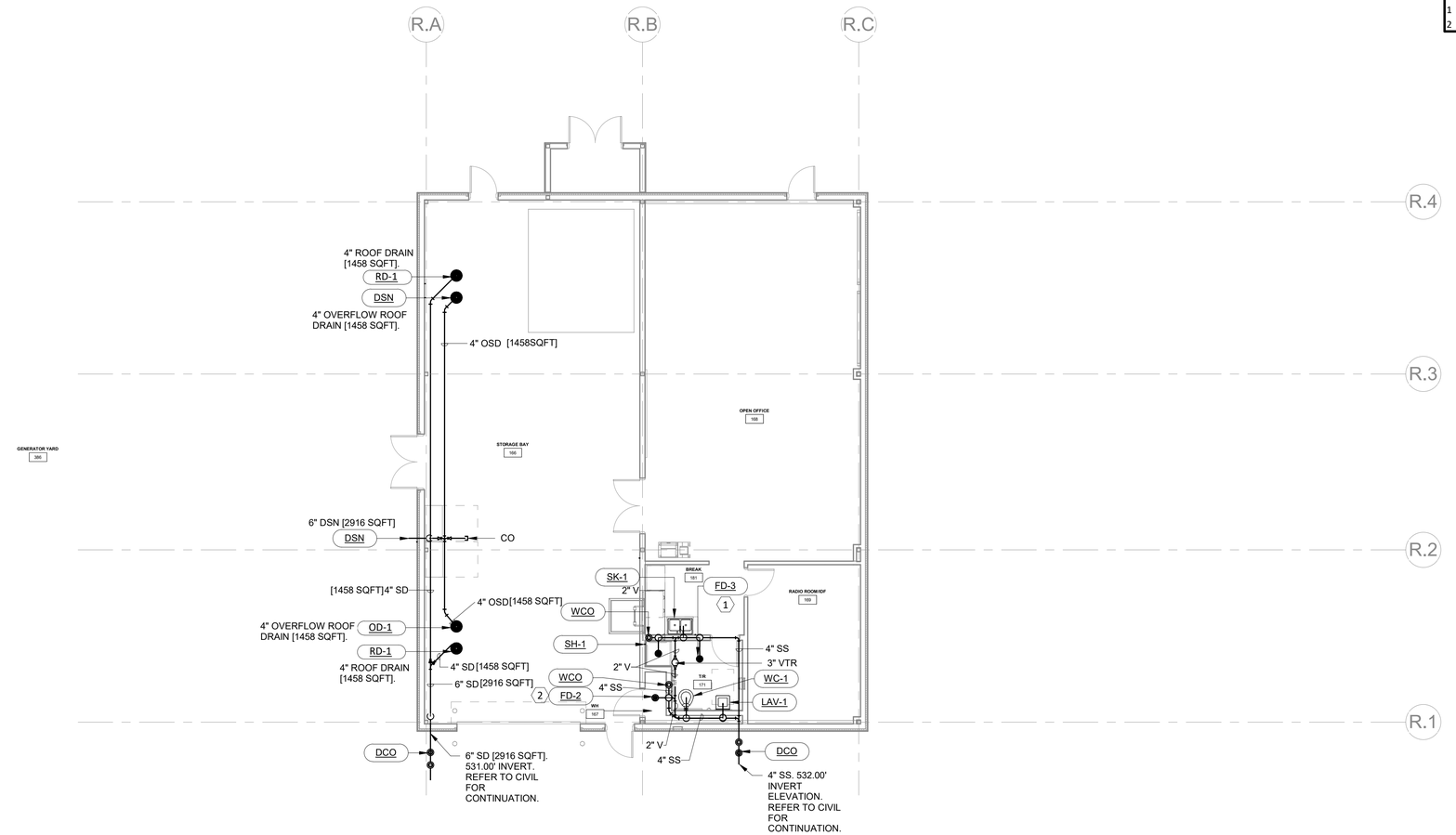
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

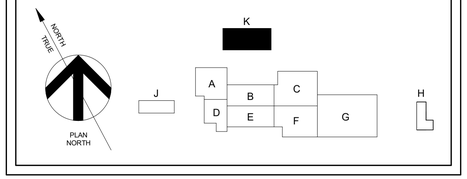
KEYNOTE LEGEND

1 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN OPEN OFFICE 168.
2 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN RESTROOM 171.



A1 PLUMBING PLAN - WASTE AND VENT - SEGMENT K
1/8" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' PLUMBING PLAN - WASTE AND VENT - SEGMENT K

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.9
8209

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

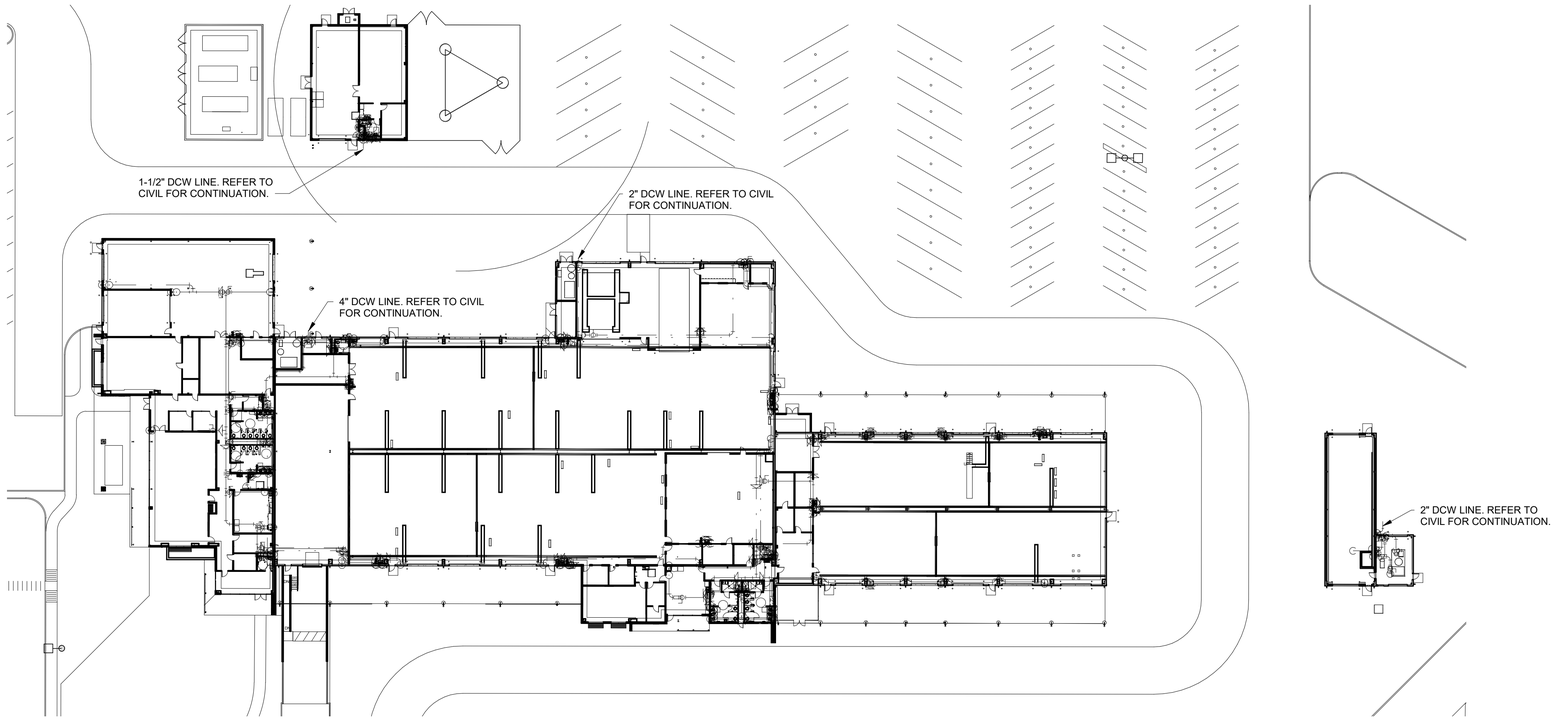
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

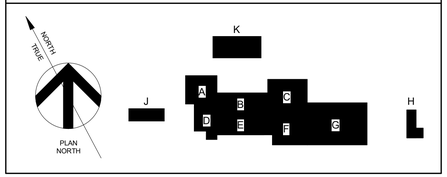
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - DOMESTIC WATER - OVERALL
1" = 40'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 20' 40' 80'

PLUMBING PLAN - DOMESTIC WATER- OVERALL

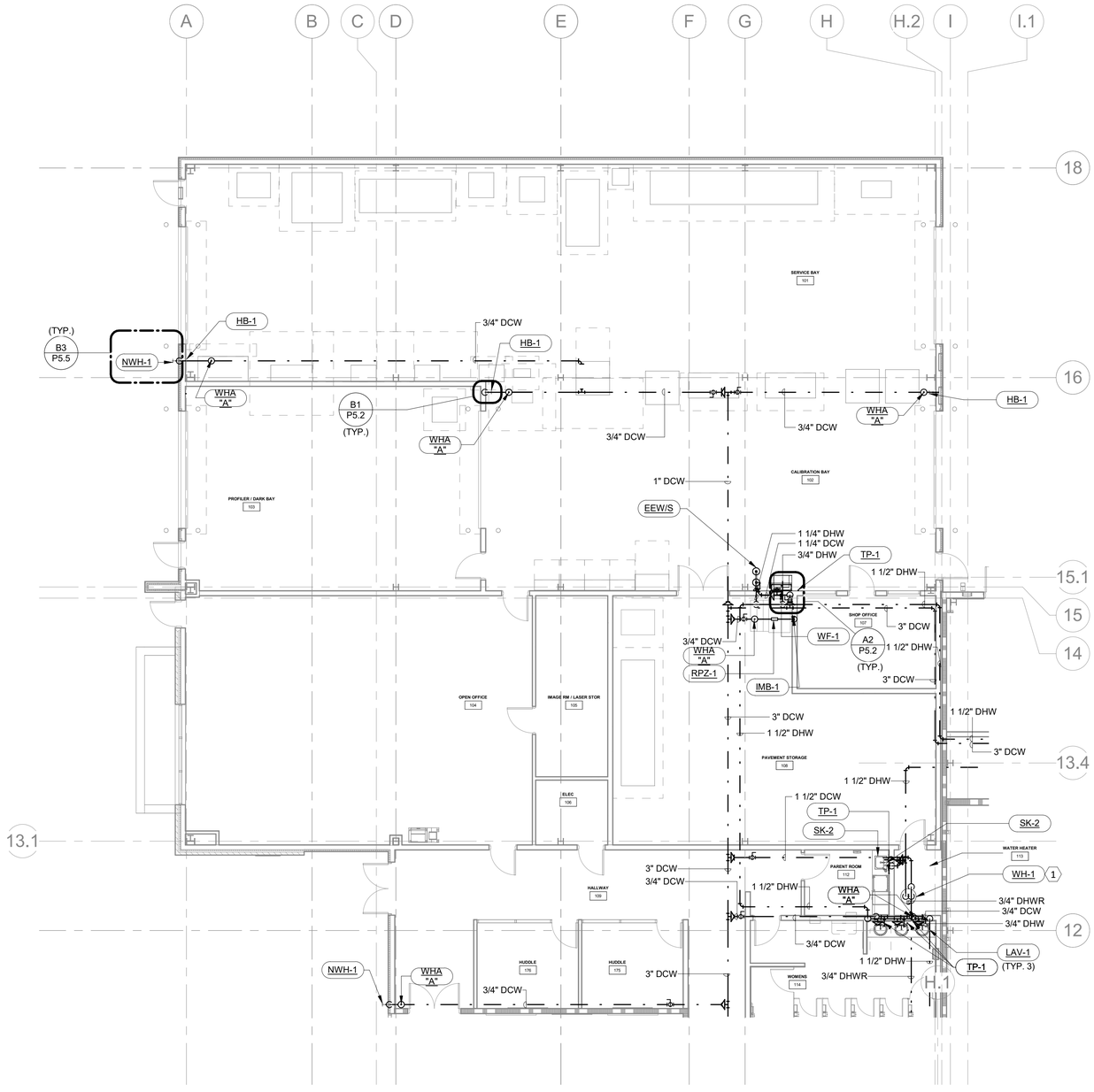
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.10
8210



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

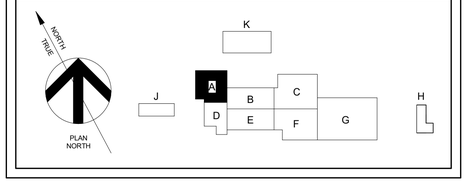
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 REFER TO WATER HEATER DETAIL ON SHEET B2/P5.1 FOR PIPING, VALVING, AND ACCESSORIES.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT A

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.11
8211

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

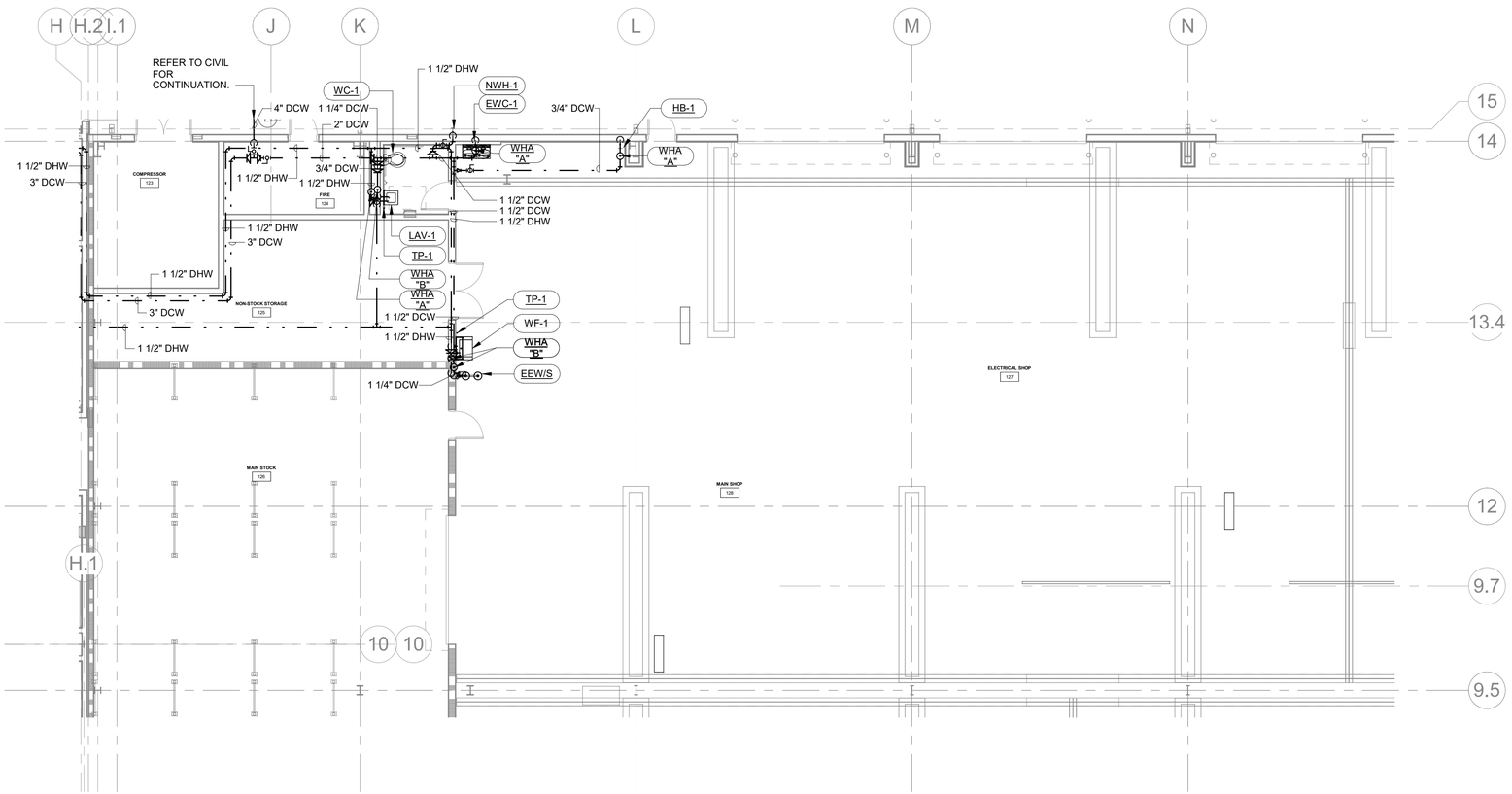
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



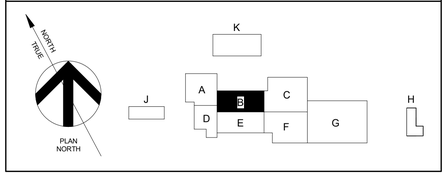
A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT B
1/8" = 1'-0"

0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT B

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

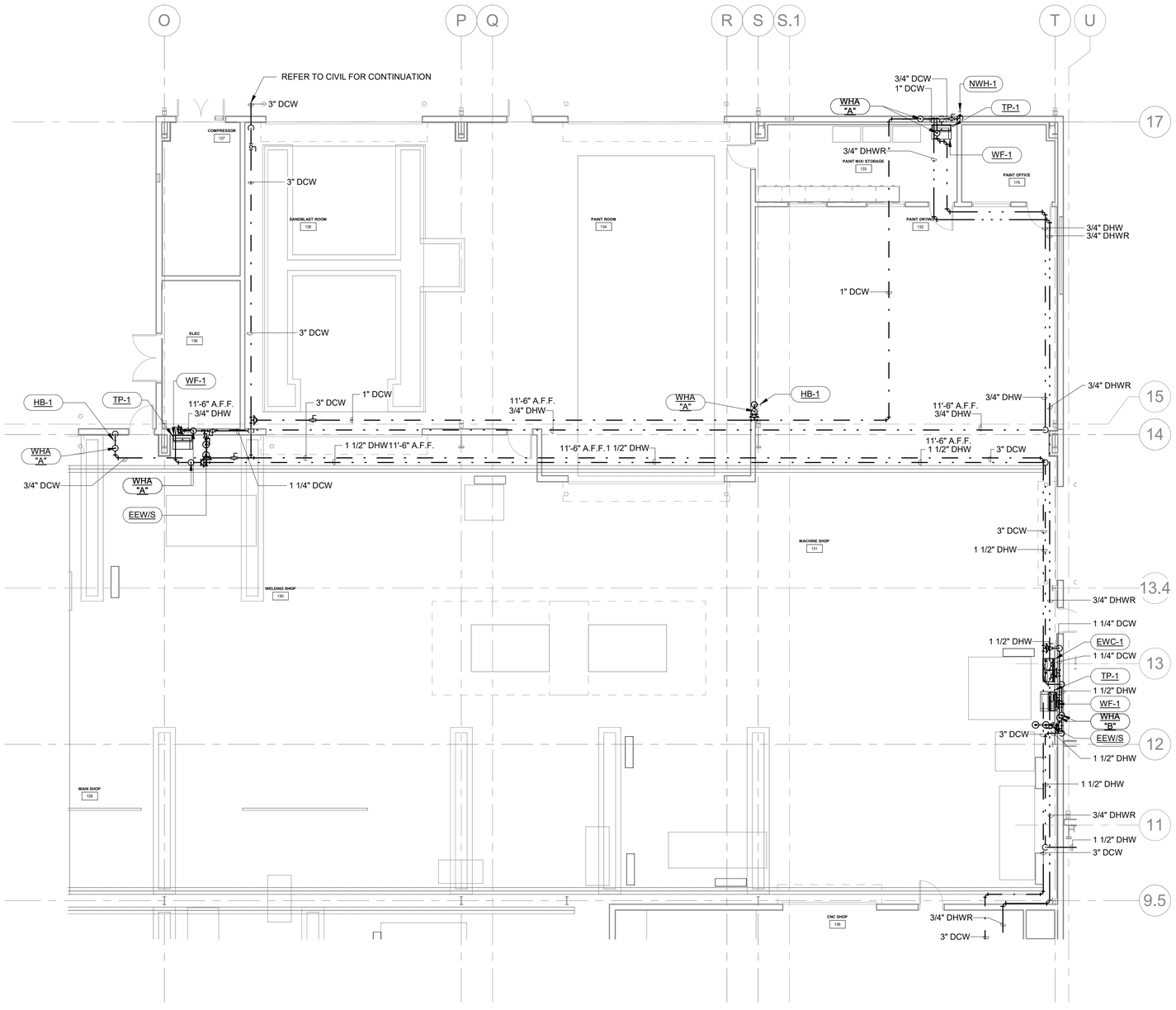
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.12
8212

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:06 PM C:\Users\Wilson Eiland\Documents\20088.MEP-AUS.TxDOT 973 Operations Center RDS_Wilson Eiland.rvt



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

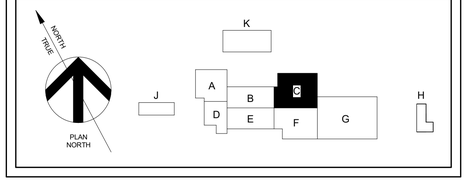
E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
PLUMBING PLAN - DOMESTIC WATER - SEGMENT C

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

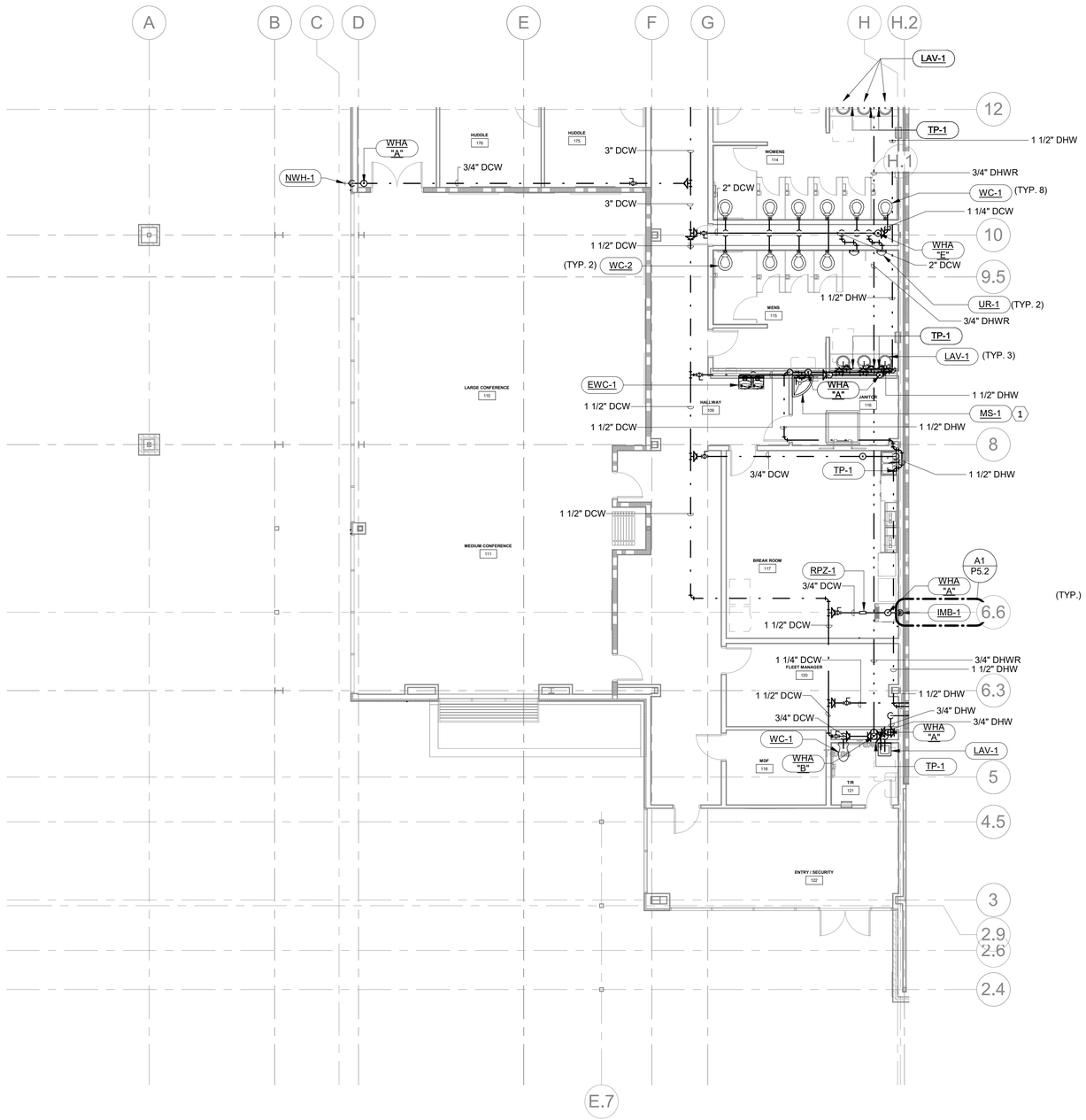
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.13
8213

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:07 PM C:\Users\Wilson.Eland\Documents\20088.MEP.AUS.TxDOT 973 Operations Center R20_Wilson.Eland.rvt



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT D
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE BALL VALVE, CHECK VALVE, AND TYPE "A" WATER HAMMER ARRESTOR ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO MOP SINK. REFER TO DETAIL B1/P5.1.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

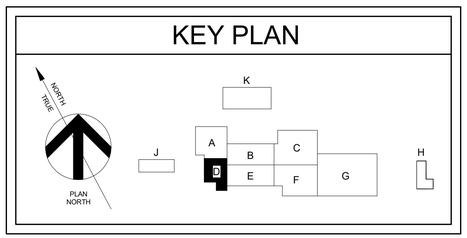
973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)

PROJECT No: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
PLUMBING PLAN - DOMESTIC WATER - SEGMENT D

P2.14
8214

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:07 PM C:\Users\Wilson.Eiland\Documents\20088.MEP_AUS_TxDOT 973 Operations Center RSD_Wilson.Eiland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

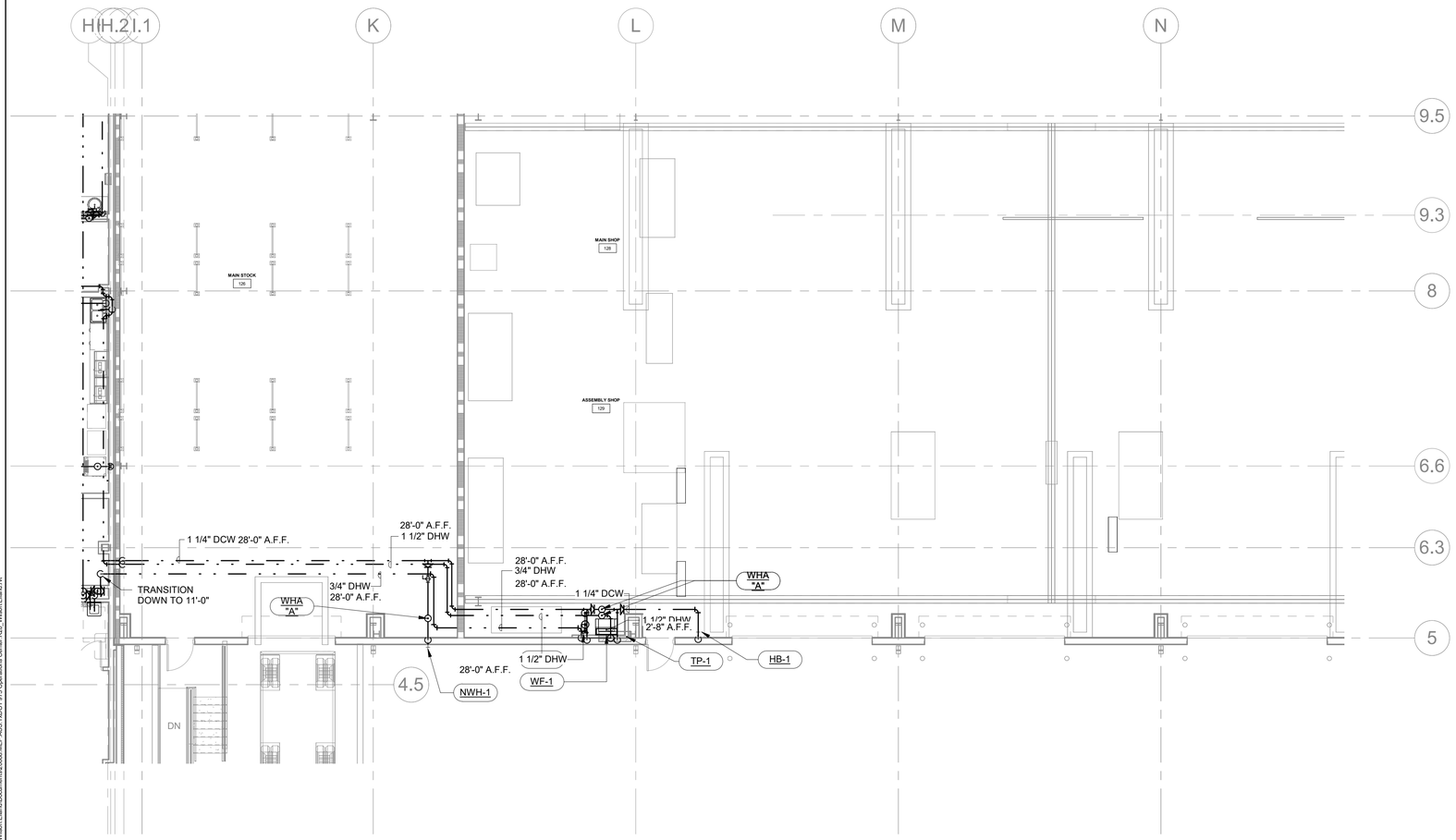
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

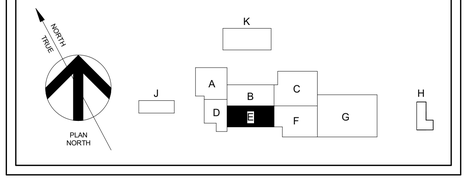
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT E
1/8" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT E

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

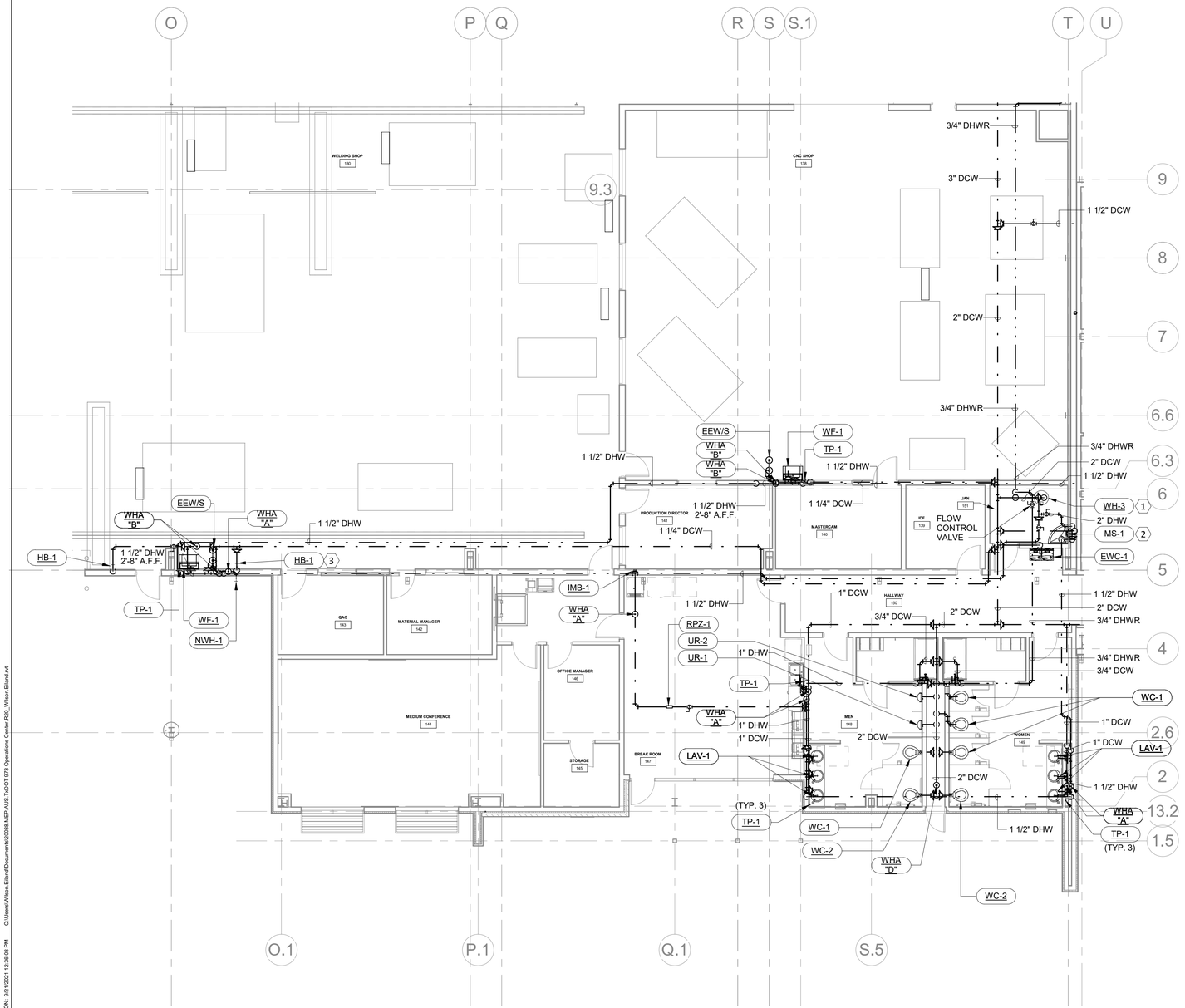
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.15
8215

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:08 PM C:\Users\Wilson.Eland\Documents\20068.MEP.AUS.TxDOT 973 Operations Center R20_Wilson.Eland.rvt



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

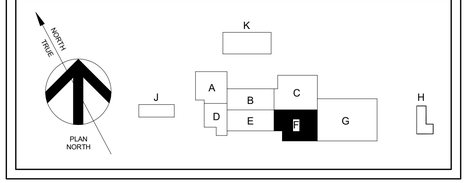
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 REFER TO WATER HEATER DETAIL ON SHEET B2/P5.1 FOR PIPING, VALVING, AND ACCESSORIES.
2 PROVIDE BALL VALVE, CHECK VALVE, AND TYPE "A" WATER HAMMER ARRESTOR ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO MOP SINK. REFER TO DETAIL B1/P5.1.
3 PROVIDE 3/4" WATER CONNECTION AND HOSE TO PLASMA BURN TABLE. ROUTE HOSE TIGHT TO SLAB. REFER TO ARCHITECTURAL EQUIPMENT PLANS FOR PLASMA TABLE LOCATION.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT F

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.16
8216

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

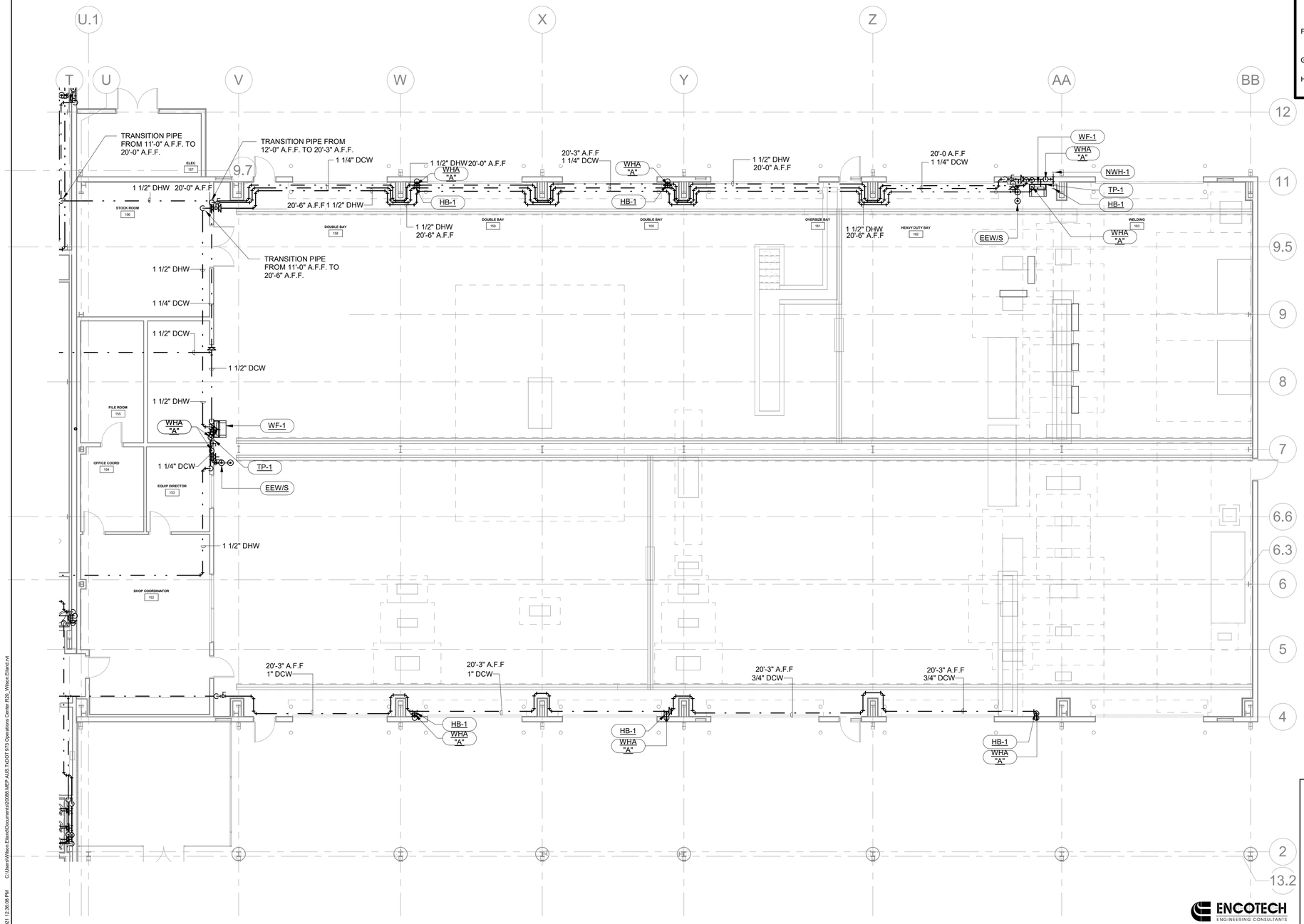
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

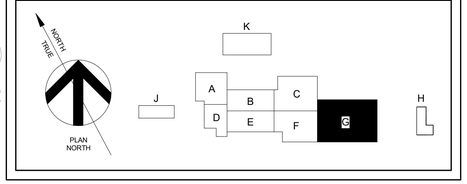
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT G
1/8" = 1'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512-338.1101

0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT G

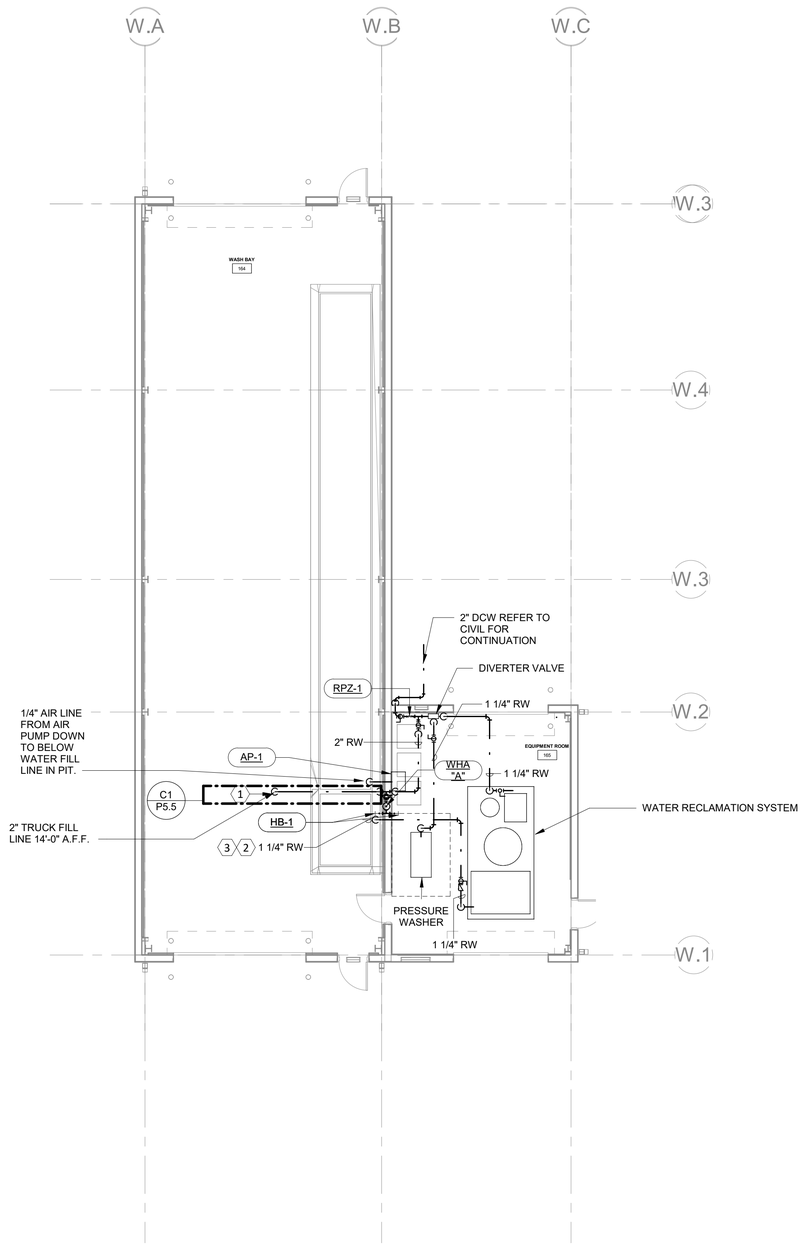
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.17
8217



A1 PLUMBING PLAN- DOMESTIC WATER - SEGMENT H
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 ALL EXPOSED PIPING WITHIN WASH BAY IS TO BE HELD TIGHT AND FASTENED TO WALL OR DECK ABOVE.

2 PROVIDE SUCTION HOSE WITH STRAINER AND FLOATS SHALL BE ROUTED DOWN INTO THE CONCRETE OIL SEPARATOR PIT AND SECURELY FASTENED TO RESIST MOVEMENT.

3 TRANSITION WATER RECLAMATION LINE DOWN TO SUMP PUMP LOCATED IN PIT.

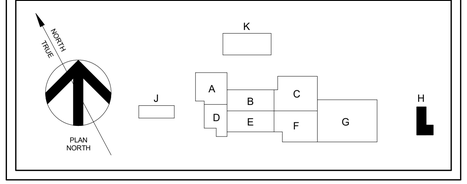
STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT H

P2.18
8218

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

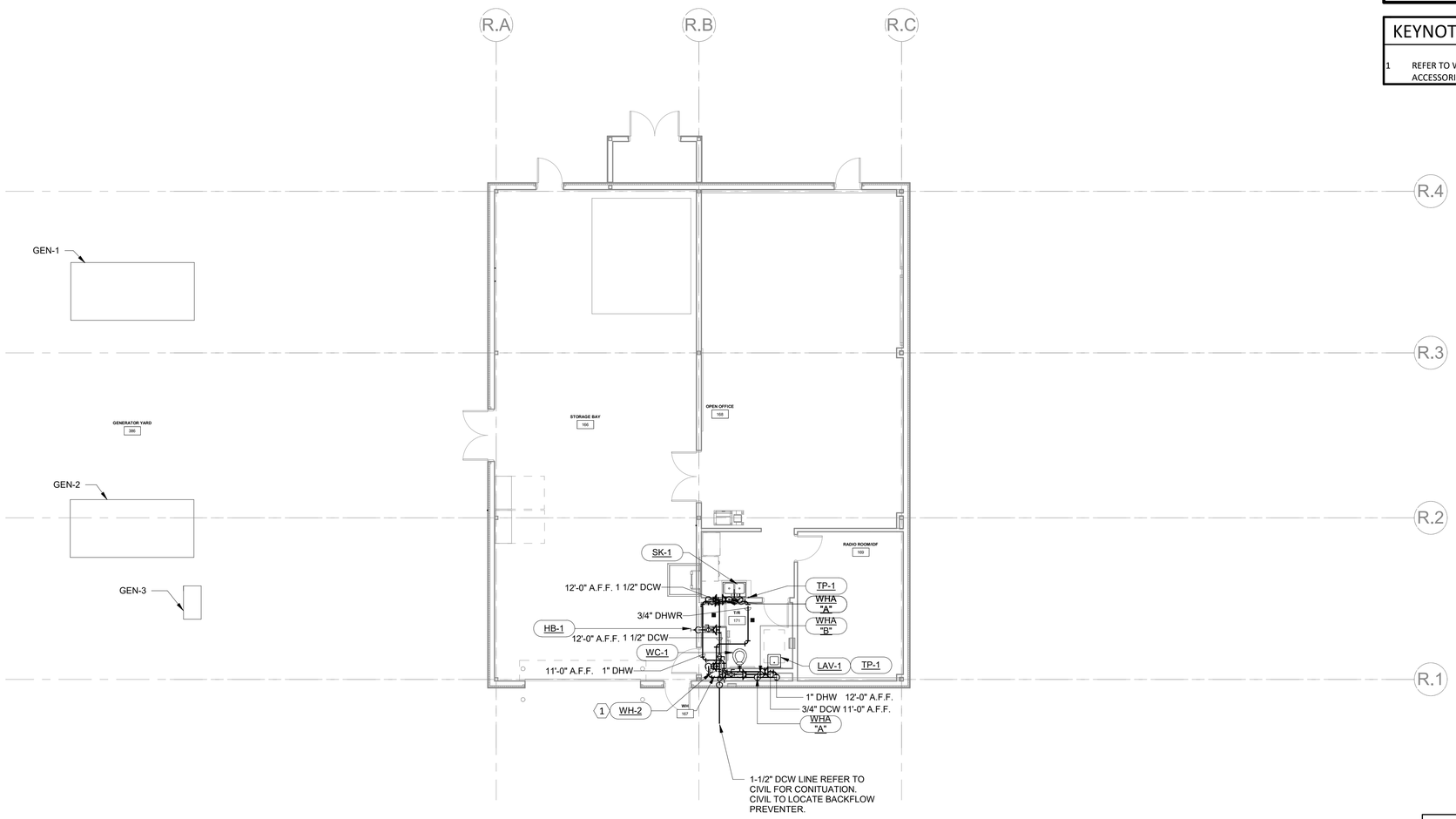
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

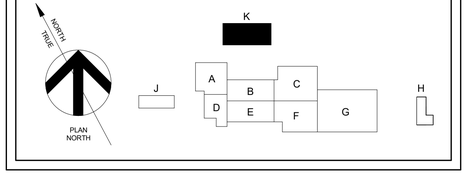
1 REFER TO WATER HEATER DETAIL ON SHEET B2/P5.1 FOR PIPING, VALVING, AND ACCESSORIES.



A1 PLUMBING PLAN - DOMESTIC WATER - SEGMENT K
1/8" = 1'-0"

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

PLUMBING PLAN - DOMESTIC WATER - SEGMENT K

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.19
8219

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

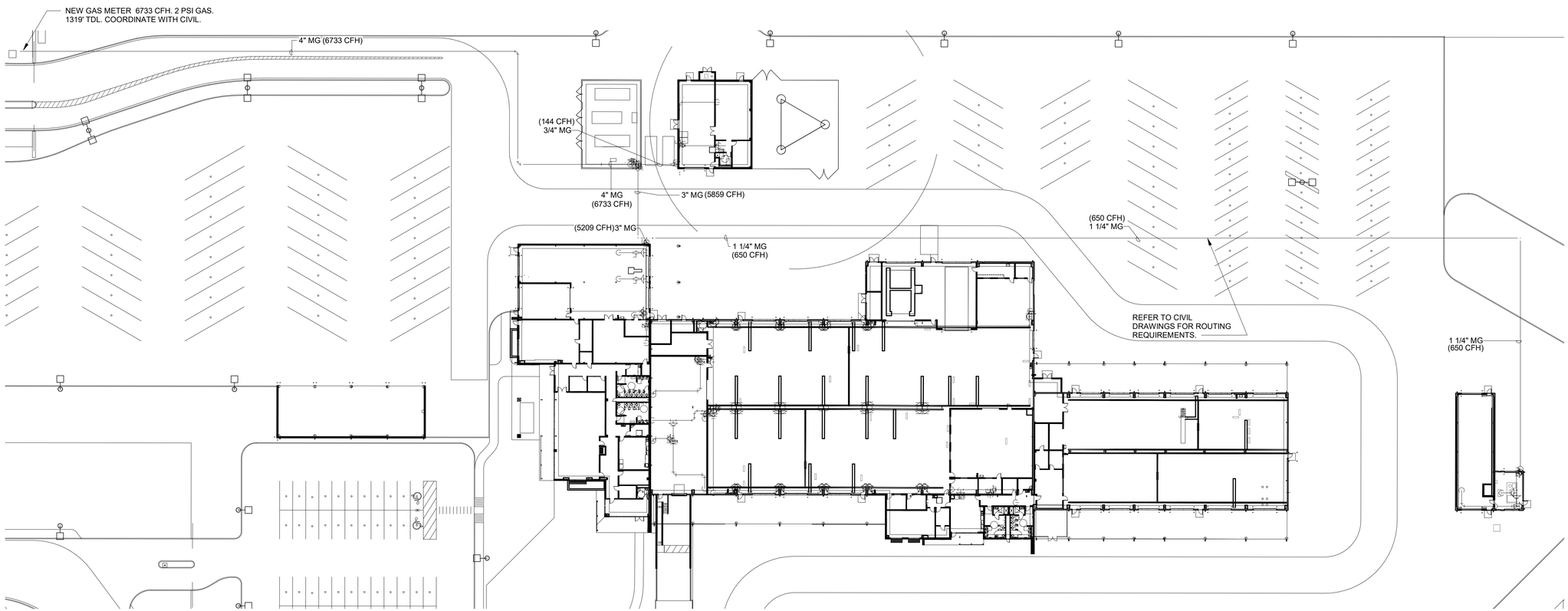
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

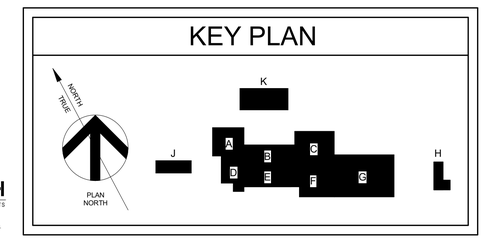
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - NATURAL GAS - OVERALL
1" = 40'-0"



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 20' 40' 80'

PLUMBING PLAN - NATURAL GAS - OVERALL

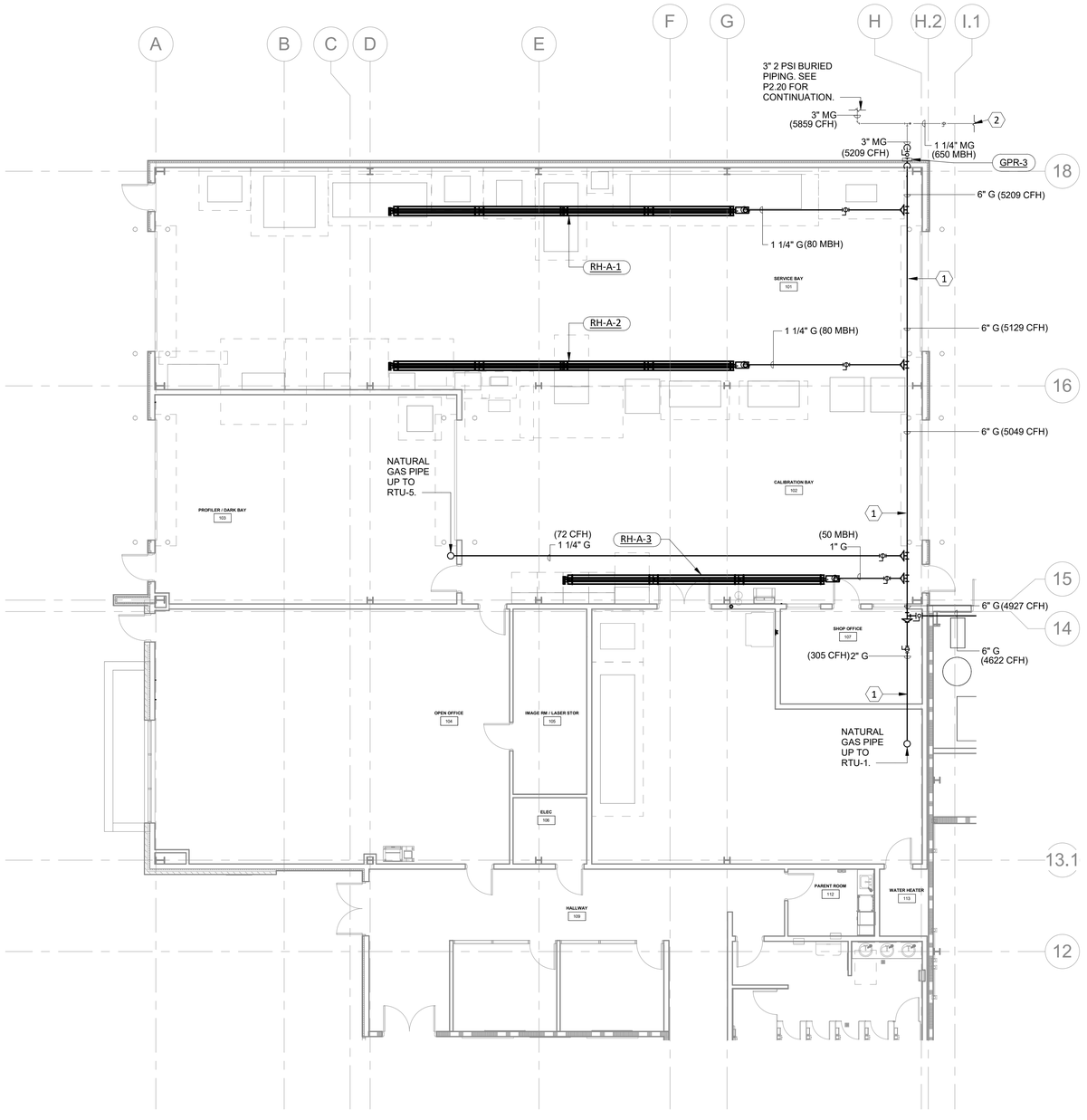
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.20
8220



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

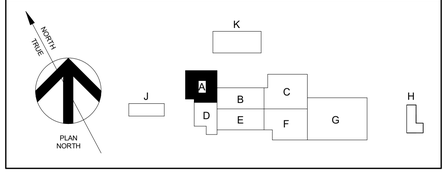
1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 1-1/4"MG 2PSI BURIED PIPING TO TRUCK WASH. REFER TO SHEET P2.20 FOR CONTINUATION.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT A

P2.21
8221

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

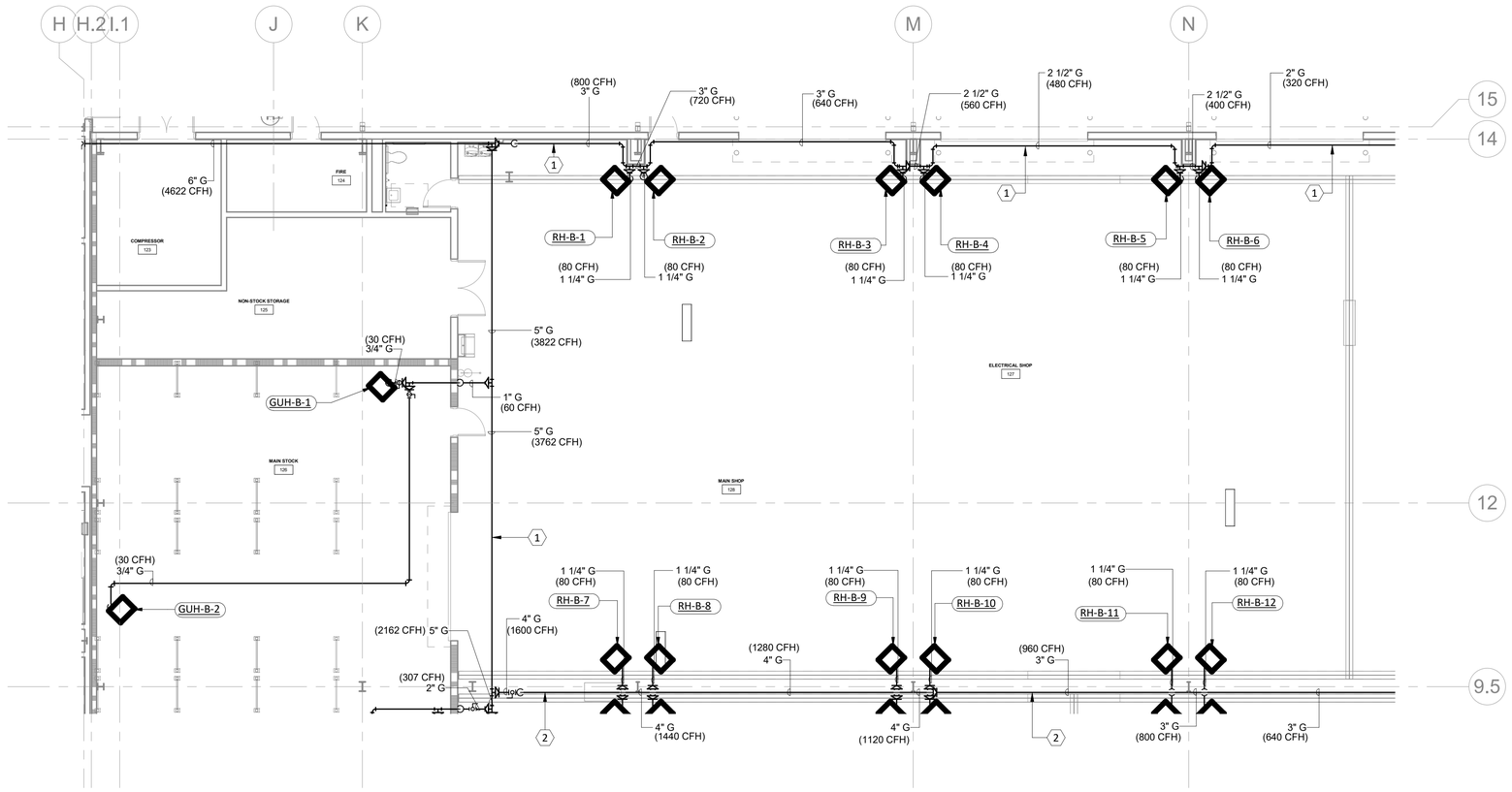
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

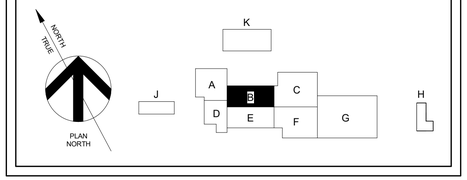
1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 GAS PIPING ROUTED OVERHEAD, C.O.P. 35'-0".



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT B
1/8" = 1'-0"

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT B

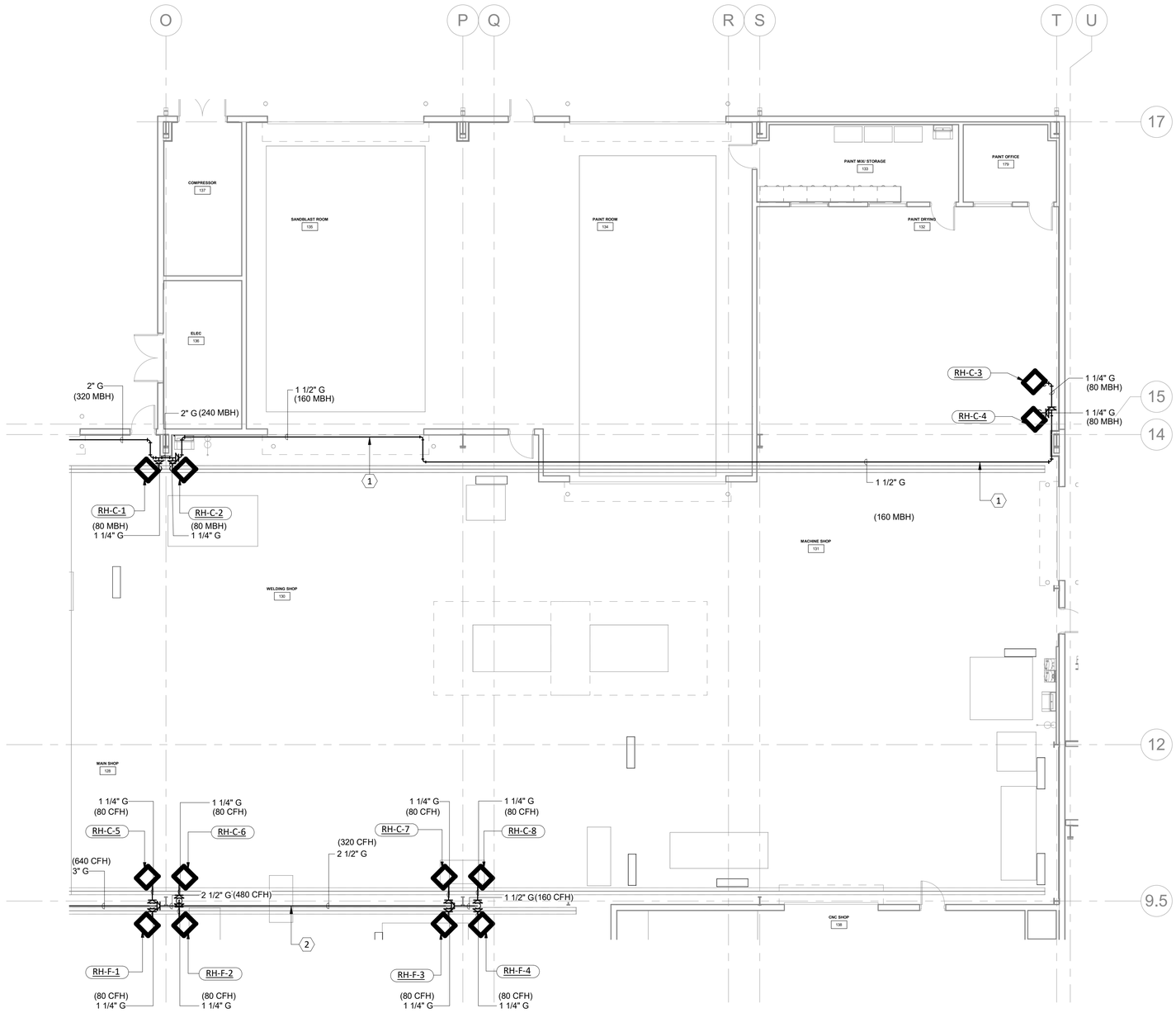
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.22
8222



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

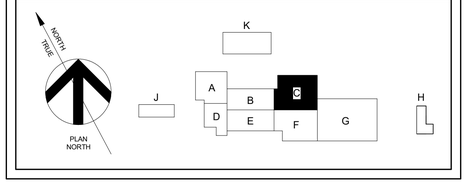
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 GAS PIPING ROUTED OVERHEAD, C.O.P. 35'-0".

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

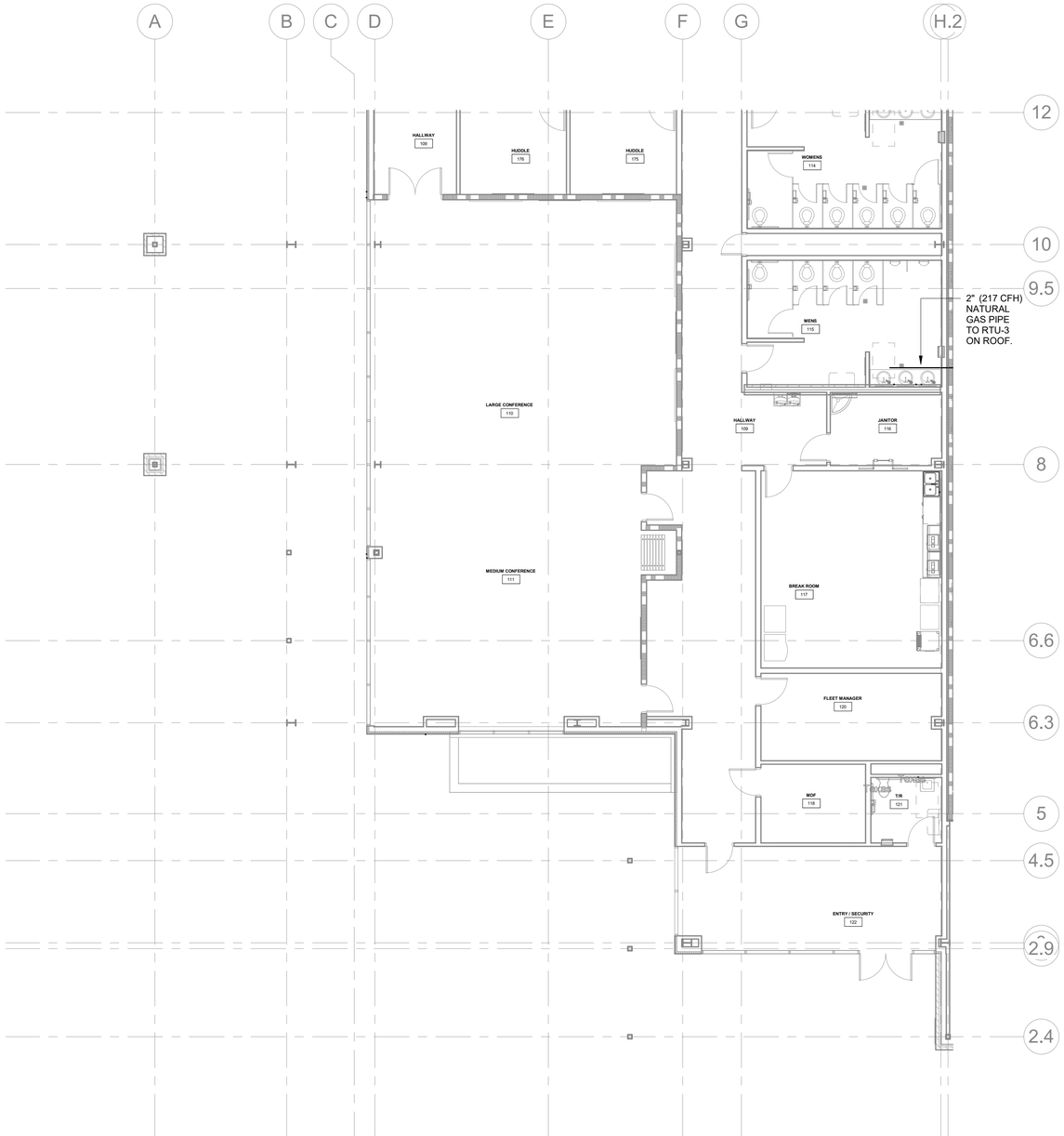
PLUMBING PLAN - NATURAL GAS - SEGMENT C

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.23
8223



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT D
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

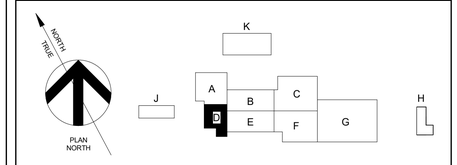
E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512-338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT D

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.24
8224

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

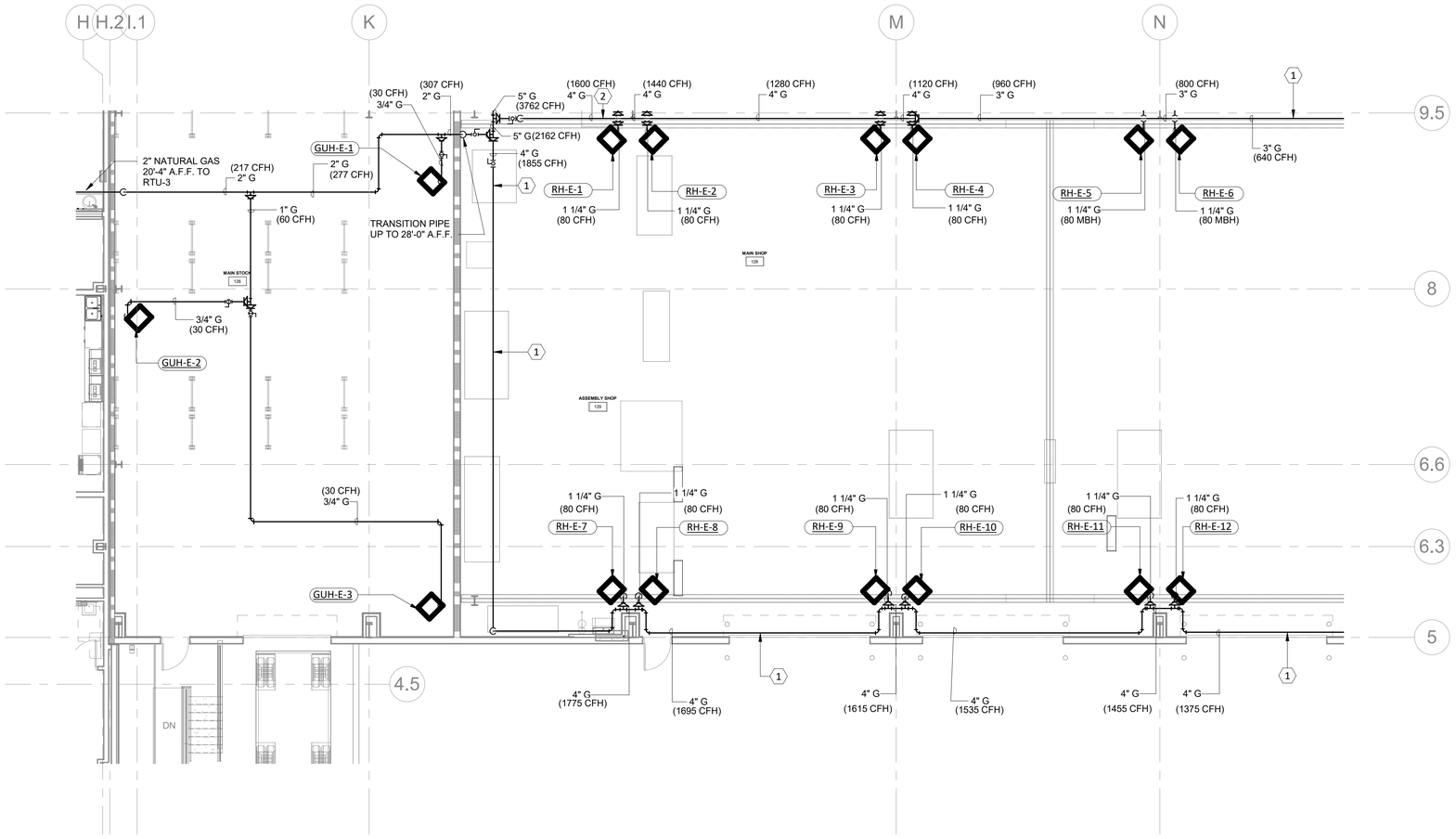
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

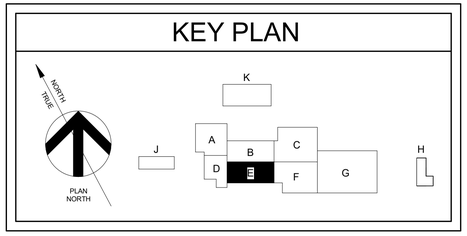
KEYNOTE LEGEND

1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 GAS PIPING ROUTED OVERHEAD, C.O.P. 35'-0".



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT E
1/8" = 1'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT E

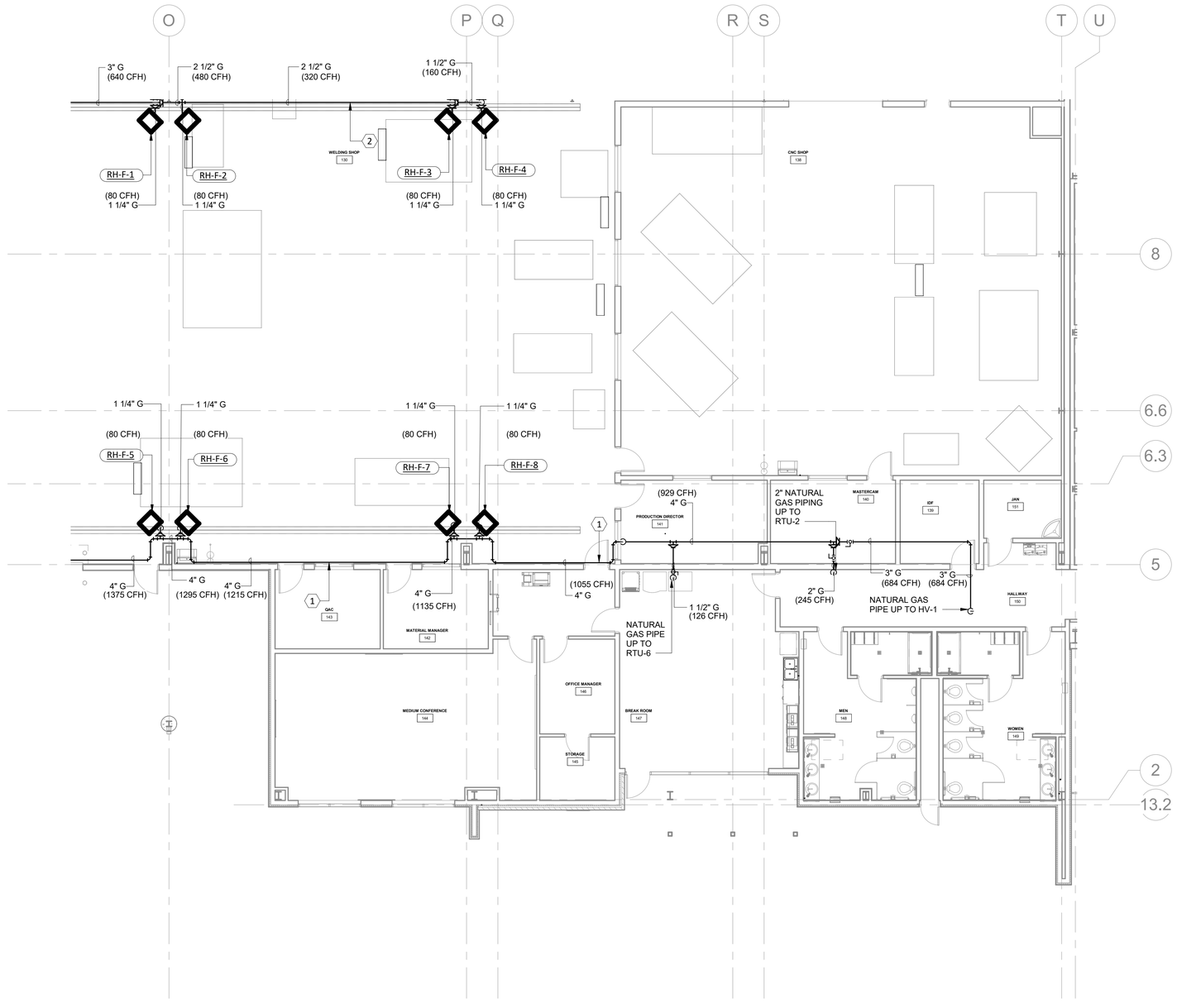
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.25
8225



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 GAS PIPING ROUTED OVERHEAD, C.O.P. 35'-0".

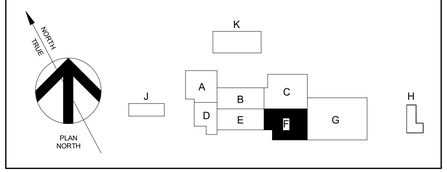
STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT F

P2.26
8226

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:14 PM C:\Users\Wilson Elland\Documents\20986 MEP AUS 1xDOT 973 Operations Center R20_Wilson Elland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

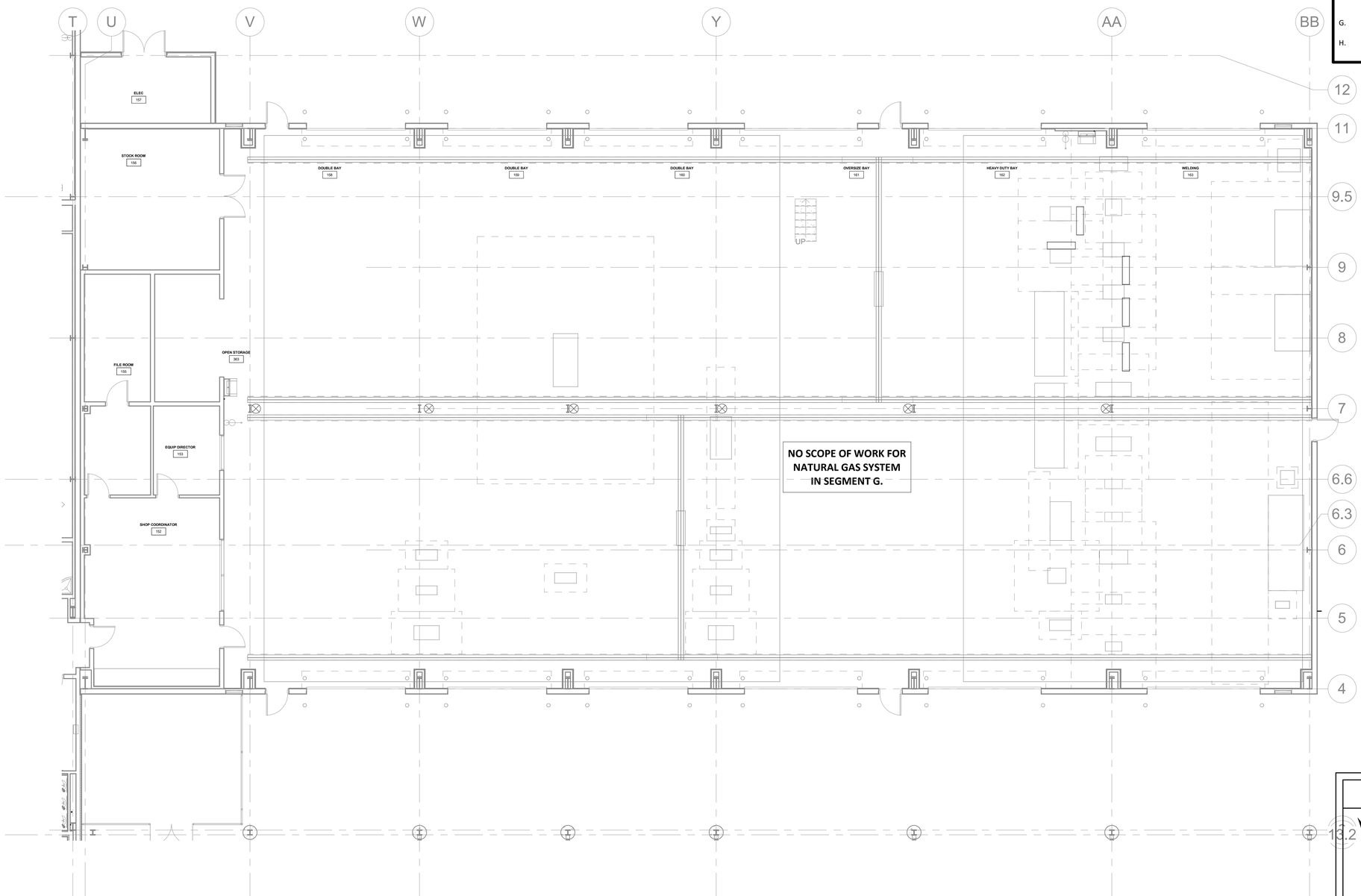
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

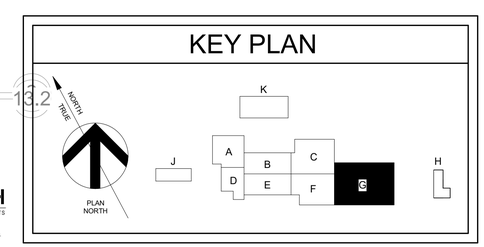
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT G
1/8" = 1'-0"



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT G

EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09/24/21

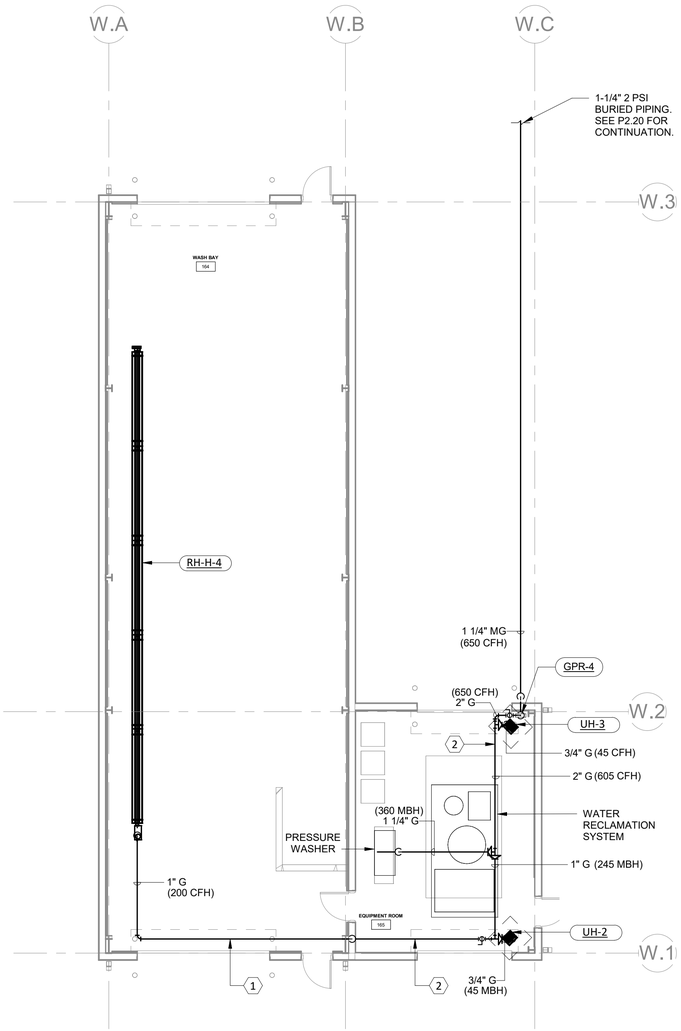
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.27
8227

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:14 PM C:\Users\Wilson.Eiland\Documents\20088.MEP AUS TxDOT 973 Operations Center R20_Wilson.Eiland.rvt



A1 PLUMBING PLAN- NATURAL GAS - SEGMENT H
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

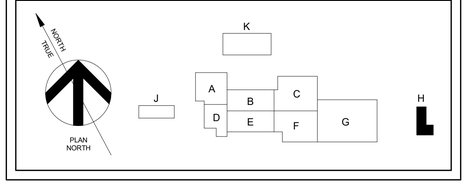
1 GAS PIPING ROUTED OVERHEAD, B.O.P. 20'-0".
2 GAS PIPING ROTUED OVERHEAD, B.O.P. 13'-0".

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT H

P2.28

8228

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

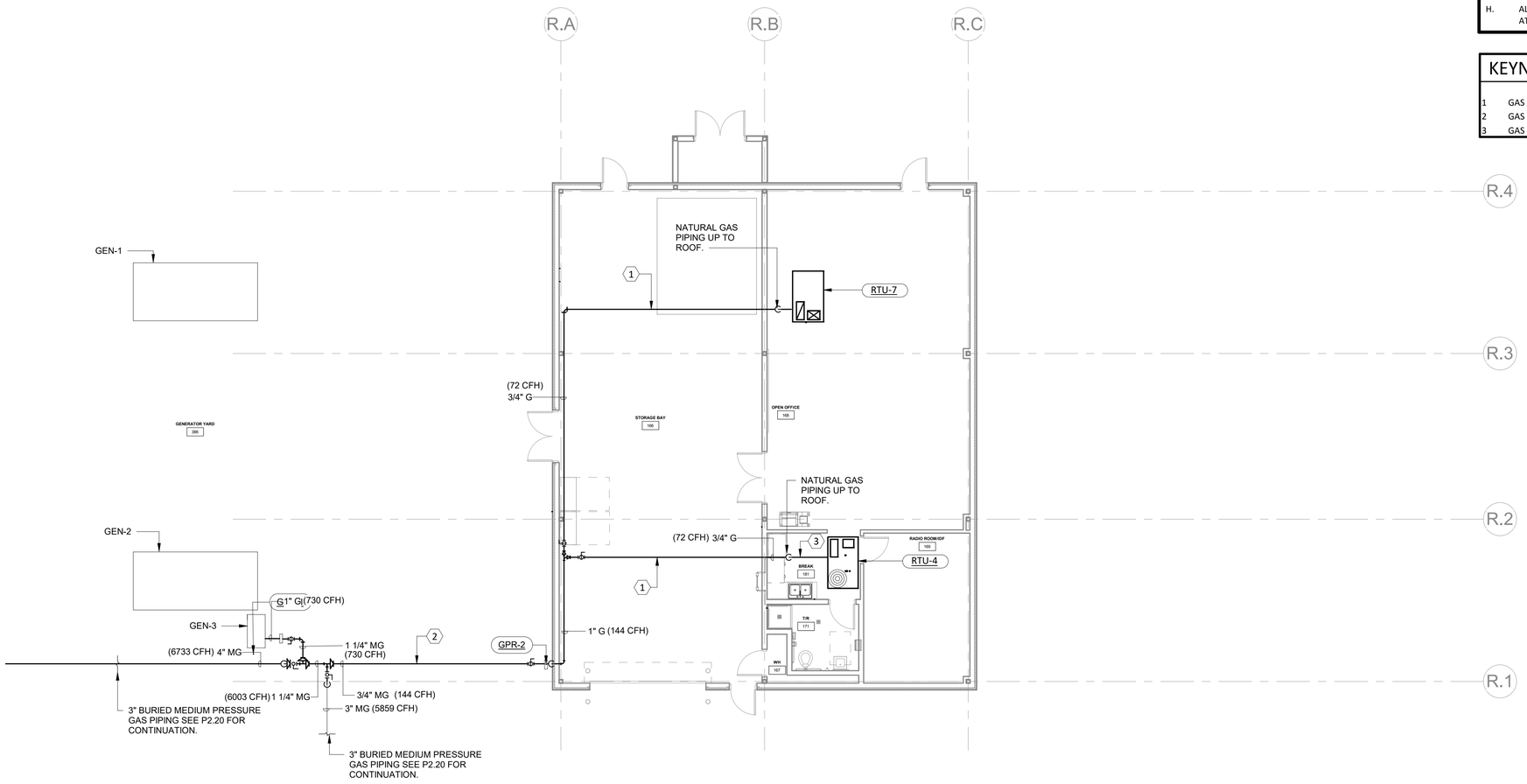
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

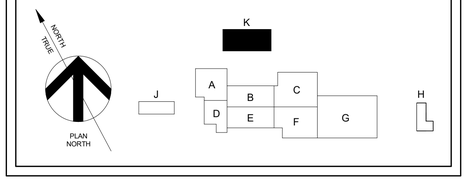
KEYNOTE LEGEND

1 GAS PIPING ROTUED OVERHEAD, B.O.P. 13'-0".
2 GAS PIPING ROUTED ALONG FINISHED FLOOR.
3 GAS PIPING ROUTED OVERHEAD ALONG ROOF.



A1 PLUMBING PLAN - NATURAL GAS - SEGMENT K
1/8" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - NATURAL GAS - SEGMENT K

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.29
8229

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

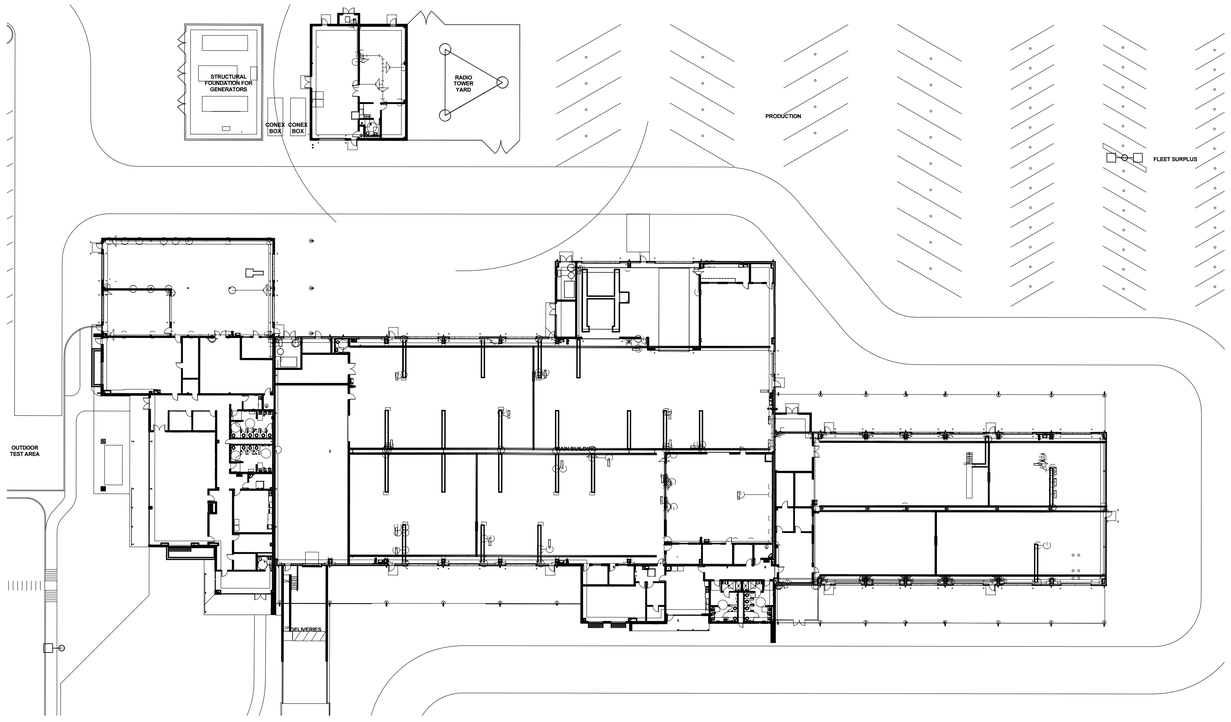
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

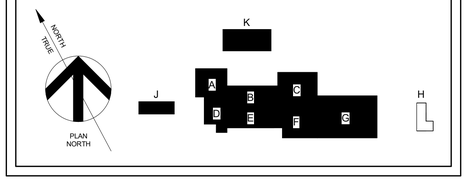
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - COMPRESSED AIR - OVERALL
1" = 40'-0"

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 20' 40' 80'

PLUMBING PLAN - COMPRESSED AIR - OVERALL

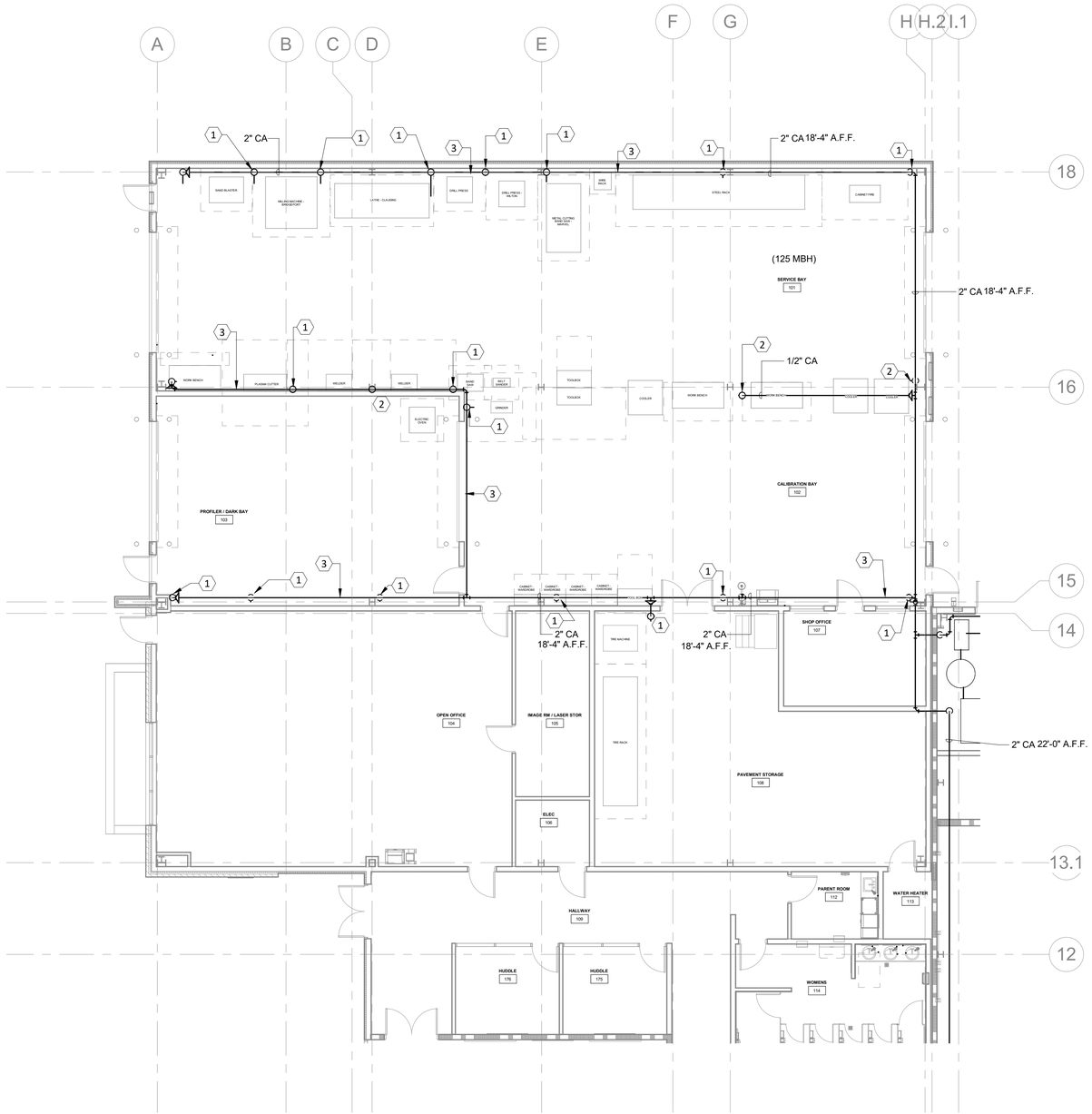
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.30
8230



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

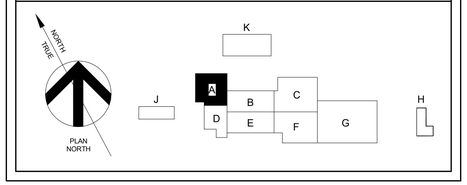
1 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.
2 PROVIDE MOTORIZED COMPRESSED AIR HOSE REEL FOR 50' OF 1/2" COMPRESSED AIR HOSE. HOSE REEL SHALL BE MOUNTED 7'-0" A.F.F. WITH IN-LINE REGULATOR.
3 ROUTE COMPRESSED AIR PIPING TIGHT TO CEILING.

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN

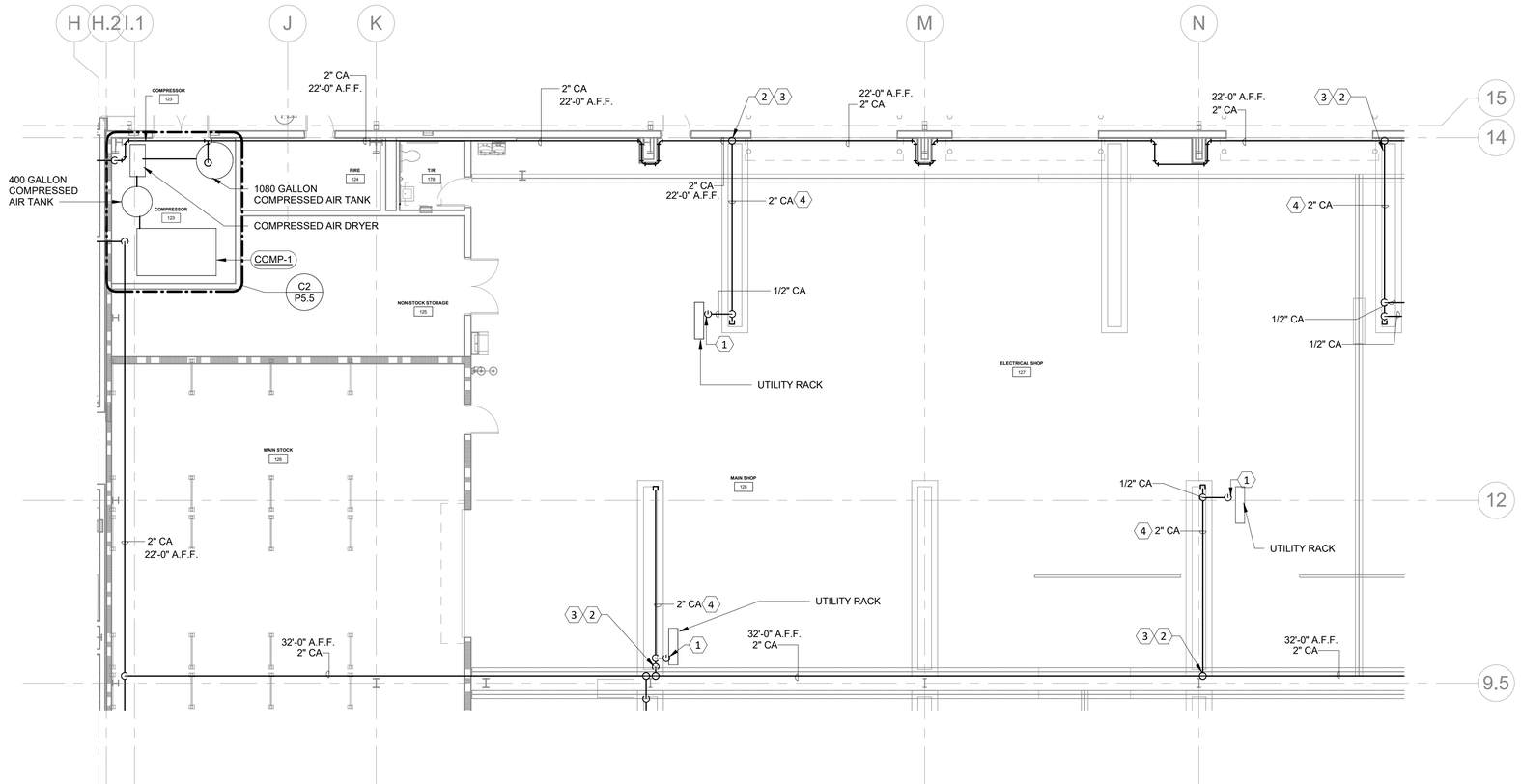


ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - COMPRESSED AIR - SEGMENT A

P2.31
8231



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT B
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4

2 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.

3 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.

4 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4

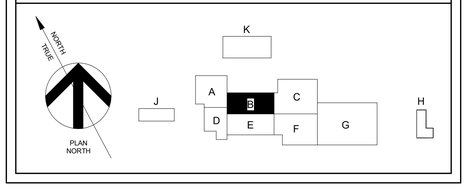
STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEY PLAN

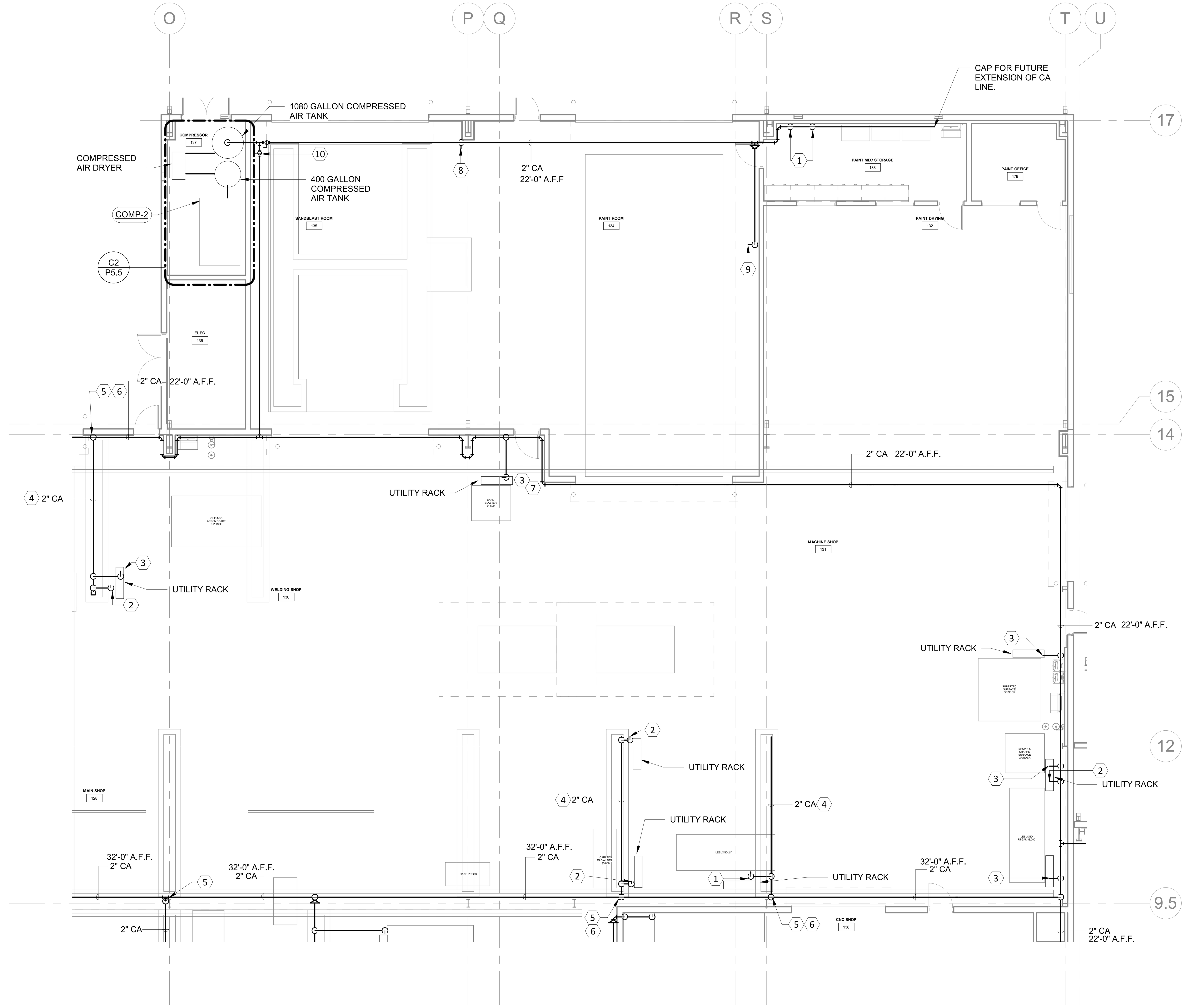


ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' PLUMBING PLAN - COMPRESSED AIR - SEGMENT B

P2.32
8232

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.

2 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4

3 PROVIDE 1/2" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4.

4 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4

5 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.

6 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.

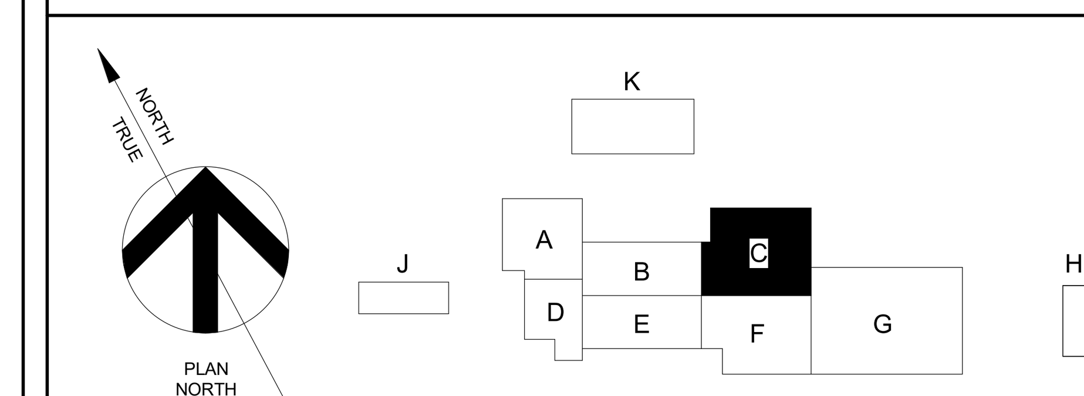
7 ROUTE COMPRESSED AIR PIPING ON TOP OF SLAB TO UTILITY STATION FOR FINAL CONNECTION TO EQUIPMENT. PIPING ON SLAB SHALL BE SECURED TO PREVENT MOVEMENT.

8 ROUTE COMPRESSED AIR TO 2" COMPRESSED AIR QUICK CONNECT FOR SAND BLAST EQUIPMENT. COORDINATE FINAL LOCATION OF SAND BLAST EQUIPMENT WITH ARCHITECTURAL EQUIPMENT PLANS.

9 ROUTE COMPRESSED AIR TO 3/4" COMPRESSED AIR QUICK CONNECT FOR SPRAY PAINT EQUIPMENT. COORDINATE FINAL LOCATION OF SPRAY PAINT EQUIPMENT WITH ARCHITECTURAL EQUIPMENT PLANS.

10 PROVIDE ISOLATION VALVE ON COMPRESSED AIR BYPASS LINE.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

0 4' 8' 16'
PLUMBING PLAN - COMPRESSED AIR - SEGMENT C

P2.33
8233

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

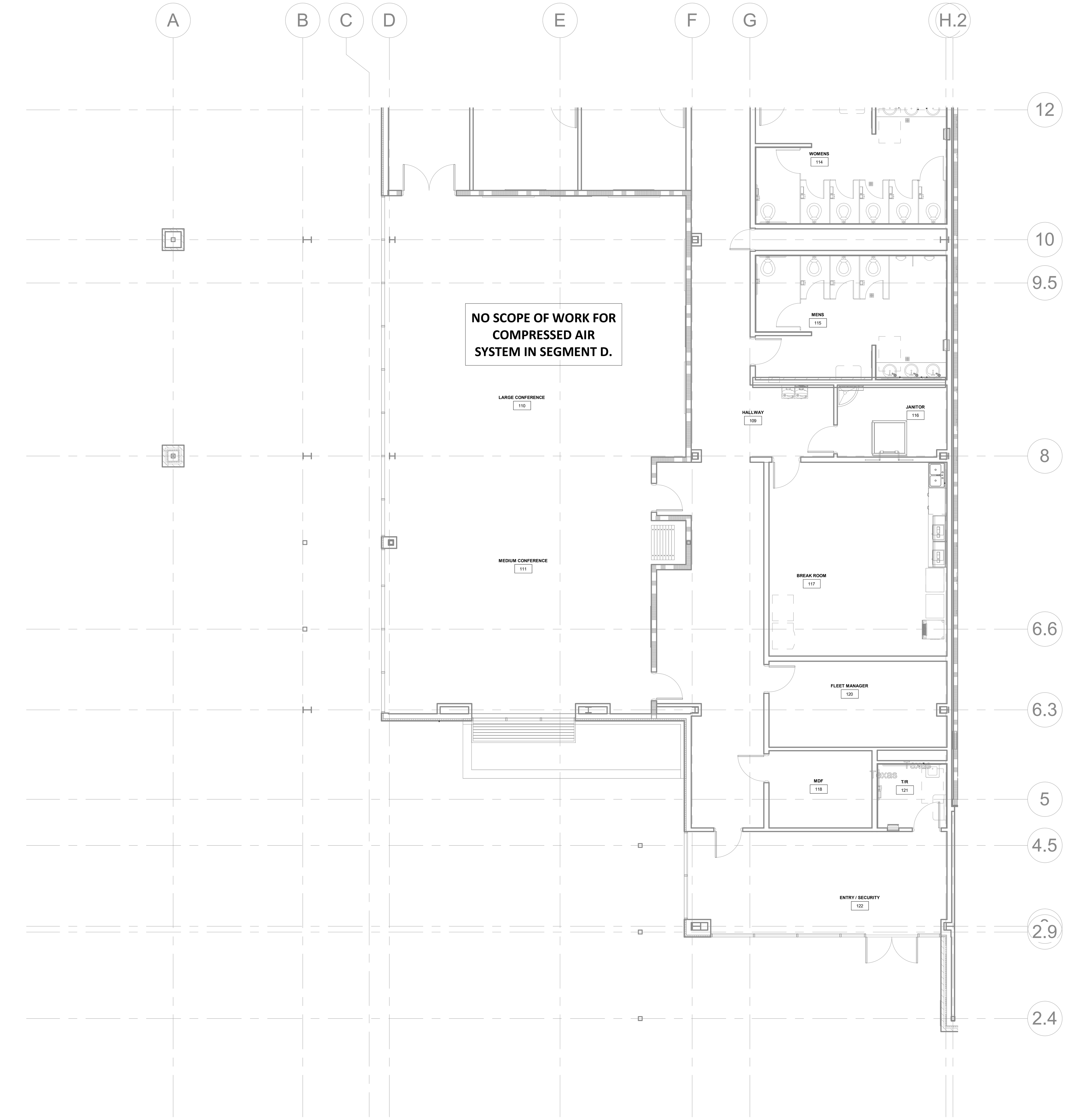
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

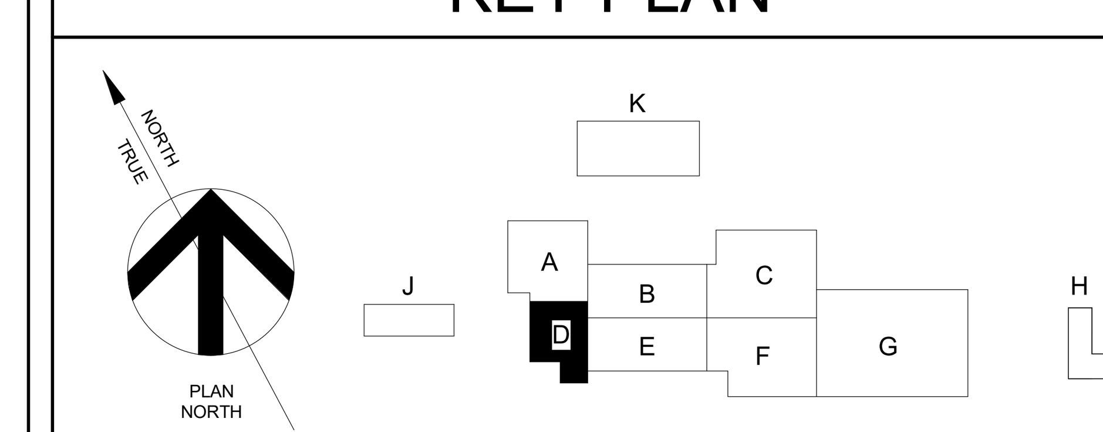
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT D
1/8" = 1'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS

TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER 09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

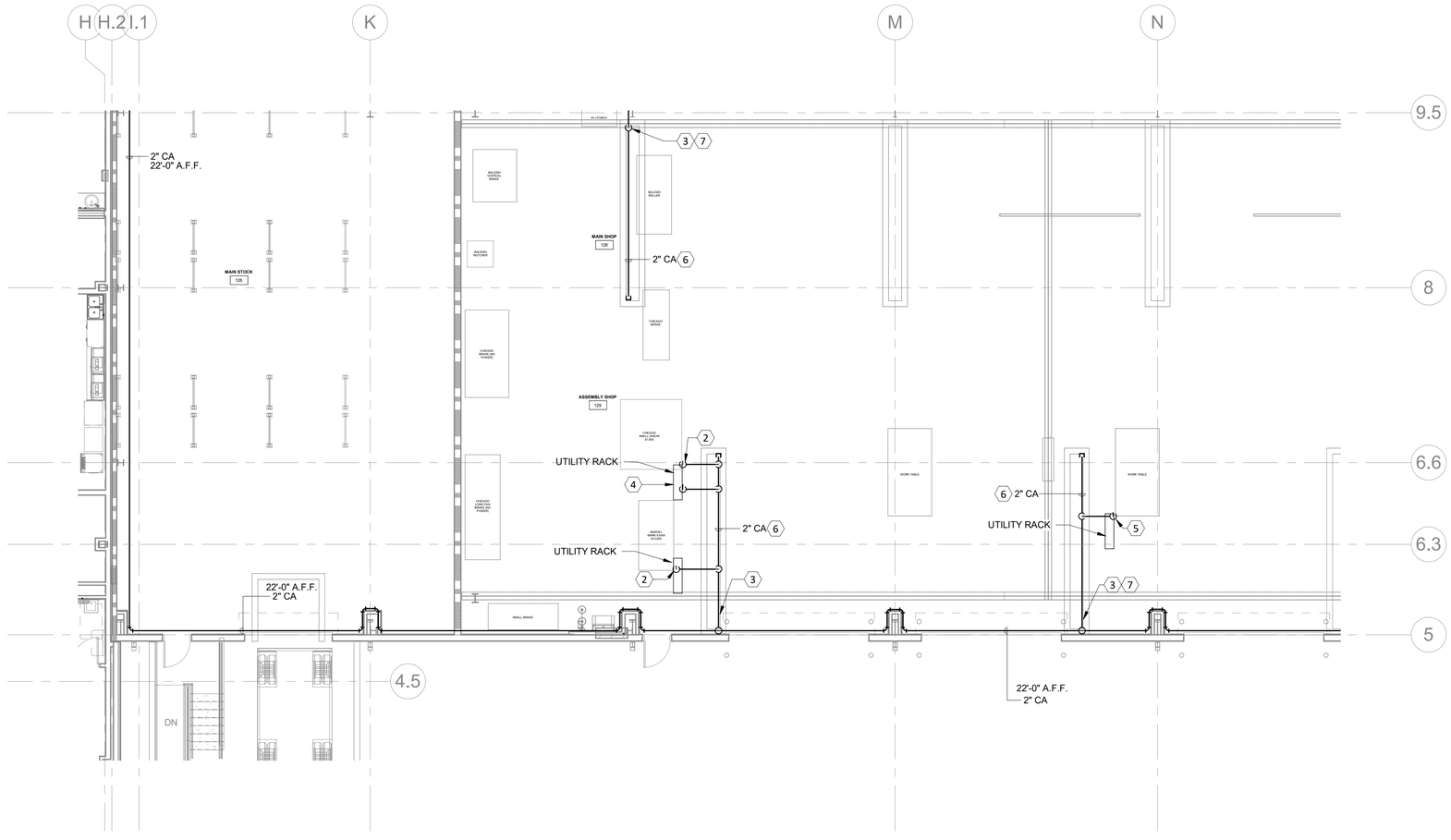
ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

0 4' 8' 16'

PLUMBING PLAN - COMPRESSED AIR - SEGMENT D

P2.34

8234



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT E
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

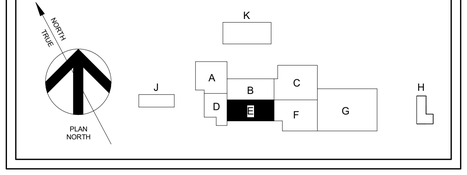
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE MOTORIZED COMPRESSED AIR HOSE REEL FOR 50' OF 1/2" COMPRESSED AIR HOSE. HOSE REEL SHALL BE MOUNTED 7'-0" A.F.F. WITH IN-LINE REGULATOR.
2 PROVIDE 1/2" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4.
3 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.
4 PROVIDE COMPRESSED AIR HOSE REEL AT UTLITY STATION FOR 50' OF 1/2" COMPRESSED AIR HOSE. PROVIDE WITH IN- LINE REGULATOR. REFER TO DETAIL B1/P5.4
5 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4
6 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4
7 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



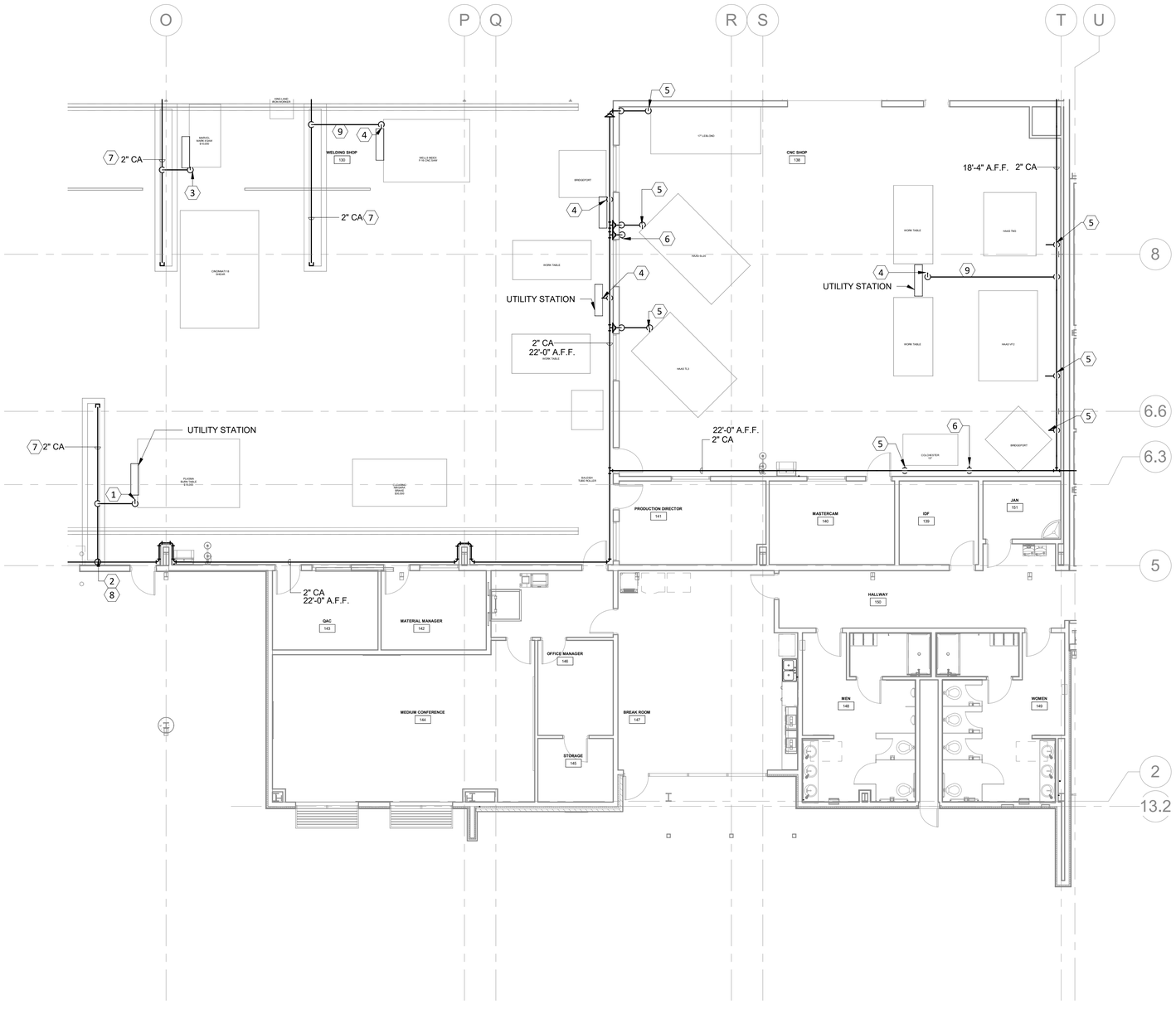
0 4' 8' 16' PLUMBING PLAN - COMPRESSED AIR - SEGMENT E

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47042062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.35
8235



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE 3/4" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4."

2 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.

3 PROVIDE 1/2" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4.

4 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4

5 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.

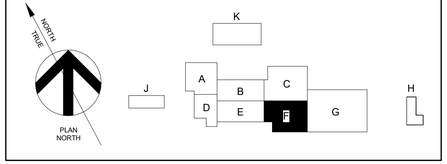
6 PROVIDE MOTORIZED COMPRESSED AIR HOSE REEL FOR 50' OF 1/2" COMPRESSED AIR HOSE. HOSE REEL SHALL BE MOUNTED 7'-0" A.F.F. WITH IN-LINE REGULATOR.

7 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4

8 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.

9 ROUTE COMPRESSED AIR PIPING ON TOP OF SLAB TO UTILITY STATION FOR FINAL CONNECTION TO EQUIPMENT. PIPING ON SLAB SHALL BE SECURED TO PREVENT MOVEMENT.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' PLUMBING PLAN - COMPRESSED AIR - SEGMENT F

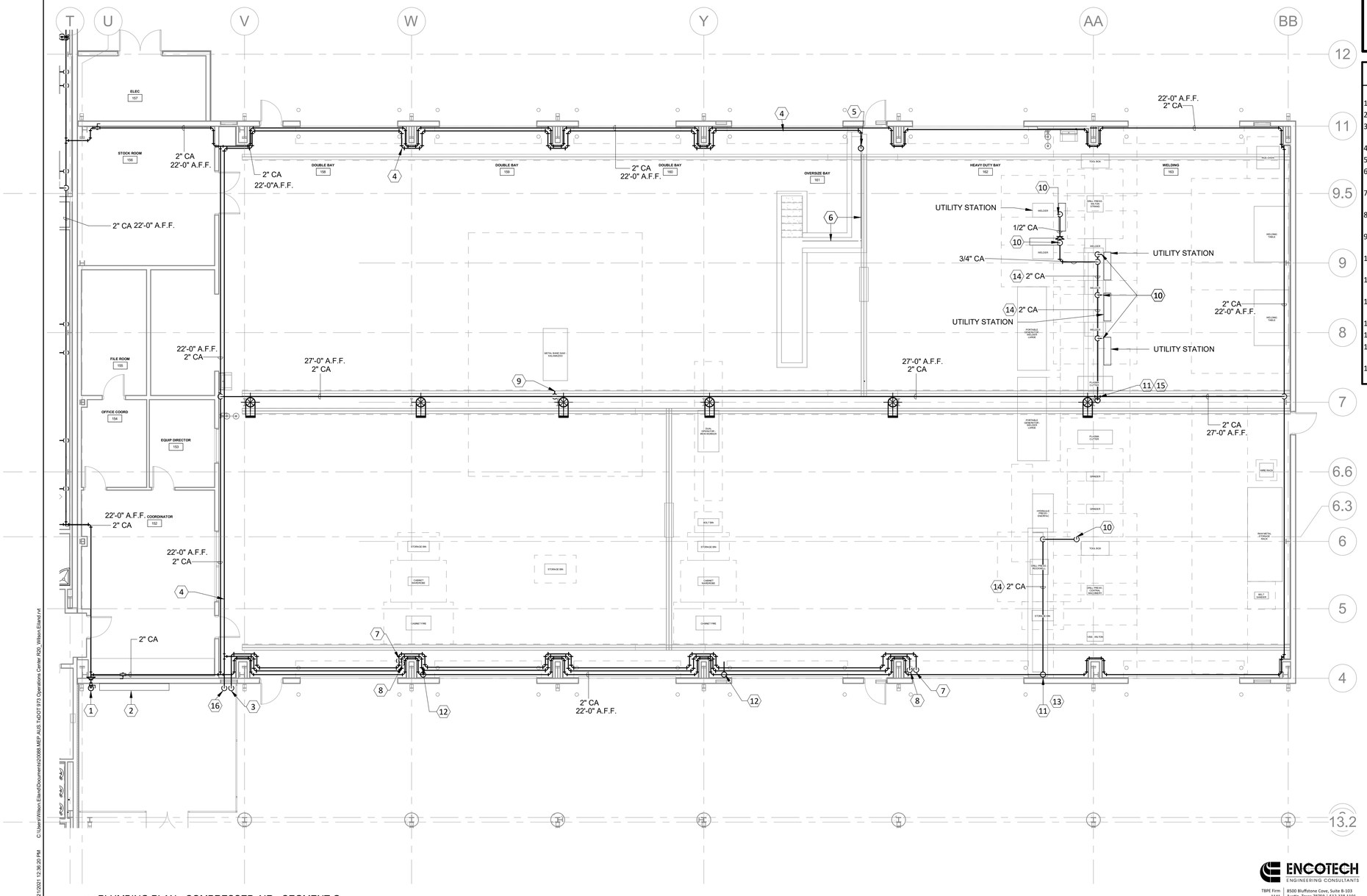
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.36
8236



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT G
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

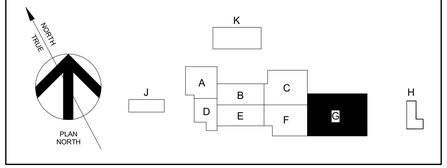
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE 3/4" CA QUICK CONNECT 4'-0" A.F.F.
2 COMPRESSED AIR MANIFOLD FOR PNEUMATIC PUMPS. REFER TO PROCESS PIPING VENDOR.
3 1/2" COMPRESSED AIR LINE FROM COOLANT WASTE PUMP TO EVACUATION SYSTEMS. REFER TO PROCESS PIPING VENDOR.
4 OIL WASTE COMPRESSED AIR LINE ROUTED OVERHEAD, 22'-0" A.F.F.
5 1/2" CA PIPING FROM BOTTOM OF MECHANICAL CHANNEL. SECURE PIPING TO WALL.
6 4" PROCESS PIPING SLEEVE ROUTED UNDERFLOOR WITHIN MECHANICAL CHANNEL. SECURE PIPING TO THE WALL.
7 1/2" CA PIPING DOWN TO COOLANT WASTE EVACUATION PUMP. ROUTE PIPING 22'-6" A.F.F. REFER TO PROCESS PIPING VENDOR.
8 1/2" CA PIPING FROM OIL WASTE EVACUATION PUMP. ROUTE PIPING 22-'-3" A.F.F.. REFER TO PROCESS PIPING VENDOR.
9 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.
10 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4
11 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.
12 PROVIDE MOTORIZED COMPRESSED AIR HOSE REEL FOR 50' OF 1/2" COMPRESSED AIR HOSE. HOSE REEL SHALL BE MOUNTED 7'-0" A.F.F. WITH IN-LINE REGULATOR.
13 PROVIDE ISOLATION VALVE ON COMPRESSED AIR BYPASS LINE.
14 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4
15 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.
16 1/2" COMPRESSED AIR LINE FROM OIL WASTE PUMP TO EVACUATION SYSTEMS. REFER TO PROCESS PIPING VENDOR.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
PLUMBING PLAN - COMPRESSED AIR - SEGMENT G

Texas Department of Transportation
COPYRIGHT © 2021

EUGENE W. RAANES 62200 LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.37
8237

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:20 PM
C:\Users\Wilson Eiland\Documents\20088.MEP AUS TxDOT 973 Operations Center R20_Wilson Eiland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

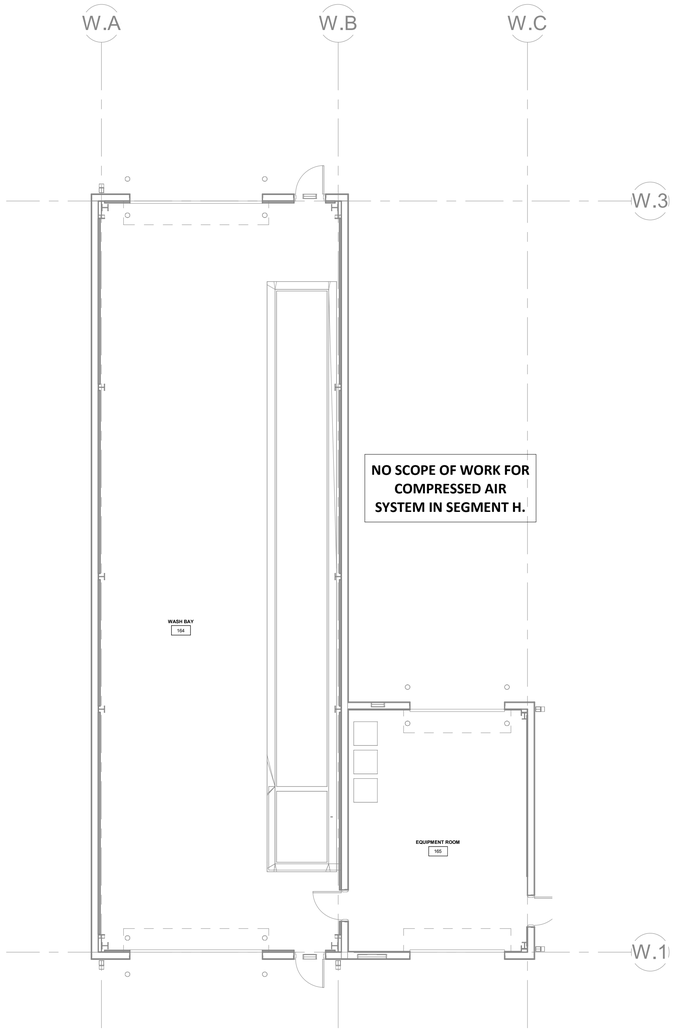
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

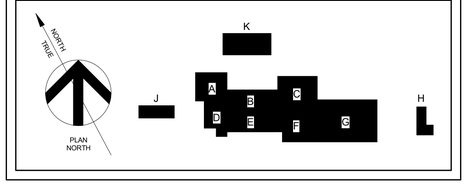
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT H
1/8" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141
8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

PLUMBING PLAN - COMPRESSED AIR - SEGMENT H

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.38
8238

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:36:21 PM C:\Users\Wilson Eiland\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_Wilson.Eiland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

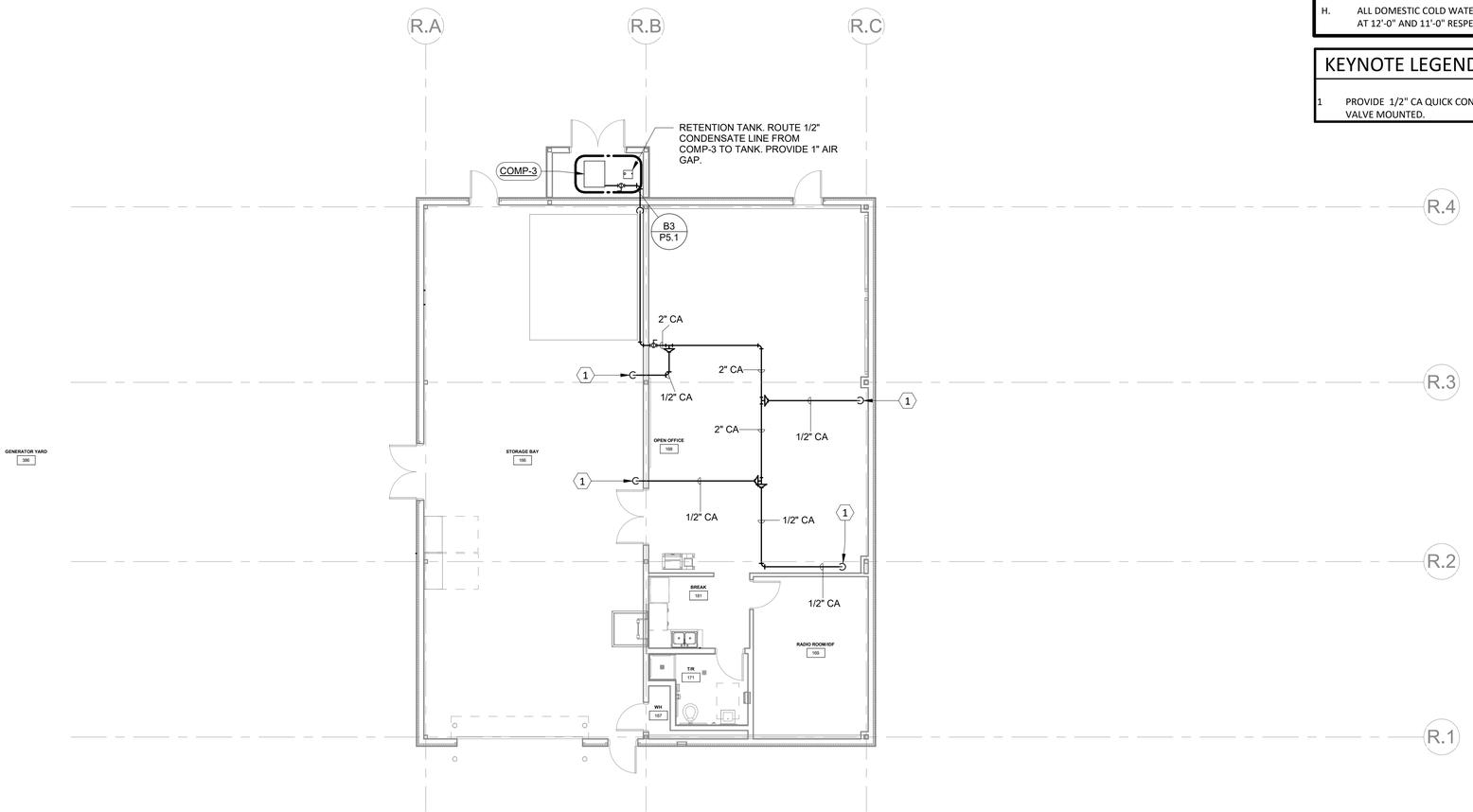
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

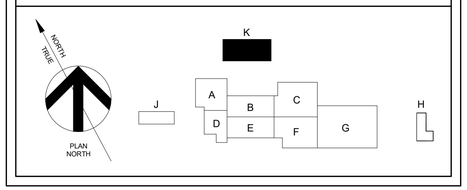
1 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.



A1 PLUMBING PLAN - COMPRESSED AIR - SEGMENT K
1/8" = 1'-0"

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

KEY PLAN



0 4' 8' 16'

PLUMBING PLAN - COMPRESSED AIR - SEGMENT K

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.39
8239

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 10/1/2021 12:36:21 PM C:\Users\Wilson.Eiland\Documents\02088.MEP-AUS.TxDOT 973 Operations Center R20_Wilson.Eiland.rvt

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

D. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL HOSE REELS.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO DIVISION 11 SPECIFICATIONS FOR TANK SIZES AND MANUFACTURING REQUIREMENTS.

G. REFER TO DIVISION 11 SPECIFICATIONS FOR REEL SIZES AND MANUFACTURING REQUIREMENTS.

KEYNOTE LEGEND

1 MEDIUM PRESSURE PROCESS PIPING DOWN TO SUPPLY TANKS. 3/4" COOLANT, 3/4" MOTOR OIL, AND 3/4" HYDRAULIC OIL, 3/4" GEAR OIL, 3/4" TRANSMISSION FLUID.
2 HIGH PRESSURE PROCESS PIPING DOWN TO SUPPLY TANK. 3/4" GREASE.
3 MEDIUM PRESSURE PROCESS PIPING ROUTED OVERHEAD, 27'-0" A.F.F. 3/4" COOLANT, 3/4" MOTOR OIL, 3/4" HYDRAULIC OIL, 3/4" GEAR OIL, 3/4" TRANSMISSION FLUID.
4 HIGH PRESSURE PROCESS PIPING ROUTED OVERHEAD, 27'-0" A.F.F. 3/4" GREASE.
5 1" GREASE WASTE PIPING DOWN TO PNEUMATIC EVACUATION EQUIPMENT.
6 HIGH PRESSURE PROCESS PIPING DOWN TO HOSE REEL. SECURE PIPING TO STRUCTURAL FRAMING. 3/4" GREASE.
7 MEDIUM PRESSURE PROCESS PIPING DOWN TO HOSE REEL. SECURE PIPING TO STRUCTURAL FRAMING. 3/4" COOLANT, 3/4" MOTOR OIL, 3/4" HYDRAULIC OIL, 3/4" GEAR OIL, 3/4" TRANSMISSION FLUID.
8 WASTE PROCESS PIPING ROUTED OVERHEAD, 22'-0" A.F.F MINIMUM. 1" GREASE WASTE, 1" COOLANT WASTE. SLOPE ALL PIPING AT 1%.
9 1" GREASE WASTE PIPING DOWN TO COLLECTION TANK.
10 1" GREASE WASTE PIPING DOWN TO MECHANICAL CHANNEL. SECURE PIPING TO WALL.
11 PROVIDE CONTAINMENT PAN OR 6" DEEP DIKE AROUND TANKS. (TYP.).
12 4" PROCESS PIPING SLEEVE ROUTED UNDERFLOOR WITHIN MECHANICAL CHANNEL. SECURE PIPING TO THE WALL.
13 ROUTE 1/2" CA AND 1" GREASE WASTE ALONG PIT TO GREASE EVACUATION PUMP. COORDINATE EQUIPMENT CONNECTIONS WITH PUMP MANUFACTURER.
14 5/8" HIGH PRESSURE GREASE TO REEL LOCATED WITH-IN THE PIT. FIELD COORDINATE FINAL CONNECTION WITH REEL MANUFACTURER.
15 HIGH PRESSURE PROCESS PIPING DOWN TO MECHANICAL CHANNEL. SECURE PIPING TO WALL. 3/4" GREASE

TU V W Y AA BB

12 11 9.5 9 8 7 6.6 6.3 6 5 4

WASTE OIL TANK
COOLANT WASTE
GREASE WASTE
MOTOR OIL TANK LIGHT DUTY
HYDRAULIC OIL TANK
MOTOR OIL TANK HEAVY DUTY
COOLANT TANK
COOLANT TANK

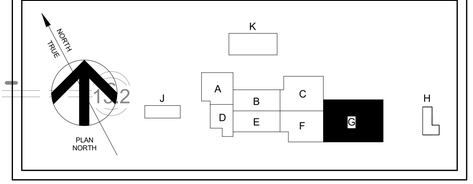
COMPRESSED AIR MANIFOLD FOR PNUEMATIC PUMPS

A1 PROCESS PIPING - SEGMENT G
1/8" = 1'-0"

0 4' 8' 16'

PLUMBING PLAN - PROCESS PIPING - SEGMENT G

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: GGR
CHECKED BY: EWR
REVISIONS:

P2.47
8240

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

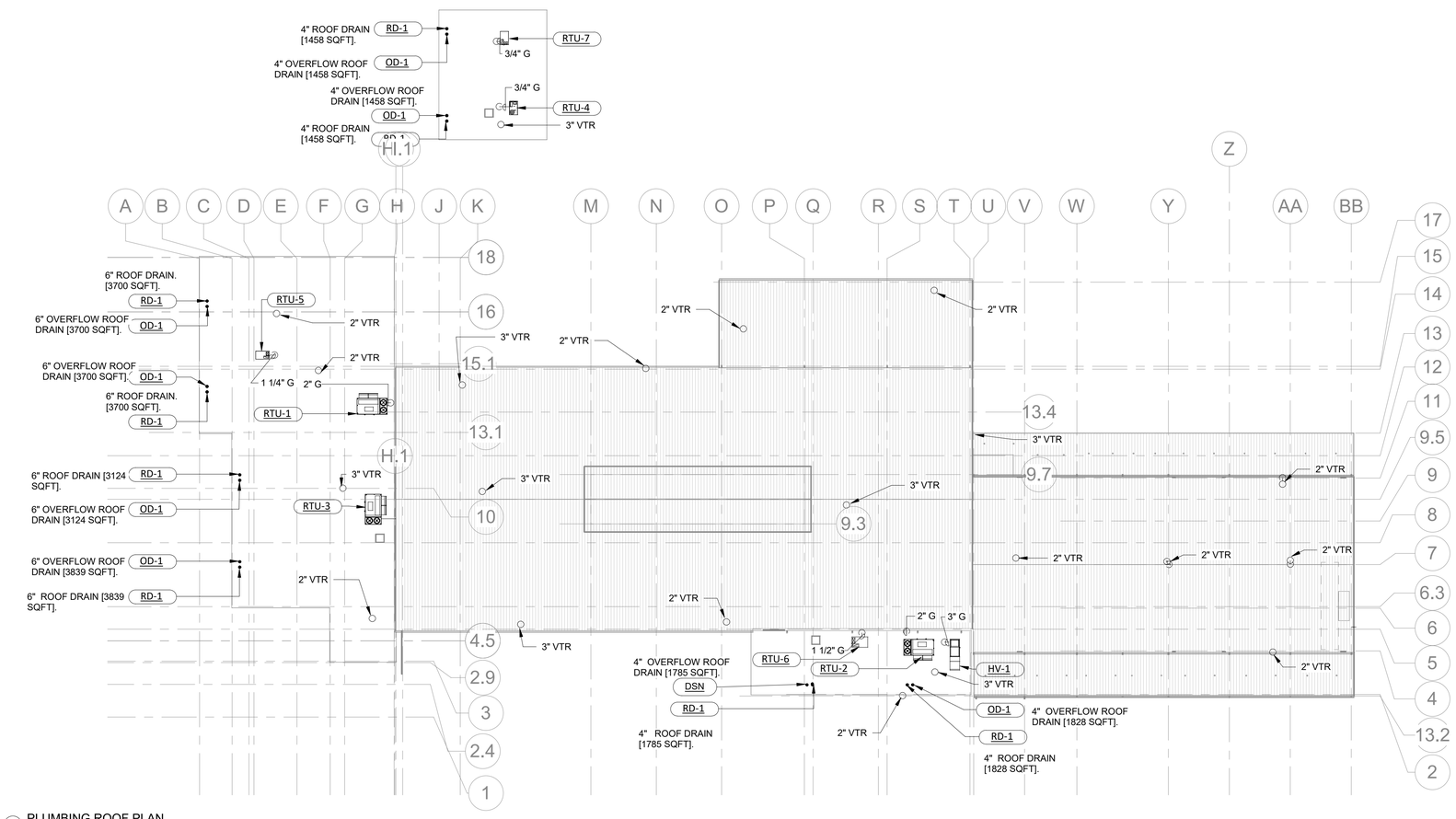
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

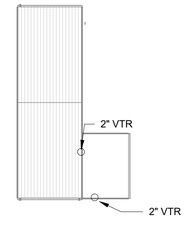
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

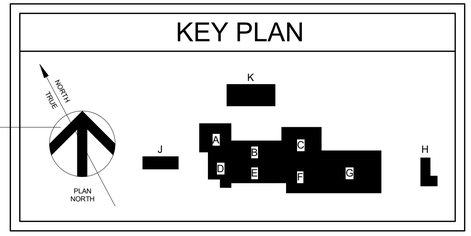
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 PLUMBING ROOF PLAN
1/32" = 1'-0"





ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 20' 40' 80'

PLUMBING ROOF PLAN

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)

PROJECT No : 38-4704200

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P2.50
8241

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

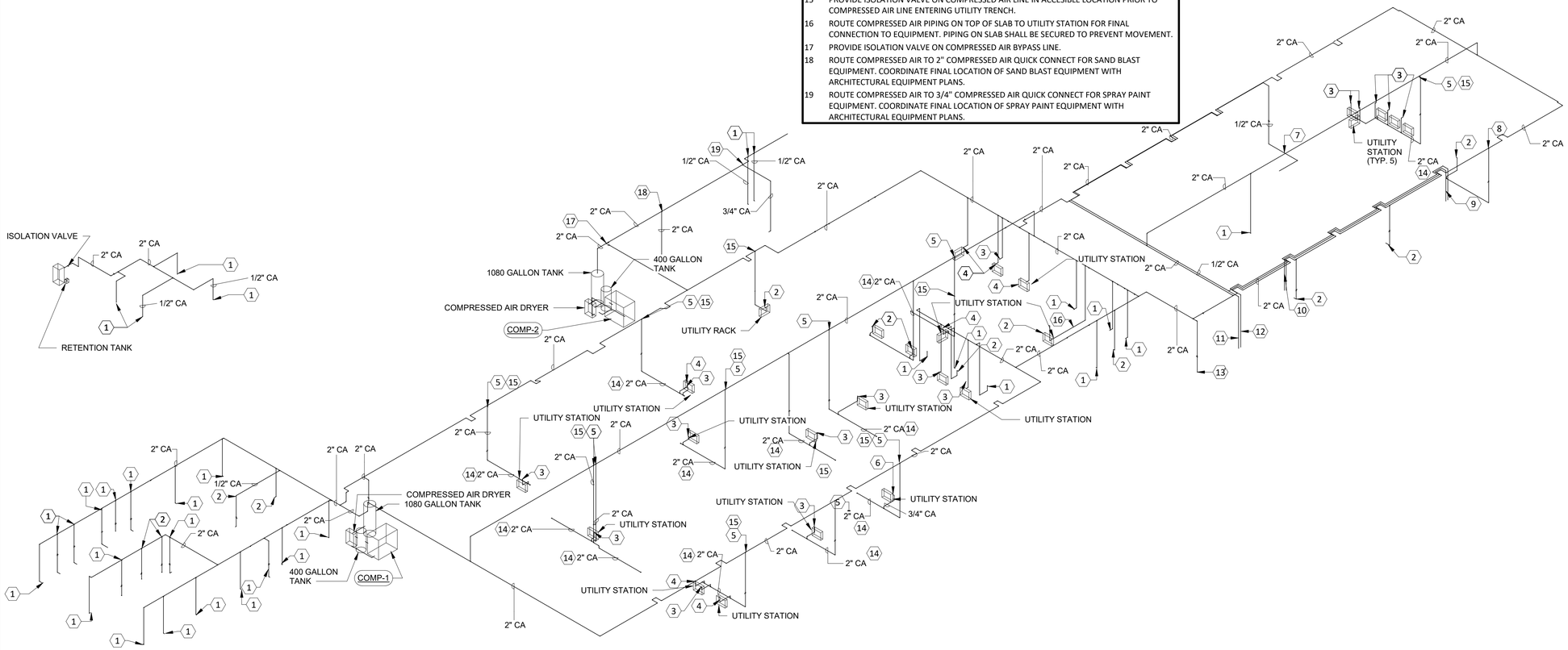
GENERATED ON: 9/21/2021 12:36:22 PM C:\Users\Wilson Eliano\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_Wilson Eliano.rvt

KEYNOTE LEGEND

1 PROVIDE 1/2" CA QUICK CONNECT 3'-6" A.F.F WITH IN-LINE REGULATOR AND ISOLATION VALVE MOUNTED.
2 PROVIDE MOTORIZED COMPRESSED AIR HOSE REEL FOR 50' OF 1/2" COMPRESSED AIR HOSE. HOSE REEL SHALL BE MOUNTED 7'-0" A.F.F. WITH IN-LINE REGULATOR.
3 ROUTE 1/2" CA LINE TO CA HOSE REEL MOUNTED ON UTLITY STATION. REFER TO DETAIL C2/P5.4
4 PROVIDE 1/2" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4.
5 ROUTE 2" COMPRESSED AIR PIPING DOWN TO UNISTRUT CHANNEL LOCATED IN UTLITY TRENCH. REFER TO DETAIL B1/P5.4.
6 PROVIDE 3/4" CA QUICK CONNECT AT UTILITY STATION. PROVIDE WITH IN-LINE REGULATOR AND ISOLATION VALVE. REFER TO DETAIL C2/P5.4."
7 4" PROCESS PIPING SLEEVE ROUTED UNDERFLOOR WITHIN MECHANICAL CHANNEL. SECURE PIPING TO THE WALL.
8
9 1/2" CA PIPING DOWN TO COOLANT WASTE EVACUATION PUMP. ROUTE PIPING 22'-6" A.F.F. REFER TO PROCESS PIPING VENDOR.
10 1/2" CA PIPING FROM OIL WASTE EVACUATION PUMP. ROUTE PIPING 22-'-3" A.F.F.. REFER TO PROCESS PIPING VENDOR.
11 1/2" COMPRESSED AIR LINE FROM OIL WASTE PUMP TO EVACUATION SYSTEMS. REFER TO PROCESS PIPING VENDOR.
12 1/2" COMPRESSED AIR LINE FROM COOLANT WASTE PUMP TO EVACUATION SYSTEMS. REFER TO PROCESS PIPING VENDOR.
13 PROVIDE 3/4" CA QUICK CONNECT 4'-0" A.F.F.
14 ROUTE 2" COMPRESSED AIR THROUGH UTILITY TRENCH REFER TO DETAIL B1/P5.4
15 PROVIDE ISOLATION VALVE ON COMPRESSED AIR LINE IN ACCESIBLE LOCATION PRIOR TO COMPRESSED AIR LINE ENTERING UTILITY TRENCH.
16 ROUTE COMPRESSED AIR PIPING ON TOP OF SLAB TO UTILITY STATION FOR FINAL CONNECTION TO EQUIPMENT. PIPING ON SLAB SHALL BE SECURED TO PREVENT MOVEMENT.
17 PROVIDE ISOLATION VALVE ON COMPRESSED AIR BYPASS LINE.
18 ROUTE COMPRESSED AIR TO 2" COMPRESSED AIR QUICK CONNECT FOR SAND BLAST EQUIPMENT. COORDINATE FINAL LOCATION OF SAND BLAST EQUIPMENT WITH ARCHITECTURAL EQUIPMENT PLANS.
19 ROUTE COMPRESSED AIR TO 3/4" COMPRESSED AIR QUICK CONNECT FOR SPRAY PAINT EQUIPMENT. COORDINATE FINAL LOCATION OF SPRAY PAINT EQUIPMENT WITH ARCHITECTURAL EQUIPMENT PLANS.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.
B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.
C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.
E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.
G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 COMPRESSED AIR RISER

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING RISERS

P3.1
8301

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

KEYNOTE LEGEND

1 PROVIDE BALL VALVE, CHECK VALVE, AND TYPE "A" WATER HAMMER ARRESTOR ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO MOP SINK. REFER TO DETAIL B1/P5.1.

2 REFER TO WATER HEATER DETAIL ON SHEET B2/P5.1 FOR PIPING, VALVING, AND ACCESSORIES.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

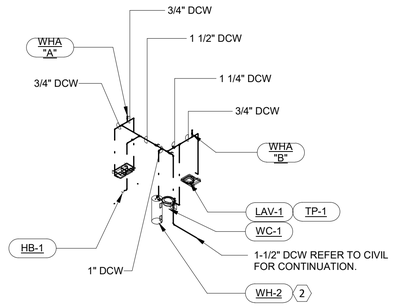
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

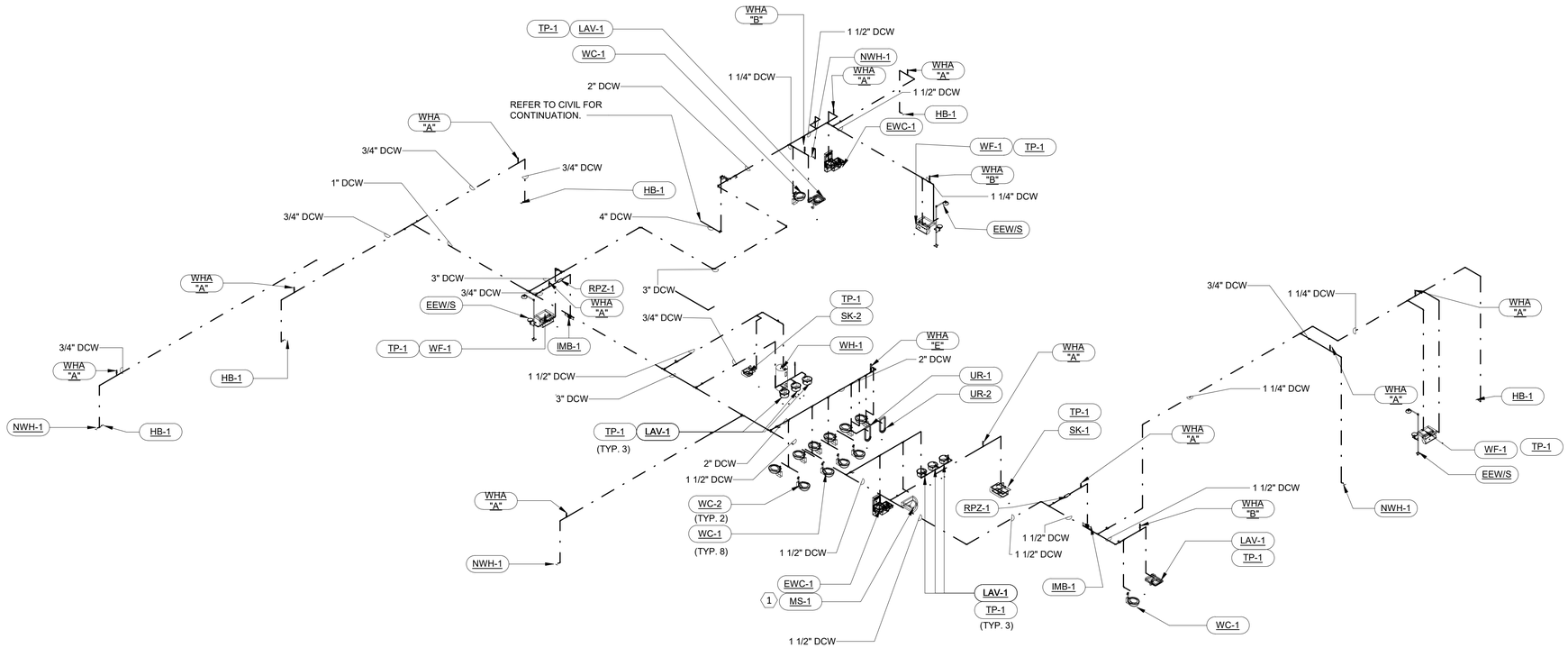
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



C1 DOMESTIC COLD WATER RISER SEG K



A1 DOMESTIC COLD WATER RISER - WEST BUILDING

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-4704200062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING RISER

P3.2
8302

KEYNOTE LEGEND

1 PROVIDE BALL VALVE, CHECK VALVE, AND TYPE "A" WATER HAMMER ARRESTOR ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO MOP SINK. REFER TO DETAIL B1/P5.1.

2 PROVIDE BALL VALVE ON TRUCK FILL LINE AT 5'-0" A.F.F.. PROVIDE DRAIN VALVE AT BASE OF TRUCK FILL LINE FOR FREEZE PROTECTING THE SYSTEM.

3 PROVIDE SUCTION HOSE WITH STRAINER AND FLOATS SHALL BE ROUTED DOWN INTO THE CONCRETE OIL SEPARATOR PIT AND SECURELY FASTENED TO RESIST MOVEMENT.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

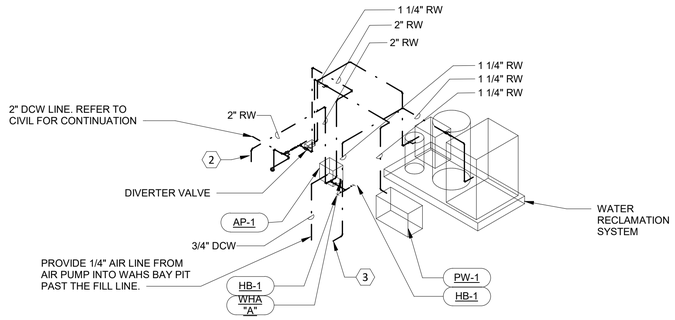
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

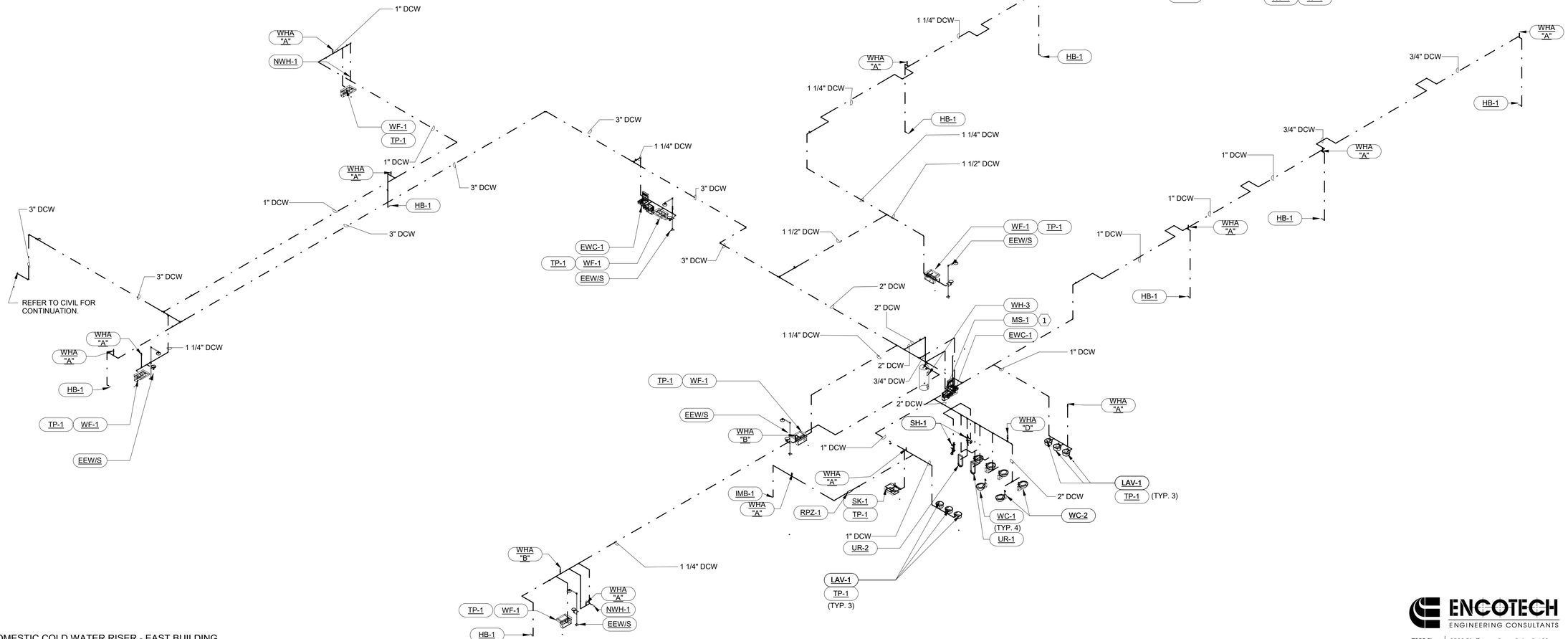
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



C1 DOMESTIC COLD WATER RISER SEG H



A1 DOMESTIC COLD WATER RISER - EAST BUILDING

PLUMBING RISERS

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

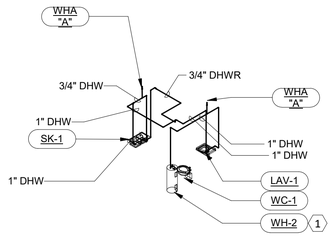
STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

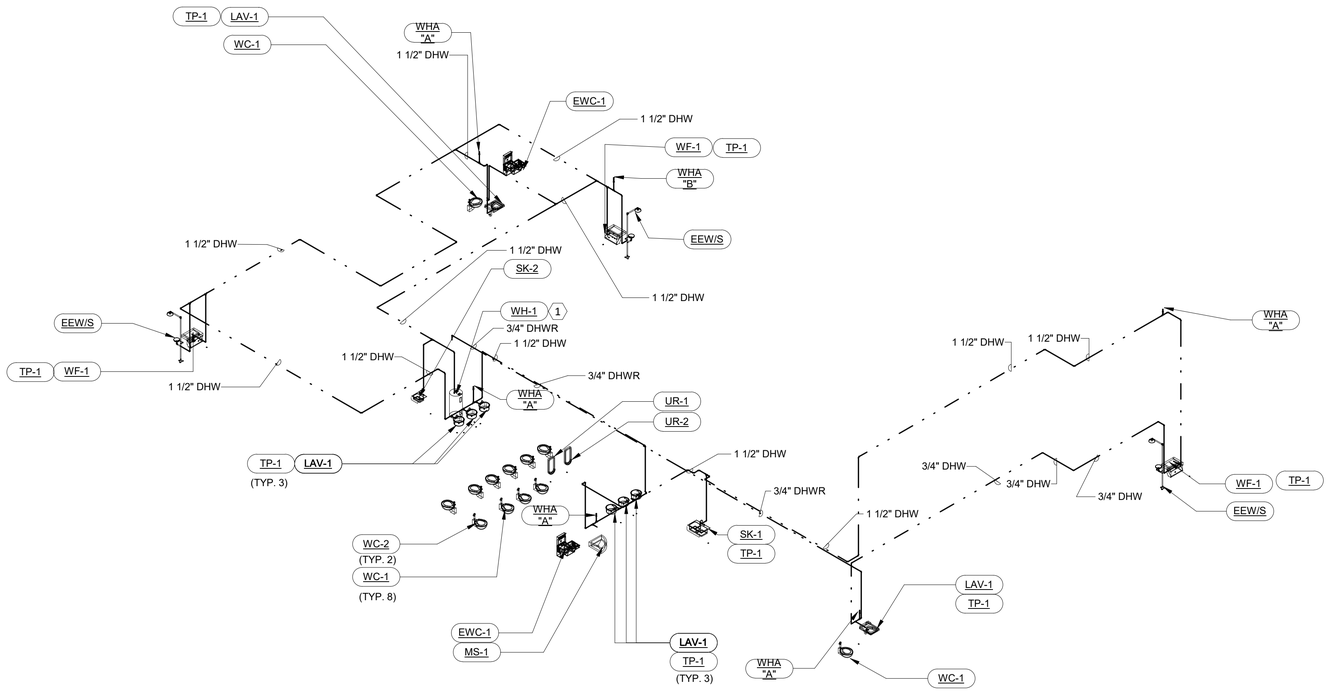
ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P3.3
8303

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



C1 DOMESTIC HOT WATER RISER SEG K



A1 DOMESTIC HOT WATER RISER - WEST BUILDING

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 REFER TO WATER HEATER DETAIL ON SHEET B2/P5.1 FOR PIPING, VALVING, AND ACCESSORIES.

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724

TRAVIS COUNTY

STATE HEADQUARTERS (29)

PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING RISER

P3.4

8304

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

KEYNOTE LEGEND

1 PROVIDE BALL VALVE, CHECK VALVE, AND TYPE "A" WATER HAMMER ARRESTOR ON DOMESTIC HOT AND COLD WATER CONNECTIONS TO MOP SINK. REFER TO DETAIL B1/P5.1.

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

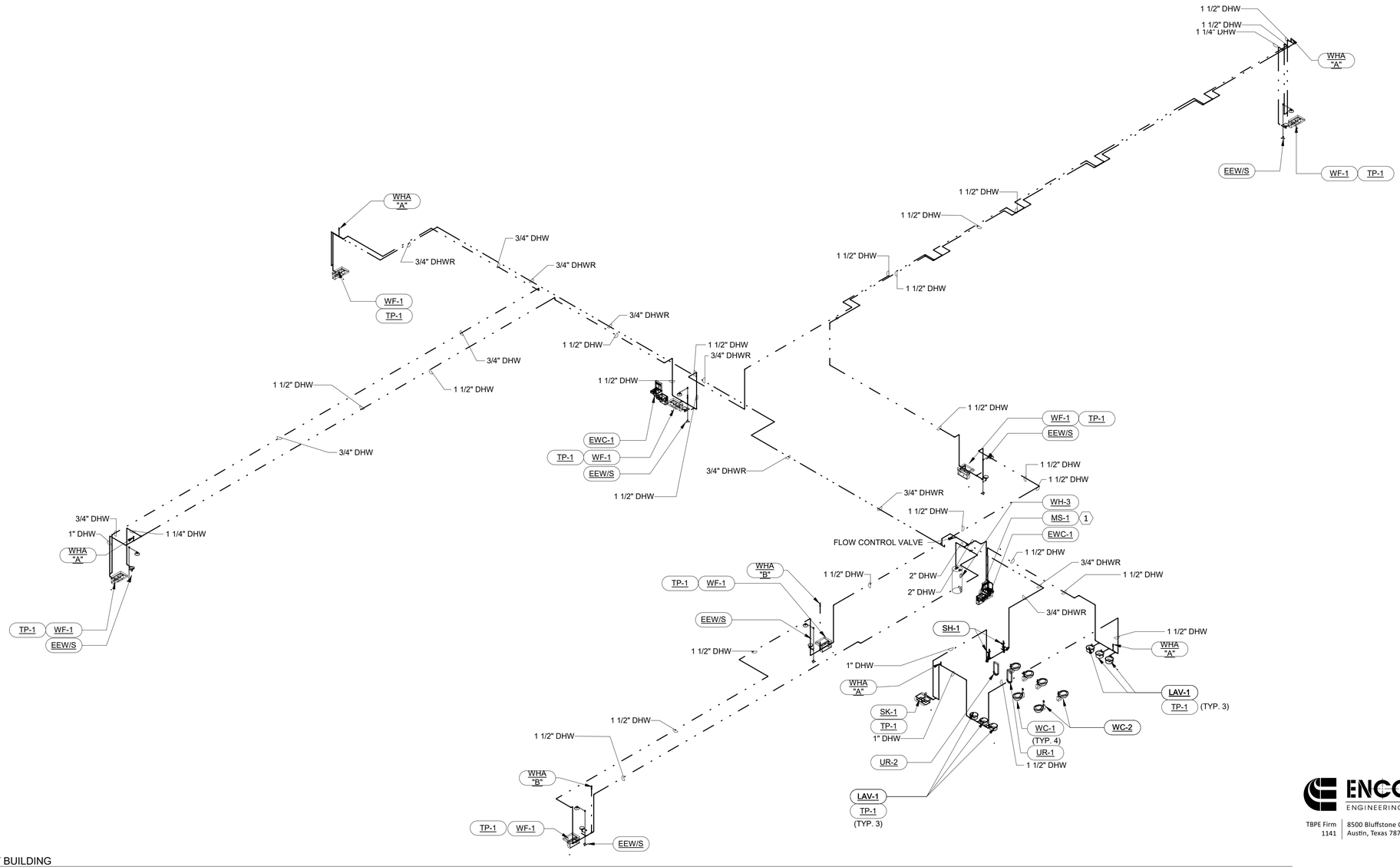
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 DOMESTIC HOT WATER RISER - EAST BUILDING

PLUMBING RISER

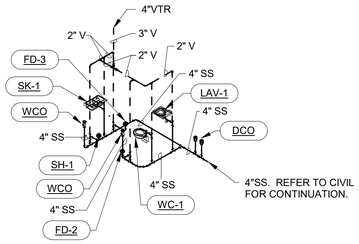
ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

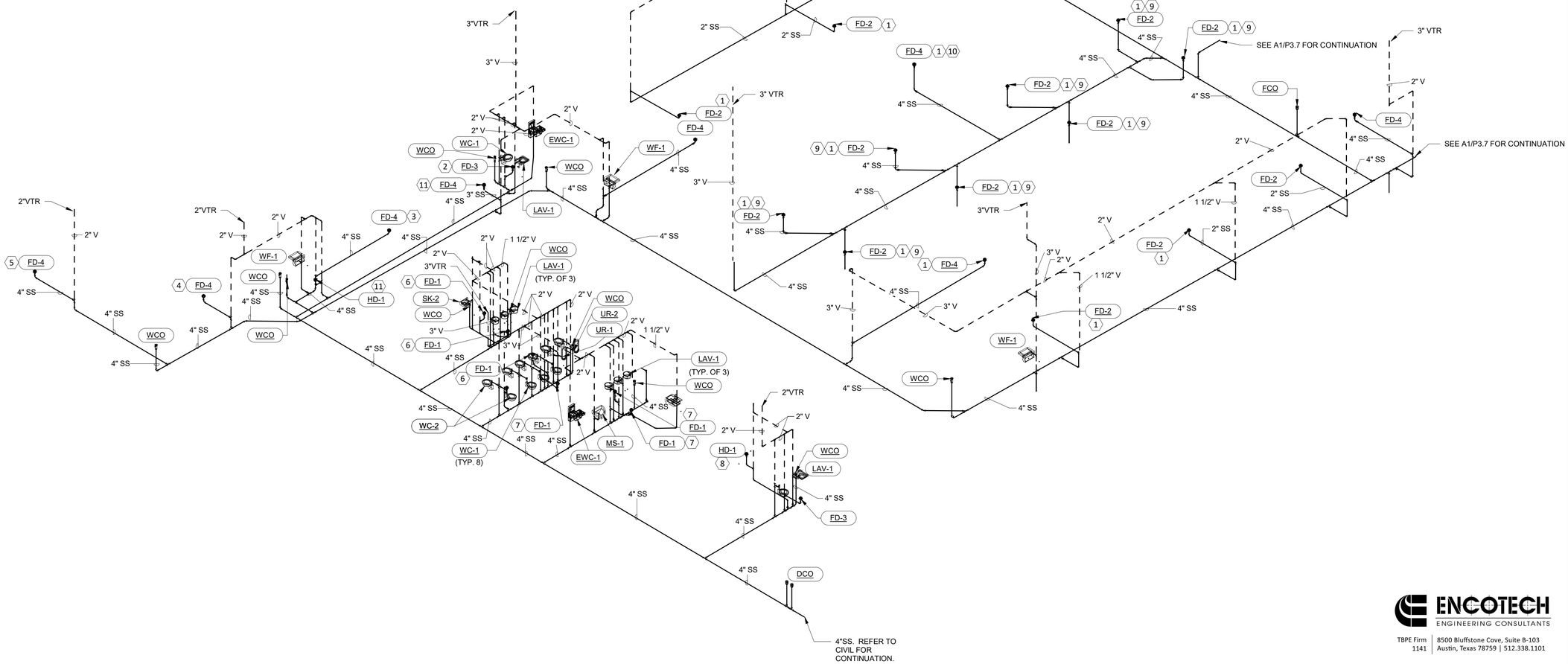
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P3.5
8305



1 WASTE & VENT RISER - SEG K



A1 WASTE & VENT RISER - WEST BUILDING SANITARY CONNECTION

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
2 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN RESTROOM 178.
3 PROVIDE WATER SAVER TRAP PRIMER FREOM SINK IN ELECTRICAL SHOP 127.
4 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN PARENT ROOM 112.
5 PROVIDE WATER SAVING TRAP PRIMER FROM SINK IN CALIBRATION BAY 102.
6 PROVIDE WATER SAVING TRAP PRIMER FROM LAVATORY IN WOMENS 114.
7 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN MENS 115.
8 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN BREAKROOM 117.
9 PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
10 3" FLOOR DRAIN BODY. PIPING BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
11 PROVIDE FLOOR DRAIN WIHT J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.

Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING RISERS

P3.6
8306

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

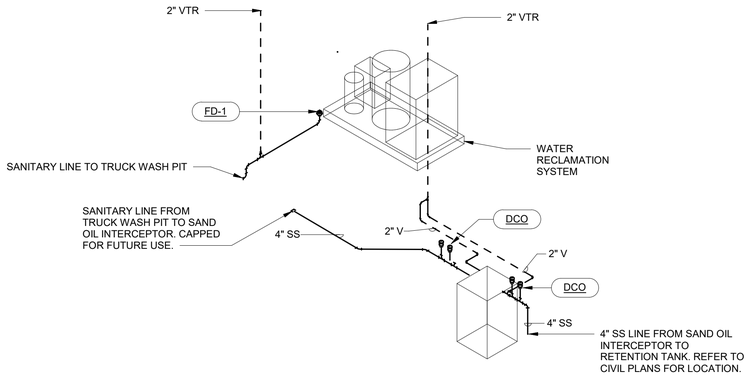
F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

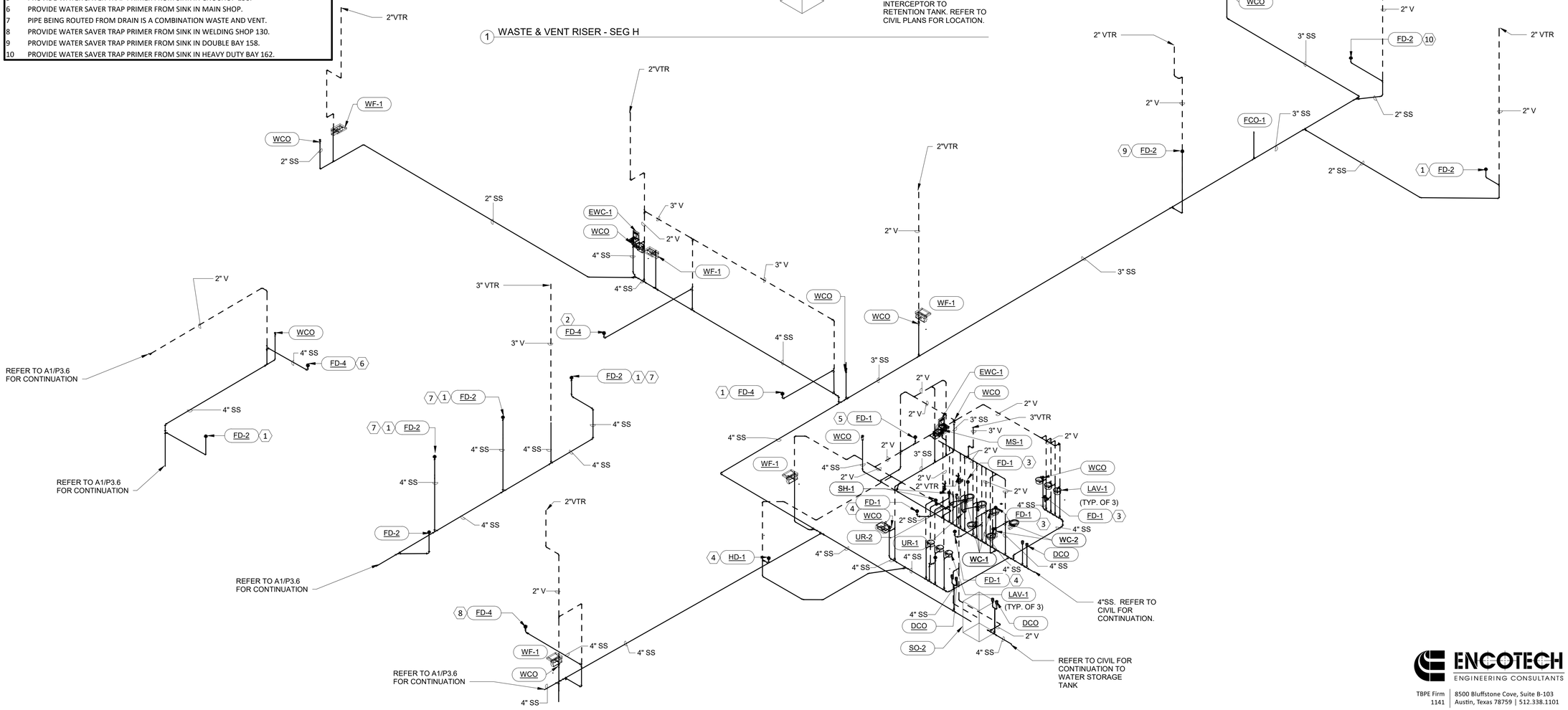
H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.

KEYNOTE LEGEND

1 PROVIDE FLOOR DRAIN WITH J.R. SMITH TRAP GUARD MODEL# 2692-04 OR APPROVED EQUIVALENT.
2 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN MACHINE SHOP 131.
3 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATROY IN WOMEN 149.
4 PROVIDE WATER SAVER TRAP PRIMER FROM LAVATORY IN MEN 148.
5 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN CNC SHOP 138.
6 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN MAIN SHOP.
7 PIPE BEING ROUTED FROM DRAIN IS A COMBINATION WASTE AND VENT.
8 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN WELDING SHOP 130.
9 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN DOUBLE BAY 158.
10 PROVIDE WATER SAVER TRAP PRIMER FROM SINK IN HEAVY DUTY BAY 162.



1 WASTE & VENT RISER - SEG H



A1 WASTE & VENT RISER - EAST BUILDING SANITARY CONNECTION

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING RISERS

P3.7
8307

GENERAL SHEET NOTES

A. REFER TO GENERAL NOTES ON SHEET P0.1.

B. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR REPLACEMENT OF DRAINS. DRAINS SHALL BE LOCATED AT LOW-POINTS IN GRADING.

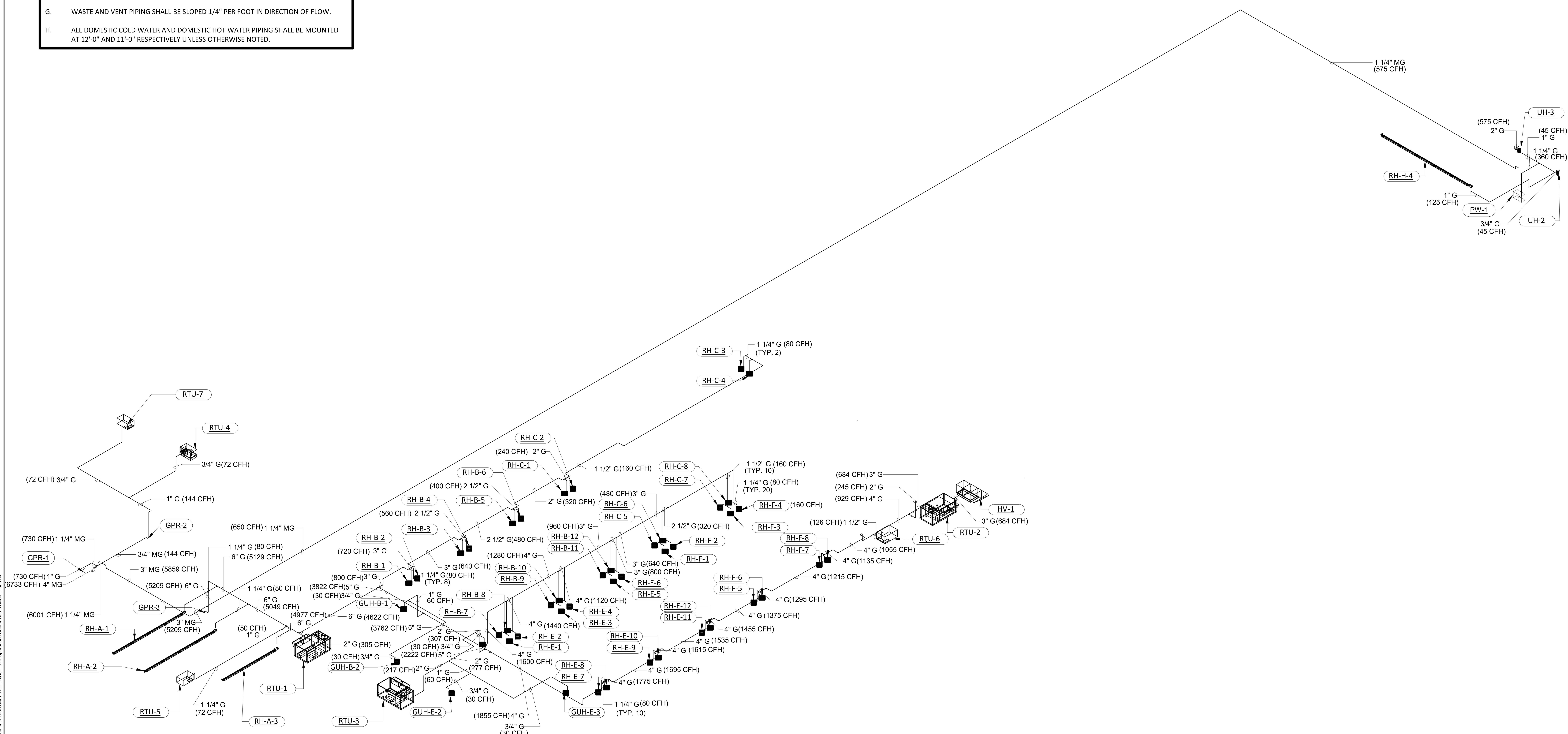
D. REFER TO RISER DIAGRAMS FOR ALL PIPE SIZES, ACCESSORIES, AND PIPING ROUTING.

E. PLUMBING ROUTING IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING SHALL BE FIELD-ROUTED AND OFFSET AS REQUIRED TO AVOID INTERFERENCES WITH DUCTWORK, LIGHTING, AND OTHER TRADES AS ALLOWABLE.

F. REFER TO PLUMBING FIXTURE SCHEDULE FOR SIZE OF PLUMBING CONNECTIONS TO INDIVIDUAL FIXTURES.

G. WASTE AND VENT PIPING SHALL BE SLOPED 1/4" PER FOOT IN DIRECTION OF FLOW.

H. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING SHALL BE MOUNTED AT 12'-0" AND 11'-0" RESPECTIVELY UNLESS OTHERWISE NOTED.



A1 Natural Gas Riser

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

PLUMBING RISERS

P3.8
8308

PLUMBING FIXTURE SCHEDULE

MARK	CW	HW	VENT	S&W	MODEL NUMBER	DESCRIPTION
CO-1			*	*	-	WYE FITTING WITH CAP OR PLUG SIZED TO MATCH PIPING. MATERIAL TO MATCH PIPING.
DCO	-	-	-	*	DOUBLE CLEANOUT: JAY R. SMITH MODEL: (2) 4262L-G	DOUBLE EXTERIOR CLEANOUT. INSTALL (2) ECO FIXTURES (REFER TO ECO SCHEDULED BELOW AND DETAIL).
DSN	-	-	-	-	DOWNSPOUT NOZZLE: JAY R. SMITH MODEL: 1770T	CAST BRONZE NOZZLE WITH CAST BRONZE FLANGE. REFER TO PLANS FOR SIZE.
ECO	-	-	-	*	EXTERIOR CLEANOUT: JAY R. SMITH MODEL: 4262L-G	HEAVY DUTY CAST IRON COVER. HIGH & LOW ROUND FLANGES FOR USE WITH CONCRETE, ASPHAULT AND EARTH FILL IN PAVED AREAS.
EEW/S	1-1/4"	1-1/4"	-	-	EMERGENCY EYE WASH/SHOWER: GUARDIAN MODEL: G1902HFC EMERGENCY MIXING VALVE: NAVIGATOR S19-2100 EFX25	COMBINATION EMERGENCY EYE WASH & SHOWER. 10" DIAMETER, FLOOR MOUNTED, ORANGE ABS, STAINLESS STEEL BOWL, HAND AND FOOT CONTROL, EMERGENCY MIXING VALVE TO REGULATE TEMPERED WATER TO THE FIXTURES. SHALL COMPLY WITH ANSI Z358.1 ASSE 1071
EWC-1	1/2"	-	1-1/2"	2"	DRINKING FOUNTAIN: ELKAY MODEL: EZSTL8WSLK	ELECTRIC DRINKING FOUNTAIN, DUAL HEIGHT WITH BOTTLE FILLER, STAINLESS STEEL BASIN, INDOOR RATED, WALL MOUNT, 3.2 FLA, 120 V, 1 PH, ADA COMPLIANT.
FCO	-	-	-	*	FLOOR CLEANOUT: JAY R. SMITH MODEL: 4333	FLOOR CLEANOUT. HEAVY DUTY CAST IRON NON ADJUSTABLE TOP WITH BRONZE TAPER THREAD CLOSURE PLUG.
FD-1	-	-	2"	4"	FLOOR DRAIN: JAY R. SMITH MODEL: 2005-A	5"X5" SQUARE FLOOR DRAIN. CAST IRON WITH NICKEL BRONZE ADJUSTABLE STRAINER HEAD. PROVIDE WITH TRAP PRIMER PORT.
FD-2	-	-	1-1/2"	2"	FLOOR DRAIN: JAY R. SMITH MODEL: 2110-B	8" ROUND MEDIUM DUTY FLOOR DRAIN. CAST IRON WITH CAST IRON GRATE. PROVIDE WITH TRAP PRIMER PORT AND SEDIMENT BUCKET.
FD-3	-	-	2"	3"	FLOOR DRAIN: JAY R. SMITH MODEL: 2100-B	8" ROUND MEDIUM DUTY FLOOR DRAIN. CAST IRON WITH CAST IRON GRATE. PROVIDE WITH TRAP PRIMER PORT AND SEDIMENT BUCKET.
FD-4	-	-	2"	4"	FLOOR DRAIN: JAY R. SMITH MODEL: 2110-B	8" ROUND HEAVY DUTY FLOOR DRAIN. CAST IRON WITH CAST IRON GRATE. PROVIDE WITH TRAP PRIMER PORT AND SEDIMENT BUCKET.
HB-1	3/4"	-	-	-	HOSE BIBB: WOODFORD 24	HOSE BIBB, ANTI-SIPHON, VACUUM BREAKER, EXPOSED.
HD-1	-	-	2"	2"	HUB DRAIN: JAY R. SMITH MODEL: 3811	HUB DRAIN. CAST IRON. PROVIDE WITH P TRAP WITH TRAP PRIMER.
IMB-1	1/2"	-	-	-	ICE MAKER BOX: WATER TITE MODEL: IPS AB9700	ICE MAKER OUTLET BOX, QUARTER TURN VALVE, 1/2" CONNECTION, LEAD FREE. SECURE BOX TO STRUCTURAL MEMBER.
LAV-1	1/2"	1/2"	1-1/2"	2"	LAVATORY: AMERICAN STANDARD MODEL: 0476.028 SOAP: BOBRICK B-8263 MIXING VALVE: POWERS MODEL: LFE480 FAUCET: SLOAN MODEL: EAF-250	WHITE VITREOUS CHINA, TOP MOUNT. SELF-RIMMING WITH FRONT OVERFLOW. 20" x 17" OVAL BOWL. FAUCET HOLE ON 4" CENTER. SEAL WITH SILICONE SEALANT. ADA COMPLIANT. INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK PER ADA REQUIREMENTS WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT. LEAD FREE BRASS BODY THERMOSTATIC MIXING VALVE. ASSE 1070 COMPLIANT. SET TEMPERATURE TO 105F. MOUNT BELOW PLUMBING FIXTURE. 0.25 GPM MINIMUM FLOW RATE. COMMERCIAL GRADE, 0.5 GPM FLOW RATE, ADA COMPLIANT, ELECTRONIC, SENSOR ACTIVATED, BATTERY POWERED, DIE-CAST HAND WASHING FAUCET.
MS-1	3/4"	3/4"	2"	3"	MOP BASIN: FIAT MODEL: TSB3003501 FAUCET: CHICAGO FAUCETS MODEL: 897-CP	MOP SINK BASIN, TERRAZO, FLOOR MOUNT, 36"W x 24"L x 12"D BASIN, PROVIDE STAINLESS STEEL BACKSPLASH WITH SINK. COMBINATION FAUCET WITH VACUUM BREAKER, 3/4" HOSE THREAD ON SPOUT, PAIL HOOK, LEVER HANDLES, INTEGRAL STOPS, WALL BRACE, AND MOP BRACKET.
NWH-1	3/4"	-	-	-	NON-FREEZE WALL HYDRANT: WOODFORD 67	EXPOSED NON-FREEZE WALL HYDRANT, FREEZE PROOF, ASSE 1052 ANTI-SIPHON DOUBLE CHECK VACUUM BREAKER, THREADED HOSE CONNECTION, LOOSE KEY HANDLE.
OD-1	-	-	-	-	OVERFLOW ROOF DRAIN: JAY R. SMITH MODEL: 1080-C-R-U-CID	CAST IRON BODY, CAST IRON DOME GRATE WITH 2" WATER DAM. FLASHING CLAMP, GRAVEL STOP, SUMP RECIEVER, AND VANDAL PROOF DOME. PROVIDE SIZE PER PLAN DRAWINGS.
RD-1	-	-	-	-	ROOF DRAIN: JAY R. SMITH MODEL: 1010Y-C-R-U-CID	CAST IRON BODY WITH CAST IRON DOME GRATE. FLASHING CLAMP, GRAVEL STOP, SUMP RECIEVER, AND VANDAL PROOF DOME. PROVIDE SIZE PER PLAN DRAWINGS.
RPZ-1	*	-	-	-	BACKFLOW PREVENTOR: WATTS MODEL: LF009QT-S	REDUCED PRESSURE ZONE BACKFLOW PREVENTOR, LEAD FREE CAST BRONZE BODY, QUARTER TURN BALL VALVES, STRAINER, AND 909AG AIR GAP FITTING. RPZ MUST COMPLY WITH ASSE 1013 AND NSF 61 ANNEX G.

NOTES:
*REFER TO PLAN FOR SIZING
** PLUMBING FIXTURES, ACCESSORIES AND INSTALLATION SHALL MEET ALL FEDERAL, STATE, ADA AND LOCAL REQUIREMENTS

PLUMBING FIXTURE SCHEDULE

MARK	CW	HW	VENT	S&W	MODEL NUMBER	DESCRIPTION
SH-1	1/2"	1/2"	1-1/2"	2"	BASIN: MINCEY MARBLE MODEL: TDRI-36ADJ62-OSF FAUCET: DELTA MODEL: T13H133	36"X62" PRE-FABRICATED ADA COMPLIANT SHOWER STALL WITH ROLL IN TRENCH DRAIN PAN AND TEXTURED NON-SLIP FINISH. SHOWER VALVE. PRESSURE BALANCING CARTRIDGE, SHOWERHEAD, ARM, FLANGE, AND LEVER BLADE HANDLE. 1.5 GPM. CHROME FINISH. COMPLY WITH ADA AND ASME A112.18.1/CSA B125.1.
SK-1	1/2"	1/2"	1-1/2"	2"	SINK: ELKAY MODEL: LRADQ332255 MIXING VALVE: POWERS MODEL: LFE480 FAUCET: DELTA MODEL: 26C3942	DOUBLE COMPARTMENT SINK, 33"x22", #18 GAUGE STAINLESS STEEL, SELF RIMMING, 5-1/2" BOWL DEPTH, 8" CENTER SET, REAR CENTER DRAIN, AND ADA COMPLIANT. INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT. LEAD FREE BRASS BODY THERMOSTATIC MIXING VALVE. ASSE 1070 COMPLIANT. SET TEMPERATURE TO 110F. MOUNT BELOW PLUMBING FIXTURE. MANUAL GOOSENECK FAUCET, 1.5 GPM AERATOR, 8" CENTERS, LEVER HANDLES. ADA ACCESSIBLE.
SK-2	1/2"	1/2"	1-1/2"	2"	SINK: ELKAY MODEL: LRADQ172255 MIXING VALVE: POWERS MODEL: LFE480 FAUCET: DELTA MODEL: 26C3942	SINGLE COMPARTMENT SINK, 17"x20", #18 GAUGE STAINLESS STEEL, SELF RIMMING, 5-1/2" BOWL DEPTH, 8" CENTER SET, LK-99 DRAIN FITTING, AND ADA COMPLIANT. INSULATE ALL EXPOSED DRAIN AND WATER PIPING UNDER SINK WITH TRUEBRO #102 WHITE INSULATION OR EQUIVALENT. LEAD FREE BRASS BODY THERMOSTATIC MIXING VALVE. ASSE 1070 COMPLIANT. SET TEMPERATURE TO 110F. MOUNT BELOW PLUMBING FIXTURE. MANUAL GOOSENECK FAUCET, 1.5 GPM AERATOR, 8" CENTERS, LEVER HANDLES. ADA ACCESSIBLE.
TP-1	1/2"	-	-	-	WATER SAVER TRAP PRIMER MODEL: ZURN 1021	WATER SAVER TRAP PRIMER, CHROME PLATED POLISHED CAST BRASS BODY WITH CLEANOUT, GROUND JOINT WITH 1-1/2" NPT OUTLET. STAINLESS STEELBRAIDED PRIMER HOSE WITH 1/2" FIP COMPRESSION FITTINGS.
UR-1	3/4"	-	1-1/2"	2"	URINAL: KOHLER MODEL: BARDON-K-A-4991-ET CARRIERS: ZURN Z1221 FLUSH VALVE: SLOAN MODEL: SOLIS 8186	FLUSH VALVE URINAL, WALL MOUNTED, 1-1/4" TOP SPUD, REAR OUTLET, MOUNT TRIM AT 24" ABOVE FINISHED FLOOR. ADA COMPLIANT. SENSOR-ACTIVATED FLUSH VALVE WITH MANUAL OVERRIDE, BATTERY POWERED, EXPOSED, 0.5 GPF, PROVIDE MANUFACTURER'S LOW VOLTAGE TRANSFORMER FOR UP TO TEN URINALS OR WATER CLOSETS. ADA ACCESIBLE.
UR-2	3/4"	-	1-1/2"	2"	URINAL: AMERICAN STANDARD MODEL: 6590.001 CARRIERS: ZURN Z1221 FLUSH VALVE: SLOAN MODEL: SOLIS 8186	URINAL BOWL. VITREOUS CHINA. WALL MOUNT. PROVIDE WALL CARRIER. MOUNT 17" A.F.F. TO LIP OF BOWL. FLUSH VALVE. 3/4" TOP SPUD. 0.5 GPF. ADA COMPLIANT WHEN MOUNTED AT 17" A.F.F. TO LIP OF BOWL. SENSOR-ACTIVATED FLUSH VALVE WITH MANUAL OVERRIDE, BATTERY POWERERD, EXPOSED, 0.25 GPF, PROVIDE MANUFACTURER'S LOW VOLTAGE TRANSFORMER FOR UP TO TEN URINALS OR WATER CLOSETS. ADA ACCESSIBLE.
WC-1	1-1/4"	-	2"	4"	WATER CLOSET: TOTO MODEL: CT708E#01 CARRIER: Z1201-N FLUSH VALVE: SLOAN SOLIS 8111 SEAT: CHURCH 295SSC	FLUSH VALVE WATER CLOSET, WHITE VITREOUS CHINA, WALL-MOUNTED, BACK OUTLET OUTLET, ELONGATED BOWL, WHITE, 1.28 GPF. ADA ACCESIBLE. FLUSH VALVE, TOP-MOUNT, 1.28 GPF, SENSOR, BATTERY POWERED, POLISHED CHROME FINISH, EXPOSED. ADA ACCESIBLE. OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE.

NOTES:
*REFER TO PLAN FOR SIZING
** PLUMBING FIXTURES, ACCESSORIES AND INSTALLATION SHALL MEET ALL FEDERAL, STATE, ADA AND LOCAL REQUIREMENTS

PLUMBING FIXTURE SCHEDULE

MARK	CW	HW	VENT	S&W	MODEL NUMBER	DESCRIPTION
WC-2	1-1/4"	-	2"	4"	WATER CLOSET: TOTO MODEL: CT708E#01 CARRIER: Z1201-N (FOR SINGLE WC) FLUSH VALVE: SLOAN SOLIS #8111 SEAT: CHURCH 295SSC	FLUSH VALVE WATER CLOSET, WHITE VITREOUS CHINA, WALL-MOUNTED, BACK OUTLET OUTLET, ELONGATED BOWL, WHITE, 1.28 GPF. ADA ACCESSIBLE. FLUSH VALVE, TOP-MOUNT, 1.28 GPF, SENSOR, BATTERY POWERED, POLISHED CHROME FINISH, EXPOSED. ADA ACCESSIBLE. OPEN FRONT, ELONGATED SEAT WITH STAINLESS STEEL LOCKING HINGE.
WCO	-	-	-	*	WALL CLEANOUT: JAY R. SMITH MODEL: 4530S	CAST IRON CLENOUT TEE, STAINLESS STEEL ROUND COVER AND SCREW, AND IRON PLUG WITH SEAL.
WF-1	1"	1"	1-1/2"	2"	SINK: BRADLEY MODEL: WF2803 MIXING VALVE: POWERS MODEL: LFE480	36" SEMI-CIRCULAR WASH FOUNTAIN. PRE ASSEMBLED BOWL AND PEDESTAL. FOOT PEDAL ACTIVATED. ACCOMODATES UP TO 3 USERS AT ONCE WITH APROXIMATE FLOW RATE OF 1.5 GPM. LEAD FREE BRASS BODY THERMOSTATIC MIXING VALVE. ASSE 1070 COMPLIANT. SET TEMPERATURE TO 110F. MOUNT BELOW PLUMBING FIXTURE.
WH-1	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DSE-50A EXPANSION TANK: AMTROL ST-12 (ET-1) RECIRCULATING PUMP (RP-1): BELL AND GOSSET 60	ELECTRIC WATER HEATER, 50 GALLON TANK, 6 KW HEATING ELEMENT, 140°F OUTPUT, 36 GPH RECOVERY AT 70°F TEMPERATURE RISE, 208V/3Ø ELECTRIC POWER. 5 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE. INLINE HOT WATER RECIRCULATION PUMP. 1X1X5-1/2 CENTRIFUGAL PUMP. 1" SUCTION AND DISCHARGE. 1/2HP, 120V/1PH.
WH-2	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DSE-30A EXPANSION TANK: AMTROL ST-12 (ET-1) RECIRCULATING PUMP (RP-1): BELL AND GOSSET 60	ELECTRIC WATER HEATER, 30 GALLON TANK, 6 KW HEATING ELEMENT, 140°F OUTPUT, 36 GPH RECOVERY AT 70°F TEMPERATURE RISE, 208V/3Ø ELECTRIC POWER. 5 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE. INLINE HOT WATER RECIRCULATION PUMP. 1X1X5-1/4 CENTRIFUGAL PUMP. 1" SUCTION AND DISCHARGE. 1/4HP, 120V/1PH.
WH-3	3/4"	3/4"	-	-	WATER HEATER: A.O. SMITH MODEL: DSE-65A EXPANSION TANK: AMTROL ST-12 (ET-1) RECIRCULATING PUMP (RP-1): BELL AND GOSSET 60	ELECTRIC WATER HEATER, 65 GALLON TANK, 6 KW HEATING ELEMENT, 140°F OUTPUT, 36 GPH RECOVERY AT 70°F TEMPERATURE RISE, 208V/3Ø ELECTRIC POWER. 5 GALLON INLINE EXPANSION TANK. SET TANK AIR SIDE PRESSURE TO MATCH DOMESTIC WATER SYSTEM PRESSURE. INLINE HOT WATER RECIRCULATION PUMP. 1X1X5-1/2 CENTRIFUGAL PUMP. 1" SUCTION AND DISCHARGE. 1/2HP, 120V/1PH.
WHA	-	-	-	-	WATER HAMMER ARRESTOR: WATTS MODEL ES-WD-SS SERIES	WATER HAMMER ARRESTOR. PROVIDE PDI SIZES "A" THROUGH "F" AS INDICATED ON PLANS.

NOTES:
*REFER TO PLAN FOR SIZING
** PLUMBING FIXTURES, ACCESSORIES AND INSTALLATION SHALL MEET ALL FEDERAL, STATE, ADA AND LOCAL REQUIREMENTS

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING SCHEDULES

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P4.1
8401

AIR COMPRESSOR SCHEDULE

MARK	MANUFACTURER MODL/SIZE	TANK SIZE (GALLONS)	TANK CONFIGURATION	MAX HP	CAPACITY (CFM) @150 PSI	RPM	OUTLET SIZE	VOLT/HZ/PH	No. STAGES	MAX. PSI RATING	RATED FLOW SCFM	FILTRATION RATING (MICRONS)	NOTES
COMP-1/2	INGERSOLL-RAND MODEL# HH125A	N/A	N/A	125	477	10947	2"	460/60/3	2	150	N/A	N/A	1,2,3,4,5,6,7,8
REG/GAUGE 1-2	INGERSOLL-RAND MODEL# R27241-600, WITH GAGUE	N/A	N/A	N/A	N/A	N/A	1/2"	N/A	N/A	200	150	N/A	
SEP	INGERSOLL-RAND MODEL# POLY SEP AS65	34" X 21" X 39"	N/A	N/A	650	N/A	1/2"	N/A	N/A	N/A	N/A	N/A	
P-FILTER-1/2	INGERSOLL-RAND MODEL# GP-123	-	-	-	-	-	-	-	-	-	-	-	
A-FILTER-1/2	INGERSOLL-RAND MODEL# HE-123	-	-	-	-	-	-	-	-	-	-	-	
DRYER-1/2	INGERSOLL-RAND MODEL# NVC500	N/A	N/A	N/A	N/A	N/A	N/A	460/60/3	N/A	N/A	**500**	N/A	
COMP-3	ATLAS COPCO MODEL# CR7.5-TS-80V-1-IS	N/A	N/A	7.5	23		3/4"	230/60/3	1		N/A	N/A	3,4,7,8,9

NOTES

1. AIR COMPRESSOR SHALL INCLUDE A FACTORY MOUNTER MOTOR STARTER, ADJUSTABLE PRESSURE SWITCH, DUAL CONTROL CENTRIFUGAL UNLOADER, OIL PRESSURE SWITCH, AIR COOLED AFTERCOOLER AND AUTOMATIC RECIEVER TANK DRAIN.
2. AIR COMPRESSOR PUMP SHALL BE 100% CAST IRON RATED FOR 15,000 HOURS.
3. START UP KIT SHALL BE INSTALLED AND PROVIDED WITH 1 YEAR MAINTENANCE PLAN.
4. AIR COMPRESSOR SHALL HAVE A TWO YEAR PUMP WARRANTY AND FIVE YEAR RECEIVER TANK WARRANTY.
5. AUTO DRAIN RECEIVER TANK DRAIN VALVE AND AUTO DRAIN COMPRESSED AIR FILTERS SHALL DRAIN TO OIL/WATER SEPARATOR.
6. RIGID MOUNT OIL/WATER SEPARATOR ON GALVANIZED METAL CHAIR. OIL/WATER SEPARATOR DRAIN SHALL BE 18" ABOVE FINISHED FLOOR.
7. COMPRESSED AIR PIPING SHALL BE 3/4" TYPE "K" COPPER, PROVIDE A STAINLESS STELL BRAIDED HOSE WITH COMPRESSION FITTINGS.
8. PROVIDE ONE SPARE REPLACEABLE FILTER ELEMENT WITH EACH COMPRESSED AIR FILTER.
9. ROUTE CONDENSATE TO ABOCE GROUND RETENTION TANK, RELIANCE AQUA-TAINER OR APRROVED 7 GALLON WATER STORAGE TANK WITH HANDLE EQUIVALENT.

AIR PUMP SCHEDULE

MARK	MANUFACTURER/ MODEL	VOLTS/PH/HZ	MAX HP.	CAPACITY (CFM) @10 PSI	RPM
AP-1	GAST MODEL# ATO5 SERIES	115/60/1	1/4	4.8	1725

1. PROVIDE INTERVAL TIMER CONTROL ON AIR PUMP WITH A PROGRAMMED 2 HR. ON 2 HR. OFF SCHEDULE.

SAND OIL INTERCEPTOR SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION
SO-1	PARK EQUIPMENT COMPANY	SOCMP-750	CLASS II CONCRETE INTERCEPTOR WITH 750 GALLON CAPACITY, 4" INLET AND OUTLET CONNECTIONS, REMOVABLE 1/4" NON SKID DIAMOND THREADPLATE COVER FLUSH WITH GRADE SUITABLE FOR HEAVY TRUCK TRAFFIC, (H20 RATED) SECURED WITH STAINLESS STEEL SCREWS AND HEAVY DUTY LEAK PROOF GASKET.
SO-2	PARK EQUIPMENT COMPANY	SOCMP-500	CLASS II CONCRETE INTERCEPTOR WITH 500 GALLON CAPACITY, 4" INLET AND OUTLET CONNECTIONS, REMOVABLE 1/4" NON SKID DIAMOND THREADPLATE COVER FLUSH WITH GRADE SUITABLE FOR HEAVY TRUCK TRAFFIC, (H20 RATED) SECURED WITH STAINLESS STEEL SCREWS AND HEAVY DUTY LEAK PROOF GASKET.

GAS PRESSURE REGULATOR SCHEDULE

TAG	MANUFACTURER	MODEL #	VALVE BODY SIZE	DESIGN FLOW RATE	VALVE MAXIMUM FLOW RATE	MAXIMUM INLET PRESSURE	DESIGN INLET PRESSURE	OUTLET PRESSURE	SERVICE	NOTES
			INCHES	CFH	CFH	PSI	PSI	IN. W.C.		
GPR-1	PIETRO-FIORENTINI	30053DC	1"	730	906	2	1	5"-14"	GEN-3	1, 3, 4, 5
GPR-2	MAXITROL	325-5L	1/2"	144	360	2	1	7"-11"	RADIO TOWER	1, 2, 3, 4
GPR-3	PIETRO-FIORENTINI	30155DC	2"	5209	9068	2	1	7"-11"	FACILITY	1, 3, 4, 5
GPR-4	PIETRO-FIORENTINI	30052DC	3/4"	650	690	2	1	7"-11"	WASH BAY	1, 3, 4, 5

NOTES:

1. REGULATOR SHALL BE DIAPHRAM TYPE WITH VENT LIMITER.
2. MAXIMUM DROOP OF 1 IN. W.C.
3. REFER TO EQUIPMENT SUBMITTALS FOR FINAL EXACT LOADS. VERIFY SIZE MATCHES REQUIRED FINAL FLOW RATE REQUIREMENT BEFORE INSTALLATION.
4. VALVE SHALL MEET ANSI Z21.80 AND CSA 6.22. VALVE SHALL HAVE CSA LISTING STAMP.
5. MAXIMUM DROOP OF 2 IN. W.C.

WATER RECLAMATION SYSTEM SCHEDULE

SEPARATOR UNIT	WATER RECYCLING SYSTEM
TANK SIZE MAIN SEPARATOR	4' X 6' X 7'-6"
OVERALL HEIGHT	8'-9"
HOLDING TANK CONSTRUCTION	3/16" STEEL PLATE
MAX. FLOW RATE (GPM)	22
WEIGHT (LBS)	6,600
CENTRIFUGAL BASIN SUMP PUMP (HP/FLA)	3/4/6.1
COALESCING PACK MATERIAL	GALVANIZED STEEL
DRAIN OFF OIL CAPACITY (GAL)	51
TOTAL OPERATING OIL CAPACITY (GAL)	150
TOTAL FLUID CAPACITY (GAL)	680
HOLDING TANK CAPACITY (GAL)	600
DUAL FILTER BAG CANISTERS	25 MICRON
SKID MOUNT DIMENSIONS	7'X14'
SKID MOUNT CONSTRUCTION	8" CHANNEL W/ 7-GAUGE STEEL PLATE
CENTRIFUGAL FILTER PUMP (HP/FLA)	3/4/8.2
PRESSURE BLADDER CAPACITY (GAL)	85
**FULL LOAD AMPS	16.3
**OVER CURRENT PROTECTION	30
UNIT VOLTS/PHASE/HZ	208/1/60
MANUFACTURER	TAYLOR ENVIRONMENTAL PRODUCT INC.
MODEL	CLLV

REMARKS:

1. THE ABOVE CLOSED LOOP RECYCLE SYSTEM SHALL BE MOUNTED ON A SKID PLATFORM.
2. THE COMPLETE SYSTEM SHALL REQUIRE A SINGEL PHASE, 208 AC POWER, TO A WEATHER PROOF CONTROL PANEL INSTALLED ON THE SKID BY THE MANUFACTURER.
3. THE INLET MANIFOLD SHALL BE DESIGNED TO MINIMIZE TURBULENCE AND PREVENT SHORT CYCLING.
4. SYSTEM SHALL INCLUDE A STRAINER AND FLOAT SWITCH TO PROVIDE CENTRIFUGAL SUMP PUMP PROTECTION AND CONTROL.
5. UNIT SHALL INCLUDE A CENTRIFUGAL PUMP TO DRAW WATER OUT OF THE HOLDING TANK AND INTO THE PRESURE BLADDER. THE WATER WILL THEN PASS THROUGH THE RIGID PIPE DUAL BAG FILTER CANISTERS PRIOR TO ENTERING PRESSURE WASHER AS SCHEDUELD.
6. UNIT SHALL INCLUDE A SLUDGE PAN, DRAIN LINES AND AUTOMATIC VALVES FOR OIL AND SLUDGE REMOVAL.
7. SYSTEM SHALL INCLUDE A HOSE BIBB CONNECTION FOR SUPPLY OF WATER TO PRESSURE WASHER.
8. SUCTION HOSE WITH STRAINER AND FLOATS SHALL BE ROUTINED DOWN INTO THE CONCRETE OIL SEPARATOR PIT AND SECURELY FASTENED TO RESIST MOVEMENT.
9. CONTRACTOR SHALL INSTALL SYSTEM ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

PRESSURE WASHER SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION
PW-1	HOTSY	900 SERIES	PRESSURE WAHSER 5HP, LIMIT TO 3 GPM, NATURAL GAS ELECTRICAL: 208V/1PH/60HZ, 31 FLA, 50 AMP GFCI PLUG

GAS LOAD CALCULATION

RADIANT HEATER	1 x 3610 MBH	=	3610 MBH
GAS FIRED UNIT	2 x 45 MBH	=	90 MBH
RTU-1...	1 X 305 MBH	=	305 MBH
RTU-2...	1 X 245 MBH	=	245 MBH
RTU-3...	1 X 217 MBH	=	217 MBH
RTU-4...	1 X 72 MBH	=	72 MBH
RTU-5...	1 X 72 MBH	=	72 MBH
RTU-6...	1 X 126 MBH	=	126 MBH
RTU-7...	1 X 72 MBH	=	72 MBH
HV-1...	1 X 684 MBH	=	684 MBH
UNIT HEATER	5 X 30 MBH	=	150 MBH
_____...			
TOTAL MBH		=	5643 MBH
5643 MBH = 5643 CUBIC FOOT PER HOUR (CFH)			
MECHANICAL HEATING	1 X 5493 CFH	=	5643.0 CFH
RADIO TOWER GENERATOR	1 X 730 CFH	=	730 CFH
PRESSURE WASHER	1 X 360 CFH	=	360 CFH
TOTAL CFH		=	6733 CFH
VERTICAL PIPE LENGTH		=	4 FEET
HORIZONTAL PIPE LENGTH METER TO LAST FIXTURE...		=	1300 FEET
_____...			
TOTAL PIPE LENGTH		=	1304 FEET

USE 4" 2 PSI GAS SUPPLY LINE

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING SCHEDULES

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P4.2
8401

WATER CALCULATION - WASHBAY

WATER CLOSET, FLUSH VALVE...	0 x	10.0 F.U.	=	0.0 F.U.
LAVATORY...	0 x	2.0 F.U.	=	0.0 F.U.
URINAL, FLUSH VALVE...	0 x	5.0 F.U.	=	0.0 F.U.
DRINKING FOUNTAIN...	0 x	0.25 F.U.	=	0.0 F.U.
SHOWER...	0 x	4.0 F.U.	=	0.0 F.U.
KITCHEN SINK, DOMESTIC...	0 x	1.5 F.U.	=	0.0 F.U.
ICE MAKER BOX...	0 x	0.25 F.U.	=	0.0 F.U.
DISHWASHER...	0 x	1.4 F.U.	=	0.0 F.U.
HOSE BIBB...	2 x	2.0 F.U.	=	4.0 F.U.
SERVICE SINK (PUBLIC)...	2 x	3.0 F.U.	=	6.0 F.U.
TOTAL FIXTURE UNITS			=	10.0 F.U.
10.0 FIXTURE UNITS			=	27.0 GPM
FLOW FROM TRUCK FILL			=	70.0 GPM
TOTAL FLOW FOR...			=	97.0 GPM

HIGHEST FIXTUR... 14 FEET
(14 FT.) x 0.43 = 6.0 PSI STATIC LOSS

HORIZONTAL PIPE LENGTH TAP TO METER...	=	18 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING...	=	148 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE...	=	100 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE...	=	14 FEET
TOTAL PIPE LENGTH	=	280 FEET

(280 FT.) x 1.25 (FITTING LOSS) = 350 FEET TOTAL DEVELOPED LENGTH

SIZE	DEVICE		PSI LOSS
3"	METER...	=	0.2 PSI
	BACKFLOW...	=	12.0 PSI
	STATIC...	=	6.0 PSI
	FIXTURE (FLUSH VALVE)...	=	15.0 PSI
	TOTAL BUILDING LOSS...	=	33.2 PSI

PRESSURE AT STREET...	=	50.0 PSI
	=	33.2 PSI
DIFFERENCE	=	16.8 PSI

(16.8 / 350) x 100 = 4.8 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH

2" MAIN WATER LINE TO BUILDING

WATER CALCULATION NOTES

- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2018.
* VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.
** BACKFLOW PREVENTER FOR BUILDING DOMESTIC WATER SERVICE SHALL BE PROVIDED BY CIVIL.

WATER CALCULATION - RADIO TOWER

WATER CLOSET, FLUSH VALVE...	0 x	10.0 F.U.	=	0.0 F.U.
LAVATORY	0 x	1.0 F.U.	=	0.0 F.U.
URINAL, FLUSH VALVE...	0 x	4.0 F.U.	=	0.0 F.U.
DRINKING FOUNTAIN...	0 x	0.5 F.U.	=	0.0 F.U.
SHOWER	0 x	2.0 F.U.	=	0.0 F.U.
KITCHEN SINK, DOMESTIC...	0 x	1.5 F.U.	=	0.0 F.U.
DRINKING FOUNTAIN...	0 x	0.5 F.U.	=	0.0 F.U.
DRINKING FOUNTAIN...	0 x	0.5 F.U.	=	0.0 F.U.
DISHWASHER	0 x	1.5 F.U.	=	0.0 F.U.
FIRST HOSE BIBB...	0 x	2.5 F.U.	=	0.0 F.U.
ADDITIONAL HOSE BIBBS...	0 x	1.0 F.U.	=	0.0 F.U.
SERVICE SINK (PUBLIC)...	0 1	3.0 F.U.	=	0.0 F.U.
TOTAL FIXTURE UNITS			=	30.5 F.U.
30.5 FIXTURE UNITS			=	23.5 GPM
EMERGENCY EYE WASH...			=	23.0 GPM
FLOW FROM TRUCK...			=	0.0 GPM
TOTAL FLOW FOR...			=	46.5 GPM

HIGHEST FIXTURE = 14 FEET
(14 FT.) x 0.43 = 6.0 PSI STATIC LOSS

HORIZONTAL PIPE LENGTH TAP TO METER...	=	50 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING...	=	50 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE...	=	100 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE...	=	14 FEET
TOTAL PIPE LENGTH	=	214 FEET

(214 FT.) x 1.25 (FITTING LOSS) = 268 FEET TOTAL DEVELOPED LENGTH

SIZE	DEVICE		PSI LOSS
3"	METER	=	0.1 PSI
	BACKFLOW...	=	12.0 PSI
	STATIC	=	6.0 PSI
	FIXTURE (FLUSH TANK)...	=	8.0 PSI
	TOTAL BUILDING LOSS...	=	26.2 PSI

PRESSURE AT STREET...	=	50.0 PSI
BUILDING LOSS	=	26.2 PSI
DIFFERENCE	=	23.8 PSI

(23.8 / 268) x 100 = 8.9 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH

1-1/2" MAIN WATER LINE TO BUILDING

WATER CALCULATION NOTES

- THIS CALCULATION IS BASED ON UNIFORM PLUMBING CODE 2015.
* VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.

WATER CALCULATION -EAST

WATER CLOSET, FLUSH VALVE...	6 x	10.0 F.U.	=	60.0 F.U.
LAVATORY	6 x	2.0 F.U.	=	12.0 F.U.
URINAL, FLUSH VALVE...	2 x	5.0 F.U.	=	10.0 F.U.
DRINKING FOUNTAIN...	1 x	0.25 F.U.	=	0.3 F.U.
SHOWER	2 x	4.0 F.U.	=	8.0 F.U.
KITCHEN SINK, DOMESTIC...	1 x	1.5 F.U.	=	1.5 F.U.
ICE MAKER BOX...	1 x	0.25 F.U.	=	0.3 F.U.
DISHWASHER	0 x	1.4 F.U.	=	0.0 F.U.
HOSE BIBB	12 x	2.0 F.U.	=	24.0 F.U.
SERVICE SINK (PUBLIC)...	8 x	3.0 F.U.	=	24.0 F.U.
TOTAL FIXTURE UNITS			=	140.0 F.U.
140.0 FIXTURE UNITS			=	77.0 GPM
EMERGENCY EYE WASH...			=	23.0 GPM
FLOW FROM TRUCK FILL			=	0.0 GPM
TOTAL FLOW FOR BUILDING			=	100.0 GPM

HIGHEST FIXTURE = 14 FEET
(14 FT.) x 0.43 = 6.0 PSI STATIC LOSS

HORIZONTAL PIPE LENGTH TAP TO METER...	=	18 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING...	=	148 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE...	=	413 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE...	=	20 FEET
TOTAL PIPE LENGTH	=	599 FEET

(599 FT.) x 1.25 (FITTING LOSS) = 749 FEET TOTAL DEVELOPED LENGTH

SIZE	DEVICE		PSI LOSS
3"	METER	=	1.5 PSI
	BACKFLOW...	=	12.0 PSI
	STATIC	=	6.0 PSI
	FIXTURE (FLUSH VALVE)...	=	15.0 PSI
	TOTAL BUILDING LOSS...	=	34.6 PSI

PRESSURE AT STREET	=	50.0 PSI
	=	34.6 PSI
DIFFERENCE	=	15.4 PSI

(15.4 / 749) x 100 = 2.1 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH

3" MAIN WATER LINE TO FROM WEST BUILDING

WATER CALCULATION NOTES

- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2018.
* VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.
** BACKFLOW PREVENTER FOR BUILDING DOMESTIC WATER SERVICE SHALL BE PROVIDED BY CIVIL.

WATER CALCULATION - WEST

WATER CLOSET, FLUSH VALVE...	12 x	10.0 F.U.	=	120.0 F.U.
LAVATORY	8 x	2.0 F.U.	=	16.0 F.U.
URINAL, FLUSH VALVE	2 x	5.0 F.U.	=	10.0 F.U.
DRINKING FOUNTAIN	2 x	0.25 F.U.	=	0.5 F.U.
SHOWER	0 x	4.0 F.U.	=	0.0 F.U.
KITCHEN SINK, DOMESTIC	2 x	1.5 F.U.	=	3.0 F.U.
ICE MAKER BOX	1 x	0.25 F.U.	=	0.3 F.U.
DISHWASHER	0 x	1.4 F.U.	=	0.0 F.U.
HOSE BIBB	9 x	2.0 F.U.	=	18.0 F.U.
SERVICE SINK (PUBLIC)	3 x	3.0 F.U.	=	9.0 F.U.
TOTAL FIXTURE UNITS			=	176.8 F.U.
176.8 FIXTURE UNITS			=	84.8 GPM
EMERGENCY EYE WASH SHOWER			=	23.0 GPM
FLOW FROM TRUCK FILL			=	0.0 GPM
TOTAL FLOW FOR BUILDING			=	107.8 GPM

HIGHEST FIXTURE = 14 FEET
(14 FT.) x 0.43 = 6.0 PSI STATIC LOSS

HORIZONTAL PIPE LENGTH TAP TO METER...	=	18 FEET
HORIZONTAL PIPE LENGTH METER TO BUILDING...	=	148 FEET
HORIZONTAL PIPE LENGTH BUILDING TO LAST FIXTURE...	=	181 FEET
VERTICAL PIPE LENGTH BUILDING RISE TO HIGHEST FIXTURE...	=	14 FEET
TOTAL PIPE LENGTH	=	361 FEET

(361 FT.) x 1.25 (FITTING LOSS) = 451 FEET TOTAL DEVELOPED LENGTH

SIZE	DEVICE		PSI LOSS
3"	METER	=	1.9 PSI
	BACKFLOW...	=	12.0 PSI
	STATIC	=	6.0 PSI
	FIXTURE (FLUSH VALVE)...	=	15.0 PSI
	TOTAL BUILDING LOSS...	=	34.9 PSI

PRESSURE AT STREET	=	50.0 PSI
	=	34.9 PSI
DIFFERENCE	=	15.1 PSI

(15.1 / 451) x 100 = 3.3 MAX PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH

PROVIDE NEW 3" METER AND 4" MAIN WATER LINE TO BUILDING

WATER CALCULATION NOTES

- THIS CALCULATION IS BASED ON INTERNATIONAL PLUMBING CODE 2018.
* VERIFY PRESSURE AT TIME OF CONSTRUCTION. IF GREATER THAN 80 PSI PROVIDE AND INSTALL PRESSURE REDUCING VALVE TO REDUCE WATER PRESSURE TO 80 PSI MAXIMUM.
** BACKFLOW PREVENTER FOR BUILDING DOMESTIC WATER SERVICE SHALL BE PROVIDED BY CIVIL.

WASTE WATER SIZING - RADIO

PUBLIC	WATER CLOSET, FLUSH VALVE...	1 x	4.0 F.U. =	4.0 F.U.
PUBLIC	LAVATORY, SINGLE	1 x	1.0 F.U. =	1.0 F.U.
PUBLIC	URINAL...	0 x	2.0 F.U. =	0.0 F.U.
PUBLIC	DRINKING FOUNTAIN	0 x	0.5 F.U. =	0.0 F.U.
PUBLIC	SHOWER...	1 x	2.0 F.U. =	2.0 F.U.
PUBLIC	KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER...	1 x	2.0 F.U. =	2.0 F.U.
PUBLIC	MOP SINK...	0 x	3.0 F.U. =	0.0 F.U.
PUBLIC	2" FLOOR DRAIN/FLOOR SINK...	0 x	3.0 F.U. =	0.0 F.U.
PUBLIC	3" FLOOR DRAIN/FLOOR SINK...	0 x	5.0 F.U. =	0.0 F.U.
PUBLIC	4" FLOOR DRAIN/FLOOR SINK...	1 x	6.0 F.U. =	6.0 F.U.
	TOTAL FIXTURE UNITS		=	15.0 F.U.

CONNECT TO EXISTING 4 INCH WASTE WATER LINE FROM BUILDING AT 1/4 IN/FT

WASTE WATER SIZING - EAST

PUBLIC	WATER CLOSET, FLUSH VALVE...	6 x	4.0 F.U. =	24.0 F.U.
PUBLIC	LAVATORY, SINGLE	6 x	1.0 F.U. =	6.0 F.U.
PUBLIC	URINAL	2 x	2.0 F.U. =	4.0 F.U.
PUBLIC	DRINKING FOUNTAIN	2 x	0.5 F.U. =	1.0 F.U.
PUBLIC	SHOWER...	2 x	2.0 F.U. =	4.0 F.U.
PUBLIC	KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER...	0 x	2.0 F.U. =	0.0 F.U.
PUBLIC	MOP SINK...	1 x	3.0 F.U. =	3.0 F.U.
PUBLIC	2" FLOOR DRAIN/FLOOR SINK...	0 x	3.0 F.U. =	0.0 F.U.
PUBLIC	3" FLOOR DRAIN/FLOOR SINK...	0 x	5.0 F.U. =	0.0 F.U.
PUBLIC	4" FLOOR DRAIN/FLOOR SINK...	8 x	6.0 F.U. =	48.0 F.U.
	TOTAL FIXTURE UNITS		=	90.0 F.U.

CONNECT TO 4 INCH WASTE WATER LINE FROM BUILDING AT 1/4 IN/FT

WASTE WATER SIZING - RETENTION TANK

PUBLIC	WATER CLOSET, FLUSH VALVE...	0 x	4.0 F.U.	=	0.0 F.U.
PUBLIC	LAVATORY, SINGLE	0 x	1.0 F.U.	=	0.0 F.U.
PUBLIC	URINAL	0 x	2.0 F.U.	=	0.0 F.U.
PUBLIC	DRINKING FOUNTAIN	0 x	0.5 F.U.	=	0.0 F.U.
PUBLIC	SHOWER	0 x	2.0 F.U.	=	0.0 F.U.
PUBLIC	KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER...	0 x	2.0 F.U.	=	0.0 F.U.
PUBLIC	MOP SINK...	10 x	3.0 F.U.	=	30.0 F.U.
PUBLIC	2" FLOOR DRAIN/FLOOR SINK...	22 x	3.0 F.U.	=	66.0 F.U.**
PUBLIC	3" FLOOR DRAIN/FLOOR SINK...	0 x	5.0 F.U.	=	0.0 F.U.
PUBLIC	4" FLOOR DRAIN/FLOOR SINK...	11 x	6.0 F.U.	=	66.0 F.U.**
	TOTAL FIXTURE UNITS			=	162.0 F.U.*

CONNECT TO 4 INCH WASTE WATER LINE FROM BUILDING AT 1/4 IN/FT

* FOR RETENTION TANK CALCULATION, ASSUME EMERGENCY FLOOR DRAINS WILL NOT BE CONTRIBUTING CONTINUOUS DRAINAGE TO THE TANK.
** FLOOR DRAINS/FLOOR SINKS ARE CONSIDERED TO BE AN EMERGENCY FLOOR DRAIN FIXTURES (0 DFU EACH) FOR RENTENTION TANK CALCULATION.

WASTE WATER SIZING - WEST

PUBLIC	WATER CLOSET, FLUSH VALVE...	12 x	4.0 F.U.	=	48.0 F.U.
PUBLIC	LAVATORY, SINGLE	8 x	1.0 F.U.	=	8.0 F.U.
PUBLIC	URINAL	2 x	2.0 F.U.	=	4.0 F.U.
PUBLIC	DRINKING FOUNTAIN	2 x	0.5 F.U.	=	1.0 F.U.
PUBLIC	SHOWER...	0 x	2.0 F.U.	=	0.0 F.U.
PUBLIC	KITCHEN, DOMESTIC (WITH OR WITHOUT DISHWASHER...	0 x	2.0 F.U.	=	0.0 F.U.
PUBLIC	MOP SINK...	1 x	3.0 F.U.	=	3.0 F.U.
PUBLIC	2" FLOOR DRAIN/FLOOR SINK...	0 x	3.0 F.U.	=	0.0 F.U.
PUBLIC	3" FLOOR DRAIN/FLOOR SINK...	1 x	5.0 F.U.	=	5.0 F.U.
PUBLIC	4" FLOOR DRAIN/FLOOR SINK...	7 x	6.0 F.U.	=	42.0 F.U.
	TOTAL FIXTURE UNITS			=	111.0 F.U.

CONNECT TO 4 INCH WASTE WATER LINE FROM BUILDING AT 1/4IN/FT

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

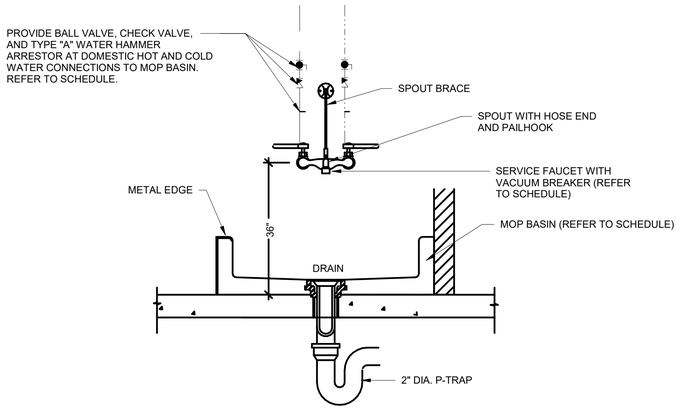
PLUMBING SCHEDULES

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

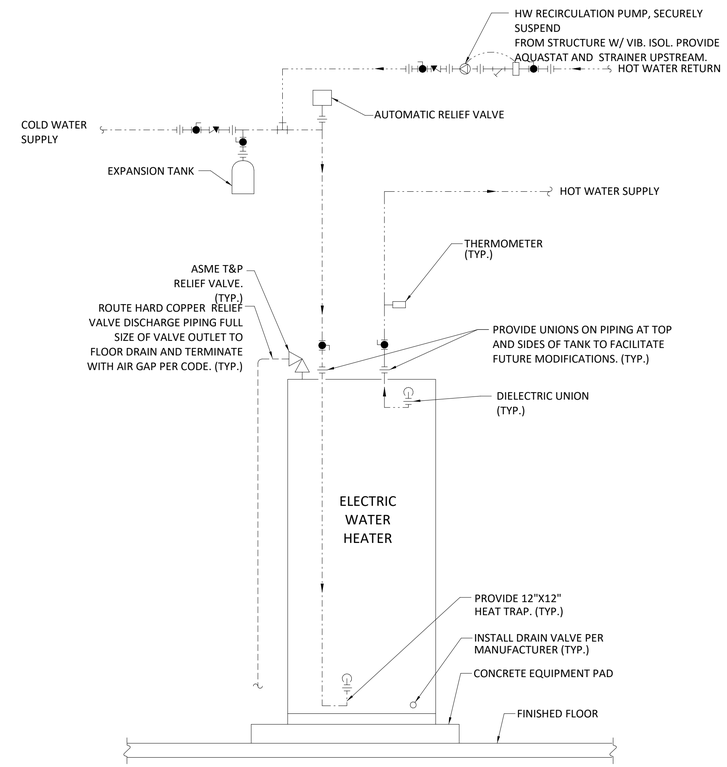
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

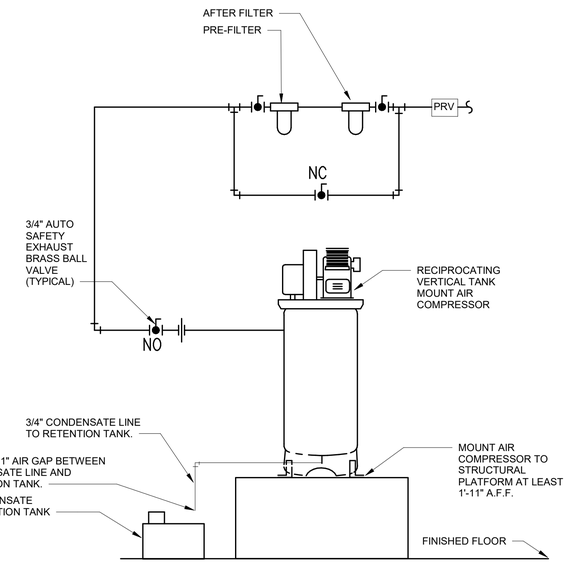
P4.3
8403



B1 MOP BASIN DETAIL1
NTS



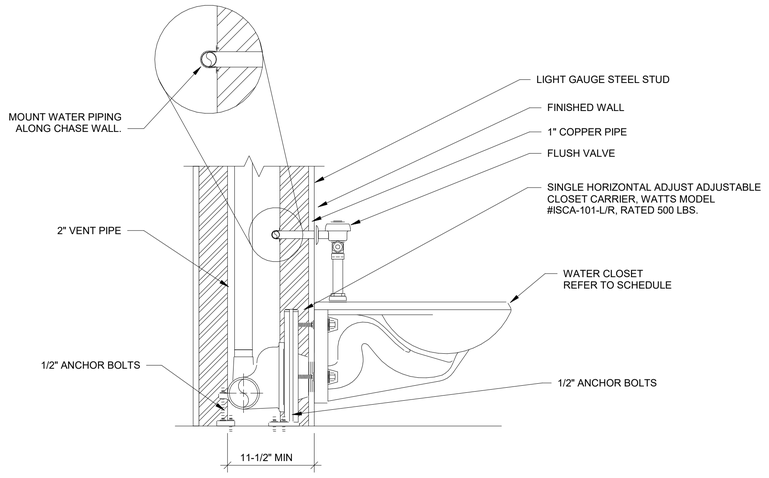
B2 223300-EWH-02 Single Electric Water Heater with Recirculation Pump
12" = 1'-0"



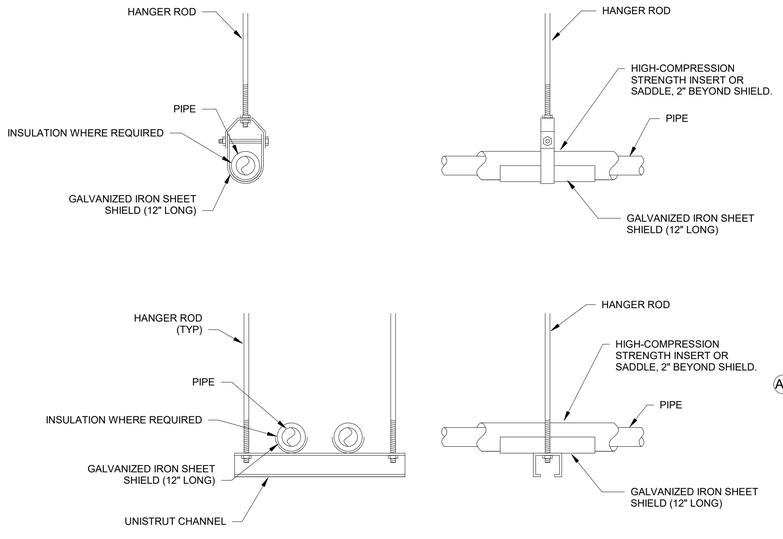
B3 RAISED AIR COMPRESSER DETAIL
NTS

NOTE:

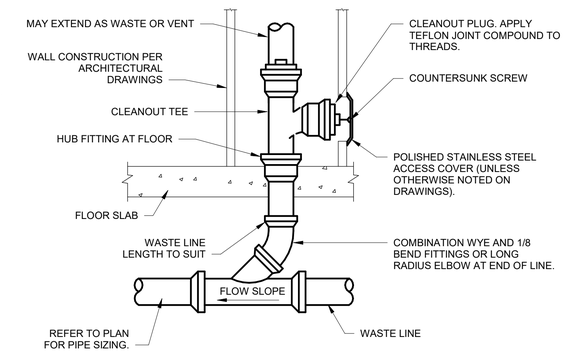
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CHORD OF JOISTS OR BEAM.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.
3. PIPING INSULATION SHALL BE CONTINUOUS THROUGH ALL HANGERS AND SUPPORTS.



A1 WATER CLOSET MOUNTING DETAIL
NTS



A2 PIPE HANGERS DETAIL
NTS



A3 WALL CLEANOUT DETAIL
NTS

PLUMBING DETAILS

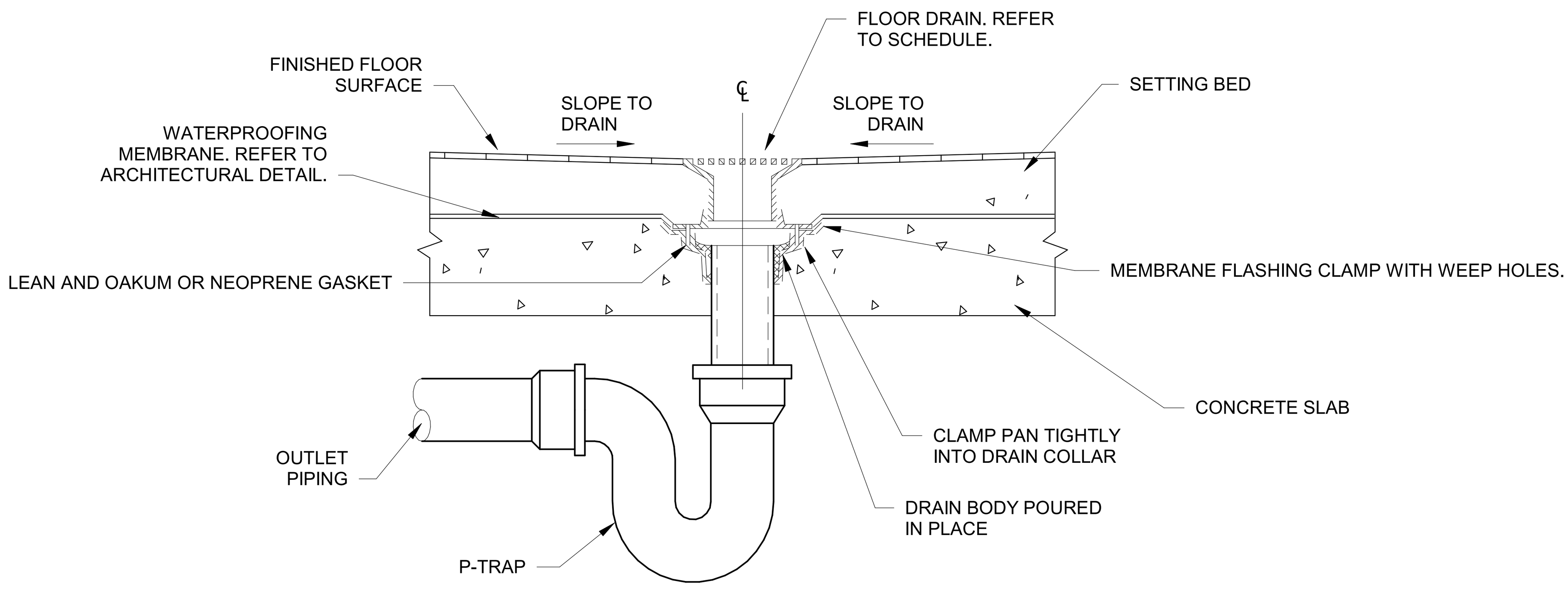
STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

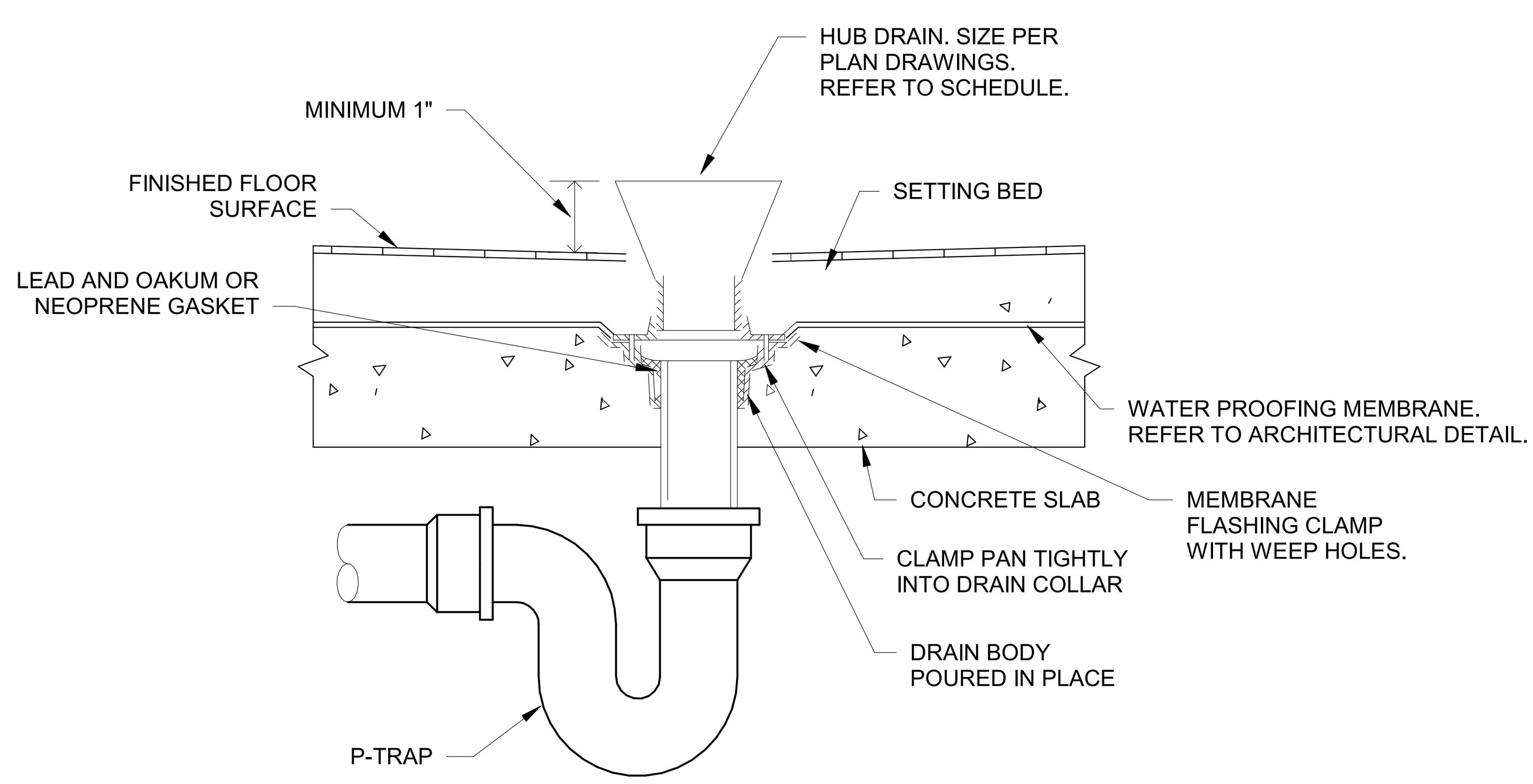
ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

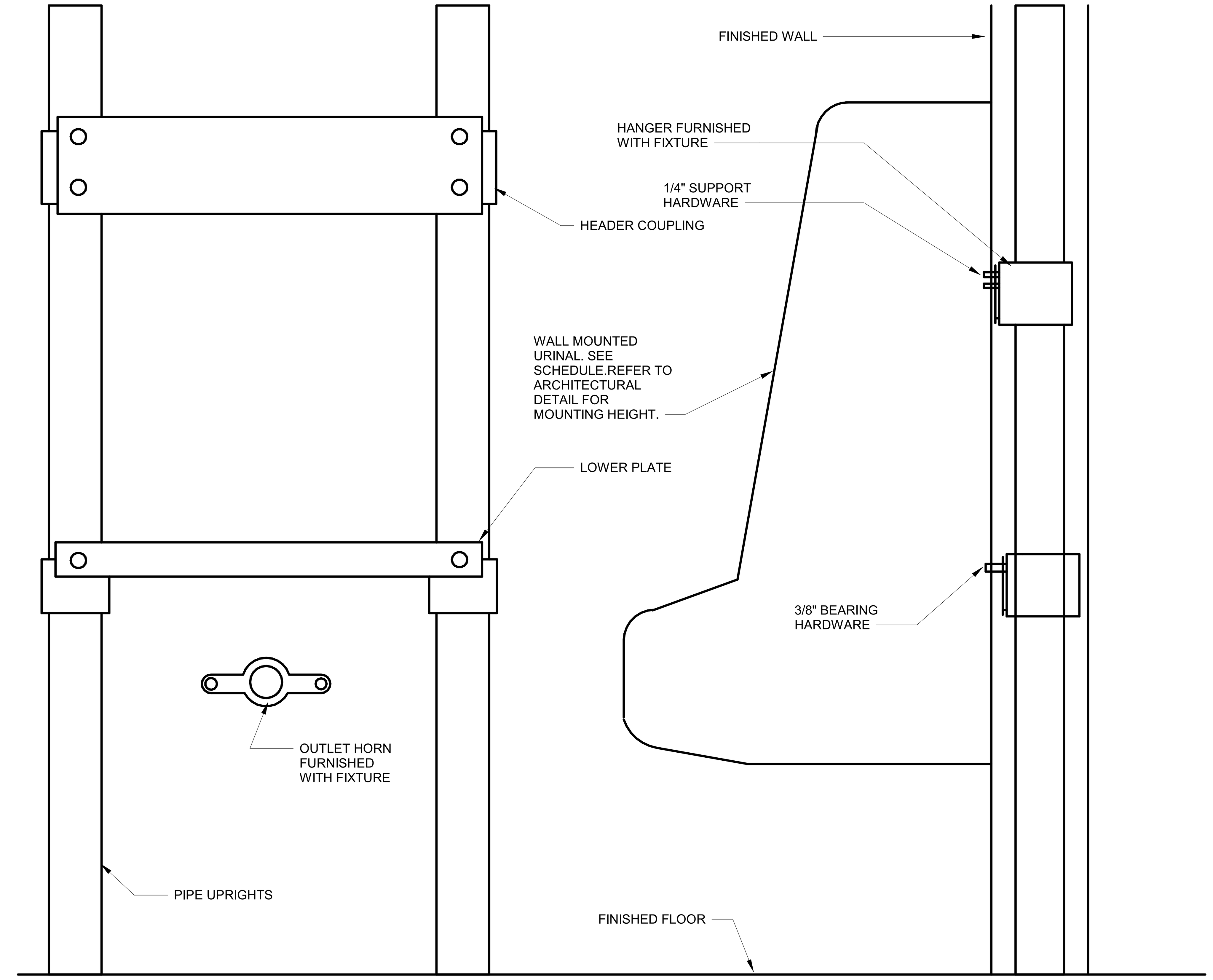
P5.1
8501



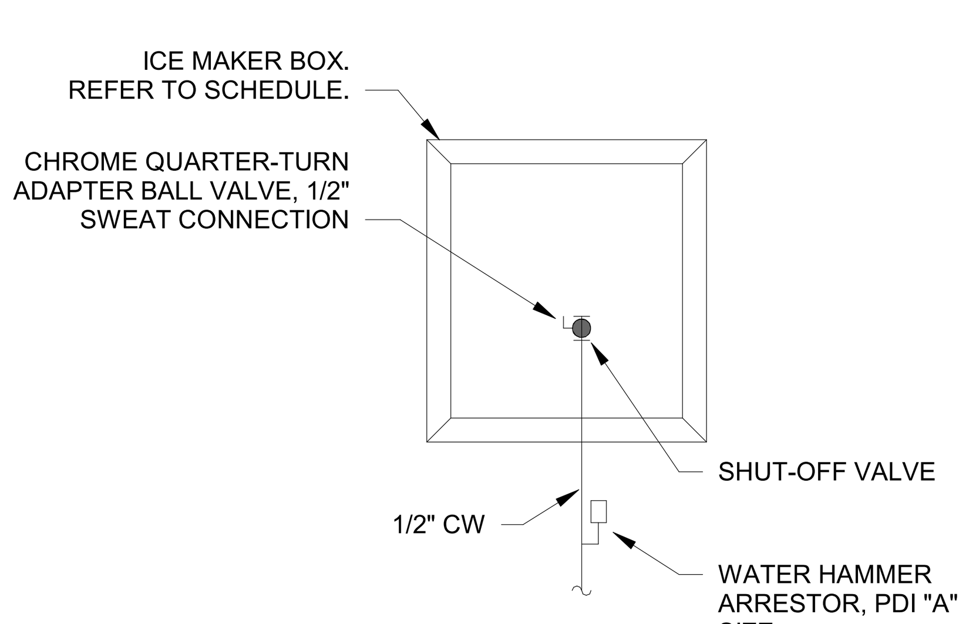
C1 FLOOR DRAIN DETAIL
NTS



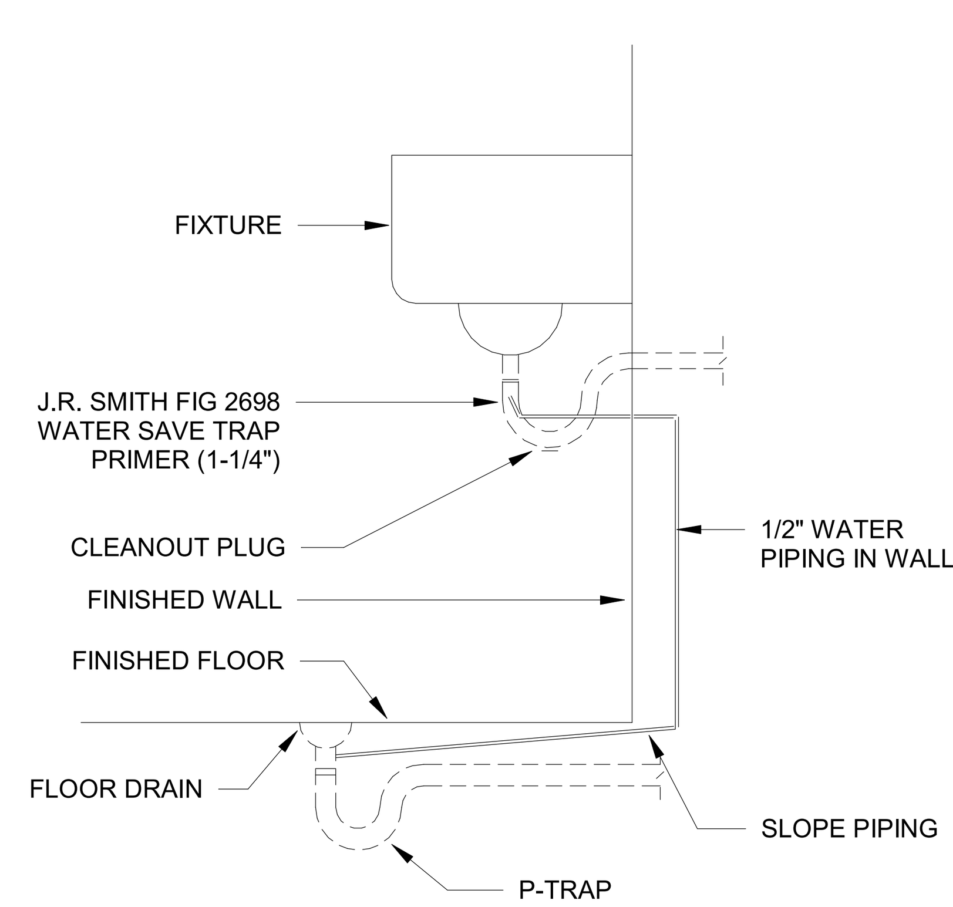
B1 HUB DRAIN DETAIL
NTS



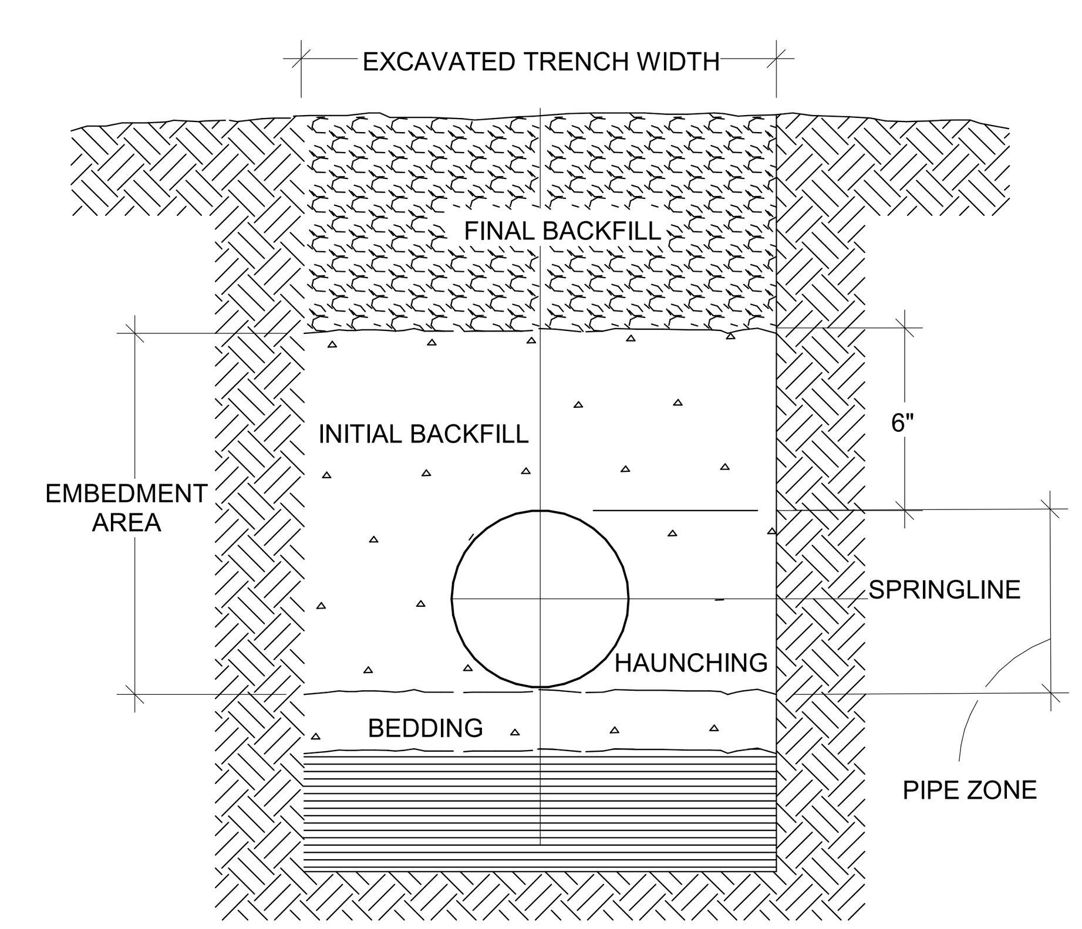
B2 WALL MOUNTED URINAL DETAIL
NTS



A1 ICE MAKER VALVE BOX DETAIL
NTS



A2 WATER SAVER TRAP PRIMER DETAIL
NTS



A3 UNDERGOUND INSTALLATION OF PLASTIC PIPE DETAIL
NTS

NOTES:

1. THE MINIMUM WIDTH OF THE TRENCH SHOULD BE THE PIPE OD (OUTSIDE DIAMETER) PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25 PLUS 12 INCHES. THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED TO COMPACT THE BACKFILL.
2. PROVIDE A MINIMUM OF 4 INCHES OF FIRM, STABLE AND UNIFORM BEDDING MATERIAL IN THE TRENCH BOTTOM, IF ROCK OR UNYIELDING MATERIAL IS ENCOUNTERED, A MINIMUM OF 6 INCHES OF BEDDING SHALL BE USED. BLOCKING SHOULD NOT BE USED TO CHANGE PIPE GRADE OR TO INTERMITTENTLY SUPPORT PIPE OVER LOW SECTIONS IN THE TRENCH.
3. THE PIPE SHOULD BE SURROUNDED WITH AN AGGREGATE MATERIAL WHICH CAN BE EASILY WORKED AROUND THE SIDES OF THE PIPE. BACKFILLING SHOULD BE PERFORMED IN LAYERS OF 6 INCHES WITH EACH LAYER BEING SUFFICIENTLY COMPACTED TO 85% TO 95% COMPACTION.
4. A MECHANICAL TAMPER IS RECOMMENDED FOR COMPACTING SAND AND GRAVEL. THESE MATERIALS CONTAIN FINE-GRAINS, SUCH AS SILT AND CLAY. IF A TAMPER IS NOT AVAILABLE, COMPACTING SHOULD BE DONE BY HAND.
5. THE TRENCH SHOULD BE COMPLETELY FILLED. THE BACKFILL SHOULD BE PLACED AND SPREAD IN UNIFORM LAYERS TO PREVENT ANY UNFILLED SPACES OR VOIDS. LARGE ROCKS, STONES, FROZEN CLODS, OR OTHER LARGE DEBRIS SHOULD BE REMOVED. STONE BACKFILL SHALL PASS THROUGH AN 1-1/2" SIEVE. ROCK SIZE SHOULD BE ABOUT ONE-TENTH OF THE PIPE OUTSIDE DIAMETER. HEAVY TAMPERS OR ROLLING EQUIPMENT SHOULD ONLY BE USED TO CONSOLIDATE THE FINAL BACKFILL.
6. TO PREVENT DAMAGE TO THE PIPE AND DISTURBANCE TO PIPE EMBEDMENT, A MINIMUM DEPTCH OF BACKFILL ABOVE THE PIPE SHOULD BE MAINTAINED. PIPE SHOULD ALWAYS BE INSTALLED BELOW THE FROST LEVEL. TYPICALLY, IT IS NOT ADVISABLE TO ALLOW VEHICULAR TRAFFIC OR HEAVY CONSTRUCTION EQUIPMENT TO TRAVERSE THE PIPE TRENCH.
7. INSTALL PIPING IN ACCORDANCE WITH ASTM D2321 FOR UNDERGROUND GRAVITY SYSTEMS AND ASTM D2774 FOR UNDERGROUND PRESSURE PIPING.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

PLUMBING DETAILS

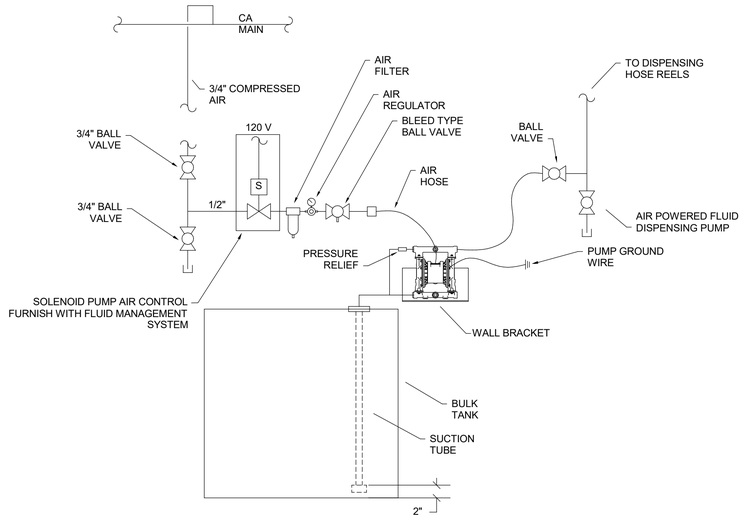
Texas Department of Transportation

STATE OF TEXAS
EUGENE W. RAANES
62200
LICENSED
PROFESSIONAL ENGINEER
09/24/21

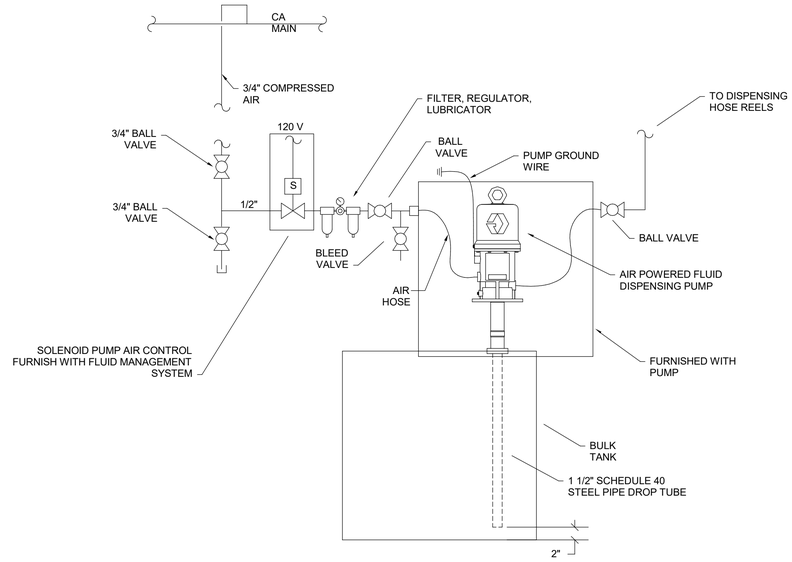
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

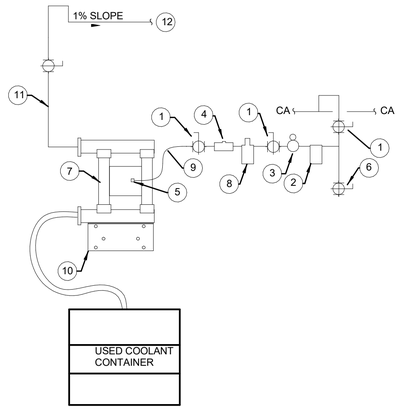
P5.2
8502



B1 COOLANT PUMP DETAIL
NTS



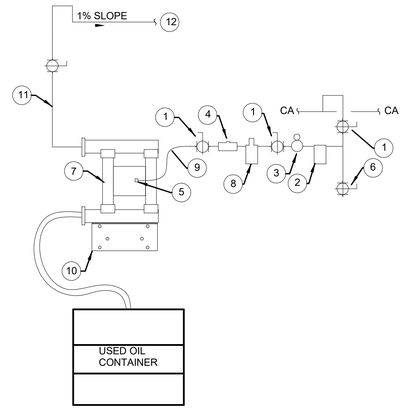
B2 OIL PUMP DETAIL
NTS



KEY

1. BLEED TYPE MASTER AIR VALVE
2. AIR LINE FILTER
3. AIR REGULATOR AND GAUGE
4. PUMP RUNAWAY VALVE
5. AIR INLET
6. BALL VALVE (FOR RELEASING COLLECTED MOISTURE)
7. PUMP
8. AIR LINE LUBRICATOR
9. ELECTRICALLY CONDUCTIVE AIR HOSE
10. WALL MOUNTING BRACKET
11. PRESSURIZED DISCHARGE
12. GRAVITY DISCHARGE TO BULK WASTE

A1 WASTE COOLANT PUMP DETAIL
NTS



KEY

1. BLEED TYPE MASTER AIR VALVE
2. AIR LINE FILTER
3. AIR REGULATOR AND GAUGE
4. PUMP RUNAWAY VALVE
5. AIR INLET
6. BALL VALVE (FOR RELEASING COLLECTED MOISTURE)
7. PUMP
8. AIR LINE LUBRICATOR
9. ELECTRICALLY CONDUCTIVE AIR HOSE
10. WALL MOUNTING BRACKET
11. PRESSURIZED DISCHARGE
12. GRAVITY DISCHARGE TO BULK WASTE

A2 WASTE OIL PUMP DETAIL
NTS

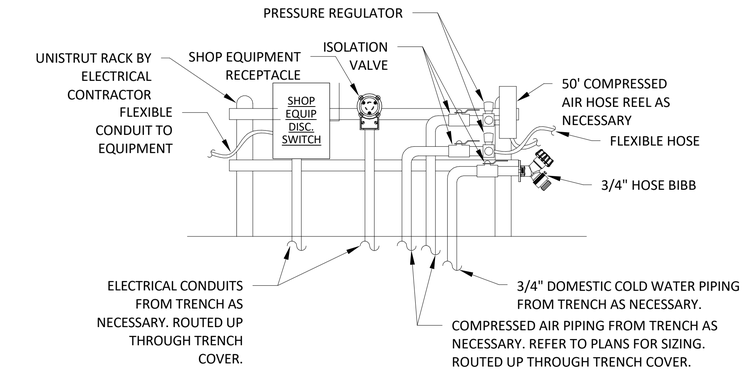
ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

PLUMBING DETAILS

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

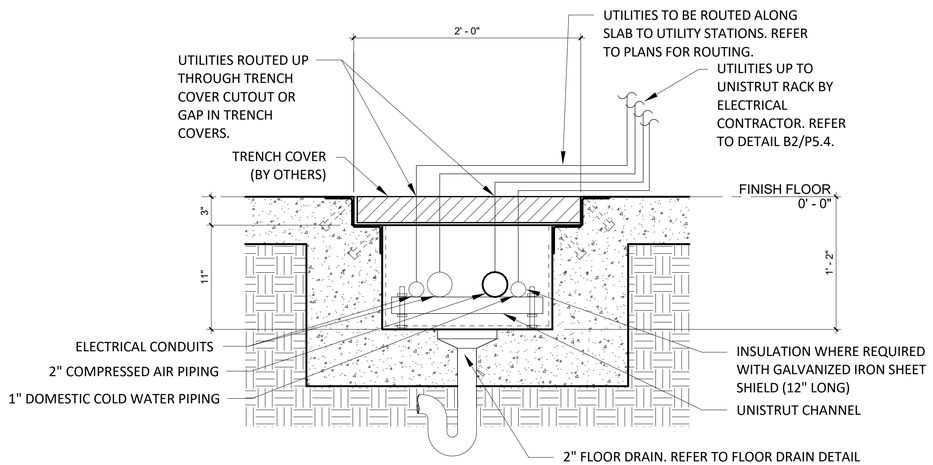
ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

P5.3
8503



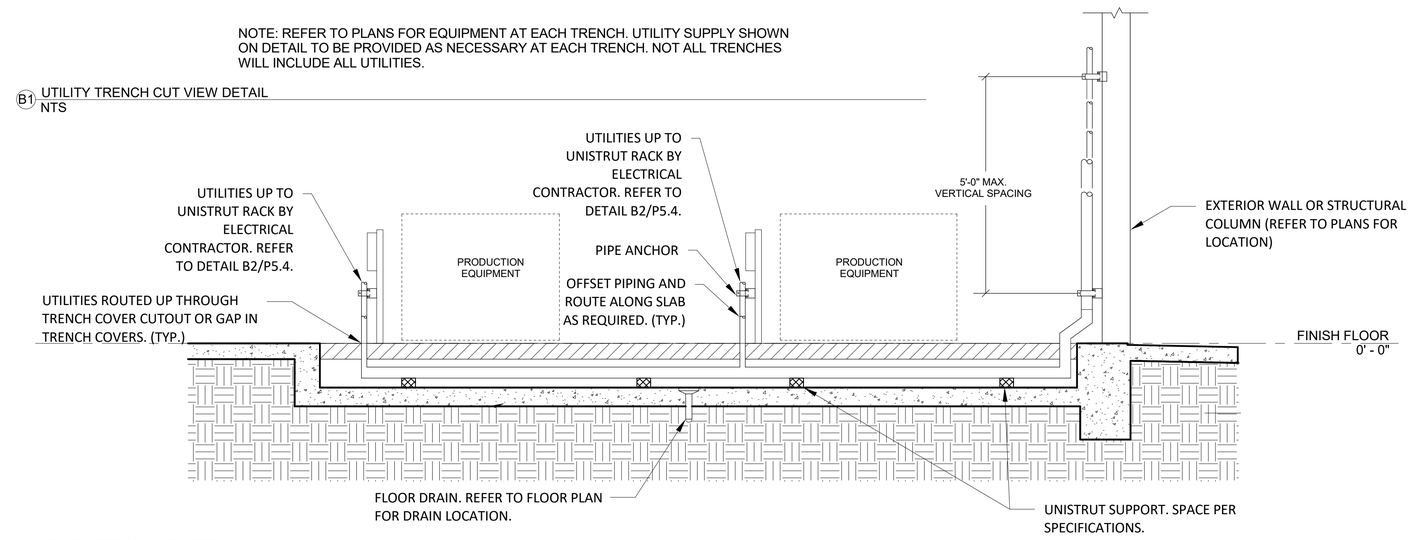
NOTE: REFER TO PLANS FOR EQUIPMENT AT EACH UTILITY STATION. EQUIPMENT SHOWN ON DETAIL TO BE PROVIDED AS NECESSARY AT EACH STATION. NOT ALL STATIONS WILL INCLUDE ALL EQUIPMENT SHOWN.

C2 UTILITY RACK DETAIL
NTS

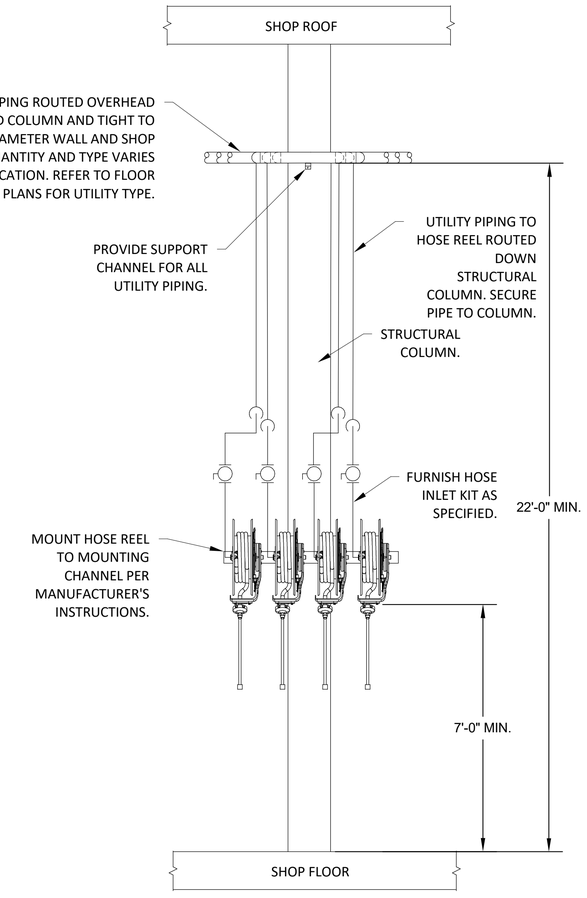


NOTE: REFER TO PLANS FOR EQUIPMENT AT EACH TRENCH. UTILITY SUPPLY SHOWN ON DETAIL TO BE PROVIDED AS NECESSARY AT EACH TRENCH. NOT ALL TRENCHES WILL INCLUDE ALL UTILITIES.

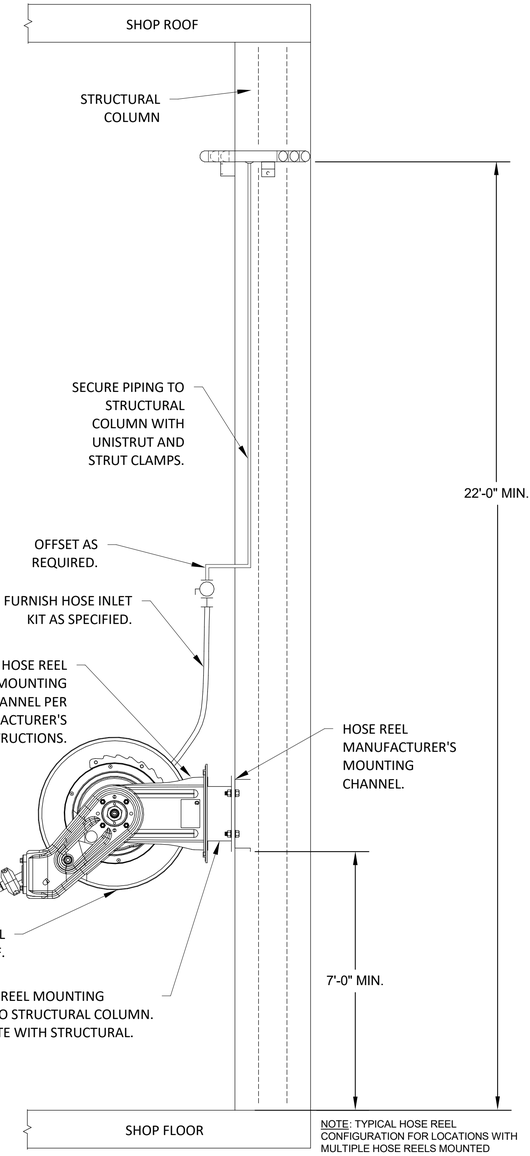
B1 UTILITY TRENCH CUT VIEW DETAIL
NTS



A1 UTILITY TRENCH VIEW DETAIL
NTS



B2 TYPICAL HOSE REEL MOUNTING DETAIL
NTS

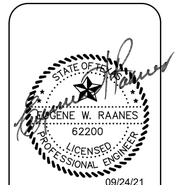


NOTE: TYPICAL HOSE REEL CONFIGURATION FOR LOCATIONS WITH MULTIPLE HOSE REELS MOUNTED PARALLEL ON A SINGLE COLUMN.

A2 TYPICAL HOSE REEL MOUNTING CUT VIEW DETAIL
NTS

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

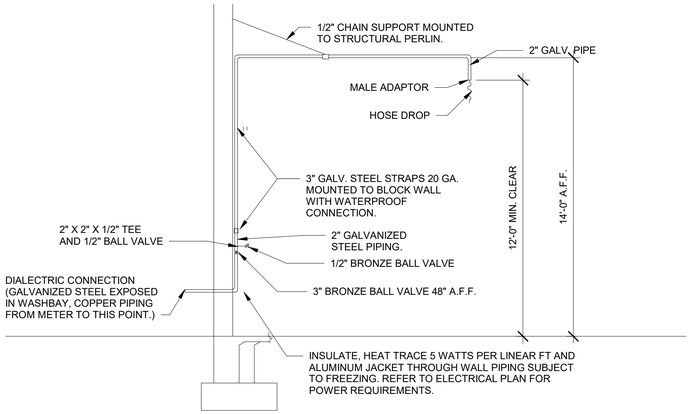
PLUMBING DETAILS



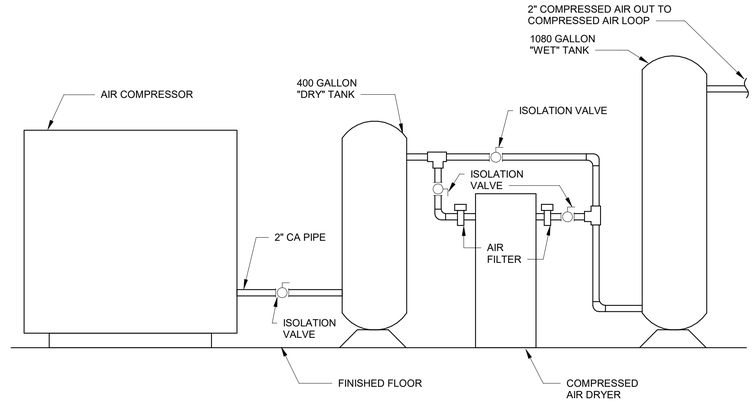
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

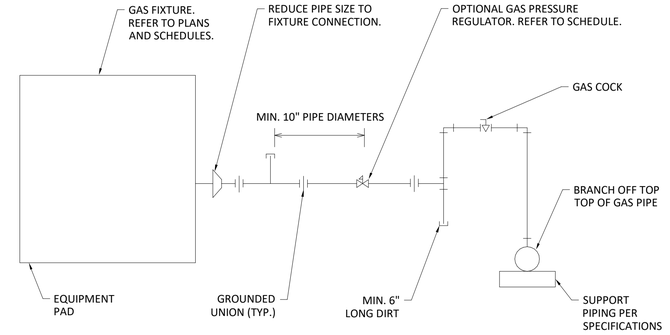
P5.4
8504



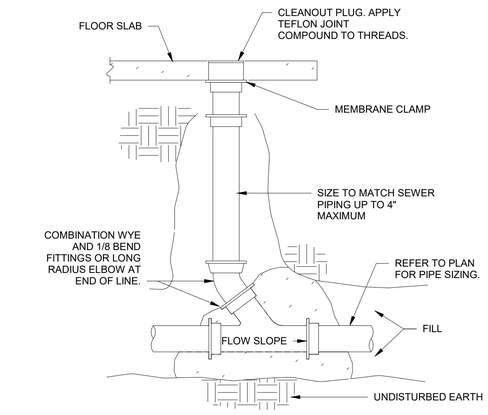
C1 TRUCK FILL DETAIL
NTS



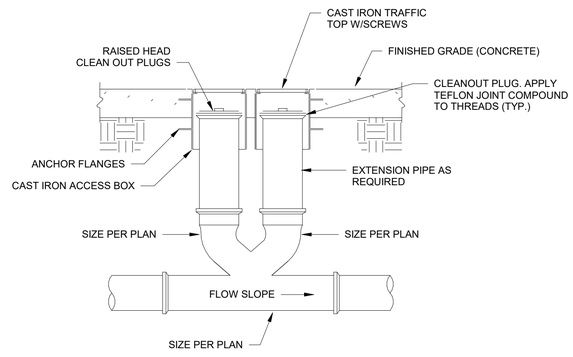
C2 COMPRESSED AIR PIPING SYSTEM DETAIL
NTS



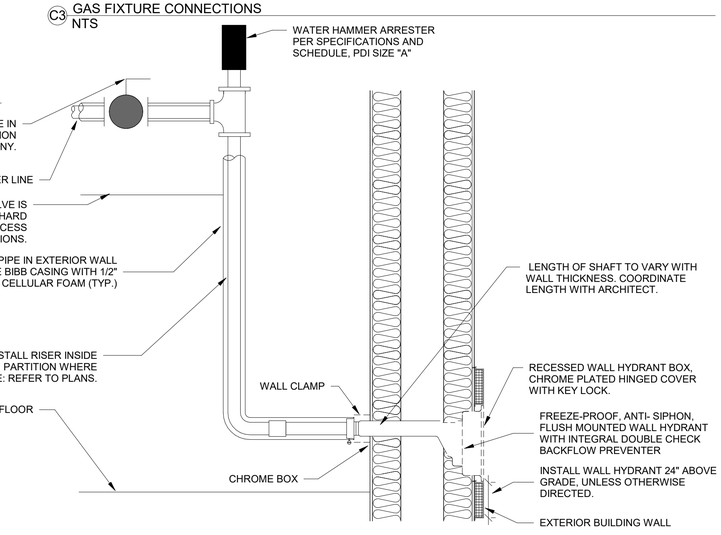
C3 GAS FIXTURE CONNECTIONS
NTS



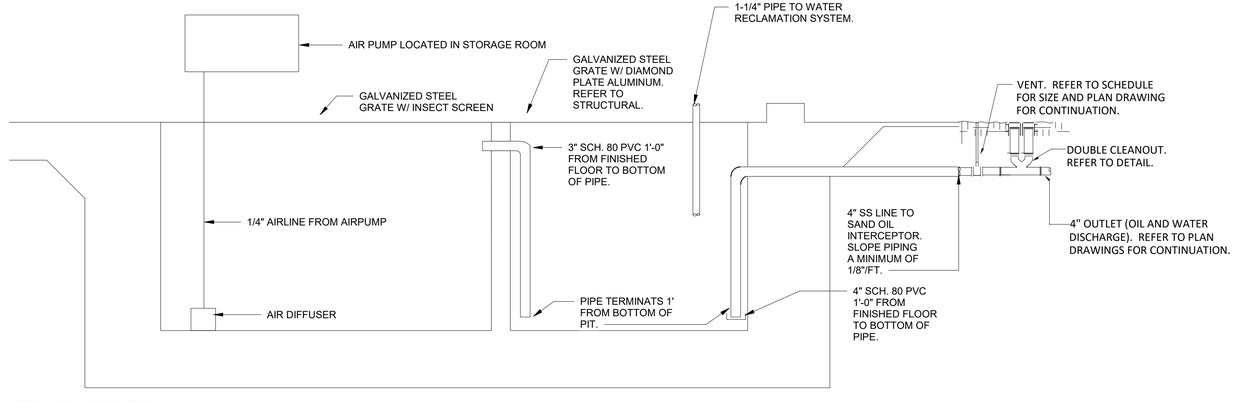
B1 FLOOR CLEANOUT DETAIL
NTS



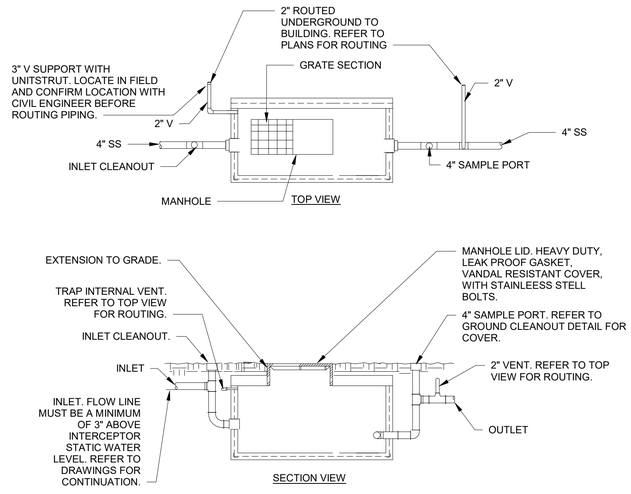
B2 DOUBLE CLEANOUT DETAIL
NTS



B3 RECESSED WALL HYDRANT
NTS

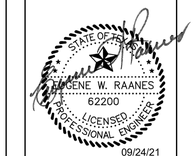


A1 WASH BAY PIT DETAIL
NTS



A2 SAND/OIL INTERCEPTOR DETAIL
NTS

PLUMBING DETAILS



973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: W.B.E.
CHECKED BY: S.E.M
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

P5.5
8505

ELECTRICAL ABBREVIATIONS

AMPERE ____ A(AMP)
ABOVE ABV
ABOVE FINISHED FLOOR ____ AFF
ABOVE FINISHED GRADE ____ AFG
AIR CONDITIONING ____ A/C
ALUMINUM ____ AL
APPROXIMATE(LY) ____ APPROX.
ARCHITECT(URAL) ____ ARCH('L).
AUTHORITY HAVING JURISDICTION ____ AHJ

BELOW ____ BLW
BREAKER ____ BKR
BUILDING ____ BLDG.

CARD READER CR
CEILING ____ CLG
CIRCUIT ____ CKT
CONCRETE MASONRY UNIT ____ CMU
CONDENSATE DRAIN ____ COND.
COPPER ____ CU
CONDUIT ____ C.
COUNTER ____ CTR
CURRENT TRANSFORMER ____ CT

DEMOLISH(ITION) ____ DEMO.
DEPARTMENT ____ DEPT.
DETAIL DET.
DISCONNECT ____ DISC.
DIVISION ____ DIV.
DRAWING(S) ____ DWG(S)

EACH ____ EA.
ELECTRICAL CONTRACTOR ____ EC
ELECTRIC(AL) ____ ELEC.
ELECTRIC WATER COOLER ____ EWC
ELEVATOR ____ ELEV.
EMERGENCY ____ EM,EMER
ENGINEER ____ ENGR.
EQUIPMENT ____ EQPT.
ETCETERA ____ ETC.
EXHAUST FAN ____ EF
EXISTING ____ EXIST.,(E)
EXISTING RELOCATED ____ ER
EXISTING TO REMAIN ____ ETR

FIRE ALARM ____ F/A
FIRE ALARM CONTROL PANEL FACP
FIRE ALARM ANNUNCIATOR PANEL ____ FAAP
FIRE / SMOKE DAMPER ____ F/S
FOOT/FEET ____ FT.

GALVANIZED ____ GALV.
GENERAL CONTRACTOR ____ GC
GROUND ____ GND,G
GROUNDING ELEC. CONDCTOR ____ GEC
GROUND FAULT CIRCUIT INTERRUPTER ____ GFCI/GF

HEATING, VENTILATION & AIR CONDITIONING ____ HVAC

INFORMATION ____ INFO
INTERIOR ____ INT.
ISOLATED GROUND ____ IG

JUNCTION BOX ____ JB,(J-BOX)

KILOAMPERE INTERRUPTING CAPACITY ____ kAIC
KILOVOLT-AMPS ____ kVA

LIGHTING CONTACTOR ____ LC
LIGHTING CONTROL PANEL ____ LCP

MAIN CIRCUIT BREAKER ____ MCB
MAIN LUG ONLY ____ MLO
MANUFACTURE(R) ____ MFR.
MAXIMUM ____ MAX
MAXIMUM OVERCURRENT PROTECTION ____ MOCP
MECHANICAL ____ MECH.
MINIMUM ____ MIN.
MINIMUM CURRENT AMPACITY ____ MCA
MISCELLANEOUS ____ MISC.
MOUNTING HEIGHT TO CENTER LINE OF DEVICE AFF OR AFG ____ +(#)"

NATIONAL ELECTRICAL CODE ____ NEC
NEMA 1, NEMA 3R, NEMA RATING (AS NOTED) ____ N1,N3R,N_
NIGHT LIGHT ____ NL
NOMINAL ____ NOM.
NOT APPLICABLE ____ N/A
NOT IN CONTRACT ____ N.I.C.
NOT TO SCALE ____ N.T.S.
NUMBER ____ NO.,#

PANEL ____ PNL
PARTIAL ____ PART.
PHASE ____ PH.,∅
PHOTOCELL ____ PC
POLE ____ P
POLYVINYL CHLORIDE ____ PVC
POWER POLE ____ PP

QUANTITY ____ QTY

RECEPTACLE RECEPT.
REFER TO / REFERENCE ____ REF.
REQUIRE(D) ____ REQ.('D)
RIGID GALVANIZED STEEL ____ RGS
ROOM ____ RM

SERVICE DISTRIBUTION ENCLOSURE ____ SDE
SPECIFICATION(S) ____ SPEC.(S)
SQUARE ____ SQ.
SQUARE FEET ____ SF
STRUCTURED MEDIA CENTER ____ SMC
SURGE PROTECTIVE DEVICE ____ SPD
SWITCH ____ SW.

TELEPHONE / DATA COMBO ____ TELEDATA
TELEPHONE ____ TEL.
TELEPHONE MOUNTING BOARD ____ TMB
TELEVISION ____ TV
TEXAS ____ TX
THROUGH ____ THRU
TIMECLOCK ____ TC
TRANSFORMER ____ XFMR
TYPICAL ____ TYP

UNDERGROUND ____ UG
UNDERWRITER LABORATORIES INC. ____ UL
UNINTERRUPTIBLE POWER SUPPLY ____ UPS
UNLESS NOTED OTHERWISE ____ UNO
UTILITY UTIL.

VOLT-AMPS ____ VA
VOLTAGE / VOLTS ____ V

WEATHER PROOF ____ WP
WEATHER RESISTANT ____ WR
WITH ____ W/
WITHOUT ____ W/O

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT

APPLICABLE CODES
2018 IBC
2020 NEC
2015 IECC
2012 TAS
LOCAL CODES AND ORDINANCES

VOLTAGE DROP TABLE (20A CIRCUITS ONLY)		
	208V, 1∅	120V, 1∅
#12 AWG	0 - 90 FT.	0 - 50 FT.
#10 AWG	91 - 150 FT.	51 - 90 FT.
#8 AWG	151 - 250 FT.	91 - 140 FT.
#6 AWG	251 - 390 FT.	141 - 225 FT.
#4 AWG	391 - 630 FT.	226 - 300 FT.
(VERIFY MINIMUM VOLTAGE DROP AND CONDUIT SIZE, PER N.E.C.)		

ELECTRICAL LEGEND

NOTES: MOUNTING HEIGHTS LISTED BELOW INDICATE HEIGHT TO CENTER OF DEVICE. ALL SYMBOLS SHOWN ON LEGEND ARE NOT NECESSARILY USED.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	1X4 LINEAR FIXTURE W/ DESIGNATION		PANELBOARD OR LOAD CENTER - SURFACE MOUNT, RECESSED MOUNT
A	2X2 LINEAR FIXTURE W/ DESIGNATION		TRANSFORMER
A	2X4 LINEAR FIXTURE W/ DESIGNATION		DISCONNECT SWITCHES - NON-FUSED, FUSED. FUSE SIZES NOTED ON DRAWINGS WITH "AF".
	EMERGENCY LIGHT FIXTURE (HALF-SHADED FOR ANYFIXTURE)		MAGNETIC MOTOR STARTER, COMBINATION STARTER AND DISCONNECT
A	LINEAR 6" OR SLOT FIXTURE W/ DESIGNATION	$M	MOTOR-RATED DISCONNECT SWITCH
A	LINEAR STRIP FIXTURE W/ DESIGNATION		VARIABLE FREQUENCY DRIVE (VFD), COMBINATION VFD AND DISCONNECT
A	RECESSED DOWNLIGHT FIXTURE W/ DESIGNATION		MOTOR
A	SURFACE DOWNLIGHT FIXTURE W/ DESIGNATION		PUSHBUTTON - SINGLE, MUSHROOM HEAD
A	PENDANT FIXTURE W/ DESIGNATION	M	METER - PLAN VIEW, ONE-LINE DIAGRAM
A	WALL WASH FIXTURE W/ DESIGNATION, DIRECTION INDICATED BY TRIANGLE		METER BANK
A	WALL MOUNT LINEAR FLUORESCENT FIXTURE W/ DESIGNATION		UNISTRUT RACK
A	WALL MOUNT FIXTURE W/ DESIGNATION		LIGHTING CONTROLS
	SPOTLIGHT	O V	OCCUPANCY SENSOR, VACANCY SENSOR - CEILING MOUNTED
	CEILING W/ FACE INDICATED; WALL W/ FACE, EMERGENCY HEADS, AND DIRECTIONAL ARROWS (INSTALL FACES AND ARROWS AS INDICATED)	O V	OCCUPANCY SENSOR, VACANCY SENSOR - MOUNTEDHIGH ON WALL
	EMERGENCY BATTERY FIXTURE	PC	PHOTOELECTRIC CELL
	CEILING FAN	LC	LIGHTING CONTACTOR
	POLE LIGHT (ARM MOUNT, POST-TOP MOUNT)	TC	TIMECLOCK
	BOLLARD FIXTURE	LCP	LIGHTING CONTROL PANEL
	SINGLE 20A RECEPTACLE AT 18" UNLESS NOTED	DZ	DAYLIGHT ZONE SENSOR
	20A DUPLEX RECEPTACLE AT 18" UNLESS NOTED	$	LIGHT SWITCH AT 48" UNLESS NOTED
	20A GFI DUPLEX RECEPTACLE AT 18" UNLESS NOTED	D	DIMMER SWITCH AT 48" UNLESS NOTED
	DOUBLE 20A DUPLEX RECEPTACLE AT 18" UNLESS NOTED	$ D	LOW-VOLTAGE SMART LIGHT SWITCH, SMART DIMMER LIGHT SWITCH AT 48" UNLESS NOTED
	20A DUPLEX RECEPTACLE 6" ABOVE COUNTER UNLESS NOTED		SUBSCRIPTS
	20A DUPLEX RECEPTACLE SPECIAL MOUNT (FLOOR,CLG)	3	3-WAY SWITCH
IG	20A ISOLATED GROUND RECEPTACLE	4	4-WAY SWITCH
WP	20A RECEPTACLE WITH WEATHERPROOF "EXTRA DUTY" COVER AND WEATHER-RESISTANT GFCIRECEPTACLE	F	SINGLE POLE CEILING FAN & LIGHT SWITCH WITH 3-SPEED FAN CONTROL TO ALLOW CONTROL OF FAN INDEPENDENT OF LIGHT KIT
USB	COMBINATION DUAL USB WITH DUPLEX RECEPTACLE	K	KEY-OPERATED SWITCH
30	SPECIAL RECEPTACLE (RATING NOTED)	O	OCCUPANCY SENSOR SWITCH
	COMBINATION TELEPHONE/DATA (TELE-DATA) OUTLET (18" ON WALL, 6" ABOVE COUNTER)	P	SWITCH WITH PILOT LIGHT
	COMBINATION TELEPHONE/DATA (TELE-DATA) OUTLET SPECIAL MOUNT (FLOOR, CLG)	R	RED EMERGENCY BRANCH SWITCH
	TELEPHONE OUTLET, DATA OUTLET	T	TIMER SWITCH
	TELEVISION CABLE CONNECTION AT 58" A.F.F. UNLESSOTHERWISE NOTED.	V	VACANCY SENSOR SWITCH (AUTO OFF, MANUAL ON)
CR FOB	LOW-VOLTAGE OR DATA OUTLET INTENDED FOR SPECIFIC PURPOSE (CARD READER, FOB SECURITY DEVICE SHOWN)	a	LOWER CASE LETTER AT FIXTURES AND SWITCHES (a, b, ETC.) INDICATES SWITCHING CONTROL.
J J	J-BOX (CEILING/WALL, FLOOR)	ZONE 123	LIGHTING CONTROL ZONE WITH ZONE #. SEE LIGHTING CONTROL SCHEDULE FOR ZONE CONTROL REQUIREMENTS.
	SECURITY CAMERA		FIRE ALARM SYSTEM
S S	SPEAKER - CEILING MOUNTED, WALL MOUNTED	FACP	FIRE ALARM CONTROL PANEL
W	WIFI OUTLET - CEILING MOUNTED	FAAP	FIRE ALARM ANNUNCIATOR PANEL
	CONDUIT RUN EXPOSED OR CONCEALED	F	MANUAL PULL STATION DOUBLE ACTION
	CONDUIT RUN BELOW FLOOR OR GRADE		GENERAL ALARM COMBINATION HORN/STROBE (AUDIO/VISUAL) (WALL, CLG)
	ITEM TO BE REMOVED		FIRE ALARM STROBE (VISUAL DEVICE) (WALL, CLG)
	SWITCHLEG		SMOKE/IONIZATION DETECTOR
	CIRCUIT HOMERUN, #12, THWN/THHN & QTY AS REQ'D, W/ GND, 3/4"C., UNLESS NOTED		HEAT DETECTOR
	CIRCUIT HOMERUN CONTAINING 3 HOTS, NEUTRAL, GROUND, AND ISOLATED GROUND		DUCT DETECTOR
	CONDUIT STUB-UP - CAP & MARK	C	COMBINATION SMOKE / CARBON MONOXIDE DETECTOR
	CONDUIT OR CIRCUIT BREAK/CONTINUATION (DIAGRAMMATIC ONLY)	B	BEAM DETECTOR
	GROUND	FS	SPRINKLER SYSTEM FLOW SWITCH
	MAKE DIRECT EQUIPMENT CONNECTION	TS	SPRINKLER SYSTEM TAMPER SWITCH
			ELECTRIC DOOR HOLDER

ELECTRICAL GENERAL NOTES

1. THESE DRAWING NOTES ACCOMPANY THE PUBLISHED CONSTRUCTION DOCUMENT SPECIFICATION BOOK (PROJECT MANUAL).
2. EXISTENCE AND LOCATION OF DEVICES, FIXTURES, EQUIPMENT, CIRCUITING, ETC. THAT ARE SHOWN TO BE EXISTING WAS TAKEN FROM EXISTING DRAWINGS AND/OR VISUAL INSPECTION AND SHOULD BE VERIFIED IN FIELD PRIOR TO ANY PRICING OR WORK.
3. COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS, REFLECTED CEILING PLANS, AND ELEVATIONS.
4. ELECTRICAL CONTRACTOR SHALL VISIT SITE AND SHALL BECOME FAMILIAR WITH SITE CONDITIONS AND VERIFY DIMENSIONS AND WORK TO BE INSTALLED PRIOR TO SUBMITTING A BID: BY SUBMITTING A BID, CONTRACTOR CERTIFIES FAMILIARITY WITH EXISTING JOBSITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK; FAILURE TO DO SO WILL NOT BE CAUSE FOR EXTRA WORK COMPENSATION.
5. ALL MATERIAL SHALL BE NEW AND SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
6. FURNISH ALL MATERIAL, LABOR, EQUIPMENT AND PERMITS TO PROVIDE A COMPLETE, OPERATIONAL ELECTRICAL SYSTEM CONSISTENT WITH THE INTENT OF THE DRAWINGS. WHERE THE WORD "PROVIDE" IS USED, IT SHALL MEAN, "FURNISH AND INSTALL COMPLETE AND READY FOR USE".
7. INSTALLATIONS FOUND NOT COMPLYING WITH SPECIFIED WORKMANSHIP PRACTICES SHALL BE REVISED TO COMPLY AT NO ADDITIONAL COST TO THE OWNER.
8. ELECTRICAL CONTRACTOR SHALL PERFORM WORK IN A SAFE MANNER AND MAINTAIN ADEQUATE PROTECTION OF WORK, THE OWNER'S PROPERTY AND ALL PERSONS ON SITE FROM INJURY, DAMAGE OR LOSS.
9. FIELD-COORDINATE LOCATION OF PANELS, CONDUITS AND DEVICES WITH STRUCTURAL MEMBERS AND EQUIPMENT FROM OTHER TRADES. CAREFULLY COORDINATE INSTALLATION SCHEDULES WITH OTHER TRADES AND GENERAL CONTRACTOR. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN. COORDINATE LOCATION AND INSTALLATION OF OWNER-FURNISHED ITEMS AFFECTING THIS TRADE.
10. ALL WIRING SHALL BE IN CONDUIT. ALL WIRING SHALL BE #12 AWG MINIMUM COPPER CONDUCTORS. ALUMINUM CONDUCTORS WILL NOT BE ALLOWED.
11. FEEDER CONDUCTORS, BRANCH WIRING, PANEL BUSS AND GROUND BUSS SHALL BE COPPER, UNLESS NOTED OTHERWISE.
12. WIRING DEVICES THAT OCCUR TOGETHER SHALL BE GANGED UNDER A COMMON WALL PLATE, UNLESS NOTED OTHERWISE.
13. ELECTRICAL CONTRACTOR SHALL ASSEMBLE AND PROVIDE TO THE OWNER AS PART OF CLOSE-OUT SUBMISSION REQUIREMENTS, ORGANIZED BINDER WITH TECHNICAL DATA, CUT SHEETS, MAINTENANCE REQUIREMENTS, ADJUSTMENT PROCEDURES, TEST REPORTS, APPROVALS, WARRANTIES, PHONE NUMBERS OF SERVICE PERSONNEL, SOURCES OF REPLACEMENT PARTS AND OTHER PERTINENT INFORMATION.
14. BEFORE BEGINNING EXCAVATIONS OF ANY NATURE WHATSOEVER, CONTRACTOR SHALL LOCATE ALL SERVICES AND UTILITIES OCCURRING WITHIN THE BOUNDS OF THE PROJECT. THE CONTRACTOR SHALL THEN PROCEED WITH CAUTION IN HIS WORK SO THAT NO UTILITY OR LINE SERVING AREAS THAT ARE TO REMAIN BE DAMAGED WITH A RESULTANT LOSS OF SERVICE. VERIFY THE SOURCE AND EXTENT OF EACH AND EVERY LINE ENCOUNTERED AND RECORD SERVICE, SIZE AND LOCATION ON RECORD DRAWINGS.
15. COORDINATE EACH AND EVERY INTERRUPTION OF SERVICES AND UTILITIES WITH THE OWNER AND UTILITY COMPANIES TO ENSURE MINIMUM SHUT-DOWN TIMES ARE ACCEPTABLE.
16. FOR EACH EQUIPMENT CONNECTION SHOWN, PROVIDE THE DEVICE, OUTLET, DISCONNECT SWITCH, OR JUNCTION BOX REQUIRED TO CONNECT THE EQUIPMENT.
17. NO SINGLE CONDUIT SHALL CONTAIN MORE THAN 6 CURRENT CARRYING CONDUCTORS, UNLESS NOTED OTHERWISE AND PROPERLY DERATED.
18. WHERE FIXTURES CONTAINING BATTERY PACKS ARE SWITCHED (BY TOGGLE SWITCH, OCCUPANCY SENSOR, TIMECLOCK/LIGHTING CONTROL PANEL, ETC.), SUPPLY TO BATTERY PACKS SHALL BE UNSWITCHED. EXIT LIGHTS SHOWN ON A SWITCHED CIRCUIT SHALL BE POWERED BY AN UNSWITCHED LINE ON THAT CIRCUIT.
19. LIGHT SWITCHES SHOWN IN ROOM CONTROL ALL LIGHTS IN THAT ROOM UNLESS NOTED OTHERWISE. WALL SWITCHES SHOWN IN ROOMS WITH CEILING OCCUPANCY SENSOR SWITCHES SHALL OVERRIDE OCCUPANCY SENSOR CONTROL.
20. DOCUMENTS CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF IECC SECTION C405 SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY PER IECC C408.3.2.
21. REVIEW ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, PLUMBING, AND OTHER DRAWINGS PRIOR TO BID.
22. INSTALL ALL MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO INSTALLATION.
23. PROTECT ALL SIMPLEX RECEPTACLES SHOWN TO BE GFCI-PROTECTED WITH GFCI-TYPE CIRCUIT BREAKERS.
24. PROTECT ALL RECEPTACLES SHOWN AS GFCI-PROTECTED IN LOCATIONS THAT ARE NOT "READILY ACCESSIBLE" (PER THE NEC) WITH GFCI-TYPE CIRCUIT BREAKERS IN LIEU OF GFCI-TYPE RECEPTACLE.
25. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
26. FOR EACH TELEPHONE, DATA, NURSE CALL, SYSTEMS CLOCK, FIRE ALARM DEVICE, AND T.V. OUTLET, PROVIDE OUTLET BOX AND 3/4" CONDUIT (UNLESS NOTED OTHERWISE) WITH PULL STRING ROUTED UP IN WALL TO ABOVE ACCESSIBLE CEILING. FOR COMBINATION DEVICES (I.E. TELEPHONE/DATA) PROVIDE 1" CONDUIT (UNLESS NOTED OTHERWISE). TERMINATE WITH PLASTIC BUSHING. ALL EXPOSED CABLES, REGARDLESS OF HEIGHT, SHALL BE ENCLOSED IN CONDUIT.
27. FIELD LOCATE FIXTURES IN MECHANICAL/ELECTRICAL ROOMS SO EQUIPMENT DOES NOT OBSTRUCT LIGHTING OR EQUIPMENT ACCESS. COORDINATE WITH MECHANICAL AND OTHER TRADES AS NEEDED.
28. SEE PLUMBING AND MECHANICAL DRAWINGS FOR ALL DIVISION 22 AND 23 EQUIPMENT LOCATIONS AND ELECTRICAL LOAD REQUIREMENTS.
29. ELECTRICAL CONTRACTOR TO PROVIDE MEANS (REQUEST AND INSTALLATION OF) TEMPORARY CONSTRUCTION POWER.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: JRS
CHECKED BY: SSB
REVISIONS:

ELECTRICAL GENERAL NOTES

E0.1
9001

KEYNOTE LEGEND

1 ROUTE 3" CONDUIT WITH PULLSTRING FROM MAIN ELECTRICAL ROOM AND 2" CONDUIT WITH PULLSTRING FROM MDF ROOM TO FUTURE FUELING AREA. STUB UP AND CAP CONDUIT.

2 PROVIDE JUNCTION BOX FOR MONUMENT SIGN LIGHTING. PROVIDE LOCKABLE CIRCUIT BREAKER FOR CIRCUIT. ROUTE 1" CONDUIT FROM SIGN TO ELECTRICAL ROOM.

3 PROVIDE MOTOR RATED SWITCH IN WEATHERPROOF ENCLOSURE FOR MOTORIZED GATE OPENER. REFER TO DETAIL C1/E5.2 FOR MORE INFORMATION.

4 ROUTE 3" CONDUIT WITH PULLSTRING FROM MAIN ELECTRICAL ROOM TO AREA OF FUTURE BUILDING EXPANSION. STUB UP AND CAP CONDUIT.

5 REFER TO CIVIL DRAWINGS FOR SERVICE TRANSFORMER PAD.

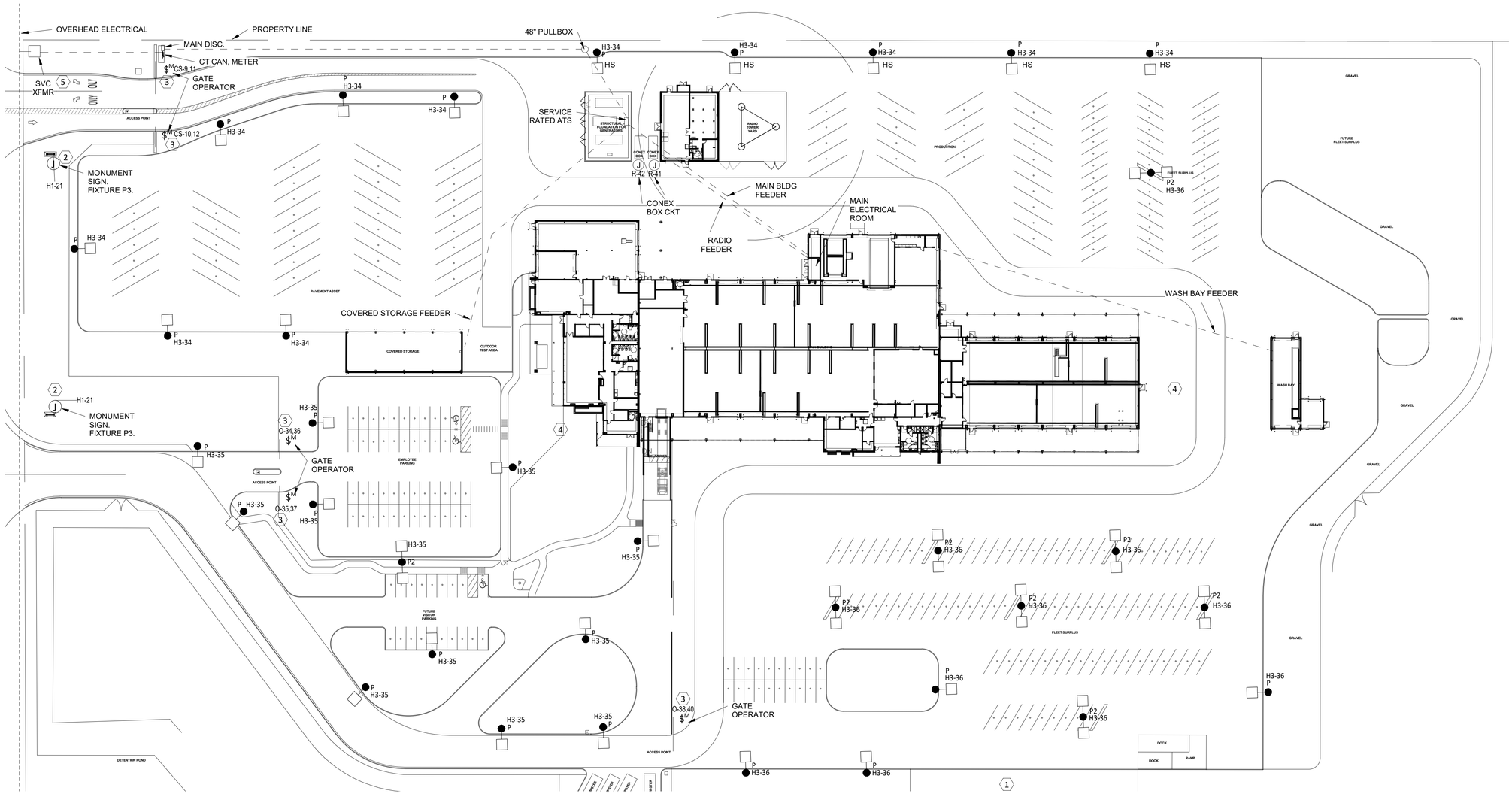
GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

B. REFER TO ONE LINE DIAGRAM ON SHEET E3.1 FOR FEEDER SIZING.

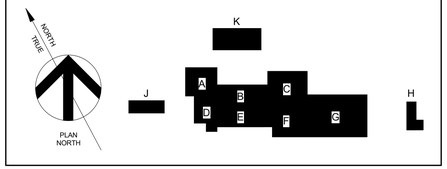
C. COORDINATE ELECTRIC SERVICE INSTALLATION WITH AUSTIN ENERGY AND UTILIZE AUSTIN ENERGY DESIGN DRAWINGS.

D. REFER 2/E5.3 FOR UNDERGROUND TRENCH DETAIL.



1 ELECTRICAL SITE PLAN
1" = 50'-0"

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 25' 50' 100'

ELECTRICAL SITE PLAN

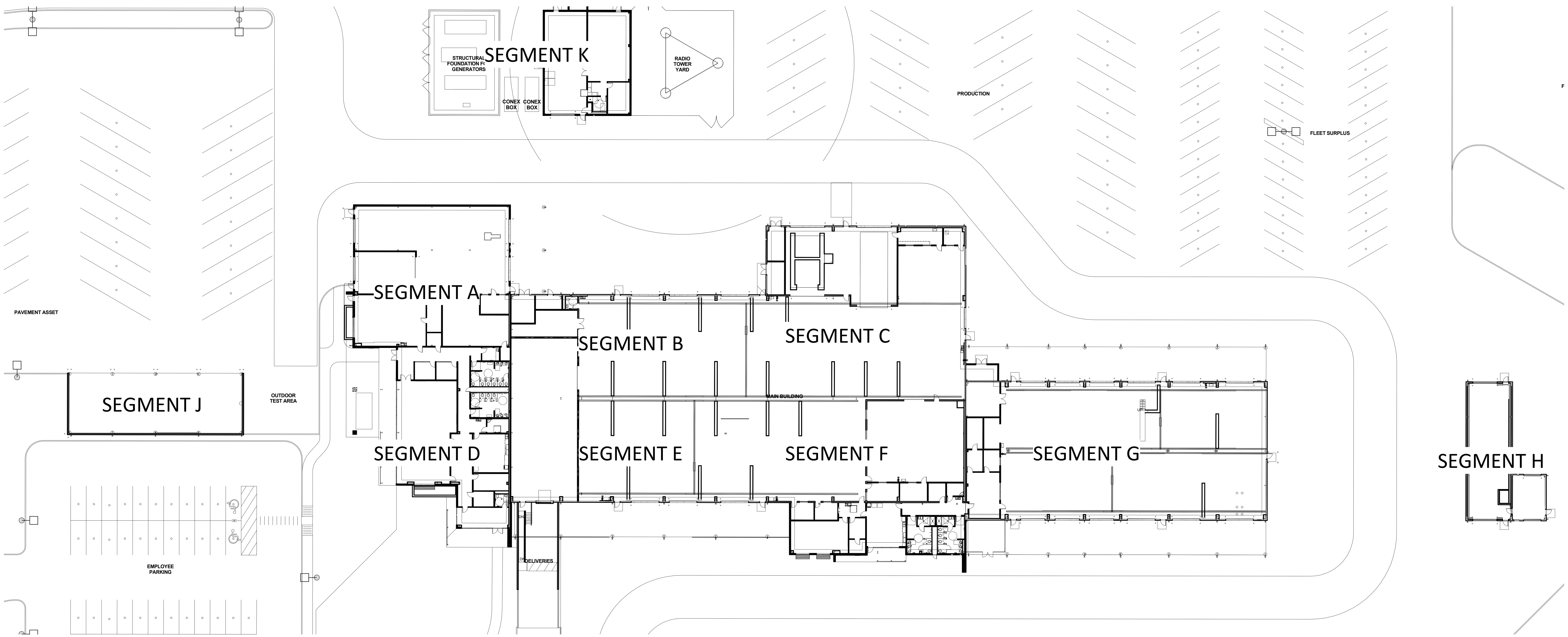
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

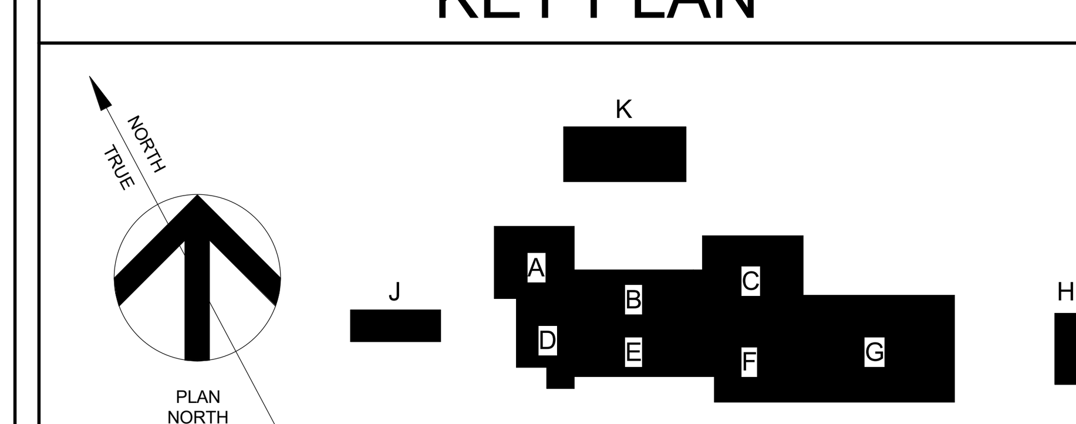
ISSUED: 2021
DRAWN BY: JRS
CHECKED BY: SSB
REVISIONS:

E1.1
9101



1 ELECTRICAL PLAN - LIGHTING - OVERALL
1/32" = 1'-0"

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 24' 48' 72'

ELECTRICAL PLAN - LIGHTING - OVERALL

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

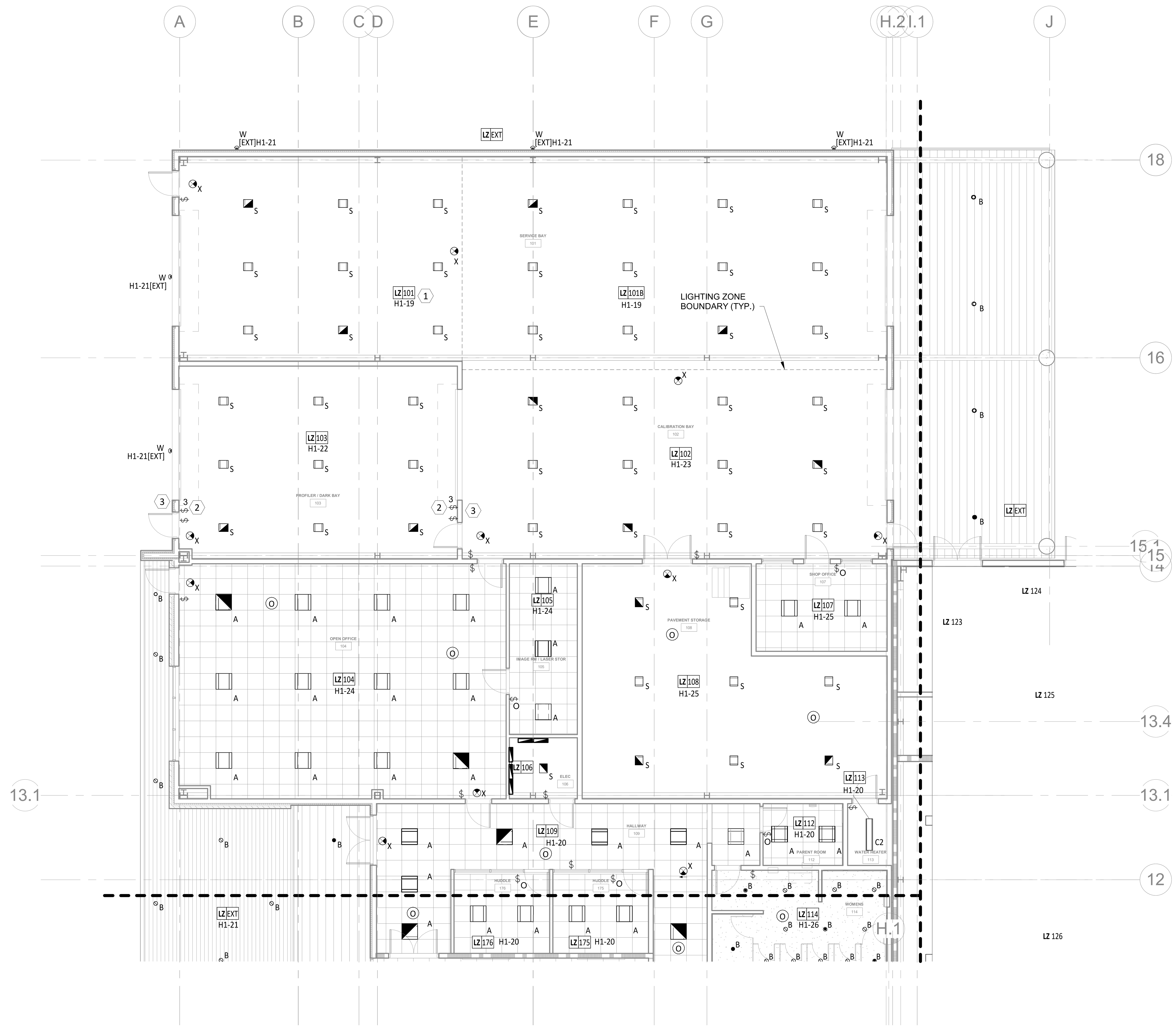
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.0
9200

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:14:32 PM



1 ELECTRICAL PLAN - LIGHTING - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR “HARD LID”) AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE’S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON “HARD”CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN “DAISEY-CHAIN”METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE’S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

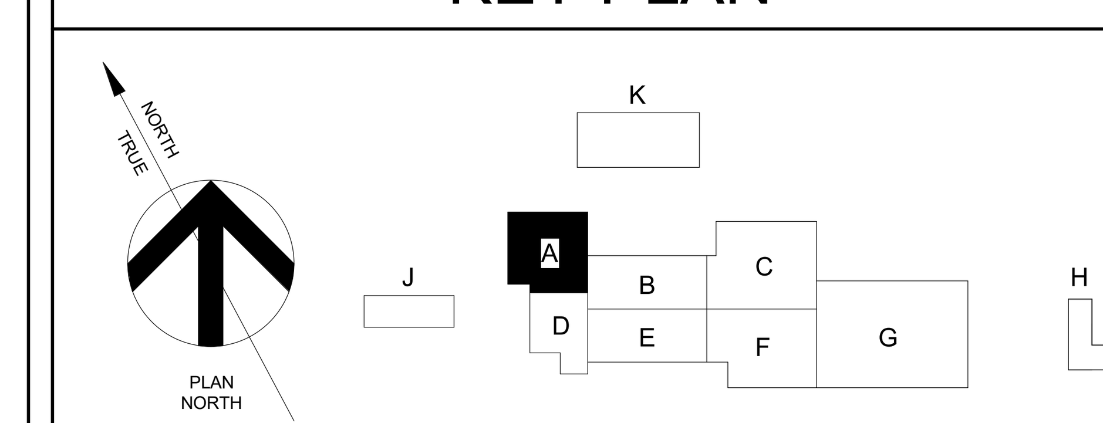
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.
2 THREE WAY SWITCH CONTROLS INDICATOR LIGHTS AT BOTH ENTRANCES TO ROOM 103.
3 PROVIDE PATLITE WH-A/WK-A SERIES OR APPROVED EQUIVALENT WALL MOUNT INDICATOR LIGHT BELOW "DO NOT ENTER" SIGNAGE.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

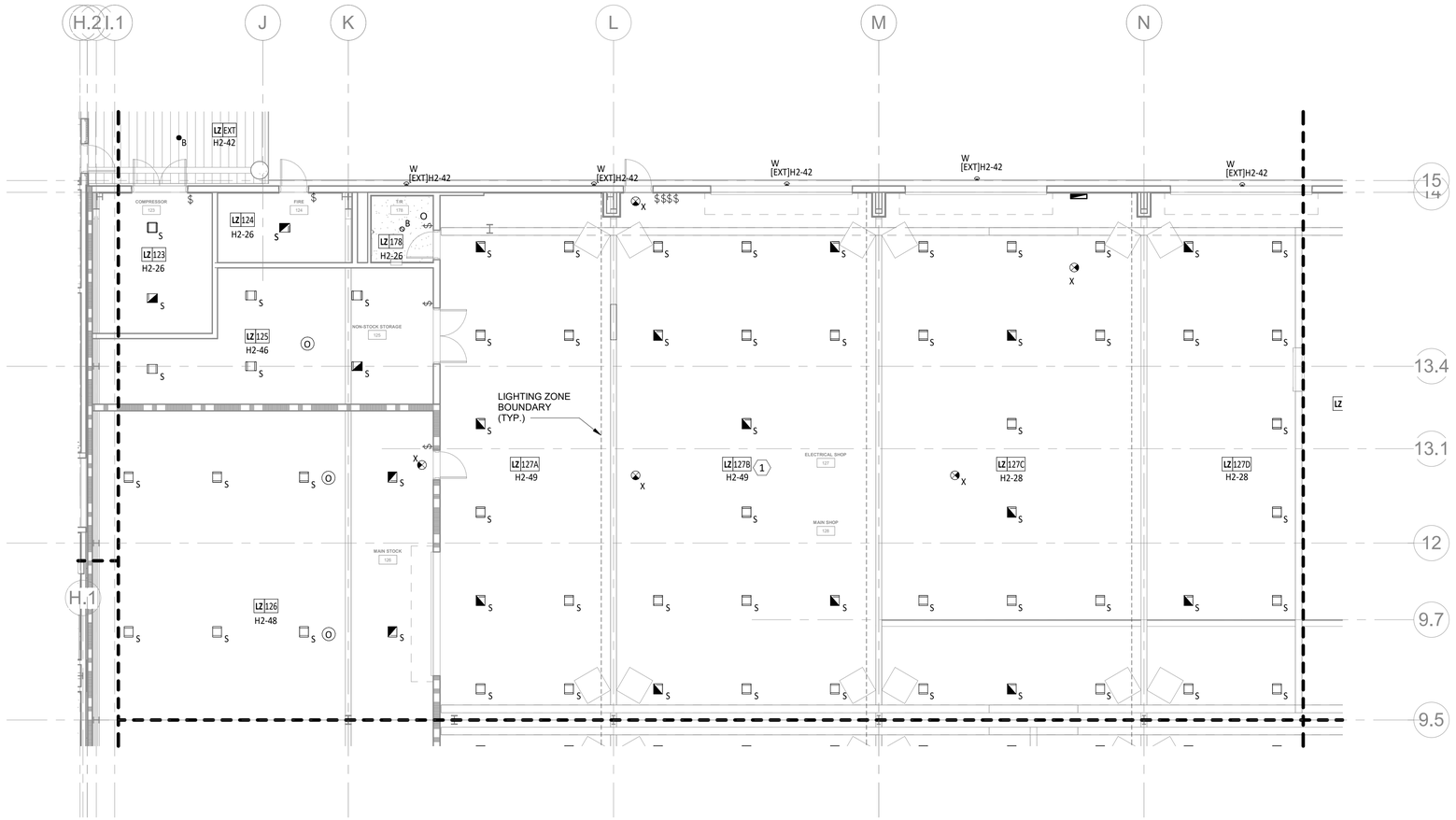
ELECTRICAL PLAN - LIGHTING - SEGMENT A

SHARON S. BICKFORD 77390 LICENSED PROFESSIONAL ENGINEER 09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.1
9201



1 ELECTRICAL PLAN - LIGHTING - SEGMENT B
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

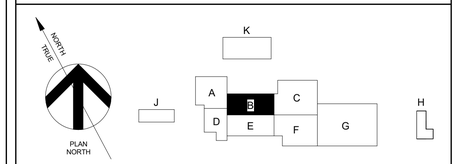
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

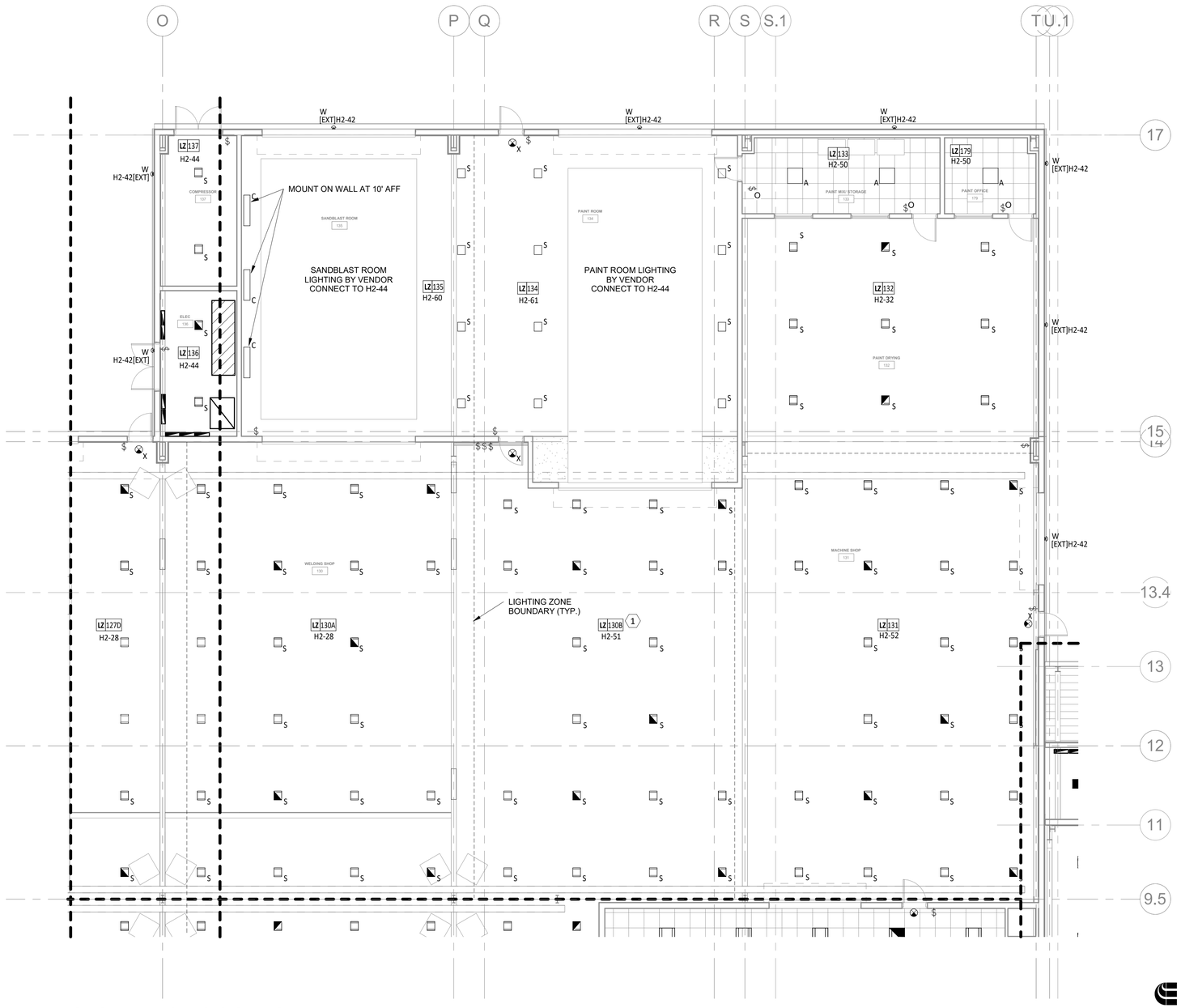
0 4' 8' 16' ELECTRICAL PLAN - LIGHTING - SEGMENT B

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.2
9202



1 ELECTRICAL PLAN - LIGHTING - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

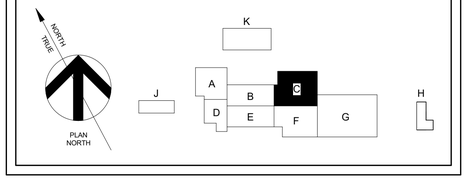
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512-338.1101

0 4' 8' 16'

ELECTRICAL PLAN - LIGHTING - SEGMENT C

Texas Department of Transportation

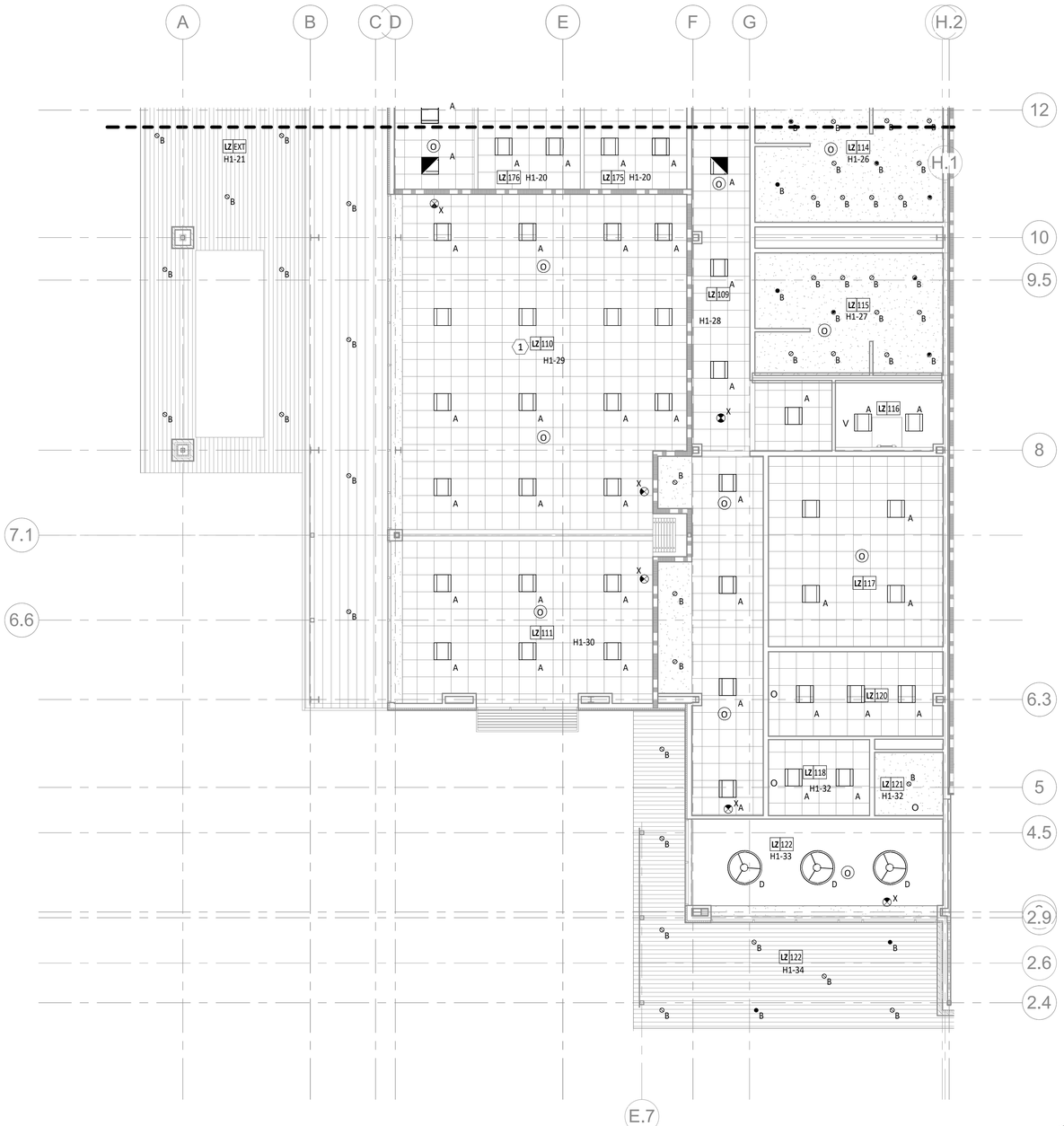
STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.3
9203

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



1 ELECTRICAL PLAN - LIGHTING - SEGMENT D
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

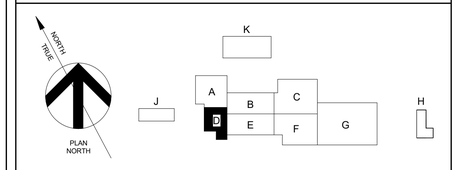
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' ELECTRICAL PLAN - LIGHTING - SEGMENT D

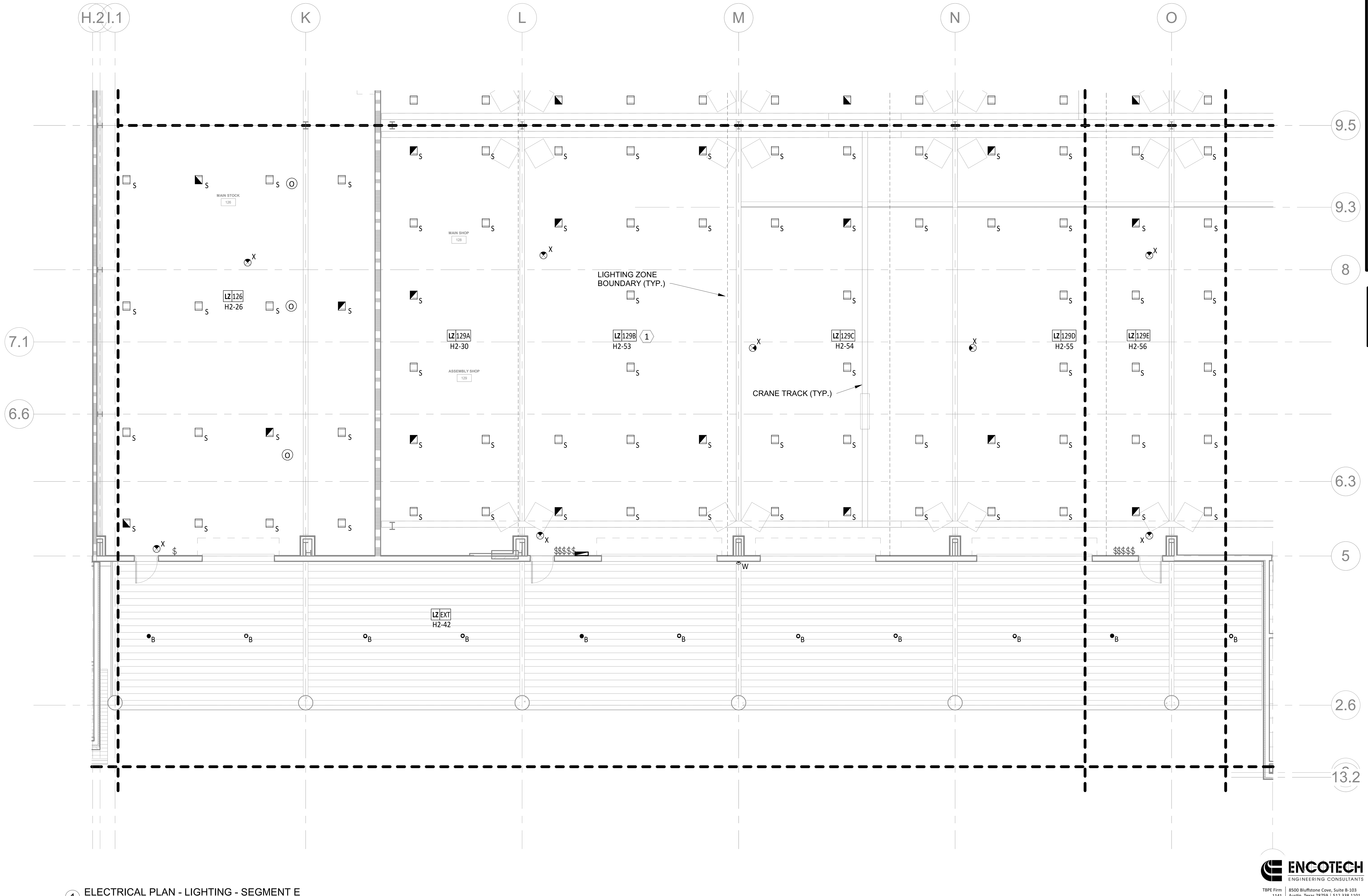
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.4
9204



1 ELECTRICAL PLAN - LIGHTING - SEGMENT E
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

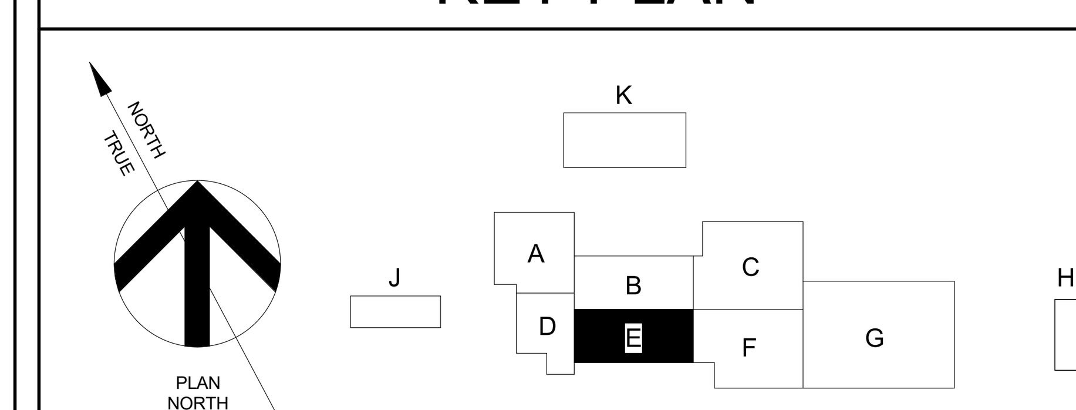
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



Texas Department of Transportation

SHARON S. BICKFORD 77390 LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

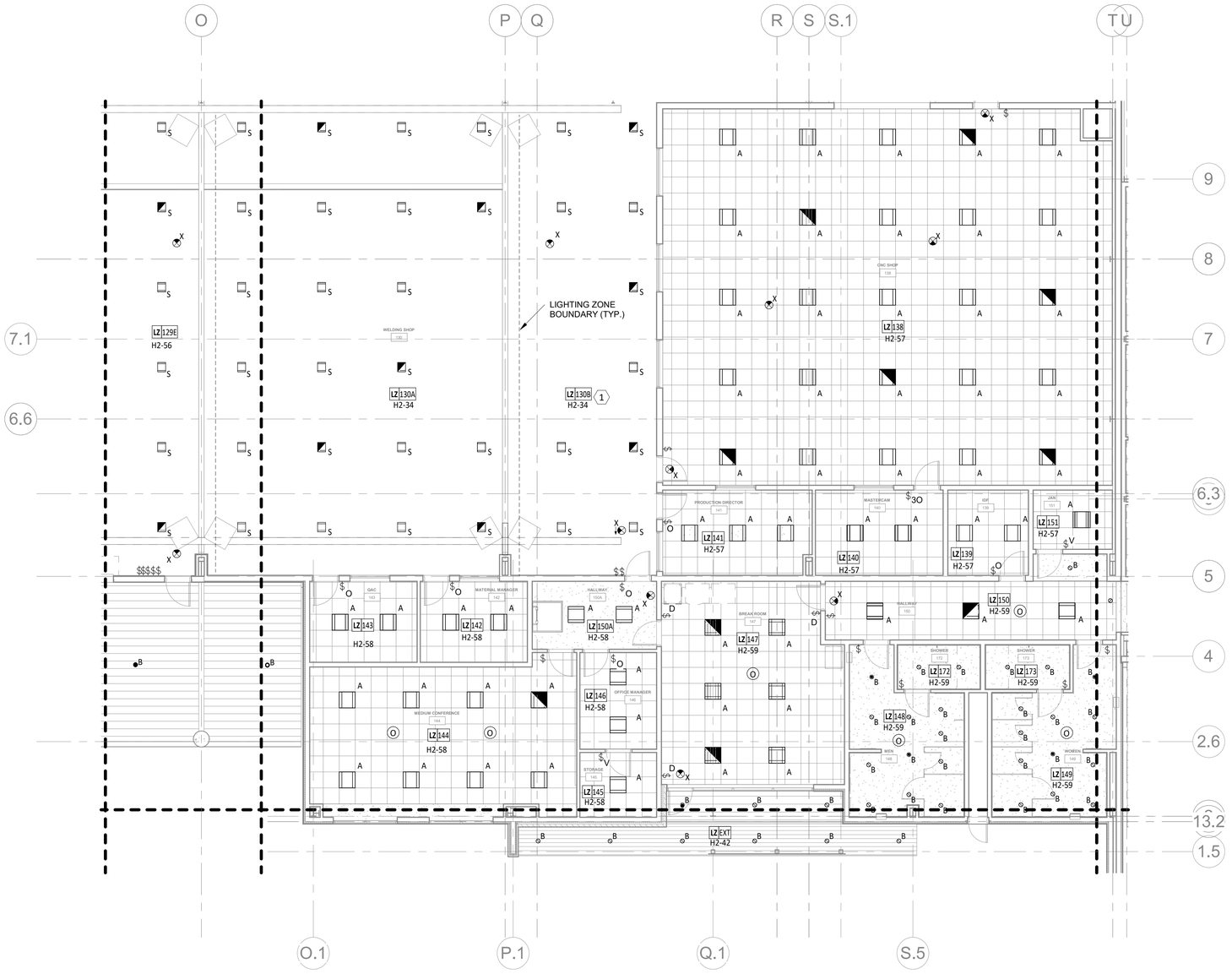
ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
ELECTRICAL PLAN - LIGHTING - SEGMENT E

E2.5
9205

GENERATED ON: 9/21/2021 12:14:43 PM C:\Users\JStull\Documents\20088 MEP AUS TxDOT 973 Operations Center R20_joe.stull@eec-tx.com.rvt



1 ELECTRICAL PLAN - LIGHTING - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

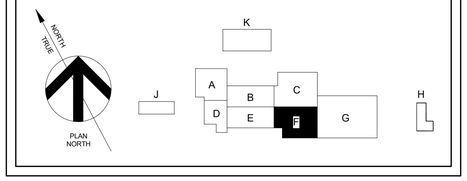
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - LIGHTING - SEGMENT F

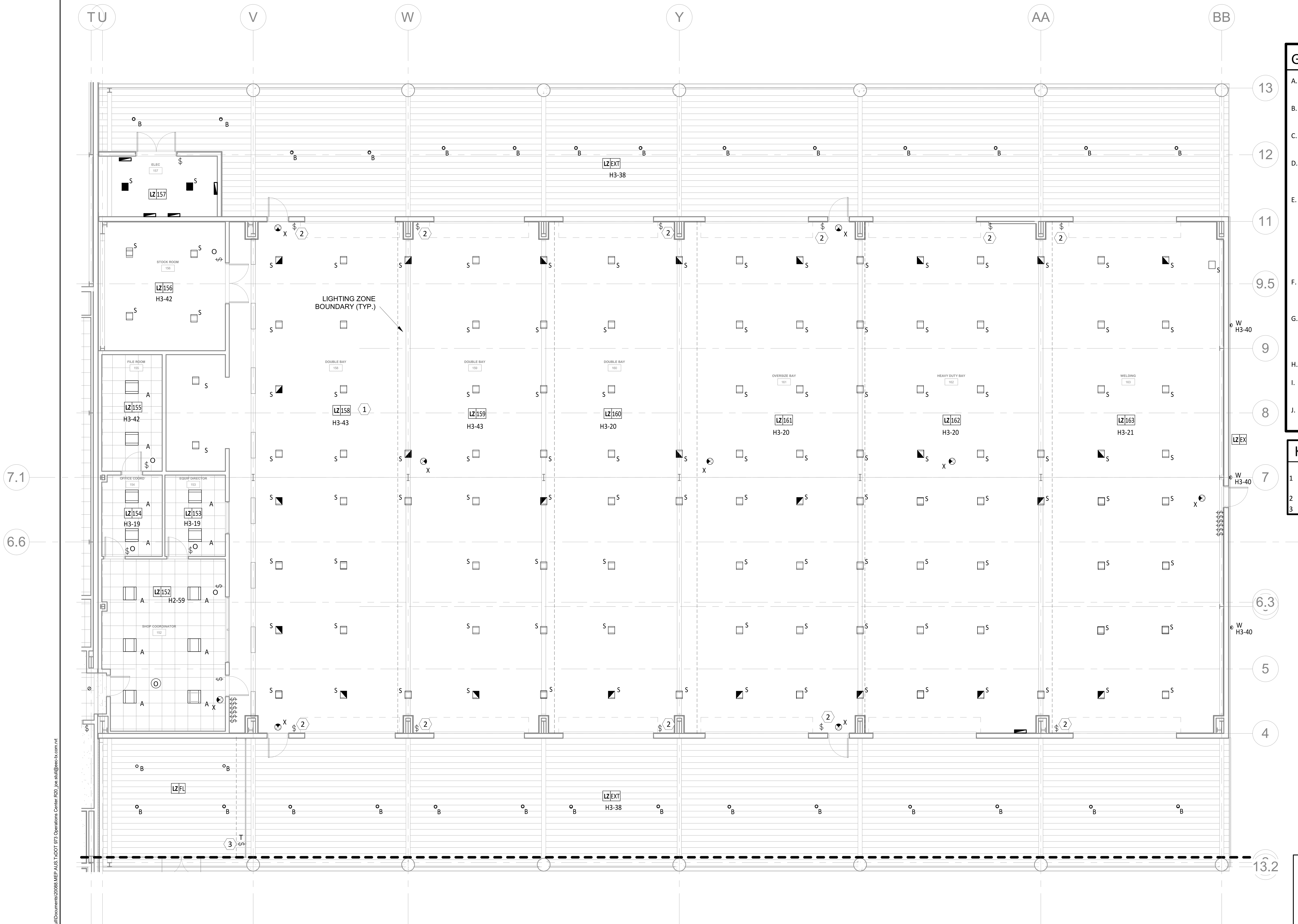
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.6
9206



1 ELECTRICAL PLAN - LIGHTING - SEGMENT G
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR “HARD LID”) AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE’S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON “HARD”CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN “DAISEY-CHAIN”METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE’S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

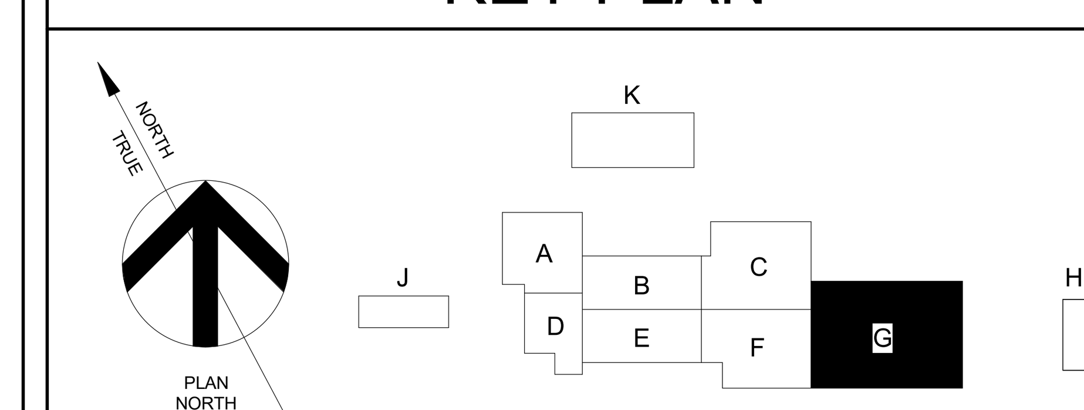
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.
2 SWITCH SHALL CONTROL LIGHTING ZONE IT IS LOCATED IN.
3 PROVIDE TORK C560 OR APPROVED EQUAL TIMER SWITCH FOR LIGHTING CONTROL.

KEY PLAN



Texas Department of Transportation

SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

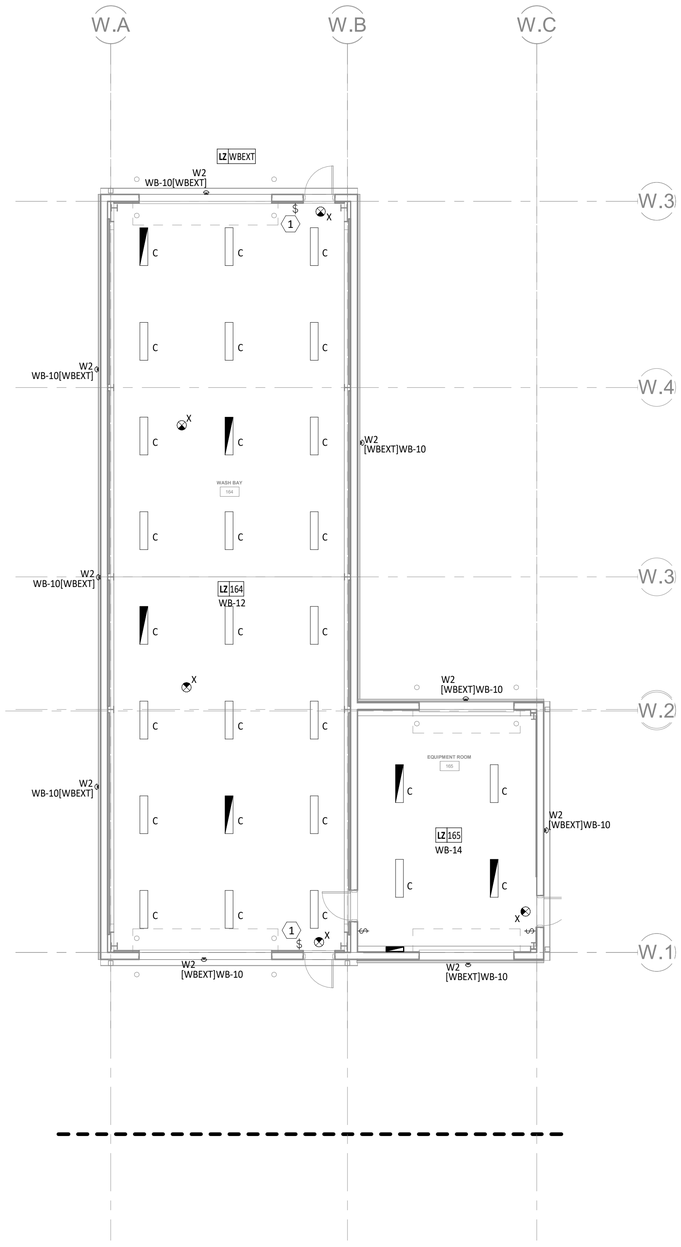
ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 5' 10' 20'
ELECTRICAL PLAN - LIGHTING - SEGMENT G

E2.7
9207

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:14:49 PM



1 ELECTRICAL PLAN - LIGHTING - SEGMENT H
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

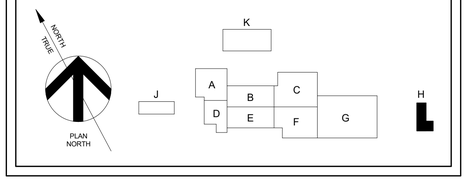
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 PROVIDE SWITCH IN WEATHERPROOF ENCLOSURE.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

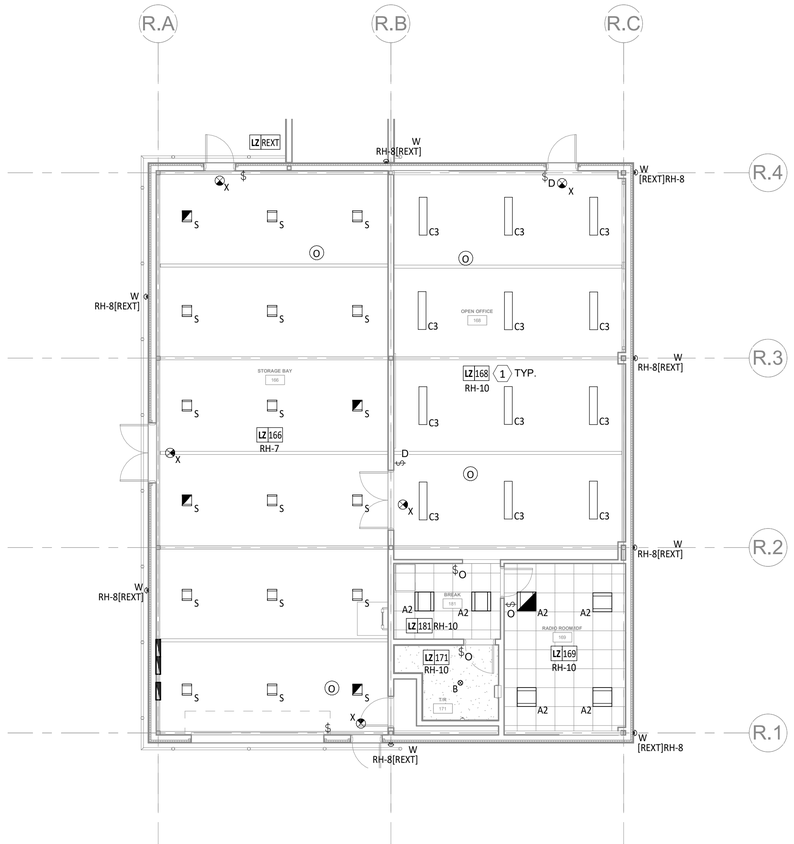
ELECTRICAL PLAN - LIGHTING -SEGMENT H

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.8
9208



1 ELECTRICAL PLAN - LIGHTING - SEGMENT K
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE KEYNOTES.

B. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED DEVICES.

C. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

D. SHADED REGION WITH DASHED OUTLINE INDICATES AREA NEEDS REQUIRED IECC 2015 DAYLIGHT-RESPONSIVE CONTROLS. REFER TO LIGHTING ZONE ON LIGHTING CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.

E. CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL DRAWINGS TO CONFIRM CEILING TYPES IN ALL ROOMS (ACCESSIBLE, EXPOSED OR "HARD LID") AND TO USE THE APPROPRIATE WIRING METHOD FOR EACH TYPE. INSURE ALL J-BOXES ARE ACCESSIBLE AFTER ALL OTHER TRADE'S WORK IS COMPLETED. DO NOT LOCATE ANY J-BOXES ON "HARD"CEILINGS; ALL WIRING MUST BE ACCESSIBLE THROUGH LUMINAIRE ONLY IN "DAISEY-CHAIN"METHOD OR WITH DEDICATED HOMERUNS TO EACH LUMINAIRE. J-BOXES MAY BE LOCATED ABOVE OTHER TRADE'S ACCESS DOORS IF FEASIBLE AND DOES NOT INTERFERE WITH ACCESS.

F. ALL OCCUPANY/VACANCY SENSORS SHOWN SHALL PROVIDE 100% COVERAGE OF SPACE WHERE PROVIDED. ADJUST QUANITIES AND LOCATIONS OF SENSORS TO ENSURE PROPER COVERAGE OF SPACE TO MINIMIZE FALSE "OFF" SITUATIONS

G. PROVIDE OCCUPANCY SENSOR IN RESTROOMS AND WATER CLOSETS WITH AUXILLARY CONTACTS TO INTERFACE AND CONTROL EXHAUST FAN. SEE MECHANICAL CONTROLS SHEET FOR MORE INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR BEFORE PURCHASING OCCUPANCY SENSORS TO ENSURE COMPATABILITY.

H. EXIT SIGN FIXTURES SHALL BE CONNECTED TO SAME CIRCUIT AS LIGHTING ZONE.

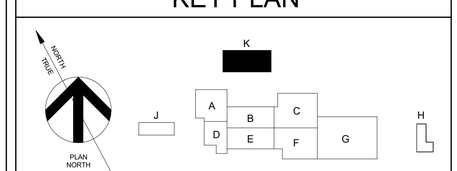
I. CONDUIT SHALL BE ROUTED TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

J. COORDINATE MOUNTING ELEVATIONS OF EXTERIOR WALL PACKS WITH ARCHITECTURAL ELEVATIONS.

KEYNOTE LEGEND

1 REFER TO LIGHTING CONTROL SCHEDULE ON SHEET E4.1 FOR MORE INFORMATION ON LIGHTING ZONE CONTROLS.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16' ELECTRICAL PLAN - LIGHTING - SEGMENT K

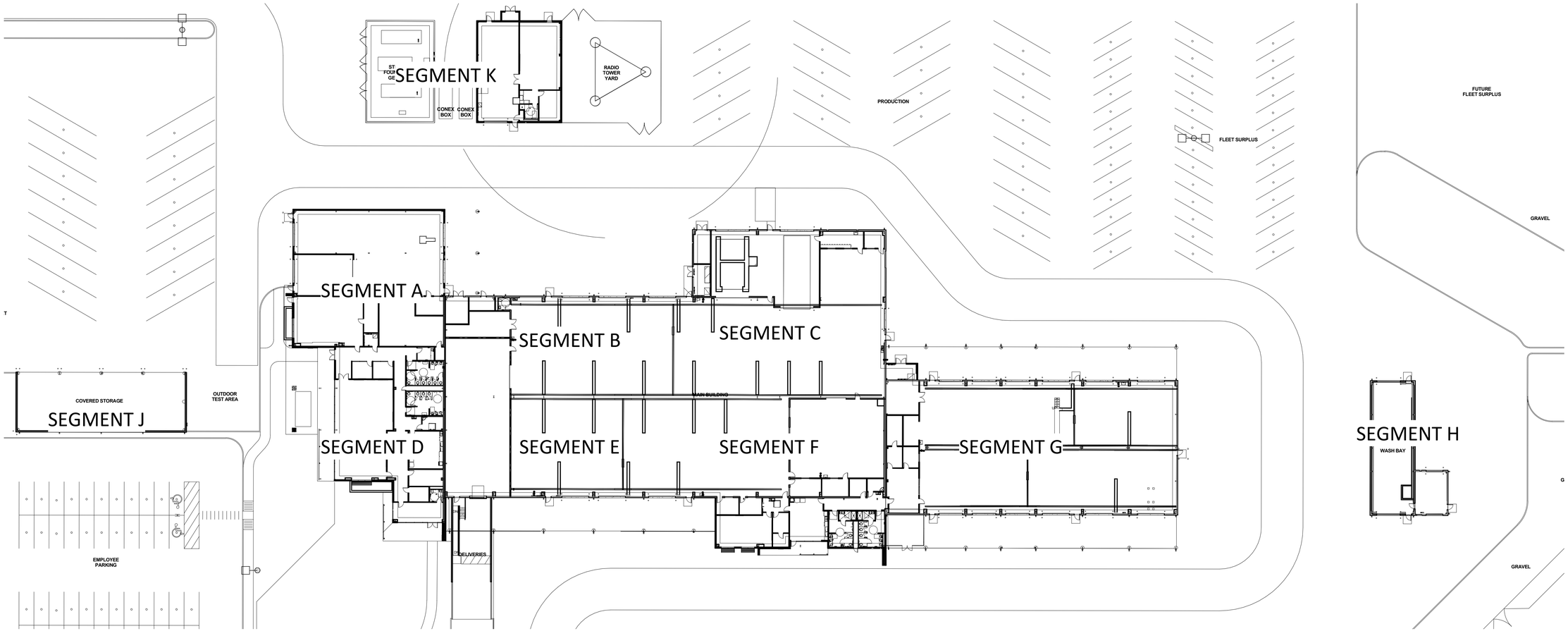
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

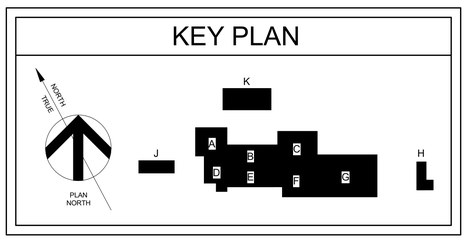
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.9
9209



1 ELECTRIC PLAN - POWER - OVERALL
1/32" = 1'-0"



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 24' 48' 72'

ELECTRICAL PLAN - POWER - OVERALL

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

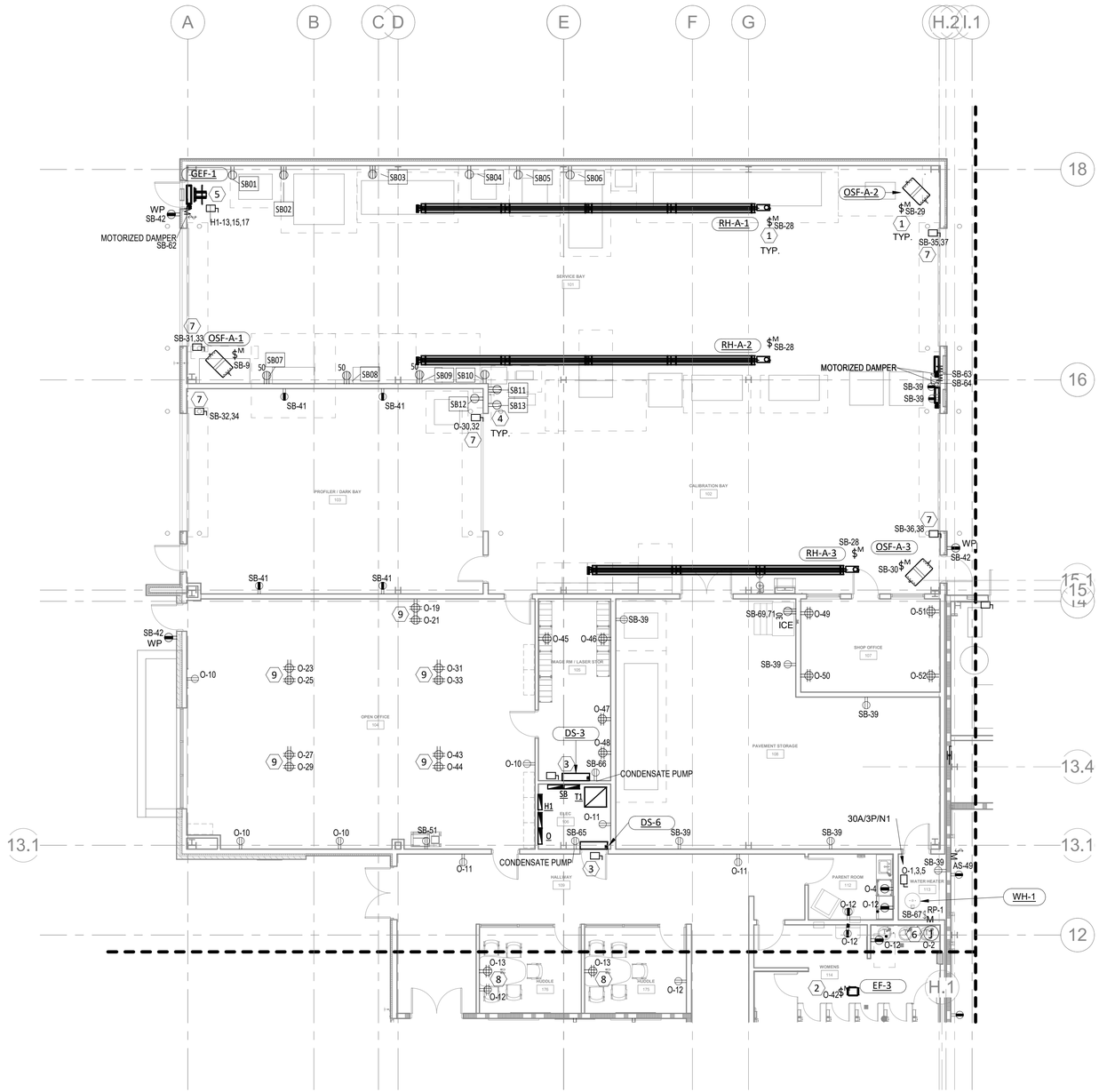
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: S.S.B.
REVISIONS:

E2.10
9210

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 10/1/2021 12:14:52 PM C:\Users\JSuit\Documents\20068 MEP AUS TxDOT 973 Operations Center R20_jse.suit@encotx.com.rvt



1 ELECTRICAL PLAN - POWER - SEGMENT A
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

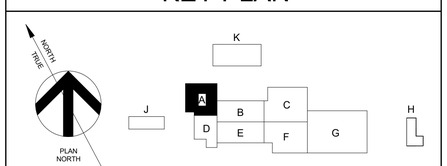
1 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.
2 INTERLOCK FAN CONTROL WITH ROOM LIGHTING CONTROL.
3 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR DS UNIT. CONNECT UNIT TO CORRESPONDING OUTDOOR UNIT.
4 REFER TO EQUIPMENT SCHEDULES ON SHEET E4.3 FOR MORE INFORMATION ON TAGGED EQUIPMENT.
5 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO FAN.
6 PROVIDE LOW VOLTAGE TRANSFORMER FOR PLUMBING FIXTURE SENSORS.
7 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.
8 INSTALL RECEPTACLE IN TV BACKBOX PROVIDED BY OTHERS. REFER TO SHEET T4.1 FOR MORE INFORMATION.
9 PROVIDE RECEPTACLES IN LEGRAND 25DTP SERIES POWER POLE OR APPROVED EQUIVALENT.

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

KEY PLAN



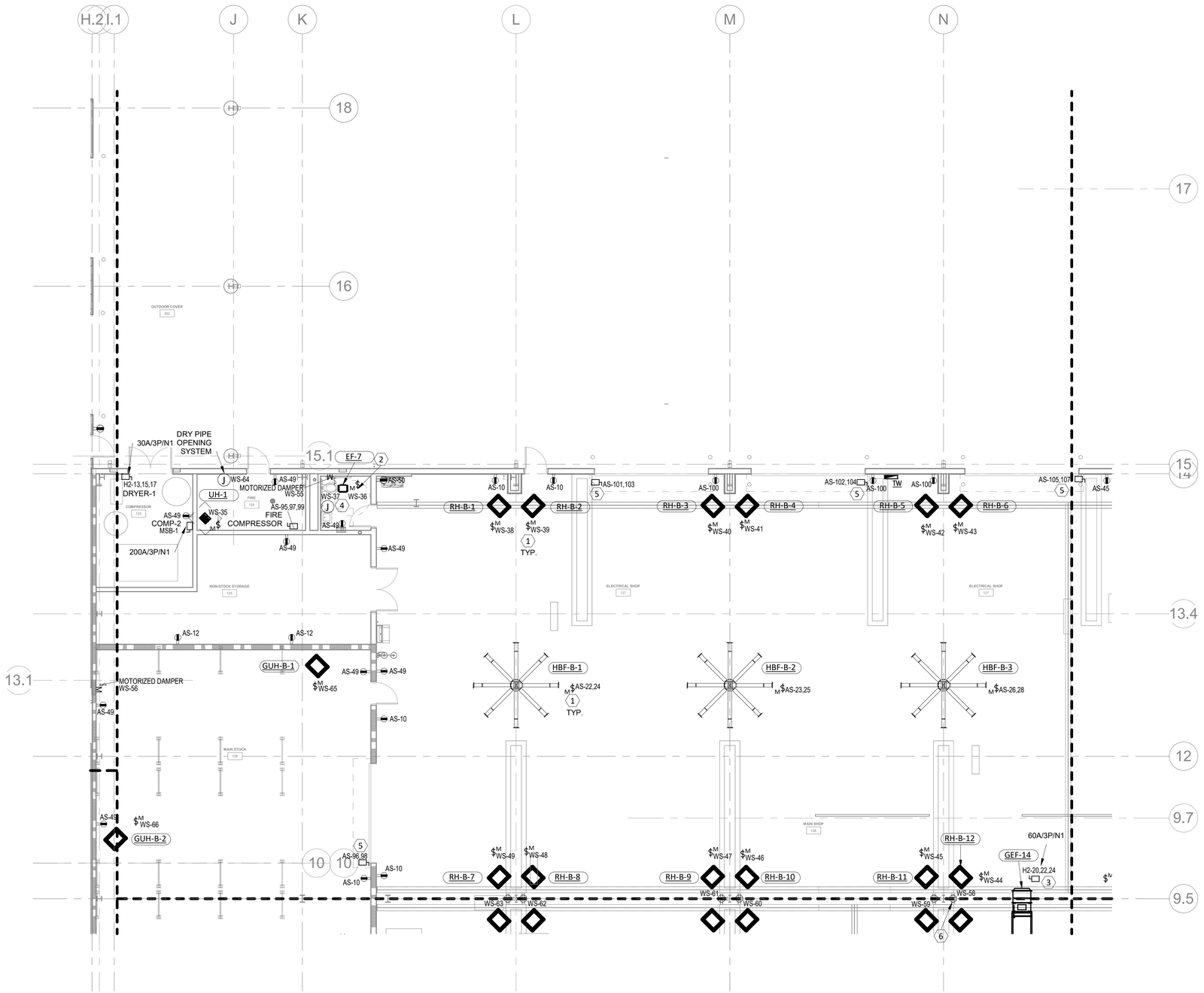
ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT A

E2.11
9211

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



1 ELECTRICAL PLAN - POWER - SEGMENT B
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

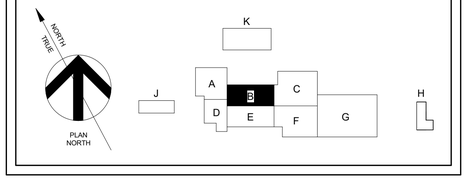
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.
2 INTERLOCK FAN CONTROL WITH ROOM LIGHTING CONTROL.
3 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO FAN.
4 PROVIDE LOW VOLTAGE TRANSFORMER FOR PLUMBING FIXTURE SENSORS.
5 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.
6 COORDINATE RECEPTACLE LOCATION AND CONDUIT ROUTING ON COLUMN WITH COMPRESSED AIR PIPING AND OTHER TRADES.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT B

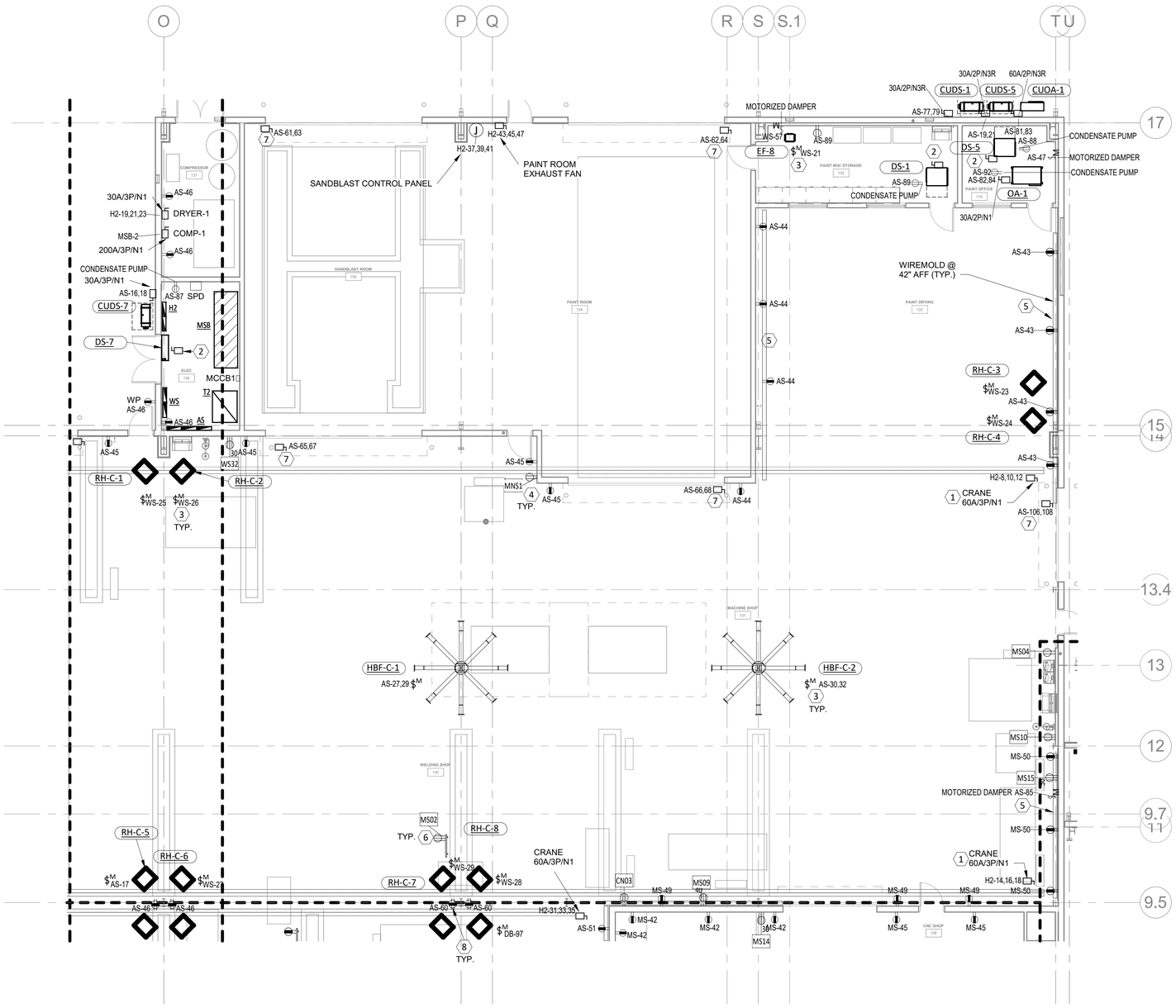
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-4J70420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.12
9212



1 ELECTRICAL PLAN - POWER - SEGMENT C
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO CRANE RAIL. CONNECT TO CRANE SYSTEM ACCORDING TO MANUFACTURER INSTRUCTIONS.

2 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR DS UNIT. CONNECT UNIT TO CORRESPONDING OUTDOOR UNIT.

3 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.

4 REFER TO EQUIPMENT SCHEDULES ON SHEET E4.3 FOR MORE INFORMATION ON TAGGED EQUIPMENT.

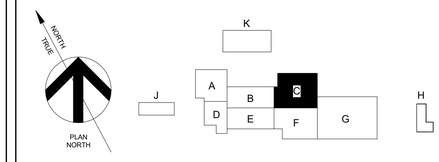
5 PROVIDE RECEPTACLES IN LEGRAND 2400 SERIES OR APPROVED EQUIVALENT MULTIOUTLET RACEWAY SYSTEM.

6 PROVIDE UNISTRUT RACK FOR UTILITY STATION. UTILIZE FLOOR TRENCH FOR EQUIPMENT CONDUIT ROUTING. COORDINATE CONDUIT PLACEMENT WITH PIPING AND OTHER TRADES. STUB CONDUIT UP THROUGH TRENCH COVER AND TERMINATE IN EQUIPMENT DISCONNECTING MEANS ON UNISTRUT RACK. FOR DISCONNECT SWITCHES, RUN LFMC ON TOP OF SLAB TO EQUIPMENT LOCATION FOR FINAL CONNECTION.

7 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.

8 COORDINATE RECEPTACLE LOCATION AND CONDUIT ROUTING ON COLUMN WITH COMPRESSED AIR PIPING AND OTHER TRADES.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

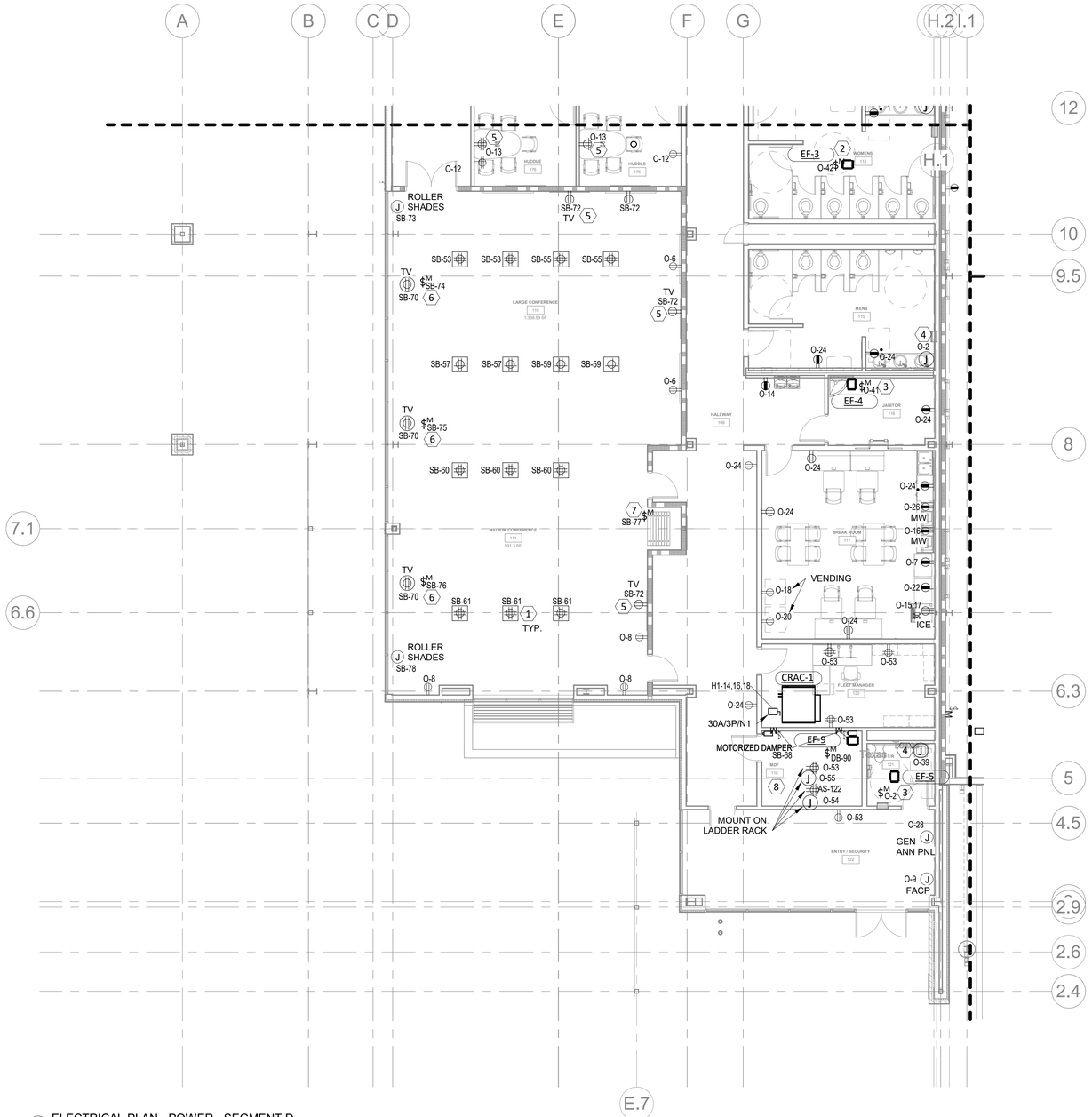
0 4' 8' 16' ELECTRICAL PLAN - POWER - SEGMENT C

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.13
9213



1 ELECTRICAL PLAN - POWER - SEGMENT D
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

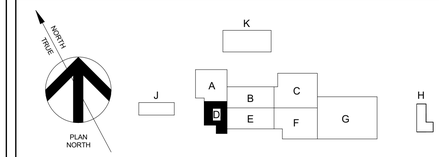
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE HUBBELL SYSTEMONE SERIES OR APPROVED EQUIVALENT 4-GANG RECTANGULAR FLOOR BOX.
2 INTERLOCK FAN CONTROL WITH ROOM LIGHTING CONTROL.
3 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.
4 PROVIDE LOW VOLTAGE TRANSFORMER FOR PLUMBING FIXTURE SENSORS.
5 INSTALL RECEPTACLE IN TV BACKBOX PROVIDED BY OTHERS. REFER TO SHEET T4.1 FOR MORE INFORMATION.
6 PROVIDE POWER CONNECTION TO MOTORIZED TV MOUNT. CIRCUIT AS INDICATED. PROVIDE BOX, CONDUIT AND CONDUCTORS REQUIRED FOR TV MOUNT CONTROLS. COORDINATE EXACT LOCATION OF CONTROLS WITH ARCHITECT.
7 PROVIDE MOTOR RATED SWITCH FOR MOTORIZED PARTITION. PROVIDE BOX, CONDUIT AND CONDUCTORS REQUIRED FOR PARTITION KEYED SWITCH CONTROLS. COORDINATE EXACT LOCATION OF CONTROLS WITH ARCHITECT.
8 PROVIDE GROUND BUS AND CONNECT TO GROUNDING SYSTEM.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT D

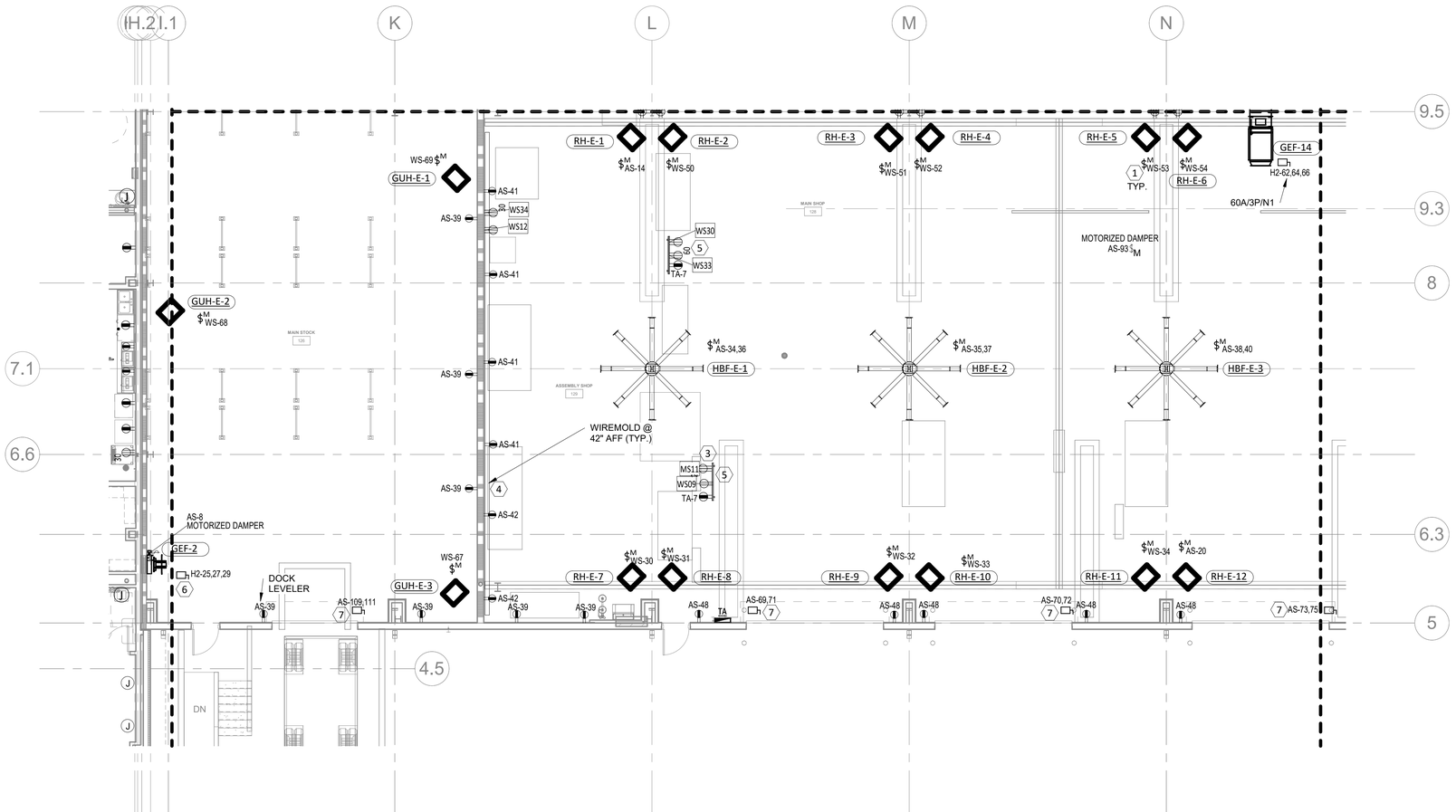
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.14
9214



1 ELECTRICAL PLAN - POWER - SEGMENT E
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

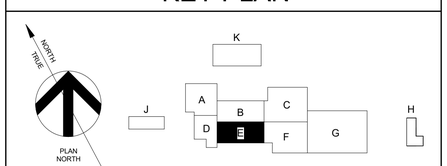
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.
2 INSTALL HIGH VOLUME FAN CONTROLLER ACCORDING TO MANUFACTURER REQUIREMENTS.
3 REFER TO EQUIPMENT SCHEDULES ON SHEET E4.3 FOR MORE INFORMATION ON TAGGED EQUIPMENT.
4 PROVIDE RECEPTACLES IN LEGRAND 2400 SERIES OR APPROVED EQUIVALENT MULTIOUTLET RACEWAY SYSTEM.
5 PROVIDE UNISTRUT RACK FOR UTILITY STATION. UTILIZE FLOOR TRENCH FOR EQUIPMENT CONDUIT ROUTING. COORDINATE CONDUIT PLACEMENT WITH PIPING AND OTHER TRADES. STUB CONDUIT UP THROUGH TRENCH COVER AND TERMINATE IN EQUIPMENT DISCONNECTING MEANS ON UNISTRUT RACK. FOR DISCONNECT SWITCHES, RUN LFMC ON TOP OF SLAB TO EQUIPMENT LOCATION FOR FINAL CONNECTION.
6 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO FAN.
7 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT E

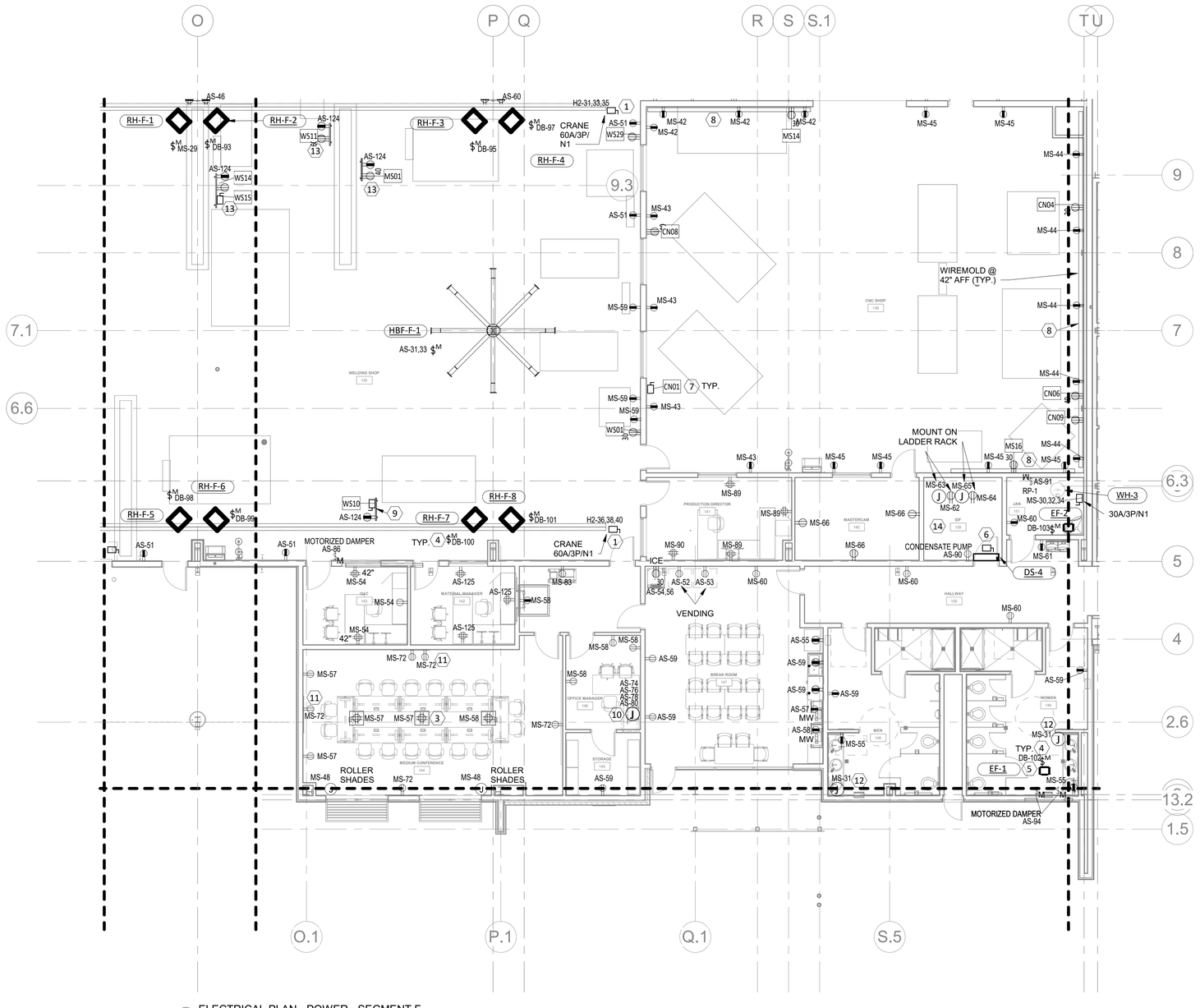
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.15
9215



1 ELECTRICAL PLAN - POWER - SEGMENT F
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

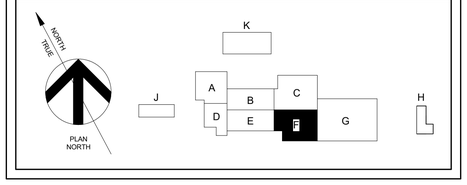
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO CRANE RAIL. CONNECT TO CRANE SYSTEM ACCORDING TO MANUFACTURER INSTRUCTIONS.
2
3 PROVIDE HUBBELL SYSTEMONE SERIES OR APPROVED EQUIVALENT 4-GANG RECTANGULAR FLOOR BOX.
4 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.
5 INTERLOCK FAN CONTROL WITH ROOM LIGHTING CONTROL.
6 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR DS UNIT. CONNECT UNIT TO CORRESPONDING OUTDOOR UNIT.
7 REFER TO EQUIPMENT SCHEDULES ON SHEET E4.3 FOR MORE INFORMATION ON TAGGED EQUIPMENT.
8 PROVIDE RECEPTACLES IN LEGRAND 2400 SERIES OR APPROVED EQUIVALENT MULTIOUTLET RACEWAY SYSTEM.
9 MOUNT EQUIPMENT DISCONNECTING MEANS ON UNISTRUT RACK. ROUTE EQUIPMENT CIRCUIT UNDERGROUND. UTILIZE FLOOR TRENCHES WHEREVER POSSIBLE.
10 PROVIDE CONNECTION TO 8 WIRE, 4 CIRCUIT MODULAR FURNITURE IN LEGRAND EVOLUTION SERIES FURNITURE FEED WALL BOX OR APPROVED EQUIVALENT.
11 INSTALL RECEPTACLE IN TV BACKBOX PROVIDED BY OTHERS. REFER TO SHEET T4.1 FOR MORE INFORMATION.
12 PROVIDE LOW VOLTAGE TRANSFORMER FOR PLUMBING FIXTURE SENSORS.
13 PROVIDE UNISTRUT RACK FOR UTILITY STATION. UTILIZE FLOOR TRENCH FOR EQUIPMENT CONDUIT ROUTING. COORDINATE CONDUIT PLACEMENT WITH PIPING AND OTHER TRADES. STUB CONDUIT UP THROUGH TRENCH COVER AND TERMINATE IN EQUIPMENT DISCONNECTING MEANS ON UNISTRUT RACK. FOR DISCONNECT SWITCHES, RUN LFMC ON TOP OF SLAB TO EQUIPMENT LOCATION FOR FINAL CONNECTION.
14 PROVIDE GROUND BUS AND CONNECT TO GROUNDING SYSTEM.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT F

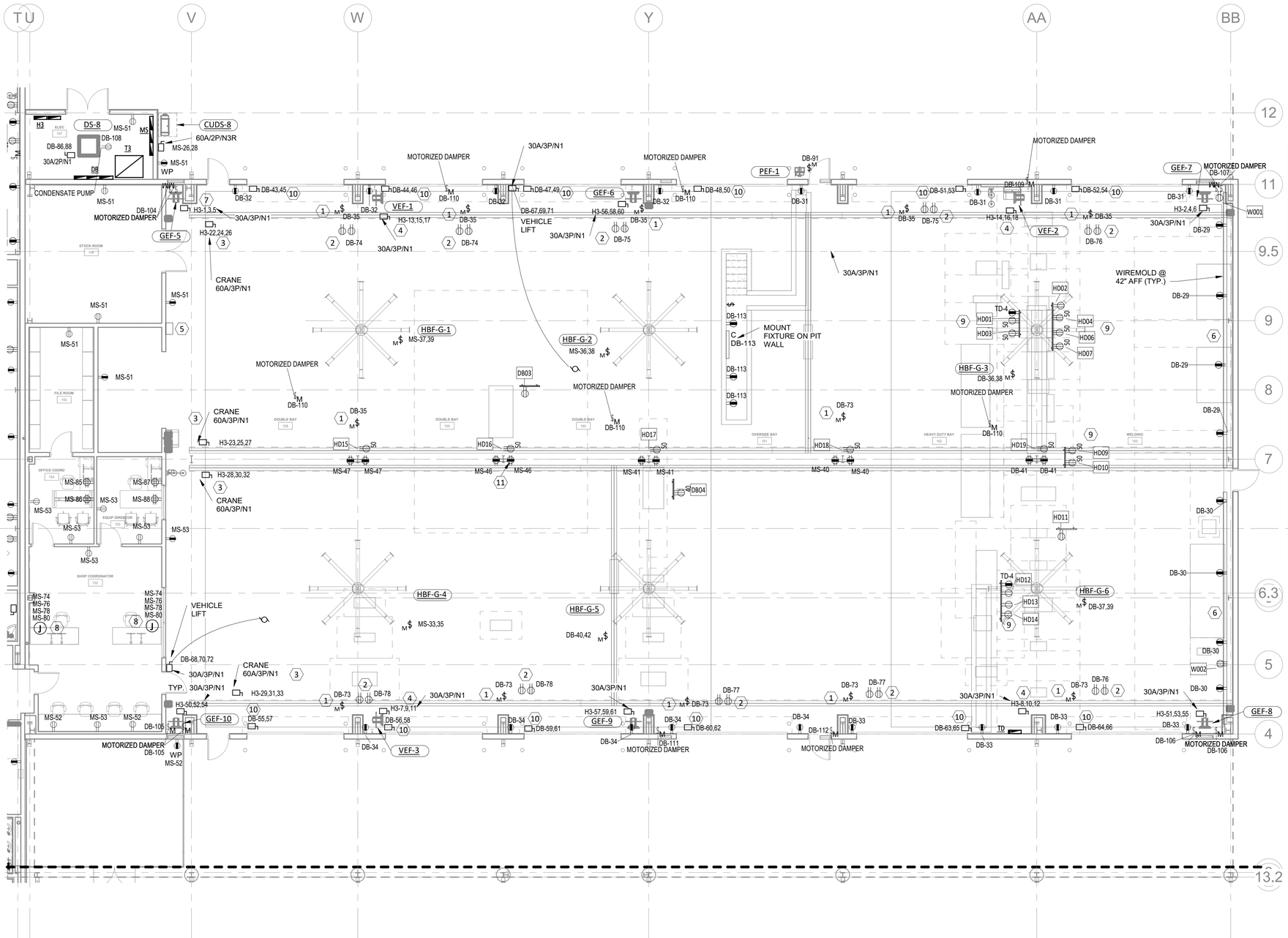
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47-70420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.16
9216



1 ELECTRICAL PLAN - POWER - SEGMENT G
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

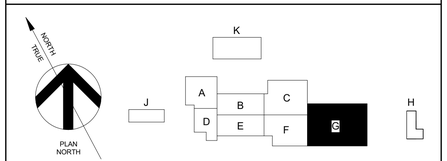
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE MOTOR RATED SWITCH FOR MOTORIZED HOSE REELS.
2 PROVIDE 120V CONNECTION TO ELECTRICAL RECEPTACLE REEL.
3 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO CRANE RAIL. CONNECT TO CRANE SYSTEM ACCORDING TO MANUFACTURER INSTRUCTIONS.
4 INTERLOCK FAN CONTROL WITH VEHICLE EXHAUST REMOVAL SYSTEM CONTROL PANEL.
5 INSTALL HIGH VOLUME FAN CONTROLLER ACCORDING TO MANUFACTURER REQUIREMENTS.
6 PROVIDE RECEPTACLES IN LEGRAND 2400 SERIES OR APPROVED EQUIVALENT MULTIOUTLET RACEWAY SYSTEM.
7 MOUNT DISCONNECT SWITCH ON STRUCTURE ADJACENT TO FAN.
8 PROVIDE CONNECTION TO 8 WIRE, 4 CIRCUIT MODULAR FURNITURE IN LEGRAND 25DTP SERIES FURNITURE FEED POWER POLE OR APPROVED EQUIVALENT.
9 PROVIDE UNISTRUT RACK FOR UTILITY STATION. UTILIZE FLOOR TRENCH FOR EQUIPMENT CONDUIT ROUTING. COORDINATE CONDUIT PLACEMENT WITH PIPING AND OTHER TRADES. STUB CONDUIT UP THROUGH TRENCH COVER AND TERMINATE IN EQUIPMENT DISCONNECTING MEANS ON UNISTRUT RACK. FOR DISCONNECT SWITCHES, RUN LFMC ON TOP OF SLAB TO EQUIPMENT LOCATION FOR FINAL CONNECTION.
10 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.
11 COORDINATE RECEPTACLE LOCATION AND CONDUIT ROUTING ON COLUMN WITH COMPRESSED AIR PIPING AND OTHER TRADES.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 5' 10' 20'

ELECTRICAL PLAN - POWER - SEGMENT G

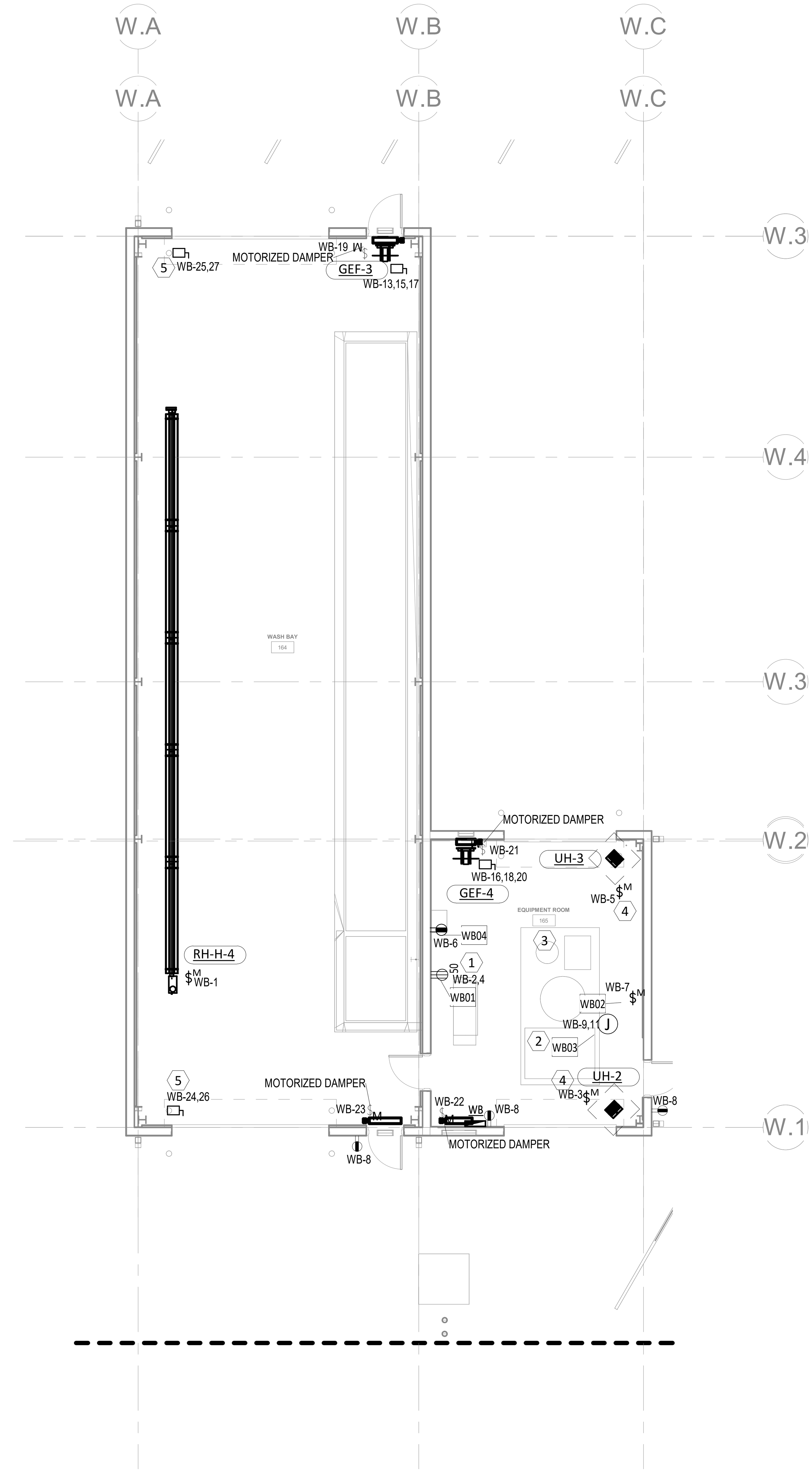
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.17
9217



1 ELECTRICAL PLAN - POWER - SEGMENT H
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE 6-50R RECEPTACLE FOR PRESSURE WASHER. PROVIDE GFCI CIRCUIT BREAKER FOR CIRCUIT.

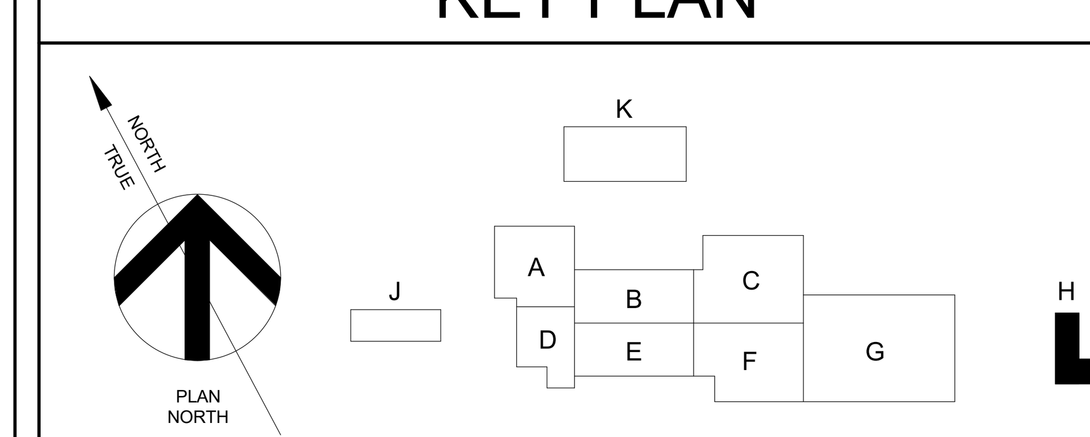
2 PROVIDE JUNCTION BOX AND EQUIPMENT CONNECTION FOR WATER RECLAIM SYSTEM.

3 ROUTE ALL CONDUITS EXPOSED WITH SURFACE MOUNTED EQUIPMENT AND DEVICES INSIDE WASH EQUIPMENT ROOM AND WASH BAY. DO NOT ROUTE CONDUIT OUTSIDE OF BUILDING. ALL CONDUITS INSIDE WASH EQUIPMENT ROOM AND INSIDE WASH BAY SHALL BE RGS. SURFACE MOUNT ALL DEVICES, EQUIPMENT, AND FIXTURE BOXES ON INTERIOR WALLS. PROVIDE WEATHER PROOF TYPE BOXES, COVERS, AND NEMA 4X ENCLOSURES FOR ALL RECEPTACLES, LIGHTS, AND ELECTRICAL EQUIPMENT INSTALLED IN WASH EQUIPMENT ROOM AND WASH BAY.

4 PROVIDE MOTOR RATED SWITCH FOR MECHANICAL UNIT TO ACT AS DISCONNECTING MEANS AND MOUNT HIGH ON WALL/STRUCTURE ADJACENT TO UNIT.

5 PROVIDE 30A/2P/N3R DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.

KEY PLAN



ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'
ELECTRICAL PLAN - POWER - SEGMENT H

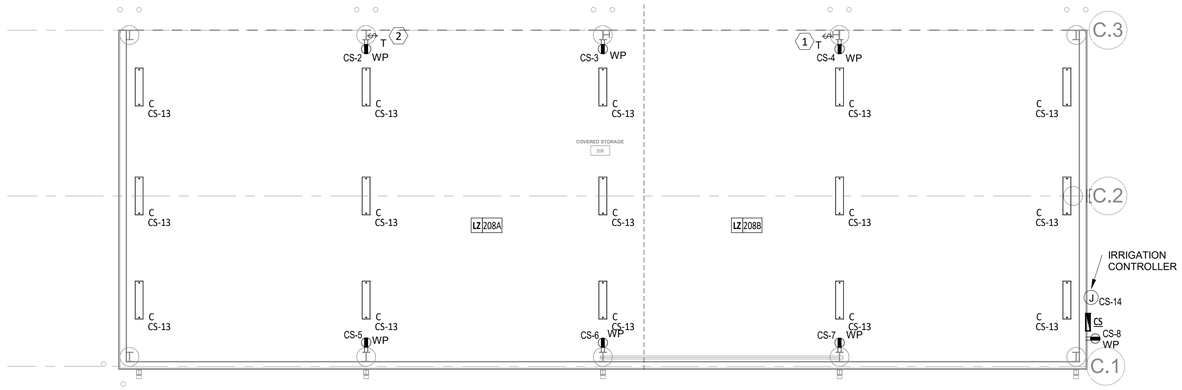
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.18
9218



1 ELECTRICAL PLAN - SEGMENT J
1/8" = 1'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

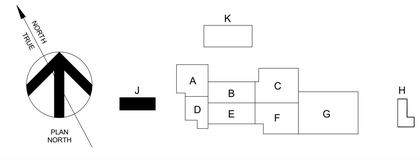
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE TORK C560 OR APPROVED EQUAL TIMER SWITCH FOR LIGHTING CONTROL.
2 REFER TO DETAIL 4/E5.2 FOR MORE INFORMATION ON ELECTRICAL SERVICE EQUIPMENT.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

ELECTRICAL PLAN - POWER - SEGMENT J

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.19
9219

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:15:09 PM C:\Users\JSturf\Documents\2008B MEP AIS TxDOT 973 Operations Center R20_joe.sturf@encc-tx.com.rvt

GROUNDING NOTES

1. PROVIDE GROUND BAR IN RADIO ROOM FOR SINGLE POINT OF CONNECTION OF GROUNDING ELECTRODE SYSTEM.
2. PROVIDE GROUNDING RADIALS, GROUND BUS BARS, AND GROUND RODS WITH TEST WELLS FOR RADIO TOWER.
3. PROVIDE CONNECTION TO TOWER GROUND BUS BAR WITH DOWN CONDUCTOR.
4. PROVIDE GROUNDING AND BONDING OF EACH RACK AND CABLE SUPPORT.
5. WHERE HIGH SOIL RESISTIVITY RESULTS IN POOR GROUNDING, PROVIDE CONCRETE ENCASED ELECTRODES (UFER) AS SUPPLEMENTAL GROUND.
6. REFER TO SPECIFICATIONS SECTION 260526.

GENERAL SHEET NOTES

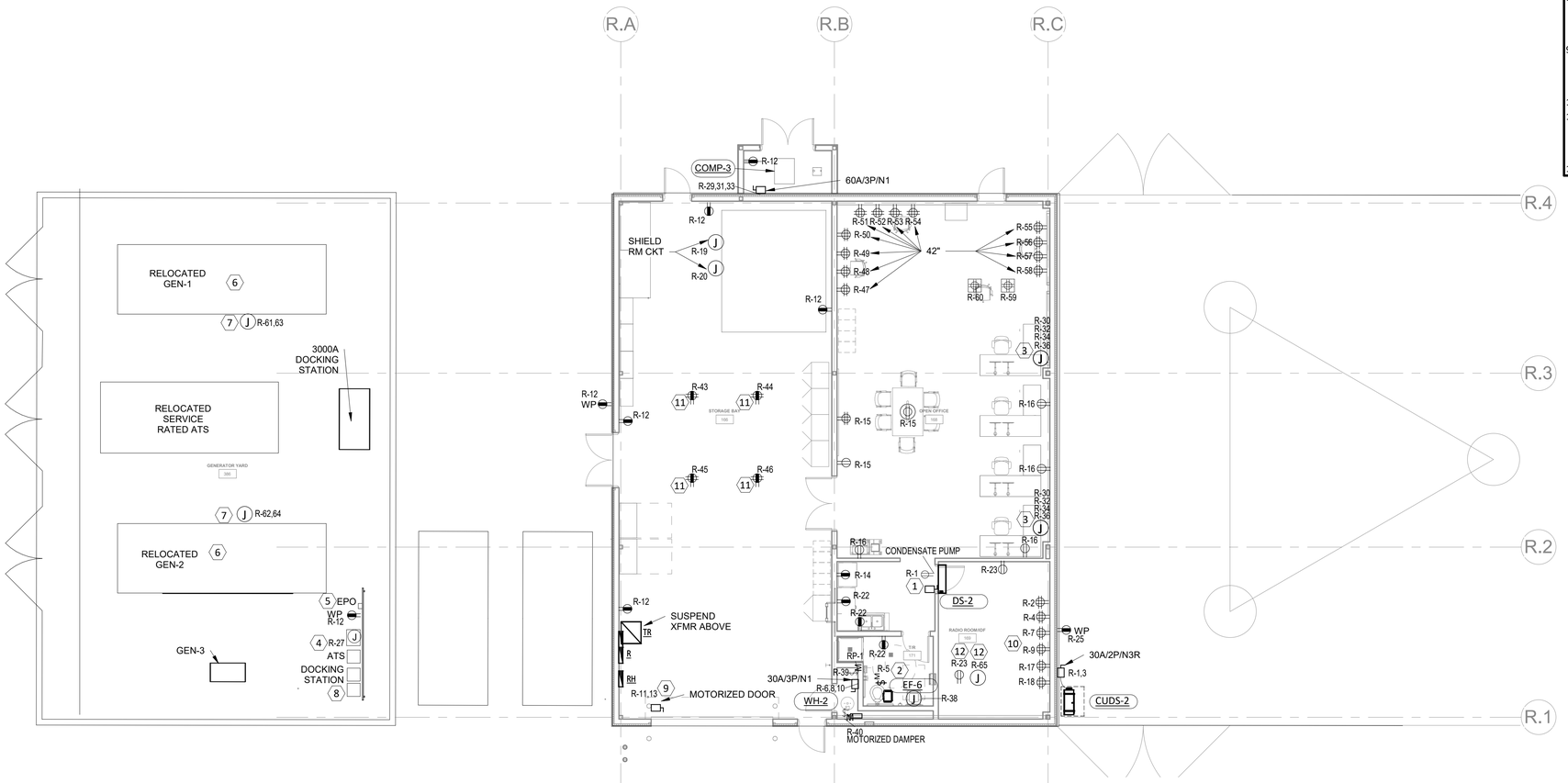
A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

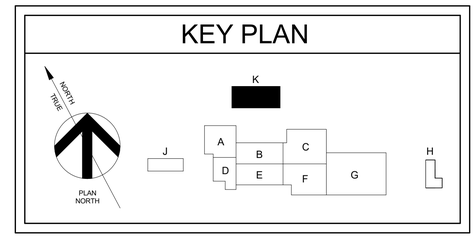
C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR DS UNIT. CONNECT UNIT TO CORRESPONDING OUTDOOR UNIT.
2 INTERLOCK FAN CONTROL WITH ROOM LIGHTING CONTROL.
3 PROVIDE CONNECTION TO 8 WIRE, 4 CIRCUIT MODULAR FURNITURE IN LEGRAND EVOLUTION SERIES FURNITURE FEED WALL BOX OR APPROVED EQUIVALENT.
4 PROVIDE 120V CONNECTION TO BLUE PILLAR GENERATOR MONITORING SYSTEM.
5 PROVIDE RED, MUSHROOM TYPE EMERGENCY POWER OFF SWITCH AND CONNECT TO GENERATOR CONTROLS.
6 CONTRACTOR SHALL RELOCATE TWO (2) EXISTING DIESEL GENERATORS FROM TXDOT CEDAR PARK FACILITY TO THE NEW FLEET OPERATIONS SITE WITH ALL ASSOCIATED INTEGRAL COMPONENTS, INLCUDING, BUT NOT LIMITED TO, SKID-MOUNTED FUEL TANKS, BLOCK HEATERS, LIGHTS, CIRCUIT BREAKERS, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO LIFT AND TRANSPORT GENERATORS FROM ORIGINAL SITE TO NEW SITE, AND TO REINSTALL GENERATORS AS SHOWN ON SITE PLAN.
7 PROVIDE CONNECTION TO INTEGRAL GENERATOR LOAD CENTER.
8 PROVIDE SELF PARALLELING GENERATOR CONTROL BOX PER MANUFACTURERS INSTRUCTION. MOUNT ON UNISTRUT RACK. ROUTE 1-1" AND 1-2" CONDUIT FROM SELF PARALLELING GENERATOR CONTROL BOX TO CONTROLLER ON EACH GENERATOR FOR COMMUNICATION CABLE.
9 PROVIDE 30A/2P/N1 DISCONNECT SWITCH FOR MOTORIZED DOOR. PROVIDE BOXES, CONDUIT, AND CONDUCTORS AS NECESSARY FOR DOOR CONTROLS. MOUNT DOOR CONTROLS ON OPPOSITE SIDE OF DOOR SO THAT CONTROLS ARE NOT LOCATED UNDER MOTOR.
10 MOUNT QUAD RADIO RECEPTACLES EVEN WITH TOP OF RADIO RACK.
11 PROVIDE QUADRUPLEX RECEPTACLE ON CEILING FOR CORD REEL. PROVIDE 20A RETRACTABLE CORD REEL WITH AUTOMATIC REWIND, HUBBELL MODEL #HBL45123GF220WM1 OR APPROVED EQUIVALENT. COORDINATE FINAL LOCATIONS WITH OWNER BEFORE INSTALLATION.
12 MOUNT ON LADDER RACK. REFER TO SHEET T3.0 FOR MORE INFORMATION.



1 ELECTRICAL PLAN - POWER - SEGMENT K
1/8" = 1'-0"



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

0 4' 8' 16'

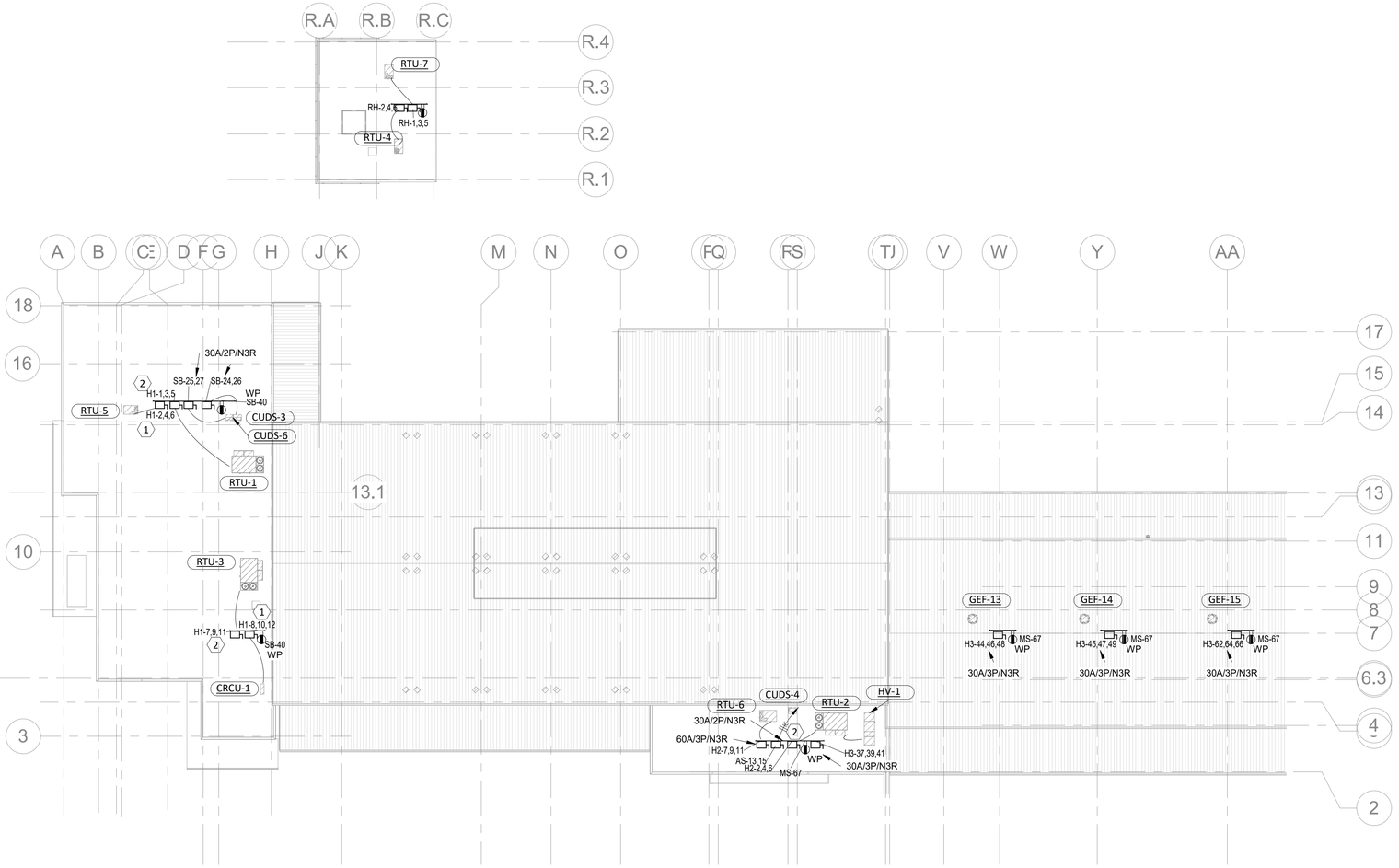
ELECTRICAL PLAN - POWER - SEGMENT K

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.20
9220



1 ELECTRICAL PLAN - POWER - ROOF
1" = 30'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET E0.1 FOR GENERAL ELECTRICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN KEYNOTES.

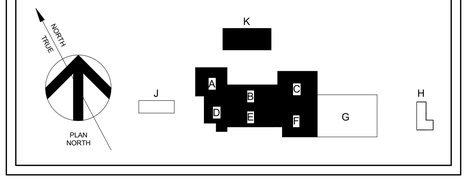
B. COORDINATE EQUIPMENT LOCATIONS WITH ALL OTHER DISCIPLINES PRIOR TO INSTALLATION AND CONNECTION TO EQUIPMENT.

C. CONDUIT SHALL BE ROUTED ABOVE BRIDGE CRANE TO AVOID ANY CONFLICT WITH OPERATION OF BRIDGE CRANE.

KEYNOTE LEGEND

1 PROVIDE 30A/3P/N3R DISCONNECT SWITCH ON UNISTRUT RACK FOR MECHANICAL UNIT.
2 PROVIDE 200A/3P/N3R DISCONNECT SWITCH ON UNISTRUT RACK FOR MECHANICAL UNIT.

KEY PLAN



ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512-338.1101

0 16' 32' 48'

ELECTRICAL PLAN - POWER - ROOF

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E2.21
9221

Distribution Panel: MSB

Project: TxDOT 973 Operations Center

Location: ELEC 136
Supply From: SVC RATED ATS
Mounting: PAD
Enclosure: NEMA 1

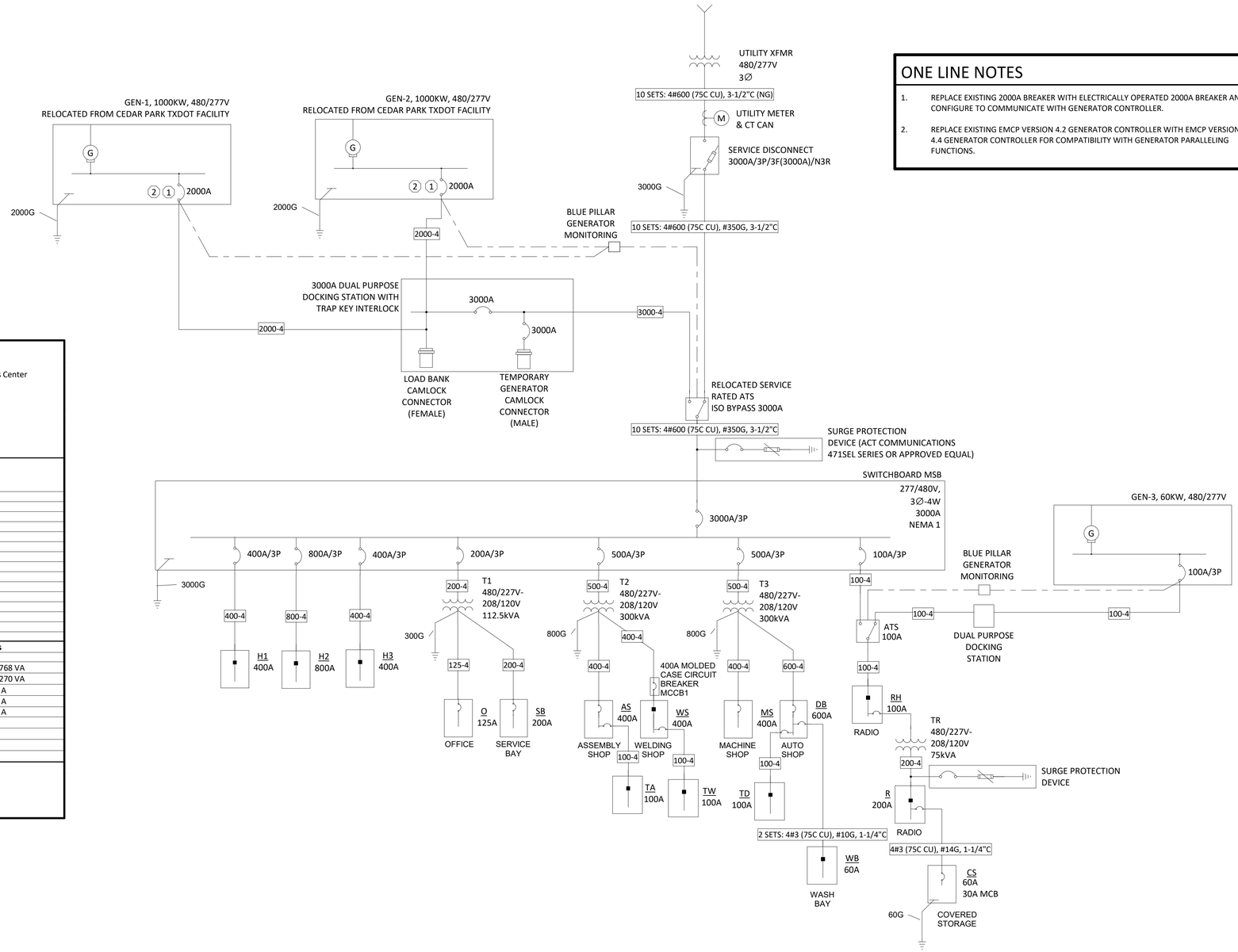
Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 42,000
Mains Type: MCB
Mains Rating: 3000 A
BUS AMPS: 3000 A
SPECIAL: SPD

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	COMP-2	3	200 A	200 A	129696 VA	
2	COMP-1	3	200 A	200 A	129696 VA	
3	H1	3	400 A	400 A	143692 VA	
4	H2	3	800 A	800 A	374842 VA	
5	H3	3	400 A	400 A	209136 VA	
6	T3	3	600 A	600 A	310123 VA	
7	T2	3	400 A	300 A	233982 VA	
8	T1	3	200 A	200 A	113488 VA	
9	RH	3	100 A	100 A	89112 VA	
10	Spare	1	--	400 A	0 VA	
11	Spare	1	--	200 A	0 VA	
12	Space	--	--	--	0 VA	--
13	Space	--	--	--	0 VA	--
14	Space	--	--	--	0 VA	--

Load Classification	Connected Load	Demand Factor	Estimated...	Panel Totals	
Equipment	353605 VA	100.00%	353605 VA		
HEATING	24916 VA	75.00%	18687 VA	**Total Conn. Load:**	1733768 VA
HVAC	277296 VA	100.00%	277296 VA	**Total Est. Demand:**	1662270 VA
KITCHEN EQUIPMENT	4800 VA	70.00%	3360 VA	**Total Conn.:**	2085 A
Lighting	53819 VA	100.00%	53819 VA	**Total Est. Demand:**	1999 A
MOTORS	806435 VA	104.02%	838859 VA	**NEC 25% SPARE**	2607 A
Motor	3840 VA	106.25%	4080 VA		
NONCONTINUOUS LOADS	6072 VA	100.00%	6072 VA		
Receptacle	202986 VA	52.46%	106493 VA		

Notes:



1 ONE LINE DIAGRAM
NOT TO SCALE

ONE LINE NOTES

1. REPLACE EXISTING 2000A BREAKER WITH ELECTRICALLY OPERATED 2000A BREAKER AND CONFIGURE TO COMMUNICATE WITH GENERATOR CONTROLLER.
2. REPLACE EXISTING EMCP VERSION 4.2 GENERATOR CONTROLLER WITH EMCP VERSION 4.4 GENERATOR CONTROLLER FOR COMPATIBILITY WITH GENERATOR PARALLELING FUNCTIONS.

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL ONE LINE DIAGRAM

E3.1
9301

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

DESIGNATION RANGE (ID)	GROUNDING ELECTRODE CONDUCTOR CU WIRE SIZE FOR:		
	GROUND ROD	CONCRETE-ENCASED ELECTRODE	STRUCTURAL STEEL AND METAL WATER PIPING (IF ANY)
20G-100G	#8	#8	#8
125G-150G	#6	#6	#6
175G-200G	#6	#4	#4
225G-300G	#6	#4	#2
350G-500G	#6	#4	#1/0
600G-800G	#6	#4	#2/0
1000G+	#6	#4	#3/0
NOTES:	1. DESIGNATIONS REFER TO AMPERAGE FOLLOWED BY A "G." FOR EXAMPLE, 30G WOULD FALL WITHIN THE 20G-100G RANGE. 2. CONDUCTOR CONNECTED TO FIRST ELECTRODE IN SYSTEM SHALL BE SIZED ACCORDING TO THE GROUNDING ELECTRODE REQUIRING THE LARGEST CONDUCTOR. ONLY AVAILABLE GROUNDING ELECTRODES IN SYSTEM SHALL BE CONSIDERED. ALL BONDING BETWEEN REMAINING ELECTRODES SHALL BE SIZED ACCORDING TO VALUE LISTED IN TABLE. 3. GROUNDING ELECTRODE SYSTEMS SHALL CONSIST OF ALL AVAILABLE GROUNDING ELECTRODES. 4. THIS TABLE IS BASED ON ARTICLE 250.66 OF THE NEC.		

FEEDER AND BRANCH CIRCUIT SCHEDULE

MARK	# OF SETS	PHASE & NEU. CONDUCTORS (CU)	EQUIP. GRND CONDUCTOR (CU)	3PH / 4W CONDUIT SIZE	1 OR 3PH / 3W CONDUIT SIZE	1PH / 2W CONDUIT SIZE
20	1	#12	#12	3/4"	3/4"	3/4"
25	1	#10	#10	3/4"	3/4"	3/4"
30	1	#10	#10	3/4"	3/4"	3/4"
35	1	#8	#10	3/4"	3/4"	3/4"
40	1	#8	#10	1"	3/4"	3/4"
45	1	#8	#10	1"	3/4"	3/4"
50	1	#8	#10	1"	1"	3/4"
55	1	#6	#10	1-1/2"	1-1/2"	1"
60	1	#6	#10	1-1/2"	1-1/2"	1"
70	1	#4	#8	1-1/2"	1-1/2"	1"
80	1	#4	#8	1-1/2"	1-1/2"	1"
90	1	#3	#8	1-1/2"	1-1/2"	1"
100	1	#3	#8	2"	1-1/2"	1-1/2"
125	1	#1	#6	1-1/2"	1-1/2"	N/A
150	1	#1/0	#6	2"	1-1/2"	N/A
175	1	#2/0	#6	2"	2"	N/A
200	1	#3/0	#6	2-1/2"	2"	N/A
225	1	#4/0	#4	2-1/2"	2"	N/A
250	1	250 KCMIL	#4	3"	2-1/2"	N/A
300	1	350 KCMIL	#4	3"	3"	N/A
350	2	#2/0	#3	2"	2"	N/A
400	2	#3/0	#3	2-1/2"	2"	N/A
500	2	250 KCMIL	#2	3"	2-1/2"	N/A
600	2	350 KCMIL	#1	3"	3"	N/A
800	3	300 KCMIL	#1/0	2-1/2"	2-1/2"	N/A
1000	3	400 KCMIL	#2/0	4"	3"	N/A
1200	4	350 KCMIL	#3/0	3"	3"	N/A
1600	5	400 KCMIL	#4/0	4"	4"	N/A
2000	6	400 KCMIL	250 KCMIL	4"	N/A	N/A
2500	7	500 KCMIL	400 KCMIL	4"	N/A	N/A
3000	8	500 KCMIL	400 KCMIL	4"	N/A	N/A
3500	10	500 KCMIL	500 KCMIL	4"	N/A	N/A
4000	10	600 KCMIL	500 KCMIL	4"	N/A	N/A

NOTES:

A. FEEDER AND BRANCH CIRCUIT SCHEDULE IS BASED ON NEC TABLE 310.15(B)(16) AND TABLE 250.122.

B. ALL NEUTRAL CONDUCTORS SHALL MATCH THE SIZE OF THE PHASE CONDUCTORS UNLESS OTHERWISE NOTED.

C. FEEDER AND BRANCH CIRCUIT SCHEDULE IS NOT TO BE USED FOR SIZING SERVICE FEEDERS BEFORE MAIN OVERCURRENT PROTECTION EQUIPMENT.

D. FEEDER AND BRANCH CIRCUIT MARK LEGEND

100 - 4 (NG, IF SHOWN = NO GND)

CIRCUIT MARK
SEE FEEDER AND BRANCH CIRCUIT SCHEDULE FOR CONDUCTOR AND CONDUIT SIZE

NUMBER OF PHASE CONDUCTORS
4 = 3 PH / 4 WIRE
3 = 1 OR 3 PH / 3 WIRE
2 = 1 PH / 2 WIRE

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL FEEDER SCHEDULE

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E3.2
9302

LIGHTING CONTROL SCHEDULE

	Space Type	Occupancy Sensor				Time Clock			Wall Switch					Daylight Sensor			OTHER	
Zone	Room Type	Vacancy Mode	Occupancy Mode	Sensor Timeout Period (Minutes)	Dual Technology	Schedule On At	Schedule Off At	Schedule Overide Switch	Manual (On/Off)	Manual Dimming	Key Switch	Scene Control	Graphical Touchscreen	Switching (On/Off)	Dimming	Target Light Level (FC)	Exterior Location	Notes
101	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
101B	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
102	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
103	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
104	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	Yes	30FC	No	AUTO ON TO 50%
105	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
106	ELECTRICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
107	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
108	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
109	HALLWAY	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
110	CONFERENCE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	Yes	20FC	No	AUTO ON TO 50%
111	CONFERENCE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	Yes	20FC	No	AUTO ON TO 50%
112	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
113	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
114	RESTROOM	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
115	RESTROOM	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
116	JANITOR	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
117	BREAK ROOM	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
118	MDF	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
120	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
121	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
122	VESTIBULE	No	Yes	15	Yes			No	Yes	No	No	No	No	No	Yes	20FC	No	AUTO ON TO 50%
123	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
124	FIRE	No	No		No			No	Yes	No	No	No	No	No	No		No	
125	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
126	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
127A	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
127B	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
127C	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
127D	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
129A	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
129B	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
129C	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
129D	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
129E	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
130A	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
130B	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
131	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
132	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
133	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
134	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
135	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
136	ELECTRICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
137	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
138	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
139	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
140	IDF	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
141	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
142	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
143	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
144	CONFERENCE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	Yes	20FC	No	AUTO ON TO 50%
145	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
146	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
147	BREAK ROOM	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	Yes	15FC	No	AUTO ON TO 50%
148	RESTROOM	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
149	RESTROOM	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
150	HALLWAY	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
150A	HALLWAY	No	Yes	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
151	JANITOR	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
152	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
153	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
154	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
155	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
156	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
157	ELECTRICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
158	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
159	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
160	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
161	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
162	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
163	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
164	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
165	MECHANICAL	No	No		No			No	Yes	No	No	No	No	No	No		No	
166	STORAGE	No	Yes	15	Yes	-	-	No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
168	OFFICE	No	Yes	15	Yes	-	-	No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
169	OFFICE	No	Yes	15	Yes	-	-	No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
171	OFFICE	No	Yes	15	Yes	-	-	No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
172	SHOWER	No	No		No			No	Yes	No	No	No	No	No	No		No	
173	SHOWER	No	No		No			No	Yes	No	No	No	No	No	No		No	
175	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
176	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
178	STORAGE	Yes	No	15	Yes			No	Yes	No	No	No	No	No	No		No	AUTO ON TO 50%
179	OFFICE	No	Yes	15	Yes			No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
181	OFFICE	No	Yes	15	Yes	-	-	No	Yes	Yes	No	No	No	No	No		No	AUTO ON TO 50%
208A		No	No		No			No	Yes	No	No	No	No	No	No		No	TIMER SWITCH 1
208B		No	No		No			No	Yes	No	No	No	No	No	No		No	TIMER SWITCH 2
EX	SHOP	No	No		No			No	Yes	No	No	No	No	No	No		No	
EXT	BLDG EXTERIOR	No	No		No			No	No	No	No	No	No	No	No		Yes	
FL	BLDG EXTERIOR	No	No		No			No	No	No	No	No	No	No	No		Yes	
REXT	RADIO BLDG EXTERIOR	No	No		No	-	-	No	No	No	No	No	No	No	No		Yes	
WBEXT	WASH BAY EXTERIOR	No	No		No	-	-	No	No	No	No	No	No	No	No		Yes	

Notes:

1. Lights shall manually turn 'On' at 50% then 100% and turn 'Off' when the space is vacant.
2. Lights shall automatically turn 'On' at 100%, dim to 30% when unoccupied, and turn 'Off' after 30 minutes of additional vacancy.
3. Time-switch control required. Reference IECC 2015 Section C405.2.2.1 for additional requirements for Time-switch control and manual control for light reduction.
4. Emergency Egress lighting will be scheduled to remain 'On' at 100% during business hours and 50% during non-business hours to provide security night lights. Fire Alarm System over-ride is required to automatically enable egress lighting to full brightness in event of fire during non-business hours or manual over-ride during testing of Fire Alarm System.
5. Lighting shall be additionally controlled by a daylight responsive device that automatically dims, turns 'Off' (or disables) artificial lighting when sufficient daylight is available. Reference IECC 2015 Section C405.2.3 for additional requirements for Daylight-responsive controls.
6. Manual Control Only: User can toggle between 'On' and 'Off'.
7. User can select Scenes 1-2 + 'Off' with Raise/Lower. User can toggle between 'On' and 'Off' with Raise/Lower.
8. User can select Scene 1 + 'On' and 'Off'.
9. Provide and Integrate a partition sensor into lighting control zone to sense 'Open' and 'Closed' state of foldable room divider partition.
10. Provide color temperture tuning control for all light fixtures in space.
11. User can select Scene 1 + 'On'. No manual 'Off'.
12. Connect to Astronomical Time clock controller located in Room A112 ELEC.
13. Occupancy Sensors will automatically dim lighitng to 50% when unoccupied and return to 100% when occupied.
14. Provide auxiliary contacts on occupancy sensors in room for control of HVAC equipment when occupancy is detected. See Mechanical M600 series sheets for more information.
15. Provide 10% spare control modules for future expansion.

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL LIGHTING SCHEDULES

E4.1
9401

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	MODEL	VOLTAGE	WATTAGE	TYPE	TEMP	MOUNTING	DESCRIPTION
A	LITHONIA	2FSL2 40L MVOLT EZ1 LP840	277	34	LED	4000K	LAY-IN	2x2 LED LAY-IN. PROVIDE BATTERY BACKUP WHERE INDICATED ON PLAN (EL7L).
A2	LITHONIA	2FSL2 40L MVOLT EZ1 LP850	277	34	LED	5000K	LAY-IN	2x2 LED LAY-IN. PROVIDE BATTERY BACKUP WHERE INDICATED ON PLAN (EL7L).
B	LITHONIA	LDN8-30/40-L08-AR-LSS-MVOLT-GZ1	277	38	LED	4000K	RECESSED	LED DOWNLIGHT. 5000 LUMENS. PROVIDE EMERGENCY BATTERY BACKUP WHERE INDICATED ON PLAN (OPTION EL).
C/C2	LITHONIA	FEM L48 6000LM MD MVOLT GZ10 40K 90CRI	120/277	38	LED	4000K	SURFACE	VAPOR TITE LINEAR LED. 4 FT. WET LOCATION RATED. PROVIDE BATTERY BACKUP WHERE INDICATED ON PLAN (E10WMCP)
C3	LITHONIA	FEM L48 6000LM MD MVOLT GZ10 50K 90CRI	120/277	38	LED	5000K	SURFACE	VAPOR TITE LINEAR LED. 4 FT. WET LOCATION RATED. PROVIDE BATTERY BACKUP WHERE INDICATED ON PLAN (E10WMCP)
D	LUMOS	RP DN 48 4000 SPC	277	74	LED	4000K	SUSPENDED	4" WIDE LED, 4' DIAMETER CIRCLE DIRECT PENDANT WITH HIGH EFFICIENCY OPTIC
P	LITHONIA	DSX2-LED-P4-50K-T3S-MVOLT-RPA	277	270	LED	5000K	POLE	40"x15" LED OUTDOOR LIGHT FIXTURE, POLE LENGTH 27.5', SINGLE HEAD, TYPE T3S. FULL CUT OFF. PROVIDE HOUSE SIDE SHIELD (OPTION HS) FOR FIXTURES LABELED "HS" ON PLAN.
P2	LITHONIA	DSX2-LED-P4-50K-T3S-MVOLT-RPA	277	540	LED	5000K	POLE	40"x15" LED OUTDOOR LIGHT FIXTURE, POLE LENGTH 27.5', 180DEG DOUBLE HEAD, TYPE T3S. FULL CUT OFF.
P3	ELLIPTIPAR	S161-L03S-H-02-M-V0-0-827-Zx	277	20	LED	2700K	SURFACE	LINEAR LED MOUNTED TO SIGN, POINTED DOWNWARD. 2400 LUMENS. CUTOFF VISOR. SEMIGLOSS WHITE HOUSING. REFER TO EXTERIOR LIGHTING CONTROL DETAIL FOR CONTROL INFORMATION.
S/S2	LITHONIA	CPHB 12000LM HEF GCL WD MVOLT GZ10 50K 90 CRI	120/277	75	LED	5000K	SUSPENDED	HIGH BAY LED. 12000 LUMENS. MOUNT TO UNISTRUT SUPPORTS. PROVIDE BATTERY BACKUP WHERE INDICATED ON PLAN (OPTION E15WMCP).
W	LITHONIA	DSXW1 LED 10C 1000 50K T3M MVOLT ELCW	277	39	LED	5000K	WALL	EXTERIOR LED WALL PACK. 3900 LUMENS. BATTERY BACKUP. FULL CUT OFF.
X	LITHONIA	LQM-3-R-MVOLT	277	1	LED	-	SURFACE	LED EXIT SIGN. BATTERY BACKUP.

NOTES:

- SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATION OF ALL FIXTURES.
- SEE ARCHITECTURAL ELEVATIONS AND/OR DETAILS FOR ALL LIGHT FIXTURE MOUNTING HEIGHTS FOR ALL WALL MOUNTED FIXTURES AND ABOVE FINISHED FLOOR HEIGHTS FOR ALL SUSPENDED OR PENDANT MOUNTED FIXTURES UNLESS NOTED OTHERWISE.
- MOUNT AND CONFIGURE TYPE 'XE' UNIVERSAL EXIT SIGNS AS INDICATED ON LIGHTING PLANS.
- PROVIDE REMOTE LED DRIVERS FOR FIXTURES LOCATED IN HARD CEILING. MOUNT LED DRIVER TO STRUCTURE ABOVE CEILING AS CLOSE TO LIGHT FIXTURE AS POSSIBLE IN AN EASILY ACCESSIBLE AREA.

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

ELECTRICAL LIGHTING SCHEDULES

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

E4.2
9402

DOUBLE BAY AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
DB03	METAL BAND SAW - KALAMAZOO	208	3	8.3	20/3	RCPT	18"	DB-1,3,5	
DB04	DUAL OPERATOR - IRON WORKER	208	3	30.8	40/3	RCPT	18"	DB-2,4,6	

SERVICE BAY AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
SB01	SAND BLASTER	120	1	1.6	20/1	RCPT	18"	SB-1	
SB02	MILLING MACHINE - BRIDGEPORT	208	3	6.0	20/3	RCPT	18"	SB-12,14,16	
SB03	LATHE - CLAUSING	208	3	7.0	20/3	RCPT	18"	SB-18,20,22	
SB04	DRILL PRESS	120	1	13.8	20/1	RCPT	18"	SB-4	
SB05	DRILL PRESS - WILTON	120	1	18.0	25/1	RCPT	18"	SB-6	
SB06	METAL CUTTING BAND SAW - MARVEL	208	3	8.5	20/3	RCPT	18"	SB-19,21,23	
SB07	PLASMA CUTTER	208	1	36.0	50/2	RCPT	18"	SB-15,17	
SB08	WELDER	208	1	32.0	50/2	RCPT	18"	SB-11,13	
SB09	WELDER	208	1	32.0	50/2	RCPT	18"	SB-8,10	
SB10	BAND SAW	120	1	2.8	20/1	RCPT	18"	SB-5	
SB11	BELT SANDER	120	1	16.0	20/1	RCPT	18"	SB-7	
SB12	ELECTRIC OVEN	120	1	8.3	20/1	RCPT	18"	SB-2	
SB13	GRINDER	120	1	9.8	20/1	RCPT	18"	SB-3	

MAIN SHOP AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
WS12	NOTCHER - BAILEIGH	208	3	8.6	20/3	RCPT	18"	AS-2,4,6	
WS30	PLATE ROLLER - BAILEIGH XL	208	3	15.7	25/3	RCPT	18"	AS-1,3,5	
WS33	CHICAGO BRAKE	208	3	30.8	40/3	RCPT	18"	AS-110,112,114	
WS34	BAILEIGH VERTICAL BRAKE	208	3	24.0	30/3	RCPT	18"	AS-113,115,117	

ASSEMBLY SHOP AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
MS11	METAL SHEAR - CHICAGO	208	3	19.7	25/3	RCPT	18"	TA-1,3,5	
WS09	METAL CUTTING BAND SAW - MARVEL	208	3	8.5	20/3	RCPT	18"	TA-2,4,6	

CNC SHOP AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
CN01	HAAS TL3	208	3	56.0	70/3	DISC	18"	MS-14,16,18	100A/3P/N1
CN04	HAAS CNC TM3	208	3	20.0	25/3	RCPT	18"	MS-17,19,21	
CN06	HAAS CNC VF2	208	3	32.0	40/3	RCPT	18"	MS-20,22,24	
CN08	HAAS SL20	208	3	32.0	40/3	RCPT	18"	MS-11,13,15	
CN09	MILLING MACHINE - BRIDGEPORT	208	3	6.0	20/3	RCPT	18"	MS-23,25,27	
MS14	17" LEBLOND	208	3	24.2	30/3	RCPT	18"	MS-69,71,73	
MS16	COLCHESTER 13"	208	3	10.6	20/3	RCPT	18"	AS-Feed Through Lugs	

HEAVY DUTY AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
HD01	WELDER	208	1	32.0	50/2	RCPT	18"	DB-7,9	
HD02	DRILL PRESS - WILTON STRAND	208	1	5.3	20/2	RCPT	18"	DB-8,10	
HD03	WELDER	208	1	32.0	50/2	RCPT	18"	DB-11,13	
HD04	WELDER	208	1	32.0	50/2	RCPT	18"	DB-12,14	
HD06	WELDER	208	1	32.0	50/2	RCPT	18"	DB-15,17	
HD07	WELDER	208	1	32.0	50/2	RCPT	18"	DB-16,18	
HD09	PLASMA CUTTER	208	1	36.0	50/2	RCPT	18"	DB-19,21	
HD10	PLASMA CUTTER	208	1	36.0	50/2	RCPT	18"	DB-20,22	
HD11	GRINDER	120	1	9.8	20/1	RCPT	18"	DB-23	
HD12	GRINDER	120	1	9.8	20/1	RCPT	18"	TD-1	
HD13	DRILL PRESS - ROCKWELL	120	1	18.0	25/1	RCPT	18"	TD-2	
HD14	DRILL PRESS - CENTRAL MACHINERY	120	1	18.0	25/1	RCPT	18"	TD-3	
HD15	WELDER	208	1	32.0	50/2	RCPT	18"	MS-75,77	
HD16	WELDER	208	1	32.0	50/2	RCPT	18"	MS-79,81	
HD17	WELDER	208	1	32.0	50/2	RCPT	18"	MS-82,84	
HD18	WELDER	208	1	32.0	50/2	RCPT	18"	DB-79,81	
HD19	WELDER	208	1	32.0	50/2	RCPT	18"	DB-80,82	

WELDING AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
W001	ROD OVEN	120	1	8.3	20/1	RCPT	18"	DB-27	
W002	BELT SANDER	120	1	16.0	20/1	RCPT	18"	DB-28	

WASH BAY EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
WB01	PRESSURE WASHER	208	1	31.0	40/2	RCPT	18"	WB-2,4	
WB02	SUMP PUMP	120	1	13.8	20/1	DISC	18"	WB-7	MR SWITCH
WB03	RECLAIM	208	1	16.3	25/2	JBOX	18"	WB-9,11	
WB04	AIR PUMP	120	1	5.8	20/1	RCPT	18"	WB-6	

MACHINE SHOP EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
CN03	RADIAL DRILL - CARLTON	208	1	5.0	20/2	RCPT	18"	MS-7,9	
MS04	SURFACE GRINDER - SUPERTEC	208	3	23.0	30/3	RCPT	18"	MS-1,3,5	
MS09	24" HOLLOW SPINDLE - LEBLOND	208	3	32.0	40/3	RCPT	18"	MS-8,10,12	
MS10	SURFACE GRINDER - BROWN AND SHARPE	208	3	7.0	20/3	RCPT	18"	MS-2,4,6	
MS15	LEBLOND REGAL	208	3	10.6	20/3	RCPT	18"	AS-119,121,123	
WS32	CHICAGO APRON BRAKE	208	3	24.0	30/3	RCPT	18"	AS-116,118,120	

WELDING SHOP AREA EQUIPMENT CONNECTION SCHEDULE

TAG	EQUIPMENT	VOLT	PH.	AMP	C/B	TYPE	MOUNT (AFF)	CIRCUIT	NOTES
MNS1	SAND BLASTING MACHINE	120	1	1.7	20/1	RCPT	18"	WS-1	
MS01	CNC BAND SAW - W.F. WELLS	208	3	28.2	40/3	RCPT	18"	WS-9,11,13	
MS02	BAND SAW - DAKE	208	1	5.8	20/2	RCPT	18"	WS-2,4	
WS01	PIPE ROLLER - BEILEIGH	208	3	22.0	30/3	RCPT	18"	WS-18,20,22	
WS10	HYDRAULIC PRESS BRAKE - CLEARING NIAGARA	480	3	40.0	50/3	DISC	18"	H2-1,3,5	60A/3P/N1
WS11	IRON WORKER - KINGSLAND 115 XL	208	3	30.8	40/3	RCPT	18"	WS-3,5,7	
WS14	METAL CUTTING BAND SAW - MARVEL	208	3	8.5	20/3	RCPT	18"	WS-6,8,10	
WS15	CINCINNATI 18 SHEAR	208	3	136.8	200/3	DISC	18"	WS-12,14,16	200A/3P/N1
WS29	MILLING MACHINE - BRIDGEPORT	208	3	6.0	20/3	RCPT	18"	WS-15,17,19	

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL EQUIPMENT SCHEDULES

E4.3
9403

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

AS

LOCATION: ELEC 136
SUPPLY FROM: T2
A.I.C. RATING: 22,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**400 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	1885								--
						1033			2					
		PLATE ROLLER - BAILEIGH	20	3	3		1885							
							1033		4	3	20	NOTCHER - BAILEIGH		
					5			1885						
--								1033	6					
					7	3747								--
						50			8	1	20	MOTORIZED DAMPER		
#3		TA	100	3	9		3387							--
							900		10	1	20	Receptacle		
					11			3387						--
--								360	12	1	20	Receptacle		
					13	1248								--
		CUDS-4	15	2		48			14	1	20	RH-E-1		
					15		1248							--
--							1768		16					
		RH-C-5	20	1	17			48		2	20	CUDS-7		
--								1768	18					
					19	936								--
		CUDS-5	15	2		48			20	1	20	RH-E-12		
					21		936							--
--							1040		22					
					23			1040		2	20	HBF-B-1		
		HBF-B-2	20	2				1040	24					
					25	1040								--
--						1040			26					
					27		1040			2	20	HBF-B-3		
		HBF-C-1	20	2			1040		28					
					29			1040						--
--								1040	30					
					31	1040				2	20	HBF-C-2		
		HBF-F-1	20	2		1040			32					
					33		1040							--
--							1040		34					
					35			1040		2	20	HBF-E-1		
		HBF-E-2	20	2				1040	36					
					37	1040								--
--						1040			38					
		Receptacle	20	1	39		1260			2	20	HBF-E-3		
--							1040		40					
		Receptacle	20	1	41			720						--
--								360	42	1	20	Receptacle		
		TOTAL LOAD PER PHASE				**45741**	**49930**	**48603**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	60157 VA	167 A	100.00%	60157 VA	167 A	
HEATING	2846 VA	8 A	75.00%	2134 VA	6 A	
HVAC	16224 VA	45 A	100.00%	16224 VA	45 A	
KITCHEN EQUIPMENT	960 VA	3 A	100.00%	960 VA	3 A	
MOTORS	43527 VA	121 A	101.19%	44047 VA	122 A	
Receptacle	20560 VA	57 A	74.32%	15280 VA	42 A	
CONNECTED TOTALS	**144274 VA** / **400 A**		**DEMAND TOTALS**	**138802 VA** / **385 A**		

PANELBOARD SCHEDULE

SECTION 2

AS

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		RECEPTACLES	20	1	43	720								--
--						720			44	1	20	Receptacle		
		Receptacle	20	1	45		720							--
--							1440		46	1	20	Receptacle		
		MOTORIZED DAMPER	20	1	47			50						--
--								900	48	1	20	Receptacle		
		Receptacle	20	1	49	1620								--
--						960			50	1	20	RECEPTACLES		
		Receptacle	20	1	51		720							--
--							1000		52	1	20	VENDING		
		VENDING	20	1	53			1000						--
								1768	54					
		REFRIGERATOR	20	1	55	960				2	30	ICE MAKER		#10
--						1768			56					
		MICROWAVE	20	1	57		1000							--
--							1000		58	1	20	MICROWAVE		
		RECEPTACLES	20	1	59			1260						--
--								720	60	1	20	RECEPTACLES		
					61	915								--
		MOTORIZED DOOR	20	2		915			62					
					63		915			2	20	MOTORIZED DOOR		--
--							915		64					
					65			915						--
		MOTORIZED DOOR	20	2				915	66					
					67	915				2	20	MOTORIZED DOOR		
--						915			68					
					69		915							--
		MOTORIZED DOOR	20	2			915		70					
					71			915		2	20	MOTORIZED DOOR		
--								915	72					
					73	915								--
		MOTORIZED DOOR	20	2		180			74	1	20	MODULAR FURNITURE		
					75		915							--
--							180		76	1	20	MODULAR FURNITURE		
					77			946						--
		CUDS-9	15	2				180	78	1	20	MODULAR FURNITURE		
					79	946								--
--						180			80	1	20	MODULAR FURNITURE		
					81		3026							--
#8		CUOA-1	35	2			187		82					
					83			3026		2	15	OA-1		
--								187	84					

PANELBOARD SCHEDULE

SECTION 3

AS

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		MOTORIZED DAMPER	20	1	85	50								--
--						50			86	1	20	MOTORIZED DAMPER		
		CONDENSATE PUMP - DS-7	20	1	87		180							--
--							180		88	1	20	CONDENSATE PUMP - DS-5		
		CONDENSATE PUMP - DS-1	20	1	89			360						--
--								180	90	1	20	CONDENSATE PUMP - DS-4		
		RP-1	20	1	91	667								--
--						180			92	1	20	Receptacle		
		MOTORIZED DAMPER	20	1	93		50							--
--							100		94	1	20	MOTORIZED DAMPERS		
					95			901						--
								915	96					
		HEATING	20	3	97	901				2	20	MOTORIZED DOOR		
						915			98					
					99		901							--
--							540		100	1	20	Receptacle		
					101			915						--
		MOTORIZED DOOR	20	2				915	102					
					103	915				2	20	MOTORIZED DOOR		
--						915			104					
					105		915							--
		MOTORIZED DOOR	20	2			915		106					
					107			915		2	20	MOTORIZED DOOR		
--								915	108					
					109	915								--
		MOTORIZED DOOR	20	2		3699			110					
					111		915							
--							3699		112	3	40	CHICAGO BRAKE		#8
					113			2882						
								3699	114					
#10		BAILEIGH VERTICAL BRAKE	30	3	115	2882								--
						2882			116					
					117		2882							
--							2882		118	3	30	CHICAGO APRON BRAKE		#10
					119			1273						
								2882	120					
		COLCHESTER	20	3	121	1273								--
						360			122	1	20	Receptacle		
					123		1273							--
--							720		124	1	20	Receptacle		
		Receptacle	20	1	125			1080						--
--								0	126	1	20	Spare		--

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

TW

LOCATION: ELECTRICAL SHOP 127
SUPPLY FROM: WS
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**100 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		Spare	20	1	1	0								--
--						0			2	--	--	Space	--	--
--		Spare	20	1	3		0							--
--							0		4	--	--	Space	--	--
--		Spare	20	1	5			0						--
--								0	6	--	--	Space	--	--
--		Spare	20	1	7	0								--
--						0			8	--	--	Space	--	--
--		Spare	20	1	9		0							--
--							0		10	--	--	Space	--	--
--		Spare	20	1	11			0						--
--								0	12	--	--	Space	--	--
--		Spare	20	1	13	0								--
--						0			14	--	--	Space	--	--
--		Spare	20	1	15		0							--
--							0		16	--	--	Space	--	--
--		Spare	20	1	17			0						--
--								0	18	--	--	Space	--	--
--		Spare	20	1	19	0								--
--						0			20	--	--	Space	--	--
		TOTAL LOAD PER PHASE				**0**	**0**	**0**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
CONNECTED TOTALS	**0 VA** / **0 A**		**DEMAND TOTALS**	**0 VA** / **0 A**		

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103
Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED
PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

E4.4
9404

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

LOCATION: ELEC 157
SUPPLY FROM: T3
A.I.C. RATING: 22,000

DB

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	3	4	SURFACE	600 A	MCB	NEMA 1

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	997								--
						3699			2					
		METAL BAND SAW - KALAMAZOO	20	3	3		997							
							3699		4	3	40	DUAL OPERATOR - IRON WORKER		#8
					5			997						
--								3699	6					
					7	3328								--
#8		WELDER	40	2		551			8					
					9		3328			2	20	DRILL PRESS - WILTON STRAND		
--							551		10					
					11			3328						--
#8		WELDER	40	2				3328	12					
					13	3328				2	40	WELDER		#8
--						3328			14					
					15		3328							--
#8		WELDER	40	2			3328		16					
					17			3328		2	40	WELDER		#8
--								3328	18					
					19	3744								--
#8		PLASMA CUTTER	45	2		3744			20					
					21		3744			2	45	PLASMA CUTTER		#8
--							3744		22					
		GRINDER	20	1	23			1176						--
--								0	24	1	20	Spare		--
--		Spare	20	1	25	0								--
--						0			26	1	20	Spare		--
		ROD OVEN	20	1	27		996							--
--							1920		28	1	20	BELT SANDER		
		163 WIREMOLD	20	1	29			720						--
--								720	30	1	20	163 WIREMOLD		
		162/163 RCPTS	20	1	31	720								--
--						720			32	1	20	158-160 RCPTS		
		162/163 RCPTS	20	1	33		720							--
--							900		34	1	20	159-161 RCPTS		
		HOSE REELS	20	1	35			1440						--
--								1040	36					
					37	1040				2	20	HBF-G-3		
		HBF-G-6	20	2		1040			38					
					39		1040							--
--							1040		40					
		RECEPTACLES	20	1	41			720		2	20	HBF-G-5		
--								1040	42					
TOTAL LOAD PER PHASE						**58873**	**58174**	**43707**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	34615 VA	96 A	100.00%	34615 VA	96 A	
HEATING	1056 VA	3 A	75.00%	792 VA	2 A	
HVAC	374 VA	1 A	100.00%	374 VA	1 A	
Lighting	1255 VA	3 A	100.00%	1255 VA	3 A	
MOTORS	51445 VA	143 A	102.80%	52886 VA	147 A	
Receptacle	72008 VA	200 A	56.94%	41004 VA	114 A	
CONNECTED TOTALS	**160753 VA** **446 A**		**DEMAND TOTALS**	**130926 VA** **363 A**		

PANELBOARD SCHEDULE SECTION 2

DB

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					43	915								--
		MOTORIZED DOOR	20	2		915			44					
					45		915			2	20	MOTORIZED DOOR		
--							915		46					
					47			915						--
		MOTORIZED DOOR	20	2				915	48					
					49	915				2	20	MOTORIZED DOOR		
--						915			50					
					51		915							--
		MOTORIZED DOOR	20	2			915		52					
					53			915		2	20	MOTORIZED DOOR		
--								915	54					
					55	915								--
		MOTORIZED DOOR	20	2		915			56					
					57		915			2	20	MOTORIZED DOOR		
--							915		58					
					59			915						--
		MOTORIZED DOOR	20	2				915	60					
					61	915				2	20	MOTORIZED DOOR		
--						915			62					
					63		915							--
		MOTORIZED DOOR	20	2			915		64					
					65			915		2	20	MOTORIZED DOOR		
--								915	66					
					67	1921								--
		VEHICLE LIFT	20	3		1921			68					
					69		1921							
							1921		70	3	20	VEHICLE LIFT		
					71			1921						
--								1921	72					
		HOSE REELS	20	1	73	1440								--
--						720			74	1	20	Receptacle		
		Receptacle	20	1	75		720							--
--							720		76	1	20	Receptacle		
		Receptacle	20	1	77			720						--
--								720	78	1	20	Receptacle		
							79	3328						--
#8		WELDER	40	2			3328		80					
								3328		2	40	WELDER		#8
--					81		3328							
							3328		82					
		Spare	20	1	83			0						--
--								0	84	1	20	Spare		--

PANELBOARD SCHEDULE SECTION 3

DB

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					85	7820								--
						187			86					
#6		WB	60	3	87		6429			2	15	DS-8		
							187		88					
					89			4676						--
--								120	90	1	20	MOTORS		
		PEF-1	20	1	91	696								--
						3336			92					
		RH-F-2	20	1	93		48							
--							2520		94	3	100	TD		#3
		RH-F-3	20	1	95			48						
--								0	96					
		RH-F-4	20	1	97	48								--
--						48			98	1	20	RH-F-5		
		RH-F-6	20	1	99		48							--
--						48			100	1	20	RH-F-7		
		RH-F-8	20	1	101			48						--
--								528	102	1	20	EF-1		
		EF-2	20	1	103	120								--
--						100			104	1	20	MOTORIZED DAMPER		
		MOTORIZED DAMPER	20	1	105		100							--
--							100		106	1	20	MOTORIZED DAMPER		
		MOTORIZED DAMPER	20	1	107			100						--
--								180	108	1	20	CONDENSATE PUMP - DS-8		
		MOTORIZED DAMPER	20	1	109	50								--
--						250			110	1	20	MOTORIZED DAMPER		
		MOTORIZED DAMPER	20	1	111		50							--
--							50		112	1	20	MOTORIZED DAMPER		
		Receptacle	20	1	113			540						--
--								0	114	--	--	Space	--	--
		Spare	20	1	115	0								--
--						0			116	--	--	Space	--	--
		Spare	20	1	117		0							--
--							0		118	--	--	Space	--	--
		Spare	20	1	119			0						--
--								0	120	--	--	Space	--	--
		Spare	20	1	121	0								--
--						0			122	--	--	Space	--	--
		Spare	20	1	123		0							--
--							0		124	--	--	Space	--	--
		Spare	20	1	125			0						--
--								0	126	--	--	Space	--	--

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No: 38-4704200062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.5
9405

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

LOCATION: ELEC 136
SUPPLY FROM: MSB
A.I.C. RATING: 42,000

H2

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
480/277 Wye	3	4	SURFACE	800 A	MLO	NEMA 1

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	11085								--
						14826			2					
#8		HYDRAULIC PRESS BRAKE - NIAGARA	50	3	3		11085			3	60	RTU-2		
							14826		4					#6
					5			11085						
--								14826	6					
					7	6928								--
						11085			8					
#10		RTU-6	30	3	9		6928			3	60	CRANE		
							11085		10					#6
					11			6928						
--								11085	12					
					13	2688								--
						11085			14					
		DRYER-2	20	3	15		2688			3	60	CRANE		
							11085		16					#6
					17			2688						
--								11085	18					
					19	2688								--
						942			20					
		DRYER-1	20	3	21		2688			3	45	GEF-13		
							942		22					#8
					23			2688						
--								942	24					
					25	139								--
						1485			26	1	20	Lighting		
		GEF-2	20	3	27		139							
							3600		28	1	20	Lighting		
					29			139						
--								750	30	1	20	Lighting		
					31	11085								--
						675			32	1	20	Lighting		
#6		CRANE	60	3	33		11085							
							1800		34	1	20	Lighting		
					35			11085						
--								11085	36					
					37	21467								--
						11085			38	3	60	CRANE		
#3		SANDBLAST CONTROL PANEL	100	3	39		21467							
							11085		40					#6
					41			21467						
--								945	42	1	20	Lighting		
TOTAL LOAD PER PHASE						124160	127780	122903						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

PANELBOARD SCHEDULE

SECTION 2

H2

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					43	3048								--
						300			44	1	20	Lighting		
		PAINT ROOM EF	20	3	45		3048							
							375		46	1	20	Lighting		
					47			3048						
--								600	48	1	20	Lighting		
		Lighting	20	1	49	1800								--
						225			50	1	20	Lighting		
		Lighting	20	1	51		1500							
--							1650		52	1	20	Lighting		
		Lighting	20	1	53			675						
--								525	54	1	20	Lighting		
		Lighting	20	1	55	900								--
--						750			56	1	20	Lighting		
		Lighting	20	1	57		832							
--							448		58	1	20	Lighting		
		Lighting	20	1	59			1533						
--								300	60	1	20	Lighting		
		Lighting	20	1	61	450								--
--						9422			62					
--		Spare	20	1	63		0							
--						9422			64	3	45	GEF-14		#8
--		Spare	20	1	65			0						
--								9422	66					
--		Spare	20	1	67	0								--
--						0			68	--	--	Space	--	--
--		Spare	20	1	69		0							--
--							0		70	--	--	Space	--	--
--		Spare	20	1	71			0						--
--								0	72	--	--	Space	--	--
--		Spare	20	1	73	0								--
--						0			74	--	--	Space	--	--
--		Spare	20	1	75		0							--
--							0		76	--	--	Space	--	--
--		Spare	20	1	77			0						--
--								0	78	--	--	Space	--	--
--	--	Space	--	--	79	0								--
--						0			80	--	--	Space	--	--
--	--	Space	--	--	81		0							--
--							0		82	--	--	Space	--	--
--	--	Space	--	--	83			0						--
--								0	84	--	--	Space	--	--

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	33255 VA	40 A	100.00%	33255 VA	40 A	
HVAC	74409 VA	90 A	100.00%	74409 VA	90 A	
Lighting	22118 VA	27 A	100.00%	22118 VA	27 A	
MOTORS	245060 VA	295 A	106.57%	261160 VA	314 A	
CONNECTED TOTALS	374842 VA	451 A	DEMAND TOTALS	390942 VA	470 A	

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

LOCATION: ELEC 106
SUPPLY FROM: MSB
A.I.C. RATING: 22,000

H1

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
480/277 Wye	3	4	SURFACE	400 A	MLO	NEMA 1

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	19399								--
						3603			2					
#4		RTU-1	80	3	3		19399							
							3603		4	3	15	RTU-5		
					5			19399						
--								3603	6					
					7	14826								--
						2854			8					
#6		RTU-3	60	3	9		14826							
							2854		10	3	20	CRCU-1		
					11			14826						
--								2854	12					
					13	139								--
						4379			14					
		GEF-1	20	3	15		139							
							4379		16	3	20	CRAC-1		
					17			139						
--								4379	18					
--		Lighting	20	1	19	1575								--
						562			20	1	20	Lighting		
--		Lighting	20	1	21		511							--
							675		22	1	20	Lighting		
--		Lighting	20	1	23			900						--
								716	24	1	20	Lighting		
--		Lighting	20	1	25	664								--
						540			26	1	20	Lighting		
--		Lighting	20	1	27		480							--
							128		28	1	20	Lighting		
--		Lighting	20	1	29			224						--
								160	30	1	20	Lighting		
--		Lighting	20	1	31	192								--
						124			32	1	20	Lighting		
--		Lighting	20	1	33		222							--
							420		34	1	20	Lighting		
--		Spare	20	1	35			0						--
--								0	36	--	--	Space	--	--
--		Spare	20	1	37	0								--
--						0			38	--	--	Space	--	--
--		Spare	20	1	39		0							--
--							0		40	--	--	Space	--	--
--		Spare	20	1	41			0						--
--								0	42	--	--	Space	--	--
TOTAL LOAD PER PHASE						48857	47636	47200						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	55 VA	0 A	100.00%	55 VA	0 A	
HVAC	135183 VA	163 A	100.00%	135183 VA	163 A	
Lighting	8038 VA	10 A	100.00%	8038 VA	10 A	
MOTORS	416 VA	1 A	125.00%	520 VA	1 A	
CONNECTED TOTALS	143692 VA	173 A	DEMAND TOTALS	143796 VA	173 A	

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.6
9406

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

R

LOCATION: STORAGE BAY 166
SUPPLY FROM: TR
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**200 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	1248								--
		CUDS-2	15	2		360			2	1	20	Receptacle		
					3		1248							--
--							360		4	1	20	Receptacle		
		EF-6	20	1	5			120						--
--								2042	6					
		Receptacle	20	1	7	360								--
--						2042			8	3	25	WH-2		#10
		Receptacle	20	1	9		360							--
--							2042		10					
					11			915						--
		MOTORIZED DOOR	20	2				1260	12	1	20	RECEPTACLES		
					13	915								--
--						960			14	1	20	REFRIGERATOR		
		RECEPTACLES	20	1	15		720							--
--							720		16	1	20	RECEPTACLES		
		Receptacle	20	1	17			360						--
--								360	18	1	20	Receptacle		
		Equipment	20	1	19	960								--
--						960			20	1	20	Equipment		
--		Spare	20	1	21		0							--
--							540		22	1	20	RECEPTACLES		
		RECEPTACLES	20	1	23			360						--
--								2240	24					
		Receptacle	20	1	25	180								--
--						1608			26	3	60	CS		#6
		RECEPTACLES	20	1	27		500							--
--							1608		28					
					29			2942						--
								360	30	1	20	MODULAR FURNITURE		
#8		COMP-3	35	3	31	2942								--
						360			32	1	20	MODULAR FURNITURE		
					33		2942							--
--							360		34	1	20	MODULAR FURNITURE		
--		Spare	20	1	35			0						--
--								360	36	1	20	MODULAR FURNITURE		
--		Spare	20	1	37	0								--
--						96			38	1	20	NONCONTINUOUS LOADS		
		RP-1	20	1	39		667							--
--							50		40	1	20	MOTORIZED DAMPER		
		RECEPTACLES	20	1	41			500						--
--								500	42	1	20	RECEPTACLES		
TOTAL LOAD PER PHASE						**25343**	**24469**	**15559**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	26240 VA	73 A	100.00%	26240 VA	73 A	
HEATING	6125 VA	17 A	100.00%	6125 VA	17 A	
HVAC	2616 VA	7 A	100.00%	2616 VA	7 A	
KITCHEN EQUIPMENT	960 VA	3 A	100.00%	960 VA	3 A	
Lighting	1200 VA	3 A	100.00%	1200 VA	3 A	
MOTORS	11374 VA	32 A	119.40%	13580 VA	38 A	
NONCONTINUOUS LOADS	1176 VA	3 A	100.00%	1176 VA	3 A	
Receptacle	15680 VA	44 A	81.89%	12840 VA	36 A	
CONNECTED TOTALS	**65370 VA** / **181 A**		**DEMAND TOTALS**	**64737 VA** / **180 A**		

PANELBOARD SCHEDULE

R

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		Receptacle	20	1	43	360								--
						360			44	1	20	Receptacle		
--		Receptacle	20	1	45		360							--
							360		46	1	20	Receptacle		
--		Receptacle	20	1	47			360						--
								360	48	1	20	Receptacle		
--		Receptacle	20	1	49	360								--
						360			50	1	20	Receptacle		
--		Receptacle	20	1	51		360							--
							360		52	1	20	Receptacle		
--		Receptacle	20	1	53			360						--
								360	54	1	20	Receptacle		
--		Receptacle	20	1	55	360								--
						360			56	1	20	Receptacle		
--		Receptacle	20	1	57		360							--
							360		58	1	20	Receptacle		
--		Receptacle	20	1	59			360						--
								360	60	1	20	Receptacle		
					61	5096								--
#6		GEN LOAD CENTER	60	2		5096			62					
					63		5096			2	60	GEN LOAD CENTER		#6
--							5096		64					
--		NONCONTINUOUS LOADS	20	1	65			1080						--
								0	66	--	--	Space	--	--
--		Spare	20	1	67	0								--
						0			68	--	--	Space	--	--
--		Spare	20	1	69		0							--
							0		70	--	--	Space	--	--
--		Spare	20	1	71			0						--
								0	72	--	--	Space	--	--
--		Spare	20	1	73	0								--
						0			74	--	--	Space	--	--
--		Spare	20	1	75		0							--
							0		76	--	--	Space	--	--
--		Spare	20	1	77			0						--
								0	78	--	--	Space	--	--
--		Spare	20	1	79	0								--
						0			80	--	--	Space	--	--
--		Spare	20	1	81		0							--
							0		82	--	--	Space	--	--
--	--	Space	--	--	83			0						--
								0	84	--	--	Space	--	--

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

RH

LOCATION: STORAGE BAY 166
SUPPLY FROM: MSB
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
480/277 Wye	**3**	**4**	**SURFACE**	**100 A**	**MLO**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	3603								--
						3603			2					
		RTU-7	15	3	3		3603							--
							3603		4	3	15	RTU-4		
					5			3603						--
--								3603	6					
		Lighting	20	1	7	1350								--
--						120			8	1	20	Lighting		
					9		25343							--
		TR	100	3			656		10	1	20	Lighting, TIMECLOCK		
#3					11			24469					--	--
								0	12	--	--	Space	--	--
					13	15559								--
--						0			14	--	--	Space	--	--
--		Spare	20	1	15		0							--
--							0		16	--	--	Space	--	--
--		Spare	20	1	17			0						--
--								0	18	--	--	Space	--	--
--		Spare	20	1	19	0								--
--						0			20	--	--	Space	--	--
--		Spare	20	1	21		0							--
--							0		22	--	--	Space	--	--
--		Spare	20	1	23			0						--
--								0	24	--	--	Space	--	--
TOTAL LOAD PER PHASE						**24234**	**33204**	**31674**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	26240 VA	32 A	100.00%	26240 VA	32 A	
HEATING	6125 VA	7 A	100.00%	6125 VA	7 A	
HVAC	24232 VA	29 A	100.00%	24232 VA	29 A	
KITCHEN EQUIPMENT	960 VA	1 A	100.00%	960 VA	1 A	
Lighting	3326 VA	4 A	100.00%	3326 VA	4 A	
MOTORS	11374 VA	14 A	119.40%	13580 VA	16 A	
NONCONTINUOUS LOADS	1176 VA	1 A	100.00%	1176 VA	1 A	
Receptacle	15680 VA	19 A	81.89%	12840 VA	15 A	
CONNECTED TOTALS	**89112 VA** / **107 A**		**DEMAND TOTALS**	**88479 VA** / **106 A**		

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.7
9407

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

LOCATION: ELEC 106

SUPPLY FROM: T1

A.I.C. RATING: 22,000

SB

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	3	4	SURFACE	200 A	MCB	NEMA 1

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		SAND BLASTER	20	1	1	192								--
--						996			2	1	20	ELECTRIC OVEN		--
--		GRINDER	20	1	3		1176							--
--							1656		4	1	20	DRILL PRESS		--
--		BAND SAW	20	1	5			336						--
--								2160	6	1	25	DRILL PRESS - WILTON		#10
--		BELT SANDER	20	1	7	1920								--
--						3328			8					--
--		OSF-A-1	20	1	9		1176			2	40	WELDER		#8
--							3328		10					--
					11			3328						--
#8		WELDER	40	2				721	12					--
					13	3328								--
--						721			14	3	20	MILLING MACHINE - BRIDGEPORT		--
					15		3744							--
#8		PLASMA CUTTER	45	2			721		16					--
					17			3744						--
--								841	18					--
					19	1021								--
						841			20	3	20	LATHE- CLAUSING		--
		METAL CUTTING BAND SAW - MARVEL	20	3	21		1021							--
							841		22					--
					23			1021						--
--								1248	24					--
					25	1394				2	15	CUDS-3		--
		CUDS-6	20	2		1248			26					--
					27		1394							--
--							720		28	1	20	RH-A-1-3		--
		OSF-A-2	20	1	29			1176						--
--								1176	30	1	20	OSF-A-3		--
					31	915								--
		MOTORIZED DOOR	20	2		915			32					--
					33		915			2	20	MOTORIZED DOOR		--
--							915		34					--
					35			915						--
		MOTORIZED DOOR	20	2				915	36					--
					37	915				2	20	MOTORIZED DOOR		--
--						915			38					--
--		Receptacle	20	1	39		1440							--
--							360		40	1	20	Receptacle		--
--		Receptacle	20	1	41			720						--
--								540	42	1	20	Receptacle		--
TOTAL LOAD PER PHASE						**22725**	**24634**	**25668**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	19718 VA	55 A	100.00%	19718 VA	55 A	
HEATING	720 VA	2 A	100.00%	720 VA	2 A	
HVAC	5283 VA	15 A	100.00%	5283 VA	15 A	
MOTORS	11765 VA	33 A	103.89%	12223 VA	34 A	
Motor	3840 VA	11 A	106.25%	4080 VA	11 A	
Receptacle	31700 VA	88 A	65.77%	20850 VA	58 A	
CONNECTED TOTALS	**73026 VA** **203 A**		**DEMAND TOTALS**	**62873 VA** **175 A**		

PANELBOARD SCHEDULE

SECTION 2

SB

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		Spare	20	1	43	0								--
--						0			44	--	--	Space	--	--
--		Spare	20	1	45		0							--
--							0		46	--	--	Space	--	--
--		Spare	20	1	47			0						--
--								0	48	--	--	Space	--	--
--		Spare	20	1	49	0								--
--						0			50	--	--	Space	--	--
		COPIER	20	1	51		180							--
--							0		52	--	--	Space	--	--
		Receptacle	20	1	53			720						--
--								0	54	--	--	Space	--	--
		Receptacle	20	1	55	720								--
--						0			56	--	--	Space	--	--
		Receptacle	20	1	57		720							--
--							0		58	--	--	Space	--	--
		Receptacle	20	1	59			720						--
--								1080	60	1	20	Receptacle		--
		Receptacle	20	1	61	1080								--
--						50			62	1	20	MOTORIZED DAMPER		--
		MOTORIZED DAMPER	20	1	63		50							--
--							50		64	1	20	MOTORIZED DAMPER		--
		CONDENSATE PUMP-DS-6	20	1	65			180						--
--								180	66	1	20	CONDENSATE PUMP - DS-3		--
		MOTORIZED DAMPER	20	1	67	667								--
--						100			68	1	20	MOTORIZED DAMPER		--
					69		1768							--
#10		CLAUSING LATHE	25	2			540		70	1	20	RECEPTACLES		--
					71			1768						--
--								720	72	1	20	Receptacle		--
		RECEPTACLES	20	1	73	500								--
--						960			74	1	20	MOTORIZED TV MOUNT		--
		MOTORIZED TV MOUNT	20	1	75		960							--
--							960		76	1	20	MOTORIZED TV MOUNT		--
		MOTORIZED PARTITION	20	1	77			960						--
--								500	78	1	20	ROLLER SHADES		--
--		Spare	20	1	79	0								--
--						0			80	--	--	Space	--	--
--		Spare	20	1	81		0							--
--							0		82	--	--	Space	--	--
--		Spare	20	1	83			0						--
--								0	84	--	--	Space	--	--

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

LOCATION: EQUIPMENT ROOM 165

SUPPLY FROM: DB

A.I.C. RATING: 10,000

WB

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	3	4	SURFACE	60 A	MCB	NEMA 4X

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		RH-H-4	20	1	1	240								--
--						3224			2					--
		UH-2	20	1	3		240			2	40	PW-1		#8
--							3224		4					--
		UH-3	20	1	5			240						--
--								696	6	1	20	AP-1		--
		SUMP PUMP	20	1	7	1656								--
--						540			8	1	20	Receptacle		--
					9		1695							--
#10		RECLAIM SYSTEM	25	2			135		10	1	20	Lighting		--
					11			1695						--
--								960	12	1	20	Lighting		--
					13	60								--
						160			14	1	20	Lighting		--
		GEF-3	20	3	15		60							--
							60		16					--
					17			60						--
--								60	18	3	20	GEF-4		--
		MOTORIZED DAMPER	20	1	19	50								--
--						60			20					--
		MOTORIZED DAMPER	20	1	21		50							--
--							50		22	1	20	MOTORIZED DAMPER		--
		MOTORIZED DAMPER	20	1	23			50						--
--								915	24					--
					25	915				2	20	MOTORIZED DOOR		--
		MOTORIZED DOOR	20	2		915			26					--
					27		915							--
--							0		28	--	--	Space	--	--
--		Spare	20	1	29			0						--
--								0	30	--	--	Space	--	--
--		Spare	20	1	31	0								--
--						0			32	--	--	Space	--	--
--		Spare	20	1	33		0							--
--							0		34	--	--	Space	--	--
--		Spare	20	1	35			0						--
--								0	36	--	--	Space	--	--
--		Spare	20	1	37	0								--
--						0			38	--	--	Space	--	--
--		Spare	20	1	39		0							--
--							0		40	--	--	Space	--	--
--		Spare	20	1	41			0						--
--								0	42	--	--	Space	--	--
--		Spare	20	1	43	0								--
--						0			44	--	--	Space	--	--
--		Spare	20	1	45		0							--
--							0		46	--	--	Space	--	--
--		Spare	20	1	47			0						--
--								0	48	--	--	Space	--	--
TOTAL LOAD PER PHASE						**7820**	**6429**	**4676**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	9838 VA	27 A	100.00%	9838 VA	27 A	
HEATING	720 VA	2 A	100.00%	720 VA	2 A	
Lighting	1255 VA	3 A	100.00%	1255 VA	3 A	
MOTORS	6572 VA	18 A	106.96%	7030 VA	20 A	
Receptacle	540 VA	1 A	100.00%	540 VA	1 A	
CONNECTED TOTALS	**18926 VA** **53 A**		**DEMAND TOTALS**	**19383 VA** **54 A**		

09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.8

9408

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

MS

LOCATION: ELEC 157
SUPPLY FROM: T3
A.I.C. RATING: 22,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**400 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	2762								--
						841			2					
#10		SURFACE GRINDER - SUPERTEC	30	3	3		2762							
							841		4	3	20	SURFACE GRINDER - BROWN AND SHARPE		
					5			2762						
--								841	6					
					7	520								--
		RADIAL DRILL - CARLTON	20	2		3843			8					
					9		520							
--							3843		10	3	40	24" HOLLOW SPINDLE - LEBLOND		#8
					11			3843						
								3843	12					
#8		HAAS SL20	40	3	13	3843								--
						6725			14					
					15		3843							
--							6725		16	3	70	HAAS TL3		#4
					17			2402						
								6725	18					
#10		HAAS CNC TM3	25	3	19	2402								--
						3843			20					
					21		2402							
--							3843		22	3	40	HAAS CNC VF2		#8
					23			721						
								3843	24					
		MILLING MACHINE - BRIDGEPORT	20	3	25	721								--
						3026			26					
					27		721			2	35	CUDS-8		#8
--							3026		28					
		RH-F-1	20	1	29			48						--
--								2042	30					
		PLMB SENSORS	20	1	31	192								
--						2042			32	3	25	WH-3		#10
					33		1040							
		HBF-G-4	20	2			2042		34					
					35			1040						--
--								1040	36					
					37	1040				2	20	HBF-G-2		
		HBF-G-1	20	2		1040			38					
					39		1040							--
--							720		40	1	20	RECEPTACLES		
		RECEPTACLES	20	1	41			720						--
--								720	42	1	20	Receptacle		
TOTAL LOAD PER PHASE						**44653**	**54357**	**50360**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	86134 VA	239 A	100.00%	86134 VA	239 A	
HEATING	6173 VA	17 A	100.00%	6173 VA	17 A	
HVAC	6053 VA	17 A	100.00%	6053 VA	17 A	
MOTORS	6240 VA	17 A	108.33%	6760 VA	19 A	
NONCONTINUOUS LOADS	2352 VA	7 A	100.00%	2352 VA	7 A	
Receptacle	42418 VA	118 A	61.79%	26209 VA	73 A	
CONNECTED TOTALS	**149369 VA** / **415 A**		**DEMAND TOTALS**	**133680 VA** / **371 A**		

PANELBOARD SCHEDULE

SECTION 2

MS

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		Receptacle	20	1	43	720								--
--						900			44	1	20	Receptacle		
		Receptacle	20	1	45		1080							--
--							720		46	1	20	RECEPTACLES		
		RECEPTACLES	20	1	47			720						--
--								1000	48	1	20	Receptacle		
		Receptacle	20	1	49	540								--
--						540			50	1	20	RECEPTACLES		
		Receptacle	20	1	51		1260							--
--							540		52	1	20	Receptacle		
		Receptacle	20	1	53			1260						--
--								900	54	1	20	Receptacle		
		Receptacle	20	1	55	360								--
--						0			56	1	20	Spare		--
		Receptacle	20	1	57		1080							--
--							1080		58	1	20	RECEPTACLES		--
		Receptacle	20	1	59			540						--
--								720	60	1	20	Receptacle		--
		Receptacle	20	1	61	180								--
--						180			62	1	20	RECEPTACLES		--
		RECEPTACLES	20	1	63		1080							--
--							180		64	1	20	RECEPTACLES		--
		RECEPTACLES	20	1	65			1080						--
--								540	66	1	20	RECEPTACLES		--
		Receptacle	20	1	67	720								--
--						0			68	1	20	Spare		--
					69		2906							--
							0		70	1	20	Spare		--
#10		17" LEBLOND	30	3	71			2906						--
								900	72	1	20	Receptacle		
					73	2906								--
--						360			74	1	20	MODULAR FURNITURE		
					75		3328							--
#8		WELDER	40	2			360		76	1	20	MODULAR FURNITURE		
					77			3328						--
--								360	78	1	20	MODULAR FURNITURE		
					79	3328								--
#8		WELDER	40	2		360			80	1	20	MODULAR FURNITURE		
					81		3328							--
--							3328		82					
		Receptacle	20	1	83			750		2	40	WELDER		#8
--								3328	84					

PANELBOARD SCHEDULE

SECTION 3

MS

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		Receptacle	20	1	85	360								--
--						360			86	1	20	Receptacle		
		Receptacle	20	1	87		360							--
--							360		88	1	20	Receptacle		
		Receptacle	20	1	89			1080						--
--								360	90	1	20	Receptacle		
--		Spare	20	1	91	0								--
--						0			92	--	--	Space	--	--
--		Spare	20	1	93		0							--
--							0		94	--	--	Space	--	--
--		Spare	20	1	95			0						--
--								0	96	--	--	Space	--	--
--		Spare	20	1	97	0								--
--						0			98	--	--	Space	--	--
--		Spare	20	1	99		0							--
--							0		100	--	--	Space	--	--
--		Spare	20	1	101			0						--
--								0	102	--	--	Space	--	--
--		Spare	20	1	103	0								--
--						0			104	--	--	Space	--	--
--		Spare	20	1	105		0							--
--							0		106	--	--	Space	--	--
--	--	Space	--	--	107			0						--
--								0	108	--	--	Space	--	--
--	--	Space	--	--	109	0								--
--						0			110	--	--	Space	--	--
--	--	Space	--	--	111		0							--
--							0		112	--	--	Space	--	--
--	--	Space	--	--	113			0						--
--								0	114	--	--	Space	--	--
--	--	Space	--	--	115	0								--
--						0			116	--	--	Space	--	--
--	--	Space	--	--	117		0							--
--							0		118	--	--	Space	--	--
--	--	Space	--	--	119			0						--
--								0	120	--	--	Space	--	--
--	--	Space	--	--	121	0								--
--						0			122	--	--	Space	--	--
--	--	Space	--	--	123		0							--
--							0		124	--	--	Space	--	--
--	--	Space	--	--	125			0						--
--								0	126	--	--	Space	--	--

Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.9
9409

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

WS

LOCATION: ELEC 136
SUPPLY FROM: T2
A.I.C. RATING: 22,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**400 A**	**MLO**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		SAND BLASTING MACHINE	20	1	1	204			2					--
						603								
#8		IRON WORKER - KINGSLAND 115	40	3	3		3699		4	2	20	BAND SAW - DAKE		--
					5		603							
--								3699	6					--
					7	3699		1021						
--						1021			8	3	20	METAL CUTTING BAND SAW - MARVEL		--
#8		CNC BAND SAW - WF WELLS	40	3	9		3387		10					--
					11		1021							
--								3387	12					--
					13	3387		16428						
--						16428			14	3	200	CINCINNATI 18 SHEAR		#3/0
		MILLING MACHINE - BRIDGEPORT	20	3	15		721		16					--
					17		16428							
--								721	18					--
					19	721		2642						
--						2642			20	3	30	PIPE ROLLER - BAILEIGH		#10
--		EF-8	20	1	21		120		22					--
							2642							
--		RH-C-3	20	1	23			48	24	1	20	RH-C-4		--
								48						
--		RH-C-1	20	1	25	48			26	1	20	RH-C-2		--
						48								
--		RH-C-6	20	1	27		48		28	1	20	RH-C-8		--
							48							
--		RH-C-7	20	1	29			48	30	1	20	RH-E-7		--
								48						
--		RH-E-8	20	1	31	48			32	1	20	RH-E-9		--
						48								
--		RH-E-10	20	1	33		48		34	1	20	RH-E-11		--
							48							
--		UH-1	20	1	35			240	36	1	20	EF-7		--
								120						
--		LAV SENSOR	20	1	37	96			38	1	20	RH-B-1		--
						48								
--		RH-B-2	20	1	39		48		40	1	20	RH-B-3		--
							48							
--		RH-B-4	20	1	41			48	42	1	20	RH-B-5		--
								48						
TOTAL LOAD PER PHASE						**30148**	**30008**	**29553**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	85190 VA	236 A	100.00%	85190 VA	236 A	
HEATING	1872 VA	5 A	75.00%	1404 VA	4 A	
MOTORS	390 VA	1 A	107.69%	420 VA	1 A	
NONCONTINUOUS LOADS	96 VA	0 A	100.00%	96 VA	0 A	
Receptacle	2160 VA	6 A	100.00%	2160 VA	6 A	
CONNECTED TOTALS	**89708 VA** / **249 A**		**DEMAND TOTALS**	**89270 VA** / **248 A**		

PANELBOARD SCHEDULE

SECTION 2

WS

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		RH-B-6	20	1	43	48			44	1	20	RH-B-12		--
						48								
--		RH-B-11	20	1	45		48		46	1	20	RH-B-10		--
							48							
--		RH-B-9	20	1	47			48	48	1	20	RH-B-8		--
								48						
--		RH-B-7	20	1	49	48			50	1	20	RH-E-2		--
						48								
--		RH-E-3	20	1	51		48		52	1	20	RH-E-4		--
							48							
--		RH-E-5	20	1	53			48	54	1	20	RH-E-6		--
								48						
--		MOTORIZED DAMPER	20	1	55	50			56	1	20	MOTORIZED DAMPER		--
						50								
--		MOTORIZED DAMPER	20	1	57		50		58	1	20	Receptacle		--
							360							
--		Receptacle	20	1	59			360	60	1	20	Receptacle		--
								360						
--		Receptacle	20	1	61	360			62	1	20	Receptacle		--
						360								
--		Receptacle	20	1	63		360		64	1	20	Equipment		--
							90							
--		GUH	20	1	65			48	66	1	20	GUH		--
								48						
--		GUH	20	1	67	48			68	1	20	GUH		--
						48								
--		GUH	20	1	69		48		70					--
							0							
--		Spare	20	1	71			0	72	3	100	TW		#3
								0						
--		Spare	20	1	73	0			74					--
						0								
--		Spare	20	1	75		0		76	--	--	Space	--	--
							0							
--		Spare	20	1	77			0	78	--	--	Space	--	--
								0						
--		Spare	20	1	79	0			80	--	--	Space	--	--
						0								
--		Spare	20	1	81		0		82	--	--	Space	--	--
							0							
--		Spare	20	1	83			0	84	--	--	Space	--	--
								0						

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

TA

LOCATION: ASSEMBLY SHOP 129
SUPPLY FROM: AS
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**100 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	2366			2					--
#10		METAL SHEAR - CHICAGO	25	3	3	1021								
							2366		4	3	20	METAL CUTTING BAND SAW - MARVEL		--
--					5		1021							
								2366	6					--
--		Receptacle	20	1	7	360		1021						
						0			8	--	--	Space	--	--
--		Spare	20	1	9		0							--
--							0		10	--	--	Space	--	--
--		Spare	20	1	11			0						--
--								0	12	--	--	Space	--	--
--		Spare	20	1	13	0								--
--						0			14	--	--	Space	--	--
--		Spare	20	1	15		0							--
--							0		16	--	--	Space	--	--
--		Spare	20	1	17			0						--
--								0	18	--	--	Space	--	--
--		Spare	20	1	19	0								--
--						0			20	--	--	Space	--	--
TOTAL LOAD PER PHASE						**3747**	**3387**	**3387**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	10160 VA	28 A	100.00%	10160 VA	28 A	
Receptacle	360 VA	1 A	100.00%	360 VA	1 A	
CONNECTED TOTALS	**10520 VA** / **29 A**		**DEMAND TOTALS**	**10520 VA** / **29 A**		

09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.10
9410

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

H3

LOCATION: ELEC 157
SUPPLY FROM: MSB
A.I.C. RATING: 22,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
480/277 Wye	**3**	**4**	**SURFACE**	**400 A**	**MLO**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	443								--
						443			2					
		GEF-5	20	3	3		443							
							443		4	3	20	GEF-7		
					5			443						
--								443	6					
					7	2106								--
						2106			8					
		VEF-3	20	3	9		2106							
							2106		10	3	20	VEF-4		
					11			2106						
--								2106	12					
					13	2106								--
						2106			14					
		VEF-1	20	3	15		2106							
							2106		16	3	20	VEF-2		
					17			2106						
--								2106	18					
		Lighting	20	1	19	192								--
--						3300			20	1	20	Lighting		
		Lighting	20	1	21		1275							--
--							11085		22					
					23			11085						
#6		CRANE	60	3	25	11085		11085	24	3	60	CRANE		#6
						11085			26					
					27		11085							--
--							11085		28					
					29			11085						
#6		CRANE	60	3	31	11085		11085	30	3	60	CRANE		#6
						11085			32					
					33		11085							--
--							2970		34	1	20	SITE LTG		
		SITE LTG	20	1	35			3510						--
--								4860	36	1	20	Lighting		
					37	5099								--
						541			38	1	20	Lighting		
#10		HV-1	30	3	39		5099							--
							45		40	1	20	EXTERIOR LIGHTING - SEGMENT G		
					41			5099						--
--								664	42	1	20	Lighting		
TOTAL LOAD PER PHASE						**69109**	**67641**	**72385**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

PANELBOARD SCHEDULE

H3

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		Lighting	20	1	43	1725								--
--						942			44					
					45		942							
		GEF-14	20	3					46	3	20	GEF-13		
					47			942						
								942	48					
					49	942								--
--						443			50					
					51		443							
		GEF-8	20	3			443		52	3	20	GEF-10		
					53			443						
								443	54					
					55	443								--
--						443			56					
					57		443							
		GEF-9	20	3			443		58	3	20	GEF-6		
					59			443						
								443	60					
					61	443								--
--						942			62					
--		Spare	20	1	63		0							--
--							942		64	3	20	GEF-15		
--		Spare	20	1	65			0						--
--								942	66					
--		Spare	20	1	67	0								--
--						0			68	--	--	Space	--	--
--		Spare	20	1	69		0							--
--							0		70	--	--	Space	--	--
--		Spare	20	1	71			0						--
--								0	72	--	--	Space	--	--
--		Spare	20	1	73	0								--
--						0			74	--	--	Space	--	--
--		Spare	20	1	75		0							--
--							0		76	--	--	Space	--	--
--		Spare	20	1	77			0						--
--								0	78	--	--	Space	--	--
--	--	Space	--	--	79	0								--
--						0			80	--	--	Space	--	--
--	--	Space	--	--	81		0							--
--							0		82	--	--	Space	--	--
--	--	Space	--	--	83			0						--
--								0	84	--	--	Space	--	--

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
HVAC	15297 VA	18 A	100.00%	15297 VA	18 A	
Lighting	19082 VA	23 A	100.00%	19082 VA	23 A	
MOTORS	174757 VA	210 A	104.76%	183071 VA	220 A	
CONNECTED TOTALS	**209136 VA** **252 A**		**DEMAND TOTALS**	**217450 VA** **262 A**		

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: Author
CHECKED BY: Checker
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL PANEL SCHEDULES

E4.11

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

CS

LOCATION:
SUPPLY FROM: R
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**60 A**	**30A MCB**	**NEMA 3R**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
--		Lighting	20	1	1	600								--
						180			2	1	20	Receptacle		
		Receptacle	20	1	3		180							--
--							180		4	1	20	Receptacle		
		Receptacle	20	1	5			180						--
--								180	6	1	20	Receptacle		
		Receptacle	20	1	7	180								--
--						180			8	1	20	Receptacle		
		GATE OPERATOR	20	2	9		624							--
							624		10					
					11			624		2	20	GATE OPERATOR		
--								624	12					
--		Lighting	20	1	13	600								--
--						500			14	1	20	IRRIGATION CONTROLLER		
--		Spare	20	1	15		0							--
--							0		16	--	--	Space	--	--
--		Spare	20	1	17			0						--
--								0	18	--	--	Space	--	--
--		Spare	20	1	19	0								--
--						0			20	--	--	Space	--	--
		TOTAL LOAD PER PHASE				**2240**	**1608**	**1608**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	2496 VA	7 A	100.00%	2496 VA	7 A	
Lighting	1200 VA	3 A	100.00%	1200 VA	3 A	
Receptacle	1760 VA	5 A	100.00%	1760 VA	5 A	
CONNECTED TOTALS	**5456 VA** / **15 A**		**DEMAND TOTALS**	**5456 VA** / **15 A**		

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

TD

LOCATION: HEAVY DUTY BAY 162
SUPPLY FROM: DB
A.I.C. RATING: 10,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**100 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		GRINDER	20	1	1	1176								--
--						2160			2	1	25	DRILL PRESS - ROCKWELL		#10
#10		DRILL PRESS - CENTRAL MACHINERY	25	1	3		2160							--
--							360		4	1	20	Receptacle		
--		Spare	20	1	5			0						--
--								0	6	--	--	Space	--	--
--		Spare	20	1	7	0								--
--						0			8	--	--	Space	--	--
--		Spare	20	1	9		0							--
--							0		10	--	--	Space	--	--
--		Spare	20	1	11			0						--
--								0	12	--	--	Space	--	--
--		Spare	20	1	13	0								--
--						0			14	--	--	Space	--	--
--		Spare	20	1	15		0							--
--							0		16	--	--	Space	--	--
--		Spare	20	1	17			0						--
--								0	18	--	--	Space	--	--
--		Spare	20	1	19	0								--
--						0			20	--	--	Space	--	--
		TOTAL LOAD PER PHASE				**3336**	**2520**	**0**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	5496 VA	15 A	100.00%	5496 VA	15 A	
Receptacle	360 VA	1 A	100.00%	360 VA	1 A	
CONNECTED TOTALS	**5856 VA** / **16 A**		**DEMAND TOTALS**	**5856 VA** / **16 A**		

PANELBOARD SCHEDULE

Project: TxDOT 973 Operations Center

O

LOCATION: ELEC 106
SUPPLY FROM: T1
A.I.C. RATING: 22,000

VOLTAGE	PHASE	WIRE	MOUNTING	BUS (A)	LUG	TYPE
120/208 Wye	**3**	**4**	**SURFACE**	**125 A**	**MCB**	**NEMA 1**

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
					1	2042								--
						312			2	1	20	LAV SENSORS		
#10		WH-1	25	3	3		2042							--
							960		4	1	20	REFRIGERATOR		
					5			2042						--
--								360	6	1	20	RECEPTACLES		
		REFRIGERATOR	20	1	7	960								--
--						540			8	1	20	RECEPTACLES		
		FACP	20	1	9		300							--
--							720		10	1	20	Receptacle		
		Receptacle	20	1	11			540						--
--								1260	12	1	20	RECEPTACLES		
		RECEPTACLES	20	1	13	720								--
--						960			14	1	20	EWC		
		ICE MAKER	30	2	15		1768							--
#10							1000		16	1	20	MICROWAVE		
					17			1768						--
--								1000	18	1	20	VENDING		
		Receptacle	20	1	19	360								--
--						1000			20	1	20	VENDING		
		Receptacle	20	1	21		360							--
--							960		22	1	20	REFRIGERATOR		
		Receptacle	20	1	23			360						--
--								1620	24	1	20	RECEPTACLES		
		Receptacle	20	1	25	360								--
--						1000			26	1	20	MICROWAVE		
		Receptacle	20	1	27		360							--
--							300		28	1	20	GEN ANN PNL		
		Receptacle	20	1	29			360						--
--								915	30					
		Receptacle	20	1	31	360				2	20	GATE OPERATOR		
--						915			32					
		Receptacle	20	1	33		360							--
--							624		34					
		GATE OPERATOR	20	2	35			624		2	20	GATE OPERATOR		
								624	36					
--					37	624								--
						624			38					
		LAV SENSOR	20	1	39		96			2	20	Equipment		
--							624		40					
		EF-4	20	1	41			120						--
--								240	42	1	20	EF-3		
		TOTAL LOAD PER PHASE				**13297**	**11914**	**15253**						

① GFCI ② AFCI ③ AFCI/GFCI ④ SHUNT TRIP ⑤ SWD ⑥ HACR ⑦ LOCKABLE

OPTIONS: 'NONE' - REFER TO SPECIFICATIONS

FEEDER OCPD AND CONDUCTOR CALCULATION

LOAD DESCRIPTION	CONNECTED LOAD (VA)	CONNECTED LOAD (Amps)	DEM FACTOR (AVG)	DEMAND LOAD (VA)	DEMAND LOAD (Amps)	NOTES
Equipment	8240 VA	23 A	100.00%	8240 VA	23 A	
HEATING	6125 VA	17 A	100.00%	6125 VA	17 A	
HVAC	240 VA	1 A	100.00%	240 VA	1 A	
KITCHEN EQUIPMENT	2880 VA	8 A	90.00%	2592 VA	7 A	
MOTORS	2070 VA	6 A	122.10%	2528 VA	7 A	
NONCONTINUOUS LOADS	2448 VA	7 A	100.00%	2448 VA	7 A	
Receptacle	18460 VA	51 A	77.09%	14230 VA	39 A	
CONNECTED TOTALS	**40463 VA** / **112 A**		**DEMAND TOTALS**	**36402 VA** / **101 A**		

PANELBOARD SCHEDULE

O

LOAD

WIRE SIZE	TYPE	USE and/or AREA SERVED	C/B	POLE	CIR	A	B	C	CIR	POLE	C/B	USE and/or AREA SERVED	TYPE	WIRE SIZE
		Receptacle	20	1	43	360								--
--						360			44	1	20	Receptacle		
		Receptacle	20	1	45		360							--
--							360		46	1	20	Receptacle		
		Receptacle	20	1	47			360						--
--								360	48	1	20	Receptacle		
		Receptacle	20	1	49	360								--
--						360			50	1	20	Receptacle		
		Receptacle	20	1	51		360							--
--							360		52	1	20	Receptacle		
		RECEPTACLES	20	1	53			1620						--
--								1080	54	1	20	NONCONTINUOUS LOADS		
		NONCONTINUOUS LOADS	20	1	55	1080								--
--						0			56	--	--	Space	--	--
--		Spare	20	1	57		0							--
--							0		58	--	--	Space	--	--
--		Spare	20	1	59			0						--
--								0	60	--	--	Space	--	--
--		Spare	20	1	61	0								--
--						0			62	--	--	Space	--	--
--		Spare	20	1	63		0							--
--							0		64	--	--	Space	--	--
--		Spare	20	1	65			0						--
--								0	66	--	--	Space	--	--
--		Spare	20	1	67	0								--
--						0			68	--	--	Space	--	--
--		Spare	20	1	69		0							--
--							0		70	--	--	Space	--	--
--		Spare	20	1	71			0						--
--								0	72	--	--	Space	--	--
--	--	Space	--	--	73	0								--
--						0			74	--	--	Space	--	--
--	--	Space	--	--	75		0							--
--							0		76	--	--	Space	--	--
--	--	Space	--	--	77			0						--
--								0	78	--	--	Space	--	--
--	--	Space	--	--	79	0								--
--						0			80	--	--	Space	--	--
--	--	Space	--	--	81		0							--
--							0		82	--	--	Space	--	--
--	--	Space	--	--	83			0						--
--								0	84	--	--	Space	--	--

09/24/21

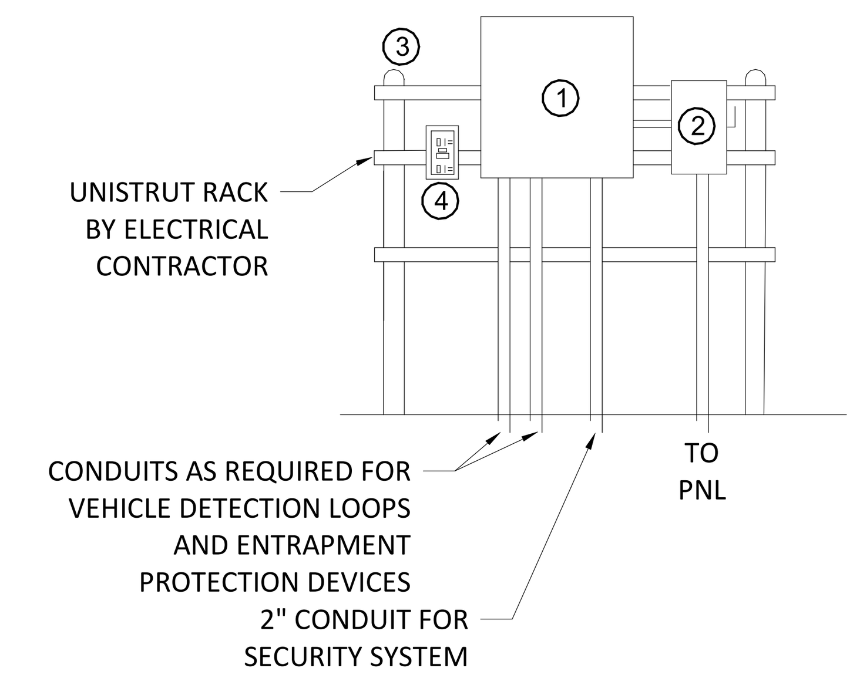
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 2021
DRAWN BY: JRS
CHECKED BY: SSB
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

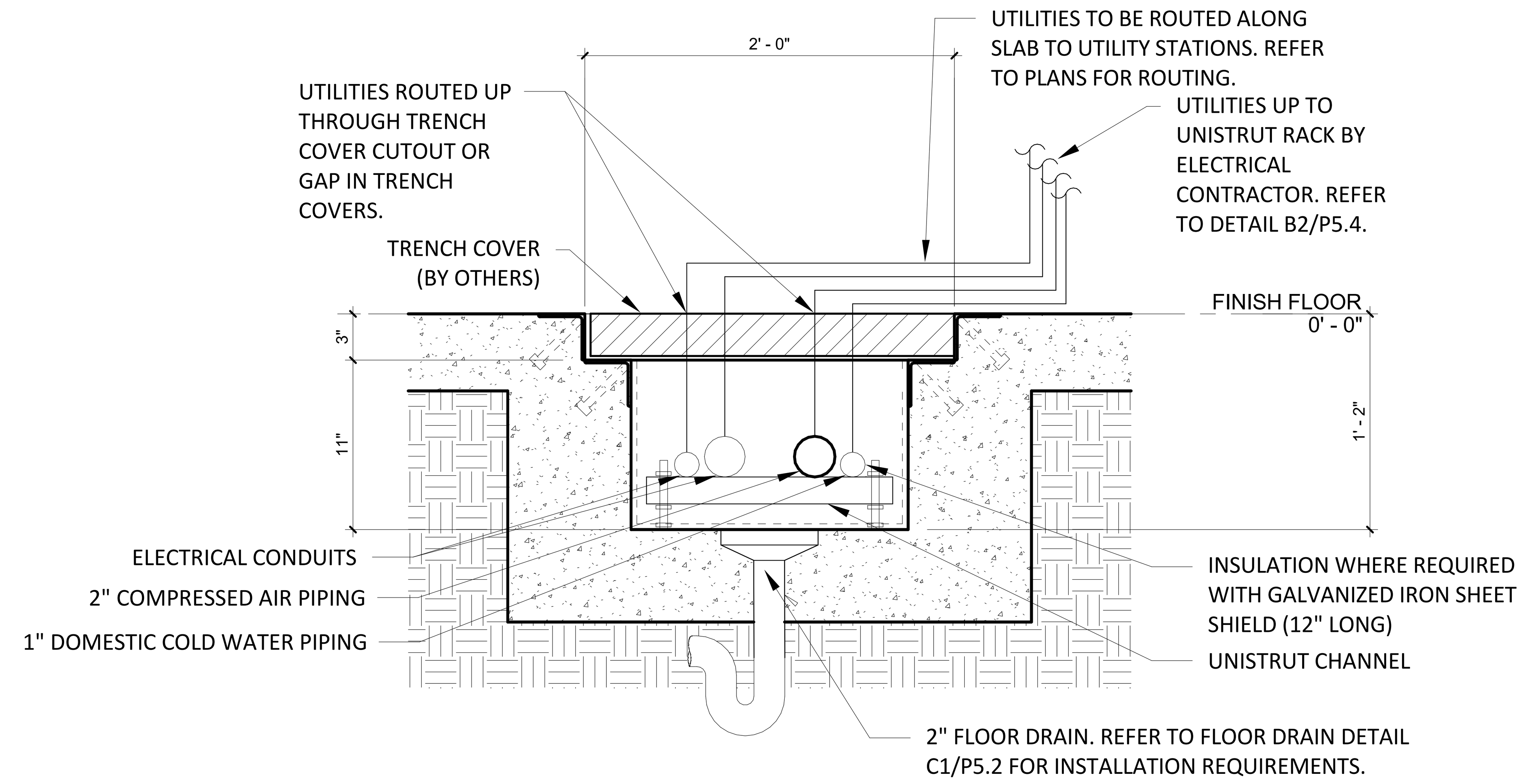
ELECTRICAL PANEL SCHEDULES

E4.12
9412



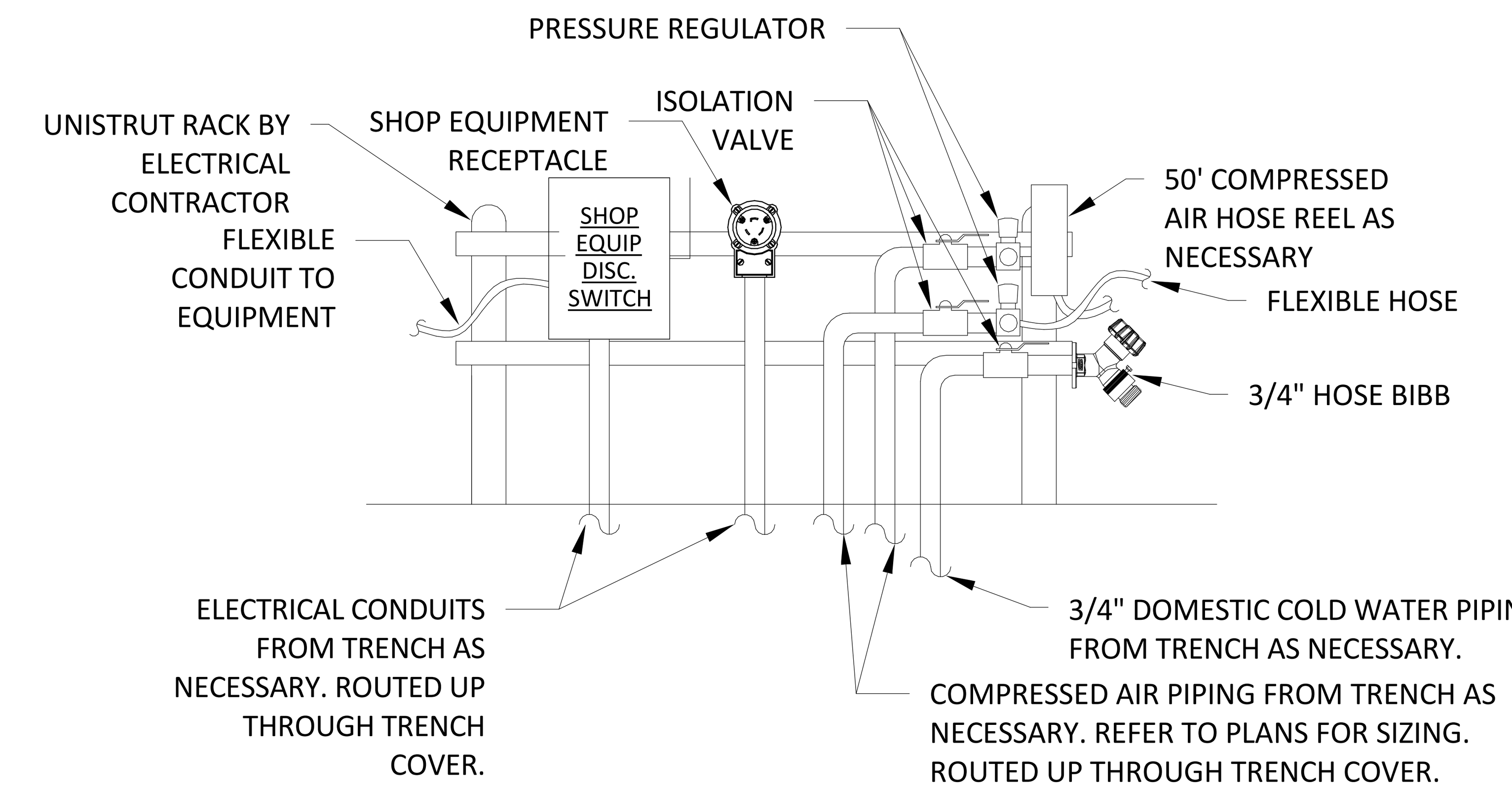
1. LIFTMASTER MODEL SL595101U, 1HP, 120V AC SLIDE GATE OPERATOR. PROVIDE LIFTMASTER HTRNB HEATER KIT. INSTALL GATE OPERATOR WITH ADJUSTABLE RAILS CONFIGURATION PER MANUFACTURERS INSTRUCTIONS.
2. 30/2P/N3R DISCONNECT SWITCH.
3. UNISTRUT RACK.
4. WEATHERPROOF GFCI RECEPTACLE.

6 GATE OPERATOR RACK DETAIL
NOT TO SCALE



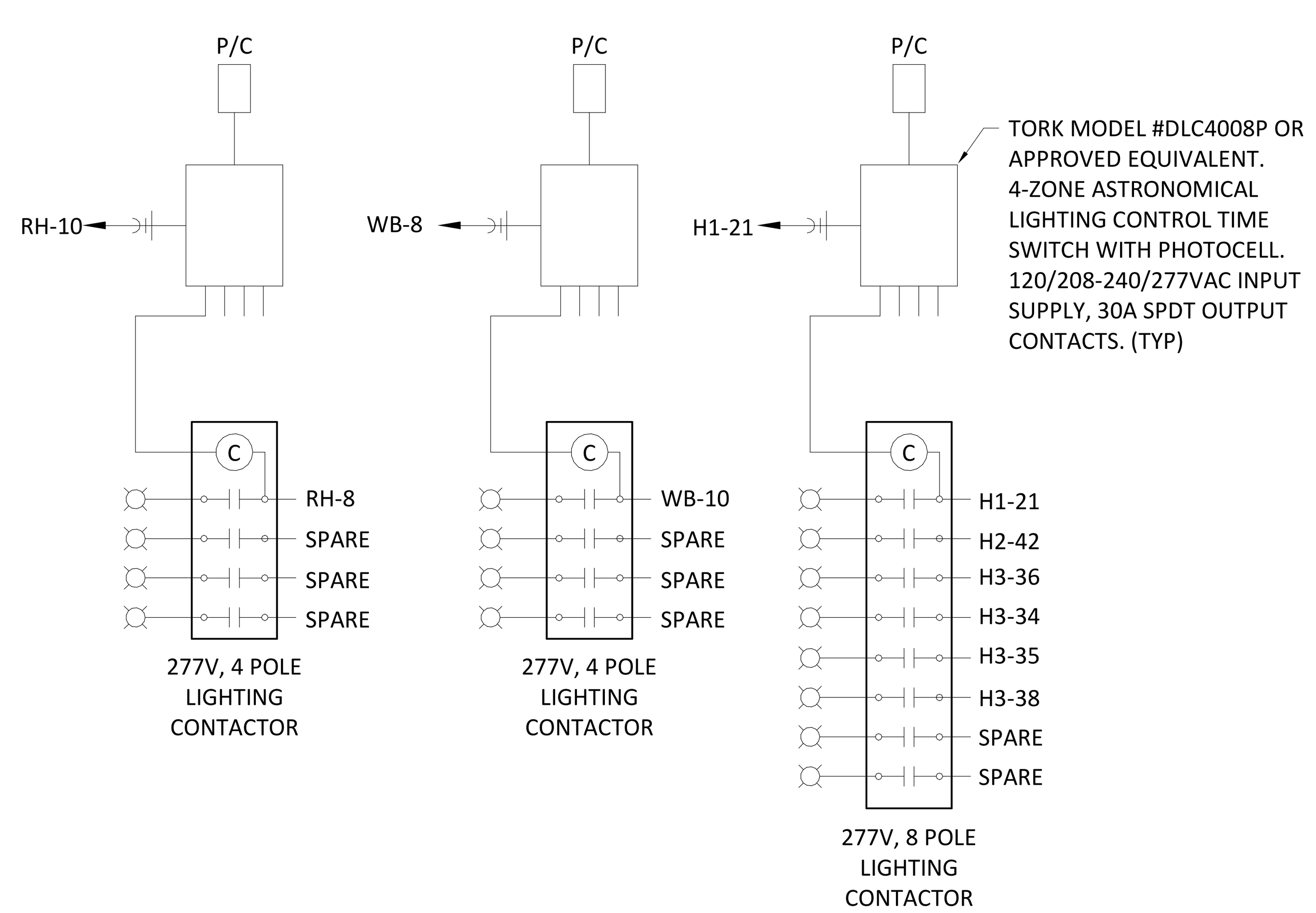
NOTE: REFER TO PLANS FOR EQUIPMENT AT EACH TRENCH. UTILITY SUPPLY SHOWN ON DETAIL TO BE PROVIDED AS NECESSARY AT EACH TRENCH. NOT ALL TRENCHES WILL INCLUDE ALL UTILITIES.

5 UTILITY TRENCH CUT VIEW ELECTRICAL DETAIL
NOT TO SCALE

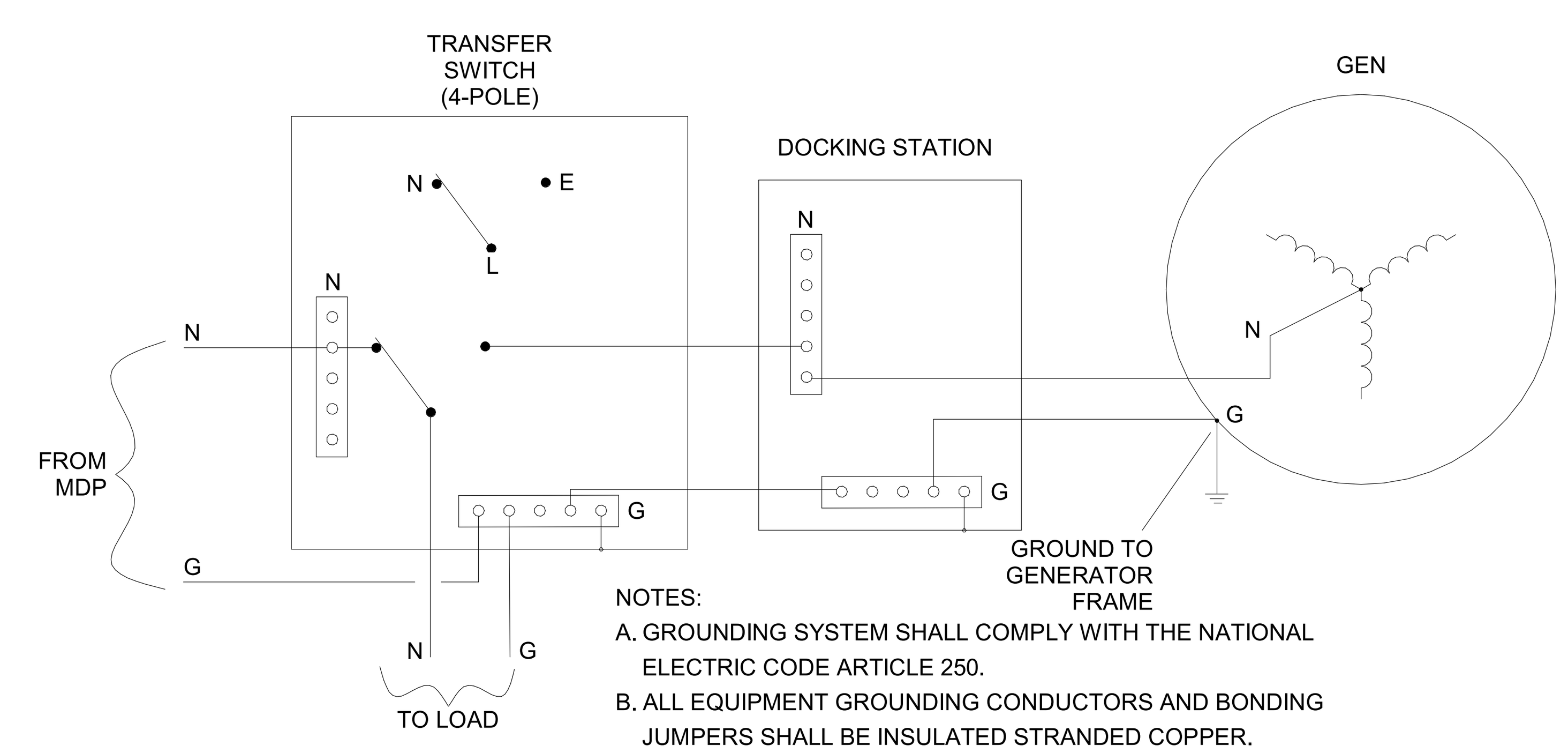


NOTE: REFER TO PLANS FOR EQUIPMENT AT EACH UTILITY STATION. EQUIPMENT SHOWN ON DETAIL TO BE PROVIDED AS NECESSARY AT EACH STATION. NOT ALL STATIONS WILL INCLUDE ALL EQUIPMENT SHOWN.

4 UTILITY RACK ELECTRICAL DETAIL
NOT TO SCALE

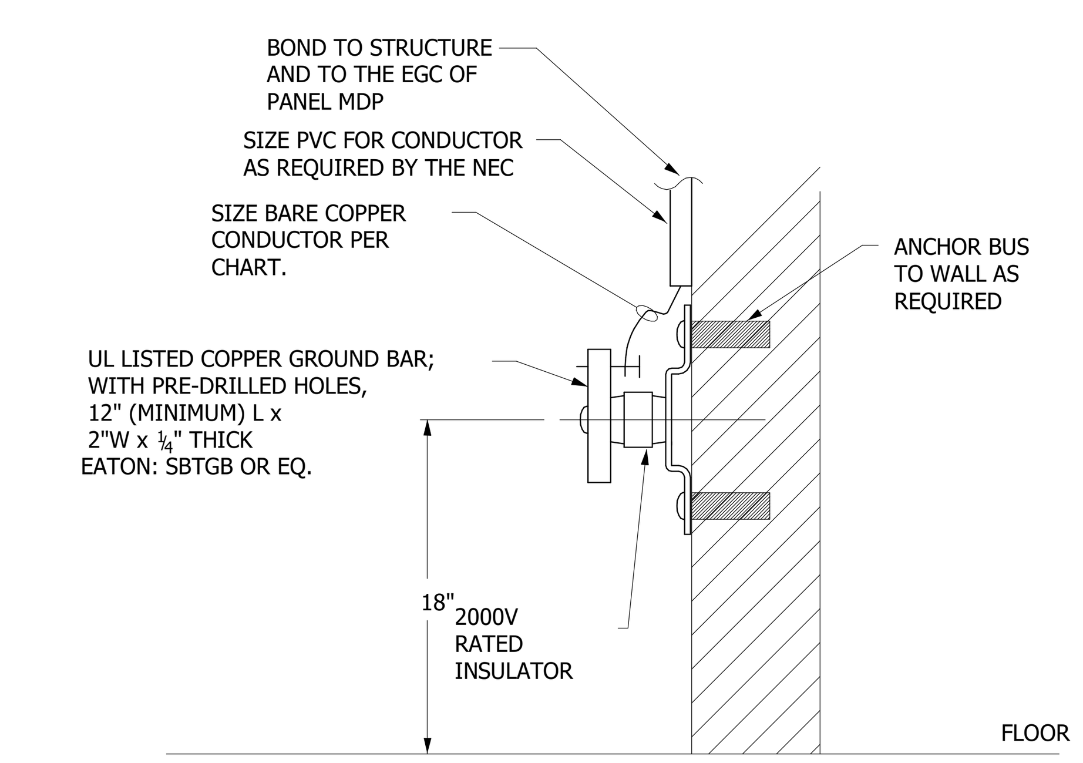


3 EXTERIOR LIGHTING CONTROL DIAGRAM
NOT TO SCALE



NOTES:
A. GROUNDING SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE ARTICLE 250.
B. ALL EQUIPMENT GROUNDING CONDUCTORS AND BONDING JUMPERS SHALL BE INSULATED STRANDED COPPER.
C. ONLY (1) GROUNDING CONDUCTOR SHALL BE TERMINATED IN EACH TERMINATION POINT ON THE EQUIPMENT GROUND BUS BAR. PROVIDE BUS BAR SIZED FOR TOTAL QUANTITY OF GROUNDING CONDUCTORS.

2 GENERATOR GROUND SYSTEM ONE-LINE DIAGRAM (GEN-1, GEN-2)
NOT TO SCALE



NOTES:

PART NUMBERS ARE BASED ON COOPER/EATON. OTHER APPROVED MANUFACTURERS; PANDUIT, LEGRAND, AND HUBBELL.

TWO-HOLE COMPRESSION LUGS AND JOINT COMPOUND SHALL BE USED FOR ALL TERMINATIONS.

1 GROUND BUS DETAIL
NOT TO SCALE

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL DETAILS

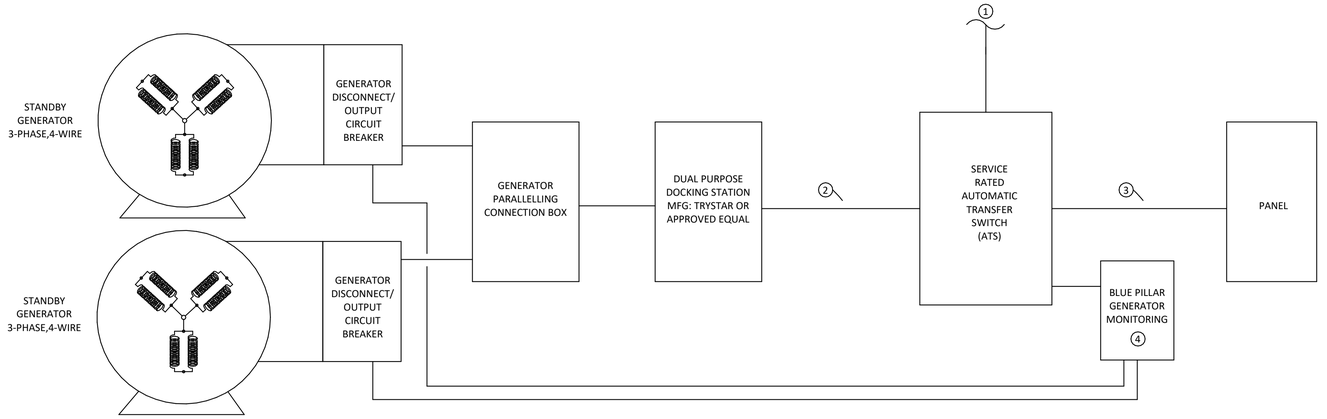
Texas Department of Transportation

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

E5.1
9501

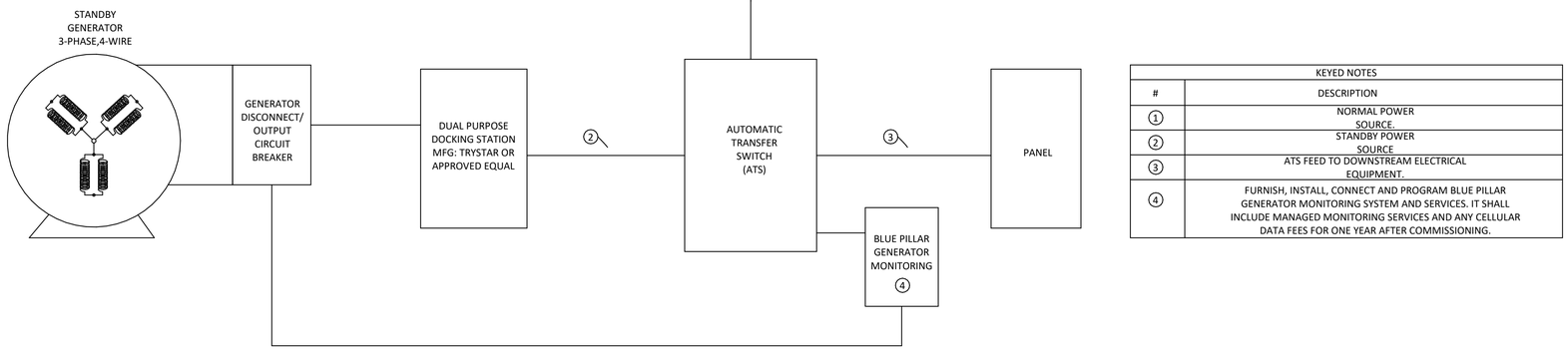


KEYED NOTES	
#	DESCRIPTION
1	NORMAL POWER SOURCE.
2	STANDBY POWER SOURCE
3	ATS FEED TO DOWNSTREAM ELECTRICAL EQUIPMENT.
4	FURNISH, INSTALL, CONNECT AND PROGRAM BLUE PILLAR GENERATOR MONITORING SYSTEM AND SERVICES. IT SHALL INCLUDE MANAGED MONITORING SERVICES AND ANY CELLULAR DATA FEES FOR ONE YEAR AFTER COMMISSIONING.

4 FACILITY STANDBY GENERATOR INSTALLATION DETAIL Copy 1
NOT TO SCALE

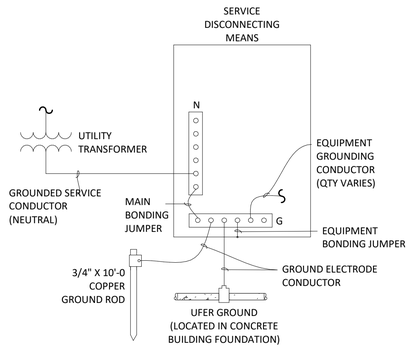
BLUE PILLAR SYSTEM NOTES

1. ROUTE 1-1/4" CONDUIT FROM BLUE PILLAR CONTROL PANEL TO MDF ROOM.
2. ROUTE 3-1" CONDUIT FROM BLUE PILLAR CONTROL PANEL TO GENERATOR CONTROL PANEL.
3. ROUTE 4-1" CONDUIT FROM BLUE PILLAR CONTROL PANEL TO THE AUTOMATIC TRANSFER SWITCH.



KEYED NOTES	
#	DESCRIPTION
1	NORMAL POWER SOURCE.
2	STANDBY POWER SOURCE
3	ATS FEED TO DOWNSTREAM ELECTRICAL EQUIPMENT.
4	FURNISH, INSTALL, CONNECT AND PROGRAM BLUE PILLAR GENERATOR MONITORING SYSTEM AND SERVICES. IT SHALL INCLUDE MANAGED MONITORING SERVICES AND ANY CELLULAR DATA FEES FOR ONE YEAR AFTER COMMISSIONING.

3 RADIO BLDG STANDBY GENERATOR INSTALLATION DETAIL
NOT TO SCALE



2 Service Ground Electrode System One-Line Diagram
NOT TO SCALE

NOTES:

A. GROUNDING SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE ARTICLE 250

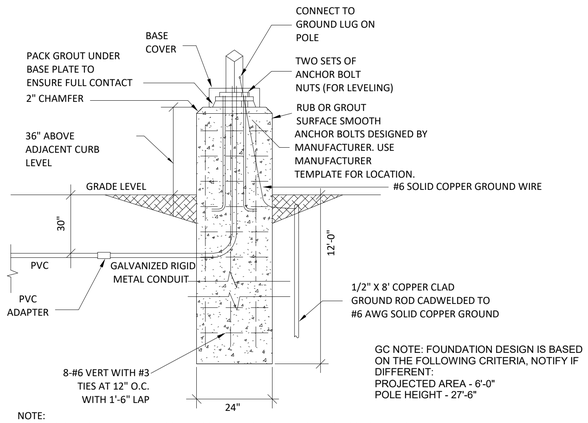
B. ALL EQUIPMENT GROUNDING CONDUCTORS AND BONDING JUMPERS SHALL BE INSULATED STRANDED COPPER. GROUND ELECTRODE CONDUCTORS SHALL BE BARE STRANDED COPPER.

C. WHERE GROUND ELECTROD CONDUCTORS OR GROUND RODS PENETRATE THROUGH OR ENTER CONCRETE FOUNDATIONS, PROVIDE PVC SLEEVE EXTENDING NOT LESS THAN 2" ABOVE FINISHED FLOOR

D. UFER GROUND (CONCRETE-ENCASED ELECTRODE) SHALL CONSIST OF AT LEAST 20'-0" OF EITHER OPTION BELOW:
   a. ONE OR MORE ELECTRICALLY CONDUCTIVE COATED STEEL REINFORCEMENT BARS OF NOT LESS THAN 0.5" IN DIAMETER, INSTALLED IN ONE CONTINUOUS 20'-0" LENGTH, OR IF IN MULTIPLE PIECES CONNECTED TOGETHER BY STEEL TIE WIRES OR WELDING.
   b. BARE COPPER CONDUCTOR NOT SMALLER THAN NO. 4 AWG.

E. GROUNDING CONNECTIONS TO GROUND ROD SHALL BE MADE WITH MECHANICAL GROUNDING CONNECTOR EXPOSED NOT LESS THAN 2" ABOVE GRADE OR FINISHED FLOOR. GROUNDING CONNECTIONS TO BUILDING FOUNDATION STEEL REINFORCEMENT OR GROUND ELECTRODE CONDUCTOR SPLICES SHALL BE BY MEANS OF EXOTHERMIC WELDS.

F. ONLY (1) GROUNDING CONDUCTOR SHALL BE TERMINATED IN EACH TERMINATION POINT ON THE EQUIPMENT GROUND BUS BAR. PROVIDE BUS BAR SIZED FOR TOTAL QUANTITY OF GROUNDING CONDUCTORS



NOTE:
REFER TO STRUCTURAL DRAWINGS AND CONCRETE SPECIFICATIONS FOR CONCRETE POLE BASE, INCLUDING BACKFILL, CONCRETE, REINFORCING STEEL LAP SPLICES, AND REINFORCING STEEL COVERS.

1 POLE BASE DETAIL
NOT TO SCALE

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

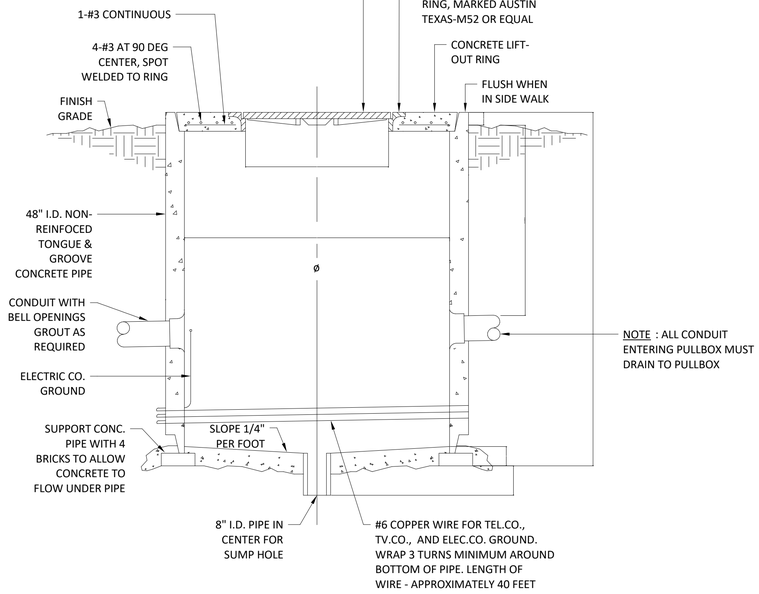
ISSUED: 2021
DRAWN BY: J.S.
CHECKED BY: S.S.B.
REVISIONS:

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

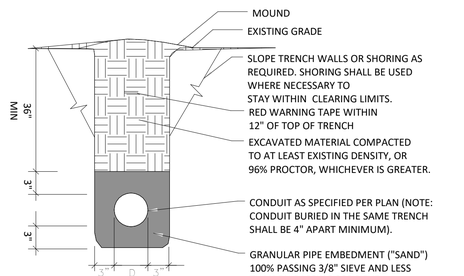
ELECTRICAL DETAILS

E5.2
9502

NOTE : METAL RING AND CONCRETE RING, PRE-CAST TO FIT GROOVE DIA. AND DEPTH WITH 1/2" CLEARANCE AROUND EDGE OF PULLBOX



1 Pullbox Detail
NOT TO SCALE



2 Trench Detail
NOT TO SCALE

STATE OF TEXAS
SHARON S. BICKFORD
77390
LICENSED PROFESSIONAL ENGINEER
09/24/21

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47042062

ISSUED: 2021
DRAWN BY: JS
CHECKED BY: SSB
REVISIONS:

ENCOTECH
ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

ELECTRICAL DETAILS

E5.3
9503

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

ABBREVIATIONS LEGEND

A	AMBER COLORED STROBE
AC	ABOVE CEILING
ADS	ACOUSTICALLY DISTINGUISHABLE SPACE
AIM	ADDRESSABLE INPUT MODULE
AOM	ADDRESSABLE OUTPUT MODULE
AS	AUTOMATIC SPRINKLER COVERAGE
AHJ	AUTHORITY HAVING JURISDICTION
AMP	AMPLIFIER
BATT	BATTERY CABINET
BMS	BUILDING MANAGEMENT SYSTEM
BFP	BACKFLOW PREVENTER
C	CEILING MOUNTED
CA	CLEAN AGENT
CARP	CLEAN AGENT RELEASING PANEL
CELL	CELLULAR DIALER
CMR	CODE MODIFICATION REQUEST
CO	CARBON MONOXIDE
CP	CONTROL PANEL
CU	CONTROL UNIT
DACT	DIGITAL ALARM COMMUNICATOR/TRANSCEIVER
DAS	DISTRIBUTED ANTENNA SYSTEM
DBA	DECIBEL LEVEL
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DL	DELUGE SYSTEM
DS	DRY SYSTEM
E	ELEVATOR RECALL
EOLR	END OF LINE RESISTOR
EX	EXISTING TO REMAIN
EVAC	EMERGENCY EVACUATION NOTIFICATION SYS
F2	SQUARE FEET
F3	CUBIC FEET
FA	FIRE ALARM SYSTEM
FAA	FIRE ALARM ANNUNCIATE
NFAA	SITE ALARM ANNUNCIATE
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FFOP	FIRE FIGHTERS OPERATIONS PANEL
FH	FIRE HYDRANT
FO	FOAM SYSTEM
FP	FIRE PROTECTION
FPCG	FIRE PROTECTION CONSULTING GROUP
FS	FIRE SUPPRESSION SYSTEM
HC	FIRE HOSE CONNECTION
HL	HIGH/LOW PRESSURE SWITCH
IBC	INTERNATIONAL BUILDING CODE
IDC	INITIATING DEVICE CIRCUIT
IFC	INTERNATIONAL FIRE CODE
IR	INFRARED
LF	LINEAR FEET
LOC	LOCAL OPERATOR CONSOLE
NA	NOT APPLICABLE
NAC	NOTIFICATION APPLIANCE CIRCUIT-POWER SUPPLY
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OS&Y	OUTSIDE SCREW & YOKE VALVE
PIV	POST INDICATOR VALVE
PRE	PRE-ACTION SYSTEM
PRV	PRESSURE REDUCING VALVE
PRHS	PRESSURE REDUCING HOSE CONNECTION
PS	PRESSURE SWITCH
R	RELEASING; SUPPRESSION SYS
RTS	REMOTE ALARM TEST SWITCH
RTI	RESPONSE TIME INDEX
RUI	REMOTE UNIT INTERFACE
S	SHUNT TRIP
SC	STROBE CIRCUIT
SF	SQUARE FEET
SLC	SIGNALING LINE CIRCUIT
SOO	SEQUENCE OF OPERATIONS
SOW	SCOPE OF WORK
SRD	SUPPRESSION RELEASING DEVICE
TYP	TYPICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION MODULE
UF	UNDER FLOOR DEVICE
UNO	UNLESS NOTED OTHERWISE
VS	VALVE SUPERVISORY SWITCH
W	WALL MOUNTED
WC	WET CHEMICAL
WF	WATER FLOW
WP	WEATHER PROOF
WS	WET SYSTEM
XP	EXPLOSION PROOF

APPLICABLE CODES

1. INTERNATIONAL CODE COUNCIL
   a. 2018 INTERNATIONAL BUILDING CODE (IBC)
   b. 2020 NATIONAL ELECTRIC CODE (NEC)
   c. 2018 INTERNATIONAL PLUMBING CODE (IPC)
   d. 2018 INTERNATIONAL MECHANICAL CODE (IMC)
2. NATIONAL FIRE PROTECTION ASSOCIATION
   a. 2018 NFPA 1 FIRE CODE
   b. 2018 NFPA 101 LIFE SAFETY CODE
   c. 2016 NFPA 13 WATER-BASED SPRINKLER SYS
   d. 2016 NFPA 24 UNDERGROUND
   e. 2016 NFPA 72 NTL. FIRE ALARM & SIGNALING CODE
3. AHJ: TEXAS STATE FIRE MARSHAL

SPECIFICATIONS LIST

21 05 00	COMMON WORK RESULTS FOR WATER-BASED FIRE SUPPRESSION SYSTEMS
21 13 13	WET-PIPE SPRINKLER SYSTEMS
21 13 16	DRY-PIPE SPRINKLER SYSTEMS
28 38 00	COMMON WORK RESULTS FOR FIRE ALARM SYSTEMS
28 38 05	FIRE DETECTION & ALARM NOTIFICATION SYSTEMS

BASIC BUILDING INFORMATION

THE PROPOSED BUILDINGS ON THE SITE AS SHOWN HAVE THE FOLLOWING CHARACTERISTICS:

1. **OPERATIONS CENTER: SEGMENTS A - G**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±80,000 FT²
   d. MIXED OCCUPANCIES: GROUP B (BUSINESS), S-1 (STORAGE/REPAIR GARAGE), F-1 (FACTORY)
   e. FIRE PROTECTION: FULLY SPRINKLERED AS REQUIRED BY 2018 IBC 903.2
   f. FIRE ALARM: FIRE ALARM DETECTION AND OCCUPANT NOTIFICATION SYSTEM TO BE PROVIDED
2. **WASH BAY: SEGMENT H**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±2,500 FT²
   d. PRIMARY OCCUPANCY: GROUP S-1 (STORAGE/REPAIR GARAGE)
   e. FIRE PROTECTION: NONE
   f. FIRE ALARM: NONE
3. **RADIO TRANSMISSION: SEGMENT J**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±1,700 FT²
   d. PRIMARY OCCUPANCY: GROUP S-1 (STORAGE)
   e. FIRE PROTECTION: NONE
   f. FIRE ALARM: SMOKE DETECTION AND OCCUPANT NOTIFICATION AS SHOWN ON PLANS

FIRE ALARM INSTALLATION NOTES

1. SEE ARCHITECTURAL PLANS FOR FIRE-RESISTANCE RATED WALL LOCATIONS WHERE WALL AND FLOOR/CEILING PENETRATIONS SHALL BE SEALED PER THE IBC.
2. PROVIDE SUPERVISION, CONTROL AND/OR MONITORING OF ALL LIFE SAFETY DEVICES AND AS SHOWN ON THE OPERATIONS MATRIX, WETHER SHOWN ON PLANS OR NOT.
3. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
4. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED TECHNICAL REPRESENTATIVE.
5. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM INSTALLER.
6. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
7. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC.
8. DUCT DETECTORS AND REMOTE INDICATORS TO BE PROVIDED BY FIRE ALARM CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. DUCT DETECTORS MUST BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICING AND TESTING. PROVIDE REMOTE TEST SWITCHES FOR SMOKE DETECTORS INCLUDING DAMPER SMOKE DETECTORS.
9. COORDINATE WITH MECHANICAL CONTRACTOR FOR AHU SHUTDOWN SEQUENCING. SINGLE DUCT SMOKE DETECTOR SHOULD NOT SHUT DOWN ALL UNITS.
10. ALL WIRING TO THE FACP IN EXPOSED AREAS SHALL BE IN CONDUIT. CONTRACTOR SHALL COORDINATE USE OF CABLE TRAYS WHERE USED FOR PLENUM RATE CABLE.
11. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

FIRE ALARM SCOPE OF WORK

PROVIDE COMPLETE NEW ADDRESSABLE FIRE DETECTION AND NOTIFICATION SYSTEM FOR THE OPERATIONS CENTER AND RADIO TOWER BLDG AS DEPICTED IN THESE DOCUMENTS INCLUDING ANY ARCHITECTURAL SUPPLEMENTAL INFORMATION, ASI'S.

1. AN INTELLIGENT ADDRESSABLE NETWORKED SYSTEM SHALL BE PROVIDED.
2. CONTROL AND SIGNALING LINE CIRCUITS TO BE CLASS B.
3. ALL FIRE ALARM COMPONENTS SHALL BE OF ONLY NEW EQUIPMENT.
4. A CONNECTION TO THE SITE FIBER OPTIC SYSTEM WILL BE PROVIDED FOR THE SUBCONTRACTOR IN AN IDF ROOM TO BE DESIGNATED BY THE CONTRACTOR. THE FIRE ALARM SUBCONTRACTOR SHALL PROVIDE FIBER OPTIC CABLING AND CONNECTION FROM THE FACP TO THE SITE FIBER OPTIC SYSTEM. COORDINATE WITH CONTRACTOR FOR COMPATIBLE CONNECTOR. FINAL CONNECTIONS SHALL BE MADE BY THE TECHNOLOGY EQUIPMENT CONTRACTOR.
5. REFER TO ARCHITECTURAL DOCUMENTS FOR PHASING OF CONSTRUCTION.
6. PROCEDURES:
   A. WRITTEN REQUESTS FOR INFORMATION, RFI'S, SHALL BE REQUIRED IN ORDER TO CLARIFY DISCREPANCIES OR INSUFFICIENT INFORMATION.
   B. THE CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH CAUSE MAJOR DEVIATIONS IN THE WORK SHOWN.
   C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH THE GENERAL CONTRACTOR WHETHER PR'S OR ASI'S HAVE BEEN POSTED.
   D. PRIOR TO SUBMITTAL FOR PERMIT, THE CONTRACTOR SHALL PROVIDE ALL DRAWINGS, CALCULATIONS, AND SUBMITTALS FOR REVIEW BY THE STAKEHOLDERS. STAKEHOLDERS SHALL BE DEFINED AS THE OWNER, FPE, GC OR ARCHITECT AS DEFINED IN THE SPECIFICATIONS. SUBMITTALS NOT APPROVED BY THE STAKEHOLDERS SHALL NOT BE SUBMITTED FOR PERMITTING TO THE AHJ.
   E. ONCE APPROVED BY THE STAKEHOLDERS, THE CONTRACTOR SHALL PROVIDE ALL DOCUMENTS AND INFORMATION REQUIRED TO OBTAIN A PERMIT FOR THE INSTALLATION OF THIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMIT FEES AND SHALL PROVIDE ALL MATERIALS AND EFFORT REQUIRED FOR SUBMITTAL OF ANY AND ALL REQUIRED PERMITS.
   F. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MAINTAIN THE INTEGRITY OF AND THE AESTHETICS OF THE SITE AND BUILDING ELEMENTS AFFECTED BY THE THIS WORK. SHOULD ANY DAMAGE TO SITE OR BUILDING FEATURES BE CAUSED BY THE CONTRACTOR AS PART OF THIS WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED MATERIALS OR OTHER ITEMS TO THE SATISFACTION OF THE ARCHITECT AND OWNER.
   G. DEVICE LOCATION SHOWN ON THIS DRAWING ARE SCHEMATIC IN NATURE. NOT ALL APPURTENANCES ARE EXPECTED TO BE SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINAL DEVICES AND EQUIPMENT SIZES, DIMENSIONS, LOCATIONS, AND ELEVATIONS BASED ON FIELD CONDITIONS.
   H. IT IS THE SELECTED INSTALLING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH MECHANICAL, STRUCTURAL AND OTHER TRADES DURING CREATION OF SHOP DRAWINGS AND DURING INSTALLATION.
   I. THROUGHOUT CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN ON-SITE A SET OF THE MOST CURRENT WORKING DRAWINGS THAT BEAR THE APPROVAL MARK OF THE AHJ. WHERE FIELD MODIFICATIONS ARE MADE TO THE SYSTEM, THEY SHALL BE RECORDED ON THE WORKING DRAWINGS FOR INCORPORATION INTO THE PROJECT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS AS PART OF THE PROJECT CLOSE-OUT DOCUMENTS AND TRAINING.
   J. THE CONTRACTOR SHALL COORDINATE TESTING AND INSPECTIONS WITH THE OWNER AND ARCHITECT AND IS RESPONSIBLE FOR ALL INSPECTION FEES.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED POWER FOR THE FOLLOWING:
   A. NEW FIRE ALARM PANEL, AT THE DESIGNATED LOCATION
   B. FIRE SUPPRESSION AIR COMPRESSOR
   C. FIRE SUPPRESSION QUICK-OPENING DEVICES
8. ALTERNATE LOCATIONS OF CONTROL EQUIPMENT AS SHOWN MUST BE SUBMIT TO THE ARCHITECT AND FPE FOR REVIEW AND APPROVAL PRIOR TO EQUIPMENT PLACEMENT.

SYMBOLS LEGEND

SUPERSCRIPT LEGEND
##= CANDELA RATING WP = WEATHER RESISTANT XP = EXPLOSION PROOF

NOTIFICATION DEVICES

- Ceiling Mounted Horn
- Wall Mounted Horn
- Ceiling Mounted Strobe
- Wall Mounted Strobe
- Ceiling Mounted Horn/Strobe
- Wall Mounted Horn/Strobe
- Wall Mounted Electric Bell (10"DIA - 24 VAC)

DETECTION DEVICES

- Addressable Smoke Detector
- Duct Smoke Detector
- RTS Duct Detector Remote Indicator and Test Switch
- Heat Detector

MANUAL PULL STATIONS

- F Fire System Pull Station

WIRING DEVICES

- VS Supervisory Switch
- PS Pressure Sensing Switch
- H/L Hi/Low Pressure Switch
- Q/O Quick Opening Device Supervisory Switch

FIRE SYSTEM PANELS

- FACP Fire Alarm Control Panel
- FAA Fire Alarm Annunciator Panel
- NAC Notification Appliance Circuit Extender
- BATT Battery Cabinet
- TVSS Transient Voltage Surge Suppressor
- FATC Fire Alarm Terminal Cabinet

WIRING DEVICES

- AOM Addressable Output Module
- AIM Addressable Input Module
- ISO Isolation Module
- WF Water Flow Switch

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 Texas Firm No. F-15865 www.firepcg.com
14439 NW Military Hwy Suite 108, #430 San Antonio, Texas 78231

FIRE ALARM NOTES & SYMBOLS

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-479420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA0.1
10001

SYMBOLS LEGEND

SUPERSCRIPT LEGEND
##= CANDELA RATING WP = WEATHER RESISTANT XP = EXPLOSION PROOF

NOTIFICATION DEVICES
- Ceiling Mounted Horn
- Wall Mounted Horn
- Ceiling Mounted Strobe
- Wall Mounted Strobe
- Ceiling Mounted Horn/Strobe
- Wall Mounted Horn/Strobe
- Wall Mounted Electric Bell
  10"DIA - 24 VAC

DETECTION DEVICES
- Addressable Smoke Detector
- Duct Smoke Detector
- RTS Duct Detector Remote Indicator and Test Switch
- Heat Detector

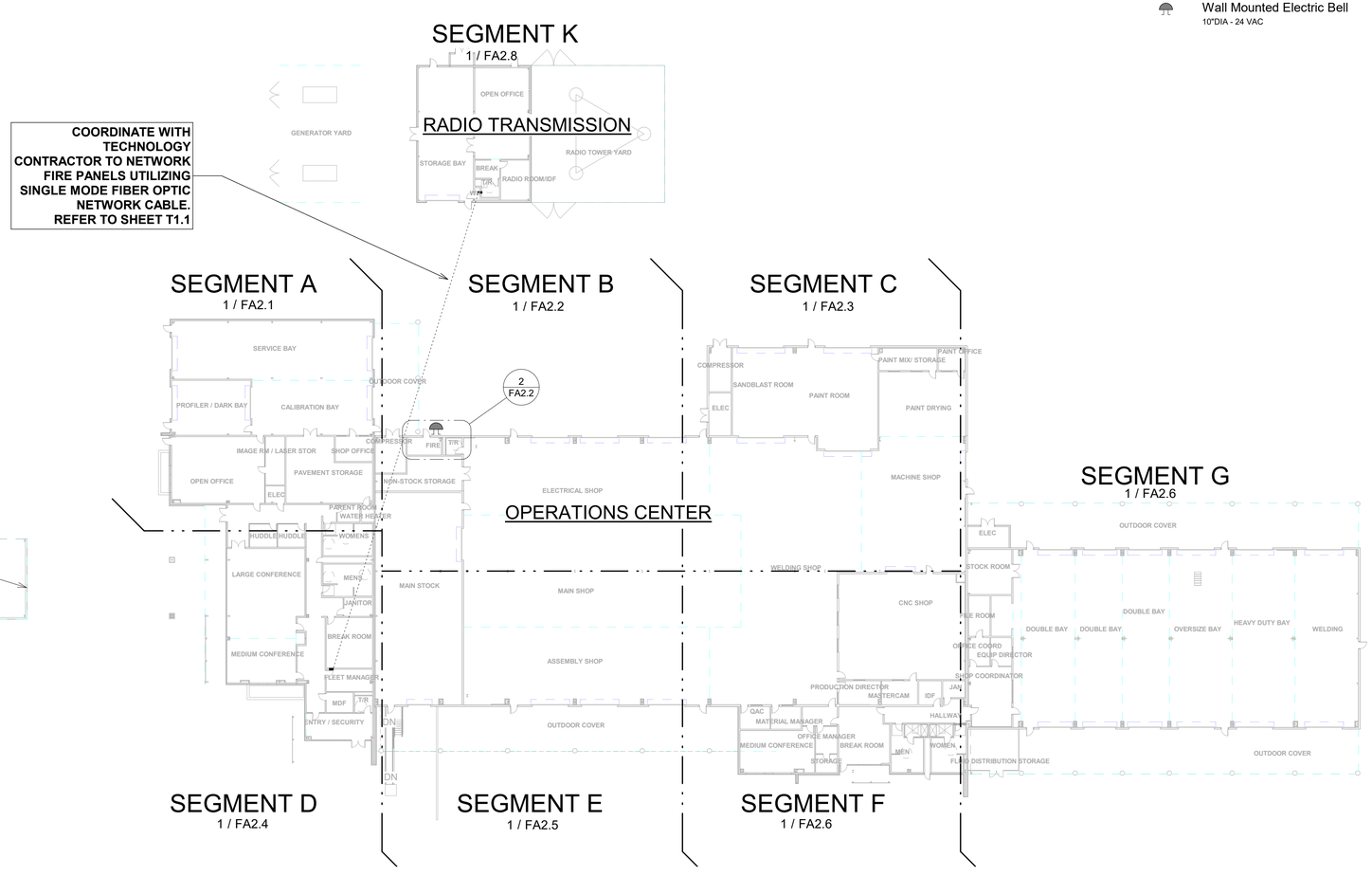
MANUAL PULL STATIONS
- F Fire System Pull Station

WIRING DEVICES
- VS Supervisory Switch
- PS Pressure Sensing Switch
- H/L Hi/Low Pressure Switch
- O/O Quick Opening Device Supervisory Switch

FIRE SYSTEM PANELS
- FACP Fire Alarm Control Panel
- FAA Fire Alarm Annunciator Panel
- NAC Notification Appliance Circuit Extender
- BATT Battery Cabinet
- TVSS Transient Voltage Surge Suppressor
- FATC Fire Alarm Terminal Cabinet

WIRING DEVICES
- AOM Addressable Output Module
- AIM Addressable Input Module
- ISO Isolation Module
- WF Water Flow Switch

COORDINATE WITH TECHNOLOGY CONTRACTOR TO NETWORK FIRE PANELS UTILIZING SINGLE MODE FIBER OPTIC NETWORK CABLE. REFER TO SHEET T1.1



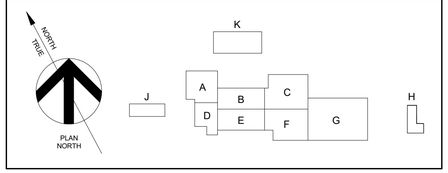
STORAGE
SEGMENT J
COVERED STORAGE
NO FIRE ALARM

WASH BAY
SEGMENT H
NO FIRE ALARM
WASH BAY
EQUIPMENT ROOM

1 OVERALL FIRE ALARM FLOOR PLAN

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firspcg.com San Antonio, Texas 78231

KEY PLAN



FIRE ALARM PLAN - OVERALL

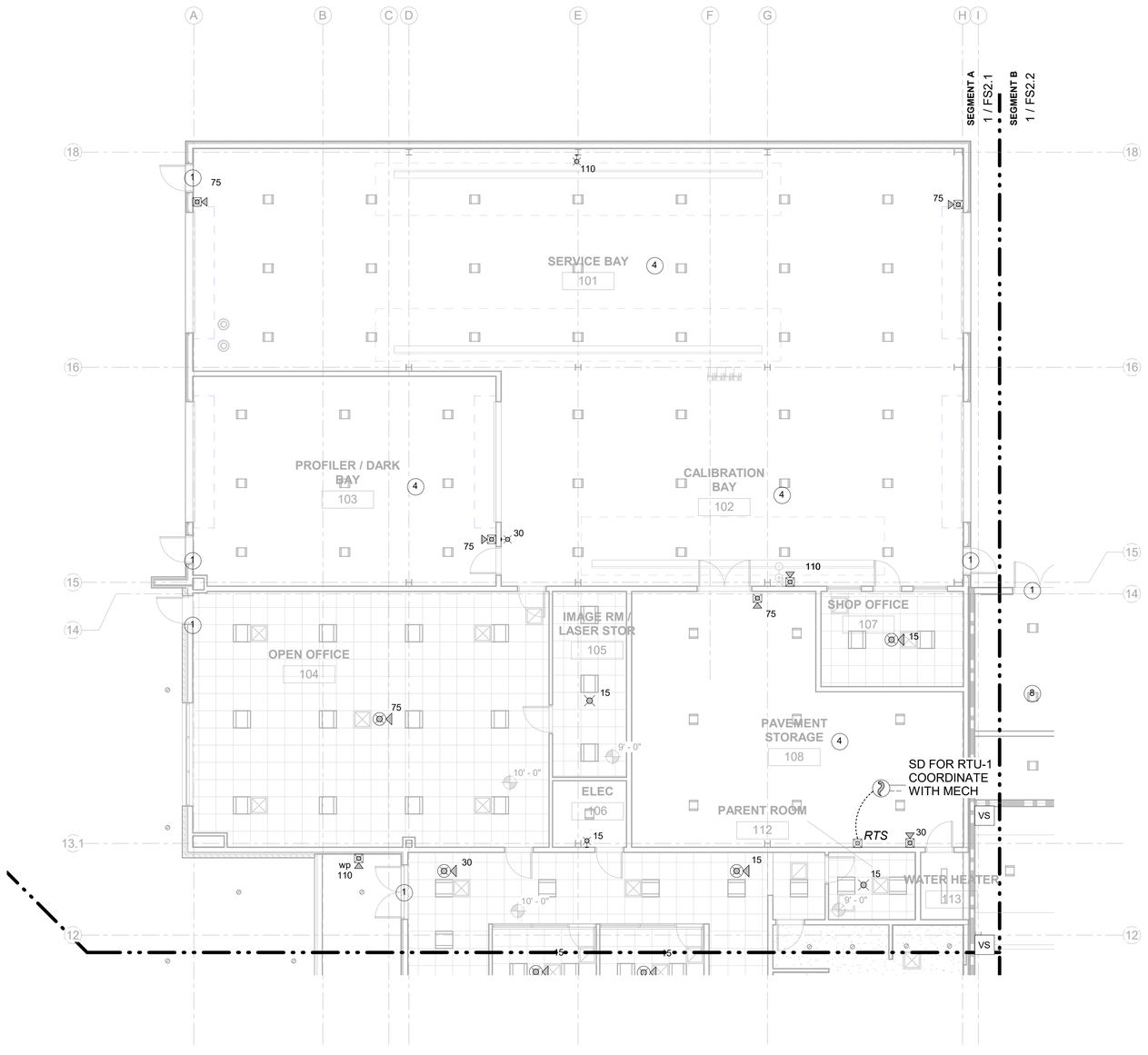
Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-4704200622

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.0
10002



1 FIRE ALARM PLAN - SEGMENT A
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

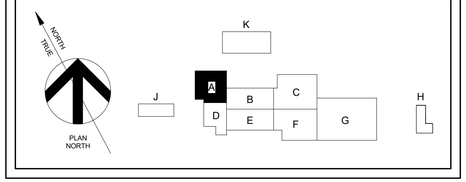
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN



FIRE ALARM PLAN - SEGMENT A

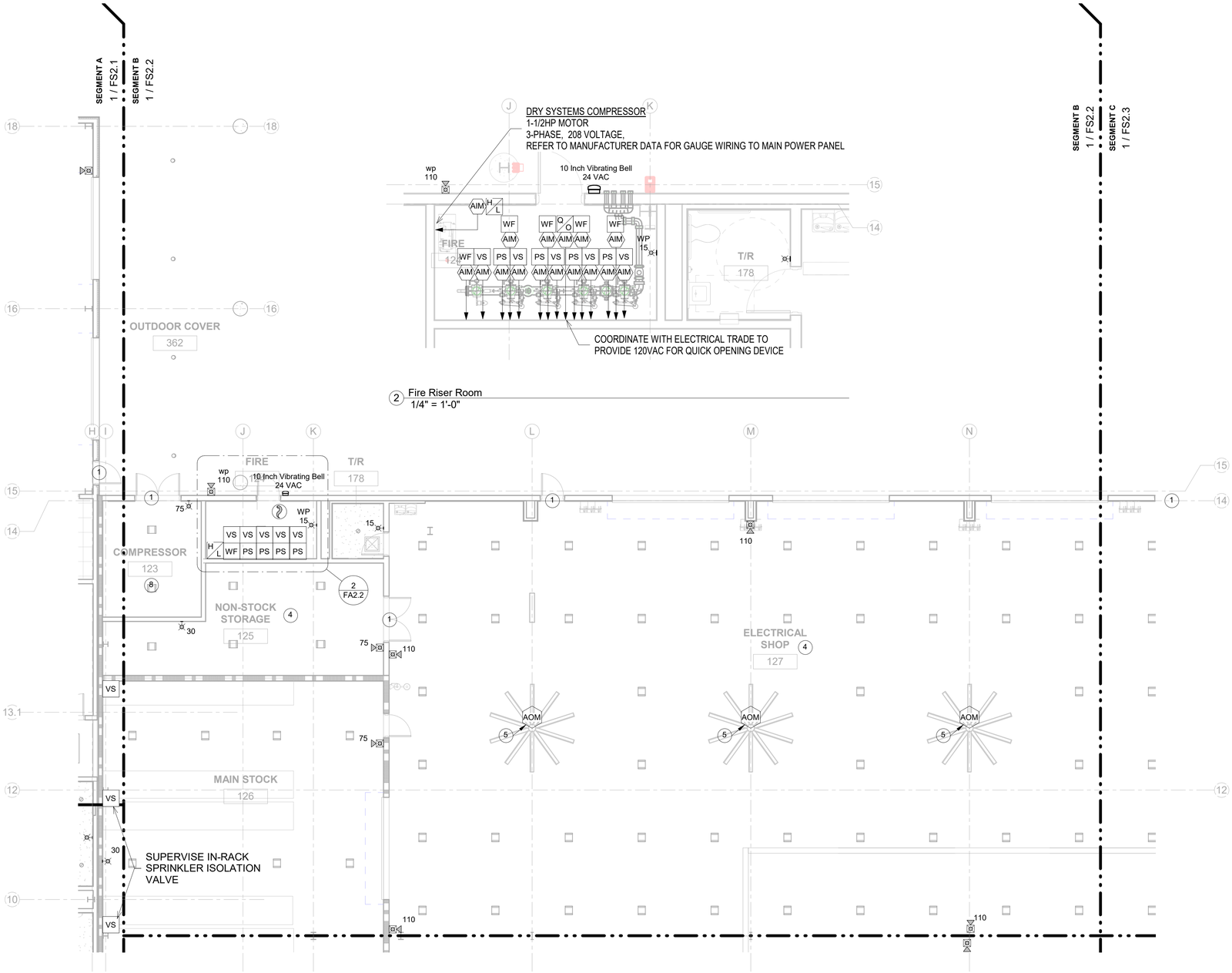
Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47042062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.1
10003



1 FIRE ALARM PLAN - SEGMENT B
1/8" = 1'-0"

2 Fire Riser Room
1/4" = 1'-0"

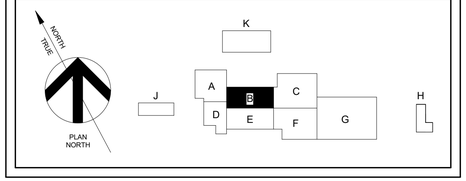
SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'



FIRE ALARM PLAN - SEGMENT B

Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

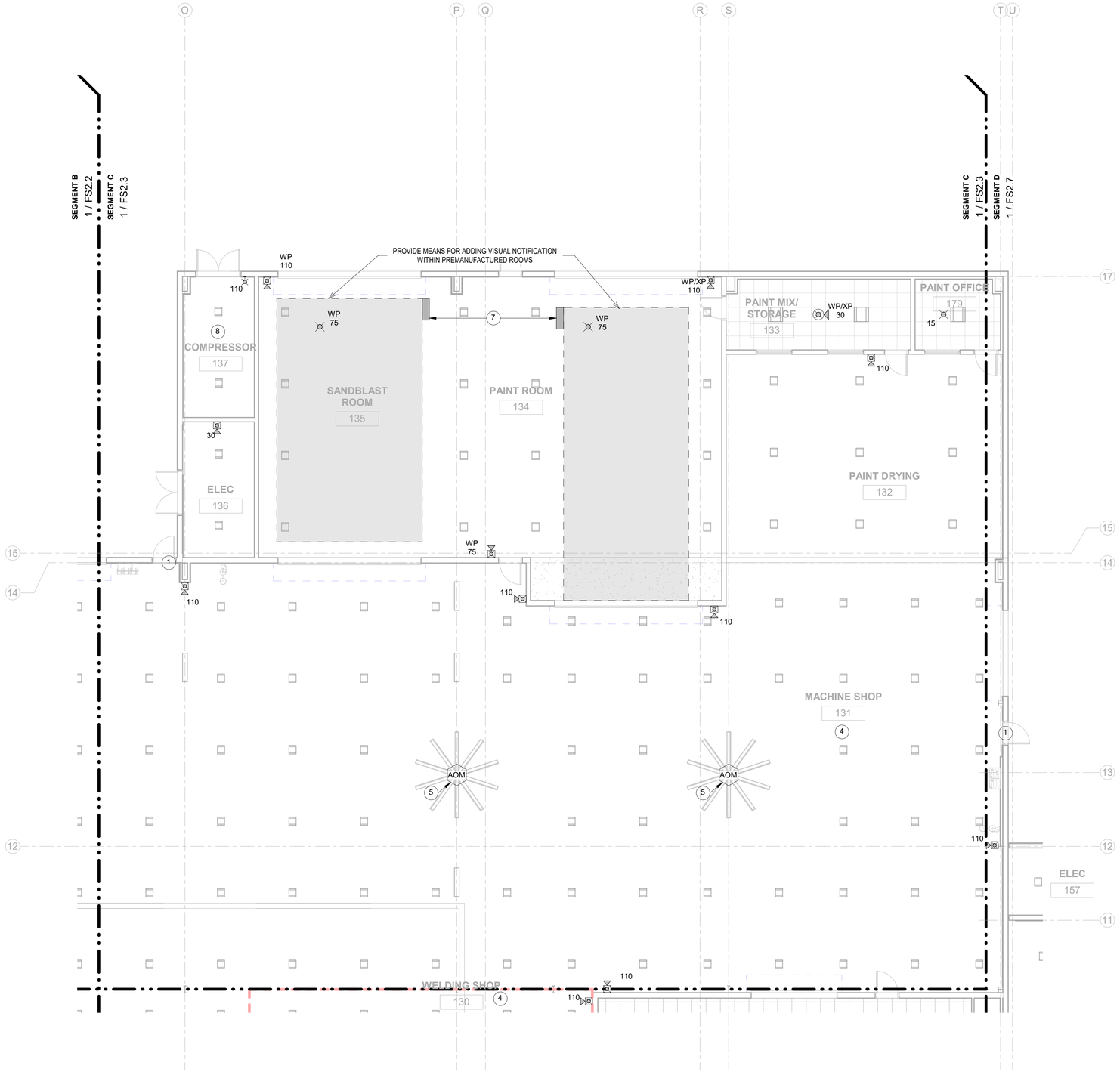
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 150, #430
www.firepcg.com San Antonio, Texas 78231

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.2
10004

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



1 FIRE ALARM PLAN - SEGMENT C
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

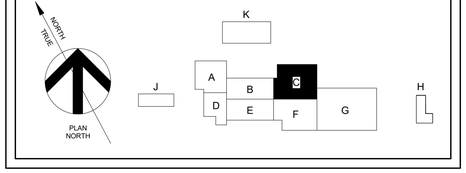
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471
Texas Firm No. F-15865
www.firepcg.com
14439 NW Military Hwy
Suite 108, #430
San Antonio, Texas 78231

KEY PLAN



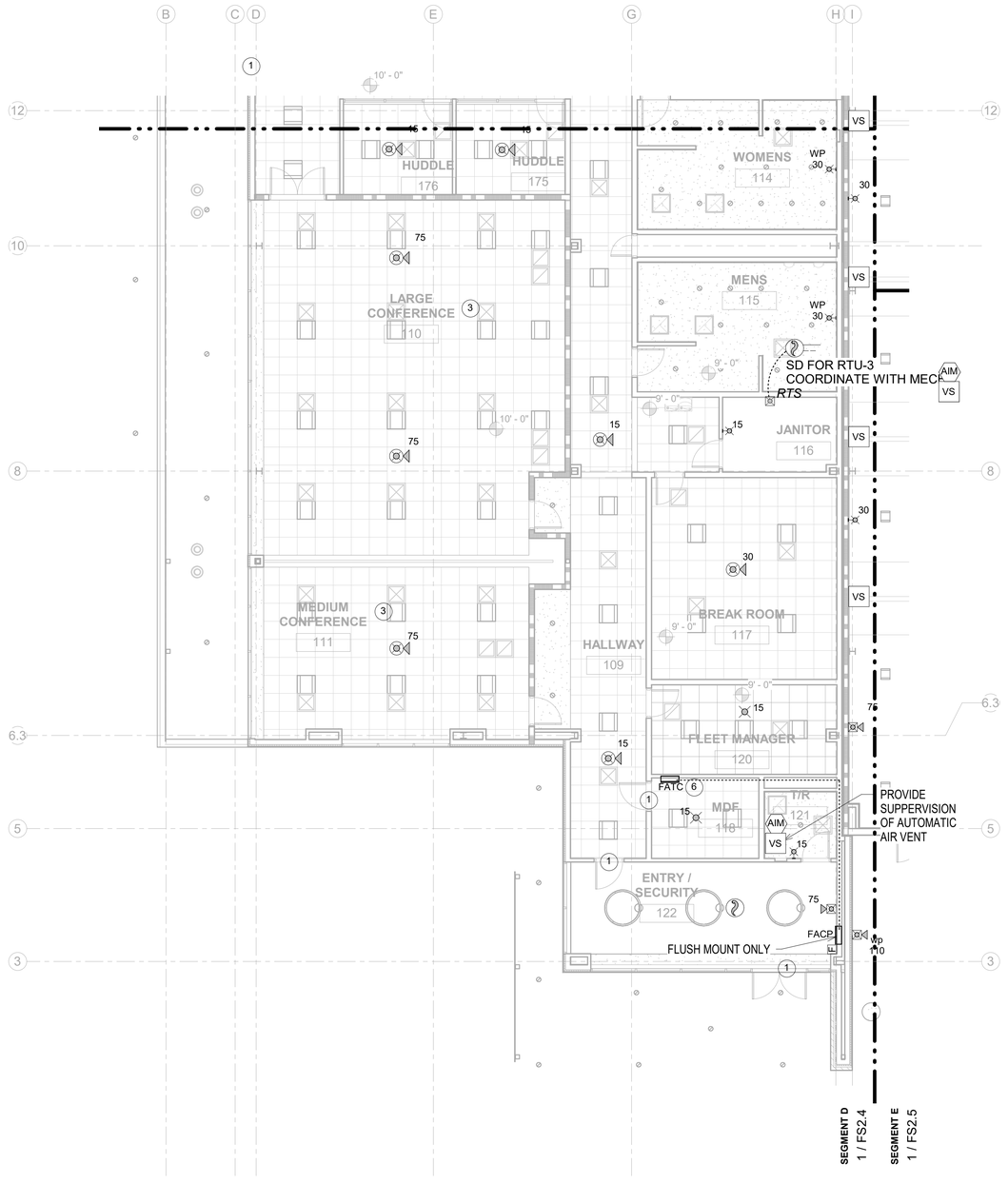
FIRE ALARM PLAN - SEGMENT C

Texas Department of Transportation

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.3
10005



1 FIRE ALARM PLAN - SEGMENT D
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

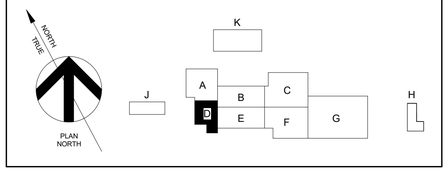
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471
Texas Firm No. F-15865
www.firepcg.com
14439 NW Military Hwy
Suite 105, #430
San Antonio, Texas 78231

KEY PLAN



FIRE ALARM PLAN - SEGMENT D

Texas Department of Transportation
COPYRIGHT © 2021

GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

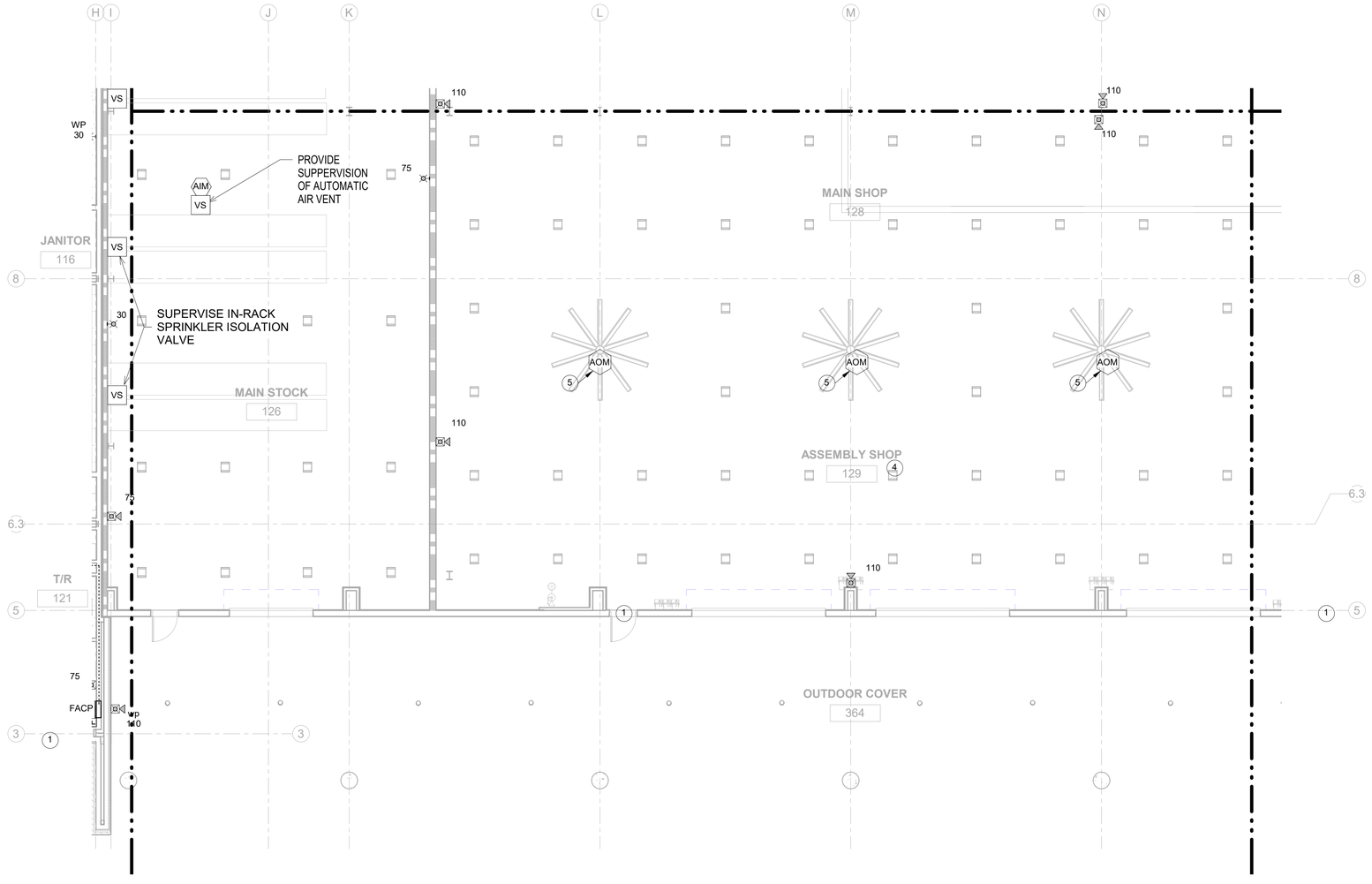
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-479420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.4
10006

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:05:17 PM E:\Dropbox (FPCG)\FPCG Projects\A2020 Projects\20-471 - TxDOT - 973 Operations Center_FPCG Drawings\20-471 - TxDOT - 973 Operation Center_FPCG.rvt



1 FIRE ALARM PLAN - SEGMENT E
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

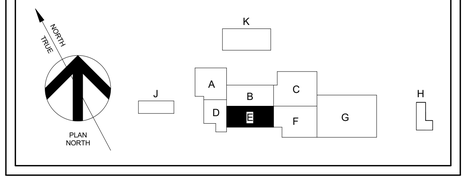
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN

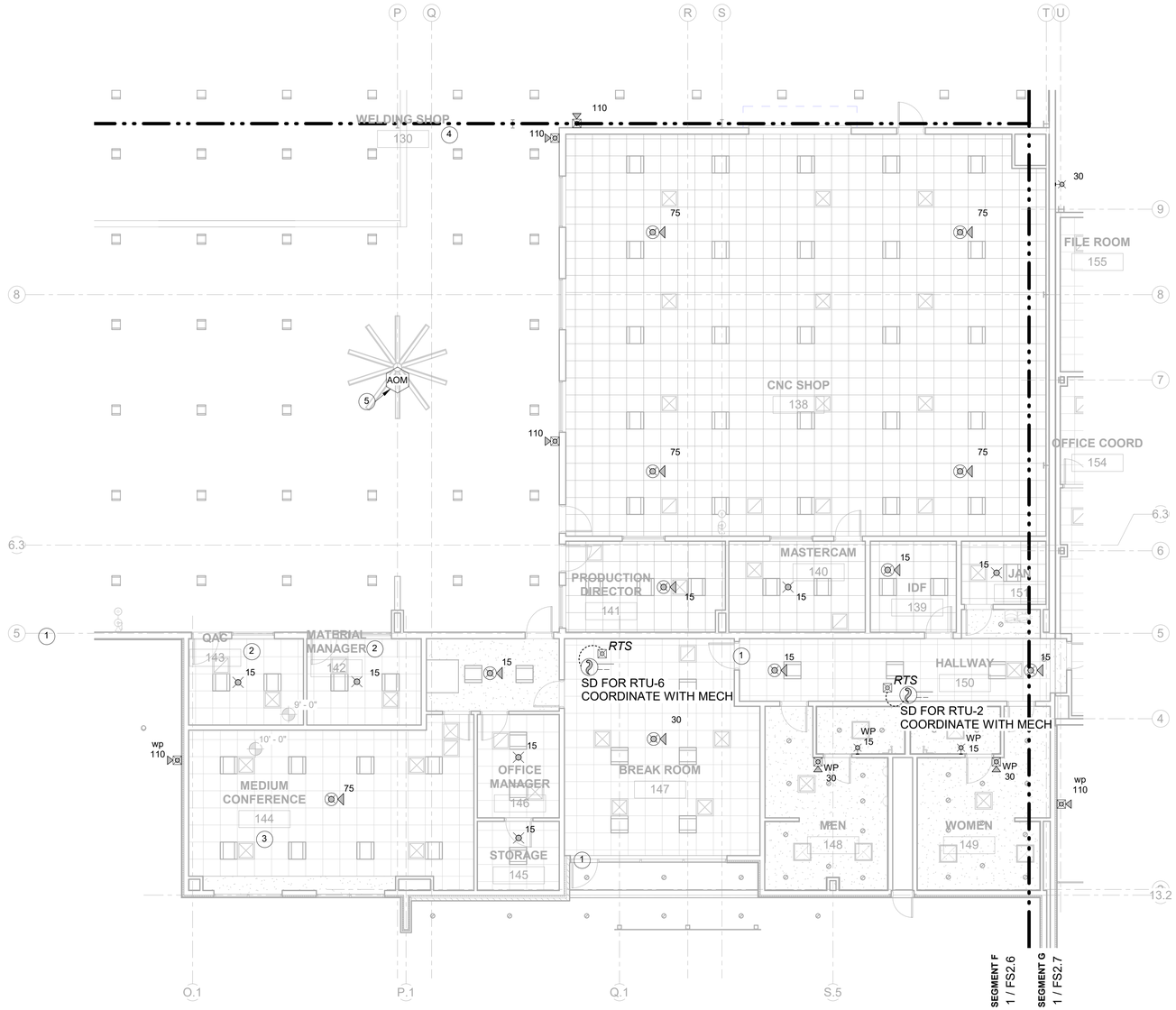


FIRE ALARM PLAN - SEGMENT E

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.5
10007



1 FIRE ALARM PLAN - SEGMENT F
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

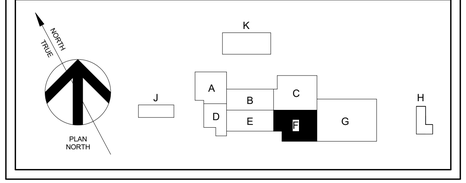
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN

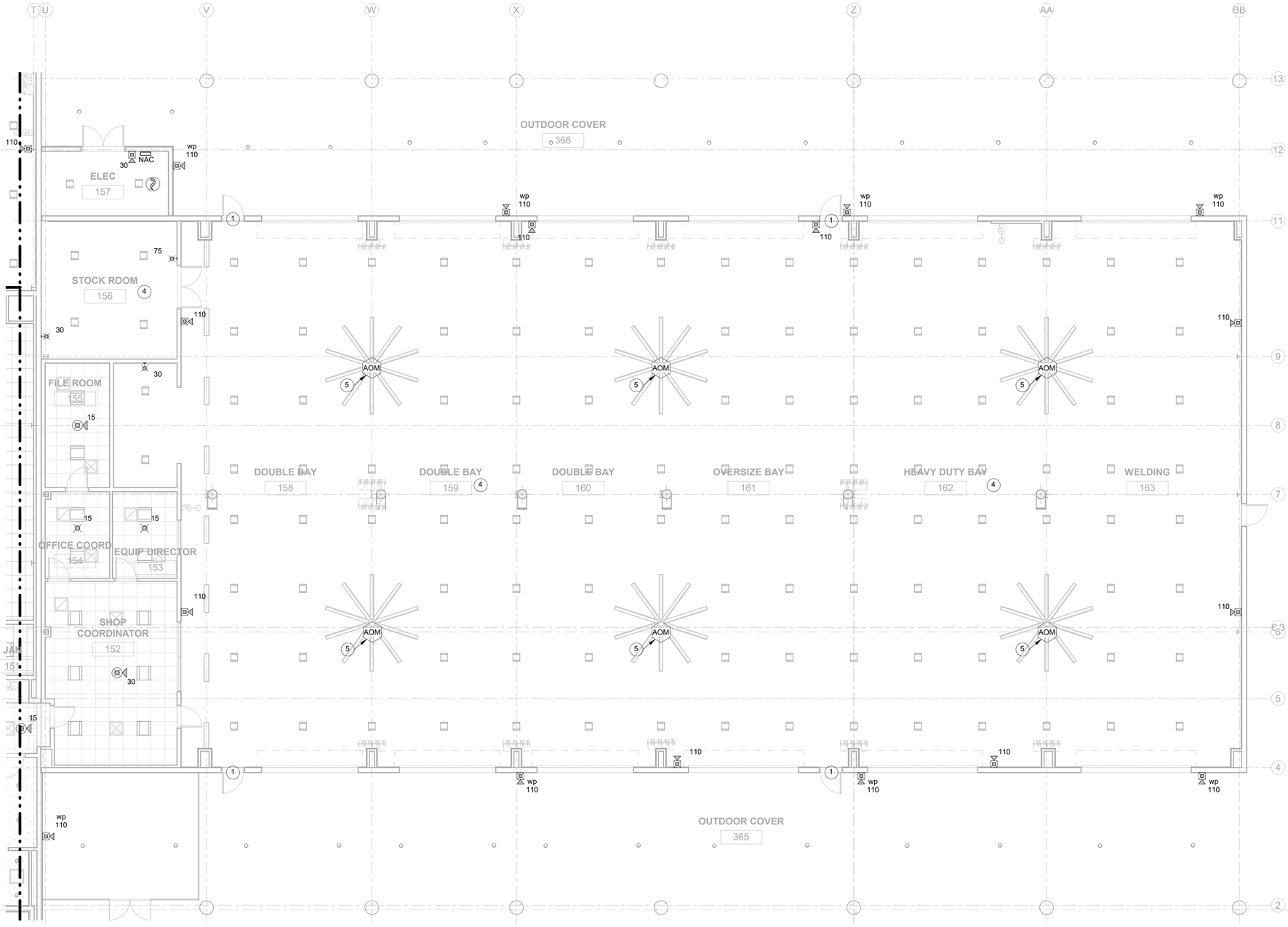


FIRE ALARM PLAN - SEGMENT F

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No. : 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.6
10008



1 FIRE ALARM PLAN - SEGMENT G
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.
7. SPRINKLER ALARM BELL SHALL BE PROVIDED WITH 24VDC AUXILIARY POWER FROM THE FIRE ALARM SYSTEM.

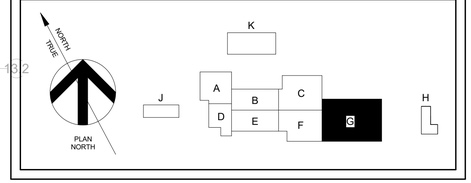
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS. INCLUDE UP TO 5 AOM'S IN BID FOR THIS PURPOSE. LOCATIONS TO BE COORDINATED UPON FINAL SECURITY SYSTEM DESIGN.
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL. COORDINATE LOCATION OF AOM TO BE WITHIN 3 FT OF FAN CONTROLLER.
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.
7. SUPPRESSION RELEASING PANEL, PROVIDED BY PAINT BOOTH CONTRACTOR, SHALL EACH BE MONITORED FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. COORDINATE ACTURAL LOCATION OF SRP TO ENSURE AIM'S ARE LOCATED WITHIN 3 FT.
8. HIGH AMBIENT NOISE ANTICIPATED IN THIS SPACE. VISUAL ONLY NOTIFICATION PROVIDED PER NFPA 72 18.4.3.2.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN



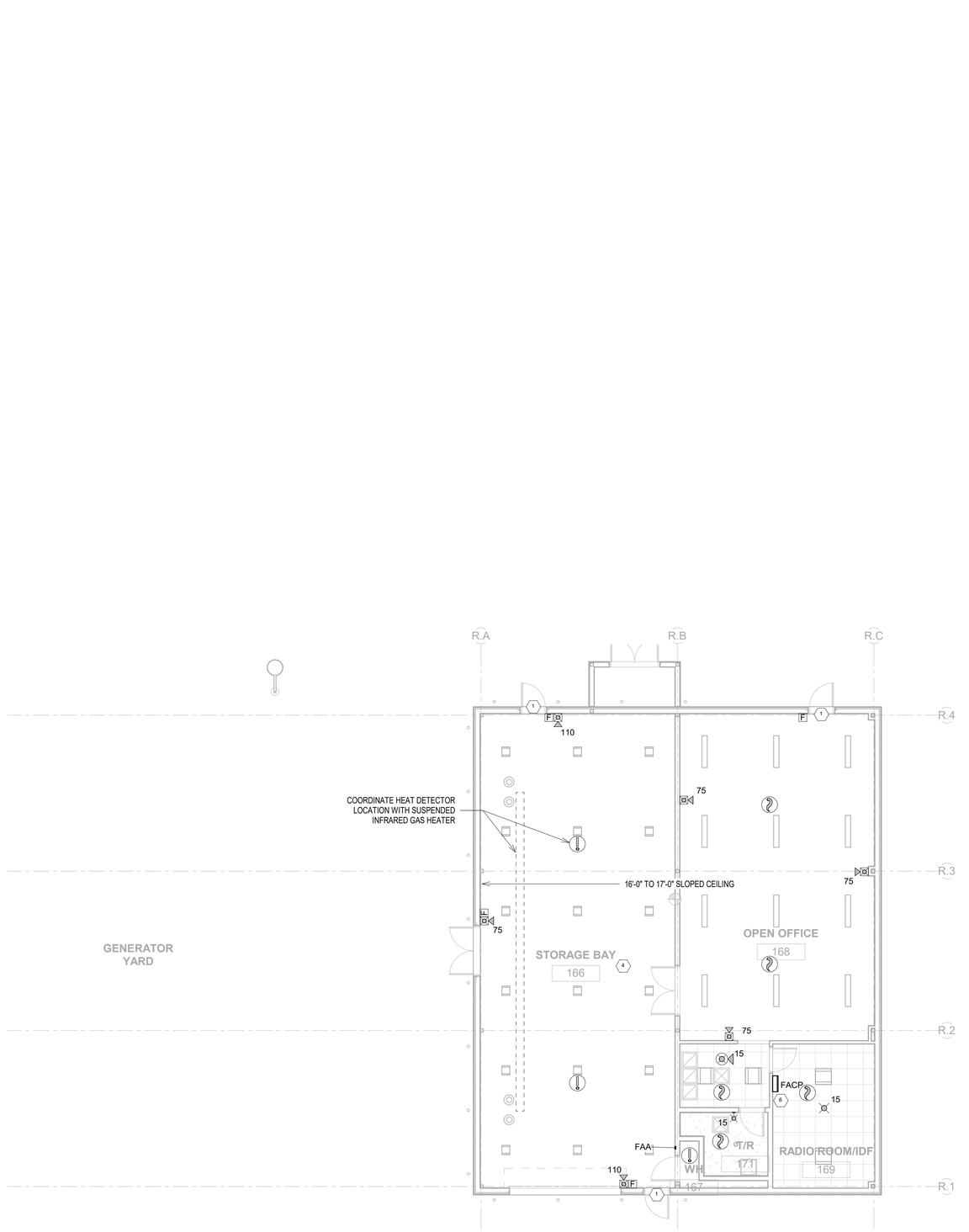
FIRE ALARM PLAN - SEGMENT G

GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.7
10009



1 FIRE ALARM FLOOR PLAN - SEGMENT K
1/8" = 1'-0"

SHEET NOTES

1. INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER AND IDENTIFY ROOMS WHICH MAY HAVE CORROSIVE OR WET ENVIRONMENTS AND PROVIDE NOTIFICATION DEVICES WHICH WITHSTAND THESE ENVIRONMENTS.
2. NOTIFICATION DEVICES NOT SHOWING A CANDELA RATING SHALL BE EITHER 15CD FOR SMALL ROOMS OR ARE TO BE DETERMINED IN FIELD DUE TO FUTURE OBSTRUCTIONS. ADDITIONAL DEVICES MAY BE REQUIRED IN MECH, ELEC, IDF OR SIMILAR ROOMS.
3. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ANY SPECIAL WALL OR CEILING CONDITIONS REQUIRING OTHER THAN STANDARD DEVICES.
4. NOT ALL DEVICES/APPURTENANCES ARE SHOWN ON THESE PLANS TO ALLOW FOR SITE ADJUSTMENTS.
5. WHERE DEVICES ARE SHOWN ON THESE PLANS, CONTRACTOR SHALL ADHERE TO THE LOCATIONS AND TYPES SPECIFIED OR REQUEST ALTERNATES IN WRITING TO THE ARCHITECT.
6. CONTRACTOR SHALL COORDINATE STROBE LAYOUT IN STORAGE SPACES AND MECHANICAL ROOMS WITH PROPOSED OWNER FURNISHINGS AND WITH MECHANICAL EQUIPMENT TO ENSURE FULL VISUAL COVERAGE IS PROVIDED AROUND OBSTRUCTIONS.

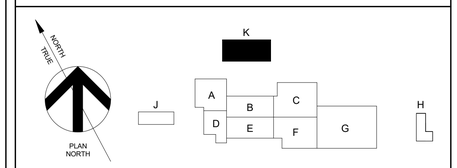
KEY NOTES

1. PROVIDE INTERFACE TO UNLOCK SECURED DOORS
2. ROOMS WITH GLASS CURTAIN WALLS OR WINDOWS ADJOINING SPACES WITH VISUAL NOTIFICATION SHALL NOT REQUIRE ADDITIONAL VISUAL DEVICE IF LUMINESCENCE REQUIREMENTS ARE MET.
3. PROVIDE INTERFACE WITH AUDIO EQUIPMENT AND/OR SOUND MASKING EQUIPMENT TO SHUNT DURING ALARM EVENT.
4. PROVIDE FOR ADDITIONAL WIRING AND STROBES TO MEET CODE REQ'S DUE TO UNDETERMINED EQUIPMENT AND/OR STORAGE HEIGHTS WHICH MAY OBSTRUCT STROBE COVERAGE.
5. PROVIDE HVLS SHUT DOWN UPON WATERFLOW SIGNAL
6. CONTRACTOR TO PROVIDE AND RUN FIBER OPTIC CABLE FROM THIS LOCATION TO THE FACP. COORDINATE WITH TECHNOLOGY CONTRACTOR.

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 | 14439 NW Military Hwy
Texas Firm No. F-15865 | Suite 108, #430
www.firepcg.com | San Antonio, Texas 78231

KEY PLAN



FIRE ALARM PLAN - SEGMENT K

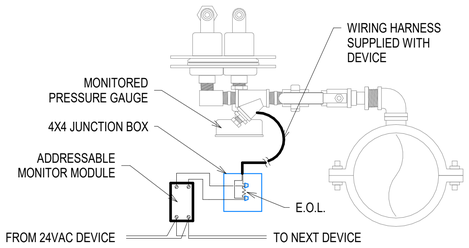
Texas Department of Transportation

GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
Sept. 24, 2021

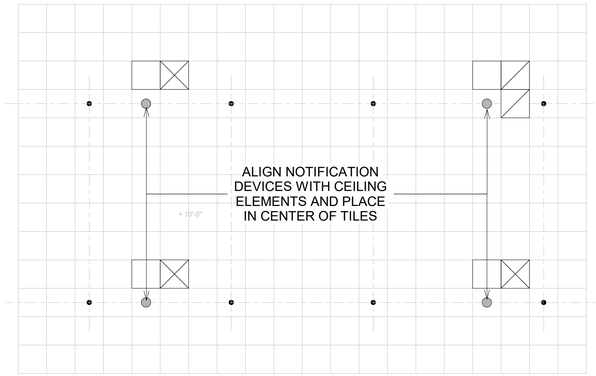
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA2.8
10010



9 Wet Pipe Air Ejector Monitored



8 Front of House Center of Tile Installation

2 x 2 LIGHTING

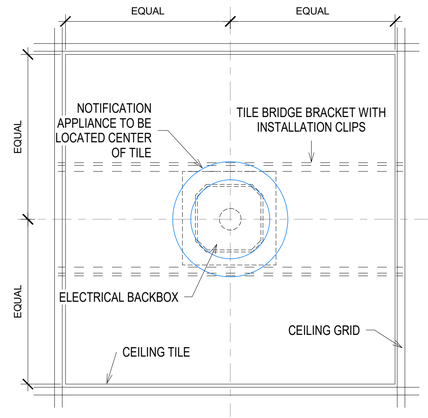
2 x 2 MECH GRILL

SPRINKLER HEAD

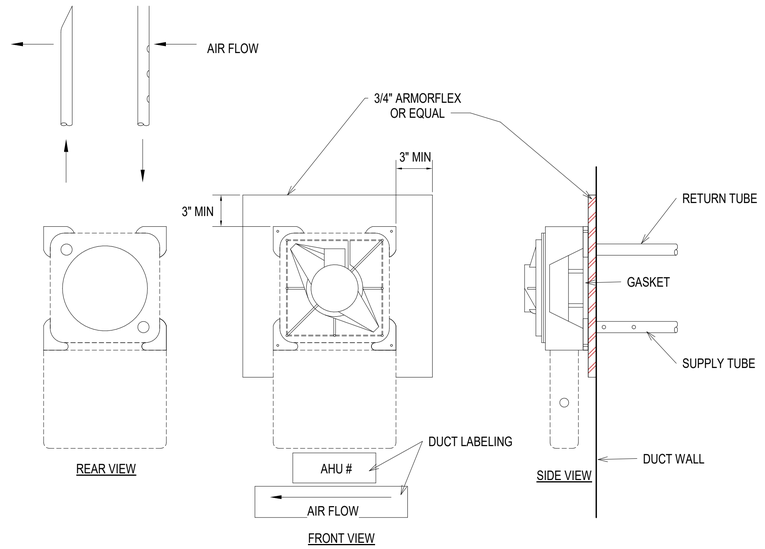
CEILING HORN / STROBE

SPRINKLER AND FIRE ALARM DEVICE COLORS AND TYPES SHALL BE AS SHOWN ON PLANS AND/OR DESCRIBED IN SPECIFICATIONS.

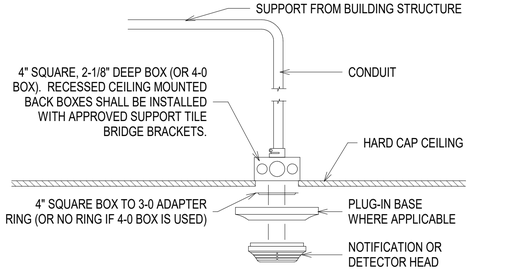
ANY QUESTIONS OR DISCREPENCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECTURAL TEAM FOR CLARIFICATION OR RESOLUTION.



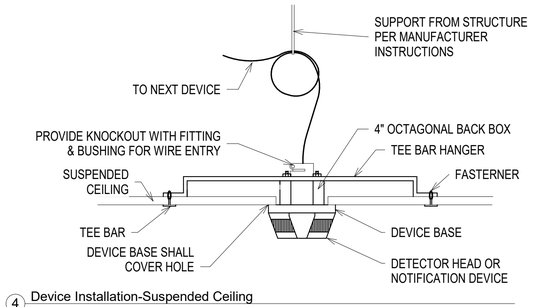
7 Device Center of Tile



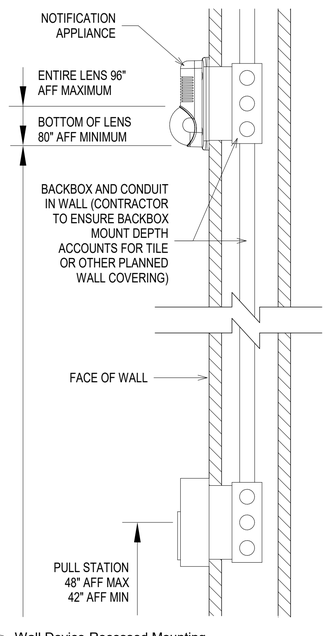
6 Duct Smoke Detector Install



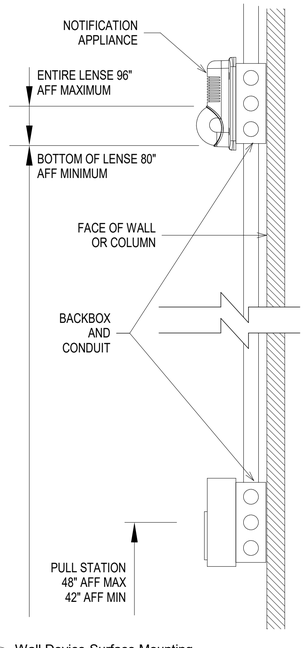
5 Device Installation-Hard Cap Ceiling



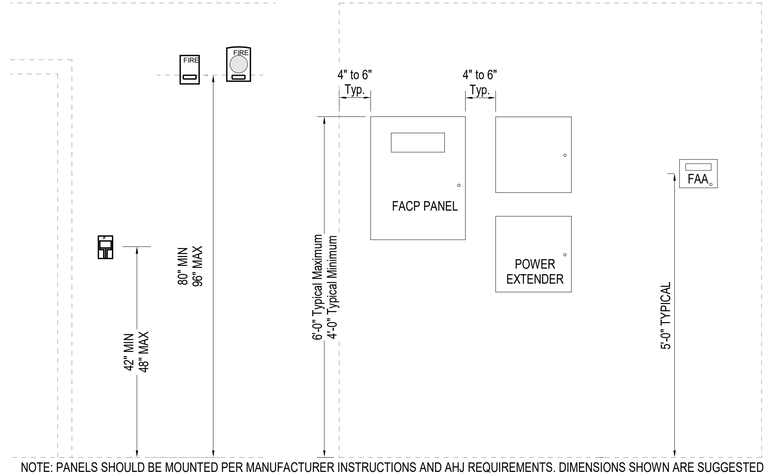
4 Device Installation-Suspended Ceiling



3 Wall Device-Recessed Mounting



2 Wall Device-Surface Mounting



NOTE: PANELS SHOULD BE MOUNTED PER MANUFACTURER INSTRUCTIONS AND AHJ REQUIREMENTS. DIMENSIONS SHOWN ARE SUGGESTED MOUNTING HEIGHTS ONLY. APPLICABLE CODES ONLY REQUIRE CONTROL PANELS TO BE MOUNTED AT AN ACCESSIBLE HEIGHT AND LOCATION WITH ADEQUATE CLEARANCE FROM OTHER PANELS FOR OPERATION AND MAINTENANCE.

1 Device Installation Heights

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

FIRE ALARM DETAILS

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-4?0420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA8.1
10011

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:05:19 PM E:\Dropbox (FPCG)\FPCG Projects\2020 Projects\20-471 - TXDOT - 973 Operations Center_FPCG Drawings\20-471 - TXDOT_973 Operation Center_FPCG.rvt

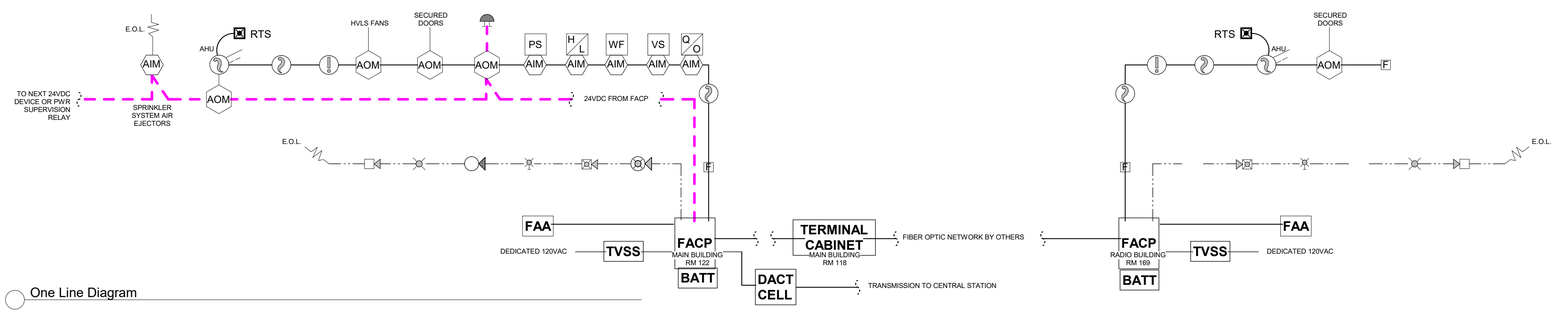
SEQUENCE OF OPERATIONS MATRIX

	FACP ANNUNCIATION							BUILDING NOTIFICATION								LIFE SAFETY INTERFACE						
	ACTUATE COMMON ALARM SIGNAL	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL	ACTUATE AUDIBLE TROUBLE SIGNAL	DISPLAY DEVICE STATUS	ACTUATE ALL AUDIBLE EVACUATION DEVICES	ACTUATE ALL VISIBLE EVACUATION DEVICES	TRANSMIT ALARM TO RECEIVING STATION / FAA	TRANSMIT SUPERVISORY TO RECEIVING STATION / FAA	TRANSMIT TROUBLE TO RECEIVING STATION / FAA	ACTUATE EXTERIOR ALARM BELL		ASSOCIATED AIR HANDLER SHUTDOWN	CLOSE ASSOCIATED SMOKE DAMPERS	RELEASE ALL DOOR HOLD OPENS / UNLOCK SECURED DOORS	SHUNT HVLS CEILING FANS	SWITCH SOUND TO "STANDBY" MODE		COMMENTS
ADDRESSABLE PULL STATION	●	●					●	●	●	●										●		
ADDRESSABLE SMOKE DETECTOR	●	●					●	●	●	●										●		
ADDRESSABLE HEAT DETECTOR	●	●					●	●	●	●										●		
ADDRESSABLE DUCT SMOKE DETECTOR-AHU'S			●	●			●				●					●	●					REFER TO MECHANICAL PLANS
ADDRESSABLE DUCT SMOKE DETECTOR-DAMPERS			●	●			●				●						●					REFER TO MECHANICAL SEQUENCE OF OPERATIONS
SYSTEMS AIR COMPRESSOR HI/LOW SENSOR			●	●			●				●											
QUICK OPENING DEVICE TROUBLE SWITCH					●	●	●				●	●										
DRY SYS #1 SUPERVISORY SWITCH			●	●			●				●											
DRY SYS #1 LOW PRESSURE ALARM SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #1 WATERFLOW SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #2 SUPERVISORY SWITCH			●	●			●				●											
DRY SYS #2 LOW PRESSURE ALARM SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #2 WATERFLOW SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #3 SUPERVISORY SWITCH			●	●			●				●											
DRY SYS #3 LOW PRESSURE ALARM SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #3 WATERFLOW SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #4 SUPERVISORY SWITCH			●	●			●				●											
DRY SYS #4 LOW PRESSURE ALARM SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
DRY SYS #4 WATERFLOW SWITCH	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
WET SYSTEM #5 SPRINKLER WATERFLOW	●	●					●	●	●	●			●						●		●	COORDINATE WITH ASSOCIATED TRADES
WET SYSTEM #5 SPRINKLER TAMPERS			●	●			●				●											
AUTOMATIC AIR EJECTOR PRESSURE GUAGE				●		●	●				●											
SUPPRESSION RELEASING PANEL SANDBLAST RM (BY OTHERS)	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
SUPPRESSION RELEASING PANEL PAINT BOOTH (BY OTHERS)	●	●					●	●	●	●			●						●	●	●	COORDINATE WITH ASSOCIATED TRADES
AC LOSS TO FACP OR NAC					●	●	●					●										
OPEN/SHORT CIRCUIT OR GROUND FLT					●	●	●					●										
DISABLED DEVICES					●	●	●					●										
BATTERY FAULT					●	●	●					●										

Fire Alarm Device Schedule

Description	Comments	Candella Rating	Count
MAIN BUILDING			
Fire Panel Accessory	NAC		1
Fire Panel Accessory	FACP		1
Fire Panel Accessory	FATC		1
Area Smoke Detector			4
Duct Smoke Detector			4
See Part Description	10 Inch Vibrating Bell	24 VAC	1
	Fire Alarm Pull Station		1
Fire Alarm Speaker/Strobe-Ceiling Mounted		75	9
Fire Alarm Speaker/Strobe-Ceiling Mounted		30	1
Fire Alarm Speaker/Strobe-Ceiling Mounted		15	12
Fire Alarm Speaker/Strobe-Ceiling Mounted		30	3
Fire Alarm Speaker/Strobe-Ceiling Mounted	WP/XP	30	1
Fire Alarm Speaker/Strobe-Wall Mounted		30	3
Fire Alarm Speaker/Strobe-Wall Mounted		75	8
Fire Alarm Speaker/Strobe-Wall Mounted		110	24
Fire Alarm Speaker/Strobe-Wall Mounted	wp	110	6
Fire Alarm Strobe-Ceiling Mounted		15	12
Fire Alarm Strobe-Ceiling Mounted		15	1
	WP	75	2
Fire Alarm Strobe-Wall Mounted		15	3
Fire Alarm Strobe-Wall Mounted	WP	15	3
Fire Alarm Strobe-Wall Mounted		30	3
Fire Alarm Strobe-Wall Mounted	WP	30	2
Fire Alarm Strobe-Wall Mounted		75	3
Fire Alarm Strobe-Wall Mounted		110	1
RADIO BUILDING			
Fire Panel Accessory	FACP		1
Area Heat Detector			3
Area Smoke Detector			4
	Fire Alarm Pull Station		4
Fire Alarm Speaker/Strobe-Ceiling Mounted		15	1
Fire Alarm Speaker/Strobe-Wall Mounted	WP	30	2
Fire Alarm Speaker/Strobe-Wall Mounted		75	4
Fire Alarm Speaker/Strobe-Wall Mounted	WP	75	1
Fire Alarm Speaker/Strobe-Wall Mounted		110	3
Fire Alarm Speaker/Strobe-Wall Mounted	WP	110	1
Fire Alarm Speaker/Strobe-Wall Mounted	wp	110	6
Fire Alarm Speaker/Strobe-Wall Mounted	WP/XP	110	1
Fire Alarm Strobe-Ceiling Mounted		15	1
Fire Alarm Strobe-Wall Mounted		15	2
Fire Alarm Strobe-Wall Mounted		30	3
Fire Alarm Strobe-Wall Mounted		110	1

Grand total: 148



One Line Diagram

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 | 14439 NW Military Hwy
Texas Firm No. F-15865 | Suite 108, #430
www.firepcg.com | San Antonio, Texas 78231

FIRE ALARM SEQUENCE OF OPERATIONS

Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FA9.1
10012

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

ABBREVIATIONS LEGEND

A	AMBER COLORED STROBE
AC	ABOVE CEILING
ADS	ACOUSTICALLY DISTINGUISHABLE SPACE
AIM	ADDRESSABLE INPUT MODULE
AOM	ADDRESSABLE OUTPUT MODULE
AS	AUTOMATIC SPRINKLER COVERAGE
AHJ	AUTHORITY HAVING JURISDICTION
AMP	AMPLIFIER
BATT	BATTERY CABINET
BMS	BUILDING MANAGEMENT SYSTEM
BFP	BACKFLOW PREVENTER
C	CEILING MOUNTED
CA	CLEAN AGENT
CARP	CLEAN AGENT RELEASING PANEL
CELL	CELLULAR DIALER
CMR	CODE MODIFICATION REQUEST
CO	CARBON MONOXIDE
CP	CONTROL PANEL
CU	CONTROL UNIT
DACT	DIGITAL ALARM COMMUNICATOR/TRANSCEIVER
DAS	DISTRIBUTED ANTENNA SYSTEM
DBA	DECIBEL LEVEL
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DL	DELUGE SYSTEM
DS	DRY SYSTEM
E	ELEVATOR RECALL
EOLR	END OF LINE RESISTOR
EX	EXISTING TO REMAIN
EVAC	EMERGENCY EVACUATION NOTIFICATION SYS
F2	SQUARE FEET
F3	CUBIC FEET
FA	FIRE ALARM SYSTEM
FAA	FIRE ALARM ANNUNCIATE
NFAA	SITE ALARM ANNUNCIATE
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FFOP	FIRE FIGHTERS OPERATIONS PANEL
FH	FIRE HYDRANT
FO	FOAM SYSTEM
FP	FIRE PROTECTION
FPCG	FIRE PROTECTION CONSULTING GROUP
FS	FIRE SUPPRESSION SYSTEM
HC	FIRE HOSE CONNECTION
HL	HIGH/LOW PRESSURE SWITCH
IBC	INTERNATIONAL BUILDING CODE
IDC	INITIATING DEVICE CIRCUIT
IFC	INTERNATIONAL FIRE CODE
IR	INFRARED
LF	LINEAR FEET
LOC	LOCAL OPERATOR CONSOLE
NA	NOT APPLICABLE
NAC	NOTIFICATION APPLIANCE CIRCUIT-POWER SUPPLY
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OS&Y	OUTSIDE SCREW & YOKE VALVE
PIV	POST INDICATOR VALVE
PRE	PRE-ACTION SYSTEM
PRV	PRESSURE REDUCING VALVE
PRHS	PRESSURE REDUCING HOSE CONNECTION
PS	PRESSURE SWITCH
R	RELEASING; SUPPRESSION SYS
RTS	REMOTE ALARM TEST SWITCH
RTI	RESPONSE TIME INDEX
RUI	REMOTE UNIT INTERFACE
S	SHUNT TRIP
SC	STROBE CIRCUIT
SF	SQUARE FEET
SLC	SIGNALING LINE CIRCUIT
SOO	SEQUENCE OF OPERATIONS
SOW	SCOPE OF WORK
SRD	SUPPRESSION RELEASING DEVICE
TYP	TYPICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION MODULE
UF	UNDER FLOOR DEVICE
UNO	UNLESS NOTED OTHERWISE
VS	VALVE SUPERVISORY SWITCH
W	WALL MOUNTED
WC	WET CHEMICAL
WF	WATER FLOW
WP	WEATHER PROOF
WS	WET SYSTEM
XP	EXPLOSION PROOF

BASIC BUILDING INFORMATION

THE PROPOSED BUILDINGS ON THE SITE AS SHOWN HAVE THE FOLLOWING CHARACTERISTICS:

1. **OPERATIONS CENTER: SEGMENTS A - G**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±80,000 FT²
   d. MIXED OCCUPANCIES: GROUP B (BUSINESS), S-1 (STORAGE/REPAIR GARAGE), F-1 (FACTORY)
   e. FIRE PROTECTION: FULLY SPRINKLERED AS REQUIRED BY 2018 IBC 903.2
   f. FIRE ALARM: FIRE ALARM DETECTION AND OCCUPANT NOTIFICATION SYSTEM TO BE PROVIDED
2. **WASH BAY: SEGMENT H**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±2,500 FT²
   d. PRIMARY OCCUPANCY: GROUP S-1 (STORAGE/REPAIR GARAGE)
   e. FIRE PROTECTION: NONE
   f. FIRE ALARM: NONE
3. **RADIO TRANSMISSION: SEGMENT J**
   a. TYPE OF CONSTRUCTION: TYPE IIB
   b. HEIGHT IN STORIES: 1
   c. AREA: ±1,700 FT²
   d. PRIMARY OCCUPANCY: GROUP S-1 (STORAGE)
   e. FIRE PROTECTION: NONE
   f. FIRE ALARM: SMOKE DETECTION AND OCCUPANT NOTIFICATION AS SHOWN ON PLANS

APPLICABLE CODES

1. INTERNATIONAL CODE COUNCIL
   a. 2018 INTERNATIONAL BUILDING CODE (IBC)
   b. 2020 NATIONAL ELECTRIC CODE (NEC)
   c. 2018 INTERNATIONAL PLUMBING CODE (IPC)
   d. 2018 INTERNATIONAL MECHANICAL CODE (IMC)
2. NATIONAL FIRE PROTECTION ASSOCIATION
   a. 2018 NFPA 1 FIRE CODE
   b. 2018 NFPA 101 LIFE SAFETY CODE
   c. 2016 NFPA 13 WATER-BASED SPRINKLER SYS
   d. 2016 NFPA 24 UNDERGROUND
   e. 2016 NFPA 72 NTL. FIRE ALARM & SIGNALING CODE
3. AHJ: TEXAS STATE FIRE MARSHAL

SPECIFICATIONS LIST

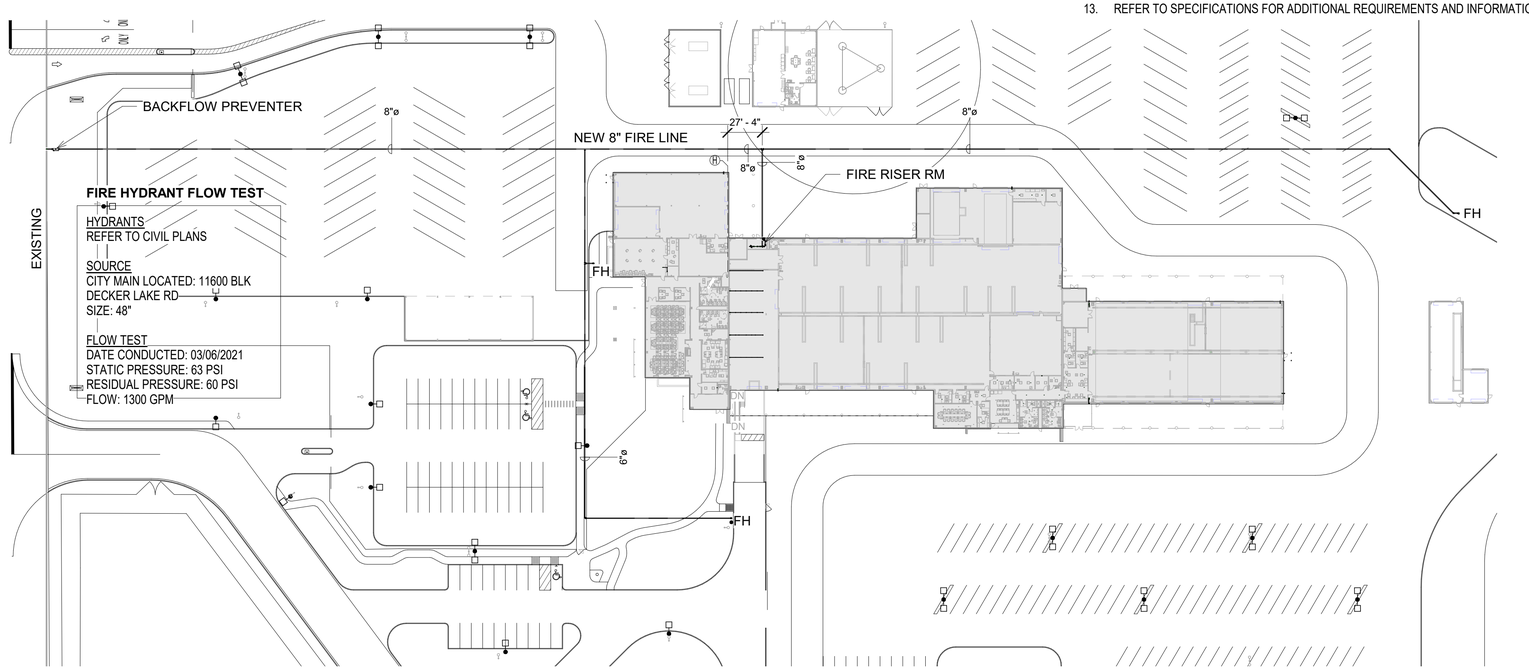
21 05 00	COMMON WORK RESULTS FOR WATER-BASED FIRE SUPPRESSION SYSTEMS
21 13 13	WET-PIPE SPRINKLER SYSTEMS
21 13 16	DRY-PIPE SPRINKLER SYSTEMS
28 38 00	COMMON WORK RESULTS FOR FIRE ALARM SYSTEMS
28 38 05	FIRE DETECTION & ALARM NOTIFICATION SYSTEMS

FIRE SUPPRESSION INSTALLATION NOTES

1. SPRINKLER SYSTEM INSTALLATION SHALL BE PER 2018 IFC, 2016 EDITION OF NFPA 13 AND TEXAS STATE FIRE MARSHAL'S OFFICE.
2. ALL COMPONENTS SHALL BE OF NEW EQUIPMENT.
3. QUICK RESPONSE SPRINKLERS SHALL BE PROVIDED THROUGHOUT ENTIRE BUILDING UNLESS PROHIBITED BY NFPA 13 OR NOTED OTHERWISE.
4. WHERE SUSPENDED CEILINGS ARE PROVIDED: ALL SPRINKLERS SHALL BE INSTALLED CENTER OF TILE, ALIGNED WITH LIGHTING FIXTURES OR IN THE LOCATIONS AS SHOWN ON THE PLAN UNLESS A CODE DISCREPANCY WARRANTS ALTERNATE LOCATION.
5. SPRINKLERS IN PUBLIC AREAS WILL BE AS SHOWN ON THE PLANS AND AS APPROVED BY THE ARCHITECT.
6. ALL PIPE, SPRINKLERS OR OTHER RELATED APPURTENANCES TO BE INSTALLED IN THE BUILDING SHALL BE KEPT CLEAN AND RUST FREE. ANY COMPONENT FOUND TO HAVE RUST OR IN POOR CONDITION SHALL BE REMOVED AND REPLACED AT THE INSTALLER'S EXPENSE.
7. EXPOSED PIPE SHALL BE PAINTED AND SPRINKLERS SHALL BE CORROSION RESISTANT WHERE EXPOSED TO CORROSIVE ATMOSPHERES TO INCLUDE: HIGH MOISTURE AREAS, PARKING OR DRIVING AREAS OR EXTERIOR ENVIRONMENTS.
8. PROVIDE FIRE PATCHING / CAULKING FOR RATED WALL ASSEMBLIES UNDER THE DIRECTION OF THE GENERAL CONTRACTOR.
   A. SEE ARCHITECTURAL PLANS FOR FIRE-RESISTANCE RATED WALL LOCATIONS WHERE PIPE PENETRATIONS THROUGH PARTITION SHALL BE SEALED PER THE IBC.
   B. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE SEALED WITH APPROVED FIRE RESISTIVE MATERIALS AND/OR ASSEMBLIES.
   C. MATERIAL AND ASSEMBLIES SHALL BE SUITABLE FOR THE HOURLY RATING OF THE PENETRATED CONSTRUCTION ELEMENT. THE INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
   D. PROVIDE WALL ESCUTCHEONS FOR PIPES PASSING THRU EXPOSED WALLS UNLESS DIRECTED OTHERWISE BY ARCHITECT.
9. REFER TO THE OCCUPANCY HAZARD PLAN FOR REQUIRED SPRINKLER SPACING AND DENSITIES. ALL HYDRAULIC CALCULATIONS SHALL INCLUDE A MINIMUM 10% SAFETY FACTOR AT THE WATER SOURCE.
10. FINAL CONNECTIONS OF EXTERIOR ALARM NOTIFICATION APPLIANCE(S), WATERFLOW DETECTOR, PRESSURE AND TAMPER SWITCHES TO THE FIRE ALARM PANEL SHALL BE MADE BY SELECTED FIRE ALARM CONTRACTOR.
11. WET-PIPE SYSTEM PIPING SHALL BE SCHEDULE 10 AND/OR 40 BLACK STEEL. ALL WET PIPE SHALL BE PROTECTED FROM FREEZING IN ACCORDANCE WITH NFPA 13; WHERE INSTALLED TEMPERATURES SHALL BE MAINTAINED AT NO LESS 40 °F.
12. DRY-PIPE SYSTEM PIPING SHALL BE SCHEDULE 10 AND/OR 40 BLACK STEEL. DRY PIPE SHALL BE PROVIDED IN ALL AREAS SUBJECT TO FREEZING TEMPERATURES. ALL DRY SYSTEM PIPE SHALL BE PITCHED TO A DRAIN IN ACCORDANCE WITH NFPA 13.
13. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.

FIRE SUPPRESSION SCOPE OF WORK

1. PROVIDE COMPLETE NEW AUTOMATIC SPRINKLER SYSTEMS TO FULLY PROTECT THE OPERATIONS CENTER FACILITY AS DEPICTED IN THE DOCUMENTS INCLUDING ANY ARCHITECTURAL SUPPLEMENTAL INFORMATION, ASI'S, AND PER THE APPLICABLE CODES AND STANDARDS, INCLUDING AHJ ADOPTED AMENDMENTS.
2. REFER TO ARCHITECTURAL DOCUMENTS FOR PHASING OF CONSTRUCTION.
3. PROCEDURES:
   A. WRITTEN REQUESTS FOR INFORMATION, RFI'S, SHALL BE REQUIRED IN ORDER TO CLARIFY DISCREPANCIES OR INSUFFICIENT INFORMATION.
   B. THE CONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH WOULD CAUSE APPRECIABLE DEVIATION FROM THE WORK SHOWN.
   C. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO VERIFY WITH THE GENERAL CONTRACTOR WHETHER PR'S OR ASI'S HAVE BEEN POSTED.
   D. PRIOR TO SUBMITTAL FOR PERMIT, THE CONTRACTOR SHALL PROVIDE ALL DRAWINGS, CALCULATIONS, AND SUBMITTALS FOR REVIEW BY THE STAKEHOLDERS. STAKEHOLDERS SHALL BE DEFINED AS THE OWNER, FPE, GC OR ARCHITECT AS DEFINED IN THE SPECIFICATIONS. SUBMITTALS NOT APPROVED BY THE STAKEHOLDERS SHALL NOT BE SUBMITTED FOR PERMITTING TO THE AHJ.
   E. ONCE APPROVED BY THE STAKEHOLDERS, THE CONTRACTOR SHALL PROVIDE ALL DOCUMENTS AND INFORMATION REQUIRED TO OBTAIN A PERMIT FOR THE INSTALLATION OF THIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMIT FEES AND SHALL PROVIDE ALL MATERIALS AND EFFORT REQUIRED FOR SUBMITTAL OF ANY AND ALL REQUIRED PERMITS.
   F. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MAINTAIN THE INTEGRITY OF AND THE AESTHETICS OF THE SITE AND BUILDING ELEMENTS AFFECTED BY THE THIS WORK. SHOULD ANY DAMAGE TO SITE OR BUILDING FEATURES BE CAUSED BY THE CONTRACTOR AS PART OF THIS WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED MATERIALS OR OTHER ITEMS TO THE SATISFACTION OF THE ARCHITECT AND OWNER.
   G. DEVICE LOCATIONS SHOWN ON THIS DRAWING ARE SCHEMATIC IN NATURE. NOT ALL APPURTENANCES ARE EXPECTED TO BE SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINAL DEVICES AND EQUIPMENT SIZES, DIMENSIONS, LOCATIONS, AND ELEVATIONS.
   H. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY PIPE LOCATION SHOWN ON DRAWINGS IS COORDINATED WITH INSTALLATION OF MECHANICAL, STRUCTURAL AND OTHER TRADES DURING CREATION OF SHOP DRAWINGS AND DURING INSTALLATION.
   I. QUANTITY OF DEVICES SHOWN ON THIS DOCUMENT NOT INTENDED TO ENCOMPASS ALL REQUIRED TO ACCOMPLISH CODE COMPLIANCE.
   J. THROUGHOUT CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN ON-SITE: A SET OF THE MOST CURRENT WORKING DRAWINGS THAT BEAR THE APPROVAL MARK OF THE AHJ. WHERE FIELD MODIFICATIONS ARE MADE TO THE SYSTEM, THEY SHALL BE RECORDED ON THE WORKING DRAWINGS FOR INCORPORATION INTO THE PROJECT AS-BUILT DRAWINGS. THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS AS PART OF THE PROJECT CLOSE-OUT DOCUMENTS AND TRAINING.
   K. THE CONTRACTOR SHALL COORDINATE TESTING AND INSPECTIONS WITH THE OWNER AND ARCHITECT AND IS RESPONSIBLE FOR ALL INSPECTION FEES.
4. IF A CURRENT FIRE FLOW TEST IS NOT OTHERWISE PROVIDED BY THE ENGINEER, THE CONTRACTOR SHALL PROVIDE A FIRE FLOW TEST TO SUPPORT DESIGN OF THE SPRINKLER SYSTEM WORK. IF THE ENGINEER'S FLOW TEST WAS CONDUCTED MORE THAN ONE YEAR PRIOR TO THE DATE OF SUBMITTAL FOR SPRINKLER PERMIT, THE CONTRACTOR SHALL CONDUCT A NEW TEST TO SERVE AS THE DESIGN BASIS; REPORT OF RESULTS TO ACCOMPANY SUBMITTALS TO THE ARCHITECT AND TO THE AHJ FOR PERMITTING.
5. ALTERNATE LOCATIONS OF PIPING, VALVES OR OTHER EQUIPMENT FROM THAT SHOWN MUST BE SUBMITTED TO THE GENERAL CONTRACTOR AND APPROVED IN WRITING PRIOR TO EQUIPMENT PLACEMENT.
6. ELECTRICAL, IDF AND OTHER ROOMS HOUSING SENSITIVE ELECTRONIC EQUIPMENT (AS DIRECTED BY THE OWNER) WILL BE SPRINKLERED USING DRY SIDEWALLS AS SHOWN ON THESE PLANS. ELECTRICAL AND MECHANICAL ROOMS WHERE SIDEWALL SPRINKLERS ARE **NOT** SHOWN SHALL HAVE PIPE ROUTED BETWEEN EQUIPMENT. WHERE PIPE MUST BE ROUTED OVER EQUIPMENT OR PANES, THE CONTRACTOR SHALL PROVIDE DRIP SHIELDS. REFER TO IT PLANS FOR PANEL LOCATIONS.
7. ELECTRIC ROOMS CONTAINING HIGH VOLTAGE EQUIPMENT (OVER 600KW) ARE EXEMPT FROM SPRINKLER PROTECTION.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED POWER FOR THE AIR COMPRESSOR, AT THE DESIGNATED LOCATION.



1 Site Plan for Reference
1" = 60'-0"

Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

FIRE SUPPRESSION NOTES & SYMBOLS

FS0.1
10101

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 12:01:56 PM E:\Dropbox (FPCG)\FPCG Projects\2020 Projects\20-471 - TXDOT - 973 Operations Center_FPCG Drawings\20-471 - TxDOT_973 Operation Center_FPCG.rvt

FIRE PROTECTION HAZARD LEGEND & REQUIRED DENSITIES

LIGHT HAZARD - "LH"
0.10 GPM/FT² OVER 1,500 FT²
100 GPM HOSE STREAM ALLOWANCE.

ORDINARY HAZARD GROUP 1 - "OH1"
0.15 GPM/FT² OVER 1,500 FT²
250 GPM HOSE STREAM ALLOWANCE.
130 SQFT MAX SPRINKLER SPACING

ORDINARY HAZARD GROUP 2 - "OH2"
0.20 GPM/FT² OVER 1,500 FT²
250 GPM HOSE STREAM ALLOWANCE.
130 SQFT MAX SPRINKLER SPACING

STORAGE GROUP CH16.2.2.1
(15) K11.2 OVERHEAD SPRINKLERS AT 25PSI PLUS
(1) LEVEL OF IN-RACK SPRINKLERS AT 15PSI
250 GPM HOSE STREAM ALLOWANCE.
100 SQFT MAX SPRINKLER SPACING

HAZARD LEVEL NOTES

OCCUPANCIES OR PORTIONS THEREOF WHERE THE...

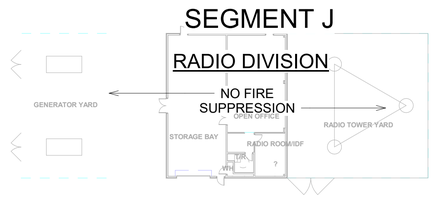
LIGHT HAZARD: ...QUANTITY AND/OR COMBUSTIBILITY OF CONTENTS ARE RELATIVELY LOW (NO OR LIMITED STORAGE)
- BUSINESS AREAS
- ASSEMBLY AREAS
- ANCILLARY SPACES
- OFFICES SPACES

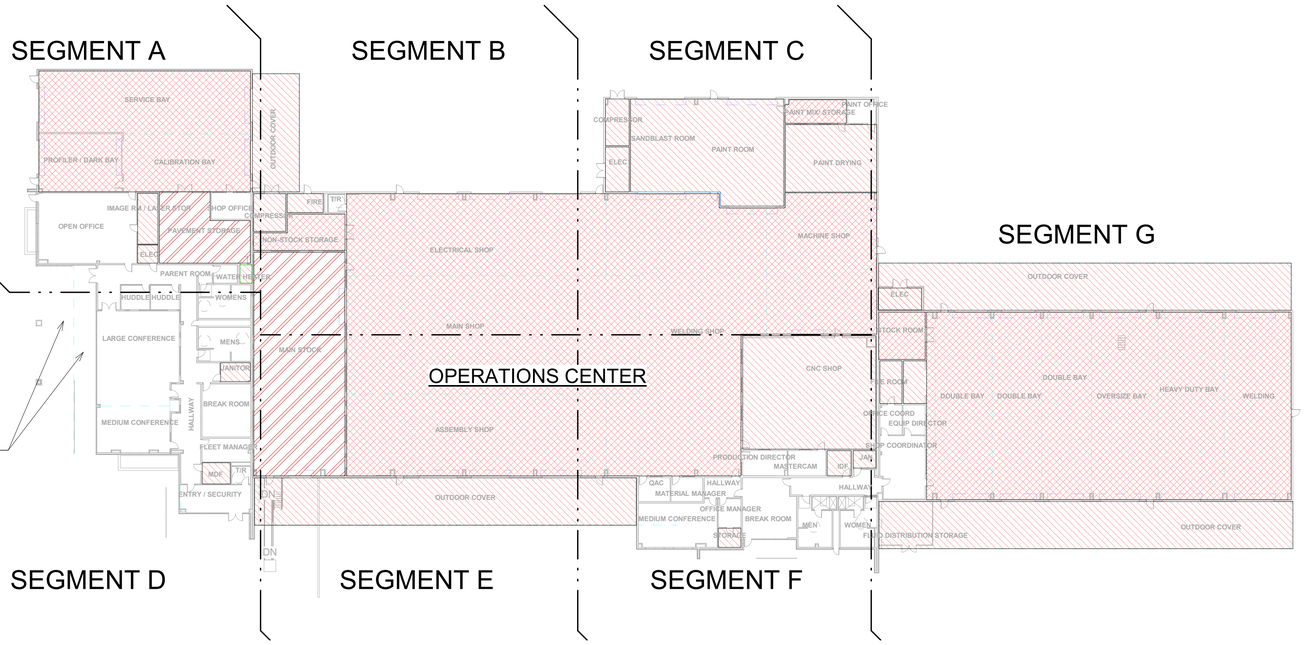
ORDINARY HAZARD GROUP 1: ...COMBUSTIBILITY IS LOW, QUANTITY OF COMBUSTIBLES IS MODERATE, STOCKPILES OF COMBUSTIBLES DO NOT EXCEED 8'-0".
- STORAGE CLOSETS AND ROOMS
- JANITORIAL ROOMS
- MECHANICAL SPACES
- IDF, MDF, ELECTRICAL ROOMS/SPACES

ORDINARY HAZARD GROUP 2: ...QUANTITY AND/OR COMBUSTIBILITY OF CONTENTS ARE MODERATE TO HIGH, STOCKPILES WITH HIGH RATES OF HEAT RELEASE (HHR) DO NOT EXCEED 8'-0", STOCKPILES WITH MODERATE HHR DO NOT EXCEED 12'-0".
- EXTERIOR LOADING DOCK
- TRASH STORAGE AND/OR COMPACTING
- PAINT STORAGE AREAS
- MAINTENANCE AREAS AND PROTECTED WELDING

HIGH RACK STORAGE: ...PER NFPA CHAPTER 16.2.2.1 COMMODITIES SHALL BE LIMITED TO CLASS I - CLASS IV, STORAGE UP TO 25 FT AFF WITH MINIMUM 8 FT AISLES. ON CONVENTIONAL PALLETS IN OPEN RACKS. NO SOLID SHELVES OR OPEN TOPS PERMITTED. HIGHER CLASSIFICATION OF COMMODITIES CAN BE DISPERSED SPARINGLY PER NFPA 13

* THE INSTALLING CONTRACTOR SHALL COORDINATE WITH OWNER/OPERATOR DESCRIBING THE PROPER ARRANGEMENT OF PROTECTED COMMODITIES PER THE SYSTEM DESIGN ACCORDING TO NFPA 13.





STORAGE
SEGMENT K

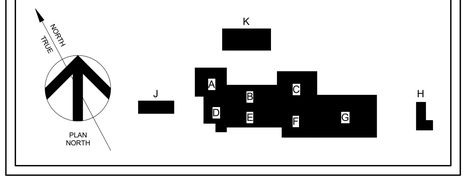
ENTRY
COVERED
AREAS EXEMPT
FROM FIRE
SUPPRESSION

WASH BAY
SEGMENT H

1 OCCUPANCY HAZARD PLAN
1/32" = 1'-0"

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 100, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION HAZARD PLAN

Texas Department of Transportation

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

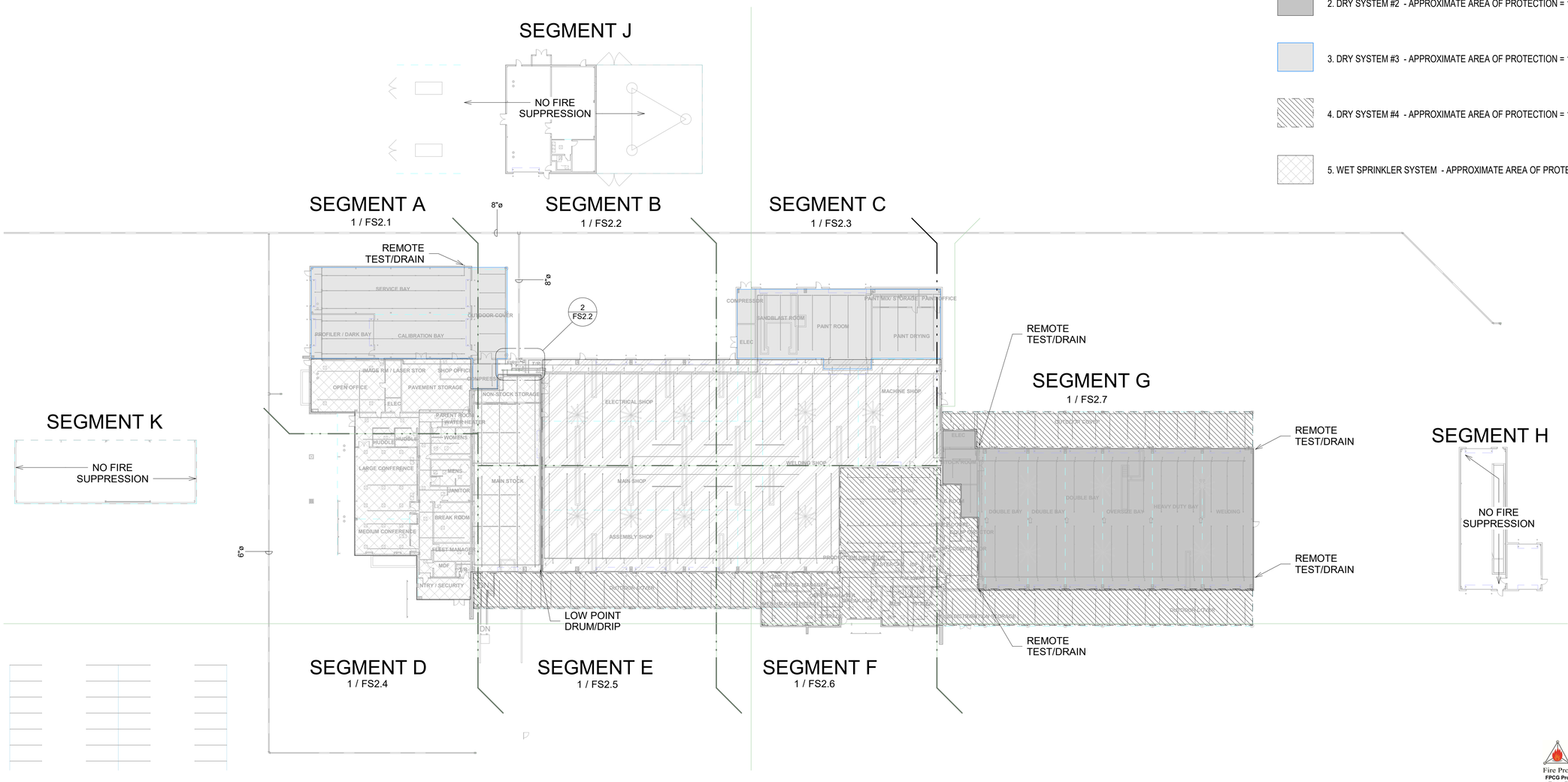
FS1.0
10102

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

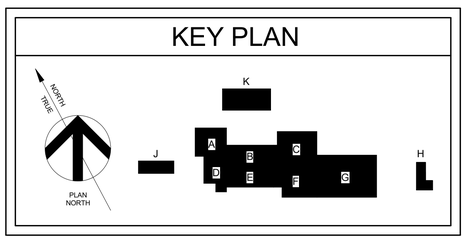
GENERATED ON: 9/21/2021 12:01:51 PM E:\Dropbox (FPCG)\FPCG Projects\2020 Projects\20-471 - TxDOT - 973 Operations Center_FPCG Drawings\20-471 - TxDOT_973 Operation Center_FPCG.rvt

FIRE SUPPRESSION SYSTEMS

1. DRY SYSTEM #1 - APPROXIMATE AREA OF PROTECTION = 23,307 FT²
2. DRY SYSTEM #2 - APPROXIMATE AREA OF PROTECTION = 13,073 FT²
3. DRY SYSTEM #3 - APPROXIMATE AREA OF PROTECTION = 10,461 FT²
4. DRY SYSTEM #4 - APPROXIMATE AREA OF PROTECTION = 17,321 FT²
5. WET SPRINKLER SYSTEM - APPROXIMATE AREA OF PROTECTION = 12,939 FT²



1 OVERALL FIRE SUPPRESSION PLAN
1/32" = 1'-0"



FIRE SUPPRESSION PLAN - OVERALL

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-470420062

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471
Texas Firm No. F-15865
www.firepcg.com
14439 NW Military Hwy
Suite 108, #430
San Antonio, Texas 78231

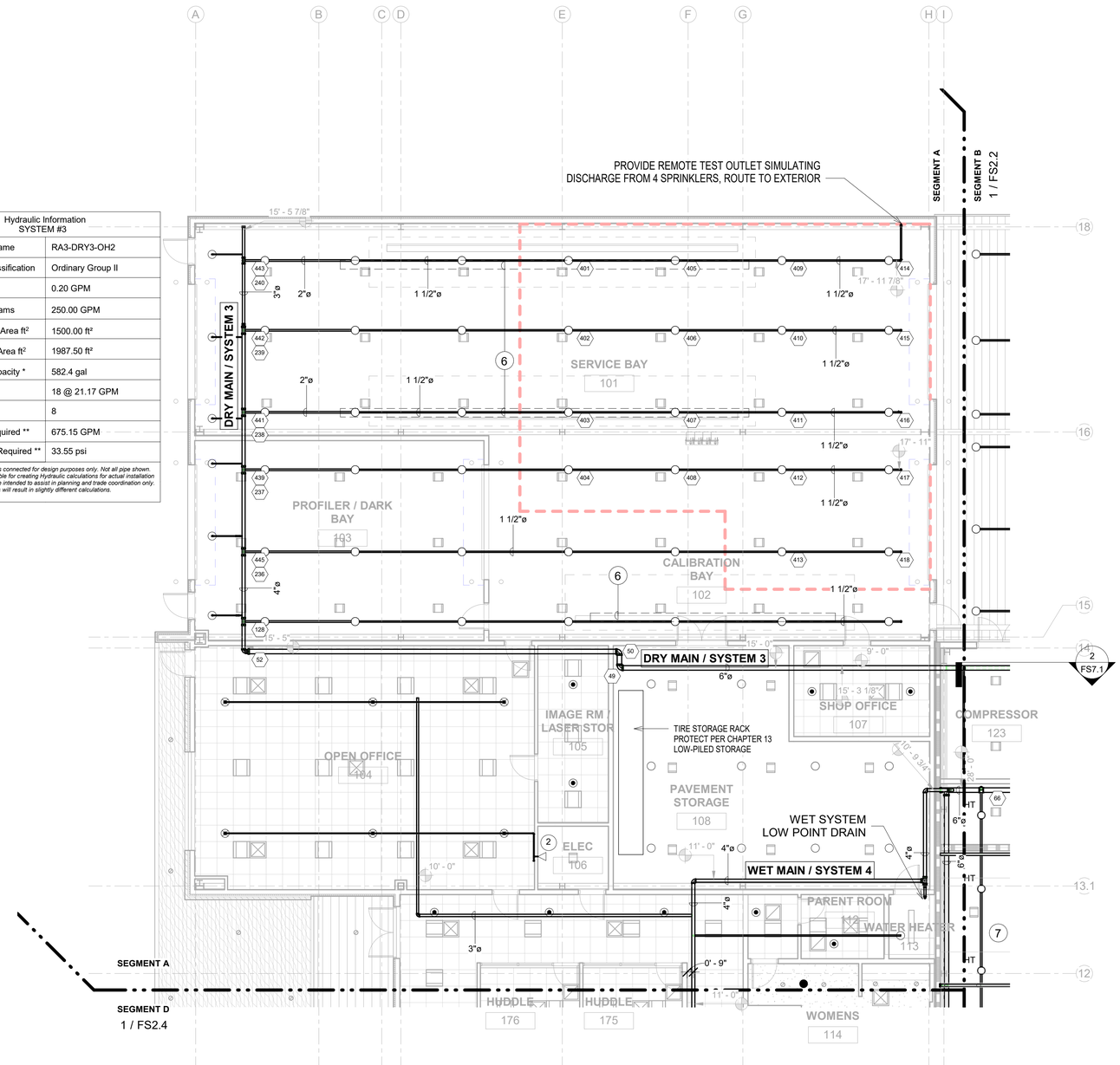
ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.0
10103

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

Hydraulic Information SYSTEM #3	
Remote Area Name	RA3-DRY3-OH2
Occupancy Classification	Ordinary Group II
Density	0.20 GPM
Total Hose Streams	250.00 GPM
Design Remote Area ft²	1500.00 ft²
Actual Remote Area ft²	1987.50 ft²
Approx. Dry Capacity *	582.4 gal
Flowing Heads	18 @ 21.17 GPM
K-Factor	8
Total Water Required **	675.15 GPM
Total Pressure Required **	33.55 psi

** Represents system as connected for design purposes only. Not all pipe shown.*
*** Contractor Responsible for creating Hydraulic calculations for actual installation documents. This table intended to assist in planning and trade coordination only. Actual final pipe sizes will result in slightly different calculations.*



1 FIRE SUPPRESSION PLAN - SEGMENT A
1/8" = 1'-0"

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

123 REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

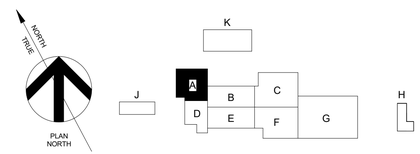
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT A

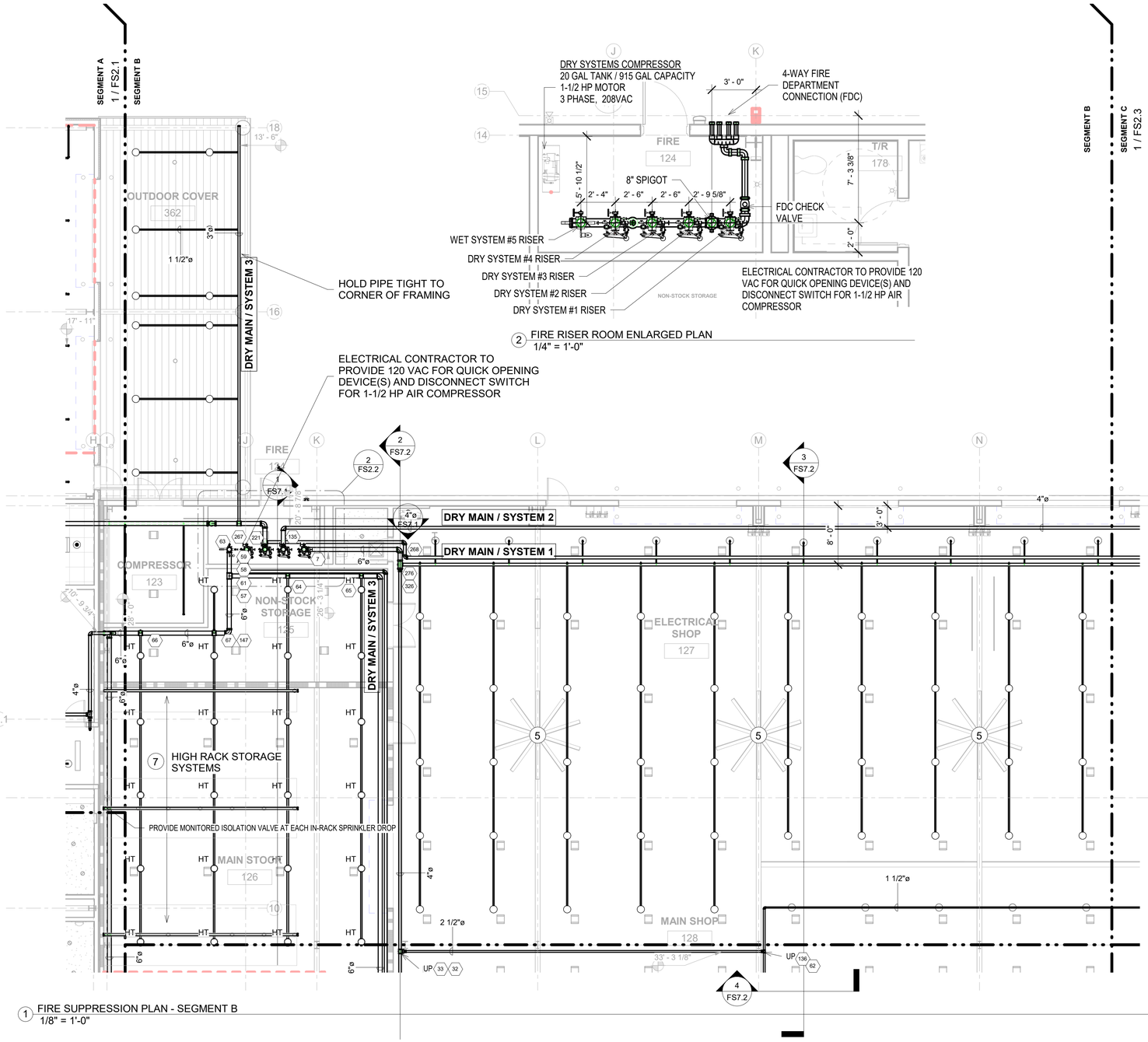
Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.1
10104



SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

(123) REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

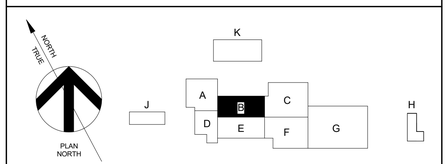
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 | 14439 NW Military Hwy
Texas Firm No. F-15865 | Suite 108, #430
www.firepcg.com | San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT B

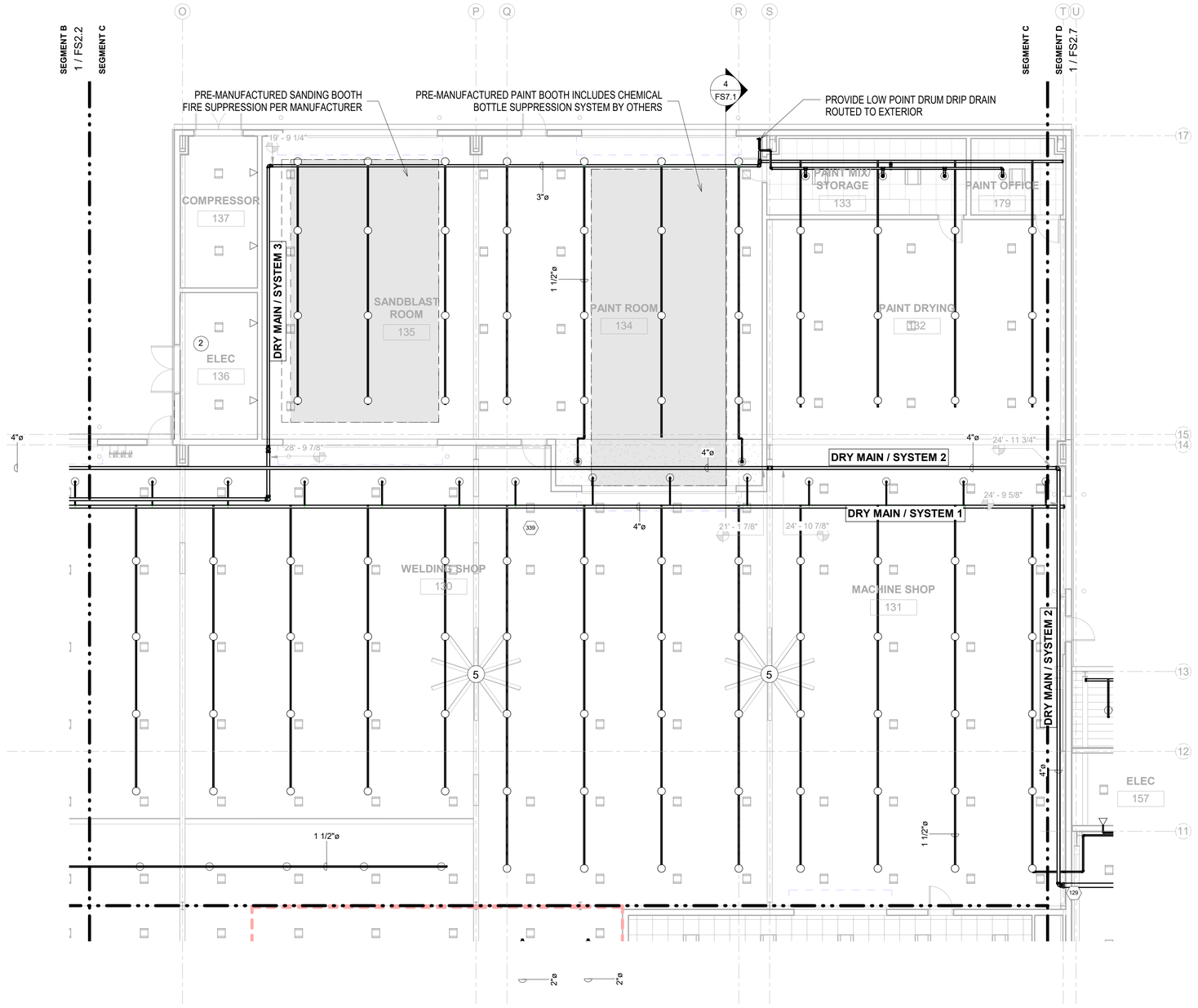
Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-47042062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.2
10105



1 FIRE SUPPRESSION PLAN - SEGMENT C
1/8" = 1'-0"

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

(123) REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

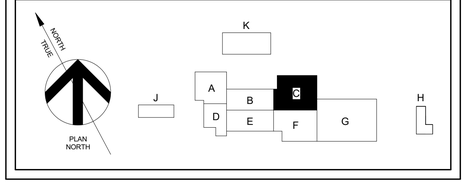
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

0 4' 8' 16'

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT C

Texas Department of Transportation

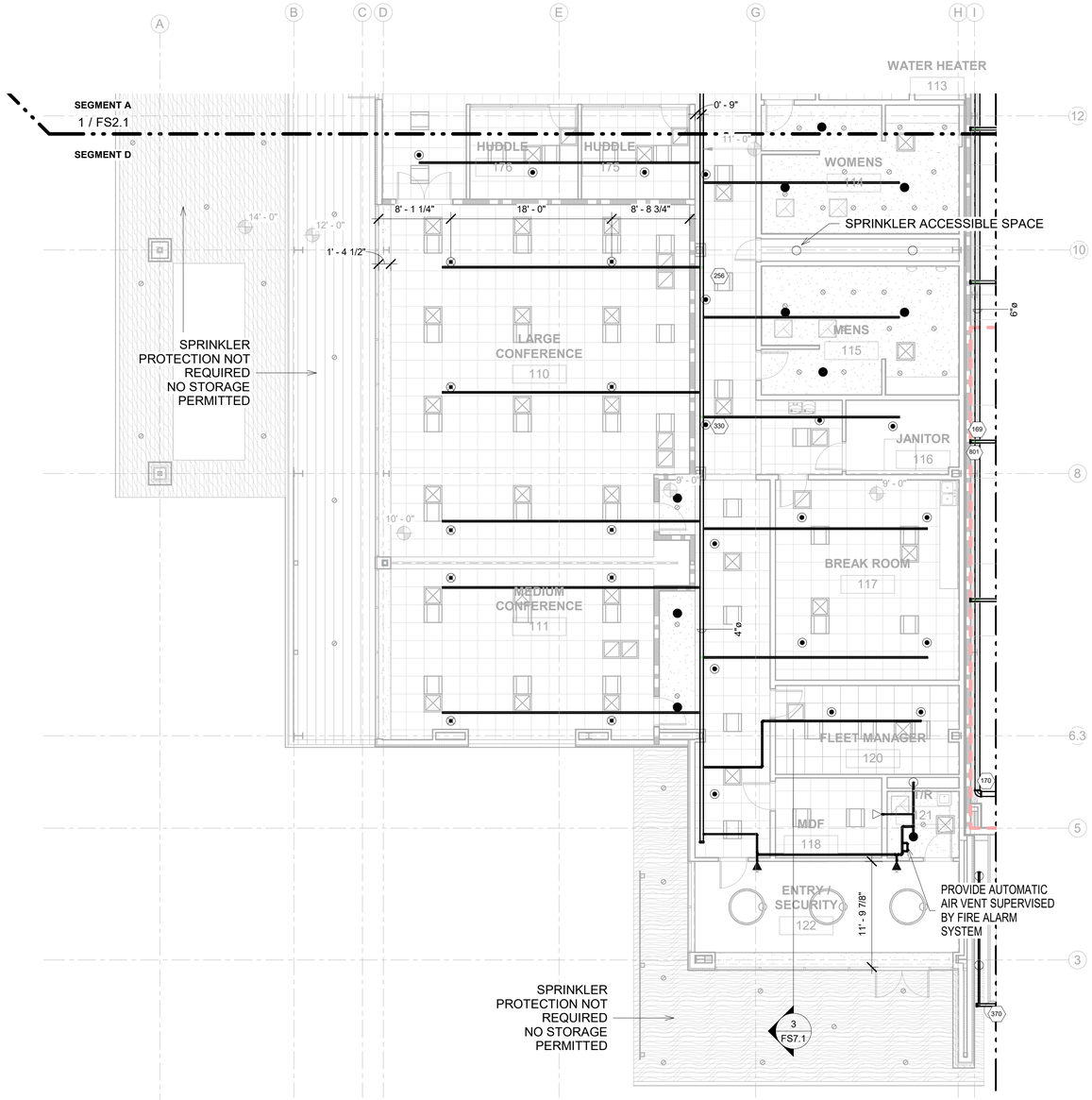
STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.3
10106

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



1 FIRE SUPPRESSION PLAN - SEGMENT D
1/8" = 1'-0"

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

(123) REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

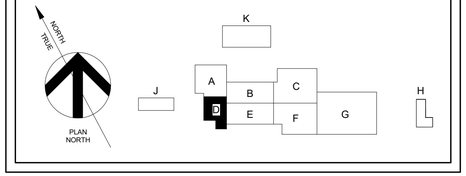
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471
Texas Firm No. P-15865
www.firepcg.com
14439 NW Military Hwy
Suite 105, #430
San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT D

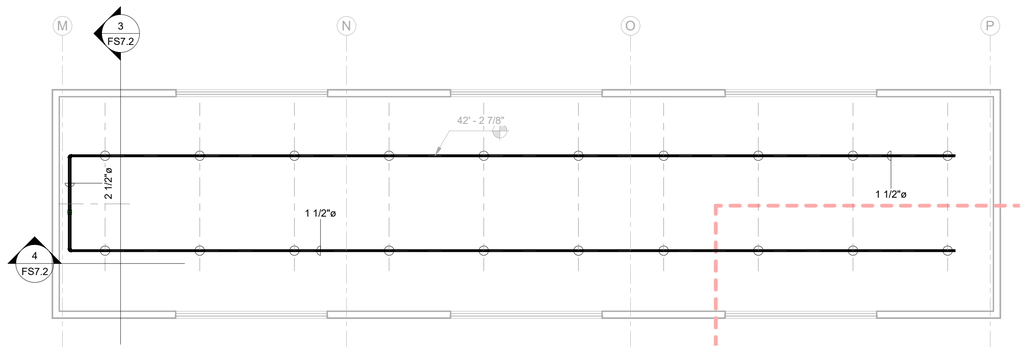
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.4
10107

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

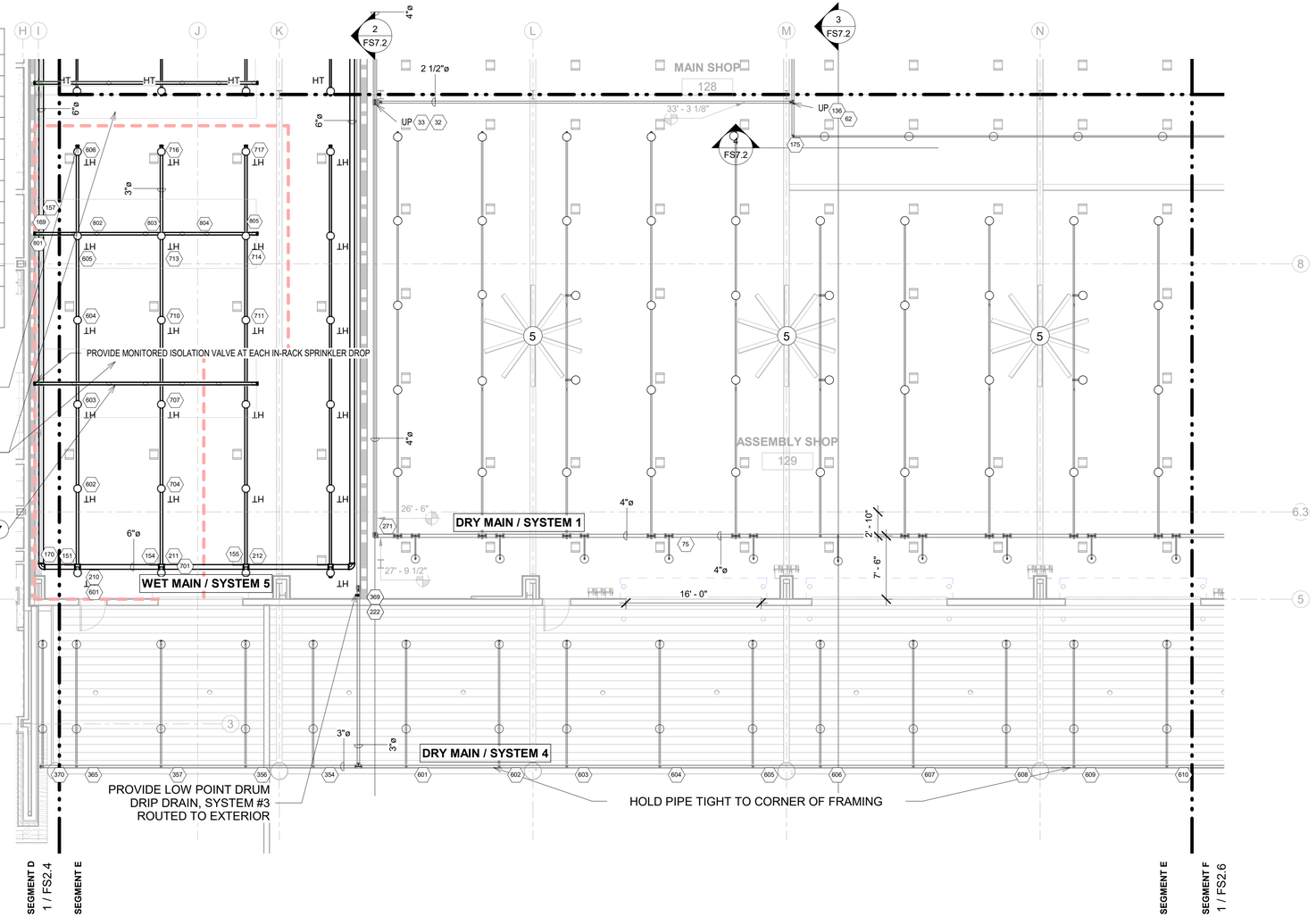
GENERATED ON: 9/21/2021 12:05:06 PM E:\Dropbox (FPCG)\FPCG Projects\2020 Projects\20-471 - TXDOT - 973 Operations Center_FPCG Drawings\20-471 - TXDOT_973 Operation Center_FPCS.rvt



2 Skylight Sprinkler Plan
1/8" = 1'-0"

Hydraulic Information SYSTEM #5	
Remote Area Name	CMSA CH16
Occupancy Classification	Storage
Density	0.00 GPM
Total Hose Streams	250.00 GPM
Design Remote Area ft²	0.00 ft²
Actual Remote Area ft²	1390.00 ft²
Approx. Dry Capacity *	0.0 gal
Flowing Heads	15 @ 25.00 psi + 5 @ 15.00 psi
K-Factor	11.2
Total Water Required **	1359.62 GPM
Total Pressure Required **	58.08 psi

** Represents system as connected for design purposes only. Not all pipe shown.*
*** Contractor Responsible for creating Hydraulic calculations for actual installation documents. This table intended to assist in planning and trade coordination only. Actual final pipe sizes will result in slightly different calculations.*



1 FIRE SUPPRESSION PLAN - SEGMENT E
1/8" = 1'-0"

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

(123) REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

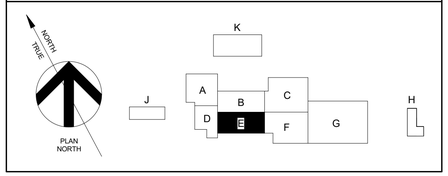
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 | 14439 NW Military Hwy
Texas Firm No. P-15865 | Suite 108, #430
www.firepcg.com | San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT E

Texas Department of Transportation

GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL
ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-479420062

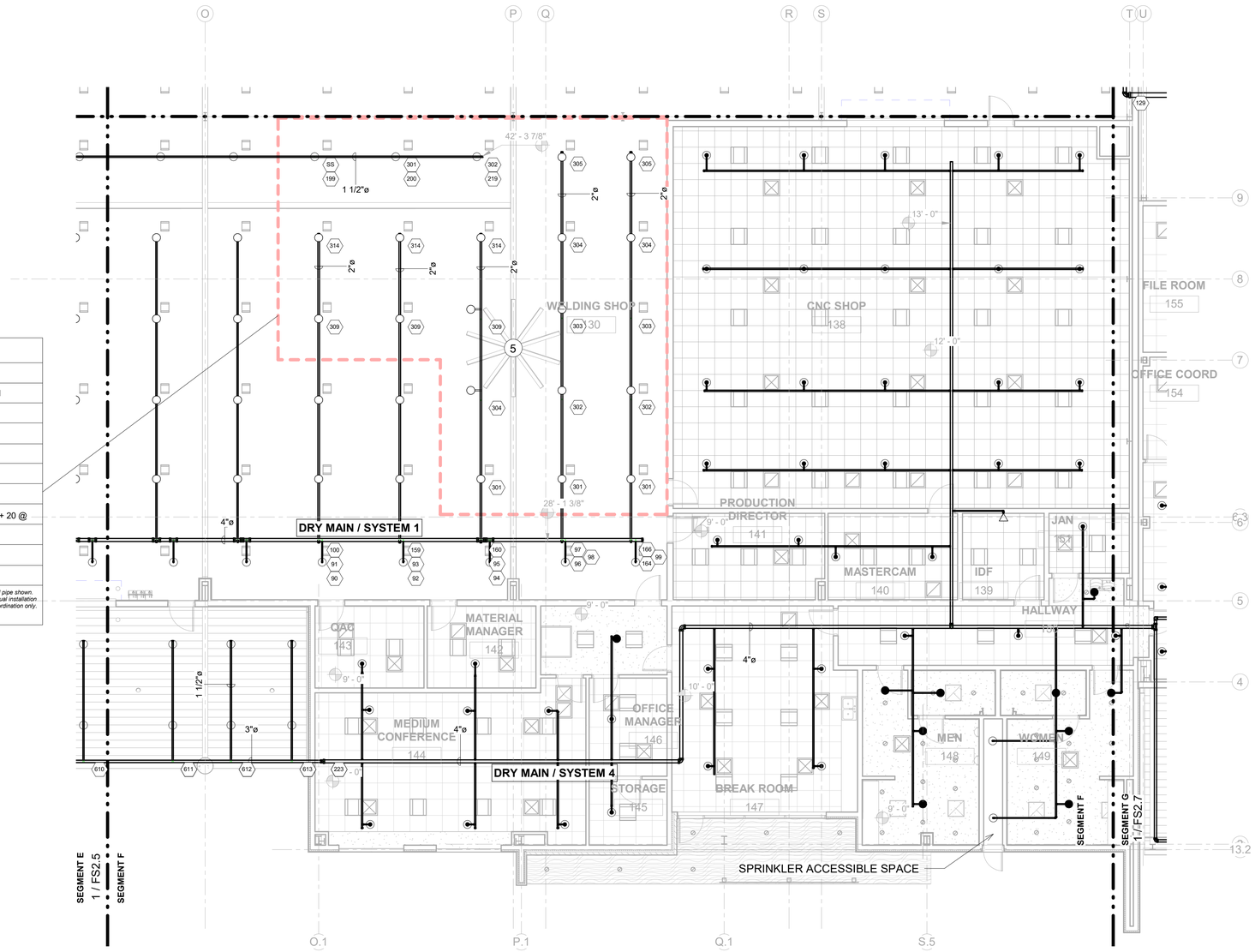
ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.5
10108

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

Hydraulic Information SYSTEM #1	
Remote Area Name	RA2-DRY-OH2
Occupancy Classification	Ordinary Group II
Density	0.20 GPM
Total Hose Streams	250.00 GPM
Design Remote Area ft²	1500.00 ft²
Actual Remote Area ft²	1969.10 ft²
Approx. Dry Capacity *	692.0 gal
Flowing Heads	1 @ 22.00 GPM + 20 @ 21.17 GPM
K-Factor	8
Total Water Required **	854.39 GPM
Total Pressure Required **	59.11 psi

** Represents system as connected for design purposes only. Not all pipe shown.*
*** Contractor Responsible for creating Hydraulic calculations for actual installation documents. This table intended to assist in planning and trade coordination only. Actual final pipe sizes will result in slightly different calculations.*



1 FIRE SUPPRESSION PLAN - SEGMENT F
1/8" = 1'-0"

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.
7. CONTRACTO SHALL SIZE PIPE TO BALANCE IN-RACK SPRINKLER DEMAND WITH OVERHEAD DEMAND AT POINT OF CONNECTION TO THE OVERHEAD SYSTEM.

(123) REPRESENTS HYDRAULIC TAGS FOR REFERENCE ONLY.

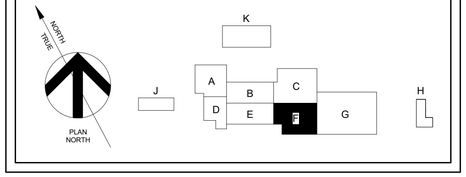
SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

0 4' 8' 16'

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. P-15865 Suite 100, #430
www.firepcg.com San Antonio, Texas 78231

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT F

Texas Department of Transportation

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS2.6
10109

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

SYMBOL LEGEND

- RECESSED STANDARD COV. SPRINKLER
- RECESSED EXTENDED COV. SPRINKLER
- CONCEALED STANDARD COV. SPRINKLER
- UPRIGHT STANDARD COVERAGE SPRINKLER
  HT = HIGH TEMPERATURE
- DRY SIDEWALL SPRINKLER
- 24v ELECTRIC ALARM BELL
- WALL FIRE DEPARTMENT CONNECTION

SHEET NOTES

1. PENDENT SPRINKLERS IN HARD CAP CEILINGS SHALL BE CONCEALED WITH WHITE COVER PLATES
2. PENDENT SPRINKLERS IN DROP DOWN CEILING SHALL BE RECESSED WHITE OR AS APPROVED BY ARCHITECT
3. UPRIGHT SPRINKLERS SHALL BE BRASS
4. PROVIDE CORROSION RESISTANT SPRINKLERS IN CORROSIVE OR EXTERIOR ENVIRONMENTS

KEY NOTES

1. COORDINATE CEILING/WALL CONDITIONS WITH ARCHITECT, WALLS NOT TO DECK MAY REQUIRE SPRINKLERING ABOVE AND BELOW.
2. PROVIDE DRY SIDEWALL SPRINKLERS IN ELECTRICAL AND MDF/IDF ROOMS. DO NOT RUN SPRINKLER PIPE THROUGH SPACE.
3. PROVIDE EXTENDED COVERAGE DRY SIDEWALL SPRINKLERS
4. PROVIDE ADDITIONAL COVERAGE WHERE BATHROOM STALLS EXTEND TO CEILING.
5. PER NFPA 13 SECTION 11.1.7 THE HVLS FAN SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS AND HAVE A VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR OF A MINIMUM OF 3 FT. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN UPON WATERFLOW PER THE REQUIREMENTS OF NFPA 72.
6. VERIFY INSTALLATION LOCATIONS OF SUSPENDED GAS FIRED INFRARED HEATERS AND LOCATE SPRINKLERS PER NFPA 13. PROVIDE HIGHER TEMP SPRINKLERS AS NECESSARY.

123 REPRESENT HYDRAULIC TAGS FOR REFERENCE ONLY.

Hydraulic Information DRY SYSTEM #4	
Remote Area Name	OH1-RAD4
Occupancy Classification	Ordinary Hazard Group 1
Density	0.15 GPM
Total Hose Streams	250.00 GPM
Design Remote Area ft²	1500.00 ft²
Actual Remote Area ft²	1498.24 ft²
Approx. Dry Capacity *	698.6 gal
Flowing Heads	10 @ 21.17 GPM
K-Factor	8
Total Water Required **	500.42 GPM
Total Pressure Required **	54.35 psi

** Represents system as connected for design purposes only. Not all pipe shown.*
*** Contractor Responsible for creating Hydraulic calculations for actual installation documents. This table intended to assist in planning and trade coordination only. Actual final pipe sizes will result in slightly different calculations.*

Hydraulic Information SYSTEM #2	
Remote Area Name	RA-DRY2-OH2
Occupancy Classification	Ordinary Group II
Density	0.20 GPM
Total Hose Streams	250.00 GPM
Design Remote Area ft²	1500.00 ft²
Actual Remote Area ft²	1954.44 ft²
Approx. Dry Capacity *	714.6 gal
Flowing Heads	21 @ 21.17 GPM
K-Factor	8
Total Water Required **	718.64 GPM
Total Pressure Required **	57.13 psi

** Represents system as connected for design purposes only. Not all pipe shown.*
*** Contractor Responsible for creating Hydraulic calculations for actual installation documents. This table intended to assist in planning and trade coordination only. Actual final pipe sizes will result in slightly different calculations.*

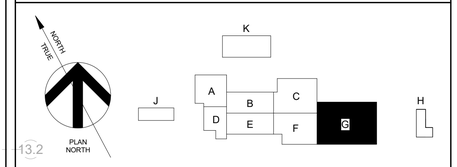
HOLD PIPE TIGHT TO CORNER OF FRAMING
DRY MAIN / SYSTEM 4
DRY MAIN / SYSTEM 2
DRY SIDEWALL PROTECTION
SYSTEM #1 REMOTE INSPECTORS TEST MANIFOLD
SYSTEM #2 LOW POINT DRUM DRIP DRAIN
SYSTEM #4 LOW POINT DRUM DRIP DRAIN
ROUTED TO EXTERIOR
PROVIDE SPRINKLER PROTECTION FOR COVERED AREAS (DRY SYSTEM 2)
PROVIDE SYSTEM #4 WITH REMOTE TEST AND DRUM DRIP DRAINS ROUTE TO EXTERIOR
PROVIDE SYSTEM #2 WITH REMOTE TEST OUTLETS ROUTED TO EXTERIOR
PROVIDE SYSTEM #4 LOW POINT DRUM DRIP DRAINS ROUTED TO EXTERIOR
PROVIDE SPRINKLER PROTECTION FOR COVERED AREAS (DRY SYSTEM 4)
HOLD PIPE TIGHT TO CORNER OF FRAMING
SEGMENT F
1 / FS2.6
SEGMENT G
ELEC 157
STOCK ROOM 156
FILE ROOM 155
OFFICE COORD 154
EQUIP DIRECTOR 153
SHOP COORDINATOR 152
FLUID DISTRIBUTION STORAGE 180
DOUBLE BAY 158
DOUBLE BAY 159
DOUBLE BAY 160
OVERSIZE BAY 161
HEAVY DUTY BAY 162
WELDING 163
OUTDOOR COVER 366
OUTDOOR COVER 365

1 FIRE SUPPRESSION PLAN - SEGMENT G
1/8" = 1'-0"

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 | 14439 NW Military Hwy
Texas Firm No. F-15865 | Suite 105, #430
www.firepcg.com | San Antonio, Texas 78231

0 4' 8' 16'

KEY PLAN



FIRE SUPPRESSION PLAN - SEGMENT G

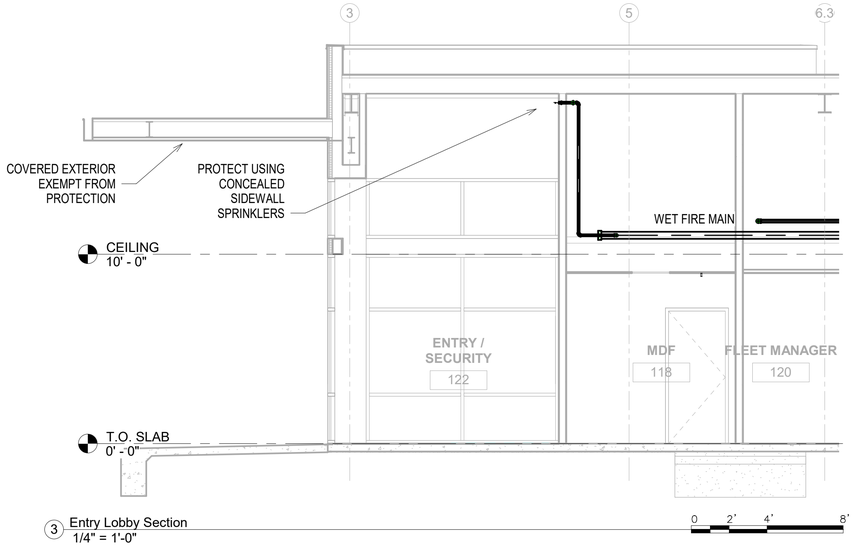
Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

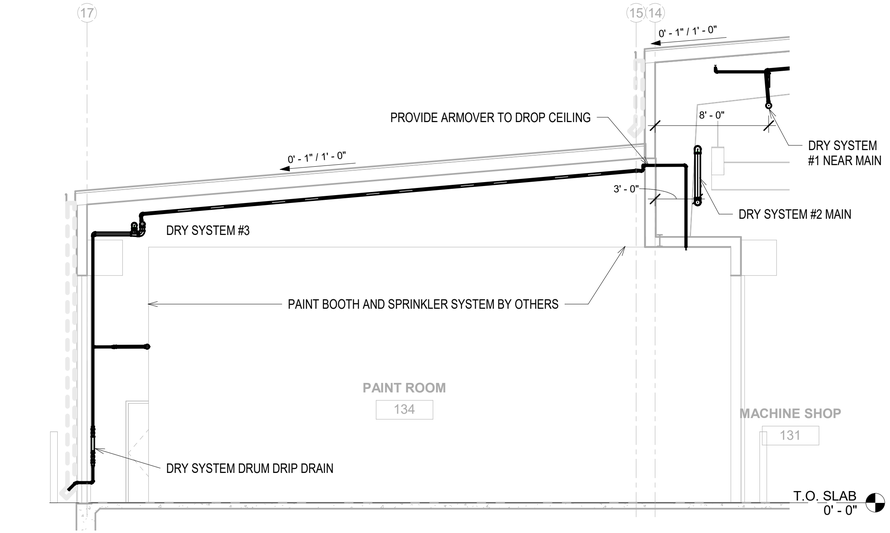
973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-479420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

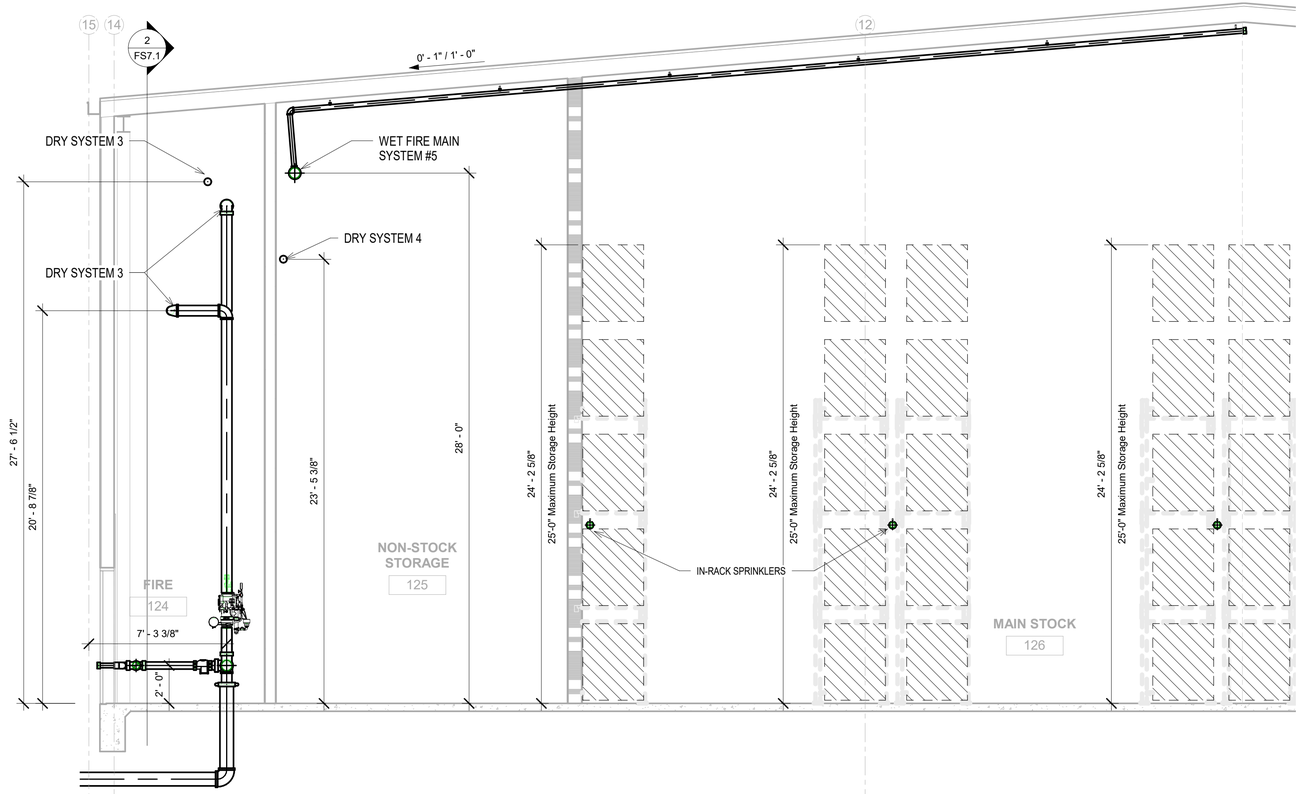
FS2.7
10110



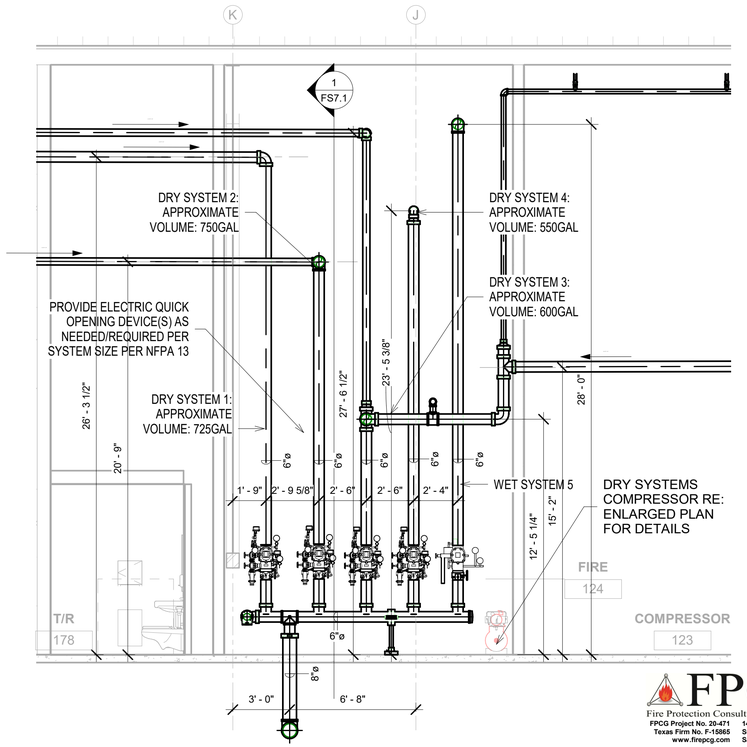
3 Entry Lobby Section
1/4" = 1'-0"



4 Paint Room Section
3/16" = 1'-0"



1 Fire Riser Cross Section
1/4" = 1'-0"



2 Fire Riser Room
1/4" = 1'-0"

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471
Texas Firm No. F-15865
www.firepcg.com
14439 NW Military Hwy
Suite 108, #430
San Antonio, Texas 78231

FIRE SUPPRESSION BUILDING SECTIONS

Texas Department of Transportation

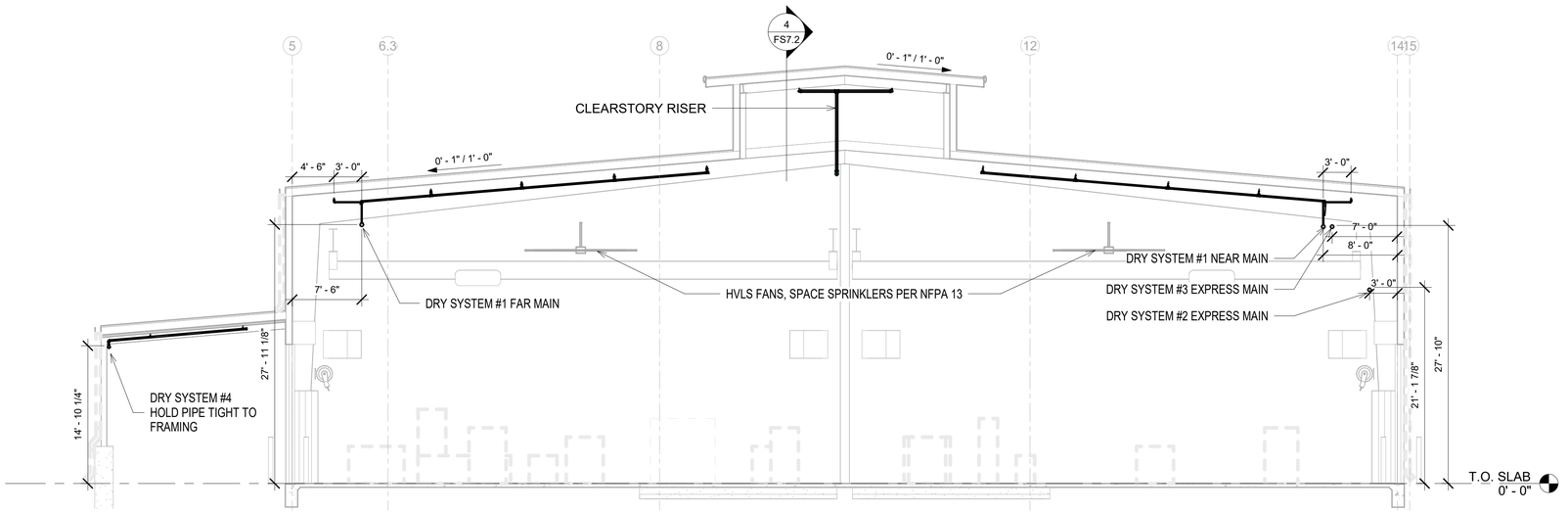
STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 21, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

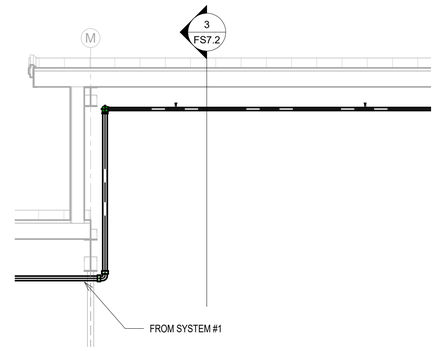
ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS7.1
10111

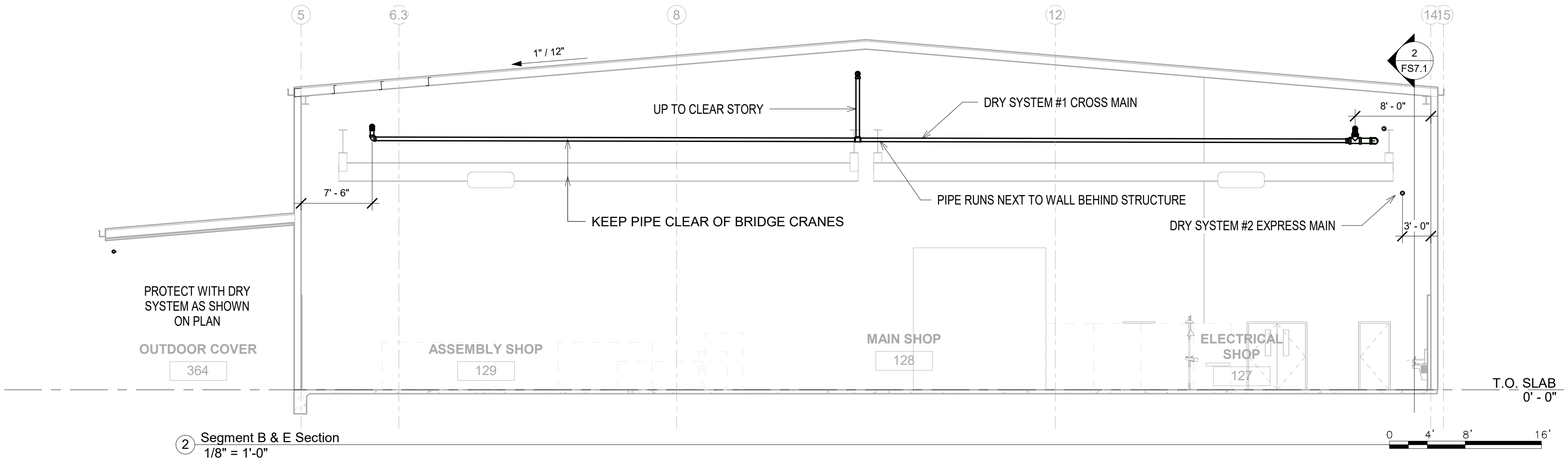
THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.



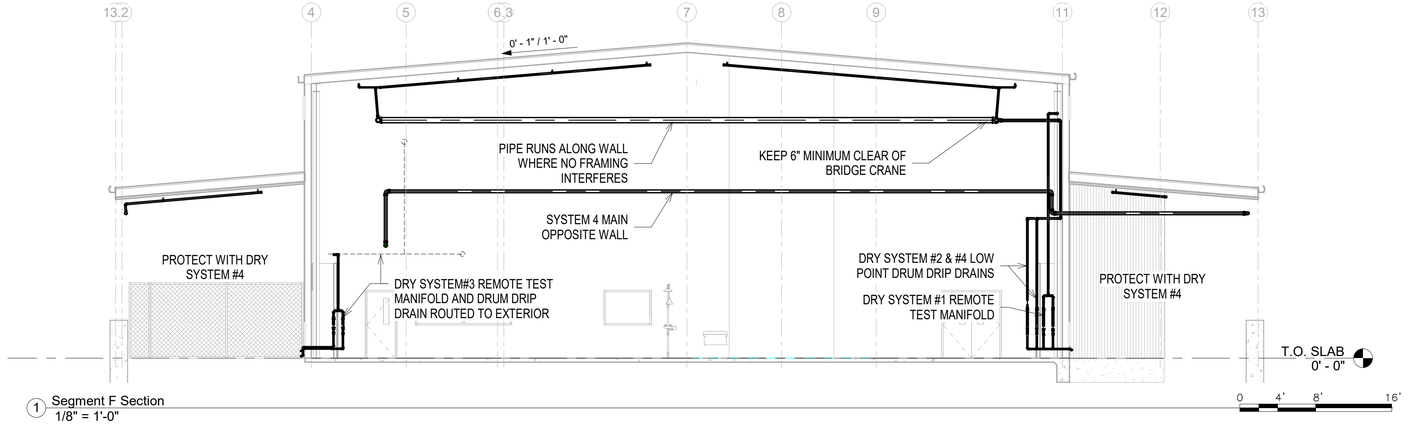
3 Segment B &E Section
1/8" = 1'-0"



4 Clearstory Section
1/4" = 1'-0"



2 Segment B & E Section
1/8" = 1'-0"



1 Segment F Section
1/8" = 1'-0"

Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL
ENGINEER
Sept. 21, 2021

973 OPERATIONS CENTER

5501 NORTH F.M. 973, AUSTIN, TX, 78724

TRAVIS COUNTY

STATE HEADQUARTERS (29)

PROJECT No.: 38-470420062

ISSUED: 09/103/2021

AUTHOR: CC

CHECKED BY: GZ

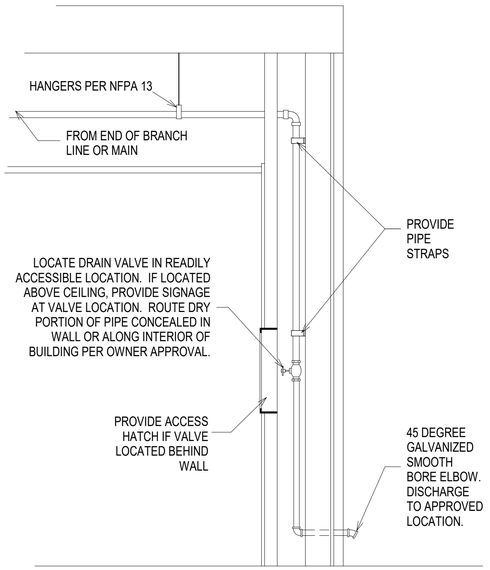
REVISIONS:

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

FIRE SUPPRESSION BUILDING SECTIONS

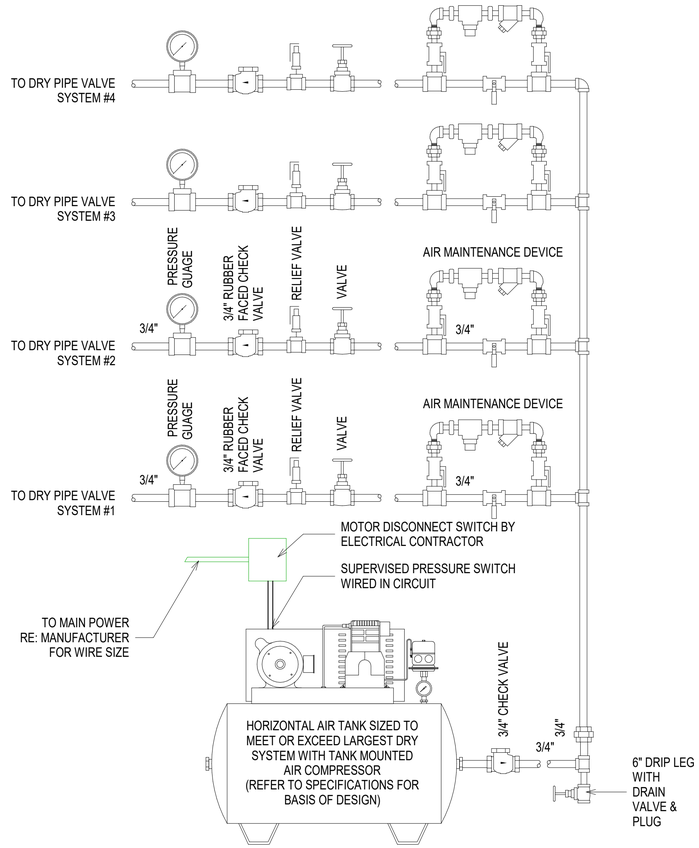
FS7.2

10112

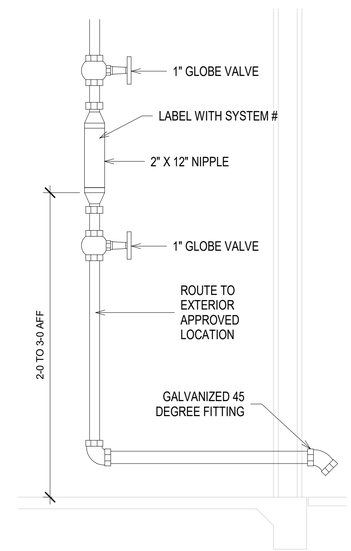


NOTE: NOT LESS THAN 4 FEET OF EXPOSED PIPE IN WARM ROOM BEYOND VALVE WHEN PIPE EXTENDS THROUGH WALL TO OUTSIDE
PROVIDE IN APPROVED LOCATION

7 Wet System Remote Drain
1/2" = 1'-0"

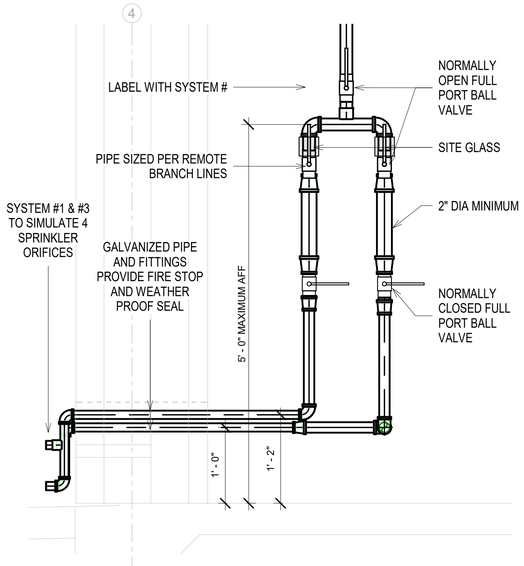


6 Dry System Air Comressor



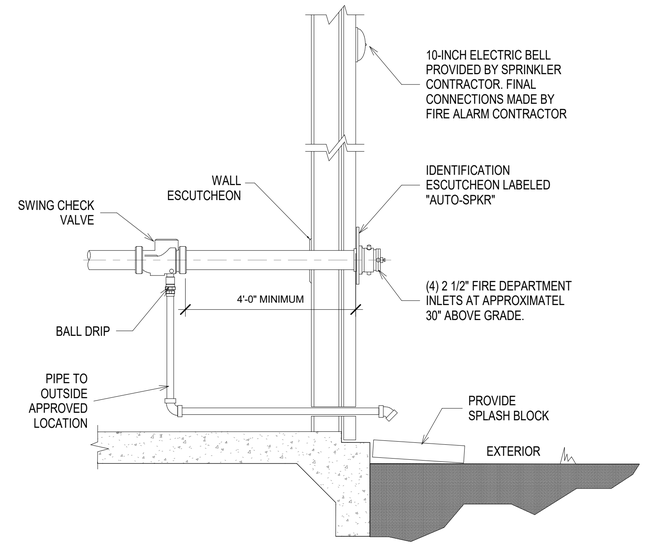
5 Dry System Auxiliary Drain

Per NFPA 13 - 2016 Edition Table 7.2.3.6.1 Dry Pipe System Water Delivery		
Hazard	# of Most Remote Open Sprinklers	Max Water Delivery Time
Light	1	60
Ordinary I	2	50
Ordinary II	2	50
Extra I	4	45
Extra II	4	45
High Piled	4	45

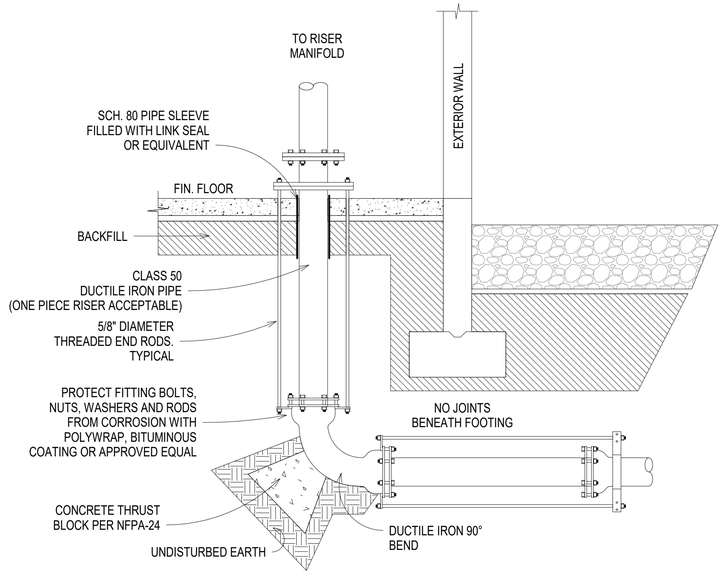


Dry Systems Remote Inspectors Test Manifold

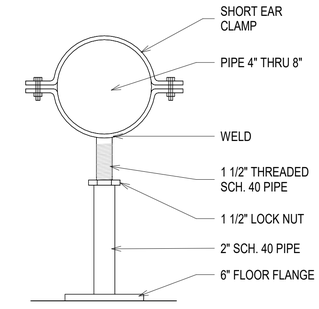
4



3 Wall Mounted FDC



2 Sprinkler Supply Spigot



1 Sprinkler Manifold Pipe Stand

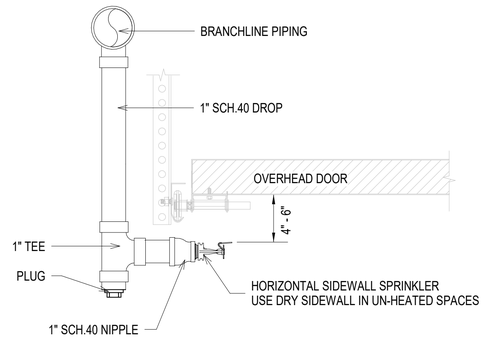
FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

FIRE SUPPRESSION DETAILS

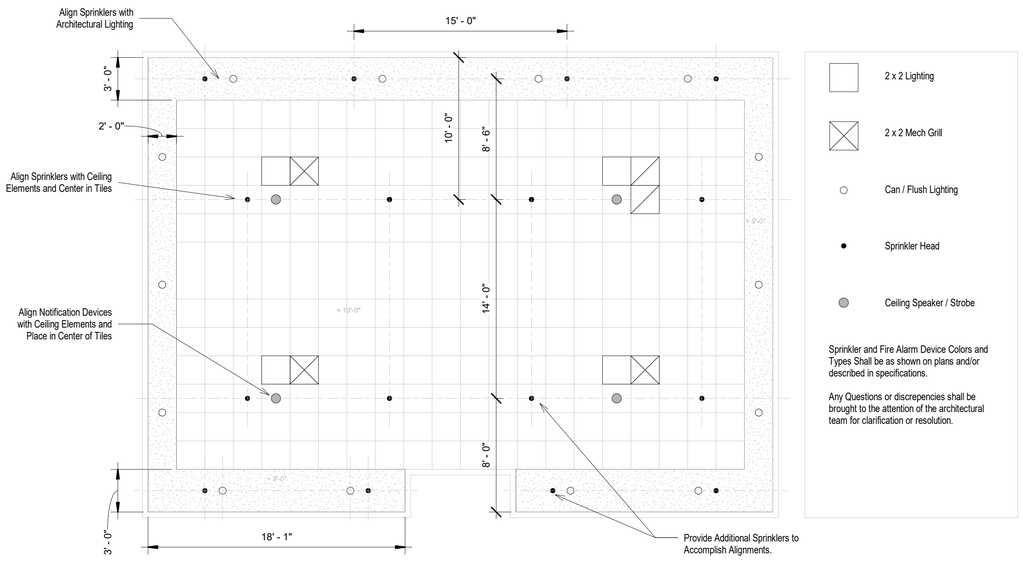
973 OPERATIONS CENTER
5501 NORTH F.M. 973; AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-479420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

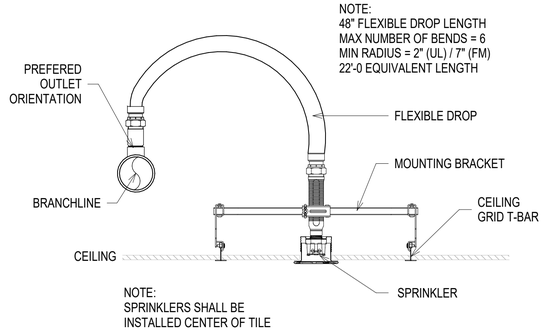
FS8.1
10113



10 Overhead Door Sprinkler



7 Front of House Center of Tile Installation

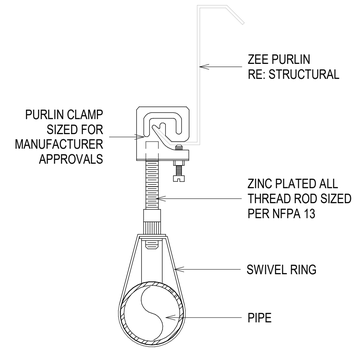


9 Flexible Sprinkler Installation

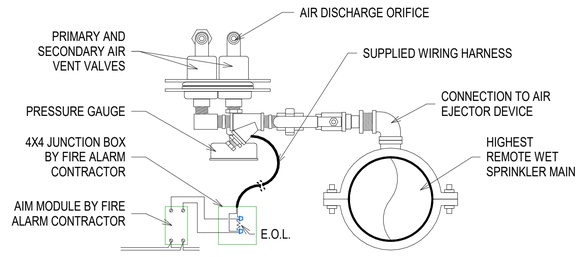
Per NFPA 13 - 2016 Edition
Table 9.2.2.1 (a) Maximum Distance Between Hangers
Section 9.2.3.4 Unsupported Lengths

Pipe Sizes Nominal	(O.D.)	Max Spacing	Unsupported Length
1"	(1.315")	12'-0"	3'-0"
1-1/4"	(1.660")	12'-0"	4'-0"
1-1/2"	(1.900")	15'-0"	5'-0"
2"	(2.375")	15'-0"	5'-0"
2-1/2"	(2.375")	15'-0"	5'-0"
3"	(3.500")	15'-0"	5'-0"
4"	(4.500")	15'-0"	5'-0"
6"	(6.625")	15'-0"	5'-0"
8"	(8.625")	15'-0"	5'-0"

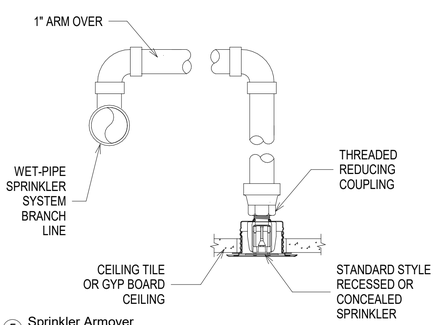
The above does not cover all conditions, refer to NFPA 13 Chapter 9 for additional information.



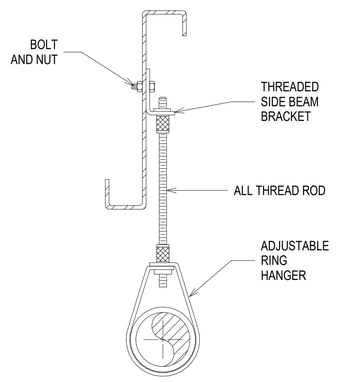
8 Z-Purlin Clamp Hanger



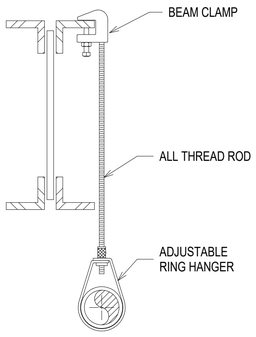
6 Suppervised Wet Pipe Air Ejector



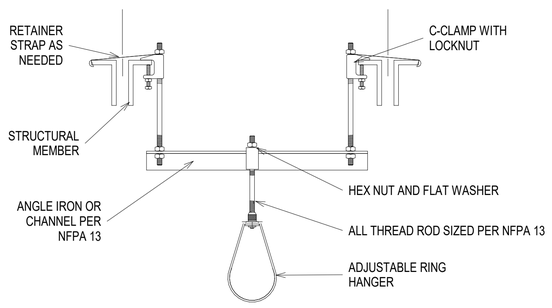
5 Sprinkler Armover



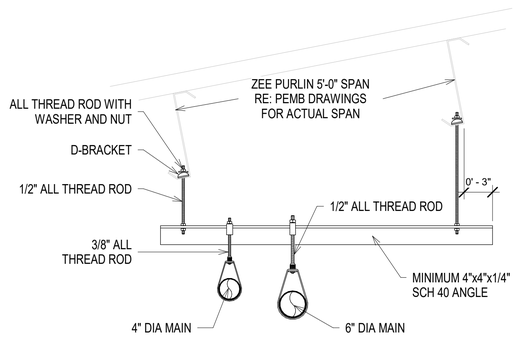
4 Sprinkler Pipe Side Beam Hanger



3 Sprinkler Pipe Top Beam Hanger



2 Sprinkler Pipe Trapeze Hanger



1 Z-Purlin Shared Trapese Hanger Installation

FPCG
Fire Protection Consulting Group, LLC
FPCG Project No. 20-471 14439 NW Military Hwy
Texas Firm No. F-15865 Suite 108, #430
www.firepcg.com San Antonio, Texas 78231

FIRE SUPPRESSION DETAILS

Texas Department of Transportation

STATE OF TEXAS
GILEAD R. ZIEMBA
104873
LICENSED
PROFESSIONAL ENGINEER
Sept. 24, 2021

973 OPERATIONS CENTER
5501 NORTH F.M. 973, AUSTIN, TX, 78724
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-470420062

ISSUED: 09/103/2021
AUTHOR: CC
CHECKED BY: GZ
REVISIONS:

FS8.2
10114

TECHNOLOGY SYMBOLS & LEGEND

VOICE SYMBOLS

▼	SINGLE VOICE OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED.
X ▼	VOICE OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED. X = NUMBER OF CABLE TERMINATIONS PER LOCATION.
▼	SINGLE VOICE OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED.
X ▼	VOICE OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED, X = NUMBER OF CABLE TERMINATIONS PER LOCATION AS INDICATED.
▼	POWER/COMMUNICATIONS POLE WITH A SINGLE VOICE OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
X ▼	POWER/COMMUNICATIONS POLE WITH X = NUMBER OF VOICE OUTLETS, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
▼	SINGLE VOICE OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE-THRU AS SPECIFIED.
X ▼	VOICE OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE -THRU AS SPECIFIED WITH X = NUMBER OF VOICE TERMINATIONS PER LOCATION.
W ▼	SINGLE VOICE OUTLET FOR WALL-MOUNTED PHONE, CABLE TYPE AS SPECIFIED, MOUNTED +52-INCHES A.F.F. UNLESS OTHERWISE NOTED.

DATA SYMBOLS

▽	SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED.
X ▽	DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED. X = NUMBER OF CABLE TERMINATIONS PER LOCATION.
▽	SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED.
X ▽	DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED, X = NUMBER OF CABLE TERMINATIONS PER LOCATION AS INDICATED.
▽	POWER/COMMUNICATIONS POLE WITH A SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
X ▽	POWER/COMMUNICATIONS POLE WITH X = NUMBER OF DATA OUTLETS, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
▽	SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE-THRU AS SPECIFIED.
X ▽	DATA OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE -THRU AS SPECIFIED WITH X = NUMBER OF CABLE TERMINATIONS PER LOCATION.
W ▽	SINGLE DATA OUTLET FOR WALL-MOUNTED IP PHONE, CABLE TYPE AS SPECIFIED, MOUNTED +52-INCHES A.F.F. UNLESS OTHERWISE NOTED.
	SINGLE ABOVE CEILING DATA OUTLET, CABLE TYPE AS SPECIFIED.
X	ABOVE CEILING DATA OUTLET, CABLE TYPE AS SPECIFIED WITH X = NUMBER OF CABLE TERMINATIONS PER LOCATION.

ROUGH-IN & MISC. SYMBOLS

	ROUGH-IN LOCATION, INFRASTRUCTURE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED.
	ROUGH-IN LOCATION, INFRASTRUCTURE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED.
	POWER POLE WITH ROUGH-IN LOCATION, INFRASTRUCTURE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
	ROUGH-IN LOCATION. TERMINATED IN FLOOR BOX/POKE-THRU AS SPECIFIED.
WAP	WIRELESS ACCESS POINT. EQUIPMENT AS SPECIFIED.
R/R	WALL-MOUNTED ROUGH-IN LOCATION FOR FUTURE USE.
MM#	WALL-MOUNTED MULTIMEDIA PLATE, # = TYPE AS SPECIFIED.

GENERAL SYMBOLS

# SHEET — DRAWING TITLE — SCALE: SCALE	DRAWING TITLE CALLOUT, # = DETAIL NUMBER.
# SHEET	DETAIL CALLOUT, # = DETAIL NUMBER.
# SHEET	SECTION CALLOUT, # = DETAIL NUMBER.
SHEET #	ELEVATION CALLOUT, # = DETAIL NUMBER.
#	KEYED NOTE, # = KEYED NOTE NUMBER.
#	REVISION TRIANGLE, # = REVISION NUMBER (PER SHEET).
TR (IDF XXX)	INDICATES TELECOMMUNICATIONS REGION

VOICE/DATA SYMBOLS

▼▽	SINGLE VOICE & SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED.
X Y ▼▽	VOICE & DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED. X = NUMBER OF VOICE TERMINATIONS , Y = NUMBER OF DATA TERMINATIONS PER LOCATION.
▼▽	SINGLE VOICE & SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED.
X Y ▼▽	VOICE & DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED, X = NUMBER OF VOICE OUTLETS AND Y = NUMBER OF DATA OUTLETS PER LOCATION AS INDICATED.
▼▽	POWER/COMMUNICATIONS POLE WITH A SINGLE VOICE OUTLET AND SINGLE DATA OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
X Y ▼▽	POWER/COMMUNICATIONS POLE WITH X = NUMBER OF VOICE TERMINATIONS, Y = NUMBER OF DATA TERMINATIONS, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
▼▽	SINGLE VOICE OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE-THRU AS SPECIFIED.
X Y ▼▽	VOICE OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE -THRU AS SPECIFIED WITH X = NUMBER OF VOICE TERMINATIONS, Y = NUMBER OF DATA TERMINATIONS PER LOCATION.

FIBER OPTIC SYMBOLS

▽	SINGLE FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED.
X ▽	FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +18-INCHES A.F.F. UNLESS OTHERWISE NOTED. X = NUMBER OF CABLE TERMINATIONS PER LOCATION.
▽	SINGLE FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED.
X ▽	FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED +6-INCHES ABOVE COUNTER OR BACKSPLASH UNLESS OTHERWISE NOTED, X = NUMBER OF CABLE TERMINATIONS PER LOCATION AS INDICATED.
▽	POWER/COMMUNICATIONS POLE WITH A SINGLE FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
X ▽	POWER/COMMUNICATIONS POLE WITH X = NUMBER OF FIBER OPTIC OUTLETS, CABLE TYPE AS SPECIFIED, MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
▽	SINGLE FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE-THRU AS SPECIFIED.
X ▽	FIBER OPTIC OUTLET, CABLE TYPE AS SPECIFIED, TERMINATED IN FLOOR BOX/POKE -THRU AS SPECIFIED WITH X = NUMBER OF CABLE TERMINATIONS PER LOCATION.

CABLE PLANT & RISER DIAGRAM

	MAINTENANCE HOLE, SIZE & TYPE AS SPECIFIED.
	PULLBOX, SIZE AND TYPE AS SPECIFIED.
UGC	DIRECT BURIED COMMUNICATIONS, CABLE TYPE AS SPECIFIED.
AER	AERIAL COMMUNICATIONS, CABLE TYPE AS SPECIFIED.
	CONDUIT, SIZE AND TYPE AS SPECIFIED.

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AER	AERIAL
DEMARC	DEMARCATION POINT
EMT	ELECTRIC METALLIC TUBE
F.O.C.	FIBER OPTIC CABLE
GIP	GALVANIZED IRON PIPE
HE	PA/INTERCOM HEAD-END
IMC	INTERMEDIATE METAL CONDUIT
ISP	INSIDE CABLE PLANT
IDF	INTERMEDIATE DISTRIBUTION FRAME
MDF	MAIN DISTRIBUTION FRAME
MH	MAINTENANCE HOLE
MM	MULTIMODE
OSP	OUTSIDE CABLE PLANT
PB	PULLBOX
PR	PAIR
PVC	POLYVINYL CHLORIDE
RSC	RIGID STEEL CONDUIT
SM	SINGLE MODE
SP	SERVICE PROVIDER
STP	SHIELDED TWISTED PAIR
TB	TERMINAL BLOCK
TR	TELECOMMUNICATION REGION
UGC	UNDERGROUND COMMUNICATION
UON	UNLESS OTHERWISE NOTED
UTP	UNSHIELDED TWISTED PAIR

NOTES

1. CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS THAT MAKE UP THE CONTRACT DOCUMENTS AND COMPLETE ALL WORK INCLUDED THEREIN.
2. SCALE OF TECHNOLOGY DRAWINGS IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CABLE LENGTHS, SIZE OF PATHWAYS, DIMENSIONS, ETC.
3. TECHNOLOGY DRAWINGS SHALL BE USED TO COMPLEMENT THE WRITTEN SPECIFICATIONS.
4. ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/DESIGN CONSULTANT. DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT/DESIGN CONSULTANT AND SUBSEQUENTLY CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE ARCHITECT'S/DESIGN CONSULTANT'S INTERPRETATION.

INDEX OF DRAWINGS

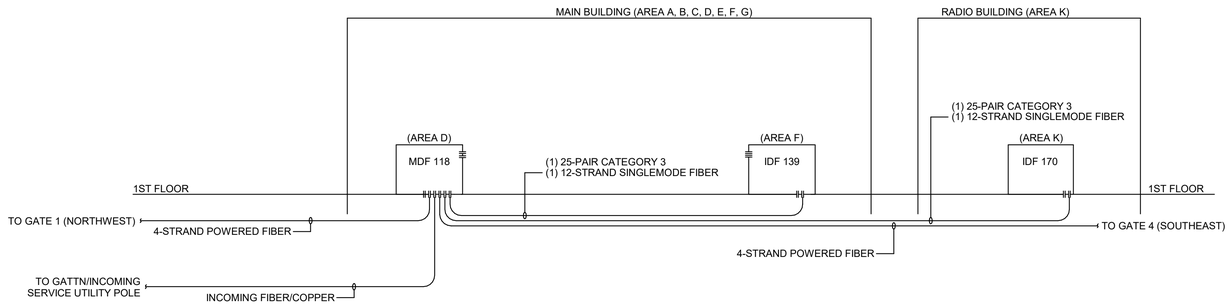
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T0.0
11000

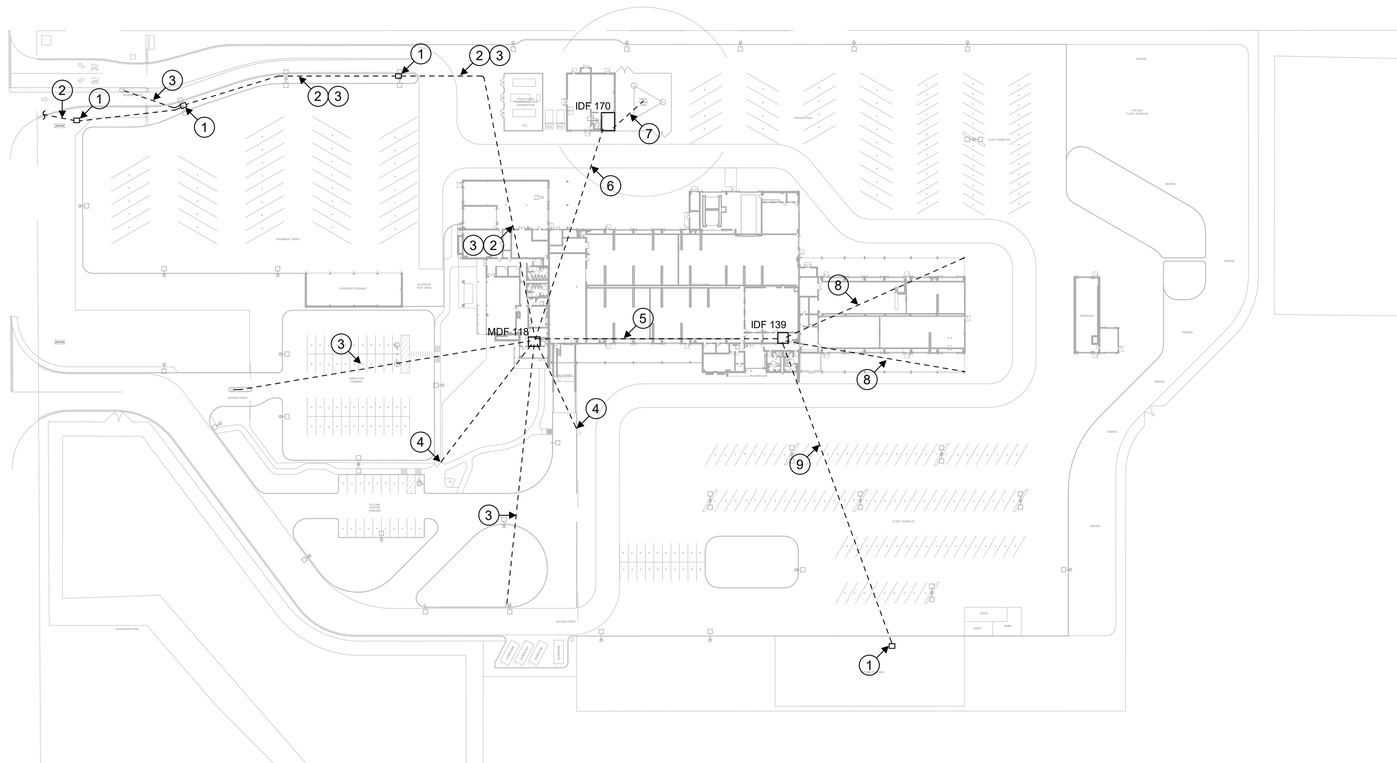
ALL NEW UNDERGROUND 4-INCH CONDUITS SHALL CONTAIN 3-CELL MAXCELL WITH A MULE TAPE PULL STING IN EACH CELL. ALL UNDERGROUND CONDUITS SHALL HAVE A LOCATE WIRE ABOVE.



ALL NEW UNDERGROUND 4-INCH CONDUITS SHALL CONTAIN 3-CELL MAXCELL WITH A MULE TAPE PULL STING IN EACH CELL. ALL UNDERGROUND CONDUITS SHALL HAVE A LOCATE WIRE ABOVE.

2 COPPER/FIBER RISER DIAGRAM

NOT TO SCALE



1 TECHNOLOGY SITE PLAN - OVERALL

1" = 80'-0"

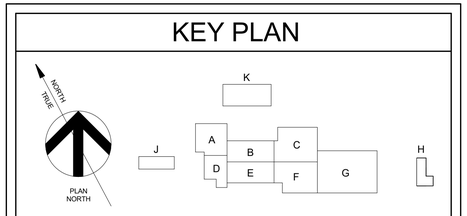
GENERAL NOTES

1. 1. CONDUIT ROUTING AND HANDHOLE LOCATIONS ARE SHOWN FOR SCHEMATIC IN NATURE. REFER TO ELECTRICAL/CIVIL SITE PLAN AND SPECIFICATIONS FOR ACTUAL SITE CONDUIT ROUTING, HANDHOLE LOCATIONS, MATERIALS, AND METHODS.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
4. CABLING FOR DATA, VOICE AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN CONDUIT, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME CONDUIT, CONDUIT SLEEVE, CORE, ETC.
5. CONDUITS SHALL MAINTAIN A MINIMUM OF 12-INCHES OF WELL TAMPED EARTH OR 3-INCHES OF CONCRETE SEPARATION BETWEEN ANY FOREIGN CONDUITS AND/OR PIPES THROUGHOUT THE ENTIRE CONDUIT PATHWAY.
6. CONDUIT SEGMENTS SHALL CONTAIN NO MORE THAN (2) 90 DEGREE BENDS OR 300 LINEAR FEET BETWEEN PULLING POINTS.
7. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
8. CONTRACTOR SHALL PROVIDE DETECTABLE WARNING TAPE 12-INCHES BELOW GRADE ON TOP OF ALL CONDUITS THROUGHOUT THE ENTIRE CONDUIT TRENCH.
9. CONTRACTOR SHALL COORDINATE ALL CONDUIT PATHWAYS WITH THE ARCHITECT AND LANDSCAPE PLAN PRIOR TO BEGINNING ANY TRENCHING.
10. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
11. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
12. ALL NEW CONDUIT 3-INCHES AND LARGER SHALL HAVE 3-CELL MAXCELL INSTALLED, WITH A MULE TAPE PROVIDED IN EACH CELL. ALL CONDUIT SMALLER THAN 3-INCHES SHALL HAVE A MULE TAPE INSTALLED.
13. ALL NEW UNDERGROUND CONDUITS SHALL HAVE A LOCATE WIRE ABOVE.
14. COORDINATE EXACT CONDUIT PATH / ROUTING WITH CIVIL ENGINEER AND ARCHITECT PRIOR TO INSTALLATION.

KEYED NOTES

1. NEW 36X36X18 (MINIMUM) PRECAST HANDHOLE WITH LOCKABLE LID LABELED "COMMUNICATIONS", RECESSED IN SOFTSCAPE. TOP OF HANDHOLE SHALL BE FLUSH WITH GRADE.
2. (3) 4-INCH UNDERGROUND CONDUITS FROM MDF 118 TO LOCATION SHOWN FOR INCOMING AT&T SERVICE AND GAATN CONNECTIONS. UNDERGROUND CONDUITS SHALL EXTEND TO AT&T / GAATN SERVICE POLE LOCATION AND STUB UP AT BASE OF POLE A MINIMUM OF 4-INCHES ABOVE FINISHED GRADE.
3. (1) 2-INCH UNDERGROUND CONDUIT FROM MDF 118 TO ISLAND AS SHOWN. CONDUIT SHALL ROUTE TO PEDESTAL LOCATION AND STUB ABOVE ISLAND GRADE A MINIMUM OF 4-INCHES. REFER TO SECURITY SITE PLAN FOR LOCATION OF PEDESTAL AND ADDITIONAL CONDUIT REQUIREMENTS.
4. ROUTE (2) 1-INCH UNDERGROUND CONDUITS FROM MDF/IDF TO GATE AS SHOWN. CONDUITS SHALL ROUTE TO EACH POST OF GATE; (1) CONDUIT TO STRIKE SIDE AND (1) CONDUIT TO HINGE SIDE. EACH CONDUIT SHALL STUB INTO BASE OF GATE POST A MINIMUM OF 12-INCHES ABOVE GRADE. REFER TO SECURITY SITE PLAN FOR LOCATION OF EQUIPMENT AND ADDITIONAL CONDUIT REQUIREMENTS.
5. (2) 4-INCH UNDERGROUND CONDUITS FROM MDF 118 TO IDF 140 FOR BACKBONE CABLING. REFER TO ENLARGED MDF/IDF PLANS FOR EXACT LOCATION OF CONDUIT STUB UP INSIDE THE MDF/IDF ROOM.
6. (2) 4-INCH UNDERGROUND CONDUITS FROM MDF 118 TO IDF 170 FOR BACKBONE CABLING. REFER TO ENLARGED MDF/IDF PLANS FOR EXACT LOCATION OF CONDUIT STUB UP INSIDE THE MDF/IDF ROOM.
7. (1) 4-INCH UNDERGROUND CONDUIT FROM IDF 170 TO RADIO TOWER FOR RADIO CABLING. CONDUIT SHALL STUB UP AT BASE OF RADIO TOWER A MINIMUM OF 12-INCHES ABOVE FINISHED GRADE.
8. (1) 1-INCH UNDERGROUND CONDUIT FROM IDF 140 TO COLUMN CAMERA LOCATION AS SHOWN. ROUTE CONDUIT UNDERGROUND FROM IDF TO BASE OF COLUMN. ROUTE UP TO 12-FEET ABOVE FINISHED GRADE AND STUB INTO DOUBLE GANG BOX RECESSED IN CONCRETE COLUMN. CONDUIT SHALL STUB A MINIMUM OF 4-INCHES ABOVE FINISHED FLOOR.
9. (1) 4-INCH UNDERGROUND CONDUIT FROM IDF 140 TO FUTURE FUEL MANAGEMENT SYSTEM LOCATION.

KEY PLAN



TECHNOLOGY SITE PLAN - OVERALL

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

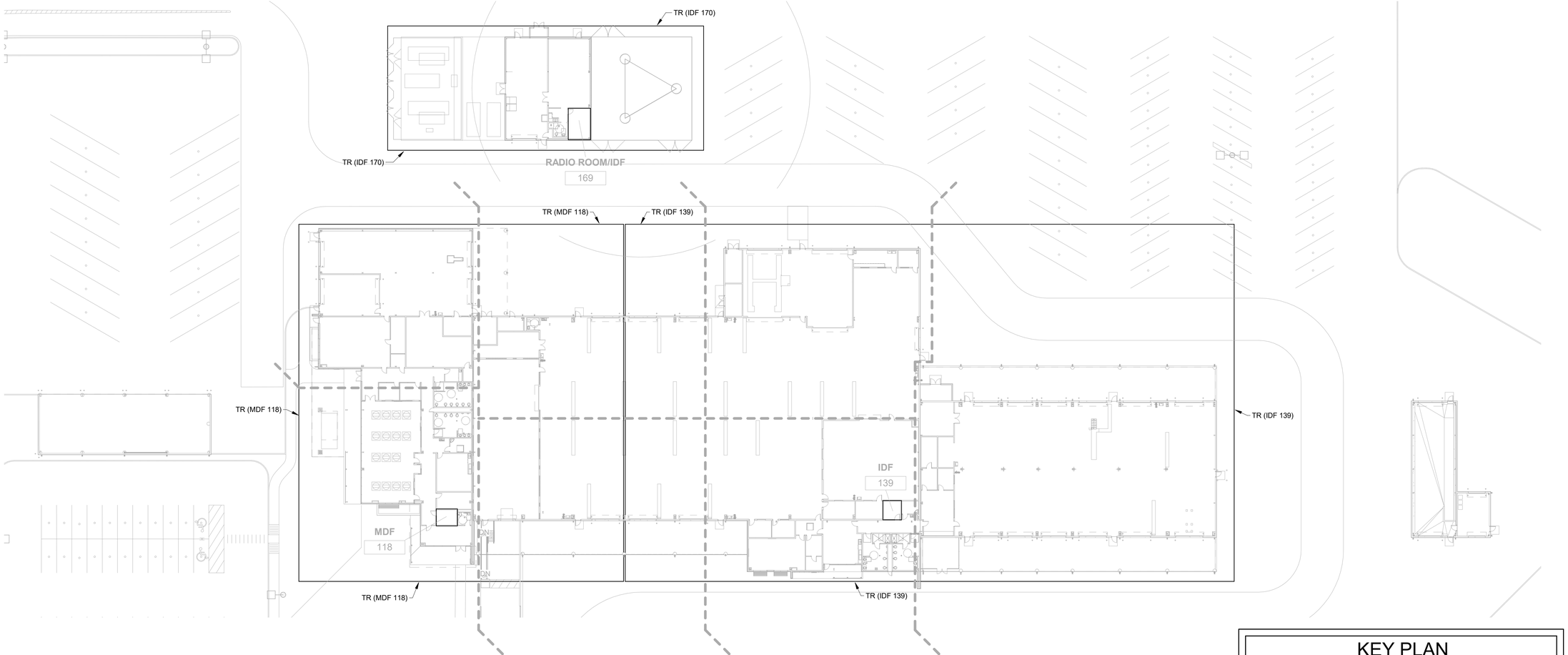
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T1.1
11101

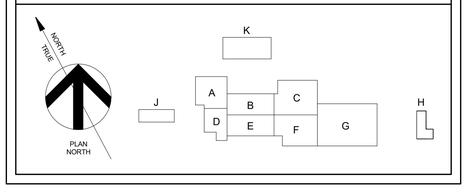
THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:24:43 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R2b - TxDOT_973 Operation Center.rvt



1 TECHNOLOGY FLOOR PLAN - OVERALL
1/32" = 1'-0"

KEY PLAN



TECHNOLOGY FLOOR PLAN - OVERALL

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

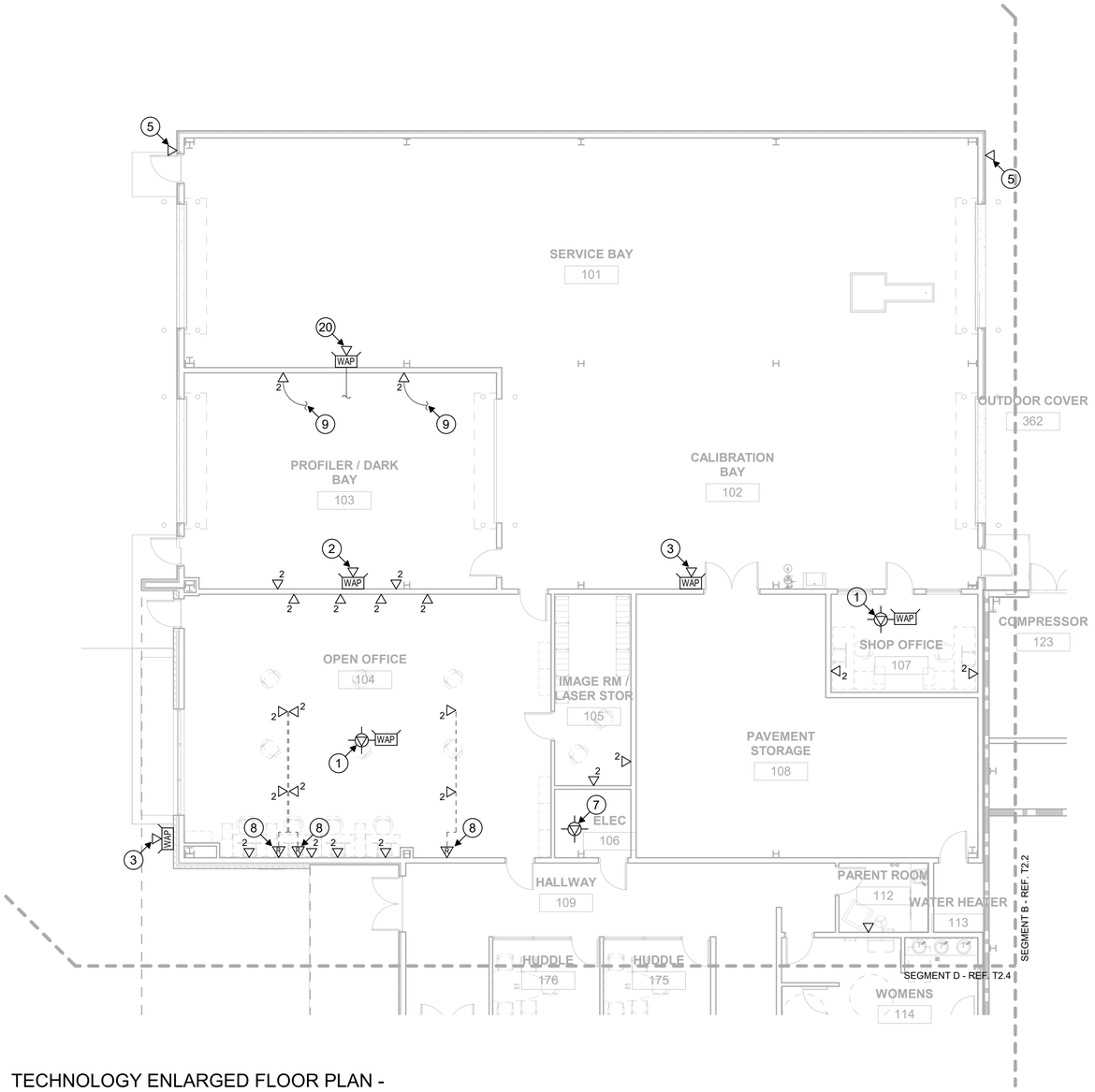
T2.0
11200

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:24:45 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R3D - TxDOT_973 Operation Center.rvt

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.



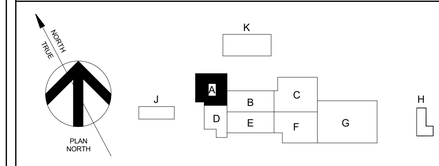
1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT A
1/8" = 1'-0"

0 4' 8' 16'

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT A

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

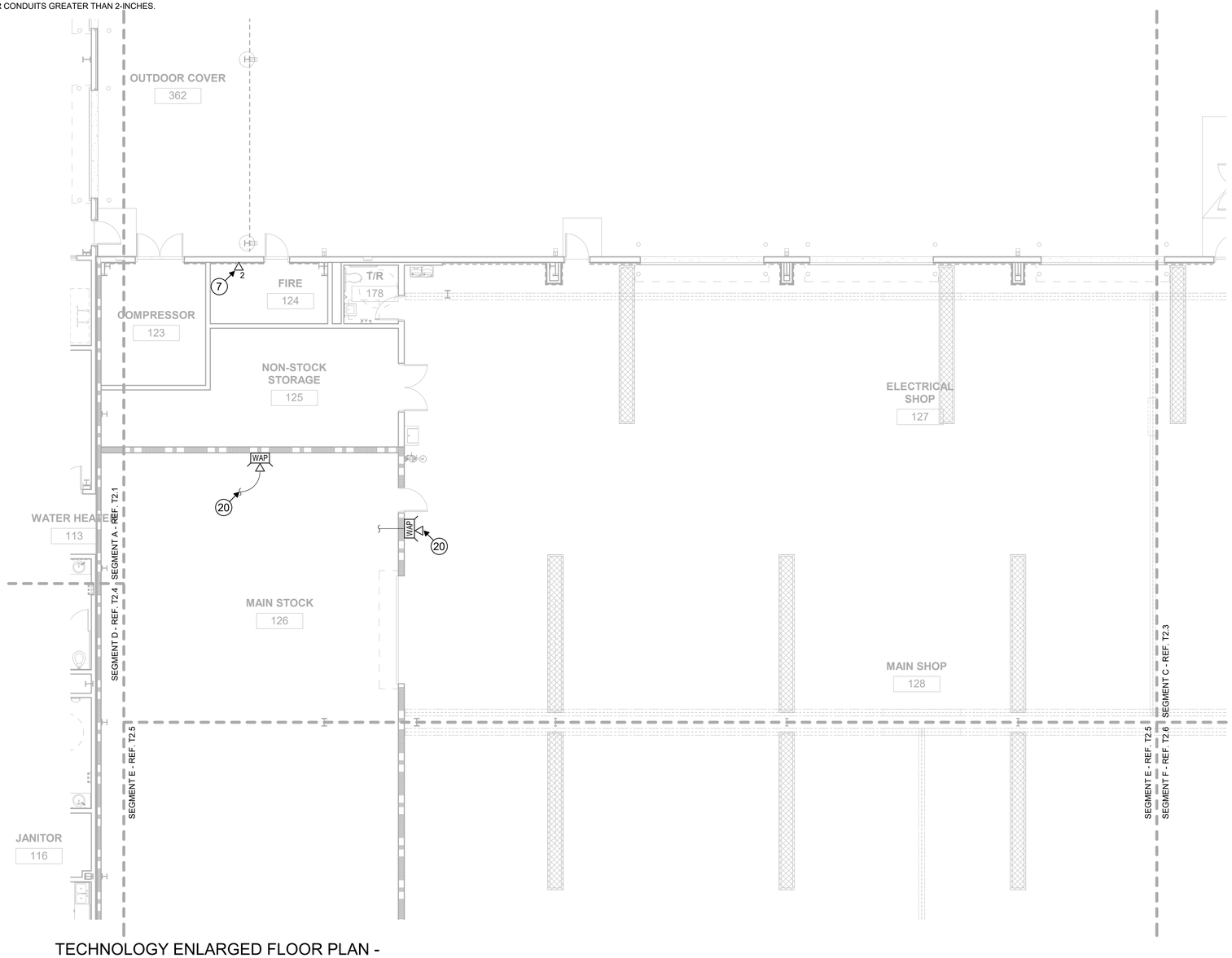
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T2.1
11201

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.



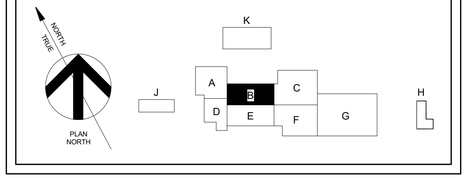
1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT B
1/8" = 1'-0"

0 4' 8' 16'

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT B

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

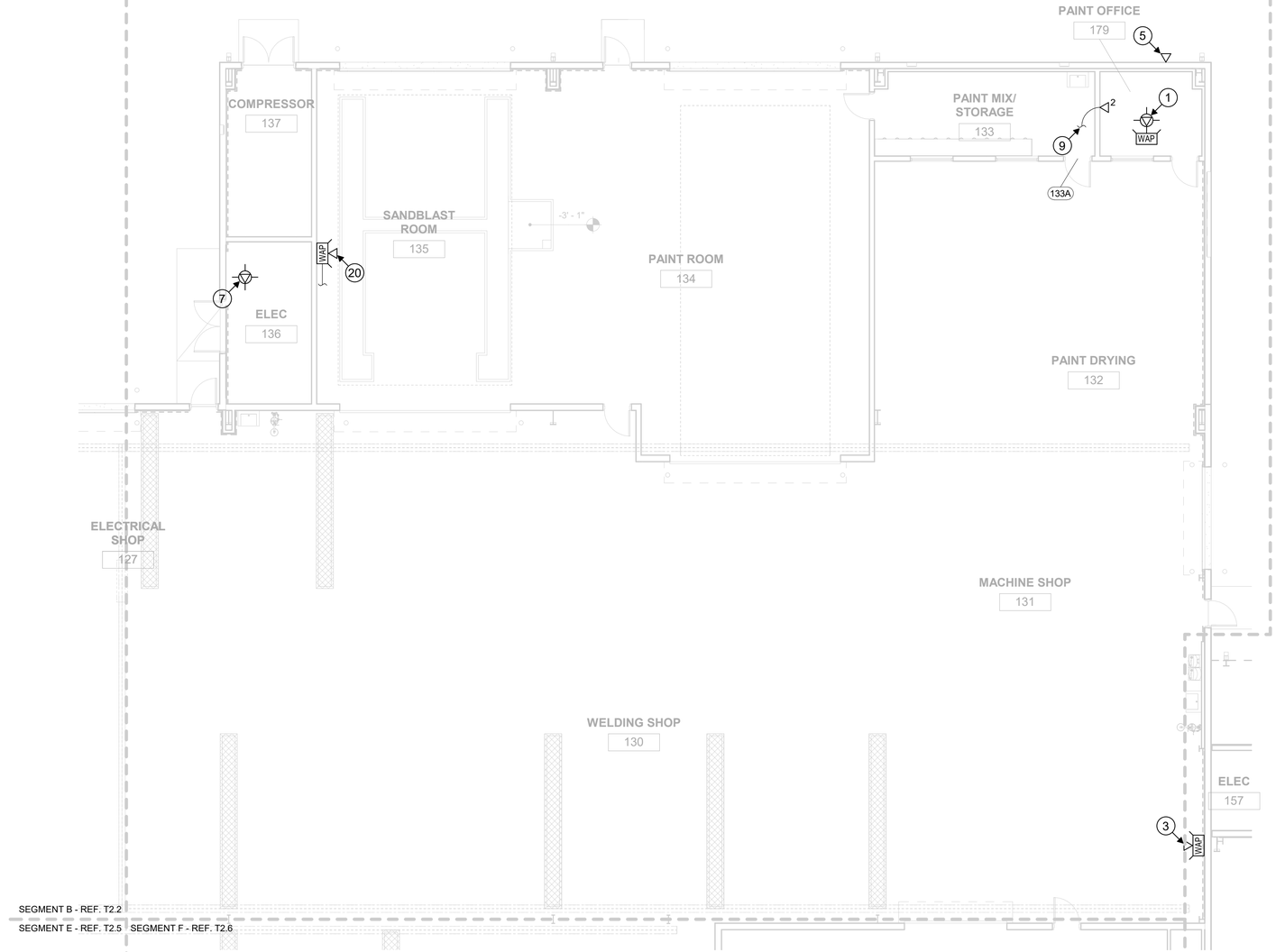
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T2.2
11202

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO: CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.

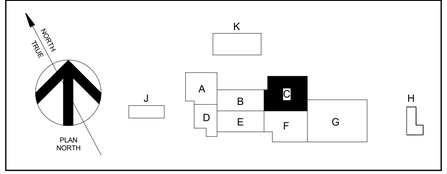


1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT C
1/8" = 1'-0"
0 4' 8' 16'

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT C

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

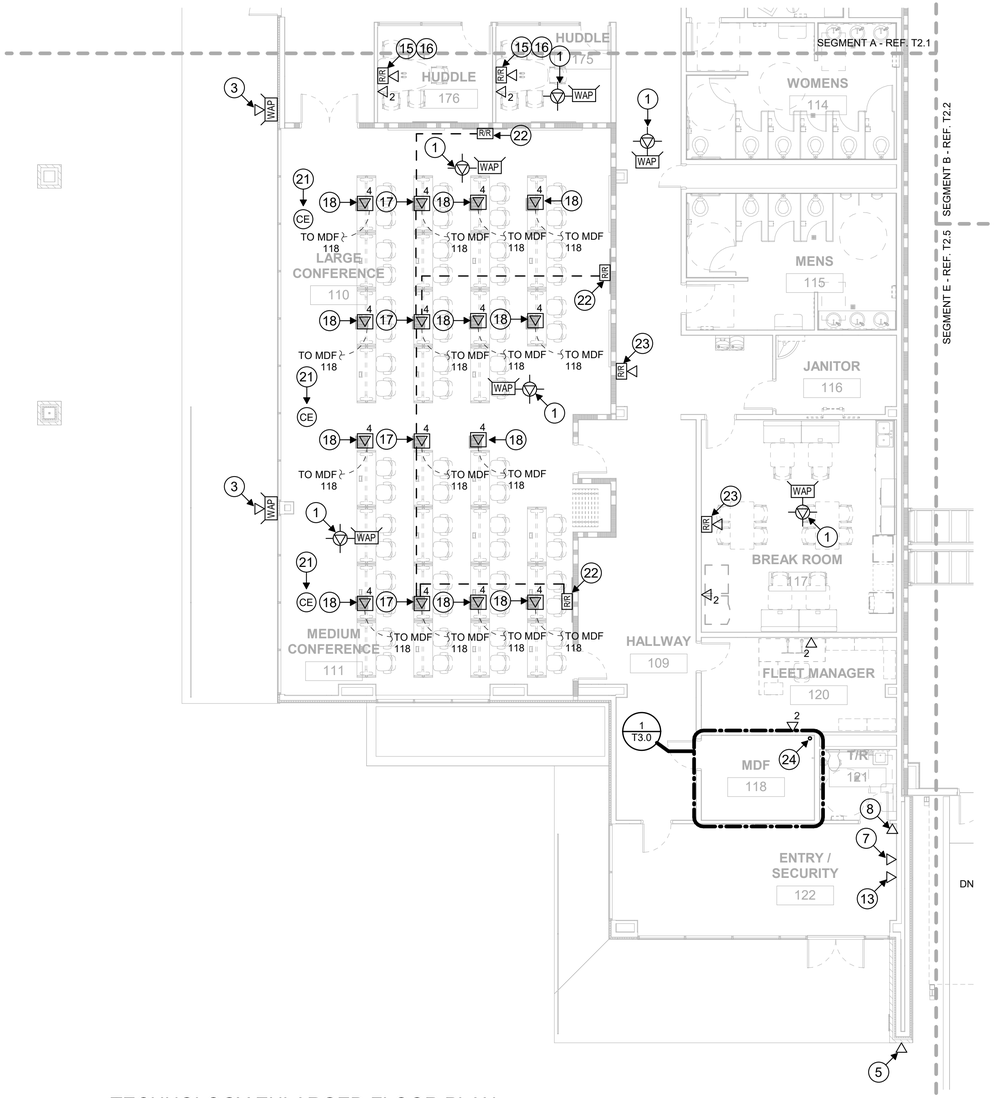
T2.3
11203

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.

KEYED NOTES

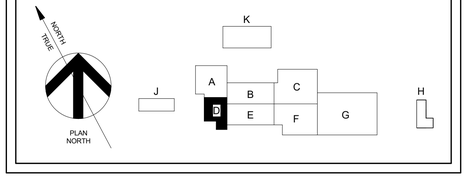
1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.



1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT D
1/8" = 1'-0"

0 4' 8' 16'

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT D

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

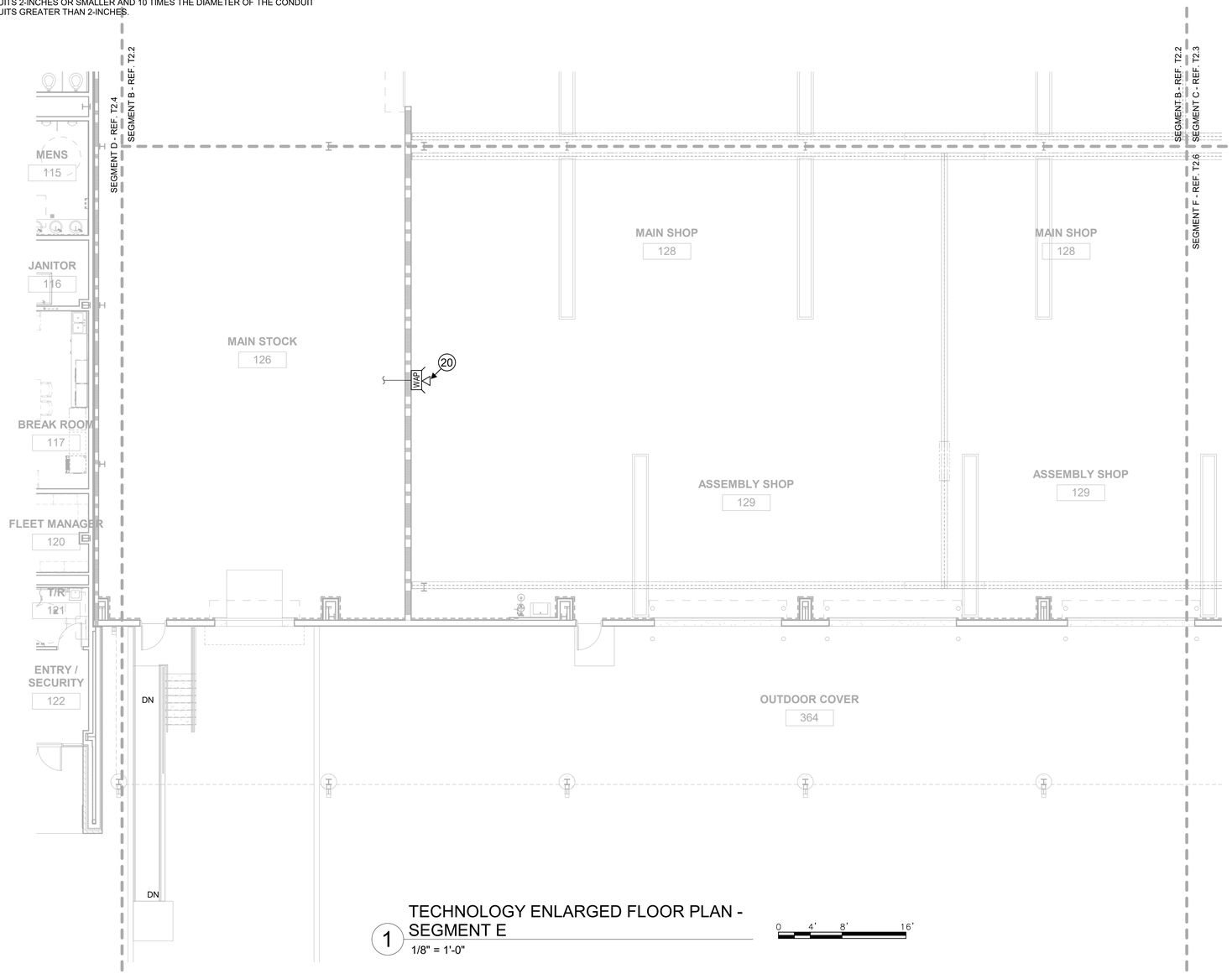
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T2.4
11204

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.



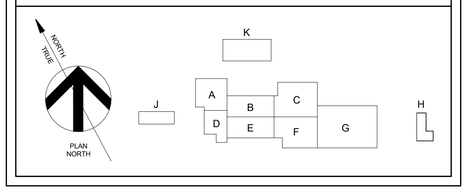
1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT E
1/8" = 1'-0"

0 4' 8' 16'

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT E

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1869-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T2.5
11205

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

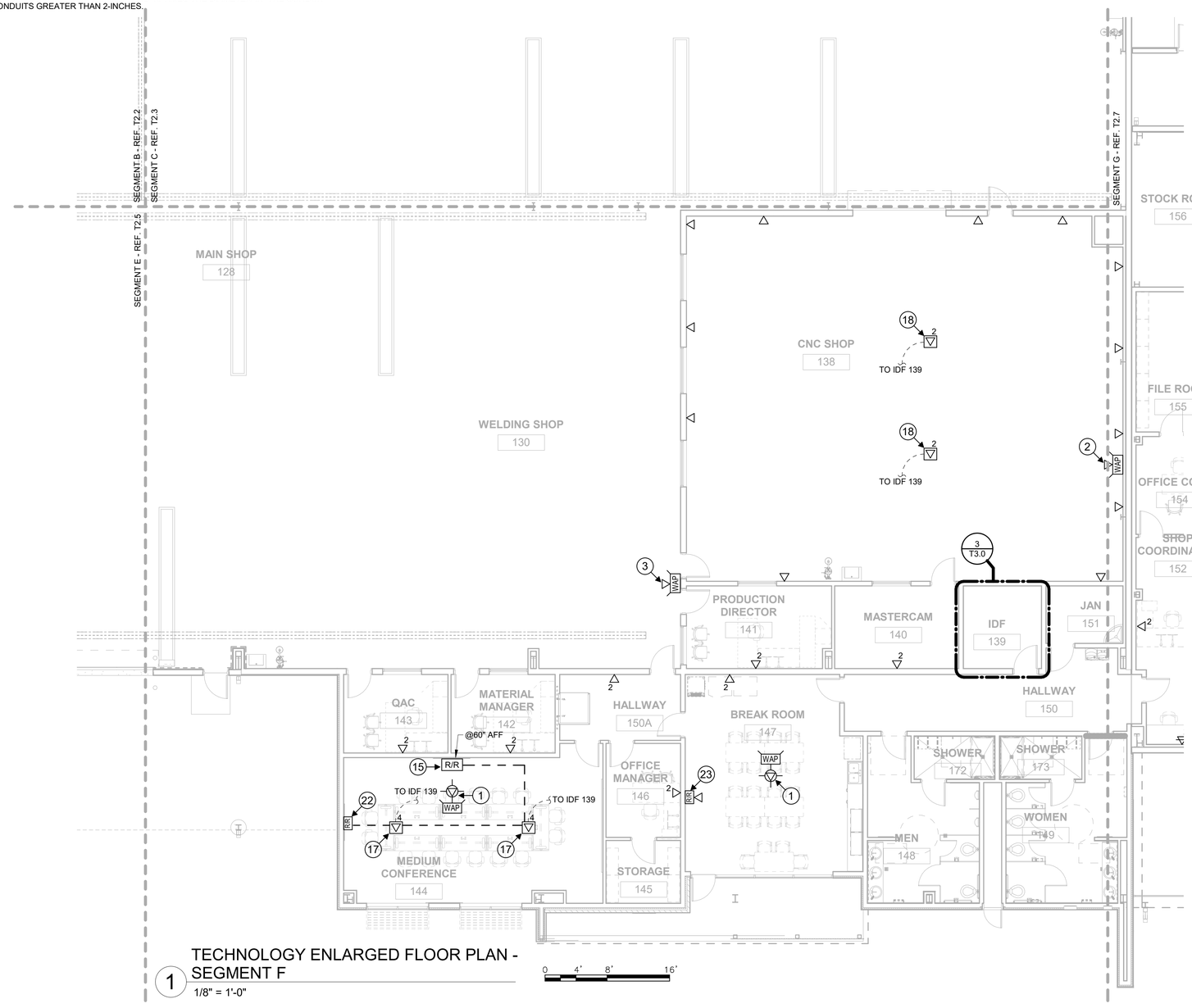
GENERATED ON: 10/1/2021 4:24:51 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.

KEYED NOTES

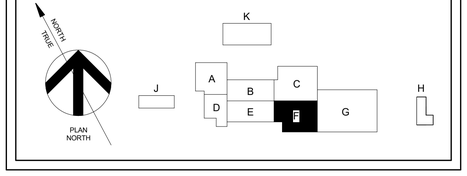
1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL. ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.



1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT F
1/8" = 1'-0"

0 4' 8' 16'

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT F

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

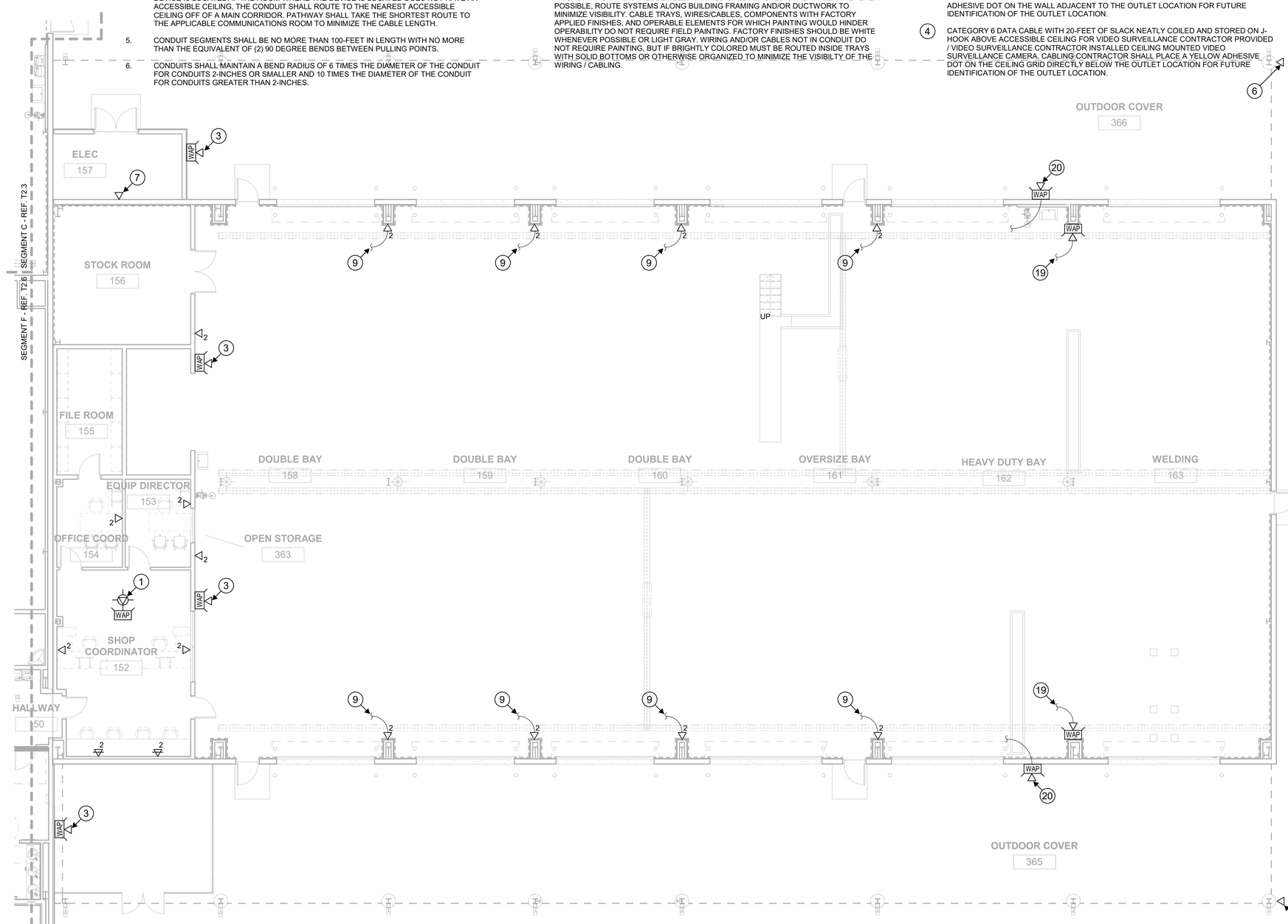
T2.6
11206

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

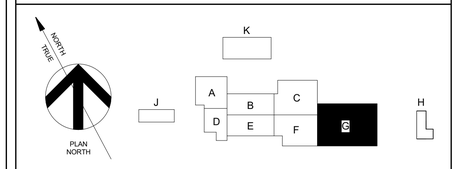


1 TECHNOLOGY ENLARGED FLOOR PLAN - SEGMENT G
1/8" = 1'-0"

0 4' 8' 16'

TECHNOLOGY FLOOR PLAN - SEGMENT G

KEY PLAN



Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

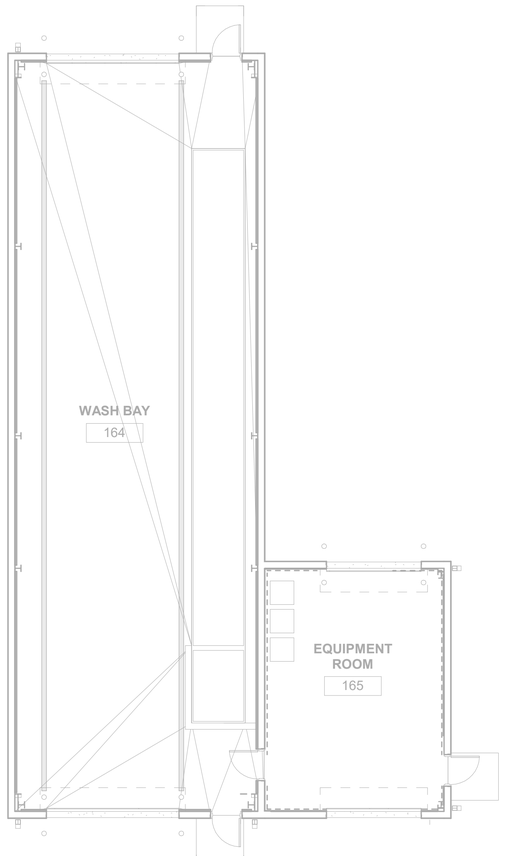
T2.7
11207

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

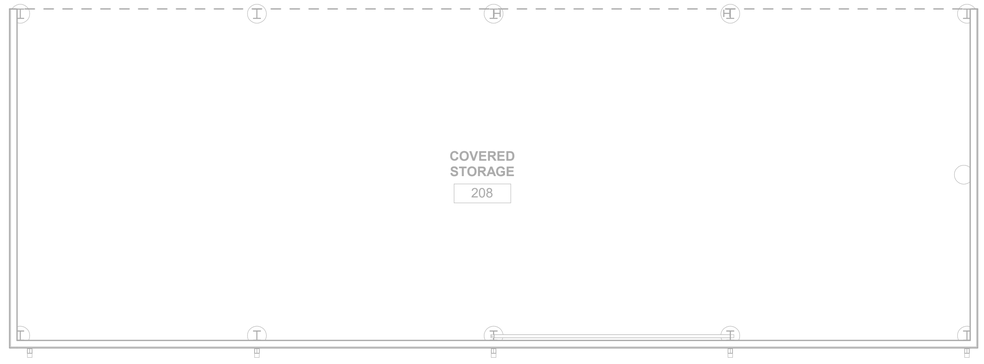
GENERATED ON: 10/1/2021 12:54:54 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS P26 - TxDOT_973 Operation Center.rvt

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILTY OF THE WIRING / CABLING.



1 TECHNOLOGY ENLARGED FLOOR PLAN - WASH BAY
1/8" = 1'-0"



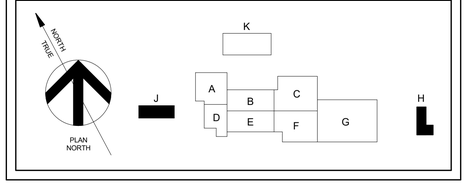
2 TECHNOLOGY ENLARGED FLOOR PLAN - COVERED STORAGE
1/8" = 1'-0"

0 4' 8' 16'

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

KEY PLAN



TECHNOLOGY FLOOR PLAN - SEGMENT H & J

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

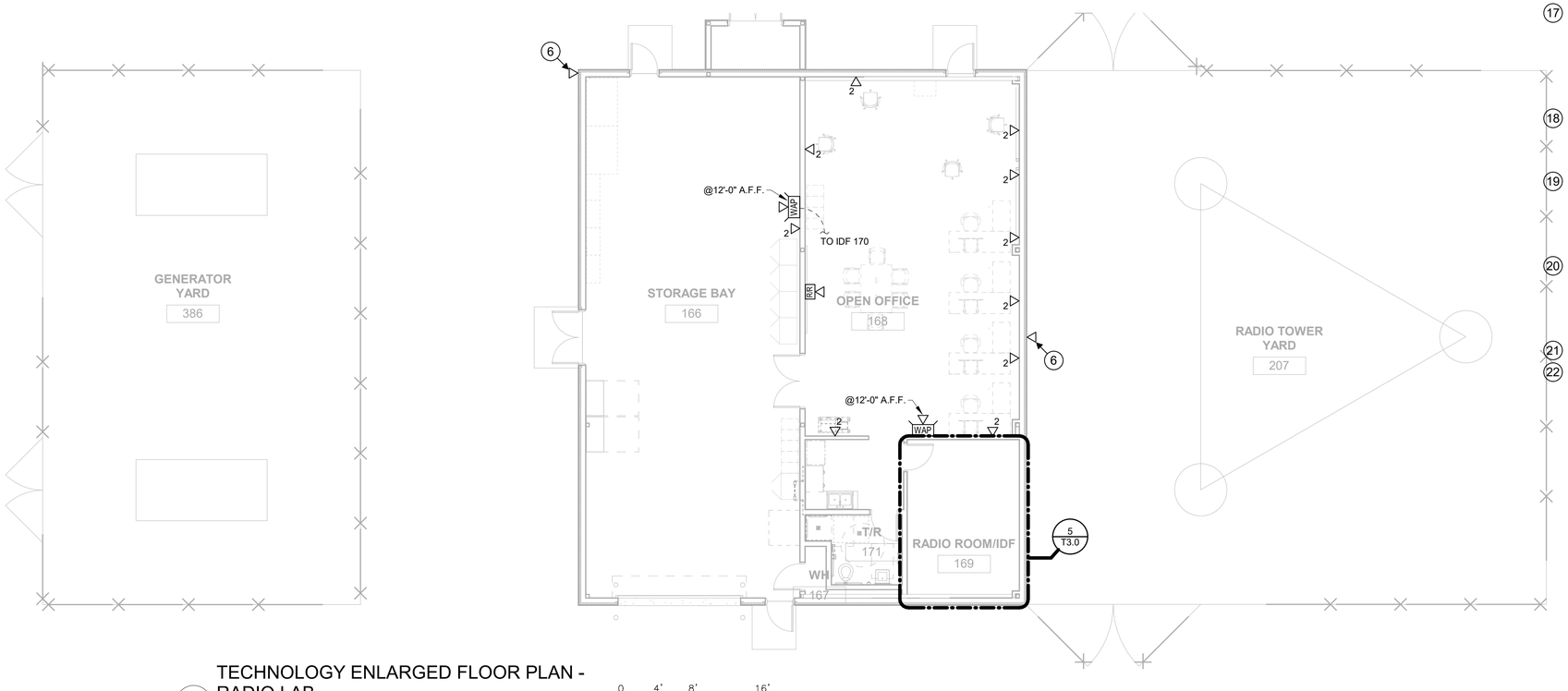
T2.8
11208

GENERAL NOTES

1. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING BACK TO THE ORIGINAL RATING.
2. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA/VOICE CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
3. CABLING FOR DATA/VOICE SYSTEM DEVICES SHALL BE ROUTED IN CABLE TRAY WHERE PROVIDED, AND IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. WHEN NOT IN CABLE TRAY. DIFFERENT MEDIA TYPES (DATA, VOICE, VIDEO, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
4. ALL CONDUITS FOR DATA/VOICE SYSTEMS SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE COMMUNICATIONS ROOM TO MINIMIZE THE CABLE LENGTH.
5. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
6. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
6. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE.
7. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
8. ALL CABLING INSTALLED IN OR BELOW SLAB, REGARDLESS OF THE USE OF CONDUIT, SHALL BE RATED FOR USE IN A WET ENVIRONMENT.
9. ALL DEVICES INSTALLED IN CEILING TILES SHALL BE CENTERED IN THE TILE AND SUPPORTED WITH A TILE BRIDGE.
10. ALL TECHNOLOGY SYSTEMS INCLUDING, BUT NOT LIMITED TO; CONDUIT, CONNECTIONS AND J-BOXES, SUSPENSION AND ANCHORAGES, AND OTHER COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED UNLESS NOTED OTHERWISE. WHENEVER POSSIBLE, ROUTE SYSTEMS ALONG BUILDING FRAMING AND/OR DUCTWORK TO MINIMIZE VISIBILITY. CABLE TRAYS, WIRES/CABLES, COMPONENTS WITH FACTORY APPLIED FINISHES, AND OPERABLE ELEMENTS FOR WHICH PAINTING WOULD HINDER OPERABILITY DO NOT REQUIRE FIELD PAINTING. FACTORY FINISHES SHOULD BE WHITE WHENEVER POSSIBLE OR LIGHT GRAY. WIRING AND/OR CABLES NOT IN CONDUIT DO NOT REQUIRE PAINTING, BUT IF BRIGHTLY COLORED MUST BE ROUTED INSIDE TRAYS WITH SOLID BOTTOMS OR OTHERWISE ORGANIZED TO MINIMIZE THE VISIBILITY OF THE WIRING / CABLING.

KEYED NOTES

1. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED CEILING MOUNTED WIRELESS ACCESS POINT. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
2. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED INTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
3. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. CABLING CONTRACTOR SHALL PLACE A GREEN ADHESIVE DOT ON THE WALL ADJACENT TO THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
4. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK ABOVE ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED CEILING MOUNTED VIDEO SURVEILLANCE CAMERA. CABLING CONTRACTOR SHALL PLACE A YELLOW ADHESIVE DOT ON THE CEILING GRID DIRECTLY BELOW THE OUTLET LOCATION FOR FUTURE IDENTIFICATION OF THE OUTLET LOCATION.
5. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
6. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED EXTERIOR COLUMN MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TECHNOLOGY SITE PLAN FOR CONDUIT ROUTING. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
7. DATA CABLE FOR FIRE ALARM CONTROL PANEL. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR PRIOR TO INSTALLATION.
8. CATEGORY 6 DATA CABLE FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. REFER TO TS-SERIES DRAWINGS FOR MOUNTING HEIGHT. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
9. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION AT 18-INCHES AFF. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
10. DATA CABLE(S) WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR MECHANICAL CONTROLS. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
11. (2) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHING ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO RETURN WALL BACK TO ORIGINAL RATING. IF WALL IS NOT RATED, CONDUIT SLEEVES SHALL BE PROPERLY SEALED ON THE EXTERIOR AND INTERIOR TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE DATA CABLE ONLY.
12. CATEGORY 6 DATA CABLE WITH 20-FEET OF SLACK NEATLY COILED AND STORED ON A J-HOOK ABOVE NEAREST ACCESSIBLE CEILING FOR VIDEO SURVEILLANCE CONTRACTOR PROVIDED / VIDEO SURVEILLANCE CONTRACTOR INSTALLED INTERIOR WALL MOUNTED VIDEO SURVEILLANCE CAMERA. COORDINATE EXACT TERMINATION REQUIREMENTS WITH THE VIDEO SURVEILLANCE CONTRACTOR PRIOR TO TERMINATION.
13. CATEGORY 6 DATA CABLE WITH 40-FEET OF SLACK NEATLY COILED AND STORED ON J-HOOK FOR ELECTRICAL UPLINK. COORDINATE EXACT CONDUIT ROUGH-IN LOCATION, HEIGHT AND TERMINATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
14. CATEGORY 6 DATA CABLE FOR SECURITY CONTRACTOR PROVIDED / SECURITY CONTRACTOR INSTALLED INTERCOM MOUNTED AT 42-INCHES AFF. REFER TO TS-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION AND ROUGH-IN REQUIREMENTS.
15. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26. REFERENCE DETAIL 6/T4.1.
16. PROVIDE DOUBLE GANG BOX WITH SINGLE GANG REDUCER RING MOUNTED AT 18-INCHES AFF. ROUTE (1) 1.25-INCH CONDUIT FROM PAC526 WALL BOX TO DOUBLE GANG BOX. ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
17. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM FLOOR BOX TO PAC526 WALL BOX IN THIS ROOM AS SHOWN. CONDUIT SHALL STUB INTO BASE OF PAC526 WALL, ROUTE IN INTERIOR OF WALL UP TO BOTTOM OF PAC526. ROUTE (2) 1.25-INCH CONDUITS IN SLAB FROM THIS FLOOR BOX TO THE OTHER FLOOR BOX(ES) AS SHOWN. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY DIVISION 26.
18. FLOOR BOX AS SPECIFIED BY DIVISION 26. ROUTE (1) 1-INCH CONDUIT FOR DATA CABLING IN SLAB TO NEAREST TELECOMMUNICATIONS ROOM (TR) SERVING THIS AREA. CONDUIT SHALL STUB INTO BASE OF TR WALL, ROUTE IN INTERIOR OF WALL UP TO 90-INCHES AFF AND TURN INTO TR ABOVE LADDER RACK. FLOOR BOX AND ROUGH-IN SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
19. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED COLUMN MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO COLUMN WITH DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
20. CATEGORY 6 DATA CABLE FOR DATA NETWORK CONTRACTOR PROVIDED / DATA NETWORK CONTRACTOR INSTALLED WALL MOUNTED WIRELESS ACCESS POINT MOUNTED AT 12'-0" AFF. DIVISION 26 CONTRACTOR SHALL ROUTE (1) 1-INCH EMT CONDUIT FROM NEAREST ACCESSIBLE CEILING, UP TO STRUCTURE, OVER TO DEVICE AND DOWN TO DEVICE LOCATION. PROVIDE DOUBLE-GANG BACKBOX WITH SINGLE-GANG REDUCER RING AT DEVICE LOCATION. CONDUIT SHALL BE SECURELY FASTENED TO STRUCTURE THROUGHOUT RUN.
21. CEILING ENCLOSURE
22. CHIEF PAC526 WALL BOX PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR FOR OWNER PROVIDED / OWNER INSTALLED WALL MOUNTED DISPLAY. STRUCTURED CABLING CONTRACTOR SHALL PROVIDE AND INSTALL DATA DROP INSIDE OF PAC526 BOX. REFER TO FLOORPLAN FOR MOUNTING HEIGHT (TO CENTER OF BOX). DIVISION 26 CONTRACTOR SHALL PROVIDE (2) 1-INCH AND (2) 1.25-INCH CONDUITS FROM PAC526 WALL BOX TO ABOVE ACCESSIBLE CEILING. REFERENCE DETAIL 7 / T4.1.

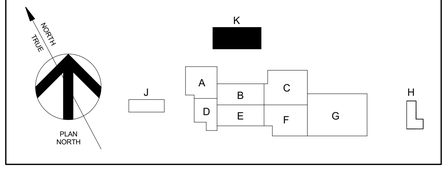


1 TECHNOLOGY ENLARGED FLOOR PLAN - RADIO LAB
1/8" = 1'-0"

0 4' 8' 16'

TECHNOLOGY FLOOR PLAN - SEGMENT K

KEY PLAN



REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

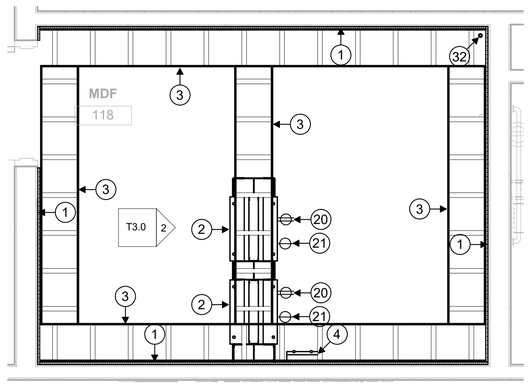
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

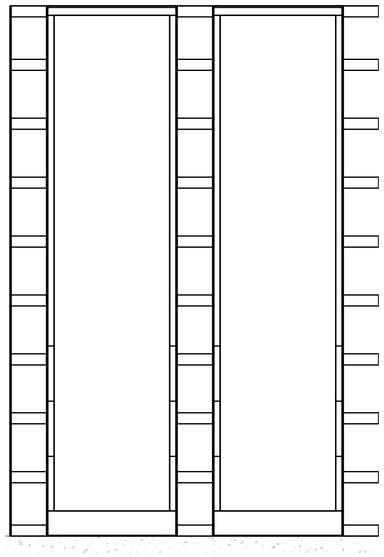
T2.9
11209

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:24:56 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt



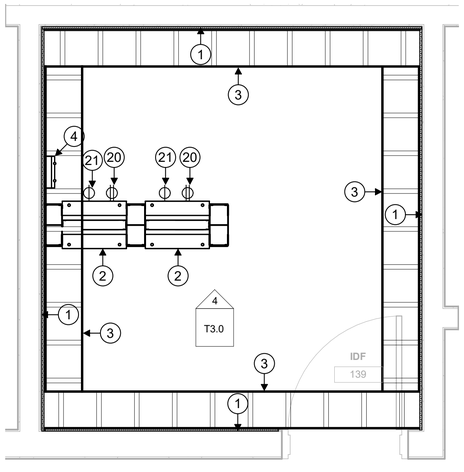
1 MDF 118 ROOM LAYOUT
1/2" = 1'-0"



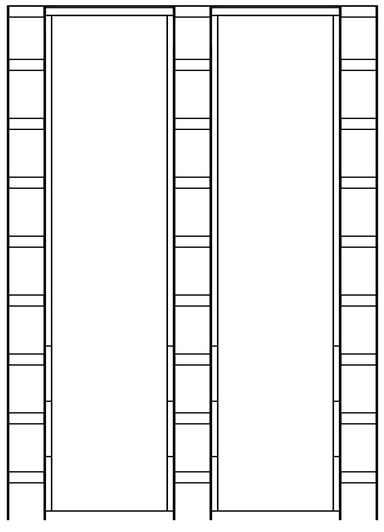
2 MDF 118 RACK ELEVATION
1" = 1'-0"

KEYED NOTES

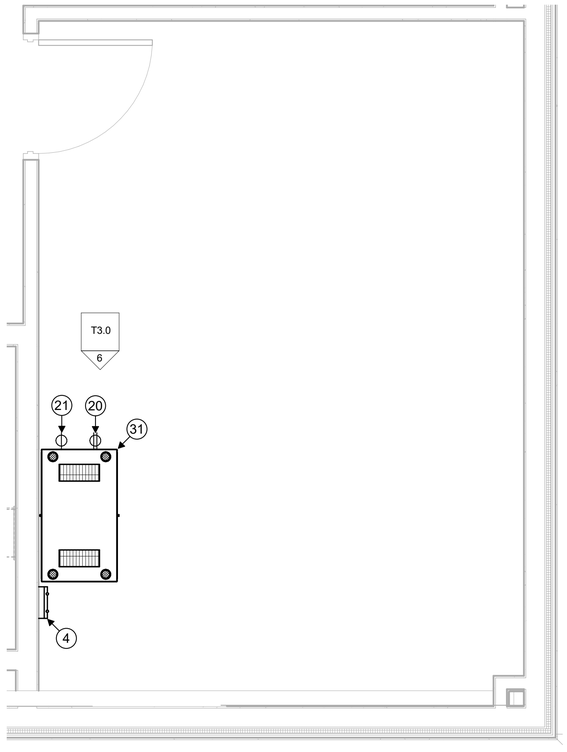
1. 4-FEET X 8-FEET X ¾-INCH AC GRADE VOID FREE FIRE RATED PLYWOOD INSTALLED VERTICALLY STARTING AT 24-INCHESABOVE FINISHED FLOOR. THE PLYWOOD SHALL BE INSTALLED WITH THE "A" GRADE SIDE EXPOSED AND THE "C" GRADE SIDE AGAINST THE BUILDING WALL OR STRUCTURE. FIRE RATED PLYWOOD SHALL BE PAINTED WITH TWO COATS OF FIRE RETARDANT PAINT. FIRE RATED STAMPS SHALL BE VISIBLE FOR INSPECTION AFTER INSTALLATION. (BY DIV. 27)
2. 19-INCH X 84-INCH EQUIPMENT RACK WITH VERTICAL WIRE MANAGERS. (BY DIV. 27)
3. 12-INCH LADDER RACK MOUNTED AT 86-INCHES ABOVE FINISHED FLOOR. (BY DIV. 27)
4. GROUND BUS BAR MOUNTED AT 84-INCHES ABOVE FINISHED FLOOR. (BY DIV. 27)
5. DEDICATED 20 AMP CIRCUIT WITH QUAD RECEPTACLE NEMA 5-20R FLUSH MOUNTED TO THE FINISHED WALL SURFACE AT 48-INCHES ABOVE FINISHED FLOOR. (BY DIV. 26)
6. (2) FOUR INCH EMT WALL SLEEVES/CONDUITS WITH BUSHING ON EACH END AND FIRESTOP AS REQUIRED. SLEEVES ARE FOR HORIZONTAL DATA/VOICE/SECURITY CABLE ONLY. (BY DIV. 26)
7. ACCESS CONTROL PANEL. (BY DIV. 28)
8. INTRUSION DETECTION PANEL. (BY DIV. 28)
9. DOUBLE-SIDED VERTICAL CABLE MANAGER. (BY DIV. 27)
10. RACK MOUNTED 2U FIBER OPTIC ENCLOSURE FOR INCOMING FIBER SERVICE. (BY DIV. 27)
11. DOUBLE-SIDED 1U HORIZONTAL CABLE MANAGER. (BY DIV. 27)
12. RACK MOUNTED 24-PORT CATEGORY 3 PATCH PANEL FOR COPPER BACKBONE CABLING. CONTRACTOR SHALL EXTEND ANALOG LINES FROM DEMARC LOCATION ON WALL TO THIS PATCH PANEL. (BY DIV. 27)
13. RACK MOUNTED 48-PORT CATEGORY 6 PATCH PANEL FOR DATA. (BY DIV. 27)
14. RACK MOUNTED 24-PORT CATEGORY 6 PATCH PANEL FOR DATA. (BY DIV. 27)
15. DATA DROP FOR INTRUSION DETECTION PANEL. (BY DIV. 27)
16. DATA DROP FOR ACCESS CONTROL PANEL. (BY DIV. 27)
17. RACK MOUNTED NETWORK SWITCH. (OFOI)
18. RACK MOUNTED VERTICAL PDU. (BY DIV. 27)
19. DEDICATED 20 AMP CIRCUIT IN JUNCTION BOX FLUSH MOUNTED TO THE FINISHED WALL SURFACE AT 48-INCHES ABOVE FINISHED FLOOR. (BY DIV. 26)
20. DEDICATED 20 AMP CIRCUIT WITH QUAD RECEPTACLE NEMA 5-20R MOUNTED TO LADDER RACK AT REAR SIDE OF EQUIPMENT RACKS. (BY DIV. 26)
21. DEDICATED 30 AMP CIRCUIT WITH NEMA L6-30R TWIST LOCK RECEPTACLE MOUNTED TO LADDER RACK AT REAR SIDE OF EQUIPMENT RACKS. (BY DIV. 26)
22. RACK MOUNTED UPS. (OFOI)
23. (3) FOUR INCH UNDERGROUND CONDUITS FOR INCOMING SERVICE CONNECTION. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
24. (2) FOUR INCH UNDERGROUND CONDUITS TO IDF 170. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
25. (2) FOUR INCH UNDERGROUND CONDUITS TO IDF 140. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
26. (2) ONE INCH UNDERGROUND CONDUITS TO GATE. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
27. (1) TWO INCH UNDERGROUND CONDUIT TO CARD READER PEDESTAL. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
28. (1) ONE INCH UNDERGROUND CONDUIT FROM TELECOM ROOM TO FLOOR BOX. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
29. (1) FOUR INCH UNDERGROUND CONDUIT TO FUTURE RADIO TOWER. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
30. (1) ONE INCH UNDERGROUND CONDUIT TO COLUMN MOUNTED CAMERA. CONDUIT SHALL BE PROPERLY SEALED TO PREVENT WATER INFILTRATION. (BY DIV. 26)
31. LOCKABLE 19"X84"X30" 4-POST CABINET/ENCLOSURE.
32. ROUTE 1.25-INCH EMT CONDUIT FROM CEILING OF MDF TO ROOF ABOVE FOR FUTURE CELLULAR DONOR ANTENNA CABLING. CONDUIT SHALL STUB THROUGH ROOF A MINIMUM OF 12-INCHES AND HAVE WEATHER-HEAD TO PREVENT WATER INFILTRATION. CONDUIT SHALL BE FLASHED AND WATERPROOFED AT PENETRATION AS NECESSARY.



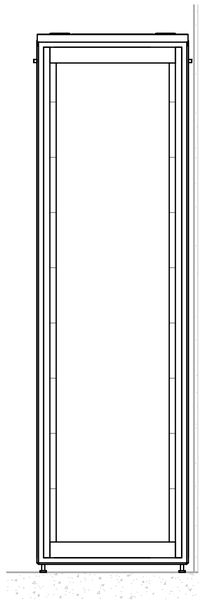
3 IDF 139 ROOM LAYOUT
1/2" = 1'-0"



4 IDF 139 RACK ELEVATION
1" = 1'-0"



5 IDF 170 ROOM LAYOUT
1/2" = 1'-0"



6 IDF 170 RACK ELEVATION
1" = 1'-0"

TECHNOLOGY ENLARGED PLANS & ELEVATIONS

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

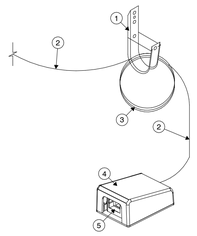
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T3.0
11300

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:24:58 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

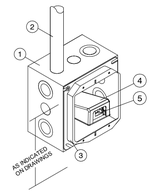


KEYED NOTES:

1. J-HOOK WITH RETAINER CLIP ABOVE ACCESSIBLE CEILING (BY DIV 27).
2. DATA CABLE ABOVE ACCESSIBLE CEILING (BY DIV 27).
3. 20 FOOT SERVICE LOOP ABOVE ACCESSIBLE CEILING NEATLY COILED AND SECURED TO J-HOOK (BY DIV 27).
4. SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING SECURED TO BUILDING STRUCTURE (BY DIV 27).
5. DATA INSERT (BY DIV 27).

1 / T4.0 TYPICAL ABOVE CEILING SINGLE DATA OUTLET

SCALE: N.T.S.

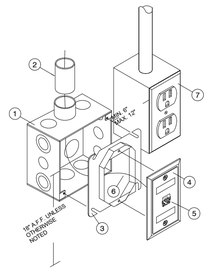


KEYED NOTES:

1. 4 11/16-INCH X 4 11/16-INCH X 2 1/8-INCH RECESSED DOUBLE GANG BOX (BY DIV 26).
2. 1-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH (BY DIV 26).
3. DOUBLE GANG PLASTER RING (BY DIV 26).
4. SURFACE MOUNT BOX INSIDE THE 4 11/16-INCH X 4 11/16-INCH X 2 1/8-INCH DOUBLE GANG BOX (BY DIV 27).
5. RJ-45 INSERT (BY DIV 27).

2 / T4.0 TYPICAL WALL-MOUNTED WIRELESS ACCESS POINT

SCALE: N.T.S.



KEYED NOTES:

1. 4 11/16-INCH X 4 11/16-INCH X 2 1/8-INCH RECESSED DOUBLE GANG BOX (BY DIV 26).
2. 1-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH (BY DIV 26).
3. SINGLE GANG REDUCER RING (BY DIV 26).
4. SINGLE GANG WALL PLATE WITH DESIGNATION IN WINDOW (BY DIV 27).
5. DATA INSERT (BY DIV 27).
6. CABLE AS SPECIFIED (BY DIV 27).
7. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV 26).

3 / T4.0 TYPICAL SINGLE DATA OUTLET CONFIGURATION

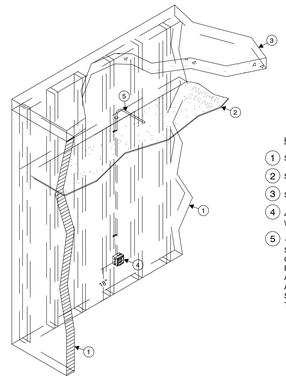
SCALE: T4.0

KEYED NOTES:

1. 4 11/16-INCH X 4 11/16-INCH X 2 1/8-INCH RECESSED DOUBLE GANG BOX (BY DIV 26).
2. 1-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH (BY DIV 26).
3. SINGLE GANG REDUCER RING (BY DIV 26).
4. SINGLE GANG WALL PLATE WITH DESIGNATION IN WINDOW (BY DIV 27).
5. DATA INSERT (BY DIV 27).
6. CABLE AS SPECIFIED (BY DIV 27).
7. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV 26).

4 / T4.0 TYPICAL DUAL DATA OUTLET CONFIGURATION

SCALE: N.T.S.

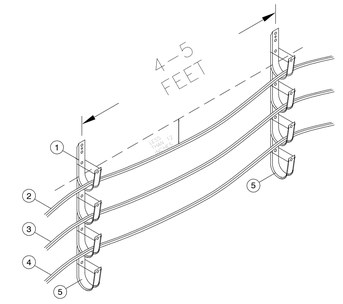


KEYED NOTES:

1. SCHEDULED WALL.
2. SCHEDULED CEILING.
3. SCHEDULED DECK ABOVE.
4. 4 11/16-INCH x 4 11/16-INCH x 2 1/8-INCH RECESSED DOUBLE GANG BOX WITH DOUBLE GANG PLASTER RING (BY DIV 26).
5. 1-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH. (BY DIV 26).

5 / T4.0 TYPICAL TECHNOLOGY CONDUIT ROUGH-IN

SCALE: N.T.S.

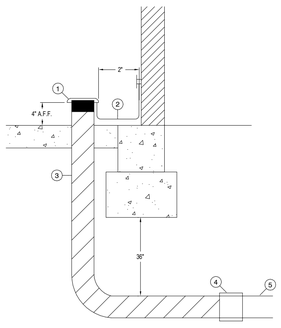


KEYED NOTES:

1. J-HOOK WITH RETAINER CLIP ABOVE ACCESSIBLE CEILING (BY DIV 27).
2. DATA CABLE ABOVE ACCESSIBLE CEILING (BY DIV 27).
3. A/V CABLE ABOVE ACCESSIBLE CEILING (BY DIV 27).
4. SECURITY CABLE ABOVE ACCESSIBLE CEILING (BY DIV 28).
5. SPARE J-HOOK (BY DIV 27).

6 / T4.0 TYPICAL J-HOOK CABLE PATHWAY

SCALE: N.T.S.

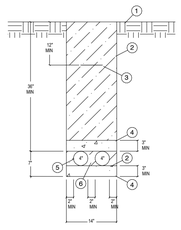


KEYED NOTES:

1. GROUNDING BUSHING (BY DIV 26).
2. #6 GROUND WIRE TO TMGB/TGB (BY DIV 26).
3. 4-INCH RIGID STEEL CONDUIT WRAPPED WITH PASCO PROTECTIVE TAPE SYSTEM (BY DIV 26).
4. PVC FEMALE ADAPTER (BY DIV 26).
5. SCHEDULE 40 PVC (BY DIV 26).

7 / T4.0 TYPICAL TECHNOLOGY DUCT ENTRY INTO BUILDING

SCALE: N.T.S.

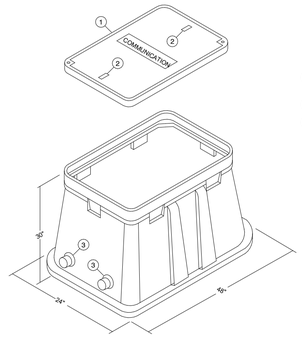


KEYED NOTES:

1. FINISHED GRADE (BY DIV 26).
2. SELECT COMPACTED BACKFILL (BY DIV 26).
3. DETECTABLE WARNING TAPE (BY DIV 26).
4. COMPACTED SAND (BY DIV 26).
5. COMMUNICATIONS CONDUIT (BY DIV 26).
6. DUCT SPACERS (TYPICAL BETWEEN ALL CONDUITS) (BY DIV 26).

8 / T4.0 TYPICAL COMMUNICATIONS DUCT BANK DETAIL - (2) 4-INCH CONDUITS

SCALE: N.T.S.



KEYED NOTES:

1. 40-INCH X 18-INCH COVER RATED FOR ENVIRONMENT WITH "COMMUNICATION" STENCILED ON TOP (BY DIV 26).
2. LIFTING EYE (BY DIV 26).
3. 4-INCH TERMINATOR (BY DIV 26).

9 / T4.0 TYPICAL TECHNOLOGY HANDHOLES (HH)

SCALE: N.T.S.

TECHNOLOGY TYPICAL DETAILS

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

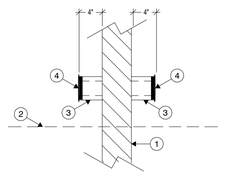
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T4.0
11400

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:24:58 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

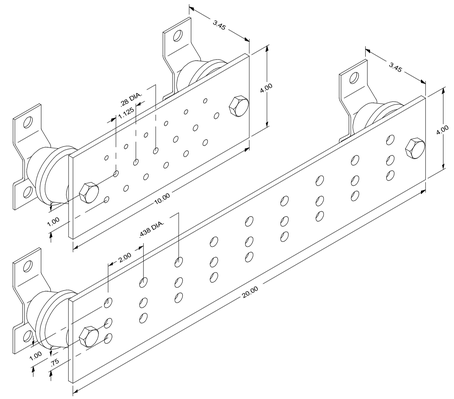


KEYED NOTES:

1. SCHEDULED WALL.
2. SCHEDULED CEILING.
3. CONDUIT SLEEVE (BY DIV 26).
4. NYLON BUSHING (BY DIV 26).

1 / T4.1 TYPICAL CONDUIT SLEEVE GOING THROUGH WALL

SCALE: N.T.S.

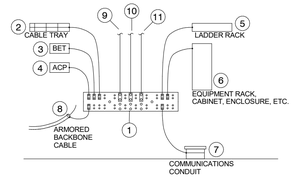


2 / T4.1 WALL-MOUNTED BUS BAR

SCALE: N.T.S.

GENERAL NOTES:

1. MAKE ALL BONDING CONNECTIONS WITH TWO-HOLE COMPRESSION LUGS.
2. SIZE ALL BONDING CONDUCTORS PER TELECOM BONDING CONDUCTOR SIZING TABLE.
3. THIS IS A TYPICAL DETAIL, NOT ALL EQUIPMENT REQUIRING BONDING MAY BE PRESENT IN EACH TELECOM ROOM.

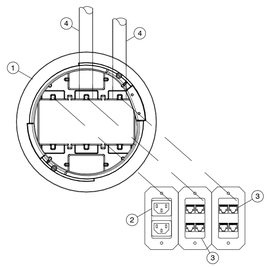


KEYED NOTES:

1. TELECOMMUNICATIONS GROUNDING BUSBAR WITH BICSI STYLE HOLE PATTERN, SIZED PER [DRAWINGS/SPECIFICATIONS] (BY DIV 27).
2. BOND TO CABLE TRAY IN CORRIDOR. (BY DIV 26)
3. BOND TO BUILDING ENTRANCE TERMINALS AND PROTECTORS. (BY DIV 27)
4. BOND TO ACCESS CONTROL PANELS AND OTHER SECURITY ENCLOSURES. (BY DIV 28)
5. BOND TO OVERHEAD LADDER RACK; ENSURE ALL LADDER RACK SECTIONS ARE BONDED TOGETHER. (BY DIV 27)
6. BOND TO EACH EQUIPMENT RACK, CABINET, ENCLOSURE, ETC. (BY DIV 27)
7. BOND TO EACH CONTINUOUS COMMUNICATIONS CONDUIT THAT ENTERS THE TELECOM ROOM. (SLEEVES DO NOT NEED TO BE BONDED). (BY DIV 26)
8. BOND TO EACH ARMORED BACKBONE CABLE THAT TERMINATES IN THE TELECOM ROOM. (BY DIV 27)
9. FOR TELECOMMUNICATIONS MAIN GROUNDING BUSBAR, PROVIDE BONDING CONDUCTOR FOR TELECOMMUNICATIONS TO MAIN ELECTRICAL GROUND. (BY DIV 26)
10. FOR TELECOMMUNICATIONS GROUNDING BUSBARS ONLY: BONDING CONDUCTOR TO [BUILDING STEEL] [TELECOMMUNICATIONS BONDING BACKBONE] [GROUND BUS OF ELECTRICAL PANEL SERVING TELECOM ROOM POWER]. (BY DIV 26)
11. [FOR TELECOMMUNICATIONS MAIN GROUNDING BUSBAR, PROVIDE TELECOMMUNICATIONS BONDING BACKBONE PER TYPICAL GROUNDING DIAGRAM.] (BY DIV 26)

3 / T4.1 TELECOMMUNICATIONS BONDING BUSBAR DETAIL

SCALE: N.T.S.

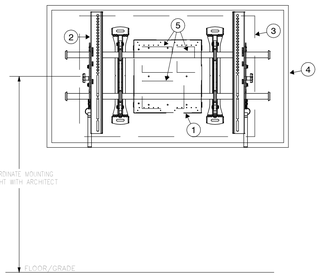


KEYED NOTES:

1. LARGE-FORMAT FLOOR BOX/POKETHROUGH AS SPECIFIED BY MEP. REFER TO DIV 26 SPECIFICATIONS (BY DIV 26).
2. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV 26).
3. DATA INSERTS - QUANTITY AS SHOWN ON TECHNOLOGY DRAWINGS (BY DIV 27).
4. 1-INCH EMT CONDUIT FROM FLOOR BOX WITH 200 LBS PULL STRING STUBBED OUT TO THE ACCESSIBLE LOCATION. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH (BY DIV 26).

4 / T4.1 TYPICAL FLOOR POKE-THROUGH

SCALE: N.T.S.

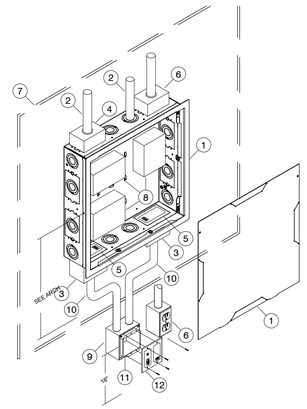


KEYED NOTES:

1. RECESSED BACK BOX FOR FLAT PANEL DISPLAY - CHIEF PAC526FCW. REFER TO DRAWINGS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE FINISH WITH ARCHITECT (BY DIV 26).
2. FLAT PANEL DISPLAY MOUNTING BRACKET - MANUFACTURER / MODEL NUMBER AS SPECIFIED. REFER TO DRAWINGS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION (BY DIV 27).
3. IN-WALL BLOCKING FOR FLAT PANEL MOUNTING. BLOCKING TO BE PRESENT ON ALL SIDES OF RECESSED BACK BOX. PROVIDE 10" OF BLOCKING ABOVE AND BELOW RECESSED BACK BOX AND 16" OF BLOCKING TO THE LEFT AND RIGHT OF BACK BOX (BY DIV 26).
4. FLAT PANEL DISPLAY - MANUFACTURER / MODEL NUMBER AS SPECIFIED. REFER TO DRAWINGS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION (BY DIV 27).
5. VIDEO OVER TWISTED-PAIR RECEIVER, AUDIO AMPLIFIER, CONTROL EXPANSION MODULE, ETC., IF REQUIRED, WITH MOUNTING HARDWARE AS REQUIRED / APPROPRIATE. (BY DIV 27).

5 / T4.1 TYPICAL WALL-MOUNTED FLAT PANEL DISPLAY

SCALE: N.T.S.

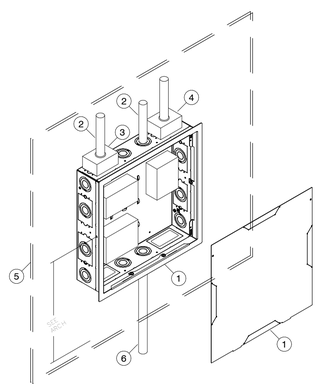


KEYED NOTES:

1. CHIEF PAC526FCW FLAT PANEL DISPLAY WALL BOX WITH COVER (BY DIV. 26).
2. 1-INCH EMT CONDUIT FROM SINGLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED UNLESS NOTED OTHERWISE (BY DIV. 26).
3. SINGLE-GANG BACK BOX (BY DIV. 26).
4. SINGLE-GANG BACK BOX (BY DIV. 26). CATV/DATA AS REQUIRED. REFER TO DRAWINGS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION (BY DIV. 27).
5. A/V DEVICE AS SPECIFIED. REFER TO DRAWINGS, SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION (BY DIV. 27).
6. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV. 26).
7. IN-WALL BLOCKING FOR FLAT PANEL MOUNTING. BLOCKING TO BE PRESENT ON ALL SIDES OF RECESSED BACK BOX. PROVIDE 10" OF BLOCKING ABOVE AND BELOW RECESSED BACK BOX AND 16" OF BLOCKING TO THE LEFT AND RIGHT OF BACK BOX (BY DIV 26).
8. VIDEO OVER TWISTED-PAIR RECEIVER, AUDIO AMPLIFIER, CONTROL EXPANSION MODULE, ETC., IF REQUIRED, WITH MOUNTING HARDWARE AS REQUIRED / APPROPRIATE. (BY DIV 27).
9. 4-11/16" X 4-11/16" X 2-1/8" RECESSED DOUBLE GANG BOX (BY DIV 26).
10. 1-INCH EMT CONDUIT FROM BACK BOX TO BACK BOX (BY DIV 26).
11. DOUBLE-GANG PLASTER RING - DEVICE OPENING MUST HAVE RIGHT-ANGLE CORNERS TO AVOID PHYSICAL CONFLICTS WITH A|V DEVICE(S) (BY DIV 26).
12. AUDIO VISUAL INPUTS - VGA + 3.5MM AND HDMI INPUT PLATE - MANUFACTURER/MODEL NUMBER AS SPECIFIED. PROVIDE PLENUM-RATED RUNNER CABLES AND FLYING LEADS AS REQUIRED TO REACH FROM INPUT PLATE LOCATION TO DISPLAY/PROJECTOR LOCATION. REFER TO DRAWINGS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION (BY DIV 27). COORDINATE FINISH WITH ARCHITECT.

6 / T4.1 TYPICAL FLAT PANEL DISPLAY ROUGH-IN

SCALE: N.T.S.

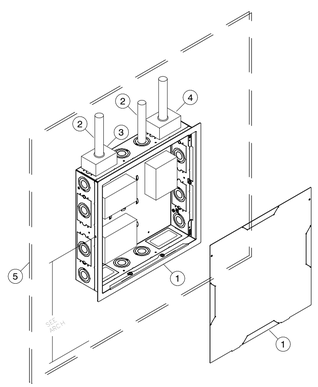


KEYED NOTES:

1. CHIEF PAC526FCW FLAT PANEL DISPLAY WALL BOX WITH COVER (BY DIV. 26).
2. 1-INCH EMT CONDUIT FROM SINGLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED (BY DIV. 26).
3. SINGLE-GANG BACK BOX FOR DATA/VIDEO (BY DIV. 26).
4. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV. 26).
5. IN-WALL BLOCKING FOR FLAT PANEL MOUNTING. BLOCKING TO BE PRESENT ON ALL SIDES OF RECESSED BACK BOX. PROVIDE 10" OF BLOCKING ABOVE AND BELOW RECESSED BACK BOX AND 16" OF BLOCKING TO THE LEFT AND RIGHT OF BACK BOX (BY DIV 26).
6. 1.25-INCH EMT CONDUIT FROM SINGLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING ROUTED BELOW SLAB TO FLOOR BOX/POKE-THROUGH IN THE SAME ROOM WHERE THE DEVICE IS LOCATED (BY DIV. 26).

7 / T4.1 TYPICAL FLAT PANEL DISPLAY ROUGH-IN

SCALE: N.T.S.



KEYED NOTES:

1. CHIEF PAC526FCW FLAT PANEL DISPLAY WALL BOX WITH COVER (BY DIV. 26).
2. 1-INCH EMT CONDUIT FROM SINGLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED (BY DIV. 26).
3. SINGLE-GANG BACK BOX FOR DATA/VIDEO (BY DIV. 26).
4. ELECTRICAL RECEPTACLE, GANG BOX AND CONDUIT SHOWN FOR REFERENCE ONLY (REFER TO DIV. 26).
5. IN-WALL BLOCKING FOR FLAT PANEL MOUNTING. BLOCKING TO BE PRESENT ON ALL SIDES OF RECESSED BACK BOX. PROVIDE 10" OF BLOCKING ABOVE AND BELOW RECESSED BACK BOX AND 16" OF BLOCKING TO THE LEFT AND RIGHT OF BACK BOX (BY DIV 26).

8 / T4.1 TYPICAL FLAT PANEL DISPLAY ROUGH-IN

SCALE: N.T.S.

TECHNOLOGY TYPICAL DETAILS

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: MT
REVISIONS:

T4.1
11401

SECURITY SYMBOLS & LEGEND

ACCESS CONTROL SYMBOLS

AD	INTERFACE TO AUTOMATIC DOOR CONTROL AND MONITORING.
BI	INTERFACE TO RETRACTABLE VEHICLE BOLLARD.
BR	BIOMETRIC READER.
CH	DOOR BELL CHIME.
CR	CARD READER.
CR1	CARD READER MULLION MOUNT.
CR2	ELEVATOR CARD READER.
CR3	CARD READER/INTERCOM UNIT.
CR4	CARD READER/INTERCOM PEDESTRIAN PEDESTAL.
D	DURESS BUTTON MOUNTED IN KNEE SPACE OF DESK, TABLE OR COUNTER PROVIDE ARMORED CABLE FROM DURESS BUTTON TO JUNCTION BOX.
D	WALL MOUNTED DURESS BUTTON.
DB	DOOR BELL.
DC	DOOR CONTACT.
DC1	OVERHEAD DOOR CONTACT. PROVIDE ARMORED CABLE FROM SWITCH TO JUNCTION BOX.
DMA	DOOR MANAGEMENT ANNUNCIATOR.
DR	SINGLE DOOR RELEASE PUSHBUTTON UNDER COUNTER. ARMORED CABLE FROM PUSHBUTTON TO JUNCTION BOX.
EL	INTERFACE TO ELEVATOR CONTROL/MONITORING.
FA	INTERFACE TO FIRE ALARM SYSTEM.
GC	INTERFACE TO PARKING GATE CONTROL/MONITORING.
IC	AUDIO INTERCOM SUBSTATION.
IM	INTERCOM MASTER STATION AS INDICATED BLOCK DIAGRAM AND/OR DETAILS.
KS	KEYSWITCH.
LD	LOCKDOWN BUTTON UNDER COUNTER. ARMORED CABLE FROM LOCKDOWN BUTTON TO JUNCTION BOX.
LD	LOCKDOWN BUTTON.
OD	INTERFACE TO OVERHEAD DOOR CONTROL/MONITORING.
RD	INTERFACE TO MOTORIZED REVOLVING DOOR CONTROL/MONITORING.
REX	REQUEST-TO-EXIT IS INTEGRAL WITH ELECTRIFIED LOCKING HARDWARE. PROVIDED AND INSTALLED BY OTHERS.
RX	REQUEST-TO-EXIT MOTION SENSOR MOUNTED CEILING-MOUNTED.
RX	REQUEST-TO-EXIT MOTION SENSOR DOOR FRAME-MOUNTED.
SD	INTERFACE TO SLIDING DOOR CONTROL/MONITORING.
SR	SECURITY SYSTEM RISER, DATA GATHERING PANEL AND LOW VOLTAGE POWER SUPPLY DISTRIBUTION LOCATION.
VI	VIDEO INTERCOM SUBSTATION.

ACCESS CONTROL SYMBOLS

VM	DESKTOP VIDEO INTERCOM MASTER STATION.
WD	WIRELESS DURESS BUTTON MOUNTED IN KNEE SPACE OF DESK, TABLE, OR COUNTER.
WDRR	WIRELESS DOOR RELEASE RECEIVER DEVICE.
WDRT	WIRELESS DOOR RELEASE TRANSMITTER DEVICE.
WR	WIRELESS DURESS BUTTON RECEIVER DEVICE.
WT	WIRELESS DURESS BUTTON TRANSMITTER DEVICE.
	PRE-WIRE AND BLANK COVER PLATE FOR FUTURE DEVICE.

ELECTRONIC SURVEILLANCE SYMBOLS

	FIXED SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	CEILING-MOUNTED FIXED SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	180° SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	CEILING-MOUNTED 180° SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	360° SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	CEILING-MOUNTED 360° SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
	PAN, TILT & ZOOM SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.
CLG	CEILING-MOUNTED PAN, TILT & ZOOM SURVEILLANCE CAMERA, CAMERA MODEL AND MOUNTING HEIGHT AS SPECIFIED.

GENERAL SYMBOLS

# SHEET — DRAWING TITLE — SCALE: SCALE	DRAWING TITLE CALLOUT, # = DETAIL NUMBER.
# SHEET	DETAIL CALLOUT, # = DETAIL NUMBER.
# SHEET	SECTION CALLOUT, # = DETAIL NUMBER.
SHEET #	ELEVATION CALLOUT, # = DETAIL NUMBER.
#	KEYED NOTE, # = KEYED NOTE NUMBER.
#	REVISION TRIANGLE, # = REVISION NUMBER (PER SHEET).
TR (IDF XXX)	INDICATES TELECOMMUNICATIONS REGION

INTRUSION DETECTION SYMBOLS

AL	ALARM ANNUNCIATOR LIGHT.
AP	ANNUNCIATOR PANEL AS INDICATED IN BLOCK DIAGRAMS AND/OR DETAILS.
AV	AUDIO VISUAL ANNUNCIATOR.
FA	INTERFACE TO FREEZER/TEMPERATURE ALARM. PROVIDED AND INSTALLED BY OTHERS.
FC	FUTURE CABLE AS SPECIFIED.
GB	CEILING-MOUNTED GLASS BREAK SENSOR.
GB	GLASS BREAK SENSOR.
KP	PERSONAL IDENTIFICATION NUMBER KEYPAD.
M	SOUND DETECTION MICROPHONE.
MD	360° MOTION DETECTOR MOUNTED TO CEILING.
MD	MOTION DETECTOR.
MD LR	LONG RANGE MOTION DETECTOR.
RA	INTERFACE TO REFRIGERATOR/TEMPERATURE ALARM. PROVIDED AND INSTALLED BY OTHERS.
ST	STROBE LIGHT SURFACE MOUNTED TO CEILING.
ST	STROBE LIGHT.
V	VIBRATION DETECTOR.

MISCELLANEOUS SECURITY SYMBOLS

B	ALERTUS BEACON MOUNTED AT 60" A.F.F. UNLESS OTHERWISE NOTED
EP	EMERGENCY PHONE.
LS	FLOOR MOUNTED LIQUID SENSOR. PROVIDE ARMORED CABLE FROM SENSOR TO JUNCTION BOX.
S	INTERCOM SPEAKER FLUSH MOUNTED IN CEILING.
	ALERTUS LED MARQUEE (SINGLE SIDED)
	ALERTUS LED MARQUEE (DOUBLE SIDED)

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AER	AERIAL
B	BURIED
CAT.3/5	CATEGORY 3/5
CATV	COMMUNITY ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CLT	CLOSET
CO	CENTRAL OFFICE
DEMARC	DEMARCATION POINT
DPDT	DOUBLE PULL DOUBLE THROW
EMT	ELECTRIC METALLIC TUBE
F.O.C.	FIBER OPTIC CABLE
GIP	GALVANIZED IRON PIPE
HE	PA/INTERCOM HEAD-END
IRC	INTERMEDIATE RIGID CONDUIT
ISP	INSIDE CABLE PLANT
IDF	INTERMEDIATE DISTRIBUTION FRAME
MDF	MAIN DISTRIBUTION FRAME
MH	MANHOLE
MM	MULTIMODE
OSP	OUTSIDE CABLE PLANT
PB	PULLBOX
PR	PAIR
PBX	PRIVATE BRANCH EXCHANGE
PVC	POLYVINYL CHLORIDE
SM	SINGLE MODE
SP	SERVICE PROVIDER
STP	SHIELDED TWISTED PAIR
TB	TERMINAL BLOCK
UTP	UNSHIELDED TWISTED PAIR

NOTES

1. CONTRACTOR SHALL REVIEW ALL SECURITY DRAWINGS AND SPECIFICATIONS THAT MAKE UP THE CONTRACT DOCUMENTS AND COMPLETE ALL WORK INCLUDED THEREIN.
2. SCALE OF SECURITY DRAWINGS IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CABLE LENGTHS, SIZE OF PATHWAYS, DIMENSIONS, ETC.
3. SECURITY DRAWINGS SHALL BE USED TO COMPLEMENT THE WRITTEN SPECIFICATIONS.
4. ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND SUBSEQUENTLY CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE ARCHITECT'S/ENGINEER'S INTERPRETATION.
5. SECURITY DEVICES SHALL TERMINATE IN THE MDF/IDF LOCATED WITHIN THE SECURITY REGION (SR) OUTLINED ON THE TS DRAWINGS.
6. ANY REFERENCE TO OR INDICATION OF DOOR HARDWARE IS SHOWN FOR REFERENCE ONLY. COORDINATE WITH THE DIVISION 8 ENGINEER/CONSULTANT FOR DOOR HARDWARE CLARIFICATION OR INFORMATION (BY DIV. 8).
7. THESE DRAWING REPRESENTS DIV. 28 INSTALLATION REQUIREMENTS, ANY REFERENCE TO OTHER DIVISIONS SUCH AS DIV. 8, 26, 27, 14 ETC. IS SHOWN ON THESE DOCUMENTS AS A GENERAL DEPICTION OF THE INSTALLATION AND DOES NOT REPRESENT THE ACTUAL DEVICES, PATHWAYS AND RELATED INSTALLATION REQUIREMENTS. THE CONTRACTOR SHALL REFER TO THE OTHER DIVISIONS OF WORK FOR THE COMPLETE REQUIREMENTS FOR THOSE DIVISIONS OF WORK.

INDEX OF DRAWINGS

SECURITY SYMBOLS & LEGEND

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

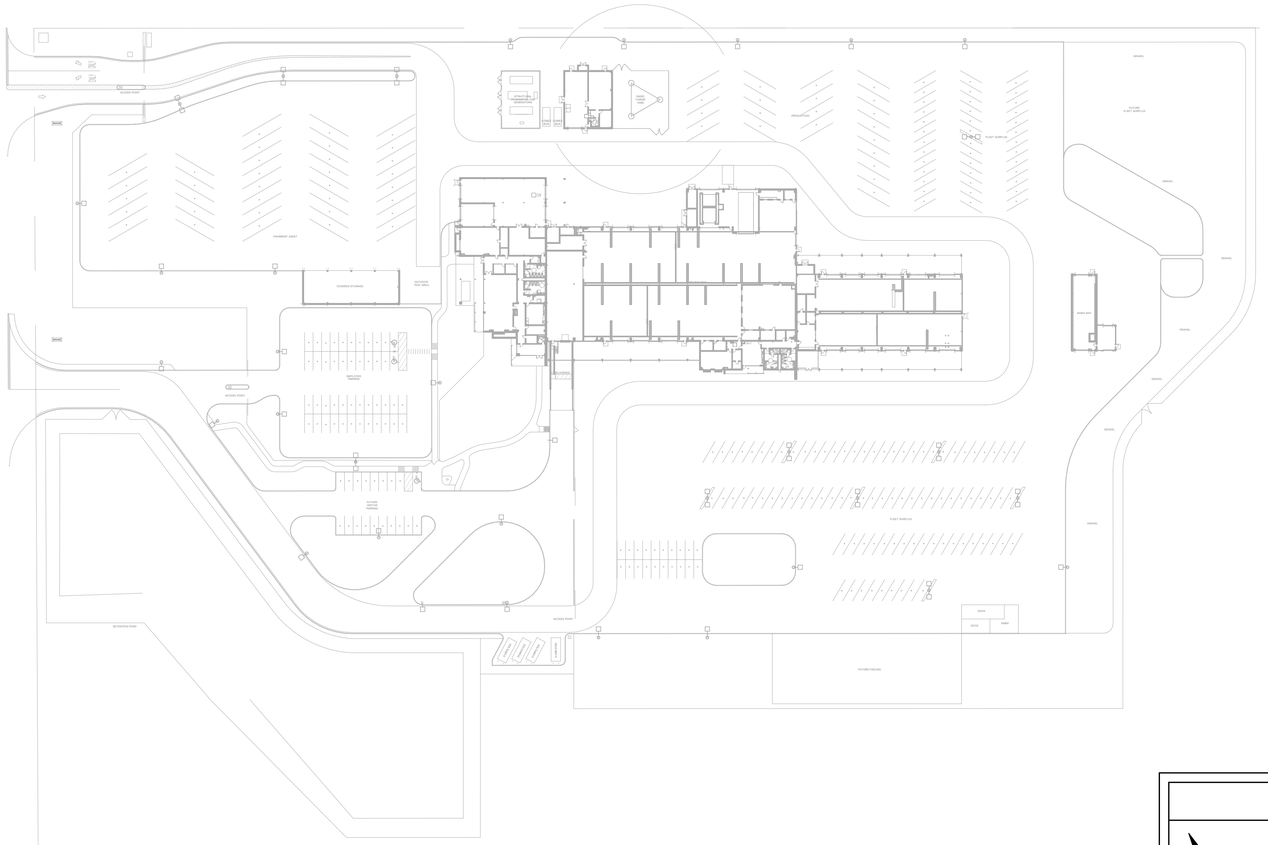
TS0.0
18000

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

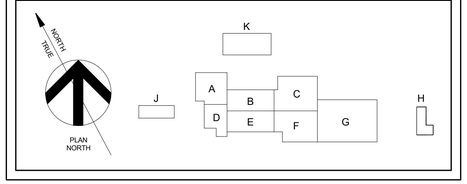
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY SITE PLAN - OVERALL
1" = 80'-0"

KEY PLAN



SECURITY SITE PLAN - OVERALL

BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS1.1
18101

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

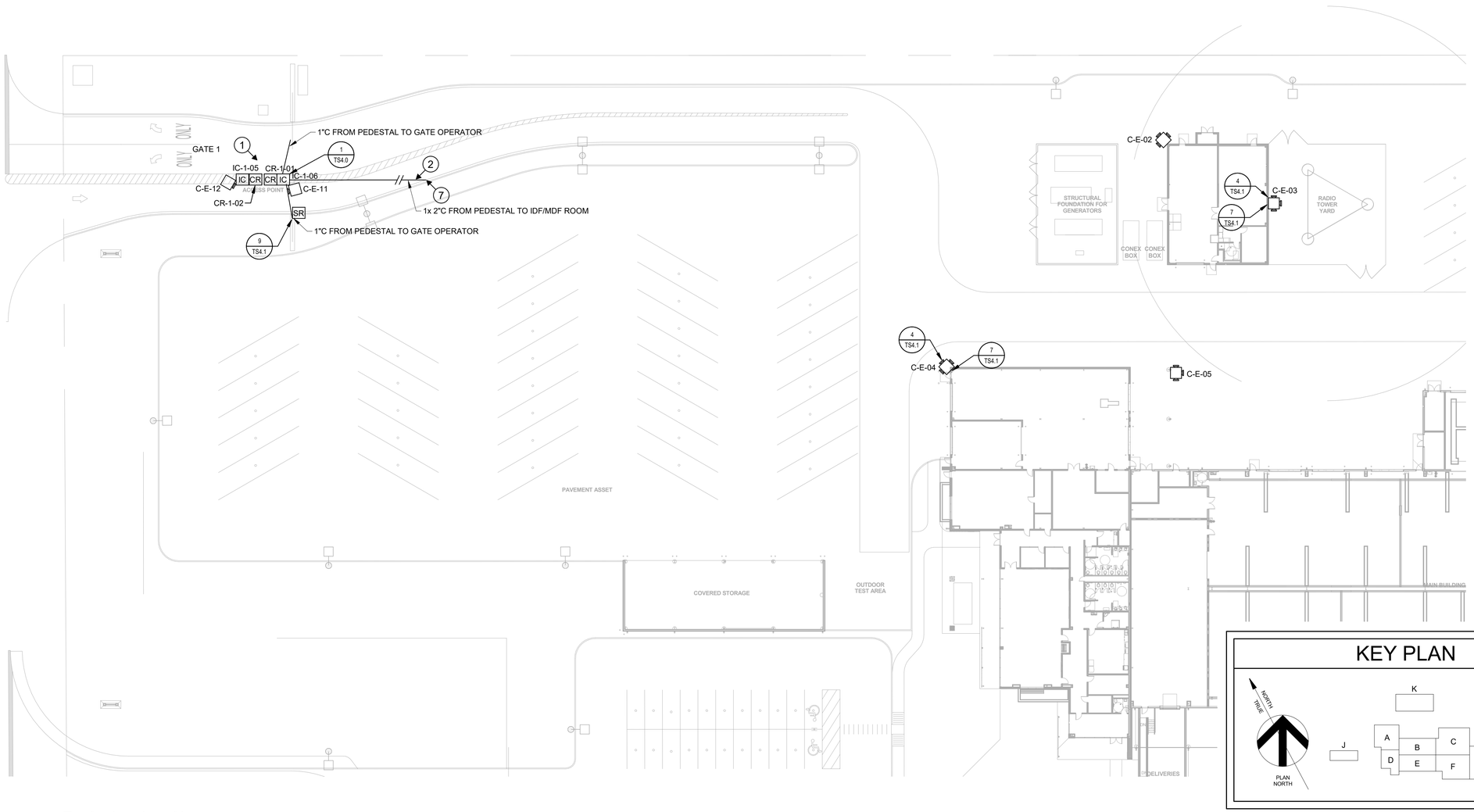
GENERATED ON: 9/21/2021 4:25:00 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY SITE PLAN - AREA A
1" = 30'-0"

SECURITY SITE PLAN - AREA A

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS1.2
18102

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

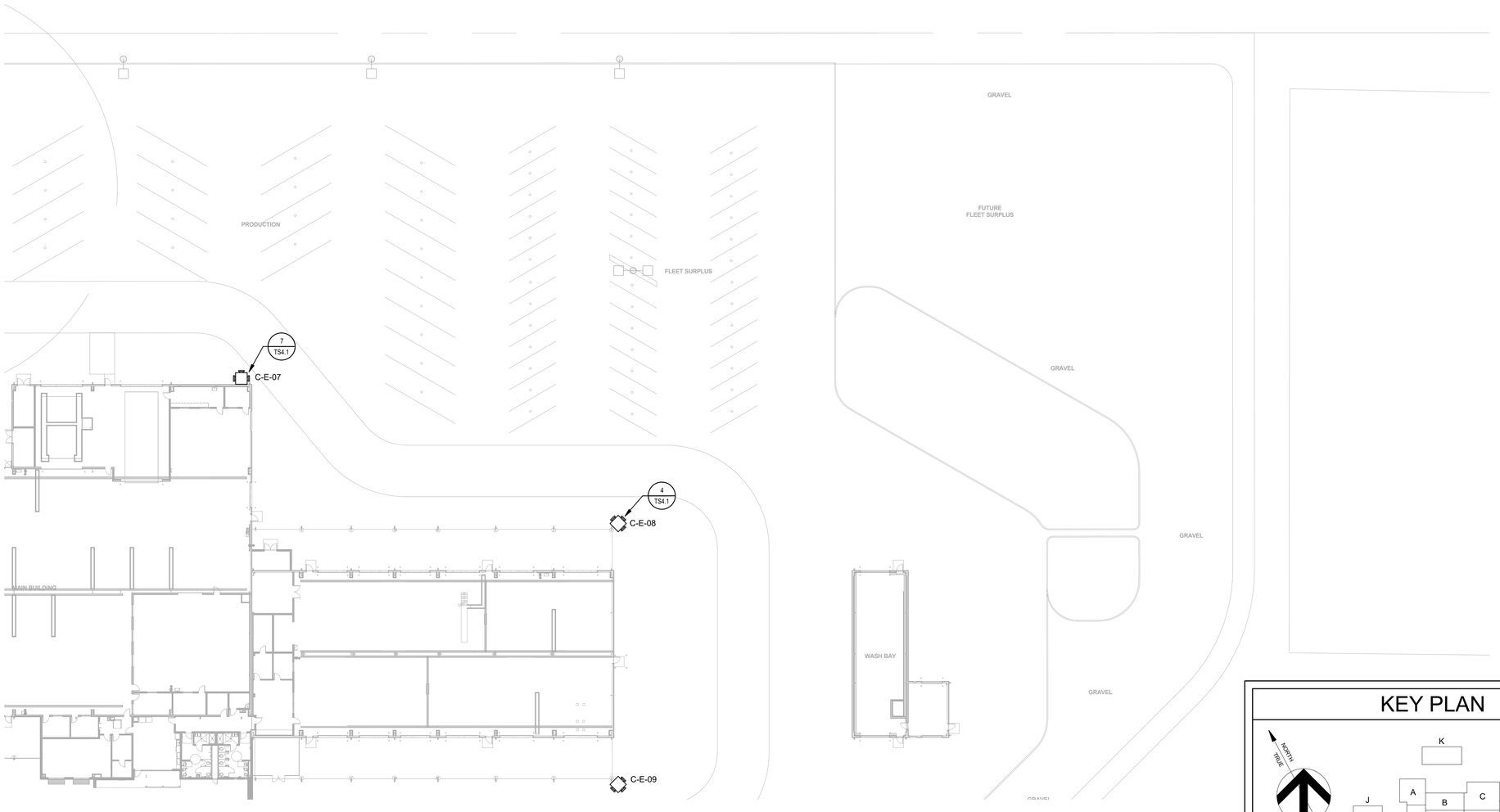
GENERATED ON: 9/21/2021 4:25:01 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

GENERAL NOTES - NEW CONSTRUCTION

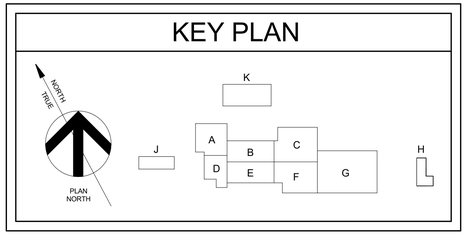
1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY SITE PLAN - AREA B
1" = 30'-0"



SECURITY SITE PLAN - AREA B

COPYRIGHT © 2021

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS1.3
18103

GENERATED ON: 9/21/2021 4:25:02 PM
BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

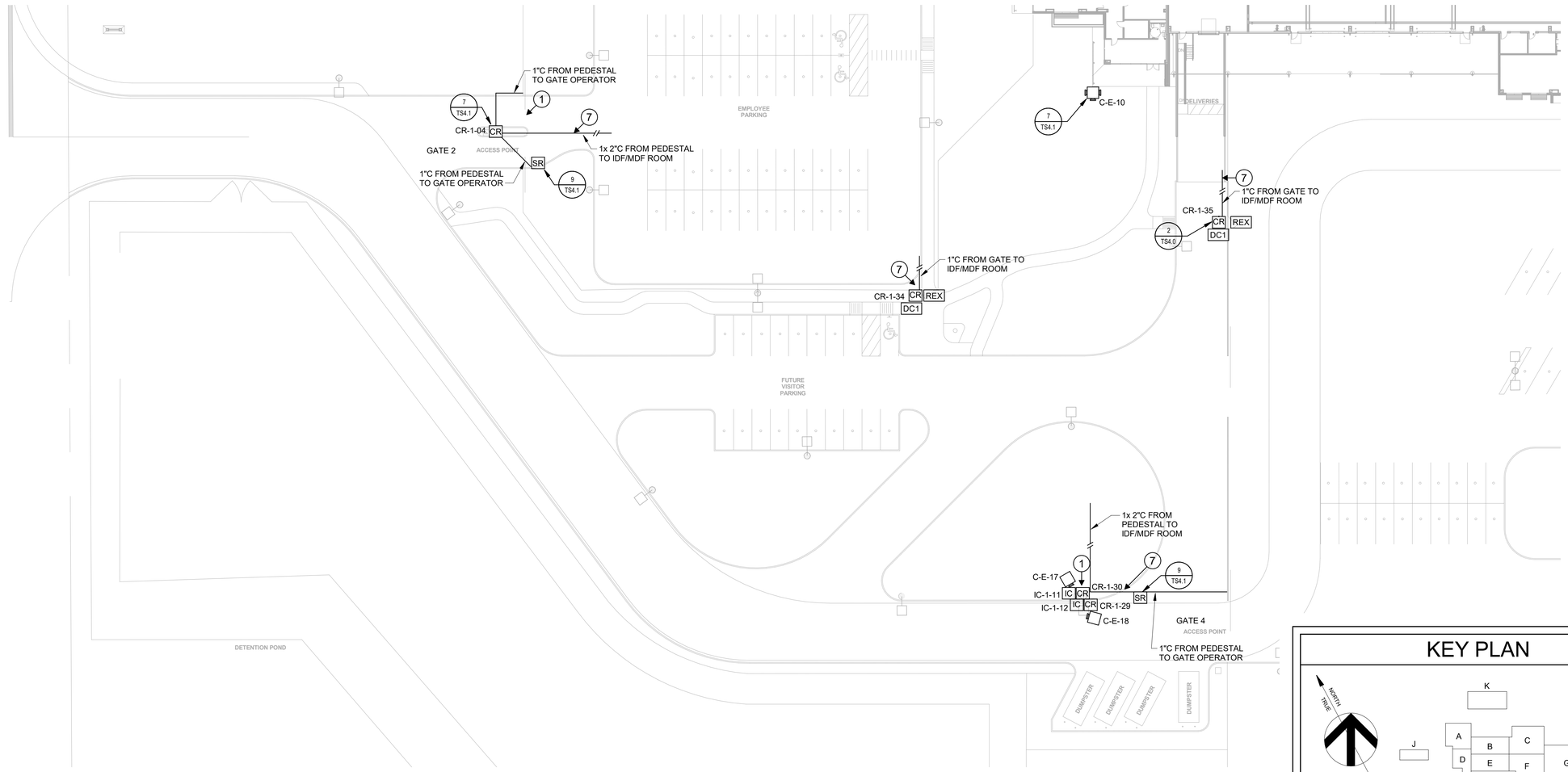
THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

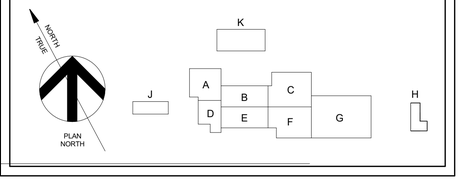
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY SITE PLAN - AREA C
1" = 30'-0"

KEY PLAN



SECURITY SITE PLAN - AREA C

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS1.4
18104

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

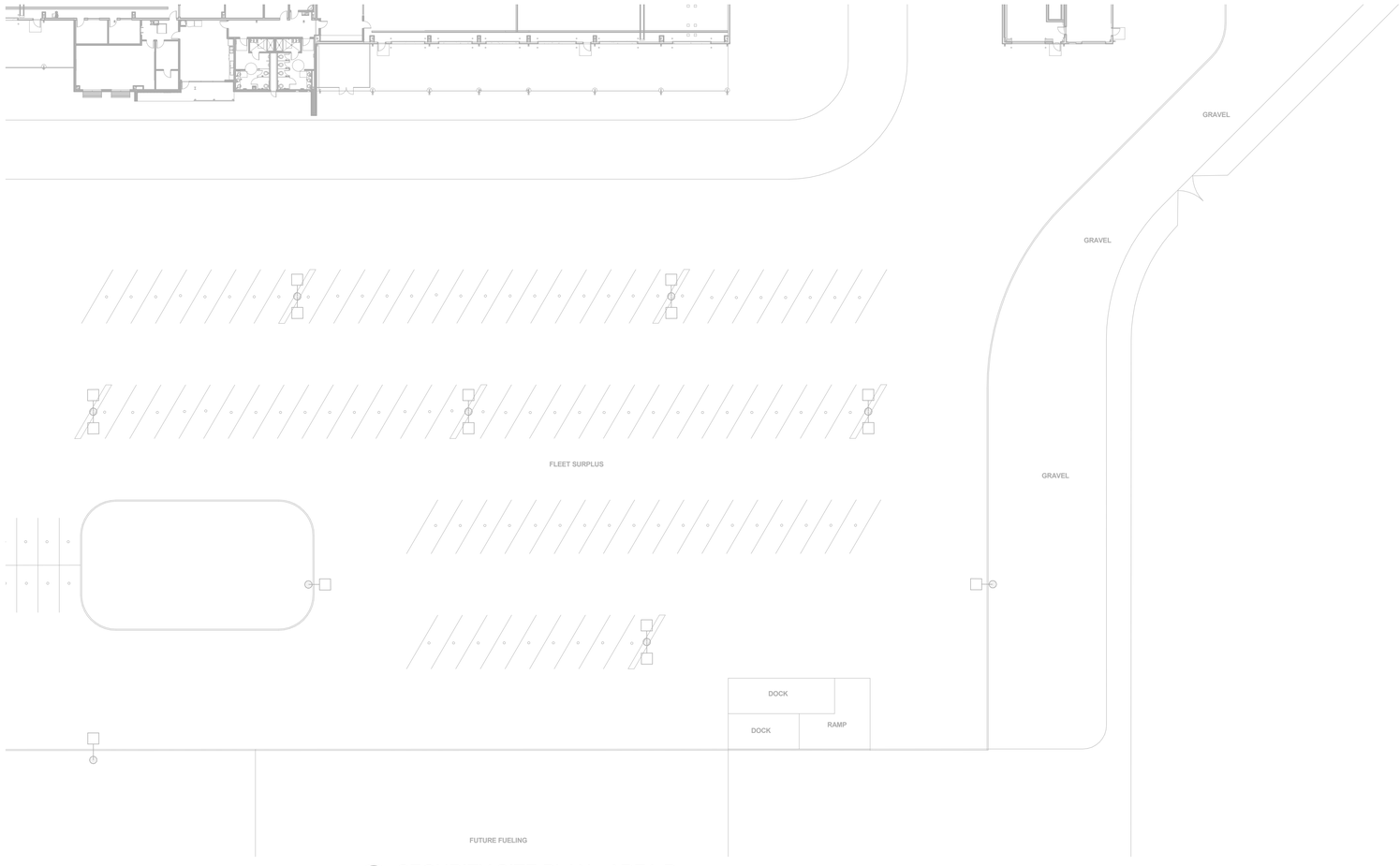
GENERATED ON: 9/21/2021 4:23:02 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

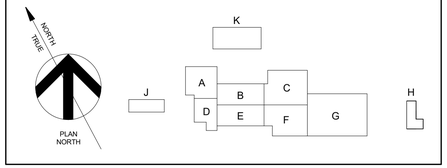
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY SITE PLAN - AREA D
1" = 30'-0"

KEY PLAN



SECURITY SITE PLAN - AREA D

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS1.5
18105

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

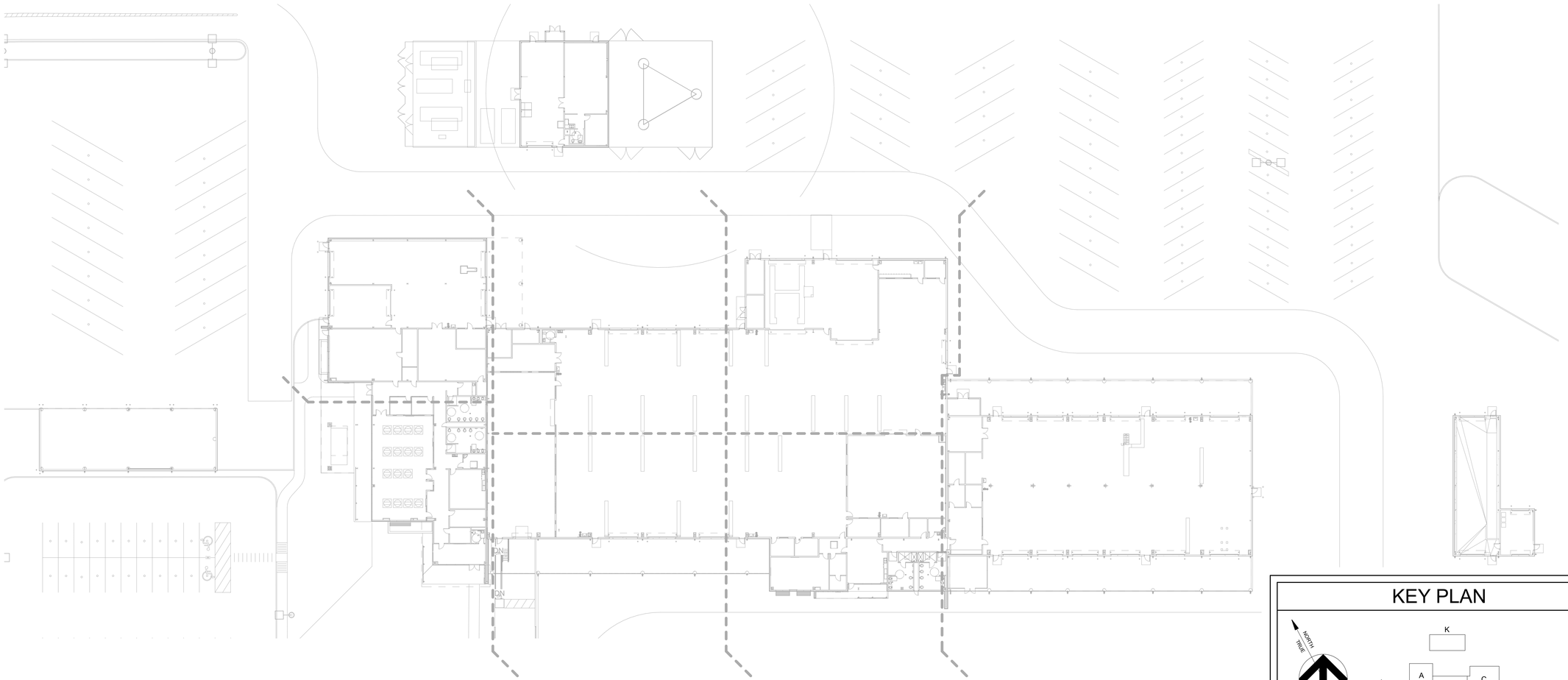
GENERATED ON: 9/21/2021 4:25:03 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R2b - TxDOT_973 Operation Center.rvt

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

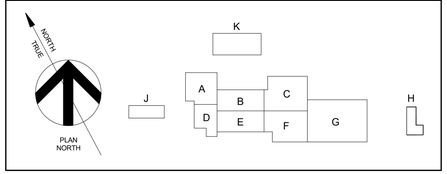
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY FLOOR PLAN - OVERALL
1/32" = 1'-0"

KEY PLAN



SECURITY FLOOR PLAN - OVERALL

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

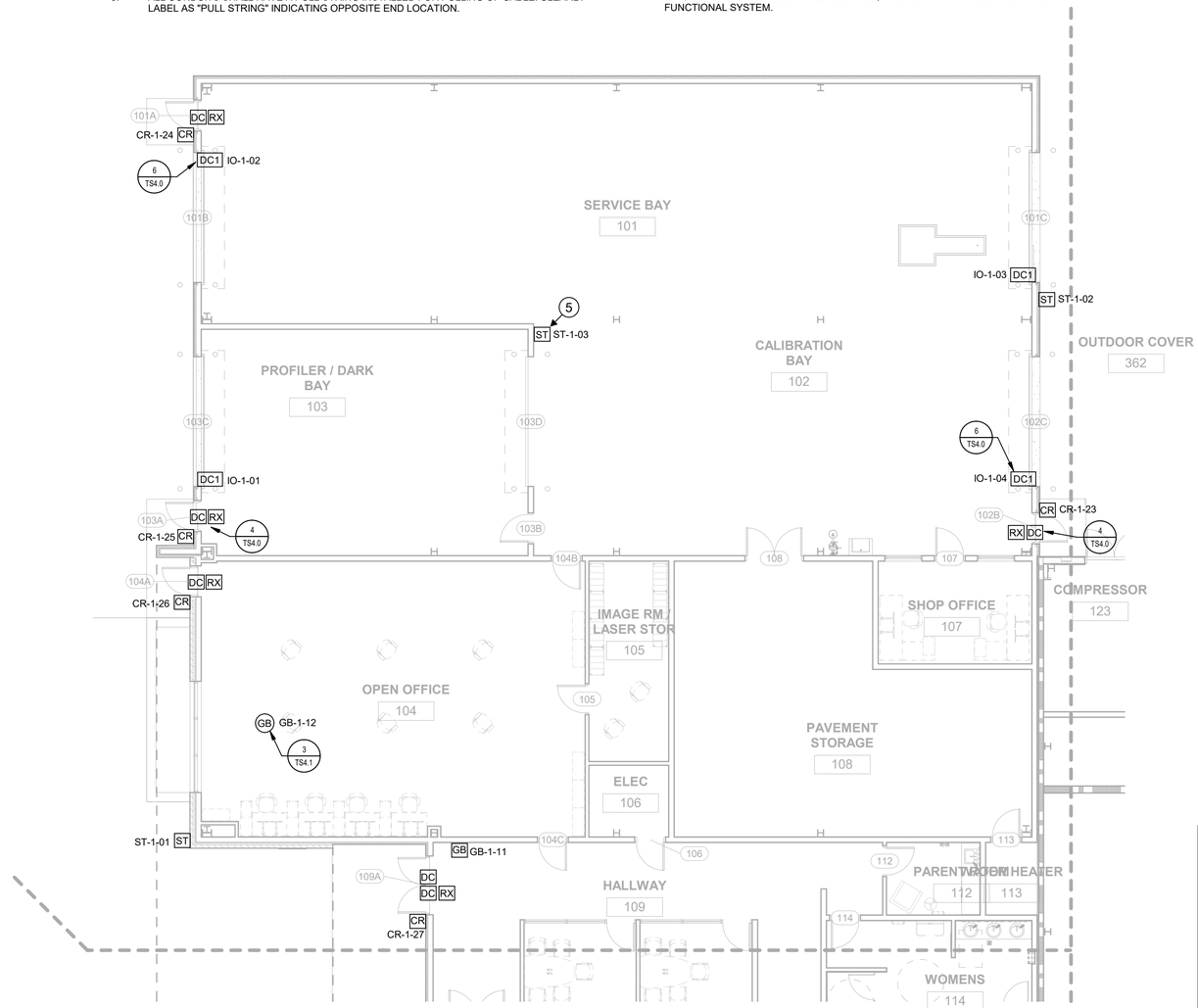
TS2.0
18200

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

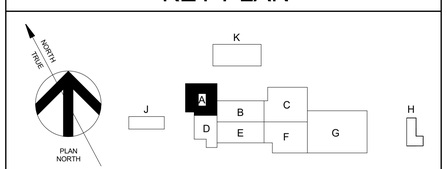


1 SECURITY ENLARGED FLOOR PLAN - SEGMENT A

1/8" = 1'-0"

0 4' 8' 16'

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT A

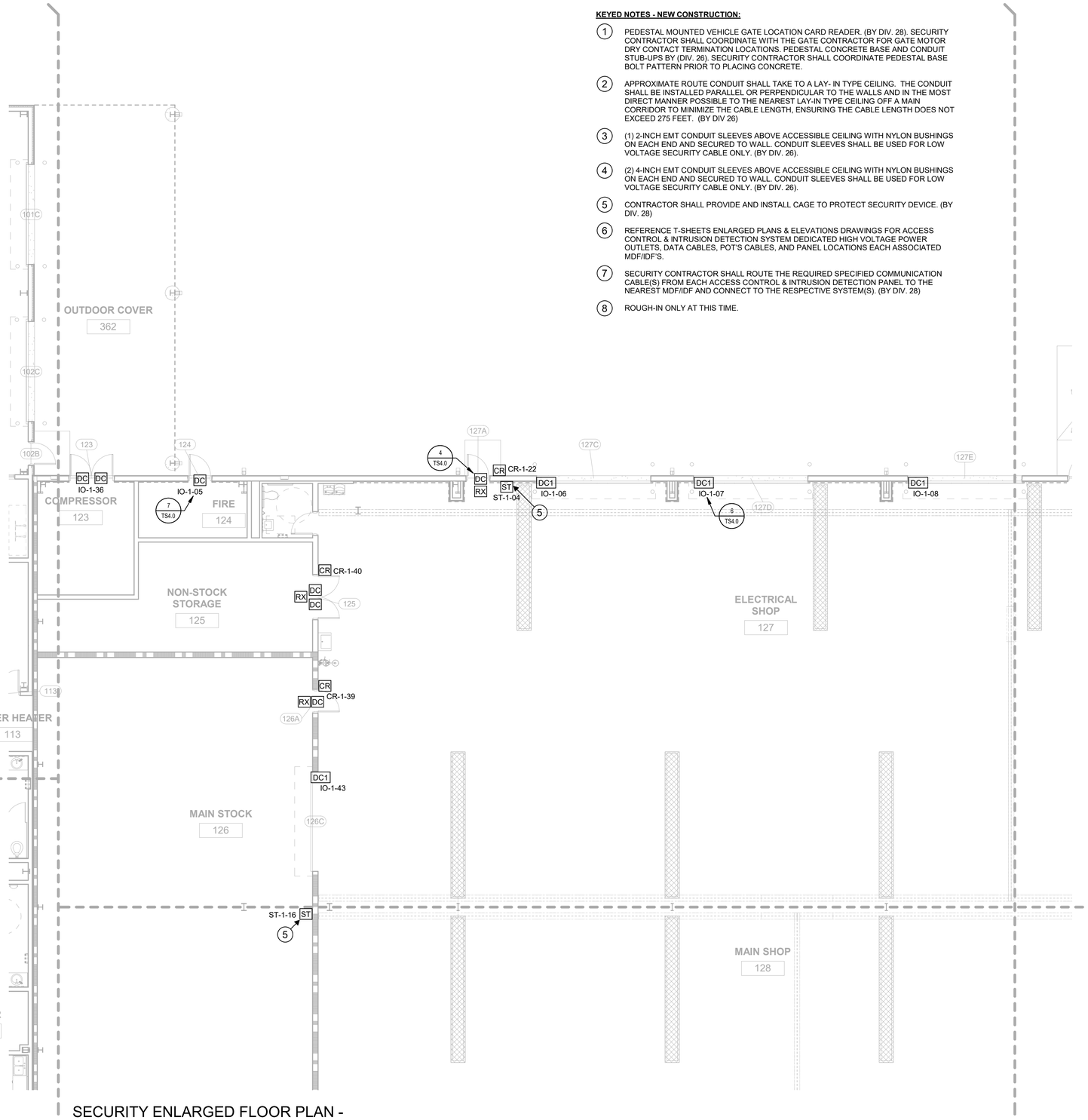
Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.1
18201



1 SECURITY ENLARGED FLOOR PLAN - SEGMENT B

1/8" = 1'-0"

0 4' 8' 16'

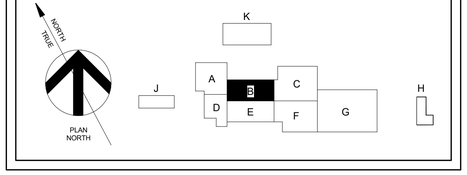
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT B

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

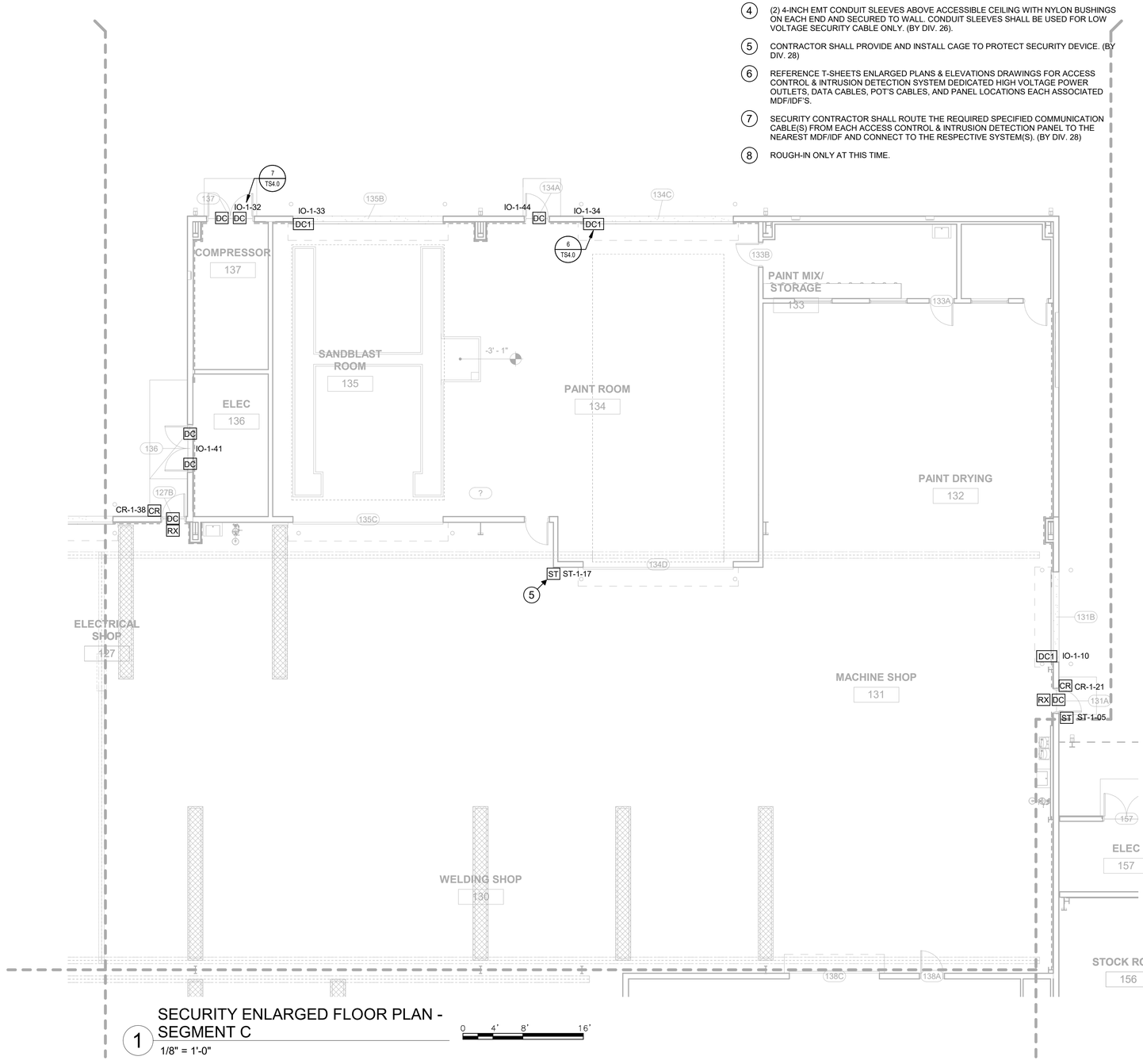
TS2.2
18202

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

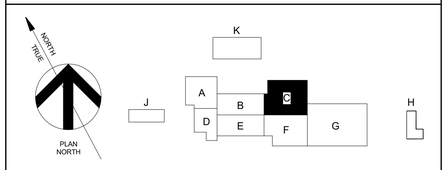


1 SECURITY ENLARGED FLOOR PLAN - SEGMENT C
1/8" = 1'-0"

0 4' 8' 16'

SECURITY FLOOR PLAN - SEGMENT C

KEY PLAN



Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

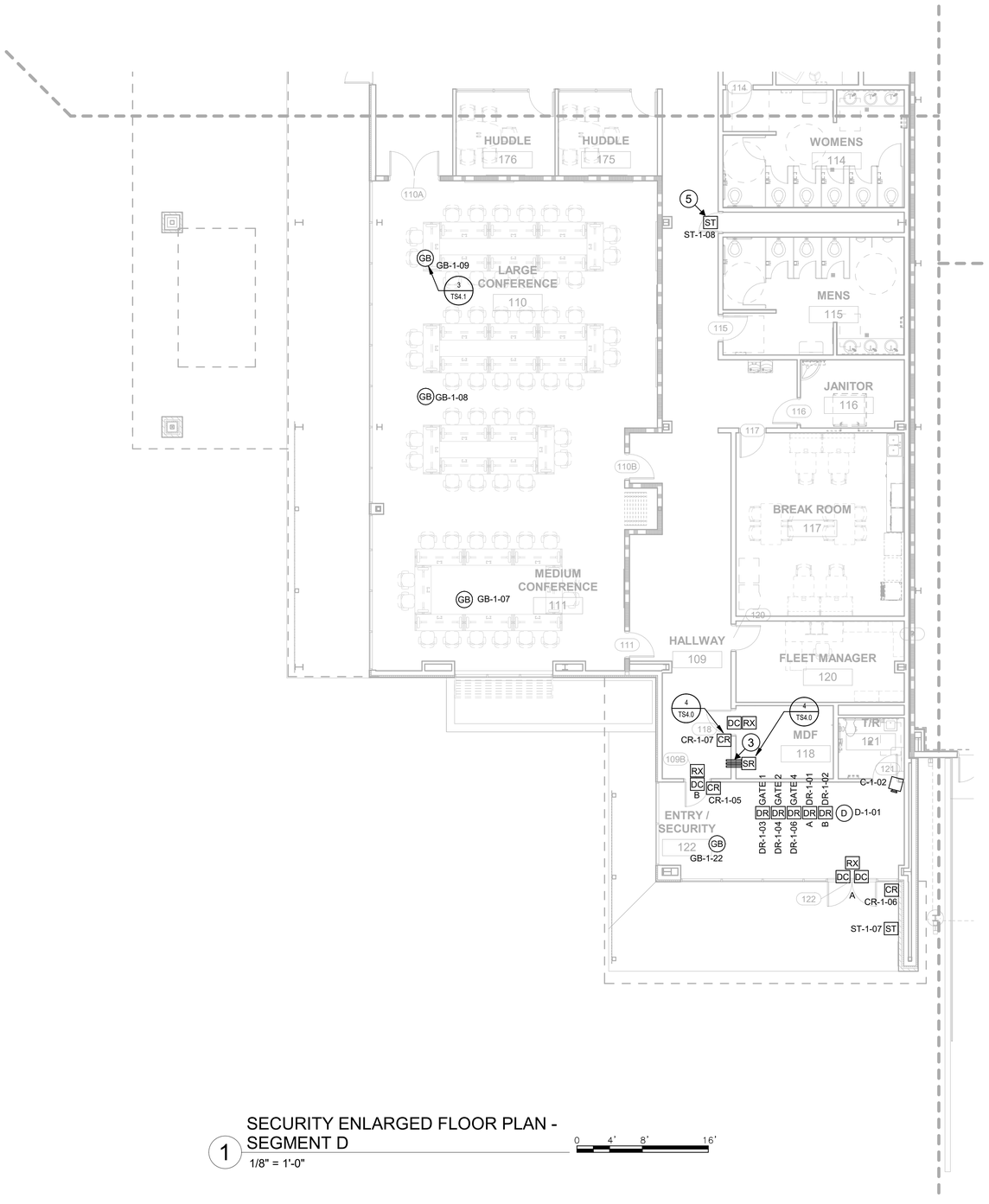
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.3
18203

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:08 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt



1 SECURITY ENLARGED FLOOR PLAN - SEGMENT D

1/8" = 1'-0"

0 4' 8' 16'

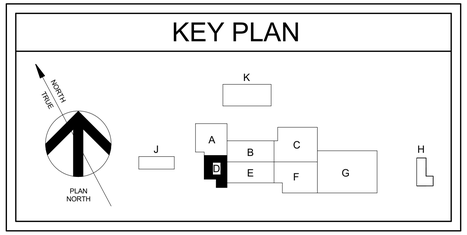
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT D

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

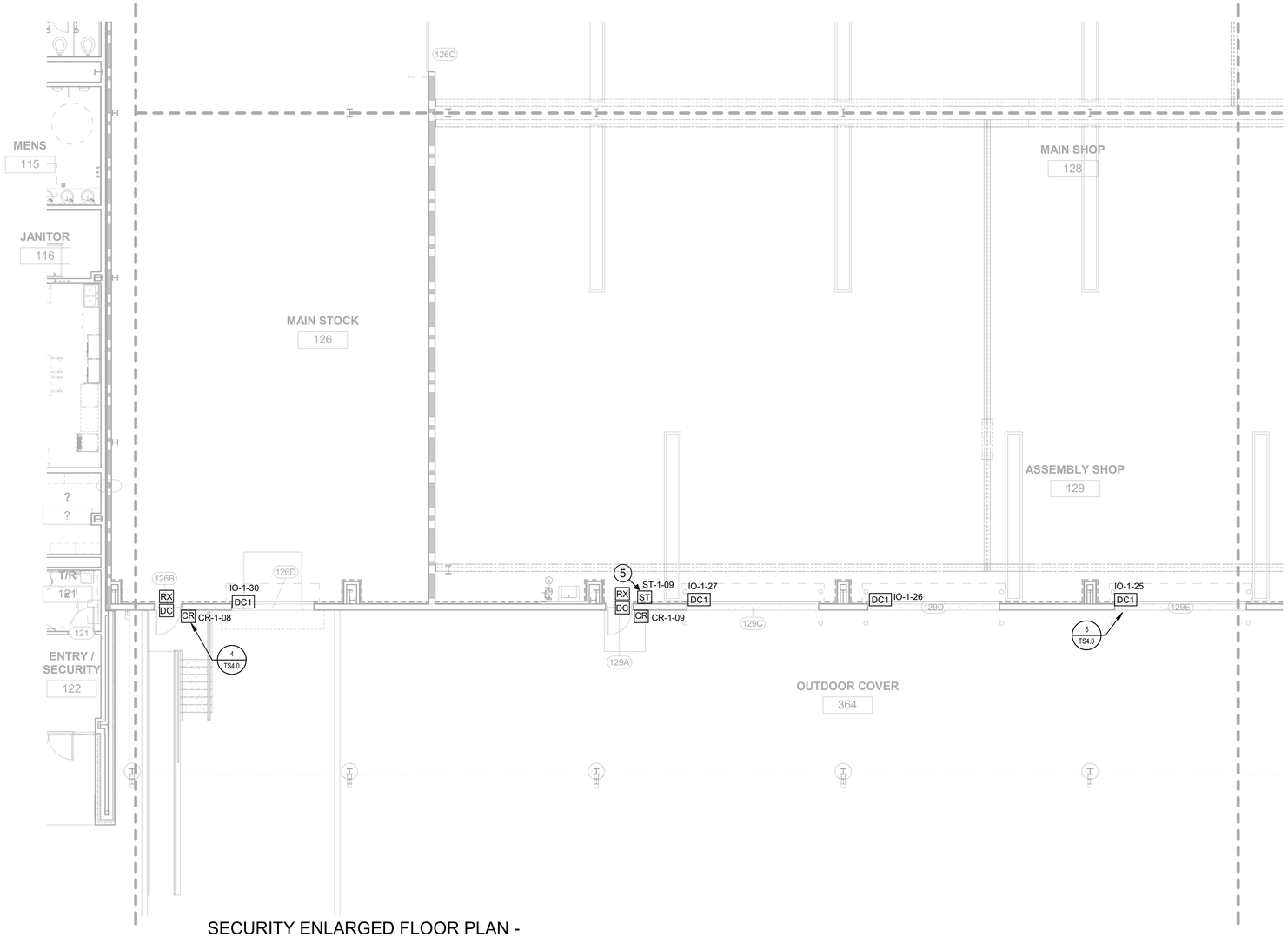
TS2.4
18204

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

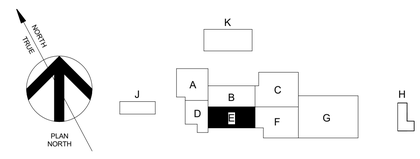
1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.



1 SECURITY ENLARGED FLOOR PLAN - SEGMENT E
1/8" = 1'-0"

0 4' 8' 16'

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT E

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

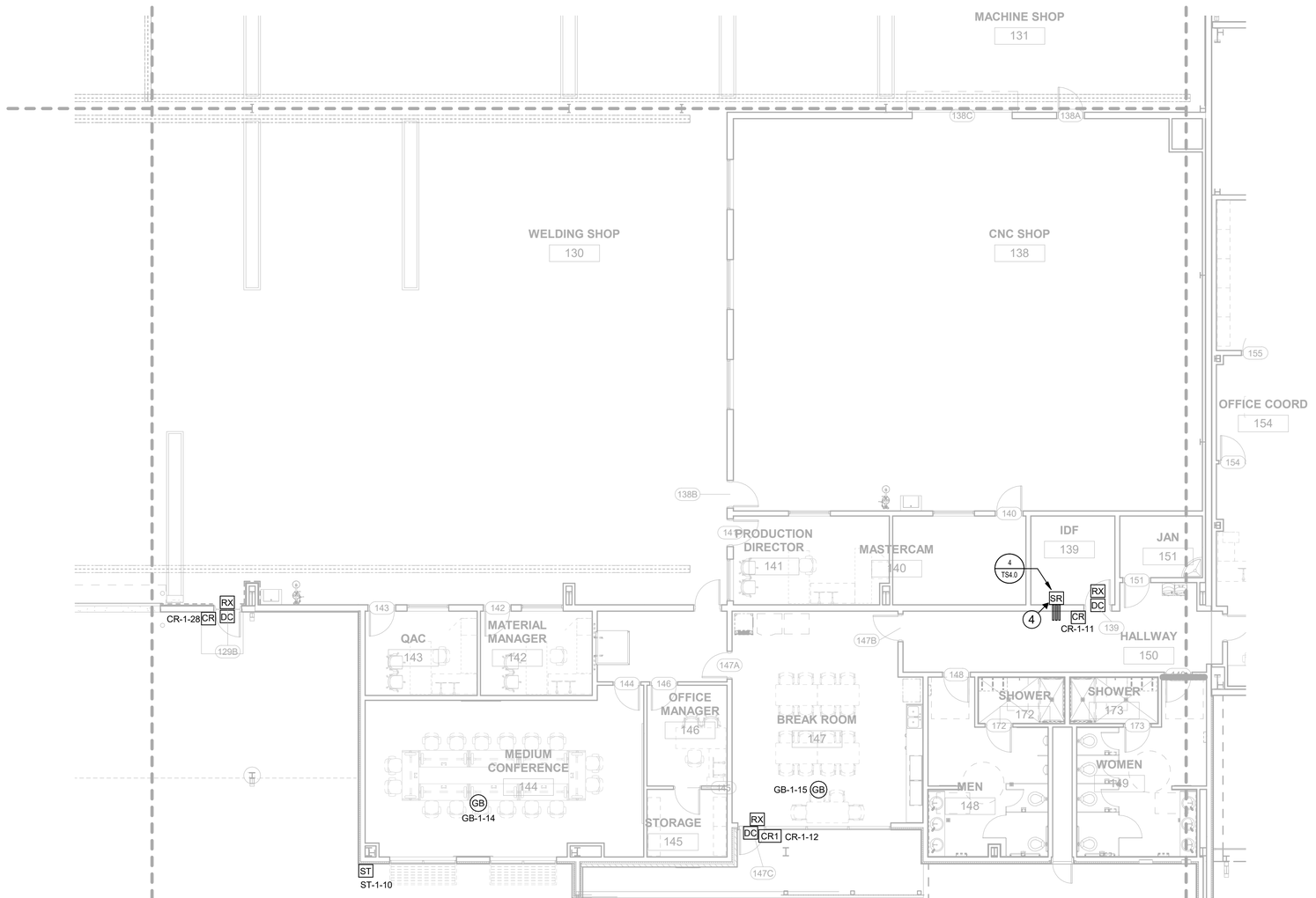
TS2.5
18205

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:11 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.



1 SECURITY ENLARGED FLOOR PLAN - SEGMENT F

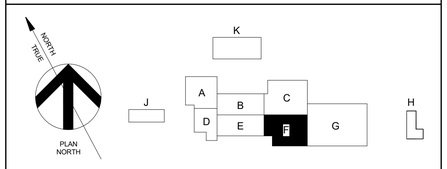
1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT F

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

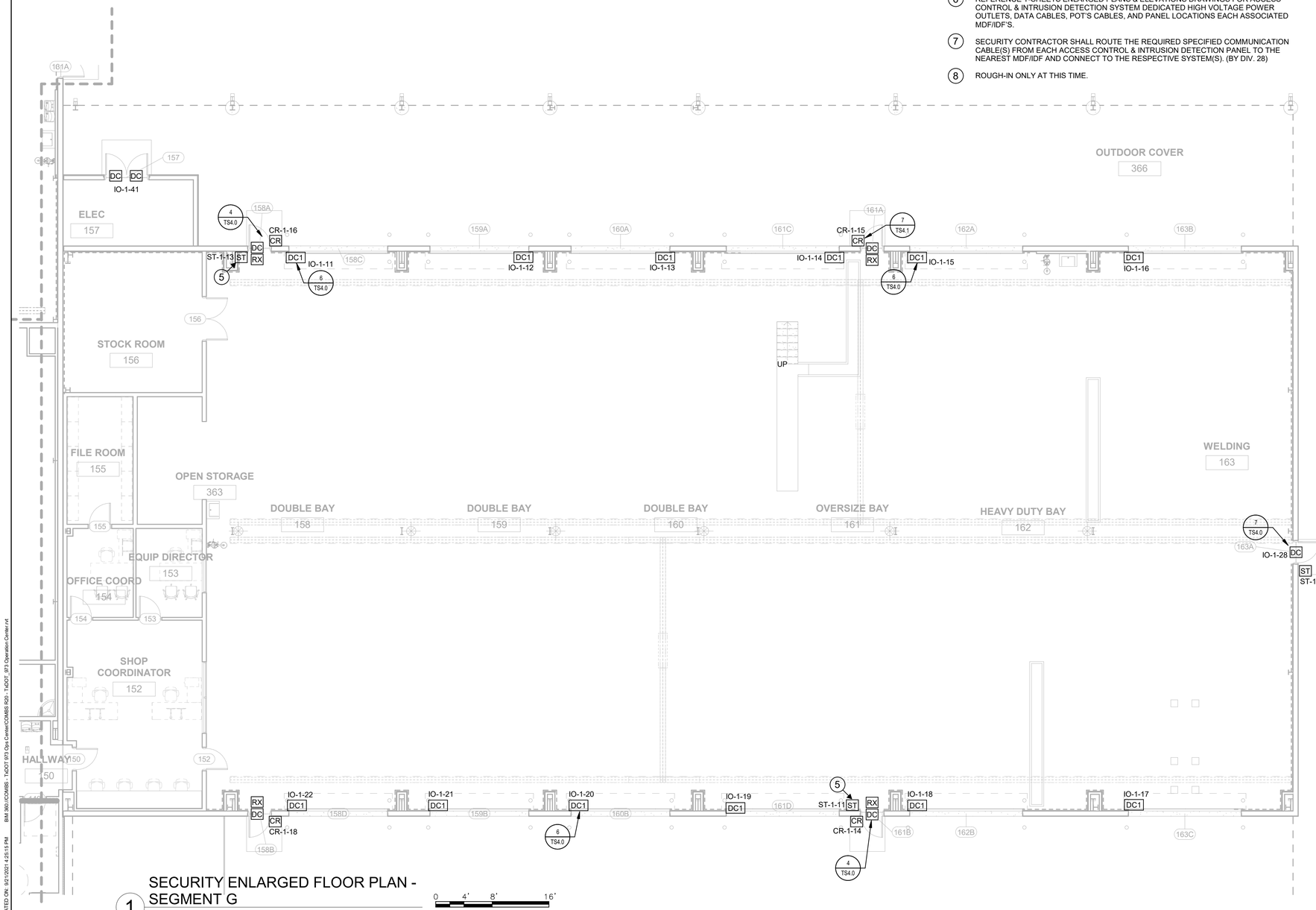
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.6
18206

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:13 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R26 - TxDOT_973 Operation Center.rvt



1 SECURITY ENLARGED FLOOR PLAN - SEGMENT G

1/8" = 1'-0"

0 4' 8' 16'

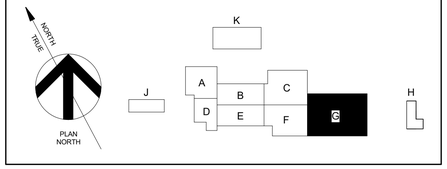
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



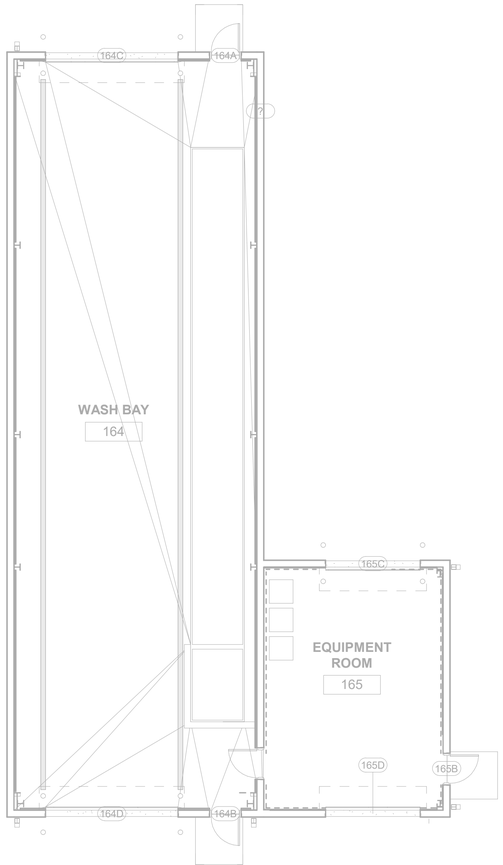
SECURITY FLOOR PLAN - SEGMENT G

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.7
18207



1 SECURITY ENLARGED FLOOR PLAN - WASH BAY

1/8" = 1'-0"

2 SECURITY ENLARGED FLOOR PLAN - COVERED STORAGE

1/8" = 1'-0"

0 4' 8' 16'

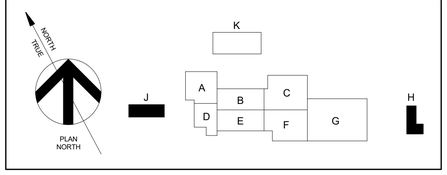
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT H & J

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

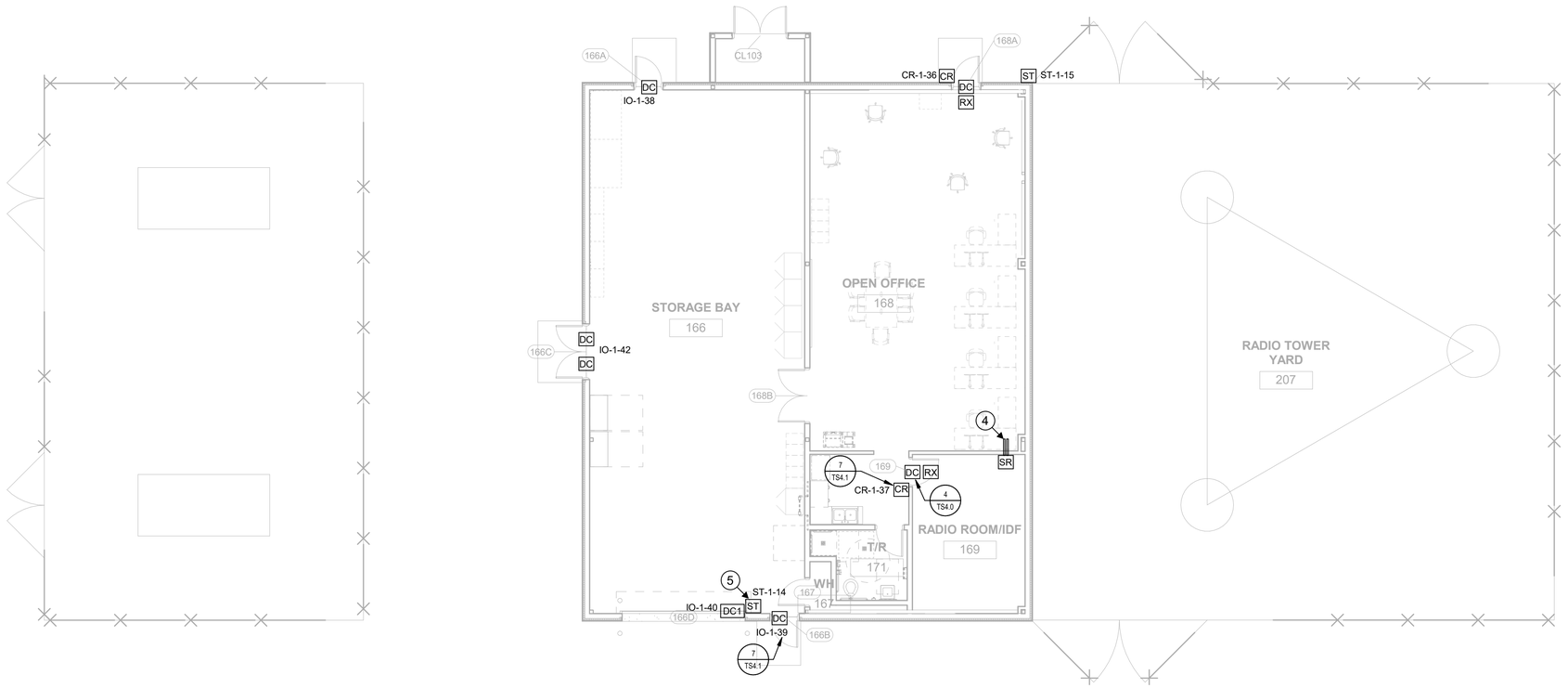
973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.8
18208

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:15 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt



1 SECURITY ENLARGED FLOOR PLAN - RADIO LAB

1/8" = 1'-0"

0 4' 8' 16'

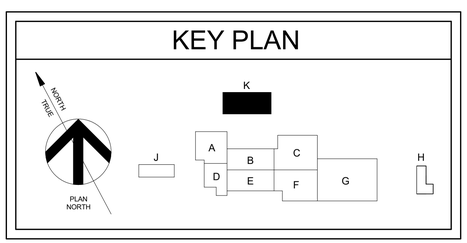
KEYED NOTES - NEW CONSTRUCTION:

1. PEDESTAL MOUNTED VEHICLE GATE LOCATION CARD READER. (BY DIV. 28). SECURITY CONTRACTOR SHALL COORDINATE WITH THE GATE CONTRACTOR FOR GATE MOTOR DRY CONTACT TERMINATION LOCATIONS. PEDESTAL CONCRETE BASE AND CONDUIT STUB-UPS BY (DIV. 26). SECURITY CONTRACTOR SHALL COORDINATE PEDESTAL BASE BOLT PATTERN PRIOR TO PLACING CONCRETE.
2. APPROXIMATE ROUTE CONDUIT SHALL TAKE TO A LAY- IN TYPE CEILING. THE CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE WALLS AND IN THE MOST DIRECT MANNER POSSIBLE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH, ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. (BY DIV 26)
3. (1) 2-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
4. (2) 4-INCH EMT CONDUIT SLEEVES ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS ON EACH END AND SECURED TO WALL. CONDUIT SLEEVES SHALL BE USED FOR LOW VOLTAGE SECURITY CABLE ONLY. (BY DIV. 26).
5. CONTRACTOR SHALL PROVIDE AND INSTALL CAGE TO PROTECT SECURITY DEVICE. (BY DIV. 28)
6. REFERENCE T-SHEETS ENLARGED PLANS & ELEVATIONS DRAWINGS FOR ACCESS CONTROL & INTRUSION DETECTION SYSTEM DEDICATED HIGH VOLTAGE POWER OUTLETS, DATA CABLES, POT'S CABLES, AND PANEL LOCATIONS EACH ASSOCIATED MDF/IDF'S.
7. SECURITY CONTRACTOR SHALL ROUTE THE REQUIRED SPECIFIED COMMUNICATION CABLE(S) FROM EACH ACCESS CONTROL & INTRUSION DETECTION PANEL TO THE NEAREST MDF/IDF AND CONNECT TO THE RESPECTIVE SYSTEM(S). (BY DIV. 28)
8. ROUGH-IN ONLY AT THIS TIME.

GENERAL NOTES - NEW CONSTRUCTION

1. ALL CONDUIT PATHWAYS, ROUGH-INS, CONDUIT SLEEVES, ETC. INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
2. ALL POWER INDICATED ON THE SECURITY DRAWINGS ARE TO BE PROVIDED AND INSTALLED BY DIVISION 26.
3. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH FIRE RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING BACK TO THE ORIGINAL RATING.
4. CONTRACTOR SHALL RESTORE ALL PENETRATIONS PROVIDED THROUGH NON-RATED WALLS/STRUCTURES FOR DATA, VOICE, AND SECURITY CABLING FOR SOUND TO REDUCE NOISE TRAVELING THROUGH PENETRATIONS.
5. CABLING FOR DATA, VOICE, AND SECURITY SHALL BE ROUTED IN SEPARATE PATHWAYS IN J-HOOKS, CONDUITS, CONDUIT SLEEVES, CORES, ETC. THROUGHOUT THE ENTIRE PATHWAY. DIFFERENT MEDIA TYPES (DATA, VOICE, SECURITY, ETC.) SHALL NOT SHARE THE SAME J-HOOK, CONDUIT, CONDUIT SLEEVE, CORE, ETC.
6. ALL CONDUITS FOR DATA, VOICE, AND SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE AN ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE DATA ROOM TO MINIMIZE THE CABLE LENGTH.
7. CONDUIT SEGMENTS SHALL BE NO MORE THAN 100-FEET IN LENGTH WITH NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULLING POINTS.
8. CONDUITS SHALL MAINTAIN A BEND RADIUS OF 6 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS 2-INCHES OR SMALLER AND 10 TIMES THE DIAMETER OF THE CONDUIT FOR CONDUITS GREATER THAN 2-INCHES.
9. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
10. ALL SPARE CONDUITS OR CONDUITS FILLED WITH LESS THAN THE MAXIMUM ALLOWED FILL RATIO SHALL HAVE A PULL STRING INSTALLED AND LEFT FOR FUTURE PULLING OF CABLE. CLEARLY LABEL AS "PULL STRING" INDICATING OPPOSITE END LOCATION.
11. ALL DEVICES ARE SHOWN DIAGRAMMATICALLY. COORDINATE EXACT PLACEMENT WITH ARCHITECT/ENGINEER
12. CONTRACTOR SHALL MAKE AT LEAST 1 RETURN TRIP TO RE-AIM AND RE-FOCUS ALL IP CAMERAS.
13. EXISTING CONDUIT AND DATA CABLE THAT FEEDS EXISTING SURVEILLANCE CAMERAS. IF REMOVAL IS NECESSARY, COORDINATE WITH THE ARCHITECT/ENGINEER PRIOR TO REMOVAL (BY DIV 26 AND DIV 27).
14. ALL CONDUITS FOR SECURITY DEVICES SHALL ROUTE FROM THE DEVICE LOCATION AND TERMINATE ABOVE A LAY- IN TYPE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE A LAY-IN TYPE CEILING TO PREVENT THE CABLES FROM BEING EXPOSED, THE CONDUIT SHALL ROUTE TO THE NEAREST LAY-IN TYPE CEILING OFF A MAIN CORRIDOR. THE CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE MAIN CORRIDOR TO MINIMIZE THE CABLE LENGTH ENSURING THE CABLE LENGTH DOES NOT EXCEED 275 FEET. CONDUIT, CONNECTIONS, J-BOXES, SUSPENSION, ANCHORAGES, AND OTHER CONDUIT COMPONENTS EXPOSED TO VIEW IN PUBLIC SPACES SHALL BE ROUTED AND INSTALLED CAREFULLY TO MINIMIZE VISUAL IMPACT AND SHALL BE FULLY PAINTED TO MATCH UNLESS NOTED OTHERWISE.
15. CONTRACTOR MUST COORDINATE EXTERIOR CAMERA PLACEMENT(S) WITH THE LANDSCAPE CONTRACTOR PRIOR TO ROUGH-IN. IF TREES OR SHRUBS OBSTRUCT THE CAMERA VIEW, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT/CONSULTANT FOR RELOCATION OF EXTERIOR CAMERA(S).
16. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL THE SPECIFIED ACCESS CONTROL SYSTEM & INTRUSION DETECTION SYSTEM COMMUNICATION CABLE(S) AS REQUIRED TO EACH ASSOCIATED MDF / IDF, IN ORDER TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM.

KEY PLAN



SECURITY FLOOR PLAN - SEGMENT K

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS2.9
18209

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:16 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R20 - TxDOT_973 Operation Center.rvt

TXDOT 973 OPS CENTER INPUT SCHEDULE

Device Input Point Number	Device Type	Building Name / Sheet Number	Termination Room Number	Termination Device Type
IC-1-01	INTERCOM	MAIN BUILDING/OFFICE	MDF 118	VOIP/DATA
IC-1-04	INTERCOM	MAIN BUILDING/ MAIN STOCK 308	MDF 118	VOIP/DATA
IC-1-05	INTERCOM	SECURITY HIGH-LOW PEDESTAL	RADIO ROOM/IDF 169	VOIP/DATA
IC-1-06	INTERCOM	SECURITY HIGH-LOW PEDESTAL	RADIO ROOM/IDF 169	VOIP/DATA
IC-1-10	INTERCOM	SECURITY HIGH-LOW PEDESTAL	MDF 118	VOIP/DATA
IC-1-11	INTERCOM	SECURITY HIGH-LOW PEDESTAL	MDF 118	VOIP/DATA
IC-1-12	INTERCOM	SECURITY HIGH-LOW PEDESTAL	MDF 118	VOIP/DATA
IO-1-01	OVERHEAD DOOR CONTACT	MAIN BUILDING/PROFILER/DARK	MDF 118	ALARM
IO-1-02	OVERHEAD DOOR CONTACT	MAIN BUILDING/SERVICE BAY	MDF 118	ALARM
IO-1-03	OVERHEAD DOOR CONTACT	MAIN BUILDING/SERVICE BAY	MDF 118	ALARM
IO-1-04	OVERHEAD DOOR CONTACT	MAIN BUILDING/CALIBRATION BAY	MDF 118	ALARM
IO-1-05	DOOR CONTACT	MAIN BUILDING/FIRE	MDF 118	ALARM
IO-1-06	OVERHEAD DOOR CONTACT	MAIN BUILDING/ELEC SHOP	MDF 118	ALARM
IO-1-07	OVERHEAD DOOR CONTACT	MAIN BUILDING/ELEC SHOP	MDF 118	ALARM
IO-1-08	OVERHEAD DOOR CONTACT	MAIN BUILDING/ELEC SHOP	MDF 118	ALARM
IO-1-09	OVERHEAD DOOR CONTACT	MAIN BUILDING/ELEC SHOP	MDF 118	ALARM
IO-1-10	OVERHEAD DOOR CONTACT	MAIN BUILDING/MACHINE SHOP	IDF 139	ALARM
IO-1-11	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-12	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-13	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-14	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-15	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-16	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-17	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-18	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-19	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-20	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-21	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-22	OVERHEAD DOOR CONTACT	MAIN BUILDING/ DOUBLE BAY	IDF 139	ALARM
IO-1-24	OVERHEAD DOOR CONTACT	MAIN BUILDING/ASSEMBLY SHOP	IDF 139	ALARM
IO-1-25	OVERHEAD DOOR CONTACT	MAIN BUILDING/ASSEMBLY SHOP	IDF 139	ALARM
IO-1-26	OVERHEAD DOOR CONTACT	MAIN BUILDING/ASSEMBLY SHOP	IDF 139	ALARM
IO-1-27	OVERHEAD DOOR CONTACT	MAIN BUILDING/ASSEMBLY SHOP	IDF 139	ALARM
IO-1-28	DOOR CONTACT	MAIN BUILDING/HEAVY DUTY BAY	IDF 139	ALARM
IO-1-29	OVERHEAD DOOR CONTACT	MAIN BUILDING/MAIN STOCK	IDF 139	ALARM
IO-1-30	OVERHEAD DOOR CONTACT	MAIN BUILDING/MAIN STOCK	IDF 139	ALARM
IO-1-33	OVERHEAD DOOR CONTACT	DOOR 135B	IDF 139	ALARM
IO-1-34	OVERHEAD DOOR CONTACT	MAIN BUILDING/PAINT ROOM	IDF 139	ALARM
IO-1-36	DOOR CONTACT	MAIN BUILDING/COMPRESSOR	IDF 139	ALARM
IO-1-38	DOOR CONTACT	RADIO BUILDING/STORAGE BAY	RADIO ROOM/IDF 169	ALARM
IO-1-39	DOOR CONTACT	RADIO BUILDING/STORAGE BAY	RADIO ROOM/IDF 169	ALARM
IO-1-40	DOOR CONTACT	RADIO BUILDING/STORAGE BAY	RADIO ROOM/IDF 169	ALARM
IO-1-41	DOOR CONTACT	ELEC ROOM	IDF 139	ALARM
IO-1-42	DOOR CONTACT	STORAGE BAY	IDF 139	ALARM
IO-1-42	DOOR CONTACT	STORAGE BAY	RADIO ROOM/IDF 169	ALARM
IO-1-43	OVERHEAD DOOR CONTACT	MAIN STOCK 126	IDF 139	ALARM
IO-1-44	DOOR CONTACT	PAINT ROOM 134A	IDF 139	ALARM
KP-1-01	KEYPAD	MAIN BUILDING/EMPLOYEE ENTRY	RADIO ROOM/IDF 169	ALARM CONTROL
KP-1-02	KEYPAD	MAIN BUILDING/ LOBBY 304	RADIO ROOM/IDF 169	ALARM CONTROL
KP-1-03	KEYPAD	DOUBLE BAY 325	IDF 139	ALARM CONTROL
KP-1-04	KEYPAD	OPEN OFFICE 191	RADIO ROOM/IDF 169	ALARM CONTROL
ST-1-01	STROBE/SOUNDER	MAIN BUILDING BY DOOR 109A	MDF 118	ALARM CONTROL
ST-1-02	STROBE/SOUNDER	SERVICE BAYBY DOOR 101C	MDF 118	ALARM CONTROL
ST-1-03	STROBE/SOUNDER	SERVICE BAY AREA	MDF 118	ALARM CONTROL
ST-1-04	STROBE/SOUNDER	ELECTRICAL SHOP BY DOOR 127D	MDF 118	ALARM CONTROL
ST-1-05	STROBE/SOUNDER	MACHINCE SHOP BY DOOR 131A	IDF 139	ALARM CONTROL
ST-1-07	STROBE/SOUNDER	DOOR 122	MDF 118	ALARM CONTROL
ST-1-08	STROBE/SOUNDER	MAIN OFFICE AREA HALLWAY 109	MDF 118	ALARM CONTROL
ST-1-09	STROBE/SOUNDER	DOOR 129D	IDF 139	ALARM CONTROL
ST-1-10	STROBE/SOUNDER	MEDIUM CONF EXTERIOR WALL	IDF 139	ALARM CONTROL
ST-1-11	STROBE/SOUNDER	DOOR 161B	IDF 139	ALARM CONTROL
ST-1-12	STROBE/SOUNDER	DOOR 163A	IDF 139	ALARM CONTROL
ST-1-13	STROBE/SOUNDER	DOOR 158A	IDF 139	ALARM CONTROL
ST-1-14	STROBE/SOUNDER	DOOR166D	RADIO ROOM/IDF 169	ALARM CONTROL
ST-1-15	STROBE/SOUNDER	DOOR 166A	RADIO ROOM/IDF 169	ALARM CONTROL
ST-1-16	STROBE/SOUNDER	MAIN STOCK ROOOM	IDF 139	ALARM CONTROL
ST-1-17	STROBE/SOUNDER	WELDING SHOP	IDF 139	ALARM CONTROL

TXDOT 973 OPS CENTER INPUT SCHEDULE

Device Input Point Number	Device Type	Building Name / Sheet Number	Termination Room Number	Termination Device Type
GB-1-01	GLASS BREAK SENSOR	MAIN BUILDING/LOBBY	MDF 118	ALARM
GB-1-02	GLASS BREAK SENSOR	MAIN BUILDING/CONF ROOM	MDF 118	ALARM
GB-1-03	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	MDF 118	ALARM
GB-1-04	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	MDF 118	ALARM
GB-1-05	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	MDF 118	ALARM
GB-1-06	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	MDF 118	ALARM
GB-1-07	GLASS BREAK SENSOR	MAIN BUILDING MED AND LARGE CONF ROOM	MDF 118	ALARM
GB-1-08	GLASS BREAK SENSOR	MAIN BUILDING MED AND LARGE CONF ROOM	MDF 118	ALARM
GB-1-09	GLASS BREAK SENSOR	MAIN BUILDING MED AND LARGE CONF ROOM	MDF 118	ALARM
GB-1-10	GLASS BREAK SENSOR	OFFICE	MDF 118	ALARM
GB-1-11	GLASS BREAK SENSOR	MAIN BUILDING/EMPLOYEE ENTRY	MDF 118	ALARM
GB-1-12	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	IDF 139	ALARM
GB-1-13	GLASS BREAK SENSOR	MAIN BUILDING/OPEN OFFICE	IDF 139	ALARM
GB-1-14	GLASS BREAK SENSOR	MAIN BUILDING/MED CONF	IDF 139	ALARM
GB-1-15	GLASS BREAK SENSOR	MAIN BUILDING/BREAK ROOM	IDF 139	ALARM
GB-1-16	GLASS BREAK SENSOR	MAIN BUILDING/WAITING 345	IDF 139	ALARM
GB-1-18	GLASS BREAK SENSOR	EQUIP DIR	IDF 139	ALARM
GB-1-19	GLASS BREAK SENSOR	PRODUCTION MANAGER 335	IDF 139	ALARM
GB-1-20	GLASS BREAK SENSOR	MATERIALS MANAGER	IDF 139	ALARM
GB-1-21	GLASS BREAK SENSOR	OFFICE MANAGER	IDF 139	ALARM
GB-1-22	GLASS BREAK SENSOR	HALLWAY	MDF 118	ALARM
D-1-01	DURESS ALARM	MAIN BUILDING/LOBBY DESK	MDF 118	ALARM
DR-1-01	REMOTE DOOR RELEASE	MAIN BUILDING/LOBBY DESK	IDF 139	DOOR RELEASE
DR-1-02	REMOTE DOOR RELEASE	MAIN BUILDING/LOBBY DESK	IDF 139	DOOR RELEASE
DR-1-03	REMOTE GATE RELEASE	MAIN BUILDING/SECURITY	IDF 139	GATE RELEASE
DR-1-04	REMOTE GATE RELEASE	MAIN BUILDING/SECURITY	IDF 139	GATE RELEASE
DR-1-05	REMOTE GATE RELEASE	MAIN BUILDING/SECURITY	IDF 139	GATE RELEASE
DR-1-06	REMOTE GATE RELEASE	MAIN BUILDING/SECURITY	IDF 139	GATE RELEASE

SECURITY SCHEDULES

Texas Department of Transportation

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1859-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS3.0
18300

TXDOT 973 OPS CENTER ACCESS CONTROL SCHEDULE

Card Reader Point Number	Building Name / Sheet Number	Mounting Height	Door Number	Reader Operations	Termination Room Number	Notes
CR-1-01	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	GATE 1	READER ACCESS	RADIO ROOM/IDF 169	GATE CONTROL BY GATE CONTRACTOR
CR-1-02	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	GATE 1	READER ACCESS	RADIO ROOM/IDF 169	GATE CONTROL BY GATE CONTRACTOR
CR-1-04	36 INCH AFG PEDESTAL	AS INDICATED ON DETAIL	GATE 2	READER ACCESS	MDF118	GATE CONTROL BY GATE CONTRACTOR
CR-1-05	OFFICE BUILDING	48 INCHES AFF	DOOR 109B	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-06	OFFICE BUILDING	48 INCHES AFF	DOOR 122	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-07	MDF118	48 INCHES AFF	DOOR 118	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-08	MAIN STOCK	48 INCHES AFF	DOOR 126B	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-09	ASSEMBLY SHOP	48 INCHES AFF	DOOR 129A	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-11	IDF 139	48 INCHES AFF	DOOR 139	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-12	BREAK ROOM	48 INCHES AFF	DOOR 147C	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-14	HEAVY DUTY BAY	48 INCHES AFF	DOOR 161B	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-15	HEAVY DUTY BAY	48 INCHES AFF	DOOR 161A	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-16	DOUBLE BAY	48 INCHES AFF	DOOR 158A	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-18	HEAVY DUTY BAY	48 INCHES AFF	DOOR 158B	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-21	MACHINE SHOP	48 INCHES AFF	DOOR 131A	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-22	ELEC SHOP	48 INCHES AFF	DOOR 127A	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-23	CALIBRATION BAY	48 INCHES AFF	DOOR 102B	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-24	SERVICE BAY	48 INCHES AFF	DOOR 101A	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-25	PROFILER/DARK BAY	48 INCHES AFF	DOOR 103A	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-26	OPEN OFFICE	48 INCHES AFF	DOOR 104A	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-27	MAIN EMPLOYEE ENTRY	48 INCHES AFF	DOOR 109A	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-28	WELDING SHOP	48 INCHES AFF	DOOR 129B	READER ACCESS	MDF118	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-29	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	GATE 4	READER ACCESS	IDF 139	GATE CONTROL BY GATE CONTRACTOR
CR-1-30	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	GATE 4	READER ACCESS	IDF 139	GATE CONTROL BY GATE CONTRACTOR
CR-1-34	PEDESTRIAN GATE FROM VISITOR PARKING TO FRONT OF BUILDING	48 INCHES AFF	PEDESTRIAN GATE	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-35	PEDESTRIAN GATE FROM VISITOR FLEET SURPLUS	48 INCHES AFF	PEDESTRIAN GATE	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-36	RADIO ENTRY DOOR 166A	48 INCHES AFF	DOOR 168A	READER ACCESS	RADIO ROOM/IDF 169	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-37	RADIO ROOM/IDF 169	48 INCHES AFF	DOOR 169	READER ACCESS	RADIO ROOM/IDF 169	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-38	ELEC SHOP	48 INCHES AFF	DOOR 127B	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-39	MAIN STOCK 126	48 INCHES AFF	DOOR 126A	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8
CR-1-40	NON-STOCK STORAGE 125	48 INCHES AFF	DOOR 125	READER ACCESS	IDF 139	DOOR ELEC LOCKING DEVICES BY DIV. 8

TXDOT 973 OPS CENTER ELECTRONIC SURVEILLANCE SYSTEM SCHEDULE

Camera No.	Building Name / Sheet Number	Camera Mounting Height	Termination Room Number	Termination Device Type (Encoder/Switch/DVR)	Camera Type (Fixed/PTZ/Existing)	Notes
C-E-02	GENERATOR YARD FENCE	12 FT AFG	RADIO ROOM/IDF 169	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-03	RADIO BUILDING	12 FT AFG	RADIO ROOM/IDF 169	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-04	SERVICE BAY	12 FT AFG	MDF 118	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 270DEG	MULTI SENSOR
C-E-05	SERVICE BAY	12 FT AFG	MDF 118	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-07	PAINT ROOM	12 FT AFG	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-08	OVERSIZED BAY	12 FT AFG	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 270DEG	MULTI SENSOR
C-E-09	OVERSIZED BAY	12 FT AFG	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-10	DELIVERY	12 FT AFG	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-E-11	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	RADIO ROOM/IDF 169	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED SINGLE LENS	AMERICAN DYNAMICS SINGLE LENS DOME
C-E-12	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	RADIO ROOM/IDF 169	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED SINGLE LENS	AMERICAN DYNAMICS SINGLE LENS DOME
C-E-17	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED SINGLE LENS	AMERICAN DYNAMICS SINGLE LENS DOME
C-E-18	SECURITY HIGH-LOW PEDESTAL	AS INDICATED ON DETAIL	IDF 139	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED SINGLE LENS	AMERICAN DYNAMICS SINGLE LENS DOME
C-1-01	LOBBY 304	9 FT AFF	MDF 118	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED MULTI SENSOR 180DEG	MULTI SENSOR
C-1-02	HALLWAY 286	9 FT AFF	MDF 118	OWNER PROVIDED SWITCH/DIV 28 NVR	FIXED SINGLE LENS	AMERICAN DYNAMICS SINGLE LENS DOME

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No.: 38-1659-04-20-1

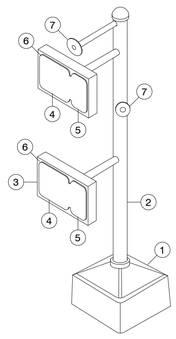
ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

SECURITY SCHEDULES

TS3.1
18301

THIS DRAWING CREATED FOR PRODUCTION ON 22"x34" SHEET SIZE. DO NOT SCALE PRINTS.

GENERATED ON: 9/21/2021 4:25:18 PM BIM 360://COMBS - TxDOT 973 Ops Center/COMBS R26 - TxDOT_973 Operation Center.rvt



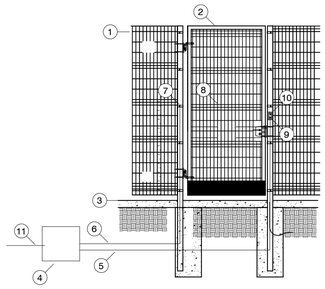
GENERAL NOTES:
1. TO BE PAINTED WITH EXTERIOR PAINT.
2. DIMENSION HEIGHTS ARE APPROXIMATE PER TYPICAL VEHICLE HEIGHTS.
3. DATA CABLES AND POE POWER FOR CAMERAS AND INTERCOMS (BY DIV. 27)
4. CONDUIT PATHWAYS FROM PEDESTAL TO ACCESSIBLE CEILING IN BUILDING (BY DIV. 26)

KEYED NOTES:

1. SECURITY CONTRACTOR SHALL INSTALL TXDOT PROVIDED PEDESTAL BASE (BY DIV. 28)
2. SECURITY CONTRACTOR SHALL INSTALL TXDOT PROVIDED CARD READER PEDESTAL (BY DIV. 28)
3. SECURITY CONTRACTOR SHALL FURNISH AND INSTALL KNOX BOX MODEL 3502 KEYSWITCH, COORDINATE KEYING WITH LOCAL AHJ, COORDINATE MOUNTING DIRECTION WITH TXDOT REPRESENTATIVE. (BY DIV. 28)
4. SECURITY CONTRACTOR SHALL FURNISH AND INSTALL LONG RANGE PROXIMITY CARD READERS WITH NYLON BOLTS TO TXDOT PROVIDED ACRYLIC PLATE. (BY DIV. 28)
5. SECURITY CONTRACTOR SHALL FURNISH AND INSTALL INTERCOM WITH NYLON BOLTS TO TXDOT PROVIDED ACRYLIC PLATE. (BY DIV. 28)
6. SECURITY CONTRACTOR SHALL FURNISH AND INSTALL NYLON BOLTS, WASHERS AND NUTS THAT MOUNT TO TXDOT PROVIDED ACRYLIC PLATE. (BY DIV. 28)
7. SECURITY CONTRACTOR SHALL FURNISH AND INSTALL OUTDOOR DOME CAMERAS AS SPECIFIED. (BY DIV. 28)

1 / TS4.0 TYPICAL TxDOT DUAL HEIGHT VEHICLE GATE PEDESTAL

SCALE: N.T.S.



KEYED NOTES:

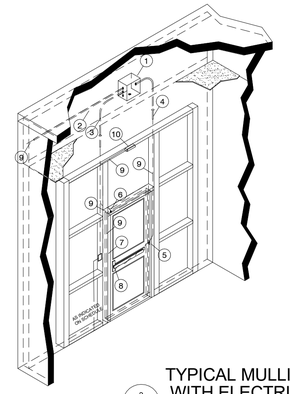
1. SCHEDULE FENCE BY OTHERS.
2. SCHEDULE GATE ENTRANCE BY OTHERS.
3. SCHEDULED FINISHED GRADE BY OTHERS.
4. 12x12x12 HANDHOLE SHALL BE SEALED WITH WATERPROOF MATERIAL. (BY DIV. 26)
5. 1-INCH PVC CONDUIT AS REQUIRED FROM HANDHOLE TO THE CARD READER LOCATION. SHALL BE SEALED WITH WATERPROOF MATERIAL. (BY DIV 26)
6. 1-INCH PVC CONDUIT AS REQUIRED FROM HANDHOLE TO THE ELECTRIFIED POWER TRANSFER HINGE. CONDUIT SHALL BE SEALED WITH WATERPROOF MATERIAL. (BY DIV 26)
7. ELECTRIFIED POWER TRANSFER HINGE. (BY DIV 8)
8. ELECTRIFIED CRASHBAR WITH INTEGRAL REQUEST TO EXIT. (BY DIV 8)
9. SINGLE GANG NEMA RATED WATER PROOF BACK BOX, SEALED WITH WATERPROOF MATERIAL. (BY DIV 26)
10. CARD READER AS SPECIFIED (BY DIV 28.)
11. 2 INCH PVC CONDUIT AS REQUIRED FROM NEAREST MDF/IDF TO THE HANDHOLE. CONDUIT SHALL BE SEALED WITH WATERPROOF MATERIAL. (BY DIV. 26)

GENERAL NOTE:
SECURITY CONTRACTOR SHALL COORDINATE WITH ADA CONTRACTOR. SECURITY CONTRACTOR SHALL PROVIDE AND INSTALL (1) 18 AWG 4-CONDUCTOR OSP CABLE FROM NEAREST MDF/IDF TO ADA MOTOR DRY CONTACT. SECURITY CONTRACTOR SHALL LEAVE 20 FEET COILED AT ADA CONTACT LOCATION. CABLES SHALL BE LABELED 6-INCHES FROM BOTH ENDS.

2 / TS4.0 TYPICAL SINGLE PEDESTRIAN CARD READER GATE WITH ELECTRIFIED EXIT DEVICE

SCALE: N.T.S.

NOTE: IF DOORS ARE INSTALLED UNDERNEATH HIGH ACCESSIBLE CEILINGS (ABOVE 10-FEET) OR IN OPEN OR NON-ACCESSIBLE CEILINGS, J-BOX MAY BE LOCATED IN NEAREST ADJACENT ROOM, 12-INCHES ABOVE ACCESSIBLE CEILING.

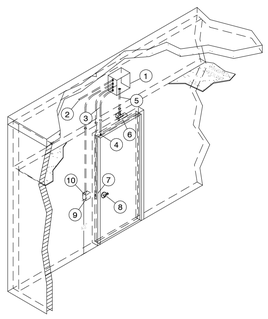


KEYED NOTES:

1. (1) 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX MOUNTED ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR (BY DIV. 26).
2. (1) 1-INCH CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR FOR ACCESS CONTROL CABLE (BY DIV. 26).
3. 3/4 INCH CONDUIT FROM 12X12X8 JUNCTION BOX TO STORE FRONT CHANNEL FOR DOOR CONTACT CABLE AND CARD READER CABLE AND REX CABLE. BY DIV 26. CONCEALED DOOR POSITION SWITCH (ONLY ON EXTERIOR DOORS) (BY DIV. 28).
4. 1/2 INCH CONDUIT FROM 12X12X8 JUNCTION BOX TO STORE FRONT CHANNEL FOR LOCK POWER CABLE TO ELECTRIFIED HINGE. BY DIV. 26
5. ELECTRIFIED HINGE BY DIVISION 8. SECURITY CONTRACTOR SHALL TERMINATE LOCK POWER CABLE TO TOP ON ELECTRIFIED HINGE. IT SHALL BE THE RESPONSIBILITY ON THE DIV. 8 INSTALLER TO MAKE ALL CABLE TERMINATIONS FROM THE HINGE TO THE ELECTRIFIED LOCKSET. (BY DIV. 8 & 28)
6. CONCEALED DOOR POSITION SWITCH. (BY DIV 28)
7. (1) MULLION MOUNTED CARD READER ON UNSECURE SIDE OF DOOR. PROPERLY SEAL CARD READER TO MULLION WITH WEATHER TIGHT SEALANT. (BY DIV. 28).
8. ELECTRIFIED LOCKSET. (BY DIV 8)
9. SECURITY CABLES AS SPECIFIED. (BY DIV 28)
10. REQUEST-TO-EXIT MOTION AS SPECIFIED (BY DIV. 28)

3 / TS4.0 TYPICAL MULLION MOUNTED CARD READER WITH ELECTRIFIED LEVERSET - SINGLE DOOR

SCALE: N.T.S.

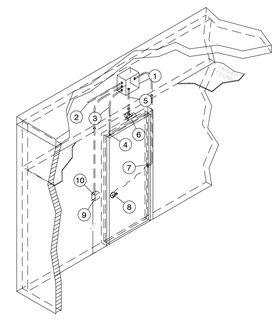


KEYED NOTES:

1. (1) 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX MOUNTED ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR (BY DIV. 26).
2. (1) 1-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR FOR ACCESS CONTROL CABLE (BY DIV. 26).
3. (1) 1/2-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO HEAD OF DOOR FRAME FOR CONCEALED DOOR POSITION SWITCH. STUB CONDUIT INTO HEAD OF DOOR FRAME 6-INCHES FROM THE STRIKE SIDE OF THE DOOR. PROVIDE A 3-INCH BLOCKOUT FOR GROUTED DOORS. (BY DIV. 26).
4. CONCEALED DOOR POSITION SWITCH (BY DIV. 28).
5. (1) 1/2-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 12-INCH DEEP JUNCTION BOX TO A RECESSED SINGLE GANG BOX WITH A SINGLE GANG PLASTER RING INSTALLED HORIZONTALLY 6-INCHES ABOVE HEAD OF DOOR FRAME ON CENTERLINE OF DOOR AND ON SECURE SIDE OF DOOR FOR REQUEST TO EXIT MOTION SENSOR (BY DIV. 26).
6. (1) REQUEST TO EXIT MOTION SENSOR ON SECURE SIDE OF DOOR (BY DIV. 28).
7. (1) 3/4-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX DOWN DOOR FRAME TO CUT OUT FOR ELECTRIC STRIKE (BY DIV. 26).
8. (1) ELECTRIFIED LEVERSET ON SECURE SIDE OF DOOR (BY DIV. 8).
9. (1) 3/4-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO A RECESSED DOUBLE GANG BOX WITH A SINGLE GANG PLASTER RING FOR CARD READER ON UNSECURE SIDE OF DOOR (BY DIV. 26).
10. (1) CARD READER ON UNSECURE SIDE OF DOOR (BY DIV. 28).

4 / TS4.0 TYPICAL WALL MOUNTED CARD READER WITH ELECTRIC STRIKE AND WALL MOUNTED REQUEST TO EXIT MOTION SENSOR

SCALE: N.T.S.

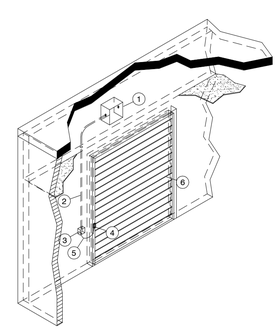


KEYED NOTES:

1. (1) 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX MOUNTED ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR (BY DIV. 26).
2. (1) 1-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR FOR ACCESS CONTROL CABLE (BY DIV. 26).
3. (1) 1/2-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO HEAD OF DOOR FRAME FOR CONCEALED DOOR POSITION SWITCH. STUB CONDUIT INTO HEAD OF DOOR FRAME 6-INCHES FROM THE STRIKE SIDE OF THE DOOR. PROVIDE A 3-INCH BLOCKOUT FOR GROUTED DOORS (BY DIV. 26).
4. CONCEALED DOOR POSITION SWITCH (BY DIV. 28).
5. (1) 1/2-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 12-INCH DEEP JUNCTION BOX TO A RECESSED SINGLE GANG BOX WITH A SINGLE GANG PLASTER RING INSTALLED HORIZONTALLY 6-INCHES ABOVE HEAD OF DOOR FRAME ON CENTERLINE OF DOOR AND ON SECURE SIDE OF DOOR FOR REQUEST TO EXIT MOTION SENSOR (BY DIV. 26).
6. (1) REQUEST TO EXIT MOTION SENSOR ON SECURE SIDE OF DOOR (BY DIV. 28).
7. (1) 3/4-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX DOWN DOOR FRAME FOR POWER TRANSFER HINGE (BY DIV. 26).
8. (1) ELECTRIFIED LEVERSET ON SECURE SIDE OF DOOR (BY DIV. 8).
9. (1) 3/4-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO A RECESSED DOUBLE GANG BOX WITH A SINGLE GANG PLASTER RING FOR CARD READER ON UNSECURE SIDE OF DOOR (BY DIV. 26).
10. (1) CARD READER ON UNSECURE SIDE OF DOOR (BY DIV. 28).

5 / TS4.0 TYPICAL WALL MOUNTED CARD READER WITH ELECTRIFIED LEVERSET AND WALL MOUNTED REQUEST TO EXIT MOTION SENSOR

SCALE: N.T.S.

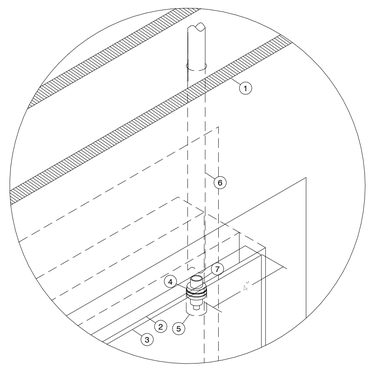


KEYED NOTES:

1. (1) 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX MOUNTED ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR (BY DIV. 26).
2. (1) 1-INCH EMT CONDUIT FROM 12-INCH WIDE X 12-INCH HIGH X 8-INCH DEEP JUNCTION BOX TO ABOVE ACCESSIBLE CEILING ON SECURE SIDE OF DOOR FOR OVERHEAD DOOR CONTACT CABLE (BY DIV. 26).
3. (1) 4-INCH WIDE X 4-INCH HIGH X 2 1/8" DEEP JUNCTION BOX SURFACE MOUNTED AT 1'-0" A.F.F. ON SECURE SIDE OF DOOR (BY DIV. 26).
4. OVERHEAD DOOR POSITION SWITCH TRACK MOUNTED (BY DIV. 28).
5. ARMORED CABLE (BY DIV. 28).
6. OVERHEAD ROLL UP DOOR AS SCHEDULED.

6 / TS4.0 TYPICAL DOOR CONTACT OVERHEAD DOOR (TRACK MOUNT)

SCALE: N.T.S.

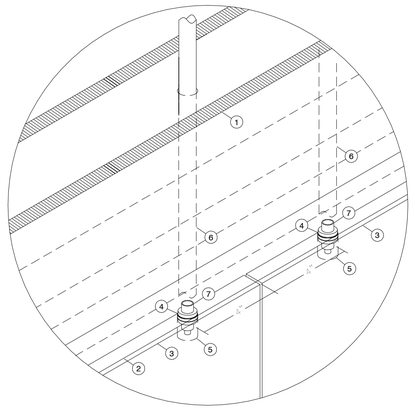


KEYED NOTES:

1. SCHEDULED PARTITION.
2. HEAD OF DOOR FRAME. PROVIDE TAB AT DOOR FRAME TO SECURE CONDUIT DIRECTLY ABOVE DOOR POSITION SWITCH.
3. SCHEDULED DOOR.
4. 3/4" DIAMETER HOLE IN THE HEAD OF FRAME FOR CONCEALED DOOR CONTACT (BY DIV. 26)
5. 3/4" DIAMETER X 1 5/8" DEEP HOLE IN TOP OF DOOR FOR CONCEALED DOOR CONTACT MAGNET (BY DIV.28)
6. 1/2" CONDUIT FROM JUNCTION BOX ABOVE DOOR (BY DIV 26).
7. DOOR CONTACT (REFERENCE SPECIFICATION)(BY DIV. 28)

7 / TS4.0 TYPICAL DOOR CONTACT - SINGLE DOOR RECESSED

SCALE: SCALE

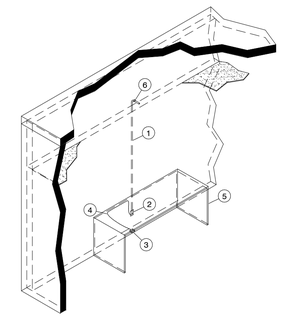


KEYED NOTES:

1. SCHEDULED PARTITION.
2. HEAD OF DOOR FRAME. PROVIDE TAB AT DOOR FRAME TO SECURE CONDUIT DIRECTLY ABOVE DOOR POSITION SWITCH.
3. SCHEDULED DOOR.
4. 3/4" DIAMETER HOLE IN THE HEAD OF FRAME FOR CONCEALED DOOR CONTACT (BY DIV. 26)
5. 3/4" DIAMETER X 1 5/8" DEEP HOLE IN TOP OF DOOR FOR CONCEALED DOOR CONTACT MAGNET (BY DIV. 28)
6. 1/2" CONDUIT FROM JUNCTION BOX ABOVE DOOR (BY DIV 26).
7. DOOR CONTACT (REFERENCE SPECIFICATION) (BY DIV. 28)

8 / TS4.0 TYPICAL DOOR CONTACT - DOUBLE DOOR RECESSED

SCALE: NTS



KEYED NOTES:

1. 3/4 -INCH DURESS / LOCKDOWN / DOOR RELEASE CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED ACCESSIBLE CEILING (BY DIV. 26).
2. RECESSED DOUBLE GANG JUNCTION BOX WITH COVER PLATE MOUNTED AT 1'-6" A.F.F. (BY DIV. 26).
3. DURESS / LOCKDOWN / DOOR RELEASE MOUNTED WITH KNEE SPACE OF DESK (BY DIV. 28).
4. ARMORED CABLE FROM DOUBLE GANG JUNCTION BOX TO DURESS / LOCKDOWN / DOOR RELEASE BUTTON ATTACHED TO WALL AND UNDER SIDE OF DESK (BY DIV. 28).
5. DESK/COUNTER AS SCHEDULED.
6. CABLE AS SPECIFIED (BY DIV. 28).

9 / TS4.0 TYPICAL DURESS / LOCKDOWN / DOOR RELEASE - KNEE SPACE MOUNT

SCALE: N.T.S.

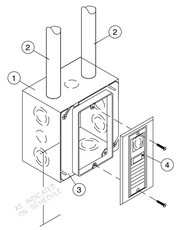
SECURITY TYPICAL DETAILS

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1669-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS4.0
18400

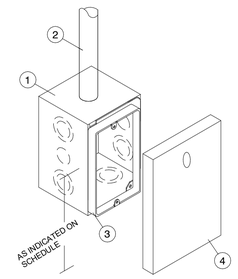


KEYED NOTES:

1. 4 11/16" x 4 11/16" x 2 1/8" RECESSED DOUBLE GANG BOX (BY DIV 26).
2. (1) 1-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING FROM BACK BOX TO PULL BOX (BY DIV 26).
3. SINGLE GANG PLASTER RING (BY DIV 26).
4. INTERCOM - MANUFACTURER/MODEL NUMBER AS SPECIFIED. REFER TO DRAWINGS, SPECIFICATIONS, DETAILS AND EQUIPMENT SCHEDULES FOR ADDITIONAL INFORMATION (BY DIV 28).

1 / TS4.1 TYPICAL INTERCOM DETAIL

SCALE: N.T.S.

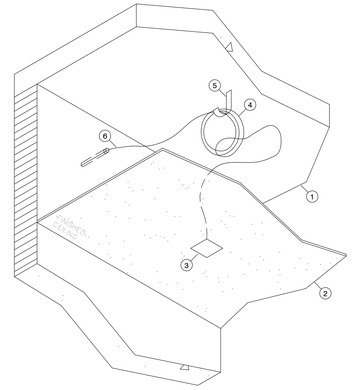


KEYED NOTES:

1. 2-INCH x 4-INCH x 2 1/8-INCH RECESSED SINGLE GANG BOX (BY DIV 26).
2. 1-INCH EMT CONDUIT FROM SINGLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING IN THE SAME ROOM WHERE THE DEVICE IS LOCATED. IF THE ROOM WHERE THE DEVICE IS LOCATED DOES NOT HAVE AN ACCESSIBLE CEILING, THE CONDUIT SHALL ROUTE TO THE NEAREST ACCESSIBLE CEILING OFF OF A MAIN CORRIDOR. CONDUIT PATHWAY SHALL TAKE THE SHORTEST ROUTE TO THE APPLICABLE MDF/IDF ROOM TO MINIMIZE THE CABLE LENGTH (BY DIV 26).
3. SINGLE GANG PLASTER RING (BY DIV 26).
4. SCHEDULED GLASSBREAK DETECTOR .

2 / TS4.1 TYPICAL GLASS BREAK DETECTOR - WALL MOUNTED DETAIL

SCALE: N.T.S.

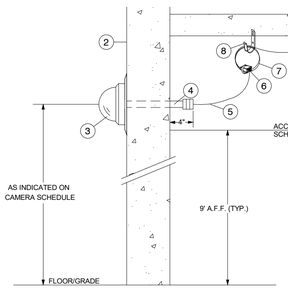


KEYED NOTES:

1. CEILING DECK AS SCHEDULED.
2. LAY-IN CEILING AS SCHEDULED.
3. CEILING MOUNTED GLASS BREAK DETECTOR (REFERENCE DIV 28 SPECIFICATIONS FOR EXACT MODEL).
4. 20 FOOT SERVICE LOOP ABOVE ACCESSIBLE CEILING NEATLY COILED AND SECURED TO J-HOOK (BY DIV 28).
5. J-HOOK ABOVE ACCESSIBLE CEILING (BY DIV 28).
6. SECURITY CABLE ABOVE ACCESSIBLE CEILING (BY DIV 28).

3 / TS4.1 TYPICAL INTERIOR CEILING MOUNTED GLASS BREAK DETECTOR

SCALE: N.T.S.

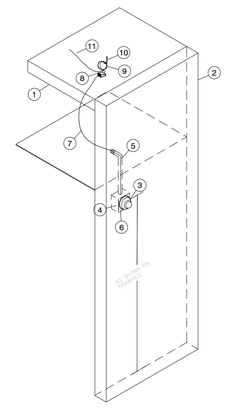


KEYED NOTES:

1. CEILING DECK.
2. SCHEDULED EXTERIOR WALL.
3. EXTERIOR WALL MOUNTED VIDEO SURVEILLANCE DOME CAMERA.
4. 3/4-INCH IMC CONDUIT FROM VIDEO SURVEILLANCE CAMERA WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING.
5. PATCH CORD AS SPECIFIED.
6. SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING.
7. 20-FOOT SERVICE LOOP ABOVE ACCESSIBLE CEILING NEATLY COILED AND SECURED TO J-HOOK.
8. J-HOOK ABOVE ACCESSIBLE CEILING.
9. DATA CABLE ABOVE ACCESSIBLE CEILING.

4 / TS4.1 TYPICAL EXTERIOR WALL MOUNTED SURVEILLANCE CAMERA

SCALE: N.T.S.

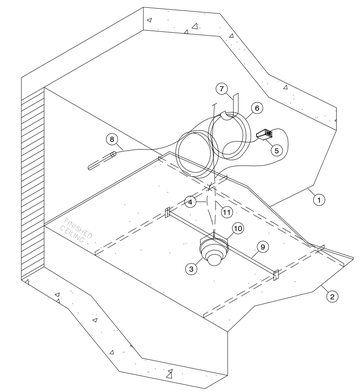


KEYED NOTES:

1. CEILING DECK AS SCHEDULED.
2. INTERIOR WALL AS SCHEDULED.
3. INTERIOR WALL MOUNTED IP VIDEO SURVEILLANCE DOME CAMERA (REFERENCE SPECIFICATION).
4. 4 11/16" x 4 11/16" x 2 1/8" RECESSED DOUBLE GANG BOX (BY DIV 26).
5. 3/4-INCH EMT CONDUIT FROM DOUBLE GANG BOX WITH 200 LBS PULL STRING AND NYLON BUSHING STUBBED OUT ABOVE ACCESSIBLE CEILING (BY DIV 26).
6. DOUBLE GANG PLASTER RING (BY DIV 26).
7. PATCH CORD AS SPECIFIED.
8. SURFACE MOUNT BOX ABOVE ACCESSIBLE CEILING (BY DIV 27).
9. 20 FOOT SERVICE LOOP ABOVE ACCESSIBLE CEILING NEATLY COILED AND SECURED TO J-HOOK (BY DIV 27).
10. J-HOOK ABOVE ACCESSIBLE CEILING (BY DIV 27).
11. DATA CABLE ABOVE ACCESSIBLE CEILING (BY DIV 27).

5 / TS4.1 TYPICAL INTERIOR WALL MOUNTED SURVEILLANCE CAMERA

SCALE: N.T.S.



KEYED NOTES:

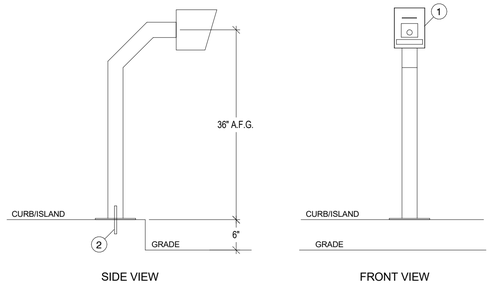
1. CEILING DECK AS SCHEDULED.
2. LAY-IN CEILING AS SCHEDULED.
3. CEILING MOUNTED INTERIOR IP VIDEO SURVEILLANCE DOME CAMERA (REFERENCE DIV 28 SPECIFICATIONS FOR EXACT MODEL).
4. PATCH CORD (BY DIV 27).
5. SURFACE MOUNT DATA OUTLET ABOVE ACCESSIBLE CEILING (BY DIV 27).
6. 20 FOOT SERVICE LOOP ABOVE ACCESSIBLE CEILING NEATLY COILED AND SECURED TO J-HOOK (BY DIV 27).
7. J-HOOK ABOVE ACCESSIBLE CEILING (BY DIV 27).
8. DATA CABLE ABOVE ACCESSIBLE CEILING (BY DIV 27).
9. HEAVY DUTY T-GRID, SURVEILLANCE CAMERA SUPPORT ATTACHED TO CEILING GRID (BY DIV 26).
10. DOUBLE GANG BACKBOX WITH DUAL-GANG MUD RING (BY DIV 26).
11. GUIDEWIRE FROM DOUBLE GANG BACKBOX WITH DUAL-GANG MUD RING TO STRUCTURE (BY DIV 26).

6 / TS4.1 TYPICAL INTERIOR CEILING MOUNTED SURVEILLANCE CAMERA

SCALE: N.T.S.

KEYED NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL A PEDESTAL MOUNTED READER AS SCHEDULED (BY DIV 28).
2. CONDUIT PATHWAYS AS INDICATED ON SITE DRAWINGS (BY DIV 26).

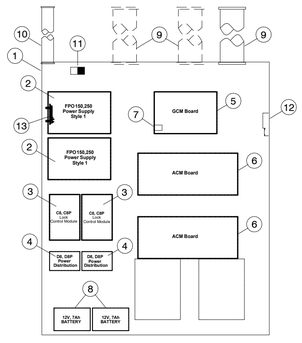


7 / TS4.1 SINGLE PEDESTAL MOUNTED CARD READER

SCALE: N.T.S.

GENERAL NOTE:

1. THIS DETAIL IS FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE SECURITY CONTRACTOR TO SIZE EACH ACCESS CONTROL PANEL WITH 20% ADDITIONAL OVERALL AMPERAGE. THE SECURITY CONTRACTOR SHALL REFERENCE THE DIVISION 8 FINISH HARDWARE SCHEDULE FOR ALL LOCK POWER REQUIREMENTS IN ORDER TO PROVIDE A FULLY FUNCTION ACCESS CONTROL SYSTEM. SECURITY CONTRACTOR SHALL VERIFY POWER SUPPLY COMPATIBILITY WITH DIVISION 8 CONTACTOR HARDWARE PRIOR TO INSTALLATION.

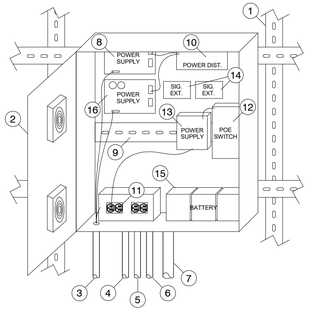


KEYED NOTES:

1. LIFESAFTEY ENCLOSURE (BY DIV. 28)
2. 12/24VDC POWER SUPPLY AS REQUIRED. IT IS THE RESPONSIBILITY OF THE DIV. 28 CONTRACTOR TO SIZE EACH POWER SUPPLY WITH 20% ADDITIONAL POWER FOR FUTURE GROWTH (BY DIV. 28)
3. DUAL VOLTAGE RELAY BASED LOCK CONTROL MODULE AS REQUIRED. EACH ELECTRIFIED LOCK SHALL BE PROTECTED BY A DEDICATED FUSED OUTPUT (BY DIV. 28)
4. DUAL VOLTAGE POWER DISTRIBUTION MODULE AS REQUIRED. EACH REQUEST TO EXIT MOTION SENSORS SHALL BE PROTECTED BY A DEDICATED FUSED OUTPUT (BY DIV. 28)
5. GCM BOARD AS REQUIRED (BY DIV. 28)
6. ACM BOARD AS REQUIRED (BY DIV. 28)
7. INTELLIGENT CONTROLLER NETWORK INTERFACE. (1) DATA CABLE SHALL BE PATCHED TO OWNER'S EXISTING NETWORK (BY DIV. 27)
8. BATTERY BACKUP AS SPECIFIED. BATTERIES SHALL BE MACHINE LABELED WITH THE DATE OF INSTALLATION. BATTERIES SHALL BE PLACED ON DIELECTRIC MATERIAL (BY DIV. 28)
9. PROVIDE 2-INCH CONDUIT STUBBED UP AS REQUIRED WITH THREADED NYLON BUSHING TO ENCLOSURE FOR LOW VOLTAGE SECURITY DEVICE CABLING. REFERENCE DEVICE SCHEDULES FOR QUANTITY NEEDED TO HOLD ALL CABLING AS REQUIRED (BY DIV. 26)
10. (1) 3/4-INCH CONDUIT WITH THREADED NYLON BUSHING NEAR POWER SUPPLY TERMINATION LOCATION. (BY DIV. 26)
11. MANUFACTURER PROVIDED CIRCUIT BREAKER ROCKER SWITCH CONNECTED TO 120VAC POWER SUPPLY CIRCUIT (BY DIV. 26)
12. SECURITY ENCLOSURE DOOR TAMPER SWITCH AS SPECIFIED (BY DIV. 28)
13. NETWORKED POWER SUPPLY STATUS MONITORING MODULE AS SPECIFIED (BY DIV. 28)

8 / TS4.1 TYPICAL ENCLOSED ACCESS CONTROL PANEL

SCALE: N.T.S.



KEYED NOTES:

1. GATE MOTOR AREA GALVANIZED STRUT METAL CHANNEL MOUNTED TO GROUND IN CONCRETE. (BY DIV. 26)
2. LOCKABLE NEMA ENCLOSURE AS SPECIFIED (BY DIV. 28)
3. HIGH VOLTAGE 1" CONDUIT WITH 200 LBS PULLSTRING (BY DIV. 26)
4. FIBER CONDUIT 1" CONDUIT TO BUILDING WITH 200 LBS PULLSTRING (BY DIV. 26)
5. CARD READER CABLES 1" CONDUIT TO BUILDING WITH 200 LBS PULLSTRING (BY DIV. 26)
6. CARD READER CABLES 1" CONDUIT TO DUAL HEIGHT GATE PEDESTAL WITH 200 LBS PULLSTRING (BY DIV. 26)
7. COPPER DATA CABLES CONDUIT 2" CONDUIT TO DUAL HEIGHT GATE PEDESTAL WITH 200 LBS PULLSTRING (BY DIV. 26)
8. HARDWIRED 12VDC POWER SUPPLY AS SPECIFIED PROVIDED AND INSTALLED (BY DIV. 28). HARDWIRED (BY DIV.26)
9. DIN RAIL AS SPECIFIED (BY DIV. 28)
10. SELECTABLE DUAL VOLTAGE FUSED POWER DISTRIBUTION BOARD AS SPECIFIED (BY DIV. 28)
11. 110VAC OUTLETS INCLUDED IN SPECIFIED ENCLOSURE SHALL BE HARDWIRED AND PROPERLY GROUNDED (BY DIV.26)
12. INDUSTRIAL MANAGED POE SWITCH AS SPECIFIED (BY DIV. 28)
13. DIN RAIL MOUNTED SWITCH POWER SUPPLY AS SPECIFIED (BY DIV. 28)
14. WEIGAND SIGNAL EXTENDERS AS SPECIFIED (BY DIV. 28)
15. BATTERIES AS SPECIFIED (BY DIV. 28)
16. HARDWIRED 24VDC POWER SUPPLY FOR LONG RANGE CARD READERS AS SPECIFIED PROVIDED AND INSTALLED (BY DIV. 28). HARDWIRED (BY DIV.26)

9 / TS4.1 TYPICAL TXDOT ACCESS CONTROL SYSTEM VEHICLE GATE ENCLOSURE

SCALE: N.T.S.

SECURITY TYPICAL DETAILS

BICSI REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
BRIAN K COMBS
BICSI ID# 118077
EXPIRES 12-31-21
RCDD
09-24-2021

973 OPERATIONS CENTER
973, AUSTIN, TX, 78
TRAVIS COUNTY
STATE HEADQUARTERS (29)
PROJECT No : 38-1659-04-20-1

ISSUED: 09/2021
DRAWN BY: PM
CHECKED BY: RN
REVISIONS:

TS4.1
18401