CONCESSION / RESTROOM BUILDING SOCCER FIELD DEVELOPMENT PHASE 1

EAST BLVD AND EAST 13TH ST., CITY OF DEER PARK, TEXAS

PROJECT TEAM

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SHEET INDEX

ARCHITECTURE

COVER SHEET ACCESSIBILITY DIAGRAMS ABBREVIATIONS & NOTES FLOOR PLAN REFLECTED CEILING PLAN **ROOF PLAN** EXTERIOR ELEVATIONS **BUILDING SECTIONS** WALL SECTIONS ENLARGED PLANS / INTERIOR ELEVATIONS

DOOR SCHEDULE/ DETAILS

BUILDING TROOM CONCESSION / RES

SOCCER FIELD DEVELOPMENT PHASE 1

EAST BLVD AND EAST 13TH ST., CITY O

APPROVED ☐ APPROVED AS NOTED
☐ DISAPPROVED

PROJECT PHASE BID - 8/3/17

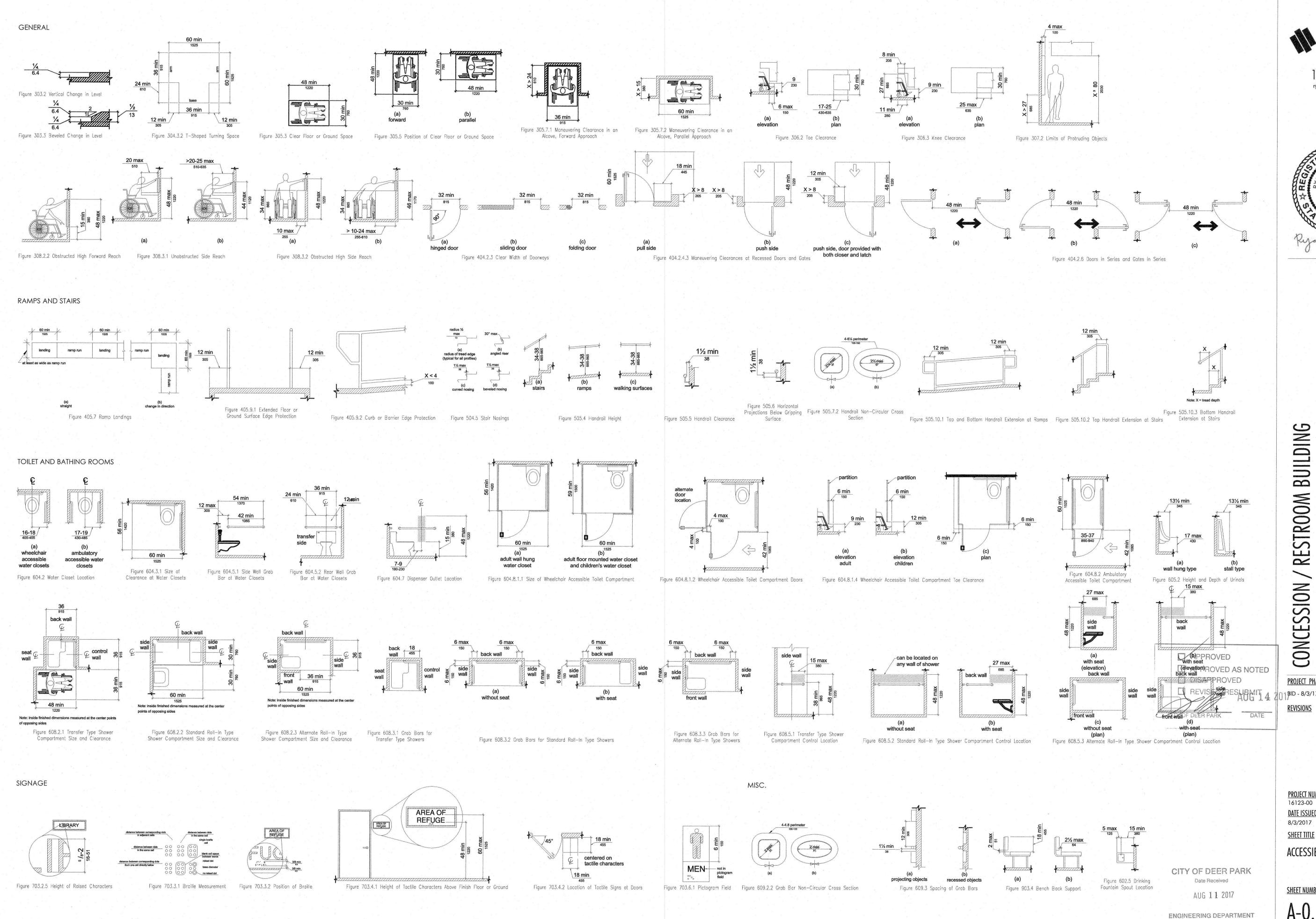
> PROJECT NUMBER 16123-00 DATE ISSUED 8/3/2017 SHEET TITLE **COVER SHEET**

CITY OF DEER PARK Date Received

ENGINEERING DEPARTMENT

AUG 11 2017

A-0.0



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EAST BLVD AND EAST 13TH ST., CITY OF DEER PARK, TEXAS SOCCER FIELD DEVELOPMENT PHASE 1

<u>PROJECT PHASE</u> 01^{BID} - 8/3/17

> PROJECT NUMBER 16123-00 DATE ISSUED 8/3/2017

ACCESSIBILITY DIAGRAMS

SHEET NUMBER

A-0.1

FLOOR PLAN LEGEND

ARCHITECTURE ABBREVIATIONS

			7 (11.0)
		A/C	AIR CONDITIONING
	NEW WALL	ACC	ACCESS
	TALL TO THE SECOND	ACP	ACOUSTICAL CEILING PANEL
		ADDL	ADDITIONAL
	EXISTING WALL TO REMAIN	ADDM ADH	ADDENDUM
		ADH	ADHESIVE ADJUSTABLE
		AFF	ABOVE FINISHED FLOOR
	ITEMS TO BE DEMOLISHED	AGG	AGGRETATE
		ALT	ALTERNATE
6	CENTEDIALE	ALUM APPROX	ALUMINUM APPROXIMATELY
Ę	CENTERLINE	ARCH	ARCHITECT/ARCHITECTURAL
		ASPH	ASPHALT
(0)	COLUMN GRID	AUTO	AUTOMATIC
		AV	AUDIO VISUAL
		BD	BOARD
11)	PARTITION TYPE	BL	BUILDING LINE
		BLDG	BUILDING
		BLVD BM	BOULEVARD BEAM
1t)	WINDOW TYPE	B.M.	BENCH MARK
		BRK	BRICK
(101)	DOOR NUMBER	BRZ	BRONZE
101	DOOK NOMBER	BSMT BTU	BASEMENT
	The second of th	BVL	BRITISH THERMAL UNIT BEVEL/BEVELED
	ROOM NAME AND NUMBER		DE VEL, DE VELED
		CAB	CABINET
		CB	CATCH BASIN
Name _	FLEVATION DATINA BOINT	C/C CFCI	CENTER TO CENTER CONTRACTOR FURNISHED
Elevation	ELEVATION DATUM POINT	CICI	CONTRACTOR FURNISHED
		CI	CAST IRON
Ref		CG	CORNER GUARD
View Name Φ		CLG CLK	CEILING
w Name		CLO	CAULK/CAULKING CLOSET
Z	ELEVATION VIEW	CLR	CLEAR/CLEARANCE
A S A S A S A S A S A S A S A S A S A S		CMU	CONCRETE MASONRY UNIT
		CND	CONDUIT
1		COL	COLUMN COMPOSITION/COMPOSITE
Ref		CONC	CONCRETE
View Name		CONF	CONFERENCE
SIM		CONN	CONNECTION
1	SECTION/DETAIL	CONST	CONSTRUCTION
A101		CSMT	CASEMENT
		DEPT	DEPARTMENT
SIM		DH	DOUBLE HUNG
(1)	ENLARGED PLAN	DIA	DIAMETER
A101		DIM DN	DIMENSION DOWN
		DS	DOWNSPOUT
		DW	DISHWASHER
1	REVISION KEY	DWG	DRAWING
		E	EAST
		EA	EACH
		EB	EXPANSION BOLT
	revision cloud	E)	EXPANSION JOINT
		EL ELEC	ELEVATION ELECTRIC/ELECTRICAL
		ELEV	ELEVATION/ELEVATOR
		EMER	EMERGENCY
	NORTH ARROW	ENC	ENCLOSURE
		ENT EQ	ENTRANCE EQUAL
		EQPT	EQUIPMENT
		ESTM	ESTIMATE
		EWC	ELECTRIC WATER COOLER
		EWH	ELECTRIC WATER HEATER
		EXC EXF	EXCAVATE EXHAUST FAN
		EXH	EXHAUST
		EXT	EXTERIOR
		it	EIDE ALADA 4
		FA FBD	FIRE ALARM FIBER BOARD
		FBO	FURNISHED BY OWNER
	a the same and a	FBRK	FIRE BRICK
		FD	FLOOR DRAIN
		FDC	FIRE DEPARTMENT
		CONNECTION FE	FIRE EXTINGUISHER
		FEC	FIRE EXTINGUISHER CABINET
		FF	FINISH FLOOR
		FFE	FINISHED FLOOR ELEVATION
		FFL	FINISHED FLOOR LINE
		FIN FIXT	FINISHED FIXTURE
		FLOUR	FLOURESCENT

· · · · · · · · · · · · · · · · · · ·			a see		
A/C ACC	AIR CONDITIONING ACCESS	GA GALV	GUAGE GALVANIZED	PLAM PLMB	PLASTIC LAMINATE PLUMBING
ACP	ACOUSTICAL CEILING PANEL	GB	GRAB BAR	PLYWD	PLYWOOD
ADDL	ADDITIONAL	GC	GENERAL CONTRACTOR	PNL	PANEL
ADDM	ADDENDUM	GD	GRADE	PREFAB	PREFABRICATED
ADH	ADHESIVE	GEN	GENERAL	PREFIN	PREFINISHED
ADJ AFF	ADJUSTABLE ABOVE FINISHED FLOOR	GL GLB	GLASS/GLAZING	PRF	PREFORMED
AGG	AGGRETATE	GTR	GLASS BLOCK GUTTER	PSF PSI	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
ALT	ALTERNATE	GVL	GRAVEL	PT	PAINT
ALUM	ALUMINUM	GYP	GYPSUM	PVC	POLYVINYL CHLORIDE
APPROX	APPROXIMATELY	GYP BD	GYPSUM BOARD		
ARCH	ARCHITECT/ARCHITECTURAL	110	LICCE DID	R	RADIUS
ASPH AUTO	ASPHALT AUTOMATIC	HB HC	HOSE BIB HOLLOW CORE	RA RD	RETURN AIR ROOF DRAIN
AV	AUDIO VISUAL	HDP	HANDICAP	RE BAR	REINFORCING BARS
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	HDR	HEADER	RECP	RECEPTACLE
BD	BOARD	HDWD	HARDWOOD	REF	REFERENCE
BL	BUILDING LINE	HDWR	HARDWARE	REFR	REFRIGERATOR
BLDG BLVD	BUILDING BOULEVARD	HM	HOLLOW METAL	REG REINF	REGISTER
BM	BEAM	HORZ HT	HORIZONTAL HEIGHT	REQ'D	REINFORCED REQUIRED
B.M.	BENCH MARK	HTG	HEATING	RET	RETURN
BRK	BRICK	HVAC	HEATING VENTILATION	RH	RIGHT HAND
BRZ	BRONZE	10 at	AIR CONDITIONING	RM	ROOM
BSMT BTU	BASEMENT BRITISH THERMAL UNIT	HW	HOT WATER	RO	ROUGH OPENING
BVL	BEVEL/BEVELED	IBC	INTERNATIONAL BUILDING	ROW RT	RIGHT OF WAY RUBBER TILE
		100	CODE		NOBBEN TIE
CAB	CABINET	IN	INCH	S	SOUTH
CB	CATCH BASIN	INCL	INCLUDED	SBC	STANDARD BUILDING CODE
C/C CFCI	CENTER TO CENTER CONTRACTOR FURNISHED	INSUL INT	INSULATION INTERIOR	SC SCHED	SOLID CORE SCHEDULE
CrCi	CONTRACTOR FURNISHED	100.1	INTERIOR	SCHED	SCREEN
CI	CAST IRON	JAN	JANITOR	SEAL	SEALANT
CG	CORNER GUARD	JBOX	JUNCTION BOX	SHTH	SHEATHING
CLG	CEILING	JCT	JUNCTION	SHT	SHEET
CLK	CAULK/CAULKING	JST	JOIST	SH	SHINGLE HUNG
CLO CLR	CLOSET CLEAR/CLEARANCE	ΤL	JOINT	SIM SLV	SIMILAR SLEEVE
CMU	CONCRETE MASONRY UNIT	KIT	KITCHEN	SPEC	SPECIFICATIONS
CND	CONDUIT	KPL	KICKPLATE	SQ	SQUARE
COL	COLUMN	KO	KNOCK OUT	SQ FT	SQUARE FEET
COMP	COMPOSITION/COMPOSITE			SST	STAINLESS STEEL
CONC	CONCRETE	LAB	LABORATORY	STD	STANDARD
CONN	CONFERENCE CONNECTION	LAV	LAMINATE LAVATORY	STL STOR	STEEL STORAGE
CONST	CONSTRUCTION	LH	LEFT HAND	STRUCT	STRUCTURAL
CSMT	CASEMENT	LL .	LIVE LOAD	SUSP	SUSPENDED
		LT	LIGHT	SYM	SYMMETRICAL
DEPT DH	DEPARTMENT DOUBLE HUNG	LWT	LIGHTWEIGHT	SYN	SYNTHETIC
DIA	DIAMETER	MAS	MASONRY	SYS	SYSTEM
DIM	DIMENSION	MATL	MATERIAL	TAN	TANGENT
DN	DOWN	MAX	MAXIMUM	TAS	TEXAS ACCESSIBILITY
D\$	DOWNSPOUT	MB	MACHINE BOLT		STANDARDS
DW DWG	DISHWASHER DRAWING	MECH	MECHANICAL	TECH TELE	TECHNICAL TELEPHONE
DWG	DRAWING	MEMB MEZZ	MEMBRANE MEZZANINE	T&G	TONGUE AND GROOVE
E	EAST	MFR	MANUFACTURER	THK	THICK
EA	EACH	MH	MAN HOLE	THRES	THRESHOLD
EB	EXPANSION BOLT	MICRO	MICROWAVE	TLT	TOILET
EJ EL	EXPANSION JOINT ELEVATION	MIN	MINIMUM	TOB TOC	TOP OF BLOCK TOP OF CURB
ELEC	ELECTRIC/ELECTRICAL	MIR MISC	MIRROR MISCELLANEOUS	TOM	TOP OF MASONRY
ELEV	ELEVATION/ELEVATOR	MLD	MOULDING	TOP	TOP OF PARAPET
EMER	EMERGENCY	MLWK	MILLWORK	TOPL	TOP OF PLATE
ENC	ENCLOSURE	MO	MASONRY OPENING	TOS	TOP OF STEEL
ENT	ENTRANCE	MOD	MODULAR	TOSL	TOP OF SLAB
EQ EQPT	EQUAL EQUIPMENT	MTD MTL	MOUNTED METAL	TOW TRANS	TOP OF WALL TRANSFORMER
ESTM	ESTIMATE	MULT	MULTIPLE	TS	TUBE STEEL
EWC	ELECTRIC WATER COOLER			TV	TELEVISION
EWH	ELECTRIC WATER HEATER	N	NORTH	TYP	TYPICAL
EXC EXF	EXCAVATE EXHAUST FAN	NAT NIC	NATURAL NOT IN CONTRACT	UBC	UNIFORM BUILDING CODE
EXH	EXHAUST	NOM	NOMINAL	UNFIN	UNFINISHED
EXT	EXTERIOR	NTS	NOT TO SCALE	UNO	UNLESS NOTED OTHERWISE
EA	EIDE ALADAA	OBS	OBSCLIBE	UR	URINAL
FA FBD	FIRE ALARM FIBER BOARD	OBS OC	OBSCURE ON CENTER	VB	VAPOR BARRIER
FBO	FURNISHED BY OWNER	OCEW	ON CENTER EACH WAY	VAR	VARIES
FBRK	FIRE BRICK	OD	OUTSIDE DIAMETER	VERT	VERTICAL
FD	FLOOR DRAIN	ОН	OVERHEAD	VENT	VENTILATION
FDC	FIRE DEPARTMENT	OP	OPAQUE	VOL	VOLUME
CONNECTION FE	FIRE EXTINGUISHER	OPNG OPP	OPENING OPPOSITE	WTW	WALL TO WALL
FEC	FIRE EXTINGUISHER CABINET	OPP HD	OPPOSITE HAND	WC	WATER CLOSET
FF	FINISH FLOOR	ORIG	ORIGINAL	WH	WATER HEATER
FFE	FINISHED FLOOR ELEVATION	OWI	OPEN WEB JOIST	WP	WATER PROOFING
FFL FIN	FINISHED FLOOR LINE FINISHED	OZ	OUNCE	W	WEST WITH
FIXT	FIXTURE	PAR	PARALLEL	W/ W/O	WITHOUT
FLOUR	FLOURESCENT	PART	PARTITION	WD	WOOD
FLR	FLOOR	PART BD	PARTICLE BOARD	WDW	WINDOW
FNDN	ECOLUNIO ATIONI	PC PCE	PRECAST	WT	WEIGHT IN THE WEIGHT.
FOC FOF	FOUNDATION	PCF	POUNDS PER CUBIC FOOT	WI	
	FACE OF CONCRETE		FELIFATAL	1000	VARD APPROVED AS
FOM		PED PERIM	PEDESTAL PERIMETER	YD	YARD WALLAS
FOS	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD	PED PERIM PERM	PERIMETER PERMANENT	YD	YARD DISAPPROVED
FOS FP	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF	PED PERIM PERM PERP	PERIMETER PERMANENT PERPENDICULAR	YD	☐ DISAPPROVED
FOS FP FPL	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF FIREPLACE	PED PERIM PERM PERP PFL	PERIMETER PERMANENT PERPENDICULAR POUNDS PER LINEAL FOOT	YD	☐ DISAPPROVED
FOS FP FPL FRC	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF FIREPLACE FIRE RESISTANT COATING	PED PERIM PERM PERP PFL PKG	PERIMETER PERMANENT PERPENDICULAR POUNDS PER LINEAL FOOT PARKING	YD	IAKU
FOS FP FPL FRC FRT FT	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF FIREPLACE	PED PERIM PERM PERP PFL	PERIMETER PERMANENT PERPENDICULAR POUNDS PER LINEAL FOOT	YD	DISAPPROVED REVISE & RESU
FOS FP FPL FRC FRT FT FTG	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF FIREPLACE FIRE RESISTANT COATING FIRE RETARDANT FOOT/FEET FOOTING	PED PERIM PERM PERP PFL PKG PL	PERIMETER PERMANENT PERPENDICULAR POUNDS PER LINEAL FOOT PARKING PLATE	YD	☐ DISAPPROVED
FOS FP FPL FRC FRT FT	FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY FACE OF STUD FIREPROOF FIREPLACE FIRE RESISTANT COATING FIRE RETARDANT FOOT/FEET	PED PERIM PERM PERP PFL PKG PL PL	PERIMETER PERMANENT PERPENDICULAR POUNDS PER LINEAL FOOT PARKING PLATE PROPERTY LINE	YD	DISAPPROVED REVISE & RESU

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	desig	n co.	mpa	ny

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ROOM BUILDING

RESTR

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EAST BLVD AND EAST 13TH ST., CITY

SOCCER FIELD DEVELOPMENT PHASE 1

CONCESSION

PROJECT PHASE YARD APPROVED AS NOTED BID - 8/3/17 REVISIONS REVISE & RESURME 1 4 2017

INTERIOR FINISHES ABBREVIATIONS

ACP	ACOUSTICAL CEILING PANEL	
CONC	CONCRETE	
CPT	CARPET/CARPET TILE	
CT	CERAMIC TILE	
F	FURNITURE	
FAB	FABRIC (FURNITURE)	
FWC	FABRIC WALLCOVERING	
GL.	GLASS/GLAZING	
GLB	GLASS BLOCK	
MTL	METAL	

PT QT QUARRY TILE RAISED FLOORING RESILIENT BASE RESINOUS FLOORING RESILIENT FLOORING SPECIALTY PRODUCTS SOLID SURFACE STONE/STONE FLOORING STC STAINED CONCRETE
TZ TERRAZZO
VCT VINYL COMPOSITION TILE
VT VINYL TILE
VWC VINYL WALL COVERING

WD WOOD VENEER/WOOD BASE/ WOOD TRIM WDFL WOOD FLOORING WT WINDOW TREATMENT CITY OF DEER PARK Date Received

AUG 11 2017

☐ DISAPPROVED

ENGINEERING DEPARTMENT

SHEET NUMBER

PROJECT NUMBER

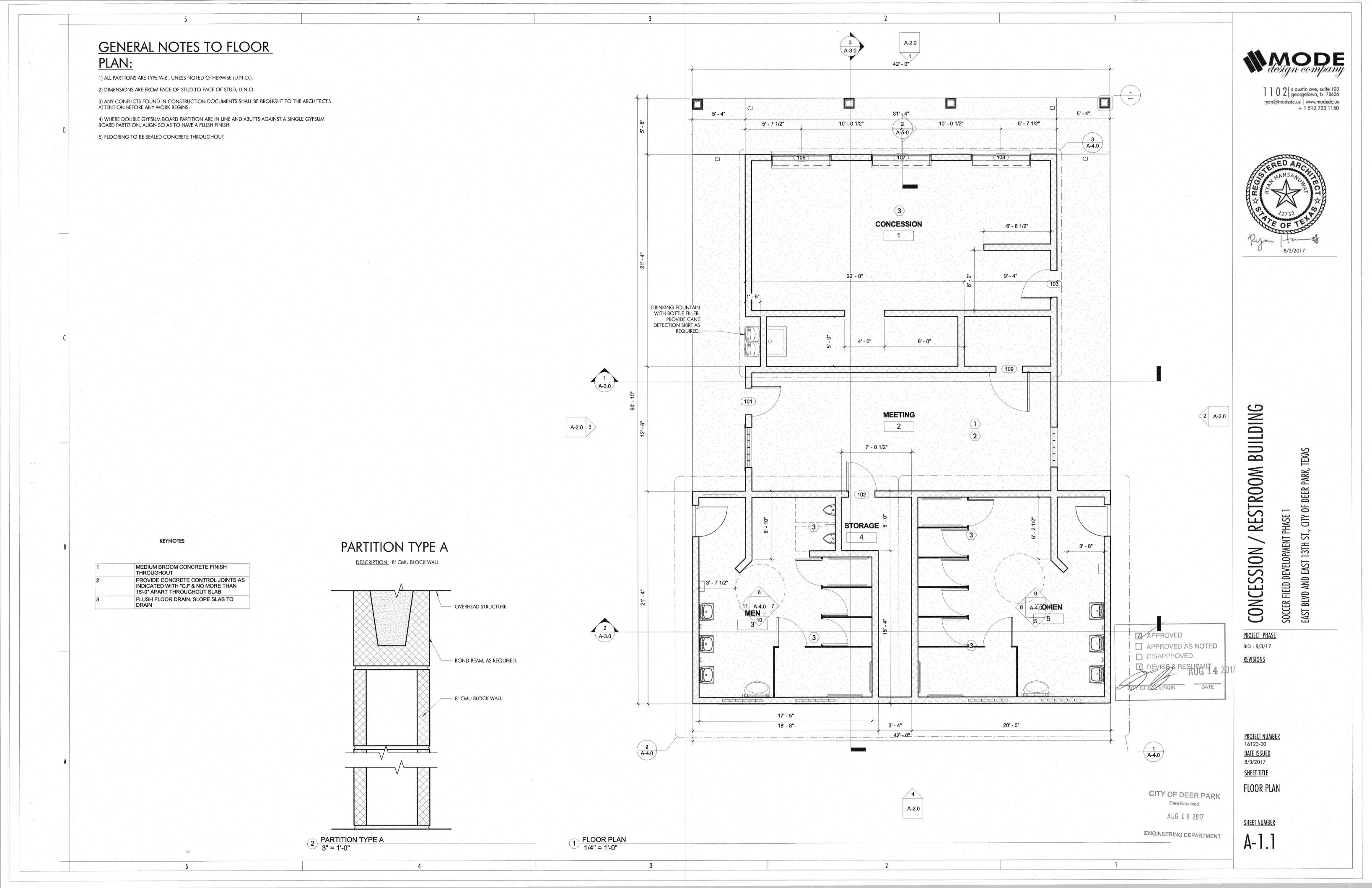
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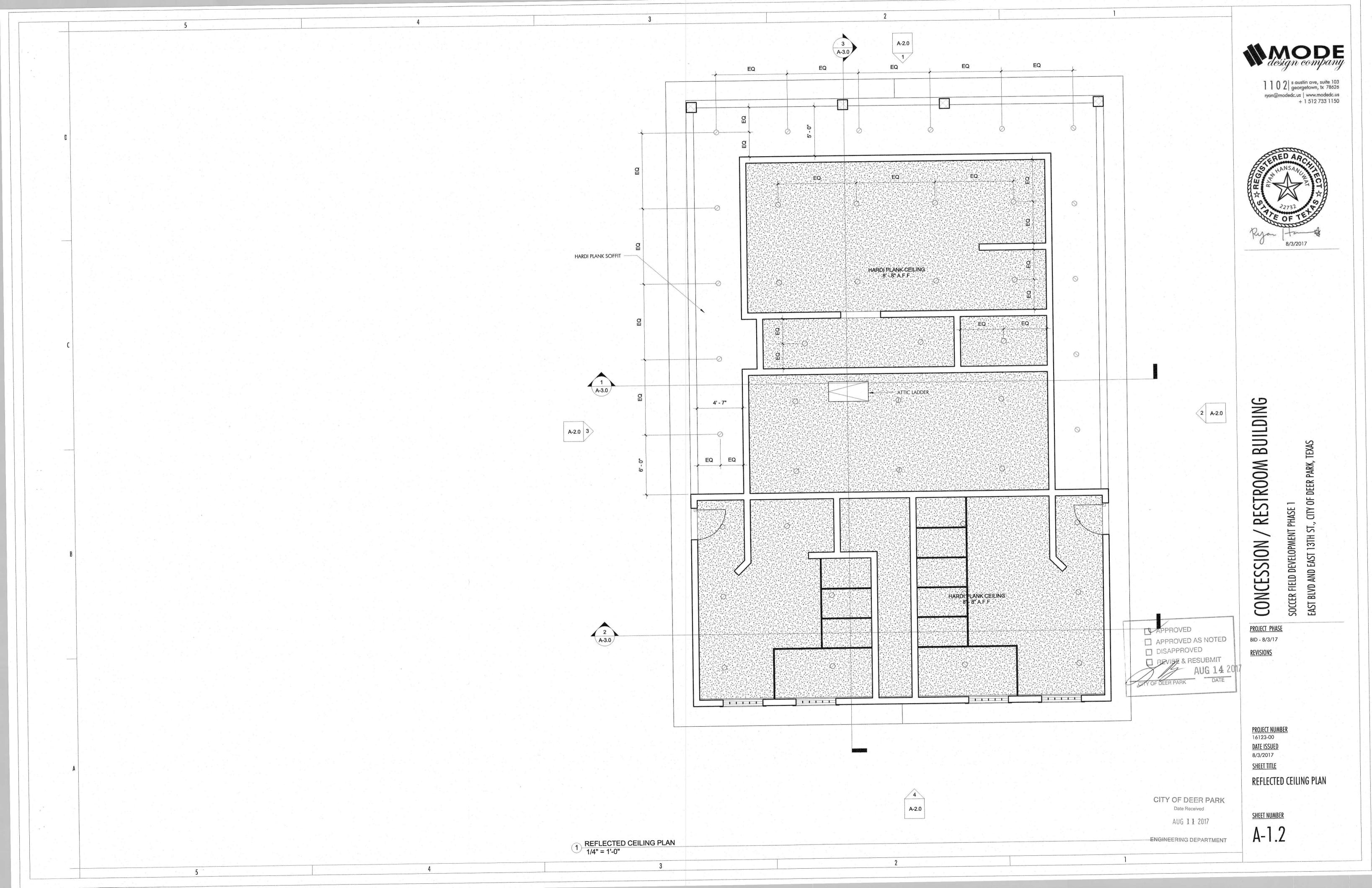
DATE ISSUED

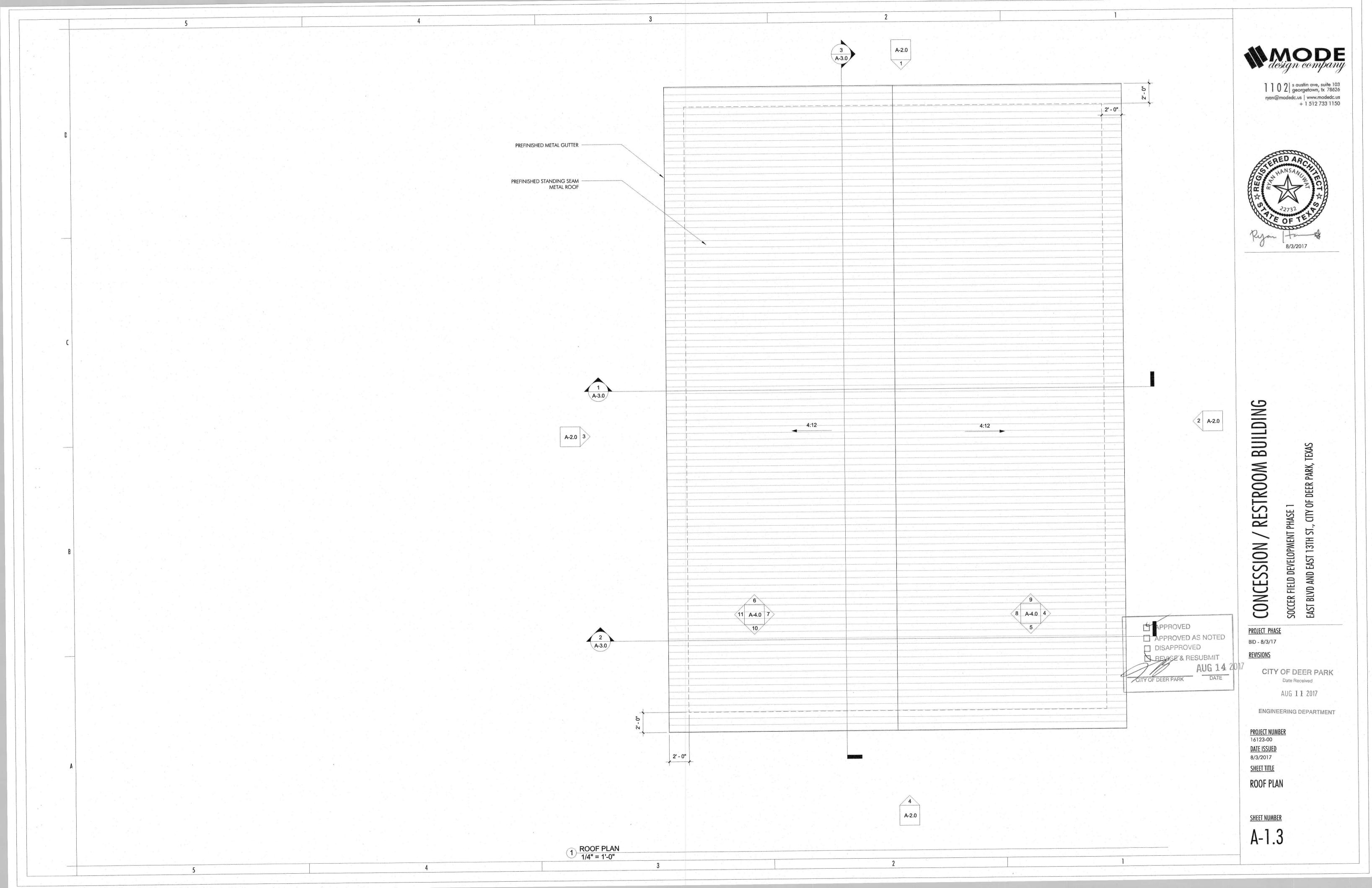
8/3/2017

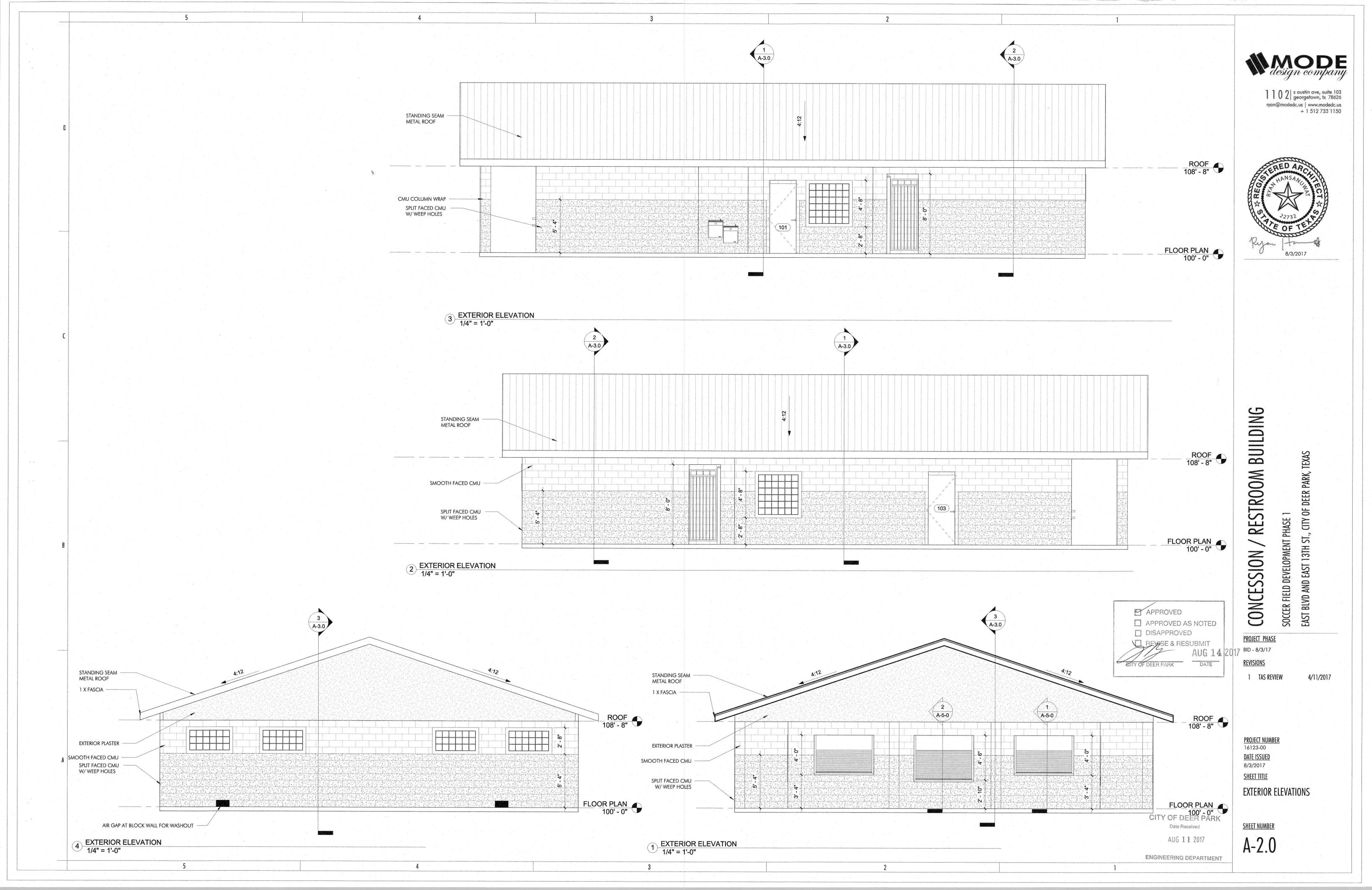
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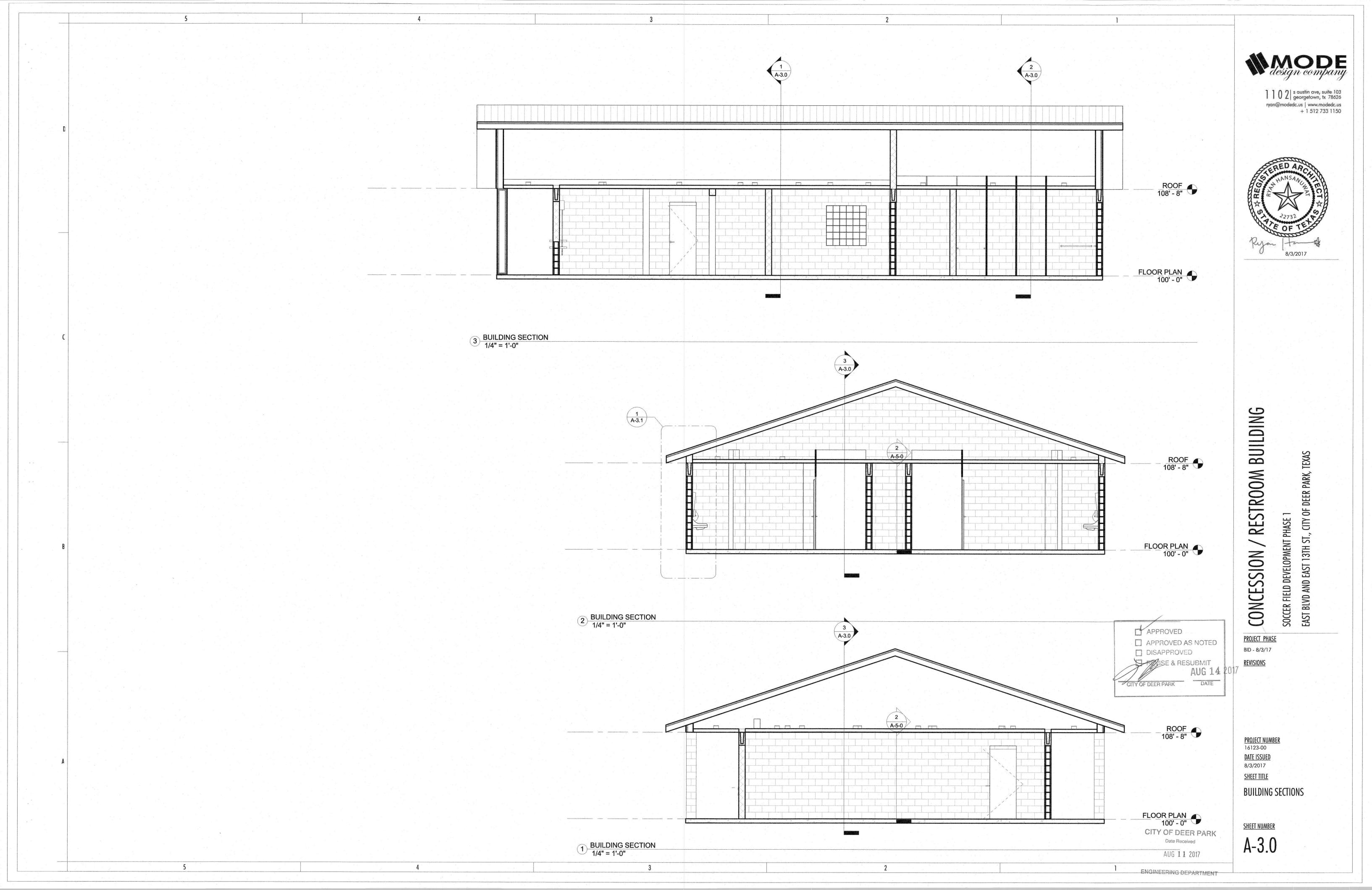
ABBREVIATIONS & NOTES









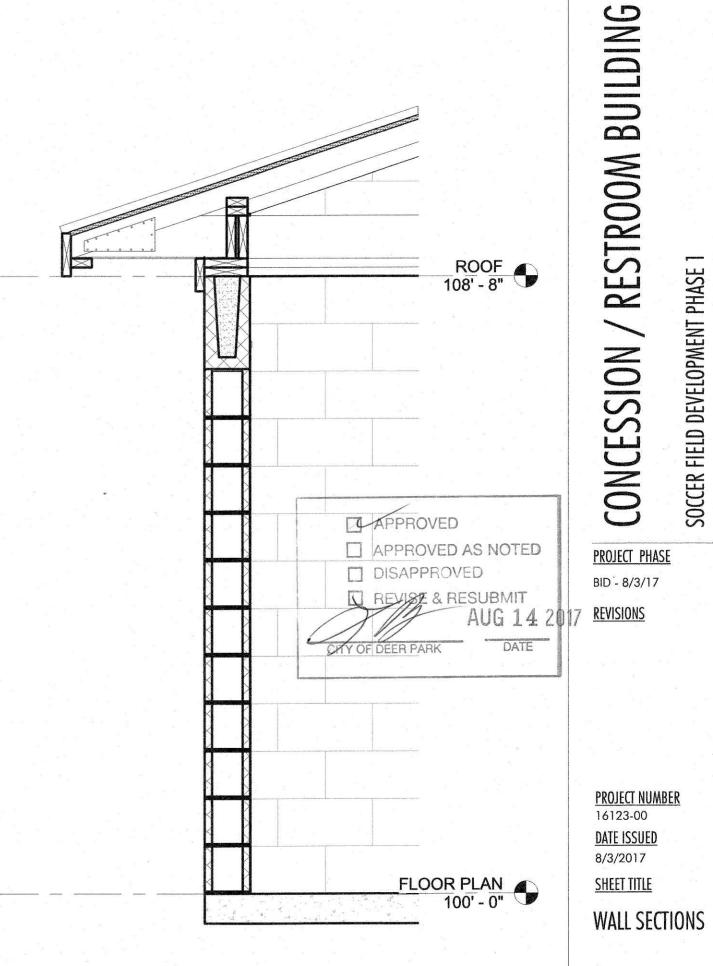




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SOCCER FIELD DEVELOPMENT PHASE 1
EAST BLVD AND EAST 13TH ST., CITY OF DE



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

3

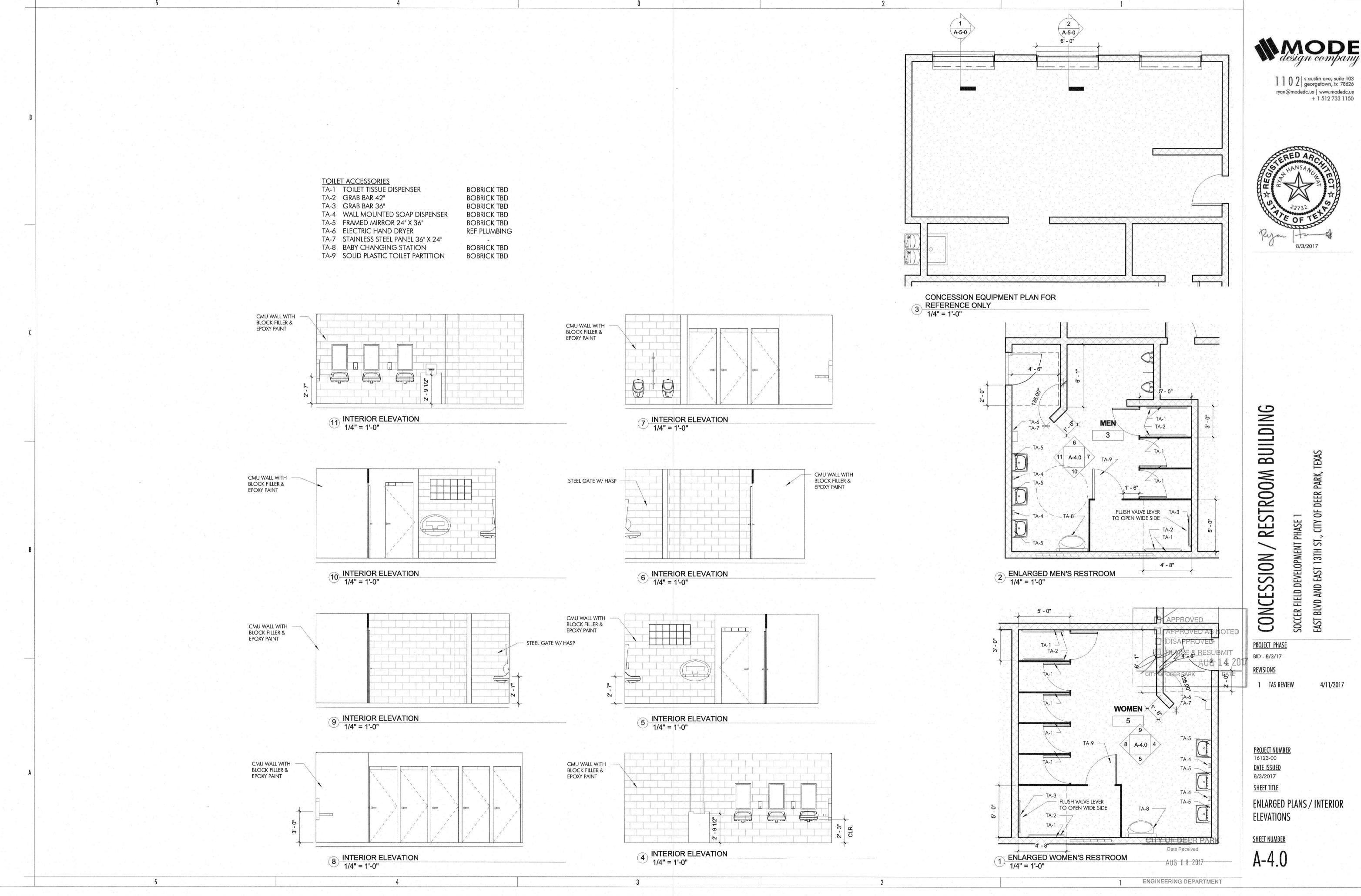
CITY OF DEER PARK
Date Received

AUG 1 1 2017

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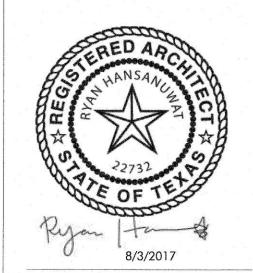
SHEET NUMBER

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MAODEdesign company





CONCESSION / RESTROOM BUILDING SOCCER FIELD DEVELOPMENT PHASE 1 EAST BLVD AND EAST 13TH ST., CITY OF DEER PARK, TEXAS **REVISIONS**

APPROVED AS NOTED

DISAPPROVED

COLING DOOR REVISE & RESUBMIT AUG 14 20 PROJECT PHASE BID - 8/3/17

1 TAS REVIEW

4/11/2017

PROJECT NUMBER 16123-00

<u>DATE ISSUED</u> 8/3/2017 SHEET TITLE

DETAILS

SHEET NUMBER A-5-0

AUG 11 2017 ENGINEERING DEPARTMENT

CITY OF DEER PARK

Date Received

DAPPROVED

- 8" CMU BOND BEAM

STAINLESS STEEL COUNTER

STAINLESS STEEL TABLE, BY OTHERS

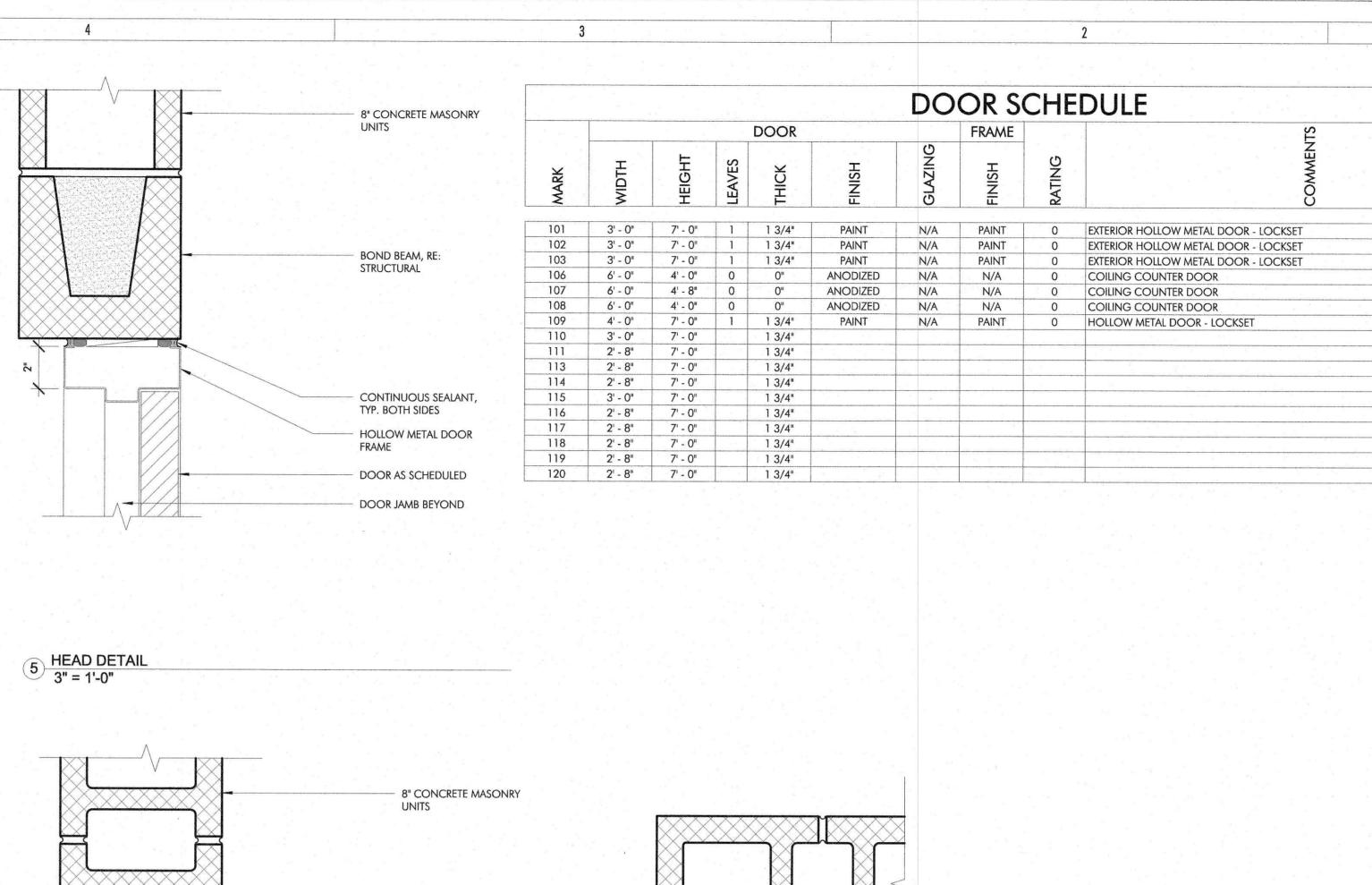
COILING DOOR 8" CMU BOND BEAM STAINLESS STEEL COUNTER STAINLESS STEEL TABLE, BY OTHERS --- 8" CMU WALL

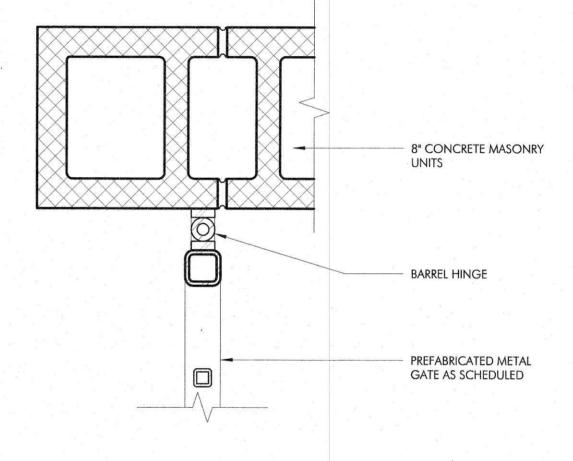
3

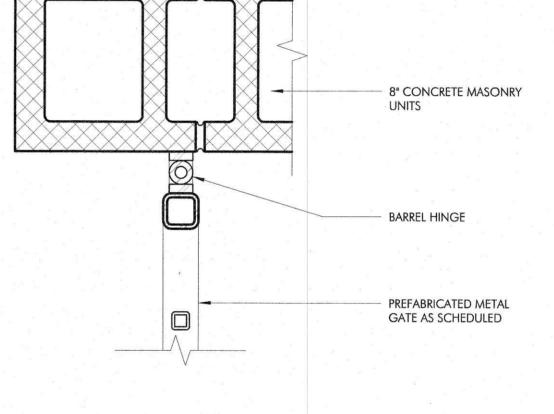
2 LOWER COUNTER DETAIL 1/2" = 1'-0"

1 COUNTER DETAIL
1/2" = 1'-0"

8" CMU WALL









ROOM BUILDING CONCESSION / RESTI SOCCER FIELD DEVELOPMENT PHASE 1 PROJECT PHASE

EAST BLVD AND EAST 13TH ST., CITY OF

PROJECT NUMBER 16123-00 DATE ISSUED 8/3/2017 SHEET TITLE DOOR SCHEDULE/ DETAILS

CITY OF DEER PARK Date Received AUG 11 2017

SHEET NUMBER

1 THRESHOLD DETAIL 3" = 1'-0"

CONTINUOUS SEALANT, TYP. BOTH SIDES

HOLLOW METAL DOOR

DOOR AS SCHEDULED

DOOR JAMB BEYOND

DOOR AS SCHEDULED

DOOR JAMB BEYOND

FLOOR FINISH AS SCHEDULED WEATHERSTRIP

TAS COMPLIANT METAL THRESHOLD

ON BED OF SEALANT

WARP CONCRETE @ ENTRANCE, MAX. 1:48

LINE OF CONCRETE WALKWAY BEYOND

SLOPE

FRAME

4 JAMB DETAIL 3" = 1'-0"

3 THRESHOLD DETAIL
3" = 1'-0"

2 JAMB DETAIL 3" = 1'-0"

PREFABRICATED GATE
AS SCHEDULED

PREFABRICATED GATE AS SCHEDULED

CONCRETE SLAB, RE:

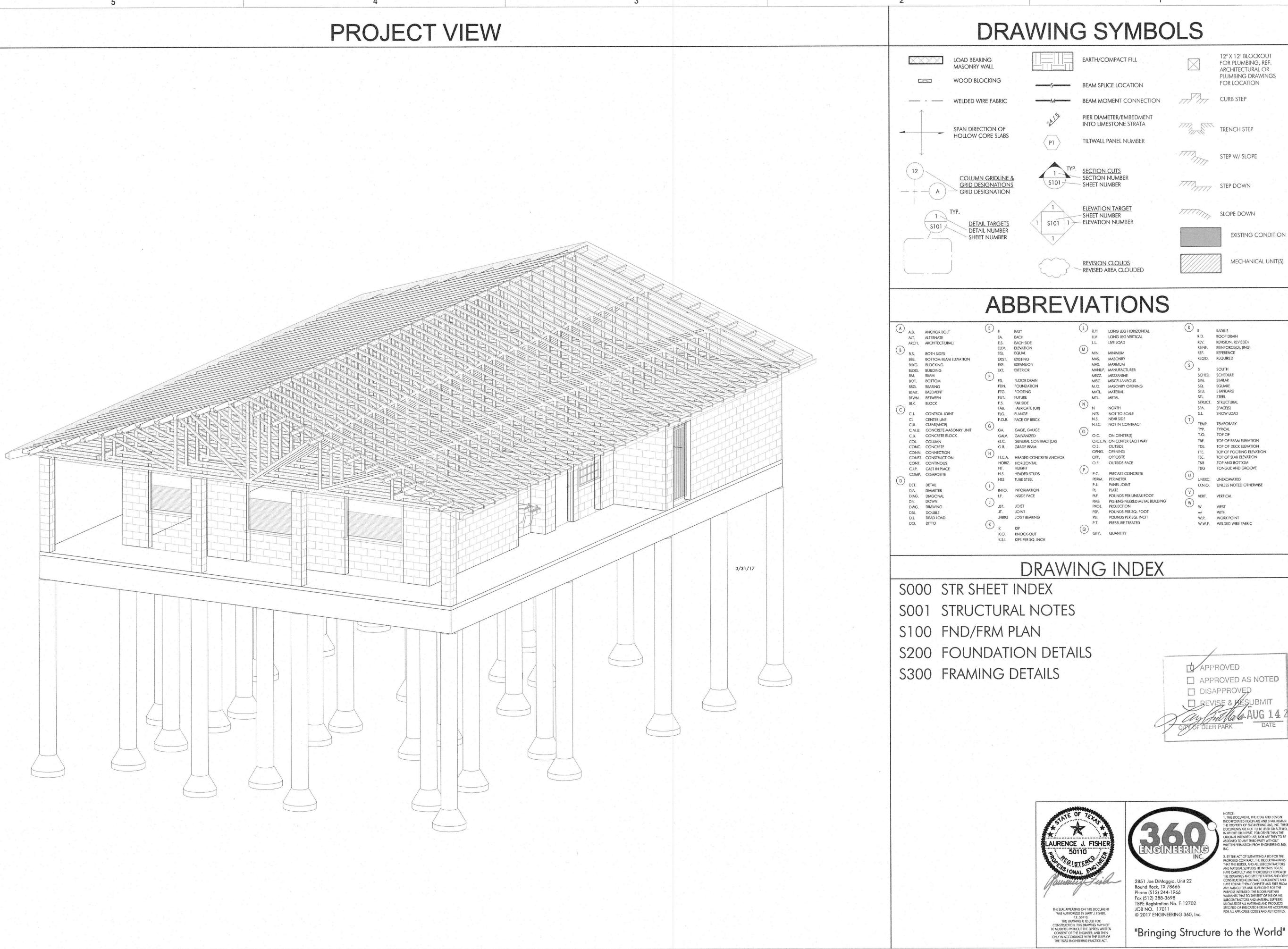
STRUCTURAL

A-6.0

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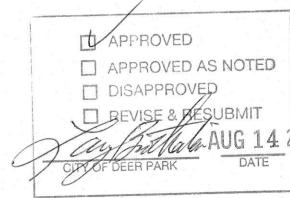




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OF DEER PARK,

DEVELOPMENT PHASE



PROJECT PHASE

ENGINEERING DEPARTMENT

CITY OF DEER PARK

AUG 1 1 2017

PROJECT NUMBER DATE ISSUED 03-20-2017

REVISIONS

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SHEET NUMBER

S000

Lumber: All lumber and plywood used in the construction of forms for

sufficient size and thickness to rigidly support the loads involved.

Form Coating: Equal to Sonneborn Formsaver.

straight, true and square.

during concreting

V. REINFORCING MATERIAL PROPERTIES

VI. EXPANSION AND CONTROL JOINTS

REINFORCING PROPERTIES:

All bars unless noted

Post-tensioning strand

Pre-stressing strand

Weldable rebar

Welded wire fabric (smooth)

Ties & stirrups

non-structural concrete.

satisfaction before placing concrete.

directs, without extra cost to the owner.

surfaces which are later to be plastered or rubbed.

concrete shall be sound, clean and free of surface imperfections, and of

Plywood: Form plywood shall be sound and free of surface imperfections,

and shall be manufactured with exterior glue suitable for use in forming

Accessories: Form ties, clamps and other accessories shall be of such type,

exposed faces shall be such as will not leave exposed metal on concrete

The contractor shall employ an experienced surveyor to supply all necessary

lines and levels to insure that all finished concrete work is properly located,

All vertical concrete surfaces shall be formed with wood, including edges of

Form construction and removal shall conform to the recommendations and

support the loads involved without movement, and constructed to maximize

The contractor shall check with all other trades and make certain that all

various trades are properly placed and supported to prevent movement

The contractor shall obtain the Architect's and the Engineer's review and

The contractor shall construct form work to adequately support pressure

from the wet concrete. Reinforcing shall be installed to the Engineer's

Thoroughly clean all form surfaces in contact with concrete and coat with

approved form coating. Oiled forms shall not be used for exposed concrete

Leave all form work in place for a time consistent with recommendations of

forms may be removed within 24-28 hours after concrete is placed. Should

concrete occur, the contractor shall make such corrections as the engineer

FY, KSI

65

Control joins are to encompass an area not greater than 400 sq. ft. The minimum

layout plan for review by architect and engineer prior to construction of slab.

distance between control joints is 15'-0". Control joints shall be placed at mid span

between grade beams parallel to control joint. Contractor shall submit control joint

270Fpu

270Fpu

ASTM

A615

A615

A185

A416

A416

A706

13.

the American Concrete Institute. In general, the perimeter vertical beam

inconsistencies and/or irregularities on the lines, levels or plumb of the

okay before placing any structural concrete, giving at least 48 hours notice

before pours are scheduled. Obtain the Architect's approval before pouring

resistance to shortening of the member. All joints in form work shall be tight

piping, conduit, sockets, inserts, sleeves, anchors, colts, etc., required by the

requirements of the appropriate sections of ACI Standard 347 and ACI

Code 318, latest versions. All form work shall be placed straight, level,

plumb and true to line, sufficiently supported, braced and tied to rigidly

and neat to prevent leakage or irregularities in exposed surfaces.

walks, slabs on grade, steps on grade and exposed portions of grade

concreting, no forms need to be constructed for concrete below grade.

beams. If the earth will stand vertical and firm during excavating and

size, etc. as will safely support the loads to be encountered. Accessories on

VII. CAST IN PLACE CONCRETE

Materials

Concrete Aggregates:

or organic materials.

Admixtures:

Ready Mixed Concrete:

Expansion joints (if shown):

Portland Cement shall conform to the standard specifications for Portland

Water shall be clean, potable and free of injurious amounts of acids, alkalis

Ready Mixed Concrete shall conform to ASTM Specifications C-94, latest

Pre-molded joint filler shall consist of asphalt vegetable fiber and mineral

filler between two sheets of asphalt saturated paper and shall meet the

Chemical compounds shall be used as an Admixture to control plastic

shrinkage, improved workability and entrain 3 to 5% air. The Admixtures

shall contain no chlorides, fluorides or nitrates and shall be formulated by

the manufacturer for the job area and weather conditions to control setting

time. Admixtures shall conform to ASTM Specifications C-260 and C-494

latest versions. The Admixtures intended for use shall be submitted to the

cement, ASTM Designation C-150, latest version Type I or Type III.

Aggregates, ASTM C-33, latest version Type I or Type III.

requirements of ASTM Specification D-994, latest version.

Engineer for approval before any actual mix is made.

Cold Weather Placing: Comply with ACI 306.

Hot Weather Placing: Comply with ACI 305.

minutes for ambient temperatures of 90 degrees and above.

Welded Wire Fabric (W.W.F.) shall conform to ASTM A185.

shrinkage or settlement at any age.

additions of water at the site, and shall have the following attributes:

Fahrenheit, before any water is added at the jobsite.

lap of 40 diameters or 24", whichever is greater.

latest ACI Specifications.

the Engineer.

weakness within the section

approved by the Engineer.

concrete is still plastic.

building, existing curbs and walks.

excessive shimming and grouting.

movement during concreting.

ACI-318, latest editions.

Batching, Mixing & Delivery: Comply with ACI C94

ALL CONCRETE SHALL BE CONSOLIDATED BY USE OF A MECHANICAL

The maximum time interval between the addition of mixing water and/or cement to

exceed ninety (90) minutes for ambient temperatures below 90 degrees and sixty (60)

the batch, and the placing of the last of the concrete batch in the forms shall not

No concrete shall be placed where the concrete temperature exceeds 90 degrees

Reinforcing bars shall be designed, fabricated and placed in accordance with the

Provide corner bars for all continuous reinforcing bars at all corners with minimum

Non-shrink grout shall be ready-to use metallic aggregate product requiring only

Provide 1/2" pre-molded expansion joints where new concrete walks about the

Deposit concrete continuously or in layers of such thickness that no concrete will be

placed on concrete which has hardened sufficiently to form seams or planes of

Where a section cannot be placed continuously, provide construction joints as

Place concrete at such a rate that concrete which is being integrated with fresh

cause segregation. Do not use mechanical vibrators to move concrete.

Deposit concrete as nearly as practicable in its final location to avoid segregation due

to re-handling and flowing. Do not subject concrete to any procedure which might

Do not use concrete that has become non-plastic and unworkable, or does not meet

Do not re-temper concrete after initially obtaining the proper slump on any load of

All concrete shall be designed and constructed in accordance w/ IBC Chapter 19 &

Provide extra reinforcing on each face around all openings 24" or larger in all slabs

& walls equal to half the interrupted reinforcing bars on each side but not less than 2

MINIMUM

COVER IN.

3"

1-1/2"

SLUMP

 4 ± 1

 5 ± 1

 5 ± 1

 5 ± 1

INCHES

Screed concrete which is to receive other construction to the proper level to avoid

the required quality control limits or which has been contaminated by foreign

All reinforcing shall be supported on metal supports and securely tied to prevent

- #5 bars with Class B lap but not less than 2 feet beyond edge openings.

The following minimum concrete cover shall be provided for reinforcement

#11 & smaller bars

If any ponds, tree wells or abrupt grade changes occur within 5'-0" of perimeter

grade beam, the grade beam must be extended a minimum of 12" below the lowest

Under-slab vapor barrier shall be StegoWrap 15 mil. Or equal. Vapor retarder shall

All anchor bolts and shearwall hold down bolts are to be "wet set". Do not drill any

All exterior concrete shall be air entrained to give the concrete on air content of

Cast-In-Place concrete shall be regular weight with a minimum compressive strength

of 3000 psi at 28 days. The concrete mix design shall have a minimum of 5 sacks of

cement for 3000 psi and 5-1/2 sacks for 3500 psi per cubic yard of concrete. The

mix design shall be prepared by a testing agency and reviewed by the Engineer prior to placing any concrete. All concrete shall be by one supplier unless approved by the

Concrete shall have a maximum slump of 5" for slabs and 4" for all other concrete.

F'c PSI

3000

3000

3000

3500

28 DAYS

Provide a 3/4" chamfer on all exposed corners of concrete.

Concrete cast against &

#6 THRU #18 bars

#5 & smaller bars

contact with ground:

Beams & Columns:

levation of the grade change.

epoxy set hold down or anchor bolts.

& foundation walls

Interior slab on grade

Exterior slab on grade

Topping & concrete

Engineer. The use of Fly Ash is not permitted.

over metal deck

Footings, piers, grade beams

VIII. CONCRETE MATERIAL PROPERTIES

CONCRETE PROPERTIES:

 $6 \pm 1\%$ by volume.

permanently exposed to earth:

Concrete exposed to earth or weather:

Concrete not exposed to weather or in

slabs & walls: #14 & #18 bars

Primary reinforcement, ties & stirrups

be installed in accordance with manufacturer's specifications.

Be capable of producing a flowable grouting material having no drying

The compressive strength of the grout (50mm or 2" cubes) shall be not less

than 5,000 psi at age 28 days. Store, mix and place non-shrink grout in

strict accordance with manufacturer's recommendations, as approved by

Continuous reinforcing bars shall have a minimum lap of 40 diameters or 24",

Place concrete in compliance with practices and recommendations of ACI 304.

Concrete aggregates shall conform to the specifications for Concrete

SECTION ASSURANCE

1705.2.2.1.1 AWS D1.3

1705.2.2.1.2 AWS D1.4

1705.2.2.2 Indicated in

1705.3 IBC TABLE

1705.4

1705.6

1705.7

1705.8

AISC 360

IBC TABLE

1705.2.2

and ACI 318

Section

1705.3

Inspection:

TMS 420/ACI

530/ASCE 5

Assurance:

TMS 602/ACI

530.1/ASCE 6

Indicated in

1705.2

APPLICABLE

PARK,

9

AND

BLVD

HASE OPM B 0

PROJECT PHASE

Broject Status

<u>REVISIONS</u>

CITY OF DEER PARK Date Received

AUG 1 1 2017

ENGINEERING DEPARTMENT

PROJECT NUMBER NOTICE:

1. THIS DOCUMENT, THE IDEAS AND DESIGN INCORPORATED HEREIN ARE AND SHALL REMAIN DATE ISSUED 03-20-2017

ORIGINAL INTENDED USE, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY WITHOUT ITTEN PERMISSION FROM ENGINEERING 36 SHEET TITLE 2. BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS AND SPECIFICATIONS AND OTH HOROUGH TO THE CONSTRUCTION CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HIS SUBCONTRACTORS AND MATERIAL SUPPLIERS KNOWLEDGE ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTAE FOR ALL APPLICABLE CODES AND AUTHORITIES. STRUCTURAL NOTES

2851 Joe DiMaggio, Unit 22 Round Rock, TX 78665 Phone (512) 244-1966 Fax (512) 388-3698 TBPE Registration No. F-12702 © 2017 ENGINEERING 360, Inc.

accordance with Section 107.1 as a condition of permit issuance. The statement shall be in accordance with Section 1704.3. PROJECT ADDRESS: DEER PARK CITY, STATE: DEER PARK, TEXAS

AND EXTENT

Steel Construction Other Than

Steel Construction

Structural Steel

Inspection

Cold-Formed Welding

Reinforced Steel Welding

Concrete Construction

Masonry Construction

Wood Construction: High-

Cold-Formed Steel Trusses

Spanning 60 Feet or Greater

APPLICABLE

shall be (1) #5 Vertical per CMU block cell at each location noted above with each cell being filled with 3000 psi concrete in 4'-0" lifts maximum. SECTION 1705: REQUIRED VERIFICATION AND INSPECTION All CMU Walls to be reinforced horizontally with 3/16" Dur-O-Wall at 16" O C vertically. Dur-O-Wall to be basic bright wire with deformed side rods. Dur-O-Wall to Section 1705 of the International Building Code 2012, the following is a list of the required be fully embedded in the mortar with a minimum of 5/8" cover on exterior faces. All special inspections applicable for this project: splices shall be a minimum of 6". Bend and hook side rods at ends of walls and at 2012 IBC | INSPECTION | TYPE OF SPECIAL INSPECTION

Mortar shall be Type S, with a minimum compressive strength of 1800 psi at 28 days. Control joints shall be placed at a minimum of 24'-0" spacing and at either side of each opening 6'-0" or greater or one side of other openings. Each control joint shall be properly reinforced to provide lateral support.

All CMU Walls to be reinforced with (1) #5 Vertical at 24" O.C. There shall also be

#5 Verticals at each side of each opening, at wall ends and at control joints. There

(3) #5 Verticals at each corner, (4) #5 Verticals at each wall intersection and (2)

Bond Beams shall be placed at the floor and roof level and at a maximum vertical spacing of 8'-0". The bond beam shall consist of an 8" CMU with (1) #5 continuous and filled with 3000 psi concrete as specified in NOTE VII. CAST IN PLACE

X. FRAMING

IX. MASONRY

All bolts shall be ASTM A-307. All beam header, rafter and ceiling joist framing lumber shall be No. 1 grade Southern Pine Kiln Dried or better. All column lumber shall be No. 1 Douglas Fir Kiln-Dried or

All wood connector and hangers shall be as manufactured by Simpson Strong-Tie Co. All connectors or hangers for pressure treated material shall be stainless steel. All exterior walls and interior shear walls shall be sheathed with a minimum of 7/16-24/48 C-D Exterior Plywood or OSB. Attach to framing with 10d nails @ 6"

All exterior walls and interior shear walls shall be anchored to the foundation with 1/2" x 12" anchor bolts at 48" O.C. All roofs shall be decked with 5/8"-48/24 C-D Exterior Plywood nailed with 6d nails

at 6" O.C. at all supports. All wall framing shall be #2 Southern Yellow Pine or better. All roof joists and ceiling joists shall be #2 Southern Yellow Pine or better.

No holes, notches or other cuts shall be made in any beam, joist, rafter or other framing member without written approval by the engineer. No hole larger than 1" in diameter will be allowed in any load bearing or any exterior

wall stud. 1" diameter and smaller holes shall be located on the centerline of the wide axis and spaced no less than 6" O.C. No other holes will be allowed without the written approval of the engineer.

XI. ROOF TRUSSES

Top Chord Dead Load = 10 psf Top Chord Live Load = 20 psf Bot Chord Live Load = 0 psf

Uplift = 0 psf Duration Factor of 100%

Trusses shall be Designed and Manufactured to be Equal to that Manufactured by Alpine Engineered Products, Inc. All trusses shall be engineered for the loading indicated and the manufacturer shall submit sealed engineering drawings for each truss type and length.

XII. USE AND/OR RELEASE OF STRUCTURAL ENGINEERING ELECTRONIC FILE

The electronic files for the structural engineering documents will not be released for use during construction or for the preparation of shop drawings or submittals. Each supplier or fabricator is responsible for reproducing the information required for their submittal. The duplicating of any part of these documents for inclusion in shop drawings or submittals is also prohibited.

Details noted as typical shall apply in all cases unless specifically shown or noted otherwise. XIV. STRUCTURAL REQUIREMENTS FOR SUBMITTALS

The following are submittals required by Engineer. Use plans and spec. book for product list.

Select fill material Soil compaction test results Reinforcement & concrete accessories including vapor barrier

Concrete mix design Anchor bolts CMU block and accessories

Mortar mix design, grout mix design and test results Wood trusses Concrete test results

XV. STRUCTURAL REQUIREMENTS FOR SITE VISITS

Site visits for construction observation will not be made by Engineer until all submittals and/or testing results have been reviewed and accepted by the Engineer. Contractor is responsible for scheduling submittals to allow the Engineer adequate time to review and comment before proceeding with construction.

Representative of Engineering 360 will visit the site at the following stages of construction:

During pier drilling and placement of reinforcing and concrete piers After forms, rebar, embeds and other accessories are in place and 72 hours prior to placement of concrete

All anchor bolts and embeds are to be set and adequately tied & held in position prior to the start of placing concrete During construction of masonry wall while all phases of the operation are in progress, including laying up of wall courses, pouring cells and constructing

bond beams After decking is in place and attached to the structure, but prior to covering

Please refer to specifications or General Notes for project specific instructions.

with floor and roof materials

Contractor shall issue to the engineer a complete project schedule with the above site visits noted and notify the Engineer a minimum of 48 hours prior to the scheduled visit to confirm time and date required visit. Failure of the Contractor to accomplish this notification will not require the engineer to respond on shorter notice, nor will the Contractor proceed without the Engineer performing appropriate site visit. Additionally if the Contractor requests or schedules a site visit and construction is not at the appropriate stage for the Engineer to perform the proper observations, another site visit will be required and scheduled at the Contractor expense for all time and travel expenses of the engineer or his representative. Engineer will not issue any type or form of compliance or concurrence statement for construction without performing the above noted site observations.

Load Diaphragm/Metal-Plate-Connected Wood Trusses anning 60 Feet or Greater Indicated in Indicated in Driven Deep Foundations Section Indicated in Cast-in-Place Deep Foundations Section 1705.9 Indicated in Helical Pile Foundations 1705.10 Indicated in Special Inspection for Wind Section Resistance Indicated in Special Inspection for Seismic Section 1705.12 Indicated in Testing and Qualification for Seismic Resistance Section 1705.13 Indicated in Sprayed Fire-Resistance 1705.14 AWCI 12-B Mastic and Intumescent Fire-Resistance Coatings 1705.15 Indicated in Exterior Insulation and Finish Section & Systems/Water-Resistive Barrier ASTM E 2570 | Coating 1705.16 Indicated in Fire-Resistance Penetrations Section and Joints 1705.17 Indicated in Special Inspection for Smoke

Special Inspection Reports are to conform to the requirements staed in Section 1704.2.4. Exceptions of Special Inspection as permitted per Section 1704.2

1. Special inspections are not required for construction of a minor nature or as warranted by

conditions in the jurisdiction as approved by the building official. 2. Unless otherwise required by the building official, special inspections are not required for 3. Special inspections are not required for portions of structures designed and constructed in

accordance with the cold-formed steel light-frame construction provisions of IBC Section

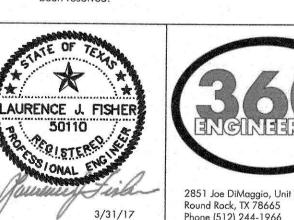
2211.7 or the conventional light-frame construction provisions of IBC Section 2308. Additional Special inspections shall also be required for proposed work that is, in the opinion of the building official, unusual in nature.

Additional Special Inspection per International Building Code 2012, the following is a list of the required special inspections applicable for this project:

2012 IBC SECTION	DETAILS	TYPE OF SPECIAL INSPECTION AND EXTENT	APPLICABLE	NON APPLICABLE
1706	73 19	Design Strengths of Materials		X
1707	= ."	Alternative Test Procedures	PPROVED	X
1708		Test Safe Load	PPROVED	AS NOTE
1709			ISAPPROV	
1710	a 25 (4	Preconstruction Load Tests	EVISE & RI	ESWEMAIT
1711	1 13 13	Material and Test Standards	1/2	AQU 1

Prior to the commencement of observations, the structural observer shall submit to the building official a written statement identifying the frequency and extent of structural observations.

At the conclusion of work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identified any reported noting deficiencies which, to the best of the structural observer's knowledge, have not



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY LARRY J. FISHER, P.E. 50110.
THIS DRAWING IS ISSUED FOR CONSTRUCTION. THIS DRAWING MAY NOT BE MODIFIED WITHOUT THE EXPRESS WRITTEN CONSERVED THE FINELESS AWRITTEN CONSERVED THE FINELESS AWRITTEN CONSERVED THE FINELESS AWRITTEN. CONSENT OF THE ENGINEER, AND THEN ONLY IN ACCORDANCE WITH THE RULES OF THE TEXAS ENGINEERING PRACTICE ACT.

"Bringing Structure to the World"

I. DESIGN DATA

DESIGN LOADS 1. Wind Load Design Wind Speed 150 MPH Risk Category Roof Loads Live Load (L.L.) 20 PSF** Dead Load (Design) (D.L.) 20 PSF Floor Loads 80 PSF* Dead Load (Superimposed) 5 PSF Partitions 20PSF Storage Mezzanines 100 PSF Stairs, public corridors & Lobbies (L.L.) 100 PSF Internal Pressure Coefficient 0.18 PSF Seismic Zone Design Cat.

INTERNATIONAL BUILDING CODE 2012 EDITION WITH CITY OF

DEER PARK, TX AMMENDMENTS.

IV. FORMS

Application:

*Reduced Per I.B.C. SEC. 1607.9 ** Reduced Per I.B.C. SEC. 1605.3

Site Class

The contractor shall verify all dimensions and shall coordinate all structural plans and details with the architect before starting work. The engineer shall be notified of any discrepancies prior to construction.

The structural systems of the floor and roof are designed to perform as a complete unit. During demolition and repair of these structures, structural components may be unstable and it is the responsibility of the contractor to provide temporary shoring and/or bracing as required for the stability of the incomplete structure and for the safety of all on-site personnel.

ALTERNATE DESIGNS

Alternate structural systems & details will only be considered, provided they are submitted with calculations certified by a Professional Engineer Registered in the State of the project. The calculations must show the equivalency of the alternate & acceptance of the alternate by the engineer must be in writing.

FUTURE EXPANSION This project is not designed for future expansion.

ROOF SLOPE

The roof has not been designed for ponding based on a roof slope of 3" per foot,

Contractor to verify all conditions at the jobsite and report any discrepancies to the engineer prior to start of any construction

II. SITE WORK

A. SOIL REPORT

Foundations, retaining & basement walls, foundation drainage, slabs on grade & other items related to the soils are designed & shall be constructed in accordance with the recommendations of QC Laboratories, INC. REPORT NO. 16G13570 DATED January 2017.

Design net soil bearing capacity is as follows:

BUILDING PAD PREPARATION (Slab-On-Grade Areas)

Remove all remaining vegetation, surficial clay soil, uncontrolled fill and obstructions from the existing surface of the site to a minimum of 5'-0" outside the building lines to a minimum of 36" below existing grade. Proof roll exposed subgrade and re-compact all soft areas.

Construct a compacted base of select fill overlaying the existing soil with a minimum thickness of 36 inches below the bottom of the slab. The select fill shall be in compliance with the specifications in item 4 below.

Bring building areas to planned grade using off-site fill selected and

compacted in accordance with the following: Gradation Per Geotechnical Report.

Plasticity Index Material used for the granular fill shall have a plasticity index between 4 and 20.

No organic matter is permitted. Compaction Compact the material to meet Geotechnical Report requirements.

Hold water contents during compaction to -2% to +2% of laboratory optimum andcompacted lift thickness of 8 inches Approval All select fill material shall be approved by the Engineer prior to it

being used on the project.

same day. Temporary steel casing may be required during the installation of drilled piers (see

the Geotechnical Report shall be reported to the Architect, Structural Engineer and Geotechnical Engineer before further construction is attempted.

Geotechnical Report).

General Contractor shall notify the Architect and Structural Engineer 24 hours prior to

Foundation conditions noted during construction which differ from those described in

III. DRILLED PIERS

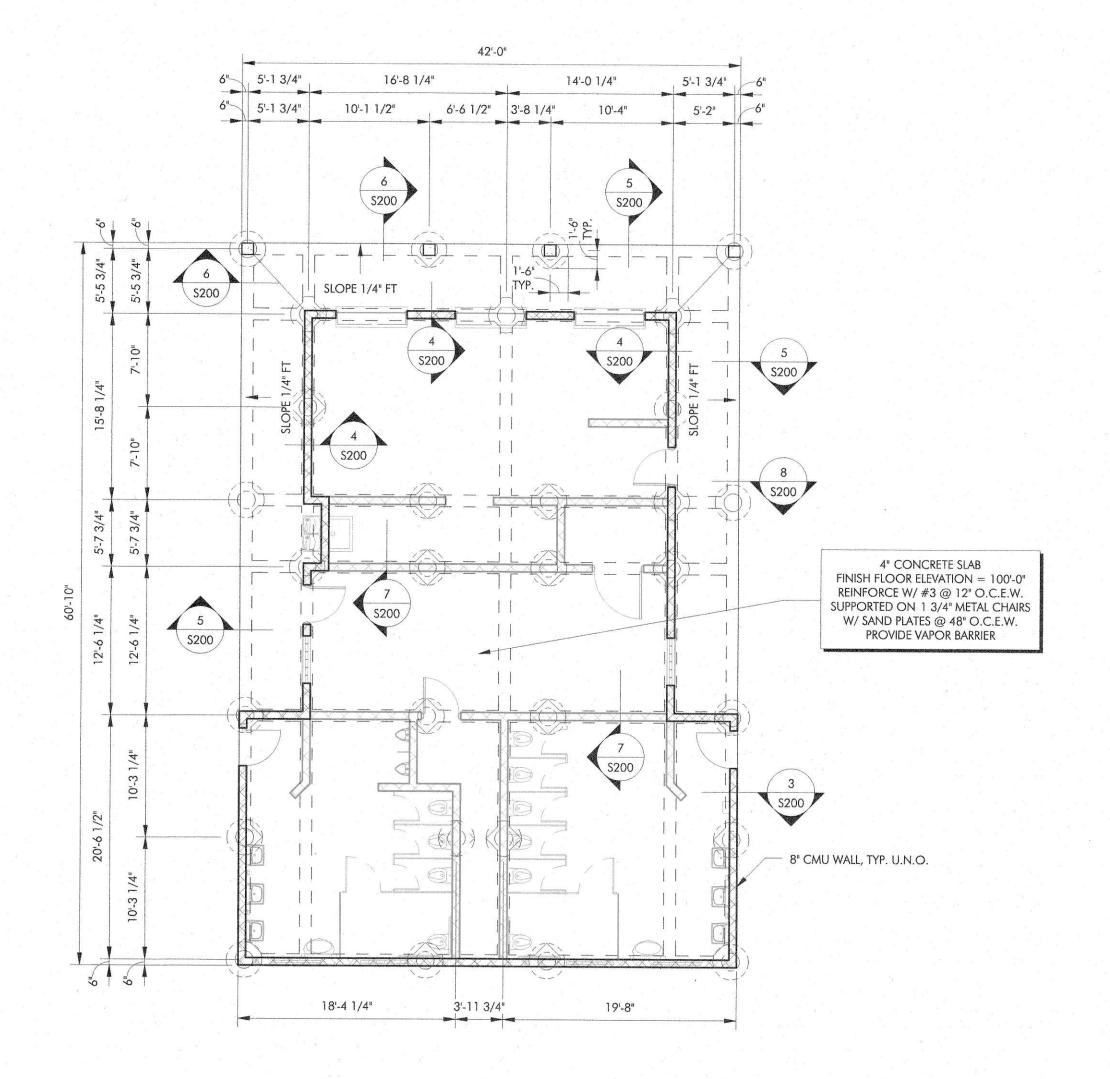
Drilled piers shall be excavated, cleaned, reinforced and concrete placed on the

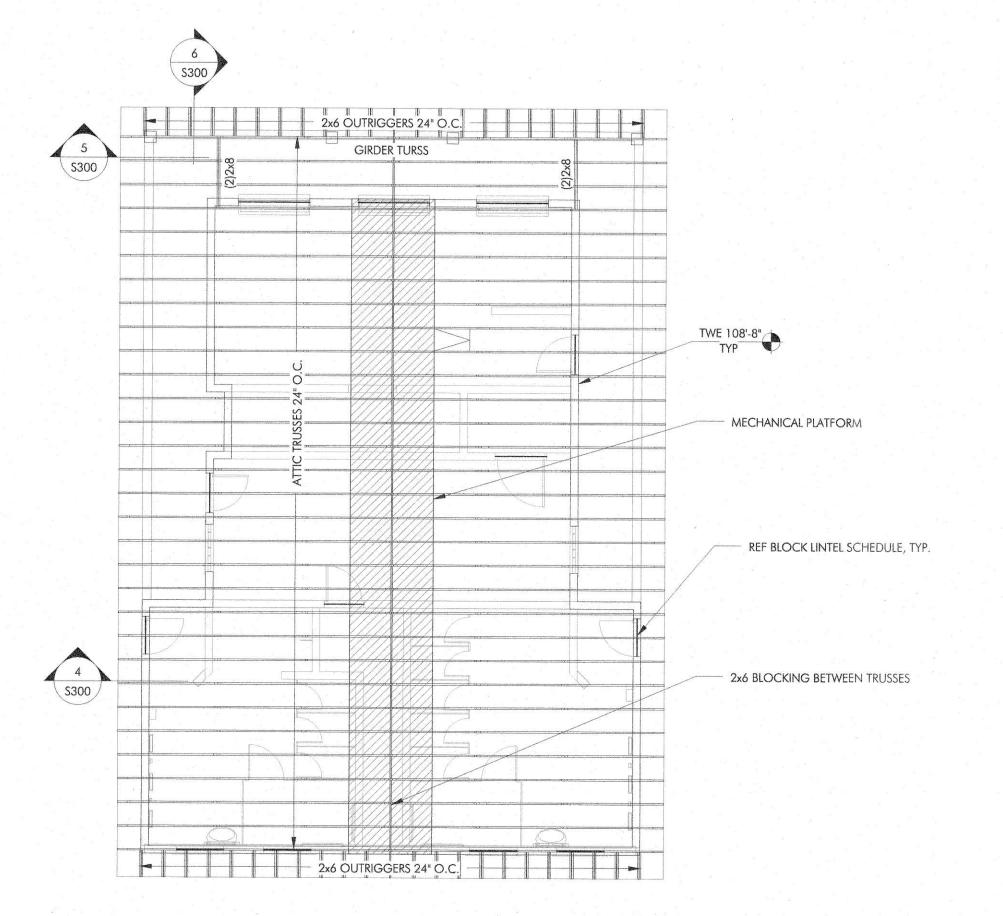
Grade beams shall be formed and cast to insure 8" deep void below beam prior to installations of soil retainers.

placement of concrete in the piers.



1 1 0 2 s austin ave, suite 103 georgetown, tx 78626 ryan@modedc.us www.modedc.us + 1 512 733 1150





2

APPROVED APPROVED AS NOTED ☐ DISAPPROVED

2851 Joe DiMaggio, Unit 22 Round Rock, TX 78665 Phone (512) 244-1966 Fax (512) 388-3698

TBPE Registration No. F-12702 JOB NO. 17011 © 2017 ENGINEERING 360, Inc.

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Project Status AUG 14 2017 REVISIONS

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PROJECT PHASE

CITY OF DEER PARK

Date Received AUG 11 2017 AND

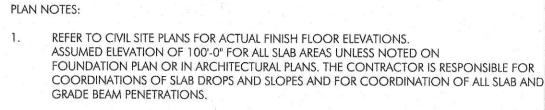
ENGINEERING DEPARTMENT

PROJECT NUMBER DATE ISSUED 03-20-2017 SHEET TITLE

2. BY THE ACT OF SUBMITTING A BID FOR THE PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS AND SPECIFICATIONS AND OTHER CONSTRUCTIONCONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BISDER FURTHER WARRANTS THAT TO THE BISDER FURTHER SUDCONTRACTORS AND MATERIAL SUPPLIERS KNOWLEDGE ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HERRIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES, FND/FRM PLAN

SHEET NUMBER

S100



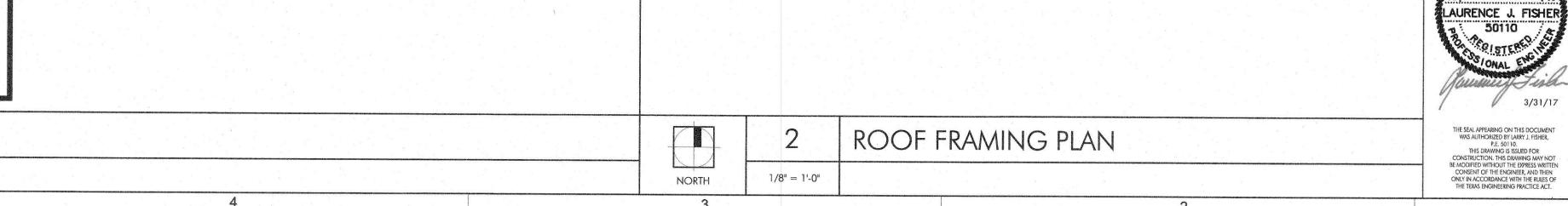
- PROVIDE CORNER BARS IN GRADE BEAMS PER DETAIL 9/S200.
- PLUMBING FIXTURES ARE SHOWN FOR REFERENCE ONLY. REFER ARCHITECTURAL AND PLUMBING PLANS FOR LOCATIONS, TYPE AND QUANTITIES.

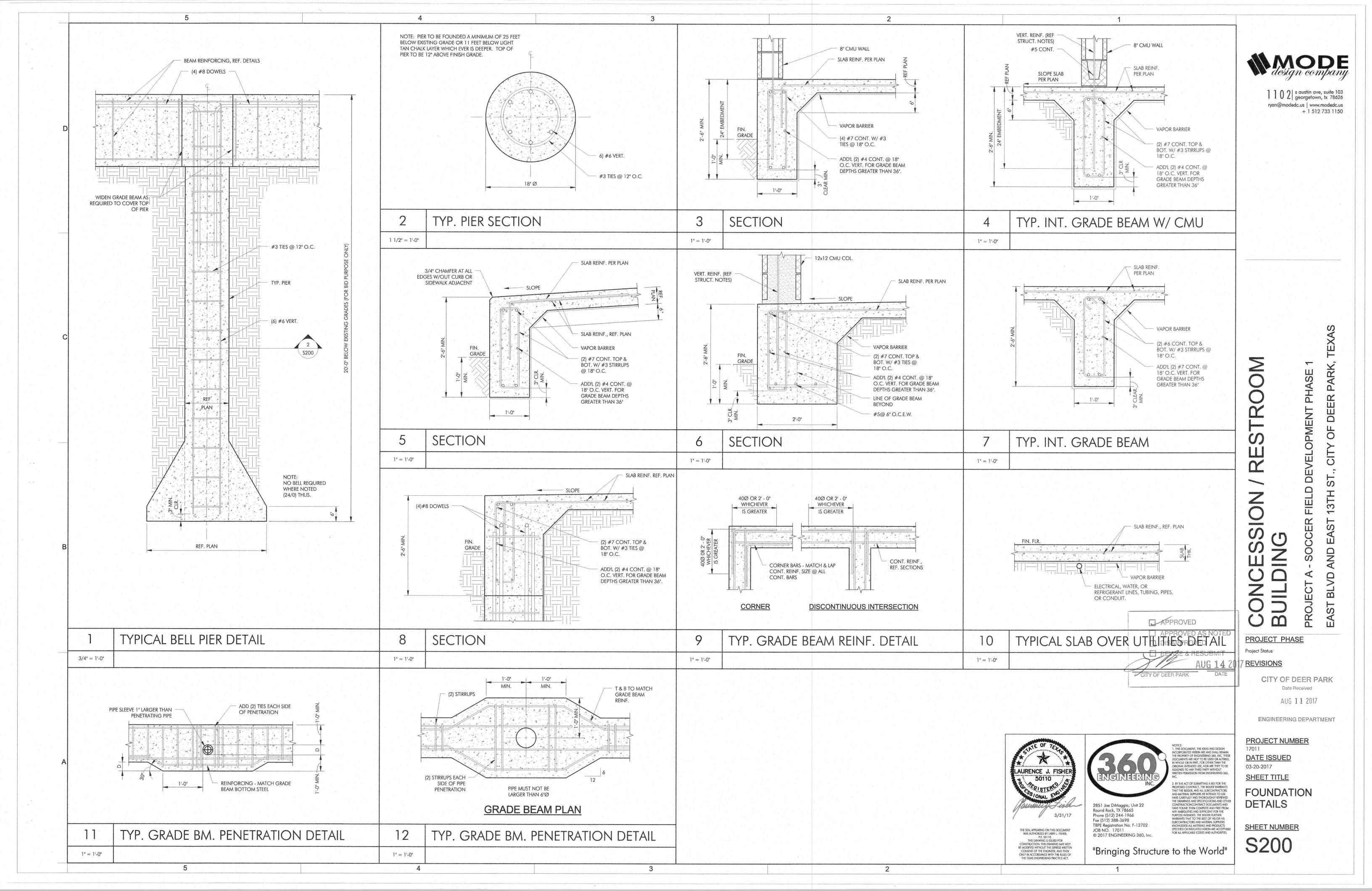
FOUNDATION PLAN

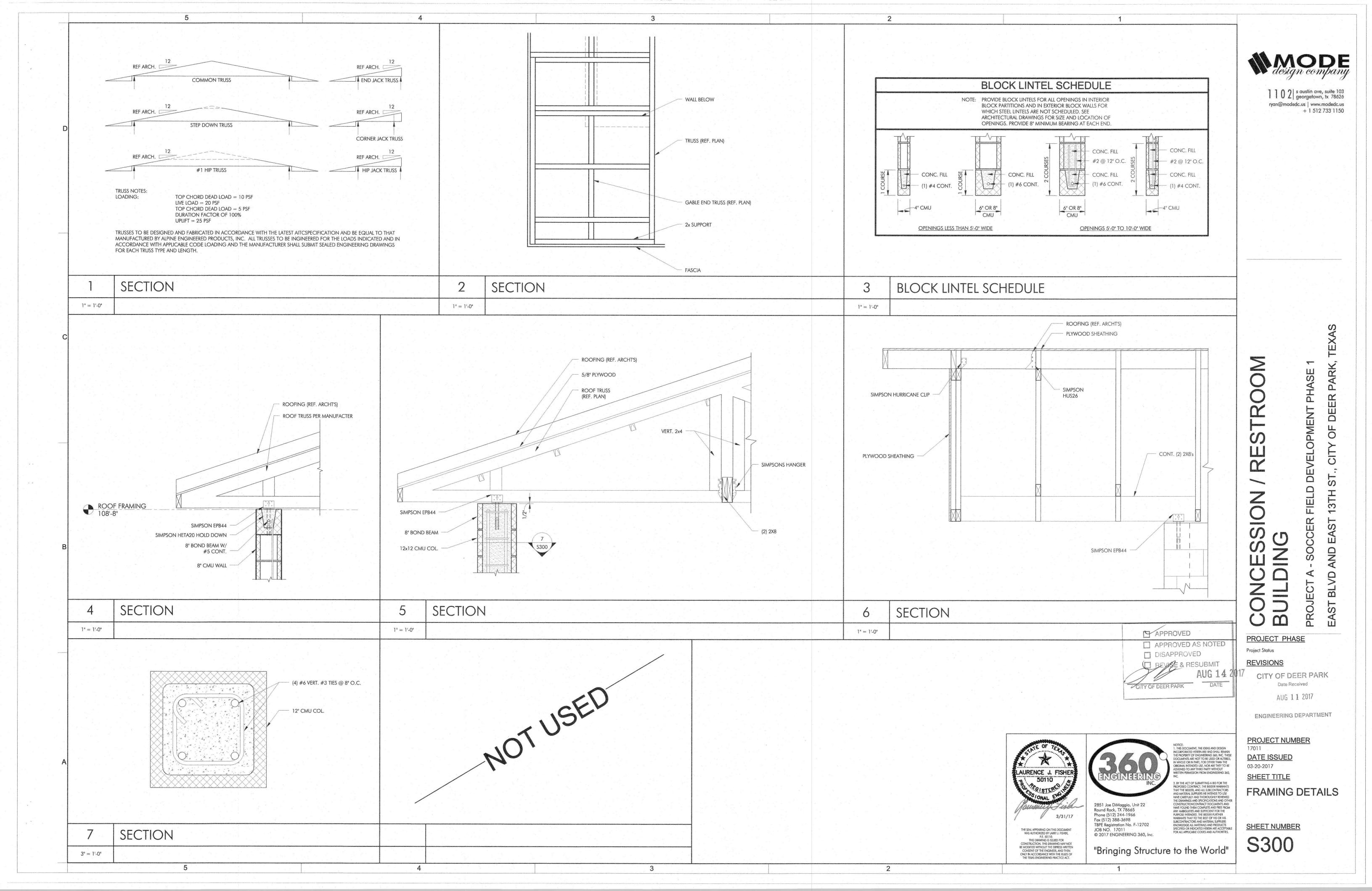
- REFER TO DETAIL 10/S200 FOR ALL PIPE/CONDUIT IN THE FOUNDATION.
- REFER TO DETAIL 11 AND 12/S200 FOR GRADE BEAM PENETRATIONS.

1/8" = 1'-0"

NORTH







SWITCHBOARD, REFER TO SWITCHBOARD SCHEDULE

TRANSFORMER, REFER TO TRANSFORMER SCHEDULE

KILOWATTS LIGHT/LIGHTING

MECHANICAL CONTRACTOR

MAXIMUM

-	LECTRICAL ABBR			ON SCHEDULE
A/C	AMPERES AIR CONDITIONING ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION ALUMINUM		MECH MH	MECHAN I CAL MANHOLE
AFF	ABOVE FINISHED FLOOR		MIN	MINIMUM
AHJ	AUTHORITY HAVING JURISDICTION	27	MISC	MISCELLANEOUS
AL	ALUMINUM		MLO	MAIN LUG ONLY
AUTO	AUTOMATIC		MSB	MAIN SWITCHBOARD
AUX	AUXILIARY		NEC	NATIONAL ELECTRICAL CODE
BFF	BELOW FINISHED FLOOR		NEMA	NATIONAL ELECTRICAL
BLDG	BUILDING			MAIN LUG ONLY MAIN SWITCHBOARD NATIONAL ELECTRICAL CODE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
C	CONDUIT		NF	NON-FUSED
CB	CIRCUIT BREAKER		NIC	NOT IN CONTRACT
CKI	CIRCUII		NI2	NOT TO SCALE
CONC	CONCRETE		OC .	NOT IN CONTRACT NOT TO SCALE ON CENTER(S) OVERHEAD ELECTRIC
CONST	CONSTRUCTION		OT	OVERHEAD ELECTRIC
CONTR	CONTRACTOR		PC .	PLUMBING CONTRACTOR
CTV	CABLE TELEVISION		РЙ	OVERHEAD TELEPHONE PLUMBING CONTRACTOR PHASE
DWG	DRAWING		PNL	PANEL
EC	ELECTRICAL CONTRACTOR		PVC	POLYVINYL CHLORIDE REFERENCE/REFER TO
EF	EXHAUST FAN		RE:	REFERENCE/REFER TO
DN	DOWN		RECPT	RECEPTACLÉ
ELEC	ELECTRIC/ELECTRICAL		RGS	RIGID GALVANIZED STEEL CONDUIT
FWI	ELECTRICAL METALLIC TUBING		KW	ROOM SCHEDULE
EQUIP	EVICTING		SPEC	SPECIFICATIONS
ΕÀ	FIDE ALADM		TEL	SPECIFICATIONS TELEPHONE
FF	FINISHED FLOOR		TTB	TELEPHONE TERMINAL BOARD TYPICAL UNDERGROUND ELECTRIC
FLR	FLOOR/FLOORING		TYP	TYPICAL
G	GROUND		UE	UNDERGROUND ELECTRIC
GC	GENERAL CONTRACTOR		UL	UNDERWRITER'S LABORATORIES
GFI	AIR CONDITIONING ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION ALUMINUM AUTOMATIC AUXILIARY BELOW FINISHED FLOOR BUILDING CONDUIT CIRCUIT BREAKER CIRCUIT COLUMN CONCRETE CONSTRUCTION CONTRACTOR CABLE TELEVISION DRAWING ELECTRICAL CONTRACTOR EXHAUST FAN DOWN ELECTRIC/ELECTRICAL ELECTRICAL METALLIC TUBING EQUIPMENT EXISTING FIRE ALARM FINISHED FLOOR FLOOR/FLOORING GROUND GENERAL CONTRACTOR GROUND FAULT INTERRUPT HEAVY DUTY HORSEPOWER INTERMEDIATE METAL CONDUIT		UON	UNLESS OTHERWISE NOTED
HD	HEAVY DUTY		UT	UNDERGROUND TELEPHONE
HP	HORSEPOWER		V	VOLTS/VOLTAGE
IMC	INTERMEDIATE METAL CONDUIT		VA	VOLT-AMPERES

B	RANCH CIR	CUI	Γ۷	VIRE	E AND	CON	DU	IT SCHEDU	JLE
NOT A.	T E: PROVIDE INDIVIDUAL N CONDUIT G — GRO				CIRCUIT. NO	SHARED NI			
MARK	WIRE AND CONDUIT	SYSTEM	MARK	WIRE A	ND CONDUIT	SYSTEM	MARK	WIRE AND CONDUIT	SYSTEM
①	2#12, 1/2"C.	LN	3	2#4, 1	#8G., 1"C.	LLG	(61)	3#1/0, 1#6G., 2" C.	LLNG

WITH WITHOUT WEATHER PROOF TRANSFORMER

ESC-19

Α.														
C -	- CONDUIT G - GROU	JND	L.	- LINE OR PHASE	N – NE	UTRA								
MARK	WIRE AND CONDUIT	SYSTEM	MARK	WIRE AND CONDUIT	SYSTEM	MARK	WIRE AND CONDUIT	SYSTE						
1	2#12, 1/2"C.	LN	3	2#4, 1#8G., 1"C.	LLG	61	3#1/0, 1#6G., 2" C.	LLNG						
2	2#12, 1#12G., 1/2" C.	LNG	3	3#4, 1" C.	ш	62	3#1/0, 1#6G., 2" C.	LLLG						
3	2#12, 1#12G., 1/2" C.	LLG	3	3#4, 1#8G., 1" C.	LLNG	63)	4#1/0, 1#6G., 2" C.	LLLNG						
4	3#12, 1/2" C.	LLL	34	3#4, 1#8G., 1" C.	LLLG	64)	2#2/0, 1 1/2" C.	LN						
(5)	3#12, 1#12G., 1/2" C.	LLNG	35)	4#4, 1#8G., 1 1/4" C.	LLLNG	65	2#2/0, 1#4G., 1 1/2"C.	LNG						
6	3#12, 1#12G., 1/2" C.	LLLG	36	2#3, 1" C.	LN	66)	2#2/0, 1#4G., 1 1/2" C.	LLG						
7	4#12, 1#12G., 1/2" C.	LLLNG	3	2#3, 1#8G., 1"C.	LNG	67)	3#2/0, 1 1/2" C.	LLL						
8	2#10, 1/2"C.	LN	38	2#3, 1#8G., 1" C.	LLG	68)	3#2/0, 1#4G., 2" C.	LLNG						
9	2#10, 1#10G., 1/2" C.	LNG	39	3#3, 1" C.	LLL	69	3#2/0, 1#4G., 2" C.	LLLG						
100	2#10, 1#10G., 1/2" C.	LLG	(2)	3#3, 1#8G., 1 1/4" C.	LLNG	70	4#2/0, 1#4G., 2" C.	LLLNG						
1	3#10, 1/2" C.	LLL	(1	3#3, 1#8G., 1 1/4" C.	LLLG	71)	2#3/0, 1 1/2" C.	LN						
12	3#10, 1#10G., 1/2" C.	LLNG	42	4#3, 1#8G., 1 1/4" C.	LLLNG	72	2#3/0, 1#4G., 2" C.	LNG						
13	3#10, 1#10G., 1/2" C.	LLLG	43	2#2, 1"C.	LN	73)	2#3/0, 1#4G., 2" C.	LLG						
14)	4#10, 1#10G., 1/2" C.	LLLNG	44	2#2, 1#8G., 1" C.	LNG	74)	3#3/0, 2" C.	LLL						
15	2#8, 1/2" C.	LN	(45)	2#2, 1#8G., 1" C.	LLG	75)	3#3/0, 1#4G., 2" C.	LLNG						
16)	2#8, 1#10G., 3/4" C.	LNG	4	3#2, 1 1/4" C.	ш	9	3#3/0, 1#4G., 2" C.	LLLG						
17	2#8, 1#10G., 3/4" C.	LLG	4	3#2, 1#8G., 1 1/4" C.	LLNG	0	4#3/0, 1#4G., 2 1/2" C.	LLLNG						
18	3#8, 3/4" C.	LLL	48	3#2, 1#8G., 1 1/4" C.	LLLG	(82)	2#4/0, 2" C.	LN						
19	3#8, 1#10G., 3/4" C.	LLNG	(9)	4#2, 1#8G., 1 1/4" C.	LLLNG	79	2#4/0, 1#4G., 2" C.	LNG						
20	3#8, 1#10G., 3/4" C.	LLLG	50	2#1, 1 1/4" C.	LN	8	2#4/0, 1#4G., 2" C.	LLG						
21)	4#8, 1#10G., 1" C.	LLLNG	(5)	2#1, 1#6G., 1 1/4" C.	LNG	81)	3#4/0, 2" C.	LLL						
22	2#6, 3/4" C.	LN	52	2#1, 1#6G., 1 1/4" C.	LLG	82)	3#4/0, 1#4G., 2 1/2" C.	LLNG						
23	2#6, 1#10G., 3/4" C.	LNG	53	3#1, 1 1/2" C.	LLL		3#4/0, 1#4G., 2 1/2" C.	City Control of the C						
24)	2#6, 1#10G., 3/4" C.	LLG	54	3#1, 1#6G., 1 1/2" C.	LLNG	84)	4#4/0, 1#4G., 2 1/2" C.	LLLNG						
25	3#6, 3/4"C.	Щ	(5 5)	3#1, 1#6G., 1 1/2" C.	LLLG									
26	3#6, 1#10G., 3/4" C.	LLNG	(56)	4#1, 1#6G., 1 1/2" C.	LLLNG			n e						
27	3#6, 1#10G., 3/4" C.	LLLG	57	2#1/0, 1 1/4" C.	LN									
28)	4#6, 1#10G., 1" C.	LLLNG	58	2#1/0, 1#6G., 1 1/2" C.	LNG		The state of the s	- Marriage						
29	2#4, 3/4" C.	LN	59	2#1/0, 1#6G., 1 1/2"C.	LLG									
30	2#4, 1#8G., 1" C.	LNG	(3#1/0, 1 1/2" C.	LLL									

DEVICE SYMBOL SCHEDULE

ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS. ALL DEVICE PART NUMBERS ARE HUBBELL UNLESS OTHERWISE NOTED.

SYMBOL	DESCRIPTION	REMARKS
ф	SINGLE RECEPTACLE 20A/120V 16" AFF UON	HBL 5361-I
€	DUPLEX RECEPTACLE 20A/120V 16"AFF UON	CR20-I
υ 💝=	DUPLEX RECEPTACLE WITH DUAL USB 20A/120V 16" AFF UON	USB20X2W
⊝ =	DUPLEX RECEPTACLE 20A/120V 16" AFF UON WITH GROUND FAULT INTERRUPTER	GF20ILA
IG ⊖ =	DUPLEX RECEPTACLE 20A/120V 16" AFF UON WITH ISOLATED/INSULATED GROUND	CR5352IG
⊕	FOURPLEX RECEPTACLE 20A/120V 16" AFF UON	(2) CR20-I
ЮІ	CLOCK RECEPTACLE 120V 96" AFF UON	HBL 5235
€	SPECIAL PURPOSE RECEPTACLE 16" AFF SEE PLANS FOR DETAILS	
•	CEILING MOUNTED DUPLEX RECEPTACLE 20A/120V (FLUSH)	CR20-I
₽	DUPLEX RECEPTACLE 20A/120V MOUNTED HORIZONTALLY 48" AFF UON	CR20-I
Р ∰=	FOURPLEX RECEPTACLE FOR PROJECTOR	
WP 🗲	WEATHER/TAMPER-RESISTANT DUPLEX RECEPTACLE WITH "IN-USE" COVER 20A/120V 18"AFF UON	GFTR20I/ WP26M
\$	8" ABOVE COUNTER — GFI	
sc ⊖=	DUPLEX RECEPTACLE W/ SURGE SUPPRESSION 20A/120V 16" AFF UON	IG5362-SA
s ⊜=	SAFETY TYPE DUPLEX RECEPTACLE 20A/120V 16" AFF UON	CR20ITR
0	DUPLEX RECEPTACLE, FLOOR MOUNTED FLUSH	CR20-I,PFBRG1 SB3083,S3825
•	FOURPLEX RECEPTACLE, FLOOR MOUNTED FLUSH	(2) HBL-5362-I, PFBRG2 SB3084, (2)S3825
(j=	EXISTING DUPLEX RECEPTACLE	
€)=	EXISTING FOURPLEX RECEPTACLE	
\$ =	EXISTING 208V RECEPTACLE	
\$	SINGLE POLE SWITCH 20A, 48"AFF UON	CS120-I
\$3	THREE-WAY SWITCH 20A, 48"AFF UON	CS320-I
\$4	FOUR-WAY SWITCH 20A, 48"AFF UON	CS1224-I
\$ ^K	SINGLE POLE KEY OPERATED SWITCH 20A, 48"AFF UON	HBL 1221-RKL
\$	DIMMER SWITCH, 48"AFF UON, SEE PLANS FOR DETAILS	
\$ ^P	SWITCH WITH PILOT LIGHT, 48"AFF UON	HBL1221-PL
\$ ²	TWO POLE SWITCH 20A, 48"AFF UON	CS1222-I
\$ [†]	TIMER SWITCH, 48"AFF UON	INTERMATIC FF60MC
\$ ^F	FAN SWITCH, 48"AFF UON	RF51
\$ir	WALL MOTION SENSOR: 48" AFF UON, (IR) INFRARED	WS1277-I
\$us	WALL MOTION SENSOR: 48" AFF UON, (US) ULTRASONIC	AU1277l1
\$ _{DT}	WALL MOTION SENSOR: 48" AFF UON, (DT) DUAL TECHNOLOGY	AD1277-I1
Mus	MOTION SENSOR: US (ULTRASONIC)	ATU2000C
MIR	MOTION SENSOR: IR (INFRARED)	ATP1500C
M _{DT}	MOTION SENSOR: DT (DUAL TECHNOLOGY)	ATD2000C

TELECOMMUNICATION/DATA SYMBOL SCHEDULE

- ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS.
- PROVIDE 3/4" CONDUIT TO ABOVE CEILING WITH PULLSTRING AND PLASTIC BUSHING FOR ALL DEVICES,
- USE 4" x 4" x 2 1/8" JUNCTION BOX WITH SINGLE GANG PLASTER RING FOR ALL DEVICES.
- ALL CABLING BY OWNER/ OTHERS.

10 FEET SERVICE LOOP WITH DATA BISCUIT BOX ON END ABOVE CEILING, TIE OFF TO NEAREST JOIST. FINAL INSTALL OF AP DEVICE BY DISTRICT.

SYMBOL	DESCRIPTION	REMARKS
4	TELEPHONE OUTLET	
4	TELEPHONE OUTLET, FLOOR MOUNTED FLUSH	
₩	TELEPHONE OUTLET, WALL MOUNTED	
4	COMBINATION SINGLE VOICE TELEPHONE/DUAL DATA	
4	COMBINATION SINGLE VOICE TELEPHONE/DUAL DATA, FLOOR MOUNTED FLUSH	
Ø	DUAL DATA OUTLET	
	DUAL DATA OUTLET, FLOOR MOUNTED FLUSH	
0	DUAL DATA OUTLET, CEILING MOUNTED FLUSH	
€	TELEVISION OUTLET	
HMR	MUDRING WITH 3-PULL STRINGS TO ABOVE CEILING	
	SINGLE DATA DROP FOR WIRELESS ACCESS POINT, (WALL MOUNT)	
	SINGLE DATA DROP FOR WIRELESS ACCESS POINT, (CEILING MOUNT)	1
₩)	AUDIO/VISUAL WALL MOUNTED OUTLET	

GENERAL NOTES

- THE CONTRACTOR IS TO VISIT THE SITE PRIOR TO BID TO FAMILIARIZE HIMSELF WITH ALL CONDITIONS AS THEY EXIST. SUBMISSION OF BID INDICATES THE CONTRACTOR'S UNDERSTANDING OF EXISTING CONDITIONS AND HIS WILLINGNESS TO WORK WITH THESE CONDITIONS. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED DUE TO LACK OF COORDINATION WITH EXISTING CONDITIONS OR OTHER TRADES.
- CONTRACTOR IS TO REVIEW AND COMPARE ALL DRAWINGS SO ALL WORK IN THEIR RESPECTIVE TRADE IS INCLUDED IN BID. EACH CONTRACTOR SHALL INCLUDE ALL MATERIALS AND INSTALLATION REQUIRED FOR HIS PARTICULAR TRADE AFTER COMPLETE REVIEW OF ALL CONTRACT DRAWINGS AND SPECIFICATIONS.
- ALL WORK SHALL COMPLY WITH THE CURRENT APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. FOLLOW RECOMMENDED PRACTICES AS SET DOWN BY NFPA, BUILDING CODE, MECHANICAL CODE, PLUMBING CODE, NATIONAL ELECTRICAL CODE, ADA AND OSHA, AS THEY APPLY TO THIS PROJECT, EXCEPT IN CASES WHERE LOCAL STATUTES GOVERN. THE CONTRACTOR SHALL VERIFY WITH AUTHORITY HAVING JURISDICTION THE LATEST ADOPTED LOCAL CODES, ORDINANCES AND AMENDMENTS THAT APPLY TO THIS PROJECT.
- THE ELECTRICAL CONTRACTOR SHALL VERIFY SIZES OF BREAKERS, FUSES, WIRES, ETC., FOR ALL EQUIPMENT PROVIDED AND REPORT DISCREPANCIES TO THE ENGINEER/ARCHITECT PRIOR TO INSTALLATION OF CONDUIT. COORDINATE WITH MECHANICAL/ELECTRICAL COORDINATION SHEET PROVIDED BY MECHANICAL CONTRACTOR FOR
- HOMERUNS SHALL BE COORDINATED WITH PANELBOARDS. ALL WIRING AND CONDUIT SHALL BE CONCEALED, EXCEPT IN ELECTRICAL ROOMS AND EXPOSED STRUCTURE AREAS.
- ALL WIRING SHALL BE FREE OF SHORTS AND GROUNDS. NO WIRING SHALL BE LOADED BEYOND THE PERMITTED AMPACITIES ALLOWED BY CURRENT N.E.C. NO ALUMINUM WIRING ALLOWED.
- MINIMUM WIRE/CONDUIT SIZES, EXCEPT FOR CLASS 2 LOW VOLTAGE CIRCUITS, ARE #12 AWG COPPER IN 1/2" CONDUIT. WHERE THE DISTANCE BETWEEN THE SUPPLYING PANEL AND THE FIRST BRANCH CIRCUIT RECEPTACLE OR LIGHT FIXTURE IS MORE THAN 100 FEET, UP SIZE CONDUCTOR TO ALLOW FOR MAXIMUM OF 3% VOLTAGE DROP FOR ACTUAL ROUTING OF CONDUITS TO DEVICE.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO MAKE A COMPLETE AND WORKABLE SYSTEM.
- CONFIRM THE EXACT LOCATION AND MOUNTING HEIGHTS OF LIGHTING FIXTURES WITH ARCHITECT BEFORE ROUGH-IN. COORDINATE REQUIRED CLEARANCES ABOVE FIXTURES WITH OTHER TRADES.

NOTIFY ARCHITECT/ENGINEERS OF ANY DIMENSIONAL PROBLEMS.

- PROVIDE A TYPED PANEL DIRECTORY FOR ALL PANELBOARDS INDICATING FINAL INSTALLED CONDITION. CIRCUIT LABELING SHALL AGREE WITH EQUIPMENT DESIGNATIONS AND OWNERS FINAL ROOM NUMBERS.
- K. LABEL ALL RECEPTACLES AND LIGHT SWITCHES WITH CIRCUIT NUMBER USING AN ELECTRONIC LABELER (BLACK ON
- THE CONTRACTOR IS TO LAY OUT SERVICE ENTRANCE AND ELECTRIC ROOMS TO SCALE WITH ACTUAL GEAR TO BE INSTALLED TO ENSURE PROPER FIT AND CLEARANCES BEFORE INSTALLATION. COORDINATE ALL SERVICE

CLEARANCE REQUIREMENTS WITH LOCAL UTILITY COMPANY. PROVIDE A 1/4" SCALE (MINIMUM) SHOP DRAWING.

- M. COORDINATE AND WIRE ALL DOOR HOLD OPEN DEVICES, AS REQUIRED. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS. ROUTE 120 VOLT POWER FROM NEAREST AVAILABLE CIRCUIT AS REQUIRED. PROVIDE ALL WIRING NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
- N. CONDUITS ROUTED TO ROOF SHALL BE INSTALLED IN SAME ROOF JACK AS MECHANICAL ELEMENTS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR
- SHALL PROVIDE ROOF JACK WHERE NO MECHANICAL ELEMENTS EXIST. PROVIDE SLEEVES FOR SPECIAL SYSTEMS ABOVE EACH DOOR INTO A RATED EGRESS CORRIDOR, (1 - 2" AND 3 -
- 3/4"). FIRE SEAL ENDS AND UNUSED SLEEVES SHALL HAVE A SCREW CAP INSTALLED ON BOTH SIDES. USE THREADED CONDUIT. ALL RECEPTACLES SERVING ELECTRIC WATER COOLERS SHALL BE LOCATED AT A HEIGHT SO AS NOT TO BE VISIBLE
- AFTER INSTALLATION OF EWC. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT BEING PROVIDED. PROTECT
- Q. ALL CONDUITS ROUTED BELOW FINISHED FLOOR SHALL BE RUN BELOW THE GRADE BEAMS. CONDUITS AND MULTIPLE CONDUITS SHALL NOT PENETRATE GRADE BEAMS UNLESS COORDINATED WITH STRUCTURAL ENGINEER. OBTAIN WRITTEN APPROVAL FROM STRUCTURAL ENGINEER PRIOR TO BEGINNING WORK.
- R. ALL EXPOSED CONDUIT SHALL BE RUN PARALLEL AND PERPENDICULAR TO STRUCTURE AND BUILDING LINES. COORDINATE FINAL CONDUIT ROUTING PATH WITH ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
- S. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL 120 VOLT WIRING AND CONNECTIONS REQUIRED TO RELAY REQUIREMENTS WITH FIRE ALARM CONTRACTOR. CONNECT TO NEAREST AVAILABLE UNSWITCHED CIRCUIT UNLESS OTHERWISE INDICATED ON DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL CONNECT MOTORIZED BACK DRAFT DAMPERS FOR EXHAUST FANS FROM CIRCUIT FEEDING FAN. PROVIDE ALL MATERIAL AND LABOR TO MAKE CONNECTIONS.
- U. ELECTRICAL CONTRACTOR SHALL WIRE ALL EXHAUST FANS TO BE CONTROLLED PER "EXHAUST FAN SCHEDULE" ON MECHANICAL SHEET. ELECTRICAL CONTRACTOR TO PROVIDE ALL RELAYS, CONTACTORS, SPRING WOUND TIMERS, ETC., AS REQUIRED PER SCHEDULE TO OPERATE AND CONTROL EXHAUST FAN. IF NO CONTROL IS SPECIFIED, EXHAUST FAN SHALL ENERGIZE WHEN LIGHTS IN ANY ROOM IT SERVES ARE POWERED ON. REFERENCE DETAIL ON ELECTRICAL SHEET FOR ADDITIONAL INFORMATION.
- V. ELECTRICAL CONTRACTOR TO SEAL ALL PENETRATIONS OF ELECTRICAL WORK IN FIRE AND SMOKE RATED
- W. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECTING MEANS FOR ALL EQUIPMENT PER N.E.C. UNLESS OTHERWISE NOTED.
- X. COORDINATE ALL DEVICES IN MILLWORK WITH ARCHITECTURAL MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN.
- Y. SENSOR OPERATED PLUMBING DEVICES: PLUMBING CONTRACTOR TO PROVIDE LOW VOLTAGE TRANSFORMERS FROM MANUFACTURER. ELECTRICAL CONTRACTOR IS TO PROVIDE ALL OTHER MATERIALS AND LABOR FOR COMPLETE INSTALLATION.
- SPRAY PAINT JUNCTION BOXES RED FOR FIRE ALARM SYSTEM. ALL OTHER SPECIAL SYSTEM JUNCTION BOXES TO BE PAINTED WHITE.
- AA. DO NOT HANG ANY FIXTURES, EQUIPMENT OR CONDUIT FROM ROOF DECK.
- BB. LABEL ALL JUNCTION BOXES WITH CIRCUIT NUMBERS.
- CC. IDENTIFY RECEPTACLE CIRCUITS IN PANELBOARDS TO INDICATE FINAL ROOM NUMBERS. VERIFY FINAL ROOM NUMBERS PRIOR TO TYPING PANELBOARD SCHEDULES.
- DD. MECHANICALLY FASTEN ALL LABELS TO EQUIPMENT.
- EE. ELECTRICAL CONTRACTOR TO OBTAIN "MECH/ELEC COORDINATION SHEET" FILLED OUT FROM MECHANICAL CONTRACTOR. THIS SHEET IS TO BE INCLUDED WITH ELECTRICAL GEAR/PANELBOARD SUBMITTAL. SUBMITTAL WILL NOT BE CHECKED WITHOUT THIS FORM INCLUDED.
- FF. ELECTRICAL CONTRACTOR IS TO PROVIDE ROUGH-IN FOR ALL MECHANICAL CONTROL DEVICES IN WALLS AND PENETRATIONS FOR CONTROL WIRES TO EXTERIOR UNITS. COORDINATE ALL LOCATIONS WITH MECHANICAL CONTRACTOR AND MECHANICAL SHEETS.
- GG. DISCONNECTS MOUNTED ABOVE CEILING MUST BE MOUNTED TO BE READILY ACCESSIBLE NEAR UNIT. HANDLE TO BE NO MORE THAN 36" ABOVE CEILING GRID.
- HH. ALL EXTERIOR DISCONNECTS ARE TO BE MOUNTED BELOW LINE OF SIGHT OF A SCREEN WALL OR IF SINGLE DISCONNECT, LEVEL WITH TOP OF CONDENSER. VERIFY LOCATION WITH ARCHITECT/ENGINEER PRIOR TO



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8 PROJECT PHASE

BID - 8/10/2017

REVISIONS

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CITY OF DEER PARK Date Received

AUG 11 2017

ENGINEERING DEPARTMENT

SCHEDULES, NOTES, AND

LEGENDS - ELECTRICAL



REFERENCE GENERAL NOTES O SHEETS M1.1, P1.1 AND E1.

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HCE job no.: 17-026

A. ELECTRICIAN TO PROVIDE 120V POWER TO ALL EQUIPMENT FROM NEAREST PANEL HAVING CAPACITY, UNLESS OTHERWISE NOTED.

ELECTRICAL CONTRACTOR IS TO PROVIDE ALL PARTS AND LABOR TO MAKE FINAL CONNECTIONS TO ALL EQUIPMENT SHOWN IN CONTRACT DOCUMENTS. POWER MAY BE SHOWN IN GENERAL LOCATION. IT IS EXPECTED THAT THE ELETRICAL CONTRACTOR COORDINATE FINAL LOCATION FOR ROUGH-IN AND CONNECTION REQUIREMENTS WITH EXACT EQUIPMENT BEING INSTALLED. THESE ITEMS INCLUDE, BUT NOT LIMITED TO, BOOK SECURITY, EXHAUST FANS, KILNS, HAND DRYERS, SENSOR OPERATED PLUMBING DEVICES, ELECTRIC OVERHEAD DOORS, FIRE SMOKE DAMPERS, AIR PURIFICATION UNITS, ETC.

MOTION SENSORS

PROVIDE MOTION SENSORS AS SHOWN ON PLANS. PROVIDE DUAL TECHNOLOGY MOTION SENSORS IN EVERY ROOM OVER 250 SQ FT. WIRE SO THAT MOTION SENSOR ACTIVATES SWITCHES ON WALL

POWER FOR SPECIAL SYSTEMS POWER SUPPLIES

ELECTRICAL CONTRACTOR TO PROVIDE POWER TO ALL SECURITY, FIRE ALARM, ACCESS CONTROL, ETC. POWER SUPPLIES. COORDINATE EXACT LOCATION WITH SPECIAL SYSTEMS CONTRACTOR AND FLOOR PLANS. PROVIDE DEDICATED LOW VOLTAGE CIRCUIT TO NEAREST PANEL HAVING CAPACITY

2. LABEL ALL SPECIAL SYSTEMS POWER SUPPLIES WITH PANEL AND CIRCUIT NUMBERS.

SENSOR OPERATED PLUMBING DEVICES

PLUMBING CONTRACTOR TO PROVIDE LOW VOLTAGE TRANSFORMERS FROM MANUFACTURER. ELECTRICAL CONTRACTOR IS TO PROVIDE ALL OTHER MATERIALS AND LABOR FOR COMPLETE INSTALLATION.

DISCONNECT SWITCH SCHEDULE

REMARKS

COORDINATE FINAL FUSE SIZES WITH EQUIPMENT BEING PROVIDED PRIOR TO ROUGH-IN. WHEN THE LENGTH OF THE SECONDARY CONDUCTORS OF ANY TRANSFORMER EXCEEDS TEN FEET, PROVIDE AN ENCLOSED CIRCUIT BREAKER OR FUSED DISCONNECT WITHIN TEN FEET OF THE TRANSFORMER SECONDARY TERMINALS IN ACCORDANCE WITH NEC ARTICLE 240-21(C)(2). THIS OVERCURRENT DEVICE SHALL HAVE AN AMP RATING EQUAL TO THE AMP RATING OF THE PANEL BEING SERVED. THE PANEL BEING FED MAY BE CHANGED TO MAIN LUG ONLY.

PROVIDE LUG KITS AND/OR WIRING GUTTERS FOR PANELS WITH OVERSIZED CONDUCTORS DUE TO VOLTAGE DROP AND/OR DISTANCE. MAKE CONNECTIONS IN ACCORDANCE WITH THE N.E.C.

PROVIDE SHOP DRAWINGS OF ALL ELECTRIC ROOMS INDICATING ALL PANEL, TRANSFORMER AND DISCONNECT LOCATIONS. ELECTRICAL EQUIPMENT MAY SHIFT IN LOCATION TO INSURE PROPER CLEARANCES.

PROVIDE DISCONNECTING MEANS FOR ALL EQUIPMENT PER N.E.C.

DISCONNECTS MOUNTED ABOVE CEILING MUST BE MOUNTED TO BE READILY ACCESSIBLE NEAR UNIT. HANDLE TO BE NO MORE THAN 36" ABOVE CEILING GRID.

ALL EXTERIOR DISCONNECTS ARE TO BE MOUNTED BELOW LINE OF SIGHT OF A SCREEN WALL OR IF SINGLE DISCONNECT, LEVEL WITH TOP OF CONDENSER. VERIFY LOCATION WITH ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.

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	VC	OLTA	AGE				A	MP	ERE	S	RATI	NG								PO	LES			ENC	CLOS	URE	FU	SES		REMARKS
MARK	120	240	277	480	1 PHASE	3 PHASE	30	. 09	100	200	400	009	800	1200	1600	2000	2500	3000		1	2	3	S/N	NEMA 1	NEMA 3R	NEMA	NON-FUSED	FUSE SIZE	FUSE CLASS	
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4																														
(5)		10																												

SPECIAL SYSTEMS SCOPE

FIRE ALARM SYSTEM

1. NONE

TECHNOLOGY

1. NONE OR BY OWNER

ACCESS/ CONTROL SECURITY

1. NONE OR BY OWNER

HVAC CONTROLS DDC

NLIGHT - DEVICE SYMBOL SCHEDULE

ALL SYMBOLS DO NOT NECESSARILY APPEAR ON THESE DRAWINGS. ALL DEVICE PART NUMBERS ARE NLIGHT UNLESS OTHERWISE NOTED.

THESE DEVICES SHOULD BE USED IN ALL AREAS TO BE CONTROLLED BY NLIGHT.

MOTION SENSOR: WHERE MOTION SENSORS ARE SHOWN ON THE PLANS. THAT INDICATES AREA SHOULD BE COVERED IN FULL BY MOTION SENSORS. IT IS UP TO MOTION SENSOR PROVIDER TO PROVIDE APPROPRIATE QUANTITY AND LAYOUT OF MOTION SENSORS FOR COMPLETE COVERAGE PROVIDE SHOP DRAWING AT SUBMITTAL PHASE.

PHOTOCELL: WHERE PHOTOCELLS ARE SHOWN ON PLANS OR IN TYPICAL DETAILS. IE:CLASSROOMS PHOTOCELL LOCATION AND QUANTITY SHOULD BE DETERMINED BY PHOTOCELL PROVIDER.

PHOTOCELLS ARE INTENDED TO DIM LIGHTS IN DAYLIGHT ZONES AS INDICATED BY IECC 2015.

IF MULTIPLE ZONE CONTROL IS INDICATED FOR A SPACE AND THOSE ZONES ARE NOT CLEAR TO MANUFACTURER TO PROVIDE A COMPLETE SET OF SHOP DRAWINGS INDICATING ALL ASPECTS OF

LIGHTING CONTROL AT A MINIMUM OF 1/8" = 1' SCALE WITH CLEAR DESCRIPTIONS AND LEGENDS FOR

SYMBOLS. BASIC COMPONENTS ARE CALLED FOR HERE, IT IS EXPECTED THAT MANUFACTURER PROVIDES ALL

COMPONENTS FOR A COMPLETE WORKABLE SYSTEM. FACTORY START-UP IS REQUIRED FOR ALL NLIGHT SPACES.

CONTRACTOR SHOULD SEND COMPLETE SET OF ELECTRICAL PLANS TO NLIGHT FACTORY REP TO

CONTRACTOR TO ASSUME ALL DEVICES INTER-CONNECTED WITH CAT-5 CABLE. PROVIDE ALL REQUIRED CABLING BETWEEN DEVICES.

SYMBOL	DESCRIPTION		REMARKS
\$ ^D	DIMMER		nPODM-DX
\$ ^{DT}	DUAL TECHNOLOGY WALL MOUNT MOTION AND DIMMING		nWSX-PDT-SA
\$ ^{c1}	ONE ZONE CONTROLLER, ON/OFF AND DIMMING		nPODM-DX
\$ ^{C2}	TWO ZONE CONTROLLER, ON/OFF AND DIMMING		nPODM-2P-DX
\$ ^{c3}	THREE ZONE CONTROLLER, 3 PRESET TOGGLE BUTTONS		
\$ ^{C4}	FOUR ZONE CONTROLLER, 4 PRESET TOGGLE BUTTONS		
M _{DT}	MOTION SENSOR, DT (DUAL TECHNOLOGY)	N =	nCM-PDT-9;nWV-PDT-16
(P)	PHOTOCELL		nCM-ADCX
		- 6 pt = 1 t =	
		200 A 190 A	1 1 N 9 N B

NLIGHT INTERIOR LIGHTING SCHEDULE

GENERAL NOTES:

FOR FIXTURES THAT ARE NOT NLIGHT COMPATIBLE, PROVIDE POWER PACKS TO ACHIEVE ZONING INDICATED ON PLANS.

AREAS WITH HIGH CEILINGS(25FT OR HIGHER). PROVIDE POWER PACKS TO ACHIEVE ZONING INDICATED ON PLANS. LOCATE POWER PACKS IN ACCESSIBLE LOCATION FROM LIGHTING PANEL SERVING CIRCUITS.

WHEN POWER PACKS ARE PROVIDED. CONTRACTOR MUST PROVIDE 0-10V DIMMING WIRES FROM POWER PACK TO FIXTURE FOR CONTROL IN LEIU OF CAT5 CABLE.

PROVIDE MOTION SENSORS AS SHOWN ON PLANS. PROVIDE DUAL TECHNOLOGY MOTION SENSORS IN **EVERY ROOM AS REQUIRED BY IEEC 2015.**

CONTROL STATION

ALL ROOMS SHALL HAVE A CONTROL STATION FOR CONTROL OF LIGHTS IN ROOM. IF NO CONTROL STATION TECHNOLOGY CONTROLLER FOR ROOMS SMALLER THAN 9' X 9'.

SPACE TYPE DESCRIPTION:

A. PROVIDE MOTION SENSOR AS SHOWN ON PLANS. WHEN MOTION IS NOT DETECTED LIGHTS SHOULD BE DIMMED TO 25% FOR 5 MIN THEN TO 0% IF NO ADDITIONAL MOTION IS DETECTED.

DISHWASHER

CIRCULATING FAN POWER

A. PROVIDE CONTROL STATIONS AS SHOWN ON PLANS.

B. ONE OVERALL ZONE TO CONTROL ALL LIGHTS IN ROOM. C. PROVIDE COMPLETE MOTION SENSOR COVERAGE, SHOP DRAWING REQUIRED.

SPECIAL SYSTEM SYMBOL SCHEDULE

THIS IS FOR GENERAL LOCATION ONLY. ALL DEVICES AND CABLING PER DISTRICT SPECIFICATIONS.

SYMBOL	DESCRIPTION	REMARKS
HHD)	HAND DRYER	

LIGHT FIXTURE SCHEDULE

GENERAL NOTES:

- A. CONFIRM CEILING TYPE AND CONSTRUCTION PRIOR TO ORDERING LIGHT FIXTURE. PROVIDE FLANGE KIT FOR PROPER INSTALLATION OF LAY-IN FIXTURE IN GYPSUM CEILING. PROVIDE FIXTURE TYPE 'H2' IN LIEU OF FIXTURE TYP 'A2' IN ROOMS WITH NO CEILING. CHAIN HANG AT 10' A.F.F.
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF WALL MOUNTED LIGHT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
- C. REFER TO ARCHITECTURAL REFLECTIVE CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURE.
- CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING LIGHT FIXTURES.
- E. 'E' DESIGNATION ADJACENT TO LIGHTING FIXTURE TYPE INDICATES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY PACK UNIT (LITHONIA PS1400 OR EQUAL). LIGHT FIXTURE SHALL BE SWITCHED, BATTERY PACK SHALL BE UNSWITCHED.
- F. 'N' DESIGNATION ADJACENT TO LIGHTING FIXTURE TYPE INDICATES FIXTURE SHALL BE PROVIDED WITH EMERGENCY BATTERY PACK UNIT (LITHONIA PS1400 OR EQUAL). LIGHT FIXTURE AND BATTERY PACK SHALL BE UNSWITCHED.
- G. FIXTURES SHALL HAVE A MAXIMUM OF TWO (2) LAMPS PER BALLAST.
- H. CONNECT ALL EXIT LIGHTING TO THE NEAREST UNSWITCHED CIRCUIT OR THE NEAREST EMERGENCY CIRCUIT.
- (*) PROVIDE UNIT PRICE FOR THIS FIXTURE. INCLUDE MATERIAL AND LABOR TO BE ADDED AT ANY TIME DURING THE PROJECT.

MARK	MANUFACTURERS CATALOG NUMBER	LAMPS NO. / TYPE / WATTS	FIXTURE VOLTS / WATTS	DESCRIPTION AND COMMENTS
J2	LITHONIA VAP LED-4000LM-FST-MD-MVOLT -1%DIMMING-35K-80CRI-N100	1/LED 5200L/42	MVOLT/42	ENCLOSED LED WET LOCATION STRIP WITH ENERGY SAVING LAMPS. HIGH IMPACT LENS. WHITE FINISH. 1%DIM, NLIGHT
J3	LITHONIA VAP LED-6000LM-FST-MD-MVOLT -1%DIMMING-35K-80CRI-N100	1/LED 6630/62	MVOLT/62	ENCLOSED LED WET LOCATION STRIP WITH ENERGY SAVING LAMPS. HIGH IMPACT LENS. WHITE FINISH. 1%DIM, NLIGHT
L1	LITHONIA LDN6-35-1000-L06-AR-MVOLT	1/LED 1000 LUMENS/18	MVOLT/18	6" LED DOWNLIGHT SEMI SPECULAR REFLECTOR, TRIM TO MATCH CANOPY OR SILVER. PROVIDE 'EL' BATTERY WHEN SPECIFIED.
T1 (led)	VISIONAIRE LIGHTING VSC-1-T2-32-530-4000K- UNV-WM-SL-PC120	1/LED ENGINES/54	MVOLT/54	SLIM ARCHITECTURAL WALL MOUNTED LED FIXTURE WITH DIE CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR WITH FULL CUTT-OFF, HIGH EFFICIENCY DRIVER. DARK BRONZE FINISH. COORDINATE FINAL HEIGHT WITH ARCHITECTURAL.
X1	LITHONIA LESW-1R-MVOLT-ELN	INCLUDED	MVOLT/5	LED SINGLE FACE EXIT SIGN WITH DIE CAST ALUMINUM HOUSING, EMERGENCY BATTERY PACK. WHITE FINISH.
Y1	LITHONIA ELM2—LED	INCLUDED	MVOLT/20	EMERGENCY EGRESS FIXTURE WITH POLYCARBONATE HOUSING, EMERGENCY BATTERY PACK AND
				AMMETER. WHITE FINISH. MOUNT FIXTURE ON WALL, AS HIGH AS POSSIBLE. CONNECT TO NEAREST UNSWITCHED 120 VOLT CIRCUIT.

CEILING FANS

CEILING FAN (CF-1, 2):

HUNTER ORIGINAL CLASSIC CEILING FAN MANUFACTURED BY HUNTER. 52" DIAMETER. PROVIDE PROPER LENGTH MOUNTING STEM FOR HEIGHT SPECIFIED ON PLANS. KEEP MANUFACTURER MINIMUM CLEARANCE BETWEEN FAN BLADES AND CEILING. FAN SPEED IS VARIABLE. FANS TO BE BROWN, BLADES BROWN, IF LIGHT KIT IS CALLED FOR MUST BE APPROVED BY ARCHITECT. CONTACT MIKE AT "TEXAS CEILING FAN" 512-477-3132. (QUANTITY PER PLANS). COORDINATE STEM LENGTHS WITH FINAL MOUNTING HEIGHT. PROVIDE \$100 ALLOWANCE PER LIGHT KIT. NO EXCEPTIONS ON FAN MODEL.

BROWN - # 23847 WHITE - #23845 BLACK - #23838

LIGHTING CONTACTOR SQ-D #LH-20

(120 VOLT) OR EQUAL, LOCATED IN-

ELECTRIC ROOM

DEMOIT #20	000		and the second second		- the control of the	
MARK NO.	STOCK/ MODEL NUMBER	MAX RPM	HP	VOLT/PH/AMPS	BLADE DIAMETER	WEIGHT
CF-1	HUNTER ORIGINAL		FRACTION	120/1/1.1	52"	30

DISAPPROVED



BID - 8/10/2017 CITY OF DEER PARK Date Received

PROJECT NUMBER

16123-00 DATE ISSUED

8/10/2017

AUG 1 1 2017

ENGINEERING DEPARTMENT

PROJECT PHASE

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BUILDING

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REFERENCE GENERAL NOTES ON SHEETS M1.1, P1.1 AND E1 FOR ADDITIONAL INFORMATION



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HCE job no.: 17-026

SCHEDULES -

ELECTRICAL

REFERENCE DISTRICT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PHOTOCELL, TORK #2001 (120 VOLT) MOUNTED ON ROOF AND ORIENTED TO THE NORTH, (ON/OFF AT 5 F.C.) HAND-OFF-AUTO SWITCH LOCATED IN ELECTRIC ROOM-NEXT TO CONTACTOR ELECTROMECHANICAL TIME CLOCK, 7-DAY ASTRONOMIC TORK 7200Z-

LOCATED NEXT TO CONTACTOR LIGHTING CONTACTOR DETAIL

EDE-11

CIRCUIT BREAKER PANELBOARD 'L1' **DEER PARK - SPENCERVIEW**

STANDARD NOTES:

PROVIDE BALANCED LOAD ON EACH PHASE. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. REFERENCE BRANCH CIRCUIT WIRE AND CONDUIT SCHEDULE.

NOTES: (THESE ITEMS APPLY ONLY WHERE SPECIFIED BELOW)

REFERENCE SPLIT SYSTEM/ROOFTOP ELECTRICAL CONNECTION SCHEDULE.

REFERENCE TRANSFORMER SCHEDULE. REFERENCE FAN POWERED BOX / VAV

CONNECTION SCHEDULE.

(e) PROVIDE WITH 200% NEUTRAL BUS AND WIRE.

(f) PROVIDE WITH GFCI BREAKER. (g) REFERENCE ASSOCIATED PANEL SCHEDULE. PROVIDE 6" PANEL EXTENSION AND CT'S AS NOTED.

(d) PROVIDE WITH SHUNT TRIP BREAKER.

120/208 VOLT, 3 PHASE, 4 WIRE, 400A, MCB, KA, RMS SYM, MOUNTED, NEMA 1 ENCLOSURE, S/N FEEDER: REFERENCE PANELBOARD CONNECTION SCHEDULE

СКТ		LOAD DESCRIPTION	WIRE/CONDUIT	KVA	C/B	C/B	KVA	WIRE/CONDUIT	LOAD DESCRIPTION	T	CKT
1	E	COVE HEATERS	2	1.5	20/1	80/2	16.0	31	AHU-1	E	2
3	E	COVE HEATERS	2	0.8	20/1	_			1 1		4
5	E	COVE HEATERS	2	1.5	20/1	70/2	13.3	17	AHU-2	E	6
7	E	COVE HEATERS	2	1.5	20/1	-	- 1		11 11		8
9	E	COVE HEATERS	2	0.8	20/1	45/2	5.9	17	HP-1	E	10
11	E	COVE HEATERS	2	1.5	20/1	-	- 1		11 11	Names excession Eastern Louis	12
13	E	EUH-1	5	3.3	20/2	35/2	4.3	10	HP-2	E	14
15		18 19		_			- 1		" "		16
17	E	EF-1, EF-2	2	0.5	20/1	20/1	0.2	2	RECEPT.	R	18
19	S	SPARE			30/2	20/1	0.2	2	RECEPT.	R	20
21		11 11		-		20/1	0.2	2	RECEPT.	R	22
23	L	EXTERIOR LIGHTING	2	0.5	20/1	20/1	1.0	2	RECEPT.	R	24
25	L	LIGHTING	2	1.2	20/1	20/1	1.0	2	RECEPT.	R	26
27	L	LIGHTING	2	0.7	20/1	20/1	1.0	2	RECEPT.	R	28
29	L	LIGHTING	2	0.3	20/1	20/1	1.0	2	RECEPT.	R	30
31	E	CEILING FANS	2	0.3	20/1	20/1	1.0	2	RECEPT.	R	32
33	E	CEILING FANS	2	0.3	20/1	20/1	1.0	2	RECEPT.	R	34
35	E	WATER HEATER	14	6.0	30/3	20/1	0.5	2	RECEPT.	R	36
37		11 11		-	41 1	20/1	0.5	2	RECEPT.	R	38
39		" "	-	T -		20/1	1.0	2	RECEPT.	R	40
41	E	EWC	2,(f)	1.0	20/1	20/1	1.0	2	RECEPT.	R	42
43	S	SPARE		-	20/1	20/1	1.0	2	RECEPT.	R	44
45	1	SPARE	_	_	20/1	20/1	1.0	2	RECEPT.	R	46
47	-	SPARE	-		20/1	20/1	1.0	2	RECEPT.	R	48
49	S	SPARE	-	-	20/1	20/1		<u>-</u>	SPARE	S	50
51	S	SPARE		_	20/1	20/1		No. of the last of	SPARE	S	52
53	S	SPARE	_	-	20/1	20/1			SPARE	S	54
55	S	SPARE			20/1	20/1	_	-	SPARE	S	56
57	S	SPARE	-	-	20/1	20/1			SPARE	S	58
59	S	SPARE		_	20/1	20/1	-	-	SPARE	S	60
ELEC	TRIC	CAL LOAD CALCULATIONS:		3		10					
		CONNECTED LOAD	DEMAND FACTOR			DEM	AND LO	DAD	REMARKS:		
LIGHT	ING	= 2.7 KVA	X 1.25	LIGHT	ING	=	3.4	KVA			
RECE	PTA	CLE = 12.7 KVA	NEC 220 - 14	RECE	PTACL	E =	11.3	KVA			
EQUIP	ME	NT = 58.5 KVA	X 1.0	EQUIF	MENT	=	58.5	KVA			
KITCH	EN	= 0.0 KVA	NEC 220 - 56	KITCH	EN	:	0.0	KVA			
SPAR	ES	= 0.0 KVA	X 0.5	SPAR	ES	AUTO CAN MARKA SERVICE	0.0	KVA			A 34
TOTAL		= 73.8 KVA		TOTAL	-		73.2	KVA		203	AMPS

EXTERIOR | CONCESSION

0 1 ELECTRICAL RISER DIAGRAM

RISER KEYED NOTES

- COORDINATE CONNECTION POINT WITH CIVIL SITE CONTRACTOR. REFERENCE CIVIL MEP PACKAGE FOR ALL ELECTRICAL EQUIPMENT UPSTREAM OF DISCONNECT.
- ONE SET 4#600 IN 4" CONDUIT.
- GROUND PER NEC 250. MINIMUM #3/0 GROUNDING ELECTRODE CONDUCTOR. PROVIDE CONTINUOUS CONDUCTOR TO BUILDING STEEL, WATER PIPE, EUPHER.
- ONE SET 4#600, #3G IN 4" CONDUIT.
- REFERENCE DISCONNECT SWITCH SCHEDULE
- REFERENCE PANEL BOARD SCHEDULE.

GENERAL DISCONNECT NOTES

- WHEN THE LENGTH OF THE SECONDARY CONDUCTORS OF ANY TRANSFORMER EXCEEDS TEN FEET, PROVIDE AN ENCLOSED CIRCUIT BREAKER OR FUSED DISCONNECT WITHIN TEN FEET OF THE TRANSFORMER SECONDARY TERMINALS IN ACCORDANCE WITH NEC ARTICLE 240-21(C)(2). THIS OVERCURRENT DEVICE SHALL HAVE AN AMP RATING EQUAL TO THE AMP RATING OF THE PANEL BEING SERVED. THE PANEL BEING FED MAY BE CHANGED TO MAIN LUG ONLY.
- PROVIDE LUG KITS AND/OR WIRING GUTTERS FOR PANELS WITH OVERSIZED CONDUCTORS DUE TO VOLTAGE DROP AND/OR DISTANCE. MAKE CONNECTIONS IN ACCORDANCE WITH THE NEC.
- REFERENCE "DISCONNECT SCHEDULE" FOR ADDITIONAL DISCONNECT INFORMATION.

SPLIT SYSTEM ELECTRICAL CONNECTION SCHEDULE

DEER PARK - SOCCER & SOFTBALL

17026

208/1

- A. COORDINATE ALL FUSE AND CIRCUIT BEAKER SIZES WITH MECHANICAL EQUIPMENT MANUFACTURES EQUIPMENT SUBMITTAL. OBTAIN A COPY OF THE MECH / ELEC COORDINATION SHEET FROM THE MECHANICAL CONTRACTOR PRIOR TO SUBMITTAL AND / OR RELEASING OF EQUIPMENT.
- B. WIRE CONDUIT LENGTHS LONGER THAN LISTED LENGTHS MUST ACCOUNT FOR VOLTAGE DROP.
- C. ALL UNITS TO BE PROVIDED WITH FUSED DISCONNECTS NO EXCEPTIONS.

2 STAGE HEAT PUMP SPLIT SYSTEM WITH VARIABLE SPEED BLOWER

		2H2	2H3	2H4	2H5			
INDO	OR	19.9	19.9	19.9	39.9			
INDOOR: VOLTAGE / PHASE	Promission Audition of Profession Communication (Profession Communication Communicat	208/1	208/1	208/1	208/1	gleenheeleeskeeleed erkeeleesteedagskeeleeskeeleeskeeleesk	handan dag bendengkan kendengkan kendengkan perimekendan daga bersebagi perimenban dan	den de gal egal anding dien den gloop heerdrood gest musiken de radeerd verden dien viereld
KVA		7.0	10.9	13.1	17.1			***************************************
MCA		41	64	77	100			
FUSED DISCONNECT (NEMA	1)	60	100	100	100			
MOCP		45	70	80	100	THE RESIDENCE OF THE PARTY OF T		
MINIMUM WIRE / CONDUIT S	IZE	i i						A THE RESERVE THE PROPERTY OF
LENGTH UP TO (FT)	125	24	31	31	38			
LENGTH UP TO (FT)	250	31	45	45	59	00000000000000000000000000000000000000	when the second	A Albanous Anna Caral Ca
LENGTH UP TO (FT)	375	38	52	59	66			
OUTDO	OOR	19.9	18.9	19.5	19.9			
OUTDOOR: VOLTAGE / PHAS	E	208/1	208/1	208/1	208/1			
KVA .		2.6	3.5	4.8	6.3			
MCA		15.3	20.8	28.3	36.8			
FUSED DISCONNECT (NEMA:	3R)	30	60	60	60	-		
MOCP		25	35	45	60			
MINIMUM WIRE / CONDUIT SI	IZE	â						
LENGTH UP TO (FT)	125	3	10	17	17			
LENGTH UP TO (FT)	250	17	24	24	31			
LENGTH UP TO (FT)	375	24	31	31	38			

2 STAGE HEAT PUMP SPLIT SYSTEM WITH MULTISPEED BLOWER

INDOOR UNIT KVA TOTAL=	24.0546
OUTDOOR UNIT KVA TOTAL=	8.37646
GRAND TOTAL KVA=	32.43106

				GRAND TO TAL RVA-	02.40100
UNIT MARK	UNIT TYPE	REMARKS	UNIT MARK	UNIT TYPE	REMARKS
AHU/HP-1	2H4		0	0	
AHU/HP-2	2H3			o l	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0	0	
0	0		0		
0	0		0	0	

GEAR MANUFACTURER TO PROVIDE COORDINATION STUDY, FAULT CURRENT ANALYSIS AND DETERMINE FINAL KAIC RATINGS FOR ALL GEAR.

UTILITY COMPANY CONTACT:

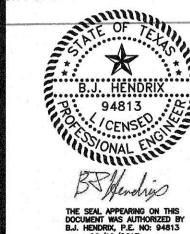
COORDINATE WITH CIVIL/ OWNER

UTILITY COMPANY TO DETERMINE SERVICE TRANSFORMER SIZES. DO NOT BEGIN ANY UTILITY WORK UNTIL UTILITY DRAWINGS HAVE BEEN ISSUED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE AVAILABLE FAULT CURRENT WHEN AVAILABLE.

THE ELECTRICAL RISER DIAGRAM IS SHOWN SCHEMATICALLY IN NATURE TO INDICATE THE RELATIONSHIP OF THE ELECTRICAL SYSTEM COMPONENTS. IT DOES NOT REFLECT THE ACTUAL ROUTING OF CONDUITS. CONTRACTOR SHALL DETERMINE OVERHEAD OR UNDERGROUND CONDUIT ROUTING. CONDUIT SHALL NOT BE ROUTED EXPOSED ON EXTERIOR WALLS EXCEPT OUT OF THE BOTTOM OF THE PANEL TO **RUN UNDER SLAB OR TO AN ADJACENT PANEL WITHIN 24"** EXTERIOR EXPOSED CONDUIT SHALL BE MINIMIZED.

APPROVED

☐ APPROVED AS NOTE DISAPPROVED



PROJECT PHASE BID - 8/10/2017

8

BUILDING

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PROJECT NUMBER

16123-00

DATE ISSUED

8/10/2017

SHEET TITLE

CITY OF DEER PARK Date Received

AUG 11 2017

ENGINEERING DEPARTMENT

SCHEDULES AND ONE LINE

DIAGRAM - ELECTRICAL



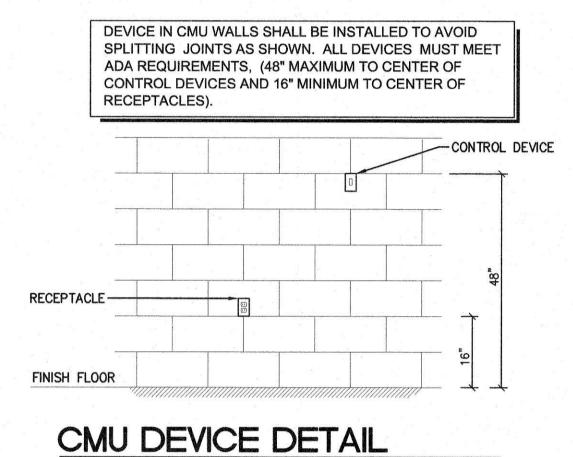
REFERENCE GENERAL NOTES ON

SHEETS M1.1, P1.1 AND E1.

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1102 s austin ave, suite 103 georgetown, tx 78626 ryan@modedc.us | www.modedc.us + 1 512 733 1150



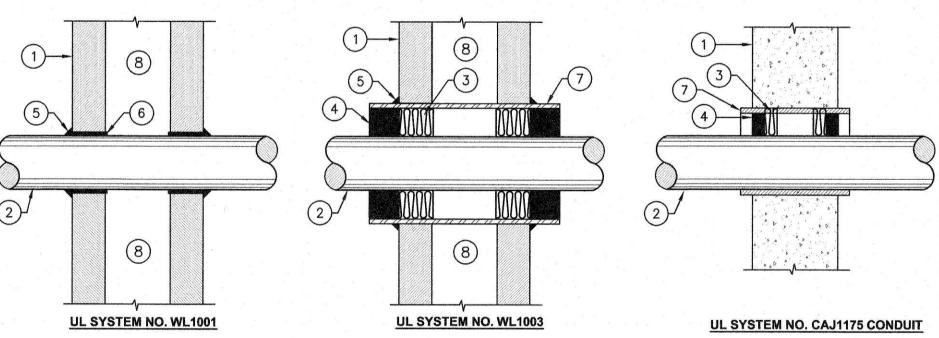
4

GROUND_ TERMINAL GROUND TO BOX -RECEPTACLE OUTLET RECEPTACLE GROUNDING DETAIL

CLOCKS, CLOCK OUTLETS, F/A HORNS
—AT 96" AFF, UON, COORDINATE WITH
ARCHITECT AND ELEVATIONS FIRE 🔲 F/A VISUAL ONLY OR AUDIBLE/VISUAL COMBINATION ALARM AT 80" TO CENTER AFF LIGHT SWITCHES, CALL BUTTONS, INTERCOM -STATIONS, F/A MANUAL PULL STATION, DIMMER CONTROLS AT 48" TO CENTER AFF UON RECEPTACLES, SWITCHES AND COMBINATIONS MOUNTED AT 3" FROM TOP OF BACKSPLASH TO BOTTOM OF -BACKSPLASH DEVICE UON DUPLEX, FOUR-PLEX, TELEPHONE, DATA,
-TELEVISION OUTLETS AT 16" AFF TO CENTER UON FINISHED FLOOR

MOUNTING HEIGHT DETAIL

NO SCALE EDE-10



KEYED NOTES

- (1) RATED WALL BARRIER
- 2 PIPE OR CONDUIT
- FORMING MATERIAL (MINERAL WOOL **BATT INSULATION**
- (4) FIRE CAULK
- FIRE CAULK CONTINUOUS BEAD AROUND PENETRATING ITEM
- (6) FIRE CAULK CONTINUOUSLY FILL ANNULAR SPACE BETWEEN PIPE OR CONDUIT THROUGHOUT THICKNESS OF WALL BOARD LAYERS
- SLEEVE FOR UL SYSTEM NO. WL1003, OPTIONAL FOR UL SYSTEM NO. CAJ1175
- 8 WALL CAVITY

GENERAL NOTES

EDE-59

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL RATED WALLS, FLOORS AND CEILINGS.
- REFERENCE SPECIFICATIONS FOR ADDITIONAL
- C. REFERENCE UL FIRE RESISTANCE DIRECTORY FOR

INFORMATION CONCERNING MATERIALS AND METHODS.

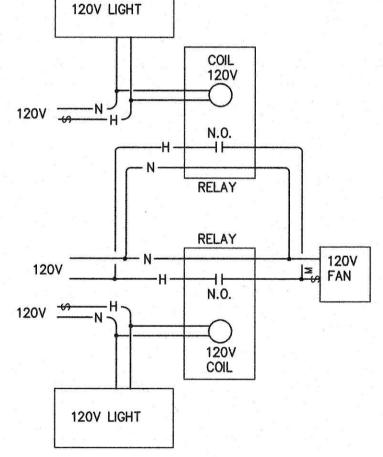
- ADDITIONAL DATA, INCLUDING WALL RATINGS FOR WHICH DETAILS ARE AND SUPPORT REQUIREMENTS.
- D. ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH UL SYSTEM NUMBER AND MANUFACTURER'S INSTRUCTIONS PROVIDED WITH MATERIALS.
- E. ONLY MATERIALS TESTED FOR SPECIFIC UL SYSTEM NUMBER MAY BE USED.
 - ANNULAR SPACE BETWEEN FIRE BARRIER SURFACE AND PENETRATING ITEM IS EXTREMELY CRITICAL. REFER TO PARTICULAR UL SYSTEM NUMBER AND FIRE RATING FOR THIS CRITERIA.

FAN, HEATER OR RHP 120V/240V LINE VOLTAGE CONTROL DIAGRAM NOTE* BREAK NEUTRAL WHEN 2 POLE THERMOSTAT IS USED. FAN, HEATER

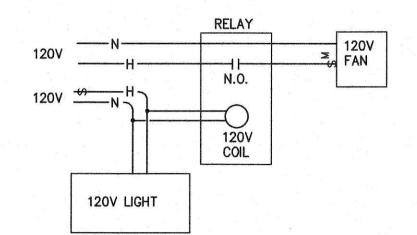
OR RHP 240V LINE VOLTAGE CONTROL DIAGRAM NOTE* MUST USE 2 POLE THERMOSTAT.

120V OR --- H -

240V

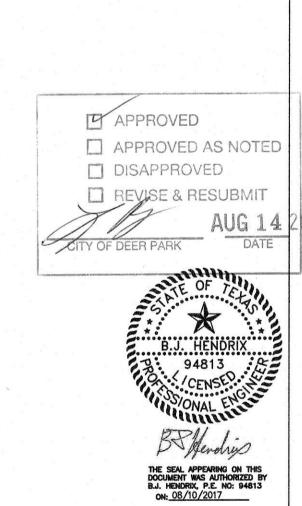


SINGLE 120V FAN CONTROLLED WITH 120V LIGHTS IN DIFFERENT ROOMS ADD 1 RELAY PER ADDITIONAL ROOM AS REQUIRED.



120V FAN CONTROLLED WITH 120V LIGHT ON SEPERATE CIRCUIT. IF FAN AND LIGHT ARE BOTH ON SAME CIRCUIT SIMPLE WIRE IN PARALLEL.

EXHAUST FAN/HEATER CONTROL SCALE: NONE



REFERENCE GENERAL NOTES ON SHEETS M1.1, P1.1 AND E1.1 FOR ADDITIONAL INFORMATION



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HCE job no.: 17-026

SHEET NUMBER

DOM BUILDING

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PROJECT PHASE

REVISIONS

BID - 8/10/2017

PROJECT NUMBER

16123-00

DATE ISSUED

8/10/2017

ELECTRICAL

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SOCCER FIELD I

CITY OF DEER PARK

Date Received

AUG 11 2017

ENGINEERING DEPARTMENT

TYPICAL CONDUIT PENETRATION

(FIRE RATED GYPSUM/STUD WALL ASSEMBLY AND CONCRETE WALL/FLOOR ASSEMBLY) EDE-96

KEYED NOTES

THESE NOTES APPLY TO THIS SHEET ONLY

- LOW VOLTAGE LIGHTING CONTROL BUTTON. REFERENCE MISCELLANEOUS EQUIPMENT SCHEDULE AND NLIGHT INTERIOR LIGHTING SCHEDULE.
- 2 FIELD COORDINATE EXACT MOUNTING HEIGHT OF EXTERIOR FIXTURES WITH ARCHITECT AT ROUGH-IN.
- 3 COORDINATE LIGHTS AND FANS TO AVOID STROBING. .

2

KX1 ⊢⊗

MDT

0 1 FLOOR PLAN - LIGHTING TITE (2)
SCALE: 1/4" = 1'-0"

S Y1

L1-27

MDT

MDT

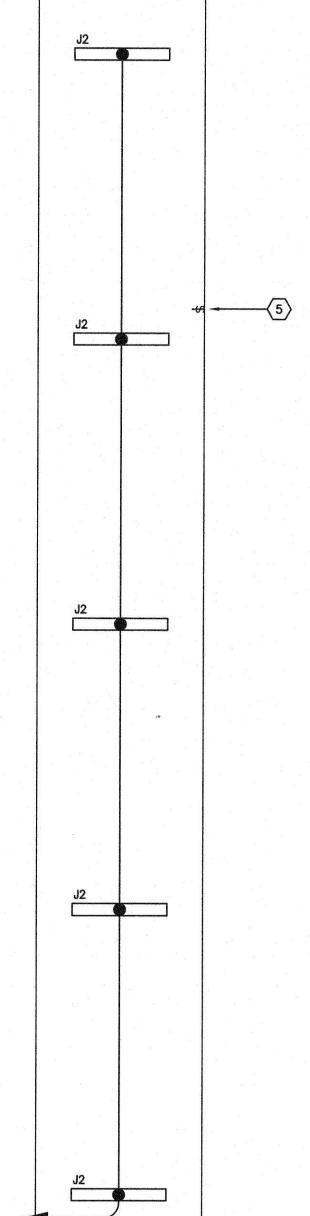
WOMEN

5

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L1-23

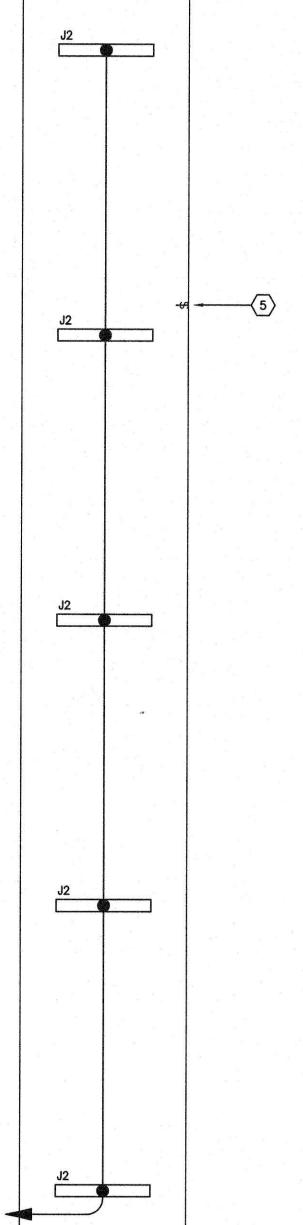
- REFERENCE LIGHTING CONTACTOR DETAIL FOR EXTERIOR LIGHTING CONTROL INFORMATION.
- 5 APPROXIMATE LOCATION OF MANUAL LIGHT SWITCH FOR MEZZANINE SERVICE LIGHTS AT TOP OF STAIRS TO MEZZANINE. COORDINATE FINAL LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.



02 MEZZANINE - LIGHTING
SCALE: 1/4" = 1'-0"



1 1 0 2 s austin ave, suite 103 georgefown, tx 78626 ryan@modedc.us www.modedc.us + 1 512 733 1150



RESTROOM BUILDING ☐ APPROVED AS NOT DISAPPROVED SIGN CONCE

PROJECT PHASE

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BID - 8/10/2017

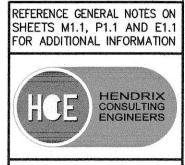
CITY OF DEER PARK Date Received

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EAST BLVD AND EAST 13TH ST., CITY

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DATE ISSUED

8/10/2017

SHEET TITLE

E-2.1

FLOOR PLAN -

3

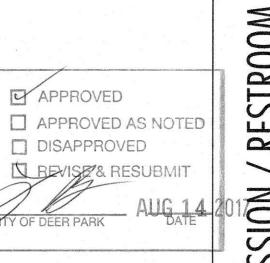
0 1 FLOOR PLAN - POWER SCALE: 1/8" = 1'-0"

KEYED NOTES

2

THESE NOTES APPLY TO THIS SHEET ONLY

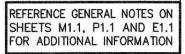
- FIELD COORDINATE PLACEMENT OF J-BOXES AND DISCONNECTING MEANS FOR COVE HEATERS WITH MECHANICAL CONTRACTOR. DISCONNECTING MEANS MAY BE A SNAP SWITCH AT EACH LOCATION AND SHALL BE LOCATED HIGH ON THE WALL AT THE END OF THE COVE HEATER.
 - TIME CLOCK PER LIGHTING CONTACTOR DETAIL. PROVIDE WITH NEMA 3R WEATHERPROOF ENCLOSURE.
- 3 COORDINATE FINAL RECEPTACLE LOCATIONS WITH MILLWORK PRIOR TO ROUGH-IN. REVIEW FINAL ARCHITECTURAL INTERIOR ELEVATIONS FOR FINAL LAYOUTS OF EQUIPMENT TO BE POWERED.
- 4 REFERENCE MECHANICAL FAN SCHEDULE FOR CONTROL OF EXHAUST FANS.
- COORDINATE DISCONNECT LOCATION WITH ALL TRADES PRIOR TO ROUGH-IN.
 REFERENCE DISCONNECT SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR ALL
 DISCONNECT SWITCHES.
- 6 FIELD COORDINATE PLACEMENT OF DISCONNECTING MEANS FOR WATER HEATERS.
- ONE 2" CONDUIT FOR SITE TECHNOLOGY. COORDINATE CONNECTION POINT WITH OWNER/ SITE CONTRACTOR.





REFERENCE MECHANICAL FAN SCHEDULE FOR EXHAUST FAN SWITCHING REQUIREMENTS

FOR LOCATIONS WHERE POWER AND DATA ARE SHOWN TOGETHER, DEVICE ROUGH-IN IS TO BE A MAXIMUM OF 6" APART. PROVIDE CADDY BRACKETS AS REQUIRED.





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HCE job no.: 17-026

SHEET NUMBER
of from eers.

E - 3.1

FLOOR PLAN -



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CONCESSION / RESTROOM BUILDING

PROJECT PHASE BID - 8/10/2017

CITY OF DEER PARK
Date Received

AUG 11 2017

ENGINEERING DEPARTMENT

REVISIONS

16123-00

DATE ISSUED 8/10/2017

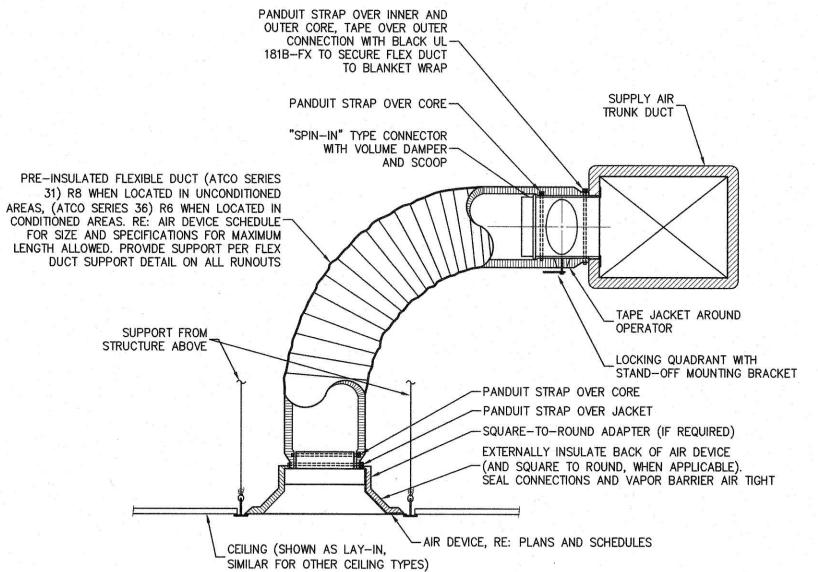
SHEET TITLE

POWER

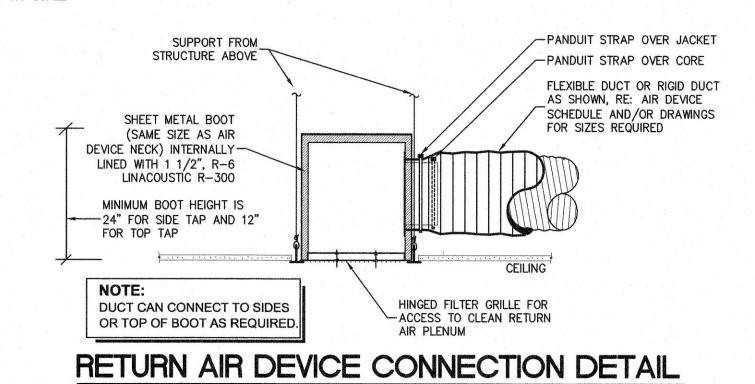
- COORDINATE EXACT LOCATION OF DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN. 2. ALL SUPPLY DIFFUSERS SHALL BE 4-WAY THROW UNLESS NOTED OTHERWISE.
- ALL FLEX SHALL BE SIZED AS SCHEDULED UNLESS NOTED OTHERWISE.

1400 CFM USE 18" DIAMETER OR 16" x 18", UNLESS SHOWN OTHERWISE.

- ALL DIFFUSERS SHALL BE OFF-WHITE UNLESS NOTED OTHERWISE.
- VERIFY FRAME TYPE WITH ACTUAL CEILING TYPE PRIOR TO PURCHASE OF AIR DEVICES.
- 6. ALL VOLUME DAMPERS SHALL BE OPPOSED BLADE TYPE. RUN-OUTS AND DROPS FROM R/A MAIN TRUNKS SHALL BE AS FOLLOWS: UP TO 250 CFM USE 10" DIAMETER OR 10" x 8"; 251 CFM TO 450 CFM USE 12" DIAMETER OR 12" x 10"; 451 CFM TO 700 CFM USE 14" DIAMETER OR 12" x 12": 701 CFM TO 1000 CFM USE 16" DIAMETER OR 14" x 16"; 1001 CFM TO
- 8. INSULATE BACKS OF ALL AIR DEVICES.
- PROVIDE PRICE PLASTER FRAME FOR ALL AIR DEVICES LOCATED IN GYP OR PLASTER CEILINGS. AIR DEVICES LOCATED IN DAMP AREAS (SHOWERS/LOCKER ROOMS/TRAINING ROOMS) ARE TO BE OF THE SAME SIZE AND TYPE AS SHOWN ON THE AIR DEVICE SCHEDULE BUT MUST BE OF ALL ALUMINUM CONSTRUCTION. ALL DEVICES SCHEDULED TO BE ALUMINUM MUST BE ALUMINUM NO
- MATTER WHERE THEY ARE LOCATED. TRANSITION TO AIR DEVICE NECK SIZE AS REQUIRED.
- 12. ALL LAY-IN AIR DEVICES ARE TO BE CONNECTED WITH FLEX DUCT. PROVIDE WITH MINIMUM 3" HIGH ROUND NECK OR SQUARE TO ROUND ADAPTER WITH 3" HIGH NECK FOR PROPER CONNECTION OF FLEX DUCT (SIZED PER SCHEDULE) TO AIR DEVICE.



CEILING SUPPLY AIR DEVICE CONNECTION DETAIL



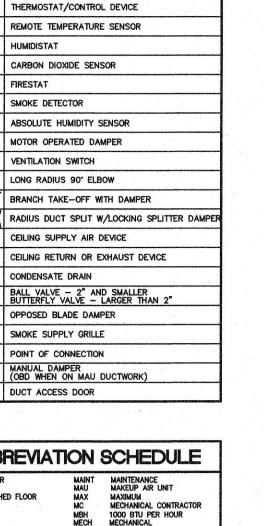
GENERAL NOTES

- THE CONTRACTOR IS TO VISIT THE SITE PRIOR TO BID TO FAMILIARIZE HIMSELF WITH ALL CONDITIONS AS THEY EXIST. SUBMISSION OF BID INDICATES THE CONTRACTOR'S UNDERSTANDING OF EXISTING CONDITIONS AND HIS WILLINGNESS TO WORK WITH THESE CONDITIONS. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED DUE TO LACK OF COORDINATION WITH EXISTING CONDITIONS OR OTHER TRADES.
- CONTRACTORS TO REVIEW AND COMPARE ALL DRAWINGS SO ALL WORK IN THEIR RESPECTIVE TRADE IS INCLUDED IN BID. EACH CONTRACTOR SHALL INCLUDE ALL MATERIALS AND INSTALLATION REQUIRED FOR HIS PARTICULAR TRADE AFTER COMPLETE REVIEW OF ALL CONTRACT DRAWINGS AND SPECIFICATIONS.
- ALL WORK SHALL COMPLY WITH THE CURRENT APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. FOLLOW RECOMMENDED PRACTICES AS SET DOWN BY ASME, SMACNA, ASHRAE, NFPA, APPLICABLE BUILDING CODE, APPLICABLE MECHANICAL CODE, APPLICABLE PLUMBING CODE, NATIONAL ELECTRICAL CODE, AGA, ADA AND OSHA, AS THEY APPLY TO THIS PROJECT, EXCEPT IN CASES WHERE LOCAL STATUTES GOVERN. THE CONTRACTOR SHALL VERIFY WITH THE LATEST ADOPTED LOCAL CODES, ORDINANCES AND AMENDMENTS THAT APPLY TO THIS PROJECT WITH THE AUTHORITY HAVING JURISDICTION.
- MECHANICAL CONTRACTOR TO COMPLETE A MECHANICAL/ELECTRICAL EQUIPMENT COORDINATION SHEET IN SPECIFICATION SECTION 20 00 00 AND SUBMIT COMPLETED FORM WITH EQUIPMENT SUBMITTAL AND PROVIDE A COMPLETED FORM TO THE ELECTRICAL CONTRACTOR.
- PROVIDE TRAP AND PROPER VENTING AT EACH A/C UNIT PER THE MANUFACTURER'S RECOMMENDATIONS. ROUTE CONDENSATE TO NEAREST CODE APPROVED DISPOSAL POINT.
- TRANSITION FROM DUCT SIZE SHOWN TO ROOF OPENING SIZE FOR EXHAUST FANS AND OTHER ROOF MOUNTED EQUIPMENT. ALLOW FOR CLEARANCE BETWEEN STRUCTURAL JOISTS.
- PROVIDE SEVEN (7) DAY PROGRAMMABLE THERMOSTATS FOR EACH AHU EQUAL TO ECOBEE EMS THERMOSTAT WI-FI ENABLED WITH FREE MOBILE PHONE APPS AND EASY TO USE ECOBEE WEB PORTAL. THERMOSTAT TO HAVE FULL COLOR TOUCH SCREEN, 365 DAY SCHEDULING AND 7 DAY PROGRAMMABILITY FOR EACH UNIT WITH DEHUMIDIFICATION CAPABILITY PROVIDE HONEYWELL MODEL H600A1014 DEHUMIDISTAT. REFERENCE GENERAL NOTES, SCHEDULE SHEETS, PLANS AND JOB SPECIFICATIONS FOR MORE INFORMATION.
- CONFIRM LOCATION AND MOUNTING HEIGHT OF EACH THERMOSTAT/SENSOR PRIOR TO INSTALLATION. COORDINATE WITH ARCHITECT, OWNER, MILLWORK, SWITCHES, EQUIPMENT, FURNITURE, ETC. PROVIDE INSULATED SUBBASE FOR EACH THERMOSTAT/SENSOR.
- PROVIDE ENGRAVED LABELS FOR ALL EQUIPMENT. LABEL ALL THERMOSTATS/SENSORS TO CORRESPONDING EQUIPMENT NUMBER. PROVIDE ENGRAVED ACCESS PANEL MARKERS ON THE CEILING GRID TO INDICATE ACCESS LOCATIONS FOR EQUIPMENT ABOVE CEILING.
- COORDINATE FRAMED OPENING THROUGH ROOF FOR EQUIPMENT. VERIFY SIZE AND METHOD WITH STRUCTURAL ENGINEER. PROVIDE ROOF SHOP DRAWING INDICATING SIZE AND LOCATION OF ROOF OPENINGS FOR COORDINATION PURPOSES.
- COORDINATE PLACEMENT AND SUPPORT OF ALL ROOF MOUNTED EQUIPMENT CURBS AND SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
- RETURN AIR PLENUMS ON BACK OF AIR HANDLING UNITS TO BE FULL SIZE OF RETURN OPENING ON UNITS. PROVIDE MINIMUM 16" x 16" ACCESS DOOR IN RETURN PLENUM IN ACCESSIBLE LOCATION.
- AIR HANDLING UNITS MOUNTED ABOVE CEILING ARE TO BE INSTALLED TO ALLOW FOR MAXIMUM ACCESS ON ACCESS PANEL SIDES. CODE CLEARANCES MUST BE MAINTAINED. EQUIPMENT MUST BE INSTALLED SO THAT IT IS ACCESSIBLE FROM A LADDER THAT IS NO TALLER THAN THE CEILING, WITHOUT STANDING ON TOP STEP.
- WHERE STRUCTURAL BRIDGING IS REMOVED, RE-BRIDGE ON EACH SIDE OF JOIST. VERIFY WITH STRUCTURAL ENGINEER PRIOR TO REMOVING ANY BRIDGING.
- COORDINATE WITH ALL STRUCTURAL BRACING FOR ROUTING OF DUCT AND DIFFUSERS.
- BEFORE ANY CUTTING OR TRENCHING OPERATIONS BEGIN, VERIFY WITH OWNER'S REPRESENTATIVE, UTILITY COMPANIES AND OTHER INTERESTED PARTIES THAT ALL AVAILABLE INFORMATION HAS BEEN PROVIDED CONCERNING EXISTING UTILITY LOCATION. VERIFY LOCATIONS GIVEN. CONTACT ARCHITECT IMMEDIATELY UPON UNCOVERING UNKNOWN UTILITIES FOR FURTHER DIRECTION. INDICATE ALL UNCOVERED UTILITIES ON RECORD
- REFRIGERANT PIPING: THE REFRIGERATION SYSTEM SHALL BE INSTALLED COMPLETE AS A SYSTEM WITH ALL REFRIGERANT, OIL, VALVES, DEHYDRATORS, GAUGES AND CONTROLS AS REQUIRED FOR PROPER OPERATION OF THE SYSTEM. PIPING SHALL BE HARD DRAWN ACR REFRIGERANT PIPING WITH WROT FITTINGS IN ACCORDANCE WITH ARI STANDARDS. USE LONG RADIUS ELBOWS. INSULATE SUCTION LINES AND SEAL ALL CUT ENDS AND EDGES WITH ADHESIVE TO PROVIDE AN AIR TIGHT SEAL. USE 3/4" ARMAFLEX AP II INSULATION. REFRIGERANT PIPING IN INACCESSIBLE SPACES, SUCH AS WALL CAVITIES, OR IN UNDERGROUND SLEEVES IS TO BE SOFT DRAWN COPPER WITH NO FITTINGS IN THE INACCESSIBLE AREAS. ALL BENDS IN SOFT COPPER ARE TO BE MADE WITH REFRIGERATION TUBING BENDER. INSTALL COMBINATION SIGHT GLASS/MOISTURE INDICATOR NEAR LIQUID LINE CONNECTION TO OUTDOOR UNIT.
- FIRE/SMOKE AND/OR FIRE DAMPERS: INSTALL DAMPERS AT ALL DUCT PENETRATIONS OR RATED WALLS, TUNNELS AND CEILINGS. ALL DAMPERS TO BE OUT OF AIRSTREAM TYPE. DAMPERS TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE FACTORY WALL SLEEVE AND ANGLE KIT. ACCESS PANEL TO BE PROVIDED IN DUCT FOR ACCESS TO FUSIBLE LINK AND FOR INSPECTION AND MAINTENANCE, VERIFY THE EXACT LOCATION OF ALL RATED WALLS, TUNNELS AND CEILINGS WITH ARCHITECTURAL DRAWINGS. COMBINATION FIRE/SMOKE DAMPERS TO BE INSTALLED IN ALL SMOKE WALLS AND RATED EGRESS WAYS.
- COORDINATE LOCATION AND MOUNTING TYPE OF ALL CEILING AIR DEVICES IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- INSTALL CLEAN SET OF FILTERS THROUGHOUT AT COMPLETION OF PROJECT. ANY UNITS THAT ARE OPERATED DURING CONSTRUCTION SHALL HAVE FILTER MEDIA (FIBERBOND DUAL-PLY DUSTLOK MEDIA) PLACED OVER THE EXTERIOR OF RETURN AIR GRILLES. MEDIA SHALL BE CHANGED AS FREQUENTLY AS REQUIRED TO KEEP DUCTWORK CLEAN. WHEN RETURN AIR FILTERS ARE LOCATED AT UNIT, PROVIDE INSULATED FILTER RACK SUITABLE FOR 2" THICK, FACTORY STANDARD FILTER SIZES, THAT IS AIRTIGHT WITH HINGED ACCESS DOOR AND LATCH, UNLESS SUCH A RACK IS INTEGRAL TO UNIT CONSTRUCTION.
- U. PROVIDE INTERNALLY LINED RETURN AIR BOOT WITH WITH NINETY DEGREE ELBOW OR TEE FITTING ON BACK OF ALL RETURN AIR GRILLES UNLESS OTHERWISE NOTED. REFERENCE DETAIL SHEETS AND SPECIFICATIONS FOR MORE INFORMATION.
- PROVIDE ALL APPROPRIATE TOOLS, WRENCHES, KEYS, ETC. AS REQUIRED FOR ACCESS AND OPERATION OF VALVES, COVERS, ETC.
- SEAL AROUND ALL DUCTWORK AND PIPING AT PENETRATIONS THROUGH SOUND WALLS WITH ACOUSTICAL SEALANT
- X. ALL DUCTS 30" AND LARGER IN ANY DIMENSION TO HAVE DUCTMATE FITTINGS.
- ALL ACCESS DOORS SHALL BE INSTALLED IN EASILY ACCESSIBLE LOCATIONS. RELOCATE ANY ACCESS DOOR THAT IS NOT INSTALLED IN THIS MANNER. THIS SHALL BE DONE AT NO ADDITIONAL COST TO OWNER. INSTALL MINIMUM 12" x 12" HINGED ACCESS DOORS WITH CAM LOCKS AT THE END OF ALL DUCT RUNS, AT 20' INTERVALS ALONG LENGTH OF RUN, AND ON EACH SIDE OF ELBOWS WITH TURNING VANES. REFERENCE SPECIFICATIONS FOR MORE INFORMATION.
- COORDINATE LOCATION OF DUCTWORK WITH LOCATION AND DEPTH OF ALL LIGHT FIXTURES PRIOR TO INSTALLATION.
- AA. MECHANICAL CONTRACTOR TO HAVE STAMPED AND REVIEWED DUCT SHOP DRAWINGS PRIOR TO INSTALLATION OF ANY DUCTWORK IN FIELD.
- ABSOLUTELY NO PIPING OR DUCTWORK CAN BE ROUTED ABOVE ELECTRICAL PANELS, GEAR OR TRANSFORMERS. THE ONLY HVAC, PLUMBING, SPRINKLER PIPING OR DUCTWORK THAT CAN ENTER AN ELECTRIC ROOM ARE THOSE SPECIFICALLY SERVING THAT ROOM. THESE SERVICES CAN ONLY ENTER INTO ELECTRIC ROOM ABOVE ENTRY DOOR.
- CC. SEAL AROUND ALL DUCTWORK AND PIPING AT PENETRATIONS THROUGH RATED WALLS WITH FIRE SEALANT. ALL PENETRATIONS THROUGH RATED WALLS ARE TO BE SEALED ACCORDING TO THE FIRE SEALANT MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUBMIT ON U.L. SYSTEM TO BE USED FOR EACH TYPE OF PENETRATION, POST A COPY OF INSTALLATION INSTRUCTIONS AT JOB SITE ACCESSIBLE TO ALL WORKERS PERFORMING WORK.
- DD. ALL OPENINGS OF DUCTWORK AND MECHANICAL EQUIPMENT MUST BE COVERED WITH PLASTIC AND TIGHTLY SEALED TO PREVENT DUST AND CONSTRUCTION DEBRIS FROM ENTERING SYSTEMS. THIS INCLUDES EQUIPMENT AND DUCTWORK STORED ON SITE. IF THE MECHANICAL EQUIPMENT IS OPERATED PRIOR TO ACCEPTANCE OF THE BUILDING BY OWNER, ALL OUTLET AND INLETS OF THE SYSTEM MUST BE PROTECTED WITH ROLLED FILTER MEDIA EQUAL TO (FIBERBOND DUAL-PLY DUSTLOC MEDIA). UNITS MUST BE SHUT DOWN WHEN PAINTING, SANDING AND SIMILAR CONSTRUCTION OPERATIONS ARE BEING PERFORMED. SYSTEMS THAT ARE OPERATED DURING CONSTRUCTION MUST BE CLEANED TO NEW CONDITION BEFORE FINAL PAYMENT WILL BE APPROVED. ITEMS TO BE CLEANED INCLUDE: WHOLE DUCT SYSTEM, AIR DEVICES, BLOWERS, MOTORS, UNIT CASING. EVAPORATOR COILS, CONDENSER COILS AND ALL OTHER COMPONENT EFFECTED BY THE OPERATION OF THE SYSTEMS.
- EE. ALL SUPPLY BRANCH DUCTS ARE TO HAVE BALANCING DAMPERS WITH MANUAL LOCKING QUADRANT OPERATORS. PROVIDE STAND-OFF BRACKETS EQUIVALENT TO INSULATION THICKNESS.PROVIDE BALANCING DAMPERS IN OTHER DUCT SYSTEMS AS REQUIRED TO PROPERLY BALANCE SYSTEMS. SINGLE BLADE DAMPERS ARE ACCEPTABLE IN DUCTS 14" ROUND OR 14" TALL, LARGER DUCTS TO HAVE MULTIPLE BLADE DAMPERS. ALL DAMPER BLADES AND HARDWARE ARE TO BE FABRICATED OF SUFFICIENT GAGE AND HAVE REINFORCEMENTS AS REQUIRED TO PREVENT VIBRATION.

ME	ECH	IANICAL LEGEND				
SYMBOL	ABB.	DESCRIPTION				
4	FD	FIRE DAMPER (RE: ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS)				
	FSD	COMBINATION FIRE/SMOKE DAMPER				
•	DB	DUCT BARRIER WITH SECURITY 1/2" BARS (6 x 6) EQUAL TO PRICE MODEL MSBG				
0	TSTAT	THERMOSTAT/CONTROL DEVICE				
®		REMOTE TEMPERATURE SENSOR				
Θ	- 1	HUMIDISTAT				
@		CARBON DIOXIDE SENSOR				
(Ē)	3	FIRESTAT				
(SD)		SMOKE DETECTOR				
(AH)		ABSOLUTE HUMIDITY SENSOR				
W —	MOD	MOTOR OPERATED DAMPER				
(S)		VENTILATION SWITCH				
2v	SINGLE	LONG RADIUS 90° ELBOW				
SA-A	SINGLE	BRANCH TAKE-OFF WITH DAMPER				
sa—式	SINGLE	RADIUS DUCT SPLIT W/LOCKING SPLITTER DAMPE				
\boxtimes		CEILING SUPPLY AIR DEVICE				
		CEILING RETURN OR EXHAUST DEVICE				
—D—		CONDENSATE DRAIN				
-₩-		BALL VALVE — 2" AND SMALLER BUTTERFLY VALVE — LARGER THAN 2"				
SAAA	O.B.D.	OPPOSED BLADE DAMPER				
		SMOKE SUPPLY GRILLE				
0		POINT OF CONNECTION				
		MANUAL DAMPER				

DUCT ACCESS DOOR

M/	P ABBREVIATI	ON	SCHEDULE
AD	ACCESS DOOR	MAINT	MAINTENANCE
ABV	ABOVE	MAU	MAKEUP AIR UNIT
AFF	ABOVE FINISHED FLOOR	XAM	MAXIMUM
ARCH	ARCHITECT	MC	MECHANICAL CONTRACTOR
AUTO	AUTOMATIC	MBH	1000 BTU PER HOUR
AUX	AUXILIARY	MECH	MECHANICAL
AHU	AIR HANDLING UNIT	MH	MANHOLE
Ano	AIR HARDING DINT		
BD	DALANCE DAMPED	MIN	MINIMUM
	BALANCE DAMPER	MISC	MISCELLANEOUS
BFF	BELOW FINISHED FLOOR	MTD	MOUNTED
BLDG	BUILDING	MOD	MOTOR OPERATED DAMPER
BOD	BOTTOM OF DUCT		
BOP	BOTTOM OF PIPE	NIC	NOT IN CONTRACT
BF	BOOSTER FAN	N.O.	NORMALLY OPEN
W-0		N.C.	NORMALLY CLOSED
CLG	CEILING		
	CLEAR/CLEARANCE	NO.	NUMBER
CLR		NTS	NOT TO SCALE
CO	CLEANOUT	1000-000	
COL	COLUMN	O/A	OUTDOOR AIR
CONC	CONCRETE	OBD	OPPOSED BLADE DAMPER
CONTR	CONTRACTOR	OC	ON CENTER(S)
CW	COLD WATER	OPNG	OPENING
CONN	CONNECTION		
CON	CONDENSING UNIT	ORL	OVERFLOW RAINLEADER
	COPPER UNIT	OAH	OUTSIDE AIR HOOD
Cu			
CHS	CHILLED WATER SUPPLY	PC	PLUMBING CONTRACTOR
CHR	CHILLED WATER RETURN	PH	PHASE
D14	SILLIER S	PLBG	PLUMBING
DIA	DIAMETER	. 250	. weathirt
DN	DOWN	R/A	RETURN AIR
DWG	DRAWNG		DEFENDACE OFFEED TO
DH	DUCT HEATER	RE:	REFERENCE/REFER TO
7.50		REFRIG	REFRIGERANT
E/A	EXHAUST AIR	REF	REFRIGERATOR
EC	ELECTRICAL CONTRACTOR	REQD	REQUIRED
EF	EXHAUST FAN	RHP	RADIANT HEAT PANEL
ELEC	ELECTRIC/ELECTRICAL	RL.	RAINLEADER
EQ	EQUAL	RM	ROOM
EQUIP	EQUIPMENT		
EX	EXISTING	RTU	ROOFTOP UNIT
EXH	EXHAUST	C/A	SUPPLY AIR
		S/A	
E.S.P.	EXTERNAL STATIC PRESSURE	SCH	SCHEDULE
erv	ENERGY RECOVERY VENTILATOR	SP	STATIC PRESSURE
		SPEC	SPECIFICATION
FCO	FLOOR CLEAN OUT	SD	STORM DRAIN
FCU	FAN COIL UNIT	SF	SUPPLY FAN
FF	FINISHED FLOOR		
		TSP	TOTAL STATIC PRESSURE
FLEX	FLEXIBLE	TYP	TYPICAL
FLR	FLOOR/FLOORING		90
	La project	UON	UNLESS OTHERWISE NOTED
GA	GAUGE	UG	UNDERGROUND
GC	GENERAL CONTRACTOR	UH	UNIT HEATER
GEN .	GENERAL.		OTHER PLAN
GYP	GYPSUM BOARD	V	VENT (PLUMBING)
UIF	GIFSUM BUARU	v	VOLTAGE (ELECTRICAL)
		VTR	VENT THROUGH ROOF
HP	HEAT PUMP	AIL	ATM INVOORING
Hp	HORSEPOWER	w/	MATE
HT	HEIGHT	W/O	WITH
HW	HOT WATER	W/O	WITHOUT
		WP	WATERPROOF
HWC	HOT WATER CIRC	WT	WEIGHT
HR	HOUR	WTR	WATER
HWR	HEATING WATER RETURN		
HWS	HEATING WATER SUPPLY	MA.	WASTE WATER
กพอ		WCO	WALL CLEANOUT
LOC	LOCATION	WH	WATER HEATER



3 APPROVED ☐ APPROVED AS NOT DISAPPROVED 8 * 94813 /CENSED

PROJECT PHASE BID - 8/10/2017

REVISIONS

CITY OF DEER PARK Date Received

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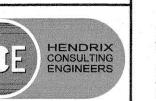
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AUG 11 2017

ENGINEERING DEPARTMENT



REFERENCE GENERAL NOTES OF

SHEETS M1.1, P1.1 AND E1

FOR ADDITIONAL INFORMATION

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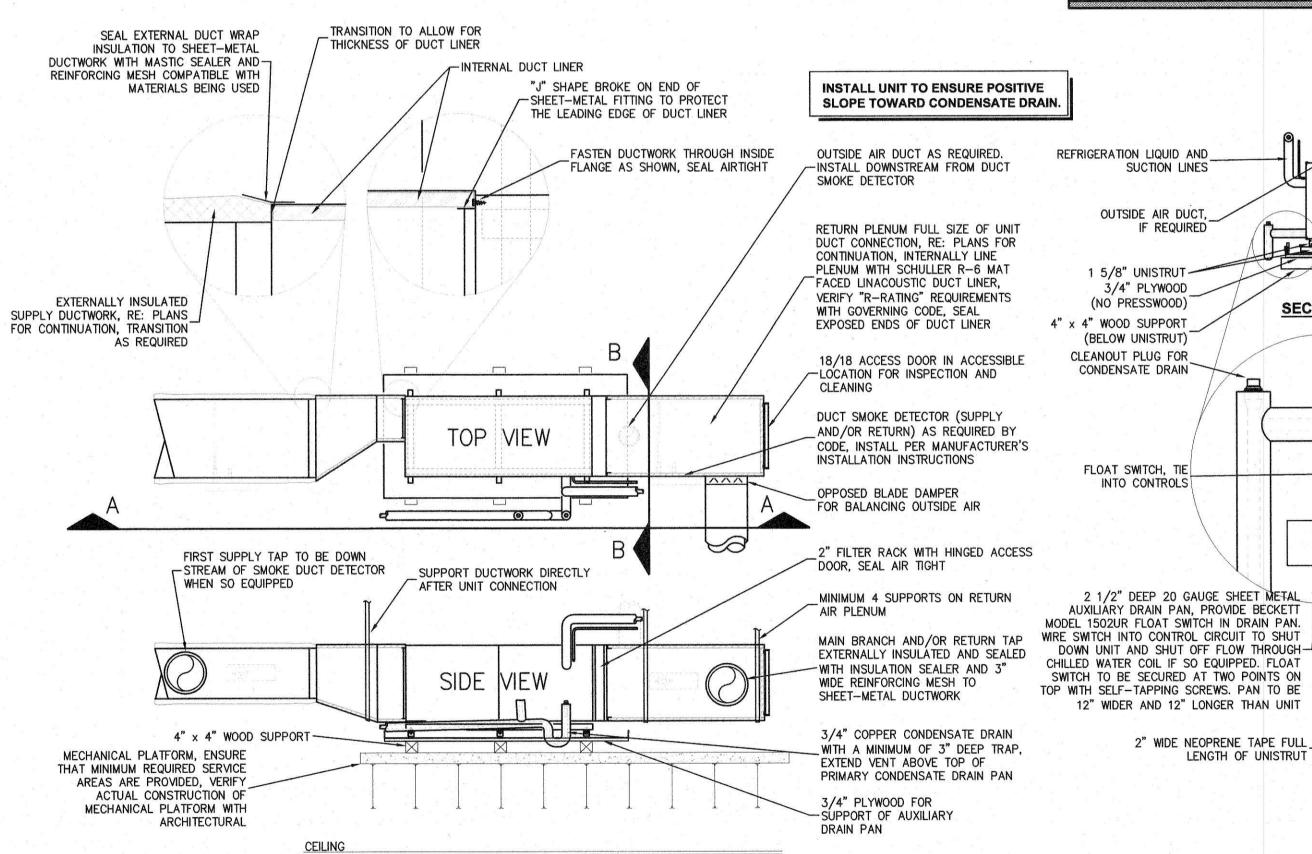
16123-00 DATE ISSUED 8/10/2017 SHEET TITLE

SCHEDULES, NOTES, AND LEGENDS - MECHANICAL

SHEET NUMBER

HCE job no.: 17-026

SPLITTER DETAIL



SECTION A-A

MECHANICAL PLATFORM AIR HANDLING UNIT DETAIL

LOUVERS

GREENHECK MODEL ESD-403, 4 INCH DEEP EXTRUDED ALUMINUM CONSTRUCTION. VERIFY FINISH WITH ARCHITECT PRIOR TO ORDERING. COORDINATE FRAME TYPE WITH ARCHITECT AND BUILDING CONSTRUCTION. PROVIDE WITH 1/8" X 1/8" GALVANIZED HARDWARE CLOTH BEE

, ⁽⁰	MARK NO.	SIZE (WxH)			
	L - 1	36 x 20			•
			•	11 . 152	
- 1	10 November 10		 A V	4	

COVE HEATERS

COVE HEATER (CV):

MARKEL ELECTRIC COVE HEATER CONSTRUCTED OF .962" THICK ALUMINUM. THE HEATER SURFACE SHALL BE CONCAVE IN CONTOUR AND SAW-TOOTH IN PROFILE. THE FINISH SHALL BE OF BAKED WHITE ENAMEL. THE HEATERS SHALL BE AVAILABLE IN RATINGS FROM 450 THROUGH 1250 WATTS, AT 120, 240, 208 AND 277 VOLTS. THE HEATING ELEMENT SHALL BE OF NICHROME WIRE, EMBEDDED IN MAGNESIUM OXIDE POWDER, ENCLOSED AND SEALED IN ALUMINUM METAL TUBING. THE HEATER SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC. AND THE ELEMENTS SHALL BE SUPPLIED WITH A ONE YEAR LIMITED WARRANTY. PROVIDE WALL MOUNTED LINE VOLTAGE THERMOSTAT.

MARK NO.	MARKEL MODEL NO.	WATTS GRS	VOLTS	LENGTH	WEIGHT	NOT USED
CV-1	CV7512X	750	120/1	72"	13	
CV-2	CV7512X	750	120/1	72"	13	
CV-3	CV7512X	750	120/1	72"	13	
CV-4	CV7512X	750	120/1	72"	13	
CV-5	CV7512X	750	120/1	72"	13	
CV-6	CV7512X	750	120/1	72"	13	
CV-7	CV7512X	750	120/1	72"	13	
CV-8	CV7512X	750	120/1	72"	13	
CV-9	CV7512X	750	120/1	72"	13	
CV-10	CV7512X	750	120/1	72"	13	
•					1	

ELECTRIC UNIT HEATERS

ELECTRIC UNIT HEATER (EUH):

SUCTION LINES

IF REQUIRED

2" WIDE NEOPRENE TAPE FULL_

LENGTH OF UNISTRUT

MANUFACTURED BY MARKEL WITH MOUNTING BRACKETS, DUST SHIELD, POWER DISCONNECT AND BUILT-IN THERMOSTAT. MOUNT NEAR BOTTOM TRUSSES.

MARK NO.	MODEL NO.	KW	VOLT/PH	APPROX. WT.	
EUH-1	HF1B5103N	3.3	208/1	35	
• 3 3		•			

SECTION B-B

FAN SCHEDULE EFSCH **CFM** S.P. DRIVE VOLT/PH ACCESSORIES OR AMPS CSP-A1750 0.375 DIRECT 0.375 CSP-A710-VG 450 DIRECT 115/1 976 325 ____

STANDARD NOTES - APPLIES TO ALL FANS

BALANCE ALL FANS TO ACTUAL CFM SHOWN ON FLOOR PLANS.

BIRD SCREEN.

FANS INSTALLED ON METAL STANDING SEAM ROOFS: ROOF CURB IS TO BE FURNISHED, INSTALLED, FLASHED AND COUNTER FLASHED BY ROOFING CONTRACTOR. MECHANICAL CONTRACTOR IS TO COORDINATE SIZE AND LOCATION. CURB IS TO EXTEND A MINIMUM OF 12" ABOVE FINISHED ROOF ON SHORT SIDE.

FANS INSTALLED ON BUILT-UP ROOF: ROOF CURB IS TO BE FLASHED AND COUNTER FLASHED BY ROOFING CONTRACTOR. MECHANICAL CONTRACTOR IS TO FURNISH AND INSTALL ROOF CURB AND COORDINATE LOCATION. CURB IS TO EXTEND A MINIMUM OF 12" ABOVE FINISHED ROOF ON SHORT SIDE.

PROVIDE EACH ROOF MOUNTED FAN WITH OPPOSED BLADE DAMPER WITH HEAVY DUTY MOTORIZED ACTUATOR (MATCH FAN VOLTAGE) UNLESS SPECIFICALLY NOTED OTHERWISE. ELECTRICAL CONTRACTOR TO TIE DAMPER ACTUATOR IN TO

UNIT WEIGHT LESS THAN 100 LBS. UNLESS NOTED OTHERWISE

COORDINATE ALL FINAL FAN LOCATIONS AND FRAMING WITH STRUCTURAL.

ALL ALTERNATE MANUFACTURER'S FANS MUST OPERATE WITH CFM, RPM AND HP RANGE AS FANS LISTED ABOVE TO ALLOW FLEXIBILITY. FANS MAY NOT BE DOWN SIZED. FAN SPEED CONTROL (MOUNTED UNDER DOME ON ROOF FANS OR NEXT TO CABINET FANS FOR ALL DIRECT DRIVE FANS).

DUCT DROPS ARE TO BE FULL SIZE OF DAMPER OR SIZED AT .08" SP WHICHEVER IS GREATER OR AS SPECIFICALLY POWDER COATED METAL IS NOT ALLOWED TO BE USED IN LIEU OF GALVANIZED UNLESS SPECIFICALLY SCHEDULED.

M. EXHAUST FANS / OUTLETS TO BE LOCATED A MINIMUM OF 10' AWAY FROM OUTSIDE AIR INTAKES OR AS REQUIRED BY LOCAL CODES.

N. PROVIDE WITH MOTORIZED BACK DRAFT DAMPER.

ACCESSORIES AND NOTES

UPBLAST GREASE FAN ACCESSORIES: FAN TO BE UL AND CUL LISTED FOR GREASE REMOVAL, HEAT BAFFLE, BIRD GUARD, HINGE KIT, DRAIN CONNECTION, GREASE TRAP AND VENTED CURB EXTENSION (MUST MEET THE NFPA 96 REQUIREMENT FOR A 40" DISCHARGE HEIGHT). PROVIDE WITH SEPARATE CURB FROM ANY SUPPLY FAN.

KITCHEN SUPPLY FAN ARRANGEMENT "DB" ACCESSORIES: EXHAUST FAN AND SUPPLY FAN TO BE MOUNTED ON SEPARATE CURBS AND PROVIDE MOPPED IN EQUIPMENT SUPPORT RAIL WITH GALVANIZED UNISTRUT SUPPORT FOR WEATHER HOOD, MOTORIZED INTAKE DAMPER, SPACER SECTION (TO MAINTAIN 10 FEET, SEPARATION FROM EXHAUST FAN), FILTER SECTION THAT ACCOMMODATES 2" FILTERS, WEATHER HOOD, SUPPLY FAN INTERLOCKED TO RUN WITH KITCHEN EXHAUST FAN. KITCHEN EXHAUST FAN IS TO RUN AND SUPPLY FAN IS TO GO OFF IN THE EVENT THAT A FIRE IS DETECTED. FURNISH WITH REMOTE OR FAN CASING MOUNT PREWIRED KITCHEN FAN CONTROL CENTER WITH STARTERS. DISCONNECTS, CONTROL TRANSFORMERS, AND SINGLE POINT ELECTRICAL CONNECTION. ELECTRICAL CONTRACTOR TO MAKE ALL CONTROL AND LINE VOLTAGE TERMINATIONS AND FEED THROUGH CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. 120 VOLT CONTROL VOLTAGE FOR HOOD FAN PACKAGE IS TO BE OBTAINED FROM HOOD LIGHTING CIRCUIT.

DIRECT FIRED GAS HEAT.

ELECTRIC HEAT. PERFORATED BAFFLE INSTALLED AT INLET.

GRAVITY BACK DRAFT DAMPER.

RADIATION DAMPER (CEILING MOUNTED FANS). COMBINATION NEOPRENE / SPRING VIBRATION ISOLATION.

INLET GUARD. BELT GUARD.

MAGNETIC MOTOR STARTER.

SWITCHED WITH LIGHTS BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL RELAYS AND APPURTENANCES.

13. SWITCHED BY SPRING WOUND TIMER (I HR MAX) PROVIDED BY ELECTRICAL CONTRACTOR. LOCATE NEXT TO ROOM LIGHT SWITCH UNLESS OTHERWISE NOTED.

14. SWITCHED BY WALL SWITCH WITH PILOT LIGHT BY ELECTRICAL CONTRACTOR. LOCATE NEXT TO ROOM LIGHT SWITCH UNLESS OTHERWISE NOTED.

15. SWITCHED BY HOOD MOUNTED SWITCH WITH PILOT LIGHT BY ELECTRICAL CONTRACTOR. 16. SWITCHED BY THERMOSTAT. THERMOSTAT PROVIDED BY MECHANICAL CONTRACTOR. INSTALLED BY ELECTRICAL

17. CONTROLLED BY ENERGY MANAGEMENT SYSTEM. 18. 120V/1PH MOTORIZED DAMPER FOR INLINE FAN TIED IN TO FAN POWER.

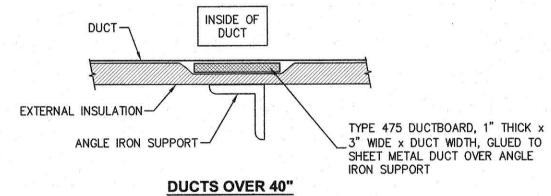
19. EXPLOSION PROOF FAN, WIRE TO RUN CONTINUOUSLY 20. PERFORATED BAFFLE INSTALLED AT INLET.

21. INTERLOCKED WITH DISHWASHER.

22. DRYER BOOSTER FAN. PROVIDE ALL CONTROLS AND INTERLOCKING WIRING REQUIRED FOR A COMPLETE OPERABLE

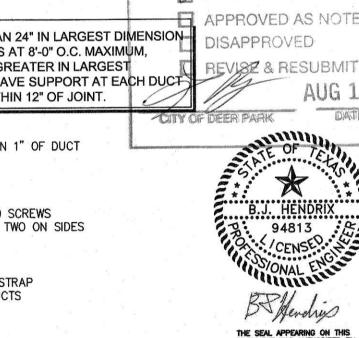
23. SIDEWALL PROPELLER FAN PROVIDE WITH HOUSING, MOTORIZED BACKDRAFT DAMPER, INTEGRAL DISCONNECT, MOTOR SIDE GUARD AND TRANSITIONS AS REQUIRED TO CONNECT TO WALL LOUVER.

-20 GAUGE STRAP -APPROVED SEAL AROUND STRAP PENETRATION WITH DUCTS LESS THAN 24" IN LARGEST DIMENSION-CHILLDERS CP-11 TO TO HAVE STRAPS AT 8'-0" O.C. MAXIMUM, MAINTAIN VAPOR BARRIER, WIPE HANGER DUCTS 24" AND GREATER IN LARGEST AND INSULATION FREE DIMENSION TO HAVE SUPPORT AT EACH DUCT OF DIRT PRIOR TO SECTION OR WITHIN 12" OF JOINT. SEALING (TYPICAL) CITY OF DEER PARK TOP SCREW WITHIN 1" OF DUCT - DUCTWORK ATTACH WITH #10 SCREWS ONE AT BOTTOM, TWO ON SIDES INSULATION PROVIDE SINGLE STRAP 1" MINIMUM--CENTERED ON DUCTS **DUCTS 40" AND LESS ROUND DUCTWORK** AT END OF RUN THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED B.J. HENDRIX, P.E. NO: 94813 ON: 08/10/2017.



DUCT DETAILS

NO SCALE



BID - 8/10/2017 REVISIONS

CITY OF DEER PARK Date Received

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AUG 11 2017 ENGINEERING DEPARTMENT

FOR ADDITIONAL INFORMATION PROJECT NUMBER

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PROJECT PHASE



REFERENCE GENERAL NOTES OF

SHEETS M1.1, P1.1 AND E1

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HCE job no.: 17-026

SHEET NUMBER

SHEET TITLE

MECHANICAL

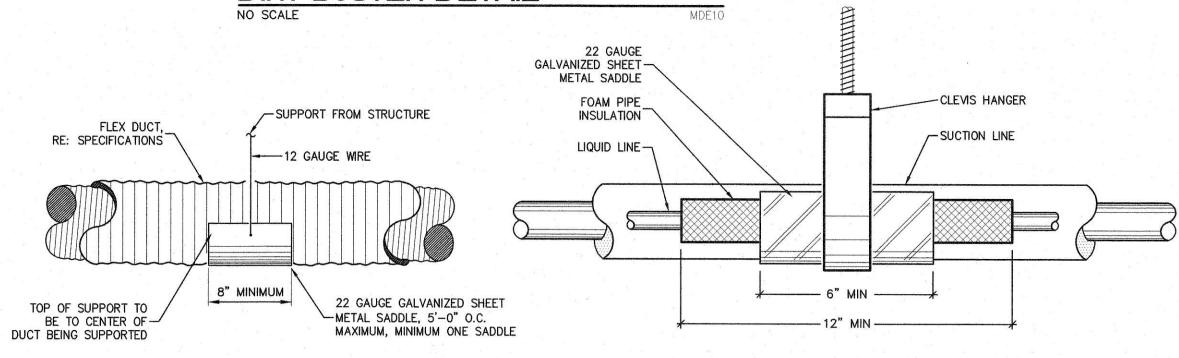
SCHEDULES -

CAP OPEN ENDS OF ALL DUCTS (INCLUDING SPIN-INS) AND EQUIPMENT WITH PLASTIC TO PREVENT CONSTRUCTION DEBRIS AND DUST FROM ENTERING

OPENINGS DURING CONSTRUCTION. COVER ALL OPEN ENDS OF DUCTWORK WHILE SITTING ON GROUND (NOT INSTALLED). ALL PREFABRICATED DUCTWORK IN SHOP SHALL COME WITH ENDS PREWRAPPED WHEN DELIVERED TO THE SITE.

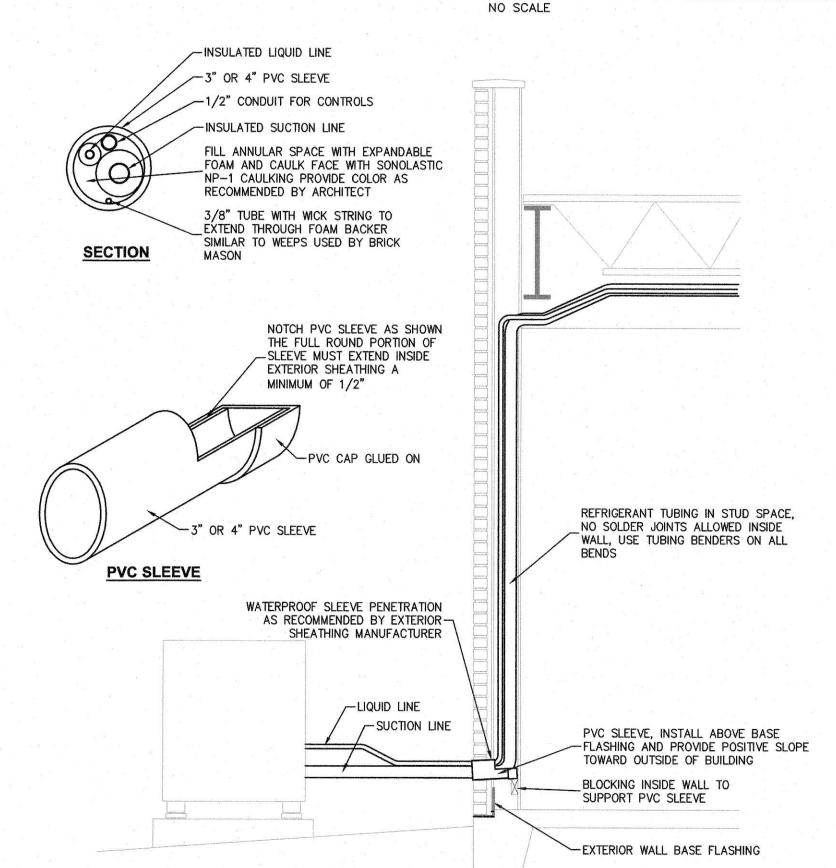
CONTRACTOR SHALL CLEAN ALL DUCTWORK THAT IS NOT PROTECTED PROPERLY DURING CONSTRUCTION.

DIRT BUSTER DETAIL



FLEX. DUCT SUPPORT DETAIL

REFRIGERANT PIPING SUPPORT DETAIL



REFRIGERANT PIPING WALL PENETRATION DETAIL SCALE: NO SCALE

SPLIT SYSTEM MASTER SCHEDULE

DEER PARK - SOCCER & SOFTBALL

C = COOLING WITH ELECTRIC HEAT

H = HEAT PUMP WITH ELECTRIC EMERGENCY HEAT GH = COOLING WITH HORIZON TAL SINGLE STAGE GAS HEAT

UNIT TYPE BREAKDOWN

GV = COOLING WITH VERTICAL SINGLE STAGE GAS HEAT 2CM = TWO STAGE COOLING WITH MULTI-SPEED AHU AND ELECTRIC HEAT 2C = TWO STAGE COOLING WITH VARIABLE SPEED AHU AND ELECTRIC HEAT 2CM = TWO STAGE COOLING WITH MULTI-SPEED AHU AND ELECTRIC HEAT

2C = TWO STAGE COOLING WITH VARIABLE SPEED AHU AND ELECTRIC HEAT 2HM = TWO STAGE HEAT PUMP WITH MULTI-SPEED AHU AND ELECTRIC EMERGENCY HEAT

2H = TWO STAGE HEAT PUMP WITH VARIABLE SPEED AHU AND ELECTRIC EMERGENCY HEAT 2GH = TWO STAGE COOLING WITH HORIZONTAL SINGLE STAGE GAS HEAT

2GV = TWO STAGE COOLING WITH VERTICAL SINGLE STAGE GAS HEAT

STANDARD NOTES:

A. SOME UNITS SHOWN ON THE MASTER SCHEDULE(S) MAY NOT BE USED ON THIS JOB.

B. ALL EFFICIENCIES LISTED ARE AT ARI CONDITIONS (80/67/95).

C. ALL CAPACITIES LISTED ARE TO BE SELECTED AT (80/67/105) AT LISTED AIR FLOW. D. VERIFY AVAILABLE VOLTAGE, PHASE AND CIRCUIT FUSE SIZE(S) WITH ELECTRICAL PLANS AND ELECTRICAL CONTRACTOR PRIOR TO RELEASING EQUIPMENT ORDER

MECHANICAL CONTRACTOR IS TO FILL IN THE "MECH/ ELECT COORDINATION SHEET" FOUND IN THE SPECIFICATIONS AND FURNISH ONE COPY TO THE ELECTRICAL CONTRACTOR AND ALSO ATTACH THIS INFORMATION TO THE EQUIPMENT SUBMITTAL PRIOR TO SUBMITTING TO ENGINEER.

E. WHEN NEUTRAL OUT SIDE AIR IS SCHEDULED, IT WILL BE PROVIDED FROM A DEDICATED OUTSIDE AIR UNIT TO THE RETURN AIR PLENUM OF THE UNIT OR DIRECTLY TO THE SPACE. F. WHEN RAW OUTSIDE AIR IS SCHEDULED, PROVIDE AN INSULATED FILTER BOX WITH HINGED ACCESS DOOR, ROUTE OUTSIDE AIR DUCT FROM ROOF CAP OR EXTERIOR WALL LOUVER TO RETURN AIR PLENUM. PROVIDE A MANUAL BALANCING DAMPER AND A MOTORIZED DAMPER IN OUTSIDE AIR DUCT. THE FILTER BOX AND DAMPERS MUST BE EASILY ACCESSIBLE FROM THE AIR HANDLER SERVICE AREA. FILTER SIZE TO BE 12X12X2 IN DUCTS WITH UP TO 200 CFM AND 16X20X2 IN DUCTS WITH 200 TO 800 CFM.

G. AIR PURIFICATION: PROVIDE GLOBAL PLASMA SOLUTIONS, BI-POLAR ION GENERATOR MODEL NUMBER - GPS-FC-3-BAS FOR ALL UNITS LISTED IN SCHEDULE BELOW. INSTALL

PER MANUFACTURERS INSTALLATION INSTRUCTIONS. POWER SUPPLY IS 24 VAC AT 12VA COORDINATE ELECTRICAL REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO INSTALLING. PROVIDE LARGER UNIT TRANSFORMER IF REQUIRED. CONTACT HTS FOR PRICING, 512-745-0555 OR derrick.vanwest@hts.com

SEE SPECIFICATIONS FOR ALL STANDARD ACCESSORIES, FEATURES AND CONTROLS REQUIRED.

ACCESSORIES AND NOTES: (ONLY ACCESSORIES NOTED IN THE SCHEDULE BELOWARE TO BE PROVIDED)

1. DUCT SMOKE DETECTOR IN SUPPLY AND / OR RETURN AIR DUCT AS REQUIRED BY AUTHORITY HAVING JURISDICTION, PROVIDED AND WIRED BY FIRE ALARM CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. FIRE ALARM CONTRACTOR SHALL PROVIDE A SHUT DOWN RELAY AND MAKE CONNECTIONS FROM DETECTOR TO RELAY, CONTROLS CONTRACTOR SHALL PROVIDE WIRE AND CONNECTIONS FROM CONTROL RELAY TO AIR HANDLING UNIT. IF A FIRE ALARM SYSTEM IS NOT PROVIDED, THE MECHANICAL CONTRACTOR IS TO PROVIDE AND INSTALL DUCT DETECTOR, SHUT DOWN RELAY, REMOTE TEST SWITCH AND AUDIBLE/ VISUAL INDICATOR

2. PROVIDE HIGH EFFICIENCY / CAPACITY (MERV 8) 5" THICK PLEATED FILTER AND CASING EQUAL TO LENNOX BMAC.

3. PROVIDE CONDENSATE PUMP. 4. PROVIDE CO2 SENSOR MOUNTED 18" FROM UNIT THERMOSTAT/SENSOR TO MONITOR SPACE CONDITIONS, OUTSIDE AIR DAMPER IS TO CLOSE WHEN UNIT IS OFF AND OPEN TO

MAXIMUM O/A POSITION (100% OF RAW O/A CFM SCHEDULED) ANY TIME SPACE IS OCCUPIED AND CO2 LEVEL IS ABOVE 800 PPM.

PROVIDE LOW AMBIENT CONTROL DOWN TO 0 DEGREES BY A VARIABLE SPEED CONDENSER FAN OPERATION (PROVIDE BALL BEARING CONDENSER MOTOR)

6. PROVIDE UNIT WITH THERMOSTAT HAVING TWO REMOTE SENSORS EACH HAVING 50% AUTHORITY EACH.

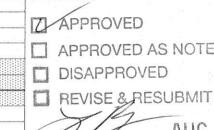
2 STAGE HEAT PUMP SPLIT SYSTEM WITH VARIABLE SPEED BLOWER

INDOOR / OUTDOOR										
CFM CFM			2H2	2H3	2H4	2H5		All the second sections to the second section and the second second second second section and a second second		
			750	1150	1550	1800				
MINIMUM NET	SENSIBLE MBH		17465	30415	37595	45510		***************************************		
MINIMUM NET	TOTAL MBH		23800	38500	49080	61500				
SEER	***************************************		15.7	16	16	15.5				***************************************
EER			12.2	12.5	12.5	12.5		***************************************		.,
INDOOR UNIT VOLTAGE / PHASE			208/1	208/1	208/1	208/1	· · · · · · · · · · · · · · · · · · ·	Transmitted Lies on the Market Control of the Control of the Control of Contr		in Separt Statement character
HEAT KW AT RATED VOLTAGE			6	9.4	11.3	15.0				***************************************
OUTDOOR UNIT VOLTAGE / PHASE			208/1	208/1	208/1	208/1				
LENNOX	INDOOR UNIT	(AHU)	CBX40UHV-024	CBX40UHV-036	CBX40UHV-048	CBX40UHV-060			1	
	ELECTRIC HEATER		ECB40-8CB P	ECB40-12.5CB P	ECB40-15CB P	ECB40-20CB P		THE PARTY OF THE P		
	OUTDOOR UNIT	(HP)	XP16-024-230	XP16-036-230	XP16-048-230	XP16-060-230				
	INDOOR UNIT	(AHU)	0	0	0	0			ļ	T T
	ELECTRIC HEATER	THE COLUMN TWO IS NOT THE COLUMN TWO IS NOT THE COLUMN	0	0	0	0			1	1
emberioro remercione escanario de la constante	OUTDOOR UNIT	(НР)	0	0	0	0				
	INDOOR UNIT	(A HÚ)	o l	0	0	0				
	ELECTRIC HEATER		0	0	0	0				*************
	OUTDOOR UNIT	(HP)		0	0	0			1	International Cont
INDCOR UNITWEIGHT			165	172	216	216	den de de la destada de la destada de la destada de la decembra de la decembra de la decembra de la decembra d	de Britanle hatiotististististististististististististist		fighting tighted
OUTDOOR UNIT WEIGHT			222	273	294	353			-	

TOTAL RAW O/A = TOTAL TONS =

TOTAL NEU O/A = TOTAL GAS LOAD BTU = O/A CFM UNIT MARK ACCESSORIES AND NOTES UNIT MARK **UNIT TYPE** ACCESSORIES AND NOTES NEUTRAL AHU/HP-1 AHU/HP-2 2H3

> PER THE LATEST VERSION OF ASHRAE. ANY MECHANICAL COOLING UNIT WITH AN EFFICIENCY EXCEEDING THE STANDARD MINIMUM REQUIREMENT BY 17% OR MORE IS EXEMPT FROM THE **ECONOMIZER REQUIREMENT.**



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APPROVED AS NOTE

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Date Received

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HCE job no.: 17-026

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BUILDING 5 α α \$ \$

DEVELOPMENT

SOCCER FIELD 3

PROJECT PHASE BID - 8/10/2017

CITY OF DEER PARK

AUG 11 2017

PROJECT NUMBER 16123-00 DATE ISSUED 8/10/2017

SHEET TITLE **DETAILS** -MECHANICAL

0 1 FLOOR PLAN - MECHANICAL
SCALE: 1/4" = 1'-0"

KEYED NOTES

THESE NOTES APPLY TO THIS SHEET ONLY

- EXHAUST AIR LOUVER. REFERENCE ARCHITECTURAL FOR EXACT LOCATION. PROVIDE 24" DEEP EXTERNALLY WRAPPED SHEET METAL PLENUM FULL SIZE OF LOUVER ON BACK OF LOUVER. BOTTOM OF PLENUM TO BE WELDED WATERTIGHT AND SLOPED TO DRAIN TOWARDS EXTERIOR.
- 2 PROVIDE THERMOSTAT WITH INSULATED BACKING.

2

- OUTSIDE SIDE AIR INTAKE FILTER GRILLE IN SOFFIT.
- OUTSIDE AIR TO CONNECT TO RETURN AIR PLENUM. PROVIDE MOTORIZED DAMPER TO OPEN ONLY WHEN ASSOCIATED COMPRESSOR IS OPERATING AND CO2 LEVEL IS ABOVE 1100 PPM. PROVIDE MANUAL DAMPER FOR BALANCING. DAMPERS TO BE IN ACCESSIBLE LOCATION.
- 5 MECHANICAL PLATFORM ACCESS LADDER. COORDINATE WITH ARCHITECT.
- AIR HANDLING UNIT ON MECHANICAL PLATFORM. ROUTE CONDENSATE TO SERVICE SINK IN PLUMBING CHASE.
- LINE OF MECHANICAL PLATFORM ABOVE CEILING. COORDINATE WITH ARCHITECT AND STRUCTURAL ENGINEER.
- SERVICE SINK LOCATION FOR CONDENSATE DISPOSAL. COORDINATE WITH PLUMBING CONTRACTOR.
- 9 LOCATION FOR ELECTRICAL SERVICE DISCONNECT.
- 10 EF-1 AND LOUVER ABOVE PLATFORM.
- 11 COVE HEATERS TO BE INSTALLED JUST BELOW CEILING PER MANUFACTURER'S INSTRUCTIONS. SET AT 40 DEGREES FAHRENHEIT FOR FREEZE PROTECTION. LIGHTS TO BE MOUNTED BELOW.
- 12 EUH-1 IN CHASE FOR FREEZE PROTECTION. SET AT 40 DEGREES FAHRENHEIT.
- 13 RUN DUCT HIGH OVER MEZZANINE FOR MAINTENANCE ACCESS.

INTERLOCK AHU-1/ HP-1 WITH

SUCH THAT WHEN OVERHEAD

AHU-1/HP-1 POWERS OFF.

SENSOR FOR OVERHEAD ROLL-UP

WINDOWS IN CONCESSION STAND

ROLL-UP WINDOWS ARE OPENED,

14 CONTINUATION OF NEW KITCHEN EXHAUST DUCT.





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OOM BUILDING RESTR CONCESSION

SOCCER FIELD DEVELOPMENT PHASE PROJECT PHASE

BID - 8/10/2017

CITY OF DEER PARK Date Received AUG 11 2017

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CITY OF

ENGINEERING DEPARTMENT

16123-00 DATE ISSUED

8/10/2017 SHEET TITLE FLOOR PLAN -MECHANICAL

PIPE SIZING REQUIREMENTS

- ALL FLOOR DRAINS AND FLOOR SINKS MUST HAVE TRAP PRIMERS. PROVIDE INVERTED TEE CONNECTION FROM SINK TAILPIECE OR FLUSH VALVE TYPE TRAP PRIMER CONNECTION TO ALL FLOOR DRAINS, FLOOR SINKS AND HUB DRAINS. AS LAST RESORT PROVIDE MECHANICAL TYPE TRAP PRIMER (PPP INC. "OREGON #1" TYPE). CONNECT TO NEAREST WATER SERVING THAT AREA PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. IN JURISDICTIONS WHERE PRESSURE ACTIVATED MECHANICAL PRIMERS ARE NOT ALLOWED, USE ELECTRONIC TRAP PRIMERS. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. PROSET "TRAP GUARD" DEVICE MAY BE USED IN LIEU OF TRAP PRIMERS WHEN ALLOWED BY LOCAL CODE AUTHORITY HAVING JURISDICTION. BEFORE USING PROSET "TRAP GUARD" CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM LOCAL CODE AUTHORITY HAVING JURISDICTION AND PROVIDE COPIES TO ARCHITECT AND
- PIPING SIZE FOR WATER MAIN DROPS AND MANIFOLD IN CHASE OR WALL TO REMAIN FULL SIZE OF DROP INDICATED. REFERENCE FIXTURE CONNECTION SCHEDULE FOR INDIVIDUAL LINE SIZE TO EACH FIXTURE.
- COORDINATE ALL WASTEWATER FLOOR PENETRATIONS AND PIPING PENETRATIONS WITH STRUCTURAL PRIOR TO INSTALLATION. PIPING MAY BE OFFSET SLIGHTLY TO AVOID STRUCTURAL CONFLICTS.
- ROUTE VENT FROM EACH FIXTURE TO HORIZONTAL VENT HEADER IN CHASE/WALL OR TO NEAREST COMMON VTR ABOVE CEILING. REFERENCE FIXTURE CONNECTION SCHEDULE FOR INDIVIDUAL FIXTURE VENT SIZES. VENT HEADERS IN CHASE TO BE SIZED ACCORDINGLY: 1 1/2" VENT UP TO 6 DRAIN FIXTURE UNITS MAXIMUM DEVELOPED LENGTH OF 60 FEET (EXCEPT FOR WATER CLOSETS), 2" VENT UP TO 20 DRAIN FIXTURE UNITS MAXIMUM DEVELOPED LENGTH OF 120 FEET, 3" VENT UP TO 84 DRAIN FIXTURE UNITS MAXIMUM DEVELOPED LENGTH OF 212 FEET AND 4" VENT UP TO 256 DRAIN FIXTURE UNITS MAXIMUM DEVELOPED LENGTH OF 300 FEET. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH ARE TO BE INCREASED BY ONE PIPE SIZE. NO MORE THAN 1/3 OF THE CODE PERMITTED DEVELOPED LENGTH SHALL BE IN HORIZONTAL POSITION. EXTEND COMMON VENT UP THROUGH ROOF.
- ROUTE ALL VENTS TO NEAREST COMMON VENT THRU ROOF (VTR) TO MINIMIZE ROOF PENETRATIONS. VTR TO BE MINIMUM 15 FEET AWAY FROM OUTSIDE AIR INTAKES. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

FIXTURE CONNECTION SCHEDULE							
MARK	CW	HW	TW	WASTE	DRAIN FIXTURE UNITS	VENT	
WATER CLOSET (FLUSH VALVE)	1"	-	_	4"	6	2"	
WATER CLOSET (TANK TYPE)	1/2"			4"	4	2"	
URINAL	3/4"		_	2"	2	2"	
LAVATORY *	1/2"	- 4-	1/2"	2"	1	1 1/2" * *	
SINK ***	1/2"	1/2"	1/2"	2"	2	1 1/2" **	
SERVICE SINK	3/4"	3/4"		3"	2	2"	
WASH FOUNTAIN	1/2"	_	1/2"	2"	2	1 1/2" * *	
EWC	1/2"	_	****	2"	1	1 1/2" **	
WASHING MACHINE	3/4"	3/4"	3 p =	2"	2	2"	
HOSE BIBB	3/4"		-		-	-	
SHOWER * * * *	1/2"	1/2"	-	3"	2	1 1/2"	
FLOOR DRAIN	-			3"	2	2"	

- * HOT (TEMPERED) AND COLD WATER REQUIRED UNLESS NOTED OTHERWISE ON PLUMBING FIXTURE SCHEDULE. PROVIDE TEMPERATURE MIXING VALVE (ASSE 1070) AT THE FIXTURE.
- * * IF HORIZONTAL VENT LENGTH EXCEEDS 20 FEET, INCREASE VENT SIZE TO TWO INCHES.
- * * * COMMERCIAL KITCHEN SINKS GET HOT WATER, REMAINDER TO BE PROVIDED WITH TEMPERATURE MIXING VALVE (ASSE 1070) AT THE FIXTURE.
- * * * SHOWER VALVES TO BE BALANCED-PRESSURE, THERMOSTATIC OR COMBINATION BALANCED-PRESSURE/THERMOSTATIC CONFORMING TO ASSE 1016.

			40	100F00 D00B	144117	
YMBOL	ABB.	DESCRIPTION	AD ABV AFF	ACCESS DOOR ABOVE ABOVE FINISHED FLOOR	MAINT MAU MAX	MAINTENANCE MAKEUP AIR UNIT MAXIMUM
	cw	COLD WATER PIPING	ARCH AUTO	ARCHITECT AUTOMATIC	MC MBH	MECHANICAL CONTRACTOR 1000 BTU PER HOUR
	HW	HOT WATER PIPING	AUX	AUXILIARY AIR HANDLING UNIT	MECH	MECHANICAL MANHOLE
_	HWR	HOT WATER RETURN PIPING	BD BFF	BALANCE DAMPER BELOW FINISHED FLOOR	MIN MISC MTD	MINIMUM MISCELLANEOUS MOUNTED
	ww	WASTE WATER	BLDG BOD	BUILDING BOTTOM OF DUCT	MOD	MOTOR OPERATED DAMPER
t		VENT PIPING	BOP BF	BOTTOM OF PIPE BOOSTER FAN	NIC N.O.	NOT IN CONTRACT NORMALLY OPEN
-		TEMPERED WATER	CLG	CEILING	N.C. NO.	NORMALLY CLOSED NUMBER
	<u> </u>	GAS PIPING	CLR CO	CLEAR/CLEARANCE CLEANOUT	NTS	NOT TO SCALE
			COL CONC CONTR	COLUMN CONCRETE	OBD	OUTDOOR AIR OPPOSED BLADE DAMPER
_		FIRE LINE	- CW	CONTRACTOR COLD WATER	OC OPNG	ON CENTER(S) OPENING
		GREASE TRAP LINE	CONN	CONNECTION CONDENSING UNIT	ORL	OVERFLOW RAINLEADER
		COMPRESSED AIR PIPING	Cu	COPPER CHILLED WATER SUPPLY	OAH	OUTSIDE AIR HOOD
		RELIEF OR CONDENSATE DRAIN PIPING	CHR	CHILLED WATER RETURN	PC PH	PLUMBING CONTRACTOR PHASE
	SD	STORM DRAIN	DIA DN	DIAMETER DOWN	PLBG	PLUMBING
			DWG DH	DRAWING DUCT HEATER	R/A RE:	RETURN AIR REFERENCE/REFER TO
	RL.	RAIN LEADER	E/A	EXHAUST AIR	REFRIG REF	REFRIGERANT REFRIGERATOR
	ORL	OVERFLOW RAIN LEADER	EC EF	ELECTRICAL CONTRACTOR EXHAUST FAN	REQD	REQUIRED RADIANT HEAT PANEL
	=	FULL PORT BALL PIPE ISOLATION VALVE	ELEC EQ	ELECTRIC/ELECTRICAL EQUAL	RL RM	RAINLEADER ROOM
	НВ	HOSE BIBB/WALL HYDRANT	EQUIP EX	EQUIPMENT EXISTING	RTU	ROOFTOP UNIT
	ara o	UNION	EXH E.S.P.	EXHAUST EXTERNAL STATIC PRESSURE	S/A SCH	SUPPLY AIR SCHEDULE
1 0	FD/FS	FLOOR DRAIN/FLOOR SINK	ERV	ENERGY RECOVERY VENTILATOR	SPEC	STATIC PRESSURE SPECIFICATION
<u>-</u>	HD	HUB DRAIN	FCO FCU FF	FLOOR CLEAN OUT FAN COIL UNIT	SD SF	STORM DRAIN SUPPLY FAN
	co	CLEAN OUT	FLEX FLR	FINISHED FLOOR FLEXIBLE FLOOR/FLOORING	TSP TYP	TOTAL STATIC PRESSURE TYPICAL
22270			GA GA	GAUGE	UON	UNLESS OTHERWISE NOTED
		DOUBLE CLEAN OUT	GC GEN	GENERAL CONTRACTOR GENERAL	UG UH	UNDERGROUND UNIT HEATER
	wco	WALL CLEAN OUT	GYP	GYPSUM BOARD	V	VENT (PLUMBING) VOLTAGE (ELECTRICAL)
		GAS COCK	HP Hp	HEAT PUMP HORSEPOWER	VTR	VENT THROUGH ROOF
		BALANCE VALVE	HT	HEIGHT HOT WATER	W/ W/O	WITHOUT
		CHECK VALVE	HWC HR	HOT WATER CIRC	WP WT	WATERPROOF WEIGHT
	7	POINT OF CONNECTION	HWR HWS	HEATING WATER RETURN HEATING WATER SUPPLY	WTR WW	WATER WASTE WATER
		GAS PRESSURE REGULATOR	LOC	LOCATION	WCO	WALL CLEANOUT WATER HEATER

GENERAL NOTES

- THE CONTRACTOR IS TO VISIT THE SITE PRIOR TO BID TO FAMILIARIZE HIMSELF WITH ALL CONDITIONS AS THEY EXIST. SUBMISSION OF BID INDICATES THE CONTRACTOR'S UNDERSTANDING OF EXISTING CONDITIONS AND HIS WILLINGNESS TO WORK WITH THESE CONDITIONS. NO ADDITIONAL TIME OR MONEY WILL BE ALLOTTED DUE TO LACK OF COORDINATION WITH EXISTING CONDITIONS OR OTHER TRADES.
- CONTRACTORS TO REVIEW AND COMPARE ALL DRAWINGS SO ALL WORK IN THEIR RESPECTIVE TRADE IS INCLUDED IN BID. EACH CONTRACTOR SHALL INCLUDE ALL MATERIALS AND INSTALLATION REQUIRED FOR HIS PARTICULAR TRADE AFTER COMPLETE REVIEW OF ALL CONTRACT DRAWINGS AND SPECIFICATIONS.
- C. ALL WORK SHALL COMPLY WITH THE APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. FOLLOW RECOMMENDED PRACTICES AS SET DOWN BY ASME, SMACNA, ASHRAE, NFPA, APPLICABLE BUILDING CODE, APPLICABLE MECHANICAL CODE, APPLICABLE PLUMBING CODE, NATIONAL ELECTRICAL CODE, AGA, ADA AND OSHA, AS THEY APPLY TO THIS PROJECT EXCEPT IN CASES WHERE LOCAL STATUTES GOVERN.
- D. THE CONTRACTOR SHALL VERIFY WITH AUTHORITY HAVING JURISDICTION THE LATEST ADOPTED LOCAL CODES, ORDINANCES AND AMENDMENTS THAT APPLY TO THIS PROJECT. PROVIDE CONDENSATE DISPOSAL POINT FOR ALL MECHANICAL EQUIPMENT TO CODE APPROVED DISPOSAL. COORDINATE WITH MECHANICAL CONTRACTOR.
- ABSOLUTELY NO PIPING OR DUCTWORK CAN BE ROUTED ABOVE ELECTRICAL PANELS, GEAR OR TRANSFORMERS. THE ONLY HVAC, PLUMBING, SPRINKLER OR DUCTWORK THAT CAN ENTER AN ELECTRIC ROOM ARE THOSE SPECIFICALLY SERVING THAT ROOM. THESE SERVICES CAN ONLY ENTER INTO ELECTRIC ROOM ABOVE ENTRY DOOR.
- PROVIDE VALVE TAGS FOR ALL VALVES. PROVIDE CEILING ACCESS MARKERS FOR VALVES LOCATED ABOVE CEILING OR BEHIND WALL MOUNTED PANEL.
- PLUMBING PIPING SHALL NOT BLOCK ACCESS TO EQUIPMENT, JUNCTION BOXES, DISCONNECTS, ACCESS DOORS, ETC.
- ALL VALVES ARE TO BE ACCESSIBLE AND SHALL NOT BE LOCATED MORE THAN FOUR FEET ABOVE THE CEILING.
- CONTRACTOR TO CONNECT COLD WATER, TEMPERED WATER, WASTE WATER AND VENT PIPING TO ALL FIXTURES PER MANUFACTURER'S RECOMMENDATIONS, UNLESS OTHERWISE NOTED ON DRAWINGS.
- BEFORE ANY CUTTING OR TRENCHING OPERATIONS BEGIN, VERIFY WITH OWNER'S REPRESENTATIVE, UTILITY COMPANIES AND OTHER INTERESTED PARTIES THAT ALL AVAILABLE INFORMATION HAS BEEN PROVIDED CONCERNING EXISTING UTILITY LOCATION. VERIFY LOCATIONS GIVEN. CONTACT ARCHITECT IMMEDIATELY UPON UNCOVERING UNKNOWN UTILITIES FOR FURTHER DIRECTION. INDICATE ALL UNCOVERED UTILITIES ON RECORD DRAWINGS.
- K. INSTALL ROOF JACK AS REQUIRED AT ALL GAS PIPING ROOF PENETRATIONS.
- L. FIRE SEAL AROUND ALL PIPING AT PENETRATIONS THROUGH RATED WALLS, CEILINGS AND TUNNELS PER UL LISTED MATERIAL FOR ACTUAL SEALANT BEING USED. COORDINATE WITH ARCHITECTURAL PLANS FOR RATED WALL LOCATION.
- PROVIDE ALL APPROPRIATE TOOLS, WRENCHES, KEYS, ETC. AS REQUIRED FOR ACCESS AND OPERATION OF VALVES, COVERS, ETC.
- DO NOT ROUTE PIPING UNDER EQUIPMENT LOCATED ABOVE CEILING. ROUTE PIPING AROUND EQUIPMENT TO ALLOW FOR ACCESS AROUND EQUIPMENT AND FOR FUTURE REMOVAL OF EQUIPMENT.
- PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING FLUES AND COMBUSTION AIR PIPING TO EXTERIOR FOR GAS FIRED WATER HEATERS AND BOILERS.
- PROVIDE HEAT TRAPS ON INCOMING AND DISCHARGE LINES FROM WATER HEATERS WHICH DO NOT HAVE THEM FACTORY INSTALLED OR ARE NOT CONNECTED TO A RECIRCULATING SYSTEM.

PLUMBING FIXTURE SCHEDULE

NOTES:

2

- REFERENCE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ALL WALL HUNG FIXTURES TO BE INSTALLED WITH WALL CARRIERS, VERIFY CONFIGURATION TYPE
- PROVIDE VANDAL RESISTANT SCREWS AT ALL FIXTURES.
- INSTALL STAINLESS STEEL CAPS AT ALL UNUSED LAVATORY FAUCET HOLES.
- NO OFFSET FLANGES WILL BE ALLOWED FOR WATER CLOSET INSTALLATIONS. GROUT FOR LEVELING WATER CLOSETS SHALL NOT EXTEND UP ON SIDE OF WATER CLOSET BASES. TAKE GROUT BACK TO MINIMUM 1/8" UNDER BASE AND CAULK FOR FINAL FINISH. VERIFY CAULK COLOR AND TYPE WITH ARCHITECT.
- REFERENCE ARCHITECTURAL CONTRACT DOCUMENTS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES. CONTACT ARCHITECT FOR ADDITIONAL INFORMATION AS REQUIRED.
- PROVIDE INVERTED TEE CONNECTION FROM SINK TAILPIECE OR FLUSH VALVE TYPE TRAP PRIMER CONNECTION TO ALL FLOOR DRAINS, FLOOR SINKS AND HUB DRAINS. AS LAST RESORT PROVIDE MECHANICAL TYPE TRAP PRIMER (PPP INC. "OREGON #1" TYPE). CONNECT TO NEAREST WATER SERVING THAT AREA PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ALL PLUMBING FIXTURES TO BE "LEAD FREE" AB1953 COMPLIANT (.25% OR LESS AVERAGE LEAD CONTENT). PROVIDE DOCUMENTATION IN SUBMITTALS THAT THIS REQUIREMENT IS MET FOR EACH APPLICABLE FIXTURE.

WATER CLOSET: ACORN MODEL #1680-W-1-HET-FVBO-FT-MT-SW, WALL/CHASE MOUNTED, SEAMLESS WELDED 14 GAUGE TYPE 304 STAINLESS STEEL, CONCEALED SUPPLY, ELONGATED BOWL, INTEGRAL SEAT. FLOOD-TROL (MANUAL RESET) METAL TEMPLATE AND WALL SLEEVE. CONCEALED FLUSH VALVE: SLOAN ROYAL 9603-1,28 GPF, 1.28 GALLON MANUAL PUSH BUTTON FLUSH WITH CHROME PLATED WALL COVER. PROVIDE WITH FLUSH VALVE TRAP PRIMER VBF-21-A AS REQUIRED.

WATER CLOSET (ADA): ACORN MODEL #1680-W-1-HET-FVBO-ADA-FT-MT-SW, WALL/CHASE MOUNTED, SEAMLESS WELDED 14 GAUGE TYPE 304 STAINLESS STEEL, CONCEALED SUPPLY, ELONGATED BOWL, INTEGRAL SEAT, FLOOD-TROL (MANUAL RESET) METAL TEMPLATE AND WALL SLEEVE. CONCEALED FLUSH VALVE: SLOAN ROYAL 9603-1.28 GPF, 1.28 GALLON MANUAL PUSH BUTTON FLUSH WITH CHROME PLATED WALL COVER. PROVIDE WITH FLUSH VALVE TRAP PRIMER VBF-21-A AS REQUIRED.

URINAL: ACORN MODEL #1709-W-1-.5-FYBO-MT-SW, WALL MOUNTED, SEAMLESS WELDED HEAVY GAUGE STAINLESS STEEL, CONCEALED SUPPLY, CONCEALED FLUSH VALVE: SLOAN ROYAL 9613-0.5, 0.5 GALLON MANUAL PUSH BUTTON FLUSH WITH CHROME PLATED WALL COVER, METAL TEMPLATE AND WALL SLEEVE. PROVIDE WITH FLUSH VALVE TRAP PRIMER AS REQUIRED.

URINAL (ADA): ACORN MODEL #1709-W-1-.5-FYBO-MT-SW, WALL MOUNTED, SEAMLESS WELDED HEAVY GAUGE STAINLESS STEEL, CONCEALED SUPPLY. CONCEALED FLUSH VALVE: SLOAN ROYAL 9613-0.5, 0.5 GALLON MANUAL PUSH BUTTON FLUSH WITH CHROME PLATED WALL COVER, METAL TEMPLATE AND WALL SLEEVE. PROVIDE WITH FLUSH VALVE TRAP PRIMER AS REQUIRED.

SEAMLESS WELDED HEAVY GAUGE STAINLESS STEEL, TOUCH TIME SINGLE TEMPERATURE

ELECTRONIC METERING VALVE, DECK MOUNTED SPOUT AND ASSE 1070 THERMOSTATIC MIXING VALVE, METAL TEMPLATE AND WALL SLEEVE. 3 COMPARTMENT SINK: ELKAY #WNSF8360LR4, 14 GAUGE STAINLESS STEEL. 1/4" RADIUS

LAVATORY (ADA): ACORN MODEL #1652LRB-DMS-PPZ1-MT-SW-ST70, WALL/CHASE MOUNTED,

COVED CORNER CONSTRUCTION, 24" x 20" x 14" DEEP BOWLS, 8" HIGH FULL LENGTH SLOPED BACKSPLASH, DRAINBOARDS LEFT AND RIGHT, STAINLESS STEEL TUBULAR LEGS WITH ADJUSTABLE BULLET FEET. FAUCETS: TWO (2) ELKAY #LK945AT12T4T, 4" WRIST BLADE HANDLES.

KITCHEN HAND SINK (ADA): ELKAY #ELVW02219, 304 STAINLESS STEEL, NSF, COMPLETE WITH WALL HANGER, INTEGRAL STAINLESS STEEL SUPPORT BRACKETS, INTEGRAL OVERFLOW. PROVIDE WITH LK412 GOOSENECK FAUCET WITH 4" WRISTBLADE HANDLES AND LK723 THERMOSTATIC MIXING VALVE (ASSE 1070).

DRINKING FOUNTAIN (ADA): "MOST DEPENDABLE FOUNTAINS, INC" WALL MOUNT MODEL 10485WMSS, DUAL LEVEL, RECESSED NOZZLE BOTTLE FILLER SPOUT, STAINLESS STEEL. STAINLESS STEEL COVER PLATE OVER WALL CARRIER PLATE, CANE APRON, VANDAL RESISTANT BUBBLER AND OPTIONAL CUT-OFF VALVE AND LOW POINT DRAIN. INSTALL PER MANUFACTURERS INSTALLATION INSTRUCTIONS.

SERVICE SINK: FIAT #MSB-2424, ONE-PIECE MOLDED STONE WITH #832-AA HOSE AND HOSE BRACKET #E-77-AA VINYL BUMPER GUARD, MSG-2424 STAINLESS STEEL WALL GUARD AND #830-AA FAUCET.

WATER HEATER: A.O.SMITH MODEL DEN-52, 50 GALLON STORAGE, 6KW-208V-3PH

NON-SIMULTANEOUS ELEMENTS. 31 GPH RECOVERY AT 80 DEGREES RISE.

HOSE BIBB: WOODFORD MODEL 26, TEE KEY OPERATOR, ASSE 1052 OR 1101 BACKFLOW PREVENTER, CLOSE COUPLED, NO SPRAYBACK. PROVIDE SHUT-OFF VALVE INSIDE BUILDING IN ACCESSIBLE LOCATION. SLOPE LINE FROM SHUT-OFF VALVE TO WALL HYDRANT TO ALLOW DRAINING OF LINE FOR FREEZE PROTECTION.

FLOOR DRAIN: C.I. BODY, FLASHING COLLAR, WEEPHOLES, ADJUSTABLE STAINLESS STEEL OR NICKEL BRONZE RECTANGULAR TOP (4" x 12"). MIFAB F1100C-RS-3 SERIES.

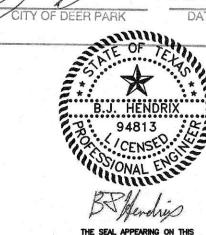
FLOOR DRAIN (KITCHEN): C.I. BODY, FLASHING COLLAR, WEEPHOLES, SECURED AND ADJUSTABLE STAINLESS STEEL OR NICKEL BRONZE SQUARE TOP (6" x 6") MINIMUM WITH COPPER SEDIMENT BASKET. TOP SIZE TO MATCH TILE SIZE AS CLOSE AS POSSIBLE, VERIFY TOP SIZE. MIFAB F1100 CS-3-5 SERIES.

FLOOR SINK: 6" DEEP WITH ACID-RESISTING PORCELAIN ENAMEL INTERIOR, ALUMINUM INTERNAL DOME STRAINER, and STAINLESS STEEL GRATE (1/2 GRATE TYPE). MIFAB FS1720-3

1 1 0 2 s austin ave, suite 103 georgetown, tx 78626 ryan@modedc.us | www.modedc.us + 1 512 733 1150

BUILDING S α α

APPROVED AS NOT



ON: 08/10/2017

REFERENCE GENERAL NOTES OF SHEETS M1.1, P1.1 AND E1.

APPROVED

[] DISAPPROVED

PROJECT PHASE BID - 8/10/2017

16123-00 DATE ISSUED

8/10/2017

SHEET TITLE

8

REVISIONS

CITY OF DEER PARK Date Received

AUG 1 1 2017

SI.

AND

BLVD

DEVELOPMENT

SOCCER FIELD

ENGINEERING DEPARTMENT

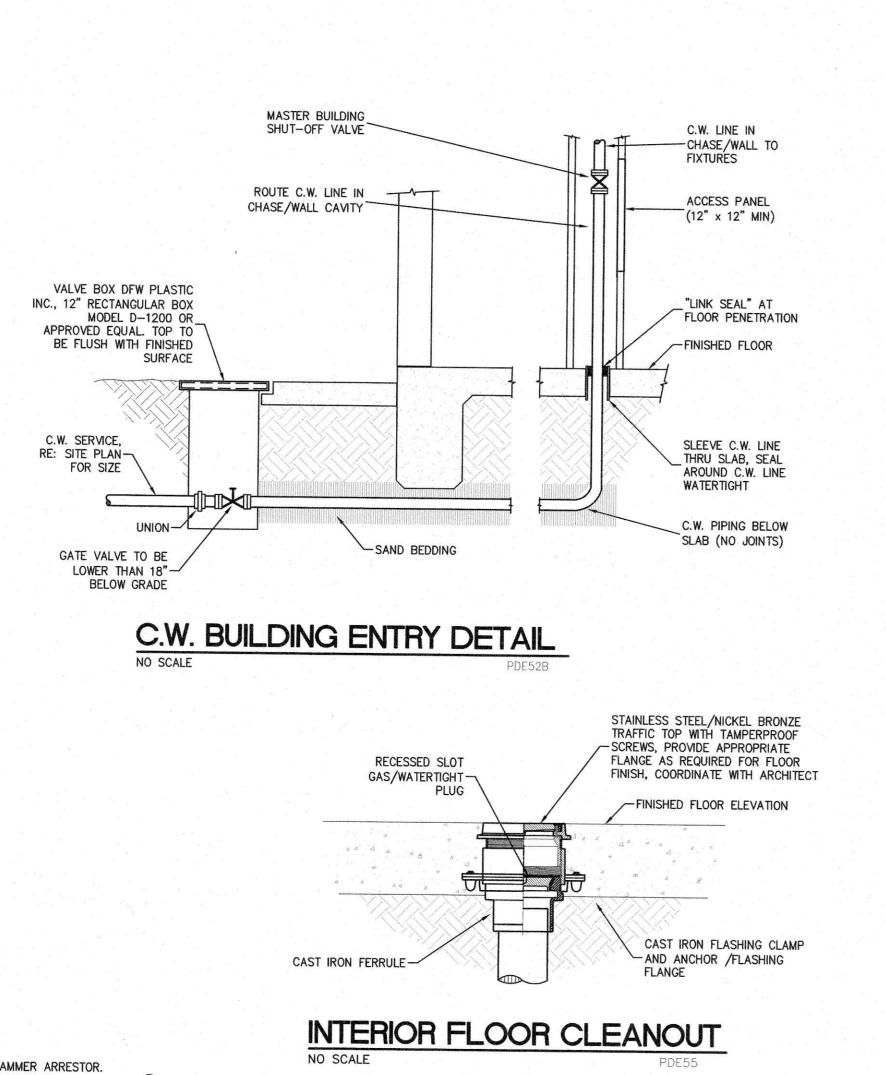
SCHEDULES, NOTES, AND

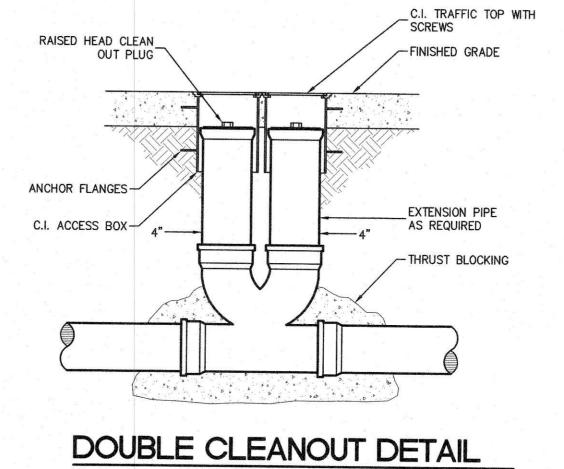
LEGENDS - PLUMBING

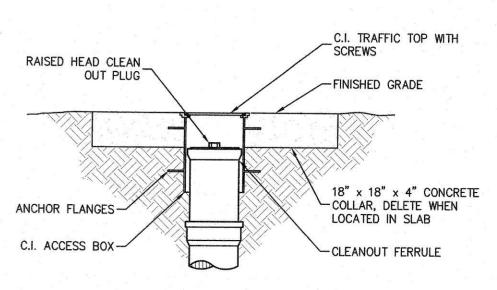


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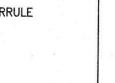
HCE job no.: 17-026



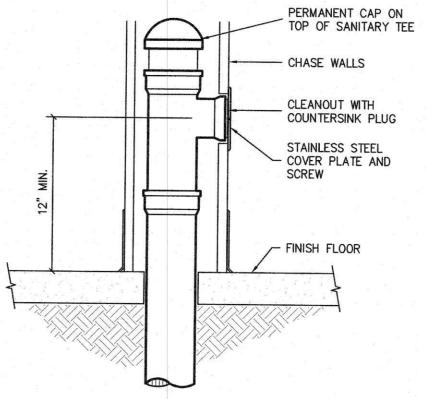




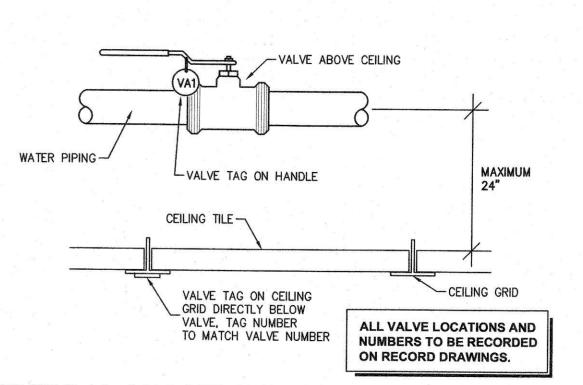
EXTERIOR CLEANOUT



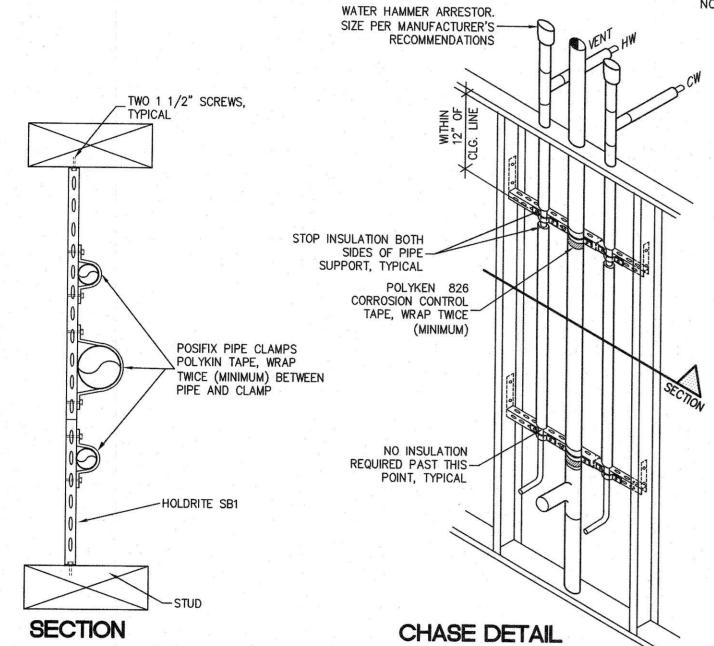
PDE88



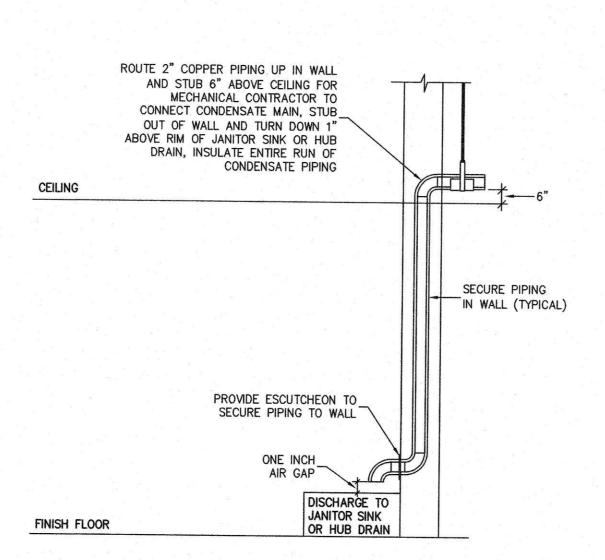
WALL CLEANOUT



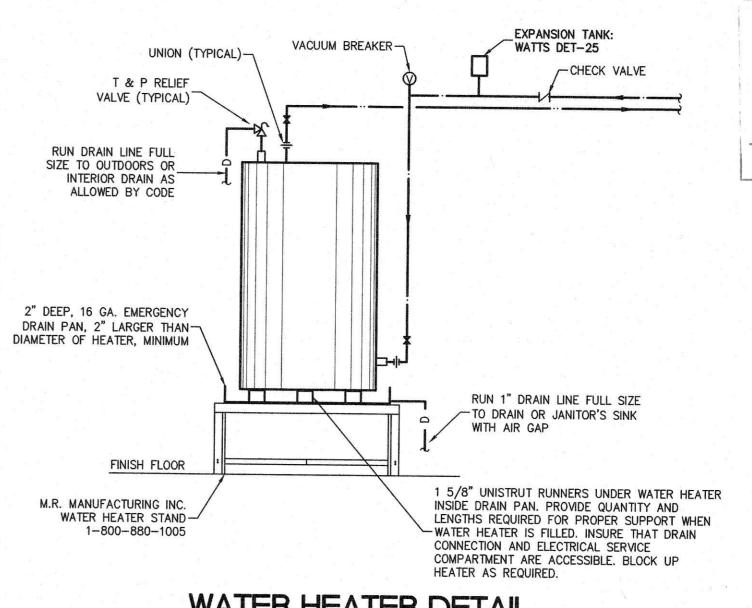
TYPICAL VALVE IDENTIFICATION DETAIL



TYP. PLUMBING CHASE SUPPORT DETAIL
NO SCALE



TYPICAL CONDENSATE STUB DETAIL



WATER HEATER DETAIL NO SCALE



94813 /CENSED

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY B.J. HENDRIX, P.E. NO: 94813 ON: 08/10/2017

REFERENCE GENERAL NOTES ON

APPROVED

COTY OF DEER PARK

DISAPPROVED

☐ APPROVED AS NOTED

REVISE & RESUBMIT

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BUILDING 8 RESTRO(SSION

SOCCER FIELD DEVELOPMENT **8** PROJECT PHASE BID - 8/10/2017

REVISIONS CITY OF DEER PARK

DEER

9

ST.,

EAST BLVD AND EAST 13TH

PHASE

Date Received AUG 11 2017

ENGINEERING DEPARTMENT

PROJECT NUMBER 16123-00 DATE ISSUED 8/10/2017

DETAILS -**PLUMBING**

KEYED NOTES

THESE NOTES APPLY TO THIS SHEET ONLY

- DO NOT ROUTE ANY PIPING ABOVE THIS AREA.
- 2 CONNECT TO WASTEWATER (WW) STUB PROVIDED BY CIVIL. FIELD VERIFY EXACT LOCATION AND INVERT. PROVIDE ADAPTER AS REQUIRED TO MAKE SIZE AND/OR MATERIAL TRANSITION.
- 3 CONNECT TO COLD WATER (CW) STUB PROVIDED BY CIVIL. FIELD VERIFY EXACT LOCATION. PROVIDE ADAPTER AS REQUIRED TO MAKE SIZE AND/OR MATERIAL TRANSITION. COORDINATE LOCATION OF SHUT OFF WITH CONDENSING UNITS.
- 4 RE: CW BUILDING ENTRY DETAIL ON PLUMBING DETAIL SHEET(S).
- 5 RE: DOUBLE CLEANOUT DETAIL ON PLUMBING DETAIL SHEET(S).
- 6 RE: EXTERIOR CLEANOUT DETAIL ON PLUMBING DETAIL SHEET(S).
- 7 RE: INTERIOR CLEANOUT DETAIL ON PLUMBING DETAIL SHEET(S).
- 8 RE: WATER HEATER DETAIL ON PLUMBING DETAIL SHEET(S) FOR WATER HEATER AND HOT WATER RECIRCULATION PUMP PIPING.
- 9 RE: TYPICAL CONDENSATE STUB DETAIL ON PLUMBING DETAIL SHEET(S).
- 10 CW IN-LINE RPZ BACKFLOW PREVENTOR ON WALL IN ACCESSIBLE LOCATION. COORDINATE EXACT LOCATION WITH ARCHITECT AND EQUIPMENT. ROUTE RELIEF FROM RPZ TO FLOOR SINK FOR ICEMAKER.
- 11 GREASE INTERCEPTOR EQUAL TO PARK MODEL MGT-35-PDI, 35 GPM, 70 LB GREASE CAPACITY. PROVIDE STEEL EXTENSIONS AS REQUIRED.
- 12 SAMPLE WELL EQUAL TO PARK MODEL SWB-184.
- 13 PROVIDE BUILDING SHUT OFF VALVE AND DOUBLE CHECK BACKFLOW PREVENTER IN
- 14 ROUTE ALL WW VENTS, AND WATER LINES TIGHT TO CHASE WALLS TO MAINTAIN MAXIMUM ACCESS SPACE DOWN CENTER OF CHASE. ROUTE 2" DOMESTIC WATER MAINS DOWN EACH SIDE OF CHASE TO SERVE FIXTURES. SLOPE MAINS TO DRAIN TO EXTERIOR HOSE BIBBS AT END OF CHASE. REFERENCE FIXTURE CONNECTION
- 15 SLOPE WATER LINE TO HOSE BIB FOR DRAIN DOWN.

2 1/2"(3) WCW

PEX-A WATER PIPING MAY BE

USED IF ACCEPTABLE TO OWNER.

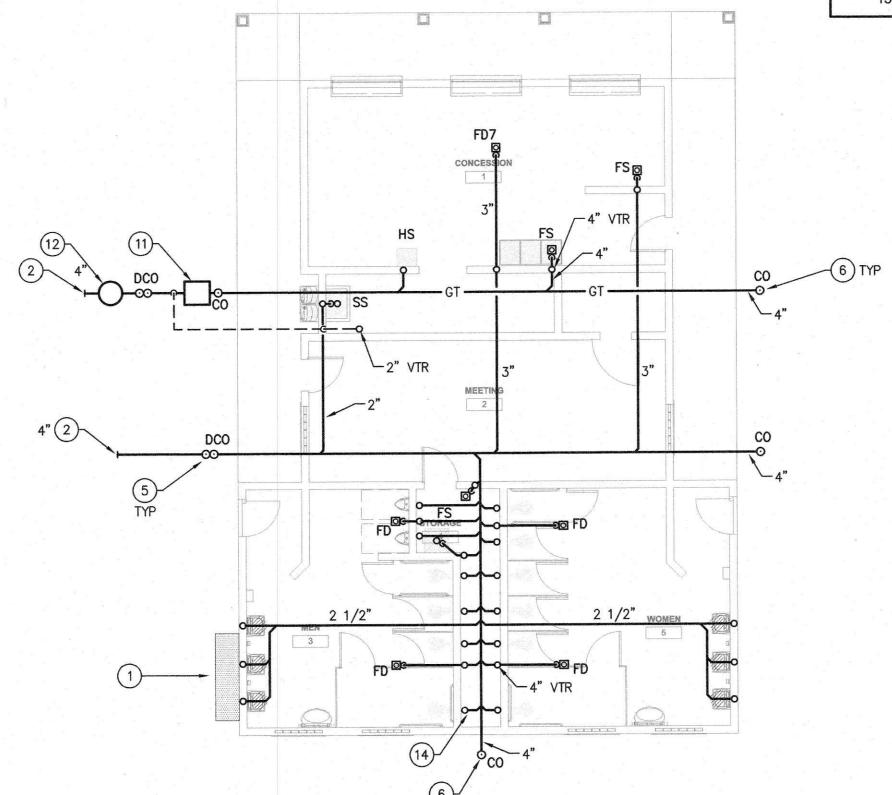
ALL WATER LINES UNDERGROUND

EXCEPT IN CHASE FOR FREEZE

PROTECTION.

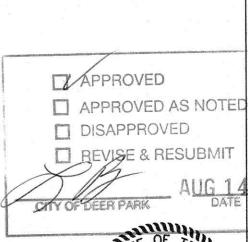
02 FLOOR PLAN - PLUMBING - SUPPLY
SCALE: 1/8" = 1'-0"

5

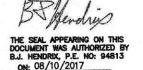


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0 1 FLOOR PLAN - PLUMBING - WASTE
SCALE: 1/8" = 1'-0"







PROJECT PHASE BID - 8/10/2017

> CITY OF DEER PARK Date Received

> > AUG 11 2017

REFERENCE GENERAL NOTES ON SHEETS M1.1, P1.1 AND E1.1 FOR ADDITIONAL INFORMATION



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HCE job no.: 17-026

BUILDING W00 RESTR CONCESSION

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ENGINEERING DEPARTMENT

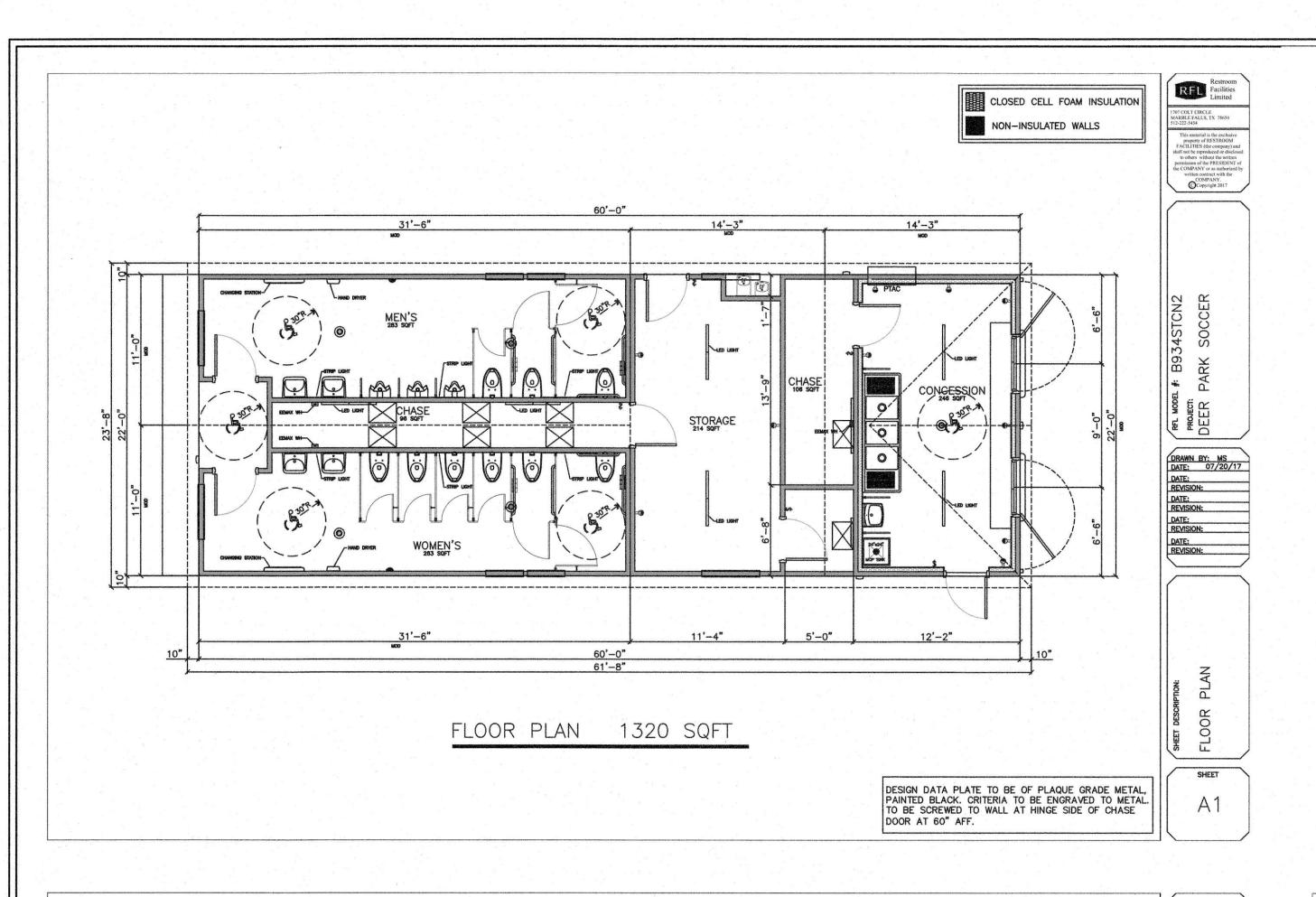
16123-00

8/10/2017 FLOOR PLAN -

DATE ISSUED

SHEET NUMBER

P-2.1



GENERAL CONTRACTOR'S SCOPE OF WORK TURNKEY INSTALLATION OF RESTROOM BUILDING WITH ATTACHED SLAB

1. SURVEY STAKES:

Provide ten foot offset stakes and locate front corners of building, existing utilities, and inverts within the area of construction. Locate and mark final slab elevation.

2. SUBGRADE PAD:

Preparing the site is fairly simple. Detailed instructions to prepare the building site are

- 2.1. Excavate down ten inches below the finish floor elevation (the slab is eight inches thick on top of a two inch sand bed).
- 2.2. If soils are poor, it may be necessary to import six inches of Class II base rock, and pour for a footing and/or piers. (This is not necessary if native soils will compact)
- 2.3. Compact to 95%, or to local code requirement.
- 2.4. Compact one foot over in all directions (over build).
- 2.5. Supply approximately five cubic yards of clean sand, on side of site, for fine
- 2.6. Excavate and backfill trenches up to and within building pad for RFL supplied underground utility service kits.
- 2.7. Provide water and inspection for RFL supplied underground sewer kit.
- 2.8. Depending on weather, all irrigation should be turned off prior to delivery to allow the surrounding soils to dry and bear the weight of the truck and crane.
- 2.9. Check corner locations against plans for proper sizing.2.10. Verify finish floor elevation for concrete slab (shipped fully attached to the
- 2.11. Excavate one foot perimeter footing if required by local code to specified depth.

3. SITE ACCESS AND STORAGE:

Provide suitable safe clear access to allow a crane (up to 110 tons), and the building on a semi-trailer (up to 40 tons) to reach site (14' width, 70' length, and 14' in height). If path to site is over existing utilities, sidewalks, or other damageable areas, proper marking, plating or other appropriate protection must be provided by General Contractor. General Contractor is responsible for removing any overhead obstructions (i.e. power lines, trees). This proposal provides for a 110 ton crane with access to within 25' of the building pad. The proposal is based on four (4) hours of crane time. If access is limited a larger crane may be required. All additional crane costs shall be borne by the CLIENT. A direct route to the project site is assumed. Should routes be altered due to road closures or restrictions, additional fees may apply.

4. UTILITIES:

Bring water, sewer, and power (if applicable) utilities into point of connection Christy boxes (supplied by RFL), within six feet of the building line at the location shown on our

- 4.1. Water: RFL will furnish and install a water point of connection (isolation valve), from mechanical chase to a Christy box six feet from the building line. General Contractor must connect service to valve.
- 4.2. Sewer: RFL will furnish and install a sewer point of connection from mechanical chase to a Christy box six feet from the building line. General Contractor must connect service.
- 4.3. Electrical: (when this option is chosen) RFL will furnish and install a PVC conduit and a Christy box to the point of connection six feet from the building line. General Contractor to pull the electrical service line through the conduit and connect to the main panel lugs inside the building. All electrical inside the building will be furnished and installed by RFL, except as noted above in exclusions.
- 4.4. If the utilities are not available when we depart the site, testing and minor leaks will be the responsibility of the General Contractor.
- 4.5. A minimum 1½" line with 25 gpm at 60 psi pressure minimum is required to ensure that water closets will operate as designed. If this is not available an auxiliary holding tank may be required.

ARCHITECTURAL ALTERNATE

OWNER TO PURCHASE PRE-FAB BUILDING AND

ELECTRICAL AND PLUMBING CONNECTIONS WITHIN 5' OF THE BUILDING AND COORDINATE WITH SITE

INSTALL. CONTRACTOR SHALL PROVIDE

WORK AND INSTALLATION WITH OWNER.

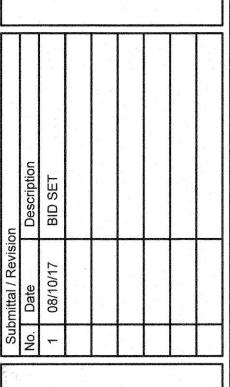
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DEER PARK

FIELD DEVELOPMENT
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14800 ST. MARY'S LANE
SUITE 160
HOUSTON, TEXAS
77079-2943
TEL (713) 588-2450



CITY OF DEER PARK
Date Received
AUG 11 2017

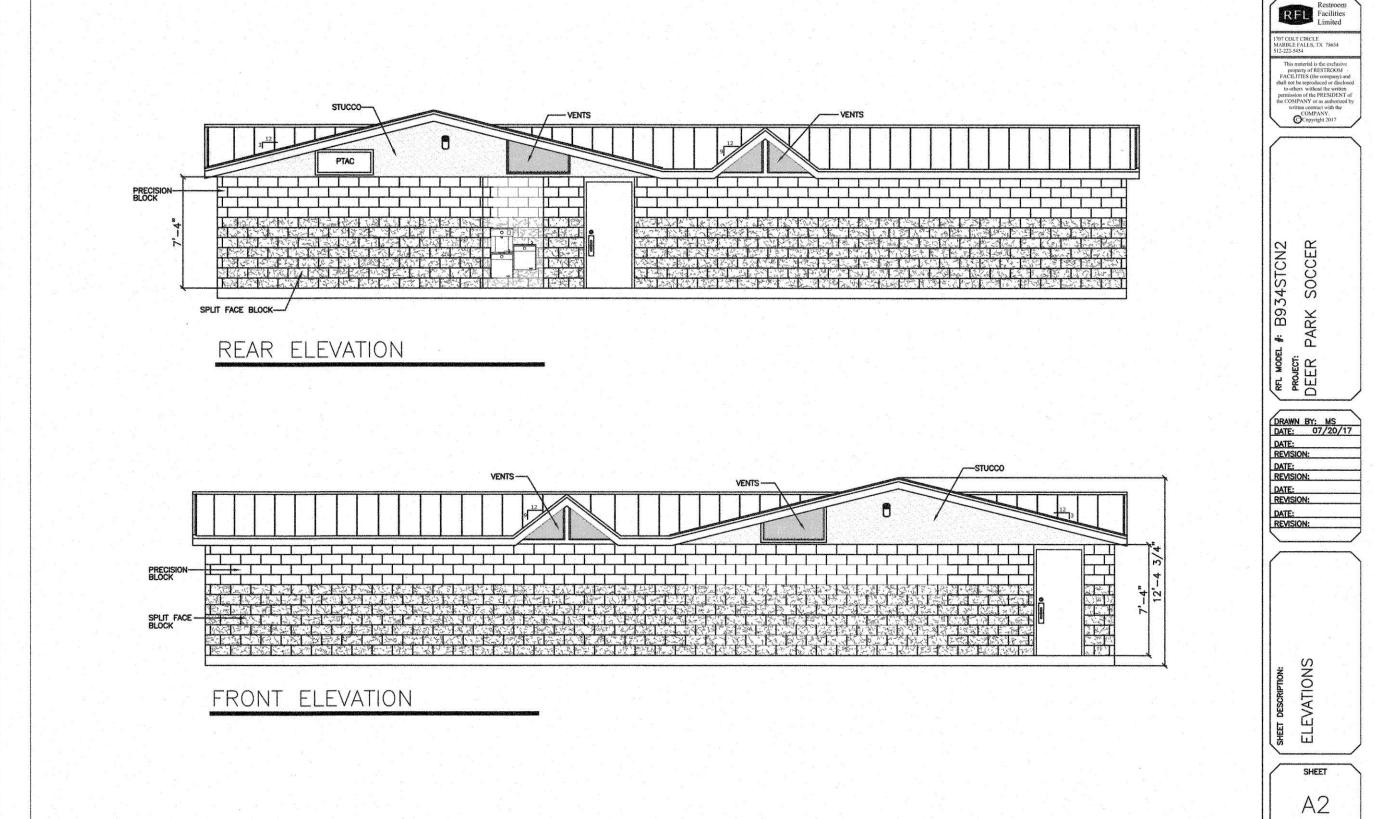
ENGINEERING DEPARTMENT

Project No.: 31558-PH1-16003E Issued: 08/10/17 Drawn By: BM

CORWORTH ARCHITECTURAL ALTERNATE

Checked By: KD / KL

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